ST. JOHNS IMPROVEMENT DISTRICT

Indian River County, Florida

PERMIT MANUAL

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SECTION 1

A. INTRODUCTION

The purpose of this *Permit Manual* ("Manual") is to provide information describing the criteria and permitting requirements relating to the utilization of, and connection to, the works of the St. Johns Improvement District ("District"). Additionally, this manual covers site development. The District has adopted Indian River County's Land Development Regulations (LDRs). The Manual is the companion document to the *Operations Guidelines* developed by the District.

This Manual should be used by permit applicants to prepare permit applications. It will be used as a guideline by the District staff to evaluate applications and proposals for permits. The criteria and requirements contained herein are **subject to change, without notice**, by the Board of Supervisors ("Board") of the District.

All projects within the District's boundaries, regardless of size, location, direct or indirect connections, require review and permitting by the District.

All waters discharged into the District's canal systems shall meet water quality standards in accordance with the laws of Florida, the Federal Government and the rules of the St. Johns River Water Management District (SJRWMD).

As applicable and in matters largely governing in-kind replacements or renovations to existing facilities, the Board may waive strict application of the criteria appearing in this Manual when such action is determined to be in the best interest of the District and general public, consistent with the objectives of the District.

B. DISTRICT POWERS AND RESPONSIBILITIES

The District is organized and exists under Chapters 189 and 298, F.S. In the context of this Manual, it is responsible for drainage, flood control and protection, water management, irrigation, reclamation of lands, and operation and maintenance of District rights-of-way (ROW) within the District boundaries. All other powers and responsibilities of the District are indicated in Florida HB 1387 and are incorporated herein by reference.

The primary functions of the District are to control water within its boundaries with respect to drainage and irrigation, and the maintenance of District roads. The District maintains the pumping stations, dikes, main canals, and lateral canals as shown in the Water Control Plan.

All landowners have the option to take water from and discharge water into the District's canals and laterals provided that these activities are conducted in accordance with the regulations established and adopted by the District's Board of Supervisors. As the designated agent of the Board, the Administrator is authorized to promulgate, implement, and enforce the regulations adopted by the Board, unless specified otherwise in the regulations.

The District, through the advice of its Engineer, makes an effort to maintain a water level in its canals and laterals at an average elevation to best serve the needs of its landowners. Any landowner desiring a water table or elevation of water within the boundaries of the landowners' property different from that maintained in the laterals and canals of the District is responsible for constructing

and maintaining such culverts or other controls to meet internal needs. It is recognized that it is impossible to maintain water levels at all times in the District canals and laterals which will suit the needs of every landowner served without auxiliary control by the landowner to provide for their specific internal requirements.

Landowners and others are to apply for and receive a permit from the Board of Supervisors for the construction of any culverts, pumps, or other facilities on District rights-of-ways or into the rights-of-ways for any purpose so the District can maintain uniform control of its facilities.

Best Management Practices

The District recognizes and supports various best management practices (BMP's) adopted by the Florida Department of Agriculture and Consumer Services (FDACS), the United States Department of Agriculture's Natural Resources Conservation Service (USDA-NRCS), and the Indian River Citrus League (IRCL).

Landowners are encouraged to implement BMP's to accomplish effective environmental management through a total systems approach centered on water management, water quality, and water supply. The BMP philosophy represents the everyday working goal of the District and is promoted continually. BMP program elements include a wide range of applications including weed barriers, disease control, side slope rehabilitation / stabilization, shoal removal, vegetation / sediment trapping removal, biological control, and physical structure rehabilitation / replacement.

C. DISTRICT CHARACTERISTICS

1. District Limits

The District encompasses all or portions of Sections 1 – 29 and 32-36, Township 33 South, Range 37 East and Sections 5 – 8, 16 – 21, and 29 – 32, Township 33 South, Range 38 East, all lying within Indian River County. The District is generally bounded by State Road (SR) 60 on the north, the C-52/L-79 system and the Old C-52 East Flow-way on the west, the St. Lucie County line on the south and the Indian River Farms Water Control District (IRFWCD) on the east.

2. Existing District Facilities

Drainage Facilities

Per the original Plan of Reclamation, the District is essentially divided into a North area of approximately 29.5 square miles, and a South area of approximately 14 square miles, with the main flow way serving as the line of bisection. Land interior to the District drains via gravity culvert connection to a pump ditch system that, in turn, connects to the main flow way. Much of the District's land area is lower in elevation than the main flow way, which serves as both the central drainage conveyance and irrigation facility of the District. Subsequently, the District is somewhat unique in that, due to the reclamation of low lying, marshy lands during the formation of the District, drainage is accomplished through pumping to the main flow way from the pump ditch system. The flow way is subsequently connected to the southeastern corner of an approximately 1,760-acre stormwater treatment area / reservoir lying within the North area at the western boundary of the District via a fixed crest weir and gated structures which can be closed or opened in accordance with operational needs. Ultimate outfall for the District is to the SJRWMD's L-79/C-52 system as part of the SJRWMD's Upper St. Johns River basin.

The District is a tailwater-limited drainage system, whereby the ability of the District to effectively drain stormwater from the District lands to outside receiving waters is governed by the surface water (tailwater) elevation within the receiving waters as maintained and managed by the St. Johns River Water Management District.

Pump Stations

The original Plan of Reclamation included 17 pump stations, with 15 spaced approximately one mile apart on both the north and south sides of the main flow way system. In conjunction with that original reclamation design, an additional pump station, PS 16, was placed at the most western portion of the main flow way and PS 17 was placed in the most southern portion of what was referred to as South Lateral 2, immediately north of the St. Lucie County line. In conjunction with the major capital improvement actions undertaken by the District in the early 1990s. PS 17 was taken out of District service followed by the removal of PS 16 in the mid-1990s. PS16 was reinstalled as an irrigation supply pumping facility in 2008, renamed PS N9, to provide for water supply during drought periods. PS 10 was built in 2019 to serve the north end of NPD8.

At the present time, the District owns, operates and maintains 17 pump stations: nine stations serving the North area of the District, seven stations serving the South area, and 1 irrigation pump station. The Plan of Reclamation dictates that the pump units provide a peak pumping design capacity of approximately 30,000 gallons per minute per pump unit. All pump stations discharge into the District's main flow way system. Per the original Plan of Reclamation, pump stations are to have a firm pumping capacity of two inches per acre per day.

Please refer to Exhibit VIII, Existing Facilities Map, for the location of each pump station. Please refer to the following table for data on each of the pump stations owned, operated and maintained by the District.

Pump Station	**Pump Ditch / Drainage Lateral Served**	**Area Served***	**Peak Flow at 2 inches per day - per POR**		**Nominal Installed Capacity**	
		(ac)	(gpm)	(cfs)	# of Pumps	Capacity (gpm)
PS-1	NPD1	1,122.42	42,300	94	2	60,000
PS-N2	NPD2	2,077.63	78,300	175	4	120,000
PS-S2	SPD2	1,279.04	48,200	107	2	60,000
PS-N3	NPD3	2,245.16	84,600	189	4	120,000
PS-S3	SPD3	1,280.72	48,200	108	2	60,000
PS-N4	NPD4	2,237.04	84,300	188	4	120,000
PS-S4	SPD4	1,276.92	48,100	107	3	90,000
PS-N5	NPD5	2,241.70	84,500	188	4	120,000
PS-S5	SPD5	1,276.16	48,100	107	3	90,000
PS-N6	NPD6	2,246.44	84,700	189	4	120,000
PS-S6	SPD6	1,278.64	48,200	107	3	90,000
PS-N7	NPD7	2,235.12	84,200	188	4	120,000
PS-S7	SPD7	1,280.04	48,200	108	3	90,000
PS-N8	NPD8	3,193.20	120,400	268	6	180,000
PS-S8	SPD8	1,279.64	48,200	108	3	90,000

Pump Station	Pump Ditch / Drainage Lateral Served	Area Served*	Peak Flow at 2 inches per day - per POR		Nominal Installed Capacity	
		(ac)	(gpm)	(cfs)	# of Pumps	Capacity (gpm)
PS-N9	From Reservoir (Borrow Canal)	District Irrigation**			1	30,000
PS-10	North NPD8	1,463.00***			3	90,000
Total		**25,086.87**	**1,000,500**	**2,231**	**56**	**1,440,000**

*Area Served per plan of Reclamation, except PS10 which was determined by the District Engineer.
** Water supply from the Reservoir to the main flow way during low water elevations.
*** Area is also included as part of the N8 basin because PS10 pumps into NPD8.

Water Control Structures

The District owns, operates and maintains the Reservoir Gate Structure also referred to as the Outfall, which serves as the ultimate outfall for the District's stormwater. The Outfall consists of five radial gates. The main flow way has a fixed crest weir and a two-gate structure which can be closed or opened in accordance with operational, water supply, and maintenance needs.

Additionally, the District maintains the rights to access, modify, replace, and operate the gravity connection culverts that allow lands within the District boundary to drain to the lateral ditch system should the landowner be non-compliant with the operation and maintenance requirements of the District.

Drainage Laterals

As described within the original Plan of Reclamation, there is a network of drainage laterals which terminate at the pump stations adjacent to the main flow way system. The drainage laterals are numbered in a manner to allow for easier identification, based on the pump station at which the drainage lateral terminates. As an example, Pump Station North 2 (PS-N2) is the termination point for North Pump Ditch 2 (NPD-2). Therefore the NPD prefix identifies the lateral as a drainage-pumped ditch on the North side of the main flow way, while the numeric indicator denotes that the drainage lateral terminates at PS-N2. Per the original Plan of Reclamation, the drainage laterals were designed to convey runoff at a rate of four inches per day per acre of land. As noted above, per the Plan of Reclamation, the pump stations have an installed capacity of two inches per day per acre. The drainage laterals are spaced approximately one mile apart from one another and are intended to serve land approximately one-half mile to either side.

Irrigation Facilities

During periods of adequate water supply, cultivated land within the District is lower than the normal water level maintained in the main flow way. As such, irrigation of lands within the District boundaries is accomplished via the force of gravity. A system of irrigation laterals is connected to the main flow way via gated culverts influenced by gravity - the capacity of which is subject to available head differential between the flow way and the irrigation lateral. Individual operable irrigation intake structures, typically flashboard risers and culverts, are installed by the District's landowners to allow water from the irrigation lateral system to flow into privately owned and maintained ditch systems within the individual properties.

The availability of irrigation water to a land owner is a result of the head differential between the main flow way and the irrigation ditch. As the water level drops in the main flow way due to

drought conditions or less than average rainfall events, the ability to provide adequate water conveyance throughout the expanse of the irrigation system diminishes. During periods of adequate water supply, and when head differences between the reservoir and the main flow way allow it, the operable gate portion of the main flow way structure can be open to allow water from the reservoir to discharge into the flow way. During periods of below average water supply and in an attempt to optimize water conservation, the main flow way gate will be closed when the water elevations within the reservoir do not favor an eastward conveyance of water. In this instance, PS-N9 is utilized to pump any remaining and accessible water from the reservoir to the flow way to maximize water availability and minimize evaporative losses.

It is important to note that the District favors and employs water conservation practices to the degree that the existing irrigation system allows. To that end, an irrigation protocol has been developed that provides for the equitable distribution of irrigation water as well as the recycling of the resource, and makes use of a seven-day schedule of delivery, use, and discharge per the following:

1. The North area receives water for irrigation over a four-day period, while the South area receives water for irrigation over a three-day period, reflecting an approximately pro-rated division of irrigation based on cultivated area.

2. When there is a need for irrigation the slide gates on the flow-way culverts serving the North irrigation laterals are opened and water is allowed to discharge from the flow way to the North irrigation laterals. After the lands served by the northern irrigation laterals complete the irrigation cycle, the slide gates on the flow-way culverts serving the north irrigation laterals are closed. At the end of the irrigation period the land owners cease irrigation and allow water in the internal ditch systems to discharge back to the north drainage laterals. The north pump stations are then utilized to pump the returned irrigation water to the main flow way.

3. The slide gates on the flow-way culverts serving the south irrigation laterals are opened and water is allowed to discharge from the flow way to the south irrigation laterals. After the lands served by the south irrigation laterals complete the irrigation cycle, the slide gates on the flow-way culverts serving the irrigation laterals are closed. At the end of the irrigation period the land owners cease irrigation withdrawals and allow water in the internal ditch systems to discharge back to the south drainage laterals. The south pump stations are then utilized to pump the returned irrigation water to the main flow way.

In this manner, the District can utilize irrigation water to its fullest and best use based on the limitations of the irrigation delivery system.

Irrigation Culverts

The District maintains 17 irrigation culverts with slide gates, associated with each of the 17 irrigation laterals connected to the main flow way, spaced approximately one-mile apart. Nine culverts serve the North area, while eight culverts serve the South area.

Irrigation Culvert	Lateral Served	Gross Area Served	Diameter
		(ac)	(inches)
IC1	L1 (North)	1,600	48
IC1A	L1A (North)	480	36
IC2	L2 (South)	1,280	36
IC3	L3 (North)	2,240	48
IC4	L4 (South)	1,280	36
IC5	L5 (North)	2,240	48
IC6	L6 (South)	640	36
IC7	L7 (North)	2,240	48
IC8	L8 (South)	1,280	36
IC9	L9 (North)	2,240	48
IC10	L10 (South)	1,280	36
IC11	L11 (North)	2,240	48
IC12	L12 (South)	1,280	36
IC13	L13 (North)	2,240	48
IC14	L14 (South)	1,280	36
IC15	L15 (North)	1,600	48
IC16	L16 (South)	640	36
Total		**26,080**	

Additionally, the District maintains the rights to access, modify, replace, and operate the irrigation culverts that connect the irrigation lateral ditch system and the privately owned secondary ditch systems should the landowner be non-compliant with the operation and maintenance protocols of the District.

Irrigation Laterals

In addition to the north and south drainage-pumped ditches, as indicated by the NPD and SPD prefix, irrigation laterals are also connected to the main flow way. The irrigation laterals originate at the main flow way and push water in a north or south direction as influenced by the head differential between the water surface elevation of the main flow way and that of the irrigation lateral. The irrigation lateral systems are also numbered to provide a ready geographic reference. Since the North and South designations have been applied to the drainage laterals, the irrigation laterals are numbered in such a manner that even numbered irrigation laterals are positioned south of the main flow way and odd numbered irrigation laterals are located north of the main flow way. Therefore, those irrigation laterals on the north side of the main flow way are numbered from east to west as L1, L3, L5, L7, L9, L11, L13, and L15. There is also irrigation lateral L1A that serves the eastern extent of the District north of the main flow way. The numbering of the irrigation laterals on the south side follows a similar pattern using even numbers up to the most western irrigation lateral: L16.

Irrigation Systems

In an effort to remain compliant with the consumptive use permits issued by the SJRWMD, the District promotes water conservation through the implementation of BMPs and encourages landowners to install internal irrigation systems employing low-volume irrigation practices. The District prohibits the use of flood irrigation except during the periods of designated freeze protection.

SECTION 2

RULES FOR USE OF OR CONNECTION TO WORKS OF THE DISTRICT

A. Permits Required

No utility or other improvement shall be constructed across, under, along, or within a canal or right-of-way over which the District has jurisdiction, nor shall any use whatsoever occur within a District right-of-way or easement, unless a valid application for a construction or use permit has been approved and issued by the District. No land alteration or site development altering the quantity and quality of surface water runoff for any property within the jurisdictional limits of the District shall occur unless a valid permit application has been reviewed and approved by the District.

The permit application process consists of two parts which both require District approval; authorization for construction and inspection/project certification. Upon District approval of the application submittal, the applicant will receive a permit, or, at the Board of Supervisor's discretion, a Letter of No Objection for construction authorization. After construction is complete, the applicant shall complete the Inspection/Project Certification requirements outlined below for the permit process to be deemed complete. In the case of an emergency, authorization (written if practical) may be given by the Administrator or District Engineer.

Any proposed use, crossing, or connection to works of the District shall not inhibit maintenance of the canal system. Easements may be required to facilitate uninterrupted maintenance access to the works of the District. Alternative arrangements for maintenance at the full expense of the project applicant may be considered at the Board's discretion on a case-by-case basis.

A map showing the general location of the District's canal rights-of-way may be acquired at the District office. The District recommends that landowners obtain a survey of their land showing all easements and rights-of-way prior to permitting. The District accepts donations of right-of-way, especially along pump ditches, irrigation laterals, and in accordance with the Indian River County grid system, along section lines.

B. Permit Fees

Permit applications shall be accompanied by the required fees. An application will be considered or reviewed only after the application is completed and signed and the required fees are submitted. A separate permit application and fee are required for each individual canal and/or for each individual parcel affected by the proposed activity. The permit process and application can also be found on the District's web site: www.stjid-fl.com.

C. Inspection / Project Certification

Any utility or other improvement constructed under a valid permit shall be subject to inspection by the District to assure compliance with the terms of the permit before use of the utility or improvement will be allowed.

Additionally, within 30 days after completion of the permitted activity, the permittee shall submit notice of completion to the District for approval. Unless otherwise specified by the District, this shall consist of a written, signed, and sealed statement of completion and certification by a Florida Registered Professional Engineer, and two (2) complete sets of the final "Record Drawings", signed and sealed by the project engineer of record or licensed

surveyor. These statements must specify the actual date of construction completion and must certify that all improvements have been constructed in substantial conformance with the plans and specifications approved by the District and will function as intended and designed. If deviations from the approved drawings are discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. All surveyed dimensions and elevations shall be certified by a registered surveyor.

D. Pre-Application Meeting

Every applicant is encouraged to contact the District staff prior to preparing an application for District review and evaluation. The staff can offer assistance in providing information and answering questions.

For applications embracing large, complex projects, the District requires a pre-application meeting to discuss criteria and other requirements. This is particularly true for the connection of new drainage and irrigation facilities, for bridge crossings, and site development.

A permit application checklist may be obtained from the District office or the District's website.

E. Pre-Construction Meeting

For large or complex projects, a pre-construction meeting is required as determined by the District.

F. Permit Application Requirements

Permit application forms may be obtained from the District office or the District's website. The application form must be signed by the owner of the private property to be served by the proposed work or improvement, or by the authorized representative of a utility or governmental agency requesting a permit. Supporting documentation must be provided demonstrating authorization to obtain permits on behalf of, or for improvements which will be maintained by, a governmental agency, or from an agent authorized to obtain permits on behalf of a private owner.

Depending upon the nature and extent of the proposed project, the submittal of certain maps, drawings, calculations and engineering details sufficient to define the nature, scope, intent and function of the proposed activity may be required to support the application. These supporting documents may include, but are not limited to:

1. Project location and area, in acres, to be served by the proposed improvement. Include section, township, and range; canal number; and location within the canal right-of-way related to some known and identifiable feature.

2. Whether the proposed use is a new installation, a modification of an existing improvement, or a replacement of existing works.

3. A description of the proposed use of, or encroachment on, works of the District.

4. A description of the portion of the works of the District to be used.

5. Two copies of full-size construction plans (24" x 36") and specifications reflecting the proposed use in plan and elevation views, and as related to the applicable works of the District. The plans provided shall be signed and sealed by the Engineer of Record and shall clearly indicate the project design datum (NAVD-88).

6. OSHA standards apply to all structures and/or improvements to be installed or operated on District facilities. In particular, all access platforms shall comply with the OSHA requirements including guard rail systems.

7. Two copies of boundary and topographic survey information signed and sealed, for the project area and adjacent canal right-of-way.

8. If available, drawings in electronic format such as AutoCAD or Portable Document Format (pdf).

9. As appropriate, supporting calculations signed and sealed by the Engineer of Record, demonstrating that the proposed improvements meet all applicable District criteria.

10. Any proposed improvement which may alter the natural groundwater gradient to a District canal, including but not limited to excavations or water impoundments, shall submit a seepage analysis demonstrating that the proposed improvement will not adversely impact the stability of the adjoining canal bank.

11. SJID will require a bond for any proposed use of the District's right-of-way to provide assurance that the District's lands are properly restored at the completion of the proposed project.

Landowners enrolled in BMP programs for water control with FDACS, USDA-NRCS, or IRCL are encouraged to submit their plans as part of the supporting documentation to a permit application. On a case by case basis and at the discretion of the Board, the District may accept supporting documents prepared for adopted BMP's or Conservation Plans in lieu of permit submittal requirements.

Insufficient or unclear drawings, at the sole discretion of the District Engineer, shall result in the return of an application without action by the District. Inadequate resubmittals which do not fully address the District's request for information may also be returned without action by the District.

G. Financial Responsibility

Financial responsibility for all connections and or ~~a~~ proposed improvements is the responsibility of the District landowner as the applicant requesting such actions.

H. Installation and Maintenance Responsibility

Installation and maintenance responsibility for the use of, or construction of facilities, in, on, or over District rights-of-way shall be that of the permittee or the entity identified in the permit. The acceptance of the SJID permit provides the District the right to enter the permitted property and inspect such facilities to determine their capability to provide effective stormwater management in accordance with the District permit. Failure of the applicant to allow such monitoring/inspection will result in the termination of the permit and/or fines of up to $1,000 per day. Failure of the applicant to maintain the facilities will result in the District correcting such matters as deemed applicable and the billings of these remedial actions to the responsible party at a rate of costs plus twenty percent. Failure to maintain the permitted use or works may result in the revocation of the permit, and at the District's sole discretion, the removal of the crossing, connection, or use.

SECTION 3

CANAL CROSSING CRITERIA

A. Canal Crossing Policy

It is the policy of the District to:

1. Allow a District landowner vehicular access to his property from one side of a canal to the other provided that it is the only alternative for accessing the subject property.

2. Limit the spacing between culverted crossings in a canal to not less than 660 feet.

3. ***Drainage Ditches*** **-** Limit hydraulic losses in its canal systems so that a single crossing, whether culvert or bridge, induces a head loss in the system of not more than 0.10 feet. The head loss shall be calculated using a design flow for the drainage area served by the canal at the crossing location, which includes all the drainage upstream of the proposed crossing. The design flow rate shall be based on the removal rate specified for laterals in the Plan of Reclamation.

4. ***Irrigation Laterals*** **-** Limit hydraulic losses in its canal systems so that a single crossing, whether culvert or bridge, induces a head loss in the system of not more than 0.10 feet. The head loss shall be calculated using a design flow for the area served by the canal at the crossing location and an even distribution of water supply to the basin. The design flow rate shall be based on the head differential across the irrigation culvert when the main flow way water level is at the maximum water supply elevation and the water level in the irrigation lateral has been surcharged as outlined in the water conservation practices, including additional factors of safety.

5. The District may require joint use crossings to serve more than one owner when such action will result in fewer structures in District canals.

The District shall establish the drainage area to be used for determination of the design flow at each crossing, and shall evaluate applications for canal crossing permits using the foregoing policy as a guideline.

B. Application for Canal Crossing Permit

A permit application for a new, or an existing unpermitted, crossing shall include, as a minimum, the following information on the nearest culverted or bridge crossings both upstream and downstream from the proposed crossing, all provided by the applicant at no expense to the District:

1. The location, in feet, from the nearest existing upstream and downstream crossings to the location of the proposed crossing.

2. For culverts, the invert elevations (referenced to NAVD-88), diameter, length and type of culvert.

3. For bridges, the deck and low member elevations (referenced to NAVD-88), and the length and number and spacing of spans.

4. Three surveyed cross-section of the canal right-of-way: one at the location of the proposed crossing, and one fifty to one-hundred feet upstream and downstream of the proposed crossing. At a minimum, surveyed elevations must be provided at each right-of-way line, canal top of bank, toe of slope, and at the lowest point of the canal bottom. The location of any existing improvements and their proximity to the project area shall also be shown.

5. Any end treatment or bank revetment proposed as part of the project design.

6. Improvements within the District right-of-way provide sufficient access for District maintenance equipment.

A permit application for replacement of an existing permitted crossing may not need to include all of the information specified above, but replacement of an existing permitted facility may require upgrading in size or lowering of the invert elevation to comply with the latest adopted standards.

C. Culverted Crossing

A road crossing a District canal may be culverted, provided, however, it is no closer than 660 feet from an existing crossing. The culvert must be sized to pass the design flow with a maximum head loss as specified in A, above. No culverted crossing will be permitted in any lateral within 660 feet of the main flow way.

The culvert design, including invert elevation, diameter, length, and end treatment, must be consistent with the water management objectives of the canal in which it is installed, as determined solely by the District.

If a proposed crossing will violate the 660-foot minimum spacing guideline, or result in an unacceptable head loss, then the culvert may be oversized, or a bridge may be required, at the sole option of the District. The District shall determine drainage areas, invert elevations, and culvert oversizing requirements.

Any proposed crossing requiring more than one culvert to pass the design flow under the conditions stated shall not be permitted. A bridge shall be required at these locations.

Construction of a culverted crossing shall conform to the requirements of *Exhibits I and II.*

D. Bridges

All bridges crossing District rights-of-way must be designed and certified by a Florida Professional Engineer with certification in bridge design. All bridges crossing District canals must provide for continuous and uninterrupted access for District equipment along both canal berms.

District's public road bridges subject to use by the District public shall be designed to carry minimum anticipated loads per Florida Department of Transportation Design Standards.

The following minimum horizontal and vertical clearances shall control the design of bridges over District canals:

Horizontal:

Center Span: 25-foot clear bent spacing, measured perpendicular to the canal centerline.

Approach Spans: Minimum 20-foot spacing between bent centers, measured perpendicular to the canal centerline.

Vertical:

Minimum Low Member Elevation: The minimum low member elevation shall be the higher of six (6) feet above the seasonal high water elevation, two (2) feet above the design water surface, or two (2) feet above adjacent natural ground. However, these vertical clearance requirements may be modified and made less restrictive by the Board providing the resultant design provides for a safe and effective District wide benefit.

All bridges crossing a District right-of-way shall include the following minimum maintenance and stabilization measures:

1. Sacrificial pilings for weed collection.

2. Hardened revetment consisting of FDOT Rock Rubble Riprap meeting the Ditch Lining specification shall be constructed from the top of bank to the toe of slope. The length of the revetment shall cover 25 feet upstream and downstream and also under the span of the bridge. The geotextile material underlying the riprap revetment shall be anchored at the top of slope and overlap a minimum of four feet of the bedding stone layer.

3. For the span of the bridge and 25 feet on each side, the bottom of the canal shall be lined with a bedding stone layer (FDOT No. 4 stone), a thickness of at least 6 inches.

E. Crossing Criteria Flexibility

The foregoing criteria are to be used as guidelines in designing and evaluating the crossing improvements. Alternative methods of meeting the District's objectives may be considered, depending on the magnitude and nature of resultant impacts on a case by case basis. As stated, the Board may modify these criteria, provided that the primary goal of meeting District water control objectives is not compromised.

SECTION 4

DRAINAGE AND IRRIGATION CONNECTIONS TO DISTRICT CANALS

A. Drainage Connections

Existing Connections

Drainage connections with District canals installed prior to the adoption of these Rules may be replaced in like size and kind as a matter of custodial maintenance. However, an application for permit must be submitted to the District and approved prior to initiation of such replacement to assure compatibility of the completed work with the District's objectives including, but not limited to, restoration of the District's rights-of-way in an acceptable manner. Applicable application fees will apply.

New Connections and Enlargement of Existing Connections

New connections and the enlargement of existing connections discharging storm water runoff to District canals shall be designed and installed to limit discharge from the drainage area served by the proposed connection.

Gravity connections, the applicant must demonstrate that the proposed installation will limit storm water runoff to the volumetric equivalent of not more than 2 inches of depth over the area served including the upstream area for any 24-hour period from the 25-year frequency, 24-hour duration rainfall. This requirement applies to any project which may alter the original citrus drainage characteristics of the land. The 2 inch discharge volume limitation from the redeveloped areas protects remaining existing uses within the affected watershed from negative impacts which may be caused by increases in run-off. Land use changes include the re-grading of land, projects which include filling and/ or constructing impervious areas, commercial, and industrial uses.

Proposed project drainage calculations shall also address the maintenance of flood plain storage. Cut and fill calculations demonstrating that compensating storage volume is being created to offset and proposed fill in the flood plain shall be prepared by the design engineer registered and currently licensed to practice Civil Engineering in the State of Florida. The existing conditions shall be based on a topographic survey prepared and signed and sealed by a Surveyor registered and currently licensed to practice in the State of Florida.

For drainage design purposes, the applicant may contact the District for information concerning canal tailwater elevations for use at the applicant's own risk. The applicant is encouraged to contact the District concerning any decisions made on assumed tailwater stages in District canals prior to use of the tailwater elevation in any drainage analysis.

The District is a tailwater-limited drainage system, whereby the ability of the District to effectively drain stormwater from the District lands to outside receiving waters is governed by the surface water (tailwater) elevation within the receiving waters as maintained and managed by the St. Johns River Water Management District.

All gravity drainage connections to District canals shall be made in accordance with the details shown on Exhibit IV. The applicant shall provide a surveyed cross-section through the canal at

the location of proposed connection, demonstrating the proposed configuration within the SJID right-of-way. Design specifications (e.g., bank stabilization) may be imposed in order to prevent bank erosion. The typical drainage connection configuration is shown on Exhibit IV.

For all drainage connections, the application submittal shall include calculations to demonstrate that the site development is in compliance with state and federal water quality standards for the Upper St. Johns River.

Additionally, for all drainage connections and subject to District system limitations noted above, the applicant shall submit calculations demonstrating that the storage volume of the water management facilities complies with the SJRWMD Applicant's Handbook and that the project recovers to the designed control elevation within 12 days of a storm event. For the use of detention and retention areas, the applicant shall include assurance that the soils can provide adequate percolation for the intended purpose.

B. Irrigation Connections

Connections to District canals for irrigation withdrawals shall be designed and installed in a manner that is consistent with the water control, operation, and maintenance objectives of the District, as determined solely by the District Engineer. Controlled irrigation intake works lying within the limits of the canal shall not impair the District's ability to perform normal maintenance operations. Intake works determined to be in violation of this objective by the District Engineer shall be removed immediately upon request of the District during the required maintenance period.

All landowner connections to the District's irrigation laterals shall have a control structure, i.e. gated culvert. No open pipe (culvert) connections are to be directly connected to the District's water supply (irrigation laterals).

Aboveground irrigation system improvements including, but not limited to, pumps, pump houses, or appurtenant works are prohibited in the District's right-of-way.

C. All Connections

1. The location of all connections shall be clearly marked by placing a post of contrasting colors over the culvert or pipe. The post shall be placed over the culvert or pipe at the top of the canal slope.

2. The permittee shall install and maintain connections in a manner that will prevent the introduction of vegetative growth into the District's canal system.

3. The use of private pumps for withdrawing water from, or discharging water to District laterals or canals is prohibited, except by board approved permit.

SECTION 5

OPEN CHANNEL CONNECTIONS

Because open channel connections disrupt continuous access along canals by District maintenance equipment, open channel connections shall not be permitted.

SECTION 6

SPOIL DISPOSITION

Earthen material (spoil) excavated from a District canal or right-of-way is the property of the District. The District may dispose of this spoil in a manner which, in the opinion of the District, is in its best interests. This includes, but is not limited to, authorizing the adjacent landowner to use it on his adjacent property at no cost, or by selling to someone other than the adjacent landowner. Permission must be secured from the District before removing any spoil.

At the discretion of the District and at the request of the property owner adjacent to the canal from which spoil is to be removed and upon permission of the District, such spoil may be taken by the landowner and used on their adjacent land. The landowner shall be responsible for repairing or restoring any damage to District facilities resulting from the removal of the spoil material is determined by the District. Restoration of the canal, berm and right-of-way shall be per District specifications, see Exhibit V.

The intent of this policy is to permit a landowner to use adjacent spoil to benefit his land if the District has no need for it. However, each request shall be evaluated and acted upon independently, depending on the needs of the District and its landowners at the time the request is considered.

SECTION 7

UTILITY CONSTRUCTION

A. Aerial Crossings

1) Overhead lines shall not be permitted to cross directly over District water control structures. Overhead communications and similar utility crossings over District water bodies are discouraged in favor of directional drill installations and will only be permitted as a variance granted by the Board.

2) If permitted by the District Board of Supervisors, overhead communication and similar utility line crossings of District rights-of-ways and Project Works shall have the following minimum vertical clearance as measured to the elevation of the lowest wire:

   a) 40 feet above the elevation of the canal berm, as measured from the lowest point of sag; or

   b) 25 feet above the dike crown;

   whichever produces the higher wire elevation. Please refer to Exhibit VI.

3) Overhead power lines shall have minimum vertical clearances of as shown on Exhibit VI. In all cases, minimum vertical clearance shall be measured from the elevation of the lowest point of sag of the line within the District right-of-way or easement to the highest point of the berm or dike crown.

B. Over-Water Crossings

Conventional underground utilities such as water, sewer and gas may install over water crossings under or attached to a bridge. All other utilities shall install crossings by directional drill. The design and construction of pile-supported or free-span utilities over a District canal shall be subject to the same horizontal and vertical clearance requirements specified for bridges.

A cross-section of the canal along the centerline of the proposed work from top-of-bank to top-of-bank, drawn to scale and referenced to NAVD 88, shall be submitted with the application. The cross-section shall be representative of the canal, maintenance berm, and the ground configuration within the canal right-of-way at the proposed crossing location, and shall include sufficient points to identify all breaks, but with points not greater than 10-foot increments.

C. Under-Canal Crossings

Open cut installations of under canal crossings are prohibited. Under-canal utility crossings of any type including, but not limited to, communication cables and water or wastewater lines, shall be installed to provide a minimum cover of five (5) feet over the utility line in the pump or irrigation laterals and eight (8) feet in the main flow way, county line reservoir or main reservoir. This cover shall be measured from the top of the utility line's protective encasement to the existing canal bottom, original design section or, if known, ultimate section, whichever produces the lowest installation.

At a minimum, all communication and power lines shall be encased in a continuous length of seamless steel pipe, or approved equivalent, throughout the width of the canal right-of-way. A scaled drawing showing the existing cross-section of the canal and right-of-way with elevations referenced to NAVD 88, shall be submitted with the application.

Geotechnical information, including boring log(s), shall also be provided. If the issued permit involves the submission of boring logs for the utilization of the District's rights-of-ways, and/or the crossing of District canal systems, the submitted bore logs as part of the final submission data must include a reference to an elevation datum, and not merely a bore depth indication. Furthermore, submitted bore logs are to be certified by the applicant.

HDPE-type plastic pipe may be used for directional bore installations only. Water, wastewater and similar pressurized lines transmitting non-volatile fluids or gases shall be buried with encasement. The encasement pipe shall meet the requirements of Standard Dimension Ration (SDR) 17 as a minimum strength. The carrier pipe shall meet the requirements of SDR 11 as a minimum strength. Directional drilled HDPE shall have a tracing wire in conformance with Indian River County standards.

Criteria for the crossing of other types of pressurized lines including, but not limited to, natural gas and steam lines, shall be determined and applied in accordance with Indian River County and industry standards at the time of application evaluation.

Vertical and horizontal spacing with other existing or proposed installations in the project vicinity shall be clearly shown on scaled construction plans. Clearances must meet minimum requirements of the jurisdictional utility or governing agency.

The under-canal crossing shall be marked by the permittee by placing permanent above-ground markers or signs over the utility at each canal right-of-way line. The markers must identify the type of utility buried and the name and contact telephone number of the utility owner. All markers must be clearly visible, and must be maintained by the permittee.

D. Utility Paralleling Canal or Right-of-Way

The District discourages the installation of any utility paralleling a canal within the canal right-of-way. If an applicant can demonstrate, to the satisfaction of the District's Board, that refusal to allow such an installation will result in an undue hardship, then the District may consider such an application. However, the establishment of criteria and terms and conditions of such an approval, if granted, are solely within the jurisdiction of the Board.

If granted by the Board, the utility paralleling the right-of-way shall be installed no greater than five (5) feet from the right-of-way line with a minimum cover of three (3) feet. The utility shall be marked along the right-of-way line at a minimum spacing of 1,000 feet.

E. Right-of-Way Use Fee

The use of the District's right-of-way shall be under a separate license agreement as part of the approved permit process. The fee for utilization of the District's right-of-way shall be based on a market appraisal of similar properties used for similar purposes within 24 months of the proposed easement. The District shall engage the services of a MAI Certified appraiser for such evaluation. All costs associated therewith are the sole responsibility of the applicant. The fee

is subject to change based on the individual characteristics of the Right-of-Way use and any operational changes that are realized by the SJID. In the event the SJID is subjected to any additional costs associated with maintenance, repair, or oversite associated with said modifications, as determined solely by the District ~~Engineeer~~Engineer, any such expenses and costs will be borne by the Right-of-Way Grantee. The costs of said easement is in addition to any permitting costs and the permitting costs and the easement fees shall be provided to the SJID prior to the granting of any easement or right-of-way.

SECTION 8

OTHER USES AND REQUIREMENTS

A. Water Control Structure Installation and Operation

The installation of a water control feature on a District-owned culvert for water conservation and irrigation purposes by a landowner may be allowed by the District. The District shall evaluate each application and the potential impact it may have on its system to assure that such a request is consistent with the District's objectives.

Operation of District-owned water control structures is the sole responsibility of the District. However, cooperative agreements may be made with landowners or their agents for joint operation of such a structure, provided that it is consistent with the District's objectives. The District shall maintain the right to override such an agreement to fulfill its primary duty and obligation to operate the structure in whatever fashion it deems necessary to meet its objectives.

B. Bees, Beehives, Bee Boxes

The District is required by law to adopt and use methods and processes reasonably adequate to render any place of employment safe and to protect the well-being of its employees. Therefore, the placement of beehives, regardless of structure, on District rights-of-ways shall not be permitted.

C. Use of District Rights-of Way for Access

The District is provided a right-of-way for the purpose of operating and maintaining the District's system. Such rights of ways are not presumed to be opened for access by District landowners except those landowners adjacent to that right-of-way.

D. Fencing of Canal Right-of-Way

The capability to move water through the District's system of canals is essential for drainage and irrigation purposes. Anything that inhibits or diminishes this capability is contrary to District policy and state law. The uncontrolled movement of cattle across a canal without the benefit of a culvert or bridge crossing is one way that the effectiveness of a canal can be degraded. Not only do cattle carry material into the canal from the canal bank and the berm, but the path they create accelerates erosion, aggravating an already unacceptable condition.

Therefore, it is the policy of the District that the owner of any property used for cattle production adjacent to a District canal must fence that property to prevent the unauthorized movement of cattle across the canal right-of-way. The fence shall be installed fifty (50) feet from the centerline of the right-of-way or twenty-five (25) feet from the top of bank, whichever provides the greater distance from the top of bank.

If cattle owners wish to have cattle cross a canal, it must be over a culverted or bridged crossing meeting the District's regulations. A permit application must be submitted by the applicant and approved by the District before the culvert may be installed.

E. Gates in Canal Right-of-Way

A landowner may install a gate on a canal berm. Landowners are strongly encouraged to coordinate with the District to ensure the following criteria are met:

1. The gate must be at least fifteen (15) feet wide to accommodate District maintenance equipment.
2. The construction materials and methods and continual maintenance must be coordinated with and approved by the District.
3. The landowner must interlock his padlock with the District's padlock.
4. The gate must be permitted and follow gate permit regulations.
5. Gates that would cause another landowner to become "landlocked" will not be permitted.

F. Docks/Observation Platforms

District canals are operated and maintained, to the extent possible, to provide for an unobstructed flow way which achieves the permitted level of flood protection. Therefore, the placement of docks, observation platforms or other structures that could restrict flow, catch debris and clog the canal, or constitute a hindrance to the mobilization of District staff and equipment shall not be permitted.

G. Plantings

NO planting within the right-of-way of the District, except for grass and approved ground covering. The canal slope is to be graded in accordance with the District's specifications.

H. Windbreaks

Any installation by landowners serving the purposes of a windbreak shall be installed fifty (50) feet from the centerline of the right-of-way or twenty-five (25) feet from the top of bank, whichever provides the greater distance from the top of bank.