

DELTA FARMS WATER CONTROL DISTRICT

Indian River County, Florida

PERMIT INFORMATION and CRITERIA MANUAL for USE of or CONNECTION to WORKS OF THE DISTRICT

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SECTION 1

A. INTRODUCTION

The purpose of this *Permit Information and Criteria Manual for Use of or Connection to Works of the District* (“Manual”) is to provide information describing the criteria and permitting requirements relating to the utilization of, and connection to, the works of the Delta Farms Water Control District (“District”). The Manual is the companion document to the *Operating Policy Procedures and Regulations* 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 D.F.W.C.D. was originally created by Decree Incorporating Drainage District under provisions of Chapter 298, Florida Statutes, on July 27, 1966, in Chancery Order No. 7413, as recorded in Official Record Book 233, page 410, Public Records of Indian River County, Florida. 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) and facilities within the District boundaries.

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, flow way, reservoir and facilities as shown in the Water Control Plan.

All landowners have a right 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 District Engineer 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 different 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 at all times maintain water levels in the District canals 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 way 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 portions of Sections 2 – 4, Township 33 South, Range 37 East, Fellsmere Farms Company Subdivision of unsurveyed Township 32 South, Range 37 East, and unsurveyed Township 31 South Range 37 East, according to plat thereof recorded in Plat Book 2, page 8, Public Records of St. Lucie County, Florida, all lying within Indian River County. The District is generally bounded by State Road (SR) 60 on the south, County Road 512 on the west, the Blue Cypress Water Management Area East (B.C.W.M.A) to the north, and the Hammock Ranch Preserve to the east.

2. Existing District Facilities

Drainage Facilities

The total area lying within the District boundaries contains 2,830 acres. Of this area, 562 acres is owned by the District and contains the right-of-ways for all its facilities, including a 460-acre reservoir/flow-way system, three pump canals, three pump stations, east boundary borrow canal, Lateral "U" discharge canal, and associated perimeter levee and internal roadway system. The system is isolated from surrounding areas by a levee system and the existing roadbed of State Road 60, which are integral to the system.

The surface water management system within the District is a pumped system in which three pump stations (Pump Stations "A", "B", and "C") pump from their respective canals (Canals "A", "B", and "C") into a contiguous flow-way/reservoir system.

Canal “A” is the easternmost District canal and runs from the south boundary of the District north to Pump Station “A” where the discharge water is lifted from Canal “A” into the east end of the flow-way. The flow-way runs westerly approximately 9,500 feet from its eastern terminus and connects into the northeast corner of the reservoir.

Pump Station “A” has a watershed area of approximately 900 acres containing the private ownership of parcels on each side of Canal “A”, lying west of the east boundary canal and levee, and east of the “146th Avenue” road alignment. Pump Station “A” has two diesel powered pumps with a combined capacity of 60,000 g.p.m.

Pump Station “B” is located on and approximately midway along the south side of the flow-way, and at the north end of Canal “B” (which runs northerly from the south boundary of the District). Pump Station “B” has a watershed of approximately 919 acres containing the private ownership of land along each side of Canal “B”, lying west of the 146th Avenue road alignment, and east of the 154th Avenue road alignment. Pump Station “B” has two diesel powered pumps with a combined capacity of 60,000 g.p.m.

Pump Station “C” is located along Canal “C” near the southeast corner of the reservoir and lifts the water from Canal “C” directly into the reservoir. Pump Station “C” has a watershed area of approximately 450 acres containing the remaining private ownership lying west of the 154th Avenue road alignment and around the southern end of the District’s reservoir. Pump Station “C” has two diesel powered pumps with a combined capacity of 30,000 g.p.m.

The three watershed areas are not inter-connected and are controlled individually. Please refer to Exhibit VIII, Existing Facilities Map, for the location of each pump station.

The reservoir, located within the northwest corner of the District, has three overflow spillways (each 10 feet in diameter) located through the west levee near the northwest corner of the reservoir. These overflow structures have a normal overflow weir elevation of 27.5 feet (NGVD) and discharge into the southerly, non-connected extension of the Lateral “U” Canal located south of the Fellsmere Water Control District (F.W.C.D) and discharging into the B.C.W.M.A. East.

During the wet season, between March 16 and September 17, D.F.W.C.D. is permitted to lower the discharge control elevation to 26.50 feet (NGVD) as set forth in Special Condition No. 21 of M.S.S.W. Permit No. 4-061-0022GM4E4. This permit authorizes the District pump stations to discharge into the reservoir at a combined rate of 150,000 GPM.

Irrigation and freeze protection water is provided through backflow culverts, with screw gate controls, constructed through the pump station headwall structures to permit discharge from the reservoir/flow-way to recharge water stages within all three District canals, and the privately owned, inter-connecting sub-lateral ditches. None of the ditches connecting into the District Canals are owned or maintained by the D.F.W.C.D. The construction, connection and utilization of these sub-lateral ditches by individual landowners is permitted and regulated as set forth in this permit manual.

Withdrawal of supplemental water from B.C.W.M.A. for freeze protection is permitted into the District reservoir through two 48” gated culvert structures located at the northwest corner of the reservoir as set forth in Special Condition No. 13 of SJRWDM CUP Permit No. 2262.

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 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 engineer's office. The District recommends that landowners obtain a survey of their land showing all easements and rights-of-way prior to permitting.

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 affected by the proposed activity. In conjunction with the permit application submission and upon the determination of the District, the applicant may be required to submit a retainer fee up to \$2,500.00 prior to the commencement of the actual review process. The retainer fee will be returned to the applicant upon the timely payment of all applicable project fees and the submission of all required project information to the satisfaction of the District upon project completion. The permit process and application can be obtained via the District engineer's office.

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, and for bridge crossings.

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 Engineer’s office. 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 (NGVD-29 or 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 should be 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. DFWCD may 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 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 improvement 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 DFWCD 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. 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. 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 NGVD-29 or NAVD-88), diameter, length and type of culvert.
3. For bridges, the deck and low member elevations (referenced to NGVD-29 or 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 shall 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 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 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 (100-year flood elevation per District model), 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 in line with pile bent - upstream.
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 4 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 (HR 10-34, HR 21-45, etc...). The 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.

All gravity drainage connections to District canals shall be made in accordance with the details shown on Exhibit III. The applicant shall provide a surveyed cross-section through the canal at the location of proposed connection, demonstrating the proposed configuration within the DFWCD 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 III.

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 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.

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 canals is prohibited.

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, as determined by the District. Restoration of the canal, berm and right-of-way shall be per District specifications, see Exhibit IV.

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 V.
- 3) Overhead power lines shall have minimum vertical clearances of as shown on Exhibit V. 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 NGVD or NAVD, 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 by directional bore, to provide a minimum cover of five (5) feet over the utility line in the pump canals and eight (8) feet in the flow way or 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 NGVD or NAVD, 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 Ratio (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 row is \$1,500 per mile or fraction thereof on an annual basis. The minimal annual fee for such use is \$1,500 per year.

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 wellbeing 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.

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.

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.

**DELTA FARMS WATER CONTROL DISTRICT
PERMIT INFORMATION AND CRITERIA MANUAL**

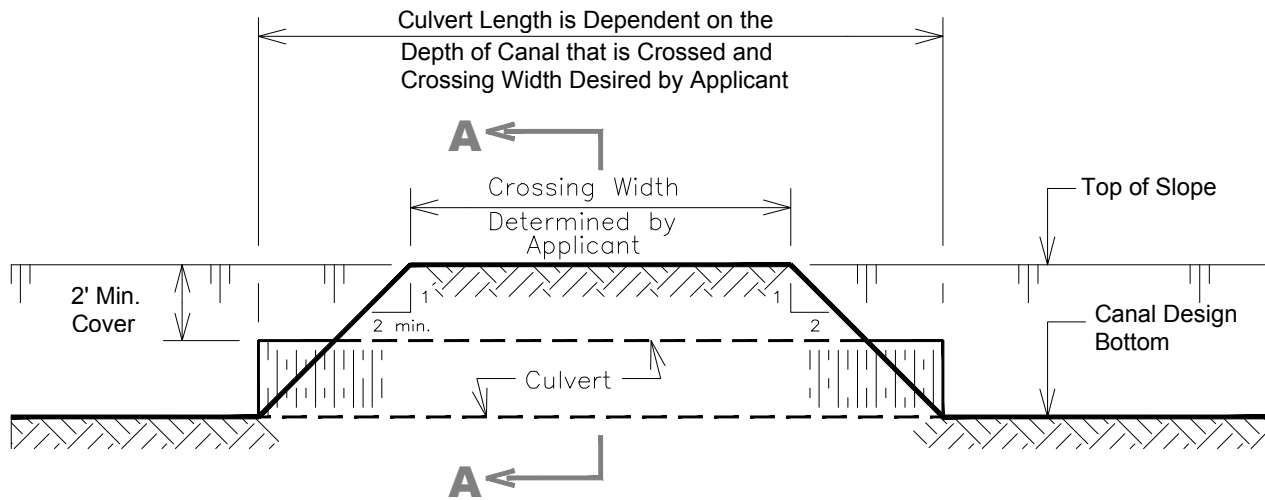
EXHIBIT I

DESIGN DISCHARGE FOR CULVERTED CROSSINGS IN DRAINAGE CANALS

Maximum Area Served (sq miles)	Culvert Diameter (inches)
0.25	60
0.50	84
0.75	96
1.00	108
1.25	120
1.50	120

Notes:

1. Design discharge for culvert crossings of drainage canals shall be based on a maximum flow of four inches per day over the drainage area. The rate of four inches per day is equivalent to 107.56 cubic feet per second per square mile (CSM).
2. Head losses as a result of a culvert crossing shall not exceed 0.1 foot.
3. Each culvert shall be set at an elevation which ensures that it will be fully submerged during its use, thereby utilizing the full cross sectional area of the culvert.
4. Culvert crossings within 660 feet of a pump station shall be prohibited.
5. Alternate culvert diameters may be approved per the review of the District Engineer for compliance with minimum design criteria.

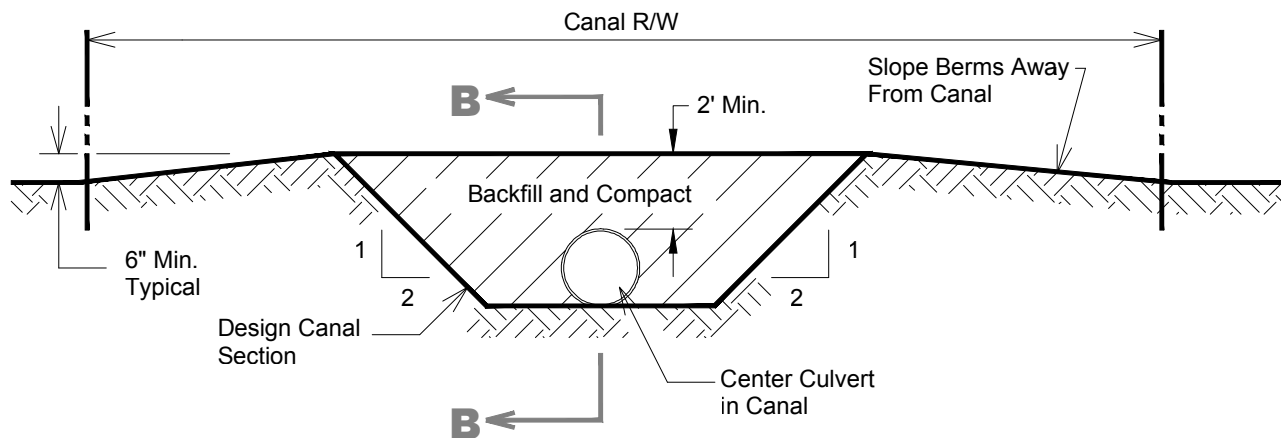


SECTION B-B

Not to Scale

NOTES:

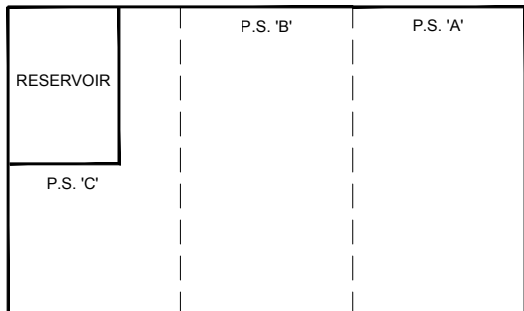
1. Concrete or sand-cement endwalls may be used to shorten the culvert length. All work shall be in accordance with Florida D.O.T. Specifications.
2. All disturbed slopes, berms and other areas shall be seeded, fertilized and mulched (or sodded) in accordance with Florida D.O.T. specifications within 14 days of the completed activity.
3. Drainage shall not be blocked or impaired at any time.
4. The applicant shall notify the Delta Farms Water Control District Office 48 hours prior to construction of the crossing.



SECTION A-A

Not to Scale

Indicate Location of Proposed Improvement Below:



SEC. ____, TWP. ____, RGE. ____.

VICINITY PLAN

DELTA FARMS WATER CONTROL DISTRICT	
SKETCH TO ACCOMPANY	
CULVERTED CANAL CROSSING	
DATE:	APPLICATION NUMBER:
CANAL:	APPLICANT:

DWG. NO. P:\DFWCD\PERMIT MANUAL\DWG\EXHIBIT II.DWG

**DELTA FARMS WATER CONTROL DISTRICT
PERMIT INFORMATION AND CRITERIA MANUAL**

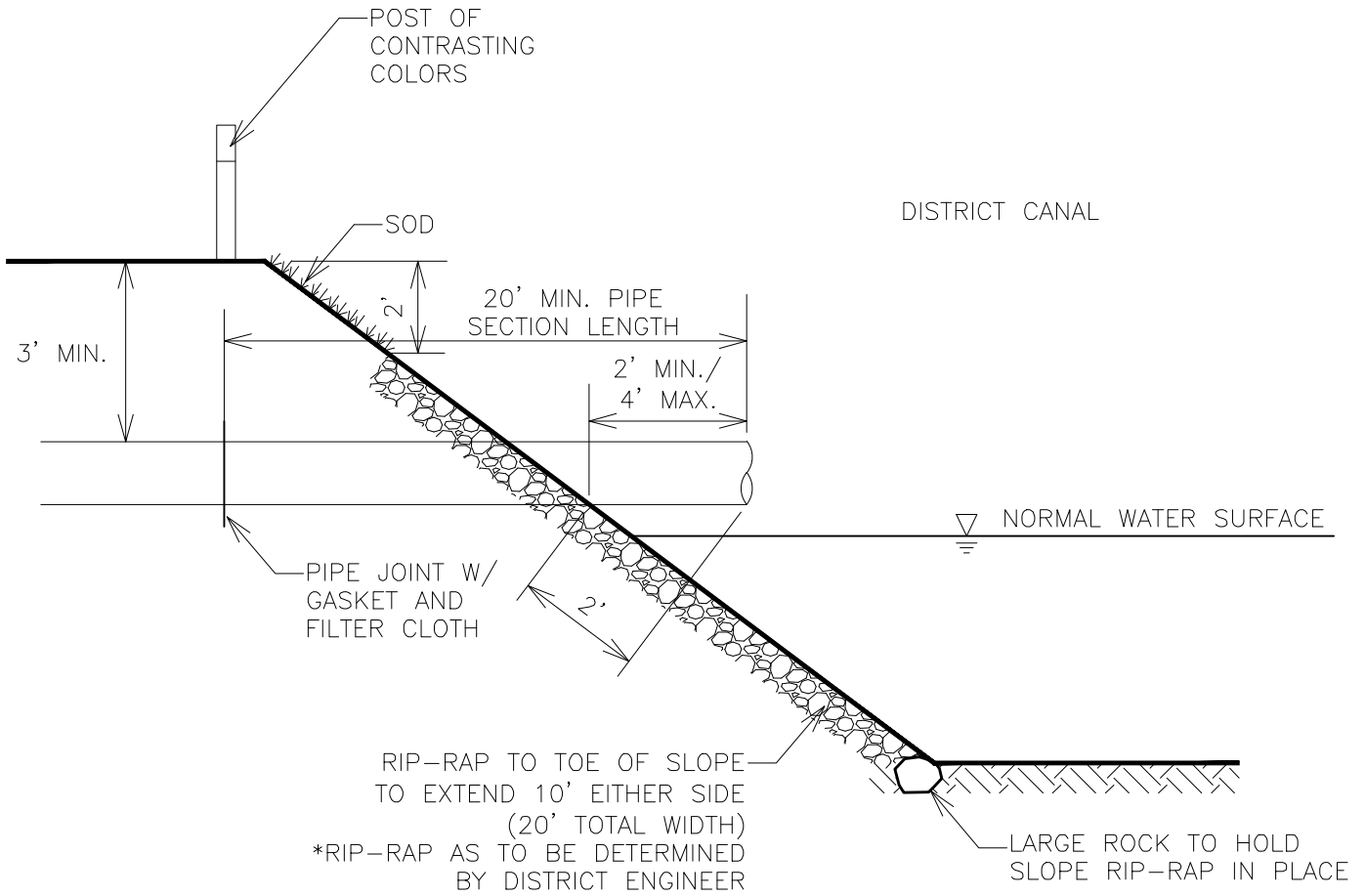
EXHIBIT III-A

DESIGN DISCHARGE FOR CULVERT CONNECTIONS TO DRAINAGE CANALS

Maximum Area Served (Acres)	Maximum Culvert Diameter (inches)
0 - 40	24
41 - 60	30
61 - 80	36
81 - 100	36
101 - 120	42
121 - 140	42
141 - 160	48
161 - 180	48
181 - 200	48
201 - 220	54

Notes:

1. Design discharge for culvert connections to District drainage canals shall be based on a maximum flow of four inches per day over the drainage area. The rate of four inches per day is equivalent to 107.56 cubic feet per second per square mile (CSM).
2. Head losses as a result of a culvert crossing shall not exceed 3 inches.
3. Drainage culverts shall be of sufficient length to extend from a point in the canal, as determined by the District Engineer, to a point in the landowner's canal without reducing the width or impairing the use of the canal right-of-way or maintenance berm.
4. Each culvert shall be set at an elevation which ensures that it will be fully submerged during its use, thereby utilizing the full cross-sectional area of the culvert.
5. Alternate culvert diameters may be approved per the review of the District Engineer for compliance with minimum design criteria.



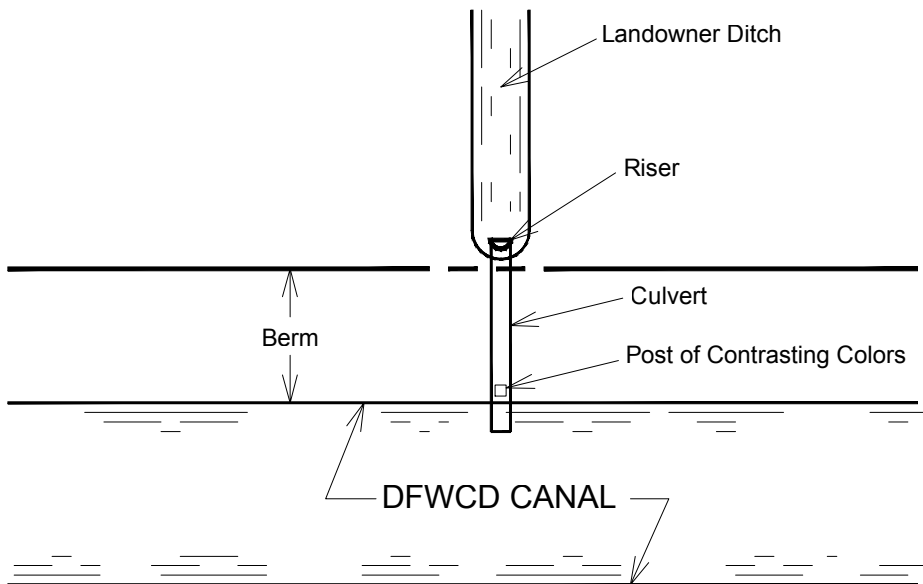
DWG. NO. P:\DFWCD\PERMIT MANUAL\DWG\EXHIBIT III-B.DWG

DELTA FARMS WATER CONTROL DISTRICT	
SKETCH TO ACCOMPANY	
CONNECTION DETAIL	
DATE:	APPLICATION NUMBER :
CANAL:	APPLICANT:

EXHIBIT "III-B"

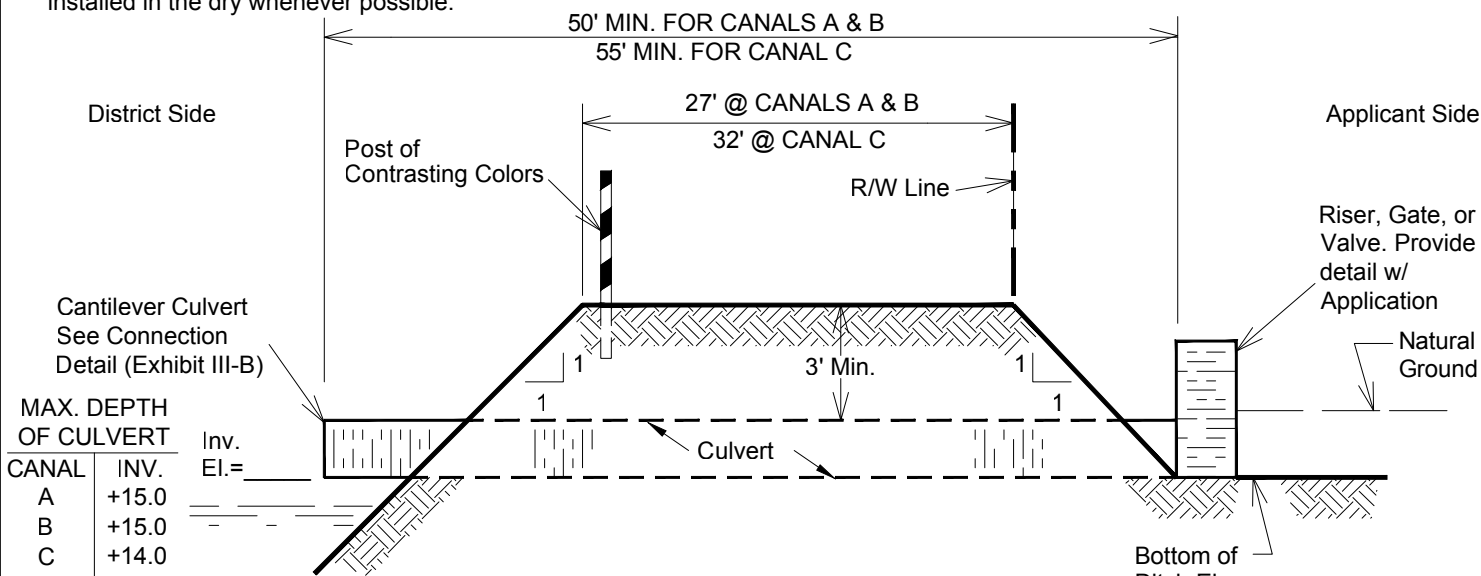
NOTES:

- All elevations refer to N.G.V.D.
- All culvert installations shall be permitted by the District and constructed to the latest District standards. A district construction permit shall be obtained prior to the commencement of the installation.
- All works within the District right-of-way shall be restored immediately after installation of the culvert. Sloped canal and road banks shall be restored with staked bahia sod. Non-sloped district areas outside the roadbeds shall be restored by seeding.
- At a minimum, culverts and risers shall be constructed of asphalt coated corrugated steel pipe conforming to the latest FDOT standards, with the exception that no pipes shall be constructed of less than 14 gauge steel.
- Pipe backfill shall be compacted in max 6" lifts to 12" above the pipe. Hand compaction shall be used under haunches.
- Trench backfill shall be compacted in max 12" lifts from 12" over the pipe to the replacement roadbed.
- Replacement roadbed shall be a min. 12" of compacted marl.
- Pipe shall be placed on firm bedding and installed in the dry whenever possible.



PLAN VIEW

Not to Scale

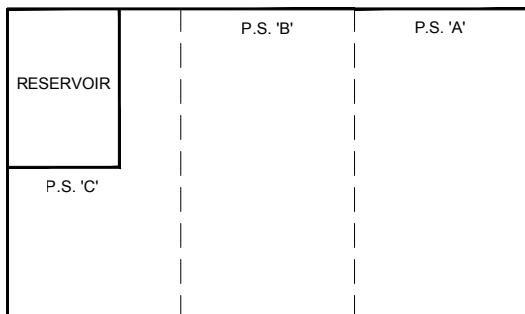


ELEVATION

Not to Scale

MAX. DEPTH OF CULVERT	
CANAL	INV. EL.=
A	+15.0
B	+15.0
C	+14.0

Indicate Location of Proposed Improvement Below:



SEC. ____, TWP. ____, RGE. ____,

VICINITY PLAN

DELTA FARMS WATER CONTROL DISTRICT

SKETCH TO ACCOMPANY

TYPICAL PLAN AND PROFILE OF CONNECTIONS TO DRAINAGE CANALS

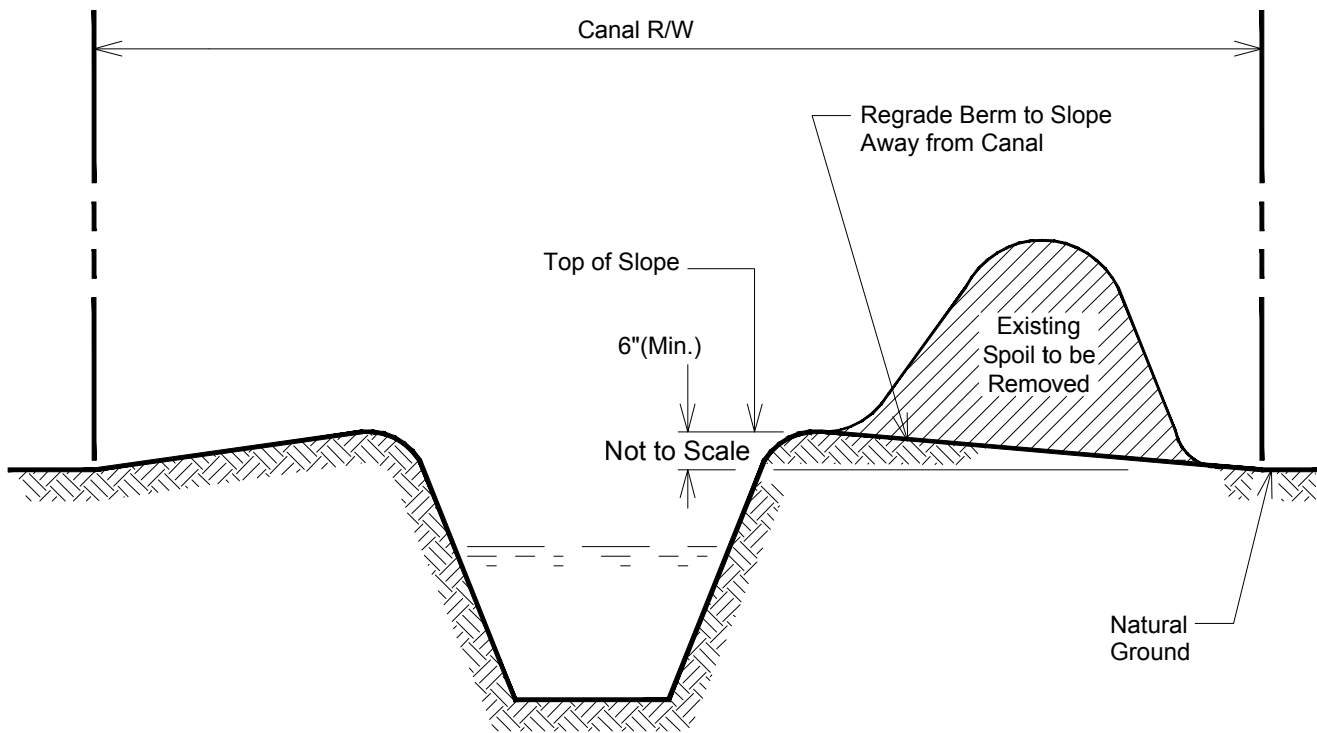
DATE:

APPLICATION NUMBER :

CANAL:

APPLICANT:

EXHIBIT "III-C"



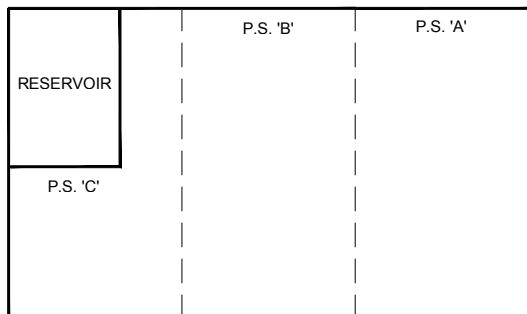
NOTES:

1. All disturbed areas shall be grassed in kind within 14 days of the completed activity.
2. Grade to blend the disturbed area with the areas on both sides.

ELEVATION

Not to Scale

Indicate Location of Proposed Improvement Below:

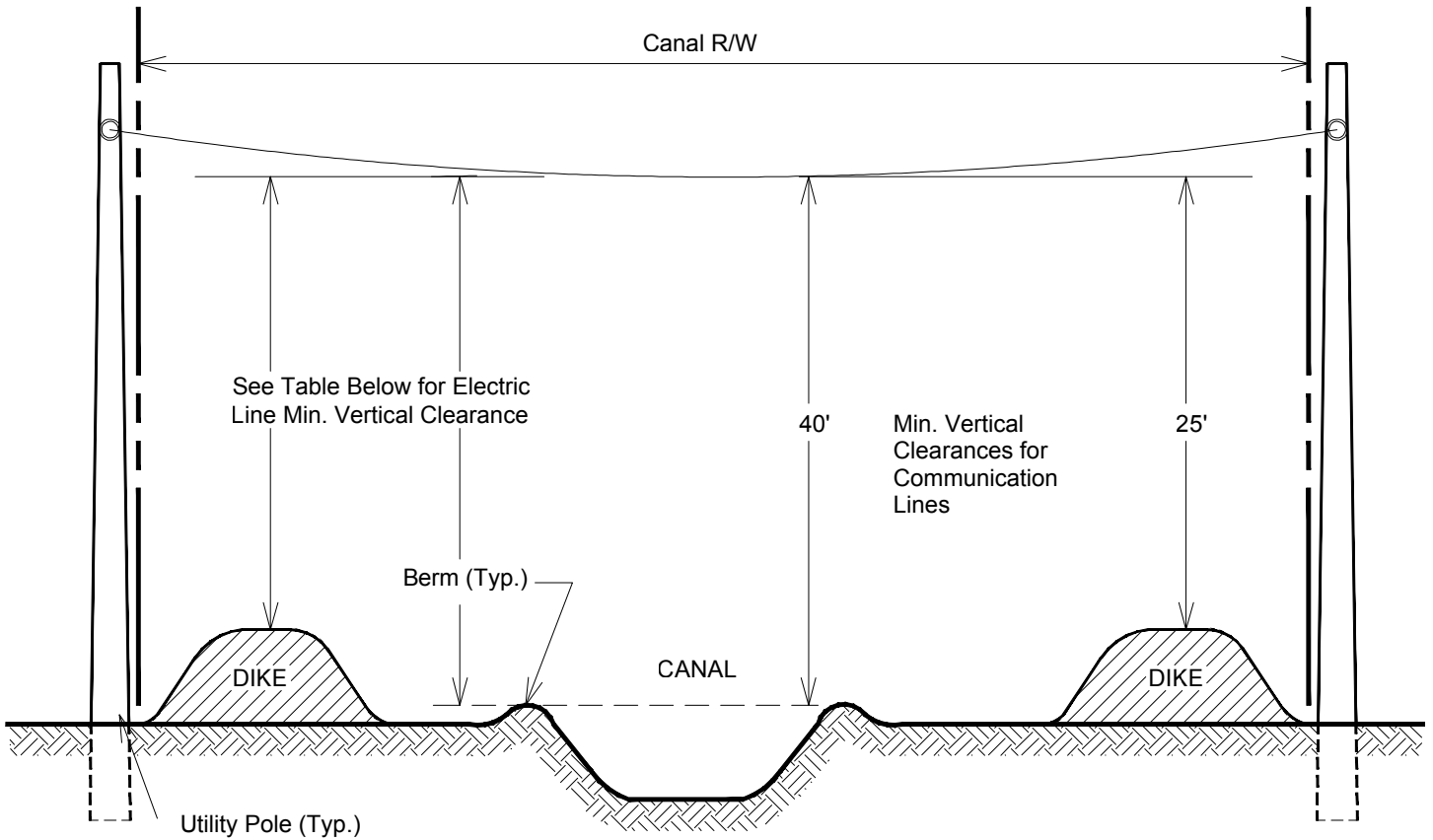


SEC. ____, TWP. ____, RGE. ____.

VICINITY PLAN

DELTA FARMS WATER CONTROL DISTRICT	
SKETCH TO ACCOMPANY	
RESTORATION OF CANAL BERMS	
DATE:	APPLICATION NUMBER:
CANAL:	APPLICANT:

DWG. NO. P:\DFWCD\PERMIT MANUAL\DWG\EXHIBIT IV.DWG



ELEVATION

Not to Scale

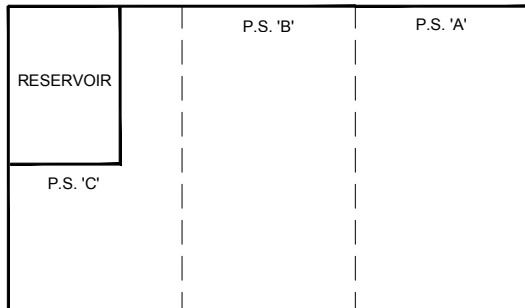
TABLE OF ELECTRICAL VERTICAL CLEARANCES

Crossing Over	Voltage Of Crossing Circuit						
	Phase To Phase	Guys (Grounded)	69kV	115kV	138kV	240kV	500kV
	Phase TO Ground		50kV & Under	67kV	80kV	138kV	289kV
Minimum Vertical Clearance From Berm		40'-0"	45'-0"	45'-8"	46'-2"	48'-0"	54'-0"
Minimum Vertical Clearance From Dike		25'-0"	25'-0"	25'-0"	25'-0"	25'-0"	35'-0"

NOTES:

- 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.
- Poles Shall Not Be Located Within Canal Right-Of-Way.
- Clearances Shown Shall Be With Wires At Maximum Design Temperature And Final Sag.

Indicate Location of Proposed Improvement Below:

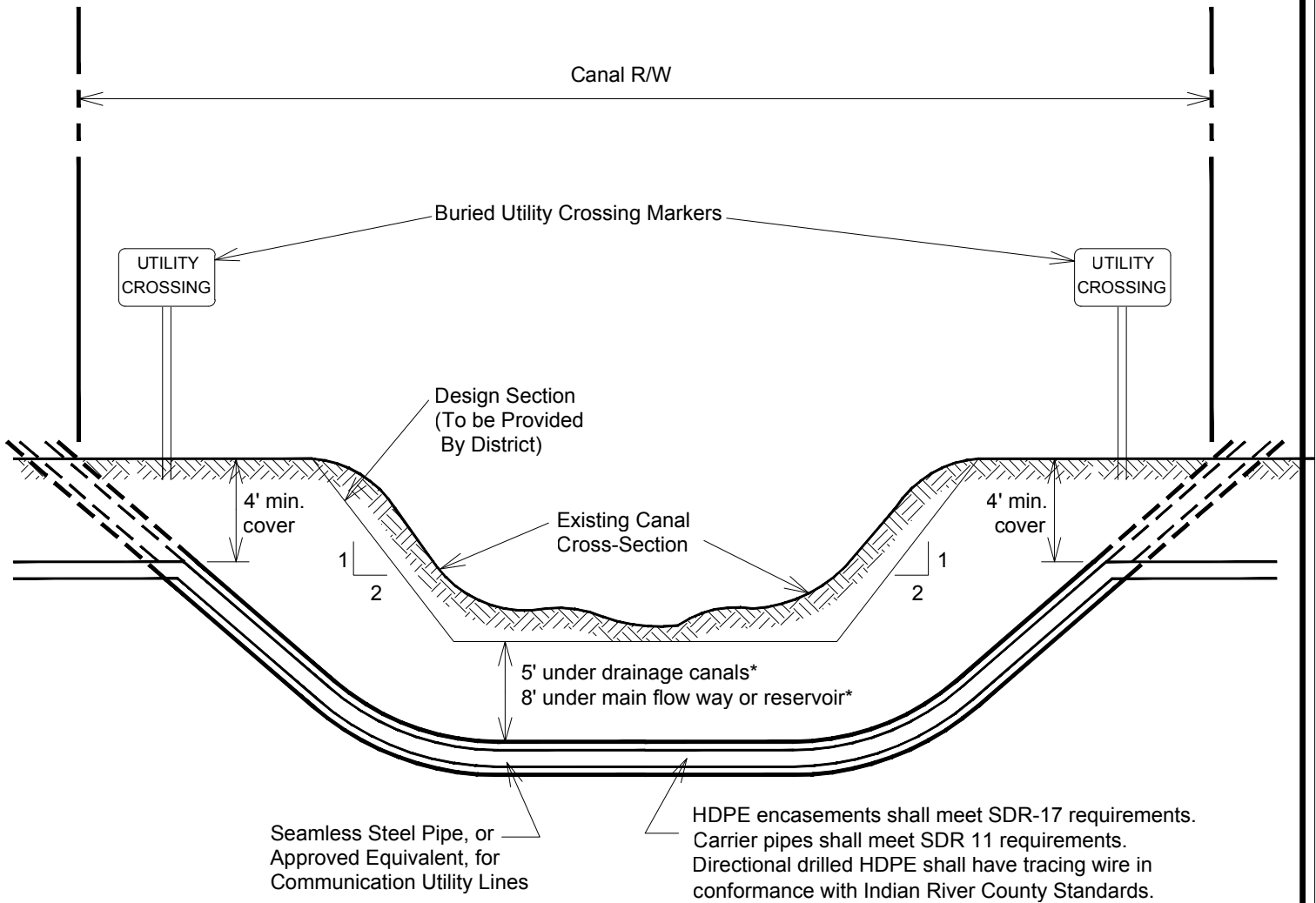


SEC. ____, TWP. ____, RGE. ____.

VICINITY PLAN

DELTA FARMS WATER CONTROL DISTRICT	
SKETCH TO ACCOMPANY	
OVERHEAD UTILITY CROSSING	
DATE:	APPLICATION NUMBER :
CANAL:	APPLICANT:

EXHIBIT "V"



HDPE encasements shall meet SDR-17 requirements. Carrier pipes shall meet SDR 11 requirements. Directional drilled HDPE shall have tracing wire in conformance with Indian River County Standards.

Seamless Steel Pipe, or Approved Equivalent, for Communication Utility Lines

* As Measured to the Top of Pipe or Top of Encasement, Whichever is Higher.

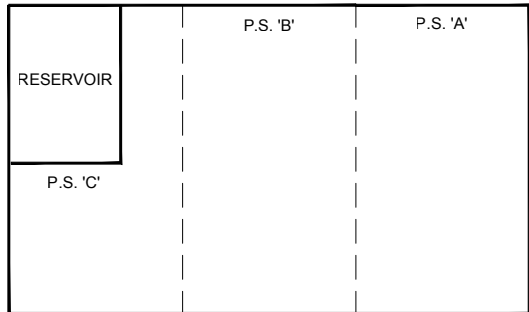
NOTES:

- Open cut installations of under canal crossings are prohibited.
- 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.

ELEVATION

Not to Scale

Indicate Location of Proposed Improvement Below:

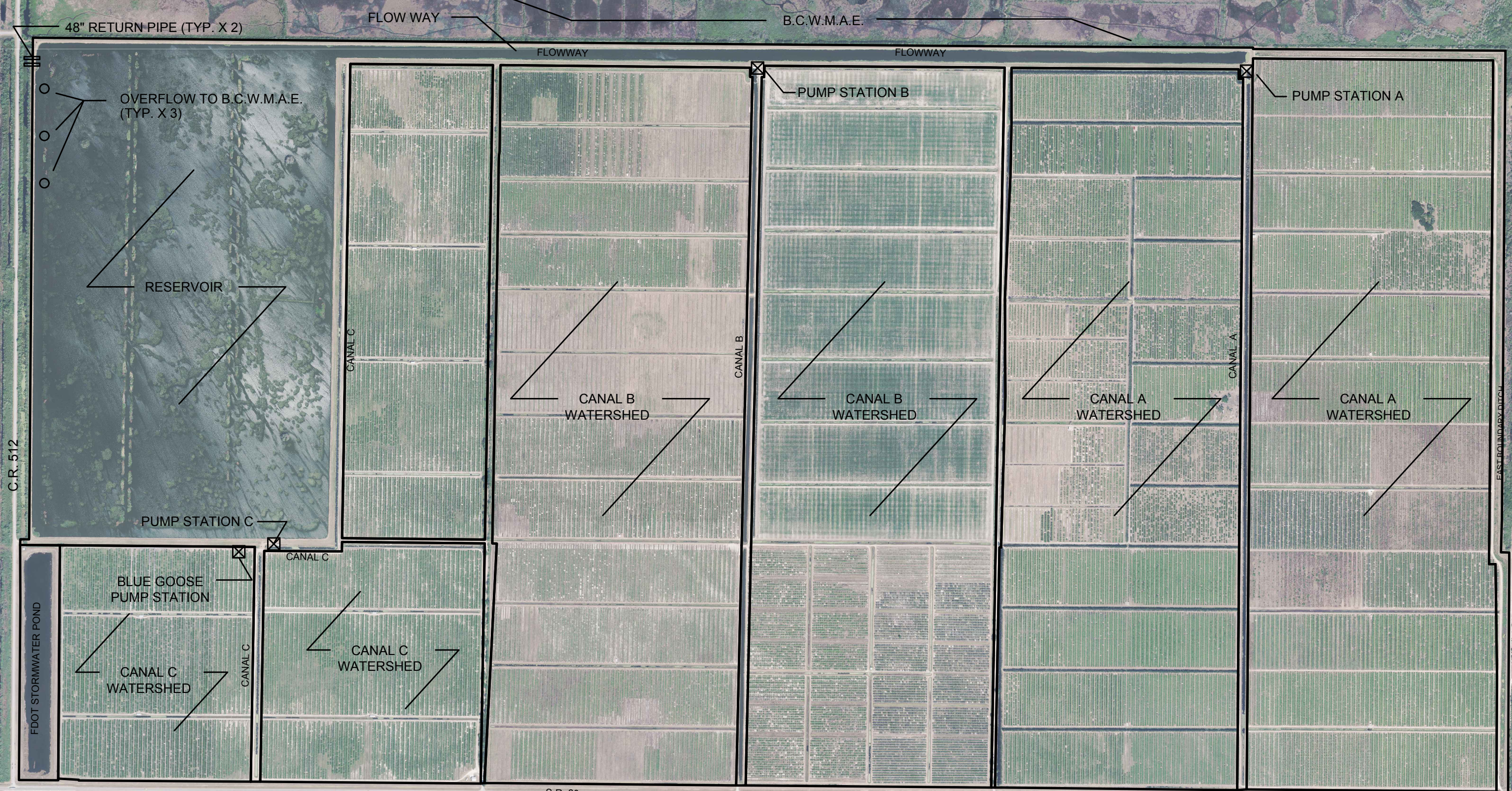


SEC. ____, TWP. ____, RGE. ____.

VICINITY PLAN

DELTA FARMS WATER CONTROL DISTRICT	
SKETCH TO ACCOMPANY	
UNDER CANAL UTILITY CROSSING	
DATE:	APPLICATION NUMBER :
CANAL:	APPLICANT:

EXHIBIT "VI"



DELTA FARMS WATER CONTROL DISTRICT
OVERALL DISTRICT MAP
 SCALE: 1" = 1,000'