

**LAKE WORTH DRAINAGE DISTRICT  
OPERATING POLICIES**

**Chapter 3: Engineering & Permitting Requirements**

**3.1 Bridges**

**3.1.1 Spans**

**3.1.1.1**

Major canals shall have a minimum of thirty-five feet (35') between spans. Clear span designs may be required, as determined by LWDD.

**3.1.1.2**

Minor canals shall have a minimum of fifteen feet (15') between spans. Minimum dimension shown is clear space from face of pile (or sheetpile) to face of pile (or sheetpile).

**3.1.1.3**

The center span shall be centered on the design section of the channel.

**3.1.1.4**

No piling shall be allowed in the center of the design channel.

**3.1.1.5**

A reasonable number of crossings will be permitted to each landowner, provided they are constructed in accordance with LWDD Policies.

**Ref: LWDD Resolution No. 87-4 – Reasonable Number of Crossings.**

**3.1.2 Low Member**

**3.1.2.1**

The lowest member of a bridge shall be no lower than forty inches (40") above the maintained water elevation or twenty-four inches (24") above the design high water elevation, whichever is the higher.

**3.1.2.2**

In the situation of a grade separation where a bridge crosses over the maintenance berm, the minimum vertical clearance between the berm elevation and the low member of the bridge shall be no less than eighteen feet (18'), unless other design and access considerations are agreed to by the Board of Supervisors. This will allow access to LWDD vehicles under a bridge with grade separation.

**3.1.3 Maintenance Access**

**3.1.3.1**

A minimum of fifteen feet (15') clear unobstructed access must be provided within existing LWDD right-of-way at all four (4) quadrants of the proposed bridge. Additional right-of-way may be required.

**3.1.3.2**

Any sidewalk or pathway that is proposed within LWDD right-of-way shall be constructed of six inch (6") thick concrete or to meet LWDD approved alternate loading and material(s). LWDD will not be held responsible or liable for any damage to the sidewalk or pathway resulting from LWDD operations and maintenance procedures, or any property damage or personal

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injury resulting from any sidewalk or pathway damage. All repairs are to be the responsibility of the Permittee.

**3.1.4 Canal Cross-Sections.** For each applicable existing LWDD canal, the applicant or petitioner must provide two sets of current canal cross-sections signed and sealed by a professional surveyor and mapper licensed in the State of Florida. The canal cross-sections will be used to determine if LWDD will require the applicant or petitioner to convey any right-of-way to LWDD. Canal cross-sections at 300 foot intervals are to be provided for each canal, including at each end of the portion of the project that fronts the canal. A minimum of three canal cross-sections for each canal are to be provided. The canal cross-sections are to show, label and dimension at least the following:

- (a) channel bottom elevation and width;
- (b) location and elevation of each toe-of-slope and each top-of-bank;
- (c) existing canal right-of-way lines;
- (d) existing land lines (such as section lines, quarter-section lines, or platted block lines and tract lines within platted subdivisions, e.g., THE PALM BEACH FARMS CO. PLAT NO. 3);
- (e) property lines of subject parcel;
- (f) all easements within the limits of the canal cross-section;
- (g) existing ground elevations to a point 50 feet beyond the existing top-of-banks on each side of the channel or to a point 25 feet outside of the existing canal right-of-way lines on each side of the channel, whichever is greater, including all features that may be relevant (e.g. buildings, edges of pavement, curbs, sidewalks, guardrails and ground grade breaks).

**Note: Each cross-section is to include a sufficient number of surveyed points such that the existing canal is accurately depicted.**

Canal cross-sections are also to be provided at each end of every culvert that exists within the limits of the project for each applicable LWDD canal, with the existing culvert shown in cross-sectional view depicted on the appropriate canal cross-section.

The cross-sections are to be shown at a scale of 1 inch equals 10 feet, both horizontal and vertical, for canals with a total of 80 feet (or less) of required right-of-way width (including both heavy and light canal maintenance berms), or 1 inch equals 20 feet, both horizontal and vertical, for canals with a total of more than 80 feet of required right-of-way width (including both heavy and light canal maintenance berms). A statement must be included on

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the cross-sections that the vertical datum used for the cross-sections is either the National Geodetic Vertical Datum of 1929 (NGVD 29) or the North American Vertical Datum of 1988 (NAVD 88), and if the NAVD 88 vertical datum has been used, a conversion factor between the NGVD 29 vertical datum and the NAVD 88 vertical datum for the locations where the cross-sections were taken, must be provided. A plan view must be provided that shows how the cross-sections are oriented. The cross-sections must be shown, in cross-sectional view, looking from west to east or from south to north, with the north or west right-of-way respectively being on the left side of each cross-section shown.

The requested information must be submitted to LWDD in both hardcopy format and CAD drawing files. The CAD drawing files must be in the form of AutoDesk DWG format (current and all prior versions accepted) or alternatively, in DXF format. The CAD drawing files can be submitted on either CD or DVD optical media.

**NOTE: Canal cross-sections are valid for a two year period. After that time, current canal cross-sections will be required for review by LWDD. Based upon review of current canal cross-sections, the applicant or petitioner may be required to reconstruct or reshape the existing canal, in addition to conveying right-of-way to LWDD.**

### 3.1.5 Stabilization

Erosion protection in the form of bank slope (channel side slope) stabilization shall be installed for a distance to be determined by authorized LWDD personnel.

The type of all required channel side slope stabilization is to be approved by LWDD. Types of acceptable stabilization material include, but are not limited to interlocking concrete block revetment and rubble (rock) rip-rap revetment. If interlocking concrete block revetment is required, details are to be included in the design plans to show that the last four feet (4') on each end is to be turned back into channel at a 45 degree angle. Permittee may be required to reshape or reconstruct the existing canal to match the design section. The limits of all required canal reshaping or reconstruction are to be shown and detailed on the design plans.

The material shall be sound and durable, with a specific gravity of at least 1.90. The broken stones shall be no larger than 1.0 cubic foot per piece and no smaller than .25 cubic foot per piece. It shall be free of cracks, soft seams and other structural defects. The pieces shall be roughly angular and shall be reasonably free from thin, flat elongated pieces. No protruding steel rebar will be permitted.

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The broken stones (rubble) shall be placed in such a manner that the smaller rubble pieces are not segregated, but are evenly distributed within the voids between the larger rubble pieces.

**3.1.6 Possible Permit Conditions**

**[Note: These conditions are not totally inclusive. Additional conditions may be required based upon the circumstances of the project.]**

**3.1.6.1**

Permittee shall reconstruct canal(s) to approved design section along and adjacent to the project's limits, including clearing and proper sloping of the maintenance berms. The cleared canal berms and side slopes shall be stabilized. Type of stabilization shall be approved by LWDD. This construction shall be completed prior to any building activity adjacent to LWDD rights-of-way. Please be advised that any fill material scheduled to be removed from the canal may not be relied on for site work.

**3.1.6.2**

Permittee is to construct any sidewalk or pathway that is proposed within LWDD's rights-of-way with six-inch (6") thick concrete, or to meet LWDD approved alternate loading and material(s). The LWDD will not be held responsible or liable for any damage to the sidewalk or pathway resulting from LWDD operations and maintenance procedures, or any property damage or personal injury resulting from any sidewalk or pathway damage. All repairs are to be the responsibility of the Permittee.

**3.1.6.3**

Permittee or Permittee's representative shall notify the LWDD Engineering Department forty-eight (48) hours prior to any work within LWDD rights-of-way to coordinate the extent of work to be completed. All facilities needing inspection must be observed prior to backfilling.

**3.1.6.4**

Permittee shall restore LWDD's right-of-way to its original or better condition where disturbed by construction activity.

**3.1.6.5**

LWDD cannot accept any water from dewatering either on or off-site until written notification of approval from South Florida Water Management District has been submitted to this office.

**3.1.6.6**

It shall be the responsibility of the Permittee to locate and protect any underground facilities within LWDD's rights-of-way prior to and during construction.

**3.1.6.7**

Permittee shall take all reasonable precautions necessary to prevent turbidity or silting upstream or downstream during construction.

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**3.1.6.8**

At the time of installation, a permanent benchmark shall be established at 2<sup>nd</sup> order, class II or better on top of the control structure(s) with the elevation clearly defined, pursuant to the National Geodetic Survey standards and requirements for leveling.

**3.1.6.9**

Permittee shall submit record drawings within sixty (60) days of project completion. Drawings should show, as a minimum, both plan and elevation views of the installation, with low member elevation(s), and revetment limits, dimensions and details, if applicable. Failure by the Permittee to provide these drawings within the time specified may result in the LWDD requesting that all jurisdictional agencies withhold their final approvals until the drawings are received and approved by LWDD. Failure to provide record drawings within the time specified herein shall result in the permit being revoked.

**3.1.6.10**

Permittee shall obtain any and all permits required by any governmental agency and/or municipality that may be involved, prior to the commencement of any construction.

**3.1.6.11**

Permittee agrees that the stormwater discharge authorized by this permit shall comply with all applicable provisions of Part IV of Chapter 373, Florida Statutes, as well as applicable management and storage of surface water rules, including but not limited to, 40E-4.301, 40E-400.215, and 40E-400.315, Florida Administrative Code, and Section 5.2 of the SOUTH FLORIDA WATER MANAGEMENT DISTRICT Basis of Review. All costs of correcting any violations of SOUTH FLORIDA WATER MANAGEMENT DISTRICT law and rules shall be the exclusive obligation of Permittee.

**3.1.6.12**

All unpermitted drainage facilities installed before or during construction shall be removed prior to the project's final acceptance.

**3.1.6.13**

Permittee has provided a bond in favor of LWDD in the amount of 110% of the cost of the permitted facility and its installation. Bond will be released upon issuance of final inspection by LWDD and Permittee's submittal of record drawings to LWDD. The cost will be based on an estimate prepared and signed and sealed by a professional engineer registered in the State of Florida.

**3.1.6.14**

Permittee agrees that significant construction must start within two years to the date of permit issuance or this permit is void and a new permit must be applied for prior to any construction activity on site. The new application must meet current operating policies.

**3.1.6.15**

The Permittee, LWDD approved assignees, or successors in title agree to operate and maintain the drainage system in perpetuity.

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### 3.1.6.16

Permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system. LWDD reserves the right to require that additional water quality treatment methods shall be incorporated into the drainage system, if such measures are shown to be necessary based on local, SFWMD, USACE, FDEP and/or EPA standards that are required.

### 3.1.7 Conditions upon which Work within LWDD Right(s)-of-Way May be Required of a Petitioner or an Applicant

Proposed improvements to property that is adjacent to a LWDD canal, or part of a parent tract (same property owner or contiguous master plat) that is adjacent to a LWDD canal, or proposed improvements within LWDD canal right(s)-of-way, may be conditioned, when and if permitted by LWDD, to do canal work. This canal work may include, but may not necessarily be limited to, canal channel and maintenance berm relocation, canal channel and maintenance berm reshaping, dredging, filling, sloping, channel side slope stabilization, sodding and/or seeding and mulching.

Projects that may be conditioned to do canal work are projects that propose to make improvements to the adjacent property and which improvements may directly affect the facilities of LWDD.

Also, projects within adjacent property that have existing conditions that have, in the past, adversely affected the facilities of LWDD, even if the proposed improvements will not directly affect the facilities of LWDD, may be required to do canal work.

Any requirements or conditions for canal work may be independent of any LWDD right-of-way ownership and interest requirements. These LWDD right-of-way ownership and interest requirements can be found in Chapter 5: Right-of-Way Ownership & Interests of the LWDD Operating Policies Manual.

Engineering and permitting requirements can be found in Chapter 3: Engineering & Permitting Requirements of the LWDD Operating Policies Manual.