



# Installation Guidelines for Modular Wetland System

## **Delivery & Unloading/Lifting**

1. Modular Wetland Systems, Inc. shall deliver the unit(s) to the site in coordination with the Contractor.
2. The Contractor will require spreader bars and chains/cables to safely and securely lift the main structure, risers a set of suitable lifting hooks, knuckles, shackles and eye bolts.
3. The main structure and lid can be lifted together or separately.

*Please see Modular Wetland Weights and Lifting Details. Contact Modular Wetlands for additional lifting details.*

## **Inspection**

1. Inspection of the Modular Wetland unit and all parts contained in or shipped outside of the unit shall be inspected at time of delivery by the site Engineer/Inspector and the Contractor. Any non-conformance to approved drawings or damage to any part of the system shall be documented on the Modular Wetland shipping ticket. Damage to the unit during and after unloading shall be corrected at the expense of the Contractor. Any necessary repairs to the Modular Wetland unit shall be made to the acceptance of the Engineer/Inspector.

## **Site Preparation**

1. The Contractor is responsible for providing adequate and complete site/inlet protection when the Modular Wetland unit is installed prior to final site stabilization (full landscaping, grass cover, final paving, and street sweeping completed).
2. The Contractor shall adhere to all jurisdictional and/or OSHA safety rules in providing temporary shoring of the excavation.
3. The Contractor or Owner is responsible for appropriately barricading the Modular Wetland unit from traffic (in accordance with local codes).



# Installation Guidelines for Modular Wetland System

## Installation

1. Each unit shall be constructed at the locations and elevations according to the sizes shown on the approved drawings. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.
2. The unit shall be placed on the compacted sub-grade with a minimum 6-inch gravel base matching the final grade of the curb line in the area of the unit. The unit is to be placed such that the unit and top slab match the grade of the curb in the area of the unit. Compact undisturbed sub-grade materials to 95% of maximum density at +1% to 2% of the optimum moisture. Unsuitable material below sub-grade shall be replaced to site engineer's approval. Please see Modular Wetlands Weights and Lifting Details. Contact Modular Wetlands for guidance where slope exceeds 5%.
3. Once the unit is set, the internal wooden forms and protective silt fabric cover must be left intact (if WetlandMedia pre-installed). The top lid(s) should be sealed onto the box section before backfilling, using a non-shrink grout, butyl rubber or similar waterproof seal. The boards on the top of the lid and boards sealed in the unit's throat must NOT be removed. The Supplier will remove these sections at the time of activation.
4. Outlet connections shall be aligned and sealed to meet the approved drawings with modifications necessary to meet site conditions and local regulations. The correct outlet will be marked on the Modular Wetland unit.
5. Backfilling should be performed in a careful manner, bringing the appropriate fill material up in 6-inch lifts on all sides. Precast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of the Modular Wetland unit shall conform to ASTM specification C891 "Standard Practice for Installation of Underground Precast Utility Structures" unless specified otherwise in contract documents.
6. It is the responsibility of the Contractor to provide curb and gutter and transition to the Modular Wetland unit for proper stormwater flow into the system through the throat, pipe or grate opening. A standard drawing of the throat and gutter detail is available in the following section; however the plans and contract documents supersede all standard drawings. Several variations of the standard design are available. Effective bypass for the Modular Wetland System is essential for correct operation (i.e. bypass to an overflow at lower elevation).

## Installation Procedure

The contractor **MUST** provide all rigging and lifting apparatus, such as all cables, chains or straps and a set of lifting hooks, shackles, knuckles and eye bolts.



It is the contractor's responsibility to provide suitable lifting equipment to off-load the Modular Wetland unit.

Modular Wetland units are designed to be off-loaded using the contractor's spreader bar.



### **1. Apply Butyl Tape Seal**

Apply butyl tape seal along the top of the box section. Butyl tape seal is provided with every unit.

Modular Wetland installed protective throat board and installed silt fabric must be left in place to protect the unit from construction sediment.



## 2. Unload and Set Box

Unload the Modular Wetland unit  
the prepared hole with appropriate sub-grade.\*

\* Compacted sub-grade with a minimum  
of six inches of gravel base which must match  
the final grade of curb line the area of the unit.



## 3. Set Top On Box

Set the top slab on the box.

The Contractor is responsible for providing  
adequate and complete site/inlet protection  
when the Modular Wetland is installed prior  
to final site stabilization (full landscaping,  
grass cover, final paving, and street sweeping  
completed).



## 4. Connect Outfall Pipe

The correct outlet will be marked on the  
Modular Wetland.

Invert of outlet pipe **MUST** be even  
with the floor of the system.





## **5. Install Curb & Gutter**

It is the responsibility of the Contractor to provide curb and gutter and transition to the Modular Wetland for proper flow into the system through a 5" - 7" throat opening. A standard drawing of the throat and gutter detail in the following section. **CONTRACTOR RESPONSIBLE FOR GROUTING IN ANY VISIBLE LIFTING POINTS.**



## **6. Activation**

Activation is performed **ONLY** by Modular Wetland personnel.

Activation can occur once the project site is fully stabilized (full landscaping, grass cover, final paving and street sweeping completed) and there is a 5" - 7" throat opening.

Call 760-433-7640 to schedule your activation.



## **NOTE: WetlandMedia Installation**

For Larger models (MWS-L-4-13 and above) the system will be delivered without WetlandMedia pre-installed to minimize pick weight and prevent contamination of the media during construction. For these models the WetlandMedia will be delivered in bulk or in super sacks. It will be responsibility of the contractor to fill the system with the WetlandMedia during the installation process. Installation of the WetlandMedia can be done after the unit is fully installed to avoid contamination. See following pages for details.

## WetlandMedia Install (if applicable)

### 1. Fill WetlandMedia

Position super sack of WetlandMedia over wetland chamber. Bottom of sack should not be more than 2' above top of system. Open sack and fill evenly\*.

\* One to several hundred cubic yards of WetlandMedia will be required based upon the model number and size of the system. For large scale jobs WetlandMedia will be delivered in bulk and will require a bobcat of similar to fill the system. All equipment is the responsibility of the contractor.



### 2. Install Plant Propagation Layer

Fill WetlandMedia up to 9" below the top of the wetland chamber. Level out the WetlandMedia as shown. Ensure that the level does not vary more than one inch or plant growth will be affected.



### 3. Install Plant Propagation Layer

Utilize plant propagation blocks provided by the manufacturer. Each block is approximately 40" by 6" by 3" thick. Blocks shall be placed side by side and end to end and cover the entire length and width of the wetland chamber unless specified.





#### **4. Finish Filling WetlandMedia**

After plant propagation blocks are installed repeat step 1 and fill the system to the top of the wetland chamber as shown. WetlandMedia must be filled within 2" of the top of the unit.



#### **5. Planting**

After system is filled with WetlandMedia planting of vegetation can begin. Utilizing 1 gallon plants dig down until The plant propagation blocks are reached. Remove plant and it's root ball from the container. Set the bottom of the root ball on the tops of the blocks. Fill hole back in with WetlandMedia. After planting a thorough watering of the plants is necessary. The plant propagation blocks must be saturated to provide a water source for the plants during the establishment phase. It is recommended that hand watering is done three times a week for the first two months. Hand water can be supplemented with drip or spray irrigation after the second week. Please call the manufacturer for more details on plants, planting arrangement and irrigation options.



**NOTE: planting is required on all units, including units delivered with WetlandMedia pre-installed.**



## Curb and Gutter Details



Modular Wetland System, Inc.

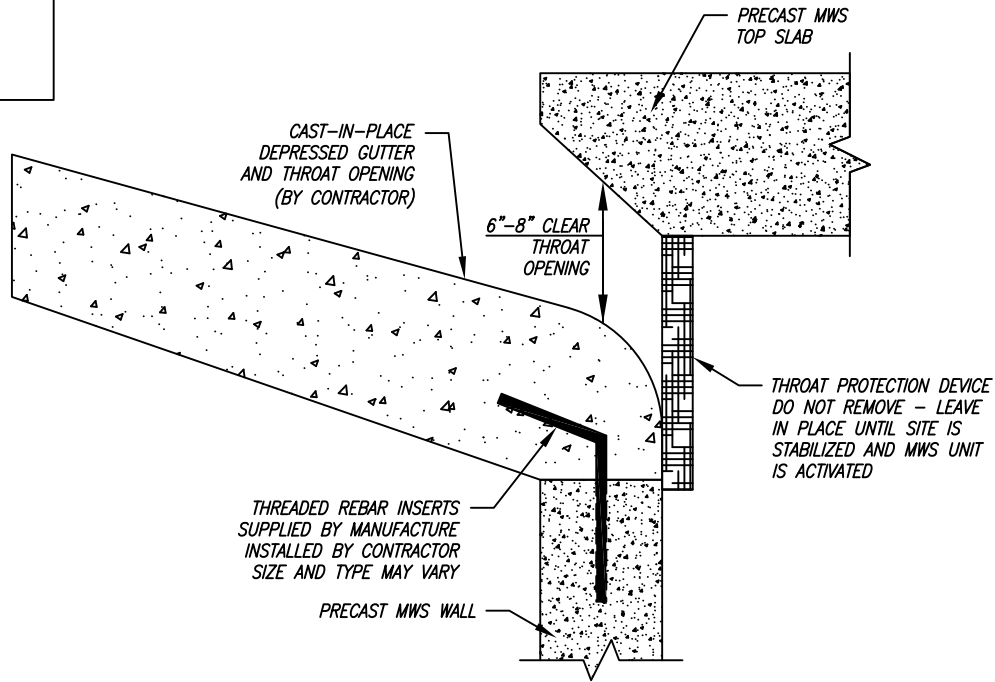
P. 760.433-7640

F. 760-433-3176

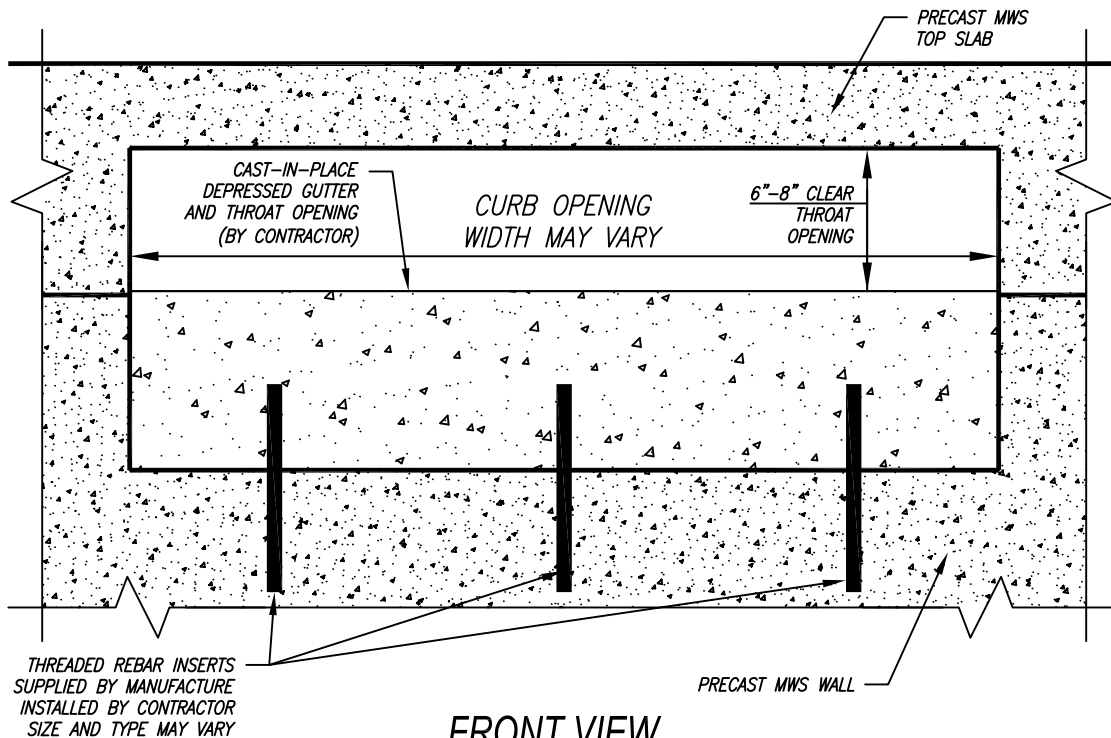
E. [Info@modularwetlands.com](mailto:Info@modularwetlands.com)

[www.modularwetlands.com](http://www.modularwetlands.com)





SECTION VIEW  
STANDARD MODULAR WETLAND CURB OPENING



FRONT VIEW  
STANDARD MODULAR WETLAND CURB OPENING

MODULAR WETLAND SYSTEMS INC.  
P.O. BOX 869  
OCEANSIDE, CA 92049  
www.ModularWetlands.com

	NAME	DATE
DRAWN	John	5/3/13
EDITED		

TITLE: MWS LINEAR 2.0  
CURB INLET DETAILS

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MODULAR WETLAND SYSTEMS INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MODULAR WETLAND SYSTEMS INC. IS PROHIBITED.

COMMENTS:

SIZE DWG. NO. REV

SCALE NTS UNITS = INCHES SHEET 1 OF 1

## Weights and Lifting Details



Modular Wetland System, Inc.

P. 760.433-7640

F. 760-433-3176

E. [Info@modularwetlands.com](mailto:Info@modularwetlands.com)

[www.modularwetlands.com](http://www.modularwetlands.com)

# MWS-L 2.0 Max Pick Weights

Model #	Size (O.D)	Size (I.D)	Unit Weight (lbs)	Media Weight (lbs)	Total Weight (lbs)
MWS-L-4-4	5' x 5'	4' x 4'	7500.0	1607.7	9107.7
MWS-L-4-6 MWS-L-4-6.5	5' x 7' 5 x 7.5'	4' x 6' 4' x 6.5'	11,000 11,500	1798.9	12,619.2 13,119.2
MWS-L-4-8	5' x 9'	8' x 4'	12500	3966	16466
MWS-L-4-13	5' x 14'	13' x 4'	21200	5895	27095
MWS-L-4-15	5' x 16'	15' x 4'	23700	8039	31739
MWS-L-4-17	5' x 18'	17' x 4'	26500	10182	36682
MWS-L-4-19	5' x 20'	19' x 4'	28300	12326	40626
MWS-L-4-21	5' x 22'	21' x 4'	30000	14470	44470
MWS-L-6-8	7' x 9'	6' x 8'	24000	6109	30109
MWS-L-8-8	9' x 9'	8' x 8'	32000	8253	40253
MWS-L-8-12	9' x 13'	8' x 12'	44000	12540	56540
MWS-L-8-16	9' x 17'	8' x 16'	47000	16828	63828

Max Pick Weight if Shipped  
Without Media Installed

Max Pick Weight if Shipped  
With Media Installed

Note: All weights listed hereon are standard max pick weights, actual pick weights may vary based upon state and local regulations and variation in concrete and rebar standards. For project specific pick weights contact the manufacturer prior to shipping of the unit(s). It is the contractor's responsibility to off-load the unit with an adequate size crane. Units are shipped with WetlandMEDIA in superbags and installed by contractor.

When Available see project contract terms, if lifting points are on the inside of the unit due to custom designs or installations requiring points to be on the inside the media will be shipped in bags and the contractor will be responsible to install after the unit is installed. For example, units placed against a wall.

For Questions or Comments Please Call 888-566-3938 or email: [info@modularwetlands.com](mailto:info@modularwetlands.com)





## Connection Details



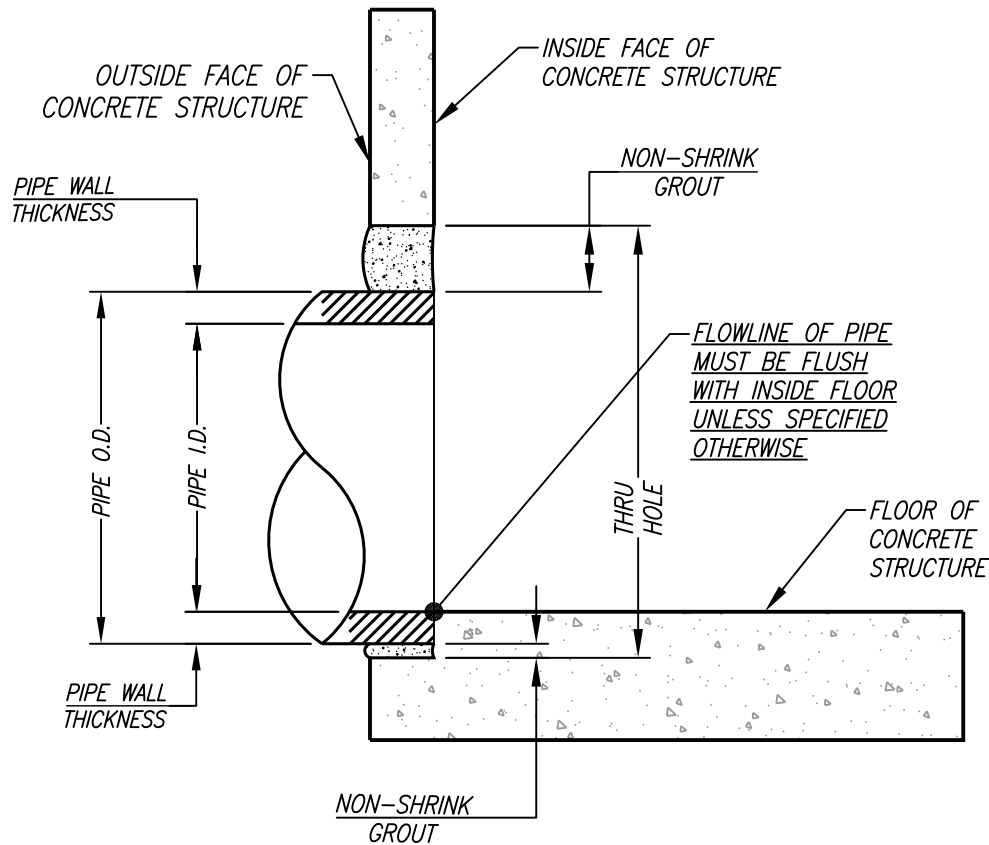
Modular Wetland System, Inc.

P. 760.433-7640

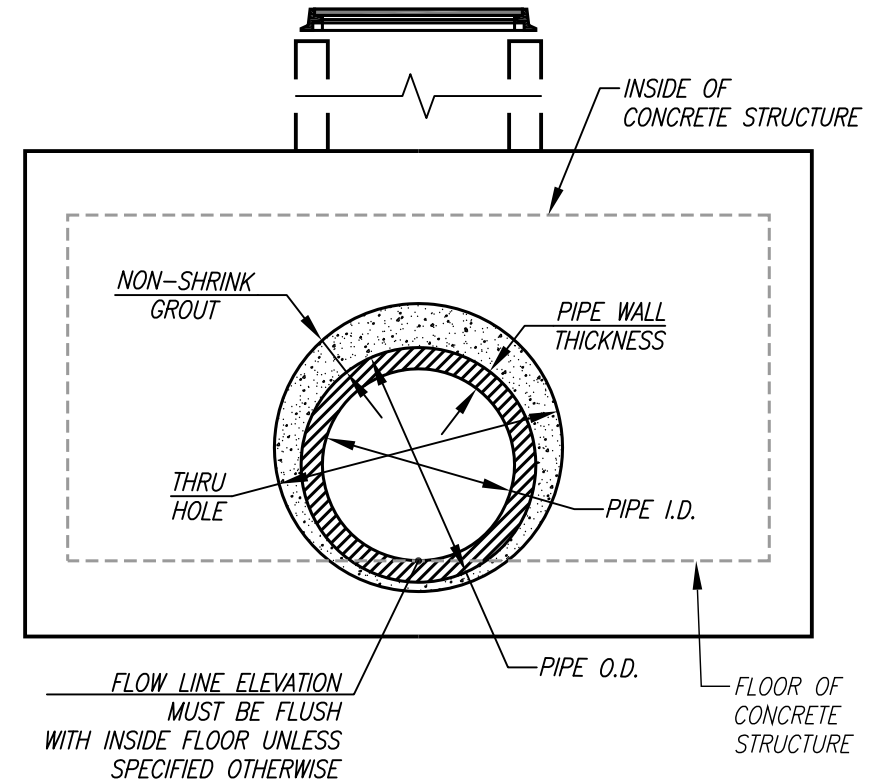
F. 760-433-3176

E. [Info@modularwetlands.com](mailto:Info@modularwetlands.com)

[www.modularwetlands.com](http://www.modularwetlands.com)



**ELEVATION VIEW**



**END VIEW**

**INSTALLATION NOTES**

1. ALL CONNECTION PIPES SUPPLIED AND INSTALLED BY CONTRACTOR. MODULAR WETLAND UNIT WILL BE DELIVERED WITH A THRU HOLE AND ITS THE CONTRACTORS RESPONSIBILITY TO SUPPLY PIPE, AND ALL LABOR AND MATERIAL TO CONNECT PIPE AND SEAL UNIT WATER TIGHT INCLUDING BUT NOT LIMITED TO GROUT, CONCRETE LUG, REBAR, PLUG, ANCHORS, COUPLER, FITTINGS AND/OR ALL SUPPORT AND CONNECTING HARDWARE.
2. ALL CONNECTIONS ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE. (CAN NOT INTRUDE BEYOND FLUSH) ALL PIPE FLOWLINES SHALL BE FLUSH WITH INSIDE FLOOR UNLESS SPECIFIED OTHERWISE.
3. ALL GROUT AND/OR CONCRETE SHALL BE NON-SHRINK AND MEET OR EXCEED LOCAL PIPE CONNECTION STANDARDS.
4. REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE.

THE PRODUCT DESCRIBED MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING

**PROPRIETARY AND CONFIDENTIAL:**

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MODULAR WETLANDS SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MODULAR WETLANDS SYSTEMS IS PROHIBITED.



**PIPE CONNECTION  
STANDARD DETAIL**