

# Custom Rec Pond Instructions

FEATURING  
**PIT VIPER**



## Components of a Rec Pond

1. Pit Viper® 2.0 Inlet Diffuser Modules
2. Pit Viper® 2.0 Center Diffuser Module
3. EasyBog Cubes (with media)
4. Pit Viper® 2.0 Cleanout Vault with Extension
5. HSC22 PRO-Blox (Wetland)
6. HSC44 PRO-Blox (Intake Bay)
7. 2.7 hp SPVS270 Pump
8. Intake Bay System
9. Flow Meter
10. 10 oz. Liner Underlayment
11. 45 Mil EPDM Rubber Liner
12. Screen Mesh & Clips
13. Plumbing Package
14. 5 lbs EasyPro® Beneficial Bacteria



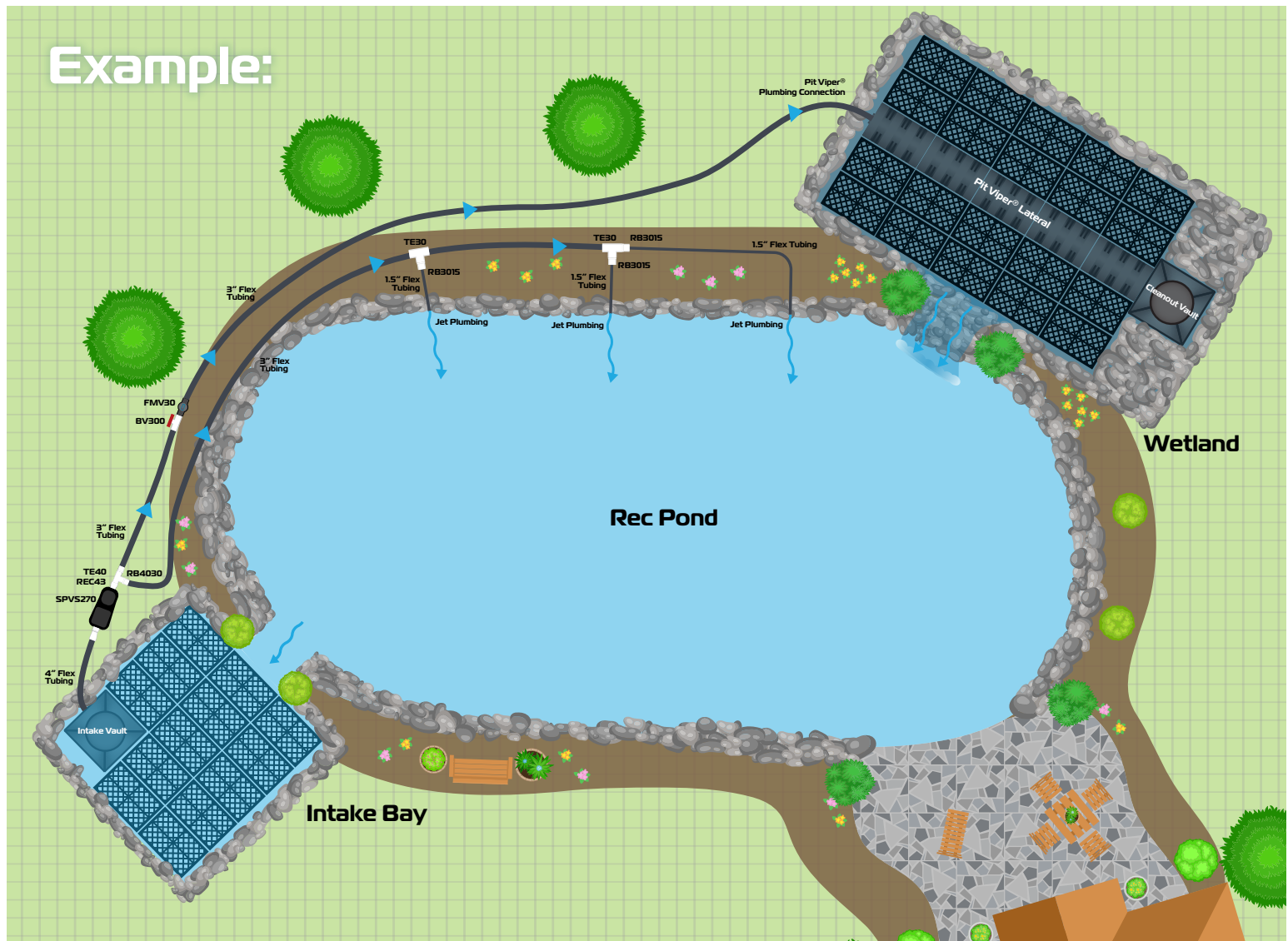
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Pond Products

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# Custom Recreational Swim Pond Overview

## Example:



## Planning, Excavation, & Liner

### 1. Determine the Pond Size

Calculate the total gallons the pond will hold.

*Example: a 28' x 36' x 6' deep Pond, with a 4' average depth, is about 24,000 gallons*

*(Max Length x Max Width x 0.8 (for a pond with rounded corners) x average depth x 7.48 = 22,404)*

### 2. Sizing the Wetland Filter

Recommendations are, One EasyBog™ Cube for every 1,250 gallons of pond water

*Example: For a 24,000 gallon pond, you will need 20 EasyBog™ cubes (always round up the gallons to the nearest 1,000 gallons, and the EasyBog™ cubes to the nearest full cube)*

### 3. Layout the Wetland Filter

A. Each EasyBog™ cube is 16" wide x 27" long x 17.5" high.  
*Example: 20 EasyBog™ cubes can be arranged in a 5 x 4 grid (5 wide x 4 long) in a 7' x 9' space*

B. For the lower layer, you will have four Pit Viper® Modules in the center, with two empty PRO-Blox on either side of the Pit Viper® Lateral, with a 2x2 space for a clean out vault at the end of the Pit Viper® Lateral (see Wetland illustration on page 5)

*Alternative: PV-END with JAFM cleanout in a corner*

D. For the upper layer, you will have a grid of 20 EasyBog™ cubes, leaving a blank space for a cleanout vault

## 4. Construction Notes for the Wetland

39" Minimum Depth. 26" required for the PV-CUBE Pit Viper® & EBC44 EasyBog™ Cubes (Step 10), 6" minimum covering of stone and gravel, and 6" of water over the wetland. Clean out vault is recommended to be at a slightly lower elevation than the rest of the wetland

Over dig the length and width by 1'. This gives room for folds in the liner and plumbing connections to the Pit Viper® (Step 20).

## 5. Sizing Notes

**Suggested Target Flow Rates by Pond Size** (consult with your dealer, or EasyPro rep for recommendations on your specific application):

30,000 gallons or less – 1 turn per hour (ie, 30,000 gph)

30,000 to 60,000 gallons – 1 turn every two hours

60,000 to 120,000 gallons – 1 turn every four hours

120,000 to 250,000 gallons – 1 turn every 6 hours

250,000 gallons plus – 1 turn every 8 hours

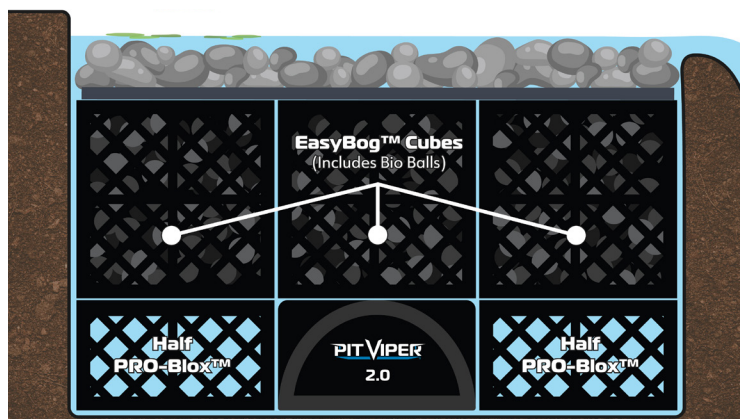
**EasyBog™ Cubes Sizing** (consult with your dealer, or EasyPro rep for recommendations on your specific application):

For ponds under 120,000 gallons: Size the EasyBog™ cubes at 1 cube per 1,250 gallons

For ponds over 120,000 gallons: Size the EasyBog™ cubes at 1 cube per 2,000 gallons

## 6. Determine the Flow Rate to the Wetland

- Each Pit Viper® Module requires 600 gph. Ex. a lateral of (10) Pit Vipers will require 6,000 gph
- Layout the Pit Viper® lateral, centered in the longest length of the wetland. (See step 9, part D on next page for info on laterals over 22.5' long.) Multiple laterals can be used to adjust the shape or size of the wetland, EasyBog cubes may also be stacked and the wetland dug deeper to accommodate them.



## 7. Sizing the Intake Bay

- One gallon of water is required in reserve per gallon per minute (GPM) of flow in the intake bay.

*Ex: if your total flow rate for the pond is 150 gpm, your intake bay is required to hold at least 150 gallons of water*

- Calculate the flow rate required for your pond.

- Your total target flow rate between the wetland and circulation jets should be at least equal to the gallons of water in the pond.

*Ex: A 7,500 gallon pond should have a total flow rate of at least 7,500 gallons per hour, with the exception of larger ponds, noted in the sizing notes above*

*\*See sizing notes for ponds over 30k gallons*

- Subtract the total gallons of the pond from the flow going to the wetland.

*Ex: A 7,500 pond – 3,000 gph flowing to the wetland = 4,500 gph remaining for the circulation jets*

- Calculate how many circulation jets are required to make up the remaining flow requirements. Each jet requires 3,000 gph. Divide the remaining gallons in the pond by 3,000

*Ex: 4,500 remaining gallons ÷ 3,000 gph per jet = 1.5 jets, round up to (2) jets = 6,000 gph*

- In this example, your total flow rate is 9,000 gph

*Ex: 3,000gph for the wetland + 6,000gph for the jets*

- Convert the 9,000 gph to gpm

*Example: 9,000 gph divided by 60 gpm = 150 gpm*

- Calculate how many Res-Cubes are required in the intake bay. Each HSC44 Res-Cube, holds 31.5 gallons of water.

*Example: 150 gallons divided by 31.5 = (5) Res-Cubes (always round up to the next whole cube)*

- Layout the Res-Cubes, 16" x 27", and the JAFIB3 or JAFIB4 intake bay vault, 24" x 24" to determine the footprint of the intake bay.

- 2.5' minimum depth. 17.5" for the cubes and vaults, 4" of gravel covering the intake bay and 6" minimum of water over the gravel. Over dig by 6" to account for folds in the liner

- Sizing the Intake Channel to the Intake Bay 6,000 gph is required per foot of width of the intake channel. Recommended 6"-1' depth in the intake channel

*Example: For a 150 gpm flow rate (9,000 gph) a 1.5' width is recommended.*

## 8. Using DuraLiner™ EPDM Liner Underlayment & Rock Pads

Seam the wetland, pond, and intake bay liners together if separate liner panels are being used

# Wetland Installation

## 9. Create the Pit Viper® Diffuser Lateral

- Layout the Pit Viper® Lateral, centered in the longest length of the wetland.
- Each Pit Viper™ Module connects to the next Pit Viper® w/ slip male/female connection.
- Water Enters the first Pit Viper® Module through the PV-INLET with 2" or 3" PVC. This connection is made within the liner/wetland.

To make this connection, bring your plumbing up over the liner into the wetland, OR through the liner with a bulkhead fitting or pipe boot

### D. Notes:

- The recommended length for each Pit Viper® Lateral is up to 22.5' long, or (10) Pit Viper® Modules. *If a longer length is needed, the last the Pit Viper® will be the PV-END and create an additional lateral. Multiple shorter laterals are also an option.*
- Use 600 gph per Pit Viper®  
*Example: A lateral of (10) Pit Viper® Modules will require 6,000 gph*
- Use HSCCLIPS PRO-Blox™ Clips to Secure PRO-Blox™ and EasyBog™ Cubes.

E. The last Pit Viper® Lateral will connect to a PV-VAULT

## 10. Install Empty HSC22 PRO-Blox™, on each side of the Pit Viper® Lateral

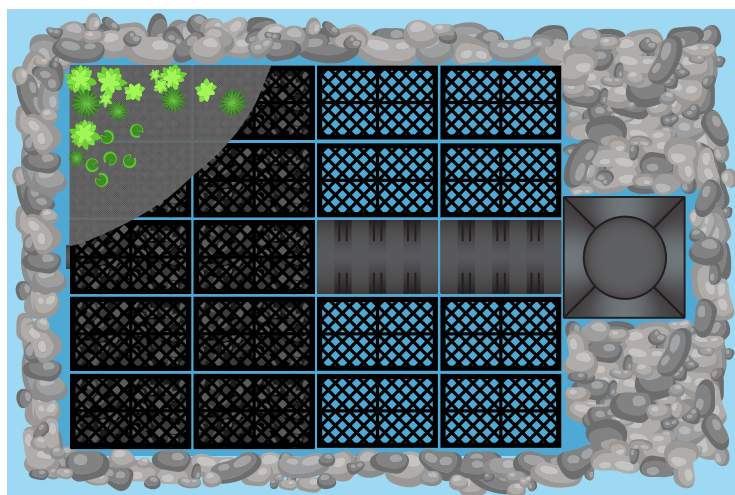
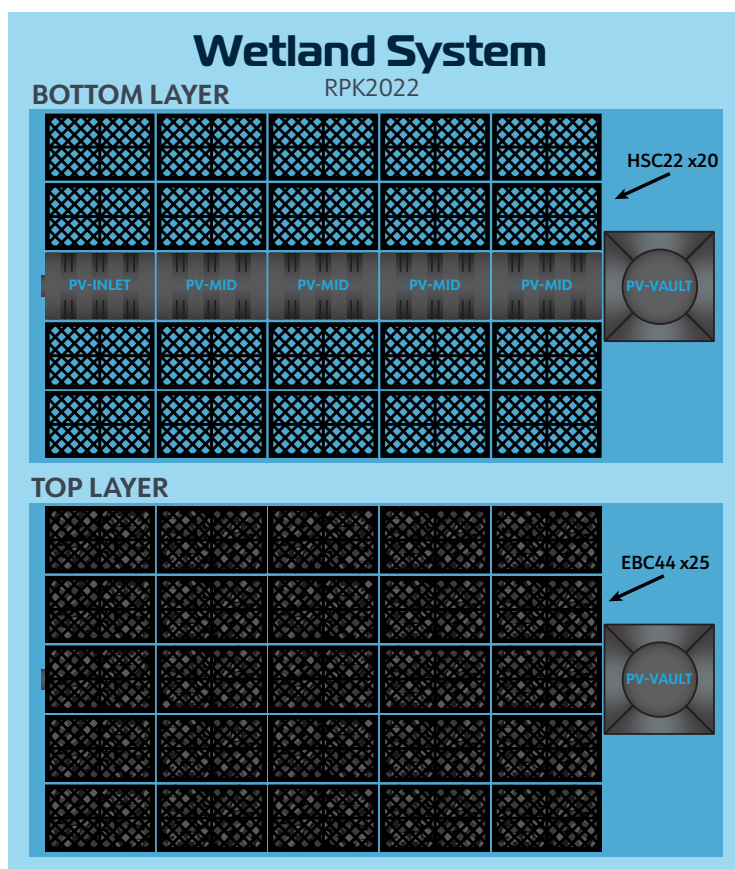
- Up to three Res-Cubes™ on each side of the lateral, for a maximum overall width of 9.33', including the lateral
- If multiple Pit Viper™ laterals are being installed, each lateral will be 8', or 6 cubes apart. Use clips to secure PRO-Blox™ together.

## 11. Install PV-VAULT (Clean Out Vault)

Install one PV-VAULT (Clean Out Vault Extensions) on PV-VAULT.

## 12. Install the EasyBog™ Cubes

- Install a layer of EBC44 EasyBog™ Cubes over the lower layer of empty cubes and the Pit Viper™ Modules. Use clips to secure the Pit Viper™ Modules and Res-Cubes together.
- Install 1/4" Plastic Mesh over the EasyBog Cubes.
- Cover the Wetland with Stones & Gravel
- Install a 6" layer of stones and gravel over the wetland



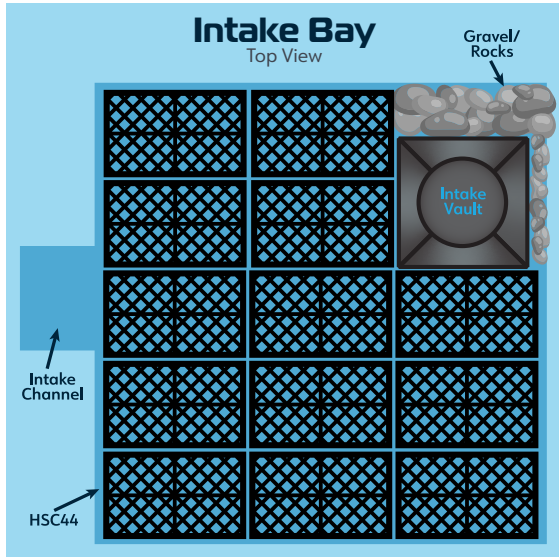
## Return Water Back to the Pond

- Seam the pond liner and wetland liner together
- Using liner, stone and waterfall foam, create a waterfall, or stream, to return filtered water to the pond
- If a waterfall or stream is not desired, you can install the wetland just above water level and return the filtered water to the pond over a wider distance creating a calmer more serene setting.

# Intake Bay Installation

## 13. Select the Pump and intake Bay Vault

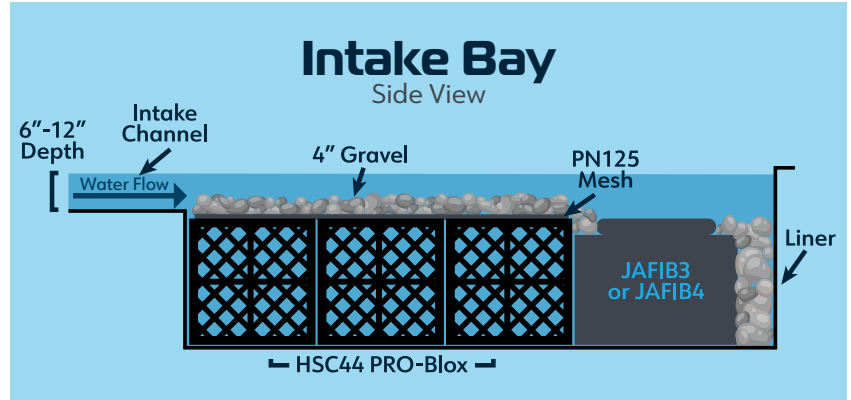
- If using 3" plumbing, select the JAFIB3 vault and CVA30IB check valve. The 3" plumbing allows flow rates up to 13,500 gph.
- If using 4" plumbing, select the JAF40IB and CVA40IB. The 4" plumbing allows flow rates up to 21,000 gph.



## 14. Install the HSC44 Res-Cubes, intake Bay Vault, and Check Valve Assembly

## 15. Install the PN125 Plastic Mesh Over the Cubes

## 16. Install Gravel and Stone Over the Intake Bay



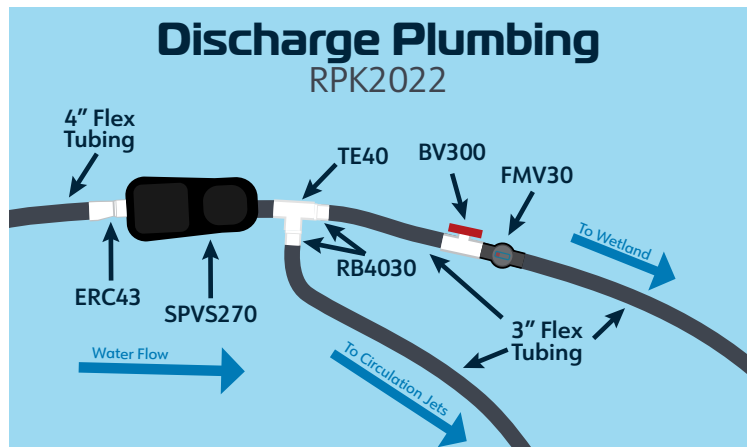
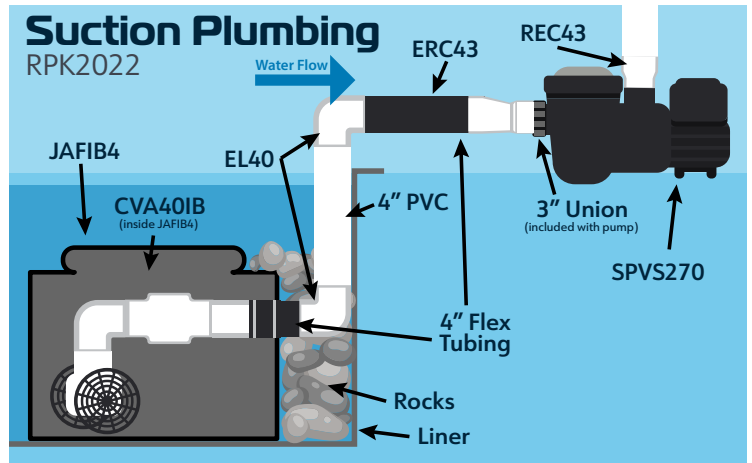
# Plumbing, Pump, & Jets Installation

## 17. Install the suction plumbing from the intake bay, to the pump

- Select the appropriate plumbing size
  - 2" for up to 5,400 gph
  - 3" for up to 13,500 gph
  - 4" for up to 21,000 gpm
- Using the rubber coupling on the intake bay check valve assembly, connect the suction line to the intake bay.
- Using the union supplied with your pump, connect the suction line to the pump.
- Always make sure all suction plumbing is airtight and full of water before starting the pump.
- Read and follow all pump instructions.

## 18. Install the discharge plumbing

- Select the appropriate plumbing size from the suction plumbing guidelines.
- Use a tee or wye to split the discharge plumbing to two lines. One line will feed the circulation jets, the other will feed the wetland filter (see illustration to the right). Size both lines according to the suction plumbing guidelines above.



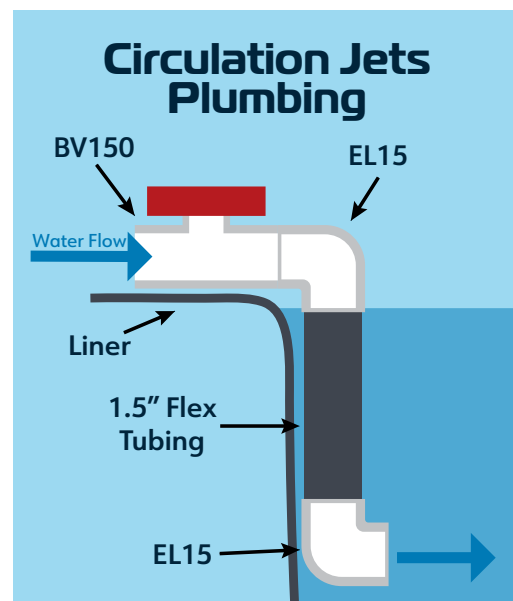
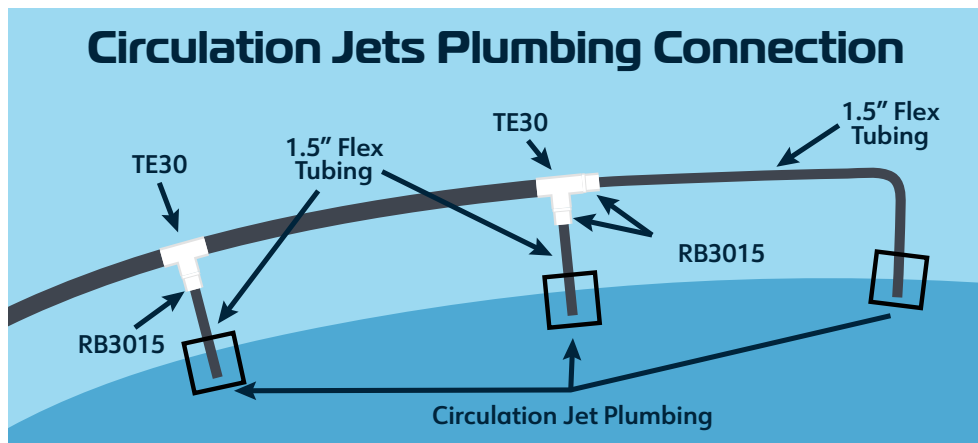
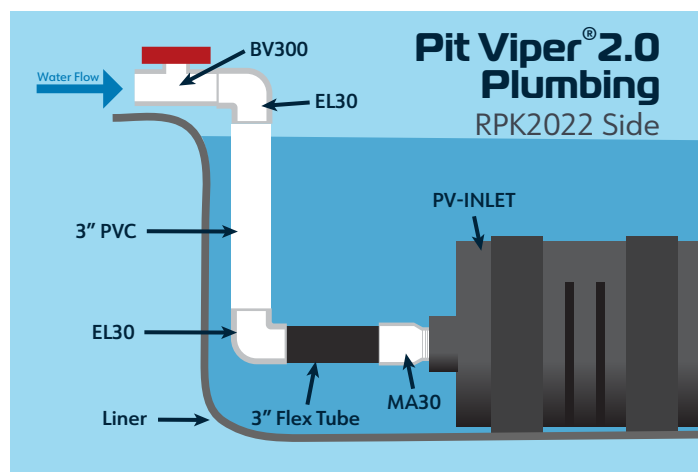
# Plumbing, Pump, & Jets Installation

## 19. Plumbing the wetland filter

- Select your line size running to the wetland based on the flow rates in Step 17. Don't forget to calculate friction loss.
- Install the flow meter(s) on the line, or lines, feeding the wetland. It can be located anywhere between the pump and wetland on the supply line running to the wetland. One meter per Pit Viper™ lateral is required.
- Install a ball valve before each flow meter. This will allow you to dial into the wetland's required flow rate

## 20. Plumbing the Circulation Jets

- The jets are comprised of open 1.5" PVC
- Each jet requires 3,000 gph
- Use tee's, reducer bushing, and ball valves, plumb each jet from the main line supplying water to the jets. The ball valves are used to adjust flow to each jet.



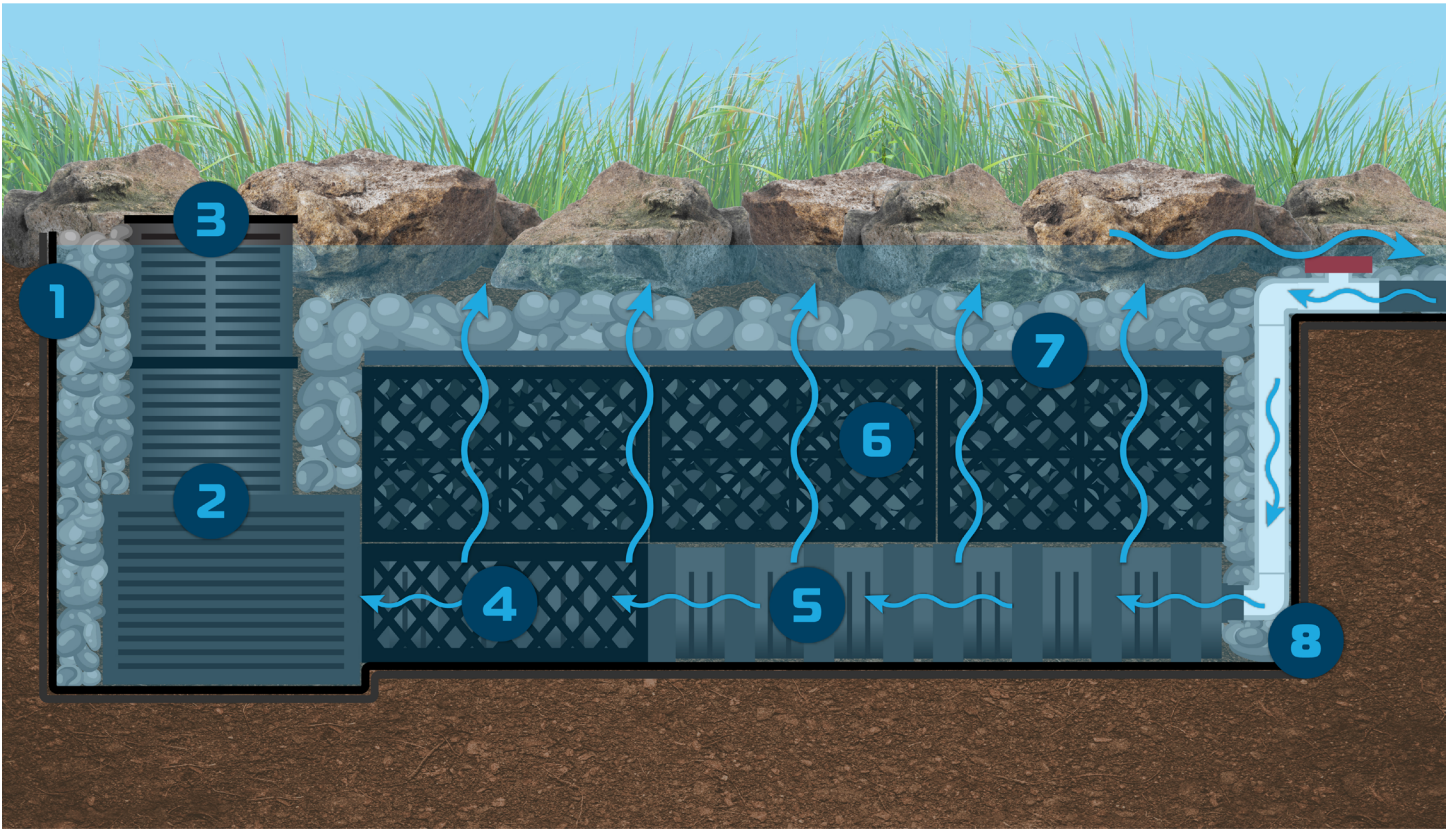
## Build It Like You'll Service It

Keep Valve handles accessible after landscaping

Photograph plumbing before backfilling

Label electrical circuits serving pond equipment

Record pump model numbers for future reference



# EASYPRO<sup>®</sup> Pond Products

## Compact Wetland Filter

1

### **DuraLiner™ & Underlayment**

Creates a durable, flexible foundation for water retention within the wetland

2

### **PITVIPER 2.0 Cleanout Vault**

Provides easy access for cleaning the wetland filter

3

### **Optional PITVIPER 2.0 Cleanout Vault Extension**

Raises the cleanout access point for convenience

4

### **Half PRO-Blox™**

Creates an open, void space where solids settle. ½ Pro-Blox height allows for shallower wetlands and less excavation.

5

### **PITVIPER 2.0 Diffuser Modules**

Trenchless, flat-bottom installation. Modular system requiring no fittings or connectors. Distributes and slows water flow entering the wetland. ½ Pro-Blox height for an even wetland base layer.

6

### **EasyBog™ Cube**

Pre-filled with Bio-Balls to provide high surface area for biological filtration, using a proven approach trusted for years in wetland systems.

7

### **PRO-Blox™ Covering Mesh & Gravel**

Mesh prevents most gravel from entering the EasyBog Cubes. Reduced gravel requirements with a 6" recommended depth.

8

### **PITVIPER 2.0 Plumbing Connection**

Standard FPT Connection compatible with standard PVC fittings.

# Recommended Add-Ons



## Pond-Vive WG - PBWG

Cold water bacteria designed to support wetland filtration systems and help maintain cleaner, healthier water.



## Rock & Waterfall Cleaner - OXY8

Cold water bacteria designed to support wetland filtration systems and help maintain cleaner, healthier water.



## Liner Seam Kit - LSK

Complete kit for joining EPDM liner sections, creating secure, waterproof seams for large or custom water feature installations.



## Telescoping Pond Net - EPFN

Features a strong telescoping handle, collapsible frame, and soft fish-safe mesh for easy fish handling and compact storage.



## 4" Bottom Drain Kit - BDK3N

Improves water circulation by pulling debris from the pond bottom, helping keep water cleaner while reducing maintenance.

# Keep Learning with EasyPro

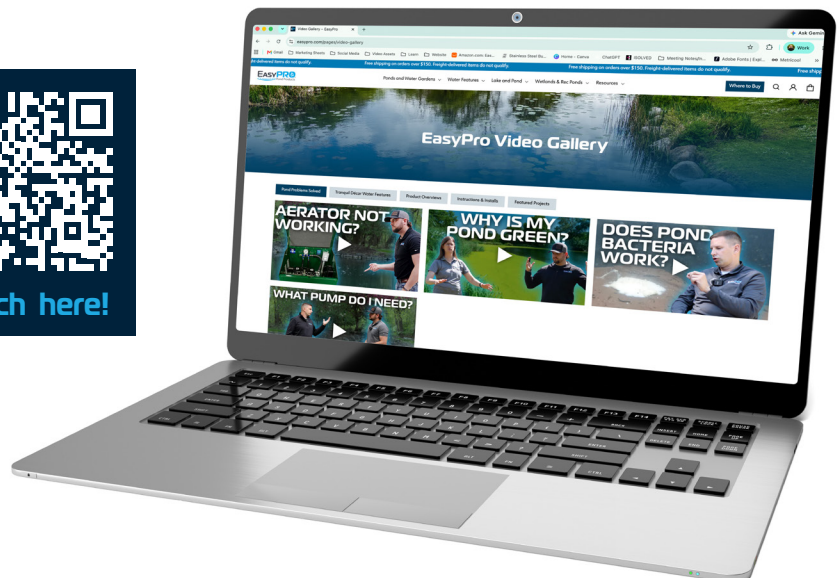
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