

SECTION 32 84 25

GREYWATER TREATMENT AND IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - a. Pre-manufactured greywater treatment and irrigation system
 - b. System components and accessories
 - c. Installation Requirements
 - d. System startup and commissioning

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete
- B. Section 22 13 00 - Facility Sanitary Sewerage
- C. Section 22 13 16 - Greywater Collection and Distribution
- D. Section 32 84 00 - Planting Irrigation
- E. Section 32 90 00 - Planting

1.3 REFERENCES

- A. NSF/ANSI 350 - Onsite Residential and Commercial Water Reuse Treatment Systems
- B. Local plumbing codes and regulations
- C. State environmental protection agency requirements

1.4 SUBMITTALS

- A. Product Data:
 - a. Manufacturer's technical data sheets
 - b. Installation instructions
 - c. Operation and maintenance manuals
- B. Shop Drawings:
 - a. System Layout
 - b. Piping diagrams
 - c. Electrical connections
- C. Permits:
 - a. Local building permits
 - b. Environmental as required

1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
 - a. Certified by manufacturer
 - b. Licensed plumber as required by jurisdiction

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver system components in manufacturer's original packaging
- B. Store in clean, dry area protected from weather
- C. Handle according to manufacturer's instructions
- D. Keep plants well-watered

1.7 WARRANTY

- A. Manufacturer's standard warranty for system components
- B. Minimum 1-year warranty on parts and labor

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer:
 - a. Leapfrog Design
 - b. Website: <https://www.leapfrog.design/>
 - c. Phone: +1 (541) 505-4967

2.2 GREYWATER TREATMENT SYSTEM

- A. Product: Leapfrog Estuary
- B. Description: Pre-manufactured greywater treatment and irrigation system
- C. Components
 - a. Surge Tank
 - i. Material: Glass Fiber Reinforced Polymer (GFRP)
 - ii. Capacity: 100 gallons
 - iii. Dimensions: 48" x 24" x 22"
 - b. Planter(s)
 - i. Material: Glass Fiber Reinforced Polymer (GFRP)
 - ii. Capacity: 100 gallons
 - iii. Dimensions: 48" x 24" x 22"
 - c. Media Blend
 - i. Pumice-based biological filter
 - 1. Particle size: 1/4" x 1/8"
 - ii. Activated carbon
 - 1. Particle size: 4mm x 1mm
 - d. Plumbing Components

- i. PVC piping and fittings
- e. Control Systems
 - i. Controls Box
 - ii. Sensors and monitoring equipment
 - iii. Remote monitoring capabilities
- f. Pumps:
 - i. Influent
 - 1. Type: Submersible
 - 2. Power: 100W
 - 3. Flow rate: 1800GPH
 - ii. Surge Tank
 - 1. Type: Submersible
 - 2. Power: 24W
 - 3. Flow rate: 250GPH
- g. Plants as specified in Planting Plan

2.3 ACCESSORIES

- A. Required for installation:
 - a. Building plumbing connection detailed in SECTION 22 13 16 GREYWATER COLLECTION AND DISTRIBUTION
 - b. Electrical connection detailed in owners manual
 - c. WiFi connection
- B. Optional:
 - a. Backup power supply

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Contractor Responsibilities:
 - a. Verify installation conditions
 - b. Confirm power availability
 - c. Verify plumbing connections with manufacturer's drawings
 - d. Report any unsuitable conditions to manufacturer
- B. Manufacturer Responsibilities:
 - a. Verify system requirements
 - b. Confirm site preparation meets specifications
 - c. Document pre-installation conditions

3.2 PREPARATION

- A. Contractor Responsibilities:
 - a. Clear installation area
 - b. Prepare level mounting surface

- i. Specs listed in Section 03 30 00 CAST IN PLACE
- c. Verify utility locations
- d. Provide electrical service to manufacturer specifications detailed in installation manual
- e. Provide plumbing connections to manufacturer specifications detailed in SECTION 22 13 16 GREYWATER COLLECTION AND DISTRIBUTION
- B. Manufacturer Responsibilities:
 - a. Provide detailed installation requirements
 - b. Review site preparation
 - c. Confirm readiness for installation

3.3 INSTALLATION

- A. Contractor Responsibilities:
 - a. Physical placement of system
 - b. Basic plumbing connections
 - c. Electrical service connection
- B. Manufacturer Responsibilities:
 - a. Control system installation and verification
 - b. Final plumbing connections
 - c. System integration and testing
 - d. Planting media installation
 - e. Plant installation

3.4 FIELD QUALITY CONTROL

- A. Contractor Responsibilities:
 - a. Basic leak test of contractor-installed components
 - b. Verification of utility connections
- B. Manufacturer Responsibilities:
 - a. Verify control system operation
 - b. Documentation of installation

3.5 STARTUP AND COMMISSIONING

- A. To be performed by manufacturer only:
 - a. System startup procedures
- B. Contractor to coordinate with manufacturer for:
 - a. Schedule of startup activities
 - b. Site access requirements
 - c. Utility availability confirmation

3.6 CLEANING

- A. Manufacturer Responsibilities:
 - a. Clean all components

- b. Remove debris
- c. Dispose of packaging

3.7 PROTECTION

- A. Manufacturer Responsibilities:
 - a. Protect installed system
 - b. Replaced damaged component

3.8 TRAINING

- A. Manufacturer to provide:
 - a. System operation training
 - b. Basic maintenance training
 - c. Emergency procedures training
 - d. Documentation and manuals

END OF SECTION