



Section [_____] Storm Water Inlet Automatic Retractable Screen

PART 1 – GENERAL

01.01.00 Purpose

The purpose of this specification is to establish generally acceptable criteria for Storm Water Inlet Automatic Retractable Screens (SWIARS) that treat storm water runoff including dry weather flows and other contaminated water sources. It is intended to serve as a guide to promote understanding regarding materials, manufacture and installation; and to identify devices complying with this specification.

01.02.00 Description

The SWIARS is used for screening stormwater runoff including dry weather flows. The SWIARS is a pre-engineered automatic retractable water screening system designed to separate solid debris typically found in runoff.

01.03.00 Manufacturer

The manufacturer of the SWIARS shall be one that is regularly engaged in the engineering design and production of systems developed for the treatment of stormwater runoff for at least (10) years, and which has a history of successful production that is acceptable to the engineer of work. In accordance with the drawings, the SWIARS(s) shall be a device manufactured by Bio Clean Environmental Services, Inc., or assigned distributors or licensees. Bio Clean Environmental Services, Inc. can be reached at:

Bio Clean Environmental Services, Inc
Corporate Headquarters:
398 Via El Centro
Oceanside, CA 92058
Phone: (760) 433-7640
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www.biocleanenvironmental.net

01.04.00 Submittals

- 01.04.01 Submittal drawings are to be provided with each order.
- 01.04.02 Submittal drawings are to detail the SWIARS and all components required and the sequence for installation, including:
 - System configuration with primary dimensions
- 01.04.03 Inspection and maintenance documentation submitted upon request.

01.05.00 Work Included

- 01.05.01 Specification requirements for installation of SWIARS.
- 01.05.02 Manufacturer to supply components of the SWIARS(s):
 - Screening system
 - Mounting hardware



PART 2 – COMPONENTS

The Storm Water Inlet Automatic Retractable Screen (SWIARS) and all of its components shall be made of 304 stainless steel.

02.01.00 Screening System

- 02.01.01 Child Protection Bar shall be manufactured of 3/4" diameter stainless steel grade 304, round bar. Length of bar will be per submittal drawings. All joints and seams are to be welded or fastened together with stainless steel hardware.
- 02.01.02 Screens shall be manufactured of stainless steel grade 304 with 3/4" diameter holes in a perforated pattern which is 50% open.
- 02.01.03 Side Plate shall be manufactured of stainless steel grade 304.
- 02.01.04 Mounting Bracket shall be manufactured of stainless steel grade 304. The mounting bracket shall be secured to the concrete structure per section 02.01.05.
- 02.01.05 Mounting Hardware shall consist of 1/4" diameter Type 316L stainless steel mushroom head spike anchors. The anchors shall secure the mounting brackets to the curb. The spike anchors shall not protrude from the face of the mounting bracket more than 7/64". Mounting hardware shall be installed per section 04.02.00

PART 3 – PERFORMANCE

The inlet screen shall meet performance specifications listed on the submittal drawings.

03.01.00 General

- 03.01.01 Function - The SWIARS is used for screening stormwater runoff including dry weather flows. The SWIARS is a water screening system designed to separate solid debris typically found in runoff.
- 03.01.02 Automatic Retractable Screen - The SWIARS is composed of an automatic retractable screening system designed to remain closed during low flows. Water flows of 2" or more will unlock and open the SWIARS. Positive force will return the SWIARS to the closed and locked position.
- 03.01.03 Removal Efficiencies - The SWIARS's screening system must be capable of capturing 100% of all materials greater than or equal to the size of the screen openings.
- 03.01.04 Hydraulic Capacity - The SWIARS shall provide a rated hydraulic capacity, which is consistent with governing water treatment regulations. The hydraulic capacity must be supported per section 03.02.01.



03.02.00 Test Performance

At a minimum, the SWIARS must meet all of these testing performance standards and have a Manufactures Performance Certification per Section 05.02.00:

03.02.01 Calculated Flow Performance:

- The SWIARS must be sized according to flow rate equation provided in manufacturer's submittal drawing. Using said formula and assuming a 50% clogging factor, SWIARS must have a minimum flow rate of 0.38 cfs per linear foot.

PART 4 - EXECUTION

04.01.00 General

The installation of the SWIARS shall conform to all applicable national, state, state highway, municipal and local specifications.

04.02.00 Installation

The contractor shall furnish all labor, equipment, materials and incidentals required to install the (SWIARS) device(s) and appurtenances in accordance with the drawings, installation manual, and these specifications. Any damage to catch basin and surrounding infrastructure caused by the installation of the SWIARS is the responsibility of the installation contractor.

04.02.01 Assembly - SWIARS shall be fully assembled prior to installation. To assemble SWIARS, attach screen section to side plates and mounting brackets with supplied hardware.

04.02.02 Mounting Anchors - After SWIARS is completely assembled per section 04.02.01 attach mounting brackets to inside of curb inlet using mounting hardware supplied by manufacturer per section 02.01.05. To install mounting anchors, a pilot hole must be drilled into curb face a minimum 1-3/4" to a maximum of 2". The anchor shall then be inserted into pilot hole and properly set using a hammer or specially designed driver.

04.03.00 Shipping, Storage and Handling

04.03.01 Shipping – The SWIARS unit(s) shall be shipped to the contractor's address or job site. The contractor is responsible for off-loading and placing the units(s) in the exact site of installation.

04.03.02 Storage and Handling – The contractor shall exercise care in the storage and handling of the SWIARS and all components prior to and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced shall be born by the contractor. The SWIARS(s) and all components shall always be stored indoors and transported inside the original shipping container until the unit(s) are ready to be installed. The SWIARS shall always be handled with caution according to contractor's workplace safety professional recommendations.



04.04.00 Maintenance and Inspection

- 04.04.01 Inspection – After installation, the contractor shall demonstrate that the SWIARS has been properly installed at the correct location(s), elevations, and with appropriate components. All components associated with the SWIARS and its installation shall be subject to inspection by the engineer at the place of installation. In addition, the contractor shall demonstrate that the SWIARS has been installed per the manufacturer’s specifications and recommendations. All components shall be inspected by a qualified professional at least once a year and results of inspection shall be kept in an inspection log.
- 04.04.02 Maintenance – The manufacturer recommends cleaning and debris removal as needed. The maintenance shall be performed by a qualified professional. A maintenance manual is available upon request from the manufacturer. The manual has detailed information regarding the maintenance of the SWIARS. A maintenance/inspection record shall be kept by the maintenance operator. The record shall include any maintenance activities performed, amount and description of debris collected, and the condition of the SWIARS.
- 04.04.03 Material Disposal – All debris, trash, organics, and sediments captured by the SWIARS shall be transported and disposed of at an approved facility for disposal site in accordance with local and state requirements. Please refer to state and local regulations for the proper disposal of toxic and non-toxic materials.

PART 5 – QUALITY ASSURANCE

05.01.00 Warranty

The manufacturer shall guarantee the SWIARS against all manufacturing defects in materials and workmanship for a period of (5) years from the date of delivery to the customer. The manufacturer shall be notified of repair or replacement issues in writing within the warranty period. The SWIARS is limited to recommended application for which it was designed.

05.02.00 Performance Certification

The SWIARS manufacturer shall submit to the Engineer of Record a “Manufacturer’s Performance Certificate” certifying the SWIARS is capable of achieving the specified flow rate. Devices without these performance certifications will not be accepted.

END OF SECTION