STORMWATER TREATMENT UNIT(S) SPECIFICATION – ONLINE SYSTEM

PART 1.00 GENERAL

1.1 DESCRIPTION

A. The manufacturer selected by the Contractor and approved by the Engineer, shall furnish all labor, materials, equipment and incidentals required to manufacture the stormwater treatment system(s) specified herein in accordance with the attached Drawing(s) and these specifications.

1.2 QUALITY CONTROL INSPECTION

A. The quality of materials, the process of manufacture, and the finished sections shall be subject to inspection by the Engineer. Such inspection may be made at the place of manufacture, or on the worksite after delivery, or at both places, and shall be subject to rejection at any time if material conditions fail to meet substantially any of the specification requirements. If a Stormwater Treatment Unit is rejected after delivery to the site, it shall be marked for identification and removed from the site. The Stormwater Treatment Unit(s) which have been damaged beyond repair during delivery will be rejected and, if already installed, shall be repaired to the Engineer's and manufacturer's acceptance level, if permitted.

B. All sections shall be field inspected for general appearance, dimensions, soundness, etc.

1.3 SUBMITTALS

A. Plan, elevation, and profile dimensional drawings shall be submitted to the Engineer for review and approval no later than 10 days prior to bid date. The Contractor shall be provided with the approved plan, elevation, and profile dimensional drawings. Any deviation from the specified stormwater treatment unit must be reviewed by a Licensed Professional Engineer to meet the Performance requirements in Section 2.2. A document, stamped and sealed by a licensed PE must be provided stating that the alternate treatment device meets all performance requirements.

PART 2.00 PRODUCTS

2.1 MATERIALS AND DESIGN

A. Concrete structures shall be designed for H-20 traffic loading and applicable soil loads or as otherwise determined by a Licensed Professional Engineer. The materials and structural design of the devices shall be per ASTM C857 and ASTM C858.

1. The minimum compressive strength of the concrete in the manhole base, riser, and top sections shall be 4000 psi.
2. Cement shall conform to the requirements for Portland cement of Specification C150.
3. Aggregates shall conform to Specification C33, except that the requirement for gradation shall not apply.
4. Reinforcement shall consist of wire conforming to Specification A82 or Specification A496, of wire fabric conforming to Specification A185 or Specification A497, or of bars of Grade 40 steel conforming to Specification A615/A615M.
5. The access cover shall be designed for HS20-44 traffic loading and shall provide a minimum 30 inch clear opening.
6. Any grout used within the system shall meet the ASTM C 1107 "Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)". Grades A, B and C at a pourable and plastic consistency at 70ºF. CRD C 621 "Corps of Engineers Specification For Non-Shrink Grout."
7. The separator internal components shall be substantially constructed of non corrosive 5052-H32 Aluminum.

2.2 PERFORMANCE

A. The stormwater treatment unit shall be an online unit capable of conveying 100% of the design peak flow.

B. The stormwater treatment unit shall be ISO14034 Environmental Technology Verified (ETV) and an ETV verification letter must be provided with the submittal.

C. The Stormwater treatment unit must provide an internal bypass which diverts water around the treatment area during the design peak flow. Independent 3rd party test data must be provided demonstrating that sediment collected in the stormwater treatment unit will not re-suspend or scour at the design peak flow.

D. The stormwater treatment unit must be able to capture and retain at least 90% of free floating oil without any risk of oil-re-entrainment. This must be verified through independent 3rd party testing at a surface loading rate of 64

gpm/sqft of treatment area.

E. The stormwater treatment unit shall provide, at a minimum, sediment and oil storage capacity as described below:

SDD3 Model	Diameter (ft)	Sediment storage capacity (cuft)*	Oil storage capacity (gal)
SDD3-900	3	18.0	31
SDD3-1200	4	34.6	75
SDD3-1500	5	58.0	148
SDD3-1800	6	93.9	259
SDD3-2100	7	139.1	409
SDD3-2400	8	231.0	616
SDD3-3000	10	348.2	1237
SDD3-3600	12	467.6	2079

F. The SDD3 unit shall be designed to remove at least 80% of the suspended solids load on an annual aggregate removal basis. Said removal shall be based on full-scale third party testing using OK-110 media gradation (manufactured by US Silica) or equivalent. Said full scale testing shall have included sediment capture based on actual total mass collected by the Stormwater Treatment Unit (s).

G. The stormwater treatment unit(s) head loss at the Peak Design Flow Rate shall not exceed the head loss specified by the Engineer.

2.3 MANUFACTURER

A. The stormwater treatment unit(s) shall be of a basic design that has been installed and used successfully for a minimum of 10 years.

B. Each stormwater treatment system shall be a NEXT SDD3 system as manufactured by NEXT, 1305 Hill Ave, West Palm Beach, FL 33407. www.nextinfras.com

PART 3.00 EXECUTION

3.1 INSTALLATION

A. Installation of the Stormwater Treatment Unit(s) shall be performed per manufacturer's Installation Instructions. Such instructions can be found at www.nextinfras.com.