

Greystan Square
Stormwater Treatment System - Design Summary
Cleveland, TN

Information provided:

- Total Area = 2.434 acres
- Percent Impervious Area = 98%

Assumptions:

- Design storm = 1.0" Rainfall Depth (Per City of Cleveland - Stormwater Ordinance)

Size estimates:

The In-line CDS Unit is placed on the main storm drain within one manhole. This system's unique configuration meets multiple engineering objectives by combining both treatment and bypass capabilities in one structure. By utilizing CDS' patented non-blocking screening technology, the In-line Unit ensures removal of both fine and suspended solids along with oil, grease, trash and debris. Offering a remarkably small footprint, this system can be incorporated into new development projects or retrofitted into existing storm water collection systems. It can also be fitted with an inlet grate to accept surface flow.

The CDS is a flow-based system, and therefore, is sized by calculating the peak water quality flow rate associated with the design storm. The design storm precipitation depth of 1.0" was selected per the City of Cleveland Stormwater Ordinance. The water quality flow rate was calculated using an SCS Type II, 24-hr storm to generate a hydrograph representing the flow during that storm. The peak flow from the water quality storm hydrograph is then treated before internal bypass in the water quality unit.

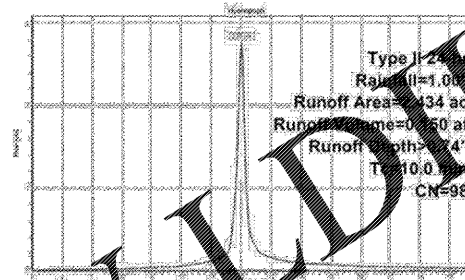


Figure 1. Water Quality Storm Hydrograph - WQ Flow = 2.75 cfs.

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To accommodate a treatment flow rate of 2.75 cfs, Contech recommends using a CDS3030-6-C Hydrodynamic Separation Unit (See attached Detail). The CDS3030-6-C will treat up to 3 cfs before internal bypass. Up to this flow rate, the CDS3030-6-C is also capable of 80% TSS removal based on a particle size distribution with an average particle size of 125 microns. The estimated cost of this system, complete and delivered to the job site, is available upon request. The contractor is responsible for installing the CDS unit and all external piping.

Maintenance

Like any stormwater best management practice, the CDS system requires regular inspection and maintenance to ensure optimal performance. Maintenance frequency will be driven by site conditions. Quarterly visual inspections are recommended, at which time the accumulation of pollutants can be determined. On average, the CDS system requires annual removal of accumulated pollutants. Please contact Contech or navigate to www.contechES.com for more information in this regard.

Thank you for the opportunity to present this to you and your client.

If you have any questions, please feel free to contact me directly.

Sincerely,

Shayam Joobhani, E.I.
Designer - Stormwater Products

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CDS3030-6-C DESIGN NOTES
CDS3030-6-C RATED TREATMENT CAPACITY IS 3.0 CFS (85.0 L/s) OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 20.0 CFS (566 L/s). IF THE SITE CONDITIONS EXCEED 20.0 CFS (566 L/s), AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.
THE STANDARD CDS3030-6-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

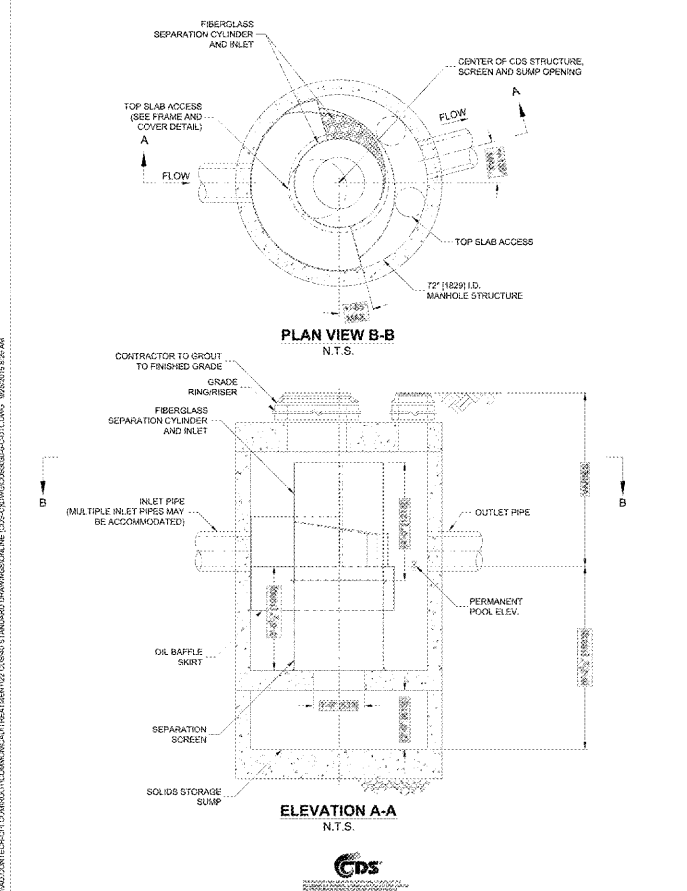
CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NUCEP/NUCAT CONFORMING UNITS

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	CDS3030-6-C
WATER QUALITY FLOW RATE (CFS OR L/s)	2.75 CFS
PEAK FLOW RATE (CFS OR L/s)	11.75 CFS
RETURN PERIOD OF PEAK FLOW (YRS)	10 YR
SCREEN APERTURE (2400 OR 4700)	2400
PIPE DATA	I.E. MATERIAL DIAMETER
INLET PIPE 1	INVERT
OUTLET PIPE	INVERT
RIM ELEVATION	
ANTI-FLOTATION BALLAST	WIDTH HEIGHT
NOTES/SPECIAL REQUIREMENTS:	
*PER ENGINEER OF RECORD	

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO H200 AND CASTINGS SHALL MEET H200 (AASHTO M 300) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SCREEN PLATE IS PLACED ON SHELVE AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER-TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
800-835-1122 | 617-265-7789 | 617-265-7961 FAX
CDS3030-6-C
ONLINE CDS
STANDARD DETAIL



JOB # 31313 DRAWING: 31313-CS.dwg LAST SAVED BY: CORYLAMO LOCATION: F:\31000\31313\0 Drawings\Design\Working\31313-05.dwg

SWP-CI BIG RED Curb Inlet Protector
Product Reference

GEOSOURCE

Product:
The SWP-CI "Big Red" Filter is a REUSABLE inlet protector that keeps soil sediment throughout the entire construction project. There are no pockets to fill, no velcro bags, no assembly etc. Simply place in front of the inlet, make sure it lays in the contour, and you are DONE!
"Big Red" CI Protector Advantages:
• Easy to install
• Versatile for a variety of curb inlets
• Reusable and Extremely easy to clean
• Made from 90% Inert Recycled Materials

Fabric Properties:

Property	Test	Units	Value
Weight	ASTM D5261	oz/sq yd	9.3
Curb Tensile Strength	ASTM D4632	lb	warp 250 fill 290
Tear Strength	ASTM D4533	lb	warp 60 fill 50
Burst	ASTM D3796	psi	440

Installation:
Simple installation also translates into simple removal, clean and re-use at the next project or phase. Maintenance is as simple as lifting the unit from the inlet, shaking the mud off it, removing the sediment on the concrete, and placing the unit back. If it is never filled with sediment, wash it out in a vegetated area and it is as good as new.
All of these features and benefits combine to make the "Big Red" curb inlet protector the perfect choice for all curb inlet applications. It comes in 54" long for single curb inlets and 104" lengths for double curb inlets. Custom sizes are also available depending on quantity.

Order Plans @ WWW.LDLine.com

FOR BID PURPOSES ONLY

1	7-22-2020	BULLETIN #2
REV	DATE	DESCRIPTION
REVISIONS		
31313	7/22/20	JDG JEH CAG CAG
CEI PROJECT NO.	INITIAL DATE	DPOR PM DES DRW
CEI Engineering Associates, Inc.		
ENGINEERS • PLANNERS • SURVEYORS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SCIENTISTS		
3030 LBJ Freeway, Suite 100 Dallas, TX 75234		(972) 488-3737 FAX (972) 488-6732
HARBOR FREIGHT TOOLS		
WYATT RD. CLEVELAND TN		
REV DATE	REV DATE	SHEET NO.
7/22/20	7/22/20	C11
REV - 1	REV - 1	
DETAIL SHEET 3		

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