

MAY 25 2018 4:11:40
CA-RWQCB

City of Alhambra
Development Services Department

May 14, 2018

Deborah Smith
Executive Officer
Los Angeles Regional Water Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013



*Gateway
to the
San Gabriel Valley*

*111
South First Street
Alhambra
California
91801*

**RE: REQUEST FOR REVIEW AND APPROVAL OF FILTERRA AS AN ALTERNATIVE
BIOFILTRATION SPECIFICATION UNDER THE LA MS4 PERMIT**

Dear Ms. Smith,

**SUBMITTAL OF FILTERRA BIOFILTRATION BEST MANAGEMENT PRACTICE FOR REVIEW
AND APPROVAL**

The 2012 Los Angeles County Municipal Separate Storm Sewer System Permit requires biofiltration Best Management Practices (BMPs) to be designed in accordance with the design specifications provided in Attachment H of the permit. However, if a biofiltration BMP does not meet these specifications, then an alternative design criteria for that BMP must be submitted to the Regional Board's Executive Officer for approval. A developer for a project site in the City of Alhambra is proposing to use a Filterra biofiltration BMP that does not meet the design specifications of Attachment H of the permit, but does provide equivalent water quality benefit. The system will be sized following the framework established in section 4 of the 2015 Geosyntec report entitled "Filterra Equivalency Analysis and Design Criteria", a copy of which is submitted with this letter.

Accordingly, the City of Alhambra hereby submits the developer-proposed Filterra biofiltration BMP for your review and approval along with our initial review findings for your consideration. We look forward to your timely review and approval of this biofiltration BMP.

Sincerely,

Ayla Jefferson, CBO
Chief Building Official
City of Alhambra



April 17, 2018
Email: Jeffrey.kao@transtech.org

Jeffrey Kao
City of Alhambra Building Division
Trans Tech Consultants
930 Shiloh Road, Building 44, Suite J
Windsor, CA 95492

RE: Fuel Facility Technical Infeasibility Review
Costco Gasoline - Expansion
2207 West Commonwealth Avenue, Alhambra, California 91803
Costco Loc. No. 428 / Our Job No. 10847

Dear Jeffrey:

On behalf of Costco Wholesale (Costco), Barghausen Consulting Engineers, Inc. is requesting review and approval of the Technical Infeasibility qualifications for the project referenced above per the 2014 Los Angeles County Low Impact Development Standards Manual. We believe retaining 100 percent of the Stormwater Quality Volume on site to be technically infeasible based on the following conditions outlined from Section 7.3 of the LA County LID Manual:

1. San Gabriel Valley (Brownfield) Superfund Site – Documented Concern

As noted in the *Historical Land Use and Regulatory Agency Records Reviews* (Report) prepared by Kleinfelder, the proposed site exists within Area 3 of the San Gabriel Valley Superfund site. Groundwater in this area contains significant concentrations of tetrachloroethylene (PCE) contaminants. Because of this, infiltration poses the risk of further damaging the already contaminated groundwater table by potentially introducing hydrocarbons from vehicle activities and petroleum products.

2. Pollutant Mobilization - Documented Concern.

Review of the *Historical Land Use and Regulatory Agency Records Reviews* (Report) prepared by Kleinfelder, identified the Costco site as listed within the multiple databases for cases of leaks and contaminations originating on site or on an adjacent property. The Report recommends soil sampling during construction to further assess the environmental conditions of the soil. Given the document concerns, Barghausen Consulting Engineers, Inc. does not recommend the use of infiltration facilities.

3. Pollutant Mobilization - Contamination

The disturbed areas of the proposed project generally drain toward the fuel facility. The high volume of cars, as well as the presence of underground storage tanks (USTs) containing petroleum contaminants, represents a risk of groundwater contamination, should infiltration infrastructure be implemented.

4. Rainwater Harvesting/Re-use

It is our belief that Rainwater Harvesting/Re-use is an infeasible alternative for the proposed site. As the site is intended to function as a fuel facility, Pollutant Mobilization is once again a concern.

April 17, 2018

As Rainwater Harvesting would spread collected runoff throughout the site, there is a risk of also spreading hydrocarbon contaminants throughout the entire property. All other site runoff is a result of asphalt and concrete pavement and not suitable for harvesting.

5. Underground Storage

Installing underground storage would still not address Pollutant Mobilization concerns, as site drainage patterns within the project area generally grade towards the fuel facility. While the runoff would not be infiltrating with this method, any potential leaks or failures of the underground tanks would release contaminants directly to site groundwater.

Alternative Compliance

Barghausen Consulting Engineers, Inc., proposes the use of a Contech Filterra Unit. The use of a Filterra Unit will provide treatment for the stormwater volume, plus an additional 50 percent of the SWQDv, per the City of Alhambra and Los Angeles County standards, by routing runoff through specially designed filter media before entering the storm drainage system. The Filterra Unit will also be designed with a peak-flow diversion for major storms.

We believe that a Filterra Unit, with its small footprint, and the infeasibility of other on-site measures, represents the best option for the Costco Fuel Facility Expansion to meet Low Impact Development standards.

We greatly appreciate your assistance with this request. Please provide your response in writing via letter or email. Should you have any questions or concerns regarding this matter, please contact me at (425) 656-1072 or mpalmer@barghausen.com. Thank you,

Sincerely,



Megan E.S. Palmer, P.E.
Project Engineer

MESP/rc
10847c.080.doc

cc: Terry Odle, MG2
Jay S. Grubb, Barghausen Consulting Engineers, Inc.
Chris Jensen, Barghausen Consulting Engineers, Inc.
Julianne Anderson, Barghausen Consulting Engineers, Inc.



Filterra Sizing Tool

Applicable in the Area Governed by the Los Angeles County MS4 Permit
(NPDES PERMIT NO. CAS004001; ORDER NO. R4-2012-0175)

For final design please contact:
Maryjane Mac Leod - Stormwater Consultant
mmacleod@conteches.com
Phone: 818-519-1781

Contact Information	Project Information
Engineer of Record Name Megan Palmer, P.E.	Project Name Costco Fuel Expansion
Engineer of Record Company Name Barghausen Consulting Engineers	Project Location Alhambra, CA
Engineer of Record Office Zip Code 98032	Catchment Name 1A

Drainage Area Inputs		
Drainage Area	33260	ft ²
Runoff coefficient	0.867	-
Time of concentration	25	min
Long term reliable infiltration rate	0.00	in/hr
85th percentile, 24-hour depth (see hyperlink below)	1.15	in

[LA County Rainfall Depth Analysis](#)

Filterra Configuration (Select from Drop-Down)	Peak Diversion
Refer to "Filterra Configurations" tab for descriptions and standard details for download.	

Constants		
LAX Airport 85th Percentile, 24-hour depth (for reference only)	1.02	in
Filterra hydraulic loading capacity	1.45	gpm/ft ²

Outputs		
Stormwater Quality Design Volume	2,763	ft ³
Design Rainfall Intensity for Equivalent Long Term Capture	0.328	in/hr
Site Scaling Factor	1.13	-
Stormwater Quality Design Flow Rate	0.25	cfs
Design Alternatives Available	Stand Alone Filterra Permitted	

Design Recommendations		
<i>Primary Recommendation - Stand Alone Filterra</i>		
Adjusted Filterra Design Intensity	0.355	in/hr
Stormwater Quality Design Flow Rate	0.27	cfs
Required Filterra Area	83	ft ²
Filterra Model ID	FTPD 8x10.5	
<i>Alternative Recommendation - Filterra + Infiltration Storage</i>		
Required Filterra Area	77	ft ²
Filterra Model ID	FTPD 8x10.5	
ChamberMaxx volume	0	ft ³
ChamberMaxx count	0	chambers

To be consistent with approval of the Filterra Bioretention System as an alternative biofiltration specification granted by the Los Angeles Regional Water Quality Control Board on October 9, 2017, Filterra use is subject to the following conditions:

- Filterra systems must be designed and sized following the methodology in Section 4 of the August 2015 report prepared by Geosyntec Consultants, entitled "Filterra Equivalency Analysis and Design Criteria" which is the basis for this design tool.
- Filterra systems use an engineered biofiltration media. Filterra systems, including the engineered biofiltration media, must be provided by the manufacturer. No substitution of materials/media is allowed.
- Filterra is only applicable as an alternative on-site biofiltration design in situations where a project applicant has demonstrated that it is technically infeasible to retain 100 percent of the SWQDv on-site.
- Hydromodification requirements of Section VI.D.7.c.iv of the Los Angeles County MS4 Permit must be considered separately regardless of what type of biofiltration is used.
- Operation and maintenance of Filterra systems must be conducted consistent with the recommendations in the Filterra maintenance manual provided by Contech Engineered Solutions.
- In the area governed by the Los Angeles Region Phase I stormwater permit, conventional biofilters must be sized to treat 1.5X the SWQDV. This results in an average annual capture rate of 93%. Filterra systems sized using this tool will also treat at least 93% of the average annual runoff volume.

Peak Flow Hydrologic Analysis

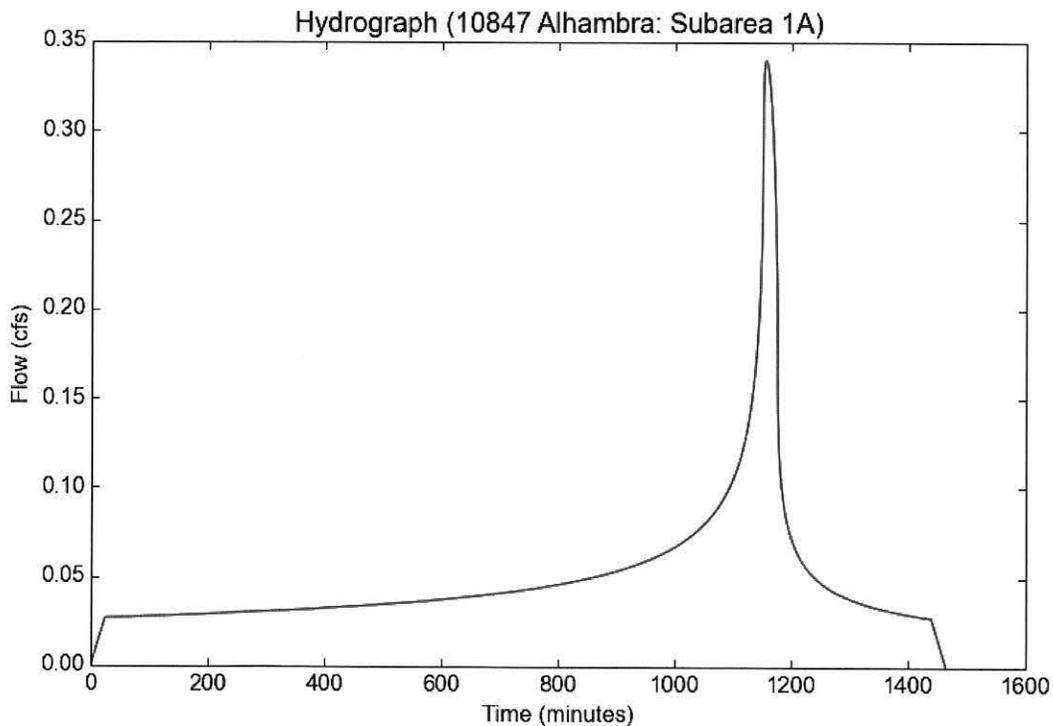
File location: P:/10000s/10847/doc/2016 Expansion/Drainage/10847 Alhambra Hydrocalc 2018-1-3.pdf
Version: HydroCalc 1.0.2

Input Parameters

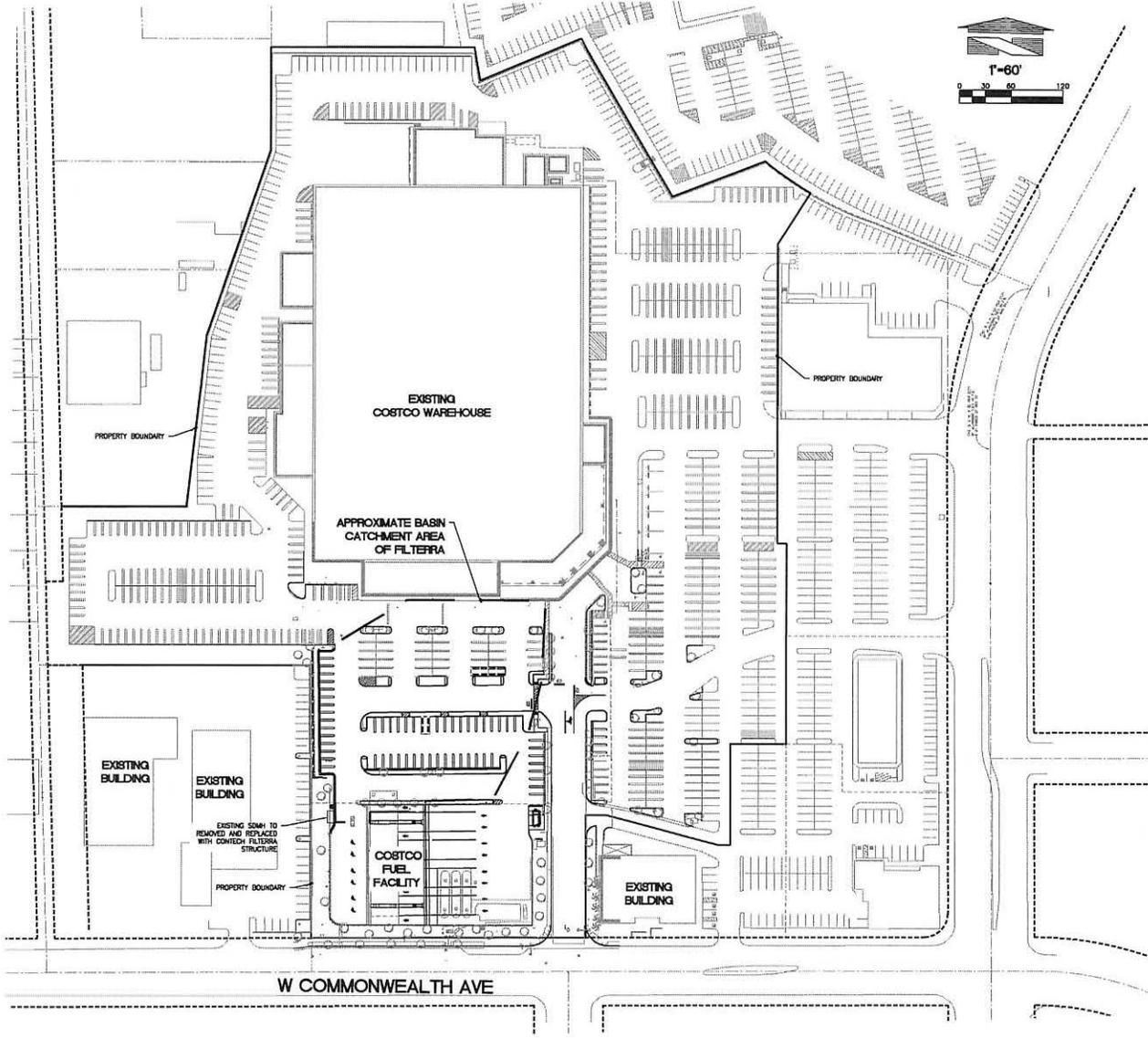
Project Name	10847 Alhambra
Subarea ID	Subarea 1A
Area (ac)	1.25
Flow Path Length (ft)	600.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	1.15
Percent Impervious	0.93
Soil Type	13
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.15
Peak Intensity (in/hr)	0.322
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.844
Time of Concentration (min)	25.0
Clear Peak Flow Rate (cfs)	0.3397
Burned Peak Flow Rate (cfs)	0.3397
24-Hr Clear Runoff Volume (ac-ft)	0.1003
24-Hr Clear Runoff Volume (cu-ft)	4367.7347



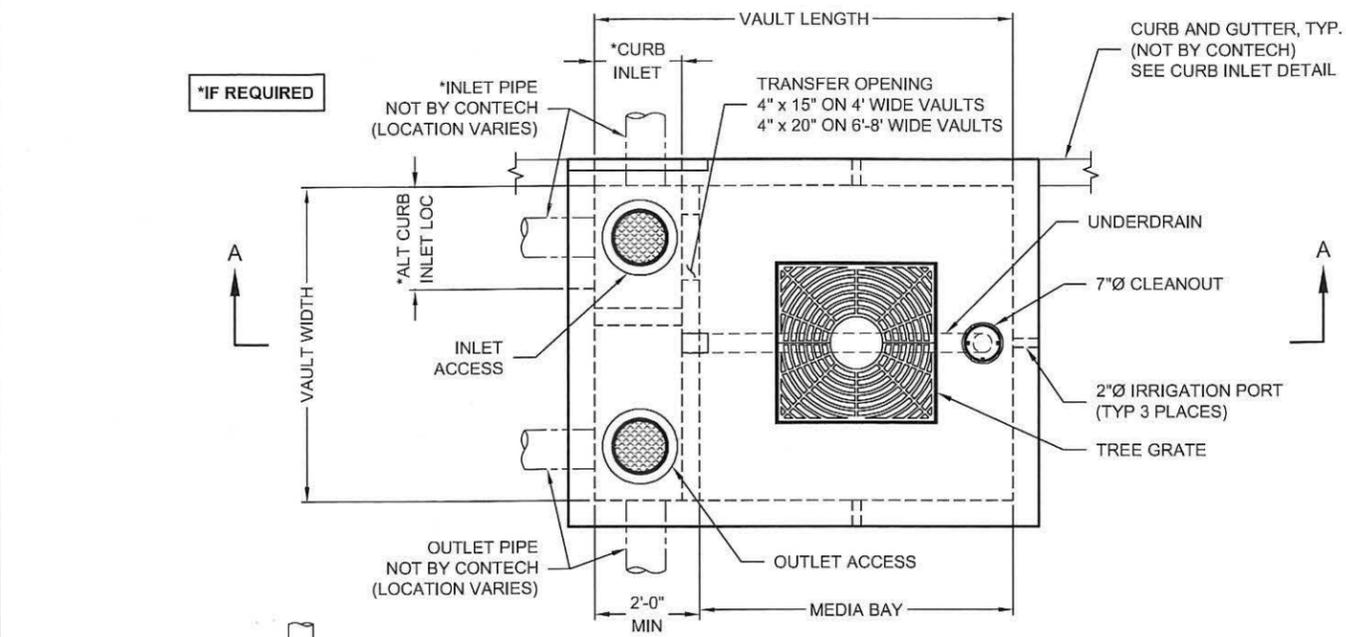
OVERALL SITE PLAN
COSTCO WHOLESALE FUEL FACILITY EXPANSION
2207 WEST COMMONWEALTH AVENUE, ALHAMBRA, CA 91803
COSTCO FACILITY #428



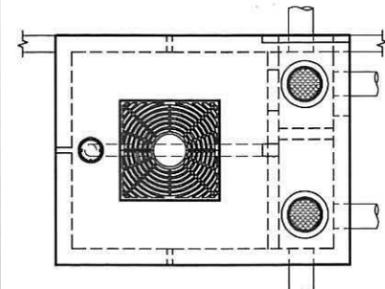
PROJECT DATA:
 PROJECT ADDRESS: 2207 WEST COMMONWEALTH AVENUE, ALHAMBRA, CA 91803
 JURISDICTION: CITY OF ALHAMBRA
 APN: 0342-010-015

Job Number 10847	Sheet 1 of 2	 Borchhausen Environmental Services 18215 72ND AVENUE SOUTH KENT, WA 98032 (425) 251-5222 FAX (425) 251-5722 FAX CIVIL, ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES	Designer: JDE Designer: JDE Checked: JDE Approved: JDE Date: 08/03/2018	Scale: Horizontal: N/A Vertical: N/A	NOT FOR CONSTRUCTION	For: COSTCO GASOLINE COSTCO WHOLESALE 999 LAKE DRIVE ISSAQUAH, WA 98027	Title: OVERALL SITE PLAN 2207 WEST COMMONWEALTH AVENUE ALHAMBRA, CA 91803 COSTCO LOCATION #428
			Date: 08/03/2018 No. 1 Date: 08/03/2018 No. 1 Date: 08/03/2018 No. 1 Date: 08/03/2018 No. 1	Scale: 1"=60' Date: 08/03/2018 No. 1			

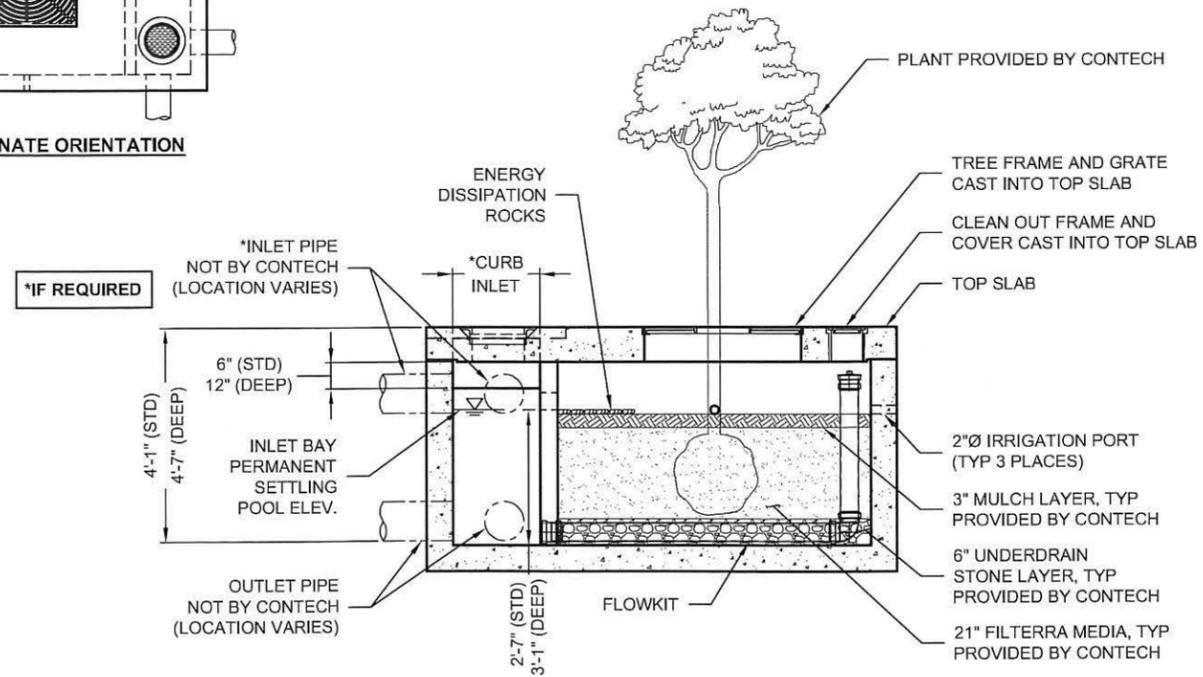
I:\COMMUNICATIONS\TREATMENT\54 FILTERRA\40 STANDARD DRAWINGS\FTPD - PEAK DIVERSION\FTPD LAYOUT DETAILS\DWG\FTPD - FILTERRA PEAK DIVERSION CONFIG DTL.DWG 11/16/2017 3:04 PM



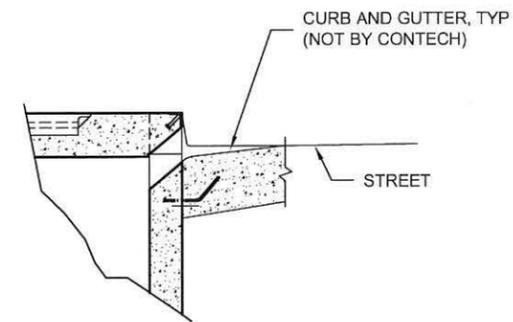
PLAN VIEW



ALTERNATE ORIENTATION



**SECTION A-A
(STANDARD DEPTH SHOWN)**



CURB INLET DETAIL

INTERNAL PIPE CONFIGURATION MAY VARY
DEPENDING UPON OUTLET LOCATION.



THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 8,277,274; 8,988,321; 7,952,485; 7,453,261; 7,831,412; RELATED FOREIGN PATENTS.

FTPD STANDARD HEIGHT CONFIGURATION							
DESIGNATION (OPTIONS: -P, -T, -PT)	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR LENGTH/ MAX CURB OPENING	*MAX BYPASS FLOW (CFS)	INLET/ OUTLET ACCESS DIA	TREE GRATE QTY & SIZE
FTPD0404	N/A CA	4 x 4	4 x 6	1'-8"	1.4	12"/12"	(1) 3' x 3'
FTPD04045	CA ONLY	4 x 4.5	4 x 6.5	1'-8"	1.4	12"/12"	(1) 3' x 3'
FTPD0406	N/A MID-ATL	4 x 6	4 x 8	1'-8"	1.4	12"/12"	(1) 3' x 3'
FTPD045058	MID-ATL ONLY	4.5 x 5.83	4.5 x 7.83	1'-8"	1.4	12"/12"	(1) 3' x 3'
FTPD0604	ALL	6 x 4	6 x 6	1'-8"	1.4	12"/12"	(1) 3' x 3'
FTPD0606	ALL	6 x 6	6 x 8	1'-8"	1.4	12"/12"	(1) 3' x 3'
FTPD0608	ALL	6 x 8	6 x 10	1'-8"	1.4	12"/12"	(1) 4' x 4'
FTPD0610	ALL	6 x 10	6 x 12	1'-8"	1.4	12"/12"	(1) 4' x 4'
FTPD0710	ALL	7 x 10	7 x 13	2'-6"	2.1	24"/24"	(1) 4' x 4'
FTPD08105	ALL	8 x 10.5	8 x 14	3'-0"	2.5	24"/24"	(1) 4' x 4'
FTPD08125	ALL	8 x 12.5	8 x 16	3'-0"	2.5	24"/24"	(2) 4' x 4'

N/A = NOT AVAILABLE

FTPD-D DEEP OPTION CONFIGURATION							
DESIGNATION (OPTIONS: -P, -T, -PT)	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR LENGTH/ MAX CURB OPENING	*MAX BYPASS FLOW (CFS)	INLET/ OUTLET ACCESS DIA	TREE GRATE QTY & SIZE
FTPD0404-D	N/A CA	4 x 4	4 x 6	1'-8"	4.6	12"/12"	(1) 3' x 3'
FTPD04045-D	CA ONLY	4 x 4.5	4 x 6.5	1'-8"	4.6	12"/12"	(1) 3' x 3'
FTPD0406-D	N/A MID-ATL	4 x 6	4 x 8	1'-8"	4.6	12"/12"	(1) 3' x 3'
FTPD045058-D	MID-ATL ONLY	4.5 x 5.83	4.5 x 7.83	1'-8"	4.6	12"/12"	(1) 3' x 3'
FTPD0604-D	ALL	6 x 4	6 x 6	1'-8"	4.6	12"/12"	(1) 3' x 3'
FTPD0606-D	ALL	6 x 6	6 x 8	1'-8"	4.6	12"/12"	(1) 3' x 3'
FTPD0608-D	ALL	6 x 8	6 x 10	1'-8"	4.6	12"/12"	(1) 4' x 4'
FTPD0610-D	ALL	6 x 10	6 x 12	1'-8"	4.6	12"/12"	(1) 4' x 4'
FTPD0710-D	ALL	7 x 10	7 x 13	2'-6"	6.8	24"/24"	(1) 4' x 4'
FTPD08105-D	ALL	8 x 10.5	8 x 14	3'-0"	8.2	24"/24"	(1) 4' x 4'
FTPD08125-D	ALL	8 x 12.5	8 x 16	3'-0"	8.2	24"/24"	(2) 4' x 4'

N/A = NOT AVAILABLE

*MAX BYPASS FLOW IS INTERNAL WEIR FLOW. SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE CURB INLET FLOW CAPACITY

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www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA PEAK DIVERSION (FTPD)
CONFIGURATION DETAIL