

PRELIMINARY STORMWATER CONTROL PLAN
for
JOYFIELD AT LAKEVIEW CENTER
ANTIOCH, CA

July 2025

Standard Lone Tree Ventures LP
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Attachments

Attachment A: Stormwater Control Plan Exhibit
Attachment B: BAHM (Bay Area Hydrology Model) Lone Tree Output
Attachment C: IMP Calculator Sizing Output

I. PROJECT DATA

Table 1. Project Data

Project Name/Number	Joyfield at Lakeview Center
Application Submittal Date	
Project Location	APN: 072-510-005 through 008
Name of Developer	Standard Lone Tree Ventures LP
Project Phase No.	N/A
Project Type and Description	Multi-Family Residential with 2 3-story and 5 4-story buildings to contain 233 units and 356 parking stalls
Project Watershed	West Antioch Creek Watershed
Total Project Site Area (acres)	±7.56 Acres
Total Area of Land Disturbed (acres)	±7.56 Acres
Total New Impervious Surface Area (sq. ft.)	±211,777 square feet
Total Replaced Impervious Surface Area	0 square feet
Total Pre-Project Impervious Surface Area	0 square feet
Total Post-Project Impervious Surface Area	±211,777 square feet
50% Rule[*]	Doesn't Apply
Project Density	30.8 Dwelling Unit/Acres
Applicable Special Project Categories	None
Percent LID and non-LID treatment	100% of Proposed Impervious Area treated by Flow through Planters
HM Compliance [†]	Applies

[*50% rule applies if:

Total Replaced Impervious Surface Area > 0.5 x Pre-Project Impervious Surface Area]

[†HM required (unless project meets one of the exemptions in *Guidebook Chapter 1 – Hydromodification Management Requirements – Exemptions*) if:

(Total New Impervious Surface Area + Total Replaced Impervious Surface Area) ≥ 1 acre]

II. SETTING

II.A.Project Location and Description

Joyfield at Lakeview Center is located in Antioch, CA, along Lone Tree Way. The project is bounded between Bluerock Dr on the south end of Lone Tree Way, and James Donlon Blvd / Ridgerock Dr

on the north end of Lone Tree Way. It lies on the west side of Lone Tree Way and directly borders a residential neighborhood along S Royal Links Circle. The project is within the PR-Proposed Development zoning and consists of 2 3-story buildings and 5 4-story buildings with 233 multi-family housing units and 356 parking stalls.

Vicinity Map



II.B. Existing Site Features and Conditions

The existing site consists of a hilly landscape area with slopes ranging from 1-35%. Currently, the site drains via sheet flow to the existing storm drain infrastructure along Lone Tree Way and within the existing shopping center on the southeast corner of the property. Existing flows from the west side of the site ultimately drain south along an existing paved road and end up draining to the Antioch Municipal Reservoir, directly south of the project site.

The existing pervious conditions of the site account for 100% of the site at 7.56 acres ±, consisting of hydrologic soil group D. The existing soil types consist of lean and fat clay with variable amounts of sand varying in thickness from approximately 0 to 9 ½ feet underlain by interbedded layers of sandstone, claystone, and siltstone. No evidence of groundwater was found.

II.C. Opportunities and Constraints for Stormwater Control

The existing site currently does not take in any additional off-site flows due to its topography. The site consists of 7 proposed buildings, with a large parking area providing 356 total parking stalls. The

primary constraints for stormwater control on the site are space for the required flow through planter treatment areas as well as the grading and natural hilly landscape. Due to the high variation in elevation, the flow through planters were spread further apart and made smaller so they could fit within the footprint of the site.

There are 14 proposed flow through planter treatment areas all varying in size. All treated stormwater is sent to the existing storm drain infrastructure along Lone Tree Way and within the existing drive aisle within the shopping center located on the southeast corner of the site. The drainage areas and their designated flow through planters can be seen on Attachment A. The site has been strategically designed to ensure the maximum amount of pervious landscaping is included, and the amount of impervious area is limited to only what is required for the site. Approximately 26% of the site accounts for pervious landscape, and approximately 74% accounts for impervious surface, which includes concrete, asphalt, and building roof.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A.Optimization of Site Layout

The proposed drainage design utilizes a combination of 14 proposed flow through planters and self-treating landscaped areas, as outlined in Attachment A – Stormwater Control Plan. Stormwater directed to the flow through planters will be treated prior to discharge within the existing storm drain infrastructure along Lone Tree Way and the existing drive aisle within the shopping center located on the southeast corner of the site. Landscaping areas have been maximized to support self-treating functions, contributing to an overall low-impact, sustainable stormwater management strategy.

III.B.Bioretention or other Integrated Management Practices (IMPS)

The geotechnical report recommends no infiltration on site. Therefore, to treat site runoff, flow through planters are implemented as the treatment sites for this project. In addition to adhering to the 4% sizing requirement outlined in the Contra Costa County C.3 Guidebook, the flow through planter facilities were designed using the Bay Area Hydrology Model (BAHM) to satisfy hydromodification management requirements for the development. BAHM is a software tool for design of flow control structures to meet hydromodification management requirements for new development or redevelopment projects. This project is subject to hydromodification requirements and is required to use BAHM to demonstrate hydromodification requirements. The passing BAHM results are attached to this report in Attachment B, demonstrating hydromodification requirements. The facility was also sized using the Contra Costa Clean Water Program IMP Sizing Tool, with the corresponding output included in Attachment C.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A.Descriptions of each Drainage Management Area

Table 2. Drainage Management Areas

DMA Name	Area (SF)	Surface Type/Description	DMA Type/Drains to
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DMA 1-R	4,305	Conventional Roof	Flow through Planter
DMA 1-A	5,129	Asphalt	(IMP 1)

DMA 1-C	2,004	<i>Concrete</i>	
DMA 1-L	7,806	<i>Landscape</i>	
DMA 2-R	10,452	<i>Conventional Roof</i>	
DMA 2-A	8,505	<i>Asphalt</i>	
DMA 2-C	2,091	<i>Concrete</i>	
DMA 2-L	6,440	<i>Landscape</i>	
DMA 3-R	10,651	<i>Conventional Roof</i>	
DMA 3-A	19,095	<i>Asphalt</i>	
DMA 3-C	4,217	<i>Concrete</i>	
DMA 3-L	9,544	<i>Landscape</i>	
DMA 4-A	5,150	<i>Asphalt</i>	
DMA 4-C	433	<i>Concrete</i>	
DMA 4-L	495	<i>Landscape</i>	
DMA 5-R	4,295	<i>Conventional Roof</i>	
DMA 5-A	13,999	<i>Asphalt</i>	
DMA 5-C	2,241	<i>Concrete</i>	
DMA 5-L	7,876	<i>Landscape</i>	
DMA 6-R	1,755	<i>Conventional Roof</i>	
DMA 6-A	5,973	<i>Asphalt</i>	
DMA 6-C	681	<i>Concrete</i>	
DMA 6-L	880	<i>Landscape</i>	
DMA 7-R	2,684	<i>Conventional Roof</i>	
DMA 7-A	6,169	<i>Asphalt</i>	
DMA 7-C	1,933	<i>Concrete</i>	
DMA 7-L	2,025	<i>Landscape</i>	
DMA 8-R	7,880	<i>Conventional Roof</i>	<i>Flow through Planter</i> (IMP 2)

DMA 8-C	4,273	<i>Concrete</i>	<i>(IMP 8)</i>
DMA 8-L	17,230	<i>Landscape</i>	
DMA 9-R	13,355	<i>Conventional Roof</i>	<i>Flow through Planter</i> <i>(IMP 9)</i>
DMA 9-A	16,045	<i>Asphalt</i>	
DMA 9-C	4,139	<i>Concrete</i>	
DMA 9-L	5,150	<i>Landscape</i>	
DMA 10-A	8,510	<i>Asphalt</i>	<i>Flow through Planter</i> <i>(IMP 10)</i>
DMA 10-C	441	<i>Concrete</i>	
DMA 10-L	2,970	<i>Landscape</i>	
DMA 11-R	1,858	<i>Conventional Roof</i>	<i>Flow through Planter</i> <i>(IMP 11)</i>
DMA 11-A	6,697	<i>Asphalt</i>	
DMA 11-C	603	<i>Concrete</i>	
DMA 11-L	3,027	<i>Landscape</i>	<i>Flow through Planter</i> <i>(IMP 12)</i>
DMA 12-R	3,452	<i>Conventional Roof</i>	
DMA 12-A	3,013	<i>Asphalt</i>	
DMA 12-C	677	<i>Concrete</i>	
DMA 12-L	4,009	<i>Landscape</i>	<i>Flow through Planter</i> <i>(IMP 13)</i>
DMA 13-A	11,652	<i>Asphalt</i>	
DMA 13-C	959	<i>Concrete</i>	
DMA 13-L	2,729	<i>Landscape</i>	<i>Flow through Planter</i> <i>(IMP 14)</i>
DMA 14-R	4,140	<i>Conventional Roof</i>	
DMA 14-A	10,288	<i>Asphalt</i>	
DMA 14-C	2,033	<i>Concrete</i>	
DMA 14-L	2,419	<i>Landscape</i>	<i>Self-Treating Landscape</i>
DMA ST	29,800	<i>Self-Treating</i>	

IV.A.1.Drainage Management Area Descriptions

DMA 1, totaling 19,244 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 1 is sent to IMP 1 – Flow through Planter.

DMA 2, totaling 27,488 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 2 is sent to IMP 2 – Flow through Planter.

DMA 3, totaling 43,507 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 3 is sent to IMP 3 – Flow through Planter.

DMA 4, totaling 6,078 square feet, is composed of multiple surfaces including asphalt, concrete or hardscape, and landscaping. Runoff from DMA 4 is sent to IMP 4 – Flow through Planter.

DMA 5, totaling 28,411 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 5 is sent to IMP 5 – Flow through Planter.

DMA 6, totaling 9,289 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 6 is sent to IMP 6 – Flow through Planter.

DMA 7, totaling 12,811 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 7 is sent to IMP 7 – Flow through Planter.

DMA 8, totaling 29,383 square feet, is composed of multiple surfaces including roof, concrete or hardscape, and landscaping. Runoff from DMA 8 is sent to IMP 8 – Flow through Planter.

DMA 9, totaling 38,689 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 9 is sent to IMP 9 – Flow through Planter.

DMA 10, totaling 11,921 square feet, is composed of multiple surfaces including asphalt, concrete or hardscape, and landscaping. Runoff from DMA 10 is sent to IMP 10 – Flow through Planter.

DMA 11, totaling 12,185 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 11 is sent to IMP 11 – Flow through Planter.

DMA 12, totaling 11,151 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 12 is sent to IMP 12 – Flow through Planter.

DMA 13, totaling 15,340 square feet, is composed of multiple surfaces including asphalt, concrete or hardscape, and landscaping. Runoff from DMA 13 is sent to IMP 13 – Flow through Planter.

DMA 14, totaling 18,880 square feet, is composed of multiple surfaces including roof, asphalt, concrete or hardscape, and landscaping. Runoff from DMA 14 is sent to IMP 14 – Flow through Planter.

DMA ST, totaling 29,800 square feet, drains by self-treating landscape.

IV.B.Integrated Management Practice Descriptions

The IMPs for the site are flow through planters (as shown on Attachment A). The flow through planters are designed with a minimum ponding depth of 6", minimum 2" of freeboard, a flow through planter soil mix depth of 18" and a minimum base rock depth of 12".

IV.C.Tabulation and Sizing Calculations

The flow through planters (IMP 1-11) have been sized and designed based on the 4% sizing rule under the Contra Costa County C3 guidebook as well as the Contra Costa Clean Water Program IMP Sizing Tool. The output from the IMP Sizing Tool is provided in Attachment C. In addition, the facility was modeled using the Bay Area Hydrology Model (BAHM) to meet hydromodification management requirements. BAHM is a software tool for design of flow control structures to meet hydromodification management requirements for new development or redevelopment projects. This project is subject to hydromodification requirements and is required to use BAHM to demonstrate hydromodification requirements. The passing BAHM results are attached to this report in Attachment B, demonstrating hydromodification requirements.

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

Potential sources of pollutants may include on-site dumping into storm drain inlets, the need for future or structural pest control, landscape/outdoor pesticide use, unprotected materials used for roofing, gutters and trim, air conditioning condensation, streets and sidewalk debris, and trash enclosures. To account for these potential sources, the source control table below lists control opportunities.

V.B.Source Control Table

Table 3. Source Controls

Potential source of runoff pollutants	Permanent source control BMPs	Operational source control BMPs
On-site dumping into storm drain inlets	All accessible on-site inlets require stainless steel markers with statement "No Dumping – Drains to Creek"	Markings will be periodically replaced. Inlets and pipes conveying stormwater to BMPs will be inspected and maintained as part of BMP Operation and Maintenance Plan.
Need for future indoor or structural pest control		Integrated Pest Management (IPM) information will be provided to property owners.
Landscape/outdoor pesticide use	Final landscape plans will: Be designed to minimize irrigation and runoff and to minimize use of fertilizers and pesticides that can contribute to stormwater pollution. Specific plantings within flow through planter areas and swales	Landscape will be maintained using minimum or no pesticides. IPM information will be provided to property owners

	<p>that are tolerant of the sandy loam soil and periodic inundation.</p> <p>Include pest-resistant plants.</p> <p>Include plantings appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.</p>	
Roofing, gutters and Trim	Do not utilize roofing, gutter or architecture trim materials made of copper or other unprotected materials that would leach into the storm water runoff.	
Air conditioning	Air conditioner condensation shall be directed to landscaped areas or plumbed to the sanitary sewer.	
Streets and Sidewalks		Sweep streets and sidewalks to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer, not to the storm drain.
Trash enclosures	Minimize stormwater pollutants of concern in urban runoff by plumbing to the sanitary sewer system.	

VI. STORMWATER FACILITY MAINTENANCE

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

The ownership and responsibility for maintenance of the facilities will be:

Standard Lone Tree Ventures LP

1015 18th St, NW

Washington, DC 20036

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

The maintenance requirements will be provided when approved project improvements are available.

VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 4. Construction Plan C.3 Checklist

<i>Stormwater Control Plan Page #</i>	<i>BMP Description</i>	<i>See Plan Sheet #s</i>
Attachment A	IMP 1-14 – Flow through Planter Facilities	C7.0

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2015-0049.

By

Print Name

ATTACHMENT A
STORMWATER CONTROL PLAN EXHIBIT

ATTACHMENT B
BAHM LONE TREE OUTPUT

BAHM2023

PROJECT REPORT

General Model Information

BAHM2023 Project Name: 24-1054 BAHM Project_250715

Site Name: Lone Tree

Site Address: Lone Tree Way

City: Antioch

Report Date: 7/15/2025

Gage: Los Medanos

Data Start: 1974/10/01

Data End: 2021/09/30

Timestep: Hourly

Precip Scale: 1.000

Version Date: 2024/06/19

POC Thresholds

Low Flow Threshold for POC1: 10 Percent of the 2 Year

High Flow Threshold for POC1: 10 Year

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Landuse Basin Data

Pre-Project Land Use

Basin 1

Bypass: No

GroundWater: No

Pervious Land Use	acre
C D,Grass,Flat(0-5%)	1.13
C D,Grass,Mod(5-10%)	3.39
C D,Grass,Ste(10-20)	0.7
C D,Grass,Very(>20%)	2.34

Pervious Total 7.56

Impervious Land Use acre

Impervious Total 0

Basin Total 7.56

Element Flow Components:

Surface Interflow

Componant Flows To:

POC 1 POC 1

Groundwater

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Mitigated Land Use

Basin 7

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.05
Pervious Total	0.05
Impervious Land Use Roads,Flat(0-5%)	acre 0.14
Roof Area	0.06
Sidewalks,Flat(0-5%)	0.04
Impervious Total	0.24
Basin Total	0.29

Element Flow Components:
Surface Interflow
Componant Flows To:
F T Plante Surface 7

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Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.15
Pervious Total	0.15
Impervious Land Use Roads,Flat(0-5%)	acre 0.2
Roof Area	0.24
Sidewalks,Flat(0-5%)	0.05
Impervious Total	0.49
Basin Total	0.64

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface 2

Groundwater

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Basin 3

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.22
Pervious Total	0.22
Impervious Land Use Roads,Flat(0-5%)	acre 0.27
Roads,Mod(5-10%)	0.16
Roof Area	0.24
Sidewalks,Flat(0-5%)	0.1
Impervious Total	0.77
Basin Total	0.99

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface 3

Groundwater

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Basin 4

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.01
Pervious Total	0.01
Impervious Land Use Roads,Flat(0-5%) Sidewalks,Flat(0-5%)	acre 0.12 0.01
Impervious Total	0.13
Basin Total	0.14

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface 4

Groundwater

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Basin 14

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.06
Pervious Total	0.06
Impervious Land Use Roads,Flat(0-5%)	acre 0.24
Roof Area	0.1
Sidewalks,Flat(0-5%)	0.05
Impervious Total	0.39
Basin Total	0.45

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface14

Groundwater

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Basin 13

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.06
Pervious Total	0.06
Impervious Land Use Roads,Flat(0-5%) Roads,Mod(5-10%) Sidewalks,Flat(0-5%)	acre 0.17 0.1 0.02
Impervious Total	0.29
Basin Total	0.35

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface13

Groundwater

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Basin 8

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.4
Pervious Total	0.4
Impervious Land Use Roof Area Sidewalks,Flat(0-5%)	acre 0.18 0.1
Impervious Total	0.28
Basin Total	0.68

Element Flow Components:

Surface Interflow
Componant Flows To:
F T Plante Surface 8

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Basin 12

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.09
Pervious Total	0.09
Impervious Land Use Roads,Mod(5-10%)	acre 0.07
Roof Area	0.08
Sidewalks,Flat(0-5%)	0.02
Impervious Total	0.17
Basin Total	0.26

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface12

Groundwater

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Basin 10

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.07
Pervious Total	0.07
Impervious Land Use Roads,Mod(5-10%) Sidewalks,Flat(0-5%)	acre 0.2 0.01
Impervious Total	0.21
Basin Total	0.28

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface10

Groundwater

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Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.18
Pervious Total	0.18
Impervious Land Use Roads,Flat(0-5%)	acre 0.12
Roof Area	0.1
Sidewalks,Flat(0-5%)	0.05
Impervious Total	0.27
Basin Total	0.45

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface 1

Groundwater

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Basin 5

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.18
Pervious Total	0.18
Impervious Land Use Roads,Flat(0-5%)	acre 0.32
Roof Area	0.1
Sidewalks,Flat(0-5%)	0.05
Impervious Total	0.47
Basin Total	0.65

Element Flow Components:

Surface	Interflow	Groundwater
Componant Flows To:		
F T Plante Surface 5	F T Plante Surface 5	

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Basin 9

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.12
Pervious Total	0.12
Impervious Land Use Roads,Flat(0-5%)	acre 0.32
Roads,Mod(5-10%)	0.04
Roof Area	0.31
Sidewalks,Flat(0-5%)	0.09
Sidewalks,Mod(5-10%)	0.01
Impervious Total	0.77
Basin Total	0.89

Element Flow Components:
Surface Interflow
Componant Flows To:
F T Plante Surface 9

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graph TD; Surface --> Groundwater; Interflow --> Groundwater; F --> Groundwater; T --> Groundwater; Plante --> Groundwater;
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Basin 6

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.02
Pervious Total	0.02
Impervious Land Use Roads,Flat(0-5%)	acre 0.14
Roof Area	0.04
Sidewalks,Flat(0-5%)	0.02
Impervious Total	0.2
Basin Total	0.22

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface 6

Groundwater

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Basin 11

Bypass:	No
GroundWater:	No
Pervious Land Use C D,Grass,Flat(0-5%)	acre 0.07
Pervious Total	0.07
Impervious Land Use Roads,Mod(5-10%)	acre 0.15
Roof Area	0.04
Sidewalks,Flat(0-5%)	0.01
Impervious Total	0.2
Basin Total	0.27

Element Flow Components:

Surface Interflow

Componant Flows To:

F T Plante Surface11

Groundwater

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Routing Elements

Pre-Project Routing

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Mitigated Routing

F T Planter 7

Bottom Length:	32.00 ft.
Bottom Width:	14.88 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	7.23
Total Outflow (ac-ft.):	8.488
Percent Through Underdrain:	85.18
Discharge Structure	
Riser Height:	1.25 ft.
Riser Diameter:	12 in.
Element Outlets:	
Outlet 1	Outlet 2
Outlet Flows To:	

Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0109	0.0000	0.0000	0.0000
0.0549	0.0109	0.0002	0.0000	0.0000
0.1099	0.0109	0.0005	0.0000	0.0000
0.1648	0.0109	0.0007	0.0000	0.0000
0.2198	0.0109	0.0009	0.0000	0.0000
0.2747	0.0109	0.0011	0.0000	0.0000
0.3297	0.0109	0.0014	0.0000	0.0000
0.3846	0.0109	0.0016	0.0000	0.0000
0.4396	0.0109	0.0018	0.0000	0.0000
0.4945	0.0109	0.0021	0.0000	0.0000
0.5495	0.0109	0.0023	0.0000	0.0000
0.6044	0.0109	0.0025	0.0000	0.0000
0.6593	0.0109	0.0027	0.0000	0.0000
0.7143	0.0109	0.0030	0.0000	0.0000
0.7692	0.0109	0.0032	0.0000	0.0000
0.8242	0.0109	0.0034	0.0000	0.0000
0.8791	0.0109	0.0037	0.0000	0.0000
0.9341	0.0109	0.0039	0.0000	0.0000
0.9890	0.0109	0.0041	0.0000	0.0000
1.0440	0.0109	0.0043	0.0000	0.0000
1.0989	0.0109	0.0046	0.0000	0.0000
1.1538	0.0109	0.0048	0.0000	0.0000
1.2088	0.0109	0.0050	0.0000	0.0000
1.2637	0.0109	0.0052	0.0000	0.0000
1.3187	0.0109	0.0055	0.0000	0.0000
1.3736	0.0109	0.0057	0.0000	0.0000
1.4286	0.0109	0.0059	0.0000	0.0000
1.4835	0.0109	0.0062	0.0000	0.0000

4.4890	0.0109	0.0261	0.0000	0.0047	0.0000
4.5440	0.0109	0.0267	0.0000	0.0047	0.0000
4.5989	0.0109	0.0273	0.0000	0.0047	0.0000
4.6538	0.0109	0.0279	0.0000	0.0047	0.0000
4.7088	0.0109	0.0285	0.0000	0.0047	0.0000
4.7637	0.0109	0.0291	0.0004	0.0047	0.0000
4.8187	0.0109	0.0297	0.0008	0.0047	0.0000
4.8736	0.0109	0.0303	0.0010	0.0047	0.0000
4.9286	0.0109	0.0309	0.0012	0.0047	0.0000
4.9835	0.0109	0.0315	0.0013	0.0047	0.0000
5.0000	0.0109	0.0317	0.0015	0.0047	0.0000

DRAFT

F T Planter 12

Bottom Length:	71.00 ft.
Bottom Width:	5.00 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	5.477
Total Outflow (ac-ft.):	6.242
Percent Through Underdrain:	87.74

Discharge Structure

Riser Height: 1.25 ft.
 Riser Diameter: 12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0081	0.0000	0.0000	0.0000
0.0549	0.0081	0.0002	0.0000	0.0000
0.1099	0.0081	0.0003	0.0000	0.0000
0.1648	0.0081	0.0005	0.0000	0.0000
0.2198	0.0081	0.0007	0.0000	0.0000
0.2747	0.0081	0.0009	0.0000	0.0000
0.3297	0.0081	0.0010	0.0000	0.0000
0.3846	0.0081	0.0012	0.0000	0.0000
0.4396	0.0081	0.0014	0.0000	0.0000
0.4945	0.0081	0.0015	0.0000	0.0000
0.5495	0.0081	0.0017	0.0000	0.0000
0.6044	0.0081	0.0019	0.0000	0.0000
0.6593	0.0081	0.0020	0.0000	0.0000
0.7143	0.0081	0.0022	0.0000	0.0000
0.7692	0.0081	0.0024	0.0000	0.0000
0.8242	0.0081	0.0026	0.0000	0.0000
0.8791	0.0081	0.0027	0.0000	0.0000
0.9341	0.0081	0.0029	0.0000	0.0000
0.9890	0.0081	0.0031	0.0000	0.0000
1.0440	0.0081	0.0032	0.0000	0.0000
1.0989	0.0081	0.0034	0.0000	0.0000
1.1538	0.0081	0.0036	0.0000	0.0000
1.2088	0.0081	0.0037	0.0000	0.0000
1.2637	0.0081	0.0039	0.0000	0.0000
1.3187	0.0081	0.0041	0.0000	0.0000
1.3736	0.0081	0.0043	0.0000	0.0000
1.4286	0.0081	0.0044	0.0000	0.0000
1.4835	0.0081	0.0046	0.0000	0.0000
1.5385	0.0081	0.0048	0.0000	0.0000
1.5934	0.0081	0.0050	0.0000	0.0000

4.5989	0.0081	0.0204	0.0000	0.0047	0.0000
4.6538	0.0081	0.0208	0.0000	0.0047	0.0000
4.7088	0.0081	0.0213	0.0000	0.0047	0.0000
4.7637	0.0081	0.0217	0.0004	0.0047	0.0000
4.8187	0.0081	0.0222	0.0008	0.0047	0.0000
4.8736	0.0081	0.0226	0.0010	0.0047	0.0000
4.9286	0.0081	0.0231	0.0012	0.0047	0.0000
4.9835	0.0081	0.0235	0.0013	0.0047	0.0000
5.0000	0.0081	0.0236	0.0015	0.0047	0.0000

DRAFT

F T Planter 2

Bottom Length:	94.00 ft.
Bottom Width:	9.35 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	12.846
Total Outflow (ac-ft.):	17.522
Percent Through Underdrain:	73.31
Discharge Structure	
Riser Height:	1.25 ft.
Riser Diameter:	12 in.
Element Outlets:	
Outlet 1	Outlet 2
Outlet Flows To:	



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0202	0.0000	0.0000	0.0000
0.0549	0.0202	0.0004	0.0000	0.0000
0.1099	0.0202	0.0008	0.0000	0.0000
0.1648	0.0202	0.0013	0.0000	0.0000
0.2198	0.0202	0.0017	0.0000	0.0000
0.2747	0.0202	0.0021	0.0000	0.0000
0.3297	0.0202	0.0025	0.0000	0.0000
0.3846	0.0202	0.0029	0.0000	0.0000
0.4396	0.0202	0.0034	0.0000	0.0000
0.4945	0.0202	0.0038	0.0000	0.0000
0.5495	0.0202	0.0042	0.0000	0.0000
0.6044	0.0202	0.0046	0.0000	0.0000
0.6593	0.0202	0.0051	0.0000	0.0000
0.7143	0.0202	0.0055	0.0000	0.0000
0.7692	0.0202	0.0059	0.0000	0.0000
0.8242	0.0202	0.0063	0.0000	0.0000
0.8791	0.0202	0.0067	0.0000	0.0000
0.9341	0.0202	0.0072	0.0000	0.0000
0.9890	0.0202	0.0076	0.0000	0.0000
1.0440	0.0202	0.0080	0.0000	0.0000
1.0989	0.0202	0.0084	0.0000	0.0000
1.1538	0.0202	0.0088	0.0000	0.0000
1.2088	0.0202	0.0093	0.0000	0.0000
1.2637	0.0202	0.0097	0.0000	0.0000
1.3187	0.0202	0.0101	0.0000	0.0000
1.3736	0.0202	0.0105	0.0000	0.0000
1.4286	0.0202	0.0110	0.0000	0.0000
1.4835	0.0202	0.0114	0.0000	0.0000
1.5385	0.0202	0.0118	0.0000	0.0000
1.5934	0.0202	0.0123	0.0000	0.0000

4.5989	0.0202	0.0504	0.0000	0.0047	0.0000
4.6538	0.0202	0.0515	0.0000	0.0047	0.0000
4.7088	0.0202	0.0526	0.0000	0.0047	0.0000
4.7637	0.0202	0.0538	0.0004	0.0047	0.0000
4.8187	0.0202	0.0549	0.0008	0.0047	0.0000
4.8736	0.0202	0.0560	0.0010	0.0047	0.0000
4.9286	0.0202	0.0571	0.0012	0.0047	0.0000
4.9835	0.0202	0.0582	0.0013	0.0047	0.0000
5.0000	0.0202	0.0585	0.0015	0.0047	0.0000

DRAFT

F T Planter 3

Bottom Length:	47.00 ft.
Bottom Width:	34.23 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	18.875
Total Outflow (ac-ft.):	27.431
Percent Through Underdrain:	68.81

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0369	0.0000	0.0000	0.0000
0.0549	0.0369	0.0008	0.0000	0.0000
0.1099	0.0369	0.0015	0.0000	0.0000
0.1648	0.0369	0.0023	0.0000	0.0000
0.2198	0.0369	0.0031	0.0000	0.0000
0.2747	0.0369	0.0039	0.0000	0.0000
0.3297	0.0369	0.0046	0.0000	0.0000
0.3846	0.0369	0.0054	0.0000	0.0000
0.4396	0.0369	0.0062	0.0000	0.0000
0.4945	0.0369	0.0069	0.0000	0.0000
0.5495	0.0369	0.0077	0.0000	0.0000
0.6044	0.0369	0.0085	0.0000	0.0000
0.6593	0.0369	0.0093	0.0000	0.0000
0.7143	0.0369	0.0100	0.0000	0.0000
0.7692	0.0369	0.0108	0.0000	0.0000
0.8242	0.0369	0.0116	0.0000	0.0000
0.8791	0.0369	0.0123	0.0000	0.0000
0.9341	0.0369	0.0131	0.0000	0.0000
0.9890	0.0369	0.0139	0.0000	0.0000
1.0440	0.0369	0.0147	0.0000	0.0000
1.0989	0.0369	0.0154	0.0000	0.0000
1.1538	0.0369	0.0162	0.0000	0.0000
1.2088	0.0369	0.0170	0.0000	0.0000
1.2637	0.0369	0.0177	0.0000	0.0000
1.3187	0.0369	0.0185	0.0000	0.0000
1.3736	0.0369	0.0193	0.0000	0.0000
1.4286	0.0369	0.0201	0.0000	0.0000
1.4835	0.0369	0.0208	0.0000	0.0000
1.5385	0.0369	0.0217	0.0000	0.0000
1.5934	0.0369	0.0225	0.0000	0.0000

4.5989	0.0369	0.0923	0.0000	0.0047	0.0000
4.6538	0.0369	0.0944	0.0000	0.0047	0.0000
4.7088	0.0369	0.0964	0.0000	0.0047	0.0000
4.7637	0.0369	0.0984	0.0004	0.0047	0.0000
4.8187	0.0369	0.1004	0.0008	0.0047	0.0000
4.8736	0.0369	0.1025	0.0010	0.0047	0.0000
4.9286	0.0369	0.1045	0.0012	0.0047	0.0000
4.9835	0.0369	0.1065	0.0013	0.0047	0.0000
5.0000	0.0369	0.1071	0.0015	0.0047	0.0000

DRAFT

F T Planter 4

Bottom Length:	57.00 ft.
Bottom Width:	7.00 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	4.297
Total Outflow (ac-ft.):	4.486
Percent Through Underdrain:	95.79

Discharge Structure

Riser Height: 1.25 ft.
Riser Diameter: 12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0092	0.0000	0.0000	0.0000
0.0549	0.0092	0.0002	0.0000	0.0000
0.1099	0.0092	0.0004	0.0000	0.0000
0.1648	0.0092	0.0006	0.0000	0.0000
0.2198	0.0092	0.0008	0.0000	0.0000
0.2747	0.0092	0.0010	0.0000	0.0000
0.3297	0.0092	0.0011	0.0000	0.0000
0.3846	0.0092	0.0013	0.0000	0.0000
0.4396	0.0092	0.0015	0.0000	0.0000
0.4945	0.0092	0.0017	0.0000	0.0000
0.5495	0.0092	0.0019	0.0000	0.0000
0.6044	0.0092	0.0021	0.0000	0.0000
0.6593	0.0092	0.0023	0.0000	0.0000
0.7143	0.0092	0.0025	0.0000	0.0000
0.7692	0.0092	0.0027	0.0000	0.0000
0.8242	0.0092	0.0029	0.0000	0.0000
0.8791	0.0092	0.0031	0.0000	0.0000
0.9341	0.0092	0.0033	0.0000	0.0000
0.9890	0.0092	0.0034	0.0000	0.0000
1.0440	0.0092	0.0036	0.0000	0.0000
1.0989	0.0092	0.0038	0.0000	0.0000
1.1538	0.0092	0.0040	0.0000	0.0000
1.2088	0.0092	0.0042	0.0000	0.0000
1.2637	0.0092	0.0044	0.0000	0.0000
1.3187	0.0092	0.0046	0.0000	0.0000
1.3736	0.0092	0.0048	0.0000	0.0000
1.4286	0.0092	0.0050	0.0000	0.0000
1.4835	0.0092	0.0052	0.0000	0.0000
1.5385	0.0092	0.0054	0.0000	0.0000
1.5934	0.0092	0.0056	0.0000	0.0000

4.5989	0.0092	0.0229	0.0000	0.0047	0.0000
4.6538	0.0092	0.0234	0.0000	0.0047	0.0000
4.7088	0.0092	0.0239	0.0000	0.0047	0.0000
4.7637	0.0092	0.0244	0.0004	0.0047	0.0000
4.8187	0.0092	0.0249	0.0008	0.0047	0.0000
4.8736	0.0092	0.0254	0.0010	0.0047	0.0000
4.9286	0.0092	0.0259	0.0012	0.0047	0.0000
4.9835	0.0092	0.0264	0.0013	0.0047	0.0000
5.0000	0.0092	0.0266	0.0015	0.0047	0.0000

DRAFT

F T Planter 14

Bottom Length:	93.00 ft.
Bottom Width:	12.67 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	11.59
Total Outflow (ac-ft.):	13.543
Percent Through Underdrain:	85.58

Discharge Structure

Riser Height: 1.25 ft.
Riser Diameter: 12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0271	0.0000	0.0000	0.0000
0.0549	0.0271	0.0006	0.0000	0.0000
0.1099	0.0271	0.0011	0.0000	0.0000
0.1648	0.0271	0.0017	0.0000	0.0000
0.2198	0.0271	0.0023	0.0000	0.0000
0.2747	0.0271	0.0028	0.0000	0.0000
0.3297	0.0271	0.0034	0.0000	0.0000
0.3846	0.0271	0.0040	0.0000	0.0000
0.4396	0.0271	0.0045	0.0000	0.0000
0.4945	0.0271	0.0051	0.0000	0.0000
0.5495	0.0271	0.0056	0.0000	0.0000
0.6044	0.0271	0.0062	0.0000	0.0000
0.6593	0.0271	0.0068	0.0000	0.0000
0.7143	0.0271	0.0073	0.0000	0.0000
0.7692	0.0271	0.0079	0.0000	0.0000
0.8242	0.0271	0.0085	0.0000	0.0000
0.8791	0.0271	0.0090	0.0000	0.0000
0.9341	0.0271	0.0096	0.0000	0.0000
0.9890	0.0271	0.0102	0.0000	0.0000
1.0440	0.0271	0.0107	0.0000	0.0000
1.0989	0.0271	0.0113	0.0000	0.0000
1.1538	0.0271	0.0119	0.0000	0.0000
1.2088	0.0271	0.0124	0.0000	0.0000
1.2637	0.0271	0.0130	0.0000	0.0000
1.3187	0.0271	0.0136	0.0000	0.0000
1.3736	0.0271	0.0141	0.0000	0.0000
1.4286	0.0271	0.0147	0.0000	0.0000
1.4835	0.0271	0.0152	0.0000	0.0000
1.5385	0.0271	0.0159	0.0000	0.0000
1.5934	0.0271	0.0165	0.0000	0.0000

4.5989	0.0271	0.0676	0.0000	0.0047	0.0000
4.6538	0.0271	0.0691	0.0000	0.0047	0.0000
4.7088	0.0271	0.0706	0.0000	0.0047	0.0000
4.7637	0.0271	0.0721	0.0004	0.0047	0.0000
4.8187	0.0271	0.0736	0.0008	0.0047	0.0000
4.8736	0.0271	0.0750	0.0010	0.0047	0.0000
4.9286	0.0271	0.0765	0.0012	0.0047	0.0000
4.9835	0.0271	0.0780	0.0013	0.0047	0.0000
5.0000	0.0271	0.0785	0.0015	0.0047	0.0000

DRAFT

F T Planter 13

Bottom Length:	31.00 ft.
Bottom Width:	24.13 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	8.872
Total Outflow (ac-ft.):	10.248
Percent Through Underdrain:	86.57

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0172	0.0000	0.0000	0.0000
0.0549	0.0172	0.0004	0.0000	0.0000
0.1099	0.0172	0.0007	0.0000	0.0000
0.1648	0.0172	0.0011	0.0000	0.0000
0.2198	0.0172	0.0014	0.0000	0.0000
0.2747	0.0172	0.0018	0.0000	0.0000
0.3297	0.0172	0.0022	0.0000	0.0000
0.3846	0.0172	0.0025	0.0000	0.0000
0.4396	0.0172	0.0029	0.0000	0.0000
0.4945	0.0172	0.0032	0.0000	0.0000
0.5495	0.0172	0.0036	0.0000	0.0000
0.6044	0.0172	0.0039	0.0000	0.0000
0.6593	0.0172	0.0043	0.0000	0.0000
0.7143	0.0172	0.0047	0.0000	0.0000
0.7692	0.0172	0.0050	0.0000	0.0000
0.8242	0.0172	0.0054	0.0000	0.0000
0.8791	0.0172	0.0057	0.0000	0.0000
0.9341	0.0172	0.0061	0.0000	0.0000
0.9890	0.0172	0.0065	0.0000	0.0000
1.0440	0.0172	0.0068	0.0000	0.0000
1.0989	0.0172	0.0072	0.0000	0.0000
1.1538	0.0172	0.0075	0.0000	0.0000
1.2088	0.0172	0.0079	0.0000	0.0000
1.2637	0.0172	0.0082	0.0000	0.0000
1.3187	0.0172	0.0086	0.0000	0.0000
1.3736	0.0172	0.0090	0.0000	0.0000
1.4286	0.0172	0.0093	0.0000	0.0000
1.4835	0.0172	0.0097	0.0000	0.0000
1.5385	0.0172	0.0101	0.0000	0.0000
1.5934	0.0172	0.0105	0.0000	0.0000

4.5989	0.0172	0.0429	0.0000	0.0047	0.0000
4.6538	0.0172	0.0439	0.0000	0.0047	0.0000
4.7088	0.0172	0.0448	0.0000	0.0047	0.0000
4.7637	0.0172	0.0458	0.0004	0.0047	0.0000
4.8187	0.0172	0.0467	0.0008	0.0047	0.0000
4.8736	0.0172	0.0476	0.0010	0.0047	0.0000
4.9286	0.0172	0.0486	0.0012	0.0047	0.0000
4.9835	0.0172	0.0495	0.0013	0.0047	0.0000
5.0000	0.0172	0.0498	0.0015	0.0047	0.0000

DRAFT

F T Planter 8

Bottom Length:	36.00 ft.
Bottom Width:	22.92 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	8.922
Total Outflow (ac-ft.):	11.011
Percent Through Underdrain:	81.02
Discharge Structure	
Riser Height:	1.25 ft.
Riser Diameter:	12 in.
Element Outlets:	
Outlet 1	Outlet 2
Outlet Flows To:	



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0189	0.0000	0.0000	0.0000
0.0549	0.0189	0.0004	0.0000	0.0000
0.1099	0.0189	0.0008	0.0000	0.0000
0.1648	0.0189	0.0012	0.0000	0.0000
0.2198	0.0189	0.0016	0.0000	0.0000
0.2747	0.0189	0.0020	0.0000	0.0000
0.3297	0.0189	0.0024	0.0000	0.0000
0.3846	0.0189	0.0028	0.0000	0.0000
0.4396	0.0189	0.0032	0.0000	0.0000
0.4945	0.0189	0.0036	0.0000	0.0000
0.5495	0.0189	0.0040	0.0000	0.0000
0.6044	0.0189	0.0044	0.0000	0.0000
0.6593	0.0189	0.0047	0.0000	0.0000
0.7143	0.0189	0.0051	0.0000	0.0000
0.7692	0.0189	0.0055	0.0000	0.0000
0.8242	0.0189	0.0059	0.0000	0.0000
0.8791	0.0189	0.0063	0.0000	0.0000
0.9341	0.0189	0.0067	0.0000	0.0000
0.9890	0.0189	0.0071	0.0000	0.0000
1.0440	0.0189	0.0075	0.0000	0.0000
1.0989	0.0189	0.0079	0.0000	0.0000
1.1538	0.0189	0.0083	0.0000	0.0000
1.2088	0.0189	0.0087	0.0000	0.0000
1.2637	0.0189	0.0091	0.0000	0.0000
1.3187	0.0189	0.0095	0.0000	0.0000
1.3736	0.0189	0.0099	0.0000	0.0000
1.4286	0.0189	0.0103	0.0000	0.0000
1.4835	0.0189	0.0107	0.0000	0.0000
1.5385	0.0189	0.0111	0.0000	0.0000
1.5934	0.0189	0.0115	0.0000	0.0000

4.5989	0.0189	0.0473	0.0000	0.0047	0.0000
4.6538	0.0189	0.0484	0.0000	0.0047	0.0000
4.7088	0.0189	0.0494	0.0000	0.0047	0.0000
4.7637	0.0189	0.0505	0.0004	0.0047	0.0000
4.8187	0.0189	0.0515	0.0008	0.0047	0.0000
4.8736	0.0189	0.0525	0.0010	0.0047	0.0000
4.9286	0.0189	0.0536	0.0012	0.0047	0.0000
4.9835	0.0189	0.0546	0.0013	0.0047	0.0000
5.0000	0.0189	0.0549	0.0015	0.0047	0.0000

DRAFT

F T Planter 10

Bottom Length:	35.00 ft.
Bottom Width:	11.34 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	6.525
Total Outflow (ac-ft.):	7.64
Percent Through Underdrain:	85.4

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0091	0.0000	0.0000	0.0000
0.0549	0.0091	0.0002	0.0000	0.0000
0.1099	0.0091	0.0004	0.0000	0.0000
0.1648	0.0091	0.0006	0.0000	0.0000
0.2198	0.0091	0.0008	0.0000	0.0000
0.2747	0.0091	0.0010	0.0000	0.0000
0.3297	0.0091	0.0011	0.0000	0.0000
0.3846	0.0091	0.0013	0.0000	0.0000
0.4396	0.0091	0.0015	0.0000	0.0000
0.4945	0.0091	0.0017	0.0000	0.0000
0.5495	0.0091	0.0019	0.0000	0.0000
0.6044	0.0091	0.0021	0.0000	0.0000
0.6593	0.0091	0.0023	0.0000	0.0000
0.7143	0.0091	0.0025	0.0000	0.0000
0.7692	0.0091	0.0027	0.0000	0.0000
0.8242	0.0091	0.0029	0.0000	0.0000
0.8791	0.0091	0.0030	0.0000	0.0000
0.9341	0.0091	0.0032	0.0000	0.0000
0.9890	0.0091	0.0034	0.0000	0.0000
1.0440	0.0091	0.0036	0.0000	0.0000
1.0989	0.0091	0.0038	0.0000	0.0000
1.1538	0.0091	0.0040	0.0000	0.0000
1.2088	0.0091	0.0042	0.0000	0.0000
1.2637	0.0091	0.0044	0.0000	0.0000
1.3187	0.0091	0.0046	0.0000	0.0000
1.3736	0.0091	0.0048	0.0000	0.0000
1.4286	0.0091	0.0049	0.0000	0.0000
1.4835	0.0091	0.0051	0.0000	0.0000
1.5385	0.0091	0.0053	0.0000	0.0000
1.5934	0.0091	0.0056	0.0000	0.0000

4.5989	0.0091	0.0228	0.0000	0.0047	0.0000
4.6538	0.0091	0.0233	0.0000	0.0047	0.0000
4.7088	0.0091	0.0238	0.0000	0.0047	0.0000
4.7637	0.0091	0.0243	0.0004	0.0047	0.0000
4.8187	0.0091	0.0248	0.0008	0.0047	0.0000
4.8736	0.0091	0.0253	0.0010	0.0047	0.0000
4.9286	0.0091	0.0258	0.0012	0.0047	0.0000
4.9835	0.0091	0.0263	0.0013	0.0047	0.0000
5.0000	0.0091	0.0264	0.0015	0.0047	0.0000

DRAFT

F T Planter 1

Bottom Length:	30.00 ft.
Bottom Width:	21.27 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	8.283
Total Outflow (ac-ft.):	9.948
Percent Through Underdrain:	83.26

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0146	0.0000	0.0000	0.0000
0.0549	0.0146	0.0003	0.0000	0.0000
0.1099	0.0146	0.0006	0.0000	0.0000
0.1648	0.0146	0.0009	0.0000	0.0000
0.2198	0.0146	0.0012	0.0000	0.0000
0.2747	0.0146	0.0015	0.0000	0.0000
0.3297	0.0146	0.0018	0.0000	0.0000
0.3846	0.0146	0.0021	0.0000	0.0000
0.4396	0.0146	0.0024	0.0000	0.0000
0.4945	0.0146	0.0028	0.0000	0.0000
0.5495	0.0146	0.0031	0.0000	0.0000
0.6044	0.0146	0.0034	0.0000	0.0000
0.6593	0.0146	0.0037	0.0000	0.0000
0.7143	0.0146	0.0040	0.0000	0.0000
0.7692	0.0146	0.0043	0.0000	0.0000
0.8242	0.0146	0.0046	0.0000	0.0000
0.8791	0.0146	0.0049	0.0000	0.0000
0.9341	0.0146	0.0052	0.0000	0.0000
0.9890	0.0146	0.0055	0.0000	0.0000
1.0440	0.0146	0.0058	0.0000	0.0000
1.0989	0.0146	0.0061	0.0000	0.0000
1.1538	0.0146	0.0064	0.0000	0.0000
1.2088	0.0146	0.0067	0.0000	0.0000
1.2637	0.0146	0.0070	0.0000	0.0000
1.3187	0.0146	0.0073	0.0000	0.0000
1.3736	0.0146	0.0076	0.0000	0.0000
1.4286	0.0146	0.0080	0.0000	0.0000
1.4835	0.0146	0.0083	0.0000	0.0000
1.5385	0.0146	0.0086	0.0000	0.0000
1.5934	0.0146	0.0089	0.0000	0.0000

4.5989	0.0146	0.0366	0.0000	0.0047	0.0000
4.6538	0.0146	0.0374	0.0000	0.0047	0.0000
4.7088	0.0146	0.0382	0.0000	0.0047	0.0000
4.7637	0.0146	0.0390	0.0004	0.0047	0.0000
4.8187	0.0146	0.0398	0.0008	0.0047	0.0000
4.8736	0.0146	0.0406	0.0010	0.0047	0.0000
4.9286	0.0146	0.0414	0.0012	0.0047	0.0000
4.9835	0.0146	0.0422	0.0013	0.0047	0.0000
5.0000	0.0146	0.0425	0.0015	0.0047	0.0000

DRAFT

F T Planter 5

Bottom Length:	159.00 ft.
Bottom Width:	7.00 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	13.313
Total Outflow (ac-ft.):	17.092
Percent Through Underdrain:	77.89

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0256	0.0000	0.0000	0.0000
0.0549	0.0256	0.0005	0.0000	0.0000
0.1099	0.0256	0.0011	0.0000	0.0000
0.1648	0.0256	0.0016	0.0000	0.0000
0.2198	0.0256	0.0021	0.0000	0.0000
0.2747	0.0256	0.0027	0.0000	0.0000
0.3297	0.0256	0.0032	0.0000	0.0000
0.3846	0.0256	0.0037	0.0000	0.0000
0.4396	0.0256	0.0043	0.0000	0.0000
0.4945	0.0256	0.0048	0.0000	0.0000
0.5495	0.0256	0.0053	0.0000	0.0000
0.6044	0.0256	0.0059	0.0000	0.0000
0.6593	0.0256	0.0064	0.0000	0.0000
0.7143	0.0256	0.0069	0.0000	0.0000
0.7692	0.0256	0.0075	0.0000	0.0000
0.8242	0.0256	0.0080	0.0000	0.0000
0.8791	0.0256	0.0085	0.0000	0.0000
0.9341	0.0256	0.0091	0.0000	0.0000
0.9890	0.0256	0.0096	0.0000	0.0000
1.0440	0.0256	0.0101	0.0000	0.0000
1.0989	0.0256	0.0107	0.0000	0.0000
1.1538	0.0256	0.0112	0.0000	0.0000
1.2088	0.0256	0.0117	0.0000	0.0000
1.2637	0.0256	0.0123	0.0000	0.0000
1.3187	0.0256	0.0128	0.0000	0.0000
1.3736	0.0256	0.0133	0.0000	0.0000
1.4286	0.0256	0.0139	0.0000	0.0000
1.4835	0.0256	0.0144	0.0000	0.0000
1.5385	0.0256	0.0150	0.0000	0.0000
1.5934	0.0256	0.0156	0.0000	0.0000

4.5989	0.0256	0.0639	0.0000	0.0047	0.0000
4.6538	0.0256	0.0653	0.0000	0.0047	0.0000
4.7088	0.0256	0.0667	0.0000	0.0047	0.0000
4.7637	0.0256	0.0681	0.0004	0.0047	0.0000
4.8187	0.0256	0.0695	0.0008	0.0047	0.0000
4.8736	0.0256	0.0709	0.0010	0.0047	0.0000
4.9286	0.0256	0.0723	0.0012	0.0047	0.0000
4.9835	0.0256	0.0737	0.0013	0.0047	0.0000
5.0000	0.0256	0.0741	0.0015	0.0047	0.0000

DRAFT

F T Planter 9

Bottom Length:	100.00 ft.
Bottom Width:	15.15 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	18.533
Total Outflow (ac-ft.):	27.056
Percent Through Underdrain:	68.5

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0348	0.0000	0.0000	0.0000
0.0549	0.0348	0.0007	0.0000	0.0000
0.1099	0.0348	0.0015	0.0000	0.0000
0.1648	0.0348	0.0022	0.0000	0.0000
0.2198	0.0348	0.0029	0.0000	0.0000
0.2747	0.0348	0.0036	0.0000	0.0000
0.3297	0.0348	0.0044	0.0000	0.0000
0.3846	0.0348	0.0051	0.0000	0.0000
0.4396	0.0348	0.0058	0.0000	0.0000
0.4945	0.0348	0.0065	0.0000	0.0000
0.5495	0.0348	0.0073	0.0000	0.0000
0.6044	0.0348	0.0080	0.0000	0.0000
0.6593	0.0348	0.0087	0.0000	0.0000
0.7143	0.0348	0.0094	0.0000	0.0000
0.7692	0.0348	0.0102	0.0000	0.0000
0.8242	0.0348	0.0109	0.0000	0.0000
0.8791	0.0348	0.0116	0.0000	0.0000
0.9341	0.0348	0.0123	0.0000	0.0000
0.9890	0.0348	0.0131	0.0000	0.0000
1.0440	0.0348	0.0138	0.0000	0.0000
1.0989	0.0348	0.0145	0.0000	0.0000
1.1538	0.0348	0.0152	0.0000	0.0000
1.2088	0.0348	0.0160	0.0000	0.0000
1.2637	0.0348	0.0167	0.0000	0.0000
1.3187	0.0348	0.0174	0.0000	0.0000
1.3736	0.0348	0.0182	0.0000	0.0000
1.4286	0.0348	0.0189	0.0000	0.0000
1.4835	0.0348	0.0196	0.0000	0.0000
1.5385	0.0348	0.0204	0.0000	0.0000
1.5934	0.0348	0.0212	0.0000	0.0000

1.6484	0.0348	0.0220	0.0000	0.0000
1.7033	0.0348	0.0228	0.0000	0.0000
1.7582	0.0348	0.0236	0.0000	0.0000
1.8132	0.0348	0.0244	0.0000	0.0000
1.8681	0.0348	0.0252	0.0000	0.0000
1.9231	0.0348	0.0260	0.0000	0.0000
1.9780	0.0348	0.0267	0.0000	0.0000
2.0330	0.0348	0.0275	0.0000	0.0000
2.0879	0.0348	0.0283	0.0000	0.0000
2.1429	0.0348	0.0291	0.0000	0.0000
2.1978	0.0348	0.0299	0.0000	0.0000
2.2527	0.0348	0.0307	0.0000	0.0000
2.3077	0.0348	0.0315	0.0000	0.0000
2.3626	0.0348	0.0323	0.0000	0.0000
2.4176	0.0348	0.0331	0.0000	0.0000
2.4725	0.0348	0.0339	0.0000	0.0000
2.5275	0.0348	0.0347	0.0000	0.0000
2.5824	0.0348	0.0355	0.0000	0.0000
2.6374	0.0348	0.0363	0.0000	0.0000
2.6923	0.0348	0.0371	0.0000	0.0000
2.7473	0.0348	0.0378	0.0000	0.0000
2.8022	0.0348	0.0386	0.0000	0.0000
2.8571	0.0348	0.0394	0.0000	0.0000
2.9121	0.0348	0.0402	0.0000	0.0000
2.9670	0.0348	0.0410	0.0000	0.0000
3.0220	0.0348	0.0418	0.0000	0.0000
3.0769	0.0348	0.0426	0.0000	0.0000
3.1319	0.0348	0.0434	0.0000	0.0000
3.1868	0.0348	0.0442	0.0000	0.0000
3.2418	0.0348	0.0450	0.0000	0.0000
3.2967	0.0348	0.0458	0.0000	0.0000
3.3516	0.0348	0.0466	0.0000	0.0000
3.4066	0.0348	0.0474	0.0000	0.0000
3.4615	0.0348	0.0482	0.0000	0.0000
3.5000	0.0348	0.0487	0.0000	0.0000

Flow Through Planter Box Surface Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infilt(cfs)
3.5000	0.0348	0.0487	0.0000	0.0047	0.0000
3.5549	0.0348	0.0506	0.0000	0.0047	0.0000
3.6099	0.0348	0.0525	0.0000	0.0047	0.0000
3.6648	0.0348	0.0544	0.0000	0.0047	0.0000
3.7198	0.0348	0.0564	0.0000	0.0047	0.0000
3.7747	0.0348	0.0583	0.0000	0.0047	0.0000
3.8297	0.0348	0.0602	0.0000	0.0047	0.0000
3.8846	0.0348	0.0621	0.0000	0.0047	0.0000
3.9396	0.0348	0.0640	0.0000	0.0047	0.0000
3.9945	0.0348	0.0659	0.0000	0.0047	0.0000
4.0495	0.0348	0.0678	0.0000	0.0047	0.0000
4.1044	0.0348	0.0697	0.0000	0.0047	0.0000
4.1593	0.0348	0.0716	0.0000	0.0047	0.0000
4.2143	0.0348	0.0736	0.0000	0.0047	0.0000
4.2692	0.0348	0.0755	0.0000	0.0047	0.0000
4.3242	0.0348	0.0774	0.0000	0.0047	0.0000
4.3791	0.0348	0.0793	0.0000	0.0047	0.0000
4.4341	0.0348	0.0812	0.0000	0.0047	0.0000
4.4890	0.0348	0.0831	0.0000	0.0047	0.0000
4.5440	0.0348	0.0850	0.0000	0.0047	0.0000

4.5989	0.0348	0.0869	0.0000	0.0047	0.0000
4.6538	0.0348	0.0888	0.0000	0.0047	0.0000
4.7088	0.0348	0.0908	0.0000	0.0047	0.0000
4.7637	0.0348	0.0927	0.0004	0.0047	0.0000
4.8187	0.0348	0.0946	0.0008	0.0047	0.0000
4.8736	0.0348	0.0965	0.0010	0.0047	0.0000
4.9286	0.0348	0.0984	0.0012	0.0047	0.0000
4.9835	0.0348	0.1003	0.0013	0.0047	0.0000
5.0000	0.0348	0.1009	0.0015	0.0047	0.0000

DRAFT

F T Planter 6

Bottom Length:	61.00 ft.
Bottom Width:	7.00 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	1
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	5.849
Total Outflow (ac-ft.):	6.967
Percent Through Underdrain:	83.95

Discharge Structure

Riser Height:	1.25 ft.
Riser Diameter:	12 in.

Element Outlets:

Outlet 1 Outlet 2

Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0098	0.0000	0.0000	0.0000
0.0440	0.0098	0.0002	0.0000	0.0000
0.0879	0.0098	0.0003	0.0000	0.0000
0.1319	0.0098	0.0005	0.0000	0.0000
0.1758	0.0098	0.0007	0.0000	0.0000
0.2198	0.0098	0.0008	0.0000	0.0000
0.2637	0.0098	0.0010	0.0000	0.0000
0.3077	0.0098	0.0011	0.0000	0.0000
0.3516	0.0098	0.0013	0.0000	0.0000
0.3956	0.0098	0.0015	0.0000	0.0000
0.4396	0.0098	0.0016	0.0000	0.0000
0.4835	0.0098	0.0018	0.0000	0.0000
0.5275	0.0098	0.0020	0.0000	0.0000
0.5714	0.0098	0.0021	0.0000	0.0000
0.6154	0.0098	0.0023	0.0000	0.0000
0.6593	0.0098	0.0025	0.0000	0.0000
0.7033	0.0098	0.0026	0.0000	0.0000
0.7473	0.0098	0.0028	0.0000	0.0000
0.7912	0.0098	0.0029	0.0000	0.0000
0.8352	0.0098	0.0031	0.0000	0.0000
0.8791	0.0098	0.0033	0.0000	0.0000
0.9231	0.0098	0.0034	0.0000	0.0000
0.9670	0.0098	0.0036	0.0000	0.0000
1.0110	0.0098	0.0038	0.0000	0.0000
1.0549	0.0098	0.0039	0.0000	0.0000
1.0989	0.0098	0.0041	0.0000	0.0000
1.1429	0.0098	0.0043	0.0000	0.0000
1.1868	0.0098	0.0044	0.0000	0.0000
1.2308	0.0098	0.0046	0.0000	0.0000
1.2747	0.0098	0.0047	0.0000	0.0000

1.3187	0.0098	0.0049	0.0000	0.0000
1.3626	0.0098	0.0051	0.0000	0.0000
1.4066	0.0098	0.0052	0.0000	0.0000
1.4505	0.0098	0.0054	0.0000	0.0000
1.4945	0.0098	0.0056	0.0000	0.0000
1.5385	0.0098	0.0057	0.0000	0.0000
1.5824	0.0098	0.0059	0.0000	0.0000
1.6264	0.0098	0.0061	0.0000	0.0000
1.6703	0.0098	0.0063	0.0000	0.0000
1.7143	0.0098	0.0065	0.0000	0.0000
1.7582	0.0098	0.0066	0.0000	0.0000
1.8022	0.0098	0.0068	0.0000	0.0000
1.8462	0.0098	0.0070	0.0000	0.0000
1.8901	0.0098	0.0072	0.0000	0.0000
1.9341	0.0098	0.0074	0.0000	0.0000
1.9780	0.0098	0.0075	0.0000	0.0000
2.0220	0.0098	0.0077	0.0000	0.0000
2.0659	0.0098	0.0079	0.0000	0.0000
2.1099	0.0098	0.0081	0.0000	0.0000
2.1538	0.0098	0.0082	0.0000	0.0000
2.1978	0.0098	0.0084	0.0000	0.0000
2.2418	0.0098	0.0086	0.0000	0.0000
2.2857	0.0098	0.0088	0.0000	0.0000
2.3297	0.0098	0.0090	0.0000	0.0000
2.3736	0.0098	0.0091	0.0000	0.0000
2.4176	0.0098	0.0093	0.0000	0.0000
2.4615	0.0098	0.0095	0.0000	0.0000
2.5000	0.0098	0.0097	0.0000	0.0000

Flow Through Planter Box Surface Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infilt(cfs)
2.5000	0.0098	0.0097	0.0000	0.0030	0.0000
2.5440	0.0098	0.0101	0.0000	0.0030	0.0000
2.5879	0.0098	0.0105	0.0000	0.0030	0.0000
2.6319	0.0098	0.0110	0.0000	0.0030	0.0000
2.6758	0.0098	0.0114	0.0000	0.0030	0.0000
2.7198	0.0098	0.0118	0.0000	0.0030	0.0000
2.7637	0.0098	0.0122	0.0000	0.0030	0.0000
2.8077	0.0098	0.0127	0.0000	0.0030	0.0000
2.8516	0.0098	0.0131	0.0000	0.0030	0.0000
2.8956	0.0098	0.0135	0.0000	0.0030	0.0000
2.9396	0.0098	0.0140	0.0000	0.0030	0.0000
2.9835	0.0098	0.0144	0.0000	0.0030	0.0000
3.0275	0.0098	0.0148	0.0000	0.0030	0.0000
3.0714	0.0098	0.0153	0.0000	0.0030	0.0000
3.1154	0.0098	0.0157	0.0000	0.0030	0.0000
3.1593	0.0098	0.0161	0.0000	0.0030	0.0000
3.2033	0.0098	0.0166	0.0000	0.0030	0.0000
3.2473	0.0098	0.0170	0.0000	0.0030	0.0000
3.2912	0.0098	0.0174	0.0000	0.0030	0.0000
3.3352	0.0098	0.0178	0.0000	0.0030	0.0000
3.3791	0.0098	0.0183	0.0000	0.0030	0.0000
3.4231	0.0098	0.0187	0.0000	0.0030	0.0000
3.4670	0.0098	0.0191	0.0000	0.0030	0.0000
3.5110	0.0098	0.0196	0.0000	0.0030	0.0000
3.5549	0.0098	0.0200	0.0000	0.0030	0.0000
3.5989	0.0098	0.0204	0.0000	0.0030	0.0000
3.6429	0.0098	0.0209	0.0000	0.0030	0.0000

3.6868	0.0098	0.0213	0.0000	0.0030	0.0000
3.7308	0.0098	0.0217	0.0000	0.0030	0.0000
3.7747	0.0098	0.0222	0.0000	0.0030	0.0000
3.8187	0.0098	0.0226	0.0000	0.0030	0.0000
3.8626	0.0098	0.0230	0.0005	0.0030	0.0000
3.9066	0.0098	0.0234	0.0008	0.0030	0.0000
3.9505	0.0098	0.0239	0.0009	0.0030	0.0000
3.9945	0.0098	0.0243	0.0011	0.0030	0.0000
4.0000	0.0098	0.0244	0.0012	0.0030	0.0000

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F T Planter 11

Bottom Length:	22.00 ft.
Bottom Width:	21.50 ft.
Material thickness of first layer:	1.5
Material type for first layer:	BAHM 5
Material thickness of second layer:	2
Material type for second layer:	GRAVEL
Material thickness of third layer:	0
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	6
Flow Through Underdrain (ac-ft.):	6.405
Total Outflow (ac-ft.):	7.231
Percent Through Underdrain:	88.58

Discharge Structure

Riser Height: 1.25 ft.
Riser Diameter: 12 in.

Element Outlets:

Outlet 1 Outlet 2
Outlet Flows To:



Flow Through Planter Box Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0109	0.0000	0.0000	0.0000
0.0549	0.0109	0.0002	0.0000	0.0000
0.1099	0.0109	0.0005	0.0000	0.0000
0.1648	0.0109	0.0007	0.0000	0.0000
0.2198	0.0109	0.0009	0.0000	0.0000
0.2747	0.0109	0.0011	0.0000	0.0000
0.3297	0.0109	0.0014	0.0000	0.0000
0.3846	0.0109	0.0016	0.0000	0.0000
0.4396	0.0109	0.0018	0.0000	0.0000
0.4945	0.0109	0.0020	0.0000	0.0000
0.5495	0.0109	0.0023	0.0000	0.0000
0.6044	0.0109	0.0025	0.0000	0.0000
0.6593	0.0109	0.0027	0.0000	0.0000
0.7143	0.0109	0.0029	0.0000	0.0000
0.7692	0.0109	0.0032	0.0000	0.0000
0.8242	0.0109	0.0034	0.0000	0.0000
0.8791	0.0109	0.0036	0.0000	0.0000
0.9341	0.0109	0.0039	0.0000	0.0000
0.9890	0.0109	0.0041	0.0000	0.0000
1.0440	0.0109	0.0043	0.0000	0.0000
1.0989	0.0109	0.0045	0.0000	0.0000
1.1538	0.0109	0.0048	0.0000	0.0000
1.2088	0.0109	0.0050	0.0000	0.0000
1.2637	0.0109	0.0052	0.0000	0.0000
1.3187	0.0109	0.0054	0.0000	0.0000
1.3736	0.0109	0.0057	0.0000	0.0000
1.4286	0.0109	0.0059	0.0000	0.0000
1.4835	0.0109	0.0061	0.0000	0.0000
1.5385	0.0109	0.0064	0.0000	0.0000
1.5934	0.0109	0.0066	0.0000	0.0000

1.6484	0.0109	0.0069	0.0000	0.0000
1.7033	0.0109	0.0071	0.0000	0.0000
1.7582	0.0109	0.0074	0.0000	0.0000
1.8132	0.0109	0.0076	0.0000	0.0000
1.8681	0.0109	0.0079	0.0000	0.0000
1.9231	0.0109	0.0081	0.0000	0.0000
1.9780	0.0109	0.0083	0.0000	0.0000
2.0330	0.0109	0.0086	0.0000	0.0000
2.0879	0.0109	0.0088	0.0000	0.0000
2.1429	0.0109	0.0091	0.0000	0.0000
2.1978	0.0109	0.0093	0.0000	0.0000
2.2527	0.0109	0.0096	0.0000	0.0000
2.3077	0.0109	0.0098	0.0000	0.0000
2.3626	0.0109	0.0101	0.0000	0.0000
2.4176	0.0109	0.0103	0.0000	0.0000
2.4725	0.0109	0.0106	0.0000	0.0000
2.5275	0.0109	0.0108	0.0000	0.0000
2.5824	0.0109	0.0111	0.0000	0.0000
2.6374	0.0109	0.0113	0.0000	0.0000
2.6923	0.0109	0.0116	0.0000	0.0000
2.7473	0.0109	0.0118	0.0000	0.0000
2.8022	0.0109	0.0121	0.0000	0.0000
2.8571	0.0109	0.0123	0.0000	0.0000
2.9121	0.0109	0.0126	0.0000	0.0000
2.9670	0.0109	0.0128	0.0000	0.0000
3.0220	0.0109	0.0131	0.0000	0.0000
3.0769	0.0109	0.0133	0.0000	0.0000
3.1319	0.0109	0.0135	0.0000	0.0000
3.1868	0.0109	0.0138	0.0000	0.0000
3.2418	0.0109	0.0140	0.0000	0.0000
3.2967	0.0109	0.0143	0.0000	0.0000
3.3516	0.0109	0.0145	0.0000	0.0000
3.4066	0.0109	0.0148	0.0000	0.0000
3.4615	0.0109	0.0150	0.0000	0.0000
3.5000	0.0109	0.0152	0.0000	0.0000

Flow Through Planter Box Surface Hydraulic Table

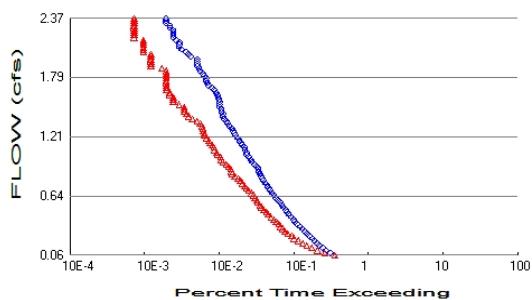
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infilt(cfs)
3.5000	0.0109	0.0152	0.0000	0.0047	0.0000
3.5549	0.0109	0.0158	0.0000	0.0047	0.0000
3.6099	0.0109	0.0164	0.0000	0.0047	0.0000
3.6648	0.0109	0.0170	0.0000	0.0047	0.0000
3.7198	0.0109	0.0176	0.0000	0.0047	0.0000
3.7747	0.0109	0.0182	0.0000	0.0047	0.0000
3.8297	0.0109	0.0188	0.0000	0.0047	0.0000
3.8846	0.0109	0.0194	0.0000	0.0047	0.0000
3.9396	0.0109	0.0200	0.0000	0.0047	0.0000
3.9945	0.0109	0.0206	0.0000	0.0047	0.0000
4.0495	0.0109	0.0212	0.0000	0.0047	0.0000
4.1044	0.0109	0.0218	0.0000	0.0047	0.0000
4.1593	0.0109	0.0224	0.0000	0.0047	0.0000
4.2143	0.0109	0.0230	0.0000	0.0047	0.0000
4.2692	0.0109	0.0236	0.0000	0.0047	0.0000
4.3242	0.0109	0.0242	0.0000	0.0047	0.0000
4.3791	0.0109	0.0248	0.0000	0.0047	0.0000
4.4341	0.0109	0.0254	0.0000	0.0047	0.0000
4.4890	0.0109	0.0259	0.0000	0.0047	0.0000
4.5440	0.0109	0.0265	0.0000	0.0047	0.0000

4.5989	0.0109	0.0271	0.0000	0.0047	0.0000
4.6538	0.0109	0.0277	0.0000	0.0047	0.0000
4.7088	0.0109	0.0283	0.0000	0.0047	0.0000
4.7637	0.0109	0.0289	0.0004	0.0047	0.0000
4.8187	0.0109	0.0295	0.0008	0.0047	0.0000
4.8736	0.0109	0.0301	0.0010	0.0047	0.0000
4.9286	0.0109	0.0307	0.0012	0.0047	0.0000
4.9835	0.0109	0.0313	0.0013	0.0047	0.0000
5.0000	0.0109	0.0315	0.0015	0.0047	0.0000

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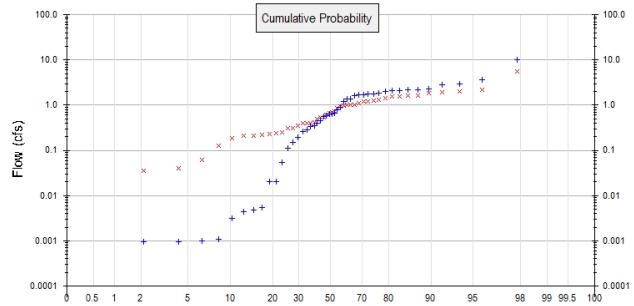
Analysis Results

POC 1



+ Pre-Project

x Mitigated



Pre-Project Landuse Totals for POC #1

Total Pervious Area: 7.56

Total Impervious Area: 0

Mitigated Landuse Totals for POC #1

Total Pervious Area: 1.68

Total Impervious Area: 4.88

Flow Frequency Method: Weibull

Flow Frequency Return Periods for Pre-Project. POC #1

Return Period	Flow(cfs)
2 year	0.636451
5 year	2.006675
10 year	2.365423
25 year	3.928947

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.678515
5 year	1.466326
10 year	1.867143
25 year	2.303578

Annual Peaks

Annual Peaks for Pre-Project and Mitigated. POC #1

Year	Pre-Project	Mitigated
1975	0.676	0.305
1976	0.000	0.031
1977	0.001	0.214
1978	1.684	0.857
1979	1.798	1.040
1980	1.382	1.006
1981	0.190	0.686
1982	1.788	1.323
1983	10.177	5.573
1984	0.785	0.404
1985	0.332	0.484
1986	2.268	0.728
1987	0.020	0.413
1988	0.554	0.242

1989	0.005	1.658
1990	0.003	0.208
1991	0.256	0.545
1992	0.021	0.254
1993	1.188	0.614
1994	0.290	0.312
1995	3.000	2.161
1996	0.897	0.980
1997	2.153	1.422
1998	2.854	1.896
1999	0.001	0.036
2000	0.001	0.128
2001	0.004	0.062
2002	0.647	1.861
2003	1.694	1.541
2004	0.636	0.354
2005	0.593	0.394
2006	0.406	0.679
2007	0.006	0.184
2008	1.365	1.192
2009	0.112	0.231
2010	1.977	1.549
2011	2.056	1.219
2012	0.152	0.218
2013	3.657	2.020
2014	0.346	0.402
2015	1.650	1.035
2016	1.823	1.251
2017	2.166	1.123
2018	0.448	0.546
2019	2.083	1.613
2020	0.054	0.040
2021	0.001	0.946

Ranked Annual Peaks

Ranked Annual Peaks for Pre-Project and Mitigated. POC #1

Rank	Pre-Project	Mitigated
1	10.1766	5.5735
2	3.6573	2.1614
3	2.9998	2.0201
4	2.8538	1.8957
5	2.2678	1.8614
6	2.1664	1.6578
7	2.1530	1.6130
8	2.0827	1.5494
9	2.0562	1.5406
10	1.9770	1.4218
11	1.8230	1.3229
12	1.7977	1.2514
13	1.7881	1.2193
14	1.6937	1.1918
15	1.6836	1.1235
16	1.6497	1.0398
17	1.3822	1.0346
18	1.3650	1.0065
19	1.1877	0.9800
20	0.8970	0.9456
21	0.7852	0.8574

22	0.6757	0.7279
23	0.6471	0.6855
24	0.6365	0.6785
25	0.5929	0.6141
26	0.5545	0.5465
27	0.4484	0.5453
28	0.4063	0.4840
29	0.3460	0.4131
30	0.3321	0.4036
31	0.2897	0.4017
32	0.2562	0.3943
33	0.1900	0.3535
34	0.1516	0.3116
35	0.1120	0.3049
36	0.0537	0.2544
37	0.0206	0.2424
38	0.0203	0.2308
39	0.0055	0.2182
40	0.0047	0.2142
41	0.0043	0.2078
42	0.0031	0.1840
43	0.0011	0.1278
44	0.0010	0.0619
45	0.0009	0.0404
46	0.0009	0.0359
47	0.0001	0.0309

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0636	1416	1468	103	Pass
0.0869	1266	1070	84	Pass
0.1101	1110	857	77	Pass
0.1334	1000	717	71	Pass
0.1566	908	619	68	Pass
0.1799	843	545	64	Pass
0.2031	777	474	61	Pass
0.2264	731	417	57	Pass
0.2496	666	388	58	Pass
0.2729	623	342	54	Pass
0.2961	576	311	53	Pass
0.3194	539	295	54	Pass
0.3426	500	273	54	Pass
0.3659	455	261	57	Pass
0.3891	427	240	56	Pass
0.4124	406	222	54	Pass
0.4356	379	204	53	Pass
0.4589	351	187	53	Pass
0.4822	332	177	53	Pass
0.5054	318	162	50	Pass
0.5287	298	153	51	Pass
0.5519	286	145	50	Pass
0.5752	268	135	50	Pass
0.5984	252	132	52	Pass
0.6217	238	125	52	Pass
0.6449	223	120	53	Pass
0.6682	214	111	51	Pass
0.6914	199	102	51	Pass
0.7147	193	95	49	Pass
0.7379	181	90	49	Pass
0.7612	172	85	49	Pass
0.7844	161	79	49	Pass
0.8077	155	74	47	Pass
0.8309	151	67	44	Pass
0.8542	147	62	42	Pass
0.8774	142	60	42	Pass
0.9007	138	59	42	Pass
0.9239	130	55	42	Pass
0.9472	123	51	41	Pass
0.9704	115	46	40	Pass
0.9937	110	44	40	Pass
1.0169	103	43	41	Pass
1.0402	97	39	40	Pass
1.0634	95	38	40	Pass
1.0867	91	36	39	Pass
1.1099	90	35	38	Pass
1.1332	84	33	39	Pass
1.1564	80	31	38	Pass
1.1797	77	30	38	Pass
1.2029	73	28	38	Pass
1.2262	68	26	38	Pass
1.2494	66	26	39	Pass
1.2727	64	25	39	Pass

1.2959	62	25	40	Pass
1.3192	56	24	42	Pass
1.3424	53	23	43	Pass
1.3657	51	21	41	Pass
1.3889	48	18	37	Pass
1.4122	46	16	34	Pass
1.4354	46	15	32	Pass
1.4587	44	14	31	Pass
1.4819	44	14	31	Pass
1.5052	42	14	33	Pass
1.5284	42	12	28	Pass
1.5517	42	10	23	Pass
1.5749	41	10	24	Pass
1.5982	40	10	25	Pass
1.6214	39	9	23	Pass
1.6447	38	9	23	Pass
1.6679	35	8	22	Pass
1.6912	33	8	24	Pass
1.7144	30	8	26	Pass
1.7377	29	8	27	Pass
1.7609	28	8	28	Pass
1.7842	28	8	28	Pass
1.8074	26	8	30	Pass
1.8307	25	8	32	Pass
1.8539	23	8	34	Pass
1.8772	22	7	31	Pass
1.9004	21	5	23	Pass
1.9237	21	5	23	Pass
1.9469	21	5	23	Pass
1.9702	21	5	23	Pass
1.9934	17	5	29	Pass
2.0167	16	5	31	Pass
2.0399	15	4	26	Pass
2.0632	13	4	30	Pass
2.0864	12	4	33	Pass
2.1097	12	4	33	Pass
2.1329	12	4	33	Pass
2.1562	11	4	36	Pass
2.1794	10	3	30	Pass
2.2027	10	3	30	Pass
2.2259	10	3	30	Pass
2.2492	10	3	30	Pass
2.2724	9	3	33	Pass
2.2957	9	3	33	Pass
2.3189	8	3	37	Pass
2.3422	8	3	37	Pass
2.3654	8	3	37	Pass

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Water Quality

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

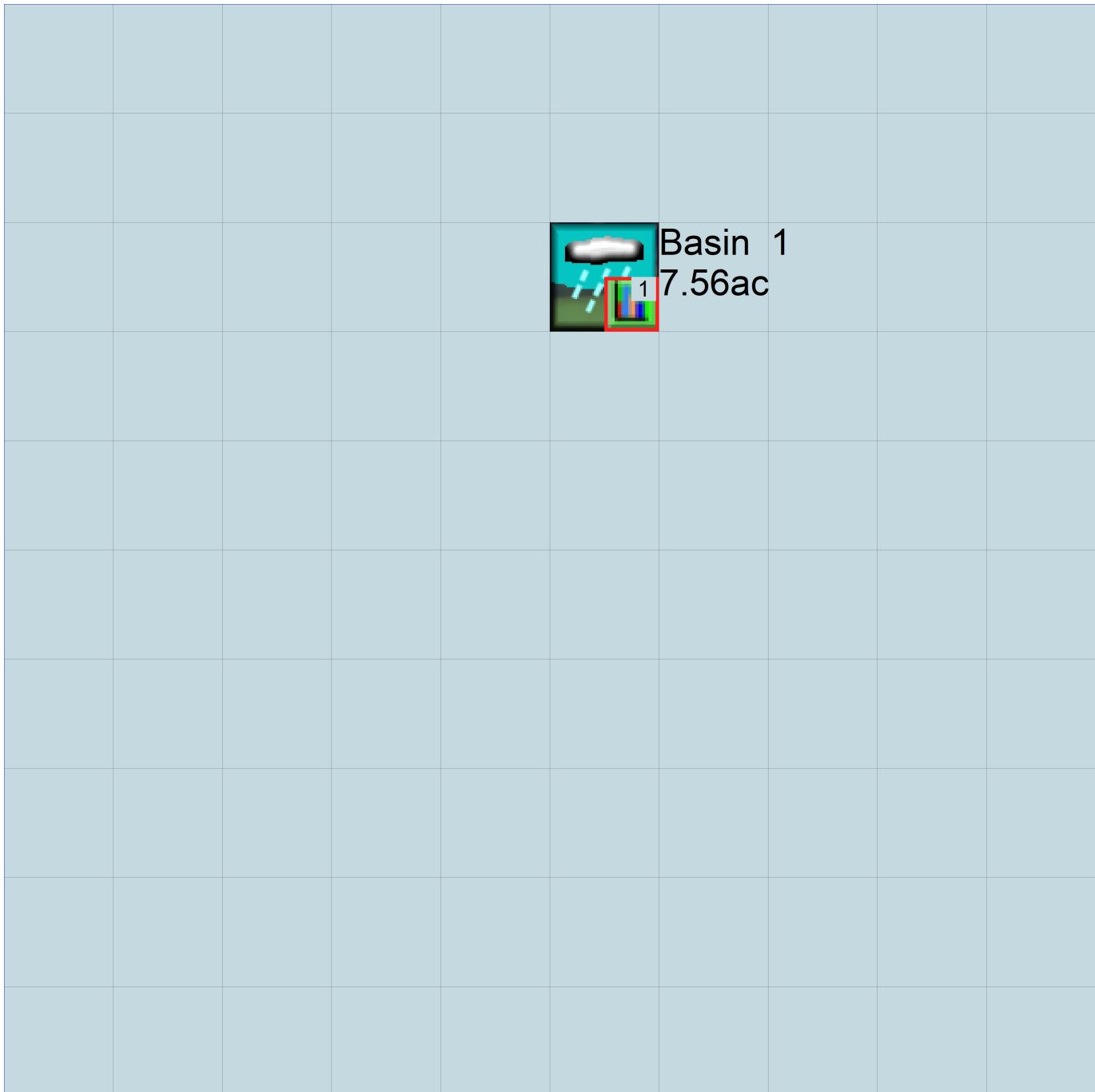
IMPLND Changes

No IMPLND changes have been made.

DRAFT

Appendix

Pre-Project Schematic



Mitigated Schematic



Disclaimer

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DRAFT

ATTACHMENT C
IMP CALCULATOR SIZING OUTPUT

Project Name: Lone Tree Way
Project Type: Standard LID WQ Treatment
APN: 072-510-005, 006, 007, 008
Drainage Area: 325,209 sq ft
Mean Annual Precipitation: 14.0 inches

Self-Treating DMAs

DMA Name	Area (sq ft)
DMA-ST	29,800.0

IV. Areas Draining to IMPs

IMP Name: IMP1
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA1L	7,806	Landscape	0.10	781
DMA1C	2,004	Concrete or Asphalt	1.00	2,004
DMA1A	5,129	Concrete or Asphalt	1.00	5,129
DMA1R	4,305	Conventional Roof	1.00	4,305
			Total	12,219

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	489 sq ft	637 sq ft

IMP Name: IMP2
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA2L	6,440	Landscape	0.10	644
DMA2C	2,091	Concrete or Asphalt	1.00	2,091
DMA2A	8,505	Concrete or Asphalt	1.00	8,505
DMA2R	10,452	Conventional Roof	1.00	10,452
			Total	21,692

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	868 sq ft	879 sq ft

IMP Name: IMP3
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA3L	9,544	Landscape	0.10	954
DMA3C	4,217	Concrete or Asphalt	1.00	4,217
DMA3A	19,095	Concrete or Asphalt	1.00	19,095
DMA3R	10,651	Conventional Roof	1.00	10,651

Total	34,917
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Area	IMP Sizing Factor	Minimum	Proposed
	0.040	1,397 sq ft	1,609 sq ft

IMP Name: IMP4

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA4L	495	Landscape	0.10	50
DMA4C	433	Concrete or Asphalt	1.00	433
DMA4A	5,150	Concrete or Asphalt	1.00	5,150
Total				5,633

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	225 sq ft	399 sq ft

IMP Name: IMP5

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA5L	7,876	Landscape	0.10	788
DMA5C	2,241	Concrete or Asphalt	1.00	2,241
DMA5A	13,999	Concrete or Asphalt	1.00	13,999
DMA5R	4,295	Conventional Roof	1.00	4,295
Total				21,323

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	853 sq ft	1,113 sq ft

IMP Name: IMP6

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA6L	880	Landscape	0.10	88
DMA6C	681	Concrete or Asphalt	1.00	681
DMA6A	5,973	Concrete or Asphalt	1.00	5,973
DMA6R	1,755	Conventional Roof	1.00	1,755
Total				8,497

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	340 sq ft	427 sq ft

IMP Name: IMP7

IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA7L	2,025	Landscape	0.10	203
DMA7C	1,933	Concrete or Asphalt	1.00	1,933
DMA7A	6,169	Concrete or Asphalt	1.00	6,169
DMA7R	2,684	Conventional Roof	1.00	2,684
			Total	10,989

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	440 sq ft	476 sq ft

IMP Name: IMP8
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA8L	17,230	Landscape	0.10	1,723
DMA8C	4,273	Concrete or Asphalt	1.00	4,273
DMA8R	7,880	Conventional Roof	1.00	7,880
			Total	13,876

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	555 sq ft	825 sq ft

IMP Name: IMP9
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA9L	5,150	Landscape	0.10	515
DMA9C	4,139	Concrete or Asphalt	1.00	4,139
DMA9A	16,045	Concrete or Asphalt	1.00	16,045
DMA9R	13,355	Conventional Roof	1.00	13,355
			Total	34,054

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	1,362 sq ft	1,480 sq ft

IMP Name: IMP10
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA10L	2,970	Landscape	0.10	297
DMA10C	441	Concrete or Asphalt	1.00	441

DMA10A	8,510	Concrete or Asphalt	1.00	8,510
			Total	9,248

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	370 sq ft	397 sq ft

IMP Name: IMP11

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA11L	3,027	Landscape	0.10	303
DMA11C	603	Concrete or Asphalt	1.00	603
DMA11A	6,697	Concrete or Asphalt	1.00	6,697
DMA11R	1,858	Conventional Roof	1.00	1,858
			Total	9,461

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	378 sq ft	473 sq ft

IMP Name: IMP12

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA12L	4,009	Landscape	0.10	401
DMA12C	677	Concrete or Asphalt	1.00	677
DMA12A	3,013	Concrete or Asphalt	1.00	3,013
DMA12R	3,452	Conventional Roof	1.00	3,452
			Total	7,543

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	302 sq ft	355 sq ft

IMP Name: IMP13

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA13L	2,729	Landscape	0.10	273
DMA13C	959	Concrete or Asphalt	1.00	959
DMA13A	11,652	Concrete or Asphalt	1.00	11,652
			Total	12,884

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	515 sq ft	748 sq ft

IMP Name: IMP14

IMP Type: Flow-Through Planter

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA14C	2,033	Concrete or Asphalt	1.00	2,033
DMA14A	10,288	Concrete or Asphalt	1.00	10,288
DMA14R	4,140	Conventional Roof	1.00	4,140
DMA14L	2,419	Landscape	0.10	242
			Total	16,703

Area	IMP Sizing Factor	Minimum	Proposed
	0.040	668 sq ft	1,178 sq ft

Report generated on 07/15/2025 by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.4.1.0).