PRELIMINARY DRAINAGE REPORT

FOR

ESCONDIDO ASSEMBLAGE, HOFTIEZER

CITY OF ESCONDIDO, CA

PREPARED FOR:

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Revised: August 2022

08-09-22
William J. Suiter, RCE 68964 DATE

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

This Hydrology Study for the proposed Escondido Assemblage Hoftiezer Preliminary Tentative Map development has been prepared to analyze the hydrologic characteristics of the existing and proposed project site. This report presents both the methodology and the calculations used for determining the storm water runoff from the project site in the existing and proposed conditions produced by the 100-year, 6-hour storm event.

1.2 Existing Conditions

The subject property is located at 0 Ash Street, in the City of Escondido.

VICINITY MAP
NOT TO SCALE

The site is approximately 5.03 acres and is surrounded by Stanley Avenue, Ash Street, and Lehner Avenue. In the existing condition, adjacent half width of Stanley Avenue and Ash Street drain onto the site. Storm water runoff from offsite streets and the project property flows overland southerly from the high point at the intersection of Stanley Avenue and Ash Street to the southwestern corner of the site and conveyed by a ditch along the property line and through a private storm drain through the adjacent property per GP16-0011. Drainage from a portion of the southern half of Lehner Avenue is collected in a catch basin and outlets to the project site, as shown on P16-0003. Elevations onsite range from approximately 744 feet to 723 feet.

Runoff from the entire site flows southwesterly through said 30” storm drain on the adjacent property to Saddle Place and continues to the existing 84” RCP storm drain pipe within Lehner Avenue. Drainage is tributary to Escondido Creek which flows southerly to Escondido Creek, which continues southwesterly to San Elijo Lagoon and ultimately to the Pacific Ocean.

Per the United States Department of Agriculture Web Soil Survey, the project site is underlain with Hydrologic Soil Group C. Refer to Appendix A for soil information.

1.3 Proposed Project

The proposed project consists of the construction of single-family residences, access drives, sidewalk, landscape, associated utilities, and a biofiltration basin BMP to meet the requirements for hydromodification management flow control, storm water pollutant control and to mitigate the 100-year 6-hour storm event. The project also includes Stanley Avenue and Lehner Avenue Street widening and right-of-way improvements, as well as parkway improvements of Ash Street.

In the proposed condition, onsite storm water runoff from Area “A1” will be collected in the proposed storm drain and conveyed southerly to a proposed biofiltration basin located at the southwest corner of the site which will discharge to the storm drain in Lehner Avenue. Lot B along Ash Street encompassing the existing SDCWA easement is to remain as open space and will be collected at the intersection of Ash Street and Lehner Avenue. The parkway improvements to the westerly edge of Ash Street will include non-contiguous sidewalk with green street stormwater treatment swales. Stanley Avenue and Lehner Avenue widening will use green street stormwater rain garden treatment.

The proposed biofiltration BMP will provide storm water pollutant control and hydromodification management flow control to meet the requirements of the California Regional Water Quality Control Board San Diego Region municipal storm water permit (Order No. R9-2013-0001, referred to as MS4 Permit). For detailed pollutant and flow control calculations refer to the report titled “Priority Development Project Storm Water Quality Management Plan for Escondido Assemblage - Hoftiezer PTM” dated August 2022, prepared by Pasco Laret Suiter & Associates. The BMPs will also provide mitigation for the 100-year storm event peak discharge. Refer to Section 3.2 and Appendix B of this report for detailed detention calculations.

Runoff coefficients and 100-year runoff intensity values were determined from Figure No. 1 of the City of Escondido Design Standards. The minimum 10-minute time of concentration was used per Figure No. 2. Using the Rational Method, a peak flow rate was calculated for the 100-year, 6-hour storm event for both existing and proposed conditions. Refer to the hydrologic calculations in Section 3.1.

1.4 Conclusion

Based upon the analyses included in this report, the proposed biofiltration basins are sized to accommodate the increase in peak runoff in the proposed condition and to meet the requirements of the MS4 Permit for pollutant control and hydromodification management flow control.

1.5 References

"Escondido Storm Water Design Manual", effective February 16, 2016, City of Escondido

"San Diego County Hydrology Manual", revised June 2003, County of San Diego, Department of Public Works, Flood Control Section.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov.

2.0 HYDROLOGIC METHODOLOGY

Pursuant to the Escondido Storm Water Design Manual dated April 2014, the Rational Method is recommended for analyzing the runoff response from drainage areas up to approximately 0.5 square miles in size. The proposed project and associated watershed basins are less than 0.5 square miles, therefore the Rational Method was used to analyze the project's hydrologic characteristics in the existing and proposed conditions.

2.1 Rational Method

The Rational Method (RM) formula estimates the peak rate of runoff based on the variables of area, runoff coefficient, and rainfall intensity. Using the Time of Concentration (Tc) which is the time required for a given element of water that originates at the most remote point of the basin being analyzed to reach the point at which the runoff from the basin is being analyzed, the RM equation determines the storm water runoff rate (Q) for a given basin in terms of flow (typically in cubic feet per second, cfs). The RM equation is as follows:

$$Q = CIA$$

Where:

Q= flow (cfs)

C = runoff coefficient, ratio of rainfall that produces storm water runoff (runoff vs. infiltration/evaporation/absorption/etc)

I = average rainfall intensity for a duration equal to the Tc for the Area (in/hr)

A = drainage area contributing to the basin (ac)

The RM equation assumes that the storm event being analyzed delivers precipitation to the entire basin uniformly, and therefore the peak discharge rate will occur when a raindrop that falls at the most remote portion of the basin arrives at the point of analysis. The RM also assumes that the fraction of rainfall that becomes runoff or the runoff coefficient, C, is not affected by the storm intensity, I, or the precipitation zone number.

2.2 City of Escondido Criteria

The City of Escondido has developed its own tables for analyzing storm water runoff for areas within the city. The city has developed runoff intensity duration curves for given storm events. The rainfall intensity, I, for the 100-year storm event is based on Figure No. 1 of the City of Escondido Design Standards, which is included in Appendix A. The time of concentration for the project was calculated to be less than 10 minutes, therefore based upon Figure No. 2, the minimum Tc of 10 minutes was used.

One of the variables of the RM equation is the runoff coefficient, C, which is dependent only upon land use and soil type. The City of Escondido Figure 1 has developed a table of Runoff Coefficients to be applied to basins located within the city. The table categorizes the land use and has an associated runoff coefficient C. Given that much of both Area "A1" is undeveloped, the runoff coefficient of 0.35 has been used for existing condition. The runoff coefficient that is most appropriate for the proposed development condition is C=0.55 for single family. Refer to Appendix A for hydrology support documents.

3.0 HYDROLOGIC ANALYSIS

3.1 Hydrologic Analysis (100-Year Event)

Rational Method Parameters
C_{UND}=0.35 for undeveloped existing condition per C.O.E. Figure 1*
C_{PR}=0.55 for proposed development condition per C.O.E. Figure 1*
I_{100} = 3.4 in/hr per C.O.E. Figure 1*
Q=Peak Runoff, Q=C x I x A (cfs)
T_c= 10 minutes minimum per C.O. E. Figure 2*
*From City of Escondido Design Standards and Standard Drawings, April 2014

<u>Existing Condition</u>

<u>Area A1- Inflow to Adjacent 30” SD</u>
Total Basin Area = 5.85 acres
C_{UND} = 0.35

T_c = 10 minutes
I_{100} = 3.4 in/hr

Q_{100} = 0.35 * 3.4 in/hr * 5.85 acres
$Q_{100, A1}$ = 6.96 cfs

<u>Area A2-Lehner Avenue (currently paved)</u>
Total Basin Area = 0.20 acres
C_{PR} = 0.55

T_c = 10 minutes
I_{100} = 3.4 in/hr

Q_{100} = 0.55 * 3.4 in/hr * 0.20 acres
$Q_{100, A2}$ = 0.37 cfs

Area A Total $Q_{100, EX}$ = 6.96 cfs + 0.37 = 7.33 cfs

Proposed Condition

Area A1 - Inflow to BMP-A

Basin Area = 4.45 acres
C_{PR} = 0.55

T_c = 10 minutes
I_{100} = 3.4 in/hr per

Q_{100} = 0.55 * 3.4 in/hr * 4.45 acres
$Q_{100, A1}$ = 8.32 cfs

Area A2 – Ash Street and Lehner Avenue

Basin Area = 0.81 acres
C_{PR} = 0.55

T_c = 10 minutes
I_{100} = 3.4 in/hr per

Q_{100} = 0.55 * 3.4 in/hr * 0.78 acres
$Q_{100, A2}$ = 1.51 cfs

Area A3 – Stanley Avenue

Basin Area = 0.21 acres
C_{PR} = 0.55

T_c = 10 minutes
I_{100} = 3.4 in/hr per

Q_{100} = 0.55 * 3.4 in/hr * 0.21 acres
$Q_{100, F3}$ = 0.39 cfs

Area A4 – Undeveloped portion of Lot B (over SDCWA easement)

Total Basin Area = 0.40 acres
C_{ex} = 0.35

T_c = 10 minutes
I_{100} = 3.4 in/hr

Q_{100} = 0.35 * 3.4 in/hr * 0.40 acres
$Q_{100, F3}$ = 0.48 cfs

Area A5 – Slope to offsite

Total Basin Area = 0.18 acres

C_{ex} = 0.35

T_c = 10 minutes

I_{100} = 3.4 in/hr

Q_{100} = 0.35 * 3.4 in/hr * 0.18 acres

$Q_{100, F3}$ = 0.21 cfs

Area A Total Q_{100} = 8.32 cfs + 1.51 cfs + 0.39 cfs + 0.48 cfs + 0.21 cfs = 10.91 cfs

Refer to Appendix C for site drainage maps.

Table 1: Summary of 100-yr Peak Discharge Rates

Drainage Basin	Existing		Proposed Undetained	
	Area (ac)	Q_{100} (cfs)	Area (ac)	Q_{100} (cfs)
Area A	6.05	7.33	6.05	10.91

3.2 Detention Analysis (100-Year Event)

The biofiltration basin BMPs provide mitigation of the 100-year storm event peak flow rate. The 100-year storm event detention analysis was performed using HydroCAD Stormwater Modeling software. The inflow runoff hydrographs to the BMPs were modeled using RatHydro which is a Rational Method Design Storm Hydrograph software that creates a hydrograph using the results of the Rational Method calculations. HydroCAD has the ability to route the 100-year storm event inflow hydrograph through the BMPs. Based on the BMP cross sectional geometry, stage storage and outlet structure data, HydroCAD calculates the detained peak flow rate and detained time to peak.

Based on the results of the HydroCAD analysis, detention for the 100-year storm event peak flow rate is provided the BMP. The outflow from BMP-A (Area “A1”) is 4.65 cfs. The flow from the adjacent Ash St. and Lehner Ave. (Area “A2”), Stanley Ave. (Area “A3”), and SDCWA easement open space area (Area “A4”) not draining to BMP-A are 1.51 cfs, 0.39 cfs, and 0.48 cfs, respectively. There is also a small segment of boundary slope (Area “A5”) tributary to offsite not draining to BMP-A which an outflow of 0.21 cfs.

Area A Total $Q_{100, D}$ = 4.65 cfs + 1.51 + 0.39 cfs + 0.48 cfs + 0.21 cfs = 7.24 cfs

Refer to Appendix B for the HydroCAD detention detailed output.

Table 2: Summary of 100-yr Peak Discharge Rates

Drainage Basin	Existing		Proposed			Biofiltration Basin	
	Area (ac)	Q_{100} (cfs)	Area (ac)	Undetained Q_{100} (cfs)	Detained Q_{100} (cfs)	Ponded Water Surface Elevation	Min. Freeboard
Area A	6.05	7.33	6.05	10.91	7.24	725.25	0.75'

3.3 Storm Water Pollutant Control

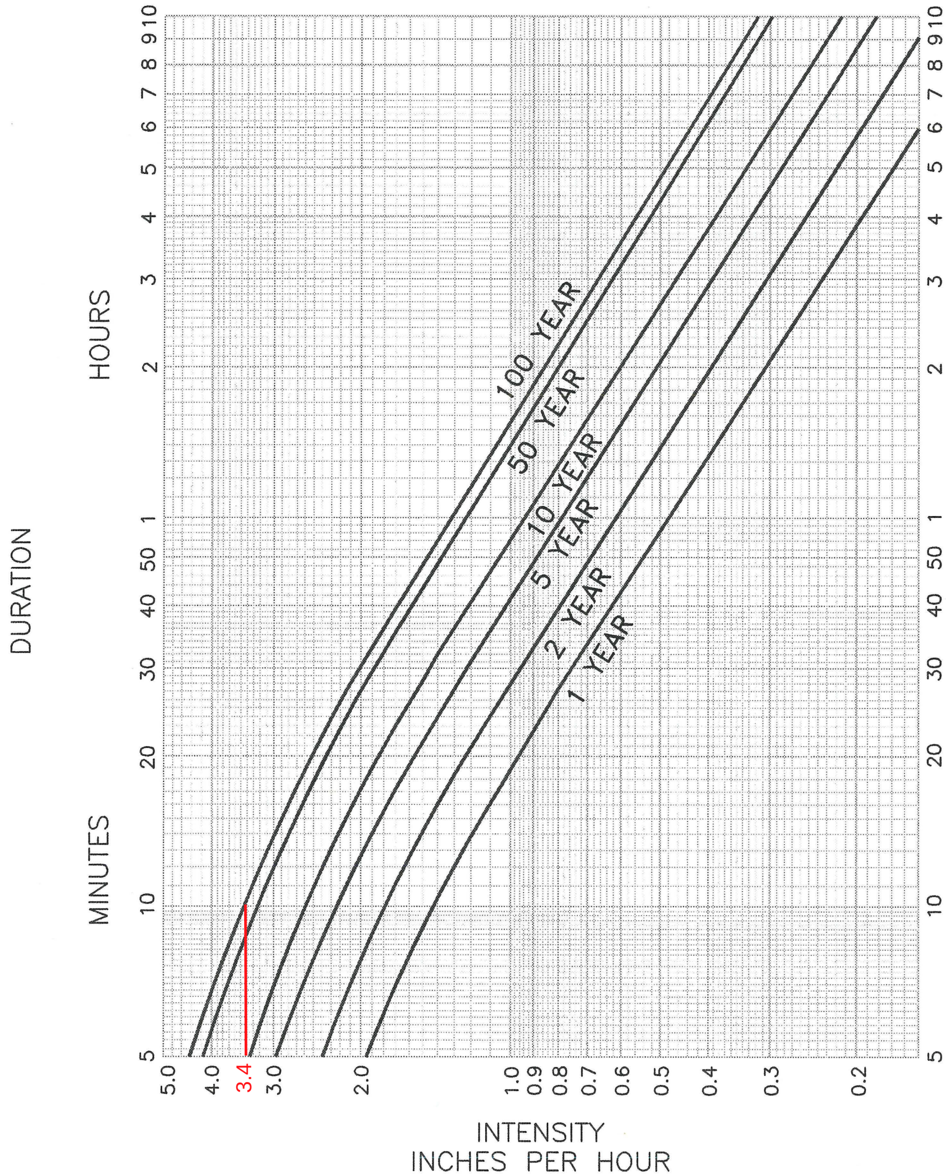
To meet the requirements of the MS4 Permit, the biofiltration basins are designed to treat onsite storm water pollutants contained in the volume of runoff from a 24-hour, 85th percentile storm event by slowly infiltrating runoff through an engineered media. For detailed pollutant control calculations refer to the report titled "Priority Development Project Storm Water Quality Management Plan for Escondido Assemblage - Hoftiezer" dated August 2022, prepared by Pasco Laret Suiter & Associates.

3.4 Hydromodification Management

To satisfy the requirements of the MS4 Permit, a hydromodification management strategy has been developed for the project based on the Final Hydromodification Management Plan dated March 2011, (Final HMP). A continuous simulation model, the Environmental Protection Agency (EPA) Storm Water Management Model (SWMM) version 5.1, was selected to size mitigation measures. The SWMM model is capable of modeling hydromodification management facilities to mitigate the effects of increased runoff from the post-development conditions and use changes that may cause negative impacts (i.e. erosion) to downstream channels. For HMP calculations refer to the report titled "Priority Development Project Storm Water Quality Management Plan for Escondido Assemblage - Hoftiezer" dated August 2022, prepared by Pasco Laret Suiter & Associates.

APPENDIX A

Hydrology Support Material



ESCONDIDO RUNOFF COEFFICIENTS

PARKS, GOLF COURSES, CEMETERIES	0.25
UNDEVELOPED LAND, OPEN SPACE	0.35
RURAL – OVER 1/2 ACRE LOTS	0.45
SINGLE FAMILY	0.55
MOBILE HOME	0.65
MULTIPLE UNITS	0.70
COMMERCIAL	0.85
INDUSTRIAL	0.95

APPROVED: DATE: 04–02–2014

P. W. DIRECTOR/CITY ENGINEER

REVISED	APPROVED

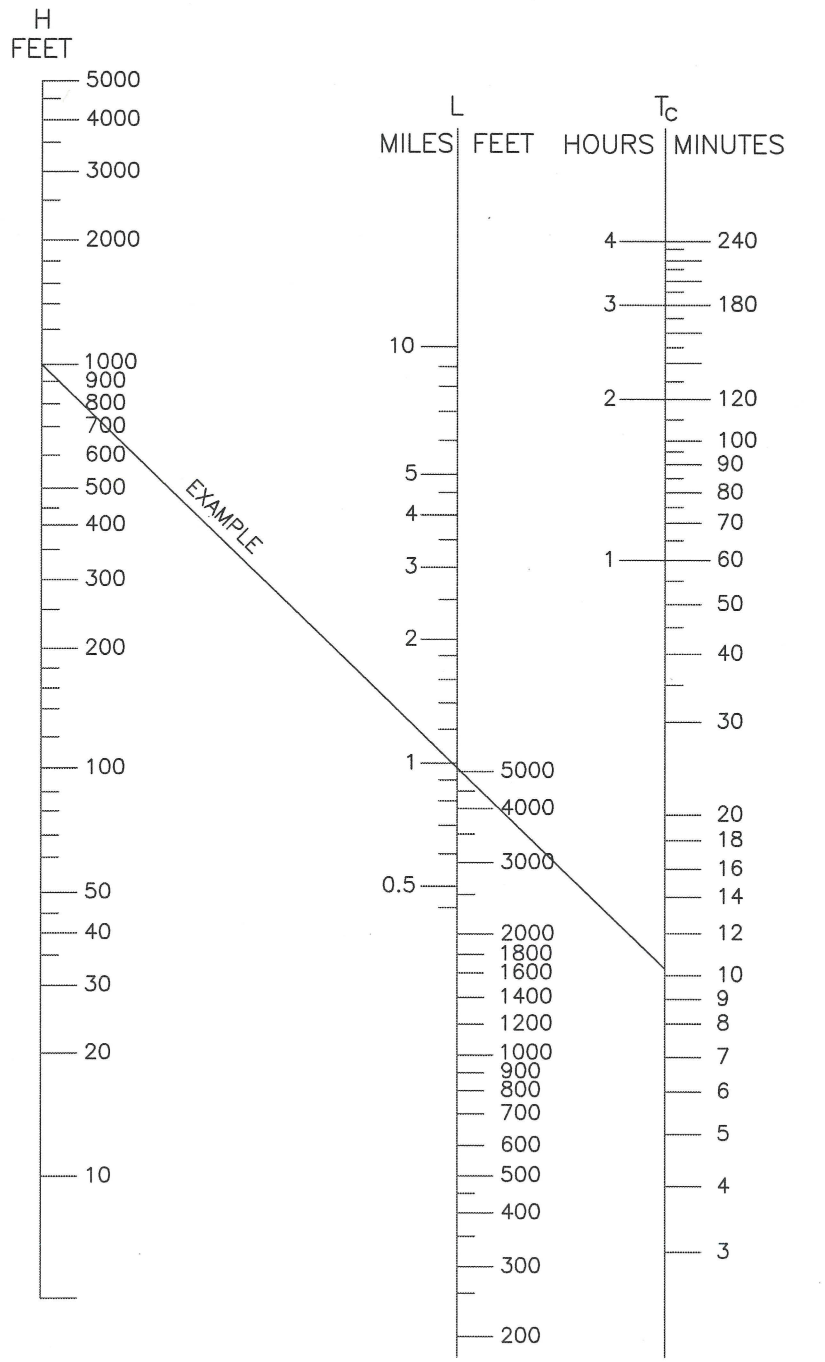
CITY OF ESCONDIDO

DEPARTMENT OF PUBLIC WORKS

RUN–OFF INTENSITY DURATION CURVE

SCALE: NOT TO SCALE

FIGURE NO. 1



$$Tc = \left(\frac{11.9 \ L^3}{H}\right)^{.385}$$

NOTE:

THIS CHART SHALL BE USED FOR ALL BASINS WITHIN THE CITY OF ESCONDIDO LESS 0.5 SQUARE MILE.
THE MINIMUM Tc TO BE USED IS 10 MINUTES

Tc = TIME OF CONCENTRATION (HOURS)
L = LENGTH OF DRAINAGE COURSE (MILES)
H = DIFFERENCE IN ELEVATION FROM FURTHER MOST POINT OF DESIGN (FEET)

APPROVED: Edward N. Dominguez DATE: 04-02-2014 P. W. DIRECTOR/CITY ENGINEER		CITY OF ESCONDIDO DEPARTMENT OF PUBLIC WORKS	SCALE: NOT TO SCALE
REVISED	APPROVED	RUNOFF TIME CHART	FIGURE NO. 2

Map Scale: 1:1,520 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 20, 40, 80, 120

N

Feet: 0, 50, 100, 200, 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 16, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 24, 2020—Feb 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
FaD2	Fallbrook sandy loam, 9 to 15 percent slopes, eroded	C	0.7	12.9%
FvD	Fallbrook-Vista sandy loams, 9 to 15 percent slopes	C	0.0	0.4%
RaB	Ramona sandy loam, 2 to 5 percent slopes	C	2.3	42.9%
RaC2	Ramona sandy loam, 5 to 9 percent slopes, eroded	C	2.3	43.8%
Totals for Area of Interest			**5.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

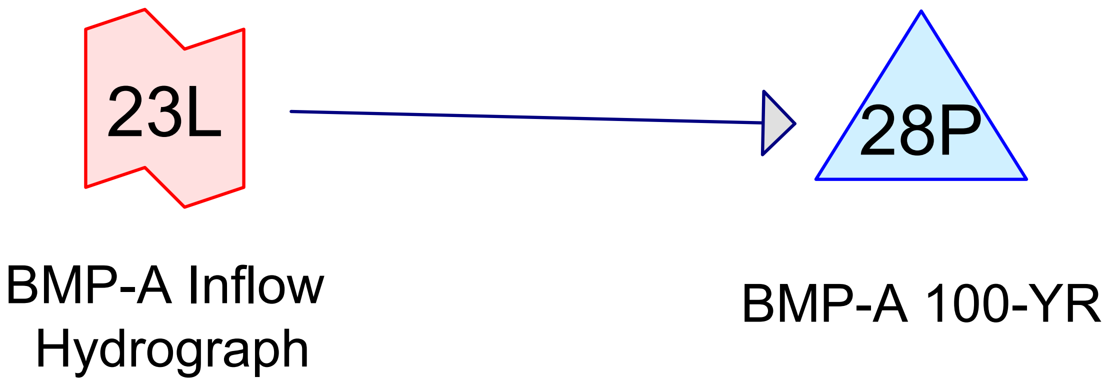
Aggregation Method: Dominant Condition

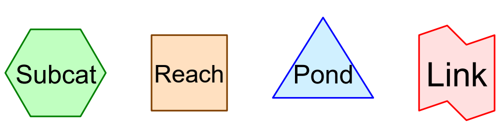
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B

Detention Support Material





Routing Diagram for 3537 HOF
Prepared by Pasco Laret Suiter & Associates, Printed 12/8/2021
HydroCAD® 10.10-7a s/n 10097 © 2021 HydroCAD Software Solutions LLC

Summary for Link 23L: BMP-A Inflow Hydrograph

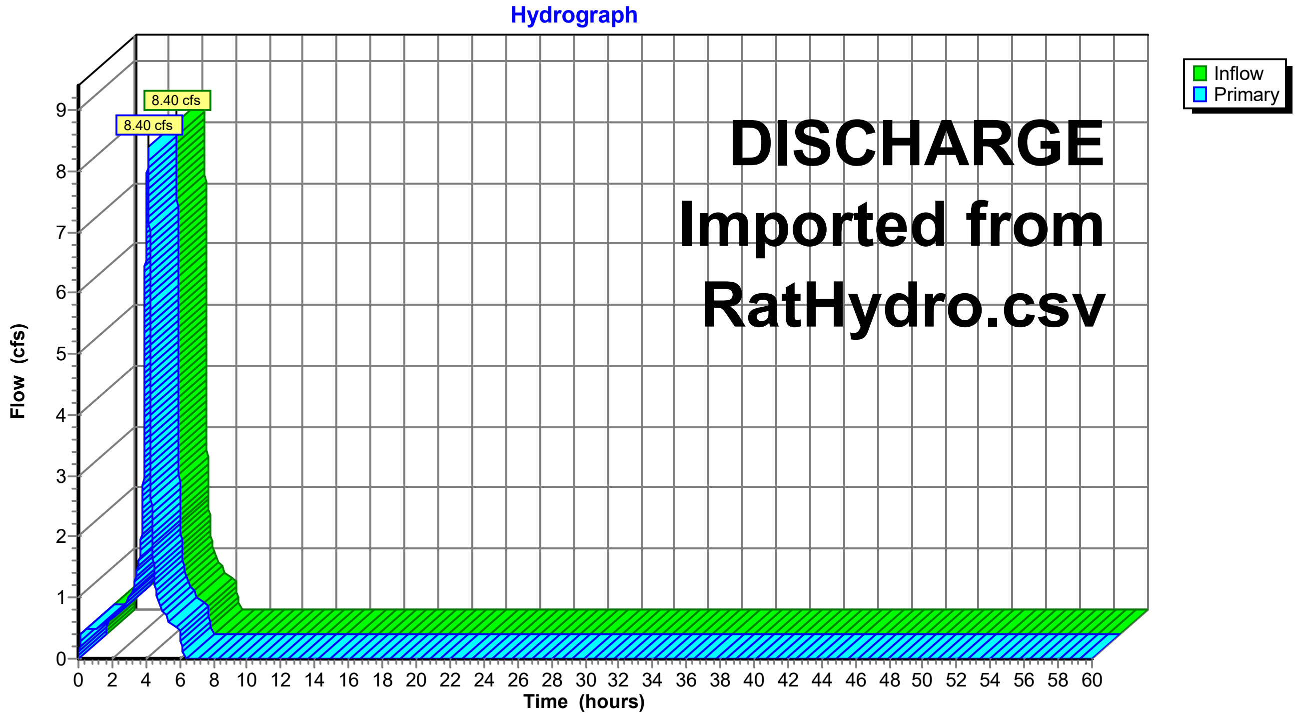
Inflow	=	8.32 cfs @	4.17 hrs,	Volume=	0.616 af
Primary	=	8.32 cfs @	4.17 hrs,	Volume=	0.616 af, Atten= 0%, Lag= 0.0 min

Routed to Pond 28P : BMP-A 100-YR

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.001 hrs

DISCHARGE Imported from RatHydro.csv

Link 23L: BMP-A Inflow Hydrograph



Summary for Pond 28P: BMP-A 100-YR

Inflow	=	8.32 cfs @	4.17 hrs,	Volume=	0.616 af
Outflow	=	4.65 cfs @	4.26 hrs,	Volume=	0.608 af, Atten= 45%, Lag= 5.9 min
Primary	=	4.65 cfs @	4.26 hrs,	Volume=	0.608 af

Routed to nonexistent node 21P

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.001 hrs
Peak Elev= 101.67' @ 4.26 hrs Surf.Area= 5,407 sf Storage= 18,338 cf

Plug-Flow detention time= 696.5 min calculated for 0.608 af (99% of inflow)
Center-of-Mass det. time= 694.8 min (910.3 - 215.5)

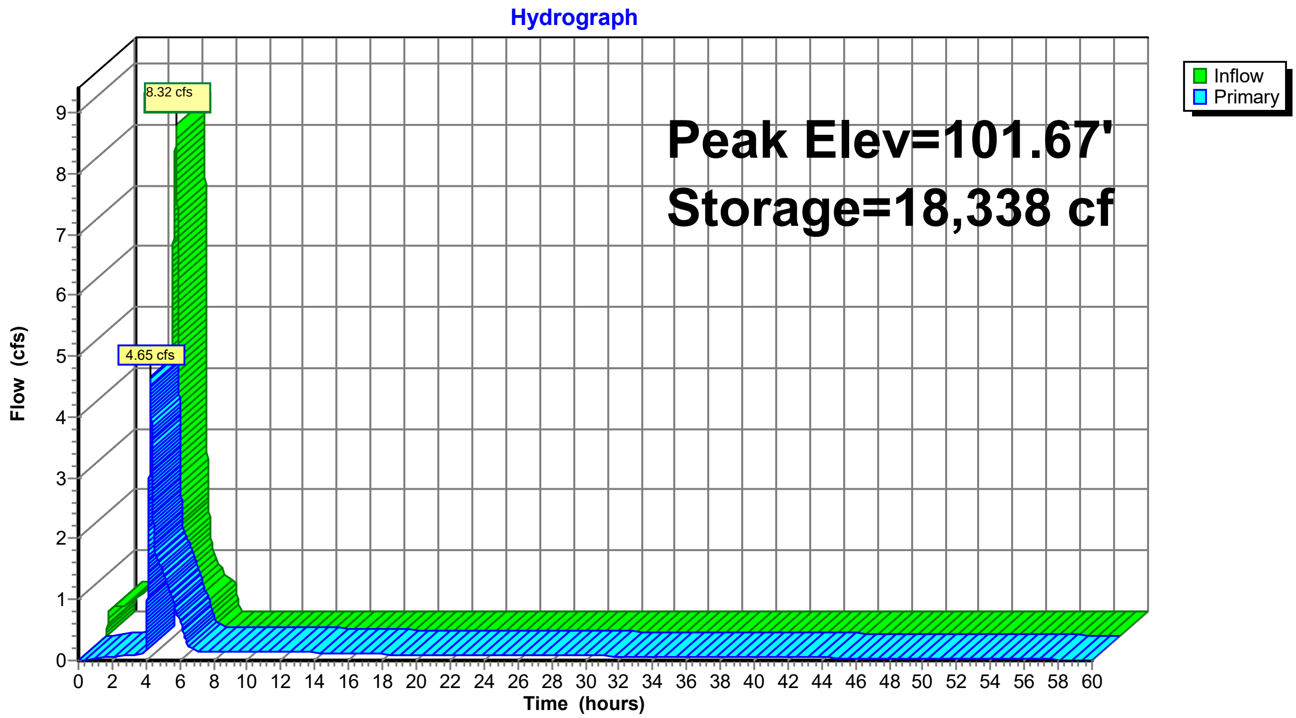
Volume	Invert	Avail.Storage	Storage Description
#1	96.00'	21,643 cf	**Biofiltration Basin (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
96.00	3,947	0.0	0	0	3,947
98.50	3,947	95.0	9,374	9,374	4,504
100.00	3,947	20.0	1,184	10,558	4,838
100.75	4,585	100.0	3,197	13,755	5,499
101.00	4,804	100.0	1,174	14,928	5,726
101.50	5,254	100.0	2,514	17,442	6,193
102.25	5,955	100.0	4,201	21,643	6,922

Device	Routing	Invert	Outlet Devices
#1	Primary	96.00'	**12.0" Round Outlet** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 96.00' / 95.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	96.00'	**1.6" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	100.75'	**10.0" W x 3.0" H Vert. Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#4	Device 1	101.50'	**36.0" x 36.0" Horiz. Grate** C= 0.600 in 36.0" x 36.0" Grate (100% open area) Limited to weir flow at low heads
#5	Device 2	96.00'	**5.000 in/hr Exfiltration over Surface area below 100.00'**

Primary OutFlow Max=4.65 cfs @ 4.26 hrs HW=101.67' (Free Discharge)
└─**1=Outlet** (Passes 4.65 cfs of 10.75 cfs potential flow)
  ├─**2=Orifice** (Orifice Controls 0.16 cfs @ 11.40 fps)
  │ └─**5=Exfiltration** (Passes 0.16 cfs of 0.46 cfs potential flow)
  ├─**3=Orifice** (Orifice Controls 1.78 cfs @ 4.28 fps)
  └─**4=Grate** (Weir Controls 2.71 cfs @ 1.34 fps)

Pond 28P: BMP-A 100-YR



APPENDIX C

Existing and Proposed Hydrology Maps

SAVE DATE: 08/09/22 ~ PLOT DATE: 08/09/22 ~ FILE NAME: J:\ACTIVE JOBS\3537 ESCO ASSEMBLAGE\CIVIL\REPORTS\HOF\HYDROLOGY\Appendix C - Drainage Maps\3537-HOF_Existing Hydro.dwg

LEGEND

MAJOR BASIN BOUNDARY	
FLOW PATH	
HYDROLOGIC NODE	100
HYDROLOGIC AREA (AC)	0.60
ELEVATION AT NODE	682.0
EXISTING HARDSCAPE/IMPERVIOUS AREA	
EXISTING LANDSCAPING/PERVIOUS AREA	

SCALE: 1" = 30'

0 30 60 90

PREPARED BY:

PASCO LARET SUITER & ASSOCIATES

San Diego | Solana Beach | Orange County

Phone 949.661.6695 | www.plsaengineering.com

ESCONDIDO ASSEMBLAGE

HOFTIEZER STREET "A"

EXISTING HYDROLOGY EXHIBIT

08/09/2022

DRAWING:

SHEET 1 OF 1

LEGEND

MAJOR BASIN BOUNDARY	
FLOW PATH	
HYDROLOGIC NODE	100
HYDROLOGIC AREA (AC)	0.60
ELEVATION AT NODE	682.0
PROPOSED HARDSCAPE/IMPERVIOUS AREA	
PROPOSED LANDSCAPING/PERVIOUS AREA	

SCALE: 1" = 30'
0 30 60 90

PREPARED BY:

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Phone 949.661.6695 | www.plsaengineering.com

ESCONDIDO ASSEMBLAGE
HOFTIEZER STREET "A"
PROPOSED HYDROLOGY EXHIBIT

05/03/2022

DRAWING:
SHEET 1 OF 1

SAVE DATE: ---- ~ PLOT DATE: 08/09/22 ~ FILE NAME: J:\ACTIVE JOBS\3537 ESCO ASSEMBLAGE\CIVIL\REPORTS\HOF\HYDROLOGY\Appendix C -- Drainage Maps\3537-HOF_Proposed Hydro.dwg