

March 20, 2023

**San Diego Developmental  
Services Department**  
101 Ash St, San Diego, CA 92101

**SUBJECT: MERGE 56 – UNIT 10: LOTS 1, 2, 3, 4, 5 & 6, UNIT 4: LOTS 3 & 4 – PDP #2 (PRJ-1059203)**  
ADDENDUM LETTER TO DRAINAGE REPORT

This letter is to address the proposed changes to the previously approved Merge 56 Unit 1 (PTS #697235) and Unit 2 (PTS #697236) Construction Change 'B' Storm Water Quality Management Plan.

*Note: Please refer to the attached proposed Drainage Exhibit for the Drainage Management Areas mentioned below.*

## **PROPOSED PROJECT DESCRIPTION**

This application proposes enacting changes to site grading, drainage, and water quality design across onsite Merge 56, more specifically, Unit 10, Lots 1, 2, 3, 4, 5, and 6, as appears on this PDP amendment plan. The bulk of this PDP concerns Unit 10, which will now cover a mixed use of three multi-story research and development buildings, retail space, and a hotel, along with a central parking structure which includes 4.5 subterranean levels and 6 above grade levels. Unit 4 will remain much the same as was previously approved but will incorporate internal adjustments within the previously proposed building footprint, thus no changes to impervious or pervious areas.

## **PROJECT SITE DRAINAGE**

**Previously Approved CC'B':** Drainage from all lots was parsed into 6 DMA's, managed by 3 biofiltration basins, and 4 Modular Wetland Systems for street treatment. DMA 12, 13, 14A, and 14B all currently drain north to Street T to their respective BMP's (BMP 12, 13, 14A, and 14B). Drainage from the systems under these streets eventually confluences with the drainage systems on Camino Del Sur, and discharges to the west into Deer Canyon, identified as POC A. Drainage from Unit 2 was split into two separate DMA's – 14A and 14B, where 14A will drain to the biofiltration basin, BMP 14a, be treated and discharged into the backbone storm drain system.

**Proposed PDP:** This PDP amendment proposes changes to the Drainage Management Areas (DMA's) of Unit 10 of Merge 56, changing some directionality and flow. Unit 10, Lots 1, 2, 3, 4, 5, and 6 will be affected as DMA 4, 12, and 13 will all be changed. DMA 4 and 12 are split into 2 separate DMA's and 13 is split into 3 DMA's. DMA 4 located in Unit 1 has been split into two separate DMA's – 4A and 4B. Runoff from 4A will be carried north to Street T by storm drain to Modular Wetlands System that is already

installed, BMP 4A, where it will be treated and discharged into the backbone storm drain system. Runoff from 4B will utilize a MWS unit, will be conveyed along Street M, and will be discharged into the backbone storm drain system. DMA 12, located in Unit 1 has been split into two separate DMA's – 12A and 12B. Runoff from 12A will be conveyed by area drains north to Street T into a biofiltration basin, BMP 12A, where it will be treated and discharged into the backbone storm drain system. Runoff from DMA 12B will be conveyed by area drains South to Street M into a biofiltration basin, where it will be treated and discharged into the backbone storm drain system. DMA 13, located in Unit 1 has been split into three separate DMA's – 13A, 13B, and 13C. Runoff from 13A, 13B, and 13C be conveyed by storm drains north to Street T to their respective BMP Modular Wetlands Systems. DMA 14A, has an updated drainage assessment where it will utilize a MWS unit. DMA 14A will flow north to Street T, where it be treated and discharged into the backbone storm drain system. Runoff is ultimately conveyed by private storm drain to Camino Del Sur where all the DMA's will confluence at the vault. It will then connect into the public storm drain at POC 'A' which will then drain westward into Deer Canyon.

In both scenarios the onsite backbone storm drainage systems have been sized to handle the 50-year storm event in the ultimate condition. In addition, the downstream drainage facilities included within Camino Del Sur as shown on the Grading and Storm Drain Plans Drawing No. 40589-D, PTS 596211 have also been sized to handle the runoff generated by the site proposed by this PDP.

Runoff generated from the site will not result in any unmitigated drainage, or storm water quality impacts on the existing downstream conditions with these proposed measures in place.

*Note: Updated drainage calculations have been provided in this addendum study.*

If you have any questions or need any further information, please feel free to call me on my direct line (858-875-1718) or email me at [Justin.Giles@latitude33.com](mailto:Justin.Giles@latitude33.com).

Sincerely,



Justin R. Giles, C83540  
Project Manager  
Latitude 33 Planning and Engineering

## I. PURPOSE

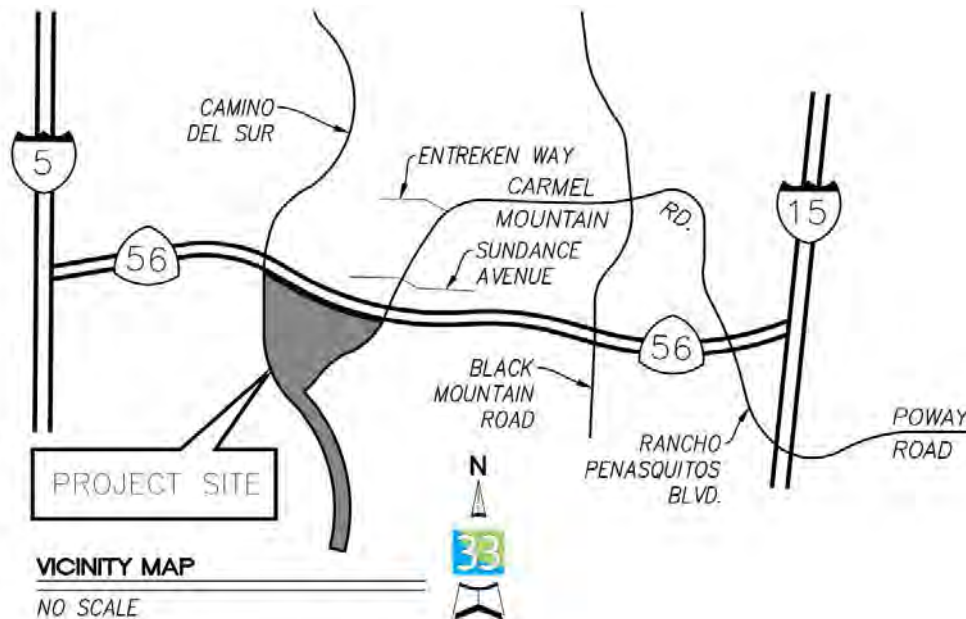
This drainage study evaluates the pre-project and post-project drainage conditions for anticipated runoff flows associated with the construction of the Merge Onsite development (approved per VTM 1266780), using the rational method outlined in the City of San Diego Drainage Design Manual. This report documents the hydrologic and hydraulic impacts due to the development.

## II. PROJECT DESCRIPTION

The proposed Onsite Merge 56 project is approximately 36.10 acres, located in the City of San Diego immediately south of state route 56 (see Figure 1 – Vicinity Map). Currently, Camino Del Sur terminates approximately one mile south of SR-56. The Offsite Merge 56 Grading and Improvement Plans (DWG 45089-D & 40590-D) propose to connect the northerly segment of Camino Del Sur from Torrey Santa Fe Road to the southerly segment near Dormouse Road. The offsite project will also extend Carmel Mountain Road southwesterly to the proposed Camino Del Sur extension.

These road extensions are also accompanied by the Onsite Merge 56 project, more specifically the Onsite PDP#2 section, which this report will focus on. The PDP#2 will be a development bounded by SR-56 to the north, Camino Del Sur to the west, and Private Street M to the South. The proposed use of this space includes a mix of research and development space, a parking garage, retail, and a multi-story hotel.

**FIGURE 1 – VICINITY MAP**



## III. EXISTING DRAINAGE PATTERNS

In pre-project conditions, the site is made up of undeveloped, naturally vegetated land. The project is located primarily within the watershed limits for Los Penasquitos Canyon Preserve. An existing ridgeline

approximately 800 feet southeast of the proposed Camino Del Sur and Carmel Mountain Road intersection divides the project's drainage into the Deer Canyon and the Penasquitos Canyon. The northern portion of the project drains northwesterly towards Deer Canyon, with the remaining portions of the site draining southeasterly towards Penasquitos Canyon. For analysis, a runoff coefficient of 0.45 is used for the existing site which corresponds to rural lots greater than ½ acre per City of San Diego Drainage Design Manual 2017.

#### Clean Water Act Section 401 & 404 Applicability

Per the approved PDP No. 1266871 conditions, the project is subject to the requirements of CWA 401/404. The CWA 401/404 approvals will be obtained prior to start of construction.

## IV. PROPOSED DRAINAGE PATTERNS

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The post-project area will generally maintain the pre-project drainage patterns. Most of the runoff will be collected via proposed storm drain systems that will be installed as part of the street improvements. Refer to the attached "Proposed Onsite Merge 56 Drainage Map" for information regarding proposed drainage areas and the point of compliance (POC 'A').

Runoff from all private driveways (DMAs 1-4A, 4B - 9) will be routed via sheet flow to modular wetlands units before entering the private storm drain system. Bypass of the modular wetlands units will be via combination gutter bypass and internal bypass within the modular wetland units. Runoff generated by the pad graded areas north of Merge Avenue (DMAs 12a and 12b), will be routed to bio-filtration basins before entering the private storm drain system. And runoff from DMA 14a will be routed to a modular wetlands device before entering the private storm drain system. Runoff from all remaining pad graded areas and private driveways south of Merge Avenue (DMAs 10-13A, 13B, 13C - 38) will be routed via storm drain to modular wetlands units. Bypass of the modular wetlands units will be via weirs installed within storm drain cleanouts.

All runoff will be piped towards the northwest corner of the project to a storage vault system which will provide detention for hydromodification requirements as well as mitigation of increased runoff generated by the developed site. The storage vault system will be equipped with an internal weir which will allow higher volume flows to bypass internally. Runoff is ultimately conveyed via private storm drain to Camino Del Sur where it will connect into the public storm drain system at POC 'A' which then drains westerly towards Deer Canyon.

Prior drainage analyses have been performed for the entire Merge 56 project (onsite and offsite) and are included in the following reports:

- January 2001, *Drainage Study for Camino Ruiz (aka Camino Del Sur), South of Carmel Mountain Road*
- January 22, 2004, *Preliminary Drainage Study, Rhodes Crossing*
- August 28, 2006, *Drainage Study, Rhodes Crossing, Camino del Sur & Camel Mountain Roadway Plans.*
- May 12, 2015, *Drainage Report for Merge 56 Vesting Tentative Map*, performed by Chang

The drainage report for the Vesting Tentative Map of the Merge 56 onsite and offsite project entitled *Drainage Report for Merge 56 Vesting Tentative Map* has been provided ion Appendix A and further support the findings of this report.

## V. CALCULATIONS SUMMARY

Using Storm and Sanitary Analysis (results provided in Appendix B & C) the following 50-year values were determined for the existing and proposed condition. These values are further detailed on the Existing and Proposed Drainage Maps found in Appendix B & C respectively.

**Table 1 - Summary of Existing Condition DMA Flows**

Existing DMA Summary		
DMA ID	Area (acres)	Peak Runoff (cfs)
1	13.92	14.08
2	22.18	27.35

**Table 2 - Summary of Proposed Condition DMA Flows**

Proposed DMA Summary		
DMA ID	Area (ac)	Peak Runoff (cfs)
1	0.45	1.49
2	1.34	4.13
3	0.37	1.28
4A	0.38	1.32
4B	0.71	2.35
5	0.30	0.92
6	0.80	2.50
7	0.13	0.45
8	0.42	1.47
9	0.54	1.88
10	0.20	1.18
11	0.46	0.77
12A	1.46	5.06
12B	4.09	14.00
13A	1.53	5.26
13B	1.64	5.70
13C	1.38	4.76
14a	1.19	4.15
14b	1.61	5.61
15	1.35	4.70
16	0.67	2.33
17	0.39	1.36
18	0.41	1.43
19	0.45	1.57

Proposed DMA Summary		
DMA ID	Area (ac)	Peak Runoff (cfs)
20	0.33	1.15
21	0.42	1.46
22	0.56	1.95
23	0.59	2.06
24	0.80	2.79
25	0.40	1.39
26	0.51	1.46
27	0.42	1.21
28	0.84	2.41
29	1.26	3.62
30	1.35	3.78
31	2.64	6.97
32	0.73	2.10
33	0.66	1.89
34	0.74	2.12
35	0.86	2.47
36	0.66	1.89
37	0.10	0.35
38	0.34	0.49

**Table 3 - Summary of Existing Outfall Flow**

Existing Conditions POC Summary		
POC ID	Contributing DMAs	Q50 Peak (cfs)
POC 'A'	1, 2	41.43

**Table 4 - Summary of Proposed Outfall Flow**

Proposed Conditions POC Summary				
POC ID	Contributing DMAs	Existing Q50 Peak (cfs)	Proposed Q50 Peak (cfs) Before Detention	Proposed Q50 Peak (cfs) After Detention
POC 'A'	1-18	41.43	94.24	41.31

## VI. CONCLUSION

The hydraulic analysis performed for the Onsite Merge 56 project provides evidence to support that the drainage design proposed is feasible. An increase in Peak  $Q_{50}$  of **52.81 cfs** and  $V_{50}$  of **36.32 FPS** will be mitigated by the implementation of storage vaults. The project currently proposes 85,305cf of storage to meet hydro modification requirements. By modeling a storage vault in Storm and Sanitary Analysis, the proposed peak runoff after detention is  $Q_{50} = 41.31$  cfs and  $V_{50} = 15.10$  FPS. As this is less than the existing peak runoff ( $Q_{50} = 41.43$  cfs), the increase in peak flow will be mitigated and the rational method analysis which was used to determine the peak 50-year values shows that the proposed private storm drain system is sized appropriately and can properly convey the project generated runoff.

For specific sizes and other details on the proposed flow control BMP's, see the Storm Water Quality Management Plan for Onsite Merge 56 prepared by Latitude 33 Planning & Engineering.

## APPENDIX C: PROPOSED CALCULATIONS & EXHIBIT

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# POC 'A'

AREA=36.51 AC  
 Before Detention:  
 $Q_{50}=94.24$  CFS  
 $V_{50}=36.32$  FPS

After Detention:  
 $Q_{50}=41.31$  CFS  
 $V_{50}=15.10$  FPS

CAMINO DEL SUR

SR 56

MERGE AVENUE

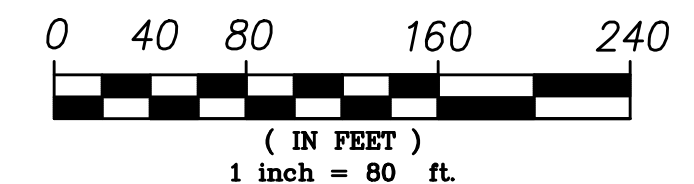
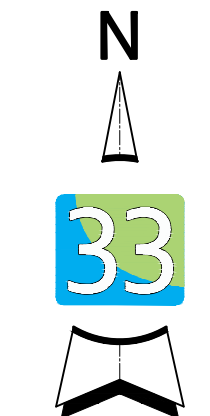
CARMEL MOUNTAIN ROAD

MAP NO. 16086

LOT 2  
 MAP 15578

**LEGEND**

- UNIT 1/2 SUBDIVISION BOUNDARY
- BASIN BOUNDARY
- LIMITS OF WORK
- DRAINAGE PATH (T.O.C.)
- BMP
- PROP STORAGE AREA
- PROP LANDSCAPE AREA
- PROP. IMPERVIOUS AREA
- BASIN INFORMATION



SHEET 1 OF 1

**MERGE 56 - ONSITE UNITS 1 AND 2  
 PROPOSED DRAINAGE EXHIBIT**

SCALE: 1" = 80'  
 DATE: 03/20/2023 DRAWN BY: DD  
 JOB NO.: 1176.30 CHECKED BY: HRG

**latitude 33**  
 PLANNING & ENGINEERING  
 9098 Hibert Street, 2nd Floor, San Diego, CA 92131  
 Tel 858.751.0833

# UNMITIGATED CONDITION

H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.2.147 (Build 0)

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Project Description  
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File Name ..... Merge Hydrology\_CCB (Before Detention-Lennar Revs) - 13B routing -  
4B North full model.SPF  
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private  
Storm Drain.dwg

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Analysis Options  
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Flow Units ..... cfs  
Subbasin Hydrograph Method. Rational  
Time of Concentration..... SCS TR-55  
Return Period..... 50 years  
Link Routing Method ..... Kinematic Wave  
Storage Node Exfiltration.. None  
Starting Date ..... SEP-26-2017 00:00:00  
Ending Date ..... SEP-27-2017 00:00:00  
Report Time Step ..... 00:00:10

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Element Count  
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Number of subbasins ..... 43  
Number of nodes ..... 92  
Number of links ..... 91

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Subbasin Summary  
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Subbasin	Total Area
ID	acres
12A	1.46
12B	4.09
13A	1.53
13B	1.64
13C	1.38
4A	0.38
4B	0.71
DMA01	0.45
DMA02	1.34
DMA03	0.37
DMA05	0.30
DMA06	0.80
DMA07	0.13
DMA08	0.42
DMA09	0.54
DMA10	0.34
DMA11	0.22
DMA14A	1.19
DMA14B	1.61
DMA15	1.35
DMA16	0.67
DMA17	0.39
DMA18	0.41
DMA19	0.45
DMA20	0.33

DMA21	0.42
DMA22	0.56
DMA23	0.59
DMA24	0.80
DMA25	0.40
DMA26	0.51
DMA27	0.42
DMA28	0.84
DMA29	1.26
DMA30	1.35
DMA31	2.64
DMA32	0.73
DMA33	0.66
DMA34	0.74
DMA35	0.86
DMA36	0.66
DMA37	0.10
DMA38	0.34

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Node Summary  
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Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-01	JUNCTION	346.29	369.77	0.00	
Jun-02	JUNCTION	358.01	375.41	0.00	
Jun-03	JUNCTION	362.89	372.14	0.00	
Jun-04	JUNCTION	361.20	370.24	0.00	
Jun-05	JUNCTION	362.85	369.15	0.00	
Jun-07	JUNCTION	365.60	376.08	0.00	
Jun-08	JUNCTION	367.76	375.18	0.00	
Jun-09	JUNCTION	370.56	378.43	0.00	
Jun-10	JUNCTION	374.88	381.78	0.00	
Jun-11	JUNCTION	377.48	385.89	0.00	
Jun-12	JUNCTION	383.38	393.29	0.00	
Jun-13	JUNCTION	380.90	389.54	0.00	
Jun-14	JUNCTION	379.11	387.57	0.00	
Jun-15	JUNCTION	376.71	383.93	0.00	
Jun-17	JUNCTION	374.13	382.45	0.00	
Jun-18	JUNCTION	372.36	382.57	0.00	
Jun-19	JUNCTION	370.42	379.05	0.00	
Jun-20	JUNCTION	368.22	373.46	0.00	
Jun-21	JUNCTION	359.66	373.22	0.00	
Jun-22	JUNCTION	362.54	376.72	0.00	
Jun-25	JUNCTION	378.92	384.01	0.00	
Jun-64	JUNCTION	384.07	390.31	0.00	
Jun-65	JUNCTION	382.95	393.88	0.00	
Jun-66	JUNCTION	380.08	395.21	0.00	
Jun-67	JUNCTION	378.51	392.50	0.00	
Jun-68	JUNCTION	377.79	392.07	0.00	
Jun-69	JUNCTION	376.32	391.50	0.00	
Jun-70	JUNCTION	375.69	389.68	0.00	
Jun-71	JUNCTION	374.96	387.44	0.00	
Jun-72	JUNCTION	373.33	386.90	0.00	
Jun-73	JUNCTION	371.18	385.75	0.00	
Jun-74	JUNCTION	368.25	382.94	0.00	
Jun-75	JUNCTION	367.22	381.80	0.00	
Jun-76	JUNCTION	365.05	379.20	0.00	
Jun-77	JUNCTION	364.42	377.30	0.00	
Jun-78	JUNCTION	372.80	386.00	0.00	
Jun-79	JUNCTION	374.28	388.80	0.00	
Jun-80	JUNCTION	379.45	390.70	0.00	
Jun-81	JUNCTION	381.79	388.24	0.00	
Jun-82	JUNCTION	383.32	389.90	0.00	

Jun-83	JUNCTION	362.67	367.60	0.00
Jun-84	JUNCTION	387.44	395.40	0.00
Jun-85	JUNCTION	384.90	392.50	0.00
Jun-86	JUNCTION	368.30	375.05	0.00
Jun-90	JUNCTION	369.82	377.50	0.00
Jun-91	JUNCTION	368.35	375.80	0.00
Jun-92	JUNCTION	367.00	373.30	0.00
Jun-93	JUNCTION	370.98	377.60	0.00
Stor-01	JUNCTION	347.00	362.00	0.00
Out-POC'A'	OUTFALL	333.75	338.75	0.00

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Inlet Summary  
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Catchbasin ID	Inlet Rim Elevation	Inlet Pondered Area	Initial Water Elevation	Manufacturer Grate Part Clogging Number Factor	Inlet Location	Number of Inlets
ft	ft	ft <sup>2</sup>	ft	%		
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BMP12B	371.72	10.00	371.72	N/A	On Sag	1
BMP13B	371.45	10.00	371.45	N/A	On Sag	1
BMP13C	371.92	10.00	371.92	N/A	On Sag	1
BMP4B	371.21	10.00	371.21	N/A	On Sag	1
Inlet-001	370.02	10.00	370.02	N/A	On Sag	1
Inlet-002	370.29	10.00	370.29	N/A	On Sag	1
Inlet-003	381.41	10.00	381.41	N/A	On Sag	1
Inlet-004	365.21	10.00	365.21	N/A	On Sag	1
Inlet-005	365.22	10.00	365.22	N/A	On Sag	1
Inlet-006	379.54	10.00	379.54	N/A	On Sag	1
Inlet-007	379.57	10.00	379.57	N/A	On Sag	1
Inlet-008	366.92	10.00	366.92	N/A	On Sag	1
Inlet-009	369.14	10.00	369.14	N/A	On Sag	1
Inlet-012	372.22	10.00	372.22	N/A	On Sag	1
Inlet-014	376.88	10.00	376.88	N/A	On Sag	1
Inlet-23	384.48	10.00	384.48	N/A	On Sag	1
Inlet-24	384.48	10.00	384.48	N/A	On Sag	1
Inlet-25	380.17	10.00	380.17	N/A	On Sag	1
Inlet-26	381.96	10.00	381.96	N/A	On Sag	1
Inlet-27	381.11	10.00	381.11	N/A	On Sag	1
Inlet-28				N/A	On Sag	1

378.11	391.52	10.00	378.11	0.00		
Inlet-29		FHWA HEC-22	GENERIC	N/A	On Sag	1
375.50	387.55	10.00	375.50	0.00		
Inlet-30		FHWA HEC-22	GENERIC	N/A	On Sag	1
377.78	387.00	10.00	377.78	0.00		
Inlet-31		FHWA HEC-22	GENERIC	N/A	On Sag	1
376.65	386.09	10.00	376.65	0.00		
Inlet-32		FHWA HEC-22	GENERIC	N/A	On Sag	1
383.11	390.82	10.00	383.11	0.00		
Inlet-33		FHWA HEC-22	GENERIC	N/A	On Sag	1
380.65	390.82	10.00	380.65	0.00		
Inlet-34		FHWA HEC-22	GENERIC	N/A	On Sag	1
385.44	393.36	10.00	385.44	0.00		
Inlet-35		FHWA HEC-22	GENERIC	N/A	On Sag	1
384.14	393.36	10.00	384.14	0.00		
Inlet-36		FHWA HEC-22	GENERIC	N/A	On Sag	1
370.93	381.90	10.00	370.93	0.00		
Inlet-37		FHWA HEC-22	GENERIC	N/A	On Sag	1
372.23	381.91	10.00	372.23	0.00		
Inlet-38		FHWA HEC-22	GENERIC	N/A	On Sag	1
368.53	377.63	10.00	368.53	0.00		
Inlet-39		FHWA HEC-22	GENERIC	N/A	On Sag	1
369.01	377.46	10.00	369.01	0.00		
Inlet-40		FHWA HEC-22	GENERIC	N/A	On Sag	1
375.72	386.94	10.00	375.72	0.00		
Inlet-41		FHWA HEC-22	GENERIC	N/A	On Sag	1
384.50	392.00	10.00	384.50	0.00		
Inlet-42		FHWA HEC-22	GENERIC	N/A	On Sag	1
382.72	389.70	10.00	382.72	0.00		
Inlet-43		FHWA HEC-22	GENERIC	N/A	On Sag	1
380.52	387.52	10.00	380.52	0.00		
Inlet-44		FHWA HEC-22	GENERIC	N/A	On Sag	1
378.53	385.53	10.00	378.53	0.00		
Inlet-45		FHWA HEC-22	GENERIC	N/A	On Sag	1
377.76	384.76	10.00	377.76	0.00		
Inlet-46		FHWA HEC-22	GENERIC	N/A	On Sag	1
372.44	379.44	10.00	372.44	0.00		
Inlet-47		FHWA HEC-22	GENERIC	N/A	On Sag	1
369.06	376.06	10.00	369.06	0.00		
Inlet-48		FHWA HEC-22	GENERIC	N/A	On Sag	1
374.00	377.00	10.00	374.00	0.00		
MWS13A		FHWA HEC-22	GENERIC	N/A	On Sag	1
372.44	377.94	10.00	372.44	0.00		

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Roadway and Gutter Summary

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Inlet ID	Roadway Longitudinal Slope ft/ft	Roadway Cross Slope ft/ft	Roadway Manning's Roughness	Gutter Cross Slope ft/ft	Gutter Width ft	Gutter Depression in
BMP12B	-	0.0200	0.0160	0.0620	2.00	2.00
BMP13B	-	0.0200	0.0160	0.0620	2.00	2.00
BMP13C	-	0.0200	0.0160	0.0620	2.00	2.00
BMP4B	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-001	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-002	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-003	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-004	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-005	-	0.0200	0.0160	0.0620	1.50	1.50
Inlet-006	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-007	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-008	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-009	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-012	-	0.0200	0.0160	0.0620	2.00	2.00

Inlet-014	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-23	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-24	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-25	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-26	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-27	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-28	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-29	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-30	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-31	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-32	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-33	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-34	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-35	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-36	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-37	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-38	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-39	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-40	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-41	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-42	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-43	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-44	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-45	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-46	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-47	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-48	-	0.0200	0.0160	0.0620	2.00	2.00
MWS13A	-	0.0200	0.0160	0.0620	2.00	2.00

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Link Summary  
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Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-001	Jun-01	Out-POC'A'	CONDUIT	43.6	25.2921	0.0150
Link-002	Stor-01	Jun-01	CONDUIT	30.7	1.9857	0.0150
Link-003	Jun-07	Jun-03	CONDUIT	325.6	0.7311	0.0150
Link-004	Jun-03	Jun-04	CONDUIT	187.1	0.7269	0.0150
Link-005	Jun-05	Jun-04	CONDUIT	63.7	0.3925	0.0150
Link-007	Inlet-005	Jun-05	CONDUIT	13.8	0.9455	0.0150
Link-008	Inlet-004	Jun-05	CONDUIT	8.3	1.5758	0.0150
Link-012	Jun-09	Jun-08	CONDUIT	228.8	1.0052	0.0150
Link-013	Jun-10	Jun-09	CONDUIT	225.0	1.7733	0.0150
Link-014	Jun-11	Jun-10	CONDUIT	109.4	2.0750	0.0150
Link-016	Inlet-001	Jun-08	CONDUIT	19.5	11.5897	0.0150
Link-017	Inlet-002	Jun-08	CONDUIT	6.5	1.2308	0.0150
Link-018	Inlet-014	Jun-10	CONDUIT	15.0	10.0000	0.0150
Link-019	Jun-02	Stor-01	CONDUIT	15.0	0.5319	0.0150
Link-020	Jun-21	Jun-02	CONDUIT	264.8	0.4985	0.0150
Link-022	Inlet-008	Jun-21	CONDUIT	33.3	13.0827	0.0150
Link-023	Jun-20	Inlet-008	CONDUIT	64.9	1.4941	0.0150
Link-024	Jun-19	Jun-20	CONDUIT	186.4	1.0032	0.0150
Link-025	Jun-18	Jun-19	CONDUIT	160.6	1.0022	0.0150
Link-026	Jun-17	Jun-18	CONDUIT	144.6	0.9959	0.0150
Link-027	Jun-15	Jun-17	CONDUIT	180.6	0.9689	0.0150
Link-029	Jun-14	Jun-15	CONDUIT	259.1	0.7988	0.0150
Link-030	Jun-13	Jun-14	CONDUIT	143.4	1.0043	0.0150
Link-031	Jun-12	Jun-13	CONDUIT	215.7	0.9969	0.0150
Link-032	Inlet-009	Jun-20	CONDUIT	7.4	1.2129	0.0150
Link-033	Jun-25	Jun-18	CONDUIT	69.2	8.4851	0.0150
Link-034	Inlet-006	Jun-25	CONDUIT	5.2	5.5449	0.0150
Link-035	Inlet-007	Jun-25	CONDUIT	19.6	1.6368	0.0150
Link-037	Inlet-003	Jun-13	CONDUIT	3.9	4.5918	0.0150
Link-100	Jun-66	Jun-67	CONDUIT	110.0	1.4277	0.0150
Link-101	Inlet-25	Jun-67	CONDUIT	20.5	8.1015	0.0150

Link-102	Inlet-26	Jun-67	CONDUIT	21.1	16.3275	0.0150
Link-103	Jun-68	Jun-69	CONDUIT	39.1	3.7606	0.0150
Link-104	Inlet-27	Jun-69	CONDUIT	20.4	23.4919	0.0150
Link-105	Inlet-28	Jun-69	CONDUIT	20.0	8.9545	0.0150
Link-106	Jun-69	Jun-70	CONDUIT	119.1	0.5291	0.0150
Link-107	Jun-70	Jun-71	CONDUIT	148.3	0.4922	0.0150
Link-108	Inlet-29	Jun-71	CONDUIT	19.5	2.7636	0.0150
Link-109	Jun-71	Jun-72	CONDUIT	35.1	4.6373	0.0150
Link-110	Inlet-30	Jun-72	CONDUIT	20.9	21.3327	0.0150
Link-111	Jun-72	Jun-73	CONDUIT	66.2	3.2468	0.0150
Link-112	Jun-73	Jun-74	CONDUIT	102.8	2.8499	0.0150
Link-113	Jun-74	Jun-75	CONDUIT	38.6	2.6698	0.0150
Link-114	Inlet-37	Jun-75	CONDUIT	20.4	24.5950	0.0150
Link-115	Inlet-36	Jun-75	CONDUIT	19.9	18.5965	0.0150
Link-116	Jun-75	Jun-76	CONDUIT	92.8	2.3371	0.0150
Link-117	Jun-76	Jun-77	CONDUIT	64.6	0.9752	0.0150
Link-118	Inlet-38	Jun-77	CONDUIT	20.5	20.0782	0.0150
Link-119	Inlet-39	Jun-77	CONDUIT	21.3	21.5089	0.0150
Link-120	Jun-77	Jun-83	CONDUIT	24.9	7.0309	0.0150
Link-121	Jun-83	Jun-22	CONDUIT	11.0	0.8197	0.0150
Link-122	Inlet-48	Jun-83	CONDUIT	56.9	19.9261	0.0150
Link-123	Inlet-42	Jun-66	CONDUIT	242.2	1.0898	0.0150
Link-124	Inlet-43	Jun-68	CONDUIT	201.9	1.3518	0.0150
Link-125	Inlet-44	Jun-70	CONDUIT	193.2	1.4703	0.0150
Link-126	Inlet-45	Jun-71	CONDUIT	212.2	1.3196	0.0150
Link-127	Inlet-46	Jun-74	CONDUIT	195.4	2.1440	0.0150
Link-128	Inlet-47	Jun-76	CONDUIT	189.3	2.1181	0.0150
Link-131	Jun-82	Jun-81	CONDUIT	126.7	1.2079	0.0150
Link-132	Inlet-35	Jun-81	CONDUIT	16.9	13.9466	0.0150
Link-133	Inlet-34	Jun-81	CONDUIT	18.9	19.2612	0.0150
Link-134	Jun-81	Jun-80	CONDUIT	199.0	1.1758	0.0150
Link-135	Inlet-33	Jun-80	CONDUIT	18.4	6.5217	0.0150
Link-136	Inlet-32	Jun-80	CONDUIT	17.8	20.6197	0.0150
Link-137	Jun-80	Jun-79	CONDUIT	208.4	2.4808	0.0150
Link-138	Inlet-40	Jun-79	CONDUIT	18.3	7.8732	0.0150
Link-139	Jun-79	Jun-78	CONDUIT	40.2	3.6807	0.0150
Link-140	Inlet-31	Jun-78	CONDUIT	16.8	22.9440	0.0150
Link-141	Jun-78	Jun-73	CONDUIT	50.0	3.2381	0.0150
Link-143	Jun-84	Jun-85	CONDUIT	73.7	2.9986	0.0150
Link-144	Jun-85	Jun-11	CONDUIT	122.9	5.6292	0.0150
Link-146	BMP12B	Jun-86	CONDUIT	29.2	10.0000	0.0150
Link-147	Jun-86	Inlet-008	CONDUIT	138.3	0.9977	0.0150
Link-148	MWS13A	Jun-09	CONDUIT	13.8	10.0145	0.0150
Link-156	BMP13B	Jun-93	CONDUIT	10.8	4.3519	0.0150
Link-158	Jun-90	Jun-91	CONDUIT	163.0	0.6996	0.0150
Link-159	BMP13C	Jun-93	CONDUIT	122.2	0.7694	0.0150
Link-161	Jun-91	Jun-92	CONDUIT	130.4	0.7823	0.0150
Link-162	BMP4B	Jun-90	CONDUIT	228.1	0.4646	0.0150
Link-163	Jun-92	Jun-07	CONDUIT	15.5	0.6452	0.0150
Link-164	Jun-93	Jun-90	CONDUIT	129.1	0.6428	0.0150
Link-165	CONDUIT	Jun-07	CONDUIT	260.2	0.7149	0.0150
Link-86	Jun-22	Jun-21	CONDUIT	340.3	0.8846	0.0150
Link-87	Jun-04	Stor-01	CONDUIT	37.4	7.4104	0.0150
Link-88	Inlet-012	Jun-03	CONDUIT	90.0	9.9989	0.0150
Link-94	Inlet-41	Jun-65	CONDUIT	258.3	0.6001	0.0150
Link-95	Inlet-23	Jun-64	CONDUIT	21.1	1.9468	0.0150
Link-96	Inlet-24	Jun-64	CONDUIT	19.3	2.1288	0.0150
Link-97	Jun-64	Jun-65	CONDUIT	162.8	0.6881	0.0150
Link-98	Jun-65	Jun-66	CONDUIT	159.1	1.8042	0.0150
Link-99	Jun-67	Jun-68	CONDUIT	37.4	1.9256	0.0150

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 Cross Section Summary  
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Link Design	Shape	Depth/	Width	No. of	Cross	Full Flow
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ID Flow Capacity cfs		Diameter		Barrels	Sectional Area ft <sup>2</sup>	Hydraulic Radius ft	
		ft	ft				
438.52	Link-001	CIRCULAR	3.50	3.50	1	9.62	0.88
122.87	Link-002	CIRCULAR	3.50	3.50	1	9.62	0.88
49.43	Link-003	CIRCULAR	3.00	3.00	1	7.07	0.75
49.28	Link-004	CIRCULAR	3.00	3.00	1	7.07	0.75
12.28	Link-005	CIRCULAR	2.00	2.00	1	3.14	0.50
3.00	Link-007	CIRCULAR	1.00	1.00	1	0.79	0.25
11.43	Link-008	CIRCULAR	1.50	1.50	1	1.77	0.38
19.66	Link-012	CIRCULAR	2.00	2.00	1	3.14	0.50
26.11	Link-013	CIRCULAR	2.00	2.00	1	3.14	0.50
28.24	Link-014	CIRCULAR	2.00	2.00	1	3.14	0.50
10.51	Link-016	CIRCULAR	1.00	1.00	1	0.79	0.25
3.43	Link-017	CIRCULAR	1.00	1.00	1	0.79	0.25
17.70	Link-018	CIRCULAR	1.25	1.25	1	1.23	0.31
63.59	Link-019	CIRCULAR	3.50	3.50	1	9.62	0.88
61.56	Link-020	CIRCULAR	3.50	3.50	1	9.62	0.88
70.92	Link-022	CIRCULAR	2.00	2.00	1	3.14	0.50
23.97	Link-023	CIRCULAR	2.00	2.00	1	3.14	0.50
19.64	Link-024	CIRCULAR	2.00	2.00	1	3.14	0.50
19.63	Link-025	CIRCULAR	2.00	2.00	1	3.14	0.50
19.57	Link-026	CIRCULAR	2.00	2.00	1	3.14	0.50
8.96	Link-027	CIRCULAR	1.50	1.50	1	1.77	0.38
8.14	Link-029	CIRCULAR	1.50	1.50	1	1.77	0.38
9.12	Link-030	CIRCULAR	1.50	1.50	1	1.77	0.38
9.09	Link-031	CIRCULAR	1.50	1.50	1	1.77	0.38
10.03	Link-032	CIRCULAR	1.50	1.50	1	1.77	0.38
26.52	Link-033	CIRCULAR	1.50	1.50	1	1.77	0.38
7.27	Link-034	CIRCULAR	1.00	1.00	1	0.79	0.25
3.95	Link-035	CIRCULAR	1.00	1.00	1	0.79	0.25
19.51	Link-037	CIRCULAR	1.50	1.50	1	1.77	0.38



Link-100	CIRCULAR	1.50	1.50	1	1.77	0.38
10.88						
Link-101	CIRCULAR	1.50	1.50	1	1.77	0.38
25.91						
Link-102	CIRCULAR	1.50	1.50	1	1.77	0.38
36.79						
Link-103	CIRCULAR	2.00	2.00	1	3.14	0.50
38.02						
Link-104	CIRCULAR	1.50	1.50	1	1.77	0.38
44.12						
Link-105	CIRCULAR	1.50	1.50	1	1.77	0.38
27.24						
Link-106	CIRCULAR	2.00	2.00	1	3.14	0.50
14.26						
Link-107	CIRCULAR	2.00	2.00	1	3.14	0.50
13.75						
Link-108	CIRCULAR	1.50	1.50	1	1.77	0.38
15.13						
Link-109	CIRCULAR	2.50	2.50	1	4.91	0.63
76.55						
Link-110	CIRCULAR	1.50	1.50	1	1.77	0.38
42.05						
Link-111	CIRCULAR	2.50	2.50	1	4.91	0.63
64.05						
Link-112	CIRCULAR	3.00	3.00	1	7.07	0.75
97.59						
Link-113	CIRCULAR	3.00	3.00	1	7.07	0.75
94.45						
Link-114	CIRCULAR	1.50	1.50	1	1.77	0.38
45.15						
Link-115	CIRCULAR	1.50	1.50	1	1.77	0.38
39.26						
Link-116	CIRCULAR	3.00	3.00	1	7.07	0.75
88.37						
Link-117	CIRCULAR	3.00	3.00	1	7.07	0.75
57.08						
Link-118	CIRCULAR	1.50	1.50	1	1.77	0.38
40.79						
Link-119	CIRCULAR	1.50	1.50	1	1.77	0.38
42.22						
Link-120	CIRCULAR	3.00	3.00	1	7.07	0.75
153.28						
Link-121	CIRCULAR	3.00	3.00	1	7.07	0.75
52.33						
Link-122	CIRCULAR	1.00	1.00	1	0.79	0.25
13.78						
Link-123	CIRCULAR	1.50	1.50	1	1.77	0.38
9.50						
Link-124	CIRCULAR	1.50	1.50	1	1.77	0.38
10.58						
Link-125	CIRCULAR	1.50	1.50	1	1.77	0.38
11.04						
Link-126	CIRCULAR	1.50	1.50	1	1.77	0.38
10.46						
Link-127	CIRCULAR	1.50	1.50	1	1.77	0.38
13.33						
Link-128	CIRCULAR	1.50	1.50	1	1.77	0.38
13.25						
Link-131	CIRCULAR	2.00	2.00	1	3.14	0.50
21.55						
Link-132	CIRCULAR	1.50	1.50	1	1.77	0.38
34.00						
Link-133	CIRCULAR	1.50	1.50	1	1.77	0.38
39.95						
Link-134	CIRCULAR	2.00	2.00	1	3.14	0.50
21.26						
Link-135	CIRCULAR	1.50	1.50	1	1.77	0.38

23.25							
Link-136	CIRCULAR	1.50	1.50	1	1.77	0.38	
41.34							
Link-137	CIRCULAR	2.00	2.00	1	3.14	0.50	
30.88							
Link-138	CIRCULAR	1.50	1.50	1	1.77	0.38	
25.54							
Link-139	CIRCULAR	2.50	2.50	1	4.91	0.63	
68.20							
Link-140	CIRCULAR	1.50	1.50	1	1.77	0.38	
43.61							
Link-141	CIRCULAR	2.50	2.50	1	4.91	0.63	
63.97							
Link-143	CIRCULAR	1.50	1.50	1	1.77	0.38	
15.76							
Link-144	CIRCULAR	1.50	1.50	1	1.77	0.38	
21.60							
Link-146	CIRCULAR	1.50	1.50	1	1.77	0.38	
28.79							
Link-147	CIRCULAR	2.00	2.00	1	3.14	0.50	
19.58							
Link-148	CIRCULAR	1.50	1.50	1	1.77	0.38	
28.81							
Link-156	CIRCULAR	1.50	1.50	1	1.77	0.38	
18.99							
Link-158	CIRCULAR	2.00	2.00	1	3.14	0.50	
16.40							
Link-159	CIRCULAR	2.00	2.00	1	3.14	0.50	
17.20							
Link-161	CIRCULAR	2.00	2.00	1	3.14	0.50	
17.34							
Link-162	CIRCULAR	1.50	1.50	1	1.77	0.38	
6.21							
Link-163	CIRCULAR	2.00	2.00	1	3.14	0.50	
15.75							
Link-164	CIRCULAR	2.00	2.00	1	3.14	0.50	
15.72							
Link-165	CIRCULAR	2.50	2.50	1	4.91	0.63	
30.06							
Link-86	CIRCULAR	3.00	3.00	1	7.07	0.75	
54.37							
Link-87	CIRCULAR	3.00	3.00	1	7.07	0.75	
157.36							
Link-88	CIRCULAR	1.50	1.50	1	1.77	0.38	
28.79							
Link-94	CIRCULAR	1.00	1.00	1	0.79	0.25	
2.39							
Link-95	CIRCULAR	1.50	1.50	1	1.77	0.38	
12.70							
Link-96	CIRCULAR	1.50	1.50	1	1.77	0.38	
13.28							
Link-97	CIRCULAR	1.50	1.50	1	1.77	0.38	
7.55							
Link-98	CIRCULAR	1.50	1.50	1	1.77	0.38	
12.23							
Link-99	CIRCULAR	1.50	1.50	1	1.77	0.38	
12.63							

*****	Volume	Depth
Runoff Quantity Continuity	acre-ft	inches
*****	-----	-----
Total Precipitation .....	1.082	0.357
Continuity Error (%) .....	0.206	

*****	Volume	Volume
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Flow Routing Continuity      acre-ft      M gallons
*****
External Inflow .....      0.000      0.000
External Outflow .....     0.818      0.267
Initial Stored Volume ....  0.000      0.000
Final Stored Volume .....  0.000      0.000
Continuity Error (%) .....  0.041
    
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Runoff Coefficient Computations Report  
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Subbasin 12A  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.46	D (6%+)	0.85
Composite Area & Weighted Runoff Coeff.	1.46		0.85

-----  
Subbasin 12B  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	4.09	D	0.85
Composite Area & Weighted Runoff Coeff.	4.09		0.85

-----  
Subbasin 13A  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.53	D (6%+)	0.85
Composite Area & Weighted Runoff Coeff.	1.53		0.85

-----  
Subbasin 13B  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	3.03	D (6%+)	0.85
Composite Area & Weighted Runoff Coeff.	3.03		0.85

-----  
Subbasin 13C  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	D	0.85
Composite Area & Weighted Runoff Coeff.	5.00		0.85

-----  
Subbasin 4A  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.38	D	0.85
Composite Area & Weighted Runoff Coeff.	0.38		0.85

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 Subbasin 4B  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.71	D	0.85
Composite Area & Weighted Runoff Coeff.	0.71		0.85

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 Subbasin DMA01  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	D	0.85
Composite Area & Weighted Runoff Coeff.	0.45		0.85

-----  
 Subbasin DMA02  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.34	D	0.85
Composite Area & Weighted Runoff Coeff.	1.34		0.85

-----  
 Subbasin DMA03  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.37	D	0.85
Composite Area & Weighted Runoff Coeff.	0.37		0.85

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 Subbasin DMA05  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	D	0.85
Composite Area & Weighted Runoff Coeff.	0.30		0.85

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 Subbasin DMA06  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.80	D	0.85
Composite Area & Weighted Runoff Coeff.	0.80		0.85

-----  
 Subbasin DMA07  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	D	0.85
Composite Area & Weighted Runoff Coeff.	0.13		0.85

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 Subbasin DMA08  
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Area	Soil	Runoff
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Soil/Surface Description	(acres)	Group	Coeff.
-	0.42	D	0.85
Composite Area & Weighted Runoff Coeff.	0.42		0.85

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Subbasin DMA09  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	D	0.85
Composite Area & Weighted Runoff Coeff.	0.54		0.85

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Subbasin DMA10  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.34	-	0.85
Composite Area & Weighted Runoff Coeff.	0.34		0.85

-----  
Subbasin DMA11  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.85
Composite Area & Weighted Runoff Coeff.	0.22		0.85

-----  
Subbasin DMA14A  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.19	D	0.85
Composite Area & Weighted Runoff Coeff.	1.19		0.85

-----  
Subbasin DMA14B  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.61	-	0.85
Composite Area & Weighted Runoff Coeff.	1.61		0.85

-----  
Subbasin DMA15  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.35	-	0.85
Composite Area & Weighted Runoff Coeff.	1.35		0.85

-----  
Subbasin DMA16  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.85
Composite Area & Weighted Runoff Coeff.	0.67		0.85

-----  
 Subbasin DMA17  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.39	-	0.85
Composite Area & Weighted Runoff Coeff.	0.39		0.85

-----  
 Subbasin DMA18  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.41	-	0.85
Composite Area & Weighted Runoff Coeff.	0.41		0.85

-----  
 Subbasin DMA19  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	-	0.85
Composite Area & Weighted Runoff Coeff.	0.45		0.85

-----  
 Subbasin DMA20  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.33	-	0.85
Composite Area & Weighted Runoff Coeff.	0.33		0.85

-----  
 Subbasin DMA21  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.85
Composite Area & Weighted Runoff Coeff.	0.42		0.85

-----  
 Subbasin DMA22  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.56	-	0.85
Composite Area & Weighted Runoff Coeff.	0.56		0.85

-----  
 Subbasin DMA23  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.59	-	0.85
Composite Area & Weighted Runoff Coeff.	0.59		0.85

-----  
 Subbasin DMA24  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.80	-	0.85
Composite Area & Weighted Runoff Coeff.	0.80		0.85

-----  
Subbasin DMA25  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.40	-	0.85
Composite Area & Weighted Runoff Coeff.	0.40		0.85

-----  
Subbasin DMA26  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.70
Composite Area & Weighted Runoff Coeff.	0.51		0.70

-----  
Subbasin DMA27  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.70
Composite Area & Weighted Runoff Coeff.	0.42		0.70

-----  
Subbasin DMA28  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.84	-	0.70
Composite Area & Weighted Runoff Coeff.	0.84		0.70

-----  
Subbasin DMA29  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

-----  
Subbasin DMA30  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.35	-	0.70
Composite Area & Weighted Runoff Coeff.	1.35		0.70

-----  
Subbasin DMA31  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70

Composite Area & Weighted Runoff Coeff. 5.00 0.70

-----  
Subbasin DMA32  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

-----  
Subbasin DMA33  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.70
Composite Area & Weighted Runoff Coeff.	0.66		0.70

-----  
Subbasin DMA34  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

-----  
Subbasin DMA35  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.70
Composite Area & Weighted Runoff Coeff.	0.86		0.70

-----  
Subbasin DMA36  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.70
Composite Area & Weighted Runoff Coeff.	0.66		0.70

-----  
Subbasin DMA37  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.85
Composite Area & Weighted Runoff Coeff.	0.10		0.85

-----  
Subbasin DMA38  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.34	-	0.35
Composite Area & Weighted Runoff Coeff.	0.34		0.35

\*\*\*\*\*



SCS TR-55 Time of Concentration Computations Report  
\*\*\*\*\*

Sheet Flow Equation  
-----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
n = Manning's Roughness  
Lf = Flow Length (ft)  
P = 2 yr, 24 hr Rainfall (inches)  
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation  
-----

V = 16.1345 \* (Sf<sup>0.5</sup>) (unpaved surface)  
V = 20.3282 \* (Sf<sup>0.5</sup>) (paved surface)  
V = 15.0 \* (Sf<sup>0.5</sup>) (grassed waterway surface)  
V = 10.0 \* (Sf<sup>0.5</sup>) (nearly bare & untilled surface)  
V = 9.0 \* (Sf<sup>0.5</sup>) (cultivated straight rows surface)  
V = 7.0 \* (Sf<sup>0.5</sup>) (short grass pasture surface)  
V = 5.0 \* (Sf<sup>0.5</sup>) (woodland surface)  
V = 2.5 \* (Sf<sup>0.5</sup>) (forest w/heavy litter surface)  
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)  
Lf = Flow Length (ft)  
V = Velocity (ft/sec)  
Sf = Slope (ft/ft)

Channel Flow Equation  
-----

V = (1.49 \* (R<sup>(2/3)</sup>) \* (Sf<sup>0.5</sup>)) / n  
R = Aq / Wp  
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)  
Lf = Flow Length (ft)  
R = Hydraulic Radius (ft)  
Aq = Flow Area (ft<sup>2</sup>)  
Wp = Wetted Perimeter (ft)  
V = Velocity (ft/sec)  
Sf = Slope (ft/ft)  
n = Manning's Roughness

-----  
Subbasin 12A  
-----

User-Defined TOC override (minutes): 5.00

-----  
Subbasin 12B  
-----

User-Defined TOC override (minutes): 5.00  
-----

Subbasin 13A  
-----

Sheet Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	100.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.60	0.00	
0.00	Computed Flow Time (minutes):	2.77	0.00	
0.00				

Shallow Concentrated Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Flow Length (ft):	300.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	Surface Type:	Paved	Unpaved	
Unpaved	Velocity (ft/sec):	2.03	0.00	
0.00	Computed Flow Time (minutes):	2.46	0.00	
0.00				

=====

Total TOC (minutes):	5.23			
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-----  
Subbasin 13B  
-----

User-Defined TOC override (minutes): 5.00

-----  
Subbasin 13C  
-----

User-Defined TOC override (minutes): 5.00

-----  
Subbasin 4A  
-----

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Total TOC (minutes):	0.00			
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-----  
Subbasin 4B  
-----

User-Defined TOC override (minutes): 5.00

-----  
Subbasin DMA01  
-----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	50.00	0.00	
0.00			
Slope (%):	1.00	0.00	
0.00			
2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75			
Velocity (ft/sec):	0.52	0.00	
0.00			
Computed Flow Time (minutes):	1.59	0.00	
0.00			

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	766.00	0.00	
0.00			
Channel Slope (%):	2.87	0.00	
0.00			
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00			
Wetted Perimeter (ft):	2.13	0.00	
0.00			
Velocity (ft/sec):	2.93	0.00	
0.00			
Computed Flow Time (minutes):	4.35	0.00	
0.00			

=====  
Total TOC (minutes): 5.95  
=====

-----  
Subbasin DMA02  
-----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	50.00	0.00	
0.00			
Slope (%):	1.00	0.00	
0.00			
2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75			
Velocity (ft/sec):	0.52	0.00	
0.00			
Computed Flow Time (minutes):	1.59	0.00	

0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	960.00	0.00	
0.00			
Channel Slope (%):	2.29	0.00	
0.00			
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00			
Wetted Perimeter (ft):	2.13	0.00	
0.00			
Velocity (ft/sec):	2.62	0.00	
0.00			
Computed Flow Time (minutes):	6.11	0.00	
0.00			
=====			
Total TOC (minutes):	7.70		
=====			

Subbasin DMA03

Sheet Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	50.00	0.00	
0.00			
Slope (%):	1.00	0.00	
0.00			
2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75			
Velocity (ft/sec):	0.52	0.00	
0.00			
Computed Flow Time (minutes):	1.59	0.00	
0.00			

Channel Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	281.00	0.00	
0.00			
Channel Slope (%):	2.80	0.00	
0.00			
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00			
Wetted Perimeter (ft):	2.13	0.00	
0.00			
Velocity (ft/sec):	2.90	0.00	
0.00			
Computed Flow Time (minutes):	1.62	0.00	
0.00			

```

=====
Total TOC (minutes):                3.21
=====

```

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-----
Subbasin DMA05
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Sheet Flow Computations
-----

```

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

```

Channel Flow Computations
-----

```

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	654.00	0.00
0.00	Channel Slope (%):	1.22	0.00
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00
0.00	Wetted Perimeter (ft):	2.13	0.00
0.00	Velocity (ft/sec):	1.91	0.00
0.00	Computed Flow Time (minutes):	5.70	0.00

```

=====
Total TOC (minutes):                7.29
=====

```

```

-----
Subbasin DMA06
-----

```

```

Sheet Flow Computations
-----

```

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75

1.75	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00
0.00			

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	680.00	0.00	
0.00	Channel Slope (%):	1.25	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	1.93	0.00	
0.00	Computed Flow Time (minutes):	5.86	0.00	
0.00				
Total TOC (minutes):		7.45		

Subbasin DMA07

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	
0.00				

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	150.00	0.00	
0.00	Channel Slope (%):	1.50	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.12	0.00	

0.00  
 0.00 Computed Flow Time (minutes): 1.18 0.00

=====  
 Total TOC (minutes): 2.77  
 =====

-----  
 Subbasin DMA08  
 -----

Sheet Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Channel Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	320.00	0.00	
0.00	Channel Slope (%):	2.19	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.56	0.00	
0.00	Computed Flow Time (minutes):	2.08	0.00	

=====  
 Total TOC (minutes): 3.67  
 =====

-----  
 Subbasin DMA09  
 -----

Sheet Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	

0.00	Slope (%):	1.00	0.00
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75
1.75	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	390.00	0.00	
0.00	Channel Slope (%):	3.00	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	3.00	0.00	
0.00	Computed Flow Time (minutes):	2.17	0.00	

=====  
 Total TOC (minutes): 3.76  
 =====

-----  
 Subbasin DMA10  
 -----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	2.20	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.72	0.00	
0.00	Computed Flow Time (minutes):	1.16	0.00	

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	255.00	0.00	
0.00	Channel Slope (%):	2.20	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	



0.00	Wetted Perimeter (ft):	2.13	0.00
0.00	Velocity (ft/sec):	2.22	0.00
0.00	Computed Flow Time (minutes):	1.91	0.00
=====			
	Total TOC (minutes):	3.07	
=====			

-----  
Subbasin DMA11  
-----

Sheet Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	2.20	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.72	0.00	
0.00	Computed Flow Time (minutes):	1.16	0.00	

Channel Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	210.00	0.00	
0.00	Channel Slope (%):	2.20	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.22	0.00	
0.00	Computed Flow Time (minutes):	1.57	0.00	

=====			
	Total TOC (minutes):	2.73	
=====			

-----  
Subbasin DMA14A  
-----

User-Defined TOC override (minutes): 5.00

Subbasin DMA14B  
-----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
0.00	Flow Length (ft):	200.00	0.00
0.00	Slope (%):	2.00	0.00
Unpaved	Surface Type:	Paved	Unpaved
0.00	Velocity (ft/sec):	2.87	0.00
0.00	Computed Flow Time (minutes):	1.16	0.00

=====  
 Total TOC (minutes): 2.75  
 =====

-----  
 Subbasin DMA15  
 -----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea
C			
	Flow Length (ft):	172.00	0.00

0.00	Slope (%):	2.00	0.00
0.00	Surface Type:	Paved	Unpaved
Unpaved	Velocity (ft/sec):	2.87	0.00
0.00	Computed Flow Time (minutes):	1.00	0.00
0.00			
=====			
	Total TOC (minutes):	2.59	
=====			

-----  
Subbasin DMA16  
-----

Sheet Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	
0.00				

Shallow Concentrated Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Flow Length (ft):	180.00	0.00	
0.00	Slope (%):	1.62	0.00	
0.00	Surface Type:	Paved	Unpaved	
Unpaved	Velocity (ft/sec):	2.59	0.00	
0.00	Computed Flow Time (minutes):	1.16	0.00	
0.00				
=====				
	Total TOC (minutes):	2.75		
=====				

-----  
Subbasin DMA17  
-----

Sheet Flow Computations  
-----

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	

0.00			
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75
1.75	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00
0.00			

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	155.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	Surface Type:	Paved	Unpaved	
Unpaved	Velocity (ft/sec):	2.03	0.00	
0.00	Computed Flow Time (minutes):	1.27	0.00	
0.00				

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	37.00	0.00	
0.00	Channel Slope (%):	1.60	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	1.90	0.00	
0.00	Computed Flow Time (minutes):	0.33	0.00	
0.00				

=====  
 Total TOC (minutes): 3.19  
 =====

-----  
 Subbasin DMA18  
 -----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	

1.75	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00
0.00			

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
	Flow Length (ft):	123.00	0.00	
0.00	Slope (%):	1.90	0.00	
0.00	Surface Type:	Paved	Unpaved	
Unpaved	Velocity (ft/sec):	2.80	0.00	
0.00	Computed Flow Time (minutes):	0.73	0.00	
0.00				

=====  
 Total TOC (minutes): 2.32  
 =====

-----  
 Subbasin DMA19  
 -----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C				
	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	
0.00				

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
	Flow Length (ft):	152.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	Surface Type:	Paved	Unpaved	
Unpaved	Velocity (ft/sec):	2.03	0.00	
0.00	Computed Flow Time (minutes):	1.25	0.00	
0.00				

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C				

0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Channel Slope (%):	1.60	0.00
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00
0.00	Wetted Perimeter (ft):	2.13	0.00
0.00	Velocity (ft/sec):	1.90	0.00
0.00	Computed Flow Time (minutes):	0.44	0.00

=====  
 Total TOC (minutes): 3.28  
 =====

-----  
 Subbasin DMA20  
 -----

Sheet Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	124.00	0.00	
0.00	Slope (%):	1.90	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.80	0.00	
0.00	Computed Flow Time (minutes):	0.74	0.00	

=====  
 Total TOC (minutes): 2.33  
 =====

-----  
 Subbasin DMA21  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea
C			
0.00	Flow Length (ft):	128.00	0.00
0.00	Slope (%):	1.00	0.00
Unpaved	Surface Type:	Paved	Unpaved
0.00	Velocity (ft/sec):	2.03	0.00
0.00	Computed Flow Time (minutes):	1.05	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	109.00	0.00
0.00	Channel Slope (%):	1.60	0.00
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00
0.00	Wetted Perimeter (ft):	2.13	0.00
0.00	Velocity (ft/sec):	1.90	0.00
0.00	Computed Flow Time (minutes):	0.96	0.00

=====  
 Total TOC (minutes): 3.60  
 =====

-----  
 Subbasin DMA22  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea
C			
0.00	Manning's Roughness:	0.01	0.00

0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	1.00	0.00
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	164.00	0.00	
0.00	Slope (%):	1.40	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.41	0.00	
0.00	Computed Flow Time (minutes):	1.13	0.00	
=====				
	Total TOC (minutes):	2.73		
=====				

-----  
Subbasin DMA23  
-----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	140.00	0.00	
0.00	Slope (%):	1.50	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.49	0.00	
0.00	Computed Flow Time (minutes):	0.94	0.00	



```

=====
Total TOC (minutes):                2.53
=====

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Subbasin DMA24
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-----
Sheet Flow Computations
-----

```

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

```

-----
Shallow Concentrated Flow Computations
-----

```

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	186.00	0.00	
0.00	Slope (%):	1.10	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.13	0.00	
0.00	Computed Flow Time (minutes):	1.46	0.00	

```

-----
Channel Flow Computations
-----

```

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	131.00	0.00	
0.00	Channel Slope (%):	2.80	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.51	0.00	
0.00	Computed Flow Time (minutes):	0.87	0.00	

```

=====
Total TOC (minutes):                3.92
=====

```



C	Flow Length (ft):	99.00	0.00
0.00	Slope (%):	3.10	0.00
0.00	Surface Type:	Paved	Unpaved
Unpaved	Velocity (ft/sec):	3.58	0.00
0.00	Computed Flow Time (minutes):	0.46	0.00
0.00			

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	57.00	0.00	
0.00	Channel Slope (%):	2.80	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.51	0.00	
0.00	Computed Flow Time (minutes):	0.38	0.00	
0.00				
=====				
	Total TOC (minutes):	2.43		
=====				

Subbasin DMA27

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	33.00	0.00	
0.00	Slope (%):	1.60	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.58	0.00	
0.00	Computed Flow Time (minutes):	0.95	0.00	
0.00				

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	205.00	0.00	
0.00	Channel Slope (%):	2.50	0.00	

0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00
0.00	Wetted Perimeter (ft):	2.13	0.00
0.00	Velocity (ft/sec):	2.37	0.00
0.00	Computed Flow Time (minutes):	1.44	0.00
=====			
	Total TOC (minutes):	2.39	
=====			

-----  
Subbasin DMA28  
-----

Sheet Flow Computations  
-----

C		Subarea A	Subarea B	Subarea
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations  
-----

C		Subarea A	Subarea B	Subarea
0.00	Flow Length (ft):	187.00	0.00	
0.00	Slope (%):	1.10	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.13	0.00	
0.00	Computed Flow Time (minutes):	1.46	0.00	

Channel Flow Computations  
-----

C		Subarea A	Subarea B	Subarea
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	98.00	0.00	
0.00	Channel Slope (%):	2.20	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.22	0.00	

0.00  
 0.00      Computed Flow Time (minutes):                      0.73                      0.00

=====  
 Total TOC (minutes):    3.79  
 =====

-----  
 Subbasin DMA29  
 -----

Sheet Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	163.00	0.00	
0.00	Slope (%):	1.10	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.13	0.00	
0.00	Computed Flow Time (minutes):	1.28	0.00	

Channel Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	174.00	0.00	
0.00	Channel Slope (%):	1.20	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	1.64	0.00	
0.00	Computed Flow Time (minutes):	1.76	0.00	

=====  
 Total TOC (minutes):    4.63  
 =====

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-----  
 Subbasin DMA30  
 -----

Sheet Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	146.00	0.00	
0.00	Slope (%):	1.30	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.32	0.00	
0.00	Computed Flow Time (minutes):	1.05	0.00	

Channel Flow Computations  
 -----

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	255.00	0.00	
0.00	Channel Slope (%):	1.00	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	1.50	0.00	
0.00	Computed Flow Time (minutes):	2.83	0.00	

=====

	Total TOC (minutes):	5.47		
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 Subbasin DMA31  
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Sheet Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	90.00	0.00	
0.00			
Slope (%):	0.60	0.00	
0.00			
2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75			
Velocity (ft/sec):	0.48	0.00	
0.00			
Computed Flow Time (minutes):	3.12	0.00	
0.00			

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea
C			
Flow Length (ft):	212.00	0.00	
0.00			
Slope (%):	2.40	0.00	
0.00			
Surface Type:	Paved	Unpaved	
Unpaved			
Velocity (ft/sec):	3.15	0.00	
0.00			
Computed Flow Time (minutes):	1.12	0.00	
0.00			

Channel Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.01	0.00	
0.00			
Flow Length (ft):	316.00	0.00	
0.00			
Channel Slope (%):	2.20	0.00	
0.00			
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00			
Wetted Perimeter (ft):	2.13	0.00	
0.00			
Velocity (ft/sec):	2.22	0.00	
0.00			
Computed Flow Time (minutes):	2.37	0.00	
0.00			

=====  
 Total TOC (minutes): 6.61  
 =====

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 Subbasin DMA32  
 -----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea
C			

0.00	Manning's Roughness:	0.01	0.00
0.00	Flow Length (ft):	50.00	0.00
0.00	Slope (%):	14.00	0.00
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	1.50	0.00
0.00	Computed Flow Time (minutes):	0.55	0.00

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	183.00	0.00	
0.00	Slope (%):	2.50	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	3.21	0.00	
0.00	Computed Flow Time (minutes):	0.95	0.00	

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	141.00	0.00	
0.00	Channel Slope (%):	2.20	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.22	0.00	
0.00	Computed Flow Time (minutes):	1.06	0.00	

=====  
 Total TOC (minutes): 2.56  
 =====

-----  
 Subbasin DMA33  
 -----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	



1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75
0.00	Velocity (ft/sec):	0.52	0.00
0.00	Computed Flow Time (minutes):	1.59	0.00

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	120.00	0.00	
0.00	Slope (%):	1.00	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	2.03	0.00	
0.00	Computed Flow Time (minutes):	0.99	0.00	

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	77.00	0.00	
0.00	Channel Slope (%):	1.60	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	1.90	0.00	
0.00	Computed Flow Time (minutes):	0.68	0.00	

=====  
 Total TOC (minutes): 3.25  
 =====

-----  
 Subbasin DMA34  
 -----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Flow Length (ft):	120.00	0.00	
0.00	Slope (%):	2.90	0.00	
Unpaved	Surface Type:	Paved	Unpaved	
0.00	Velocity (ft/sec):	3.46	0.00	
0.00	Computed Flow Time (minutes):	0.58	0.00	

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	49.00	0.00	
0.00	Channel Slope (%):	1.60	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	1.90	0.00	
0.00	Computed Flow Time (minutes):	0.43	0.00	

=====				
	Total TOC (minutes):	2.60		
=====				

Subbasin DMA35

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C				
0.00	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	100.00	0.00	
0.00	Slope (%):	8.70	0.00	
1.75	2 yr, 24 hr Rainfall (in):	1.75	1.75	
0.00	Velocity (ft/sec):	1.43	0.00	
0.00	Computed Flow Time (minutes):	1.17	0.00	

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C				
	Flow Length (ft):	120.00	0.00	

0.00	Slope (%):	1.40	0.00
0.00	Surface Type:	Paved	Unpaved
Unpaved	Velocity (ft/sec):	2.41	0.00
0.00	Computed Flow Time (minutes):	0.83	0.00

Channel Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	52.00	0.00	
0.00	Channel Slope (%):	1.90	0.00	
0.00	Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00	Wetted Perimeter (ft):	2.13	0.00	
0.00	Velocity (ft/sec):	2.07	0.00	
0.00	Computed Flow Time (minutes):	0.42	0.00	

=====  
 Total TOC (minutes): 2.42  
 =====

-----  
 Subbasin DMA36  
 -----

Sheet Flow Computations

		Subarea A	Subarea B	Subarea
C	Manning's Roughness:	0.01	0.00	
0.00	Flow Length (ft):	50.00	0.00	
0.00	Slope (%):	1.00	0.00	
0.00	2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75	Velocity (ft/sec):	0.52	0.00	
0.00	Computed Flow Time (minutes):	1.59	0.00	

Shallow Concentrated Flow Computations

		Subarea A	Subarea B	Subarea
C	Flow Length (ft):	150.00	0.00	
0.00	Slope (%):	1.70	0.00	
0.00	Surface Type:	Paved	Unpaved	
Unpaved	Velocity (ft/sec):	2.65	0.00	

0.00  
 0.00 Computed Flow Time (minutes): 0.94 0.00

Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea
C			
0.00 Manning's Roughness:	0.01	0.00	
0.00 Flow Length (ft):	93.00	0.00	
0.00 Channel Slope (%):	1.20	0.00	
0.00 Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00 Wetted Perimeter (ft):	2.13	0.00	
0.00 Velocity (ft/sec):	1.64	0.00	
0.00 Computed Flow Time (minutes):	0.94	0.00	

=====  
 Total TOC (minutes): 3.48  
 =====

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 Subbasin DMA37  
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Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea
C			
0.00 Manning's Roughness:	0.01	0.00	
0.00 Flow Length (ft):	45.00	0.00	
0.00 Slope (%):	2.80	0.00	
0.00 2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75 Velocity (ft/sec):	0.77	0.00	
0.00 Computed Flow Time (minutes):	0.97	0.00	

Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea
C			
0.00 Manning's Roughness:	0.01	0.00	
0.00 Flow Length (ft):	94.00	0.00	
0.00 Channel Slope (%):	2.80	0.00	
0.00 Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	
0.00 Wetted Perimeter (ft):	2.13	0.00	
0.00 Velocity (ft/sec):	2.51	0.00	
0.00 Computed Flow Time (minutes):	0.62	0.00	

0.00

```
=====
Total TOC (minutes):                1.59
=====
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Subbasin DMA38
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Sheet Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.02	0.00	
0.00			
Flow Length (ft):	48.00	0.00	
0.00			
Slope (%):	23.00	0.00	
0.00			
2 yr, 24 hr Rainfall (in):	1.75	1.75	
1.75			
Velocity (ft/sec):	1.45	0.00	
0.00			
Computed Flow Time (minutes):	0.55	0.00	
0.00			

Channel Flow Computations

	Subarea A	Subarea B	Subarea
C			
Manning's Roughness:	0.02	0.00	
0.00			
Flow Length (ft):	887.00	0.00	
0.00			
Channel Slope (%):	1.00	0.00	
0.00			
Cross Section Area (ft <sup>2</sup> ):	1.57	0.00	
0.00			
Wetted Perimeter (ft):	3.14	0.00	
0.00			
Velocity (ft/sec):	4.69	0.00	
0.00			
Computed Flow Time (minutes):	3.15	0.00	
0.00			

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=====
Total TOC (minutes):                3.70
=====
```

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*****
Subbasin Runoff Summary
*****
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Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	hh:mm:ss
12A	0.34	4.10	0.29	5.09	0.850	0	00:05:00
12B	0.34	4.10	0.29	14.25	0.850	0	00:05:00
13A	0.35	4.05	0.30	5.27	0.850	0	00:05:13
13B	0.34	4.10	0.29	5.72	0.850	0	00:05:00

13C	0.34	4.10	0.29	4.81	0.850	0	00:05:00
4A	0.34	4.10	0.29	1.32	0.850	0	00:05:00
4B	0.34	4.10	0.29	2.47	0.850	0	00:05:00
DMA01	0.39	3.91	0.33	1.49	0.850	0	00:05:57
DMA02	0.46	3.63	0.39	4.13	0.850	0	00:07:42
DMA03	0.34	4.10	0.29	1.28	0.850	0	00:05:00
DMA05	0.45	3.67	0.38	0.92	0.850	0	00:07:17
DMA06	0.46	3.65	0.39	2.50	0.850	0	00:07:27
DMA07	0.34	4.10	0.29	0.45	0.850	0	00:05:00
DMA08	0.34	4.10	0.29	1.47	0.850	0	00:05:00
DMA09	0.34	4.10	0.29	1.88	0.850	0	00:05:00
DMA10	0.34	4.10	0.29	1.18	0.850	0	00:05:00
DMA11	0.34	4.10	0.29	0.77	0.850	0	00:05:00
DMA14A	0.34	4.10	0.29	4.15	0.850	0	00:05:00
DMA14B	0.34	4.10	0.29	5.61	0.850	0	00:05:00
DMA15	0.34	4.10	0.29	4.70	0.850	0	00:05:00
DMA16	0.34	4.10	0.29	2.33	0.850	0	00:05:00
DMA17	0.34	4.10	0.29	1.36	0.850	0	00:05:00
DMA18	0.34	4.10	0.29	1.43	0.850	0	00:05:00
DMA19	0.34	4.10	0.29	1.57	0.850	0	00:05:00
DMA20	0.34	4.10	0.29	1.15	0.850	0	00:05:00
DMA21	0.34	4.10	0.29	1.46	0.850	0	00:05:00
DMA22	0.34	4.10	0.29	1.95	0.850	0	00:05:00
DMA23	0.34	4.10	0.29	2.06	0.850	0	00:05:00
DMA24	0.34	4.10	0.29	2.79	0.850	0	00:05:00
DMA25	0.34	4.10	0.29	1.39	0.850	0	00:05:00
DMA26	0.34	4.10	0.24	1.46	0.700	0	00:05:00
DMA27	0.34	4.10	0.24	1.21	0.700	0	00:05:00
DMA28	0.34	4.10	0.24	2.41	0.700	0	00:05:00
DMA29	0.34	4.10	0.24	3.62	0.700	0	00:05:00
DMA30	0.37	4.00	0.26	3.78	0.700	0	00:05:28
DMA31	0.42	3.77	0.29	6.97	0.700	0	00:06:36
DMA32	0.34	4.10	0.24	2.10	0.700	0	00:05:00
DMA33	0.34	4.10	0.24	1.89	0.700	0	00:05:00
DMA34	0.34	4.10	0.24	2.12	0.700	0	00:05:00
DMA35	0.34	4.10	0.24	2.47	0.700	0	00:05:00
DMA36	0.34	4.10	0.24	1.89	0.700	0	00:05:00
DMA37	0.34	4.10	0.29	0.35	0.850	0	00:05:00
DMA38	0.34	4.10	0.12	0.49	0.350	0	00:05:00

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Node Depth Summary  
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Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.35	2.63	348.92	0 00:07	0	0	0:00:00
Jun-02	0.35	3.12	361.13	0 00:07	0	0	0:00:00
Jun-03	0.34	2.01	364.90	0 00:07	0	0	0:00:00
Jun-04	1.40	2.12	363.32	0 00:07	0	0	0:00:00
Jun-05	2.24	2.62	365.47	0 00:07	0	0	0:00:00
Jun-07	1.31	2.62	368.22	0 00:06	0	0	0:00:00
Jun-08	3.31	4.30	372.06	0 00:07	0	0	0:00:00
Jun-09	0.50	1.26	371.82	0 00:05	0	0	0:00:00
Jun-10	0.50	0.93	375.81	0 00:05	0	0	0:00:00
Jun-11	0.50	1.02	378.50	0 00:05	0	0	0:00:00
Jun-12	0.00	0.00	383.38	0 00:00	0	0	0:00:00
Jun-13	0.33	0.59	381.49	0 00:05	0	0	0:00:00
Jun-14	0.35	0.72	379.83	0 00:05	0	0	0:00:00
Jun-15	0.33	0.71	377.42	0 00:06	0	0	0:00:00
Jun-17	0.83	1.19	375.32	0 00:07	0	0	0:00:00

Jun-18	0.69	1.01	373.37	0	00:07	0	0	0:00:00
Jun-19	0.33	0.93	371.35	0	00:08	0	0	0:00:00
Jun-20	0.83	1.27	369.49	0	00:05	0	0	0:00:00
Jun-21	2.91	3.61	363.27	0	00:05	0	0	0:00:00
Jun-22	0.14	2.20	364.74	0	00:06	0	0	0:00:00
Jun-25	0.33	0.73	379.65	0	00:07	0	0	0:00:00
Jun-64	0.00	0.52	384.59	0	00:05	0	0	0:00:00
Jun-65	0.01	1.00	383.95	0	00:04	0	0	0:00:00
Jun-66	0.00	0.83	380.91	0	00:05	0	0	0:00:00
Jun-67	0.01	0.98	379.49	0	00:05	0	0	0:00:00
Jun-68	0.01	0.98	378.77	0	00:05	0	0	0:00:00
Jun-69	0.01	15.18	391.50	0	00:05	0.00	0	0:00:00
Jun-70	0.03	13.99	389.68	0	00:05	0.03	2	0:00:00
Jun-71	0.01	1.91	376.87	0	00:06	0	0	0:00:00
Jun-72	0.01	0.94	374.27	0	00:05	0	0	0:00:00
Jun-73	0.01	1.28	372.46	0	00:06	0	0	0:00:00
Jun-74	0.01	1.33	369.58	0	00:06	0	0	0:00:00
Jun-75	0.01	1.41	368.63	0	00:06	0	0	0:00:00
Jun-76	0.01	1.88	366.93	0	00:06	0	0	0:00:00
Jun-77	0.01	1.88	366.30	0	00:06	0	0	0:00:00
Jun-78	0.01	0.90	373.70	0	00:05	0	0	0:00:00
Jun-79	0.01	0.94	375.22	0	00:06	0	0	0:00:00
Jun-80	0.01	0.96	380.41	0	00:07	0	0	0:00:00
Jun-81	0.01	0.96	382.75	0	00:06	0	0	0:00:00
Jun-82	0.00	0.00	383.32	0	00:00	0	0	0:00:00
Jun-83	0.01	2.13	364.80	0	00:06	0	0	0:00:00
Jun-84	0.00	0.62	388.06	0	00:05	0	0	0:00:00
Jun-85	0.33	0.94	385.84	0	00:05	0	0	0:00:00
Jun-86	0.50	1.25	369.55	0	00:05	0	0	0:00:00
Jun-90	0.34	1.50	371.32	0	00:05	0	0	0:00:00
Jun-91	0.34	1.62	369.97	0	00:05	0	0	0:00:00
Jun-92	0.34	1.57	368.57	0	00:06	0	0	0:00:00
Jun-93	0.01	1.18	372.16	0	00:05	0	0	0:00:00
Stor-01	11.44	13.64	360.64	0	00:07	0	0	0:00:00
Out-POC'A'	1.51	2.60	336.35	0	00:07	0	0	0:00:00

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Node Flow Summary  
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Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-01	JUNCTION	0.00	94.25	0 00:07	0.00	
Jun-02	JUNCTION	0.00	60.00	0 00:07	0.00	
Jun-03	JUNCTION	0.00	33.01	0 00:06	0.00	
Jun-04	JUNCTION	0.00	34.57	0 00:07	0.00	
Jun-05	JUNCTION	0.00	1.94	0 00:05	0.00	
Jun-07	JUNCTION	0.00	30.48	0 00:06	0.00	
Jun-08	JUNCTION	0.00	18.68	0 00:06	0.00	
Jun-09	JUNCTION	0.00	14.13	0 00:05	0.00	
Jun-10	JUNCTION	0.00	9.37	0 00:05	0.00	
Jun-11	JUNCTION	0.00	5.52	0 00:05	0.00	
Jun-12	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-13	JUNCTION	0.00	1.26	0 00:05	0.00	
Jun-14	JUNCTION	0.00	1.23	0 00:05	0.00	
Jun-15	JUNCTION	0.00	1.17	0 00:06	0.00	
Jun-17	JUNCTION	0.00	1.14	0 00:07	0.00	
Jun-18	JUNCTION	0.00	3.82	0 00:07	0.00	
Jun-19	JUNCTION	0.00	3.79	0 00:08	0.00	
Jun-20	JUNCTION	0.00	4.44	0 00:08	0.00	
Jun-21	JUNCTION	0.00	60.36	0 00:06	0.00	
Jun-22	JUNCTION	0.00	44.69	0 00:06	0.00	

Jun-25	JUNCTION	0.00	2.69	0	00:07	0.00		
Jun-64	JUNCTION	0.00	1.94	0	00:05	0.00		
Jun-65	JUNCTION	0.00	4.25	0	00:05	0.00		
Jun-66	JUNCTION	0.00	6.41	0	00:05	0.00		
Jun-67	JUNCTION	0.00	9.63	0	00:05	0.00		
Jun-68	JUNCTION	0.00	10.98	0	00:05	0.00		
Jun-69	JUNCTION	0.00	14.32	0	00:05	0.06	0	00:05
Jun-70	JUNCTION	0.00	16.23	0	00:05	2.46	0	00:05
Jun-71	JUNCTION	0.00	18.01	0	00:05	0.00		
Jun-72	JUNCTION	0.00	19.14	0	00:05	0.00		
Jun-73	JUNCTION	0.00	36.69	0	00:06	0.00		
Jun-74	JUNCTION	0.00	38.50	0	00:06	0.00		
Jun-75	JUNCTION	0.00	39.77	0	00:06	0.00		
Jun-76	JUNCTION	0.00	40.98	0	00:06	0.00		
Jun-77	JUNCTION	0.00	44.30	0	00:06	0.00		
Jun-78	JUNCTION	0.00	17.59	0	00:05	0.00		
Jun-79	JUNCTION	0.00	15.83	0	00:05	0.00		
Jun-80	JUNCTION	0.00	13.87	0	00:05	0.00		
Jun-81	JUNCTION	0.00	9.95	0	00:06	0.00		
Jun-82	JUNCTION	0.00	0.00	0	00:00	0.00		
Jun-83	JUNCTION	0.00	44.69	0	00:06	0.00		
Jun-84	JUNCTION	5.61	5.61	0	00:05	0.00		
Jun-85	JUNCTION	0.00	5.55	0	00:05	0.00		
Jun-86	JUNCTION	0.00	14.00	0	00:05	0.00		
Jun-90	JUNCTION	0.00	12.36	0	00:05	0.00		
Jun-91	JUNCTION	0.00	12.24	0	00:05	0.00		
Jun-92	JUNCTION	0.00	12.16	0	00:06	0.00		
Jun-93	JUNCTION	0.00	10.23	0	00:05	0.00		
Stor-01	JUNCTION	0.00	94.26	0	00:07	0.00		
Out-POC'A'	OUTFALL	0.00	94.25	0	00:07	0.00		

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 Inlet Depth Summary  
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Inlet ID	Max Gutter Spread during Peak Flow ft	Max Gutter Water Elev during Peak Flow ft	Max Gutter Water Depth during Peak Flow ft	Time of Maximum Depth Occurrence days hh:mm
BMP12B	77.86	378.92	1.70	0 00:05
BMP13B	19.87	377.60	0.65	0 00:05
BMP13C	17.59	378.02	0.60	0 00:05
BMP4B	10.85	377.18	0.47	0 00:05
Inlet-001	8.18	375.50	0.41	0 00:06
Inlet-002	11.18	375.86	0.47	0 00:06
Inlet-003	7.64	390.10	0.39	0 00:05
Inlet-004	6.71	369.74	0.38	0 00:05
Inlet-005	3.02	369.15	0.23	0 00:07
Inlet-006	49.70	385.22	1.21	0 00:07
Inlet-007	0.07	384.13	0.11	0 00:05
Inlet-008	12.94	374.16	0.50	0 00:05
Inlet-009	23.90	374.39	0.71	0 00:05
Inlet-012	18.32	377.84	0.62	0 00:05
Inlet-014	15.83	382.89	0.57	0 00:05
Inlet-23	9.03	390.79	0.43	0 00:05
Inlet-24	6.25	390.67	0.31	0 00:05
Inlet-25	16.34	393.24	0.56	0 00:05
Inlet-26	10.88	393.13	0.45	0 00:05
Inlet-27	11.99	391.99	0.47	0 00:05
Inlet-28	14.81	392.05	0.53	0 00:05
Inlet-29	13.71	388.05	0.50	0 00:05
Inlet-30	11.43	387.46	0.46	0 00:05
Inlet-31	14.69	386.61	0.52	0 00:05



Inlet-32	21.13	391.47	0.65	0	00:05
Inlet-33	13.71	391.32	0.50	0	00:05
Inlet-34	21.78	394.02	0.66	0	00:05
Inlet-35	38.41	394.36	1.00	0	00:06
Inlet-36	10.07	382.33	0.43	0	00:05
Inlet-37	3.13	382.05	0.14	0	00:05
Inlet-38	11.43	378.09	0.46	0	00:05
Inlet-39	17.76	378.04	0.58	0	00:05
Inlet-40	16.09	387.49	0.55	0	00:05
Inlet-41	17.31	392.60	0.60	0	00:02
Inlet-42	10.40	390.16	0.46	0	00:05
Inlet-43	7.12	387.91	0.39	0	00:05
Inlet-44	6.04	385.90	0.37	0	00:05
Inlet-45	9.13	385.19	0.43	0	00:05
Inlet-46	9.50	379.88	0.44	0	00:05
Inlet-47	6.98	376.45	0.39	0	00:05
Inlet-48	0.07	377.12	0.12	0	00:05
MWS13A	18.76	378.57	0.63	0	00:05

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 Inlet Flow Summary  
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Inlet Total ID Time Flooded minutes	Peak Flow cfs	Peak Lateral Flow cfs	Peak Flow Intercepted by Inlet cfs	Peak Flow Bypassing Inlet cfs	Inlet Efficiency during Peak Flow %	Total Flooding acre-in
-						
0	BMP12B	14.25	14.25	-	-	0.000
0	BMP13B	5.72	5.72	-	-	0.000
0	BMP13C	4.81	4.81	-	-	0.000
0	BMP4B	2.47	2.47	-	-	0.000
0	Inlet-001	1.49	1.49	-	-	0.000
0	Inlet-002	4.13	4.13	-	-	0.000
0	Inlet-003	1.28	1.28	-	-	0.000
0	Inlet-004	1.32	1.32	-	-	0.000
0	Inlet-005	0.92	0.92	-	-	0.000
0	Inlet-006	2.50	2.50	-	-	0.000
0	Inlet-007	0.45	0.45	-	-	0.000
0	Inlet-008	1.47	1.47	-	-	0.000
0	Inlet-009	1.88	1.88	-	-	0.000
0	Inlet-012	5.09	5.09	-	-	0.000

0	Inlet-014	4.15	4.15	-	-	-	0.000
0	Inlet-23	1.18	1.18	-	-	-	0.000
0	Inlet-24	0.77	0.77	-	-	-	0.000
0	Inlet-25	2.47	2.47	-	-	-	0.000
0	Inlet-26	1.36	1.36	-	-	-	0.000
0	Inlet-27	1.57	1.57	-	-	-	0.000
0	Inlet-28	2.12	2.12	-	-	-	0.000
0	Inlet-29	1.89	1.89	-	-	-	0.000
0	Inlet-30	1.46	1.46	-	-	-	0.000
0	Inlet-31	2.10	2.10	-	-	-	0.000
0	Inlet-32	3.62	3.62	-	-	-	0.000
0	Inlet-33	1.89	1.89	-	-	-	0.000
0	Inlet-34	3.78	3.78	-	-	-	0.000
0	Inlet-35	6.97	6.97	-	-	-	0.000
0	Inlet-36	1.21	1.21	-	-	-	0.000
0	Inlet-37	0.35	0.35	-	-	-	0.000
0	Inlet-38	1.46	1.46	-	-	-	0.000
0	Inlet-39	2.79	2.79	-	-	-	0.000
0	Inlet-40	2.41	2.41	-	-	-	0.000
0	Inlet-41	4.70	4.70	-	-	-	0.000
0	Inlet-42	2.33	2.33	-	-	-	0.000
0	Inlet-43	1.43	1.43	-	-	-	0.000
0	Inlet-44	1.15	1.15	-	-	-	0.000
0	Inlet-45	1.95	1.95	-	-	-	0.000
0	Inlet-46	2.06	2.06	-	-	-	0.000
0	Inlet-47	1.39	1.39	-	-	-	0.000
0	Inlet-48	0.49	0.49	-	-	-	0.000
0	MWS13A	5.27	5.27	-	-	-	0.000

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 Outfall Loading Summary  
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Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
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Out-POC'A'	6.31	6.54	94.25
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System	6.31	6.54	94.25

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 Link Flow Summary  
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Link ID	Ratio of	Total	Element	Time of	Maximum	Length	Peak Flow	Design	Ratio of
Flow	Surcharged	Time	Reported	Peak Flow	Velocity	Factor	during	Flow	Maximum
Depth	minutes	minutes	Type	Occurrence	Attained		Analysis	Capacity	/Design
			Condition	days hh:mm	ft/sec		cfs	cfs	Flow
Link-001	0.31	0	CONDUIT	0 00:07	36.32	1.00	94.25	438.52	0.21
			Calculated						
Link-002	0.66	0	CONDUIT	0 00:07	14.08	1.00	94.25	122.87	0.77
			Calculated						
Link-003	0.56	0	CONDUIT	0 00:07	7.51	1.00	29.74	49.43	0.60
			Calculated						
Link-004	0.60	0	CONDUIT	0 00:07	7.55	1.00	32.87	49.28	0.67
			Calculated						
Link-005	0.27	0	CONDUIT	0 00:05	2.86	1.00	1.92	12.28	0.16
			Calculated						
Link-007	0.38	0	CONDUIT	0 00:07	3.36	1.00	0.92	3.00	0.31
			Calculated						
Link-008	0.23	0	CONDUIT	0 00:05	4.32	1.00	1.32	11.43	0.12
			Calculated						
Link-012	0.62	0	CONDUIT	0 00:06	6.94	1.00	14.00	19.66	0.71
			Calculated						
Link-013	0.41	0	CONDUIT	0 00:05	7.72	1.00	9.26	26.11	0.35
			Calculated						
Link-014	0.30	0	CONDUIT	0 00:05	7.01	1.00	5.49	28.24	0.19
			Calculated						
Link-016	0.25	0	CONDUIT	0 00:06	9.48	1.00	1.49	10.51	0.14
			Calculated						
Link-017	1.00	2	SURCHARGED	0 00:07	5.08	1.00	3.67	3.43	1.07
Link-018	0.33	0	CONDUIT	0 00:05	11.77	1.00	4.14	17.70	0.23
			Calculated						
Link-019	0.77	0	CONDUIT	0 00:07	7.52	1.00	60.00	63.59	0.94
			Calculated						
Link-020	0.80	0	CONDUIT	0 00:07	7.51	1.00	60.00	61.56	0.97
			Calculated						
Link-022	0.35	0	CONDUIT	0 00:05	19.07	1.00	18.76	70.92	0.26
			Calculated						
Link-023	0.29	0	CONDUIT	0 00:08	5.84	1.00	4.44	23.97	0.19
			Calculated						
Link-024	0.30	0	CONDUIT	0 00:08	4.88	1.00	3.76	19.64	0.19
			Calculated						
Link-025	0.30	0	CONDUIT	0 00:08	4.89	1.00	3.79	19.63	0.19
			Calculated						
Link-026	0.16	0	CONDUIT	0 00:07	3.45	1.00	1.13	19.57	0.06
			Calculated						
Link-027	0.24	0	CONDUIT	0 00:07	3.56	1.00	1.14	8.96	0.13
			Calculated						
Link-029	0.25	0	CONDUIT	0 00:06	3.63	1.00	1.17	8.14	0.14
			Calculated						

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Link-030		CONDUIT	0	00:05	5.17	1.00	1.23	9.12	0.14
0.25	0	Calculated							
Link-031		CONDUIT	0	00:00	0.00	1.00	0.00	9.09	0.00
0.00	0	Calculated							
Link-032		CONDUIT	0	00:05	4.33	1.00	1.85	10.03	0.18
0.29	0	Calculated							
Link-033		CONDUIT	0	00:07	9.65	1.00	2.69	26.52	0.10
0.21	0	Calculated							
Link-034		CONDUIT	0	00:07	8.36	1.00	2.46	7.27	0.34
0.40	0	Calculated							
Link-035		CONDUIT	0	00:05	3.38	1.00	0.45	3.95	0.11
0.23	0	Calculated							
Link-037		CONDUIT	0	00:05	6.18	1.00	1.26	19.51	0.06
0.17	0	Calculated							
Link-100		CONDUIT	0	00:06	6.43	1.00	6.39	10.88	0.59
0.55	0	Calculated							
Link-101		CONDUIT	0	00:05	9.26	1.00	2.46	25.91	0.09
0.21	0	Calculated							
Link-102		CONDUIT	0	00:05	9.93	1.00	1.36	36.79	0.04
0.13	0	Calculated							
Link-103		CONDUIT	0	00:05	10.47	1.00	10.98	38.02	0.29
0.37	0	Calculated							
Link-104		CONDUIT	0	00:05	11.79	1.00	1.56	44.12	0.04
0.13	0	Calculated							
Link-105		CONDUIT	0	00:05	9.19	1.00	2.12	27.24	0.08
0.19	0	Calculated							
Link-106		CONDUIT	0	00:05	5.30	1.00	15.13	14.26	1.06
0.90	0	> CAPACITY							
Link-107		CONDUIT	0	00:07	5.23	1.00	14.88	13.75	1.08
0.94	0	> CAPACITY							
Link-108		CONDUIT	0	00:05	5.85	1.00	1.89	15.13	0.12
0.24	0	Calculated							
Link-109		CONDUIT	0	00:06	13.11	1.00	17.89	76.55	0.23
0.33	0	Calculated							
Link-110		CONDUIT	0	00:05	11.17	1.00	1.46	42.05	0.03
0.13	0	Calculated							
Link-111		CONDUIT	0	00:06	11.53	1.00	19.11	64.05	0.30
0.37	0	Calculated							
Link-112		CONDUIT	0	00:06	12.82	1.00	36.66	97.59	0.38
0.42	0	Calculated							
Link-113		CONDUIT	0	00:06	12.68	1.00	38.50	94.45	0.41
0.44	0	Calculated							
Link-114		CONDUIT	0	00:05	7.56	1.00	0.35	45.15	0.01
0.06	0	Calculated							
Link-115		CONDUIT	0	00:05	10.08	1.00	1.20	39.26	0.03
0.12	0	Calculated							
Link-116		CONDUIT	0	00:06	12.18	1.00	39.75	88.37	0.45
0.47	0	Calculated							
Link-117		CONDUIT	0	00:06	8.79	1.00	40.96	57.08	0.72
0.63	0	Calculated							
Link-118		CONDUIT	0	00:05	10.93	1.00	1.46	40.79	0.04
0.13	0	Calculated							
Link-119		CONDUIT	0	00:05	13.47	1.00	2.78	42.22	0.07
0.17	0	Calculated							
Link-120		CONDUIT	0	00:06	18.76	1.00	44.30	153.28	0.29
0.37	0	Calculated							
Link-121		CONDUIT	0	00:06	8.31	1.00	44.69	52.33	0.85
0.71	0	Calculated							
Link-122		CONDUIT	0	00:05	8.40	1.00	0.48	13.78	0.04
0.13	0	Calculated							
Link-123		CONDUIT	0	00:05	7.40	1.00	2.20	9.50	0.23
0.32	0	Calculated							
Link-124		CONDUIT	0	00:05	6.90	1.00	1.37	10.58	0.13
0.24	0	Calculated							
Link-125		CONDUIT	0	00:05	6.75	1.00	1.10	11.04	0.10
0.21	0	Calculated							
Link-126		CONDUIT	0	00:05	7.42	1.00	1.87	10.46	0.18

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0.29	0	Calculated							
Link-127		CONDUIT	0	00:05	8.13	1.00	2.00	13.33	0.15
0.26	0	Calculated							
Link-128		CONDUIT	0	00:05	7.54	1.00	1.35	13.25	0.10
0.21	0	Calculated							
Link-131		CONDUIT	0	00:00	0.00	1.00	0.00	21.55	0.00
0.00	0	Calculated							
Link-132		CONDUIT	0	00:06	15.12	1.00	6.96	34.00	0.20
0.31	0	Calculated							
Link-133		CONDUIT	0	00:05	14.24	1.00	3.77	39.95	0.09
0.21	0	Calculated							
Link-134		CONDUIT	0	00:07	6.84	1.00	9.93	21.26	0.47
0.48	0	Calculated							
Link-135		CONDUIT	0	00:05	7.93	1.00	1.89	23.25	0.08
0.19	0	Calculated							
Link-136		CONDUIT	0	00:05	14.39	1.00	3.61	41.34	0.09
0.20	0	Calculated							
Link-137		CONDUIT	0	00:06	9.61	1.00	13.84	30.88	0.45
0.47	0	Calculated							
Link-138		CONDUIT	0	00:05	9.10	1.00	2.40	25.54	0.09
0.21	0	Calculated							
Link-139		CONDUIT	0	00:06	11.31	1.00	15.83	68.20	0.23
0.33	0	Calculated							
Link-140		CONDUIT	0	00:05	12.75	1.00	2.09	43.61	0.05
0.15	0	Calculated							
Link-141		CONDUIT	0	00:06	11.13	1.00	17.59	63.97	0.28
0.36	0	Calculated							
Link-143		CONDUIT	0	00:05	9.84	1.00	5.55	15.76	0.35
0.41	0	Calculated							
Link-144		CONDUIT	0	00:05	10.28	1.00	5.52	21.60	0.26
0.34	0	Calculated							
Link-146		CONDUIT	0	00:05	16.18	1.00	14.00	28.79	0.49
0.49	0	Calculated							
Link-147		CONDUIT	0	00:05	6.96	1.00	13.87	19.58	0.71
0.62	0	Calculated							
Link-148		CONDUIT	0	00:05	12.38	1.00	5.26	28.81	0.18
0.29	0	Calculated							
Link-156		CONDUIT	0	00:05	9.40	1.00	5.70	18.99	0.30
0.38	0	Calculated							
Link-158		CONDUIT	0	00:05	5.83	1.00	12.24	16.40	0.75
0.64	0	Calculated							
Link-159		CONDUIT	0	00:05	6.06	1.00	4.68	17.20	0.27
0.36	0	Calculated							
Link-161		CONDUIT	0	00:06	6.05	1.00	12.16	17.34	0.70
0.62	0	Calculated							
Link-162		CONDUIT	0	00:05	5.90	1.00	2.30	6.21	0.37
0.42	0	Calculated							
Link-163		CONDUIT	0	00:06	5.54	1.00	12.16	15.75	0.77
0.66	0	Calculated							
Link-164		CONDUIT	0	00:05	5.39	1.00	10.10	15.72	0.64
0.58	0	Calculated							
Link-165		CONDUIT	0	00:06	6.61	1.00	18.44	30.06	0.61
0.56	0	Calculated							
Link-86		CONDUIT	0	00:06	8.77	1.00	44.34	54.37	0.82
0.68	0	Calculated							
Link-87		CONDUIT	0	00:07	17.85	1.00	34.55	157.36	0.22
0.32	0	Calculated							
Link-88		CONDUIT	0	00:05	12.29	1.00	5.06	28.79	0.18
0.28	0	Calculated							
Link-94		CONDUIT	0	00:08	7.30	1.00	2.59	2.39	1.08
1.00	3	SURCHARGED							
Link-95		CONDUIT	0	00:05	4.52	1.00	1.18	12.70	0.09
0.21	0	Calculated							
Link-96		CONDUIT	0	00:05	4.09	1.00	0.76	13.28	0.06
0.16	0	Calculated							
Link-97		CONDUIT	0	00:05	4.30	1.00	1.86	7.55	0.25
0.34	0	Calculated							

Link-98		CONDUIT	0	00:06	6.31	1.00	4.24	12.23	0.35
0.41	0	Calculated							
Link-99		CONDUIT	0	00:05	7.88	1.00	9.63	12.63	0.76
0.65	0	Calculated							

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*  
All links are stable.

WARNING 138 : Initial water surface elevation defined for Inlet BMP4B is below catchbasin invert elevation.

Assumed initial water surface elevation equal to catchbasin inlet invert elevation.

WARNING 116 : Conduit inlet invert elevation defined for Conduit Link-003 is below upstream node invert elevation.

Assumed conduit inlet invert elevation equal to upstream node invert elevation.

WARNING 116 : Conduit inlet invert elevation defined for Conduit Link-016 is below upstream node invert elevation.

Assumed conduit inlet invert elevation equal to upstream node invert elevation.

Analysis began on: Mon Mar 20 17:14:01 2023

Analysis ended on: Mon Mar 20 17:14:10 2023

Total elapsed time: 00:00:09

# MITIGATED CONDITION

H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.2.147 (Build 0)

\*\*\*\*\*  
Project Description

\*\*\*\*\*  
File Name ..... Merge Hydrology\_PDP2 (After Detention).SPF  
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

\*\*\*\*\*  
Analysis Options

\*\*\*\*\*  
Flow Units ..... cfs  
Link Routing Method ..... Kinematic Wave  
Storage Node Exfiltration.. None  
Starting Date ..... SEP-26-2017 00:00:00  
Ending Date ..... SEP-27-2017 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*

Element Count  
\*\*\*\*\*  
Number of subbasins ..... 0  
Number of nodes ..... 4  
Number of links ..... 4

\*\*\*\*\*

Node Summary

\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
HMP-1A	JUNCTION	347.00	374.50	0.00	
Jun-01	JUNCTION	341.67	369.77	0.00	
Out-POC'A'	OUTFALL	0.00	338.75	0.00	
HMP-1	STORAGE	347.00	362.00	0.00	Yes

\*\*\*\*\*

Link Summary

\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-001	Jun-01	Out-POC'A'	CONDUIT	153.0	4.1958	0.0150
Link-002	HMP-1A	Jun-01	CONDUIT	231.8	2.1566	0.0150
Orifice-HMP-1	HMP-1	HMP-1A	ORIFICE			
Weir-HMP-1	HMP-1	HMP-1A	WEIR			

\*\*\*\*\*

Cross Section Summary

\*\*\*\*\*

Link Design ID	Shape	Depth/ Diameter	Width	No. of Barrels	Cross Sectional Area	Full Flow Hydraulic Radius
Flow Capacity		ft	ft		ft²	ft
cfs						

```

-----
Link-001      CIRCULAR      3.50      3.50      1      9.62      0.88
178.61
Link-002      CIRCULAR      3.50      3.50      1      9.62      0.88
128.05
    
```

```

*****
Flow Routing Continuity
*****
Volume      Volume
acre-ft     Mgallons
-----
External Inflow .....      3.308      1.078
External Outflow .....      3.233      1.054
Initial Stored Volume ....      0.000      0.000
Final Stored Volume .....      0.073      0.024
Continuity Error (%) .....      0.001
    
```

```

*****
Node Depth Summary
*****
    
```

```

-----
Node      Average      Maximum      Maximum      Time of Max      Total      Total      Retention
ID        Depth      Depth      HGL      Occurrence      Flooded      Flooded      Time
          Attained  Attained  Attained  Occurrence      Volume      Volume      Time
          ft          ft          ft          days hh:mm      acre-in  minutes  hh:mm:ss
-----
HMP-1A      0.22      1.37      348.37      0 04:07      0          0          0:00:00
Jun-01      0.54      1.70      343.37      0 04:07      0          0          0:00:00
Out-POC'A' 335.43    336.39    336.39      0 04:07      0          0          0:00:00
HMP-1      3.82     14.83     361.83      0 04:07      0          0          0:00:00
    
```

```

*****
Node Flow Summary
*****
    
```

```

-----
Node      Element      Maximum      Peak      Time of      Maximum      Time of Peak
ID        Type          Lateral      Inflow    Peak Inflow  Flooding     Flooding
          Inflow       Inflow      Occurrence  Overflow     Occurrence
          cfs          cfs          days hh:mm  cfs          days hh:mm
-----
HMP-1A      JUNCTION      0.00      41.64      0 04:07      0.00
Jun-01      JUNCTION      0.00      41.30      0 04:07      0.00
Out-POC'A' OUTFALL       0.00      41.31      0 04:07      0.00
HMP-1      STORAGE       94.26     94.26      0 04:03      0.00
    
```

```

*****
Storage Node Summary
*****
    
```

```

-----
Storage Node ID      Maximum      Maximum      Time of Max      Average      Average      Maximum
Maximum Time of Max. Total      Pondered      Pondered      Pondered      Pondered      Storage Node
Exfiltration Exfiltration Exfiltrated      Pondered      Pondered      Pondered      Outflow
Rate          Rate          Volume      Volume      Volume      Volume      Outflow
cfm           hh:mm:ss     1000 ft³     (%)      days hh:mm  1000 ft³     (%)      cfs
-----
    
```



```
-----
HMP-1      83.123      99      0 04:07      21.425      25      41.64
0.00      0:00:00      0.000
```

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

```
-----
Outfall Node ID      Flow      Average      Peak
                    Frequency  Flow         Inflow
                    (%)       cfs          cfs
-----
Out-POC'A'          98.02      1.66         41.31
-----
System              98.02      1.66         41.31
```

\*\*\*\*\*  
 Link Flow Summary  
 \*\*\*\*\*

```
-----
Link ID      Element      Time of      Maximum      Length      Peak Flow      Design      Ratio of
Ratio of     Total      Reported     Peak Flow    Velocity      Factor      during      Flow      Maximum
Maximum      Time      Type        Occurrence   Attained     Factor      Analysis    Capacity   /Design
Flow Surcharged                                     days hh:mm   ft/sec      cfs          cfs          Flow
Depth      minutes
-----
Link-001     CONDUIT      0 04:07      15.10       1.00         41.31      178.61      0.23
0.33        0 Calculated
Link-002     CONDUIT      0 04:07      11.90       1.00         41.30      128.05      0.32
0.39        0 Calculated
Orifice-HMP-1 ORIFICE      0 04:07                                     4.25
0.00
Weir-HMP-1   WEIR         0 04:07                                     37.39
0.00
```

\*\*\*\*\*  
 Highest Flow Instability Indexes  
 \*\*\*\*\*  
 All links are stable.

WARNING 108 : Surge elevation defined for Junction Jun-01 is below junction maximum elevation. Assumed surge elevation equal to maximum elevation.  
 WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node HMP-1A.

Analysis began on: Mon Mar 20 17:53:10 2023  
 Analysis ended on: Mon Mar 20 17:53:11 2023  
 Total elapsed time: 00:00:01

ORIGINAL  
APPROVED REPORT  
FOR REFERENCE ONLY

September 28, 2021

**San Diego Developmental  
Services Department**  
101 Ash St, San Diego, CA 92101

**SUBJECT: MERGE 56 UNIT 1 & Unit 2 CONSTRUCTION CHANGE “B”, PTS 697235 & 697236  
ADDENDUM DRAINAGE REPORT**

The letter is to address the proposed changes in the Merge 56 Unit 1 Construction Change “B”, PTS 697235 (Construction Change to PTS 596359) Drainage assessment, and in the Merge 56 Unit 2 Construction Change “B”, PTS 697236 (Construction Change to PTS 599996) Drainage assessment.

*Note: Please refer to the attached Proposed Drainage Map for the Drainage Management Areas mentioned below.*

#### **PROPOSED PROJECT DESCRIPTION**

This application proposes enacting changes to site grading and design across both Merge 56 Unit 1 and Merge 56 Unit 2 (for greater detail on these changes, please see respective PTS submittal.) The changes for Unit 1 include adjustments to grading, storm drain slope, and Drainage Management Areas. The changes for Unit 2 include adjustments to grading and Drainage Management Areas and the addition of storm drain and Modular Wetlands System.

#### **PROJECT SITE DRAINAGE**

**Previously Approved Conditions:** Drainage from all lots within the Unit 2 area was parsed into 11 DMAs, managed by 6 BMP Biofiltration basins (BMP 14, 16-20), and 5 Modular Wetlands System units (BMP 3, 6, 7, 10, 11) for street treatment. Drainage from all lots within the Unit 1 area was parsed into 13 DMAs, managed by 4 BMP Biofiltration Basins (BMP 12-15), and 9 Modular Wetlands System units (BMP 1-6, 8-10) for street treatment.

Outflow was primarily conveyed through the backbone storm drain systems within Private Drive M (now Merge Avenue per Street Naming approval) and Private Drive N. Drainage from this system travels north and west and confluence with the drainage systems within Camino Del Sur and ultimately discharges to the west into Deer Canyon, identified as POC 1.

**Proposed Conditions:** The proposed construction changes have been designed to maintain overall drainage patterns of the previously approved report. DMA 14, which spanned both Unit 1 and Unit 2 has been split into two separate DMA’s – 14A and 14B. Runoff from 14A will continue to drain to the biofiltration basin, BMP 14A, where it will

be treated and discharged into the backbone storm drain system. Runoff from DMA 14B will be conveyed via storm drain to the BMP 14B Modular Wetlands System, where it will be treated and discharged into the backbone storm drain system. Drainage from this system still travels west and confluences with the drainage systems within Camino Del Sur and ultimately discharges to the west into Deer Canyon, identified as POC 1.

Runoff generated from the site will not result in any unmitigated drainage, or storm water quality impacts on the existing downstream conditions with these proposed measures in place.

*Note: Updated drainage calculations have been provided in this addendum study.*

If you have any questions or need any further information please feel free to call me on my direct line (858-875-1718) or email me at [Justin.Giles@latitude33.com](mailto:Justin.Giles@latitude33.com).

Sincerely,



Justin R. Giles, C83540  
Project Manager  
Latitude 33 Planning and Engineering

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2021

## DRAINAGE STUDY – ADDENDUM CC ‘A’ ONSITE MERGE 56 UNITS 1 & 2

Unit 1 CC‘A’: PTS# 697235, DWG 40552-D

Unit 2 CC‘A’: PTS# 697236, DWG 40553-D

SEPTEMBER 2021

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PREPARED BY: LATITUDE 33 PLANNING & ENGINEERING  
PREPARED FOR: SEABREEZE PROPERTIES, LLC  
JOB NUMBER: 1176.3



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DRAINAGE STUDY FOR:

**ONSITE MERGE 56  
UNITS 1 & 2**

CITY OF SAN DIEGO, CALIFORNIA

Unit 1:

PTS NO. 697235  
DWG. NO. 40552-D

Unit 2:

PTS NO. 697236  
DWG. NO. 40553-D

**SEPTEMBER 29, 2021**

Prepared for:

**SEA BREEZE PROPERTIES, LLC**

5550 Carmel Mountain Road, Suite 204  
San Diego, CA 92130

Prepared by:

**Latitude 33 Planning and Engineering**

9968 Hibert Street, 2<sup>nd</sup> Floor  
San Diego, California 92131  
(858) 751-0633

---

Matthew J. Semic RCE 71075  
Registration Expires 06/30/23

Prepared by: HRG  
Checked by: JRG

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## DECLARATION OF RESPONSIBLE CHARGE

---

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY AND COUNTY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

---

Matthew J. Semic R.C.E. 71075  
REGISTERED CIVIL ENGINEER

DATE



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## I. PURPOSE

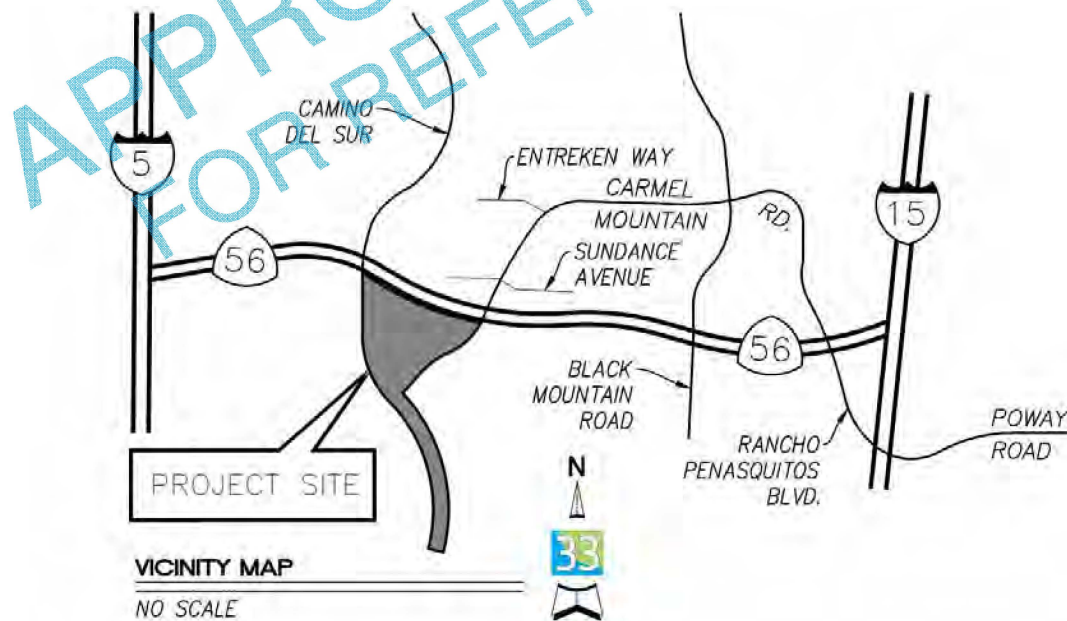
This drainage study evaluates the pre-project and post-project drainage conditions for anticipated runoff flows associated with the construction of the Merge Onsite development (approved per VTM 1266780) using the rational method outlined in the City of San Diego Drainage Design Manual. This report documents the hydrologic and hydraulic impacts due to the development.

## II. PROJECT DESCRIPTION

The proposed Onsite Merge 56 project is approximately 36.10 acres, located in the City of San Diego immediately south of state route 56 (see Figure 1 – Vicinity Map). Currently, Camino Del Sur terminates approximately one mile south of SR-56. The Offsite Merge 56 Grading and Improvement Plans (DWG 45089-D & 40590-D) propose to connect the northerly segment of Camino Del Sur from Torrey Santa Fe Road to the southerly segment near Dormouse Road. The offsite project will also extend Carmel Mountain Road southwesterly to the proposed Camino Del Sur extension.

These road extensions are also accompanied by the Onsite Merge 56 project which this report will focus on. The onsite project will be a development bounded by SR-56 to the north, Camino Del Sur to the west and Carmel Mountain Road to the east. The proposed use of this space includes a mix of single family residential, multi-family residential, and mixed-use office/retail space.

**FIGURE 1 – VICINITY MAP**



## III. EXISTING DRAINAGE PATTERNS

In pre-project conditions, the site is made up of undeveloped, naturally vegetated land. The project is located primarily within the watershed limits for Los Penasquitos Canyon Preserve. An existing ridgeline

approximately 800 feet southeast of the proposed Camino Del Sur and Carmel Mountain Road intersection divides the project's drainage into the Deer Canyon and the Penasquitos Canyon. The northern portion of the project drains northwesterly towards Deer Canyon, with the remaining portions of the site draining southeasterly towards Penasquitos Canyon. For analysis, a runoff coefficient of 0.45 is used for the existing site which corresponds to rural lots greater than ½ acre per City of San Diego Drainage Design Manual 2017.

#### Clean Water Act Section 401 & 404 Applicability

Per the approved PDP No. 1266871 conditions, the project is subject to the requirements of CWA 401/404. The CWA 401/404 approvals will be obtained prior to start of construction.

## IV. PROPOSED DRAINAGE PATTERNS

The post-project area will generally maintain the pre-project drainage patterns. Most of the runoff will be collected via proposed storm drain systems that will be installed as part of the street improvements. Refer to the attached "Proposed Onsite Merge 56 Drainage Map" for information regarding proposed drainage areas and the point of compliance (POC 'A').

Runoff from all private driveways (DMAs 1-9) will be routed via sheet flow to modular wetlands units before entering the private storm drain system. Bypass of the modular wetlands units will be via combination gutter bypass and internal bypass within the modular wetland units. Runoff generated by the pad graded areas north of Merge Avenue (DMAs 12-14a), commercial and residential, will be routed to bio-filtration basins before entering the private storm drain system. And runoff from DMA 14b will be routed to a modular wetlands device before entering the private storm drain system. Runoff from all remaining pad graded areas and private driveways south of Merge Avenue (DMAs 10-38) will be routed via storm drain to modular wetlands units. Bypass of the modular wetlands units will be via weirs installed within storm drain cleanouts.

All runoff will be piped towards the northwest corner of the project to a storage vault system which will provide detention for hydromodification requirements as well as mitigation of increased runoff generated by the developed site. The storage vault system will be equipped with an internal weir which will allow higher volume flows to bypass internally. Runoff is ultimately conveyed via private storm drain to Camino Del Sur where it will connect into the public storm drain system at POC 'A' which then drains westerly towards Deer Canyon.

Prior drainage analyses have been performed for the entire Merge 56 project (onsite and offsite) and are included in the following reports:

- January 2001, *Drainage Study for Camino Ruiz (aka Camino Del Sur), South of Carmel Mountain Road*
- January 22, 2004, *Preliminary Drainage Study, Rhodes Crossing*
- August 28, 2006, *Drainage Study, Rhodes Crossing, Camino del Sur & Camel Mountain Roadway Plans.*
- May 12, 2015, *Drainage Report for Merge 56 Vesting Tentative Map*, performed by Chang

The drainage report for the Vesting Tentative Map of the Merge 56 onsite and offsite project entitled *Drainage Report for Merge 56 Vesting Tentative Map* has been provided ion Appendix A and further support the findings of this report.

## V. CALCULATIONS SUMMARY

Using Storm and Sanitary Analysis (results provided in Appendix B & C) the following 50-year values were determined for the existing and proposed condition. These values are further detailed on the Existing and Proposed Drainage Maps found in Appendix B & C respectively.

**Table 1 - Summary of Existing Condition DMA Flows**

Existing DMA Summary		
DMA ID	Area (acres)	Peak Runoff (cfs)
1	13.92	14.08
2	22.18	27.35

**Table 2 - Summary of Proposed Condition DMA Flows**

Proposed DMA Summary		
DMA ID	Area (ac)	Peak Runoff (cfs)
1	0.45	1.49
2	1.34	4.13
3	0.37	1.28
4	1.55	3.39
5	0.30	0.92
6	0.80	2.50
7	0.13	0.45
8	0.42	1.47
9	0.54	1.88
10	0.20	1.18
11	0.46	0.77
12	4.14	14.41
13	5.52	17.93
14a	1.19	4.15
14b	1.61	5.61
15	1.35	4.70
16	0.67	2.33
17	0.39	1.36
18	0.41	1.43
19	0.45	1.57
20	0.33	1.15

Proposed DMA Summary		
DMA ID	Area (ac)	Peak Runoff (cfs)
21	0.42	1.46
22	0.56	1.95
23	0.59	2.06
24	0.80	2.79
25	0.40	1.39
26	0.51	1.46
27	0.42	1.21
28	0.84	2.41
29	1.26	3.62
30	1.35	3.78
31	2.64	6.97
32	0.73	2.10
33	0.66	1.89
34	0.74	2.12
35	0.86	2.47
36	0.66	1.89
37	0.10	0.35
38	0.34	0.49

**Table 3 - Summary of Existing Outfall Flow**

Existing Conditions POC Summary		
POC ID	Contributing DMAs	Q50 Peak (cfs)
POC 'A'	1, 2	41.43

**Table 4 - Summary of Proposed Outfall Flow**

Proposed Conditions POC Summary				
POC ID	Contributing DMAs	Existing Q50 Peak (cfs)	Proposed Q50 Peak (cfs) Before Detention	Proposed Q50 Peak (cfs) After Detention
POC 'A'	1-20	41.43	106.80	17.51

## VI. CONCLUSION

The hydraulic analysis performed for the Onsite Merge 56 project provides evidence to support that the drainage design proposed is feasible. An increase in Peak  $Q_{50}$  of **65.37cfs** will be mitigated by the implementation of storage vaults. The project currently proposes 85,305cf of storage to meet hydro modification requirements. By modeling a storage vault in Storm and Sanitary Analysis, the proposed peak runoff after detention is  $Q_{50} = 17.51cfs$ . As this is less than the existing peak runoff ( $Q_{50} = 41.43fs$ ), the increase in peak flow will be mitigated and the rational method analysis which was used to determine the peak 50-year values shows that the proposed private storm drain system is sized appropriately and can properly convey the project generated runoff.

For specific sizes and other details on the proposed flow control BMP's, see the Storm Water Quality Management Plan for Onsite Merge 56 prepared by Latitude 33 Planning & Engineering.



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CHAPTER 3: STREET DRAINAGE, CLEANOUTS, AND INLETS

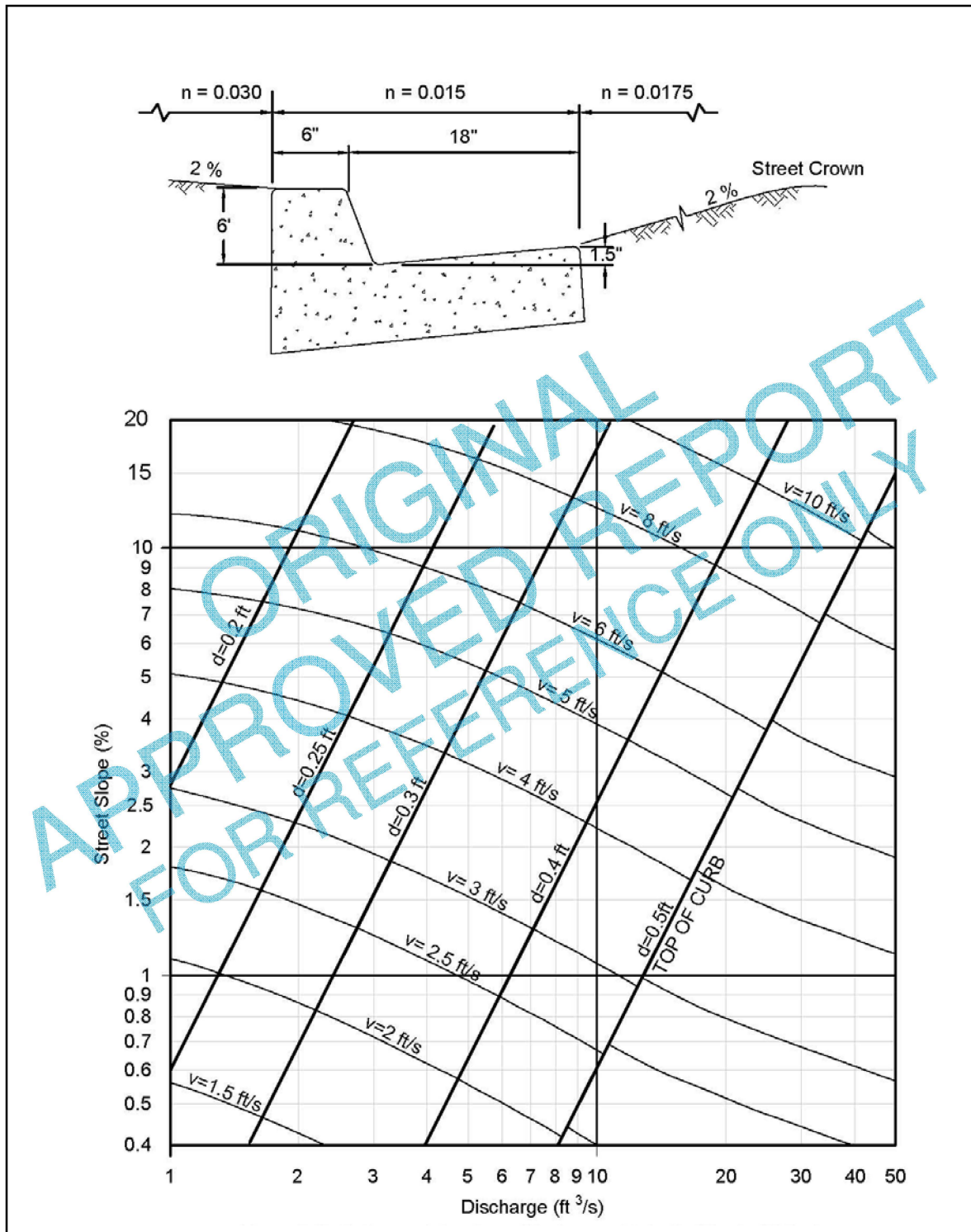


Figure 3-2: Gutter and Roadway Discharge-Velocity Chart (6" Curb)

### 3.2.2 Inlet Design

#### 3.2.2.1 Curb Inlets on Grade

##### Full Interception

The capacity of a curb inlet on continuous grade depends on gutter slope, depth of flow in the gutter, the dimensions of the curb opening, and the amount of depression at the catch basin. Equation 3-2 describes the capacity of a curb inlet assuming full (100 %) interception.

Equation 3-2. Capacity of Curb Inlet

$\frac{Q}{L_T} = 0.7 (a+y)^{3/2}$	
where:	
Q	= interception capacity of the curb inlet (ft <sup>3</sup> /s)
y	= depth of flow approaching the curb inlet (ft; maximum of y = 0.4)
a	= depth of depression of curb at inlet (ft; use a=0.33)
L <sub>T</sub>	= length of clear opening of inlet for total interception (ft)

Figure 3-4 illustrates the relationship between interception capacity, depth of approaching flow, and curb inlet depression, and may be used to determine curb inlet interception capacity.

Table A-1. Runoff Coefficients for Rational Method

Land Use	Runoff Coefficient (C)
	Soil Type <sup>(1)</sup>
<b>Residential:</b>	
Single Family	0.55
Multi-Units	0.70
Mobile Homes	0.65
Rural (lots greater than 1/2 acre)	0.45
<b>Commercial <sup>(2)</sup></b>	
80% Impervious	0.85
<b>Industrial <sup>(2)</sup></b>	
90% Impervious	0.95

**Note:**

<sup>(1)</sup> Type D soil to be used for all areas.

<sup>(2)</sup> Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

$$\begin{aligned}
 \text{Actual imperviousness} &= 50\% \\
 \text{Tabulated imperviousness} &= 80\% \\
 \text{Revised C} &= (50/80) \times 0.85 = 0.53
 \end{aligned}$$

The values in Table A-1 are typical for urban areas. However, if the basin contains rural or agricultural land use, parks, golf courses, or other types of nonurban land use that are expected to be permanent, the appropriate value should be selected based upon the soil and cover and approved by the City.

**A.1.3. Rainfall Intensity**

The rainfall intensity (I) is the rainfall in inches per hour (in/hr.) for a duration equal to the T<sub>c</sub> for a selected storm frequency. Once a particular storm frequency has been selected for design and a T<sub>c</sub> calculated for the drainage area, the rainfall intensity can be determined from the Intensity-Duration-Frequency Design Chart (Figure A-1).



APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

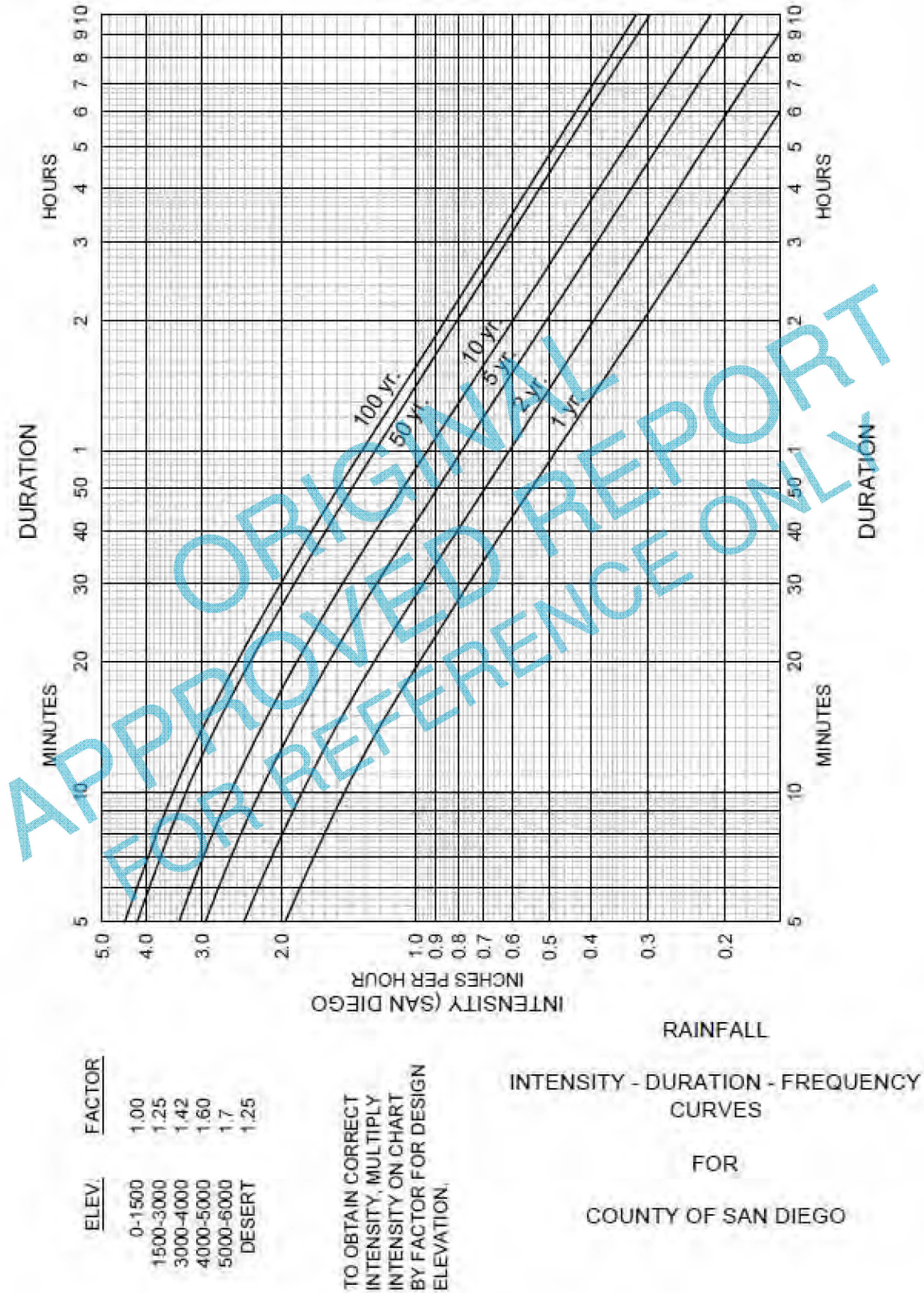


Figure A-1. Intensity-Duration-Frequency Design Chart

APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

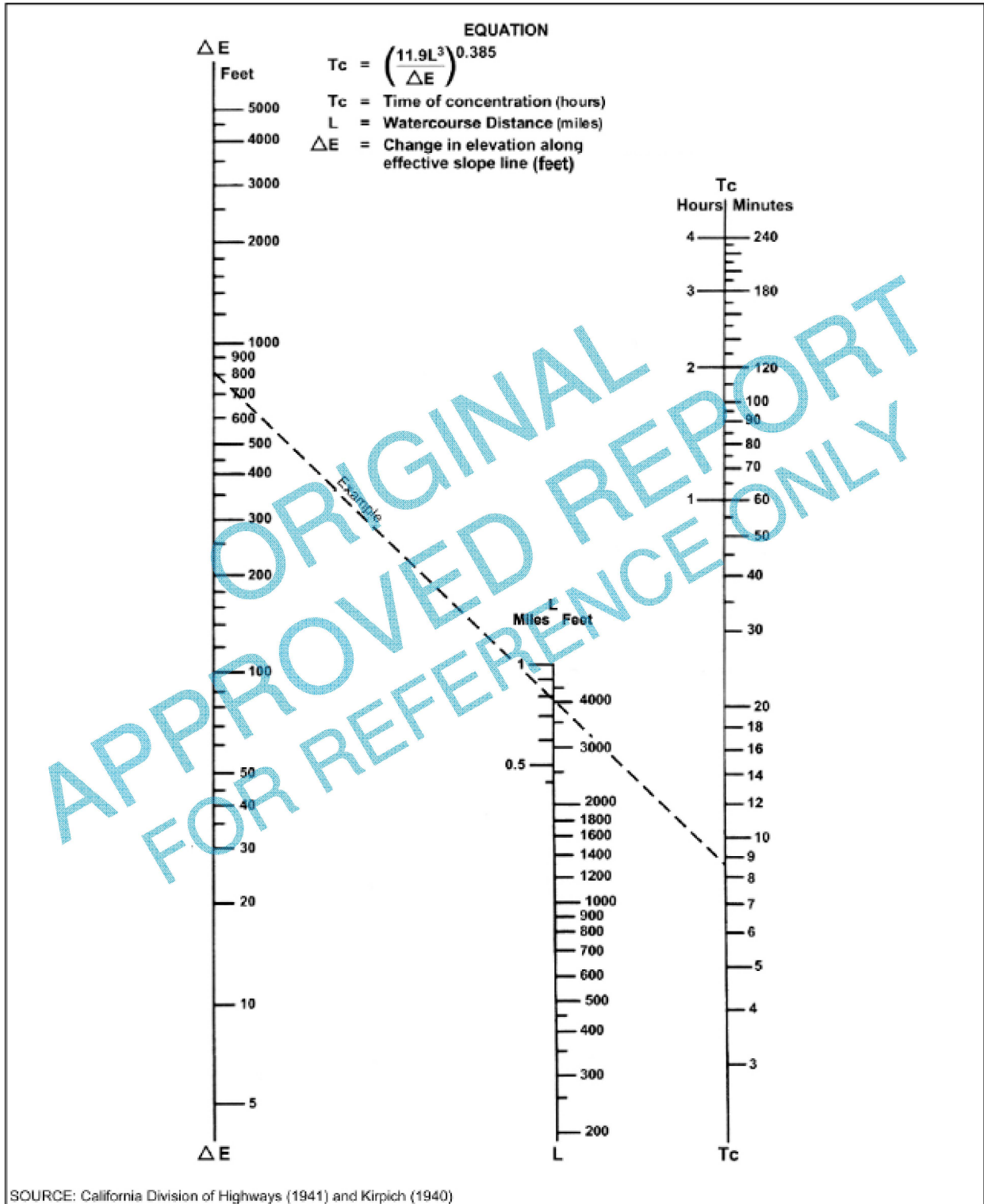


Figure A-2. Nomograph for Determination of  $T_c$  for Natural Watersheds

**Note:** Add ten minutes to the computed time of concentration from Figure A-2.

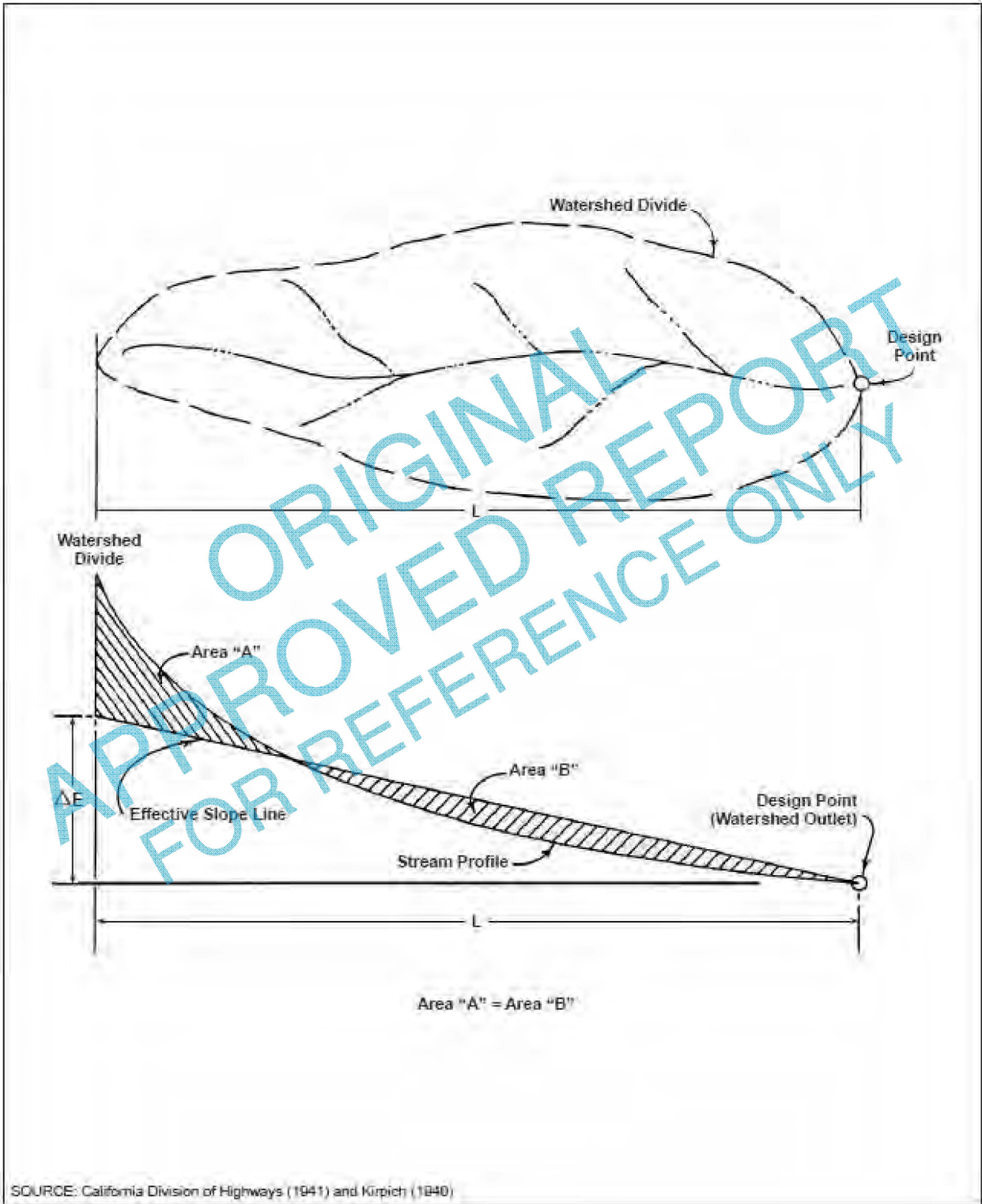


Figure A-3. Computation of Effective Slope for Natural Watersheds





APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

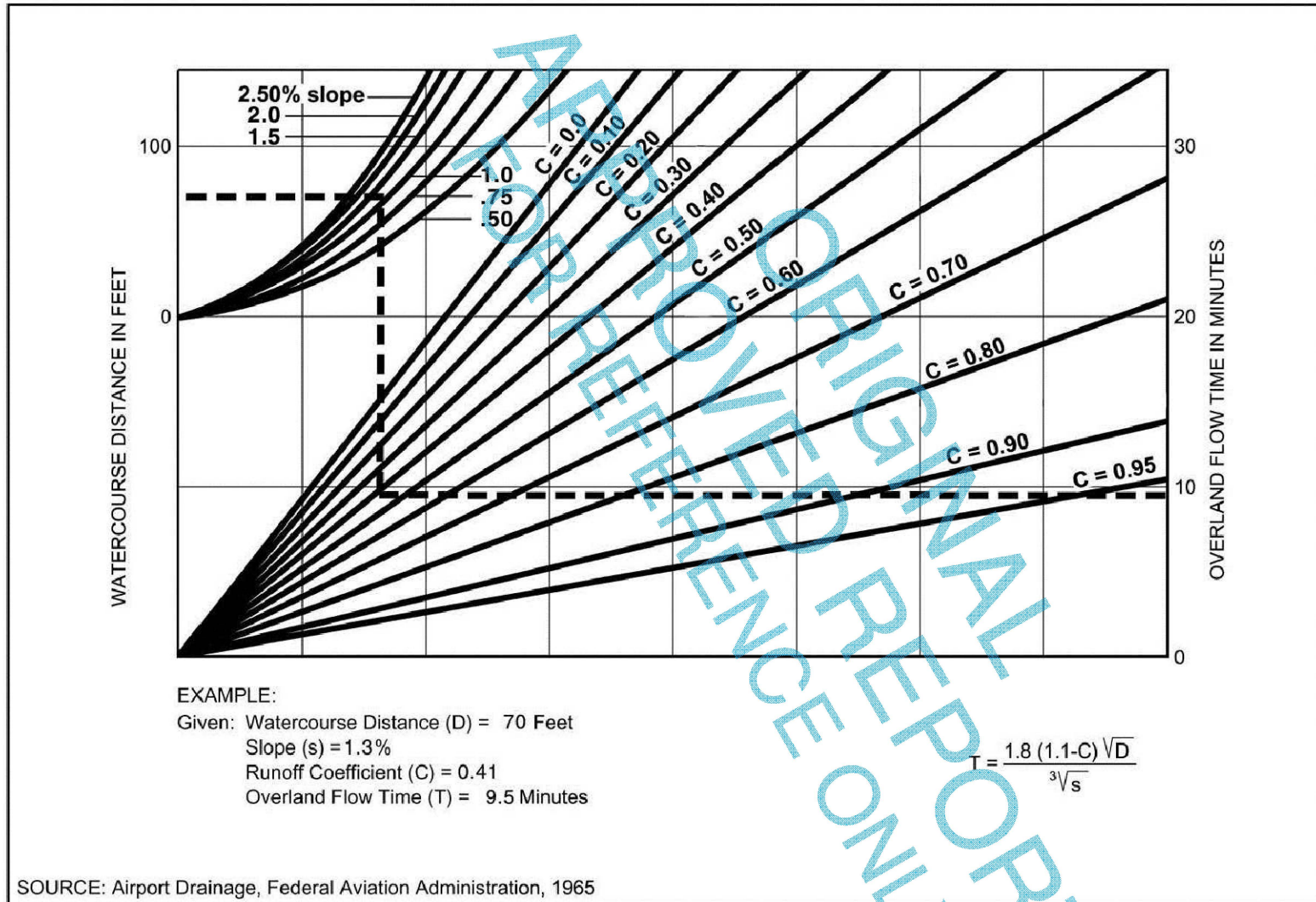


Figure A-4. Rational Formula - Overland Time of Flow Nomograph

**Note:** Use formula for watercourse distances in excess of 100 feet.

APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

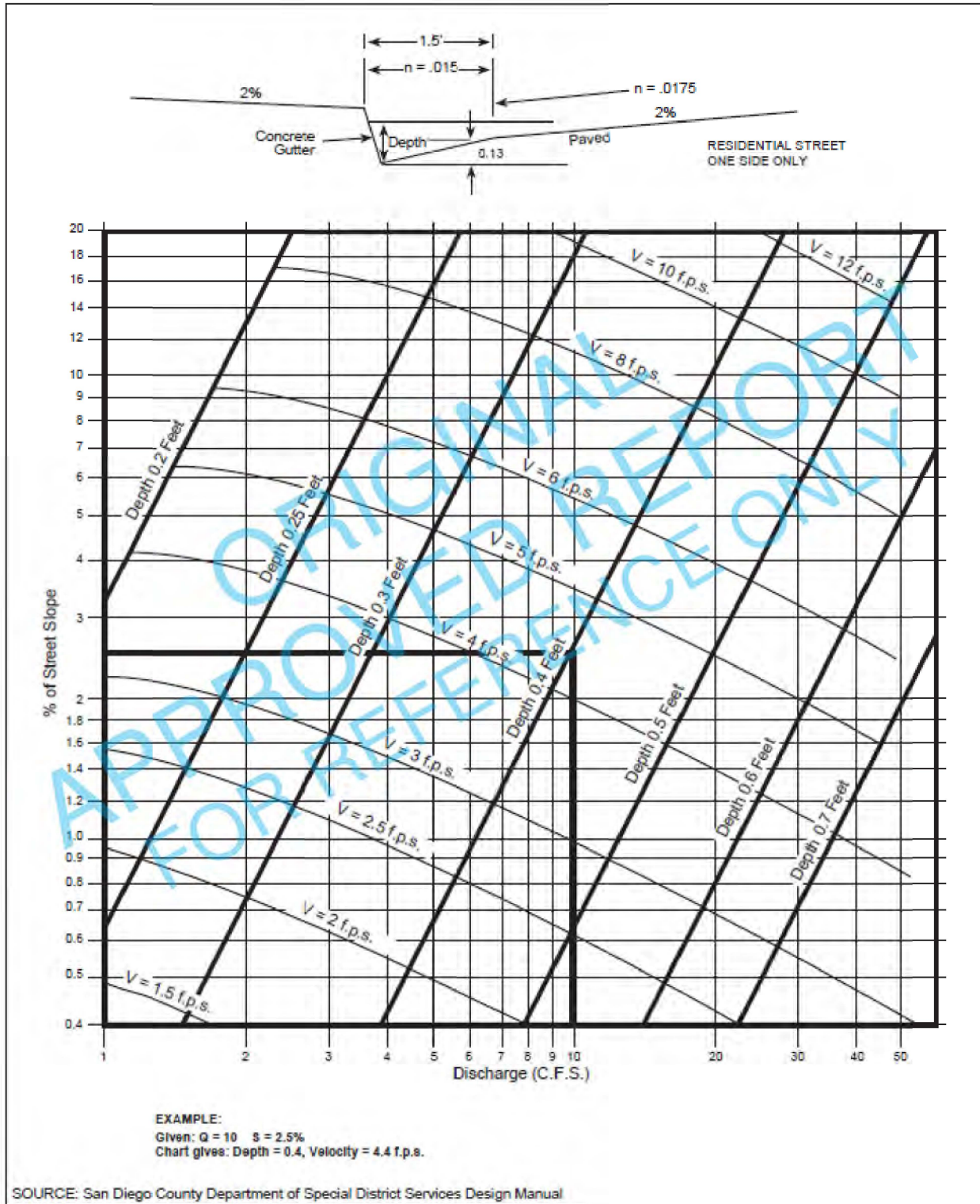


Figure A-5. Gutter and Roadway Discharge - Velocity Chart

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\*\*\*\*\*  
 Project Description  
 \*\*\*\*\*  
 File Name ..... Merge Onsite Existing Hydrology.SPF  
 Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\SSA\Exinsting  
 Parcels.dwg

\*\*\*\*\*  
 Analysis Options  
 \*\*\*\*\*  
 Flow Units ..... cfs  
 Subbasin Hydrograph Method.. Rational  
 Time of Concentration..... SCS TR-55  
 Return Period..... 50 years  
 Storage Node Exfiltration.. None  
 Starting Date ..... MAY-23-2018 00:00:00  
 Ending Date ..... MAY-24-2018 00:00:00  
 Report Time Step ..... 00:00:10

\*\*\*\*\*  
 Element Count  
 \*\*\*\*\*  
 Number of subbasins ..... 2  
 Number of nodes ..... 1  
 Number of links ..... 0

\*\*\*\*\*  
 Subbasin Summary  
 \*\*\*\*\*  

Subbasin ID	Total Area acres
{Site 1}._E1	13.93
{Site 1}._E2	22.18

\*\*\*\*\*  
 Node Summary  
 \*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft <sup>2</sup>	External Inflow
Out-POC'A'	OUTFALL	298.00	298.00	0.00	

\*\*\*\*\*  

Runoff Quantity	Volume acre-ft	Depth inches
Continuity	-----	-----
Total Precipitation .....	2.122	0.705
Continuity Error (%) .....	0.554	

\*\*\*\*\*  

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
Continuity	-----	-----
External Inflow .....	0.000	0.000
External Outflow .....	0.947	0.309
Initial Stored Volume ....	0.000	0.000

Final Stored Volume ..... 0.000 0.000  
 Continuity Error (%) ..... 0.000

\*\*\*\*\*  
 Runoff Coefficient Computations Report  
 \*\*\*\*\*

-----  
 Subbasin {Site 1}.\_E1  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	27.07	D	0.45
Composite Area & Weighted Runoff Coeff.	27.07		0.45

-----  
 Subbasin {Site 1}.\_E2  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	35.96	D	0.45
Composite Area & Weighted Runoff Coeff.	35.96		0.45

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
 \*\*\*\*\*

-----  
 Sheet Flow Equation  
 -----

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

Where:

Tc = Time of Concentration (hrs)  
 n = Manning's Roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

-----  
 Shallow Concentrated Flow Equation  
 -----

V = 16.1345 \* (Sf^0.5) (unpaved surface)  
 V = 20.3282 \* (Sf^0.5) (paved surface)  
 V = 15.0 \* (Sf^0.5) (grassed waterway surface)  
 V = 10.0 \* (Sf^0.5) (nearly bare & untilled surface)  
 V = 9.0 \* (Sf^0.5) (cultivated straight rows surface)  
 V = 7.0 \* (Sf^0.5) (short grass pasture surface)  
 V = 5.0 \* (Sf^0.5) (woodland surface)  
 V = 2.5 \* (Sf^0.5) (forest w/heavy litter surface)  
 Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

-----  
 Channel Flow Equation  
 -----

$$V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$$

$$R = Aq / Wp$$

$$Tc = (Lf / V) / (3600 \text{ sec/hr})$$

Where:

Tc = Time of Concentration (hrs)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's Roughness

-----  
 Subbasin {Site 1}.\_E1  
 -----

Shallow Concentrated Flow Computations  
 -----

C		Subarea A	Subarea B	Subarea
0.00	Flow Length (ft):	1262.00	0.00	
0.00	Slope (%):	4.00	0.00	
Unpaved	Surface Type:	Woodland	Unpaved	
0.00	Velocity (ft/sec):	1.00	0.00	
0.00	Computed Flow Time (minutes):	21.03	0.00	
Total TOC (minutes):		21.03		

-----  
 Subbasin {Site 1}.\_E2  
 -----

User-Defined TOC override (minutes): 14.40

\*\*\*\*\*  
 Subbasin Runoff Summary  
 \*\*\*\*\*

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days hh:mm:ss
{Site 1}._E1	0.79	2.25	0.35	14.08	0.450	0 00:21:01
{Site 1}._E2	0.65	2.74	0.29	27.35	0.450	0 00:14:24

Analysis began on: Mon Jun 10 16:57:23 2019  
 Analysis ended on: Mon Jun 10 16:57:25 2019  
 Total elapsed time: 00:00:02

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POC 'A'



MERGE 56 - CONSITE UNITS 1 AND 2  
EXISTING DRAINAGE EXHIBIT  
SCALE: 1" = 80'  
DATE: 06/10/2019  
DRAWN BY: JAC  
JOB NO.: 1718-20  
CHECKED BY: SW  
SHEET 1 OF 1

LEGEND

- MATCHED EXHIBIT
- POINT OF COMPLIANCE
- FLOW PATH
- BASE INFORMATION

POC 'A'



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## UNMITIGATED CONDITION

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\*\*\*\*\*  
Project Description  
\*\*\*\*\*

File Name ..... Merge Proposed Onsite Hydrology\_CCB (Before Detention-Lennar Revs).SPF  
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*

Flow Units ..... cfs  
Subbasin Hydrograph Method. Rational  
Time of Concentration..... SCS TR-55  
Return Period..... 50 years  
Link Routing Method ..... Kinematic Wave  
Storage Node Exfiltration.. None  
Starting Date ..... SEP-26-2017 00:00:00  
Ending Date ..... SEP-27-2017 00:00:00  
Report Time Step ..... 00:00:10

\*\*\*\*\*  
Element Count  
\*\*\*\*\*

Number of subbasins ..... 39  
Number of nodes ..... 83  
Number of links ..... 82

\*\*\*\*\*  
Subbasin Summary  
\*\*\*\*\*

Subbasin	Total Area acres
DMA01	0.45
DMA02	1.34
DMA03	0.37
DMA04	1.55
DMA05	0.30
DMA06	0.80
DMA07	0.13
DMA08	0.42
DMA09	0.54
DMA10	0.34
DMA11	0.22
DMA12	4.14
DMA13	5.52
DMA14A	1.19
DMA14B	1.61
DMA15	1.35
DMA16	0.67
DMA17	0.39
DMA18	0.41
DMA19	0.45
DMA20	0.33
DMA21	0.42
DMA22	0.56
DMA23	0.59
DMA24	0.80
DMA25	0.40
DMA26	0.51

DMA27 0.42  
 DMA28 0.84  
 DMA29 1.26  
 DMA30 1.35  
 DMA31 2.64  
 DMA32 0.73  
 DMA33 0.66  
 DMA34 0.74  
 DMA35 0.86  
 DMA36 0.66  
 DMA37 0.10  
 DMA38 0.34

\*\*\*\*\*  
 Node Summary  
 \*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft <sup>2</sup>	External Inflow
Jun-01	JUNCTION	346.29	369.77	0.00	
Jun-02	JUNCTION	358.01	375.41	0.00	
Jun-03	JUNCTION	362.89	372.14	0.00	
Jun-04	JUNCTION	361.20	370.24	0.00	
Jun-05	JUNCTION	362.85	369.15	0.00	
Jun-07	JUNCTION	365.60	376.08	0.00	
Jun-08	JUNCTION	367.76	375.18	0.00	
Jun-09	JUNCTION	370.56	378.43	0.00	
Jun-10	JUNCTION	374.88	383.78	0.00	
Jun-11	JUNCTION	377.48	385.88	0.00	
Jun-12	JUNCTION	383.38	393.29	0.00	
Jun-13	JUNCTION	380.90	389.54	0.00	
Jun-14	JUNCTION	379.11	387.57	0.00	
Jun-15	JUNCTION	376.71	383.93	0.00	
Jun-17	JUNCTION	374.13	382.45	0.00	
Jun-18	JUNCTION	372.36	382.57	0.00	
Jun-19	JUNCTION	370.42	379.05	0.00	
Jun-20	JUNCTION	368.22	373.46	0.00	
Jun-21	JUNCTION	359.66	373.22	0.00	
Jun-22	JUNCTION	362.54	376.72	0.00	
Jun-25	JUNCTION	378.92	384.01	0.00	
Jun-84	JUNCTION	384.07	390.31	0.00	
Jun-65	JUNCTION	382.95	393.88	0.00	
Jun-66	JUNCTION	380.08	395.21	0.00	
Jun-67	JUNCTION	378.51	392.50	0.00	
Jun-68	JUNCTION	377.79	392.07	0.00	
Jun-69	JUNCTION	376.32	391.50	0.00	
Jun-70	JUNCTION	375.69	389.68	0.00	
Jun-71	JUNCTION	374.96	387.44	0.00	
Jun-72	JUNCTION	373.33	386.90	0.00	
Jun-73	JUNCTION	371.18	385.75	0.00	
Jun-74	JUNCTION	368.25	382.94	0.00	
Jun-75	JUNCTION	367.22	381.80	0.00	
Jun-76	JUNCTION	365.05	379.20	0.00	
Jun-77	JUNCTION	364.42	377.30	0.00	
Jun-78	JUNCTION	372.80	386.00	0.00	
Jun-79	JUNCTION	374.28	388.80	0.00	
Jun-80	JUNCTION	379.45	390.70	0.00	
Jun-81	JUNCTION	381.79	388.24	0.00	
Jun-82	JUNCTION	383.32	389.90	0.00	
Jun-83	JUNCTION	362.67	367.60	0.00	
Jun-84	JUNCTION	387.44	395.40	0.00	
Jun-85	JUNCTION	384.90	392.50	0.00	
Out-POC'A'	OUTFALL	333.75	338.75	0.00	
Stor-01	STORAGE	347.00	362.00	0.00	

\*\*\*\*\*  
Inlet Summary  
\*\*\*\*\*

Inlet ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation ft	Inlet Rim Elevation ft	Ponded Area ft <sup>2</sup>	Initial Water Elevation ft	Grate Clogging Factor %
Inlet-001	FHWA HEC-22	GENERIC N/A	On Sag	1	370.02	375.09	10.00	370.02	0.00
Inlet-002	FHWA HEC-22	GENERIC N/A	On Sag	1	370.29	375.39	10.00	370.29	0.00
Inlet-003	FHWA HEC-22	GENERIC N/A	On Sag	1	381.41	389.71	10.00	381.41	0.00
Inlet-004	FHWA HEC-22	GENERIC N/A	On Sag	1	365.21	369.36	10.00	365.21	0.00
Inlet-005	FHWA HEC-22	GENERIC N/A	On Sag	1	365.22	368.92	10.00	365.22	0.00
Inlet-006	FHWA HEC-22	GENERIC N/A	On Sag	1	379.54	384.01	10.00	379.54	0.00
Inlet-007	FHWA HEC-22	GENERIC N/A	On Sag	1	379.57	384.02	10.00	379.57	0.00
Inlet-008	FHWA HEC-22	GENERIC N/A	On Sag	1	366.92	373.66	10.00	366.92	0.00
Inlet-009	FHWA HEC-22	GENERIC N/A	On Sag	1	369.14	373.68	10.00	369.14	0.00
Inlet-012	FHWA HEC-22	GENERIC N/A	On Sag	1	367.00	372.00	10.00	367.00	0.00
Inlet-013	FHWA HEC-22	GENERIC N/A	On Sag	1	372.00	377.00	10.00	372.00	0.00
Inlet-014	FHWA HEC-22	GENERIC N/A	On Sag	1	378.00	383.50	10.00	378.00	0.00
Inlet-23	FHWA HEC-22	GENERIC N/A	On Sag	1	384.48	390.36	10.00	384.48	0.00
Inlet-24	FHWA HEC-22	GENERIC N/A	On Sag	1	384.48	390.36	10.00	384.48	0.00
Inlet-25	FHWA HEC-22	GENERIC N/A	On Sag	1	380.17	392.68	10.00	380.17	0.00
Inlet-26	FHWA HEC-22	GENERIC N/A	On Sag	1	381.96	392.68	10.00	381.96	0.00
Inlet-27	FHWA HEC-22	GENERIC N/A	On Sag	1	381.11	391.52	10.00	381.11	0.00
Inlet-28	FHWA HEC-22	GENERIC N/A	On Sag	1	378.11	391.52	10.00	378.11	0.00
Inlet-29	FHWA HEC-22	GENERIC N/A	On Sag	1	375.50	387.55	10.00	375.50	0.00
Inlet-30	FHWA HEC-22	GENERIC N/A	On Sag	1	377.78	387.00	10.00	377.78	0.00
Inlet-31	FHWA HEC-22	GENERIC N/A	On Sag	1	376.65	386.09	10.00	376.65	0.00
Inlet-32	FHWA HEC-22	GENERIC N/A	On Sag	1	383.11	390.82	10.00	383.11	0.00
Inlet-33	FHWA HEC-22	GENERIC N/A	On Sag	1	380.65	390.82	10.00	380.65	0.00
Inlet-34	FHWA HEC-22	GENERIC N/A	On Sag	1	385.44	393.36	10.00	385.44	0.00
Inlet-35	FHWA HEC-22	GENERIC N/A	On Sag	1	384.14	393.36	10.00	384.14	0.00
Inlet-36	FHWA HEC-22	GENERIC N/A	On Sag	1	370.93	381.90	10.00	370.93	0.00
Inlet-37	FHWA HEC-22	GENERIC N/A	On Sag	1	372.23	381.91	10.00	372.23	0.00
Inlet-38	FHWA HEC-22	GENERIC N/A	On Sag	1	368.53	377.63	10.00	368.53	0.00
Inlet-39	FHWA HEC-22	GENERIC N/A	On Sag	1	369.01	377.46	10.00	369.01	0.00
Inlet-40	FHWA HEC-22	GENERIC N/A	On Sag	1	375.72	386.94	10.00	375.72	0.00
Inlet-41	FHWA HEC-22	GENERIC N/A	On Sag	1	384.50	392.00	10.00	384.50	0.00
Inlet-42	FHWA HEC-22	GENERIC N/A	On Sag	1	382.72	389.70	10.00	382.72	0.00
Inlet-43	FHWA HEC-22	GENERIC N/A	On Sag	1	380.52	387.52	10.00	380.52	0.00
Inlet-44	FHWA HEC-22	GENERIC N/A	On Sag	1	378.53	385.53	10.00	378.53	0.00
Inlet-45	FHWA HEC-22	GENERIC N/A	On Sag	1	377.76	384.76	10.00	377.76	0.00
Inlet-46	FHWA HEC-22	GENERIC N/A	On Sag	1	372.44	379.44	10.00	372.44	0.00
Inlet-47	FHWA HEC-22	GENERIC N/A	On Sag	1	369.06	376.06	10.00	369.06	0.00
Inlet-48	FHWA HEC-22	GENERIC N/A	On Sag	1	374.00	377.00	10.00	374.00	0.00

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Roadway and Gutter Summary  
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Inlet ID	Roadway Longitudinal Slope ft/ft	Roadway Cross Slope ft/ft	Roadway Manning's Roughness	Gutter Cross Slope ft/ft	Gutter Width ft	Gutter Depression in
Inlet-001	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-002	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-003	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-004	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-005	-	0.0200	0.0160	0.0620	1.50	1.50
Inlet-006	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-007	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-008	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-009	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-012	-	0.0200	0.0160	0.0620	2.00	2.00

Inlet-013	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-014	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-23	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-24	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-25	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-26	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-27	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-28	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-29	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-30	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-31	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-32	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-33	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-34	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-35	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-36	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-37	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-38	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-39	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-40	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-41	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-42	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-43	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-44	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-45	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-46	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-47	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-48	-	0.0200	0.0160	0.0620	2.00	2.00

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Link Summary  
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Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-001	Jun-01	Out-POC'A'	CONDUIT	43.6	25.2921	0.0150
Link-002	Stor-01	Jun-01	CONDUIT	30.7	1.9857	0.0150
Link-003	Jun-07	Jun-03	CONDUIT	329.6	0.7222	0.0150
Link-004	Jun-03	Jun-04	CONDUIT	187.1	0.7269	0.0150
Link-005	Jun-05	Jun-04	CONDUIT	63.7	0.3925	0.0150
Link-007	Inlet-005	Jun-05	CONDUIT	13.8	0.9455	0.0150
Link-008	Inlet-004	Jun-05	CONDUIT	8.3	1.5758	0.0150
Link-011	Jun-08	Jun-07	CONDUIT	264.2	0.6284	0.0150
Link-012	Jun-09	Jun-08	CONDUIT	228.8	1.0052	0.0150
Link-013	Jun-10	Jun-09	CONDUIT	225.0	1.7733	0.0150
Link-014	Jun-11	Jun-10	CONDUIT	109.4	2.0750	0.0150
Link-015	Inlet-013	Jun-07	CONDUIT	78.7	6.8624	0.0150
Link-016	Inlet-001	Jun-08	CONDUIT	19.5	11.5897	0.0150
Link-017	Inlet-002	Jun-08	CONDUIT	6.5	1.2308	0.0150
Link-018	Inlet-014	Jun-10	CONDUIT	56.0	4.6786	0.0150
Link-019	Jun-02	Stor-01	CONDUIT	15.0	0.5319	0.0150
Link-020	Jun-21	Jun-02	CONDUIT	264.8	0.4985	0.0150
Link-022	Inlet-008	Jun-21	CONDUIT	33.3	13.0827	0.0150
Link-023	Jun-20	Inlet-008	CONDUIT	64.9	1.4941	0.0150
Link-024	Jun-19	Jun-20	CONDUIT	186.4	1.0032	0.0150
Link-025	Jun-18	Jun-19	CONDUIT	160.6	1.0022	0.0150
Link-026	Jun-17	Jun-18	CONDUIT	144.6	0.9959	0.0150
Link-027	Jun-15	Jun-17	CONDUIT	180.6	0.9689	0.0150
Link-029	Jun-14	Jun-15	CONDUIT	259.1	0.7988	0.0150
Link-030	Jun-13	Jun-14	CONDUIT	143.4	1.0043	0.0150
Link-031	Jun-12	Jun-13	CONDUIT	215.7	0.9969	0.0150
Link-032	Inlet-009	Jun-20	CONDUIT	7.4	1.2129	0.0150
Link-033	Jun-25	Jun-18	CONDUIT	69.2	8.4851	0.0150
Link-034	Inlet-006	Jun-25	CONDUIT	5.2	5.5449	0.0150
Link-035	Inlet-007	Jun-25	CONDUIT	19.6	1.6368	0.0150
Link-037	Inlet-003	Jun-13	CONDUIT	3.9	4.5918	0.0150

Link-100	Jun-66	Jun-67	CONDUIT	110.0	1.4277	0.0150
Link-101	Inlet-25	Jun-67	CONDUIT	20.5	8.1015	0.0150
Link-102	Inlet-26	Jun-67	CONDUIT	21.1	16.3275	0.0150
Link-103	Jun-68	Jun-69	CONDUIT	39.1	3.7606	0.0150
Link-104	Inlet-27	Jun-69	CONDUIT	20.4	23.4919	0.0150
Link-105	Inlet-28	Jun-69	CONDUIT	20.0	8.9545	0.0150
Link-106	Jun-69	Jun-70	CONDUIT	119.1	0.5291	0.0150
Link-107	Jun-70	Jun-71	CONDUIT	148.3	0.4922	0.0150
Link-108	Inlet-29	Jun-71	CONDUIT	19.5	2.7636	0.0150
Link-109	Jun-71	Jun-72	CONDUIT	35.1	4.6373	0.0150
Link-110	Inlet-30	Jun-72	CONDUIT	20.9	21.3327	0.0150
Link-111	Jun-72	Jun-73	CONDUIT	66.2	3.2468	0.0150
Link-112	Jun-73	Jun-74	CONDUIT	102.8	2.8499	0.0150
Link-113	Jun-74	Jun-75	CONDUIT	38.6	2.6698	0.0150
Link-114	Inlet-37	Jun-75	CONDUIT	20.4	24.5950	0.0150
Link-115	Inlet-36	Jun-75	CONDUIT	19.9	18.5965	0.0150
Link-116	Jun-75	Jun-76	CONDUIT	92.8	2.3371	0.0150
Link-117	Jun-76	Jun-77	CONDUIT	64.6	0.9752	0.0150
Link-118	Inlet-38	Jun-77	CONDUIT	20.5	20.0782	0.0150
Link-119	Inlet-39	Jun-77	CONDUIT	21.3	21.5089	0.0150
Link-120	Jun-77	Jun-83	CONDUIT	24.9	7.0309	0.0150
Link-121	Jun-83	Jun-22	CONDUIT	11.0	0.8197	0.0150
Link-122	Inlet-48	Jun-83	CONDUIT	56.9	19.9261	0.0150
Link-123	Inlet-42	Jun-66	CONDUIT	242.2	1.0898	0.0150
Link-124	Inlet-43	Jun-68	CONDUIT	201.9	1.3518	0.0150
Link-125	Inlet-44	Jun-70	CONDUIT	193.2	1.4703	0.0150
Link-126	Inlet-45	Jun-71	CONDUIT	212.2	1.3196	0.0150
Link-127	Inlet-46	Jun-74	CONDUIT	195.4	2.1440	0.0150
Link-128	Inlet-47	Jun-76	CONDUIT	189.3	2.1181	0.0150
Link-131	Jun-82	Jun-81	CONDUIT	126.7	1.2079	0.0150
Link-132	Inlet-35	Jun-81	CONDUIT	16.9	13.9466	0.0150
Link-133	Inlet-34	Jun-81	CONDUIT	18.9	19.2612	0.0150
Link-134	Jun-81	Jun-80	CONDUIT	199.0	1.1758	0.0150
Link-135	Inlet-33	Jun-80	CONDUIT	18.4	6.5217	0.0150
Link-136	Inlet-32	Jun-80	CONDUIT	17.8	20.6197	0.0150
Link-137	Jun-80	Jun-79	CONDUIT	208.4	2.4808	0.0150
Link-138	Inlet-40	Jun-79	CONDUIT	18.3	7.8732	0.0150
Link-139	Jun-79	Jun-78	CONDUIT	40.2	3.6807	0.0150
Link-140	Inlet-31	Jun-78	CONDUIT	16.8	22.9440	0.0150
Link-141	Jun-78	Jun-73	CONDUIT	50.0	3.2381	0.0150
Link-143	Jun-84	Jun-85	CONDUIT	73.7	2.9986	0.0150
Link-144	Jun-85	Jun-11	CONDUIT	122.9	5.6292	0.0150
Link-86	Jun-22	Jun-21	CONDUIT	340.3	0.8946	0.0150
Link-87	Jun-04	Stor-01	CONDUIT	37.4	7.4104	0.0150
Link-88	Inlet-012	Jun-03	CONDUIT	33.6	18.6794	0.0150
Link-94	Inlet-41	Jun-65	CONDUIT	258.3	0.6001	0.0150
Link-95	Inlet-23	Jun-64	CONDUIT	21.1	1.9468	0.0150
Link-96	Inlet-24	Jun-64	CONDUIT	19.3	2.1288	0.0150
Link-97	Jun-64	Jun-65	CONDUIT	162.8	0.6881	0.0150
Link-98	Jun-65	Jun-66	CONDUIT	159.1	1.8042	0.0150
Link-99	Jun-67	Jun-68	CONDUIT	37.4	1.9256	0.0150

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Cross Section Summary  
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Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft <sup>2</sup>	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Link-001	CIRCULAR	3.50	3.50	1	9.62	0.88	438.52
Link-002	CIRCULAR	3.50	3.50	1	9.62	0.88	122.87
Link-003	CIRCULAR	3.00	3.00	1	7.07	0.75	49.12
Link-004	CIRCULAR	3.00	3.00	1	7.07	0.75	49.28
Link-005	CIRCULAR	2.00	2.00	1	3.14	0.50	12.28
Link-007	CIRCULAR	1.00	1.00	1	0.79	0.25	3.00

Link-008	CIRCULAR	1.50	1.50	1	1.77	0.38	11.43
Link-011	CIRCULAR	2.50	2.50	1	4.91	0.63	28.18
Link-012	CIRCULAR	2.00	2.00	1	3.14	0.50	19.66
Link-013	CIRCULAR	2.00	2.00	1	3.14	0.50	26.11
Link-014	CIRCULAR	2.00	2.00	1	3.14	0.50	28.24
Link-015	CIRCULAR	1.50	1.50	1	1.77	0.38	23.85
Link-016	CIRCULAR	1.00	1.00	1	0.79	0.25	10.51
Link-017	CIRCULAR	1.00	1.00	1	0.79	0.25	3.43
Link-018	CIRCULAR	1.25	1.25	1	1.23	0.31	12.11
Link-019	CIRCULAR	3.50	3.50	1	9.62	0.88	63.59
Link-020	CIRCULAR	3.50	3.50	1	9.62	0.88	61.56
Link-022	CIRCULAR	2.00	2.00	1	3.14	0.50	70.92
Link-023	CIRCULAR	2.00	2.00	1	3.14	0.50	23.97
Link-024	CIRCULAR	2.00	2.00	1	3.14	0.50	19.64
Link-025	CIRCULAR	2.00	2.00	1	3.14	0.50	19.63
Link-026	CIRCULAR	2.00	2.00	1	3.14	0.50	19.57
Link-027	CIRCULAR	1.50	1.50	1	1.77	0.38	8.96
Link-029	CIRCULAR	1.50	1.50	1	1.77	0.38	8.14
Link-030	CIRCULAR	1.50	1.50	1	1.77	0.38	9.12
Link-031	CIRCULAR	1.50	1.50	1	1.77	0.38	9.09
Link-032	CIRCULAR	1.50	1.50	1	1.77	0.38	10.03
Link-033	CIRCULAR	1.50	1.50	1	1.77	0.38	26.52
Link-034	CIRCULAR	1.00	1.00	1	0.79	0.25	7.27
Link-035	CIRCULAR	1.00	1.00	1	0.79	0.25	3.95
Link-037	CIRCULAR	1.50	1.50	1	1.77	0.38	19.51
Link-100	CIRCULAR	1.50	1.50	1	1.77	0.38	10.88
Link-101	CIRCULAR	1.50	1.50	1	1.77	0.38	25.91
Link-102	CIRCULAR	1.50	1.50	1	1.77	0.38	36.79
Link-103	CIRCULAR	2.00	2.00	1	3.14	0.50	38.02
Link-104	CIRCULAR	1.50	1.50	1	1.77	0.38	44.12
Link-105	CIRCULAR	1.50	1.50	1	1.77	0.38	27.24
Link-106	CIRCULAR	2.00	2.00	1	3.14	0.50	14.26
Link-107	CIRCULAR	2.00	2.00	1	3.14	0.50	13.75
Link-108	CIRCULAR	1.50	1.50	1	1.77	0.38	15.13
Link-109	CIRCULAR	2.50	2.50	1	4.91	0.63	76.55
Link-110	CIRCULAR	1.50	1.50	1	1.77	0.38	42.05
Link-111	CIRCULAR	2.50	2.50	1	4.91	0.63	64.05
Link-112	CIRCULAR	3.00	3.00	1	7.07	0.75	97.59
Link-113	CIRCULAR	3.00	3.00	1	7.07	0.75	94.45
Link-114	CIRCULAR	1.50	1.50	1	1.77	0.38	45.15
Link-115	CIRCULAR	1.50	1.50	1	1.77	0.38	39.26
Link-116	CIRCULAR	3.00	3.00	1	7.07	0.75	88.37
Link-117	CIRCULAR	3.00	3.00	1	7.07	0.75	57.08
Link-118	CIRCULAR	1.50	1.50	1	1.77	0.38	40.79
Link-119	CIRCULAR	1.50	1.50	1	1.77	0.38	42.22
Link-120	CIRCULAR	3.00	3.00	1	7.07	0.75	153.28
Link-121	CIRCULAR	3.00	3.00	1	7.07	0.75	52.33
Link-122	CIRCULAR	1.00	1.00	1	0.79	0.25	13.78
Link-123	CIRCULAR	1.50	1.50	1	1.77	0.38	9.50
Link-124	CIRCULAR	1.50	1.50	1	1.77	0.38	10.58
Link-125	CIRCULAR	1.50	1.50	1	1.77	0.38	11.04
Link-126	CIRCULAR	1.50	1.50	1	1.77	0.38	10.46
Link-127	CIRCULAR	1.50	1.50	1	1.77	0.38	13.33
Link-128	CIRCULAR	1.50	1.50	1	1.77	0.38	13.25
Link-131	CIRCULAR	2.00	2.00	1	3.14	0.50	21.55
Link-132	CIRCULAR	1.50	1.50	1	1.77	0.38	34.00
Link-133	CIRCULAR	1.50	1.50	1	1.77	0.38	39.95
Link-134	CIRCULAR	2.00	2.00	1	3.14	0.50	21.26
Link-135	CIRCULAR	1.50	1.50	1	1.77	0.38	23.25
Link-136	CIRCULAR	1.50	1.50	1	1.77	0.38	41.34
Link-137	CIRCULAR	2.00	2.00	1	3.14	0.50	30.88
Link-138	CIRCULAR	1.50	1.50	1	1.77	0.38	25.54
Link-139	CIRCULAR	2.50	2.50	1	4.91	0.63	68.20
Link-140	CIRCULAR	1.50	1.50	1	1.77	0.38	43.61
Link-141	CIRCULAR	2.50	2.50	1	4.91	0.63	63.97
Link-143	CIRCULAR	1.50	1.50	1	1.77	0.38	15.76
Link-144	CIRCULAR	1.50	1.50	1	1.77	0.38	21.60



Link-86	CIRCULAR	3.00	3.00	1	7.07	0.75	54.37
Link-87	CIRCULAR	3.00	3.00	1	7.07	0.75	157.36
Link-88	CIRCULAR	1.50	1.50	1	1.77	0.38	39.35
Link-94	CIRCULAR	1.00	1.00	1	0.79	0.25	2.39
Link-95	CIRCULAR	1.50	1.50	1	1.77	0.38	12.70
Link-96	CIRCULAR	1.50	1.50	1	1.77	0.38	13.28
Link-97	CIRCULAR	1.50	1.50	1	1.77	0.38	7.55
Link-98	CIRCULAR	1.50	1.50	1	1.77	0.38	12.23
Link-99	CIRCULAR	1.50	1.50	1	1.77	0.38	12.63

*****	Volume	Depth
Runoff Quantity Continuity	acre-ft	inches
*****	-----	-----
Total Precipitation .....	1.156	0.381
Continuity Error (%) .....	0.203	

*****	Volume	Volume
Flow Routing Continuity	acre-ft	Mgallons
*****	-----	-----
External Inflow .....	0.000	0.000
External Outflow .....	0.852	0.278
Initial Stored Volume .....	0.000	0.000
Final Stored Volume .....	0.000	0.000
Continuity Error (%) .....	0.065	

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Runoff Coefficient Computations Report  
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Subbasin DMA01  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	D	0.85
Composite Area & Weighted Runoff Coeff.	0.45		0.85

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Subbasin DMA02  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.34	D	0.85
Composite Area & Weighted Runoff Coeff.	1.34		0.85

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Subbasin DMA03  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.37	D	0.85
Composite Area & Weighted Runoff Coeff.	0.37		0.85

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Subbasin DMA04  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.55	D	0.85
Composite Area & Weighted Runoff Coeff.	1.55		0.85

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 Subbasin DMA05  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.30	D	0.85
Composite Area & Weighted Runoff Coeff.	0.30		0.85

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 Subbasin DMA06  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.80	D	0.85
Composite Area & Weighted Runoff Coeff.	0.80		0.85

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 Subbasin DMA07  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	D	0.85
Composite Area & Weighted Runoff Coeff.	0.13		0.85

-----  
 Subbasin DMA08  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	D	0.85
Composite Area & Weighted Runoff Coeff.	0.42		0.85

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 Subbasin DMA09  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	D	0.85
Composite Area & Weighted Runoff Coeff.	0.54		0.85

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 Subbasin DMA10  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.34	-	0.85
Composite Area & Weighted Runoff Coeff.	0.34		0.85

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 Subbasin DMA11  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.85
Composite Area & Weighted Runoff Coeff.	0.22		0.85

-----  
 Subbasin DMA12  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	4.14	D	0.85
Composite Area & Weighted Runoff Coeff.	4.14		0.85

-----  
Subbasin DMA13

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.52	D	0.85
Composite Area & Weighted Runoff Coeff.	5.52		0.85

-----  
Subbasin DMA14A

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.19	D	0.85
Composite Area & Weighted Runoff Coeff.	1.19		0.85

-----  
Subbasin DMA14B

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.61	-	0.85
Composite Area & Weighted Runoff Coeff.	1.61		0.85

-----  
Subbasin DMA15

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.35	-	0.85
Composite Area & Weighted Runoff Coeff.	1.35		0.85

-----  
Subbasin DMA16

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.85
Composite Area & Weighted Runoff Coeff.	0.67		0.85

-----  
Subbasin DMA17

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.39	-	0.85
Composite Area & Weighted Runoff Coeff.	0.39		0.85

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Subbasin DMA18

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.41	-	0.85

Composite Area & Weighted Runoff Coeff.                    0.41                    0.85

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Subbasin DMA19  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	-	0.85
Composite Area & Weighted Runoff Coeff.	0.45		0.85

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Subbasin DMA20  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.33	-	0.85
Composite Area & Weighted Runoff Coeff.	0.33		0.85

-----  
Subbasin DMA21  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.85
Composite Area & Weighted Runoff Coeff.	0.42		0.85

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Subbasin DMA22  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.56	-	0.85
Composite Area & Weighted Runoff Coeff.	0.56		0.85

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Subbasin DMA23  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.59	-	0.85
Composite Area & Weighted Runoff Coeff.	0.59		0.85

-----  
Subbasin DMA24  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.80	-	0.85
Composite Area & Weighted Runoff Coeff.	0.80		0.85

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Subbasin DMA25  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.40	-	0.85
Composite Area & Weighted Runoff Coeff.	0.40		0.85

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Subbasin DMA26  
-----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.70
Composite Area & Weighted Runoff Coeff.	0.51		0.70

Subbasin DMA27

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.70
Composite Area & Weighted Runoff Coeff.	0.42		0.70

Subbasin DMA28

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.84	-	0.70
Composite Area & Weighted Runoff Coeff.	0.84		0.70

Subbasin DMA29

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA30

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.35	-	0.70
Composite Area & Weighted Runoff Coeff.	1.35		0.70

Subbasin DMA31

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA32

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA33

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-			

- Composite Area & Weighted Runoff Coeff.            0.66            -            0.70  
 0.66            0.70

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 Subbasin DMA34  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

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 Subbasin DMA35  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.86	-	0.70
Composite Area & Weighted Runoff Coeff.	0.86		0.70

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 Subbasin DMA36  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.70
Composite Area & Weighted Runoff Coeff.	0.66		0.70

-----  
 Subbasin DMA37  
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Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.85
Composite Area & Weighted Runoff Coeff.	0.10		0.85

-----  
 Subbasin DMA38  
 -----

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.34	-	0.35
Composite Area & Weighted Runoff Coeff.	0.34		0.35

\*\*\*\*\*  
 SCS TR-55 Time of Concentration Computations Report  
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Sheet Flow Equation  
 -----

$$T_c = (0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (Sf^{0.4}))$$

Where:

- T<sub>c</sub> = Time of Concentration (hrs)
- n = Manning's Roughness
- L<sub>f</sub> = Flow Length (ft)
- P = 2 yr, 24 hr Rainfall (inches)
- Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

-----  
 $V = 16.1345 * (Sf^{0.5})$  (unpaved surface)  
 $V = 20.3282 * (Sf^{0.5})$  (paved surface)  
 $V = 15.0 * (Sf^{0.5})$  (grassed waterway surface)  
 $V = 10.0 * (Sf^{0.5})$  (nearly bare & untilled surface)  
 $V = 9.0 * (Sf^{0.5})$  (cultivated straight rows surface)  
 $V = 7.0 * (Sf^{0.5})$  (short grass pasture surface)  
 $V = 5.0 * (Sf^{0.5})$  (woodland surface)  
 $V = 2.5 * (Sf^{0.5})$  (forest w/heavy litter surface)  
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

Where:

$Tc$  = Time of Concentration (hrs)  
 $Lf$  = Flow Length (ft)  
 $V$  = Velocity (ft/sec)  
 $Sf$  = Slope (ft/ft)

Channel Flow Equation

-----  
 $V = (1.49 * (R^{2/3}) * (Sf^{0.5})) / n$   
 $R = Aq / Wp$   
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

Where:

$Tc$  = Time of Concentration (hrs)  
 $Lf$  = Flow Length (ft)  
 $R$  = Hydraulic Radius (ft)  
 $Aq$  = Flow Area (ft<sup>2</sup>)  
 $Wp$  = Wetted Perimeter (ft)  
 $V$  = Velocity (ft/sec)  
 $Sf$  = Slope (ft/ft)  
 $n$  = Manning's Roughness

Subbasin DMA01

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	766.00	0.00	0.00
Channel Slope (%):	2.87	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.93	0.00	0.00
Computed Flow Time (minutes):	4.35	0.00	0.00

-----  
 Total TOC (minutes): 5.95  
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Subbasin DMA02

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	960.00	0.00	0.00
Channel Slope (%):	2.29	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.62	0.00	0.00
Computed Flow Time (minutes):	6.11	0.00	0.00

-----  
Total TOC (minutes): 7.70  
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Subbasin DMA03

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	281.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.90	0.00	0.00
Computed Flow Time (minutes):	1.62	0.00	0.00

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Total TOC (minutes): 3.21  
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Subbasin DMA04

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00



2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	1530.00	0.00	0.00
Channel Slope (%):	1.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.73	0.00	0.00
Computed Flow Time (minutes):	14.73	0.00	0.00
-----			
Total TOC (minutes):	16.32		

Subbasin DMA05

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	654.00	0.00	0.00
Channel Slope (%):	1.22	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.91	0.00	0.00
Computed Flow Time (minutes):	5.70	0.00	0.00
-----			
Total TOC (minutes):	7.29		

Subbasin DMA06

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	680.00	0.00	0.00

Channel Slope (%):	1.25	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.93	0.00	0.00
Computed Flow Time (minutes):	5.86	0.00	0.00
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Total TOC (minutes):	7.45		
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Subbasin DMA07  
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Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	150.00	0.00	0.00
Channel Slope (%):	1.59	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.12	0.00	0.00
Computed Flow Time (minutes):	1.18	0.00	0.00
-----			
Total TOC (minutes):	2.77		
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Subbasin DMA08  
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Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	320.00	0.00	0.00
Channel Slope (%):	2.19	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.56	0.00	0.00
Computed Flow Time (minutes):	2.08	0.00	0.00
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Total TOC (minutes):	3.67		
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Subbasin DMA09  
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Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	390.00	0.00	0.00
Channel Slope (%):	3.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	3.00	0.00	0.00
Computed Flow Time (minutes):	2.17	0.00	0.00

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Total TOC (minutes): 3.76  
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Subbasin DMA10  
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Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	2.20	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.72	0.00	0.00
Computed Flow Time (minutes):	1.16	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	255.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	1.91	0.00	0.00

-----  
Total TOC (minutes): 3.07  
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Subbasin DMA11  
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Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00

Flow Length (ft):	50.00	0.00	0.00
Slope (%):	2.20	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.72	0.00	0.00
Computed Flow Time (minutes):	1.16	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	210.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	1.57	0.00	0.00
=====			
Total TOC (minutes):	2.73		
=====			

Subbasin DMA12

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	2.03	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.70	0.00	0.00
Computed Flow Time (minutes):	1.20	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	493.00	0.00	0.00
Slope (%):	2.03	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.90	0.00	0.00
Computed Flow Time (minutes):	2.83	0.00	0.00
=====			
Total TOC (minutes):	4.03		
=====			

Subbasin DMA13

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.16	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.56	0.00	0.00
Computed Flow Time (minutes):	1.50	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	637.00	0.00	0.00
Slope (%):	1.16	0.00	0.00

Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.19	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00
<b>Total TOC (minutes):</b>	<b>6.35</b>		

-----  
Subbasin DMA14A  
-----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	3.52	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.88	0.00	0.00
Computed Flow Time (minutes):	0.95	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	218.00	0.00	0.00
Slope (%):	3.62	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.87	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00
<b>Total TOC (minutes):</b>	<b>1.89</b>		

-----  
Subbasin DMA14B  
-----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	0.00	0.00
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	200.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.16	0.00	0.00
<b>Total TOC (minutes):</b>	<b>2.75</b>		

-----  
Subbasin DMA15  
-----

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	172.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.00	0.00	0.00

Total TOC (minutes):	2.59		
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Subbasin DMA16

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	180.00	0.00	0.00
Slope (%):	1.62	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.59	0.00	0.00
Computed Flow Time (minutes):	1.16	0.00	0.00

Total TOC (minutes):	2.75		
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Subbasin DMA17

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	155.00	0.00	0.00

Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	1.27	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	37.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.33	0.00	0.00
-----			
Total TOC (minutes):	3.19		

Subbasin DMA18

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	123.00	0.00	0.00
Slope (%):	1.90	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.80	0.00	0.00
Computed Flow Time (minutes):	0.73	0.00	0.00
-----			
Total TOC (minutes):	2.32		

Subbasin DMA19

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	152.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved

Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	1.25	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.44	0.00	0.00
-----			
Total TOC (minutes):	3.28		
-----			

Subbasin DMA20

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	124.00	0.00	0.00
Slope (%):	1.90	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.80	0.00	0.00
Computed Flow Time (minutes):	0.74	0.00	0.00
-----			
Total TOC (minutes):	2.33		
-----			

Subbasin DMA21

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	128.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	1.05	0.00	0.00



Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	109.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.96	0.00	0.00
<b>Total TOC (minutes):</b>	<b>3.60</b>		

Subbasin DMA22

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	164.00	0.00	0.00
Slope (%):	1.40	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.41	0.00	0.00
Computed Flow Time (minutes):	1.13	0.00	0.00
<b>Total TOC (minutes):</b>	<b>2.73</b>		

Subbasin DMA23

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	140.00	0.00	0.00
Slope (%):	1.50	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.43	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00
<b>Total TOC (minutes):</b>	<b>2.53</b>		

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 Subbasin DMA24  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	186.00	0.00	0.00
Slope (%):	1.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.13	0.00	0.00
Computed Flow Time (minutes):	1.46	0.00	0.00

Channel Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	131.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.51	0.00	0.00
Computed Flow Time (minutes):	0.87	0.00	0.00

-----  
 Total TOC (minutes): 3.92  
 -----

Subbasin DMA25  
 -----

Sheet Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations  
 -----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	1.70	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.65	0.00	0.00
Computed Flow Time (minutes):	0.75	0.00	0.00

-----  
 Total TOC (minutes): 2.35  
 -----

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Subbasin DMA26  
-----

Sheet Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	99.00	0.00	0.00
Slope (%):	3.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.58	0.00	0.00
Computed Flow Time (minutes):	0.46	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	57.00	0.00	0.00
Channel Slope (%):	2.89	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.51	0.00	0.00
Computed Flow Time (minutes):	0.38	0.00	0.00

-----  
Total TOC (minutes): 2.43  
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Subbasin DMA27  
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Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	33.00	0.00	0.00
Slope (%):	1.60	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.58	0.00	0.00
Computed Flow Time (minutes):	0.95	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	205.00	0.00	0.00
Channel Slope (%):	2.50	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.37	0.00	0.00
Computed Flow Time (minutes):	1.44	0.00	0.00

-----  
Total TOC (minutes): 2.39  
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Subbasin DMA28  
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Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	187.00	0.00	0.00
Slope (%):	1.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.13	0.00	0.00
Computed Flow Time (minutes):	1.46	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	98.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	0.73	0.00	0.00

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Total TOC (minutes): 3.79  
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Subbasin DMA29  
-----

Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	163.00	0.00	0.00
Slope (%):	1.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.13	0.00	0.00
Computed Flow Time (minutes):	1.28	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	174.00	0.00	0.00

Channel Slope (%):	1.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.64	0.00	0.00
Computed Flow Time (minutes):	1.76	0.00	0.00
-----			
Total TOC (minutes):	4.63		
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Subbasin DMA30  
-----

Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	146.00	0.00	0.00
Slope (%):	1.30	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.32	0.00	0.00
Computed Flow Time (minutes):	1.05	0.00	0.00

Channel Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	255.00	0.00	0.00
Channel Slope (%):	1.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.50	0.00	0.00
Computed Flow Time (minutes):	2.83	0.00	0.00
-----			
Total TOC (minutes):	5.47		
-----			

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Subbasin DMA31  
-----

Sheet Flow Computations  
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	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	90.00	0.00	0.00
Slope (%):	0.60	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.48	0.00	0.00
Computed Flow Time (minutes):	3.12	0.00	0.00

Shallow Concentrated Flow Computations  
-----

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	212.00	0.00	0.00
Slope (%):	2.40	0.00	0.00

Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.15	0.00	0.00
Computed Flow Time (minutes):	1.12	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	316.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	2.37	0.00	0.00
<b>Total TOC (minutes):</b>	<b>6.61</b>		

Subbasin DMA32

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	14.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	1.50	0.00	0.00
Computed Flow Time (minutes):	0.55	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	183.00	0.00	0.00
Slope (%):	2.50	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.21	0.00	0.00
Computed Flow Time (minutes):	0.95	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	141.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	1.06	0.00	0.00
<b>Total TOC (minutes):</b>	<b>2.56</b>		

Subbasin DMA33

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00

2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

-----  
 Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	0.99	0.00	0.00

-----  
 Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	77.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.68	0.00	0.00

-----  
 Total TOC (minutes): 3.25  
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 Subbasin DMA34

-----  
 Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

-----  
 Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	2.90	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.46	0.00	0.00
Computed Flow Time (minutes):	0.58	0.00	0.00

-----  
 Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	49.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.43	0.00	0.00

-----  
 Total TOC (minutes): 2.60  
 -----

Subbasin DMA35

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	8.70	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	1.43	0.00	0.00
Computed Flow Time (minutes):	1.17	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	1.40	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.41	0.00	0.00
Computed Flow Time (minutes):	0.83	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	52.00	0.00	0.00
Channel Slope (%):	1.90	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.07	0.00	0.00
Computed Flow Time (minutes):	0.42	0.00	0.00
<b>Total TOC (minutes):</b>	<b>2.42</b>		

Subbasin DMA36

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	150.00	0.00	0.00
Slope (%):	1.70	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.65	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	93.00	0.00	0.00
Channel Slope (%):	1.20	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00



Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.64	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00
<b>Total TOC (minutes):</b>	<b>3.48</b>		

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Subbasin DMA37  
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Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	45.00	0.00	0.00
Slope (%):	2.80	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.77	0.00	0.00
Computed Flow Time (minutes):	0.97	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	94.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.51	0.00	0.00
Computed Flow Time (minutes):	0.62	0.00	0.00
<b>Total TOC (minutes):</b>	<b>1.59</b>		

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Subbasin DMA38  
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Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.02	0.00	0.00
Flow Length (ft):	48.00	0.00	0.00
Slope (%):	23.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	1.45	0.00	0.00
Computed Flow Time (minutes):	0.55	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.02	0.00	0.00
Flow Length (ft):	887.00	0.00	0.00
Channel Slope (%):	1.00	0.00	0.00
Cross Section Area (ft <sup>2</sup> ):	1.57	0.00	0.00
Wetted Perimeter (ft):	3.14	0.00	0.00
Velocity (ft/sec):	4.69	0.00	0.00
Computed Flow Time (minutes):	3.15	0.00	0.00
<b>Total TOC (minutes):</b>	<b>3.70</b>		

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Subbasin Runoff Summary  
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Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Concentration hh:mm:ss
DMA01	0.39	3.91	0.33	1.49	0.850	0	00:05:57
DMA02	0.46	3.63	0.39	4.13	0.850	0	00:07:42
DMA03	0.34	4.10	0.29	1.28	0.850	0	00:05:00
DMA04	0.70	2.57	0.60	3.39	0.850	0	00:16:19
DMA05	0.45	3.67	0.38	0.92	0.850	0	00:07:17
DMA06	0.46	3.65	0.39	2.50	0.850	0	00:07:27
DMA07	0.34	4.10	0.29	0.45	0.850	0	00:05:00
DMA08	0.34	4.10	0.29	1.47	0.850	0	00:05:00
DMA09	0.34	4.10	0.29	1.88	0.850	0	00:05:00
DMA10	0.34	4.10	0.29	1.18	0.850	0	00:05:00
DMA11	0.34	4.10	0.29	0.77	0.850	0	00:05:00
DMA12	0.34	4.10	0.29	14.41	0.850	0	00:05:00
DMA13	0.40	3.83	0.34	17.93	0.850	0	00:06:21
DMA14A	0.34	4.10	0.29	4.15	0.850	0	00:05:00
DMA14B	0.34	4.10	0.29	5.61	0.850	0	00:05:00
DMA15	0.34	4.10	0.29	4.70	0.850	0	00:05:00
DMA16	0.34	4.10	0.29	2.33	0.850	0	00:05:00
DMA17	0.34	4.10	0.29	1.36	0.850	0	00:05:00
DMA18	0.34	4.10	0.29	1.43	0.850	0	00:05:00
DMA19	0.34	4.10	0.29	1.57	0.850	0	00:05:00
DMA20	0.34	4.10	0.29	1.15	0.850	0	00:05:00
DMA21	0.34	4.10	0.29	1.46	0.850	0	00:05:00
DMA22	0.34	4.10	0.29	1.95	0.850	0	00:05:00
DMA23	0.34	4.10	0.29	2.06	0.850	0	00:05:00
DMA24	0.34	4.10	0.29	2.79	0.850	0	00:05:00
DMA25	0.34	4.10	0.29	1.39	0.850	0	00:05:00
DMA26	0.34	4.10	0.24	1.46	0.700	0	00:05:00
DMA27	0.34	4.10	0.24	1.21	0.700	0	00:05:00
DMA28	0.34	4.10	0.24	2.41	0.700	0	00:05:00
DMA29	0.34	4.10	0.24	3.62	0.700	0	00:05:00
DMA30	0.37	4.00	0.26	3.78	0.700	0	00:05:28
DMA31	0.42	3.77	0.29	6.97	0.700	0	00:06:36
DMA32	0.34	4.10	0.24	2.10	0.700	0	00:05:00
DMA33	0.34	4.10	0.24	1.89	0.700	0	00:05:00
DMA34	0.34	4.10	0.24	2.12	0.700	0	00:05:00
DMA35	0.34	4.10	0.24	2.47	0.700	0	00:05:00
DMA36	0.34	4.10	0.24	1.89	0.700	0	00:05:00
DMA37	0.34	4.10	0.29	0.35	0.850	0	00:05:00
DMA38	0.34	4.10	0.12	0.49	0.350	0	00:05:00

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Node Depth Summary  
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Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.35	2.96	349.25	0	00:07	0	0	0:00:00
Jun-02	0.35	2.69	360.70	0	00:07	0	0	0:00:00
Jun-03	0.34	2.04	364.93	0	00:07	0	0	0:00:00
Jun-04	1.41	2.34	363.54	0	00:07	0	0	0:00:00
Jun-05	2.25	2.79	365.64	0	00:16	0	0	0:00:00
Jun-07	1.01	1.97	367.57	0	00:06	0	0	0:00:00
Jun-08	3.31	4.30	372.06	0	00:07	0	0	0:00:00

Jun-09	0.33	1.15	371.71	0	00:05	0	0	0:00:00
Jun-10	0.50	1.00	375.88	0	00:05	0	0	0:00:00
Jun-11	0.50	1.02	378.50	0	00:05	0	0	0:00:00
Jun-12	0.00	0.00	383.38	0	00:00	0	0	0:00:00
Jun-13	0.33	0.59	381.49	0	00:05	0	0	0:00:00
Jun-14	0.35	0.72	379.83	0	00:05	0	0	0:00:00
Jun-15	0.33	0.71	377.42	0	00:06	0	0	0:00:00
Jun-17	0.83	1.19	375.32	0	00:07	0	0	0:00:00
Jun-18	0.69	1.01	373.37	0	00:07	0	0	0:00:00
Jun-19	0.33	0.93	371.35	0	00:08	0	0	0:00:00
Jun-20	0.83	1.27	369.49	0	00:05	0	0	0:00:00
Jun-21	2.91	3.27	362.93	0	00:07	0	0	0:00:00
Jun-22	0.14	2.20	364.74	0	00:06	0	0	0:00:00
Jun-25	0.33	0.73	379.65	0	00:07	0	0	0:00:00
Jun-64	0.00	0.52	384.59	0	00:05	0	0	0:00:00
Jun-65	0.01	1.00	383.95	0	00:04	0	0	0:00:00
Jun-66	0.00	0.83	380.91	0	00:05	0	0	0:00:00
Jun-67	0.01	0.98	379.49	0	00:05	0	0	0:00:00
Jun-68	0.01	0.98	378.77	0	00:05	0	0	0:00:00
Jun-69	0.01	15.18	391.50	0	00:05	0.00	0	0:00:00
Jun-70	0.03	13.99	389.68	0	00:05	0.03	2	0:00:00
Jun-71	0.01	1.91	376.87	0	00:06	0	0	0:00:00
Jun-72	0.01	0.94	374.27	0	00:05	0	0	0:00:00
Jun-73	0.01	1.28	372.46	0	00:06	0	0	0:00:00
Jun-74	0.01	1.33	369.58	0	00:06	0	0	0:00:00
Jun-75	0.01	1.41	368.63	0	00:06	0	0	0:00:00
Jun-76	0.01	1.88	366.93	0	00:06	0	0	0:00:00
Jun-77	0.01	1.88	366.30	0	00:06	0	0	0:00:00
Jun-78	0.01	0.90	373.70	0	00:05	0	0	0:00:00
Jun-79	0.01	0.94	375.22	0	00:06	0	0	0:00:00
Jun-80	0.01	0.96	380.41	0	00:07	0	0	0:00:00
Jun-81	0.01	0.96	382.75	0	00:06	0	0	0:00:00
Jun-82	0.00	0.00	383.32	0	00:00	0	0	0:00:00
Jun-83	0.01	2.13	364.80	0	00:06	0	0	0:00:00
Jun-84	0.00	0.62	388.06	0	00:05	0	0	0:00:00
Jun-85	0.33	0.94	385.84	0	00:05	0	0	0:00:00
Out-POC'A'	1.51	2.68	336.43	0	00:07	0	0	0:00:00
Stor-01	0.26	15.00	362.00	0	00:07	0.01	0	0:00:00

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Node Flow Summary  
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Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
Jun-01	JUNCTION	0.00	112.18	0 00:07	0.00	
Jun-02	JUNCTION	0.00	49.10	0 00:07	0.00	
Jun-03	JUNCTION	0.00	39.05	0 00:07	0.00	
Jun-04	JUNCTION	0.00	41.27	0 00:07	0.00	
Jun-05	JUNCTION	0.00	3.39	0 00:16	0.00	
Jun-07	JUNCTION	0.00	31.05	0 00:06	0.00	
Jun-08	JUNCTION	0.00	13.85	0 00:06	0.00	
Jun-09	JUNCTION	0.00	9.29	0 00:05	0.00	
Jun-10	JUNCTION	0.00	9.42	0 00:05	0.00	
Jun-11	JUNCTION	0.00	5.52	0 00:05	0.00	
Jun-12	JUNCTION	0.00	0.00	0 00:00	0.00	
Jun-13	JUNCTION	0.00	1.26	0 00:05	0.00	
Jun-14	JUNCTION	0.00	1.23	0 00:05	0.00	
Jun-15	JUNCTION	0.00	1.17	0 00:06	0.00	
Jun-17	JUNCTION	0.00	1.14	0 00:07	0.00	
Jun-18	JUNCTION	0.00	3.82	0 00:07	0.00	
Jun-19	JUNCTION	0.00	3.79	0 00:08	0.00	

Jun-20	JUNCTION	0.00	4.44	0	00:08	0.00	
Jun-21	JUNCTION	0.00	49.37	0	00:06	0.00	
Jun-22	JUNCTION	0.00	44.69	0	00:06	0.00	
Jun-25	JUNCTION	0.00	2.69	0	00:07	0.00	
Jun-64	JUNCTION	0.00	1.94	0	00:05	0.00	
Jun-65	JUNCTION	0.00	4.25	0	00:05	0.00	
Jun-66	JUNCTION	0.00	6.41	0	00:05	0.00	
Jun-67	JUNCTION	0.00	9.63	0	00:05	0.00	
Jun-68	JUNCTION	0.00	10.98	0	00:05	0.00	
Jun-69	JUNCTION	0.00	14.32	0	00:05	0.06	0 00:05
Jun-70	JUNCTION	0.00	16.23	0	00:05	2.46	0 00:05
Jun-71	JUNCTION	0.00	18.01	0	00:05	0.00	
Jun-72	JUNCTION	0.00	19.14	0	00:05	0.00	
Jun-73	JUNCTION	0.00	36.69	0	00:06	0.00	
Jun-74	JUNCTION	0.00	38.50	0	00:06	0.00	
Jun-75	JUNCTION	0.00	39.77	0	00:06	0.00	
Jun-76	JUNCTION	0.00	40.98	0	00:06	0.00	
Jun-77	JUNCTION	0.00	44.38	0	00:06	0.00	
Jun-78	JUNCTION	0.00	47.59	0	00:05	0.00	
Jun-79	JUNCTION	0.00	15.83	0	00:05	0.00	
Jun-80	JUNCTION	0.00	13.87	0	00:05	0.00	
Jun-81	JUNCTION	0.00	9.95	0	00:06	0.00	
Jun-82	JUNCTION	0.00	0.00	0	00:00	0.00	
Jun-83	JUNCTION	0.00	44.69	0	00:06	0.00	
Jun-84	JUNCTION	5.61	5.61	0	00:05	0.00	
Jun-85	JUNCTION	0.00	5.55	0	00:05	0.00	
Out-POC'A'	OUTFALL	0.00	106.80	0	00:07	0.00	
Stor-01	STORAGE	0.00	90.33	0	00:07	8.04	0 00:07

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Inlet Depth Summary  
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Inlet ID	Max Gutter Spread during Peak Flow ft	Max Gutter Water Elev during Peak Flow ft	Max Gutter Water Depth during Peak Flow ft	Time of Maximum Depth Occurrence days hh:mm
Inlet-001	8.18	375.50	0.41	0 00:06
Inlet-002	11.18	375.86	0.47	0 00:06
Inlet-003	7.64	390.10	0.39	0 00:05
Inlet-004	13.67	369.88	0.52	0 00:16
Inlet-005	3.02	369.15	0.23	0 00:07
Inlet-006	49.70	385.22	1.21	0 00:07
Inlet-007	0.07	384.13	0.11	0 00:05
Inlet-008	12.94	374.16	0.50	0 00:08
Inlet-009	23.90	374.39	0.71	0 00:05
Inlet-012	79.85	373.78	1.78	0 00:05
Inlet-013	125.07	379.72	2.72	0 00:06
Inlet-014	15.83	384.07	0.57	0 00:05
Inlet-23	9.03	390.79	0.43	0 00:05
Inlet-24	6.25	390.67	0.31	0 00:05
Inlet-25	16.34	393.24	0.56	0 00:05
Inlet-26	10.88	393.13	0.45	0 00:05
Inlet-27	11.99	391.99	0.47	0 00:05
Inlet-28	14.81	392.05	0.53	0 00:05
Inlet-29	13.71	388.05	0.50	0 00:05
Inlet-30	11.43	387.46	0.46	0 00:05
Inlet-31	14.69	386.61	0.52	0 00:05
Inlet-32	21.13	391.47	0.65	0 00:05
Inlet-33	13.71	391.32	0.50	0 00:05
Inlet-34	21.78	394.02	0.66	0 00:05
Inlet-35	38.41	394.36	1.00	0 00:06
Inlet-36	10.07	382.33	0.43	0 00:05

Inlet-37	3.13	382.05	0.14	0	00:05
Inlet-38	11.43	378.09	0.46	0	00:05
Inlet-39	17.76	378.04	0.58	0	00:05
Inlet-40	16.09	387.49	0.55	0	00:05
Inlet-41	17.31	392.60	0.60	0	00:02
Inlet-42	10.40	390.16	0.46	0	00:05
Inlet-43	7.12	387.91	0.39	0	00:05
Inlet-44	6.04	385.90	0.37	0	00:05
Inlet-45	9.13	385.19	0.43	0	00:05
Inlet-46	9.50	379.88	0.44	0	00:05
Inlet-47	6.98	376.45	0.39	0	00:05
Inlet-48	0.07	377.12	0.12	0	00:05

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 Inlet Flow Summary  
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Inlet ID	Peak Flow cfs	Peak Lateral Flow cfs	Peak Flow Intercepted by Inlet cfs	Peak Flow Bypassing Inlet cfs	Inlet Efficiency during Peak Flow %	Total Flooding acre-in	Total Time Flooded minutes
Inlet-001	1.49	1.49	-	-	-	0.000	0
Inlet-002	4.13	4.13	-	-	-	0.000	0
Inlet-003	1.28	1.28	-	-	-	0.000	0
Inlet-004	3.39	3.39	-	-	-	0.000	0
Inlet-005	0.92	0.92	-	-	-	0.000	0
Inlet-006	2.50	2.50	-	-	-	0.000	0
Inlet-007	0.45	0.45	-	-	-	0.000	0
Inlet-008	1.47	1.47	-	-	-	0.000	0
Inlet-009	1.88	1.88	-	-	-	0.000	0
Inlet-012	14.41	14.41	-	-	-	0.000	0
Inlet-013	17.93	17.93	-	-	-	0.000	0
Inlet-014	4.15	4.15	-	-	-	0.000	0
Inlet-23	1.18	1.18	-	-	-	0.000	0
Inlet-24	0.77	0.77	-	-	-	0.000	0
Inlet-25	2.47	2.47	-	-	-	0.000	0
Inlet-26	1.36	1.36	-	-	-	0.000	0
Inlet-27	1.57	1.57	-	-	-	0.000	0
Inlet-28	2.12	2.12	-	-	-	0.000	0
Inlet-29	1.89	1.89	-	-	-	0.000	0
Inlet-30	1.46	1.46	-	-	-	0.000	0
Inlet-31	2.10	2.10	-	-	-	0.000	0
Inlet-32	3.62	3.62	-	-	-	0.000	0
Inlet-33	1.89	1.89	-	-	-	0.000	0
Inlet-34	3.78	3.78	-	-	-	0.000	0
Inlet-35	6.97	6.97	-	-	-	0.000	0
Inlet-36	1.21	1.21	-	-	-	0.000	0
Inlet-37	0.35	0.35	-	-	-	0.000	0
Inlet-38	1.46	1.46	-	-	-	0.000	0
Inlet-39	2.79	2.79	-	-	-	0.000	0
Inlet-40	2.41	2.41	-	-	-	0.000	0
Inlet-41	4.70	4.70	-	-	-	0.000	0
Inlet-42	2.33	2.33	-	-	-	0.000	0
Inlet-43	1.43	1.43	-	-	-	0.000	0
Inlet-44	1.15	1.15	-	-	-	0.000	0
Inlet-45	1.95	1.95	-	-	-	0.000	0
Inlet-46	2.06	2.06	-	-	-	0.000	0
Inlet-47	1.39	1.39	-	-	-	0.000	0
Inlet-48	0.49	0.49	-	-	-	0.000	0

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 Storage Node Summary  
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Storage Node ID	Maximum Ponded Volume 1000 ft <sup>3</sup>	Maximum Ponded Volume (\$)	Time of Max Volume days hh:mm	Average Ponded Volume 1000 ft <sup>3</sup>	Average Ponded Volume (\$)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
Stor-01	0.030	100	0 00:06	0.001	2	120.32	0.00	0:00:00	0.000

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Outfall Loading Summary  
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Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-POC'A'	6.31	6.81	106.80
System	6.31	6.81	106.80

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Link Flow Summary  
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Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Peak Flow ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
Link-001	CONDUIT	0 00:07	46.79	1.00	106.80	438.52	0.24	0.34	0	Calculated
Link-002	CONDUIT	0 00:07	24.24	1.00	112.18	122.87	0.91	0.73	0	Calculated
Link-003	CONDUIT	0 00:07	7.50	1.00	30.31	49.12	0.62	0.57	0	Calculated
Link-004	CONDUIT	0 00:07	7.84	1.00	38.99	49.28	0.79	0.67	0	Calculated
Link-005	CONDUIT	0 00:16	3.35	1.00	3.37	12.28	0.27	0.36	0	Calculated
Link-007	CONDUIT	0 00:07	3.36	1.00	0.92	3.00	0.31	0.38	0	Calculated
Link-008	CONDUIT	0 00:16	5.63	1.00	3.39	11.43	0.30	0.37	0	Calculated
Link-011	CONDUIT	0 00:07	5.89	1.00	13.60	28.18	0.48	0.49	0	Calculated
Link-012	CONDUIT	0 00:06	6.28	1.00	9.10	19.66	0.46	0.48	0	Calculated
Link-013	CONDUIT	0 00:05	7.73	1.00	9.29	26.11	0.36	0.41	0	Calculated
Link-014	CONDUIT	0 00:05	7.01	1.00	5.49	28.24	0.19	0.30	0	Calculated
Link-015	CONDUIT	0 00:06	14.84	1.00	17.82	23.85	0.75	0.64	0	Calculated
Link-016	CONDUIT	0 00:06	9.48	1.00	1.49	10.51	0.14	0.25	0	Calculated
Link-017	CONDUIT	0 00:07	5.08	1.00	3.67	3.43	1.07	1.00	2	SURCHARGED
Link-018	CONDUIT	0 00:05	8.95	1.00	4.12	12.11	0.34	0.40	0	Calculated
Link-019	CONDUIT	0 00:07	7.30	1.00	49.10	63.59	0.77	0.66	0	Calculated
Link-020	CONDUIT	0 00:07	7.25	1.00	49.10	61.56	0.80	0.67	0	Calculated
Link-022	CONDUIT	0 00:07	13.09	1.00	5.05	70.92	0.07	0.18	0	Calculated
Link-023	CONDUIT	0 00:08	5.84	1.00	4.44	23.97	0.19	0.29	0	Calculated
Link-024	CONDUIT	0 00:08	4.88	1.00	3.76	19.64	0.19	0.30	0	Calculated
Link-025	CONDUIT	0 00:08	4.89	1.00	3.79	19.63	0.19	0.30	0	Calculated
Link-026	CONDUIT	0 00:07	3.45	1.00	1.13	19.57	0.06	0.16	0	Calculated
Link-027	CONDUIT	0 00:07	3.56	1.00	1.14	8.96	0.13	0.24	0	Calculated
Link-029	CONDUIT	0 00:06	3.63	1.00	1.17	8.14	0.14	0.25	0	Calculated
Link-030	CONDUIT	0 00:05	5.17	1.00	1.23	9.12	0.14	0.25	0	Calculated
Link-031	CONDUIT	0 00:00	0.00	1.00	0.00	9.09	0.00	0.00	0	Calculated
Link-032	CONDUIT	0 00:05	4.33	1.00	1.85	10.03	0.18	0.29	0	Calculated
Link-033	CONDUIT	0 00:07	9.65	1.00	2.69	26.52	0.10	0.21	0	Calculated
Link-034	CONDUIT	0 00:07	8.36	1.00	2.46	7.27	0.34	0.40	0	Calculated
Link-035	CONDUIT	0 00:05	3.38	1.00	0.45	3.95	0.11	0.23	0	Calculated
Link-037	CONDUIT	0 00:05	6.18	1.00	1.26	19.51	0.06	0.17	0	Calculated
Link-100	CONDUIT	0 00:06	6.43	1.00	6.39	10.88	0.59	0.55	0	Calculated

Link-101	CONDUIT	0	00:05	9.26	1.00	2.46	25.91	0.09	0.21	0	Calculated
Link-102	CONDUIT	0	00:05	9.93	1.00	1.36	36.79	0.04	0.13	0	Calculated
Link-103	CONDUIT	0	00:05	10.47	1.00	10.98	38.02	0.29	0.37	0	Calculated
Link-104	CONDUIT	0	00:05	11.79	1.00	1.56	44.12	0.04	0.13	0	Calculated
Link-105	CONDUIT	0	00:05	9.19	1.00	2.12	27.24	0.08	0.19	0	Calculated
Link-106	CONDUIT	0	00:05	5.30	1.00	15.13	14.26	1.06	0.90	0	> CAPACITY
Link-107	CONDUIT	0	00:07	5.23	1.00	14.88	13.75	1.08	0.94	0	> CAPACITY
Link-108	CONDUIT	0	00:05	5.85	1.00	1.89	15.13	0.12	0.24	0	Calculated
Link-109	CONDUIT	0	00:06	13.11	1.00	17.89	76.55	0.23	0.33	0	Calculated
Link-110	CONDUIT	0	00:05	11.17	1.00	1.46	42.05	0.03	0.13	0	Calculated
Link-111	CONDUIT	0	00:06	11.53	1.00	19.11	64.05	0.30	0.37	0	Calculated
Link-112	CONDUIT	0	00:06	12.82	1.00	36.66	97.59	0.38	0.42	0	Calculated
Link-113	CONDUIT	0	00:06	12.68	1.00	38.50	94.45	0.41	0.44	0	Calculated
Link-114	CONDUIT	0	00:05	7.56	1.00	0.35	45.15	0.01	0.06	0	Calculated
Link-115	CONDUIT	0	00:05	10.08	1.00	1.20	39.26	0.03	0.12	0	Calculated
Link-116	CONDUIT	0	00:06	12.18	1.00	39.75	88.37	0.45	0.47	0	Calculated
Link-117	CONDUIT	0	00:06	8.79	1.00	40.96	57.08	0.72	0.63	0	Calculated
Link-118	CONDUIT	0	00:05	10.93	1.00	1.46	40.79	0.04	0.13	0	Calculated
Link-119	CONDUIT	0	00:05	13.47	1.00	2.78	42.22	0.07	0.17	0	Calculated
Link-120	CONDUIT	0	00:06	18.76	1.00	44.30	153.28	0.29	0.37	0	Calculated
Link-121	CONDUIT	0	00:06	8.31	1.00	44.69	52.33	0.85	0.71	0	Calculated
Link-122	CONDUIT	0	00:05	8.40	1.00	0.48	13.78	0.04	0.13	0	Calculated
Link-123	CONDUIT	0	00:05	7.40	1.00	2.20	9.50	0.23	0.32	0	Calculated
Link-124	CONDUIT	0	00:05	6.90	1.00	1.37	10.58	0.13	0.24	0	Calculated
Link-125	CONDUIT	0	00:05	6.75	1.00	1.10	11.04	0.10	0.21	0	Calculated
Link-126	CONDUIT	0	00:05	7.42	1.00	1.87	10.46	0.18	0.29	0	Calculated
Link-127	CONDUIT	0	00:05	8.13	1.00	2.00	13.33	0.15	0.26	0	Calculated
Link-128	CONDUIT	0	00:05	7.54	1.00	1.35	13.25	0.10	0.21	0	Calculated
Link-131	CONDUIT	0	00:00	0.00	1.00	0.00	21.55	0.00	0.00	0	Calculated
Link-132	CONDUIT	0	00:06	15.12	1.00	6.96	34.00	0.20	0.31	0	Calculated
Link-133	CONDUIT	0	00:05	14.24	1.00	3.77	39.95	0.09	0.21	0	Calculated
Link-134	CONDUIT	0	00:07	6.84	1.00	9.93	21.26	0.47	0.48	0	Calculated
Link-135	CONDUIT	0	00:05	7.93	1.00	1.89	23.25	0.08	0.19	0	Calculated
Link-136	CONDUIT	0	00:05	14.39	1.00	3.61	41.34	0.09	0.20	0	Calculated
Link-137	CONDUIT	0	00:06	9.61	1.00	13.84	30.88	0.45	0.47	0	Calculated
Link-138	CONDUIT	0	00:05	9.10	1.00	2.40	25.54	0.09	0.21	0	Calculated
Link-139	CONDUIT	0	00:06	11.31	1.00	15.83	68.20	0.23	0.33	0	Calculated
Link-140	CONDUIT	0	00:05	12.75	1.00	2.09	43.61	0.05	0.15	0	Calculated
Link-141	CONDUIT	0	00:06	11.13	1.00	17.59	63.97	0.28	0.36	0	Calculated
Link-143	CONDUIT	0	00:05	9.84	1.00	5.55	15.76	0.35	0.41	0	Calculated
Link-144	CONDUIT	0	00:05	10.28	1.00	5.52	21.60	0.26	0.34	0	Calculated
Link-86	CONDUIT	0	00:06	8.77	1.00	44.34	54.37	0.82	0.68	0	Calculated
Link-87	CONDUIT	0	00:07	18.75	1.00	41.25	157.36	0.26	0.35	0	Calculated
Link-88	CONDUIT	0	00:05	20.48	1.00	14.25	39.35	0.36	0.42	0	Calculated
Link-94	CONDUIT	0	00:08	7.30	1.00	2.59	2.39	1.08	1.00	3	SURCHARGED
Link-95	CONDUIT	0	00:05	4.52	1.00	1.18	12.70	0.09	0.21	0	Calculated
Link-96	CONDUIT	0	00:05	4.09	1.00	0.76	13.28	0.06	0.16	0	Calculated
Link-97	CONDUIT	0	00:05	4.30	1.00	1.86	7.55	0.25	0.34	0	Calculated
Link-98	CONDUIT	0	00:06	6.31	1.00	4.24	12.23	0.35	0.41	0	Calculated
Link-99	CONDUIT	0	00:05	7.88	1.00	9.63	12.63	0.76	0.65	0	Calculated

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*

Link Link-002 (2)  
Link Link-001 (2)

WARNING 116 : Conduit inlet invert elevation defined for Conduit Link-016 is below upstream node invert elevation.  
Assumed conduit inlet invert elevation equal to upstream node invert elevation.

Analysis began on: Wed Sep 29 08:10:48 2021  
Analysis ended on: Wed Sep 29 08:10:56 2021  
Total elapsed time: 00:00:08

## MITIGATED CONDITION

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.2.147 (Build 0)

\*\*\*\*\*  
Project Description  
\*\*\*\*\*

File Name ..... Merge Proposed Onsite Hydrology\_CCB (After Detention).SPF  
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

\*\*\*\*\*  
Analysis Options  
\*\*\*\*\*

Flow Units ..... cfs  
Link Routing Method ..... Kinematic Wave  
Storage Node Exfiltration... None  
Starting Date ..... SEP-26-2017 00:00:00  
Ending Date ..... SEP-27-2017 00:00:00  
Report Time Step ..... 00:05:00

\*\*\*\*\*  
Element Count  
\*\*\*\*\*

Number of subbasins ..... 0  
Number of nodes ..... 4  
Number of links ..... 4

\*\*\*\*\*  
Node Summary  
\*\*\*\*\*

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
HMP-1A	JUNCTION	347.00	375.00	0.00	
Jun-01	JUNCTION	341.67	369.77	0.00	
Out-POC'A	OUTFALL	0.00	338.75	0.00	
HMP-1	STORAGE	347.00	362.00	0.00	Yes

\*\*\*\*\*  
Link Summary  
\*\*\*\*\*

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-001	Jun-01	Out-POC'A'	CONDUIT	153.0	4.1958	0.0150
Link-002	HMP-1A	Jun-01	CONDUIT	231.8	2.1566	0.0150
Orifice-HMP-1	HMP-1	HMP-1A	ORIFICE			
Weir-HMP-1	HMP-1	HMP-1A	WEIR			

\*\*\*\*\*  
Cross Section Summary  
\*\*\*\*\*

Link ID	Shape	Depth/Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Link-001	CIRCULAR	3.50	3.50	1	9.62	0.88	178.61
Link-002	CIRCULAR	3.50	3.50	1	9.62	0.88	128.05



```

*****
Flow Routing Continuity
*****
Volume      Volume
acre-ft     Mgallons
-----
External Inflow ..... 3.171    1.033
External Outflow ..... 3.092    1.008
Initial Stored Volume .... 0.000    0.000
Final Stored Volume ..... 0.073    0.024
Continuity Error (%) ..... 0.001
    
```

\*\*\*\*\*  
Node Depth Summary  
\*\*\*\*\*

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
HMP-1A	0.21	0.88	347.88	0 04:09	0	0	0:00:00
Jun-01	0.54	1.21	342.88	0 04:09	0	0	0:00:00
Out-POC'A'	335.43	335.99	335.99	0 04:09	0	0	0:00:00
HMP-1	3.86	15.00	362.00	0 04:09	0.04	1	0:00:00

\*\*\*\*\*  
Node Flow Summary  
\*\*\*\*\*

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
HMP-1A	JUNCTION	0.00	17.59	0 04:09	0.00	
Jun-01	JUNCTION	0.00	17.59	0 04:09	0.00	
Out-POC'A'	OUTFALL	0.00	17.51	0 04:09	0.00	
HMP-1	STORAGE	90.35	90.35	0 04:03	4.97	0 04:08

\*\*\*\*\*  
Storage Node Summary  
\*\*\*\*\*

Storage Node ID	Maximum Ponded Volume 1000 ft <sup>3</sup>	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft <sup>3</sup>	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft <sup>3</sup>
HMP-1	84.072	100	0 04:08	21.644	26	17.59	0.00	0:00:00	0.000

\*\*\*\*\*  
Outfall Loading Summary  
\*\*\*\*\*

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-POC'A'	97.95	1.59	17.51
System	97.95	1.59	17.51

\*\*\*\*\*  
Link Flow Summary  
\*\*\*\*\*

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
Link-001	CONDUIT	0 04:09	11.83	1.00	17.51	178.61	0.10	0.21	0	Calculated
Link-002	CONDUIT	0 04:09	9.33	1.00	17.59	128.05	0.14	0.25	0	Calculated
Orifice-HMP-1	ORIFICE	0 04:09			4.28			0.00		
Weir-HMP-1	WEIR	0 04:09			13.31			0.00		

\*\*\*\*\*  
Highest Flow Instability Indexes  
\*\*\*\*\*  
All links are stable.

WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum elevation. Assumed surcharge elevation equal to maximum elevation.  
WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node HMP-1A.

Analysis began on: Wed Sep 29 08:24:42 2021  
Analysis ended on: Wed Sep 29 08:24:43 2021  
Total elapsed time: 00:00:01

