DRAINAGE CALCULATIONS
&
SUPPLEMENTAL INFORMATION

HIDDEN TRAILS
OFF COUNTY ROAD
W. WAREHAM, MA

SEPTEMBER 7, 2023

Prepared for:

SARAJON REALTY, LLC
2854 CRANBERRY HIGHWAY
E. WAREHAM, MA 02538

COMMONWEALTH OF MASSACHUSETTS
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CIVIL
NO. 41807
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HIDDEN TRAILS

W. WAREHAM, MA

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1. Project Description

Narrative

This project involves the development of a residential 56-lot cluster subdivision and its associated roadway, utilities, and stormwater management systems. The site has been developed to meet the Massachusetts Stormwater Standards and applicable Town of Wareham regulations pertaining to Stormwater Management.

Existing Conditions

The project site is accessed off of County Road and comprises of the formerly permitted subdivision known as "The Pond at Fearing Hill" as well as an adjacent 18 acre undeveloped parcel shown as Lot 1013 on Assessors Map 63. The prior development was not constructed, but involved the creation of approximately 11,900 feet of proposed roadways to provide access to 44 conventional sized residential lots and various open space parcels. The layout of the previously permitted development is shown on Sheet 28 of 30 of the attached subdivision plans. The total land area of the current project is approximately 153 acres, which includes a 30.5 acre manmade pond centrally located on the property. The manmade pond was created by a former sand mining operation that is no longer active. Besides the alteration that created the pond, there are approximately 27 acres of adjacent bordering vegetated wetlands and approximately 16.5 acres of unvegetated, previously disturbed property. The approximately 79 acres of the remainder of the property, besides some trails and a couple of former sand pits, is undeveloped woodland.

Proposed Conditions

The proposed project has been designed in accordance with *Article 8: Alternative Residential Sie Development* of the Town of Wareham Zoning Bylaw to create a 56-lot residential cluster development. The lots will be accessed from a roadway system that has a total length of approximately 6,700 feet. The roadway and developable lots will utilize approximately 37 acres of the entire property. The remainder of the property will consist of approximately 116 acres of open space, which includes the 30.5 acre manmade pond. The grading has been designed to minimize significant cuts & fills across the site and will follow existing drainage patterns. A Stormwater Management System will capture, treat, and infiltrate runoff up to and including a 100-year storm event.

Soil Description

Existing soil classifications and hydrologic soil groups for the site were obtained from the USDA Soil Conservation Service, Soil Survey of Plymouth County, Massachusetts & The Web Soil Survey. The soil types found within the limits of the drainage analysis are classified as the following:

1.) Windsor Loamy Sand, 3 to 8 percent slopes (255B)
2.) Deerfield Loamy Fine Sand, 0 to 3 percent slopes (256A)
3.) Deerfield Loamy Fine Sand, 3 to 8 percent slopes (256B)
4.) Carver Loamy Coarse Sand, 0 to 3 percent slopes (259A)
5.) Aquepts, 0 to 3 percent slopes (657A)
6.) Udipsamments, 0 to 8 percent slopes (665B)

Besides the Aquepts soils group, which are comprised of the centrally located wetland system, all of the above soil types are within hydrological classification group "A" and is the primary soil type within the portion of the property to be developed.

2. Hydrologic Analysis & Stormwater Management

Methodology

Stormwater runoff was evaluated for the 2-year, 10-year, 25-year, and 100-year, Type III, 24-hour storm for both pre-development and post-development conditions. Pre-development and post-development conditions were modeled using HydroCAD software, which combines USDA Soil Conservation Service hydrology and hydraulic techniques (commonly known as SCS TR-55 and TR-20) to generate hydrographs (calculations are provided in the supplemental section of this report). The rainfall amounts used for calculating runoff for the 2-year, 10-year, 25-year and 100-year storm events were obtained from the NOAA Atlas 14 Volume 10 Frequency Estimates.

The drainage calculation provided at the end of this report identify on-site and off-site design points for both existing and proposed conditions. Under both existing and proposed conditions runoff is partially collected and infiltrated onsite, and directed offsite. **Table 1** compares the pre-development and post-development peak runoff rates and volumes for the 2-year, 10-year, 25-year, and 100-year storm events at six separate design points for the Type III, 24-hour storm events. The offsite design points were evaluated to ensure post-development peak runoff rates and volumes do not exceed pre-development amounts.

Pre-Development Drainage Conditions

The site was modeled into 7 sub-catchment areas under existing conditions. Four of the existing sub-catchment areas discharge to offsite Design Points, while three existing subcatchment areas drain to onsite depressions or wetlands.

Refer to the EX-DA Plan prepared by this office at the end of this report.

Post-Development Drainage Conditions

Post-development drainage conditions and patterns were maintained to the maximum extent possible. The site was modeled into 6 sub-catchments that correspond with the same offsite and onsite Design Points modeled under pre-development conditions. To evaluate the Drainage System, subcatchments draining to each catchbasin were utilized to calculate the necessary size of the downstream drainage piping systems and infiltration basins. The drainage piping system was sized for the 25-year storm event, while the infiltration basins were sized to contain up to and including a 100-year storm event.

Refer to the PR-DA Plan and PR-DA for Drainage System Plan prepared by this office at the end of this report.

Results of Stormwater Management Analysis

Table 1 summarizes contributing areas under pre and post development conditions to the design points chosen on the project site. Table 2 summarizes the pre and post development peak rates of runoff and volume for the 2-year, 10-year, 25-year, and 100-year storm events.

Existing Areas	Proposed Areas	Design Point	Description
EX-1	PR-1	DP-1	OFFSITE onto County Road
EX-2	PR-2	DP-2	OFFSITE to East (South of Wishbone Way)
EX-3	PR-3	DP-3	ONSITE (Isolated Wetland)
EX-4	PR-4	DP-4	OFFSITE to West (cranberry bogs)
EX-5	PR-5	DP-5	OFFSITE to North (cranberry bogs)
EX-6	PR-6	DP-6	ONSITE (Manmade Pond)
EX-7	N/A	N/A	ONSITE (Fomer Sand Pit)

Table 1: Existing and Proposed Contributing Areas to Design Points

	Ex. Flow (cfs)	Prop. Flow (cfs)	Ex. Vol. (af)	Prop. Vol. (af)
DP-1 (offsite)				
2-Yr Event	0.00	0.00	0.000	0.000
10-Yr Event	0.00	0.00	0.000	0.000
25-Yr Event	0.01	0.00	0.004	0.002
100-Yr Event	0.03	0.02	0.015	0.008
DP-2 (offsite)				
2-Yr Event	0.00	0.00	0.000	0.000
10-Yr Event	0.00	0.00	0.001	0.000
25-Yr Event	0.01	0.00	0.010	0.002
100-Yr Event	0.08	0.02	0.042	0.008
DP-3 (onsite)				
2-Yr Event	0.03	0.10	0.018	0.031
10-Yr Event	0.47	0.88	0.096	0.123
25-Yr Event	1.07	1.80	0.168	0.201
100-Yr Event	2.36	3.53	0.307	0.347
DP-4 (offsite)				
2-Yr Event	0.00	0.00	0.000	0.000
10-Yr Event	0.02	0.03	0.013	0.021
25-Yr Event	0.14	0.11	0.087	0.068
100-Yr Event	0.70	0.64	0.316	0.187
DP-5 (offsite)				
2-Yr Event	0.00	0.00	0.000	0.000
10-Yr Event	0.04	0.03	0.029	0.018
25-Yr Event	0.22	0.10	0.141	0.060
100-Yr Event	1.04	0.73	0.457	0.166
DP-6 (onsite)				
2-Yr Event	0.02	0.05	0.008	0.034
10-Yr Event	0.50	1.23	0.280	0.239
25-Yr Event	2.01	3.60	0.613	0.440
100-Yr Event	6.48	9.40	1.325	0.835

Table 2: summarizes the pre and post development peak rates of runoff and volume

3. Conformance with Stormwater Management Standards

The stormwater management systems have been designed to comply with the Massachusetts Stormwater Management Policy. The Policy includes the following 10 standards:

1. ***No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.***

   This project does not include any new untreated stormwater conveyances or outfalls that discharge directly to wetlands or waters of the Commonwealth.

   The stormwater management systems utilize a number of BMPs to catch, treat, and infiltrate stormwater runoff for all storms up to and including the 100-year storm event.

2. ***Stormwater managements systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.***

   As can be seen on the Table 1 and 2 of this report and the Drainage Areas Plans at the end of this report, there are (4) offsite Design Points (DP-1, DP-2, DP-4, and DP-5) and (2) onsite Design Points (DP-3 and DP-6). The onsite design points are existing wetland pockets and depressions that were created from prior site mining activities and are not to be altered as part of this project. The results of the 2-year, 10-year, 25-year, and 100-year storm events show that the post-development peak rates and volumes for offsite design points are less than the pre-development peak rates and volumes. There will be minor increases in peak rates to the onsite design points, but the peak volume increase to DP-3 will be insignificant and the peak volume will be reduced for DP-6.

3. ***Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based upon soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.***

   The supplemental information and calculations included with this report show that the minimum volume to recharge of 0.6” of runoff multiplied by the impervious area (per Hydrologic Group A) is far exceeded by the available storage volume within each Infiltration Basin. Further, the attached total suspended solids (TSS) calculations show that a minimum of 44% of the TSS will be removed by the use of deep sump catchbasins and proprietary structures prior to discharge to the infiltration basins. This project must achieve a minimum of 44% TSS removal rates prior to infiltration due to the proposed

discharges occurring within areas of rapid infiltration rates (greater than 2.4 inches per hour). Also, the calculations show that each infiltration basin will drain within 72 hours.

4. ***Stormwater management systems shall be designed to remove 80% of the average annual post construction load of Total Suspended Solids (TSS). This Standard is met when:***

    a. ***Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;***
    b. ***Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and***
    c. ***Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.***

    This project includes the use of numerous BMP's that will achieve a minimum 95.9% or greater TSS removal rates for each stormwater management system. This removal rate is also in compliance with the Town of Wareham Zoning By-Laws, Article 12, Section 1260, which requires a minimum 90% TSS removal rates for newly developed sites. Included with this report are TSS calculations, water quality volume calculations, and a long-term pollution prevention plan.

5. ***For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable….***

    This project does not include any land uses with higher potential pollutant loads.

6. ***Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook…..***

    This project does not occur within a Zone II, Interim Wellhead Protection Area, nor within any other critical areas.

7. ***A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other***

requirements of the Stormwater Management Standards and improve existing conditions.

This project is considered new development.

8. ***A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.***

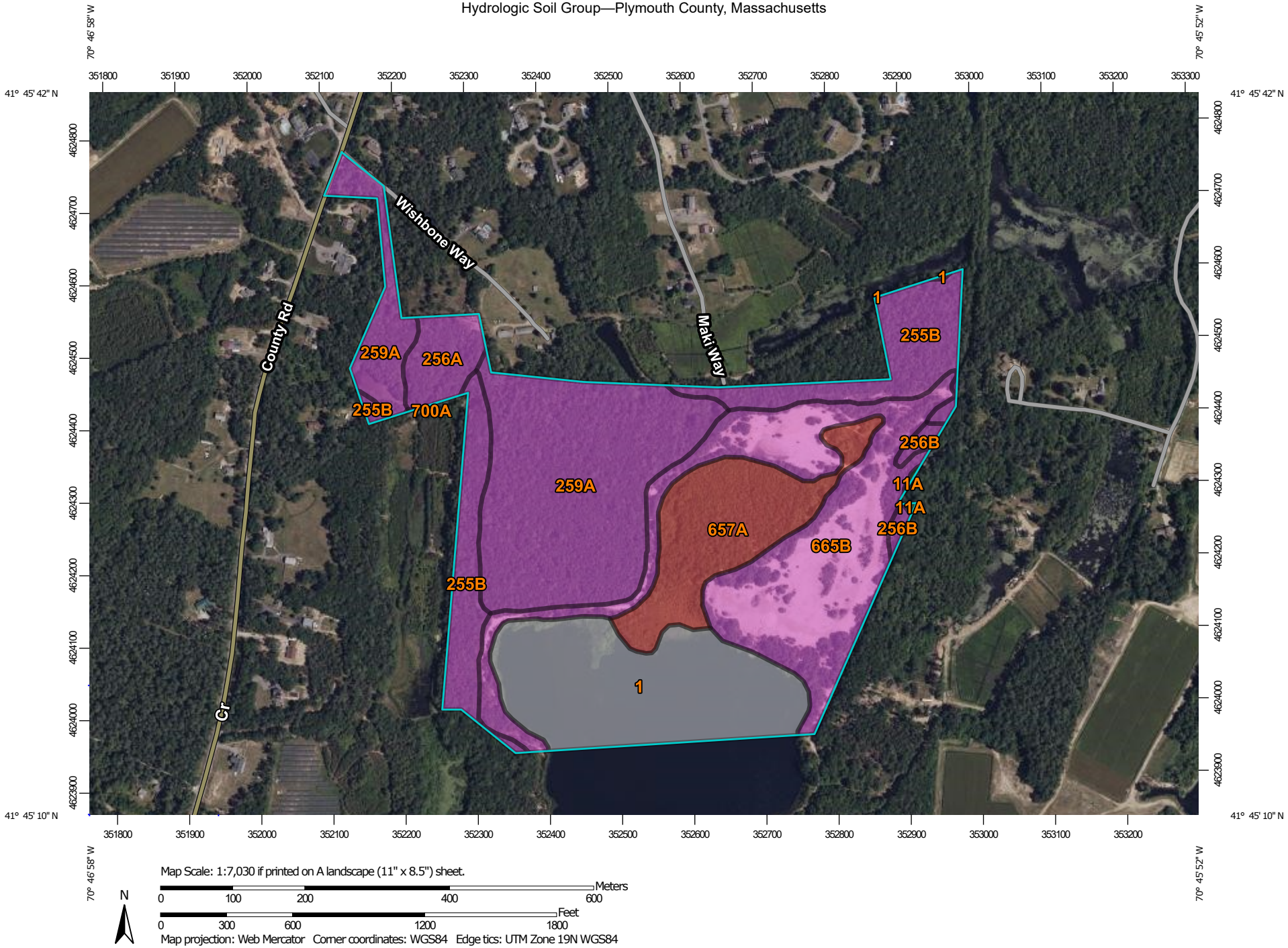
   Erosion and sediment control methods and prevention plans are included on the Plans and within this report.

9. ***A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.***

   An operations and maintenance plan is included with this report.

10. ***All illicit discharges to the stormwater management system are prohibited.***

    An illicit discharge statement has been included within the operation and maintenance plan.


70° 46' 58" W
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351800
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Wishbone Way
County Rd
Maki Way
Cr
259A
256A
255B
700A
1
255B
256B
259A
11A
11A
657A
256B
665B
255B
1
Map Scale: 1:7,030 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0
100
200
400
600
Feet
0
300
600
1200
1800
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 15, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 10, 2022—Jun 30, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		15.3	18.2%
11A	Rainberry coarse sand, 0 to 3 percent slopes	A/D	0.1	0.1%
255B	Windsor loamy sand, 3 to 8 percent slopes	A	10.9	13.0%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	2.8	3.3%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	0.7	0.8%
259A	Carver loamy coarse sand, 0 to 3 percent slopes	A	23.4	27.8%
657A	Aquepts, 0 to 3 percent slopes	D	9.8	11.7%
665B	Udipsamments, 0 to 8 percent slopes	A	21.0	25.0%
700A	Udipsamments, wet substratum, 0 to 3 percent slopes	A/D	0.0	0.0%
Totals for Area of Interest			**84.0**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NOAA Atlas 14, Volume 10, Version 3
Location name: West Wareham, Massachusetts, USA*
Latitude: 41.7611°, Longitude: -70.7783°
Elevation: 49 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.295** (0.237-0.362)	**0.366** (0.293-0.450)	**0.482** (0.385-0.594)	**0.578** (0.459-0.715)	**0.710** (0.548-0.913)	**0.808** (0.612-1.06)	**0.914** (0.676-1.24)	**1.04** (0.723-1.42)	**1.23** (0.821-1.72)	**1.39** (0.908-1.97)
10-min	**0.418** (0.336-0.514)	**0.519** (0.416-0.637)	**0.683** (0.545-0.841)	**0.819** (0.650-1.01)	**1.01** (0.776-1.29)	**1.14** (0.867-1.50)	**1.30** (0.957-1.75)	**1.47** (1.02-2.00)	**1.74** (1.16-2.43)	**1.96** (1.29-2.79)
15-min	**0.492** (0.395-0.604)	**0.610** (0.489-0.750)	**0.803** (0.641-0.989)	**0.964** (0.765-1.19)	**1.18** (0.913-1.52)	**1.35** (1.02-1.76)	**1.52** (1.13-2.06)	**1.73** (1.20-2.36)	**2.04** (1.37-2.86)	**2.31** (1.51-3.28)
30-min	**0.703** (0.564-0.864)	**0.872** (0.699-1.07)	**1.15** (0.917-1.42)	**1.38** (1.09-1.70)	**1.69** (1.31-2.18)	**1.93** (1.46-2.52)	**2.18** (1.61-2.95)	**2.48** (1.72-3.37)	**2.93** (1.96-4.09)	**3.30** (2.16-4.69)
60-min	**0.915** (0.734-1.12)	**1.13** (0.909-1.39)	**1.49** (1.19-1.84)	**1.79** (1.42-2.22)	**2.20** (1.70-2.83)	**2.51** (1.90-3.28)	**2.83** (2.10-3.84)	**3.22** (2.24-4.39)	**3.80** (2.55-5.32)	**4.30** (2.81-6.10)
2-hr	**1.22** (0.989-1.50)	**1.53** (1.23-1.86)	**2.02** (1.62-2.47)	**2.43** (1.94-2.99)	**3.00** (2.33-3.83)	**3.41** (2.61-4.44)	**3.86** (2.89-5.21)	**4.42** (3.09-5.96)	**5.25** (3.54-7.27)	**5.97** (3.94-8.39)
3-hr	**1.44** (1.17-1.75)	**1.79** (1.45-2.18)	**2.37** (1.91-2.88)	**2.84** (2.28-3.48)	**3.50** (2.73-4.45)	**3.98** (3.06-5.16)	**4.51** (3.38-6.04)	**5.14** (3.62-6.90)	**6.12** (4.15-8.43)	**6.96** (4.62-9.72)
6-hr	**1.88** (1.54-2.28)	**2.31** (1.88-2.79)	**3.00** (2.43-3.63)	**3.57** (2.88-4.34)	**4.36** (3.42-5.49)	**4.94** (3.81-6.34)	**5.57** (4.20-7.38)	**6.32** (4.49-8.40)	**7.46** (5.10-10.2)	**8.43** (5.64-11.6)
12-hr	**2.40** (1.97-2.88)	**2.87** (2.36-3.45)	**3.65** (2.98-4.39)	**4.29** (3.49-5.18)	**5.18** (4.09-6.46)	**5.84** (4.53-7.40)	**6.54** (4.94-8.52)	**7.34** (5.26-9.66)	**8.51** (5.88-11.5)	**9.48** (6.41-13.0)
24-hr	**2.89** (2.39-3.45)	**3.43** (2.84-4.09)	**4.32** (3.55-5.15)	**5.05** (4.13-6.05)	**6.05** (4.81-7.48)	**6.81** (5.31-8.54)	**7.60** (5.77-9.78)	**8.48** (6.13-11.1)	**9.74** (6.78-13.0)	**10.8** (7.33-14.5)
2-day	**3.32** (2.77-3.93)	**3.96** (3.29-4.68)	**4.99** (4.14-5.92)	**5.85** (4.82-6.97)	**7.03** (5.63-8.62)	**7.92** (6.22-9.85)	**8.85** (6.77-11.3)	**9.88** (7.20-12.8)	**11.3** (7.98-15.0)	**12.5** (8.62-16.8)
3-day	**3.64** (3.04-4.29)	**4.31** (3.60-5.08)	**5.40** (4.50-6.38)	**6.31** (5.22-7.48)	**7.56** (6.07-9.22)	**8.50** (6.70-10.5)	**9.48** (7.27-12.0)	**10.6** (7.73-13.5)	**12.1** (8.53-15.9)	**13.3** (9.20-17.7)
4-day	**3.93** (3.29-4.61)	**4.61** (3.86-5.42)	**5.73** (4.78-6.75)	**6.66** (5.53-7.87)	**7.94** (6.39-9.64)	**8.90** (7.04-11.0)	**9.90** (7.62-12.5)	**11.0** (8.08-14.0)	**12.5** (8.88-16.4)	**13.7** (9.53-18.2)
7-day	**4.68** (3.94-5.47)	**5.39** (4.54-6.30)	**6.56** (5.50-7.68)	**7.53** (6.28-8.84)	**8.86** (7.17-10.7)	**9.88** (7.84-12.0)	**10.9** (8.41-13.6)	**12.0** (8.88-15.2)	**13.5** (9.62-17.4)	**14.6** (10.2-19.2)
10-day	**5.38** (4.55-6.26)	**6.12** (5.16-7.12)	**7.32** (6.16-8.55)	**8.32** (6.97-9.75)	**9.70** (7.88-11.6)	**10.8** (8.56-13.0)	**11.8** (9.13-14.6)	**12.9** (9.60-16.3)	**14.3** (10.3-18.4)	**15.4** (10.8-20.1)
20-day	**7.47** (6.35-8.63)	**8.28** (7.04-9.58)	**9.61** (8.15-11.1)	**10.7** (9.04-12.5)	**12.2** (10.0-14.5)	**13.4** (10.8-16.1)	**14.6** (11.3-17.7)	**15.7** (11.8-19.6)	**17.1** (12.4-21.7)	**18.0** (12.8-23.3)
30-day	**9.21** (7.87-10.6)	**10.1** (8.62-11.6)	**11.5** (9.82-13.3)	**12.7** (10.8-14.7)	**14.4** (11.8-16.9)	**15.7** (12.6-18.7)	**16.9** (13.2-20.4)	**18.1** (13.6-22.4)	**19.4** (14.2-24.6)	**20.3** (14.5-26.1)
45-day	**11.4** (9.78-13.1)	**12.4** (10.6-14.2)	**14.0** (11.9-16.0)	**15.3** (13.0-17.6)	**17.1** (14.1-20.0)	**18.6** (15.0-21.9)	**19.9** (15.5-23.8)	**21.1** (16.0-26.0)	**22.5** (16.5-28.2)	**23.3** (16.7-29.7)
60-day	**13.2** (11.4-15.1)	**14.3** (12.3-16.4)	**16.0** (13.7-18.4)	**17.4** (14.9-20.0)	**19.4** (16.0-22.6)	**21.0** (17.0-24.7)	**22.4** (17.5-26.7)	**23.6** (18.0-29.0)	**25.0** (18.5-31.3)	**25.9** (18.6-32.9)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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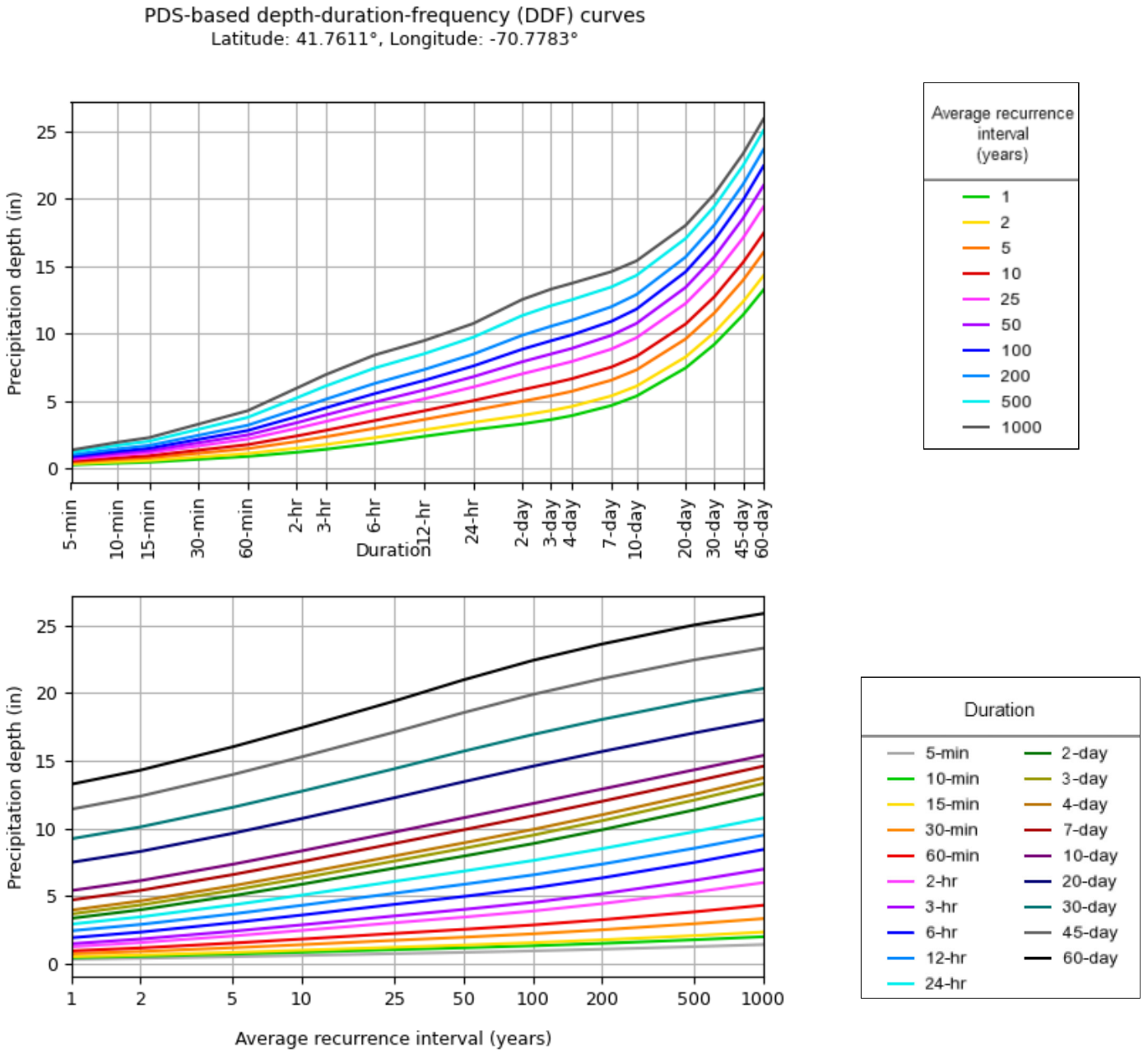
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Tue May 30 13:54:05 2023

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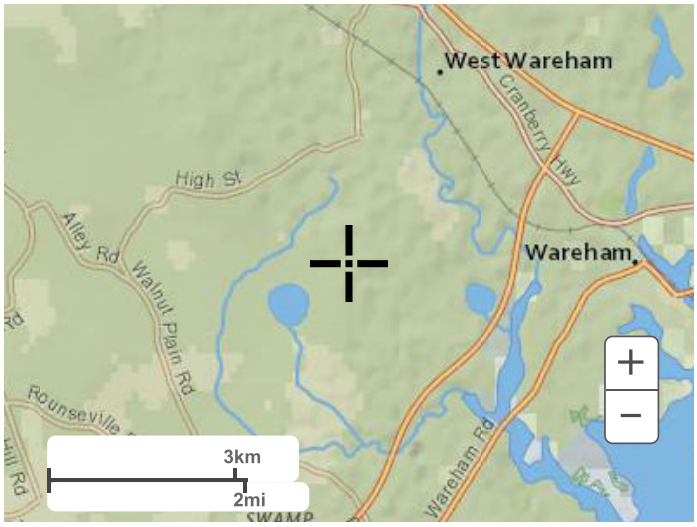
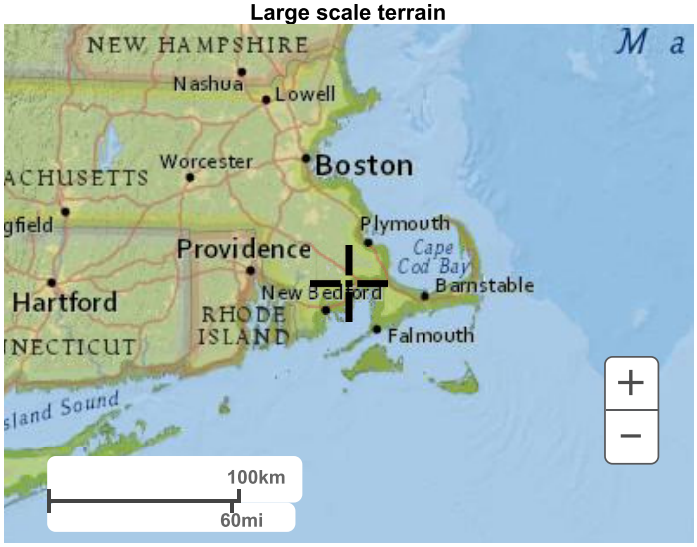
Maps & aerials

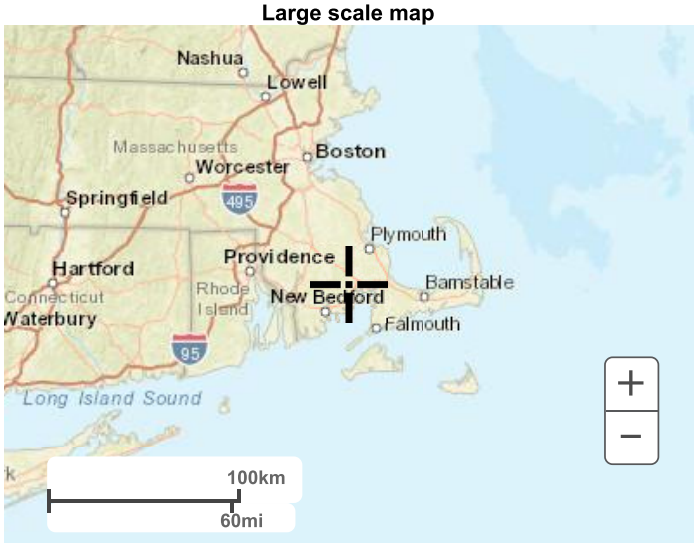
Small scale terrain



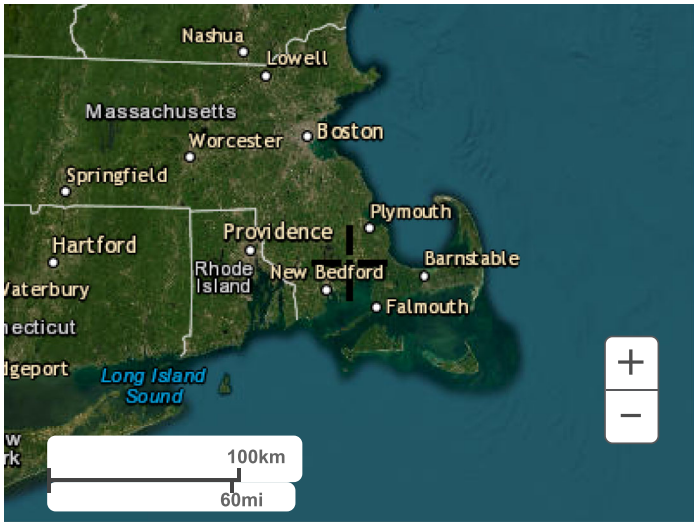
Large scale terrain



Large scale map



Large scale aerial



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

GROUNDWATER RECHARGE VOLUME CALCULATIONS

HIDDEN TRAILS off County Road

WEST WAREHAM, MA

INFILTRATION BASIN #1:

Impervious Area = 46,070 s.f.

Recharge Factor

Hydrologic Group A Soils = 0.60 inches of runoff

Groundwater Recharge Volume Required

46,070 s.f. x (0.60 inches x 1/12) = **2,304** c.f. required

Groundwater Recharge Volume Provided in Infiltration Basin

- The storage volume is **21,787** c.f. within the infiltration basin below elevation 39.5' (refer to HydroCAD output of "Pond IB1-P" in drainage report)

Conclusion: Total recharge volume of **21,787** c.f. provided is greater than the required recharge volume of **2,304** c.f.; therefore **OK**.

INFILTRATION BASIN #2:

Impervious Area = 81,510 s.f.

Recharge Factor

Hydrologic Group A Soils = 0.60 inches of runoff

Groundwater Recharge Volume Required

81,510 s.f. x (0.60 inches x 1/12) = **4,076** c.f. required

Groundwater Recharge Volume Provided in Infiltration Basin

- The storage volume is **44,124** c.f. within the infiltration basin below elevation 34.5' (refer to HydroCAD output of "Pond IB2-P" in drainage report)

Conclusion: Total recharge volume of **44,124** c.f. provided is greater than the required recharge volume of **4,076** c.f.; therefore **OK**.

INFILTRATION BASIN #3:

Impervious Area = 35,800 s.f.

Recharge Factor

Hydrologic Group A Soils = 0.60 inches of runoff

Groundwater Recharge Volume Required

35,800 s.f. x (0.60 inches x 1/12) = **1,790** c.f. required

Groundwater Recharge Volume Provided in Infiltration Basin

- The storage volume is **26,524** c.f. within the infiltration basin below elevation 36.75' (refer to HydroCAD output of "Pond IB3-P" in drainage report)

Conclusion: Total recharge volume of **26,524** c.f. provided is greater than the required recharge volume of **1,790** c.f.; therefore **OK**.

INFILTRATION BASIN #4:

Impervious Area = 144,760 s.f.

Recharge Factor

Hydrologic Group A Soils = 0.60 inches of runoff

Groundwater Recharge Volume Required

144,760 s.f. x (0.60 inches x 1/12) = **7,238** c.f. required

Groundwater Recharge Volume Provided in Infiltration Basin

- The storage volume is **91,508** c.f. within the infiltration basin below elevation 35.75' (refer to HydroCAD output of "Pond IB4-P" in drainage report)

Conclusion: Total recharge volume of **91,508** c.f. provided is greater than the required recharge volume of **7,238** c.f.; therefore **OK**.

INFILTRATION BASIN #5:

Impervious Area = 22,500 s.f.

Recharge Factor

Hydrologic Group A Soils = 0.60 inches of runoff

Groundwater Recharge Volume Required

22,500 s.f. x (0.60 inches x 1/12) = **1,125** c.f. required

Groundwater Recharge Volume Provided in Infiltration Basin

- The storage volume is **15,861** c.f. within the infiltration basin below elevation 38.0' (refer to HydroCAD output of "Pond IB5-P" in drainage report)

Conclusion: Total recharge volume of **15,861** c.f. provided is greater than the required recharge volume of **1,125** c.f.; therefore **OK**.

WATER QUALITY VOLUME CALCULATIONS

HIDDEN TRAILS off County Road

WEST WAREHAM, MA

Water Quality Depth: 1 inch For Discharge to an area with an infiltration rate >2.4 in/hr

INFILTRATION BASIN #1:

Impervious Area (I) = 46,070 s.f.

Water Quality Volume (WQV) Required to be Treated (1" of runoff)

- WQV = 1" x I (s.f.)
- WQV = 1"/(12 in/ft) x 46,070 s.f. = **3,839 c.f.** required

Water Quality Volume Provided

- The storage volume is **21,787** c.f. within the infiltration basin below elevation 39.5' (refer to HydroCAD output of "Pond IB1-P" in drainage report)

Conclusion: Total recharge volume of **21,787** c.f. provided is greater than the required recharge volume of **3,839** c.f.; therefore **OK**.

INFILTRATION BASIN #2:

Impervious Area = 81,510 s.f.

Water Quality Volume (WQV) Required to be Treated (1" of runoff)

- WQV = 1" x I (s.f.)
- WQV = 1"/(12 in/ft) x 81,510 s.f. = **6,793 c.f.** required

Water Quality Volume Provided

- The storage volume is **44,124** c.f. within the infiltration basin below elevation 34.5' (refer to HydroCAD output of "Pond IB2-P" in drainage report)

Conclusion: Total recharge volume of **44,124** c.f. provided is greater than the required recharge volume of **6,793** c.f.; therefore **OK**.

INFILTRATION BASIN #3:

Impervious Area = 35,800 s.f.

Water Quality Volume (WQV) Required to be Treated (1" of runoff)

- WQV = 1" x I (s.f.)
- WQV = 1"/(12 in/ft) x 35,800 s.f. = **2,983 c.f.** required

Water Quality Volume Provided

- The storage volume is **26,524** c.f. within the infiltration basin below elevation 36.75' (refer to HydroCAD output of "Pond IB3-P" in drainage report)

Conclusion: Total recharge volume of **26,524** c.f. provided is greater than the required recharge volume of **2,983** c.f.; therefore **OK**.

INFILTRATION BASIN #4:

Impervious Area = 144,760 s.f.

Water Quality Volume (WQV) Required to be Treated (1" of runoff)

- WQV = 1" x I (s.f.)
- WQV = 1"/(12 in/ft) x 144,760 s.f. = **12,063 c.f.** required

Water Quality Volume Provided

- The storage volume is **91,508** c.f. within the infiltration basin below elevation 35.75' (refer to HydroCAD output of "Pond IB4-P" in drainage report)

Conclusion: Total recharge volume of **91,508** c.f. provided is greater than the required recharge volume of **12,063** c.f.; therefore **OK**.

INFILTRATION BASIN #5:

Impervious Area = 22,500 s.f.

Water Quality Volume (WQV) Required to be Treated (1" of runoff)

- WQV = 1" x I (s.f.)
- WQV = 1"/(12 in/ft) x 22,500 s.f. = **1,875 c.f.** required

Water Quality Volume Provided

- The storage volume is **15,861** c.f. within the infiltration basin below elevation 38.0' (refer to HydroCAD output of "Pond IB5-P" in drainage report)

Conclusion: Total recharge volume of **15,861** c.f. provided is greater than the required recharge volume of **1,875** c.f.; therefore **OK**.

HYDRODYNAMIC SEPARATOR SIZING:

Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices (attached with Report):

$$\mathbf{Q_{max} = (qu)*(A)*(D_{WQ})}$$

Q_{max} = peak flow rate associated with first 1-inch of runoff
qu = the unit peak discharge, in csm/in.
A = impervious surface drainage area (in square miles)
D_{WQ} = water quality volume in watershed inches (1.0-inches in this case)

See Table on following page for sizing documentation of Hydrodynamic Separators (CDS) for each contributing drainage area.

- $\mathbf{Q_{max} = (qu)*(A)*(D_{WQ})}$

INFILTRATION DRAIN-DOWN TIME CALCULATIONS

HIDDEN TRAILS off County Road

WEST WAREHAM, MA

INFILTRATION BASIN #1 (Pond IB1-P):

Maximum Drain Time = 72 hours

Provided Drain Time = Storage Volume / (K x Basin Bottom Area*)

Storage Volume = 21,787 c.f.

Bottom Area = 7,290 s.f.

= 21,787 c.f. / [(2.4 in/hr) (1ft/12 inches) x 7,290 s.f.]

= **14.9 hours**, which is less than max. drain time of 72 hours, therefore OK.

INFILTRATION BASIN #2 (Pond IB2-P):

Maximum Drain Time = 72 hours

Provided Drain Time = Storage Volume / (K x Basin Bottom Area*)

Storage Volume = 44,124 c.f.

Bottom Area = 10,000 s.f.

= 44,124 c.f. / [(2.4 in/hr) (1ft/12 inches) x 10,000 s.f.]

= **22.1 hours**, which is less than max. drain time of 72 hours, therefore OK.

INFILTRATION BASIN #3 (Pond IB3-P):

Maximum Drain Time = 72 hours

Provided Drain Time = Storage Volume / (K x Basin Bottom Area*)

Storage Volume = 26,524 c.f.

Bottom Area = 2,150 s.f.

= 26,524 c.f. / [(2.4 in/hr) (1ft/12 inches) x 2,150 s.f.]

= **61.7 hours**, which is less than max. drain time of 72 hours, therefore OK.

INFILTRATION BASIN #4 (Pond IB4-P):

Maximum Drain Time = 72 hours

Provided Drain Time = Storage Volume / (K x Basin Bottom Area*)

Storage Volume = 91,508 c.f.

Bottom Area = 9,265 s.f.

= 91,508 c.f. / [(2.4 in/hr) (1ft/12 inches) x 9,265 s.f.]

= **49.4 hours**, which is less than max. drain time of 72 hours, therefore OK.

INFILTRATION BASIN #5 (Pond IB5-P):

Maximum Drain Time = 72 hours

Provided Drain Time = Storage Volume / (K x Basin Bottom Area*)

Storage Volume = 15,861 c.f.

Bottom Area = 3,630 s.f.

= 15,861 c.f. / [(2.4 in/hr) (1ft/12 inches) x 3,630 s.f.]

= **21.8 hours**, which is less than max. drain time of 72 hours, therefore OK.

SEDIMENT FOREBAY SIZING CALCULATIONS

HIDDEN TRAILS off County Road

WEST WAREHAM, MA

INFILTRATION BASIN #1:

Impervious Area (I) = 46,070 s.f.

Sediment Forebay Volume Required

- (0.10"/12) x I = **394** c.f.

Sediment Forebay Volume Provided

- The storage volume within forebays below spillway elevation 37.6':
  Base area at elevation 37.1' = 700 s.f.
  Base area at elevation 37.6' = 923 s.f.

  Volume between elevation 37.1' and 37.6' = **406 c.f.**

Conclusion: Proposed sediment forebay volume of **406** cubic feet provided is greater than **394** cubic feet required; therefore OK.

INFILTRATION BASIN #2:

Impervious Area = 81,510 s.f.

Sediment Forebay Volume Required

- (0.10"/12) x I = **679** c.f.

Sediment Forebay Volume Provided

- The storage volume within forebays below spillway elevation 32.0':
  Base area at elevation 31.2 = 639 s.f.
  Base area at elevation 32.0 = 1,228 s.f.

  Volume between elevation 31.2' and 32.0' = **747 c.f.**

Conclusion: Proposed sediment forebay volume of **747** cubic feet provided is greater than **679** cubic feet required; therefore OK.

INFILTRATION BASIN #3:

Impervious Area = 35,800 s.f.

Sediment Forebay Volume Required

- (0.10"/12) x I = **298** c.f.

Sediment Forebay Volume Provided

- The storage volume within forebays below spillway elevation 33.8':
  Base area at elevation 32.0 = 52 s.f.
  Base area at elevation 33.0 = 178 s.f.
  Base area at elevation 33.8 = 340 s.f.

  Volume between elevation 32.0' and 33.8' = **322** c.f.

Conclusion: Proposed sediment forebay volume of **322** cubic feet provided is greater than **298** cubic feet required; therefore OK.

INFILTRATION BASIN #4:

Impervious Area = 144,760 s.f.

Sediment Forebay Volume Required

- (0.10"/12) x I = **1,206** c.f.

Sediment Forebay Volume Provided

- The storage volume within forebays below spillway elevation 31.0':
  Base area at elevation 29.5 = 383 s.f.
  Base area at elevation 30.0 = 660 s.f.
  Base area at elevation 31.0 = 1,255 s.f.

  Volume between elevation 29.5' and 31.0' = **1,218** c.f.

Conclusion: Proposed sediment forebay volume of **1,218** cubic feet provided is greater than **1,206** cubic feet required; therefore OK.

INFILTRATION BASIN #5:

Impervious Area = 22,500 s.f.

Sediment Forebay Volume Required

- (0.10"/12) x I = **188** c.f.

Sediment Forebay Volume Provided

- The storage volume within forebays below spillway elevation 35.6':
  Base area at elevation 35.1 = 330 s.f.
  Base area at elevation 35.6 = 452 s.f.

  Volume between elevation 35.1' and 35.6' = **322** c.f.

Conclusion: Proposed sediment forebay volume of **322** cubic feet provided is greater than **188** cubic feet required; therefore OK.

TSS REMOVAL CALCULATIONS

TSS REMOVAL WORKSHEET (PRETREATMENT)

INFILTRATION BASIN #1

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 7)*	0.92	0.75	0.69	0.06
		0.06	0.00	0.06
		TOTAL=	93.8%	

INFILTRATION BASIN #2

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 22)*	0.84	0.75	0.63	0.12
		0.12	0.00	0.12
		TOTAL=	88.4%	

INFILTRATION BASIN #3

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 25)*	0.94	0.75	0.70	0.05
		0.05	0.00	0.05
		TOTAL=	95.4%	

INFILTRATION BASIN #4

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 12)*	0.73	0.75	0.55	0.20
		0.20	0.00	0.20
		TOTAL=	79.6%	

INFILTRATION BASIN #5

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 16)*	0.97	0.75	0.72	0.03
		0.03	0.00	0.03
		TOTAL=	97.4%	

* REFER TO ATTACHED HYDRODYNAMIC SEPARATION REMOVAL RATES

TSS REMOVAL WORKSHEET (TOTAL)

INFILTRATION BASIN #1

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 7)*	0.92	0.75	0.69	0.06
FOREBAY/INFILTRATION BASIN	0.80	0.06	0.05	0.01
		TOTAL=	98.8%	

INFILTRATION BASIN #2

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 22)*	0.84	0.75	0.63	0.12
FOREBAY/INFILTRATION BASIN	0.80	0.12	0.09	0.02
		TOTAL=	97.7%	

INFILTRATION BASIN #3

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 25)*	0.94	0.75	0.70	0.05
FOREBAY/INFILTRATION BASIN	0.80	0.05	0.04	0.01
		TOTAL=	99.1%	

INFILTRATION BASIN #4

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 12)*	0.73	0.75	0.55	0.20
FOREBAY/INFILTRATION BASIN	0.80	0.20	0.16	0.04
		TOTAL=	95.9%	

INFILTRATION BASIN #5

BMP	TSS REMOVAL RATE	STARTING TSS LOAD	AMOUNT REMOVED	REMAINING LOAD
DEEP SUMP CATCH BASIN	0.25	1.00	0.25	0.75
PROPRIETARY SEPARATOR (DMH 16)*	0.97	0.75	0.72	0.03
FOREBAY/INFILTRATION BASIN	0.80	0.03	0.02	0.01
		TOTAL=	99.5%	

HIDDEN TRAILS **CDS Sizing Chart**
Off County Road, Bourne, MA **9/7/2023**

Standard Method to Convert Required Water Quality Volume to a Dicharge Rate

Water Quality Depth (D_{WQ}) with infiltration rate > 2.4 in/hr = **1** inch

Structure Name	Contributing Imp. Area (A) (s.f.)	Unit Peak Discharge (qu) (csm/in)	Contributing Imp. Area (A) (square miles)	Water Quality Flow (Qmax) (cfs)	Required Treatment Structure*
DMH-7	46,070	795	0.00165	1.31	CDS 2015-4
DMH-22	81,510	795	0.00292	2.32	CDS 2015-4
DMH-25	35,800	795	0.00128	1.02	CDS 2015-4
DMH-12	144,760	795	0.00519	4.13	CDS 2015-4
DMH-16	22,500	795	0.00081	0.64	CDS 2015-4

- $Q_{max} = (qu)*(A)*(D_{WQ})$

Q_{max} = peak flow rate associated with first 1-inch of runoff
qu = the unit peak discharge, in csm/in. (used t_c = 6 min)
A = impervious surface drainage area (in square miles)

*Required Treatment Structure per Hydrodynamic Separation Calculator (see attached results)

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

off County Road, West Wareham, MA

Infiltration Basin #1 (DMH 7)

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0800	35.30%	35.30%	35.30%	0.0848	0.0848	12.11%	98.99%	34.94%
0.1600	23.79%	59.09%	23.79%	0.1696	0.1696	24.23%	96.56%	22.97%
0.2400	12.91%	72.00%	12.91%	0.2544	0.2544	36.34%	94.14%	12.15%
0.3200	7.83%	79.83%	7.83%	0.3392	0.3392	48.46%	91.71%	7.18%
0.4000	4.91%	84.74%	4.91%	0.4240	0.4240	60.57%	89.29%	4.38%
0.4800	3.50%	88.24%	3.50%	0.5088	0.5088	72.69%	86.86%	3.04%
0.5600	1.71%	89.95%	1.71%	0.5936	0.5936	84.80%	84.44%	1.44%
0.6400	1.83%	91.78%	1.83%	0.6784	0.6784	96.91%	82.02%	1.50%
0.7200	1.87%	93.65%	1.72%	0.7632	0.7000	100.00%	74.66%	1.40%
0.8000	0.91%	94.56%	0.75%	0.8480	0.7000	100.00%	67.19%	0.61%
1.0000	2.32%	96.88%	1.53%	1.0600	0.7000	100.00%	53.75%	1.25%
2.0000	2.88%	99.76%	0.95%	2.1200	0.7000	100.00%	26.88%	0.77%
3.0000	0.23%	99.99%	0.05%	3.1800	0.7000	100.00%	17.92%	0.04%
								91.67%
							Removal Efficiency Adjustment[2] =	
							Predicted % Annual Rainfall Treated =	96.78%
							Predicted Net Annual Load Removal Efficiency =	91.67%

1 - Based on 14 years of 15 minute precipitation data from NCDC station 3821, Hyannis, in Barnstable County, MA

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

off County Road, West Wareham, MA

Infiltration Basin #2 (DMH 22)

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0800	35.30%	35.30%	35.30%	0.1496	0.1496	21.37%	97.13%	34.29%
0.1600	23.79%	59.09%	23.79%	0.2992	0.2992	42.74%	92.86%	22.09%
0.2400	12.91%	72.00%	12.91%	0.4488	0.4488	64.11%	88.58%	11.44%
0.3200	7.83%	79.83%	7.83%	0.5984	0.5984	85.49%	84.30%	6.60%
0.4000	4.91%	84.74%	4.59%	0.7480	0.7000	100.00%	76.18%	3.74%
0.4800	3.50%	88.24%	2.73%	0.8976	0.7000	100.00%	63.48%	2.22%
0.5600	1.71%	89.95%	1.14%	1.0472	0.7000	100.00%	54.41%	0.93%
0.6400	1.83%	91.78%	1.07%	1.1968	0.7000	100.00%	47.61%	0.87%
0.7200	1.87%	93.65%	0.97%	1.3464	0.7000	100.00%	42.32%	0.79%
0.8000	0.91%	94.56%	0.43%	1.4960	0.7000	100.00%	38.09%	0.35%
1.0000	2.32%	96.88%	0.87%	1.8700	0.7000	100.00%	30.47%	0.71%
2.0000	2.88%	99.76%	0.54%	3.7400	0.7000	100.00%	15.24%	0.44%
3.0000	0.23%	99.99%	0.03%	5.6100	0.7000	100.00%	10.16%	0.02%
								84.49%
							Removal Efficiency Adjustment[2] =	
							Predicted % Annual Rainfall Treated =	92.20%
							Predicted Net Annual Load Removal Efficiency =	84.49%

1 - Based on 14 years of 15 minute precipitation data from NCDC station 3821, Hyannis, in Barnstable County, MA

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

off County Road, West Wareham, MA

Infiltration Basin #3 (DMH 25)

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0800	35.30%	35.30%	35.30%	0.0656	0.0656	9.37%	99.54%	35.14%
0.1600	23.79%	59.09%	23.79%	0.1312	0.1312	18.74%	97.66%	23.23%
0.2400	12.91%	72.00%	12.91%	0.1968	0.1968	28.11%	95.79%	12.37%
0.3200	7.83%	79.83%	7.83%	0.2624	0.2624	37.49%	93.91%	7.35%
0.4000	4.91%	84.74%	4.91%	0.3280	0.3280	46.86%	92.03%	4.52%
0.4800	3.50%	88.24%	3.50%	0.3936	0.3936	56.23%	90.16%	3.16%
0.5600	1.71%	89.95%	1.71%	0.4592	0.4592	65.60%	88.28%	1.51%
0.6400	1.83%	91.78%	1.83%	0.5248	0.5248	74.97%	86.41%	1.58%
0.7200	1.87%	93.65%	1.87%	0.5904	0.5904	84.34%	84.53%	1.58%
0.8000	0.91%	94.56%	0.91%	0.6560	0.6560	93.71%	82.66%	0.75%
1.0000	2.32%	96.88%	1.98%	0.8200	0.7000	100.00%	69.49%	1.61%
2.0000	2.88%	99.76%	1.23%	1.6400	0.7000	100.00%	34.74%	1.00%
3.0000	0.23%	99.99%	0.07%	2.4600	0.7000	100.00%	23.16%	0.05%
								93.85%
							Removal Efficiency Adjustment[2] =	
							Predicted % Annual Rainfall Treated =	97.84%
							Predicted Net Annual Load Removal Efficiency =	93.85%

1 - Based on 14 years of 15 minute precipitation data from NCDC station 3821, Hyannis, in Barnstable County, MA

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

off County Road, West Wareham, MA

Infiltration Basin #4 (DMH 12)

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0800	35.30%	35.30%	35.30%	0.2656	0.2656	37.94%	93.82%	33.12%
0.1600	23.79%	59.09%	23.79%	0.5312	0.5312	75.89%	86.22%	20.51%
0.2400	12.91%	72.00%	11.34%	0.7968	0.7000	100.00%	71.51%	9.23%
0.3200	7.83%	79.83%	5.16%	1.0624	0.7000	100.00%	53.63%	4.20%
0.4000	4.91%	84.74%	2.59%	1.3280	0.7000	100.00%	42.91%	2.11%
0.4800	3.50%	88.24%	1.54%	1.5936	0.7000	100.00%	35.76%	1.25%
0.5600	1.71%	89.95%	0.64%	1.8592	0.7000	100.00%	30.65%	0.52%
0.6400	1.83%	91.78%	0.60%	2.1248	0.7000	100.00%	26.82%	0.49%
0.7200	1.87%	93.65%	0.55%	2.3904	0.7000	100.00%	23.84%	0.45%
0.8000	0.91%	94.56%	0.24%	2.6560	0.7000	100.00%	21.45%	0.20%
1.0000	2.32%	96.88%	0.49%	3.3200	0.7000	100.00%	17.16%	0.40%
2.0000	2.88%	99.76%	0.30%	6.6400	0.7000	100.00%	8.58%	0.25%
3.0000	0.23%	99.99%	0.02%	9.9600	0.7000	100.00%	5.72%	0.01%
								72.74%
							Removal Efficiency Adjustment[2] =	
							Predicted % Annual Rainfall Treated =	82.56%
							Predicted Net Annual Load Removal Efficiency =	72.74%

1 - Based on 14 years of 15 minute precipitation data from NCDC station 3821, Hyannis, in Barnstable County, MA

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

off County Road, West Wareham, MA

Infiltration Basin #5 (DMH 16)

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0800	35.30%	35.30%	35.30%	0.0416	0.0416	5.94%	100.00%	35.30%
0.1600	23.79%	59.09%	23.79%	0.0832	0.0832	11.89%	99.03%	23.56%
0.2400	12.91%	72.00%	12.91%	0.1248	0.1248	17.83%	97.84%	12.63%
0.3200	7.83%	79.83%	7.83%	0.1664	0.1664	23.77%	96.65%	7.57%
0.4000	4.91%	84.74%	4.91%	0.2080	0.2080	29.71%	95.47%	4.69%
0.4800	3.50%	88.24%	3.50%	0.2496	0.2496	35.66%	94.27%	3.30%
0.5600	1.71%	89.95%	1.71%	0.2912	0.2912	41.60%	93.09%	1.59%
0.6400	1.83%	91.78%	1.83%	0.3328	0.3328	47.54%	91.90%	1.68%
0.7200	1.87%	93.65%	1.87%	0.3744	0.3744	53.49%	90.71%	1.70%
0.8000	0.91%	94.56%	0.91%	0.4160	0.4160	59.43%	89.52%	0.81%
1.0000	2.32%	96.88%	2.32%	0.5200	0.5200	74.29%	86.54%	2.01%
2.0000	2.88%	99.76%	1.94%	1.0400	0.7000	100.00%	54.79%	1.58%
3.0000	0.23%	99.99%	0.10%	1.5600	0.7000	100.00%	36.53%	0.08%
								96.50%
							Removal Efficiency Adjustment[2] =	
							Predicted % Annual Rainfall Treated =	98.92%
							Predicted Net Annual Load Removal Efficiency =	96.50%

1 - Based on 14 years of 15 minute precipitation data from NCDC station 3821, Hyannis, in Barnstable County, MA

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

GROUNDWATER MOUNDING SPREADSHEET

Water Table Mounding calculated based on Hantush 1967, WRR

Enter data in green cells as per their yellow labels, other values will be computed from those entries.

Results are highlighted in pink.

Zmax Beneath Center of Infiltration Basin #1 (L*W)

Feet and Days	Length of Drain Field Subunit	Width of Drain Field Subunit		Separation between Drain Field Subunits	Fraction of Drain Field Subunit that is Trench Area	Horizontal Hydraulic Conductivity	Specific Yield use 0.001 to approx steady state at 10 years	time use 10 years to approx steady state
	l_s	w_s		Sp	f	Kh	Sy	time
	ft	ft		ft		ft/days	none	days
	120	65			1	165.4	0.3	0.62
Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zmax 12 iterations	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft
1	120	65	0.4922	0.4922	0.4922	28716	0.136	50

alpha

0.229473893

Water Table Rise on Side Slope

Uses Subunit Geometry and Material Properties from Zmax Table

Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zsx 12 iterations	Distance from Center of Drain Field in Long Dim. (x in figure)	Distance from Center of Drain Field in Wide Dim. (y in figure)	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft	ft	ft
1	120	65	0.4922	0.4922	0.4922	28716	0.136			50

Water Table Mounding calculated based on Hantush 1967, WRR

Enter data in green cells as per their yellow labels, other values will be computed from those entries.

Results are highlighted in pink.

Zmax Beneath Center of Infiltration Basin #2 (L*W)

Feet and Days	Length of Drain Field Subunit	Width of Drain Field Subunit		Separation between Drain Field Subunits	Fraction of Drain Field Subunit that is Trench Area	Horizontal Hydraulic Conductivity	Specific Yield use 0.001 to approx steady state at 10 years	time use 10 years to approx steady state
	l_s	w_s		Sp	f	Kh	Sy	time
	ft	ft		ft		ft/days	none	days
	211	80			1	165.4	0.3	0.92
Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zmax 12 iterations	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft
1	211	80	0.4024	0.4024	0.4024	50812	0.209	50

alpha

0.331235154

Water Table Rise on Side Slope

Uses Subunit Geometry and Material Properties from Zmax Table

Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zsx 12 iterations	Distance from Center of Drain Field in Long Dim. (x in figure)	Distance from Center of Drain Field in Wide Dim. (y in figure)	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft	ft	ft
1	211	80	0.4024	0.4024	0.4024	50812	0.209			50

Water Table Mounding calculated based on Hantush 1967, WRR

Enter data in green cells as per their yellow labels, other values will be computed from those entries.

Results are highlighted in pink.

Zmax Beneath Center of Infiltration Basin #3 (L*W)

Feet and Days	Length of Drain Field Subunit	Width of Drain Field Subunit		Separation between Drain Field Subunits	Fraction of Drain Field Subunit that is Trench Area	Horizontal Hydraulic Conductivity	Specific Yield use 0.001 to approx steady state at 10 years	time use 10 years to approx steady state
	l_s	w_s		Sp	f	Kh	Sy	time
	ft	ft		ft		ft/days	none	days
	97	56			1	165.4	0.3	2.57
Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zmax 12 iterations	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft
1	97	56	0.5492	0.5492	0.5492	22313	0.155	50

alpha

0.091107274

Water Table Rise on Side Slope

Uses Subunit Geometry and Material Properties from Zmax Table

Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zsx 12 iterations	Distance from Center of Drain Field in Long Dim. (x in figure)	Distance from Center of Drain Field in Wide Dim. (y in figure)	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft	ft	ft
1	97	56	0.5492	0.5492	0.5492	22313	0.155			50

Water Table Mounding calculated based on Hantush 1967, WRR

Enter data in green cells as per their yellow labels, other values will be computed from those entries.

Results are highlighted in pink.

Zmax Beneath Center of Infiltration Basin #4 (L*W)

Feet and Days	Length of Drain Field Subunit	Width of Drain Field Subunit		Separation between Drain Field Subunits	Fraction of Drain Field Subunit that is Trench Area	Horizontal Hydraulic Conductivity	Specific Yield use 0.001 to approx steady state at 10 years	time use 10 years to approx steady state
	l_s	w_s		Sp	f	Kh	Sy	time
	ft	ft		ft		ft/days	none	days
	150	62			1	165.4	0.3	1.1
Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zmax 12 iterations	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft
1	150	62	1.2971	1.2971	1.2971	90231	0.455	50

alpha

0.215348969

Water Table Rise on Side Slope

Uses Subunit Geometry and Material Properties from Zmax Table

Number of subunits, n	L	W	q effective in subunit ls x ws	q in trenches	q' effective on LxW	Q	Zsx 12 iterations	Distance from Center of Drain Field in Long Dim. (x in figure)	Distance from Center of Drain Field in Wide Dim. (y in figure)	Initial Saturated Thickness
	ft	ft	ft/day	ft/day	ft/day	gallons/day	ft	ft	ft	ft
1	150	62	1.2971	1.2971	1.2971	90231	0.455			50

Water Table Mounding calculated based on Hantush 1967, WRR

Enter data in green cells as per their yellow labels, other values will be computed from those entries.

Results are highlighted in pink.

Zmax Beneath Center of Infiltration Basin #5 (L*W)

Feet and Days	Length of Drain Field Subunit	Width of Drain Field Subunit		Separation between Drain Field Subunits	Fraction of Drain Field Subunit that is Trench Area	Horizontal Hydraulic Conductivity	Specific Yield use 0.001 to approx steady state at 10 years	time use 10 years to approx steady state
	l_s	w_s		Sp	f	Kh	Sy	time
	ft	ft		ft		ft/days	none	days
	160	38			1	165.4	0.3	0.91
Number of subunits, n	L ft	W ft	q effective in subunit ls x ws ft/day	q in trenches ft/day	q' effective on LxW ft/day	Q gallons/day	Zmax 12 iterations ft	Initial Saturated Thickness ft
1	160	38	0.3084	0.3084	0.3084	14025	0.070	50

alpha

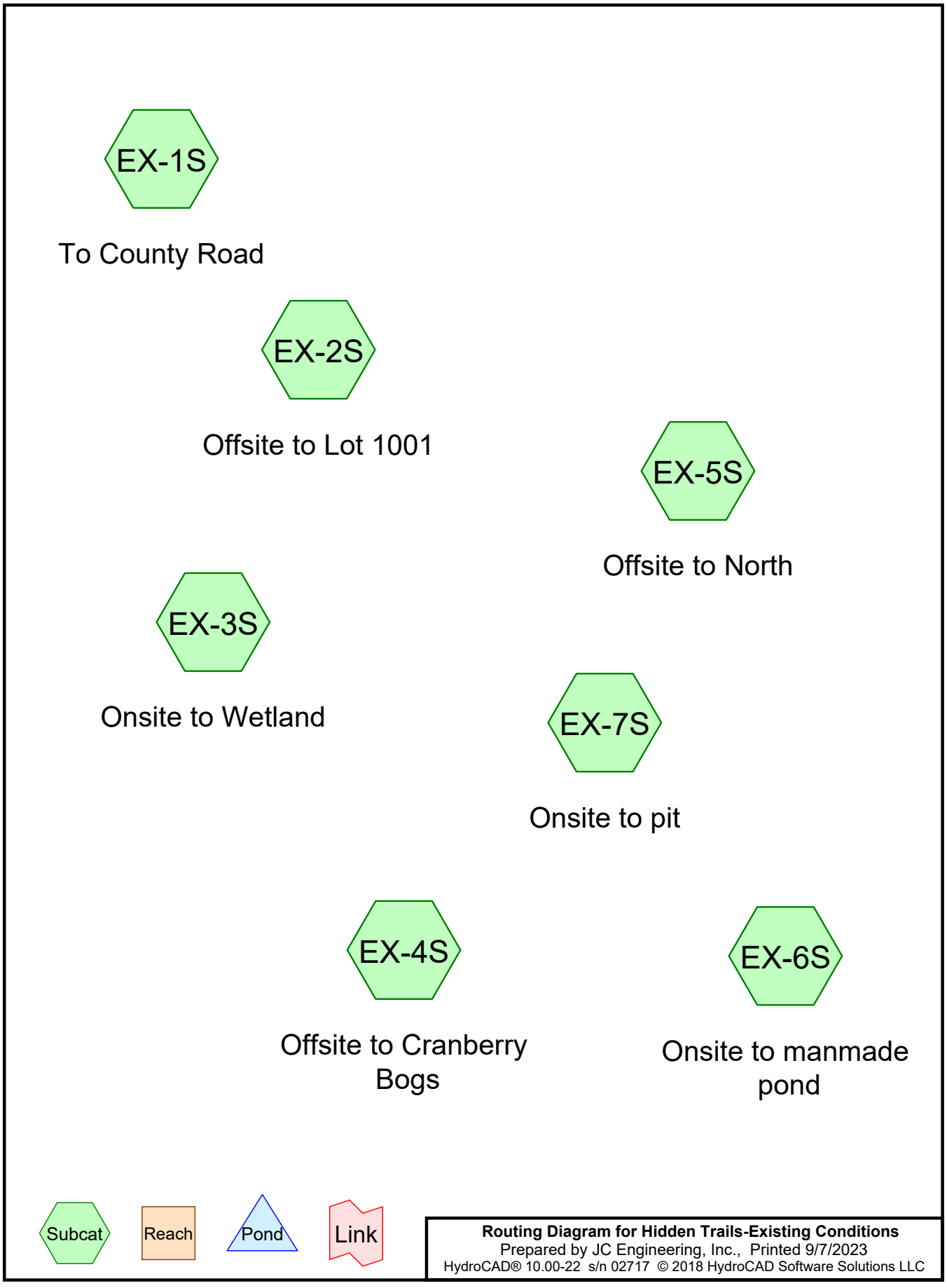
0.252549881

Water Table Rise on Side Slope

Uses Subunit Geometry and Material Properties from Zmax Table

Number of subunits, n	L ft	W ft	q effective in subunit ls x ws ft/day	q in trenches ft/day	q' effective on LxW ft/day	Q gallons/day	Zsx 12 iterations ft	Distance from Center of Drain Field in Long Dim. (x in figure) ft	Distance from Center of Drain Field in Wide Dim. (y in figure) ft	Initial Saturated Thickness ft
1	160	38	0.3084	0.3084	0.3084	14025	0.070			50

EXISTING CONDITIONS DRAINAGE CALCULATIONS


EX-1S
To County Road
EX-2S
Offsite to Lot 1001
EX-5S
Offsite to North
EX-3S
Onsite to Wetland
EX-7S
Onsite to pit
EX-4S
Offsite to Cranberry Bogs
EX-6S
Onsite to manmade pond
Subcat
Reach
Pond
Link
Routing Diagram for Hidden Trails-Existing Conditions
Prepared by JC Engineering, Inc., Printed 9/7/2023
HydroCAD® 10.00-22 s/n 02717 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.961	76	Gravel roads, HSG A (EX-4S, EX-5S, EX-6S)
0.540	98	Isolated Wetland, HSG A (EX-3S)
2.463	72	Sand Pits, Dirt roads, HSG A (EX-6S)
0.331	98	Wetlands, HSG A (EX-6S)
38.612	30	Woods, Good, HSG A (EX-1S, EX-2S, EX-3S, EX-4S, EX-5S, EX-6S, EX-7S)
42.907	**35**	**TOTAL AREA**

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1S: To County Road Runoff Area=24,266 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment EX-2S: Offsite to Lot 1001 Runoff Area=67,526 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=285' Tc=24.1 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment EX-3S: Onsite to Wetland Runoff Area=98,778 sf 23.82% Impervious Runoff Depth=0.09"
Flow Length=297' Tc=20.9 min CN=46 Runoff=0.03 cfs 0.018 af

Subcatchment EX-4S: Offsite to Cranberry Runoff Area=423,926 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=402' Tc=33.6 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment EX-5S: Offsite to North Runoff Area=523,729 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=584' Tc=50.3 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment EX-6S: Onsite to manmade Runoff Area=696,519 sf 2.07% Impervious Runoff Depth=0.01"
Flow Length=630' Tc=34.9 min CN=39 Runoff=0.02 cfs 0.008 af

Subcatchment EX-7S: Onsite to pit Runoff Area=34,275 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=40' Slope=0.0350 '/' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 42.907 ac Runoff Volume = 0.026 af Average Runoff Depth = 0.01"
97.97% Pervious = 42.036 ac 2.03% Impervious = 0.871 ac

Summary for Subcatchment EX-1S: To County Road

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
24,266	30	Woods, Good, HSG A
24,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment EX-2S: Offsite to Lot 1001

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
67,526	30	Woods, Good, HSG A
67,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
5.6	177	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.2400	2.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	40	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	285	Total			

Summary for Subcatchment EX-3S: Onsite to Wetland

Runoff = 0.03 cfs @ 14.82 hrs, Volume= 0.018 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
	75,251	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
	98,778	46	Weighted Average
	75,251		76.18% Pervious Area
	23,527		23.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	22	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.1	150	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.9	297	Total			

Summary for Subcatchment EX-4S: Offsite to Cranberry Bogs

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
416,826	30	Woods, Good, HSG A
7,100	76	Gravel roads, HSG A
423,926	31	Weighted Average
423,926		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment EX-5S: Offsite to North

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
503,479	30	Woods, Good, HSG A
20,250	76	Gravel roads, HSG A
523,729	32	Weighted Average
523,729		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.1	50	0.0020	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.8	80	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	92	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	300	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	62	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	584	Total			

Summary for Subcatchment EX-6S: Onsite to manmade pond

Runoff = 0.02 cfs @ 23.44 hrs, Volume= 0.008 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
	560,319	30	Woods, Good, HSG A
*	107,300	72	Sand Pits, Dirt roads, HSG A
*	14,400	98	Wetlands, HSG A
	14,500	76	Gravel roads, HSG A
	696,519	39	Weighted Average
	682,119		97.93% Pervious Area
	14,400		2.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
17.6	580	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.9	630	Total			

Summary for Subcatchment EX-7S: Onsite to pit

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
34,275	30	Woods, Good, HSG A
34,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	40	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1S: To County Road Runoff Area=24,266 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment EX-2S: Offsite to Lot 1001 Runoff Area=67,526 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=285' Tc=24.1 min CN=30 Runoff=0.00 cfs 0.001 af

Subcatchment EX-3S: Onsite to Wetland Runoff Area=98,778 sf 23.82% Impervious Runoff Depth=0.51"
Flow Length=297' Tc=20.9 min CN=46 Runoff=0.47 cfs 0.096 af

Subcatchment EX-4S: Offsite to Cranberry Runoff Area=423,926 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=402' Tc=33.6 min CN=31 Runoff=0.02 cfs 0.013 af

Subcatchment EX-5S: Offsite to North Runoff Area=523,729 sf 0.00% Impervious Runoff Depth=0.03"
Flow Length=584' Tc=50.3 min CN=32 Runoff=0.04 cfs 0.029 af

Subcatchment EX-6S: Onsite to manmade Runoff Area=696,519 sf 2.07% Impervious Runoff Depth=0.21"
Flow Length=630' Tc=34.9 min CN=39 Runoff=0.50 cfs 0.280 af

Subcatchment EX-7S: Onsite to pit Runoff Area=34,275 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=40' Slope=0.0350 '/' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 42.907 ac Runoff Volume = 0.419 af Average Runoff Depth = 0.12"
97.97% Pervious = 42.036 ac 2.03% Impervious = 0.871 ac

Summary for Subcatchment EX-1S: To County Road

Runoff = 0.00 cfs @ 23.75 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
24,266	30	Woods, Good, HSG A
24,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment EX-2S: Offsite to Lot 1001

Runoff = 0.00 cfs @ 23.86 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
67,526	30	Woods, Good, HSG A
67,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
5.6	177	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.2400	2.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	40	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	285	Total			

Summary for Subcatchment EX-3S: Onsite to Wetland

Runoff = 0.47 cfs @ 12.50 hrs, Volume= 0.096 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
	75,251	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
	98,778	46	Weighted Average
	75,251		76.18% Pervious Area
	23,527		23.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	22	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.1	150	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.9	297	Total			

Summary for Subcatchment EX-4S: Offsite to Cranberry Bogs

Runoff = 0.02 cfs @ 22.48 hrs, Volume= 0.013 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
416,826	30	Woods, Good, HSG A
7,100	76	Gravel roads, HSG A
423,926	31	Weighted Average
423,926		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment EX-5S: Offsite to North

Runoff = 0.04 cfs @ 21.40 hrs, Volume= 0.029 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
503,479	30	Woods, Good, HSG A
20,250	76	Gravel roads, HSG A
523,729	32	Weighted Average
523,729		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.1	50	0.0020	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.8	80	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	92	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	300	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	62	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	584	Total			

Summary for Subcatchment EX-6S: Onsite to manmade pond

Runoff = 0.50 cfs @ 13.24 hrs, Volume= 0.280 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
	560,319	30	Woods, Good, HSG A
*	107,300	72	Sand Pits, Dirt roads, HSG A
*	14,400	98	Wetlands, HSG A
	14,500	76	Gravel roads, HSG A
	696,519	39	Weighted Average
	682,119		97.93% Pervious Area
	14,400		2.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
17.6	580	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.9	630	Total			

Summary for Subcatchment EX-7S: Onsite to pit

Runoff = 0.00 cfs @ 23.61 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
34,275	30	Woods, Good, HSG A
34,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	40	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1S: To County Road Runoff Area=24,266 sf 0.00% Impervious Runoff Depth=0.08"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=30 Runoff=0.01 cfs 0.004 af

Subcatchment EX-2S: Offsite to Lot 1001 Runoff Area=67,526 sf 0.00% Impervious Runoff Depth=0.08"
Flow Length=285' Tc=24.1 min CN=30 Runoff=0.01 cfs 0.010 af

Subcatchment EX-3S: Onsite to Wetland Runoff Area=98,778 sf 23.82% Impervious Runoff Depth=0.89"
Flow Length=297' Tc=20.9 min CN=46 Runoff=1.07 cfs 0.168 af

Subcatchment EX-4S: Offsite to Cranberry Runoff Area=423,926 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=402' Tc=33.6 min CN=31 Runoff=0.14 cfs 0.087 af

Subcatchment EX-5S: Offsite to North Runoff Area=523,729 sf 0.00% Impervious Runoff Depth=0.14"
Flow Length=584' Tc=50.3 min CN=32 Runoff=0.22 cfs 0.141 af

Subcatchment EX-6S: Onsite to manmade Runoff Area=696,519 sf 2.07% Impervious Runoff Depth=0.46"
Flow Length=630' Tc=34.9 min CN=39 Runoff=2.01 cfs 0.613 af

Subcatchment EX-7S: Onsite to pit Runoff Area=34,275 sf 0.00% Impervious Runoff Depth=0.08"
Flow Length=40' Slope=0.0350 '/' Tc=8.0 min CN=30 Runoff=0.01 cfs 0.005 af

Total Runoff Area = 42.907 ac Runoff Volume = 1.027 af Average Runoff Depth = 0.29"
97.97% Pervious = 42.036 ac 2.03% Impervious = 0.871 ac

Summary for Subcatchment EX-1S: To County Road

Runoff = 0.01 cfs @ 15.56 hrs, Volume= 0.004 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
24,266	30	Woods, Good, HSG A
24,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment EX-2S: Offsite to Lot 1001

Runoff = 0.01 cfs @ 15.71 hrs, Volume= 0.010 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
67,526	30	Woods, Good, HSG A
67,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
5.6	177	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.2400	2.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	40	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	285	Total			

Summary for Subcatchment EX-3S: Onsite to Wetland

Runoff = 1.07 cfs @ 12.41 hrs, Volume= 0.168 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	75,251	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
	98,778	46	Weighted Average
	75,251		76.18% Pervious Area
	23,527		23.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	22	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.1	150	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.9	297	Total			

Summary for Subcatchment EX-4S: Offsite to Cranberry Bogs

Runoff = 0.14 cfs @ 15.51 hrs, Volume= 0.087 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
416,826	30	Woods, Good, HSG A
7,100	76	Gravel roads, HSG A
423,926	31	Weighted Average
423,926		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment EX-5S: Offsite to North

Runoff = 0.22 cfs @ 15.48 hrs, Volume= 0.141 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
503,479	30	Woods, Good, HSG A
20,250	76	Gravel roads, HSG A
523,729	32	Weighted Average
523,729		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.1	50	0.0020	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.8	80	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	92	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	300	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	62	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	584	Total			

Summary for Subcatchment EX-6S: Onsite to manmade pond

Runoff = 2.01 cfs @ 12.77 hrs, Volume= 0.613 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	560,319	30	Woods, Good, HSG A
*	107,300	72	Sand Pits, Dirt roads, HSG A
*	14,400	98	Wetlands, HSG A
	14,500	76	Gravel roads, HSG A
	696,519	39	Weighted Average
	682,119		97.93% Pervious Area
	14,400		2.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
17.6	580	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.9	630	Total			

Summary for Subcatchment EX-7S: Onsite to pit

Runoff = 0.01 cfs @ 15.46 hrs, Volume= 0.005 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
34,275	30	Woods, Good, HSG A
34,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	40	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1S: To County Road Runoff Area=24,266 sf 0.00% Impervious Runoff Depth=0.33"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=30 Runoff=0.03 cfs 0.015 af

Subcatchment EX-2S: Offsite to Lot 1001 Runoff Area=67,526 sf 0.00% Impervious Runoff Depth=0.33"
Flow Length=285' Tc=24.1 min CN=30 Runoff=0.08 cfs 0.042 af

Subcatchment EX-3S: Onsite to Wetland Runoff Area=98,778 sf 23.82% Impervious Runoff Depth=1.62"
Flow Length=297' Tc=20.9 min CN=46 Runoff=2.36 cfs 0.307 af

Subcatchment EX-4S: Offsite to Cranberry Runoff Area=423,926 sf 0.00% Impervious Runoff Depth=0.39"
Flow Length=402' Tc=33.6 min CN=31 Runoff=0.70 cfs 0.316 af

Subcatchment EX-5S: Offsite to North Runoff Area=523,729 sf 0.00% Impervious Runoff Depth=0.46"
Flow Length=584' Tc=50.3 min CN=32 Runoff=1.04 cfs 0.457 af

Subcatchment EX-6S: Onsite to manmade Runoff Area=696,519 sf 2.07% Impervious Runoff Depth=0.99"
Flow Length=630' Tc=34.9 min CN=39 Runoff=6.48 cfs 1.325 af

Subcatchment EX-7S: Onsite to pit Runoff Area=34,275 sf 0.00% Impervious Runoff Depth=0.33"
Flow Length=40' Slope=0.0350 '/' Tc=8.0 min CN=30 Runoff=0.05 cfs 0.021 af

Total Runoff Area = 42.907 ac Runoff Volume = 2.484 af Average Runoff Depth = 0.69"
97.97% Pervious = 42.036 ac 2.03% Impervious = 0.871 ac

Summary for Subcatchment EX-1S: To County Road

Runoff = 0.03 cfs @ 12.60 hrs, Volume= 0.015 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
24,266	30	Woods, Good, HSG A
24,266		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment EX-2S: Offsite to Lot 1001

Runoff = 0.08 cfs @ 12.83 hrs, Volume= 0.042 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
67,526	30	Woods, Good, HSG A
67,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
5.6	177	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	18	0.2400	2.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	40	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	285	Total			

Summary for Subcatchment EX-3S: Onsite to Wetland

Runoff = 2.36 cfs @ 12.35 hrs, Volume= 0.307 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
	75,251	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
	98,778	46	Weighted Average
	75,251		76.18% Pervious Area
	23,527		23.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	22	0.1400	1.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.1	150	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.9	297	Total			

Summary for Subcatchment EX-4S: Offsite to Cranberry Bogs

Runoff = 0.70 cfs @ 12.91 hrs, Volume= 0.316 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
416,826	30	Woods, Good, HSG A
7,100	76	Gravel roads, HSG A
423,926	31	Weighted Average
423,926		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment EX-5S: Offsite to North

Runoff = 1.04 cfs @ 13.15 hrs, Volume= 0.457 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
503,479	30	Woods, Good, HSG A
20,250	76	Gravel roads, HSG A
523,729	32	Weighted Average
523,729		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.1	50	0.0020	0.03		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
3.8	80	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	92	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	300	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	62	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	584	Total			

Summary for Subcatchment EX-6S: Onsite to manmade pond

Runoff = 6.48 cfs @ 12.65 hrs, Volume= 1.325 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
	560,319	30	Woods, Good, HSG A
*	107,300	72	Sand Pits, Dirt roads, HSG A
*	14,400	98	Wetlands, HSG A
	14,500	76	Gravel roads, HSG A
	696,519	39	Weighted Average
	682,119		97.93% Pervious Area
	14,400		2.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
17.6	580	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.9	630	Total			

Summary for Subcatchment EX-7S: Onsite to pit

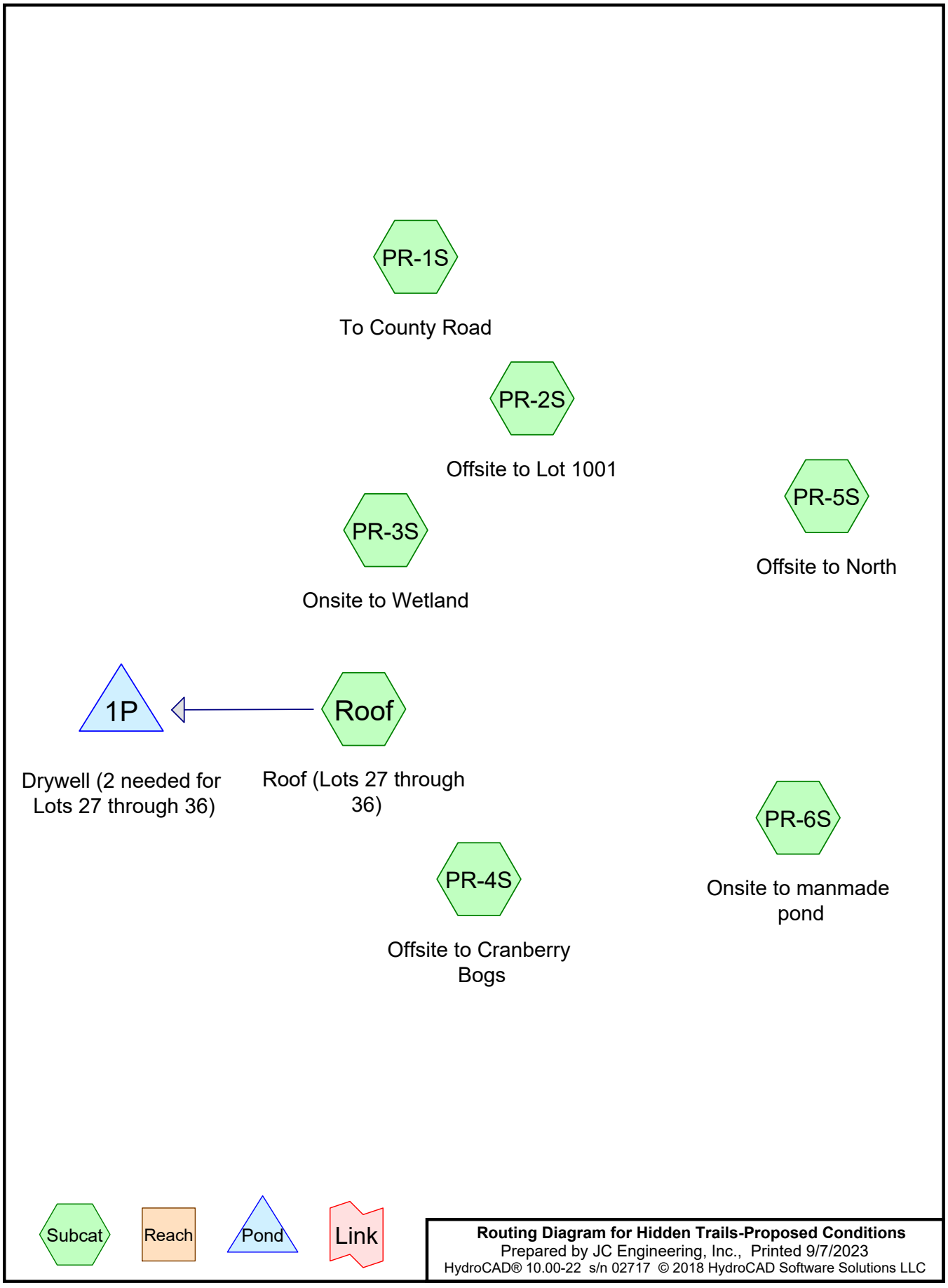
Runoff = 0.05 cfs @ 12.49 hrs, Volume= 0.021 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
34,275	30	Woods, Good, HSG A
34,275		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	40	0.0350	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

PROPOSED CONDITIONS DRAINAGE CALCULATIONS



Routing Diagram for Hidden Trails-Proposed Conditions
Prepared by JC Engineering, Inc., Printed 9/7/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.011	98	1/4 of Roof, HSG A (Roof)
6.971	39	>75% Grass cover, Good, HSG A (PR-1S, PR-3S, PR-4S, PR-5S, PR-6S)
0.540	98	Isolated Wetland, HSG A (PR-3S)
0.149	98	Paved driveway, HSG A (PR-6S)
0.014	98	Paved parking, HSG A (PR-4S)
0.510	98	Roofs, HSG A (PR-3S, PR-5S, PR-6S)
0.331	98	Wetlands, HSG A (PR-6S)
8.148	30	Woods, Good, HSG A (PR-1S, PR-2S, PR-3S, PR-4S, PR-5S, PR-6S)
16.674	**40**	**TOTAL AREA**

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1S: To County Road Runoff Area=10,403 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment PR-2S: Offsite to Lot 1001 Runoff Area=13,009 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=60' Tc=9.3 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PR-3S: Onsite to Wetland Runoff Area=90,140 sf 27.88% Impervious Runoff Depth=0.18"
Flow Length=290' Tc=12.1 min CN=50 Runoff=0.10 cfs 0.031 af

Subcatchment PR-4S: Offsite to Cranberry Runoff Area=163,370 sf 0.37% Impervious Runoff Depth=0.00"
Flow Length=402' Tc=33.6 min CN=34 Runoff=0.00 cfs 0.000 af

Subcatchment PR-5S: Offsite to North Runoff Area=145,100 sf 1.72% Impervious Runoff Depth=0.00"
Flow Length=270' Tc=16.4 min CN=34 Runoff=0.00 cfs 0.000 af

Subcatchment PR-6S: Onsite to Runoff Area=303,815 sf 12.84% Impervious Runoff Depth=0.06"
Flow Length=166' Tc=5.0 min CN=44 Runoff=0.05 cfs 0.034 af

Subcatchment Roof: Roof (Lots 27 through Runoff Area=500 sf 100.00% Impervious Runoff Depth=3.21"
Tc=6.0 min CN=98 Runoff=0.04 cfs 0.003 af

Pond 1P: Drywell (2 needed for Lots 27 through Peak Elev=0.52' Storage=15 cf Inflow=0.04 cfs 0.003 af
Outflow=0.02 cfs 0.003 af

Total Runoff Area = 16.674 ac Runoff Volume = 0.068 af Average Runoff Depth = 0.05"
90.68% Pervious = 15.120 ac 9.32% Impervious = 1.555 ac

Summary for Subcatchment PR-1S: To County Road

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
9,603	30	Woods, Good, HSG A
800	39	>75% Grass cover, Good, HSG A
10,403	31	Weighted Average
10,403		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment PR-2S: Offsite to Lot 1001

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
13,009	30	Woods, Good, HSG A
13,009		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	40	0.0250	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
0.1	20	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.3	60	Total			

Summary for Subcatchment PR-3S: Onsite to Wetland

Runoff = 0.10 cfs @ 12.51 hrs, Volume= 0.031 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
	55,213	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
*	1,600	98	Roofs, HSG A
	9,800	39	>75% Grass cover, Good, HSG A
	90,140	50	Weighted Average
	65,013		72.12% Pervious Area
	25,127		27.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	45	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	34	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	111	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	290	Total			

Summary for Subcatchment PR-4S: Offsite to Cranberry Bogs

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
	91,900	30	Woods, Good, HSG A
	7,100	39	>75% Grass cover, Good, HSG A
	600	98	Paved parking, HSG A
*	0	98	Roofs, HSG A (use drywells-8400)
	63,770	39	>75% Grass cover, Good, HSG A
	163,370	34	Weighted Average
	162,770		99.63% Pervious Area
	600		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment PR-5S: Offsite to North

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

Area (sf)	CN	Description
102,200	30	Woods, Good, HSG A
40,400	39	>75% Grass cover, Good, HSG A
2,500	98	Roofs, HSG A
145,100	34	Weighted Average
142,600		98.28% Pervious Area
2,500		1.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	80	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	140	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.4	270	Total			

Summary for Subcatchment PR-6S: Onsite to manmade pond

Runoff = 0.05 cfs @ 15.10 hrs, Volume= 0.034 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
	83,015	30	Woods, Good, HSG A
	181,800	39	>75% Grass cover, Good, HSG A
*	14,400	98	Wetlands, HSG A
*	6,500	98	Paved driveway, HSG A
*	18,100	98	Roofs, HSG A
	303,815	44	Weighted Average
	264,815		87.16% Pervious Area
	39,000		12.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.4	40	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.2200	3.28		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	53	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.0	166	Total			

Summary for Subcatchment Roof: Roof (Lots 27 through 36)

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	500	98	1/4 of Roof, HSG A
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Drywell (2 needed for Lots 27 through 36)

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 3.21" for 2-year event
Inflow = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af
Outflow = 0.02 cfs @ 12.28 hrs, Volume= 0.003 af, Atten= 56%, Lag= 11.3 min
Discarded = 0.02 cfs @ 12.28 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 0.52' @ 12.28 hrs Surf.Area= 70 sf Storage= 15 cf

Plug-Flow detention time= 4.0 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 3.9 min (758.9 - 754.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	45 cf	**Custom Stage Data (Conic)**Listed below (Recalc) 140 cf Overall - 27 cf Embedded = 113 cf x 40.0% Voids
#2	0.50'	21 cf	**2.50'W x 5.50'L x 1.50'H Prismatoid** Inside #1 27 cf Overall - 3.0" Wall Thickness = 21 cf
		66 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	70	0	0	70
2.00	70	140	140	129

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.02 cfs @ 12.28 hrs HW=0.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1S: To County Road Runoff Area=10,403 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment PR-2S: Offsite to Lot 1001 Runoff Area=13,009 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=60' Tc=9.3 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment PR-3S: Onsite to Wetland Runoff Area=90,140 sf 27.88% Impervious Runoff Depth=0.71"
Flow Length=290' Tc=12.1 min CN=50 Runoff=0.88 cfs 0.123 af

Subcatchment PR-4S: Offsite to Cranberry Runoff Area=163,370 sf 0.37% Impervious Runoff Depth=0.07"
Flow Length=402' Tc=33.6 min CN=34 Runoff=0.03 cfs 0.021 af

Subcatchment PR-5S: Offsite to North Runoff Area=145,100 sf 1.72% Impervious Runoff Depth=0.07"
Flow Length=270' Tc=16.4 min CN=34 Runoff=0.03 cfs 0.018 af

Subcatchment PR-6S: Onsite to Runoff Area=303,815 sf 12.84% Impervious Runoff Depth=0.41"
Flow Length=166' Tc=5.0 min CN=44 Runoff=1.23 cfs 0.239 af

Subcatchment Roof: Roof (Lots 27 through Runoff Area=500 sf 100.00% Impervious Runoff Depth>4.81"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Pond 1P: Drywell (2 needed for Lots 27 through Peak Elev=1.02' Storage=32 cf Inflow=0.06 cfs 0.005 af
Outflow=0.02 cfs 0.005 af

Total Runoff Area = 16.674 ac Runoff Volume = 0.406 af Average Runoff Depth = 0.29"
90.68% Pervious = 15.120 ac 9.32% Impervious = 1.555 ac

Summary for Subcatchment PR-1S: To County Road

Runoff = 0.00 cfs @ 22.25 hrs, Volume= 0.000 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
9,603	30	Woods, Good, HSG A
800	39	>75% Grass cover, Good, HSG A
10,403	31	Weighted Average
10,403		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment PR-2S: Offsite to Lot 1001

Runoff = 0.00 cfs @ 23.65 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
13,009	30	Woods, Good, HSG A
13,009		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	40	0.0250	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
0.1	20	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.3	60	Total			

Summary for Subcatchment PR-3S: Onsite to Wetland

Runoff = 0.88 cfs @ 12.24 hrs, Volume= 0.123 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
	55,213	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
*	1,600	98	Roofs, HSG A
	9,800	39	>75% Grass cover, Good, HSG A
	90,140	50	Weighted Average
	65,013		72.12% Pervious Area
	25,127		27.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	45	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	34	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	111	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	290	Total			

Summary for Subcatchment PR-4S: Offsite to Cranberry Bogs

Runoff = 0.03 cfs @ 15.83 hrs, Volume= 0.021 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
	91,900	30	Woods, Good, HSG A
	7,100	39	>75% Grass cover, Good, HSG A
	600	98	Paved parking, HSG A
*	0	98	Roofs, HSG A (use drywells-8400)
	63,770	39	>75% Grass cover, Good, HSG A
	163,370	34	Weighted Average
	162,770		99.63% Pervious Area
	600		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment PR-5S: Offsite to North

Runoff = 0.03 cfs @ 15.58 hrs, Volume= 0.018 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

Area (sf)	CN	Description
102,200	30	Woods, Good, HSG A
40,400	39	>75% Grass cover, Good, HSG A
2,500	98	Roofs, HSG A
145,100	34	Weighted Average
142,600		98.28% Pervious Area
2,500		1.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	80	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	140	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.4	270	Total			

Summary for Subcatchment PR-6S: Onsite to manmade pond

Runoff = 1.23 cfs @ 12.31 hrs, Volume= 0.239 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
	83,015	30	Woods, Good, HSG A
	181,800	39	>75% Grass cover, Good, HSG A
*	14,400	98	Wetlands, HSG A
*	6,500	98	Paved driveway, HSG A
*	18,100	98	Roofs, HSG A
	303,815	44	Weighted Average
	264,815		87.16% Pervious Area
	39,000		12.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.4	40	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.2200	3.28		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	53	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.0	166	Total			

Summary for Subcatchment Roof: Roof (Lots 27 through 36)

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	500	98	1/4 of Roof, HSG A
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Drywell (2 needed for Lots 27 through 36)

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth > 4.81" for 10-year event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af
Outflow = 0.02 cfs @ 12.36 hrs, Volume= 0.005 af, Atten= 65%, Lag= 16.2 min
Discarded = 0.02 cfs @ 12.36 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 1.02' @ 12.36 hrs Surf.Area= 70 sf Storage= 32 cf

Plug-Flow detention time= 8.1 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 8.1 min (755.9 - 747.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	45 cf	**Custom Stage Data (Conic)**Listed below (Recalc) 140 cf Overall - 27 cf Embedded = 113 cf x 40.0% Voids
#2	0.50'	21 cf	**2.50'W x 5.50'L x 1.50'H Prismatoid** Inside #1 27 cf Overall - 3.0" Wall Thickness = 21 cf
		66 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	70	0	0	70
2.00	70	140	140	129

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.02 cfs @ 12.36 hrs HW=1.01' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1S: To County Road Runoff Area=10,403 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=31 Runoff=0.00 cfs 0.002 af

Subcatchment PR-2S: Offsite to Lot 1001 Runoff Area=13,009 sf 0.00% Impervious Runoff Depth=0.08"
Flow Length=60' Tc=9.3 min CN=30 Runoff=0.00 cfs 0.002 af

Subcatchment PR-3S: Onsite to Wetland Runoff Area=90,140 sf 27.88% Impervious Runoff Depth=1.17"
Flow Length=290' Tc=12.1 min CN=50 Runoff=1.80 cfs 0.201 af

Subcatchment PR-4S: Offsite to Cranberry Runoff Area=163,370 sf 0.37% Impervious Runoff Depth=0.22"
Flow Length=402' Tc=33.6 min CN=34 Runoff=0.11 cfs 0.068 af

Subcatchment PR-5S: Offsite to North Runoff Area=145,100 sf 1.72% Impervious Runoff Depth=0.22"
Flow Length=270' Tc=16.4 min CN=34 Runoff=0.10 cfs 0.060 af

Subcatchment PR-6S: Onsite to Runoff Area=303,815 sf 12.84% Impervious Runoff Depth=0.76"
Flow Length=166' Tc=5.0 min CN=44 Runoff=3.60 cfs 0.440 af

Subcatchment Roof: Roof (Lots 27 through Runoff Area=500 sf 100.00% Impervious Runoff Depth>5.81"
Tc=6.0 min CN=98 Runoff=0.07 cfs 0.006 af

Pond 1P: Drywell (2 needed for Lots 27 through Peak Elev=1.35' Storage=43 cf Inflow=0.07 cfs 0.006 af
Outflow=0.02 cfs 0.006 af

Total Runoff Area = 16.674 ac Runoff Volume = 0.779 af Average Runoff Depth = 0.56"
90.68% Pervious = 15.120 ac 9.32% Impervious = 1.555 ac

Summary for Subcatchment PR-1S: To County Road

Runoff = 0.00 cfs @ 15.22 hrs, Volume= 0.002 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
9,603	30	Woods, Good, HSG A
800	39	>75% Grass cover, Good, HSG A
10,403	31	Weighted Average
10,403		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment PR-2S: Offsite to Lot 1001

Runoff = 0.00 cfs @ 15.47 hrs, Volume= 0.002 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
13,009	30	Woods, Good, HSG A
13,009		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	40	0.0250	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
0.1	20	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.3	60	Total			

Summary for Subcatchment PR-3S: Onsite to Wetland

Runoff = 1.80 cfs @ 12.21 hrs, Volume= 0.201 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	55,213	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
*	1,600	98	Roofs, HSG A
	9,800	39	>75% Grass cover, Good, HSG A
	90,140	50	Weighted Average
	65,013		72.12% Pervious Area
	25,127		27.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	45	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	34	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	111	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	290	Total			

Summary for Subcatchment PR-4S: Offsite to Cranberry Bogs

Runoff = 0.11 cfs @ 14.01 hrs, Volume= 0.068 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	91,900	30	Woods, Good, HSG A
	7,100	39	>75% Grass cover, Good, HSG A
	600	98	Paved parking, HSG A
*	0	98	Roofs, HSG A (use drywells-8400)
	63,770	39	>75% Grass cover, Good, HSG A
	163,370	34	Weighted Average
	162,770		99.63% Pervious Area
	600		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment PR-5S: Offsite to North

Runoff = 0.10 cfs @ 13.77 hrs, Volume= 0.060 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
102,200	30	Woods, Good, HSG A
40,400	39	>75% Grass cover, Good, HSG A
2,500	98	Roofs, HSG A
145,100	34	Weighted Average
142,600		98.28% Pervious Area
2,500		1.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	80	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	140	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.4	270	Total			

Summary for Subcatchment PR-6S: Onsite to manmade pond

Runoff = 3.60 cfs @ 12.12 hrs, Volume= 0.440 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	83,015	30	Woods, Good, HSG A
	181,800	39	>75% Grass cover, Good, HSG A
*	14,400	98	Wetlands, HSG A
*	6,500	98	Paved driveway, HSG A
*	18,100	98	Roofs, HSG A
	303,815	44	Weighted Average
	264,815		87.16% Pervious Area
	39,000		12.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.4	40	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.2200	3.28		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	53	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.0	166	Total			

Summary for Subcatchment Roof: Roof (Lots 27 through 36)

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af, Depth> 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	500	98	1/4 of Roof, HSG A
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Drywell (2 needed for Lots 27 through 36)

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth > 5.81" for 25-year event
Inflow = 0.07 cfs @ 12.09 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 12.39 hrs, Volume= 0.006 af, Atten= 68%, Lag= 18.0 min
Discarded = 0.02 cfs @ 12.39 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 1.35' @ 12.39 hrs Surf.Area= 70 sf Storage= 43 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.6 min (755.7 - 745.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	45 cf	**Custom Stage Data (Conic)**Listed below (Recalc) 140 cf Overall - 27 cf Embedded = 113 cf x 40.0% Voids
#2	0.50'	21 cf	**2.50'W x 5.50'L x 1.50'H Prismatoid** Inside #1 27 cf Overall - 3.0" Wall Thickness = 21 cf
		66 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	70	0	0	70
2.00	70	140	140	129

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.02 cfs @ 12.39 hrs HW=1.35' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Time span=1.00-40.00 hrs, dt=0.05 hrs, 781 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1S: To County Road Runoff Area=10,403 sf 0.00% Impervious Runoff Depth=0.39"
Flow Length=50' Slope=0.0120 '/' Tc=14.7 min CN=31 Runoff=0.02 cfs 0.008 af

Subcatchment PR-2S: Offsite to Lot 1001 Runoff Area=13,009 sf 0.00% Impervious Runoff Depth=0.33"
Flow Length=60' Tc=9.3 min CN=30 Runoff=0.02 cfs 0.008 af

Subcatchment PR-3S: Onsite to Wetland Runoff Area=90,140 sf 27.88% Impervious Runoff Depth=2.01"
Flow Length=290' Tc=12.1 min CN=50 Runoff=3.53 cfs 0.347 af

Subcatchment PR-4S: Offsite to Cranberry Runoff Area=163,370 sf 0.37% Impervious Runoff Depth=0.60"
Flow Length=402' Tc=33.6 min CN=34 Runoff=0.64 cfs 0.187 af

Subcatchment PR-5S: Offsite to North Runoff Area=145,100 sf 1.72% Impervious Runoff Depth=0.60"
Flow Length=270' Tc=16.4 min CN=34 Runoff=0.73 cfs 0.166 af

Subcatchment PR-6S: Onsite to Runoff Area=303,815 sf 12.84% Impervious Runoff Depth=1.44"
Flow Length=166' Tc=5.0 min CN=44 Runoff=9.40 cfs 0.835 af

Subcatchment Roof: Roof (Lots 27 through Runoff Area=500 sf 100.00% Impervious Runoff Depth>7.36"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Pond 1P: Drywell (2 needed for Lots 27 through Peak Elev=1.90' Storage=62 cf Inflow=0.08 cfs 0.007 af
Outflow=0.02 cfs 0.007 af

Total Runoff Area = 16.674 ac Runoff Volume = 1.557 af Average Runoff Depth = 1.12"
90.68% Pervious = 15.120 ac 9.32% Impervious = 1.555 ac

Summary for Subcatchment PR-1S: To County Road

Runoff = 0.02 cfs @ 12.56 hrs, Volume= 0.008 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
9,603	30	Woods, Good, HSG A
800	39	>75% Grass cover, Good, HSG A
10,403	31	Weighted Average
10,403		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0120	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"

Summary for Subcatchment PR-2S: Offsite to Lot 1001

Runoff = 0.02 cfs @ 12.51 hrs, Volume= 0.008 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
13,009	30	Woods, Good, HSG A
13,009		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	40	0.0250	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
0.1	20	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.3	60	Total			

Summary for Subcatchment PR-3S: Onsite to Wetland

Runoff = 3.53 cfs @ 12.19 hrs, Volume= 0.347 af, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
	55,213	30	Woods, Good, HSG A
*	23,527	98	Isolated Wetland, HSG A
*	1,600	98	Roofs, HSG A
	9,800	39	>75% Grass cover, Good, HSG A
	90,140	50	Weighted Average
	65,013		72.12% Pervious Area
	25,127		27.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	45	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	34	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	111	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	290	Total			

Summary for Subcatchment PR-4S: Offsite to Cranberry Bogs

Runoff = 0.64 cfs @ 12.74 hrs, Volume= 0.187 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
	91,900	30	Woods, Good, HSG A
	7,100	39	>75% Grass cover, Good, HSG A
	600	98	Paved parking, HSG A
*	0	98	Roofs, HSG A (use drywells-8400)
	63,770	39	>75% Grass cover, Good, HSG A
	163,370	34	Weighted Average
	162,770		99.63% Pervious Area
	600		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
2.0	60	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	22	0.3200	2.83		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	270	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.6	402	Total			

Summary for Subcatchment PR-5S: Offsite to North

Runoff = 0.73 cfs @ 12.49 hrs, Volume= 0.166 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

Area (sf)	CN	Description
102,200	30	Woods, Good, HSG A
40,400	39	>75% Grass cover, Good, HSG A
2,500	98	Roofs, HSG A
145,100	34	Weighted Average
142,600		98.28% Pervious Area
2,500		1.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.40"
1.9	80	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	140	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.4	270	Total			

Summary for Subcatchment PR-6S: Onsite to manmade pond

Runoff = 9.40 cfs @ 12.10 hrs, Volume= 0.835 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
	83,015	30	Woods, Good, HSG A
	181,800	39	>75% Grass cover, Good, HSG A
*	14,400	98	Wetlands, HSG A
*	6,500	98	Paved driveway, HSG A
*	18,100	98	Roofs, HSG A
	303,815	44	Weighted Average
	264,815		87.16% Pervious Area
	39,000		12.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.4	40	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.2200	3.28		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	53	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.0	166	Total			

Summary for Subcatchment Roof: Roof (Lots 27 through 36)

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 7.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	500	98	1/4 of Roof, HSG A
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond 1P: Drywell (2 needed for Lots 27 through 36)

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth > 7.36" for 100-year event
Inflow = 0.08 cfs @ 12.09 hrs, Volume= 0.007 af
Outflow = 0.02 cfs @ 12.42 hrs, Volume= 0.007 af, Atten= 71%, Lag= 19.8 min
Discarded = 0.02 cfs @ 12.42 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 1.00-40.00 hrs, dt= 0.05 hrs
Peak Elev= 1.90' @ 12.42 hrs Surf.Area= 70 sf Storage= 62 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 14.3 min (756.4 - 742.1)

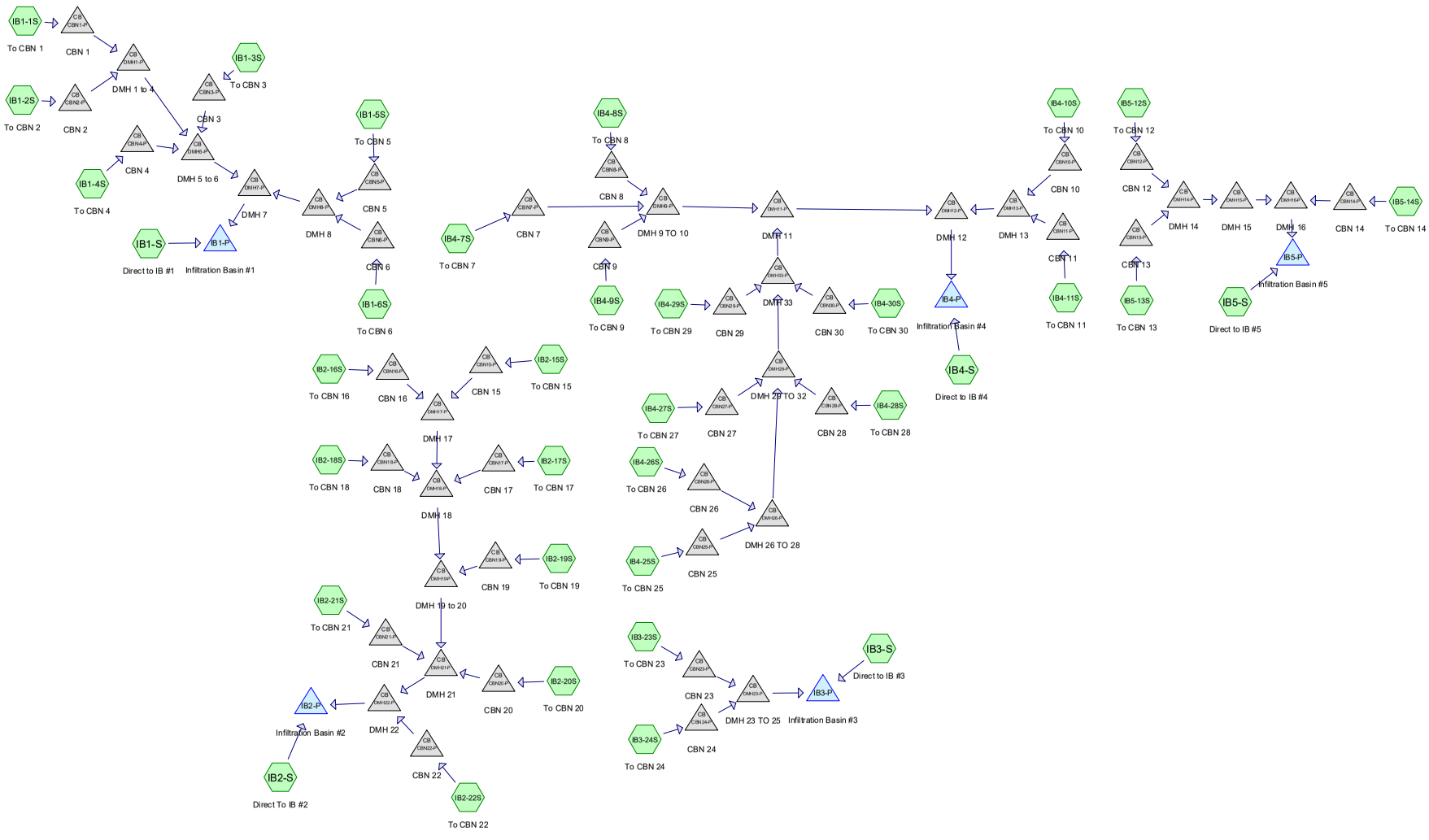
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	45 cf	**Custom Stage Data (Conic)**Listed below (Recalc) 140 cf Overall - 27 cf Embedded = 113 cf x 40.0% Voids
#2	0.50'	21 cf	**2.50'W x 5.50'L x 1.50'H Prismatoid** Inside #1 27 cf Overall - 3.0" Wall Thickness = 21 cf
		66 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	70	0	0	70
2.00	70	140	140	129

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.02 cfs @ 12.42 hrs HW=1.90' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

DRAINAGE SYSTEM DRAINAGE CALCULATIONS



Routing Diagram for Hidden Trails-Drainage System

Prepared by JC Engineering, Inc., Printed 9/7/2023

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
750,629	39	>75% Grass cover, Good, HSG A (IB1-1S, IB1-2S, IB1-3S, IB1-4S, IB1-5S, IB1-6S, IB1-S, IB2-15S, IB2-16S, IB2-17S, IB2-18S, IB2-19S, IB2-20S, IB2-21S, IB2-22S, IB2-S, IB3-23S, IB3-24S, IB3-S, IB4-10S, IB4-11S, IB4-25S, IB4-26S, IB4-27S, IB4-28S, IB4-29S, IB4-30S, IB4-7S, IB4-8S, IB4-9S, IB4-S, IB5-12S, IB5-13S, IB5-14S, IB5-S)
56,120	98	Basin (IB1-S, IB2-S, IB3-S, IB4-S, IB5-S)
189,490	98	Paved Roadway (IB1-1S, IB1-2S, IB1-3S, IB1-4S, IB1-5S, IB1-6S, IB2-15S, IB2-16S, IB2-17S, IB2-18S, IB2-19S, IB2-20S, IB2-21S, IB2-22S, IB3-23S, IB3-24S, IB4-10S, IB4-11S, IB4-25S, IB4-26S, IB4-27S, IB4-28S, IB4-29S, IB4-30S, IB4-7S, IB4-8S, IB4-9S, IB5-12S, IB5-13S, IB5-14S)
141,150	98	Roofs and Driveways, HSG A (IB1-4S, IB1-5S, IB1-6S, IB2-15S, IB2-16S, IB2-17S, IB2-18S, IB2-19S, IB2-20S, IB2-21S, IB3-23S, IB3-24S, IB4-11S, IB4-25S, IB4-26S, IB4-27S, IB4-28S, IB4-29S, IB4-30S, IB4-7S, IB4-8S, IB4-9S, IB5-13S, IB5-14S)
1,137,389	**59**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	CBN1-P	41.20	41.05	12.1	0.0124	0.013	12.0	0.0	0.0
2	CBN10-P	33.24	33.10	15.1	0.0093	0.013	12.0	0.0	0.0
3	CBN11-P	33.24	33.10	8.6	0.0163	0.013	15.0	0.0	0.0
4	CBN12-P	37.00	36.80	14.0	0.0143	0.013	12.0	0.0	0.0
5	CBN13-P	37.00	36.80	6.5	0.0308	0.013	12.0	0.0	0.0
6	CBN14-P	36.46	36.10	126.0	0.0029	0.013	12.0	0.0	0.0
7	CBN15-P	38.40	38.20	6.6	0.0303	0.013	12.0	0.0	0.0
8	CBN16-P	38.40	38.20	14.0	0.0143	0.013	12.0	0.0	0.0
9	CBN17-P	37.00	36.70	2.4	0.1250	0.013	12.0	0.0	0.0
10	CBN18-P	37.00	36.70	10.5	0.0286	0.013	12.0	0.0	0.0
11	CBN19-P	36.00	35.55	10.8	0.0417	0.013	12.0	0.0	0.0
12	CBN2-P	41.20	41.05	6.2	0.0242	0.013	12.0	0.0	0.0
13	CBN20-P	34.16	34.00	3.0	0.0533	0.013	12.0	0.0	0.0
14	CBN21-P	34.28	34.00	24.6	0.0114	0.013	12.0	0.0	0.0
15	CBN22-P	33.00	32.70	60.0	0.0050	0.013	12.0	0.0	0.0
16	CBN23-P	35.70	35.50	12.0	0.0167	0.013	15.0	0.0	0.0
17	CBN24-P	35.70	35.50	4.0	0.0500	0.013	12.0	0.0	0.0
18	CBN25-P	37.40	37.20	7.4	0.0270	0.013	12.0	0.0	0.0
19	CBN26-P	37.40	37.20	14.5	0.0138	0.013	12.0	0.0	0.0
20	CBN27-P	36.50	36.30	10.7	0.0187	0.013	12.0	0.0	0.0
21	CBN28-P	36.50	36.30	3.0	0.0667	0.013	12.0	0.0	0.0
22	CBN29-P	35.00	34.70	21.4	0.0140	0.013	12.0	0.0	0.0
23	CBN3-P	39.00	38.90	12.0	0.0083	0.013	12.0	0.0	0.0
24	CBN30-P	35.00	34.70	11.4	0.0263	0.013	12.0	0.0	0.0
25	CBN4-P	39.00	38.90	3.3	0.0303	0.013	12.0	0.0	0.0
26	CBN5-P	39.10	39.00	13.7	0.0073	0.013	12.0	0.0	0.0
27	CBN6-P	39.10	39.00	6.5	0.0154	0.013	12.0	0.0	0.0
28	CBN7-P	36.70	34.80	189.4	0.0100	0.013	12.0	0.0	0.0
29	CBN8-P	35.00	34.80	12.0	0.0167	0.013	12.0	0.0	0.0
30	CBN9-P	35.00	34.80	6.0	0.0333	0.013	12.0	0.0	0.0
31	DMH1-P	41.00	38.90	645.0	0.0033	0.013	12.0	0.0	0.0
32	DMH11-P	32.90	32.10	41.8	0.0191	0.013	24.0	0.0	0.0
33	DMH12-P	32.00	31.80	35.2	0.0057	0.013	30.0	0.0	0.0
34	DMH13-P	33.00	32.10	150.6	0.0060	0.013	15.0	0.0	0.0
35	DMH14-P	36.70	36.45	62.0	0.0040	0.013	12.0	0.0	0.0
36	DMH15-P	36.40	36.10	71.0	0.0042	0.013	12.0	0.0	0.0
37	DMH16-P	36.05	35.95	18.4	0.0054	0.013	15.0	0.0	0.0
38	DMH17-P	38.10	36.45	290.7	0.0057	0.013	12.0	0.0	0.0
39	DMH18-P	36.35	34.70	283.0	0.0058	0.013	18.0	0.0	0.0
40	DMH19-P	34.60	33.00	240.0	0.0067	0.013	18.0	0.0	0.0
41	DMH21-P	33.60	33.25	86.6	0.0040	0.013	24.0	0.0	0.0
42	DMH22-P	32.50	32.40	24.0	0.0042	0.013	24.0	0.0	0.0

Pipe Listing (all nodes) (continued)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
43	DMH23-P	35.40	34.20	200.0	0.0060	0.013	15.0	0.0	0.0
44	DMH26-P	37.10	35.45	306.0	0.0054	0.013	15.0	0.0	0.0
45	DMH29-P	35.40	33.10	396.0	0.0058	0.013	18.0	0.0	0.0
46	DMH33-P	33.05	33.00	8.0	0.0062	0.013	24.0	0.0	0.0
47	DMH5-P	38.80	38.05	242.0	0.0031	0.013	18.0	0.0	0.0
48	DMH7-P	38.00	37.80	30.2	0.0066	0.013	18.0	0.0	0.0
49	DMH8-P	38.90	38.35	107.3	0.0051	0.013	12.0	0.0	0.0
50	DMH9-P	34.70	33.00	314.4	0.0054	0.013	18.0	0.0	0.0

Time span=1.00-60.00 hrs, dt=0.05 hrs, 1181 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment IB1-1S: To CBN 1 Runoff Area=8,000 sf 70.00% Impervious Runoff Depth=1.59"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=80 Runoff=0.37 cfs 1,059 cf

Subcatchment IB1-2S: To CBN 2 Runoff Area=6,060 sf 62.21% Impervious Runoff Depth=1.32"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=76 Runoff=0.23 cfs 668 cf

Subcatchment IB1-3S: To CBN 3 Runoff Area=15,906 sf 67.90% Impervious Runoff Depth=1.52"
Flow Length=450' Slope=0.0100 '/' Tc=4.2 min CN=79 Runoff=0.67 cfs 2,014 cf

Subcatchment IB1-4S: To CBN 4 Runoff Area=42,674 sf 24.14% Impervious Runoff Depth=0.26"
Flow Length=215' Tc=7.3 min CN=53 Runoff=0.10 cfs 937 cf

Subcatchment IB1-5S: To CBN 5 Runoff Area=15,690 sf 56.09% Impervious Runoff Depth=1.08"
Flow Length=255' Tc=7.6 min CN=72 Runoff=0.40 cfs 1,415 cf

Subcatchment IB1-6S: To CBN 6 Runoff Area=15,080 sf 45.09% Impervious Runoff Depth=0.77"
Flow Length=250' Tc=7.6 min CN=66 Runoff=0.24 cfs 965 cf

Subcatchment IB1-S: Direct to IB #1 Runoff Area=15,624 sf 60.61% Impervious Runoff Depth=1.26"
Tc=6.0 min CN=75 Runoff=0.50 cfs 1,640 cf

Subcatchment IB2-15S: To CBN 15 Runoff Area=22,700 sf 37.67% Impervious Runoff Depth=0.55"
Flow Length=156' Tc=6.7 min CN=61 Runoff=0.22 cfs 1,033 cf

Subcatchment IB2-16S: To CBN 16 Runoff Area=27,500 sf 33.82% Impervious Runoff Depth=0.47"
Flow Length=226' Tc=7.3 min CN=59 Runoff=0.20 cfs 1,070 cf

Subcatchment IB2-17S: To CBN 17 Runoff Area=37,200 sf 35.22% Impervious Runoff Depth=0.51"
Flow Length=300' Tc=7.9 min CN=60 Runoff=0.31 cfs 1,568 cf

Subcatchment IB2-18S: To CBN 18 Runoff Area=38,600 sf 30.05% Impervious Runoff Depth=0.39"
Flow Length=300' Tc=7.9 min CN=57 Runoff=0.19 cfs 1,266 cf

Subcatchment IB2-19S: To CBN 19 Runoff Area=35,700 sf 29.41% Impervious Runoff Depth=0.36"
Flow Length=380' Tc=10.0 min CN=56 Runoff=0.14 cfs 1,068 cf

Subcatchment IB2-20S: To CBN 20 Runoff Area=21,950 sf 45.56% Impervious Runoff Depth=0.77"
Flow Length=410' Tc=8.8 min CN=66 Runoff=0.34 cfs 1,405 cf

Subcatchment IB2-21S: To CBN 21 Runoff Area=41,030 sf 28.03% Impervious Runoff Depth=0.36"
Flow Length=450' Tc=9.2 min CN=56 Runoff=0.16 cfs 1,227 cf

Subcatchment IB2-22S: To CBN 22 Runoff Area=12,850 sf 54.16% Impervious Runoff Depth=1.03"
Flow Length=166' Tc=5.3 min CN=71 Runoff=0.33 cfs 1,098 cf

Subcatchment IB2-S: Direct To IB #2 Runoff Area=23,990 sf 65.86% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=78 Runoff=0.91 cfs 2,903 cf

Subcatchment IB3-23S: To CBN 23 Runoff Area=79,340 sf 24.58% Impervious Runoff Depth=0.29"
Flow Length=405' Tc=12.0 min CN=54 Runoff=0.22 cfs 1,944 cf

Subcatchment IB3-24S: To CBN 24 Runoff Area=60,000 sf 27.17% Impervious Runoff Depth=0.33"
Flow Length=252' Tc=7.4 min CN=55 Runoff=0.21 cfs 1,629 cf

Subcatchment IB3-S: Direct to IB #3 Runoff Area=16,620 sf 39.11% Impervious Runoff Depth=0.59"
Tc=6.0 min CN=62 Runoff=0.19 cfs 814 cf

Subcatchment IB4-10S: To CBN 10 Runoff Area=22,450 sf 55.23% Impervious Runoff Depth=1.08"
Flow Length=600' Slope=0.0100 '/' Tc=5.4 min CN=72 Runoff=0.62 cfs 2,024 cf

Subcatchment IB4-11S: To CBN 11 Runoff Area=72,730 sf 27.91% Impervious Runoff Depth=0.33"
Flow Length=600' Tc=10.4 min CN=55 Runoff=0.25 cfs 1,975 cf

Subcatchment IB4-25S: To CBN 25 Runoff Area=57,860 sf 29.47% Impervious Runoff Depth=0.36"
Flow Length=350' Tc=8.4 min CN=56 Runoff=0.23 cfs 1,731 cf

Subcatchment IB4-26S: To CBN 26 Runoff Area=52,000 sf 25.38% Impervious Runoff Depth=0.29"
Flow Length=370' Tc=9.3 min CN=54 Runoff=0.15 cfs 1,274 cf

Subcatchment IB4-27S: To CBN 27 Runoff Area=40,900 sf 32.03% Impervious Runoff Depth=0.43"
Flow Length=243' Tc=7.7 min CN=58 Runoff=0.25 cfs 1,464 cf

Subcatchment IB4-28S: To CBN 28 Runoff Area=44,000 sf 30.70% Impervious Runoff Depth=0.39"
Flow Length=350' Tc=8.4 min CN=57 Runoff=0.21 cfs 1,443 cf

Subcatchment IB4-29S: To CBN 29 Runoff Area=21,080 sf 33.21% Impervious Runoff Depth=0.47"
Flow Length=260' Tc=7.5 min CN=59 Runoff=0.15 cfs 820 cf

Subcatchment IB4-30S: To CBN 30 Runoff Area=14,700 sf 32.65% Impervious Runoff Depth=0.43"
Flow Length=290' Tc=7.9 min CN=58 Runoff=0.09 cfs 526 cf

Subcatchment IB4-7S: To CBN 7 Runoff Area=63,520 sf 21.65% Impervious Runoff Depth=0.23"
Flow Length=344' Tc=10.4 min CN=52 Runoff=0.12 cfs 1,242 cf

Subcatchment IB4-8S: To CBN 8 Runoff Area=25,560 sf 51.84% Impervious Runoff Depth=0.97"
Flow Length=600' Tc=10.4 min CN=70 Runoff=0.52 cfs 2,069 cf

Subcatchment IB4-9S: To CBN 9 Runoff Area=85,255 sf 19.24% Impervious Runoff Depth=0.18"
Flow Length=378' Tc=10.3 min CN=50 Runoff=0.10 cfs 1,288 cf

Subcatchment IB4-S: Direct to IB #4 Runoff Area=30,330 sf 60.17% Impervious Runoff Depth=1.26"
Tc=6.0 min CN=75 Runoff=0.98 cfs 3,183 cf

Subcatchment IB5-12S: To CBN 12 Runoff Area=6,675 sf 67.42% Impervious Runoff Depth=1.52"
Flow Length=180' Tc=2.8 min CN=79 Runoff=0.30 cfs 845 cf

Subcatchment IB5-13S: To CBN 13 Runoff Area=16,860 sf 32.03% Impervious Runoff Depth=0.43"
Flow Length=235' Tc=7.1 min CN=58 Runoff=0.10 cfs 604 cf

Subcatchment IB5-14S: To CBN 14 Runoff Area=35,155 sf 35.84% Impervious Runoff Depth=0.51"
Flow Length=185' Tc=7.1 min CN=60 Runoff=0.30 cfs 1,482 cf

Subcatchment IB5-S: Direct to IB #5 Runoff Area=11,800 sf 51.69% Impervious Runoff Depth=0.97"
Tc=6.0 min CN=70 Runoff=0.28 cfs 955 cf

Pond CBN1-P: CBN 1 Peak Elev=41.54' Inflow=0.37 cfs 1,059 cf
12.0" Round Culvert n=0.013 L=12.1' S=0.0124 '/' Outflow=0.37 cfs 1,059 cf

Pond CBN10-P: CBN 10 Peak Elev=33.70' Inflow=0.62 cfs 2,024 cf
12.0" Round Culvert n=0.013 L=15.1' S=0.0093 '/' Outflow=0.62 cfs 2,024 cf

Pond CBN11-P: CBN 11 Peak Elev=33.50' Inflow=0.25 cfs 1,975 cf
15.0" Round Culvert n=0.013 L=8.6' S=0.0163 '/' Outflow=0.25 cfs 1,975 cf

Pond CBN12-P: CBN 12 Peak Elev=37.30' Inflow=0.30 cfs 845 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=0.30 cfs 845 cf

Pond CBN13-P: CBN 13 Peak Elev=37.18' Inflow=0.10 cfs 604 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0308 '/' Outflow=0.10 cfs 604 cf

Pond CBN14-P: CBN 14 Peak Elev=36.82' Inflow=0.30 cfs 1,482 cf
12.0" Round Culvert n=0.013 L=126.0' S=0.0029 '/' Outflow=0.30 cfs 1,482 cf

Pond CBN15-P: CBN 15 Peak Elev=38.66' Inflow=0.22 cfs 1,033 cf
12.0" Round Culvert n=0.013 L=6.6' S=0.0303 '/' Outflow=0.22 cfs 1,033 cf

Pond CBN16-P: CBN 16 Peak Elev=38.65' Inflow=0.20 cfs 1,070 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=0.20 cfs 1,070 cf

Pond CBN17-P: CBN 17 Peak Elev=37.31' Inflow=0.31 cfs 1,568 cf
12.0" Round Culvert n=0.013 L=2.4' S=0.1250 '/' Outflow=0.31 cfs 1,568 cf

Pond CBN18-P: CBN 18 Peak Elev=37.24' Inflow=0.19 cfs 1,266 cf
12.0" Round Culvert n=0.013 L=10.5' S=0.0286 '/' Outflow=0.19 cfs 1,266 cf

Pond CBN19-P: CBN 19 Peak Elev=36.21' Inflow=0.14 cfs 1,068 cf
12.0" Round Culvert n=0.013 L=10.8' S=0.0417 '/' Outflow=0.14 cfs 1,068 cf

Pond CBN2-P: CBN 2 Peak Elev=41.47' Inflow=0.23 cfs 668 cf
12.0" Round Culvert n=0.013 L=6.2' S=0.0242 '/' Outflow=0.23 cfs 668 cf

Pond CBN20-P: CBN 20 Peak Elev=34.49' Inflow=0.34 cfs 1,405 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0533 '/' Outflow=0.34 cfs 1,405 cf

Pond CBN21-P: CBN 21 Peak Elev=34.50' Inflow=0.16 cfs 1,227 cf
12.0" Round Culvert n=0.013 L=24.6' S=0.0114 '/' Outflow=0.16 cfs 1,227 cf

Pond CBN22-P: CBN 22 Peak Elev=33.34' Inflow=0.33 cfs 1,098 cf
12.0" Round Culvert n=0.013 L=60.0' S=0.0050 '/' Outflow=0.33 cfs 1,098 cf

Pond CBN23-P: CBN 23 Peak Elev=35.94' Inflow=0.22 cfs 1,944 cf
15.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.22 cfs 1,944 cf

Pond CBN24-P: CBN 24 Peak Elev=35.95' Inflow=0.21 cfs 1,629 cf
12.0" Round Culvert n=0.013 L=4.0' S=0.0500 '/' Outflow=0.21 cfs 1,629 cf

Pond CBN25-P: CBN 25 Peak Elev=37.67' Inflow=0.23 cfs 1,731 cf
12.0" Round Culvert n=0.013 L=7.4' S=0.0270 '/' Outflow=0.23 cfs 1,731 cf

Pond CBN26-P: CBN 26 Peak Elev=37.61' Inflow=0.15 cfs 1,274 cf
12.0" Round Culvert n=0.013 L=14.5' S=0.0138 '/' Outflow=0.15 cfs 1,274 cf

Pond CBN27-P: CBN 27 Peak Elev=36.78' Inflow=0.25 cfs 1,464 cf
12.0" Round Culvert n=0.013 L=10.7' S=0.0187 '/' Outflow=0.25 cfs 1,464 cf

Pond CBN28-P: CBN 28 Peak Elev=36.75' Inflow=0.21 cfs 1,443 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0667 '/' Outflow=0.21 cfs 1,443 cf

Pond CBN29-P: CBN 29 Peak Elev=35.21' Inflow=0.15 cfs 820 cf
12.0" Round Culvert n=0.013 L=21.4' S=0.0140 '/' Outflow=0.15 cfs 820 cf

Pond CBN3-P: CBN 3 Peak Elev=39.50' Inflow=0.67 cfs 2,014 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=0.67 cfs 2,014 cf

Pond CBN30-P: CBN 30 Peak Elev=35.16' Inflow=0.09 cfs 526 cf
12.0" Round Culvert n=0.013 L=11.4' S=0.0263 '/' Outflow=0.09 cfs 526 cf

Pond CBN4-P: CBN 4 Peak Elev=39.18' Inflow=0.10 cfs 937 cf
12.0" Round Culvert n=0.013 L=3.3' S=0.0303 '/' Outflow=0.10 cfs 937 cf

Pond CBN5-P: CBN 5 Peak Elev=39.48' Inflow=0.40 cfs 1,415 cf
12.0" Round Culvert n=0.013 L=13.7' S=0.0073 '/' Outflow=0.40 cfs 1,415 cf

Pond CBN6-P: CBN 6 Peak Elev=39.37' Inflow=0.24 cfs 965 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0154 '/' Outflow=0.24 cfs 965 cf

Pond CBN7-P: CBN 7 Peak Elev=36.89' Inflow=0.12 cfs 1,242 cf
12.0" Round Culvert n=0.013 L=189.4' S=0.0100 '/' Outflow=0.12 cfs 1,242 cf

Pond CBN8-P: CBN 8 Peak Elev=35.41' Inflow=0.52 cfs 2,069 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=0.52 cfs 2,069 cf

Pond CBN9-P: CBN 9 Peak Elev=35.17' Inflow=0.10 cfs 1,288 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=0.10 cfs 1,288 cf

Pond DMH1-P: DMH 1 to 4 Peak Elev=41.50' Inflow=0.61 cfs 1,727 cf
12.0" Round Culvert n=0.013 L=645.0' S=0.0033 '/' Outflow=0.61 cfs 1,727 cf

Pond DMH11-P: DMH 11 Peak Elev=33.42' Inflow=1.57 cfs 11,858 cf
24.0" Round Culvert n=0.013 L=41.8' S=0.0191 '/' Outflow=1.57 cfs 11,858 cf

Pond DMH12-P: DMH 12 Peak Elev=32.66' Inflow=2.16 cfs 15,857 cf
30.0" Round Culvert n=0.013 L=35.2' S=0.0057 '/' Outflow=2.16 cfs 15,857 cf

Pond DMH13-P: DMH 13 Peak Elev=33.42' Inflow=0.68 cfs 3,999 cf
15.0" Round Culvert n=0.013 L=150.6' S=0.0060 '/' Outflow=0.68 cfs 3,999 cf

Pond DMH14-P: DMH 14 Peak Elev=37.06' Inflow=0.34 cfs 1,449 cf
12.0" Round Culvert n=0.013 L=62.0' S=0.0040 '/' Outflow=0.34 cfs 1,449 cf

Pond DMH15-P: DMH 15 Peak Elev=36.75' Inflow=0.34 cfs 1,449 cf
12.0" Round Culvert n=0.013 L=71.0' S=0.0042 '/' Outflow=0.34 cfs 1,449 cf

Pond DMH16-P: DMH 16 Peak Elev=36.48' Inflow=0.59 cfs 2,931 cf
15.0" Round Culvert n=0.013 L=18.4' S=0.0054 '/' Outflow=0.59 cfs 2,931 cf

Pond DMH17-P: DMH 17 Peak Elev=38.46' Inflow=0.42 cfs 2,103 cf
12.0" Round Culvert n=0.013 L=290.7' S=0.0057 '/' Outflow=0.42 cfs 2,103 cf

Pond DMH18-P: DMH 18 Peak Elev=36.81' Inflow=0.91 cfs 4,938 cf
18.0" Round Culvert n=0.013 L=283.0' S=0.0058 '/' Outflow=0.91 cfs 4,938 cf

Pond DMH19-P: DMH 19 to 20 Peak Elev=35.08' Inflow=1.02 cfs 6,006 cf
18.0" Round Culvert n=0.013 L=240.0' S=0.0067 '/' Outflow=1.02 cfs 6,006 cf

Pond DMH21-P: DMH 21 Peak Elev=34.20' Inflow=1.51 cfs 8,638 cf
24.0" Round Culvert n=0.013 L=86.6' S=0.0040 '/' Outflow=1.51 cfs 8,638 cf

Pond DMH22-P: DMH 22 Peak Elev=33.17' Inflow=1.76 cfs 9,736 cf
24.0" Round Culvert n=0.013 L=24.0' S=0.0042 '/' Outflow=1.76 cfs 9,736 cf

Pond DMH23-P: DMH 23 TO 25 Peak Elev=35.73' Inflow=0.42 cfs 3,573 cf
15.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=0.42 cfs 3,573 cf

Pond DMH26-P: DMH 26 TO 28 Peak Elev=37.42' Inflow=0.38 cfs 3,005 cf
15.0" Round Culvert n=0.013 L=306.0' S=0.0054 '/' Outflow=0.38 cfs 3,005 cf

Pond DMH29-P: DMH 29 TO 32 Peak Elev=35.83' Inflow=0.80 cfs 5,913 cf
18.0" Round Culvert n=0.013 L=396.0' S=0.0058 '/' Outflow=0.80 cfs 5,913 cf

Pond DMH33-P: DMH 33 Peak Elev=33.55' Inflow=1.02 cfs 7,259 cf
24.0" Round Culvert n=0.013 L=8.0' S=0.0062 '/' Outflow=1.02 cfs 7,259 cf

Pond DMH5-P: DMH 5 to 6 Peak Elev=39.44' Inflow=1.27 cfs 4,678 cf
18.0" Round Culvert n=0.013 L=242.0' S=0.0031 '/' Outflow=1.27 cfs 4,678 cf

Pond DMH7-P: DMH 7 Peak Elev=38.70' Inflow=1.78 cfs 7,058 cf
18.0" Round Culvert n=0.013 L=30.2' S=0.0066 '/' Outflow=1.78 cfs 7,058 cf

Pond DMH8-P: DMH 8 Peak Elev=39.37' Inflow=0.65 cfs 2,380 cf
12.0" Round Culvert n=0.013 L=107.3' S=0.0051 '/' Outflow=0.65 cfs 2,380 cf

Pond DMH9-P: DMH 9 TO 10 Peak Elev=35.06' Inflow=0.55 cfs 4,599 cf
18.0" Round Culvert n=0.013 L=314.4' S=0.0054 '/' Outflow=0.55 cfs 4,599 cf

Pond IB1-P: Infiltration Basin #1 Peak Elev=37.42' Storage=2,384 cf Inflow=2.25 cfs 8,698 cf
Discarded=0.43 cfs 8,698 cf Secondary=0.00 cfs 0 cf Outflow=0.43 cfs 8,698 cf

Pond IB2-P: Infiltration Basin #2 Peak Elev=31.48' Storage=2,863 cf Inflow=2.52 cfs 12,639 cf
Discarded=0.59 cfs 12,639 cf Secondary=0.00 cfs 0 cf Outflow=0.59 cfs 12,639 cf

Pond IB3-P: Infiltration Basin #3 Peak Elev=31.37' Storage=900 cf Inflow=0.54 cfs 4,386 cf
Discarded=0.15 cfs 4,386 cf Secondary=0.00 cfs 0 cf Outflow=0.15 cfs 4,386 cf

Pond IB4-P: Infiltration Basin #4 Peak Elev=30.04' Storage=5,231 cf Inflow=2.96 cfs 19,040 cf
Discarded=0.57 cfs 19,040 cf Secondary=0.00 cfs 0 cf Outflow=0.57 cfs 19,040 cf

Pond IB5-P: Infiltration Basin #5 Peak Elev=35.33' Storage=855 cf Inflow=0.87 cfs 3,886 cf
Discarded=0.22 cfs 3,886 cf Secondary=0.00 cfs 0 cf Outflow=0.22 cfs 3,886 cf

Total Runoff Area = 1,137,389 sf Runoff Volume = 48,649 cf Average Runoff Depth = 0.51"
66.00% Pervious = 750,629 sf 34.00% Impervious = 386,760 sf

Summary for Subcatchment IB1-1S: To CBN 1

Runoff = 0.37 cfs @ 12.04 hrs, Volume= 1,059 cf, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	5,600	98	Paved Roadway
	2,400	39	>75% Grass cover, Good, HSG A
	8,000	80	Weighted Average
	2,400		30.00% Pervious Area
	5,600		70.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-2S: To CBN 2

Runoff = 0.23 cfs @ 12.05 hrs, Volume= 668 cf, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	3,770	98	Paved Roadway
	2,290	39	>75% Grass cover, Good, HSG A
	6,060	76	Weighted Average
	2,290		37.79% Pervious Area
	3,770		62.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-3S: To CBN 3

Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,014 cf, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	10,800	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,106	39	>75% Grass cover, Good, HSG A
	15,906	79	Weighted Average
	5,106		32.10% Pervious Area
	10,800		67.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	450	Total			

Summary for Subcatchment IB1-4S: To CBN 4

Runoff = 0.10 cfs @ 12.36 hrs, Volume= 937 cf, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	7,600	98	Paved Roadway
*	2,700	98	Roofs and Driveways, HSG A
	32,374	39	>75% Grass cover, Good, HSG A
	42,674	53	Weighted Average
	32,374		75.86% Pervious Area
	10,300		24.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	45	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	120	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	215	Total			

Summary for Subcatchment IB1-5S: To CBN 5

Runoff = 0.40 cfs @ 12.12 hrs, Volume= 1,415 cf, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	6,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,690	72	Weighted Average
	6,890		43.91% Pervious Area
	8,800		56.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	255	Total			

Summary for Subcatchment IB1-6S: To CBN 6

Runoff = 0.24 cfs @ 12.13 hrs, Volume= 965 cf, Depth= 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	8,280	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,080	66	Weighted Average
	8,280		54.91% Pervious Area
	6,800		45.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	145	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	250	Total			

Summary for Subcatchment IB1-S: Direct to IB #1

Runoff = 0.50 cfs @ 12.10 hrs, Volume= 1,640 cf, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	6,154	39	>75% Grass cover, Good, HSG A
*	9,470	98	Basin
	15,624	75	Weighted Average
	6,154		39.39% Pervious Area
	9,470		60.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB2-15S: To CBN 15

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 1,033 cf, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,150	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	14,150	39	>75% Grass cover, Good, HSG A
	22,700	61	Weighted Average
	14,150		62.33% Pervious Area
	8,550		37.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	156	Total			

Summary for Subcatchment IB2-16S: To CBN 16

Runoff = 0.20 cfs @ 12.16 hrs, Volume= 1,070 cf, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	2,900	98	Paved Roadway
*	6,400	98	Roofs and Driveways, HSG A
	18,200	39	>75% Grass cover, Good, HSG A
	27,500	59	Weighted Average
	18,200		66.18% Pervious Area
	9,300		33.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	143	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	226	Total			

Summary for Subcatchment IB2-17S: To CBN 17

Runoff = 0.31 cfs @ 12.16 hrs, Volume= 1,568 cf, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	7,200	98	Roofs and Driveways, HSG A
	24,100	39	>75% Grass cover, Good, HSG A
	37,200	60	Weighted Average
	24,100		64.78% Pervious Area
	13,100		35.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-18S: To CBN 18

Runoff = 0.19 cfs @ 12.20 hrs, Volume= 1,266 cf, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	7,400	98	Roofs and Driveways, HSG A
	27,000	39	>75% Grass cover, Good, HSG A
	38,600	57	Weighted Average
	27,000		69.95% Pervious Area
	11,600		30.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-19S: To CBN 19

Runoff = 0.14 cfs @ 12.31 hrs, Volume= 1,068 cf, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	4,500	98	Roofs and Driveways, HSG A
	25,200	39	>75% Grass cover, Good, HSG A
	35,700	56	Weighted Average
	25,200		70.59% Pervious Area
	10,500		29.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
3.4	200	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.0	380	Total			

Summary for Subcatchment IB2-20S: To CBN 20

Runoff = 0.34 cfs @ 12.15 hrs, Volume= 1,405 cf, Depth= 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	4,100	98	Roofs and Driveways, HSG A
	11,950	39	>75% Grass cover, Good, HSG A
	21,950	66	Weighted Average
	11,950		54.44% Pervious Area
	10,000		45.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	320	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.8	410	Total			

Summary for Subcatchment IB2-21S: To CBN 21

Runoff = 0.16 cfs @ 12.30 hrs, Volume= 1,227 cf, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,600	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	29,530	39	>75% Grass cover, Good, HSG A
	41,030	56	Weighted Average
	29,530		71.97% Pervious Area
	11,500		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	350	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
9.2	450	Total			

Summary for Subcatchment IB2-22S: To CBN 22

Runoff = 0.33 cfs @ 12.09 hrs, Volume= 1,098 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,960	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	12,850	71	Weighted Average
	5,890		45.84% Pervious Area
	6,960		54.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	36	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	166	Total			

Summary for Subcatchment IB2-S: Direct To IB #2

Runoff = 0.91 cfs @ 12.10 hrs, Volume= 2,903 cf, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	8,190	39	>75% Grass cover, Good, HSG A
*	15,800	98	Basin
	23,990	78	Weighted Average
	8,190		34.14% Pervious Area
	15,800		65.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB3-23S: To CBN 23

Runoff = 0.22 cfs @ 12.41 hrs, Volume= 1,944 cf, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	8,900	98	Paved Roadway
*	10,600	98	Roofs and Driveways, HSG A
	59,840	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	79,340	54	Weighted Average
	59,840		75.42% Pervious Area
	19,500		24.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
5.5	230	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	125	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	405	Total			

Summary for Subcatchment IB3-24S: To CBN 24

Runoff = 0.21 cfs @ 12.31 hrs, Volume= 1,629 cf, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	10,000	98	Roofs and Driveways, HSG A
	43,700	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	60,000	55	Weighted Average
	43,700		72.83% Pervious Area
	16,300		27.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	172	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.4	252	Total			

Summary for Subcatchment IB3-S: Direct to IB #3

Runoff = 0.19 cfs @ 12.12 hrs, Volume= 814 cf, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,120	39	>75% Grass cover, Good, HSG A
*	6,500	98	Basin
	16,620	62	Weighted Average
	10,120		60.89% Pervious Area
	6,500		39.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB4-10S: To CBN 10

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 2,024 cf, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	12,400	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,050	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	22,450	72	Weighted Average
	10,050		44.77% Pervious Area
	12,400		55.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.40"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	600	Total			

Summary for Subcatchment IB4-11S: To CBN 11

Runoff = 0.25 cfs @ 12.36 hrs, Volume= 1,975 cf, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	8,800	98	Paved Roadway
*	11,500	98	Roofs and Driveways, HSG A
	52,430	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	72,730	55	Weighted Average
	52,430		72.09% Pervious Area
	20,300		27.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-25S: To CBN 25

Runoff = 0.23 cfs @ 12.28 hrs, Volume= 1,731 cf, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	8,750	98	Paved Roadway
*	8,300	98	Roofs and Driveways, HSG A
	40,810	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	57,860	56	Weighted Average
	40,810		70.53% Pervious Area
	17,050		29.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-26S: To CBN 26

Runoff = 0.15 cfs @ 12.37 hrs, Volume= 1,274 cf, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	38,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	52,000	54	Weighted Average
	38,800		74.62% Pervious Area
	13,200		25.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.8	75	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	245	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.3	370	Total			

Summary for Subcatchment IB4-27S: To CBN 27

Runoff = 0.25 cfs @ 12.17 hrs, Volume= 1,464 cf, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	7,100	98	Roofs and Driveways, HSG A
	27,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	40,900	58	Weighted Average
	27,800		67.97% Pervious Area
	13,100		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.0	43	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.7	243	Total			

Summary for Subcatchment IB4-28S: To CBN 28

Runoff = 0.21 cfs @ 12.21 hrs, Volume= 1,443 cf, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	5,560	98	Paved Roadway
*	7,950	98	Roofs and Driveways, HSG A
	30,490	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	44,000	57	Weighted Average
	30,490		69.30% Pervious Area
	13,510		30.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-29S: To CBN 29

Runoff = 0.15 cfs @ 12.16 hrs, Volume= 820 cf, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	14,080	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	21,080	59	Weighted Average
	14,080		66.79% Pervious Area
	7,000		33.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	180	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.5	260	Total			

Summary for Subcatchment IB4-30S: To CBN 30

Runoff = 0.09 cfs @ 12.17 hrs, Volume= 526 cf, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	2,600	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	9,900	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	14,700	58	Weighted Average
	9,900		67.35% Pervious Area
	4,800		32.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	190	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	290	Total			

Summary for Subcatchment IB4-7S: To CBN 7

Runoff = 0.12 cfs @ 12.43 hrs, Volume= 1,242 cf, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,250	98	Paved Roadway
*	7,500	98	Roofs and Driveways, HSG A
	49,770	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	63,520	52	Weighted Average
	49,770		78.35% Pervious Area
	13,750		21.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.8	284	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	344	Total			

Summary for Subcatchment IB4-8S: To CBN 8

Runoff = 0.52 cfs @ 12.16 hrs, Volume= 2,069 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	12,750	98	Paved Roadway
*	500	98	Roofs and Driveways, HSG A
	12,310	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	25,560	70	Weighted Average
	12,310		48.16% Pervious Area
	13,250		51.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-9S: To CBN 9

Runoff = 0.10 cfs @ 12.48 hrs, Volume= 1,288 cf, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	12,200	98	Roofs and Driveways, HSG A
	68,855	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	85,255	50	Weighted Average
	68,855		80.76% Pervious Area
	16,400		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.0	236	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.3	378	Total			

Summary for Subcatchment IB4-S: Direct to IB #4

Runoff = 0.98 cfs @ 12.10 hrs, Volume= 3,183 cf, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	12,080	39	>75% Grass cover, Good, HSG A
*	18,250	98	Basin
	30,330	75	Weighted Average
	12,080		39.83% Pervious Area
	18,250		60.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB5-12S: To CBN 12

Runoff = 0.30 cfs @ 12.05 hrs, Volume= 845 cf, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	4,500	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	2,175	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	6,675	79	Weighted Average
	2,175		32.58% Pervious Area
	4,500		67.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.78		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
0.9	5	0.0200	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0100	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	180	Total			

Summary for Subcatchment IB5-13S: To CBN 13

Runoff = 0.10 cfs @ 12.16 hrs, Volume= 604 cf, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	3,200	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	11,460	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	16,860	58	Weighted Average
	11,460		67.97% Pervious Area
	5,400		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	135	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	235	Total			

Summary for Subcatchment IB5-14S: To CBN 14

Runoff = 0.30 cfs @ 12.15 hrs, Volume= 1,482 cf, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	8,200	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	22,555	39	>75% Grass cover, Good, HSG A
	35,155	60	Weighted Average
	22,555		64.16% Pervious Area
	12,600		35.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	185	Total			

Summary for Subcatchment IB5-S: Direct to IB #5

Runoff = 0.28 cfs @ 12.10 hrs, Volume= 955 cf, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.44"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,700	39	>75% Grass cover, Good, HSG A
*	6,100	98	Basin
	11,800	70	Weighted Average
	5,700		48.31% Pervious Area
	6,100		51.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond CBN1-P: CBN 1

Inflow Area = 8,000 sf, 70.00% Impervious, Inflow Depth = 1.59" for 2-year event
Inflow = 0.37 cfs @ 12.04 hrs, Volume= 1,059 cf
Outflow = 0.37 cfs @ 12.04 hrs, Volume= 1,059 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 12.04 hrs, Volume= 1,059 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.54' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 12.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0124 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.04 hrs HW=41.54' (Free Discharge)
↑**1=Culvert** (Inlet Controls 0.37 cfs @ 1.56 fps)

Summary for Pond CBN10-P: CBN 10

Inflow Area = 22,450 sf, 55.23% Impervious, Inflow Depth = 1.08" for 2-year event
Inflow = 0.62 cfs @ 12.09 hrs, Volume= 2,024 cf
Outflow = 0.62 cfs @ 12.09 hrs, Volume= 2,024 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.62 cfs @ 12.09 hrs, Volume= 2,024 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.70' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**12.0" Round Culvert**

L= 15.1' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0093 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.60 cfs @ 12.09 hrs HW=33.70' (Free Discharge)
1=Culvert (Barrel Controls 0.60 cfs @ 2.52 fps)

Summary for Pond CBN11-P: CBN 11

Inflow Area = 72,730 sf, 27.91% Impervious, Inflow Depth = 0.33" for 2-year event
Inflow = 0.25 cfs @ 12.36 hrs, Volume= 1,975 cf
Outflow = 0.25 cfs @ 12.36 hrs, Volume= 1,975 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.36 hrs, Volume= 1,975 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.50' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**15.0" Round Culvert** L= 8.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0163 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.25 cfs @ 12.36 hrs HW=33.50' (Free Discharge)
1=Culvert (Inlet Controls 0.25 cfs @ 1.36 fps)

Summary for Pond CBN12-P: CBN 12

Inflow Area = 6,675 sf, 67.42% Impervious, Inflow Depth = 1.52" for 2-year event
Inflow = 0.30 cfs @ 12.05 hrs, Volume= 845 cf
Outflow = 0.30 cfs @ 12.05 hrs, Volume= 845 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.05 hrs, Volume= 845 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.30' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 14.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0143 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.29 cfs @ 12.05 hrs HW=37.30' (Free Discharge)
1=Culvert (Inlet Controls 0.29 cfs @ 1.48 fps)

Summary for Pond CBN13-P: CBN 13

Inflow Area = 16,860 sf, 32.03% Impervious, Inflow Depth = 0.43" for 2-year event
Inflow = 0.10 cfs @ 12.16 hrs, Volume= 604 cf
Outflow = 0.10 cfs @ 12.16 hrs, Volume= 604 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.16 hrs, Volume= 604 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.18' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0308 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.10 cfs @ 12.16 hrs HW=37.17' (Free Discharge)
1=Culvert (Inlet Controls 0.10 cfs @ 1.12 fps)

Summary for Pond CBN14-P: CBN 14

Inflow Area = 35,155 sf, 35.84% Impervious, Inflow Depth = 0.51" for 2-year event
Inflow = 0.30 cfs @ 12.15 hrs, Volume= 1,482 cf
Outflow = 0.30 cfs @ 12.15 hrs, Volume= 1,482 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.15 hrs, Volume= 1,482 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.82' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.46'	**12.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.46' / 36.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.29 cfs @ 12.15 hrs HW=36.82' (Free Discharge)
1=Culvert (Barrel Controls 0.29 cfs @ 1.75 fps)

Summary for Pond CBN15-P: CBN 15

Inflow Area = 22,700 sf, 37.67% Impervious, Inflow Depth = 0.55" for 2-year event
Inflow = 0.22 cfs @ 12.13 hrs, Volume= 1,033 cf
Outflow = 0.22 cfs @ 12.13 hrs, Volume= 1,033 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.22 cfs @ 12.13 hrs, Volume= 1,033 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.66' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert** L= 6.6' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0303 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.22 cfs @ 12.13 hrs HW=38.66' (Free Discharge)
1=Culvert (Inlet Controls 0.22 cfs @ 1.36 fps)

Summary for Pond CBN16-P: CBN 16

Inflow Area = 27,500 sf, 33.82% Impervious, Inflow Depth = 0.47" for 2-year event
Inflow = 0.20 cfs @ 12.16 hrs, Volume= 1,070 cf
Outflow = 0.20 cfs @ 12.16 hrs, Volume= 1,070 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.20 cfs @ 12.16 hrs, Volume= 1,070 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.65' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.20 cfs @ 12.16 hrs HW=38.64' (Free Discharge)
1=Culvert (Inlet Controls 0.20 cfs @ 1.33 fps)

Summary for Pond CBN17-P: CBN 17

Inflow Area = 37,200 sf, 35.22% Impervious, Inflow Depth = 0.51" for 2-year event
Inflow = 0.31 cfs @ 12.16 hrs, Volume= 1,568 cf
Outflow = 0.31 cfs @ 12.16 hrs, Volume= 1,568 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.16 hrs, Volume= 1,568 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.31' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 2.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.70' S= 0.1250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.30 cfs @ 12.16 hrs HW=37.31' (Free Discharge)
1=Culvert (Inlet Controls 0.30 cfs @ 1.49 fps)

Summary for Pond CBN18-P: CBN 18

Inflow Area = 38,600 sf, 30.05% Impervious, Inflow Depth = 0.39" for 2-year event
Inflow = 0.19 cfs @ 12.20 hrs, Volume= 1,266 cf
Outflow = 0.19 cfs @ 12.20 hrs, Volume= 1,266 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.20 hrs, Volume= 1,266 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.24' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 10.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.70' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.19 cfs @ 12.20 hrs HW=37.24' (Free Discharge)
1=Culvert (Inlet Controls 0.19 cfs @ 1.31 fps)

Summary for Pond CBN19-P: CBN 19

Inflow Area = 35,700 sf, 29.41% Impervious, Inflow Depth = 0.36" for 2-year event
Inflow = 0.14 cfs @ 12.31 hrs, Volume= 1,068 cf
Outflow = 0.14 cfs @ 12.31 hrs, Volume= 1,068 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.31 hrs, Volume= 1,068 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.21' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	**12.0" Round Culvert** L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.00' / 35.55' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.14 cfs @ 12.31 hrs HW=36.21' (Free Discharge)
1=Culvert (Inlet Controls 0.14 cfs @ 1.22 fps)

Summary for Pond CBN2-P: CBN 2

Inflow Area = 6,060 sf, 62.21% Impervious, Inflow Depth = 1.32" for 2-year event
Inflow = 0.23 cfs @ 12.05 hrs, Volume= 668 cf
Outflow = 0.23 cfs @ 12.05 hrs, Volume= 668 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.23 cfs @ 12.05 hrs, Volume= 668 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.47' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 6.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0242 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.23 cfs @ 12.05 hrs HW=41.46' (Free Discharge)
1=Culvert (Inlet Controls 0.23 cfs @ 1.38 fps)

Summary for Pond CBN20-P: CBN 20

Inflow Area = 21,950 sf, 45.56% Impervious, Inflow Depth = 0.77" for 2-year event
Inflow = 0.34 cfs @ 12.15 hrs, Volume= 1,405 cf
Outflow = 0.34 cfs @ 12.15 hrs, Volume= 1,405 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.15 hrs, Volume= 1,405 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.49' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.16'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.16' / 34.00' S= 0.0533 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.34 cfs @ 12.15 hrs HW=34.49' (Free Discharge)
1=Culvert (Inlet Controls 0.34 cfs @ 1.54 fps)

Summary for Pond CBN21-P: CBN 21

Inflow Area = 41,030 sf, 28.03% Impervious, Inflow Depth = 0.36" for 2-year event
Inflow = 0.16 cfs @ 12.30 hrs, Volume= 1,227 cf
Outflow = 0.16 cfs @ 12.30 hrs, Volume= 1,227 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 12.30 hrs, Volume= 1,227 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.50' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.28'	**12.0" Round Culvert** L= 24.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.28' / 34.00' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.30 hrs HW=34.50' (Free Discharge)
1=Culvert (Inlet Controls 0.16 cfs @ 1.27 fps)

Summary for Pond CBN22-P: CBN 22

Inflow Area = 12,850 sf, 54.16% Impervious, Inflow Depth = 1.03" for 2-year event
Inflow = 0.33 cfs @ 12.09 hrs, Volume= 1,098 cf
Outflow = 0.33 cfs @ 12.09 hrs, Volume= 1,098 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.09 hrs, Volume= 1,098 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.34' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 33.00' / 32.70' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.32 cfs @ 12.09 hrs HW=33.34' (Free Discharge)
1=Culvert (Barrel Controls 0.32 cfs @ 2.08 fps)

Summary for Pond CBN23-P: CBN 23

Inflow Area = 79,340 sf, 24.58% Impervious, Inflow Depth = 0.29" for 2-year event
Inflow = 0.22 cfs @ 12.41 hrs, Volume= 1,944 cf
Outflow = 0.22 cfs @ 12.41 hrs, Volume= 1,944 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.22 cfs @ 12.41 hrs, Volume= 1,944 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.94' @ 12.41 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**15.0" Round Culvert**
			L= 12.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0167 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.22 cfs @ 12.41 hrs HW=35.94' (Free Discharge)
1=Culvert (Inlet Controls 0.22 cfs @ 1.32 fps)

Summary for Pond CBN24-P: CBN 24

Inflow Area = 60,000 sf, 27.17% Impervious, Inflow Depth = 0.33" for 2-year event
Inflow = 0.21 cfs @ 12.31 hrs, Volume= 1,629 cf
Outflow = 0.21 cfs @ 12.31 hrs, Volume= 1,629 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.31 hrs, Volume= 1,629 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.95' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**12.0" Round Culvert**
			L= 4.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0500 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.21 cfs @ 12.31 hrs HW=35.95' (Free Discharge)
1=Culvert (Inlet Controls 0.21 cfs @ 1.35 fps)

Summary for Pond CBN25-P: CBN 25

Inflow Area = 57,860 sf, 29.47% Impervious, Inflow Depth = 0.36" for 2-year event
Inflow = 0.23 cfs @ 12.28 hrs, Volume= 1,731 cf
Outflow = 0.23 cfs @ 12.28 hrs, Volume= 1,731 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.23 cfs @ 12.28 hrs, Volume= 1,731 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.67' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 7.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.23 cfs @ 12.28 hrs HW=37.67' (Free Discharge)
1=Culvert (Inlet Controls 0.23 cfs @ 1.39 fps)

Summary for Pond CBN26-P: CBN 26

Inflow Area = 52,000 sf, 25.38% Impervious, Inflow Depth = 0.29" for 2-year event
Inflow = 0.15 cfs @ 12.37 hrs, Volume= 1,274 cf
Outflow = 0.15 cfs @ 12.37 hrs, Volume= 1,274 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.37 hrs, Volume= 1,274 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.61' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 14.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.37 hrs HW=37.61' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.23 fps)

Summary for Pond CBN27-P: CBN 27

Inflow Area = 40,900 sf, 32.03% Impervious, Inflow Depth = 0.43" for 2-year event
Inflow = 0.25 cfs @ 12.17 hrs, Volume= 1,464 cf
Outflow = 0.25 cfs @ 12.17 hrs, Volume= 1,464 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.17 hrs, Volume= 1,464 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.78' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 10.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.24 cfs @ 12.17 hrs HW=36.77' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 1.40 fps)

Summary for Pond CBN28-P: CBN 28

Inflow Area = 44,000 sf, 30.70% Impervious, Inflow Depth = 0.39" for 2-year event
Inflow = 0.21 cfs @ 12.21 hrs, Volume= 1,443 cf
Outflow = 0.21 cfs @ 12.21 hrs, Volume= 1,443 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.21 hrs, Volume= 1,443 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.75' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0667 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.21 cfs @ 12.21 hrs HW=36.75' (Free Discharge)
1=Culvert (Inlet Controls 0.21 cfs @ 1.36 fps)

Summary for Pond CBN29-P: CBN 29

Inflow Area = 21,080 sf, 33.21% Impervious, Inflow Depth = 0.47" for 2-year event
Inflow = 0.15 cfs @ 12.16 hrs, Volume= 820 cf
Outflow = 0.15 cfs @ 12.16 hrs, Volume= 820 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.16 hrs, Volume= 820 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.21' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 21.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0140 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 12.16 hrs HW=35.21' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.23 fps)

Summary for Pond CBN3-P: CBN 3

Inflow Area = 15,906 sf, 67.90% Impervious, Inflow Depth = 1.52" for 2-year event
Inflow = 0.67 cfs @ 12.07 hrs, Volume= 2,014 cf
Outflow = 0.67 cfs @ 12.07 hrs, Volume= 2,014 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.07 hrs, Volume= 2,014 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.50' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0083 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.64 cfs @ 12.07 hrs HW=39.49' (Free Discharge)
1=Culvert (Barrel Controls 0.64 cfs @ 2.44 fps)

Summary for Pond CBN30-P: CBN 30

Inflow Area = 14,700 sf, 32.65% Impervious, Inflow Depth = 0.43" for 2-year event
Inflow = 0.09 cfs @ 12.17 hrs, Volume= 526 cf
Outflow = 0.09 cfs @ 12.17 hrs, Volume= 526 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.17 hrs, Volume= 526 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.16' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert**
			L= 11.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0263 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.17 hrs HW=35.16' (Free Discharge)
1=Culvert (Inlet Controls 0.09 cfs @ 1.07 fps)

Summary for Pond CBN4-P: CBN 4

Inflow Area = 42,674 sf, 24.14% Impervious, Inflow Depth = 0.26" for 2-year event
Inflow = 0.10 cfs @ 12.36 hrs, Volume= 937 cf
Outflow = 0.10 cfs @ 12.36 hrs, Volume= 937 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.36 hrs, Volume= 937 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.18' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert**
			L= 3.3' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0303 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.10 cfs @ 12.36 hrs HW=39.17' (Free Discharge)
1=Culvert (Inlet Controls 0.10 cfs @ 1.12 fps)

Summary for Pond CBN5-P: CBN 5

Inflow Area = 15,690 sf, 56.09% Impervious, Inflow Depth = 1.08" for 2-year event
Inflow = 0.40 cfs @ 12.12 hrs, Volume= 1,415 cf
Outflow = 0.40 cfs @ 12.12 hrs, Volume= 1,415 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.12 hrs, Volume= 1,415 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.48' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 13.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0073 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.39 cfs @ 12.12 hrs HW=39.47' (Free Discharge)
1=Culvert (Barrel Controls 0.39 cfs @ 2.16 fps)

Summary for Pond CBN6-P: CBN 6

Inflow Area = 15,080 sf, 45.09% Impervious, Inflow Depth = 0.77" for 2-year event
Inflow = 0.24 cfs @ 12.13 hrs, Volume= 965 cf
Outflow = 0.24 cfs @ 12.13 hrs, Volume= 965 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.13 hrs, Volume= 965 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.37' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.24 cfs @ 12.13 hrs HW=39.37' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 1.39 fps)

Summary for Pond CBN7-P: CBN 7

Inflow Area = 63,520 sf, 21.65% Impervious, Inflow Depth = 0.23" for 2-year event
Inflow = 0.12 cfs @ 12.43 hrs, Volume= 1,242 cf
Outflow = 0.12 cfs @ 12.43 hrs, Volume= 1,242 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.43 hrs, Volume= 1,242 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.89' @ 12.43 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 189.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.70' / 34.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.12 cfs @ 12.43 hrs HW=36.89' (Free Discharge)
1=Culvert (Inlet Controls 0.12 cfs @ 1.17 fps)

Summary for Pond CBN8-P: CBN 8

Inflow Area = 25,560 sf, 51.84% Impervious, Inflow Depth = 0.97" for 2-year event
Inflow = 0.52 cfs @ 12.16 hrs, Volume= 2,069 cf
Outflow = 0.52 cfs @ 12.16 hrs, Volume= 2,069 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.16 hrs, Volume= 2,069 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.41' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.16 hrs HW=35.41' (Free Discharge)
1=Culvert (Inlet Controls 0.51 cfs @ 1.71 fps)

Summary for Pond CBN9-P: CBN 9

Inflow Area = 85,255 sf, 19.24% Impervious, Inflow Depth = 0.18" for 2-year event
Inflow = 0.10 cfs @ 12.48 hrs, Volume= 1,288 cf
Outflow = 0.10 cfs @ 12.48 hrs, Volume= 1,288 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.48 hrs, Volume= 1,288 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.17' @ 12.48 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 6.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.48 hrs HW=35.17' (Free Discharge)
1=Culvert (Inlet Controls 0.09 cfs @ 1.10 fps)

Summary for Pond DMH1-P: DMH 1 to 4

Inflow Area = 14,060 sf, 66.64% Impervious, Inflow Depth = 1.47" for 2-year event
Inflow = 0.61 cfs @ 12.05 hrs, Volume= 1,727 cf
Outflow = 0.61 cfs @ 12.05 hrs, Volume= 1,727 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.05 hrs, Volume= 1,727 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.50' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.00'	**12.0" Round Culvert** L= 645.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 41.00' / 38.90' S= 0.0033 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.59 cfs @ 12.05 hrs HW=41.49' (Free Discharge)
1=Culvert (Barrel Controls 0.59 cfs @ 2.25 fps)

Summary for Pond DMH11-P: DMH 11

Inflow Area = 404,875 sf, 27.68% Impervious, Inflow Depth = 0.35" for 2-year event
Inflow = 1.57 cfs @ 12.21 hrs, Volume= 11,858 cf
Outflow = 1.57 cfs @ 12.21 hrs, Volume= 11,858 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.57 cfs @ 12.21 hrs, Volume= 11,858 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.42' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.90'	**24.0" Round Culvert**
			L= 41.8' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.90' / 32.10' S= 0.0191 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.56 cfs @ 12.21 hrs HW=33.41' (Free Discharge)
1=Culvert (Inlet Controls 1.56 cfs @ 2.44 fps)

Summary for Pond DMH12-P: DMH 12

Inflow Area = 500,055 sf, 28.95% Impervious, Inflow Depth = 0.38" for 2-year event
Inflow = 2.16 cfs @ 12.18 hrs, Volume= 15,857 cf
Outflow = 2.16 cfs @ 12.18 hrs, Volume= 15,857 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.16 cfs @ 12.18 hrs, Volume= 15,857 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 32.66' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.00'	**30.0" Round Culvert**
			L= 35.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.00' / 31.80' S= 0.0057 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=2.15 cfs @ 12.18 hrs HW=32.66' (Free Discharge)
1=Culvert (Barrel Controls 2.15 cfs @ 3.14 fps)

Summary for Pond DMH13-P: DMH 13

Inflow Area = 95,180 sf, 34.36% Impervious, Inflow Depth = 0.50" for 2-year event
Inflow = 0.68 cfs @ 12.11 hrs, Volume= 3,999 cf
Outflow = 0.68 cfs @ 12.11 hrs, Volume= 3,999 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.11 hrs, Volume= 3,999 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.42' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**15.0" Round Culvert** L= 150.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.00' / 32.10' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.66 cfs @ 12.11 hrs HW=33.42' (Free Discharge)
1=Culvert (Barrel Controls 0.66 cfs @ 2.74 fps)

Summary for Pond DMH14-P: DMH 14

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 0.74" for 2-year event
Inflow = 0.34 cfs @ 12.07 hrs, Volume= 1,449 cf
Outflow = 0.34 cfs @ 12.07 hrs, Volume= 1,449 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.07 hrs, Volume= 1,449 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.06' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.45' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.07 hrs HW=37.05' (Free Discharge)
1=Culvert (Barrel Controls 0.33 cfs @ 2.03 fps)

Summary for Pond DMH15-P: DMH 15

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 0.74" for 2-year event
Inflow = 0.34 cfs @ 12.07 hrs, Volume= 1,449 cf
Outflow = 0.34 cfs @ 12.07 hrs, Volume= 1,449 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.07 hrs, Volume= 1,449 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.75' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.40'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.40' / 36.10' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.07 hrs HW=36.74' (Free Discharge)
1=Culvert (Barrel Controls 0.33 cfs @ 2.06 fps)

Summary for Pond DMH16-P: DMH 16

Inflow Area = 58,690 sf, 38.34% Impervious, Inflow Depth = 0.60" for 2-year event
Inflow = 0.59 cfs @ 12.11 hrs, Volume= 2,931 cf
Outflow = 0.59 cfs @ 12.11 hrs, Volume= 2,931 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.11 hrs, Volume= 2,931 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.48' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.05'	**15.0" Round Culvert** L= 18.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.05' / 35.95' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.58 cfs @ 12.11 hrs HW=36.47' (Free Discharge)
1=Culvert (Barrel Controls 0.58 cfs @ 2.37 fps)

Summary for Pond DMH17-P: DMH 17

Inflow Area = 50,200 sf, 35.56% Impervious, Inflow Depth = 0.50" for 2-year event
Inflow = 0.42 cfs @ 12.15 hrs, Volume= 2,103 cf
Outflow = 0.42 cfs @ 12.15 hrs, Volume= 2,103 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.15 hrs, Volume= 2,103 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.46' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	**12.0" Round Culvert** L= 290.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 36.45' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.15 hrs HW=38.46' (Free Discharge)
1=Culvert (Barrel Controls 0.41 cfs @ 2.45 fps)

Summary for Pond DMH18-P: DMH 18

Inflow Area = 126,000 sf, 33.77% Impervious, Inflow Depth = 0.47" for 2-year event
Inflow = 0.91 cfs @ 12.16 hrs, Volume= 4,938 cf
Outflow = 0.91 cfs @ 12.16 hrs, Volume= 4,938 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.16 hrs, Volume= 4,938 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.81' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.35'	**18.0" Round Culvert** L= 283.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 36.35' / 34.70' S= 0.0058 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.90 cfs @ 12.16 hrs HW=36.81' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.90 cfs @ 2.94 fps)

Summary for Pond DMH19-P: DMH 19 to 20

Inflow Area = 161,700 sf, 32.81% Impervious, Inflow Depth = 0.45" for 2-year event
Inflow = 1.02 cfs @ 12.17 hrs, Volume= 6,006 cf
Outflow = 1.02 cfs @ 12.17 hrs, Volume= 6,006 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.17 hrs, Volume= 6,006 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.08' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.60'	**18.0" Round Culvert**
			L= 240.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 34.60' / 33.00' S= 0.0067 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.00 cfs @ 12.17 hrs HW=35.07' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.00 cfs @ 3.16 fps)

Summary for Pond DMH21-P: DMH 21

Inflow Area = 224,680 sf, 33.18% Impervious, Inflow Depth = 0.46" for 2-year event
Inflow = 1.51 cfs @ 12.17 hrs, Volume= 8,638 cf
Outflow = 1.51 cfs @ 12.17 hrs, Volume= 8,638 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.51 cfs @ 12.17 hrs, Volume= 8,638 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.20' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.60'	**24.0" Round Culvert**
			L= 86.6' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 33.60' / 33.25' S= 0.0040 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.47 cfs @ 12.17 hrs HW=34.19' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.47 cfs @ 2.83 fps)

Summary for Pond DMH22-P: DMH 22

Inflow Area = 237,530 sf, 34.32% Impervious, Inflow Depth = 0.49" for 2-year event
Inflow = 1.76 cfs @ 12.16 hrs, Volume= 9,736 cf
Outflow = 1.76 cfs @ 12.16 hrs, Volume= 9,736 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.76 cfs @ 12.16 hrs, Volume= 9,736 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.17' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.50'	**24.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 32.50' / 32.40' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.74 cfs @ 12.16 hrs HW=33.16' (Free Discharge)
1=Culvert (Barrel Controls 1.74 cfs @ 2.85 fps)

Summary for Pond DMH23-P: DMH 23 TO 25

Inflow Area = 139,340 sf, 25.69% Impervious, Inflow Depth = 0.31" for 2-year event
Inflow = 0.42 cfs @ 12.37 hrs, Volume= 3,573 cf
Outflow = 0.42 cfs @ 12.37 hrs, Volume= 3,573 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.37 hrs, Volume= 3,573 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.73' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 34.20' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.42 cfs @ 12.37 hrs HW=35.73' (Free Discharge)
1=Culvert (Barrel Controls 0.42 cfs @ 2.43 fps)

Summary for Pond DMH26-P: DMH 26 TO 28

Inflow Area = 109,860 sf, 27.54% Impervious, Inflow Depth = 0.33" for 2-year event
Inflow = 0.38 cfs @ 12.33 hrs, Volume= 3,005 cf
Outflow = 0.38 cfs @ 12.33 hrs, Volume= 3,005 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.33 hrs, Volume= 3,005 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.42' @ 12.33 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.10'	**15.0" Round Culvert** L= 306.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.10' / 35.45' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.38 cfs @ 12.33 hrs HW=37.42' (Free Discharge)
1=Culvert (Barrel Controls 0.38 cfs @ 2.29 fps)

Summary for Pond DMH29-P: DMH 29 TO 32

Inflow Area = 194,760 sf, 29.19% Impervious, Inflow Depth = 0.36" for 2-year event
Inflow = 0.80 cfs @ 12.26 hrs, Volume= 5,913 cf
Outflow = 0.80 cfs @ 12.26 hrs, Volume= 5,913 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.26 hrs, Volume= 5,913 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.83' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**18.0" Round Culvert** L= 396.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 33.10' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.80 cfs @ 12.26 hrs HW=35.83' (Free Discharge)
1=Culvert (Barrel Controls 0.80 cfs @ 2.85 fps)

Summary for Pond DMH33-P: DMH 33

Inflow Area = 230,540 sf, 29.78% Impervious, Inflow Depth = 0.38" for 2-year event
Inflow = 1.02 cfs @ 12.22 hrs, Volume= 7,259 cf
Outflow = 1.02 cfs @ 12.22 hrs, Volume= 7,259 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.22 hrs, Volume= 7,259 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.55' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.05'	**24.0" Round Culvert** L= 8.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.05' / 33.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.02 cfs @ 12.22 hrs HW=33.55' (Free Discharge)
1=Culvert (Barrel Controls 1.02 cfs @ 2.51 fps)

Summary for Pond DMH5-P: DMH 5 to 6

Inflow Area = 72,640 sf, 41.95% Impervious, Inflow Depth = 0.77" for 2-year event
Inflow = 1.27 cfs @ 12.06 hrs, Volume= 4,678 cf
Outflow = 1.27 cfs @ 12.06 hrs, Volume= 4,678 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.27 cfs @ 12.06 hrs, Volume= 4,678 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.44' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.80'	**18.0" Round Culvert** L= 242.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.80' / 38.05' S= 0.0031 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.24 cfs @ 12.06 hrs HW=39.43' (Free Discharge)
1=Culvert (Barrel Controls 1.24 cfs @ 2.57 fps)

Summary for Pond DMH7-P: DMH 7

Inflow Area = 103,410 sf, 44.55% Impervious, Inflow Depth = 0.82" for 2-year event
Inflow = 1.78 cfs @ 12.07 hrs, Volume= 7,058 cf
Outflow = 1.78 cfs @ 12.07 hrs, Volume= 7,058 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.78 cfs @ 12.07 hrs, Volume= 7,058 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.70' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	**18.0" Round Culvert**
			L= 30.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.00' / 37.80' S= 0.0066 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.72 cfs @ 12.07 hrs HW=38.68' (Free Discharge)
1=Culvert (Barrel Controls 1.72 cfs @ 3.22 fps)

Summary for Pond DMH8-P: DMH 8

Inflow Area = 30,770 sf, 50.70% Impervious, Inflow Depth = 0.93" for 2-year event
Inflow = 0.65 cfs @ 12.12 hrs, Volume= 2,380 cf
Outflow = 0.65 cfs @ 12.12 hrs, Volume= 2,380 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.65 cfs @ 12.12 hrs, Volume= 2,380 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.37' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**12.0" Round Culvert**
			L= 107.3' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.90' / 38.35' S= 0.0051 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.62 cfs @ 12.12 hrs HW=39.36' (Free Discharge)
1=Culvert (Barrel Controls 0.62 cfs @ 2.60 fps)

Summary for Pond DMH9-P: DMH 9 TO 10

Inflow Area = 174,335 sf, 24.89% Impervious, Inflow Depth = 0.32" for 2-year event
Inflow = 0.55 cfs @ 12.19 hrs, Volume= 4,599 cf
Outflow = 0.55 cfs @ 12.19 hrs, Volume= 4,599 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.55 cfs @ 12.19 hrs, Volume= 4,599 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.06' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**18.0" Round Culvert** L= 314.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 33.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.54 cfs @ 12.19 hrs HW=35.06' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.54 cfs @ 2.49 fps)

Summary for Pond IB1-P: Infiltration Basin #1

Inflow Area = 119,034 sf, 46.66% Impervious, Inflow Depth = 0.88" for 2-year event
Inflow = 2.25 cfs @ 12.08 hrs, Volume= 8,698 cf
Outflow = 0.43 cfs @ 12.68 hrs, Volume= 8,698 cf, Atten= 81%, Lag= 35.8 min
Discarded = 0.43 cfs @ 12.68 hrs, Volume= 8,698 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.42' @ 12.68 hrs Surf.Area= 7,752 sf Storage= 2,384 cf

Plug-Flow detention time= 44.2 min calculated for 8,698 cf (100% of inflow)
Center-of-Mass det. time= 44.1 min (909.1 - 865.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.10'	39,183 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
37.10	7,290	0	0	7,290
38.00	8,640	7,160	7,160	8,670
38.10	9,000	882	8,042	9,031
39.50	10,660	13,746	21,787	10,762
41.00	12,560	17,396	39,183	12,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	39.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.43 cfs @ 12.68 hrs HW=37.42' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=37.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB2-P: Infiltration Basin #2

Inflow Area = 261,520 sf, 37.21% Impervious, Inflow Depth = 0.58" for 2-year event
Inflow = 2.52 cfs @ 12.13 hrs, Volume= 12,639 cf
Outflow = 0.59 cfs @ 12.89 hrs, Volume= 12,639 cf, Atten= 77%, Lag= 45.5 min
Discarded = 0.59 cfs @ 12.89 hrs, Volume= 12,639 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 31.48' @ 12.89 hrs Surf.Area= 10,560 sf Storage= 2,863 cf

Plug-Flow detention time= 40.0 min calculated for 12,628 cf (100% of inflow)
Center-of-Mass det. time= 40.0 min (936.5 - 896.5)

Volume	Invert	Avail.Storage	Storage Description
#1	31.20'	52,845 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.20	10,000	0	0	10,000
32.00	11,650	8,652	8,652	11,676
34.50	16,890	35,473	44,124	17,021
35.00	18,000	8,721	52,845	18,156

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.20'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	34.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.59 cfs @ 12.89 hrs HW=31.48' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.59 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.20' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB3-P: Infiltration Basin #3

Inflow Area = 155,960 sf, 27.12% Impervious, Inflow Depth = 0.34" for 2-year event
Inflow = 0.54 cfs @ 12.34 hrs, Volume= 4,386 cf
Outflow = 0.15 cfs @ 14.02 hrs, Volume= 4,386 cf, Atten= 72%, Lag= 101.1 min
Discarded = 0.15 cfs @ 14.02 hrs, Volume= 4,386 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 31.37' @ 14.02 hrs Surf.Area= 2,689 sf Storage= 900 cf

Plug-Flow detention time= 62.6 min calculated for 4,383 cf (100% of inflow)
Center-of-Mass det. time= 62.6 min (1,002.8 - 940.2)

Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	36,051 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.00	2,150	0	0	2,150
32.00	3,730	2,904	2,904	3,741
34.00	4,070	7,798	10,701	4,300
34.10	4,680	437	11,139	4,910
36.75	7,010	15,386	26,524	7,347
38.00	8,250	9,527	36,051	8,646

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.00'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	36.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.15 cfs @ 14.02 hrs HW=31.37' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.15 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.00' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB4-P: Infiltration Basin #4

Inflow Area = 530,385 sf, 30.73% Impervious, Inflow Depth = 0.43" for 2-year event
Inflow = 2.96 cfs @ 12.15 hrs, Volume= 19,040 cf
Outflow = 0.57 cfs @ 14.13 hrs, Volume= 19,040 cf, Atten= 81%, Lag= 118.9 min
Discarded = 0.57 cfs @ 14.13 hrs, Volume= 19,040 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 30.04' @ 14.13 hrs Surf.Area= 10,198 sf Storage= 5,231 cf

Plug-Flow detention time= 95.2 min calculated for 19,024 cf (100% of inflow)
Center-of-Mass det. time= 95.2 min (1,008.7 - 913.5)

Volume	Invert	Avail.Storage	Storage Description
#1	29.50'	117,366 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
29.50	9,265	0	0	9,265
30.00	10,130	4,847	4,847	10,147
31.00	12,000	11,052	15,899	12,054
32.00	13,930	12,953	28,852	14,026
35.75	19,650	62,656	91,508	19,998
36.00	20,060	4,964	96,471	20,426
37.00	21,740	20,894	117,366	22,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	29.50'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	35.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.57 cfs @ 14.13 hrs HW=30.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=29.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB5-P: Infiltration Basin #5

Inflow Area = 70,490 sf, 40.57% Impervious, Inflow Depth = 0.66" for 2-year event
Inflow = 0.87 cfs @ 12.11 hrs, Volume= 3,886 cf
Outflow = 0.22 cfs @ 12.65 hrs, Volume= 3,886 cf, Atten= 75%, Lag= 32.5 min
Discarded = 0.22 cfs @ 12.65 hrs, Volume= 3,886 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.33' @ 12.65 hrs Surf.Area= 3,907 sf Storage= 855 cf

Plug-Flow detention time= 30.7 min calculated for 3,883 cf (100% of inflow)
Center-of-Mass det. time= 30.7 min (918.3 - 887.6)

Volume	Invert	Avail.Storage	Storage Description
#1	35.10'	23,803 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.10	3,630	0	0	3,630
36.00	4,790	3,777	3,777	4,808
36.10	4,980	488	4,265	5,000
38.00	7,300	11,596	15,861	7,379
39.00	8,600	7,941	23,803	8,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	35.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	38.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.22 cfs @ 12.65 hrs HW=35.33' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=35.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=1.00-60.00 hrs, dt=0.05 hrs, 1181 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment IB1-1S: To CBN 1 Runoff Area=8,000 sf 70.00% Impervious Runoff Depth=2.94"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=80 Runoff=0.69 cfs 1,958 cf

Subcatchment IB1-2S: To CBN 2 Runoff Area=6,060 sf 62.21% Impervious Runoff Depth=2.58"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=76 Runoff=0.46 cfs 1,301 cf

Subcatchment IB1-3S: To CBN 3 Runoff Area=15,906 sf 67.90% Impervious Runoff Depth=2.84"
Flow Length=450' Slope=0.0100 '/' Tc=4.2 min CN=79 Runoff=1.27 cfs 3,771 cf

Subcatchment IB1-4S: To CBN 4 Runoff Area=42,674 sf 24.14% Impervious Runoff Depth=0.88"
Flow Length=215' Tc=7.3 min CN=53 Runoff=0.70 cfs 3,143 cf

Subcatchment IB1-5S: To CBN 5 Runoff Area=15,690 sf 56.09% Impervious Runoff Depth=2.24"
Flow Length=255' Tc=7.6 min CN=72 Runoff=0.87 cfs 2,924 cf

Subcatchment IB1-6S: To CBN 6 Runoff Area=15,080 sf 45.09% Impervious Runoff Depth=1.76"
Flow Length=250' Tc=7.6 min CN=66 Runoff=0.64 cfs 2,214 cf

Subcatchment IB1-S: Direct to IB #1 Runoff Area=15,624 sf 60.61% Impervious Runoff Depth=2.49"
Tc=6.0 min CN=75 Runoff=1.02 cfs 3,242 cf

Subcatchment IB2-15S: To CBN 15 Runoff Area=22,700 sf 37.67% Impervious Runoff Depth=1.40"
Flow Length=156' Tc=6.7 min CN=61 Runoff=0.75 cfs 2,647 cf

Subcatchment IB2-16S: To CBN 16 Runoff Area=27,500 sf 33.82% Impervious Runoff Depth=1.26"
Flow Length=226' Tc=7.3 min CN=59 Runoff=0.78 cfs 2,894 cf

Subcatchment IB2-17S: To CBN 17 Runoff Area=37,200 sf 35.22% Impervious Runoff Depth=1.33"
Flow Length=300' Tc=7.9 min CN=60 Runoff=1.09 cfs 4,124 cf

Subcatchment IB2-18S: To CBN 18 Runoff Area=38,600 sf 30.05% Impervious Runoff Depth=1.13"
Flow Length=300' Tc=7.9 min CN=57 Runoff=0.91 cfs 3,639 cf

Subcatchment IB2-19S: To CBN 19 Runoff Area=35,700 sf 29.41% Impervious Runoff Depth=1.07"
Flow Length=380' Tc=10.0 min CN=56 Runoff=0.73 cfs 3,176 cf

Subcatchment IB2-20S: To CBN 20 Runoff Area=21,950 sf 45.56% Impervious Runoff Depth=1.76"
Flow Length=410' Tc=8.8 min CN=66 Runoff=0.89 cfs 3,223 cf

Subcatchment IB2-21S: To CBN 21 Runoff Area=41,030 sf 28.03% Impervious Runoff Depth=1.07"
Flow Length=450' Tc=9.2 min CN=56 Runoff=0.86 cfs 3,650 cf

Subcatchment IB2-22S: To CBN 22 Runoff Area=12,850 sf 54.16% Impervious Runoff Depth=2.15"
Flow Length=166' Tc=5.3 min CN=71 Runoff=0.73 cfs 2,307 cf

Subcatchment IB2-S: Direct To IB #2 Runoff Area=23,990 sf 65.86% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=78 Runoff=1.74 cfs 5,506 cf

Subcatchment IB3-23S: To CBN 23 Runoff Area=79,340 sf 24.58% Impervious Runoff Depth=0.94"
Flow Length=405' Tc=12.0 min CN=54 Runoff=1.26 cfs 6,240 cf

Subcatchment IB3-24S: To CBN 24 Runoff Area=60,000 sf 27.17% Impervious Runoff Depth=1.00"
Flow Length=252' Tc=7.4 min CN=55 Runoff=1.21 cfs 5,025 cf

Subcatchment IB3-S: Direct to IB #3 Runoff Area=16,620 sf 39.11% Impervious Runoff Depth=1.47"
Tc=6.0 min CN=62 Runoff=0.60 cfs 2,035 cf

Subcatchment IB4-10S: To CBN 10 Runoff Area=22,450 sf 55.23% Impervious Runoff Depth=2.24"
Flow Length=600' Slope=0.0100 '/' Tc=5.4 min CN=72 Runoff=1.33 cfs 4,184 cf

Subcatchment IB4-11S: To CBN 11 Runoff Area=72,730 sf 27.91% Impervious Runoff Depth=1.00"
Flow Length=600' Tc=10.4 min CN=55 Runoff=1.34 cfs 6,091 cf

Subcatchment IB4-25S: To CBN 25 Runoff Area=57,860 sf 29.47% Impervious Runoff Depth=1.07"
Flow Length=350' Tc=8.4 min CN=56 Runoff=1.24 cfs 5,147 cf

Subcatchment IB4-26S: To CBN 26 Runoff Area=52,000 sf 25.38% Impervious Runoff Depth=0.94"
Flow Length=370' Tc=9.3 min CN=54 Runoff=0.90 cfs 4,090 cf

Subcatchment IB4-27S: To CBN 27 Runoff Area=40,900 sf 32.03% Impervious Runoff Depth=1.20"
Flow Length=243' Tc=7.7 min CN=58 Runoff=1.05 cfs 4,078 cf

Subcatchment IB4-28S: To CBN 28 Runoff Area=44,000 sf 30.70% Impervious Runoff Depth=1.13"
Flow Length=350' Tc=8.4 min CN=57 Runoff=1.02 cfs 4,148 cf

Subcatchment IB4-29S: To CBN 29 Runoff Area=21,080 sf 33.21% Impervious Runoff Depth=1.26"
Flow Length=260' Tc=7.5 min CN=59 Runoff=0.59 cfs 2,218 cf

Subcatchment IB4-30S: To CBN 30 Runoff Area=14,700 sf 32.65% Impervious Runoff Depth=1.20"
Flow Length=290' Tc=7.9 min CN=58 Runoff=0.37 cfs 1,466 cf

Subcatchment IB4-7S: To CBN 7 Runoff Area=63,520 sf 21.65% Impervious Runoff Depth=0.83"
Flow Length=344' Tc=10.4 min CN=52 Runoff=0.85 cfs 4,370 cf

Subcatchment IB4-8S: To CBN 8 Runoff Area=25,560 sf 51.84% Impervious Runoff Depth=2.07"
Flow Length=600' Tc=10.4 min CN=70 Runoff=1.20 cfs 4,416 cf

Subcatchment IB4-9S: To CBN 9 Runoff Area=85,255 sf 19.24% Impervious Runoff Depth=0.71"
Flow Length=378' Tc=10.3 min CN=50 Runoff=0.88 cfs 5,064 cf

Subcatchment IB4-S: Direct to IB #4 Runoff Area=30,330 sf 60.17% Impervious Runoff Depth=2.49"
Tc=6.0 min CN=75 Runoff=1.99 cfs 6,293 cf

Subcatchment IB5-12S: To CBN 12 Runoff Area=6,675 sf 67.42% Impervious Runoff Depth=2.84"
Flow Length=180' Tc=2.8 min CN=79 Runoff=0.56 cfs 1,582 cf

Subcatchment IB5-13S: To CBN 13 Runoff Area=16,860 sf 32.03% Impervious Runoff Depth=1.20"
Flow Length=235' Tc=7.1 min CN=58 Runoff=0.45 cfs 1,681 cf

Subcatchment IB5-14S: To CBN 14 Runoff Area=35,155 sf 35.84% Impervious Runoff Depth=1.33"
Flow Length=185' Tc=7.1 min CN=60 Runoff=1.07 cfs 3,897 cf

Subcatchment IB5-S: Direct to IB #5 Runoff Area=11,800 sf 51.69% Impervious Runoff Depth=2.07"
Tc=6.0 min CN=70 Runoff=0.64 cfs 2,039 cf

Pond CBN1-P: CBN 1 Peak Elev=41.68' Inflow=0.69 cfs 1,958 cf
12.0" Round Culvert n=0.013 L=12.1' S=0.0124 '/' Outflow=0.69 cfs 1,958 cf

Pond CBN10-P: CBN 10 Peak Elev=33.98' Inflow=1.33 cfs 4,184 cf
12.0" Round Culvert n=0.013 L=15.1' S=0.0093 '/' Outflow=1.33 cfs 4,184 cf

Pond CBN11-P: CBN 11 Peak Elev=33.89' Inflow=1.34 cfs 6,091 cf
15.0" Round Culvert n=0.013 L=8.6' S=0.0163 '/' Outflow=1.34 cfs 6,091 cf

Pond CBN12-P: CBN 12 Peak Elev=37.43' Inflow=0.56 cfs 1,582 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=0.56 cfs 1,582 cf

Pond CBN13-P: CBN 13 Peak Elev=37.38' Inflow=0.45 cfs 1,681 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0308 '/' Outflow=0.45 cfs 1,681 cf

Pond CBN14-P: CBN 14 Peak Elev=37.18' Inflow=1.07 cfs 3,897 cf
12.0" Round Culvert n=0.013 L=126.0' S=0.0029 '/' Outflow=1.07 cfs 3,897 cf

Pond CBN15-P: CBN 15 Peak Elev=38.90' Inflow=0.75 cfs 2,647 cf
12.0" Round Culvert n=0.013 L=6.6' S=0.0303 '/' Outflow=0.75 cfs 2,647 cf

Pond CBN16-P: CBN 16 Peak Elev=38.91' Inflow=0.78 cfs 2,894 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=0.78 cfs 2,894 cf

Pond CBN17-P: CBN 17 Peak Elev=37.62' Inflow=1.09 cfs 4,124 cf
12.0" Round Culvert n=0.013 L=2.4' S=0.1250 '/' Outflow=1.09 cfs 4,124 cf

Pond CBN18-P: CBN 18 Peak Elev=37.56' Inflow=0.91 cfs 3,639 cf
12.0" Round Culvert n=0.013 L=10.5' S=0.0286 '/' Outflow=0.91 cfs 3,639 cf

Pond CBN19-P: CBN 19 Peak Elev=36.49' Inflow=0.73 cfs 3,176 cf
12.0" Round Culvert n=0.013 L=10.8' S=0.0417 '/' Outflow=0.73 cfs 3,176 cf

Pond CBN2-P: CBN 2 Peak Elev=41.58' Inflow=0.46 cfs 1,301 cf
12.0" Round Culvert n=0.013 L=6.2' S=0.0242 '/' Outflow=0.46 cfs 1,301 cf

Pond CBN20-P: CBN 20 Peak Elev=34.71' Inflow=0.89 cfs 3,223 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0533 '/' Outflow=0.89 cfs 3,223 cf

Pond CBN21-P: CBN 21 Peak Elev=34.82' Inflow=0.86 cfs 3,650 cf
12.0" Round Culvert n=0.013 L=24.6' S=0.0114 '/' Outflow=0.86 cfs 3,650 cf

Pond CBN22-P: CBN 22 Peak Elev=33.52' Inflow=0.73 cfs 2,307 cf
12.0" Round Culvert n=0.013 L=60.0' S=0.0050 '/' Outflow=0.73 cfs 2,307 cf

Pond CBN23-P: CBN 23 Peak Elev=36.31' Inflow=1.26 cfs 6,240 cf
15.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=1.26 cfs 6,240 cf

Pond CBN24-P: CBN 24 Peak Elev=36.36' Inflow=1.21 cfs 5,025 cf
12.0" Round Culvert n=0.013 L=4.0' S=0.0500 '/' Outflow=1.21 cfs 5,025 cf

Pond CBN25-P: CBN 25 Peak Elev=38.07' Inflow=1.24 cfs 5,147 cf
12.0" Round Culvert n=0.013 L=7.4' S=0.0270 '/' Outflow=1.24 cfs 5,147 cf

Pond CBN26-P: CBN 26 Peak Elev=37.96' Inflow=0.90 cfs 4,090 cf
12.0" Round Culvert n=0.013 L=14.5' S=0.0138 '/' Outflow=0.90 cfs 4,090 cf

Pond CBN27-P: CBN 27 Peak Elev=37.11' Inflow=1.05 cfs 4,078 cf
12.0" Round Culvert n=0.013 L=10.7' S=0.0187 '/' Outflow=1.05 cfs 4,078 cf

Pond CBN28-P: CBN 28 Peak Elev=37.10' Inflow=1.02 cfs 4,148 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0667 '/' Outflow=1.02 cfs 4,148 cf

Pond CBN29-P: CBN 29 Peak Elev=35.44' Inflow=0.59 cfs 2,218 cf
12.0" Round Culvert n=0.013 L=21.4' S=0.0140 '/' Outflow=0.59 cfs 2,218 cf

Pond CBN3-P: CBN 3 Peak Elev=39.74' Inflow=1.27 cfs 3,771 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=1.27 cfs 3,771 cf

Pond CBN30-P: CBN 30 Peak Elev=35.34' Inflow=0.37 cfs 1,466 cf
12.0" Round Culvert n=0.013 L=11.4' S=0.0263 '/' Outflow=0.37 cfs 1,466 cf

Pond CBN4-P: CBN 4 Peak Elev=39.49' Inflow=0.70 cfs 3,143 cf
12.0" Round Culvert n=0.013 L=3.3' S=0.0303 '/' Outflow=0.70 cfs 3,143 cf

Pond CBN5-P: CBN 5 Peak Elev=39.69' Inflow=0.87 cfs 2,924 cf
12.0" Round Culvert n=0.013 L=13.7' S=0.0073 '/' Outflow=0.87 cfs 2,924 cf

Pond CBN6-P: CBN 6 Peak Elev=39.58' Inflow=0.64 cfs 2,214 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0154 '/' Outflow=0.64 cfs 2,214 cf

Pond CBN7-P: CBN 7 Peak Elev=37.24' Inflow=0.85 cfs 4,370 cf
12.0" Round Culvert n=0.013 L=189.4' S=0.0100 '/' Outflow=0.85 cfs 4,370 cf

Pond CBN8-P: CBN 8 Peak Elev=35.66' Inflow=1.20 cfs 4,416 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=1.20 cfs 4,416 cf

Pond CBN9-P: CBN 9 Peak Elev=35.55' Inflow=0.88 cfs 5,064 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=0.88 cfs 5,064 cf

Pond DMH1-P: DMH 1 to 4 Peak Elev=41.72' Inflow=1.15 cfs 3,259 cf
12.0" Round Culvert n=0.013 L=645.0' S=0.0033 '/' Outflow=1.15 cfs 3,259 cf

Pond DMH11-P: DMH 11 Peak Elev=34.16' Inflow=7.96 cfs 34,997 cf
24.0" Round Culvert n=0.013 L=41.8' S=0.0191 '/' Outflow=7.96 cfs 34,997 cf

Pond DMH12-P: DMH 12 Peak Elev=33.57' Inflow=10.30 cfs 45,271 cf
30.0" Round Culvert n=0.013 L=35.2' S=0.0057 '/' Outflow=10.30 cfs 45,271 cf

Pond DMH13-P: DMH 13 Peak Elev=33.86' Inflow=2.42 cfs 10,275 cf
15.0" Round Culvert n=0.013 L=150.6' S=0.0060 '/' Outflow=2.42 cfs 10,275 cf

Pond DMH14-P: DMH 14 Peak Elev=37.30' Inflow=0.91 cfs 3,263 cf
12.0" Round Culvert n=0.013 L=62.0' S=0.0040 '/' Outflow=0.91 cfs 3,263 cf

Pond DMH15-P: DMH 15 Peak Elev=36.99' Inflow=0.91 cfs 3,263 cf
12.0" Round Culvert n=0.013 L=71.0' S=0.0042 '/' Outflow=0.91 cfs 3,263 cf

Pond DMH16-P: DMH 16 Peak Elev=36.87' Inflow=1.93 cfs 7,161 cf
15.0" Round Culvert n=0.013 L=18.4' S=0.0054 '/' Outflow=1.93 cfs 7,161 cf

Pond DMH17-P: DMH 17 Peak Elev=38.83' Inflow=1.53 cfs 5,541 cf
12.0" Round Culvert n=0.013 L=290.7' S=0.0057 '/' Outflow=1.53 cfs 5,541 cf

Pond DMH18-P: DMH 18 Peak Elev=37.31' Inflow=3.54 cfs 13,304 cf
18.0" Round Culvert n=0.013 L=283.0' S=0.0058 '/' Outflow=3.54 cfs 13,304 cf

Pond DMH19-P: DMH 19 to 20 Peak Elev=35.63' Inflow=4.17 cfs 16,479 cf
18.0" Round Culvert n=0.013 L=240.0' S=0.0067 '/' Outflow=4.17 cfs 16,479 cf

Pond DMH21-P: DMH 21 Peak Elev=34.86' Inflow=5.90 cfs 23,352 cf
24.0" Round Culvert n=0.013 L=86.6' S=0.0040 '/' Outflow=5.90 cfs 23,352 cf

Pond DMH22-P: DMH 22 Peak Elev=33.87' Inflow=6.52 cfs 25,659 cf
24.0" Round Culvert n=0.013 L=24.0' S=0.0042 '/' Outflow=6.52 cfs 25,659 cf

Pond DMH23-P: DMH 23 TO 25 Peak Elev=36.24' Inflow=2.37 cfs 11,265 cf
15.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=2.37 cfs 11,265 cf

Pond DMH26-P: DMH 26 TO 28 Peak Elev=37.90' Inflow=2.14 cfs 9,237 cf
15.0" Round Culvert n=0.013 L=306.0' S=0.0054 '/' Outflow=2.14 cfs 9,237 cf

Pond DMH29-P: DMH 29 TO 32 Peak Elev=36.46' Inflow=4.19 cfs 17,462 cf
18.0" Round Culvert n=0.013 L=396.0' S=0.0058 '/' Outflow=4.19 cfs 17,462 cf

Pond DMH33-P: DMH 33 Peak Elev=34.25' Inflow=5.14 cfs 21,146 cf
24.0" Round Culvert n=0.013 L=8.0' S=0.0062 '/' Outflow=5.14 cfs 21,146 cf

Pond DMH5-P: DMH 5 to 6 Peak Elev=39.81' Inflow=2.88 cfs 10,173 cf
18.0" Round Culvert n=0.013 L=242.0' S=0.0031 '/' Outflow=2.88 cfs 10,173 cf

Pond DMH7-P: DMH 7 Peak Elev=39.15' Inflow=4.19 cfs 15,311 cf
18.0" Round Culvert n=0.013 L=30.2' S=0.0066 '/' Outflow=4.19 cfs 15,311 cf

Pond DMH8-P: DMH 8 Peak Elev=39.66' Inflow=1.51 cfs 5,138 cf
12.0" Round Culvert n=0.013 L=107.3' S=0.0051 '/' Outflow=1.51 cfs 5,138 cf

Pond DMH9-P: DMH 9 TO 10 Peak Elev=35.56' Inflow=2.86 cfs 13,850 cf
18.0" Round Culvert n=0.013 L=314.4' S=0.0054 '/' Outflow=2.86 cfs 13,850 cf

Pond IB1-P: Infiltration Basin #1 Peak Elev=38.03' Storage=7,432 cf Inflow=5.21 cfs 18,553 cf
Discarded=0.49 cfs 18,553 cf Secondary=0.00 cfs 0 cf Outflow=0.49 cfs 18,553 cf

Pond IB2-P: Infiltration Basin #2 Peak Elev=32.38' Storage=13,254 cf Inflow=8.24 cfs 31,165 cf
Discarded=0.69 cfs 31,165 cf Secondary=0.00 cfs 0 cf Outflow=0.69 cfs 31,165 cf

Pond IB3-P: Infiltration Basin #3 Peak Elev=32.92' Storage=6,409 cf Inflow=2.86 cfs 13,300 cf
Discarded=0.22 cfs 13,300 cf Secondary=0.00 cfs 0 cf Outflow=0.22 cfs 13,300 cf

Pond IB4-P: Infiltration Basin #4 Peak Elev=31.84' Storage=26,675 cf Inflow=11.96 cfs 51,565 cf
Discarded=0.76 cfs 51,565 cf Secondary=0.00 cfs 0 cf Outflow=0.76 cfs 51,565 cf

Pond IB5-P: Infiltration Basin #5 Peak Elev=35.95' Storage=3,517 cf Inflow=2.56 cfs 9,200 cf
Discarded=0.26 cfs 9,200 cf Secondary=0.00 cfs 0 cf Outflow=0.26 cfs 9,200 cf

Total Runoff Area = 1,137,389 sf Runoff Volume = 123,782 cf Average Runoff Depth = 1.31"
66.00% Pervious = 750,629 sf 34.00% Impervious = 386,760 sf

Summary for Subcatchment IB1-1S: To CBN 1

Runoff = 0.69 cfs @ 12.04 hrs, Volume= 1,958 cf, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	5,600	98	Paved Roadway
	2,400	39	>75% Grass cover, Good, HSG A
	8,000	80	Weighted Average
	2,400		30.00% Pervious Area
	5,600		70.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-2S: To CBN 2

Runoff = 0.46 cfs @ 12.04 hrs, Volume= 1,301 cf, Depth= 2.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	3,770	98	Paved Roadway
	2,290	39	>75% Grass cover, Good, HSG A
	6,060	76	Weighted Average
	2,290		37.79% Pervious Area
	3,770		62.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-3S: To CBN 3

Runoff = 1.27 cfs @ 12.06 hrs, Volume= 3,771 cf, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	10,800	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,106	39	>75% Grass cover, Good, HSG A
	15,906	79	Weighted Average
	5,106		32.10% Pervious Area
	10,800		67.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	450	Total			

Summary for Subcatchment IB1-4S: To CBN 4

Runoff = 0.70 cfs @ 12.14 hrs, Volume= 3,143 cf, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	7,600	98	Paved Roadway
*	2,700	98	Roofs and Driveways, HSG A
	32,374	39	>75% Grass cover, Good, HSG A
	42,674	53	Weighted Average
	32,374		75.86% Pervious Area
	10,300		24.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	45	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	120	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	215	Total			

Summary for Subcatchment IB1-5S: To CBN 5

Runoff = 0.87 cfs @ 12.11 hrs, Volume= 2,924 cf, Depth= 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	6,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,690	72	Weighted Average
	6,890		43.91% Pervious Area
	8,800		56.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	255	Total			

Summary for Subcatchment IB1-6S: To CBN 6

Runoff = 0.64 cfs @ 12.12 hrs, Volume= 2,214 cf, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	8,280	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,080	66	Weighted Average
	8,280		54.91% Pervious Area
	6,800		45.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	145	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	250	Total			

Summary for Subcatchment IB1-S: Direct to IB #1

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 3,242 cf, Depth= 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	6,154	39	>75% Grass cover, Good, HSG A
*	9,470	98	Basin
	15,624	75	Weighted Average
	6,154		39.39% Pervious Area
	9,470		60.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB2-15S: To CBN 15

Runoff = 0.75 cfs @ 12.11 hrs, Volume= 2,647 cf, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,150	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	14,150	39	>75% Grass cover, Good, HSG A
	22,700	61	Weighted Average
	14,150		62.33% Pervious Area
	8,550		37.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	156	Total			

Summary for Subcatchment IB2-16S: To CBN 16

Runoff = 0.78 cfs @ 12.12 hrs, Volume= 2,894 cf, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	2,900	98	Paved Roadway
*	6,400	98	Roofs and Driveways, HSG A
	18,200	39	>75% Grass cover, Good, HSG A
	27,500	59	Weighted Average
	18,200		66.18% Pervious Area
	9,300		33.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	143	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	226	Total			

Summary for Subcatchment IB2-17S: To CBN 17

Runoff = 1.09 cfs @ 12.13 hrs, Volume= 4,124 cf, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	7,200	98	Roofs and Driveways, HSG A
	24,100	39	>75% Grass cover, Good, HSG A
	37,200	60	Weighted Average
	24,100		64.78% Pervious Area
	13,100		35.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-18S: To CBN 18

Runoff = 0.91 cfs @ 12.14 hrs, Volume= 3,639 cf, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	7,400	98	Roofs and Driveways, HSG A
	27,000	39	>75% Grass cover, Good, HSG A
	38,600	57	Weighted Average
	27,000		69.95% Pervious Area
	11,600		30.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-19S: To CBN 19

Runoff = 0.73 cfs @ 12.17 hrs, Volume= 3,176 cf, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	4,500	98	Roofs and Driveways, HSG A
	25,200	39	>75% Grass cover, Good, HSG A
	35,700	56	Weighted Average
	25,200		70.59% Pervious Area
	10,500		29.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
3.4	200	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.0	380	Total			

Summary for Subcatchment IB2-20S: To CBN 20

Runoff = 0.89 cfs @ 12.14 hrs, Volume= 3,223 cf, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	4,100	98	Roofs and Driveways, HSG A
	11,950	39	>75% Grass cover, Good, HSG A
	21,950	66	Weighted Average
	11,950		54.44% Pervious Area
	10,000		45.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	320	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.8	410	Total			

Summary for Subcatchment IB2-21S: To CBN 21

Runoff = 0.86 cfs @ 12.16 hrs, Volume= 3,650 cf, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,600	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	29,530	39	>75% Grass cover, Good, HSG A
	41,030	56	Weighted Average
	29,530		71.97% Pervious Area
	11,500		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	350	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
9.2	450	Total			

Summary for Subcatchment IB2-22S: To CBN 22

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 2,307 cf, Depth= 2.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,960	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	12,850	71	Weighted Average
	5,890		45.84% Pervious Area
	6,960		54.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	36	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	166	Total			

Summary for Subcatchment IB2-S: Direct To IB #2

Runoff = 1.74 cfs @ 12.09 hrs, Volume= 5,506 cf, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	8,190	39	>75% Grass cover, Good, HSG A
*	15,800	98	Basin
	23,990	78	Weighted Average
	8,190		34.14% Pervious Area
	15,800		65.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB3-23S: To CBN 23

Runoff = 1.26 cfs @ 12.21 hrs, Volume= 6,240 cf, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	8,900	98	Paved Roadway
*	10,600	98	Roofs and Driveways, HSG A
	59,840	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	79,340	54	Weighted Average
	59,840		75.42% Pervious Area
	19,500		24.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
5.5	230	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	125	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	405	Total			

Summary for Subcatchment IB3-24S: To CBN 24

Runoff = 1.21 cfs @ 12.13 hrs, Volume= 5,025 cf, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	10,000	98	Roofs and Driveways, HSG A
	43,700	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	60,000	55	Weighted Average
	43,700		72.83% Pervious Area
	16,300		27.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	172	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.4	252	Total			

Summary for Subcatchment IB3-S: Direct to IB #3

Runoff = 0.60 cfs @ 12.10 hrs, Volume= 2,035 cf, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,120	39	>75% Grass cover, Good, HSG A
*	6,500	98	Basin
	16,620	62	Weighted Average
	10,120		60.89% Pervious Area
	6,500		39.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB4-10S: To CBN 10

Runoff = 1.33 cfs @ 12.09 hrs, Volume= 4,184 cf, Depth= 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	12,400	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,050	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	22,450	72	Weighted Average
	10,050		44.77% Pervious Area
	12,400		55.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.40"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	600	Total			

Summary for Subcatchment IB4-11S: To CBN 11

Runoff = 1.34 cfs @ 12.17 hrs, Volume= 6,091 cf, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	8,800	98	Paved Roadway
*	11,500	98	Roofs and Driveways, HSG A
	52,430	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	72,730	55	Weighted Average
	52,430		72.09% Pervious Area
	20,300		27.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-25S: To CBN 25

Runoff = 1.24 cfs @ 12.15 hrs, Volume= 5,147 cf, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	8,750	98	Paved Roadway
*	8,300	98	Roofs and Driveways, HSG A
	40,810	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	57,860	56	Weighted Average
	40,810		70.53% Pervious Area
	17,050		29.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-26S: To CBN 26

Runoff = 0.90 cfs @ 12.16 hrs, Volume= 4,090 cf, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	38,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	52,000	54	Weighted Average
	38,800		74.62% Pervious Area
	13,200		25.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.8	75	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	245	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.3	370	Total			

Summary for Subcatchment IB4-27S: To CBN 27

Runoff = 1.05 cfs @ 12.13 hrs, Volume= 4,078 cf, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	7,100	98	Roofs and Driveways, HSG A
	27,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	40,900	58	Weighted Average
	27,800		67.97% Pervious Area
	13,100		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.0	43	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.7	243	Total			

Summary for Subcatchment IB4-28S: To CBN 28

Runoff = 1.02 cfs @ 12.14 hrs, Volume= 4,148 cf, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	5,560	98	Paved Roadway
*	7,950	98	Roofs and Driveways, HSG A
	30,490	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	44,000	57	Weighted Average
	30,490		69.30% Pervious Area
	13,510		30.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-29S: To CBN 29

Runoff = 0.59 cfs @ 12.12 hrs, Volume= 2,218 cf, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	14,080	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	21,080	59	Weighted Average
	14,080		66.79% Pervious Area
	7,000		33.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	180	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.5	260	Total			

Summary for Subcatchment IB4-30S: To CBN 30

Runoff = 0.37 cfs @ 12.13 hrs, Volume= 1,466 cf, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	2,600	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	9,900	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	14,700	58	Weighted Average
	9,900		67.35% Pervious Area
	4,800		32.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	190	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	290	Total			

Summary for Subcatchment IB4-7S: To CBN 7

Runoff = 0.85 cfs @ 12.19 hrs, Volume= 4,370 cf, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	6,250	98	Paved Roadway
*	7,500	98	Roofs and Driveways, HSG A
	49,770	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	63,520	52	Weighted Average
	49,770		78.35% Pervious Area
	13,750		21.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.8	284	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	344	Total			

Summary for Subcatchment IB4-8S: To CBN 8

Runoff = 1.20 cfs @ 12.15 hrs, Volume= 4,416 cf, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	12,750	98	Paved Roadway
*	500	98	Roofs and Driveways, HSG A
	12,310	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	25,560	70	Weighted Average
	12,310		48.16% Pervious Area
	13,250		51.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-9S: To CBN 9

Runoff = 0.88 cfs @ 12.21 hrs, Volume= 5,064 cf, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	12,200	98	Roofs and Driveways, HSG A
	68,855	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	85,255	50	Weighted Average
	68,855		80.76% Pervious Area
	16,400		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.0	236	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.3	378	Total			

Summary for Subcatchment IB4-S: Direct to IB #4

Runoff = 1.99 cfs @ 12.09 hrs, Volume= 6,293 cf, Depth= 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	12,080	39	>75% Grass cover, Good, HSG A
*	18,250	98	Basin
	30,330	75	Weighted Average
	12,080		39.83% Pervious Area
	18,250		60.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB5-12S: To CBN 12

Runoff = 0.56 cfs @ 12.05 hrs, Volume= 1,582 cf, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	4,500	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	2,175	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	6,675	79	Weighted Average
	2,175		32.58% Pervious Area
	4,500		67.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.78		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
0.9	5	0.0200	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0100	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	180	Total			

Summary for Subcatchment IB5-13S: To CBN 13

Runoff = 0.45 cfs @ 12.12 hrs, Volume= 1,681 cf, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	3,200	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	11,460	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	16,860	58	Weighted Average
	11,460		67.97% Pervious Area
	5,400		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	135	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	235	Total			

Summary for Subcatchment IB5-14S: To CBN 14

Runoff = 1.07 cfs @ 12.12 hrs, Volume= 3,897 cf, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	8,200	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	22,555	39	>75% Grass cover, Good, HSG A
	35,155	60	Weighted Average
	22,555		64.16% Pervious Area
	12,600		35.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	185	Total			

Summary for Subcatchment IB5-S: Direct to IB #5

Runoff = 0.64 cfs @ 12.10 hrs, Volume= 2,039 cf, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,700	39	>75% Grass cover, Good, HSG A
*	6,100	98	Basin
	11,800	70	Weighted Average
	5,700		48.31% Pervious Area
	6,100		51.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond CBN1-P: CBN 1

Inflow Area = 8,000 sf, 70.00% Impervious, Inflow Depth = 2.94" for 10-year event
Inflow = 0.69 cfs @ 12.04 hrs, Volume= 1,958 cf
Outflow = 0.69 cfs @ 12.04 hrs, Volume= 1,958 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.69 cfs @ 12.04 hrs, Volume= 1,958 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.68' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 12.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0124 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.04 hrs HW=41.68' (Free Discharge)
↑**1=Culvert** (Barrel Controls 0.67 cfs @ 2.67 fps)

Summary for Pond CBN10-P: CBN 10

Inflow Area = 22,450 sf, 55.23% Impervious, Inflow Depth = 2.24" for 10-year event
Inflow = 1.33 cfs @ 12.09 hrs, Volume= 4,184 cf
Outflow = 1.33 cfs @ 12.09 hrs, Volume= 4,184 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.09 hrs, Volume= 4,184 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.98' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**12.0" Round Culvert**

L= 15.1' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0093 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.30 cfs @ 12.09 hrs HW=33.97' (Free Discharge)
1=Culvert (Barrel Controls 1.30 cfs @ 2.97 fps)

Summary for Pond CBN11-P: CBN 11

Inflow Area = 72,730 sf, 27.91% Impervious, Inflow Depth = 1.00" for 10-year event
Inflow = 1.34 cfs @ 12.17 hrs, Volume= 6,091 cf
Outflow = 1.34 cfs @ 12.17 hrs, Volume= 6,091 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.17 hrs, Volume= 6,091 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.89' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**15.0" Round Culvert**
			L= 8.6' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0163 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.31 cfs @ 12.17 hrs HW=33.88' (Free Discharge)
1=Culvert (Barrel Controls 1.31 cfs @ 3.00 fps)

Summary for Pond CBN12-P: CBN 12

Inflow Area = 6,675 sf, 67.42% Impervious, Inflow Depth = 2.84" for 10-year event
Inflow = 0.56 cfs @ 12.05 hrs, Volume= 1,582 cf
Outflow = 0.56 cfs @ 12.05 hrs, Volume= 1,582 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.05 hrs, Volume= 1,582 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.43' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.55 cfs @ 12.05 hrs HW=37.42' (Free Discharge)
1=Culvert (Inlet Controls 0.55 cfs @ 1.75 fps)

Summary for Pond CBN13-P: CBN 13

Inflow Area = 16,860 sf, 32.03% Impervious, Inflow Depth = 1.20" for 10-year event
Inflow = 0.45 cfs @ 12.12 hrs, Volume= 1,681 cf
Outflow = 0.45 cfs @ 12.12 hrs, Volume= 1,681 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.45 cfs @ 12.12 hrs, Volume= 1,681 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.38' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0308 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.43 cfs @ 12.12 hrs HW=37.37' (Free Discharge)
1=Culvert (Inlet Controls 0.43 cfs @ 1.63 fps)

Summary for Pond CBN14-P: CBN 14

Inflow Area = 35,155 sf, 35.84% Impervious, Inflow Depth = 1.33" for 10-year event
Inflow = 1.07 cfs @ 12.12 hrs, Volume= 3,897 cf
Outflow = 1.07 cfs @ 12.12 hrs, Volume= 3,897 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.07 cfs @ 12.12 hrs, Volume= 3,897 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.18' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.46'	**12.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.46' / 36.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.12 hrs HW=37.16' (Free Discharge)
1=Culvert (Barrel Controls 1.04 cfs @ 2.47 fps)

Summary for Pond CBN15-P: CBN 15

Inflow Area = 22,700 sf, 37.67% Impervious, Inflow Depth = 1.40" for 10-year event
Inflow = 0.75 cfs @ 12.11 hrs, Volume= 2,647 cf
Outflow = 0.75 cfs @ 12.11 hrs, Volume= 2,647 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 12.11 hrs, Volume= 2,647 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.90' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert** L= 6.6' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0303 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.73 cfs @ 12.11 hrs HW=38.89' (Free Discharge)
1=Culvert (Inlet Controls 0.73 cfs @ 1.89 fps)

Summary for Pond CBN16-P: CBN 16

Inflow Area = 27,500 sf, 33.82% Impervious, Inflow Depth = 1.26" for 10-year event
Inflow = 0.78 cfs @ 12.12 hrs, Volume= 2,894 cf
Outflow = 0.78 cfs @ 12.12 hrs, Volume= 2,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.78 cfs @ 12.12 hrs, Volume= 2,894 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.91' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.75 cfs @ 12.12 hrs HW=38.90' (Free Discharge)
1=Culvert (Inlet Controls 0.75 cfs @ 1.90 fps)

Summary for Pond CBN17-P: CBN 17

Inflow Area = 37,200 sf, 35.22% Impervious, Inflow Depth = 1.33" for 10-year event
Inflow = 1.09 cfs @ 12.13 hrs, Volume= 4,124 cf
Outflow = 1.09 cfs @ 12.13 hrs, Volume= 4,124 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.09 cfs @ 12.13 hrs, Volume= 4,124 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.62' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 2.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.70' S= 0.1250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.07 cfs @ 12.13 hrs HW=37.61' (Free Discharge)
1=Culvert (Inlet Controls 1.07 cfs @ 2.11 fps)

Summary for Pond CBN18-P: CBN 18

Inflow Area = 38,600 sf, 30.05% Impervious, Inflow Depth = 1.13" for 10-year event
Inflow = 0.91 cfs @ 12.14 hrs, Volume= 3,639 cf
Outflow = 0.91 cfs @ 12.14 hrs, Volume= 3,639 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.14 hrs, Volume= 3,639 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.56' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 10.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.70' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.89 cfs @ 12.14 hrs HW=37.55' (Free Discharge)
1=Culvert (Inlet Controls 0.89 cfs @ 2.00 fps)

Summary for Pond CBN19-P: CBN 19

Inflow Area = 35,700 sf, 29.41% Impervious, Inflow Depth = 1.07" for 10-year event
Inflow = 0.73 cfs @ 12.17 hrs, Volume= 3,176 cf
Outflow = 0.73 cfs @ 12.17 hrs, Volume= 3,176 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.17 hrs, Volume= 3,176 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.49' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	**12.0" Round Culvert** L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.00' / 35.55' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.17 hrs HW=36.49' (Free Discharge)
1=Culvert (Inlet Controls 0.71 cfs @ 1.88 fps)

Summary for Pond CBN2-P: CBN 2

Inflow Area = 6,060 sf, 62.21% Impervious, Inflow Depth = 2.58" for 10-year event
Inflow = 0.46 cfs @ 12.04 hrs, Volume= 1,301 cf
Outflow = 0.46 cfs @ 12.04 hrs, Volume= 1,301 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.04 hrs, Volume= 1,301 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.58' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 6.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0242 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.45 cfs @ 12.04 hrs HW=41.58' (Free Discharge)
1=Culvert (Inlet Controls 0.45 cfs @ 1.65 fps)

Summary for Pond CBN20-P: CBN 20

Inflow Area = 21,950 sf, 45.56% Impervious, Inflow Depth = 1.76" for 10-year event
Inflow = 0.89 cfs @ 12.14 hrs, Volume= 3,223 cf
Outflow = 0.89 cfs @ 12.14 hrs, Volume= 3,223 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.14 hrs, Volume= 3,223 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.71' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.16'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.16' / 34.00' S= 0.0533 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.14 hrs HW=34.71' (Free Discharge)
1=Culvert (Inlet Controls 0.87 cfs @ 1.99 fps)

Summary for Pond CBN21-P: CBN 21

Inflow Area = 41,030 sf, 28.03% Impervious, Inflow Depth = 1.07" for 10-year event
Inflow = 0.86 cfs @ 12.16 hrs, Volume= 3,650 cf
Outflow = 0.86 cfs @ 12.16 hrs, Volume= 3,650 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.86 cfs @ 12.16 hrs, Volume= 3,650 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.82' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.28'	**12.0" Round Culvert** L= 24.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.28' / 34.00' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.85 cfs @ 12.16 hrs HW=34.82' (Free Discharge)
1=Culvert (Inlet Controls 0.85 cfs @ 1.97 fps)

Summary for Pond CBN22-P: CBN 22

Inflow Area = 12,850 sf, 54.16% Impervious, Inflow Depth = 2.15" for 10-year event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 2,307 cf
Outflow = 0.73 cfs @ 12.09 hrs, Volume= 2,307 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.09 hrs, Volume= 2,307 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.52' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 33.00' / 32.70' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.09 hrs HW=33.52' (Free Discharge)
1=Culvert (Barrel Controls 0.71 cfs @ 2.54 fps)

Summary for Pond CBN23-P: CBN 23

Inflow Area = 79,340 sf, 24.58% Impervious, Inflow Depth = 0.94" for 10-year event
Inflow = 1.26 cfs @ 12.21 hrs, Volume= 6,240 cf
Outflow = 1.26 cfs @ 12.21 hrs, Volume= 6,240 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.21 hrs, Volume= 6,240 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.31' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**15.0" Round Culvert**
			L= 12.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0167 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=36.31' (Free Discharge)
1=Culvert (Inlet Controls 1.25 cfs @ 2.10 fps)

Summary for Pond CBN24-P: CBN 24

Inflow Area = 60,000 sf, 27.17% Impervious, Inflow Depth = 1.00" for 10-year event
Inflow = 1.21 cfs @ 12.13 hrs, Volume= 5,025 cf
Outflow = 1.21 cfs @ 12.13 hrs, Volume= 5,025 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.13 hrs, Volume= 5,025 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.36' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**12.0" Round Culvert**
			L= 4.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0500 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.18 cfs @ 12.13 hrs HW=36.35' (Free Discharge)
1=Culvert (Inlet Controls 1.18 cfs @ 2.17 fps)

Summary for Pond CBN25-P: CBN 25

Inflow Area = 57,860 sf, 29.47% Impervious, Inflow Depth = 1.07" for 10-year event
Inflow = 1.24 cfs @ 12.15 hrs, Volume= 5,147 cf
Outflow = 1.24 cfs @ 12.15 hrs, Volume= 5,147 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.24 cfs @ 12.15 hrs, Volume= 5,147 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.07' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 7.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.23 cfs @ 12.15 hrs HW=38.07' (Free Discharge)
1=Culvert (Inlet Controls 1.23 cfs @ 2.20 fps)

Summary for Pond CBN26-P: CBN 26

Inflow Area = 52,000 sf, 25.38% Impervious, Inflow Depth = 0.94" for 10-year event
Inflow = 0.90 cfs @ 12.16 hrs, Volume= 4,090 cf
Outflow = 0.90 cfs @ 12.16 hrs, Volume= 4,090 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.90 cfs @ 12.16 hrs, Volume= 4,090 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.96' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 14.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.89 cfs @ 12.16 hrs HW=37.95' (Free Discharge)
1=Culvert (Inlet Controls 0.89 cfs @ 2.00 fps)

Summary for Pond CBN27-P: CBN 27

Inflow Area = 40,900 sf, 32.03% Impervious, Inflow Depth = 1.20" for 10-year event
Inflow = 1.05 cfs @ 12.13 hrs, Volume= 4,078 cf
Outflow = 1.05 cfs @ 12.13 hrs, Volume= 4,078 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.13 hrs, Volume= 4,078 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.11' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 10.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.13 hrs HW=37.10' (Free Discharge)
1=Culvert (Inlet Controls 1.02 cfs @ 2.08 fps)

Summary for Pond CBN28-P: CBN 28

Inflow Area = 44,000 sf, 30.70% Impervious, Inflow Depth = 1.13" for 10-year event
Inflow = 1.02 cfs @ 12.14 hrs, Volume= 4,148 cf
Outflow = 1.02 cfs @ 12.14 hrs, Volume= 4,148 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.14 hrs, Volume= 4,148 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.10' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0667 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.01 cfs @ 12.14 hrs HW=37.10' (Free Discharge)
1=Culvert (Inlet Controls 1.01 cfs @ 2.08 fps)

Summary for Pond CBN29-P: CBN 29

Inflow Area = 21,080 sf, 33.21% Impervious, Inflow Depth = 1.26" for 10-year event
Inflow = 0.59 cfs @ 12.12 hrs, Volume= 2,218 cf
Outflow = 0.59 cfs @ 12.12 hrs, Volume= 2,218 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.12 hrs, Volume= 2,218 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.44' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 21.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0140 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 12.12 hrs HW=35.43' (Free Discharge)
1=Culvert (Inlet Controls 0.57 cfs @ 1.76 fps)

Summary for Pond CBN3-P: CBN 3

Inflow Area = 15,906 sf, 67.90% Impervious, Inflow Depth = 2.84" for 10-year event
Inflow = 1.27 cfs @ 12.06 hrs, Volume= 3,771 cf
Outflow = 1.27 cfs @ 12.06 hrs, Volume= 3,771 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.27 cfs @ 12.06 hrs, Volume= 3,771 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.74' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0083 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.22 cfs @ 12.06 hrs HW=39.72' (Free Discharge)
1=Culvert (Barrel Controls 1.22 cfs @ 2.83 fps)

Summary for Pond CBN30-P: CBN 30

Inflow Area = 14,700 sf, 32.65% Impervious, Inflow Depth = 1.20" for 10-year event
Inflow = 0.37 cfs @ 12.13 hrs, Volume= 1,466 cf
Outflow = 0.37 cfs @ 12.13 hrs, Volume= 1,466 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 12.13 hrs, Volume= 1,466 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.34' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert**
			L= 11.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0263 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.13 hrs HW=35.34' (Free Discharge)
1=Culvert (Inlet Controls 0.37 cfs @ 1.56 fps)

Summary for Pond CBN4-P: CBN 4

Inflow Area = 42,674 sf, 24.14% Impervious, Inflow Depth = 0.88" for 10-year event
Inflow = 0.70 cfs @ 12.14 hrs, Volume= 3,143 cf
Outflow = 0.70 cfs @ 12.14 hrs, Volume= 3,143 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.14 hrs, Volume= 3,143 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.49' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert**
			L= 3.3' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0303 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 12.14 hrs HW=39.49' (Free Discharge)
1=Culvert (Barrel Controls 0.69 cfs @ 2.65 fps)

Summary for Pond CBN5-P: CBN 5

Inflow Area = 15,690 sf, 56.09% Impervious, Inflow Depth = 2.24" for 10-year event
Inflow = 0.87 cfs @ 12.11 hrs, Volume= 2,924 cf
Outflow = 0.87 cfs @ 12.11 hrs, Volume= 2,924 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.11 hrs, Volume= 2,924 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.69' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 13.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0073 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.85 cfs @ 12.11 hrs HW=39.68' (Free Discharge)
1=Culvert (Barrel Controls 0.85 cfs @ 2.58 fps)

Summary for Pond CBN6-P: CBN 6

Inflow Area = 15,080 sf, 45.09% Impervious, Inflow Depth = 1.76" for 10-year event
Inflow = 0.64 cfs @ 12.12 hrs, Volume= 2,214 cf
Outflow = 0.64 cfs @ 12.12 hrs, Volume= 2,214 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.12 hrs, Volume= 2,214 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.58' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.62 cfs @ 12.12 hrs HW=39.57' (Free Discharge)
1=Culvert (Barrel Controls 0.62 cfs @ 2.53 fps)

Summary for Pond CBN7-P: CBN 7

Inflow Area = 63,520 sf, 21.65% Impervious, Inflow Depth = 0.83" for 10-year event
Inflow = 0.85 cfs @ 12.19 hrs, Volume= 4,370 cf
Outflow = 0.85 cfs @ 12.19 hrs, Volume= 4,370 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.19 hrs, Volume= 4,370 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.24' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 189.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.70' / 34.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.84 cfs @ 12.19 hrs HW=37.24' (Free Discharge)
1=Culvert (Inlet Controls 0.84 cfs @ 1.97 fps)

Summary for Pond CBN8-P: CBN 8

Inflow Area = 25,560 sf, 51.84% Impervious, Inflow Depth = 2.07" for 10-year event
Inflow = 1.20 cfs @ 12.15 hrs, Volume= 4,416 cf
Outflow = 1.20 cfs @ 12.15 hrs, Volume= 4,416 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.20 cfs @ 12.15 hrs, Volume= 4,416 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.66' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.19 cfs @ 12.15 hrs HW=35.66' (Free Discharge)
1=Culvert (Inlet Controls 1.19 cfs @ 2.18 fps)

Summary for Pond CBN9-P: CBN 9

Inflow Area = 85,255 sf, 19.24% Impervious, Inflow Depth = 0.71" for 10-year event
Inflow = 0.88 cfs @ 12.21 hrs, Volume= 5,064 cf
Outflow = 0.88 cfs @ 12.21 hrs, Volume= 5,064 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.88 cfs @ 12.21 hrs, Volume= 5,064 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.55' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 6.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.88 cfs @ 12.21 hrs HW=35.55' (Free Discharge)
1=Culvert (Inlet Controls 0.88 cfs @ 1.99 fps)

Summary for Pond DMH1-P: DMH 1 to 4

Inflow Area = 14,060 sf, 66.64% Impervious, Inflow Depth = 2.78" for 10-year event
Inflow = 1.15 cfs @ 12.04 hrs, Volume= 3,259 cf
Outflow = 1.15 cfs @ 12.04 hrs, Volume= 3,259 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.15 cfs @ 12.04 hrs, Volume= 3,259 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.72' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.00'	**12.0" Round Culvert** L= 645.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 41.00' / 38.90' S= 0.0033 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.04 hrs HW=41.71' (Free Discharge)
1=Culvert (Barrel Controls 1.12 cfs @ 2.66 fps)

Summary for Pond DMH11-P: DMH 11

Inflow Area = 404,875 sf, 27.68% Impervious, Inflow Depth = 1.04" for 10-year event
Inflow = 7.96 cfs @ 12.16 hrs, Volume= 34,997 cf
Outflow = 7.96 cfs @ 12.16 hrs, Volume= 34,997 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.96 cfs @ 12.16 hrs, Volume= 34,997 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.16' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.90'	**24.0" Round Culvert**
			L= 41.8' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.90' / 32.10' S= 0.0191 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.88 cfs @ 12.16 hrs HW=34.15' (Free Discharge)
1=Culvert (Inlet Controls 7.88 cfs @ 3.81 fps)

Summary for Pond DMH12-P: DMH 12

Inflow Area = 500,055 sf, 28.95% Impervious, Inflow Depth = 1.09" for 10-year event
Inflow = 10.30 cfs @ 12.15 hrs, Volume= 45,271 cf
Outflow = 10.30 cfs @ 12.15 hrs, Volume= 45,271 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.30 cfs @ 12.15 hrs, Volume= 45,271 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.57' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.00'	**30.0" Round Culvert**
			L= 35.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.00' / 31.80' S= 0.0057 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=10.28 cfs @ 12.15 hrs HW=33.56' (Free Discharge)
1=Culvert (Barrel Controls 10.28 cfs @ 4.54 fps)

Summary for Pond DMH13-P: DMH 13

Inflow Area = 95,180 sf, 34.36% Impervious, Inflow Depth = 1.30" for 10-year event
Inflow = 2.42 cfs @ 12.12 hrs, Volume= 10,275 cf
Outflow = 2.42 cfs @ 12.12 hrs, Volume= 10,275 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.42 cfs @ 12.12 hrs, Volume= 10,275 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.86' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**15.0" Round Culvert** L= 150.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.00' / 32.10' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.36 cfs @ 12.12 hrs HW=33.84' (Free Discharge)
1=Culvert (Barrel Controls 2.36 cfs @ 3.79 fps)

Summary for Pond DMH14-P: DMH 14

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 1.66" for 10-year event
Inflow = 0.91 cfs @ 12.07 hrs, Volume= 3,263 cf
Outflow = 0.91 cfs @ 12.07 hrs, Volume= 3,263 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.07 hrs, Volume= 3,263 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.30' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.45' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.07 hrs HW=37.29' (Free Discharge)
1=Culvert (Barrel Controls 0.87 cfs @ 2.63 fps)

Summary for Pond DMH15-P: DMH 15

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 1.66" for 10-year event
Inflow = 0.91 cfs @ 12.07 hrs, Volume= 3,263 cf
Outflow = 0.91 cfs @ 12.07 hrs, Volume= 3,263 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.07 hrs, Volume= 3,263 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.99' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.40'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.40' / 36.10' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.07 hrs HW=36.98' (Free Discharge)
1=Culvert (Barrel Controls 0.87 cfs @ 2.67 fps)

Summary for Pond DMH16-P: DMH 16

Inflow Area = 58,690 sf, 38.34% Impervious, Inflow Depth = 1.46" for 10-year event
Inflow = 1.93 cfs @ 12.10 hrs, Volume= 7,161 cf
Outflow = 1.93 cfs @ 12.10 hrs, Volume= 7,161 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.93 cfs @ 12.10 hrs, Volume= 7,161 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.87' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.05'	**15.0" Round Culvert** L= 18.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.05' / 35.95' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.92 cfs @ 12.10 hrs HW=36.87' (Free Discharge)
1=Culvert (Barrel Controls 1.92 cfs @ 3.19 fps)

Summary for Pond DMH17-P: DMH 17

Inflow Area = 50,200 sf, 35.56% Impervious, Inflow Depth = 1.32" for 10-year event
Inflow = 1.53 cfs @ 12.12 hrs, Volume= 5,541 cf
Outflow = 1.53 cfs @ 12.12 hrs, Volume= 5,541 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.53 cfs @ 12.12 hrs, Volume= 5,541 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.83' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	**12.0" Round Culvert** L= 290.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 36.45' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.48 cfs @ 12.12 hrs HW=38.82' (Free Discharge)
1=Culvert (Barrel Controls 1.48 cfs @ 3.42 fps)

Summary for Pond DMH18-P: DMH 18

Inflow Area = 126,000 sf, 33.77% Impervious, Inflow Depth = 1.27" for 10-year event
Inflow = 3.54 cfs @ 12.12 hrs, Volume= 13,304 cf
Outflow = 3.54 cfs @ 12.12 hrs, Volume= 13,304 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.54 cfs @ 12.12 hrs, Volume= 13,304 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.31' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.35'	**18.0" Round Culvert** L= 283.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 36.35' / 34.70' S= 0.0058 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.42 cfs @ 12.12 hrs HW=37.29' (Free Discharge)
1=Culvert (Barrel Controls 3.42 cfs @ 4.18 fps)

Summary for Pond DMH19-P: DMH 19 to 20

Inflow Area = 161,700 sf, 32.81% Impervious, Inflow Depth = 1.22" for 10-year event
Inflow = 4.17 cfs @ 12.13 hrs, Volume= 16,479 cf
Outflow = 4.17 cfs @ 12.13 hrs, Volume= 16,479 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.17 cfs @ 12.13 hrs, Volume= 16,479 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.63' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.60'	**18.0" Round Culvert**
			L= 240.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 34.60' / 33.00' S= 0.0067 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.09 cfs @ 12.13 hrs HW=35.62' (Free Discharge)
1=Culvert (Barrel Controls 4.09 cfs @ 4.53 fps)

Summary for Pond DMH21-P: DMH 21

Inflow Area = 224,680 sf, 33.18% Impervious, Inflow Depth = 1.25" for 10-year event
Inflow = 5.90 cfs @ 12.14 hrs, Volume= 23,352 cf
Outflow = 5.90 cfs @ 12.14 hrs, Volume= 23,352 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.90 cfs @ 12.14 hrs, Volume= 23,352 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.86' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.60'	**24.0" Round Culvert**
			L= 86.6' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 33.60' / 33.25' S= 0.0040 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.80 cfs @ 12.14 hrs HW=34.85' (Free Discharge)
1=Culvert (Barrel Controls 5.80 cfs @ 4.02 fps)

Summary for Pond DMH22-P: DMH 22

Inflow Area = 237,530 sf, 34.32% Impervious, Inflow Depth = 1.30" for 10-year event
Inflow = 6.52 cfs @ 12.13 hrs, Volume= 25,659 cf
Outflow = 6.52 cfs @ 12.13 hrs, Volume= 25,659 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.52 cfs @ 12.13 hrs, Volume= 25,659 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.87' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.50'	**24.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 32.50' / 32.40' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.40 cfs @ 12.13 hrs HW=33.86' (Free Discharge)
1=Culvert (Barrel Controls 6.40 cfs @ 3.97 fps)

Summary for Pond DMH23-P: DMH 23 TO 25

Inflow Area = 139,340 sf, 25.69% Impervious, Inflow Depth = 0.97" for 10-year event
Inflow = 2.37 cfs @ 12.17 hrs, Volume= 11,265 cf
Outflow = 2.37 cfs @ 12.17 hrs, Volume= 11,265 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.37 cfs @ 12.17 hrs, Volume= 11,265 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.24' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 34.20' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.32 cfs @ 12.17 hrs HW=36.23' (Free Discharge)
1=Culvert (Barrel Controls 2.32 cfs @ 3.82 fps)

Summary for Pond DMH26-P: DMH 26 TO 28

Inflow Area = 109,860 sf, 27.54% Impervious, Inflow Depth = 1.01" for 10-year event
Inflow = 2.14 cfs @ 12.15 hrs, Volume= 9,237 cf
Outflow = 2.14 cfs @ 12.15 hrs, Volume= 9,237 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.14 cfs @ 12.15 hrs, Volume= 9,237 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.90' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.10'	**15.0" Round Culvert** L= 306.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.10' / 35.45' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.12 cfs @ 12.15 hrs HW=37.90' (Free Discharge)
1=Culvert (Barrel Controls 2.12 cfs @ 3.66 fps)

Summary for Pond DMH29-P: DMH 29 TO 32

Inflow Area = 194,760 sf, 29.19% Impervious, Inflow Depth = 1.08" for 10-year event
Inflow = 4.19 cfs @ 12.15 hrs, Volume= 17,462 cf
Outflow = 4.19 cfs @ 12.15 hrs, Volume= 17,462 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.19 cfs @ 12.15 hrs, Volume= 17,462 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.46' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**18.0" Round Culvert** L= 396.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 33.10' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.16 cfs @ 12.15 hrs HW=36.45' (Free Discharge)
1=Culvert (Barrel Controls 4.16 cfs @ 4.42 fps)

Summary for Pond DMH33-P: DMH 33

Inflow Area = 230,540 sf, 29.78% Impervious, Inflow Depth = 1.10" for 10-year event
Inflow = 5.14 cfs @ 12.14 hrs, Volume= 21,146 cf
Outflow = 5.14 cfs @ 12.14 hrs, Volume= 21,146 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.14 cfs @ 12.14 hrs, Volume= 21,146 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.25' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.05'	**24.0" Round Culvert** L= 8.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.05' / 33.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.08 cfs @ 12.14 hrs HW=34.24' (Free Discharge)
1=Culvert (Barrel Controls 5.08 cfs @ 3.73 fps)

Summary for Pond DMH5-P: DMH 5 to 6

Inflow Area = 72,640 sf, 41.95% Impervious, Inflow Depth = 1.68" for 10-year event
Inflow = 2.88 cfs @ 12.07 hrs, Volume= 10,173 cf
Outflow = 2.88 cfs @ 12.07 hrs, Volume= 10,173 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.88 cfs @ 12.07 hrs, Volume= 10,173 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.81' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.80'	**18.0" Round Culvert** L= 242.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.80' / 38.05' S= 0.0031 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.78 cfs @ 12.07 hrs HW=39.79' (Free Discharge)
1=Culvert (Barrel Controls 2.78 cfs @ 3.18 fps)

Summary for Pond DMH7-P: DMH 7

Inflow Area = 103,410 sf, 44.55% Impervious, Inflow Depth = 1.78" for 10-year event
Inflow = 4.19 cfs @ 12.08 hrs, Volume= 15,311 cf
Outflow = 4.19 cfs @ 12.08 hrs, Volume= 15,311 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.19 cfs @ 12.08 hrs, Volume= 15,311 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.15' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	**18.0" Round Culvert**
			L= 30.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.00' / 37.80' S= 0.0066 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.11 cfs @ 12.08 hrs HW=39.14' (Free Discharge)
1=Culvert (Barrel Controls 4.11 cfs @ 3.95 fps)

Summary for Pond DMH8-P: DMH 8

Inflow Area = 30,770 sf, 50.70% Impervious, Inflow Depth = 2.00" for 10-year event
Inflow = 1.51 cfs @ 12.12 hrs, Volume= 5,138 cf
Outflow = 1.51 cfs @ 12.12 hrs, Volume= 5,138 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.51 cfs @ 12.12 hrs, Volume= 5,138 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.66' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**12.0" Round Culvert**
			L= 107.3' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.90' / 38.35' S= 0.0051 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.47 cfs @ 12.12 hrs HW=39.65' (Free Discharge)
1=Culvert (Barrel Controls 1.47 cfs @ 3.23 fps)

Summary for Pond DMH9-P: DMH 9 TO 10

Inflow Area = 174,335 sf, 24.89% Impervious, Inflow Depth = 0.95" for 10-year event
Inflow = 2.86 cfs @ 12.18 hrs, Volume= 13,850 cf
Outflow = 2.86 cfs @ 12.18 hrs, Volume= 13,850 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.86 cfs @ 12.18 hrs, Volume= 13,850 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.56' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**18.0" Round Culvert** L= 314.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 33.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.83 cfs @ 12.18 hrs HW=35.56' (Free Discharge)
└**1=Culvert** (Barrel Controls 2.83 cfs @ 3.90 fps)

Summary for Pond IB1-P: Infiltration Basin #1

Inflow Area = 119,034 sf, 46.66% Impervious, Inflow Depth = 1.87" for 10-year event
Inflow = 5.21 cfs @ 12.09 hrs, Volume= 18,553 cf
Outflow = 0.49 cfs @ 13.67 hrs, Volume= 18,553 cf, Atten= 91%, Lag= 95.2 min
Discarded = 0.49 cfs @ 13.67 hrs, Volume= 18,553 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.03' @ 13.67 hrs Surf.Area= 8,752 sf Storage= 7,432 cf

Plug-Flow detention time= 152.5 min calculated for 18,537 cf (100% of inflow)
Center-of-Mass det. time= 152.4 min (997.8 - 845.4)

Volume	Invert	Avail.Storage	Storage Description
#1	37.10'	39,183 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
37.10	7,290	0	0	7,290
38.00	8,640	7,160	7,160	8,670
38.10	9,000	882	8,042	9,031
39.50	10,660	13,746	21,787	10,762
41.00	12,560	17,396	39,183	12,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	39.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.49 cfs @ 13.67 hrs HW=38.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.49 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=37.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB2-P: Infiltration Basin #2

Inflow Area = 261,520 sf, 37.21% Impervious, Inflow Depth = 1.43" for 10-year event
Inflow = 8.24 cfs @ 12.12 hrs, Volume= 31,165 cf
Outflow = 0.69 cfs @ 14.65 hrs, Volume= 31,165 cf, Atten= 92%, Lag= 151.8 min
Discarded = 0.69 cfs @ 14.65 hrs, Volume= 31,165 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 32.38' @ 14.65 hrs Surf.Area= 12,390 sf Storage= 13,254 cf

Plug-Flow detention time= 210.5 min calculated for 31,139 cf (100% of inflow)
Center-of-Mass det. time= 210.4 min (1,078.2 - 867.8)

Volume	Invert	Avail.Storage	Storage Description
#1	31.20'	52,845 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.20	10,000	0	0	10,000
32.00	11,650	8,652	8,652	11,676
34.50	16,890	35,473	44,124	17,021
35.00	18,000	8,721	52,845	18,156

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.20'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	34.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.69 cfs @ 14.65 hrs HW=32.38' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.69 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.20' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB3-P: Infiltration Basin #3

Inflow Area = 155,960 sf, 27.12% Impervious, Inflow Depth = 1.02" for 10-year event
Inflow = 2.86 cfs @ 12.16 hrs, Volume= 13,300 cf
Outflow = 0.22 cfs @ 16.05 hrs, Volume= 13,300 cf, Atten= 92%, Lag= 233.9 min
Discarded = 0.22 cfs @ 16.05 hrs, Volume= 13,300 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 32.92' @ 16.05 hrs Surf.Area= 3,885 sf Storage= 6,409 cf

Plug-Flow detention time= 336.8 min calculated for 13,300 cf (100% of inflow)
Center-of-Mass det. time= 336.6 min (1,229.7 - 893.1)

Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	36,051 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.00	2,150	0	0	2,150
32.00	3,730	2,904	2,904	3,741
34.00	4,070	7,798	10,701	4,300
34.10	4,680	437	11,139	4,910
36.75	7,010	15,386	26,524	7,347
38.00	8,250	9,527	36,051	8,646

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.00'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	36.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.22 cfs @ 16.05 hrs HW=32.92' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB4-P: Infiltration Basin #4

Inflow Area = 530,385 sf, 30.73% Impervious, Inflow Depth = 1.17" for 10-year event
Inflow = 11.96 cfs @ 12.14 hrs, Volume= 51,565 cf
Outflow = 0.76 cfs @ 16.25 hrs, Volume= 51,565 cf, Atten= 94%, Lag= 246.5 min
Discarded = 0.76 cfs @ 16.25 hrs, Volume= 51,565 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 31.84' @ 16.25 hrs Surf.Area= 13,615 sf Storage= 26,675 cf

Plug-Flow detention time= 411.3 min calculated for 51,521 cf (100% of inflow)
Center-of-Mass det. time= 411.4 min (1,291.5 - 880.1)

Volume	Invert	Avail.Storage	Storage Description
#1	29.50'	117,366 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
29.50	9,265	0	0	9,265
30.00	10,130	4,847	4,847	10,147
31.00	12,000	11,052	15,899	12,054
32.00	13,930	12,953	28,852	14,026
35.75	19,650	62,656	91,508	19,998
36.00	20,060	4,964	96,471	20,426
37.00	21,740	20,894	117,366	22,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	29.50'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	35.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.76 cfs @ 16.25 hrs HW=31.84' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.76 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=29.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB5-P: Infiltration Basin #5

Inflow Area = 70,490 sf, 40.57% Impervious, Inflow Depth = 1.57" for 10-year event
Inflow = 2.56 cfs @ 12.10 hrs, Volume= 9,200 cf
Outflow = 0.26 cfs @ 13.66 hrs, Volume= 9,200 cf, Atten= 90%, Lag= 93.5 min
Discarded = 0.26 cfs @ 13.66 hrs, Volume= 9,200 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.95' @ 13.66 hrs Surf.Area= 4,715 sf Storage= 3,517 cf

Plug-Flow detention time= 138.0 min calculated for 9,192 cf (100% of inflow)
Center-of-Mass det. time= 137.9 min (999.0 - 861.1)

Volume	Invert	Avail.Storage	Storage Description
#1	35.10'	23,803 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.10	3,630	0	0	3,630
36.00	4,790	3,777	3,777	4,808
36.10	4,980	488	4,265	5,000
38.00	7,300	11,596	15,861	7,379
39.00	8,600	7,941	23,803	8,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	35.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	38.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.26 cfs @ 13.66 hrs HW=35.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=35.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=1.00-60.00 hrs, dt=0.05 hrs, 1181 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment IB1-1S: To CBN 1 Runoff Area=8,000 sf 70.00% Impervious Runoff Depth=3.83"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=80 Runoff=0.90 cfs 2,551 cf

Subcatchment IB1-2S: To CBN 2 Runoff Area=6,060 sf 62.21% Impervious Runoff Depth=3.42"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=76 Runoff=0.61 cfs 1,729 cf

Subcatchment IB1-3S: To CBN 3 Runoff Area=15,906 sf 67.90% Impervious Runoff Depth=3.72"
Flow Length=450' Slope=0.0100 '/' Tc=4.2 min CN=79 Runoff=1.66 cfs 4,937 cf

Subcatchment IB1-4S: To CBN 4 Runoff Area=42,674 sf 24.14% Impervious Runoff Depth=1.39"
Flow Length=215' Tc=7.3 min CN=53 Runoff=1.29 cfs 4,948 cf

Subcatchment IB1-5S: To CBN 5 Runoff Area=15,690 sf 56.09% Impervious Runoff Depth=3.03"
Flow Length=255' Tc=7.6 min CN=72 Runoff=1.19 cfs 3,967 cf

Subcatchment IB1-6S: To CBN 6 Runoff Area=15,080 sf 45.09% Impervious Runoff Depth=2.48"
Flow Length=250' Tc=7.6 min CN=66 Runoff=0.92 cfs 3,113 cf

Subcatchment IB1-S: Direct to IB #1 Runoff Area=15,624 sf 60.61% Impervious Runoff Depth=3.32"
Tc=6.0 min CN=75 Runoff=1.37 cfs 4,329 cf

Subcatchment IB2-15S: To CBN 15 Runoff Area=22,700 sf 37.67% Impervious Runoff Depth=2.04"
Flow Length=156' Tc=6.7 min CN=61 Runoff=1.15 cfs 3,857 cf

Subcatchment IB2-16S: To CBN 16 Runoff Area=27,500 sf 33.82% Impervious Runoff Depth=1.87"
Flow Length=226' Tc=7.3 min CN=59 Runoff=1.22 cfs 4,287 cf

Subcatchment IB2-17S: To CBN 17 Runoff Area=37,200 sf 35.22% Impervious Runoff Depth=1.95"
Flow Length=300' Tc=7.9 min CN=60 Runoff=1.71 cfs 6,058 cf

Subcatchment IB2-18S: To CBN 18 Runoff Area=38,600 sf 30.05% Impervious Runoff Depth=1.71"
Flow Length=300' Tc=7.9 min CN=57 Runoff=1.48 cfs 5,489 cf

Subcatchment IB2-19S: To CBN 19 Runoff Area=35,700 sf 29.41% Impervious Runoff Depth=1.63"
Flow Length=380' Tc=10.0 min CN=56 Runoff=1.22 cfs 4,837 cf

Subcatchment IB2-20S: To CBN 20 Runoff Area=21,950 sf 45.56% Impervious Runoff Depth=2.48"
Flow Length=410' Tc=8.8 min CN=66 Runoff=1.28 cfs 4,531 cf

Subcatchment IB2-21S: To CBN 21 Runoff Area=41,030 sf 28.03% Impervious Runoff Depth=1.63"
Flow Length=450' Tc=9.2 min CN=56 Runoff=1.43 cfs 5,559 cf

Subcatchment IB2-22S: To CBN 22 Runoff Area=12,850 sf 54.16% Impervious Runoff Depth=2.94"
Flow Length=166' Tc=5.3 min CN=71 Runoff=1.01 cfs 3,147 cf

Subcatchment IB2-S: Direct To IB #2 Runoff Area=23,990 sf 65.86% Impervious Runoff Depth=3.62"
Tc=6.0 min CN=78 Runoff=2.29 cfs 7,243 cf

Subcatchment IB3-23S: To CBN 23 Runoff Area=79,340 sf 24.58% Impervious Runoff Depth=1.47"
Flow Length=405' Tc=12.0 min CN=54 Runoff=2.21 cfs 9,708 cf

Subcatchment IB3-24S: To CBN 24 Runoff Area=60,000 sf 27.17% Impervious Runoff Depth=1.55"
Flow Length=252' Tc=7.4 min CN=55 Runoff=2.09 cfs 7,733 cf

Subcatchment IB3-S: Direct to IB #3 Runoff Area=16,620 sf 39.11% Impervious Runoff Depth=2.12"
Tc=6.0 min CN=62 Runoff=0.90 cfs 2,943 cf

Subcatchment IB4-10S: To CBN 10 Runoff Area=22,450 sf 55.23% Impervious Runoff Depth=3.03"
Flow Length=600' Slope=0.0100 '/' Tc=5.4 min CN=72 Runoff=1.82 cfs 5,676 cf

Subcatchment IB4-11S: To CBN 11 Runoff Area=72,730 sf 27.91% Impervious Runoff Depth=1.55"
Flow Length=600' Tc=10.4 min CN=55 Runoff=2.29 cfs 9,374 cf

Subcatchment IB4-25S: To CBN 25 Runoff Area=57,860 sf 29.47% Impervious Runoff Depth=1.63"
Flow Length=350' Tc=8.4 min CN=56 Runoff=2.06 cfs 7,840 cf

Subcatchment IB4-26S: To CBN 26 Runoff Area=52,000 sf 25.38% Impervious Runoff Depth=1.47"
Flow Length=370' Tc=9.3 min CN=54 Runoff=1.58 cfs 6,363 cf

Subcatchment IB4-27S: To CBN 27 Runoff Area=40,900 sf 32.03% Impervious Runoff Depth=1.79"
Flow Length=243' Tc=7.7 min CN=58 Runoff=1.69 cfs 6,094 cf

Subcatchment IB4-28S: To CBN 28 Runoff Area=44,000 sf 30.70% Impervious Runoff Depth=1.71"
Flow Length=350' Tc=8.4 min CN=57 Runoff=1.66 cfs 6,257 cf

Subcatchment IB4-29S: To CBN 29 Runoff Area=21,080 sf 33.21% Impervious Runoff Depth=1.87"
Flow Length=260' Tc=7.5 min CN=59 Runoff=0.93 cfs 3,286 cf

Subcatchment IB4-30S: To CBN 30 Runoff Area=14,700 sf 32.65% Impervious Runoff Depth=1.79"
Flow Length=290' Tc=7.9 min CN=58 Runoff=0.60 cfs 2,190 cf

Subcatchment IB4-7S: To CBN 7 Runoff Area=63,520 sf 21.65% Impervious Runoff Depth=1.32"
Flow Length=344' Tc=10.4 min CN=52 Runoff=1.60 cfs 6,963 cf

Subcatchment IB4-8S: To CBN 8 Runoff Area=25,560 sf 51.84% Impervious Runoff Depth=2.84"
Flow Length=600' Tc=10.4 min CN=70 Runoff=1.66 cfs 6,060 cf

Subcatchment IB4-9S: To CBN 9 Runoff Area=85,255 sf 19.24% Impervious Runoff Depth=1.17"
Flow Length=378' Tc=10.3 min CN=50 Runoff=1.81 cfs 8,294 cf

Subcatchment IB4-S: Direct to IB #4 Runoff Area=30,330 sf 60.17% Impervious Runoff Depth=3.32"
Tc=6.0 min CN=75 Runoff=2.66 cfs 8,403 cf

Subcatchment IB5-12S: To CBN 12 Runoff Area=6,675 sf 67.42% Impervious Runoff Depth=3.72"
Flow Length=180' Tc=2.8 min CN=79 Runoff=0.73 cfs 2,072 cf

Subcatchment IB5-13S: To CBN 13 Runoff Area=16,860 sf 32.03% Impervious Runoff Depth=1.79"
Flow Length=235' Tc=7.1 min CN=58 Runoff=0.71 cfs 2,512 cf

Subcatchment IB5-14S: To CBN 14 Runoff Area=35,155 sf 35.84% Impervious Runoff Depth=1.95"
Flow Length=185' Tc=7.1 min CN=60 Runoff=1.66 cfs 5,725 cf

Subcatchment IB5-S: Direct to IB #5 Runoff Area=11,800 sf 51.69% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=70 Runoff=0.88 cfs 2,798 cf

Pond CBN1-P: CBN 1 Peak Elev=41.77' Inflow=0.90 cfs 2,551 cf
12.0" Round Culvert n=0.013 L=12.1' S=0.0124 '/' Outflow=0.90 cfs 2,551 cf

Pond CBN10-P: CBN 10 Peak Elev=34.14' Inflow=1.82 cfs 5,676 cf
12.0" Round Culvert n=0.013 L=15.1' S=0.0093 '/' Outflow=1.82 cfs 5,676 cf

Pond CBN11-P: CBN 11 Peak Elev=34.15' Inflow=2.29 cfs 9,374 cf
15.0" Round Culvert n=0.013 L=8.6' S=0.0163 '/' Outflow=2.29 cfs 9,374 cf

Pond CBN12-P: CBN 12 Peak Elev=37.49' Inflow=0.73 cfs 2,072 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=0.73 cfs 2,072 cf

Pond CBN13-P: CBN 13 Peak Elev=37.49' Inflow=0.71 cfs 2,512 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0308 '/' Outflow=0.71 cfs 2,512 cf

Pond CBN14-P: CBN 14 Peak Elev=37.41' Inflow=1.66 cfs 5,725 cf
12.0" Round Culvert n=0.013 L=126.0' S=0.0029 '/' Outflow=1.66 cfs 5,725 cf

Pond CBN15-P: CBN 15 Peak Elev=39.04' Inflow=1.15 cfs 3,857 cf
12.0" Round Culvert n=0.013 L=6.6' S=0.0303 '/' Outflow=1.15 cfs 3,857 cf

Pond CBN16-P: CBN 16 Peak Elev=39.07' Inflow=1.22 cfs 4,287 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=1.22 cfs 4,287 cf

Pond CBN17-P: CBN 17 Peak Elev=37.83' Inflow=1.71 cfs 6,058 cf
12.0" Round Culvert n=0.013 L=2.4' S=0.1250 '/' Outflow=1.71 cfs 6,058 cf

Pond CBN18-P: CBN 18 Peak Elev=37.75' Inflow=1.48 cfs 5,489 cf
12.0" Round Culvert n=0.013 L=10.5' S=0.0286 '/' Outflow=1.48 cfs 5,489 cf

Pond CBN19-P: CBN 19 Peak Elev=36.67' Inflow=1.22 cfs 4,837 cf
12.0" Round Culvert n=0.013 L=10.8' S=0.0417 '/' Outflow=1.22 cfs 4,837 cf

Pond CBN2-P: CBN 2 Peak Elev=41.65' Inflow=0.61 cfs 1,729 cf
12.0" Round Culvert n=0.013 L=6.2' S=0.0242 '/' Outflow=0.61 cfs 1,729 cf

Pond CBN20-P: CBN 20 Peak Elev=34.85' Inflow=1.28 cfs 4,531 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0533 '/' Outflow=1.28 cfs 4,531 cf

Pond CBN21-P: CBN 21 Peak Elev=35.02' Inflow=1.43 cfs 5,559 cf
12.0" Round Culvert n=0.013 L=24.6' S=0.0114 '/' Outflow=1.43 cfs 5,559 cf

Pond CBN22-P: CBN 22 Peak Elev=33.63' Inflow=1.01 cfs 3,147 cf
12.0" Round Culvert n=0.013 L=60.0' S=0.0050 '/' Outflow=1.01 cfs 3,147 cf

Pond CBN23-P: CBN 23 Peak Elev=36.55' Inflow=2.21 cfs 9,708 cf
15.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=2.21 cfs 9,708 cf

Pond CBN24-P: CBN 24 Peak Elev=36.67' Inflow=2.09 cfs 7,733 cf
12.0" Round Culvert n=0.013 L=4.0' S=0.0500 '/' Outflow=2.09 cfs 7,733 cf

Pond CBN25-P: CBN 25 Peak Elev=38.37' Inflow=2.06 cfs 7,840 cf
12.0" Round Culvert n=0.013 L=7.4' S=0.0270 '/' Outflow=2.06 cfs 7,840 cf

Pond CBN26-P: CBN 26 Peak Elev=38.19' Inflow=1.58 cfs 6,363 cf
12.0" Round Culvert n=0.013 L=14.5' S=0.0138 '/' Outflow=1.58 cfs 6,363 cf

Pond CBN27-P: CBN 27 Peak Elev=37.33' Inflow=1.69 cfs 6,094 cf
12.0" Round Culvert n=0.013 L=10.7' S=0.0187 '/' Outflow=1.69 cfs 6,094 cf

Pond CBN28-P: CBN 28 Peak Elev=37.32' Inflow=1.66 cfs 6,257 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0667 '/' Outflow=1.66 cfs 6,257 cf

Pond CBN29-P: CBN 29 Peak Elev=35.57' Inflow=0.93 cfs 3,286 cf
12.0" Round Culvert n=0.013 L=21.4' S=0.0140 '/' Outflow=0.93 cfs 3,286 cf

Pond CBN3-P: CBN 3 Peak Elev=39.87' Inflow=1.66 cfs 4,937 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=1.66 cfs 4,937 cf

Pond CBN30-P: CBN 30 Peak Elev=35.44' Inflow=0.60 cfs 2,190 cf
12.0" Round Culvert n=0.013 L=11.4' S=0.0263 '/' Outflow=0.60 cfs 2,190 cf

Pond CBN4-P: CBN 4 Peak Elev=39.72' Inflow=1.29 cfs 4,948 cf
12.0" Round Culvert n=0.013 L=3.3' S=0.0303 '/' Outflow=1.29 cfs 4,948 cf

Pond CBN5-P: CBN 5 Peak Elev=39.81' Inflow=1.19 cfs 3,967 cf
12.0" Round Culvert n=0.013 L=13.7' S=0.0073 '/' Outflow=1.19 cfs 3,967 cf

Pond CBN6-P: CBN 6 Peak Elev=39.69' Inflow=0.92 cfs 3,113 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0154 '/' Outflow=0.92 cfs 3,113 cf

Pond CBN7-P: CBN 7 Peak Elev=37.49' Inflow=1.60 cfs 6,963 cf
12.0" Round Culvert n=0.013 L=189.4' S=0.0100 '/' Outflow=1.60 cfs 6,963 cf

Pond CBN8-P: CBN 8 Peak Elev=35.81' Inflow=1.66 cfs 6,060 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=1.66 cfs 6,060 cf

Pond CBN9-P: CBN 9 Peak Elev=35.86' Inflow=1.81 cfs 8,294 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=1.81 cfs 8,294 cf

Pond DMH1-P: DMH 1 to 4 Peak Elev=41.85' Inflow=1.51 cfs 4,280 cf
12.0" Round Culvert n=0.013 L=645.0' S=0.0033 '/' Outflow=1.51 cfs 4,280 cf

Pond DMH11-P: DMH 11 Peak Elev=34.68' Inflow=13.37 cfs 53,347 cf
24.0" Round Culvert n=0.013 L=41.8' S=0.0191 '/' Outflow=13.37 cfs 53,347 cf

Pond DMH12-P: DMH 12 Peak Elev=34.13' Inflow=17.07 cfs 68,398 cf
30.0" Round Culvert n=0.013 L=35.2' S=0.0057 '/' Outflow=17.07 cfs 68,398 cf

Pond DMH13-P: DMH 13 Peak Elev=34.15' Inflow=3.79 cfs 15,050 cf
15.0" Round Culvert n=0.013 L=150.6' S=0.0060 '/' Outflow=3.79 cfs 15,050 cf

Pond DMH14-P: DMH 14 Peak Elev=37.44' Inflow=1.31 cfs 4,584 cf
12.0" Round Culvert n=0.013 L=62.0' S=0.0040 '/' Outflow=1.31 cfs 4,584 cf

Pond DMH15-P: DMH 15 Peak Elev=37.14' Inflow=1.31 cfs 4,584 cf
12.0" Round Culvert n=0.013 L=71.0' S=0.0042 '/' Outflow=1.31 cfs 4,584 cf

Pond DMH16-P: DMH 16 Peak Elev=37.11' Inflow=2.91 cfs 10,309 cf
15.0" Round Culvert n=0.013 L=18.4' S=0.0054 '/' Outflow=2.91 cfs 10,309 cf

Pond DMH17-P: DMH 17 Peak Elev=39.09' Inflow=2.37 cfs 8,144 cf
12.0" Round Culvert n=0.013 L=290.7' S=0.0057 '/' Outflow=2.37 cfs 8,144 cf

Pond DMH18-P: DMH 18 Peak Elev=37.63' Inflow=5.56 cfs 19,692 cf
18.0" Round Culvert n=0.013 L=283.0' S=0.0058 '/' Outflow=5.56 cfs 19,692 cf

Pond DMH19-P: DMH 19 to 20 Peak Elev=36.01' Inflow=6.70 cfs 24,529 cf
18.0" Round Culvert n=0.013 L=240.0' S=0.0067 '/' Outflow=6.70 cfs 24,529 cf

Pond DMH21-P: DMH 21 Peak Elev=35.26' Inflow=9.29 cfs 34,620 cf
24.0" Round Culvert n=0.013 L=86.6' S=0.0040 '/' Outflow=9.29 cfs 34,620 cf

Pond DMH22-P: DMH 22 Peak Elev=34.31' Inflow=10.29 cfs 37,767 cf
24.0" Round Culvert n=0.013 L=24.0' S=0.0042 '/' Outflow=10.29 cfs 37,767 cf

Pond DMH23-P: DMH 23 TO 25 Peak Elev=36.60' Inflow=4.10 cfs 17,441 cf
15.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=4.10 cfs 17,441 cf

Pond DMH26-P: DMH 26 TO 28 Peak Elev=38.22' Inflow=3.63 cfs 14,203 cf
15.0" Round Culvert n=0.013 L=306.0' S=0.0054 '/' Outflow=3.63 cfs 14,203 cf

Pond DMH29-P: DMH 29 TO 32 Peak Elev=36.89' Inflow=6.94 cfs 26,554 cf
18.0" Round Culvert n=0.013 L=396.0' S=0.0058 '/' Outflow=6.94 cfs 26,554 cf

Pond DMH33-P: DMH 33 Peak Elev=34.65' Inflow=8.44 cfs 32,031 cf
24.0" Round Culvert n=0.013 L=8.0' S=0.0062 '/' Outflow=8.44 cfs 32,031 cf

Pond DMH5-P: DMH 5 to 6 Peak Elev=40.06' Inflow=4.11 cfs 14,164 cf
18.0" Round Culvert n=0.013 L=242.0' S=0.0031 '/' Outflow=4.11 cfs 14,164 cf

Pond DMH7-P: DMH 7 Peak Elev=39.46' Inflow=5.98 cfs 21,244 cf
18.0" Round Culvert n=0.013 L=30.2' S=0.0066 '/' Outflow=5.98 cfs 21,244 cf

Pond DMH8-P: DMH 8 Peak Elev=39.86' Inflow=2.12 cfs 7,080 cf
12.0" Round Culvert n=0.013 L=107.3' S=0.0051 '/' Outflow=2.12 cfs 7,080 cf

Pond DMH9-P: DMH 9 TO 10 Peak Elev=35.92' Inflow=5.05 cfs 21,317 cf
18.0" Round Culvert n=0.013 L=314.4' S=0.0054 '/' Outflow=5.05 cfs 21,317 cf

Pond IB1-P: Infiltration Basin #1 Peak Elev=38.49' Storage=11,593 cf Inflow=7.35 cfs 25,573 cf
Discarded=0.53 cfs 25,573 cf Secondary=0.00 cfs 0 cf Outflow=0.53 cfs 25,573 cf

Pond IB2-P: Infiltration Basin #2 Peak Elev=33.09' Storage=22,445 cf Inflow=12.48 cfs 45,010 cf
Discarded=0.77 cfs 45,010 cf Secondary=0.00 cfs 0 cf Outflow=0.77 cfs 45,010 cf

Pond IB3-P: Infiltration Basin #3 Peak Elev=34.19' Storage=11,546 cf Inflow=4.86 cfs 20,384 cf
Discarded=0.28 cfs 20,384 cf Secondary=0.00 cfs 0 cf Outflow=0.28 cfs 20,384 cf

Pond IB4-P: Infiltration Basin #4 Peak Elev=33.12' Storage=45,296 cf Inflow=19.33 cfs 76,801 cf
Discarded=0.88 cfs 76,801 cf Secondary=0.00 cfs 0 cf Outflow=0.88 cfs 76,801 cf

Pond IB5-P: Infiltration Basin #5 Peak Elev=36.40' Storage=5,796 cf Inflow=3.79 cfs 13,107 cf
Discarded=0.30 cfs 13,107 cf Secondary=0.00 cfs 0 cf Outflow=0.30 cfs 13,107 cf

Total Runoff Area = 1,137,389 sf Runoff Volume = 180,875 cf Average Runoff Depth = 1.91"
66.00% Pervious = 750,629 sf 34.00% Impervious = 386,760 sf

Summary for Subcatchment IB1-1S: To CBN 1

Runoff = 0.90 cfs @ 12.04 hrs, Volume= 2,551 cf, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	5,600	98	Paved Roadway
	2,400	39	>75% Grass cover, Good, HSG A
	8,000	80	Weighted Average
	2,400		30.00% Pervious Area
	5,600		70.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-2S: To CBN 2

Runoff = 0.61 cfs @ 12.04 hrs, Volume= 1,729 cf, Depth= 3.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	3,770	98	Paved Roadway
	2,290	39	>75% Grass cover, Good, HSG A
	6,060	76	Weighted Average
	2,290		37.79% Pervious Area
	3,770		62.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-3S: To CBN 3

Runoff = 1.66 cfs @ 12.06 hrs, Volume= 4,937 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	10,800	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,106	39	>75% Grass cover, Good, HSG A
	15,906	79	Weighted Average
	5,106		32.10% Pervious Area
	10,800		67.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	450	Total			

Summary for Subcatchment IB1-4S: To CBN 4

Runoff = 1.29 cfs @ 12.12 hrs, Volume= 4,948 cf, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	7,600	98	Paved Roadway
*	2,700	98	Roofs and Driveways, HSG A
	32,374	39	>75% Grass cover, Good, HSG A
	42,674	53	Weighted Average
	32,374		75.86% Pervious Area
	10,300		24.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	45	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	120	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	215	Total			

Summary for Subcatchment IB1-5S: To CBN 5

Runoff = 1.19 cfs @ 12.11 hrs, Volume= 3,967 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	6,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,690	72	Weighted Average
	6,890		43.91% Pervious Area
	8,800		56.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	255	Total			

Summary for Subcatchment IB1-6S: To CBN 6

Runoff = 0.92 cfs @ 12.12 hrs, Volume= 3,113 cf, Depth= 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	8,280	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,080	66	Weighted Average
	8,280		54.91% Pervious Area
	6,800		45.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	145	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	250	Total			

Summary for Subcatchment IB1-S: Direct to IB #1

Runoff = 1.37 cfs @ 12.09 hrs, Volume= 4,329 cf, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	6,154	39	>75% Grass cover, Good, HSG A
*	9,470	98	Basin
	15,624	75	Weighted Average
	6,154		39.39% Pervious Area
	9,470		60.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB2-15S: To CBN 15

Runoff = 1.15 cfs @ 12.11 hrs, Volume= 3,857 cf, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,150	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	14,150	39	>75% Grass cover, Good, HSG A
	22,700	61	Weighted Average
	14,150		62.33% Pervious Area
	8,550		37.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	156	Total			

Summary for Subcatchment IB2-16S: To CBN 16

Runoff = 1.22 cfs @ 12.12 hrs, Volume= 4,287 cf, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	2,900	98	Paved Roadway
*	6,400	98	Roofs and Driveways, HSG A
	18,200	39	>75% Grass cover, Good, HSG A
	27,500	59	Weighted Average
	18,200		66.18% Pervious Area
	9,300		33.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	143	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	226	Total			

Summary for Subcatchment IB2-17S: To CBN 17

Runoff = 1.71 cfs @ 12.12 hrs, Volume= 6,058 cf, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	7,200	98	Roofs and Driveways, HSG A
	24,100	39	>75% Grass cover, Good, HSG A
	37,200	60	Weighted Average
	24,100		64.78% Pervious Area
	13,100		35.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-18S: To CBN 18

Runoff = 1.48 cfs @ 12.13 hrs, Volume= 5,489 cf, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	7,400	98	Roofs and Driveways, HSG A
	27,000	39	>75% Grass cover, Good, HSG A
	38,600	57	Weighted Average
	27,000		69.95% Pervious Area
	11,600		30.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-19S: To CBN 19

Runoff = 1.22 cfs @ 12.16 hrs, Volume= 4,837 cf, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	4,500	98	Roofs and Driveways, HSG A
	25,200	39	>75% Grass cover, Good, HSG A
	35,700	56	Weighted Average
	25,200		70.59% Pervious Area
	10,500		29.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
3.4	200	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.0	380	Total			

Summary for Subcatchment IB2-20S: To CBN 20

Runoff = 1.28 cfs @ 12.13 hrs, Volume= 4,531 cf, Depth= 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	4,100	98	Roofs and Driveways, HSG A
	11,950	39	>75% Grass cover, Good, HSG A
	21,950	66	Weighted Average
	11,950		54.44% Pervious Area
	10,000		45.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	320	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.8	410	Total			

Summary for Subcatchment IB2-21S: To CBN 21

Runoff = 1.43 cfs @ 12.15 hrs, Volume= 5,559 cf, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,600	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	29,530	39	>75% Grass cover, Good, HSG A
	41,030	56	Weighted Average
	29,530		71.97% Pervious Area
	11,500		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	350	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
9.2	450	Total			

Summary for Subcatchment IB2-22S: To CBN 22

Runoff = 1.01 cfs @ 12.08 hrs, Volume= 3,147 cf, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,960	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	12,850	71	Weighted Average
	5,890		45.84% Pervious Area
	6,960		54.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	36	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	166	Total			

Summary for Subcatchment IB2-S: Direct To IB #2

Runoff = 2.29 cfs @ 12.09 hrs, Volume= 7,243 cf, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	8,190	39	>75% Grass cover, Good, HSG A
*	15,800	98	Basin
	23,990	78	Weighted Average
	8,190		34.14% Pervious Area
	15,800		65.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB3-23S: To CBN 23

Runoff = 2.21 cfs @ 12.19 hrs, Volume= 9,708 cf, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	8,900	98	Paved Roadway
*	10,600	98	Roofs and Driveways, HSG A
	59,840	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	79,340	54	Weighted Average
	59,840		75.42% Pervious Area
	19,500		24.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
5.5	230	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	125	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	405	Total			

Summary for Subcatchment IB3-24S: To CBN 24

Runoff = 2.09 cfs @ 12.12 hrs, Volume= 7,733 cf, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	10,000	98	Roofs and Driveways, HSG A
	43,700	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	60,000	55	Weighted Average
	43,700		72.83% Pervious Area
	16,300		27.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	172	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.4	252	Total			

Summary for Subcatchment IB3-S: Direct to IB #3

Runoff = 0.90 cfs @ 12.10 hrs, Volume= 2,943 cf, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,120	39	>75% Grass cover, Good, HSG A
*	6,500	98	Basin
	16,620	62	Weighted Average
	10,120		60.89% Pervious Area
	6,500		39.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB4-10S: To CBN 10

Runoff = 1.82 cfs @ 12.09 hrs, Volume= 5,676 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	12,400	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,050	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	22,450	72	Weighted Average
	10,050		44.77% Pervious Area
	12,400		55.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.40"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	600	Total			

Summary for Subcatchment IB4-11S: To CBN 11

Runoff = 2.29 cfs @ 12.17 hrs, Volume= 9,374 cf, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	8,800	98	Paved Roadway
*	11,500	98	Roofs and Driveways, HSG A
	52,430	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	72,730	55	Weighted Average
	52,430		72.09% Pervious Area
	20,300		27.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-25S: To CBN 25

Runoff = 2.06 cfs @ 12.14 hrs, Volume= 7,840 cf, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	8,750	98	Paved Roadway
*	8,300	98	Roofs and Driveways, HSG A
	40,810	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	57,860	56	Weighted Average
	40,810		70.53% Pervious Area
	17,050		29.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-26S: To CBN 26

Runoff = 1.58 cfs @ 12.15 hrs, Volume= 6,363 cf, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	38,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	52,000	54	Weighted Average
	38,800		74.62% Pervious Area
	13,200		25.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.8	75	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	245	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.3	370	Total			

Summary for Subcatchment IB4-27S: To CBN 27

Runoff = 1.69 cfs @ 12.12 hrs, Volume= 6,094 cf, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	7,100	98	Roofs and Driveways, HSG A
	27,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	40,900	58	Weighted Average
	27,800		67.97% Pervious Area
	13,100		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.0	43	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.7	243	Total			

Summary for Subcatchment IB4-28S: To CBN 28

Runoff = 1.66 cfs @ 12.14 hrs, Volume= 6,257 cf, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	5,560	98	Paved Roadway
*	7,950	98	Roofs and Driveways, HSG A
	30,490	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	44,000	57	Weighted Average
	30,490		69.30% Pervious Area
	13,510		30.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-29S: To CBN 29

Runoff = 0.93 cfs @ 12.12 hrs, Volume= 3,286 cf, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	14,080	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	21,080	59	Weighted Average
	14,080		66.79% Pervious Area
	7,000		33.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	180	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.5	260	Total			

Summary for Subcatchment IB4-30S: To CBN 30

Runoff = 0.60 cfs @ 12.12 hrs, Volume= 2,190 cf, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	2,600	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	9,900	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	14,700	58	Weighted Average
	9,900		67.35% Pervious Area
	4,800		32.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	190	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	290	Total			

Summary for Subcatchment IB4-7S: To CBN 7

Runoff = 1.60 cfs @ 12.17 hrs, Volume= 6,963 cf, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	6,250	98	Paved Roadway
*	7,500	98	Roofs and Driveways, HSG A
	49,770	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	63,520	52	Weighted Average
	49,770		78.35% Pervious Area
	13,750		21.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.8	284	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	344	Total			

Summary for Subcatchment IB4-8S: To CBN 8

Runoff = 1.66 cfs @ 12.15 hrs, Volume= 6,060 cf, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	12,750	98	Paved Roadway
*	500	98	Roofs and Driveways, HSG A
	12,310	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	25,560	70	Weighted Average
	12,310		48.16% Pervious Area
	13,250		51.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-9S: To CBN 9

Runoff = 1.81 cfs @ 12.17 hrs, Volume= 8,294 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	12,200	98	Roofs and Driveways, HSG A
	68,855	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	85,255	50	Weighted Average
	68,855		80.76% Pervious Area
	16,400		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.0	236	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.3	378	Total			

Summary for Subcatchment IB4-S: Direct to IB #4

Runoff = 2.66 cfs @ 12.09 hrs, Volume= 8,403 cf, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	12,080	39	>75% Grass cover, Good, HSG A
*	18,250	98	Basin
	30,330	75	Weighted Average
	12,080		39.83% Pervious Area
	18,250		60.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB5-12S: To CBN 12

Runoff = 0.73 cfs @ 12.05 hrs, Volume= 2,072 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	4,500	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	2,175	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	6,675	79	Weighted Average
	2,175		32.58% Pervious Area
	4,500		67.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.78		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
0.9	5	0.0200	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0100	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	180	Total			

Summary for Subcatchment IB5-13S: To CBN 13

Runoff = 0.71 cfs @ 12.11 hrs, Volume= 2,512 cf, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	3,200	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	11,460	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	16,860	58	Weighted Average
	11,460		67.97% Pervious Area
	5,400		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	135	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	235	Total			

Summary for Subcatchment IB5-14S: To CBN 14

Runoff = 1.66 cfs @ 12.11 hrs, Volume= 5,725 cf, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	8,200	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	22,555	39	>75% Grass cover, Good, HSG A
	35,155	60	Weighted Average
	22,555		64.16% Pervious Area
	12,600		35.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	185	Total			

Summary for Subcatchment IB5-S: Direct to IB #5

Runoff = 0.88 cfs @ 12.09 hrs, Volume= 2,798 cf, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,700	39	>75% Grass cover, Good, HSG A
*	6,100	98	Basin
	11,800	70	Weighted Average
	5,700		48.31% Pervious Area
	6,100		51.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond CBN1-P: CBN 1

Inflow Area = 8,000 sf, 70.00% Impervious, Inflow Depth = 3.83" for 25-year event
Inflow = 0.90 cfs @ 12.04 hrs, Volume= 2,551 cf
Outflow = 0.90 cfs @ 12.04 hrs, Volume= 2,551 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.90 cfs @ 12.04 hrs, Volume= 2,551 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.77' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 12.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0124 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.04 hrs HW=41.76' (Free Discharge)
1=Culvert (Barrel Controls 0.87 cfs @ 2.81 fps)

Summary for Pond CBN10-P: CBN 10

Inflow Area = 22,450 sf, 55.23% Impervious, Inflow Depth = 3.03" for 25-year event
Inflow = 1.82 cfs @ 12.09 hrs, Volume= 5,676 cf
Outflow = 1.82 cfs @ 12.09 hrs, Volume= 5,676 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.82 cfs @ 12.09 hrs, Volume= 5,676 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.14' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**12.0" Round Culvert**

L= 15.1' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0093 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.77 cfs @ 12.09 hrs HW=34.13' (Free Discharge)
1=Culvert (Barrel Controls 1.77 cfs @ 3.19 fps)

Summary for Pond CBN11-P: CBN 11

Inflow Area = 72,730 sf, 27.91% Impervious, Inflow Depth = 1.55" for 25-year event
Inflow = 2.29 cfs @ 12.17 hrs, Volume= 9,374 cf
Outflow = 2.29 cfs @ 12.17 hrs, Volume= 9,374 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.29 cfs @ 12.17 hrs, Volume= 9,374 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.15' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**15.0" Round Culvert**
			L= 8.6' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0163 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.25 cfs @ 12.17 hrs HW=34.13' (Free Discharge)
1=Culvert (Barrel Controls 2.25 cfs @ 3.35 fps)

Summary for Pond CBN12-P: CBN 12

Inflow Area = 6,675 sf, 67.42% Impervious, Inflow Depth = 3.72" for 25-year event
Inflow = 0.73 cfs @ 12.05 hrs, Volume= 2,072 cf
Outflow = 0.73 cfs @ 12.05 hrs, Volume= 2,072 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.05 hrs, Volume= 2,072 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.49' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.05 hrs HW=37.49' (Free Discharge)
1=Culvert (Inlet Controls 0.72 cfs @ 1.88 fps)

Summary for Pond CBN13-P: CBN 13

Inflow Area = 16,860 sf, 32.03% Impervious, Inflow Depth = 1.79" for 25-year event
Inflow = 0.71 cfs @ 12.11 hrs, Volume= 2,512 cf
Outflow = 0.71 cfs @ 12.11 hrs, Volume= 2,512 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.11 hrs, Volume= 2,512 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.49' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0308 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 12.11 hrs HW=37.48' (Free Discharge)
1=Culvert (Inlet Controls 0.69 cfs @ 1.86 fps)

Summary for Pond CBN14-P: CBN 14

Inflow Area = 35,155 sf, 35.84% Impervious, Inflow Depth = 1.95" for 25-year event
Inflow = 1.66 cfs @ 12.11 hrs, Volume= 5,725 cf
Outflow = 1.66 cfs @ 12.11 hrs, Volume= 5,725 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.11 hrs, Volume= 5,725 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.41' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.46'	**12.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.46' / 36.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.62 cfs @ 12.11 hrs HW=37.39' (Free Discharge)
1=Culvert (Barrel Controls 1.62 cfs @ 2.75 fps)

Summary for Pond CBN15-P: CBN 15

Inflow Area = 22,700 sf, 37.67% Impervious, Inflow Depth = 2.04" for 25-year event
Inflow = 1.15 cfs @ 12.11 hrs, Volume= 3,857 cf
Outflow = 1.15 cfs @ 12.11 hrs, Volume= 3,857 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.15 cfs @ 12.11 hrs, Volume= 3,857 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.04' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert** L= 6.6' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0303 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.11 hrs HW=39.03' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.12 cfs @ 2.14 fps)

Summary for Pond CBN16-P: CBN 16

Inflow Area = 27,500 sf, 33.82% Impervious, Inflow Depth = 1.87" for 25-year event
Inflow = 1.22 cfs @ 12.12 hrs, Volume= 4,287 cf
Outflow = 1.22 cfs @ 12.12 hrs, Volume= 4,287 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.12 hrs, Volume= 4,287 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.07' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.19 cfs @ 12.12 hrs HW=39.06' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.19 cfs @ 2.18 fps)

Summary for Pond CBN17-P: CBN 17

Inflow Area = 37,200 sf, 35.22% Impervious, Inflow Depth = 1.95" for 25-year event
Inflow = 1.71 cfs @ 12.12 hrs, Volume= 6,058 cf
Outflow = 1.71 cfs @ 12.12 hrs, Volume= 6,058 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.71 cfs @ 12.12 hrs, Volume= 6,058 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.83' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 2.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.70' S= 0.1250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.65 cfs @ 12.12 hrs HW=37.81' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.65 cfs @ 2.42 fps)

Summary for Pond CBN18-P: CBN 18

Inflow Area = 38,600 sf, 30.05% Impervious, Inflow Depth = 1.71" for 25-year event
Inflow = 1.48 cfs @ 12.13 hrs, Volume= 5,489 cf
Outflow = 1.48 cfs @ 12.13 hrs, Volume= 5,489 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.13 hrs, Volume= 5,489 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.75' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 10.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.70' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.45 cfs @ 12.13 hrs HW=37.74' (Free Discharge)
1=Culvert (Inlet Controls 1.45 cfs @ 2.32 fps)

Summary for Pond CBN19-P: CBN 19

Inflow Area = 35,700 sf, 29.41% Impervious, Inflow Depth = 1.63" for 25-year event
Inflow = 1.22 cfs @ 12.16 hrs, Volume= 4,837 cf
Outflow = 1.22 cfs @ 12.16 hrs, Volume= 4,837 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.16 hrs, Volume= 4,837 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.67' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	**12.0" Round Culvert** L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.00' / 35.55' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.20 cfs @ 12.16 hrs HW=36.66' (Free Discharge)
1=Culvert (Inlet Controls 1.20 cfs @ 2.18 fps)

Summary for Pond CBN2-P: CBN 2

Inflow Area = 6,060 sf, 62.21% Impervious, Inflow Depth = 3.42" for 25-year event
Inflow = 0.61 cfs @ 12.04 hrs, Volume= 1,729 cf
Outflow = 0.61 cfs @ 12.04 hrs, Volume= 1,729 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.04 hrs, Volume= 1,729 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.65' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 6.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0242 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.60 cfs @ 12.04 hrs HW=41.64' (Free Discharge)
1=Culvert (Inlet Controls 0.60 cfs @ 1.78 fps)

Summary for Pond CBN20-P: CBN 20

Inflow Area = 21,950 sf, 45.56% Impervious, Inflow Depth = 2.48" for 25-year event
Inflow = 1.28 cfs @ 12.13 hrs, Volume= 4,531 cf
Outflow = 1.28 cfs @ 12.13 hrs, Volume= 4,531 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.13 hrs, Volume= 4,531 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.85' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.16'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.16' / 34.00' S= 0.0533 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.25 cfs @ 12.13 hrs HW=34.84' (Free Discharge)
1=Culvert (Inlet Controls 1.25 cfs @ 2.21 fps)

Summary for Pond CBN21-P: CBN 21

Inflow Area = 41,030 sf, 28.03% Impervious, Inflow Depth = 1.63" for 25-year event
Inflow = 1.43 cfs @ 12.15 hrs, Volume= 5,559 cf
Outflow = 1.43 cfs @ 12.15 hrs, Volume= 5,559 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.43 cfs @ 12.15 hrs, Volume= 5,559 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.02' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.28'	**12.0" Round Culvert** L= 24.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.28' / 34.00' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.43 cfs @ 12.15 hrs HW=35.02' (Free Discharge)
1=Culvert (Inlet Controls 1.43 cfs @ 2.31 fps)

Summary for Pond CBN22-P: CBN 22

Inflow Area = 12,850 sf, 54.16% Impervious, Inflow Depth = 2.94" for 25-year event
Inflow = 1.01 cfs @ 12.08 hrs, Volume= 3,147 cf
Outflow = 1.01 cfs @ 12.08 hrs, Volume= 3,147 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.01 cfs @ 12.08 hrs, Volume= 3,147 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.63' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 33.00' / 32.70' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.98 cfs @ 12.08 hrs HW=33.62' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.98 cfs @ 2.74 fps)

Summary for Pond CBN23-P: CBN 23

Inflow Area = 79,340 sf, 24.58% Impervious, Inflow Depth = 1.47" for 25-year event
Inflow = 2.21 cfs @ 12.19 hrs, Volume= 9,708 cf
Outflow = 2.21 cfs @ 12.19 hrs, Volume= 9,708 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.21 cfs @ 12.19 hrs, Volume= 9,708 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.55' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**15.0" Round Culvert**
			L= 12.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0167 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.19 cfs @ 12.19 hrs HW=36.55' (Free Discharge)
└**1=Culvert** (Barrel Controls 2.19 cfs @ 3.49 fps)

Summary for Pond CBN24-P: CBN 24

Inflow Area = 60,000 sf, 27.17% Impervious, Inflow Depth = 1.55" for 25-year event
Inflow = 2.09 cfs @ 12.12 hrs, Volume= 7,733 cf
Outflow = 2.09 cfs @ 12.12 hrs, Volume= 7,733 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.09 cfs @ 12.12 hrs, Volume= 7,733 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.67' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**12.0" Round Culvert**
			L= 4.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0500 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.02 cfs @ 12.12 hrs HW=36.65' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.02 cfs @ 2.62 fps)

Summary for Pond CBN25-P: CBN 25

Inflow Area = 57,860 sf, 29.47% Impervious, Inflow Depth = 1.63" for 25-year event
Inflow = 2.06 cfs @ 12.14 hrs, Volume= 7,840 cf
Outflow = 2.06 cfs @ 12.14 hrs, Volume= 7,840 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.06 cfs @ 12.14 hrs, Volume= 7,840 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.37' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 7.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.02 cfs @ 12.14 hrs HW=38.35' (Free Discharge)
1=Culvert (Inlet Controls 2.02 cfs @ 2.62 fps)

Summary for Pond CBN26-P: CBN 26

Inflow Area = 52,000 sf, 25.38% Impervious, Inflow Depth = 1.47" for 25-year event
Inflow = 1.58 cfs @ 12.15 hrs, Volume= 6,363 cf
Outflow = 1.58 cfs @ 12.15 hrs, Volume= 6,363 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.58 cfs @ 12.15 hrs, Volume= 6,363 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.19' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 14.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.57 cfs @ 12.15 hrs HW=38.18' (Free Discharge)
1=Culvert (Inlet Controls 1.57 cfs @ 2.38 fps)

Summary for Pond CBN27-P: CBN 27

Inflow Area = 40,900 sf, 32.03% Impervious, Inflow Depth = 1.79" for 25-year event
Inflow = 1.69 cfs @ 12.12 hrs, Volume= 6,094 cf
Outflow = 1.69 cfs @ 12.12 hrs, Volume= 6,094 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.69 cfs @ 12.12 hrs, Volume= 6,094 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.33' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 10.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.64 cfs @ 12.12 hrs HW=37.31' (Free Discharge)
1=Culvert (Inlet Controls 1.64 cfs @ 2.41 fps)

Summary for Pond CBN28-P: CBN 28

Inflow Area = 44,000 sf, 30.70% Impervious, Inflow Depth = 1.71" for 25-year event
Inflow = 1.66 cfs @ 12.14 hrs, Volume= 6,257 cf
Outflow = 1.66 cfs @ 12.14 hrs, Volume= 6,257 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.14 hrs, Volume= 6,257 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.32' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0667 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.63 cfs @ 12.14 hrs HW=37.31' (Free Discharge)
1=Culvert (Inlet Controls 1.63 cfs @ 2.41 fps)

Summary for Pond CBN29-P: CBN 29

Inflow Area = 21,080 sf, 33.21% Impervious, Inflow Depth = 1.87" for 25-year event
Inflow = 0.93 cfs @ 12.12 hrs, Volume= 3,286 cf
Outflow = 0.93 cfs @ 12.12 hrs, Volume= 3,286 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 12.12 hrs, Volume= 3,286 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.57' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 21.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0140 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.90 cfs @ 12.12 hrs HW=35.56' (Free Discharge)
1=Culvert (Inlet Controls 0.90 cfs @ 2.01 fps)

Summary for Pond CBN3-P: CBN 3

Inflow Area = 15,906 sf, 67.90% Impervious, Inflow Depth = 3.72" for 25-year event
Inflow = 1.66 cfs @ 12.06 hrs, Volume= 4,937 cf
Outflow = 1.66 cfs @ 12.06 hrs, Volume= 4,937 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.06 hrs, Volume= 4,937 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.87' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0083 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.60 cfs @ 12.06 hrs HW=39.85' (Free Discharge)
1=Culvert (Barrel Controls 1.60 cfs @ 3.02 fps)

Summary for Pond CBN30-P: CBN 30

Inflow Area = 14,700 sf, 32.65% Impervious, Inflow Depth = 1.79" for 25-year event
Inflow = 0.60 cfs @ 12.12 hrs, Volume= 2,190 cf
Outflow = 0.60 cfs @ 12.12 hrs, Volume= 2,190 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.60 cfs @ 12.12 hrs, Volume= 2,190 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.44' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 11.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0263 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.58 cfs @ 12.12 hrs HW=35.44' (Free Discharge)
1=Culvert (Inlet Controls 0.58 cfs @ 1.78 fps)

Summary for Pond CBN4-P: CBN 4

Inflow Area = 42,674 sf, 24.14% Impervious, Inflow Depth = 1.39" for 25-year event
Inflow = 1.29 cfs @ 12.12 hrs, Volume= 4,948 cf
Outflow = 1.29 cfs @ 12.12 hrs, Volume= 4,948 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.12 hrs, Volume= 4,948 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.72' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert** L= 3.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0303 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.24 cfs @ 12.12 hrs HW=39.70' (Free Discharge)
1=Culvert (Barrel Controls 1.24 cfs @ 2.98 fps)

Summary for Pond CBN5-P: CBN 5

Inflow Area = 15,690 sf, 56.09% Impervious, Inflow Depth = 3.03" for 25-year event
Inflow = 1.19 cfs @ 12.11 hrs, Volume= 3,967 cf
Outflow = 1.19 cfs @ 12.11 hrs, Volume= 3,967 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.19 cfs @ 12.11 hrs, Volume= 3,967 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.81' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 13.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0073 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.11 hrs HW=39.80' (Free Discharge)
1=Culvert (Barrel Controls 1.16 cfs @ 2.77 fps)

Summary for Pond CBN6-P: CBN 6

Inflow Area = 15,080 sf, 45.09% Impervious, Inflow Depth = 2.48" for 25-year event
Inflow = 0.92 cfs @ 12.12 hrs, Volume= 3,113 cf
Outflow = 0.92 cfs @ 12.12 hrs, Volume= 3,113 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.92 cfs @ 12.12 hrs, Volume= 3,113 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.69' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.90 cfs @ 12.12 hrs HW=39.68' (Free Discharge)
1=Culvert (Barrel Controls 0.90 cfs @ 2.72 fps)

Summary for Pond CBN7-P: CBN 7

Inflow Area = 63,520 sf, 21.65% Impervious, Inflow Depth = 1.32" for 25-year event
Inflow = 1.60 cfs @ 12.17 hrs, Volume= 6,963 cf
Outflow = 1.60 cfs @ 12.17 hrs, Volume= 6,963 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.60 cfs @ 12.17 hrs, Volume= 6,963 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.49' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 189.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.70' / 34.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.56 cfs @ 12.17 hrs HW=37.48' (Free Discharge)
1=Culvert (Inlet Controls 1.56 cfs @ 2.38 fps)

Summary for Pond CBN8-P: CBN 8

Inflow Area = 25,560 sf, 51.84% Impervious, Inflow Depth = 2.84" for 25-year event
Inflow = 1.66 cfs @ 12.15 hrs, Volume= 6,060 cf
Outflow = 1.66 cfs @ 12.15 hrs, Volume= 6,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.15 hrs, Volume= 6,060 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.81' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.66 cfs @ 12.15 hrs HW=35.81' (Free Discharge)
1=Culvert (Inlet Controls 1.66 cfs @ 2.42 fps)

Summary for Pond CBN9-P: CBN 9

Inflow Area = 85,255 sf, 19.24% Impervious, Inflow Depth = 1.17" for 25-year event
Inflow = 1.81 cfs @ 12.17 hrs, Volume= 8,294 cf
Outflow = 1.81 cfs @ 12.17 hrs, Volume= 8,294 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 12.17 hrs, Volume= 8,294 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.86' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 6.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.76 cfs @ 12.17 hrs HW=35.85' (Free Discharge)
1=Culvert (Inlet Controls 1.76 cfs @ 2.48 fps)

Summary for Pond DMH1-P: DMH 1 to 4

Inflow Area = 14,060 sf, 66.64% Impervious, Inflow Depth = 3.65" for 25-year event
Inflow = 1.51 cfs @ 12.04 hrs, Volume= 4,280 cf
Outflow = 1.51 cfs @ 12.04 hrs, Volume= 4,280 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.51 cfs @ 12.04 hrs, Volume= 4,280 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.85' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.00'	**12.0" Round Culvert** L= 645.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 41.00' / 38.90' S= 0.0033 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.47 cfs @ 12.04 hrs HW=41.84' (Free Discharge)
1=Culvert (Barrel Controls 1.47 cfs @ 2.83 fps)

Summary for Pond DMH11-P: DMH 11

Inflow Area = 404,875 sf, 27.68% Impervious, Inflow Depth = 1.58" for 25-year event
Inflow = 13.37 cfs @ 12.15 hrs, Volume= 53,347 cf
Outflow = 13.37 cfs @ 12.15 hrs, Volume= 53,347 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.37 cfs @ 12.15 hrs, Volume= 53,347 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.68' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.90'	**24.0" Round Culvert**
			L= 41.8' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.90' / 32.10' S= 0.0191 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.32 cfs @ 12.15 hrs HW=34.67' (Free Discharge)
1=Culvert (Inlet Controls 13.32 cfs @ 4.53 fps)

Summary for Pond DMH12-P: DMH 12

Inflow Area = 500,055 sf, 28.95% Impervious, Inflow Depth = 1.64" for 25-year event
Inflow = 17.07 cfs @ 12.14 hrs, Volume= 68,398 cf
Outflow = 17.07 cfs @ 12.14 hrs, Volume= 68,398 cf, Atten= 0%, Lag= 0.0 min
Primary = 17.07 cfs @ 12.14 hrs, Volume= 68,398 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.13' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.00'	**30.0" Round Culvert**
			L= 35.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.00' / 31.80' S= 0.0057 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=16.91 cfs @ 12.14 hrs HW=34.12' (Free Discharge)
1=Culvert (Barrel Controls 16.91 cfs @ 5.15 fps)

Summary for Pond DMH13-P: DMH 13

Inflow Area = 95,180 sf, 34.36% Impervious, Inflow Depth = 1.90" for 25-year event
Inflow = 3.79 cfs @ 12.12 hrs, Volume= 15,050 cf
Outflow = 3.79 cfs @ 12.12 hrs, Volume= 15,050 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.79 cfs @ 12.12 hrs, Volume= 15,050 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.15' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**15.0" Round Culvert** L= 150.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.00' / 32.10' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.69 cfs @ 12.12 hrs HW=34.13' (Free Discharge)
1=Culvert (Barrel Controls 3.69 cfs @ 4.18 fps)

Summary for Pond DMH14-P: DMH 14

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 2.34" for 25-year event
Inflow = 1.31 cfs @ 12.07 hrs, Volume= 4,584 cf
Outflow = 1.31 cfs @ 12.07 hrs, Volume= 4,584 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 12.07 hrs, Volume= 4,584 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.44' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.45' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.27 cfs @ 12.07 hrs HW=37.43' (Free Discharge)
1=Culvert (Barrel Controls 1.27 cfs @ 2.90 fps)

Summary for Pond DMH15-P: DMH 15

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 2.34" for 25-year event
Inflow = 1.31 cfs @ 12.07 hrs, Volume= 4,584 cf
Outflow = 1.31 cfs @ 12.07 hrs, Volume= 4,584 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 12.07 hrs, Volume= 4,584 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.14' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.40'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.40' / 36.10' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.27 cfs @ 12.07 hrs HW=37.12' (Free Discharge)
1=Culvert (Barrel Controls 1.27 cfs @ 2.93 fps)

Summary for Pond DMH16-P: DMH 16

Inflow Area = 58,690 sf, 38.34% Impervious, Inflow Depth = 2.11" for 25-year event
Inflow = 2.91 cfs @ 12.10 hrs, Volume= 10,309 cf
Outflow = 2.91 cfs @ 12.10 hrs, Volume= 10,309 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.91 cfs @ 12.10 hrs, Volume= 10,309 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.11' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.05'	**15.0" Round Culvert** L= 18.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.05' / 35.95' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.91 cfs @ 12.10 hrs HW=37.11' (Free Discharge)
1=Culvert (Barrel Controls 2.91 cfs @ 3.55 fps)

Summary for Pond DMH17-P: DMH 17

Inflow Area = 50,200 sf, 35.56% Impervious, Inflow Depth = 1.95" for 25-year event
Inflow = 2.37 cfs @ 12.11 hrs, Volume= 8,144 cf
Outflow = 2.37 cfs @ 12.11 hrs, Volume= 8,144 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.37 cfs @ 12.11 hrs, Volume= 8,144 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.09' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	**12.0" Round Culvert** L= 290.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 36.45' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.31 cfs @ 12.11 hrs HW=39.07' (Free Discharge)
1=Culvert (Barrel Controls 2.31 cfs @ 3.75 fps)

Summary for Pond DMH18-P: DMH 18

Inflow Area = 126,000 sf, 33.77% Impervious, Inflow Depth = 1.88" for 25-year event
Inflow = 5.56 cfs @ 12.12 hrs, Volume= 19,692 cf
Outflow = 5.56 cfs @ 12.12 hrs, Volume= 19,692 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.56 cfs @ 12.12 hrs, Volume= 19,692 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.63' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.35'	**18.0" Round Culvert** L= 283.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 36.35' / 34.70' S= 0.0058 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.38 cfs @ 12.12 hrs HW=37.60' (Free Discharge)
1=Culvert (Barrel Controls 5.38 cfs @ 4.63 fps)

Summary for Pond DMH19-P: DMH 19 to 20

Inflow Area = 161,700 sf, 32.81% Impervious, Inflow Depth = 1.82" for 25-year event
Inflow = 6.70 cfs @ 12.12 hrs, Volume= 24,529 cf
Outflow = 6.70 cfs @ 12.12 hrs, Volume= 24,529 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.70 cfs @ 12.12 hrs, Volume= 24,529 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.01' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.60'	**18.0" Round Culvert** L= 240.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.60' / 33.00' S= 0.0067 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.49 cfs @ 12.12 hrs HW=35.98' (Free Discharge)
1=Culvert (Barrel Controls 6.49 cfs @ 4.99 fps)

Summary for Pond DMH21-P: DMH 21

Inflow Area = 224,680 sf, 33.18% Impervious, Inflow Depth = 1.85" for 25-year event
Inflow = 9.29 cfs @ 12.13 hrs, Volume= 34,620 cf
Outflow = 9.29 cfs @ 12.13 hrs, Volume= 34,620 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.29 cfs @ 12.13 hrs, Volume= 34,620 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.26' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.60'	**24.0" Round Culvert** L= 86.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.60' / 33.25' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=9.11 cfs @ 12.13 hrs HW=35.24' (Free Discharge)
1=Culvert (Barrel Controls 9.11 cfs @ 4.49 fps)

Summary for Pond DMH22-P: DMH 22

Inflow Area = 237,530 sf, 34.32% Impervious, Inflow Depth = 1.91" for 25-year event
Inflow = 10.29 cfs @ 12.12 hrs, Volume= 37,767 cf
Outflow = 10.29 cfs @ 12.12 hrs, Volume= 37,767 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.29 cfs @ 12.12 hrs, Volume= 37,767 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.31' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.50'	**24.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 32.50' / 32.40' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=9.98 cfs @ 12.12 hrs HW=34.28' (Free Discharge)
1=Culvert (Barrel Controls 9.98 cfs @ 4.48 fps)

Summary for Pond DMH23-P: DMH 23 TO 25

Inflow Area = 139,340 sf, 25.69% Impervious, Inflow Depth = 1.50" for 25-year event
Inflow = 4.10 cfs @ 12.16 hrs, Volume= 17,441 cf
Outflow = 4.10 cfs @ 12.16 hrs, Volume= 17,441 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.10 cfs @ 12.16 hrs, Volume= 17,441 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.60' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 34.20' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.06 cfs @ 12.16 hrs HW=36.59' (Free Discharge)
1=Culvert (Barrel Controls 4.06 cfs @ 4.31 fps)

Summary for Pond DMH26-P: DMH 26 TO 28

Inflow Area = 109,860 sf, 27.54% Impervious, Inflow Depth = 1.55" for 25-year event
Inflow = 3.63 cfs @ 12.14 hrs, Volume= 14,203 cf
Outflow = 3.63 cfs @ 12.14 hrs, Volume= 14,203 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.14 hrs, Volume= 14,203 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.22' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.10'	**15.0" Round Culvert** L= 306.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.10' / 35.45' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.60 cfs @ 12.14 hrs HW=38.22' (Free Discharge)
1=Culvert (Barrel Controls 3.60 cfs @ 4.12 fps)

Summary for Pond DMH29-P: DMH 29 TO 32

Inflow Area = 194,760 sf, 29.19% Impervious, Inflow Depth = 1.64" for 25-year event
Inflow = 6.94 cfs @ 12.14 hrs, Volume= 26,554 cf
Outflow = 6.94 cfs @ 12.14 hrs, Volume= 26,554 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.94 cfs @ 12.14 hrs, Volume= 26,554 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.89' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**18.0" Round Culvert** L= 396.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 33.10' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.83 cfs @ 12.14 hrs HW=36.87' (Free Discharge)
1=Culvert (Barrel Controls 6.83 cfs @ 4.90 fps)

Summary for Pond DMH33-P: DMH 33

Inflow Area = 230,540 sf, 29.78% Impervious, Inflow Depth = 1.67" for 25-year event
Inflow = 8.44 cfs @ 12.13 hrs, Volume= 32,031 cf
Outflow = 8.44 cfs @ 12.13 hrs, Volume= 32,031 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.44 cfs @ 12.13 hrs, Volume= 32,031 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.65' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.05'	**24.0" Round Culvert** L= 8.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.05' / 33.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.28 cfs @ 12.13 hrs HW=34.64' (Free Discharge)
1=Culvert (Barrel Controls 8.28 cfs @ 4.26 fps)

Summary for Pond DMH5-P: DMH 5 to 6

Inflow Area = 72,640 sf, 41.95% Impervious, Inflow Depth = 2.34" for 25-year event
Inflow = 4.11 cfs @ 12.07 hrs, Volume= 14,164 cf
Outflow = 4.11 cfs @ 12.07 hrs, Volume= 14,164 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.11 cfs @ 12.07 hrs, Volume= 14,164 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.06' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.80'	**18.0" Round Culvert** L= 242.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.80' / 38.05' S= 0.0031 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.97 cfs @ 12.07 hrs HW=40.03' (Free Discharge)
└**1=Culvert** (Barrel Controls 3.97 cfs @ 3.47 fps)

Summary for Pond DMH7-P: DMH 7

Inflow Area = 103,410 sf, 44.55% Impervious, Inflow Depth = 2.47" for 25-year event
Inflow = 5.98 cfs @ 12.09 hrs, Volume= 21,244 cf
Outflow = 5.98 cfs @ 12.09 hrs, Volume= 21,244 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.98 cfs @ 12.09 hrs, Volume= 21,244 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.46' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	**18.0" Round Culvert**
			L= 30.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.00' / 37.80' S= 0.0066 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.86 cfs @ 12.09 hrs HW=39.44' (Free Discharge)
└**1=Culvert** (Barrel Controls 5.86 cfs @ 4.31 fps)

Summary for Pond DMH8-P: DMH 8

Inflow Area = 30,770 sf, 50.70% Impervious, Inflow Depth = 2.76" for 25-year event
Inflow = 2.12 cfs @ 12.11 hrs, Volume= 7,080 cf
Outflow = 2.12 cfs @ 12.11 hrs, Volume= 7,080 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.12 cfs @ 12.11 hrs, Volume= 7,080 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.86' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**12.0" Round Culvert**
			L= 107.3' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.90' / 38.35' S= 0.0051 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.06 cfs @ 12.11 hrs HW=39.84' (Free Discharge)
└**1=Culvert** (Barrel Controls 2.06 cfs @ 3.48 fps)

Summary for Pond DMH9-P: DMH 9 TO 10

Inflow Area = 174,335 sf, 24.89% Impervious, Inflow Depth = 1.47" for 25-year event
Inflow = 5.05 cfs @ 12.17 hrs, Volume= 21,317 cf
Outflow = 5.05 cfs @ 12.17 hrs, Volume= 21,317 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.05 cfs @ 12.17 hrs, Volume= 21,317 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.92' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**18.0" Round Culvert** L= 314.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 33.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.94 cfs @ 12.17 hrs HW=35.90' (Free Discharge)
↑**1=Culvert** (Barrel Controls 4.94 cfs @ 4.45 fps)

Summary for Pond IB1-P: Infiltration Basin #1

Inflow Area = 119,034 sf, 46.66% Impervious, Inflow Depth = 2.58" for 25-year event
Inflow = 7.35 cfs @ 12.09 hrs, Volume= 25,573 cf
Outflow = 0.53 cfs @ 14.24 hrs, Volume= 25,573 cf, Atten= 93%, Lag= 129.4 min
Discarded = 0.53 cfs @ 14.24 hrs, Volume= 25,573 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.49' @ 14.24 hrs Surf.Area= 9,443 sf Storage= 11,593 cf

Plug-Flow detention time= 230.9 min calculated for 25,551 cf (100% of inflow)
Center-of-Mass det. time= 230.8 min (1,068.1 - 837.2)

Volume	Invert	Avail.Storage	Storage Description
#1	37.10'	39,183 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
37.10	7,290	0	0	7,290
38.00	8,640	7,160	7,160	8,670
38.10	9,000	882	8,042	9,031
39.50	10,660	13,746	21,787	10,762
41.00	12,560	17,396	39,183	12,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	39.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.53 cfs @ 14.24 hrs HW=38.49' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.53 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=37.10' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB2-P: Infiltration Basin #2

Inflow Area = 261,520 sf, 37.21% Impervious, Inflow Depth = 2.07" for 25-year event
Inflow = 12.48 cfs @ 12.12 hrs, Volume= 45,010 cf
Outflow = 0.77 cfs @ 15.39 hrs, Volume= 45,010 cf, Atten= 94%, Lag= 196.2 min
Discarded = 0.77 cfs @ 15.39 hrs, Volume= 45,010 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.09' @ 15.39 hrs Surf.Area= 13,805 sf Storage= 22,445 cf

Plug-Flow detention time= 328.6 min calculated for 44,972 cf (100% of inflow)
Center-of-Mass det. time= 328.6 min (1,185.8 - 857.1)

Volume	Invert	Avail.Storage	Storage Description
#1	31.20'	52,845 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.20	10,000	0	0	10,000
32.00	11,650	8,652	8,652	11,676
34.50	16,890	35,473	44,124	17,021
35.00	18,000	8,721	52,845	18,156

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.20'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	34.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.77 cfs @ 15.39 hrs HW=33.09' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.77 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.20' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB3-P: Infiltration Basin #3

Inflow Area = 155,960 sf, 27.12% Impervious, Inflow Depth = 1.57" for 25-year event
Inflow = 4.86 cfs @ 12.15 hrs, Volume= 20,384 cf
Outflow = 0.28 cfs @ 16.60 hrs, Volume= 20,384 cf, Atten= 94%, Lag= 267.5 min
Discarded = 0.28 cfs @ 16.60 hrs, Volume= 20,384 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.19' @ 16.60 hrs Surf.Area= 4,749 sf Storage= 11,546 cf

Plug-Flow detention time= 526.3 min calculated for 20,384 cf (100% of inflow)
Center-of-Mass det. time= 526.1 min (1,404.4 - 878.3)

Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	36,051 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.00	2,150	0	0	2,150
32.00	3,730	2,904	2,904	3,741
34.00	4,070	7,798	10,701	4,300
34.10	4,680	437	11,139	4,910
36.75	7,010	15,386	26,524	7,347
38.00	8,250	9,527	36,051	8,646

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.00'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	36.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.28 cfs @ 16.60 hrs HW=34.19' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.00' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB4-P: Infiltration Basin #4

Inflow Area = 530,385 sf, 30.73% Impervious, Inflow Depth = 1.74" for 25-year event
Inflow = 19.33 cfs @ 12.14 hrs, Volume= 76,801 cf
Outflow = 0.88 cfs @ 17.19 hrs, Volume= 76,801 cf, Atten= 95%, Lag= 303.3 min
Discarded = 0.88 cfs @ 17.19 hrs, Volume= 76,801 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.12' @ 17.19 hrs Surf.Area= 15,531 sf Storage= 45,296 cf

Plug-Flow detention time= 598.4 min calculated for 76,801 cf (100% of inflow)
Center-of-Mass det. time= 598.2 min (1,466.1 - 868.0)

Volume	Invert	Avail.Storage	Storage Description
#1	29.50'	117,366 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
29.50	9,265	0	0	9,265
30.00	10,130	4,847	4,847	10,147
31.00	12,000	11,052	15,899	12,054
32.00	13,930	12,953	28,852	14,026
35.75	19,650	62,656	91,508	19,998
36.00	20,060	4,964	96,471	20,426
37.00	21,740	20,894	117,366	22,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	29.50'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	35.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.88 cfs @ 17.19 hrs HW=33.12' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.88 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=29.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB5-P: Infiltration Basin #5

Inflow Area = 70,490 sf, 40.57% Impervious, Inflow Depth = 2.23" for 25-year event
Inflow = 3.79 cfs @ 12.10 hrs, Volume= 13,107 cf
Outflow = 0.30 cfs @ 14.15 hrs, Volume= 13,107 cf, Atten= 92%, Lag= 123.0 min
Discarded = 0.30 cfs @ 14.15 hrs, Volume= 13,107 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.40' @ 14.15 hrs Surf.Area= 5,314 sf Storage= 5,796 cf

Plug-Flow detention time= 215.3 min calculated for 13,096 cf (100% of inflow)
Center-of-Mass det. time= 215.2 min (1,066.2 - 851.0)

Volume	Invert	Avail.Storage	Storage Description
#1	35.10'	23,803 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.10	3,630	0	0	3,630
36.00	4,790	3,777	3,777	4,808
36.10	4,980	488	4,265	5,000
38.00	7,300	11,596	15,861	7,379
39.00	8,600	7,941	23,803	8,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	35.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	38.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.30 cfs @ 14.15 hrs HW=36.40' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=35.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=1.00-60.00 hrs, dt=0.05 hrs, 1181 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment IB1-1S: To CBN 1 Runoff Area=8,000 sf 70.00% Impervious Runoff Depth=5.25"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=80 Runoff=1.22 cfs 3,501 cf

Subcatchment IB1-2S: To CBN 2 Runoff Area=6,060 sf 62.21% Impervious Runoff Depth=4.80"
Flow Length=220' Slope=0.0100 '/' Tc=2.3 min CN=76 Runoff=0.85 cfs 2,422 cf

Subcatchment IB1-3S: To CBN 3 Runoff Area=15,906 sf 67.90% Impervious Runoff Depth=5.14"
Flow Length=450' Slope=0.0100 '/' Tc=4.2 min CN=79 Runoff=2.27 cfs 6,809 cf

Subcatchment IB1-4S: To CBN 4 Runoff Area=42,674 sf 24.14% Impervious Runoff Depth=2.31"
Flow Length=215' Tc=7.3 min CN=53 Runoff=2.34 cfs 8,216 cf

Subcatchment IB1-5S: To CBN 5 Runoff Area=15,690 sf 56.09% Impervious Runoff Depth=4.35"
Flow Length=255' Tc=7.6 min CN=72 Runoff=1.72 cfs 5,681 cf

Subcatchment IB1-6S: To CBN 6 Runoff Area=15,080 sf 45.09% Impervious Runoff Depth=3.68"
Flow Length=250' Tc=7.6 min CN=66 Runoff=1.39 cfs 4,627 cf

Subcatchment IB1-S: Direct to IB #1 Runoff Area=15,624 sf 60.61% Impervious Runoff Depth=4.68"
Tc=6.0 min CN=75 Runoff=1.92 cfs 6,096 cf

Subcatchment IB2-15S: To CBN 15 Runoff Area=22,700 sf 37.67% Impervious Runoff Depth=3.14"
Flow Length=156' Tc=6.7 min CN=61 Runoff=1.82 cfs 5,945 cf

Subcatchment IB2-16S: To CBN 16 Runoff Area=27,500 sf 33.82% Impervious Runoff Depth=2.93"
Flow Length=226' Tc=7.3 min CN=59 Runoff=2.00 cfs 6,716 cf

Subcatchment IB2-17S: To CBN 17 Runoff Area=37,200 sf 35.22% Impervious Runoff Depth=3.04"
Flow Length=300' Tc=7.9 min CN=60 Runoff=2.75 cfs 9,413 cf

Subcatchment IB2-18S: To CBN 18 Runoff Area=38,600 sf 30.05% Impervious Runoff Depth=2.72"
Flow Length=300' Tc=7.9 min CN=57 Runoff=2.51 cfs 8,753 cf

Subcatchment IB2-19S: To CBN 19 Runoff Area=35,700 sf 29.41% Impervious Runoff Depth=2.62"
Flow Length=380' Tc=10.0 min CN=56 Runoff=2.08 cfs 7,787 cf

Subcatchment IB2-20S: To CBN 20 Runoff Area=21,950 sf 45.56% Impervious Runoff Depth=3.68"
Flow Length=410' Tc=8.8 min CN=66 Runoff=1.93 cfs 6,736 cf

Subcatchment IB2-21S: To CBN 21 Runoff Area=41,030 sf 28.03% Impervious Runoff Depth=2.62"
Flow Length=450' Tc=9.2 min CN=56 Runoff=2.44 cfs 8,949 cf

Subcatchment IB2-22S: To CBN 22 Runoff Area=12,850 sf 54.16% Impervious Runoff Depth=4.23"
Flow Length=166' Tc=5.3 min CN=71 Runoff=1.46 cfs 4,534 cf

Subcatchment IB2-S: Direct To IB #2 Runoff Area=23,990 sf 65.86% Impervious Runoff Depth=5.02"
Tc=6.0 min CN=78 Runoff=3.15 cfs 10,041 cf

Subcatchment IB3-23S: To CBN 23 Runoff Area=79,340 sf 24.58% Impervious Runoff Depth=2.41"
Flow Length=405' Tc=12.0 min CN=54 Runoff=3.91 cfs 15,946 cf

Subcatchment IB3-24S: To CBN 24 Runoff Area=60,000 sf 27.17% Impervious Runoff Depth=2.51"
Flow Length=252' Tc=7.4 min CN=55 Runoff=3.63 cfs 12,571 cf

Subcatchment IB3-S: Direct to IB #3 Runoff Area=16,620 sf 39.11% Impervious Runoff Depth=3.25"
Tc=6.0 min CN=62 Runoff=1.41 cfs 4,501 cf

Subcatchment IB4-10S: To CBN 10 Runoff Area=22,450 sf 55.23% Impervious Runoff Depth=4.35"
Flow Length=600' Slope=0.0100 '/' Tc=5.4 min CN=72 Runoff=2.61 cfs 8,129 cf

Subcatchment IB4-11S: To CBN 11 Runoff Area=72,730 sf 27.91% Impervious Runoff Depth=2.51"
Flow Length=600' Tc=10.4 min CN=55 Runoff=3.99 cfs 15,238 cf

Subcatchment IB4-25S: To CBN 25 Runoff Area=57,860 sf 29.47% Impervious Runoff Depth=2.62"
Flow Length=350' Tc=8.4 min CN=56 Runoff=3.51 cfs 12,620 cf

Subcatchment IB4-26S: To CBN 26 Runoff Area=52,000 sf 25.38% Impervious Runoff Depth=2.41"
Flow Length=370' Tc=9.3 min CN=54 Runoff=2.80 cfs 10,451 cf

Subcatchment IB4-27S: To CBN 27 Runoff Area=40,900 sf 32.03% Impervious Runoff Depth=2.83"
Flow Length=243' Tc=7.7 min CN=58 Runoff=2.80 cfs 9,631 cf

Subcatchment IB4-28S: To CBN 28 Runoff Area=44,000 sf 30.70% Impervious Runoff Depth=2.72"
Flow Length=350' Tc=8.4 min CN=57 Runoff=2.79 cfs 9,978 cf

Subcatchment IB4-29S: To CBN 29 Runoff Area=21,080 sf 33.21% Impervious Runoff Depth=2.93"
Flow Length=260' Tc=7.5 min CN=59 Runoff=1.52 cfs 5,148 cf

Subcatchment IB4-30S: To CBN 30 Runoff Area=14,700 sf 32.65% Impervious Runoff Depth=2.83"
Flow Length=290' Tc=7.9 min CN=58 Runoff=1.00 cfs 3,461 cf

Subcatchment IB4-7S: To CBN 7 Runoff Area=63,520 sf 21.65% Impervious Runoff Depth=2.21"
Flow Length=344' Tc=10.4 min CN=52 Runoff=2.97 cfs 11,695 cf

Subcatchment IB4-8S: To CBN 8 Runoff Area=25,560 sf 51.84% Impervious Runoff Depth=4.12"
Flow Length=600' Tc=10.4 min CN=70 Runoff=2.42 cfs 8,781 cf

Subcatchment IB4-9S: To CBN 9 Runoff Area=85,255 sf 19.24% Impervious Runoff Depth=2.01"
Flow Length=378' Tc=10.3 min CN=50 Runoff=3.55 cfs 14,282 cf

Subcatchment IB4-S: Direct to IB #4 Runoff Area=30,330 sf 60.17% Impervious Runoff Depth=4.68"
Tc=6.0 min CN=75 Runoff=3.73 cfs 11,834 cf

Subcatchment IB5-12S: To CBN 12 Runoff Area=6,675 sf 67.42% Impervious Runoff Depth=5.14"
Flow Length=180' Tc=2.8 min CN=79 Runoff=0.99 cfs 2,857 cf

Subcatchment IB5-13S: To CBN 13 Runoff Area=16,860 sf 32.03% Impervious Runoff Depth=2.83"
Flow Length=235' Tc=7.1 min CN=58 Runoff=1.18 cfs 3,970 cf

Subcatchment IB5-14S: To CBN 14 Runoff Area=35,155 sf 35.84% Impervious Runoff Depth=3.04"
Flow Length=185' Tc=7.1 min CN=60 Runoff=2.68 cfs 8,895 cf

Subcatchment IB5-S: Direct to IB #5 Runoff Area=11,800 sf 51.69% Impervious Runoff Depth=4.12"
Tc=6.0 min CN=70 Runoff=1.28 cfs 4,054 cf

Pond CBN1-P: CBN 1 Peak Elev=41.88' Inflow=1.22 cfs 3,501 cf
12.0" Round Culvert n=0.013 L=12.1' S=0.0124 '/' Outflow=1.22 cfs 3,501 cf

Pond CBN10-P: CBN 10 Peak Elev=34.50' Inflow=2.61 cfs 8,129 cf
12.0" Round Culvert n=0.013 L=15.1' S=0.0093 '/' Outflow=2.61 cfs 8,129 cf

Pond CBN11-P: CBN 11 Peak Elev=34.59' Inflow=3.99 cfs 15,238 cf
15.0" Round Culvert n=0.013 L=8.6' S=0.0163 '/' Outflow=3.99 cfs 15,238 cf

Pond CBN12-P: CBN 12 Peak Elev=37.59' Inflow=0.99 cfs 2,857 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=0.99 cfs 2,857 cf

Pond CBN13-P: CBN 13 Peak Elev=37.65' Inflow=1.18 cfs 3,970 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0308 '/' Outflow=1.18 cfs 3,970 cf

Pond CBN14-P: CBN 14 Peak Elev=38.16' Inflow=2.68 cfs 8,895 cf
12.0" Round Culvert n=0.013 L=126.0' S=0.0029 '/' Outflow=2.68 cfs 8,895 cf

Pond CBN15-P: CBN 15 Peak Elev=39.27' Inflow=1.82 cfs 5,945 cf
12.0" Round Culvert n=0.013 L=6.6' S=0.0303 '/' Outflow=1.82 cfs 5,945 cf

Pond CBN16-P: CBN 16 Peak Elev=39.34' Inflow=2.00 cfs 6,716 cf
12.0" Round Culvert n=0.013 L=14.0' S=0.0143 '/' Outflow=2.00 cfs 6,716 cf

Pond CBN17-P: CBN 17 Peak Elev=38.34' Inflow=2.75 cfs 9,413 cf
12.0" Round Culvert n=0.013 L=2.4' S=0.1250 '/' Outflow=2.75 cfs 9,413 cf

Pond CBN18-P: CBN 18 Peak Elev=38.20' Inflow=2.51 cfs 8,753 cf
12.0" Round Culvert n=0.013 L=10.5' S=0.0286 '/' Outflow=2.51 cfs 8,753 cf

Pond CBN19-P: CBN 19 Peak Elev=36.98' Inflow=2.08 cfs 7,787 cf
12.0" Round Culvert n=0.013 L=10.8' S=0.0417 '/' Outflow=2.08 cfs 7,787 cf

Pond CBN2-P: CBN 2 Peak Elev=41.74' Inflow=0.85 cfs 2,422 cf
12.0" Round Culvert n=0.013 L=6.2' S=0.0242 '/' Outflow=0.85 cfs 2,422 cf

Pond CBN20-P: CBN 20 Peak Elev=35.07' Inflow=1.93 cfs 6,736 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0533 '/' Outflow=1.93 cfs 6,736 cf

Pond CBN21-P: CBN 21 Peak Elev=35.45' Inflow=2.44 cfs 8,949 cf
12.0" Round Culvert n=0.013 L=24.6' S=0.0114 '/' Outflow=2.44 cfs 8,949 cf

Pond CBN22-P: CBN 22 Peak Elev=33.79' Inflow=1.46 cfs 4,534 cf
12.0" Round Culvert n=0.013 L=60.0' S=0.0050 '/' Outflow=1.46 cfs 4,534 cf

Pond CBN23-P: CBN 23 Peak Elev=37.03' Inflow=3.91 cfs 15,946 cf
15.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=3.91 cfs 15,946 cf

Pond CBN24-P: CBN 24 Peak Elev=37.67' Inflow=3.63 cfs 12,571 cf
12.0" Round Culvert n=0.013 L=4.0' S=0.0500 '/' Outflow=3.63 cfs 12,571 cf

Pond CBN25-P: CBN 25 Peak Elev=39.27' Inflow=3.51 cfs 12,620 cf
12.0" Round Culvert n=0.013 L=7.4' S=0.0270 '/' Outflow=3.51 cfs 12,620 cf

Pond CBN26-P: CBN 26 Peak Elev=38.78' Inflow=2.80 cfs 10,451 cf
12.0" Round Culvert n=0.013 L=14.5' S=0.0138 '/' Outflow=2.80 cfs 10,451 cf

Pond CBN27-P: CBN 27 Peak Elev=37.88' Inflow=2.80 cfs 9,631 cf
12.0" Round Culvert n=0.013 L=10.7' S=0.0187 '/' Outflow=2.80 cfs 9,631 cf

Pond CBN28-P: CBN 28 Peak Elev=37.87' Inflow=2.79 cfs 9,978 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0667 '/' Outflow=2.79 cfs 9,978 cf

Pond CBN29-P: CBN 29 Peak Elev=35.77' Inflow=1.52 cfs 5,148 cf
12.0" Round Culvert n=0.013 L=21.4' S=0.0140 '/' Outflow=1.52 cfs 5,148 cf

Pond CBN3-P: CBN 3 Peak Elev=40.09' Inflow=2.27 cfs 6,809 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=2.27 cfs 6,809 cf

Pond CBN30-P: CBN 30 Peak Elev=35.59' Inflow=1.00 cfs 3,461 cf
12.0" Round Culvert n=0.013 L=11.4' S=0.0263 '/' Outflow=1.00 cfs 3,461 cf

Pond CBN4-P: CBN 4 Peak Elev=40.11' Inflow=2.34 cfs 8,216 cf
12.0" Round Culvert n=0.013 L=3.3' S=0.0303 '/' Outflow=2.34 cfs 8,216 cf

Pond CBN5-P: CBN 5 Peak Elev=40.00' Inflow=1.72 cfs 5,681 cf
12.0" Round Culvert n=0.013 L=13.7' S=0.0073 '/' Outflow=1.72 cfs 5,681 cf

Pond CBN6-P: CBN 6 Peak Elev=39.86' Inflow=1.39 cfs 4,627 cf
12.0" Round Culvert n=0.013 L=6.5' S=0.0154 '/' Outflow=1.39 cfs 4,627 cf

Pond CBN7-P: CBN 7 Peak Elev=38.19' Inflow=2.97 cfs 11,695 cf
12.0" Round Culvert n=0.013 L=189.4' S=0.0100 '/' Outflow=2.97 cfs 11,695 cf

Pond CBN8-P: CBN 8 Peak Elev=36.16' Inflow=2.42 cfs 8,781 cf
12.0" Round Culvert n=0.013 L=12.0' S=0.0167 '/' Outflow=2.42 cfs 8,781 cf

Pond CBN9-P: CBN 9 Peak Elev=36.91' Inflow=3.55 cfs 14,282 cf
12.0" Round Culvert n=0.013 L=6.0' S=0.0333 '/' Outflow=3.55 cfs 14,282 cf

Pond DMH1-P: DMH 1 to 4 Peak Elev=42.10' Inflow=2.07 cfs 5,922 cf
12.0" Round Culvert n=0.013 L=645.0' S=0.0033 '/' Outflow=2.07 cfs 5,922 cf

Pond DMH11-P: DMH 11 Peak Elev=36.21' Inflow=22.99 cfs 86,047 cf
24.0" Round Culvert n=0.013 L=41.8' S=0.0191 '/' Outflow=22.99 cfs 86,047 cf

Pond DMH12-P: DMH 12 Peak Elev=35.17' Inflow=29.02 cfs 109,415 cf
30.0" Round Culvert n=0.013 L=35.2' S=0.0057 '/' Outflow=29.02 cfs 109,415 cf

Pond DMH13-P: DMH 13 Peak Elev=35.31' Inflow=6.15 cfs 23,368 cf
15.0" Round Culvert n=0.013 L=150.6' S=0.0060 '/' Outflow=6.15 cfs 23,368 cf

Pond DMH14-P: DMH 14 Peak Elev=37.67' Inflow=1.97 cfs 6,827 cf
12.0" Round Culvert n=0.013 L=62.0' S=0.0040 '/' Outflow=1.97 cfs 6,827 cf

Pond DMH15-P: DMH 15 Peak Elev=37.36' Inflow=1.97 cfs 6,827 cf
12.0" Round Culvert n=0.013 L=71.0' S=0.0042 '/' Outflow=1.97 cfs 6,827 cf

Pond DMH16-P: DMH 16 Peak Elev=37.51' Inflow=4.59 cfs 15,723 cf
15.0" Round Culvert n=0.013 L=18.4' S=0.0054 '/' Outflow=4.59 cfs 15,723 cf

Pond DMH17-P: DMH 17 Peak Elev=41.33' Inflow=3.81 cfs 12,661 cf
12.0" Round Culvert n=0.013 L=290.7' S=0.0057 '/' Outflow=3.81 cfs 12,661 cf

Pond DMH18-P: DMH 18 Peak Elev=38.91' Inflow=9.06 cfs 30,827 cf
18.0" Round Culvert n=0.013 L=283.0' S=0.0058 '/' Outflow=9.06 cfs 30,827 cf

Pond DMH19-P: DMH 19 to 20 Peak Elev=38.06' Inflow=11.02 cfs 38,614 cf
18.0" Round Culvert n=0.013 L=240.0' S=0.0067 '/' Outflow=11.02 cfs 38,614 cf

Pond DMH21-P: DMH 21 Peak Elev=36.01' Inflow=15.36 cfs 54,298 cf
24.0" Round Culvert n=0.013 L=86.6' S=0.0040 '/' Outflow=15.36 cfs 54,298 cf

Pond DMH22-P: DMH 22 Peak Elev=35.15' Inflow=16.69 cfs 58,832 cf
24.0" Round Culvert n=0.013 L=24.0' S=0.0042 '/' Outflow=16.69 cfs 58,832 cf

Pond DMH23-P: DMH 23 TO 25 Peak Elev=38.76' Inflow=7.21 cfs 28,517 cf
15.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=7.21 cfs 28,517 cf

Pond DMH26-P: DMH 26 TO 28 Peak Elev=40.22' Inflow=6.29 cfs 23,071 cf
15.0" Round Culvert n=0.013 L=306.0' S=0.0054 '/' Outflow=6.29 cfs 23,071 cf

Pond DMH29-P: DMH 29 TO 32 Peak Elev=40.64' Inflow=11.80 cfs 42,679 cf
18.0" Round Culvert n=0.013 L=396.0' S=0.0058 '/' Outflow=11.80 cfs 42,679 cf

Pond DMH33-P: DMH 33 Peak Elev=35.31' Inflow=14.26 cfs 51,289 cf
24.0" Round Culvert n=0.013 L=8.0' S=0.0062 '/' Outflow=14.26 cfs 51,289 cf

Pond DMH5-P: DMH 5 to 6 Peak Elev=40.53' Inflow=6.17 cfs 20,946 cf
18.0" Round Culvert n=0.013 L=242.0' S=0.0031 '/' Outflow=6.17 cfs 20,946 cf

Pond DMH7-P: DMH 7 Peak Elev=40.13' Inflow=8.97 cfs 31,255 cf
18.0" Round Culvert n=0.013 L=30.2' S=0.0066 '/' Outflow=8.97 cfs 31,255 cf

Pond DMH8-P: DMH 8 Peak Elev=40.54' Inflow=3.11 cfs 10,309 cf
12.0" Round Culvert n=0.013 L=107.3' S=0.0051 '/' Outflow=3.11 cfs 10,309 cf

Pond DMH9-P: DMH 9 TO 10 Peak Elev=37.39' Inflow=8.93 cfs 34,758 cf
18.0" Round Culvert n=0.013 L=314.4' S=0.0054 '/' Outflow=8.93 cfs 34,758 cf

Pond IB1-P: Infiltration Basin #1 Peak Elev=39.27' Storage=19,329 cf Inflow=10.89 cfs 37,352 cf
Discarded=0.58 cfs 37,352 cf Secondary=0.00 cfs 0 cf Outflow=0.58 cfs 37,352 cf

Pond IB2-P: Infiltration Basin #2 Peak Elev=34.19' Storage=39,022 cf Inflow=19.71 cfs 68,873 cf
Discarded=0.91 cfs 68,873 cf Secondary=0.00 cfs 0 cf Outflow=0.91 cfs 68,873 cf

Pond IB3-P: Infiltration Basin #3 Peak Elev=35.84' Storage=20,529 cf Inflow=8.41 cfs 33,018 cf
Discarded=0.36 cfs 33,018 cf Secondary=0.00 cfs 0 cf Outflow=0.36 cfs 33,018 cf

Pond IB4-P: Infiltration Basin #4 Peak Elev=35.13' Storage=79,619 cf Inflow=32.25 cfs 121,249 cf
Discarded=1.06 cfs 121,249 cf Secondary=0.00 cfs 0 cf Outflow=1.06 cfs 121,249 cf

Pond IB5-P: Infiltration Basin #5 Peak Elev=37.13' Storage=10,013 cf Inflow=5.87 cfs 19,777 cf
Discarded=0.35 cfs 19,777 cf Secondary=0.00 cfs 0 cf Outflow=0.35 cfs 19,777 cf

Total Runoff Area = 1,137,389 sf Runoff Volume = 280,268 cf Average Runoff Depth = 2.96"
66.00% Pervious = 750,629 sf 34.00% Impervious = 386,760 sf

Summary for Subcatchment IB1-1S: To CBN 1

Runoff = 1.22 cfs @ 12.04 hrs, Volume= 3,501 cf, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	5,600	98	Paved Roadway
	2,400	39	>75% Grass cover, Good, HSG A
	8,000	80	Weighted Average
	2,400		30.00% Pervious Area
	5,600		70.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-2S: To CBN 2

Runoff = 0.85 cfs @ 12.04 hrs, Volume= 2,422 cf, Depth= 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	3,770	98	Paved Roadway
	2,290	39	>75% Grass cover, Good, HSG A
	6,060	76	Weighted Average
	2,290		37.79% Pervious Area
	3,770		62.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	220	Total			

Summary for Subcatchment IB1-3S: To CBN 3

Runoff = 2.27 cfs @ 12.06 hrs, Volume= 6,809 cf, Depth= 5.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	10,800	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,106	39	>75% Grass cover, Good, HSG A
	15,906	79	Weighted Average
	5,106		32.10% Pervious Area
	10,800		67.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	450	Total			

Summary for Subcatchment IB1-4S: To CBN 4

Runoff = 2.34 cfs @ 12.12 hrs, Volume= 8,216 cf, Depth= 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	7,600	98	Paved Roadway
*	2,700	98	Roofs and Driveways, HSG A
	32,374	39	>75% Grass cover, Good, HSG A
	42,674	53	Weighted Average
	32,374		75.86% Pervious Area
	10,300		24.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	45	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	120	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	215	Total			

Summary for Subcatchment IB1-5S: To CBN 5

Runoff = 1.72 cfs @ 12.11 hrs, Volume= 5,681 cf, Depth= 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	6,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,690	72	Weighted Average
	6,890		43.91% Pervious Area
	8,800		56.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	255	Total			

Summary for Subcatchment IB1-6S: To CBN 6

Runoff = 1.39 cfs @ 12.11 hrs, Volume= 4,627 cf, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,000	98	Roofs and Driveways, HSG A
	8,280	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	15,080	66	Weighted Average
	8,280		54.91% Pervious Area
	6,800		45.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	145	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	250	Total			

Summary for Subcatchment IB1-S: Direct to IB #1

Runoff = 1.92 cfs @ 12.09 hrs, Volume= 6,096 cf, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	6,154	39	>75% Grass cover, Good, HSG A
*	9,470	98	Basin
	15,624	75	Weighted Average
	6,154		39.39% Pervious Area
	9,470		60.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB2-15S: To CBN 15

Runoff = 1.82 cfs @ 12.10 hrs, Volume= 5,945 cf, Depth= 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,150	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	14,150	39	>75% Grass cover, Good, HSG A
	22,700	61	Weighted Average
	14,150		62.33% Pervious Area
	8,550		37.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	156	Total			

Summary for Subcatchment IB2-16S: To CBN 16

Runoff = 2.00 cfs @ 12.11 hrs, Volume= 6,716 cf, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	2,900	98	Paved Roadway
*	6,400	98	Roofs and Driveways, HSG A
	18,200	39	>75% Grass cover, Good, HSG A
	27,500	59	Weighted Average
	18,200		66.18% Pervious Area
	9,300		33.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	143	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.3	226	Total			

Summary for Subcatchment IB2-17S: To CBN 17

Runoff = 2.75 cfs @ 12.12 hrs, Volume= 9,413 cf, Depth= 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	7,200	98	Roofs and Driveways, HSG A
	24,100	39	>75% Grass cover, Good, HSG A
	37,200	60	Weighted Average
	24,100		64.78% Pervious Area
	13,100		35.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-18S: To CBN 18

Runoff = 2.51 cfs @ 12.12 hrs, Volume= 8,753 cf, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	7,400	98	Roofs and Driveways, HSG A
	27,000	39	>75% Grass cover, Good, HSG A
	38,600	57	Weighted Average
	27,000		69.95% Pervious Area
	11,600		30.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.6	33	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.8	217	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	300	Total			

Summary for Subcatchment IB2-19S: To CBN 19

Runoff = 2.08 cfs @ 12.15 hrs, Volume= 7,787 cf, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	4,500	98	Roofs and Driveways, HSG A
	25,200	39	>75% Grass cover, Good, HSG A
	35,700	56	Weighted Average
	25,200		70.59% Pervious Area
	10,500		29.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
3.4	200	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.0	380	Total			

Summary for Subcatchment IB2-20S: To CBN 20

Runoff = 1.93 cfs @ 12.13 hrs, Volume= 6,736 cf, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	5,900	98	Paved Roadway
*	4,100	98	Roofs and Driveways, HSG A
	11,950	39	>75% Grass cover, Good, HSG A
	21,950	66	Weighted Average
	11,950		54.44% Pervious Area
	10,000		45.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.6	320	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.8	410	Total			

Summary for Subcatchment IB2-21S: To CBN 21

Runoff = 2.44 cfs @ 12.14 hrs, Volume= 8,949 cf, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,600	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	29,530	39	>75% Grass cover, Good, HSG A
	41,030	56	Weighted Average
	29,530		71.97% Pervious Area
	11,500		28.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	350	0.0100	2.03		**Shallow Concentrated Flow, C-D** Paved Kv= 20.3 fps
9.2	450	Total			

Summary for Subcatchment IB2-22S: To CBN 22

Runoff = 1.46 cfs @ 12.08 hrs, Volume= 4,534 cf, Depth= 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,960	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,890	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	12,850	71	Weighted Average
	5,890		45.84% Pervious Area
	6,960		54.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	36	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	166	Total			

Summary for Subcatchment IB2-S: Direct To IB #2

Runoff = 3.15 cfs @ 12.09 hrs, Volume= 10,041 cf, Depth= 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	8,190	39	>75% Grass cover, Good, HSG A
*	15,800	98	Basin
	23,990	78	Weighted Average
	8,190		34.14% Pervious Area
	15,800		65.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB3-23S: To CBN 23

Runoff = 3.91 cfs @ 12.18 hrs, Volume= 15,946 cf, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	8,900	98	Paved Roadway
*	10,600	98	Roofs and Driveways, HSG A
	59,840	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	79,340	54	Weighted Average
	59,840		75.42% Pervious Area
	19,500		24.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
5.5	230	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	125	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	405	Total			

Summary for Subcatchment IB3-24S: To CBN 24

Runoff = 3.63 cfs @ 12.12 hrs, Volume= 12,571 cf, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	10,000	98	Roofs and Driveways, HSG A
	43,700	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	60,000	55	Weighted Average
	43,700		72.83% Pervious Area
	16,300		27.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.4	172	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.4	252	Total			

Summary for Subcatchment IB3-S: Direct to IB #3

Runoff = 1.41 cfs @ 12.10 hrs, Volume= 4,501 cf, Depth= 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,120	39	>75% Grass cover, Good, HSG A
*	6,500	98	Basin
	16,620	62	Weighted Average
	10,120		60.89% Pervious Area
	6,500		39.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB4-10S: To CBN 10

Runoff = 2.61 cfs @ 12.08 hrs, Volume= 8,129 cf, Depth= 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	12,400	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	10,050	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	22,450	72	Weighted Average
	10,050		44.77% Pervious Area
	12,400		55.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.94		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.40"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	600	Total			

Summary for Subcatchment IB4-11S: To CBN 11

Runoff = 3.99 cfs @ 12.16 hrs, Volume= 15,238 cf, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	8,800	98	Paved Roadway
*	11,500	98	Roofs and Driveways, HSG A
	52,430	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	72,730	55	Weighted Average
	52,430		72.09% Pervious Area
	20,300		27.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-25S: To CBN 25

Runoff = 3.51 cfs @ 12.13 hrs, Volume= 12,620 cf, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	8,750	98	Paved Roadway
*	8,300	98	Roofs and Driveways, HSG A
	40,810	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	57,860	56	Weighted Average
	40,810		70.53% Pervious Area
	17,050		29.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-26S: To CBN 26

Runoff = 2.80 cfs @ 12.15 hrs, Volume= 10,451 cf, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,300	98	Paved Roadway
*	6,900	98	Roofs and Driveways, HSG A
	38,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	52,000	54	Weighted Average
	38,800		74.62% Pervious Area
	13,200		25.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.8	75	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	245	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.3	370	Total			

Summary for Subcatchment IB4-27S: To CBN 27

Runoff = 2.80 cfs @ 12.12 hrs, Volume= 9,631 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,000	98	Paved Roadway
*	7,100	98	Roofs and Driveways, HSG A
	27,800	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	40,900	58	Weighted Average
	27,800		67.97% Pervious Area
	13,100		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.40"
1.0	43	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	150	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.7	243	Total			

Summary for Subcatchment IB4-28S: To CBN 28

Runoff = 2.79 cfs @ 12.13 hrs, Volume= 9,978 cf, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	5,560	98	Paved Roadway
*	7,950	98	Roofs and Driveways, HSG A
	30,490	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	44,000	57	Weighted Average
	30,490		69.30% Pervious Area
	13,510		30.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.4	350	Total			

Summary for Subcatchment IB4-29S: To CBN 29

Runoff = 1.52 cfs @ 12.11 hrs, Volume= 5,148 cf, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,800	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	14,080	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	21,080	59	Weighted Average
	14,080		66.79% Pervious Area
	7,000		33.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	30	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	180	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.5	260	Total			

Summary for Subcatchment IB4-30S: To CBN 30

Runoff = 1.00 cfs @ 12.12 hrs, Volume= 3,461 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	2,600	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	9,900	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	14,700	58	Weighted Average
	9,900		67.35% Pervious Area
	4,800		32.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	190	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.9	290	Total			

Summary for Subcatchment IB4-7S: To CBN 7

Runoff = 2.97 cfs @ 12.16 hrs, Volume= 11,695 cf, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	6,250	98	Paved Roadway
*	7,500	98	Roofs and Driveways, HSG A
	49,770	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	63,520	52	Weighted Average
	49,770		78.35% Pervious Area
	13,750		21.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.8	284	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	10	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	344	Total			

Summary for Subcatchment IB4-8S: To CBN 8

Runoff = 2.42 cfs @ 12.15 hrs, Volume= 8,781 cf, Depth= 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	12,750	98	Paved Roadway
*	500	98	Roofs and Driveways, HSG A
	12,310	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	25,560	70	Weighted Average
	12,310		48.16% Pervious Area
	13,250		51.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.8	50	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	500	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.4	600	Total			

Summary for Subcatchment IB4-9S: To CBN 9

Runoff = 3.55 cfs @ 12.16 hrs, Volume= 14,282 cf, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,200	98	Paved Roadway
*	12,200	98	Roofs and Driveways, HSG A
	68,855	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	85,255	50	Weighted Average
	68,855		80.76% Pervious Area
	16,400		19.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
4.0	236	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	92	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.3	378	Total			

Summary for Subcatchment IB4-S: Direct to IB #4

Runoff = 3.73 cfs @ 12.09 hrs, Volume= 11,834 cf, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	12,080	39	>75% Grass cover, Good, HSG A
*	18,250	98	Basin
	30,330	75	Weighted Average
	12,080		39.83% Pervious Area
	18,250		60.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment IB5-12S: To CBN 12

Runoff = 0.99 cfs @ 12.05 hrs, Volume= 2,857 cf, Depth= 5.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	4,500	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	2,175	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	6,675	79	Weighted Average
	2,175		32.58% Pervious Area
	4,500		67.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.78		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
0.9	5	0.0200	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.7	40	0.0100	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.40"
1.1	130	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.8	180	Total			

Summary for Subcatchment IB5-13S: To CBN 13

Runoff = 1.18 cfs @ 12.11 hrs, Volume= 3,970 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	3,200	98	Paved Roadway
*	2,200	98	Roofs and Driveways, HSG A
	11,460	39	>75% Grass cover, Good, HSG A
*	0	98	Basin
	16,860	58	Weighted Average
	11,460		67.97% Pervious Area
	5,400		32.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	135	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	235	Total			

Summary for Subcatchment IB5-14S: To CBN 14

Runoff = 2.68 cfs @ 12.11 hrs, Volume= 8,895 cf, Depth= 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	8,200	98	Paved Roadway
*	4,400	98	Roofs and Driveways, HSG A
	22,555	39	>75% Grass cover, Good, HSG A
	35,155	60	Weighted Average
	22,555		64.16% Pervious Area
	12,600		35.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
0.9	55	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.1	185	Total			

Summary for Subcatchment IB5-S: Direct to IB #5

Runoff = 1.28 cfs @ 12.09 hrs, Volume= 4,054 cf, Depth= 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.60"

	Area (sf)	CN	Description
*	0	98	Paved Roadway
*	0	98	Roofs and Driveways, HSG A
	5,700	39	>75% Grass cover, Good, HSG A
*	6,100	98	Basin
	11,800	70	Weighted Average
	5,700		48.31% Pervious Area
	6,100		51.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Pond CBN1-P: CBN 1

Inflow Area = 8,000 sf, 70.00% Impervious, Inflow Depth = 5.25" for 100-year event
Inflow = 1.22 cfs @ 12.04 hrs, Volume= 3,501 cf
Outflow = 1.22 cfs @ 12.04 hrs, Volume= 3,501 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.04 hrs, Volume= 3,501 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.88' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 12.1' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0124 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.18 cfs @ 12.04 hrs HW=41.87' (Free Discharge)
1=Culvert (Barrel Controls 1.18 cfs @ 2.99 fps)

Summary for Pond CBN10-P: CBN 10

Inflow Area = 22,450 sf, 55.23% Impervious, Inflow Depth = 4.35" for 100-year event
Inflow = 2.61 cfs @ 12.08 hrs, Volume= 8,129 cf
Outflow = 2.61 cfs @ 12.08 hrs, Volume= 8,129 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.61 cfs @ 12.08 hrs, Volume= 8,129 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.50' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**12.0" Round Culvert**

L= 15.1' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0093 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.53 cfs @ 12.08 hrs HW=34.46' (Free Discharge)
1=Culvert (Inlet Controls 2.53 cfs @ 3.22 fps)

Summary for Pond CBN11-P: CBN 11

Inflow Area = 72,730 sf, 27.91% Impervious, Inflow Depth = 2.51" for 100-year event
Inflow = 3.99 cfs @ 12.16 hrs, Volume= 15,238 cf
Outflow = 3.99 cfs @ 12.16 hrs, Volume= 15,238 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.99 cfs @ 12.16 hrs, Volume= 15,238 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.59' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**15.0" Round Culvert**
			L= 8.6' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 33.24' / 33.10' S= 0.0163 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.93 cfs @ 12.16 hrs HW=34.58' (Free Discharge)
1=Culvert (Inlet Controls 3.93 cfs @ 3.21 fps)

Summary for Pond CBN12-P: CBN 12

Inflow Area = 6,675 sf, 67.42% Impervious, Inflow Depth = 5.14" for 100-year event
Inflow = 0.99 cfs @ 12.05 hrs, Volume= 2,857 cf
Outflow = 0.99 cfs @ 12.05 hrs, Volume= 2,857 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.05 hrs, Volume= 2,857 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.59' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.98 cfs @ 12.05 hrs HW=37.58' (Free Discharge)
1=Culvert (Inlet Controls 0.98 cfs @ 2.06 fps)

Summary for Pond CBN13-P: CBN 13

Inflow Area = 16,860 sf, 32.03% Impervious, Inflow Depth = 2.83" for 100-year event
Inflow = 1.18 cfs @ 12.11 hrs, Volume= 3,970 cf
Outflow = 1.18 cfs @ 12.11 hrs, Volume= 3,970 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.18 cfs @ 12.11 hrs, Volume= 3,970 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.65' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.80' S= 0.0308 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.11 hrs HW=37.64' (Free Discharge)
1=Culvert (Inlet Controls 1.15 cfs @ 2.16 fps)

Summary for Pond CBN14-P: CBN 14

Inflow Area = 35,155 sf, 35.84% Impervious, Inflow Depth = 3.04" for 100-year event
Inflow = 2.68 cfs @ 12.11 hrs, Volume= 8,895 cf
Outflow = 2.68 cfs @ 12.11 hrs, Volume= 8,895 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.68 cfs @ 12.11 hrs, Volume= 8,895 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.16' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.46'	**12.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.46' / 36.10' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.62 cfs @ 12.11 hrs HW=38.11' (Free Discharge)
1=Culvert (Barrel Controls 2.62 cfs @ 3.33 fps)

Summary for Pond CBN15-P: CBN 15

Inflow Area = 22,700 sf, 37.67% Impervious, Inflow Depth = 3.14" for 100-year event
Inflow = 1.82 cfs @ 12.10 hrs, Volume= 5,945 cf
Outflow = 1.82 cfs @ 12.10 hrs, Volume= 5,945 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.82 cfs @ 12.10 hrs, Volume= 5,945 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.27' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert** L= 6.6' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0303 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.80 cfs @ 12.10 hrs HW=39.26' (Free Discharge)
1=Culvert (Inlet Controls 1.80 cfs @ 2.50 fps)

Summary for Pond CBN16-P: CBN 16

Inflow Area = 27,500 sf, 33.82% Impervious, Inflow Depth = 2.93" for 100-year event
Inflow = 2.00 cfs @ 12.11 hrs, Volume= 6,716 cf
Outflow = 2.00 cfs @ 12.11 hrs, Volume= 6,716 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.00 cfs @ 12.11 hrs, Volume= 6,716 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.34' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.40'	**12.0" Round Culvert**
			L= 14.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 38.40' / 38.20' S= 0.0143 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.95 cfs @ 12.11 hrs HW=39.32' (Free Discharge)
1=Culvert (Inlet Controls 1.95 cfs @ 2.58 fps)

Summary for Pond CBN17-P: CBN 17

Inflow Area = 37,200 sf, 35.22% Impervious, Inflow Depth = 3.04" for 100-year event
Inflow = 2.75 cfs @ 12.12 hrs, Volume= 9,413 cf
Outflow = 2.75 cfs @ 12.12 hrs, Volume= 9,413 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.75 cfs @ 12.12 hrs, Volume= 9,413 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.34' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert**
			L= 2.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 37.00' / 36.70' S= 0.1250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.66 cfs @ 12.12 hrs HW=38.30' (Free Discharge)
1=Culvert (Inlet Controls 2.66 cfs @ 3.39 fps)

Summary for Pond CBN18-P: CBN 18

Inflow Area = 38,600 sf, 30.05% Impervious, Inflow Depth = 2.72" for 100-year event
Inflow = 2.51 cfs @ 12.12 hrs, Volume= 8,753 cf
Outflow = 2.51 cfs @ 12.12 hrs, Volume= 8,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.51 cfs @ 12.12 hrs, Volume= 8,753 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.20' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	**12.0" Round Culvert** L= 10.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.00' / 36.70' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.44 cfs @ 12.12 hrs HW=38.17' (Free Discharge)
1=Culvert (Inlet Controls 2.44 cfs @ 3.10 fps)

Summary for Pond CBN19-P: CBN 19

Inflow Area = 35,700 sf, 29.41% Impervious, Inflow Depth = 2.62" for 100-year event
Inflow = 2.08 cfs @ 12.15 hrs, Volume= 7,787 cf
Outflow = 2.08 cfs @ 12.15 hrs, Volume= 7,787 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.08 cfs @ 12.15 hrs, Volume= 7,787 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.98' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	**12.0" Round Culvert** L= 10.8' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.00' / 35.55' S= 0.0417 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.07 cfs @ 12.15 hrs HW=36.97' (Free Discharge)
1=Culvert (Inlet Controls 2.07 cfs @ 2.65 fps)

Summary for Pond CBN2-P: CBN 2

Inflow Area = 6,060 sf, 62.21% Impervious, Inflow Depth = 4.80" for 100-year event
Inflow = 0.85 cfs @ 12.04 hrs, Volume= 2,422 cf
Outflow = 0.85 cfs @ 12.04 hrs, Volume= 2,422 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.04 hrs, Volume= 2,422 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.74' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**12.0" Round Culvert** L= 6.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.05' S= 0.0242 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.83 cfs @ 12.04 hrs HW=41.73' (Free Discharge)
1=Culvert (Inlet Controls 0.83 cfs @ 1.96 fps)

Summary for Pond CBN20-P: CBN 20

Inflow Area = 21,950 sf, 45.56% Impervious, Inflow Depth = 3.68" for 100-year event
Inflow = 1.93 cfs @ 12.13 hrs, Volume= 6,736 cf
Outflow = 1.93 cfs @ 12.13 hrs, Volume= 6,736 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.93 cfs @ 12.13 hrs, Volume= 6,736 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.07' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.16'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.16' / 34.00' S= 0.0533 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.89 cfs @ 12.13 hrs HW=35.06' (Free Discharge)
1=Culvert (Inlet Controls 1.89 cfs @ 2.54 fps)

Summary for Pond CBN21-P: CBN 21

Inflow Area = 41,030 sf, 28.03% Impervious, Inflow Depth = 2.62" for 100-year event
Inflow = 2.44 cfs @ 12.14 hrs, Volume= 8,949 cf
Outflow = 2.44 cfs @ 12.14 hrs, Volume= 8,949 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.44 cfs @ 12.14 hrs, Volume= 8,949 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.45' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.28'	**12.0" Round Culvert** L= 24.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.28' / 34.00' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.41 cfs @ 12.14 hrs HW=35.43' (Free Discharge)
1=Culvert (Inlet Controls 2.41 cfs @ 3.07 fps)

Summary for Pond CBN22-P: CBN 22

Inflow Area = 12,850 sf, 54.16% Impervious, Inflow Depth = 4.23" for 100-year event
Inflow = 1.46 cfs @ 12.08 hrs, Volume= 4,534 cf
Outflow = 1.46 cfs @ 12.08 hrs, Volume= 4,534 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.46 cfs @ 12.08 hrs, Volume= 4,534 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 33.79' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 33.00' / 32.70' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.41 cfs @ 12.08 hrs HW=33.77' (Free Discharge)
1=Culvert (Barrel Controls 1.41 cfs @ 2.98 fps)

Summary for Pond CBN23-P: CBN 23

Inflow Area = 79,340 sf, 24.58% Impervious, Inflow Depth = 2.41" for 100-year event
Inflow = 3.91 cfs @ 12.18 hrs, Volume= 15,946 cf
Outflow = 3.91 cfs @ 12.18 hrs, Volume= 15,946 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.91 cfs @ 12.18 hrs, Volume= 15,946 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.03' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**15.0" Round Culvert**
			L= 12.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0167 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.86 cfs @ 12.18 hrs HW=37.01' (Free Discharge)
1=Culvert (Inlet Controls 3.86 cfs @ 3.15 fps)

Summary for Pond CBN24-P: CBN 24

Inflow Area = 60,000 sf, 27.17% Impervious, Inflow Depth = 2.51" for 100-year event
Inflow = 3.63 cfs @ 12.12 hrs, Volume= 12,571 cf
Outflow = 3.63 cfs @ 12.12 hrs, Volume= 12,571 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.12 hrs, Volume= 12,571 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.67' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.70'	**12.0" Round Culvert**
			L= 4.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.70' / 35.50' S= 0.0500 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.52 cfs @ 12.12 hrs HW=37.59' (Free Discharge)
1=Culvert (Inlet Controls 3.52 cfs @ 4.48 fps)

Summary for Pond CBN25-P: CBN 25

Inflow Area = 57,860 sf, 29.47% Impervious, Inflow Depth = 2.62" for 100-year event
Inflow = 3.51 cfs @ 12.13 hrs, Volume= 12,620 cf
Outflow = 3.51 cfs @ 12.13 hrs, Volume= 12,620 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.51 cfs @ 12.13 hrs, Volume= 12,620 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.27' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 7.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.43 cfs @ 12.13 hrs HW=39.22' (Free Discharge)
1=Culvert (Inlet Controls 3.43 cfs @ 4.37 fps)

Summary for Pond CBN26-P: CBN 26

Inflow Area = 52,000 sf, 25.38% Impervious, Inflow Depth = 2.41" for 100-year event
Inflow = 2.80 cfs @ 12.15 hrs, Volume= 10,451 cf
Outflow = 2.80 cfs @ 12.15 hrs, Volume= 10,451 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.80 cfs @ 12.15 hrs, Volume= 10,451 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.78' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	**12.0" Round Culvert** L= 14.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 37.40' / 37.20' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.78 cfs @ 12.15 hrs HW=38.77' (Free Discharge)
1=Culvert (Inlet Controls 2.78 cfs @ 3.54 fps)

Summary for Pond CBN27-P: CBN 27

Inflow Area = 40,900 sf, 32.03% Impervious, Inflow Depth = 2.83" for 100-year event
Inflow = 2.80 cfs @ 12.12 hrs, Volume= 9,631 cf
Outflow = 2.80 cfs @ 12.12 hrs, Volume= 9,631 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.80 cfs @ 12.12 hrs, Volume= 9,631 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.88' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 10.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.72 cfs @ 12.12 hrs HW=37.83' (Free Discharge)
1=Culvert (Inlet Controls 2.72 cfs @ 3.46 fps)

Summary for Pond CBN28-P: CBN 28

Inflow Area = 44,000 sf, 30.70% Impervious, Inflow Depth = 2.72" for 100-year event
Inflow = 2.79 cfs @ 12.13 hrs, Volume= 9,978 cf
Outflow = 2.79 cfs @ 12.13 hrs, Volume= 9,978 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.79 cfs @ 12.13 hrs, Volume= 9,978 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.87' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	**12.0" Round Culvert** L= 3.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.50' / 36.30' S= 0.0667 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.73 cfs @ 12.13 hrs HW=37.84' (Free Discharge)
1=Culvert (Inlet Controls 2.73 cfs @ 3.48 fps)

Summary for Pond CBN29-P: CBN 29

Inflow Area = 21,080 sf, 33.21% Impervious, Inflow Depth = 2.93" for 100-year event
Inflow = 1.52 cfs @ 12.11 hrs, Volume= 5,148 cf
Outflow = 1.52 cfs @ 12.11 hrs, Volume= 5,148 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.52 cfs @ 12.11 hrs, Volume= 5,148 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.77' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 21.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0140 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.48 cfs @ 12.11 hrs HW=35.75' (Free Discharge)
1=Culvert (Inlet Controls 1.48 cfs @ 2.33 fps)

Summary for Pond CBN3-P: CBN 3

Inflow Area = 15,906 sf, 67.90% Impervious, Inflow Depth = 5.14" for 100-year event
Inflow = 2.27 cfs @ 12.06 hrs, Volume= 6,809 cf
Outflow = 2.27 cfs @ 12.06 hrs, Volume= 6,809 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.27 cfs @ 12.06 hrs, Volume= 6,809 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.09' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0083 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.19 cfs @ 12.06 hrs HW=40.06' (Free Discharge)
1=Culvert (Barrel Controls 2.19 cfs @ 3.27 fps)

Summary for Pond CBN30-P: CBN 30

Inflow Area = 14,700 sf, 32.65% Impervious, Inflow Depth = 2.83" for 100-year event
Inflow = 1.00 cfs @ 12.12 hrs, Volume= 3,461 cf
Outflow = 1.00 cfs @ 12.12 hrs, Volume= 3,461 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.00 cfs @ 12.12 hrs, Volume= 3,461 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.59' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert**
			L= 11.4' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 35.00' / 34.70' S= 0.0263 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.97 cfs @ 12.12 hrs HW=35.58' (Free Discharge)
1=Culvert (Inlet Controls 0.97 cfs @ 2.05 fps)

Summary for Pond CBN4-P: CBN 4

Inflow Area = 42,674 sf, 24.14% Impervious, Inflow Depth = 2.31" for 100-year event
Inflow = 2.34 cfs @ 12.12 hrs, Volume= 8,216 cf
Outflow = 2.34 cfs @ 12.12 hrs, Volume= 8,216 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.34 cfs @ 12.12 hrs, Volume= 8,216 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.11' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.00'	**12.0" Round Culvert**
			L= 3.3' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 39.00' / 38.90' S= 0.0303 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.26 cfs @ 12.12 hrs HW=40.07' (Free Discharge)
1=Culvert (Inlet Controls 2.26 cfs @ 2.88 fps)

Summary for Pond CBN5-P: CBN 5

Inflow Area = 15,690 sf, 56.09% Impervious, Inflow Depth = 4.35" for 100-year event
Inflow = 1.72 cfs @ 12.11 hrs, Volume= 5,681 cf
Outflow = 1.72 cfs @ 12.11 hrs, Volume= 5,681 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.72 cfs @ 12.11 hrs, Volume= 5,681 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.00' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 13.7' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0073 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.11 hrs HW=39.98' (Free Discharge)
1=Culvert (Barrel Controls 1.68 cfs @ 3.03 fps)

Summary for Pond CBN6-P: CBN 6

Inflow Area = 15,080 sf, 45.09% Impervious, Inflow Depth = 3.68" for 100-year event
Inflow = 1.39 cfs @ 12.11 hrs, Volume= 4,627 cf
Outflow = 1.39 cfs @ 12.11 hrs, Volume= 4,627 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.39 cfs @ 12.11 hrs, Volume= 4,627 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.86' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	39.10'	**12.0" Round Culvert** L= 6.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 39.10' / 39.00' S= 0.0154 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.36 cfs @ 12.11 hrs HW=39.85' (Free Discharge)
1=Culvert (Barrel Controls 1.36 cfs @ 2.98 fps)

Summary for Pond CBN7-P: CBN 7

Inflow Area = 63,520 sf, 21.65% Impervious, Inflow Depth = 2.21" for 100-year event
Inflow = 2.97 cfs @ 12.16 hrs, Volume= 11,695 cf
Outflow = 2.97 cfs @ 12.16 hrs, Volume= 11,695 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.97 cfs @ 12.16 hrs, Volume= 11,695 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.19' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 189.4' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 36.70' / 34.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.92 cfs @ 12.16 hrs HW=38.16' (Free Discharge)
1=Culvert (Inlet Controls 2.92 cfs @ 3.72 fps)

Summary for Pond CBN8-P: CBN 8

Inflow Area = 25,560 sf, 51.84% Impervious, Inflow Depth = 4.12" for 100-year event
Inflow = 2.42 cfs @ 12.15 hrs, Volume= 8,781 cf
Outflow = 2.42 cfs @ 12.15 hrs, Volume= 8,781 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.42 cfs @ 12.15 hrs, Volume= 8,781 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.16' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.42 cfs @ 12.15 hrs HW=36.16' (Free Discharge)
1=Culvert (Inlet Controls 2.42 cfs @ 3.08 fps)

Summary for Pond CBN9-P: CBN 9

Inflow Area = 85,255 sf, 19.24% Impervious, Inflow Depth = 2.01" for 100-year event
Inflow = 3.55 cfs @ 12.16 hrs, Volume= 14,282 cf
Outflow = 3.55 cfs @ 12.16 hrs, Volume= 14,282 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.55 cfs @ 12.16 hrs, Volume= 14,282 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.91' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	**12.0" Round Culvert** L= 6.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 35.00' / 34.80' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.48 cfs @ 12.16 hrs HW=36.86' (Free Discharge)
1=Culvert (Inlet Controls 3.48 cfs @ 4.43 fps)

Summary for Pond DMH1-P: DMH 1 to 4

Inflow Area = 14,060 sf, 66.64% Impervious, Inflow Depth = 5.05" for 100-year event
Inflow = 2.07 cfs @ 12.04 hrs, Volume= 5,922 cf
Outflow = 2.07 cfs @ 12.04 hrs, Volume= 5,922 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.07 cfs @ 12.04 hrs, Volume= 5,922 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 42.10' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.00'	**12.0" Round Culvert** L= 645.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 41.00' / 38.90' S= 0.0033 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.01 cfs @ 12.04 hrs HW=42.07' (Free Discharge)
1=Culvert (Barrel Controls 2.01 cfs @ 2.99 fps)

Summary for Pond DMH11-P: DMH 11

Inflow Area = 404,875 sf, 27.68% Impervious, Inflow Depth = 2.55" for 100-year event
Inflow = 22.99 cfs @ 12.14 hrs, Volume= 86,047 cf
Outflow = 22.99 cfs @ 12.14 hrs, Volume= 86,047 cf, Atten= 0%, Lag= 0.0 min
Primary = 22.99 cfs @ 12.14 hrs, Volume= 86,047 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.21' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.90'	**24.0" Round Culvert**
			L= 41.8' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.90' / 32.10' S= 0.0191 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=22.70 cfs @ 12.14 hrs HW=36.15' (Free Discharge)
1=Culvert (Inlet Controls 22.70 cfs @ 7.23 fps)

Summary for Pond DMH12-P: DMH 12

Inflow Area = 500,055 sf, 28.95% Impervious, Inflow Depth = 2.63" for 100-year event
Inflow = 29.02 cfs @ 12.14 hrs, Volume= 109,415 cf
Outflow = 29.02 cfs @ 12.14 hrs, Volume= 109,415 cf, Atten= 0%, Lag= 0.0 min
Primary = 29.02 cfs @ 12.14 hrs, Volume= 109,415 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.17' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.00'	**30.0" Round Culvert**
			L= 35.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 32.00' / 31.80' S= 0.0057 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=28.62 cfs @ 12.14 hrs HW=35.13' (Free Discharge)
1=Culvert (Barrel Controls 28.62 cfs @ 5.98 fps)

Summary for Pond DMH13-P: DMH 13

Inflow Area = 95,180 sf, 34.36% Impervious, Inflow Depth = 2.95" for 100-year event
Inflow = 6.15 cfs @ 12.12 hrs, Volume= 23,368 cf
Outflow = 6.15 cfs @ 12.12 hrs, Volume= 23,368 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.15 cfs @ 12.12 hrs, Volume= 23,368 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.31' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**15.0" Round Culvert** L= 150.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.00' / 32.10' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.99 cfs @ 12.12 hrs HW=35.21' (Free Discharge)
1=Culvert (Barrel Controls 5.99 cfs @ 4.88 fps)

Summary for Pond DMH14-P: DMH 14

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 3.48" for 100-year event
Inflow = 1.97 cfs @ 12.08 hrs, Volume= 6,827 cf
Outflow = 1.97 cfs @ 12.08 hrs, Volume= 6,827 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.97 cfs @ 12.08 hrs, Volume= 6,827 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.67' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 62.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.45' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.93 cfs @ 12.08 hrs HW=37.65' (Free Discharge)
1=Culvert (Barrel Controls 1.93 cfs @ 3.22 fps)

Summary for Pond DMH15-P: DMH 15

Inflow Area = 23,535 sf, 42.07% Impervious, Inflow Depth = 3.48" for 100-year event
Inflow = 1.97 cfs @ 12.08 hrs, Volume= 6,827 cf
Outflow = 1.97 cfs @ 12.08 hrs, Volume= 6,827 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.97 cfs @ 12.08 hrs, Volume= 6,827 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.36' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.40'	**12.0" Round Culvert** L= 71.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.40' / 36.10' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.93 cfs @ 12.08 hrs HW=37.34' (Free Discharge)
1=Culvert (Barrel Controls 1.93 cfs @ 3.25 fps)

Summary for Pond DMH16-P: DMH 16

Inflow Area = 58,690 sf, 38.34% Impervious, Inflow Depth = 3.21" for 100-year event
Inflow = 4.59 cfs @ 12.10 hrs, Volume= 15,723 cf
Outflow = 4.59 cfs @ 12.10 hrs, Volume= 15,723 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.59 cfs @ 12.10 hrs, Volume= 15,723 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.51' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.05'	**15.0" Round Culvert** L= 18.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.05' / 35.95' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.58 cfs @ 12.10 hrs HW=37.50' (Free Discharge)
1=Culvert (Barrel Controls 4.58 cfs @ 4.03 fps)

Summary for Pond DMH17-P: DMH 17

Inflow Area = 50,200 sf, 35.56% Impervious, Inflow Depth = 3.03" for 100-year event
Inflow = 3.81 cfs @ 12.11 hrs, Volume= 12,661 cf
Outflow = 3.81 cfs @ 12.11 hrs, Volume= 12,661 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.81 cfs @ 12.11 hrs, Volume= 12,661 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 41.33' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	**12.0" Round Culvert** L= 290.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 36.45' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.74 cfs @ 12.11 hrs HW=41.18' (Free Discharge)
1=Culvert (Barrel Controls 3.74 cfs @ 4.76 fps)

Summary for Pond DMH18-P: DMH 18

Inflow Area = 126,000 sf, 33.77% Impervious, Inflow Depth = 2.94" for 100-year event
Inflow = 9.06 cfs @ 12.12 hrs, Volume= 30,827 cf
Outflow = 9.06 cfs @ 12.12 hrs, Volume= 30,827 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.06 cfs @ 12.12 hrs, Volume= 30,827 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.91' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.35'	**18.0" Round Culvert** L= 283.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 36.35' / 34.70' S= 0.0058 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.80 cfs @ 12.12 hrs HW=38.77' (Free Discharge)
1=Culvert (Barrel Controls 8.80 cfs @ 4.98 fps)

Summary for Pond DMH19-P: DMH 19 to 20

Inflow Area = 161,700 sf, 32.81% Impervious, Inflow Depth = 2.87" for 100-year event
Inflow = 11.02 cfs @ 12.12 hrs, Volume= 38,614 cf
Outflow = 11.02 cfs @ 12.12 hrs, Volume= 38,614 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.02 cfs @ 12.12 hrs, Volume= 38,614 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.06' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.60'	**18.0" Round Culvert** L= 240.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.60' / 33.00' S= 0.0067 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=10.69 cfs @ 12.12 hrs HW=37.85' (Free Discharge)
1=Culvert (Barrel Controls 10.69 cfs @ 6.05 fps)

Summary for Pond DMH21-P: DMH 21

Inflow Area = 224,680 sf, 33.18% Impervious, Inflow Depth = 2.90" for 100-year event
Inflow = 15.36 cfs @ 12.12 hrs, Volume= 54,298 cf
Outflow = 15.36 cfs @ 12.12 hrs, Volume= 54,298 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.36 cfs @ 12.12 hrs, Volume= 54,298 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 36.01' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.60'	**24.0" Round Culvert** L= 86.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.60' / 33.25' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=14.90 cfs @ 12.12 hrs HW=35.95' (Free Discharge)
1=Culvert (Barrel Controls 14.90 cfs @ 5.08 fps)

Summary for Pond DMH22-P: DMH 22

Inflow Area = 237,530 sf, 34.32% Impervious, Inflow Depth = 2.97" for 100-year event
Inflow = 16.69 cfs @ 12.12 hrs, Volume= 58,832 cf
Outflow = 16.69 cfs @ 12.12 hrs, Volume= 58,832 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.69 cfs @ 12.12 hrs, Volume= 58,832 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.15' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	32.50'	**24.0" Round Culvert** L= 24.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 32.50' / 32.40' S= 0.0042 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=16.22 cfs @ 12.12 hrs HW=35.07' (Free Discharge)
1=Culvert (Barrel Controls 16.22 cfs @ 5.22 fps)

Summary for Pond DMH23-P: DMH 23 TO 25

Inflow Area = 139,340 sf, 25.69% Impervious, Inflow Depth = 2.46" for 100-year event
Inflow = 7.21 cfs @ 12.15 hrs, Volume= 28,517 cf
Outflow = 7.21 cfs @ 12.15 hrs, Volume= 28,517 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.21 cfs @ 12.15 hrs, Volume= 28,517 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 38.76' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 34.20' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.21 cfs @ 12.15 hrs HW=38.75' (Free Discharge)
1=Culvert (Barrel Controls 7.21 cfs @ 5.87 fps)

Summary for Pond DMH26-P: DMH 26 TO 28

Inflow Area = 109,860 sf, 27.54% Impervious, Inflow Depth = 2.52" for 100-year event
Inflow = 6.29 cfs @ 12.14 hrs, Volume= 23,071 cf
Outflow = 6.29 cfs @ 12.14 hrs, Volume= 23,071 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.29 cfs @ 12.14 hrs, Volume= 23,071 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.22' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	37.10'	**15.0" Round Culvert** L= 306.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.10' / 35.45' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.18 cfs @ 12.14 hrs HW=40.10' (Free Discharge)
1=Culvert (Barrel Controls 6.18 cfs @ 5.04 fps)

Summary for Pond DMH29-P: DMH 29 TO 32

Inflow Area = 194,760 sf, 29.19% Impervious, Inflow Depth = 2.63" for 100-year event
Inflow = 11.80 cfs @ 12.13 hrs, Volume= 42,679 cf
Outflow = 11.80 cfs @ 12.13 hrs, Volume= 42,679 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.80 cfs @ 12.13 hrs, Volume= 42,679 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.64' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.40'	**18.0" Round Culvert** L= 396.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.40' / 33.10' S= 0.0058 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=11.57 cfs @ 12.13 hrs HW=40.41' (Free Discharge)
1=Culvert (Barrel Controls 11.57 cfs @ 6.54 fps)

Summary for Pond DMH33-P: DMH 33

Inflow Area = 230,540 sf, 29.78% Impervious, Inflow Depth = 2.67" for 100-year event
Inflow = 14.26 cfs @ 12.13 hrs, Volume= 51,289 cf
Outflow = 14.26 cfs @ 12.13 hrs, Volume= 51,289 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.26 cfs @ 12.13 hrs, Volume= 51,289 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.31' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	33.05'	**24.0" Round Culvert** L= 8.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 33.05' / 33.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.97 cfs @ 12.13 hrs HW=35.28' (Free Discharge)
1=Culvert (Barrel Controls 13.97 cfs @ 4.98 fps)

Summary for Pond DMH5-P: DMH 5 to 6

Inflow Area = 72,640 sf, 41.95% Impervious, Inflow Depth = 3.46" for 100-year event
Inflow = 6.17 cfs @ 12.07 hrs, Volume= 20,946 cf
Outflow = 6.17 cfs @ 12.07 hrs, Volume= 20,946 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.17 cfs @ 12.07 hrs, Volume= 20,946 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.53' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.80'	**18.0" Round Culvert** L= 242.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 38.80' / 38.05' S= 0.0031 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.97 cfs @ 12.07 hrs HW=40.48' (Free Discharge)
1=Culvert (Barrel Controls 5.97 cfs @ 3.77 fps)

Summary for Pond DMH7-P: DMH 7

Inflow Area = 103,410 sf, 44.55% Impervious, Inflow Depth = 3.63" for 100-year event
Inflow = 8.97 cfs @ 12.09 hrs, Volume= 31,255 cf
Outflow = 8.97 cfs @ 12.09 hrs, Volume= 31,255 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.97 cfs @ 12.09 hrs, Volume= 31,255 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.13' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.00'	**18.0" Round Culvert**
			L= 30.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.00' / 37.80' S= 0.0066 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.79 cfs @ 12.09 hrs HW=40.09' (Free Discharge)
1=Culvert (Barrel Controls 8.79 cfs @ 4.97 fps)

Summary for Pond DMH8-P: DMH 8

Inflow Area = 30,770 sf, 50.70% Impervious, Inflow Depth = 4.02" for 100-year event
Inflow = 3.11 cfs @ 12.11 hrs, Volume= 10,309 cf
Outflow = 3.11 cfs @ 12.11 hrs, Volume= 10,309 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.11 cfs @ 12.11 hrs, Volume= 10,309 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 40.54' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**12.0" Round Culvert**
			L= 107.3' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 38.90' / 38.35' S= 0.0051 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.03 cfs @ 12.11 hrs HW=40.48' (Free Discharge)
1=Culvert (Barrel Controls 3.03 cfs @ 3.86 fps)

Summary for Pond DMH9-P: DMH 9 TO 10

Inflow Area = 174,335 sf, 24.89% Impervious, Inflow Depth = 2.39" for 100-year event
Inflow = 8.93 cfs @ 12.16 hrs, Volume= 34,758 cf
Outflow = 8.93 cfs @ 12.16 hrs, Volume= 34,758 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.93 cfs @ 12.16 hrs, Volume= 34,758 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.39' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**18.0" Round Culvert** L= 314.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 33.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.80 cfs @ 12.16 hrs HW=37.29' (Free Discharge)
└**1=Culvert** (Barrel Controls 8.80 cfs @ 4.98 fps)

Summary for Pond IB1-P: Infiltration Basin #1

Inflow Area = 119,034 sf, 46.66% Impervious, Inflow Depth = 3.77" for 100-year event
Inflow = 10.89 cfs @ 12.09 hrs, Volume= 37,352 cf
Outflow = 0.58 cfs @ 15.14 hrs, Volume= 37,352 cf, Atten= 95%, Lag= 183.1 min
Discarded = 0.58 cfs @ 15.14 hrs, Volume= 37,352 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 39.27' @ 15.14 hrs Surf.Area= 10,373 sf Storage= 19,329 cf

Plug-Flow detention time= 354.8 min calculated for 37,352 cf (100% of inflow)
Center-of-Mass det. time= 354.7 min (1,182.2 - 827.6)

Volume	Invert	Avail.Storage	Storage Description
#1	37.10'	39,183 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
37.10	7,290	0	0	7,290
38.00	8,640	7,160	7,160	8,670
38.10	9,000	882	8,042	9,031
39.50	10,660	13,746	21,787	10,762
41.00	12,560	17,396	39,183	12,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	37.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	39.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.58 cfs @ 15.14 hrs HW=39.27' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.58 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=37.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB2-P: Infiltration Basin #2

Inflow Area = 261,520 sf, 37.21% Impervious, Inflow Depth = 3.16" for 100-year event
Inflow = 19.71 cfs @ 12.11 hrs, Volume= 68,873 cf
Outflow = 0.91 cfs @ 15.93 hrs, Volume= 68,873 cf, Atten= 95%, Lag= 228.9 min
Discarded = 0.91 cfs @ 15.93 hrs, Volume= 68,873 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 34.19' @ 15.93 hrs Surf.Area= 16,191 sf Storage= 39,022 cf

Plug-Flow detention time= 488.1 min calculated for 68,815 cf (100% of inflow)
Center-of-Mass det. time= 488.3 min (1,333.4 - 845.2)

Volume	Invert	Avail.Storage	Storage Description
#1	31.20'	52,845 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.20	10,000	0	0	10,000
32.00	11,650	8,652	8,652	11,676
34.50	16,890	35,473	44,124	17,021
35.00	18,000	8,721	52,845	18,156

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.20'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	34.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.91 cfs @ 15.93 hrs HW=34.19' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.91 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.20' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB3-P: Infiltration Basin #3

Inflow Area = 155,960 sf, 27.12% Impervious, Inflow Depth = 2.54" for 100-year event
Inflow = 8.41 cfs @ 12.14 hrs, Volume= 33,018 cf
Outflow = 0.36 cfs @ 17.21 hrs, Volume= 33,018 cf, Atten= 96%, Lag= 304.0 min
Discarded = 0.36 cfs @ 17.21 hrs, Volume= 33,018 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.84' @ 17.21 hrs Surf.Area= 6,156 sf Storage= 20,529 cf

Plug-Flow detention time= 702.7 min calculated for 33,018 cf (100% of inflow)
Center-of-Mass det. time= 702.5 min (1,565.6 - 863.0)

Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	36,051 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
31.00	2,150	0	0	2,150
32.00	3,730	2,904	2,904	3,741
34.00	4,070	7,798	10,701	4,300
34.10	4,680	437	11,139	4,910
36.75	7,010	15,386	26,524	7,347
38.00	8,250	9,527	36,051	8,646

Device	Routing	Invert	Outlet Devices
#1	Discarded	31.00'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	36.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.36 cfs @ 17.21 hrs HW=35.84' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.36 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=31.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB4-P: Infiltration Basin #4

Inflow Area = 530,385 sf, 30.73% Impervious, Inflow Depth = 2.74" for 100-year event
Inflow = 32.25 cfs @ 12.13 hrs, Volume= 121,249 cf
Outflow = 1.06 cfs @ 17.91 hrs, Volume= 121,249 cf, Atten= 97%, Lag= 346.6 min
Discarded = 1.06 cfs @ 17.91 hrs, Volume= 121,249 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 35.13' @ 17.91 hrs Surf.Area= 18,635 sf Storage= 79,619 cf

Plug-Flow detention time= 863.9 min calculated for 121,249 cf (100% of inflow)
Center-of-Mass det. time= 863.7 min (1,718.4 - 854.8)

Volume	Invert	Avail.Storage	Storage Description
#1	29.50'	117,366 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
29.50	9,265	0	0	9,265
30.00	10,130	4,847	4,847	10,147
31.00	12,000	11,052	15,899	12,054
32.00	13,930	12,953	28,852	14,026
35.75	19,650	62,656	91,508	19,998
36.00	20,060	4,964	96,471	20,426
37.00	21,740	20,894	117,366	22,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	29.50'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	35.75'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=1.06 cfs @ 17.91 hrs HW=35.13' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.06 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=29.50' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond IB5-P: Infiltration Basin #5

Inflow Area = 70,490 sf, 40.57% Impervious, Inflow Depth = 3.37" for 100-year event
Inflow = 5.87 cfs @ 12.10 hrs, Volume= 19,777 cf
Outflow = 0.35 cfs @ 14.95 hrs, Volume= 19,777 cf, Atten= 94%, Lag= 171.3 min
Discarded = 0.35 cfs @ 14.95 hrs, Volume= 19,777 cf
Secondary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 1.00-60.00 hrs, dt= 0.05 hrs
Peak Elev= 37.13' @ 14.95 hrs Surf.Area= 6,185 sf Storage= 10,013 cf

Plug-Flow detention time= 326.7 min calculated for 19,760 cf (100% of inflow)
Center-of-Mass det. time= 326.7 min (1,166.3 - 839.6)

Volume	Invert	Avail.Storage	Storage Description
#1	35.10'	23,803 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
35.10	3,630	0	0	3,630
36.00	4,790	3,777	3,777	4,808
36.10	4,980	488	4,265	5,000
38.00	7,300	11,596	15,861	7,379
39.00	8,600	7,941	23,803	8,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	35.10'	**2.410 in/hr Exfiltration over Wetted area**
#2	Secondary	38.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.5' Crest Height

Discarded OutFlow Max=0.35 cfs @ 14.95 hrs HW=37.13' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.35 cfs)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=35.10' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

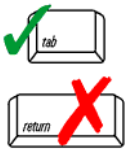
DEP STORMWATER MANAGEMENT FORMS

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

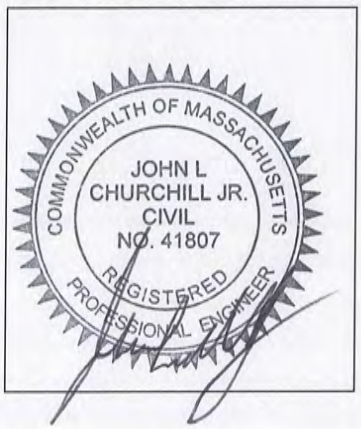
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



9/7/23

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

☒ No disturbance to any Wetland Resource Areas

☒ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☒ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☐ Other (describe): _____

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☒ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☒ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☒ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☒ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☒ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☒ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☐ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

STORMWATER OPERATIONS AND MAINTENANCE PLAN

Stormwater Operations and Maintenance Plan:
HIDDEN TRAILS off County Road, West Wareham

DATE: September 7, 2023

Responsible Party:
Sarajon Realty, LLC
2854 Cranberry Highway
East Wareham, MA 02538

Project Address:
Off County Road
W. Wareham, MA 02576

Engineering By:
JC Engineering, Inc.
2854 Cranberry Highway
East Wareham, MA 02538

The project site will be privately owned and maintained. The responsible party will be responsible for the required inspections and maintenance of the drainage system and best management practices (BMPs).

Illicit Discharges
All Illicit discharges to the stormwater management system are prohibited.

Pre-Construction Requirements

Prior to the start of any construction on the site the following procedures are to be implemented.

- Erosion Control Barriers are to be installed down gradient of all earthwork proposed in that particular phase of work. Erosion Control Barriers are to be installed at the limit of work and/or adjacent to the wetland resource areas and/or natural areas to be protected as shown on the plans.

- All major trees designated to be saved are to be flagged in the field and fenced off as necessary to prevent damage during construction.

- A temporary settling pool is to be constructed on the up-gradient side of Erosion Control Barrier at the limit of work such that stormwater runoff is channeled to the temporary settling pools, if necessary, and filtered through the Erosion Control Barrier prior to leaving the site.

- Safety barriers, warnings, and fences to be installed along County Road as necessary to protect the general public prior to the start of the work adjacent to the roadway.

- A temporary construction entrance is to be constructed at the access point to the site. The entrance is to be stabilized in such a manner as to prevent the tracking of soil onto the public way.

- A dust monitoring plan will be established prior to the start of construction.

- Weekly training sessions will be conducted for all site contractors at the job.

- A person responsible for daily inspection of all erosion control methodologies and action plan for corrections/repairs when needed will be established.

Construction Period Pollution Prevention

- The contractor must install erosion control measures as shown on the plans and details prior to starting any other work on the site construction. Erosion control must be installed at every inlet structure and inlet swale and maintained for the duration of the project. Erosion Control Barriers as shown on plans shall be inspected, repaired and/or maintained by the contractor weekly and within 12 hours of each storm event.

- Water and/or covers to minimize dust and erosion from newly graded areas and stock piles of earth will be implemented during construction as needed or when conditions are anticipated to be greater than 20 m.p.h. Application rate of water shall be sufficient to moisten soil so as to not create runoff and/or ponding. No surfactants shall be used.

- A regular street sweeping schedule of hard surfaces will be established prior to construction and will be continued until the completion of the full site development.

- A person will be assigned to monitor the perimeter erosion control methodologies on a daily basis.

- Owner or its representative shall perform weekly review/training sessions.

- Construction of a temporary settling area is to be utilized as a method of controlling concentrated flows from areas that are under construction.

- Temporary settling areas are to be constructed on an as needed basis and located throughout the construction phase as required by earthwork activities.

- At the beginning of earthwork operations on the site a mechanical on-site sweeper is to be maintained such that the public way can be kept clean during the construction phase.

- As elements of the drainage system are installed, silt fences and "silt sacs" are to be installed around all catch basins and under grates until the tributary area to that basin is completely stabilized.

- As general earthwork is completed the exterior perimeters of the areas that have been completed are to be stabilized using erosion control grass.

- Stabilize slopes steeper than 3:1 (horizontal to vertical) with seed, secured geotextile fabric, or rock rip-rap as required to prevent erosion during construction.

- Sediment shall be contained within the construction site and shall be removed when they reach a depth of 6 inches.

- Clean out catch basins, drain manholes and storm drain pipes after completion of construction.

- No stormwater shall be allowed to enter the structures until all catch basins, drain manholes, and storm drain pipes have been cleaned, the binder course is installed, and all disturbed areas are stabilized.

- If the binder course is in place for more than 3 months without a wearing course, the contractor shall set the rim elevation of the drainage structures level with the binder course. The rim elevations shall be reset just prior to placing the wearing course.

- The contractor is responsible for all stormwater best management practices being in place to contain stormwater in the event that drainage structures are not at pavement grade during a storm event, and all cleanup in the event that such measures fail during said storm event.

- Temporary surfaces should be stabilized as soon as active grading is suspended. Temporary measures include seeding with grass, jute netting, or straw mulch. Permanent stabilization should be established early in the fall to allow good cover before cold weather comes.

- A construction entrance in accordance with construction details shall be installed at the site entrance to prevent sediments from being tracked offsite.

- It is the responsibility of the contractor to maintain and supplement the

specified sedimentation controls as necessary to prevent sedimentation of off-site areas and/or any regulated resource areas. Failure by the contractor to control erosion, pollution and/or siltation shall be cause for the owner to employ outside assistance or to use his own forces to provide the necessary corrective measures, the cost of such assistance plus project engineering costs will be the contractor's responsibility. If the owner shall fail their responsibility of this Plan, the Town has the right to enter upon property after 15 days notice to take corrective actions and bill the Owner for their Services.

- Erosion Control Barriers shall be installed at the following locations: Toe of slope of embankment construction, Toe of temporary earthwork stockpiles. All locations as indicated on the Plans.

- A log of regular inspections and maintenance is to be maintained by the construction superintendent.

- When all areas tributary to any catch basin on the site are stabilized with permanent plantings and paving, that catch basin is to be cleaned of all sediment and debris that has accumulated during construction and the "silt sacs" removed.

- During construction of the project, the Owner and/or its representative, is to be the responsible party for enforcing the installation and maintenance of all erosion control devices. A permanent file is to be established for recording daily inspections, problems and maintenance of the erosion control devices. A 24 hour emergency hotline is to be established with the number posted on a sign at the construction entrance to the project and on the construction trailer indicating who can be contacted in case of an emergency on the site.

Long-Term Operation and Maintenance Program

- At the end of construction on the project, Owner shall be provided with a certified as built plan of all utilities constructed on the site.

- **Deep Sump Catch Basin**

  All Catch basins shall be inspected by the owner/operator on a quarterly basis or after a major storm event. Catch basin sumps will be cleaned annually during the early spring or when the sediment rises to within half the available sump height of the catch basin, whichever comes first.

- **Proprietary Structures**

  All Proprietary Structures shall be inspected monthly. Proprietary Structures are to be cleaned at least two times per year, once during early spring and late

fall. Sediment and trash removal and disposal shall follow the manufacturer's specifications.

- **Sediment Forebay & Infiltration Basin**

  The infiltration basin and sediment forebay should be inspected after every major storm for the first few months after stabilization. After that, the sediment forebay should be inspected monthly and removed of accumulated sediment four times per year. The infiltration basin should be inspected at least twice per year. At a minimum the responsible party should check for signs of differential settlement, cracking, erosion, leakage in the embankments, tree growth, the condition of rip raps, sediment accumulation, and the health of the turf.

  At least twice per year, the access area, side slopes and basin bottom should be mowed. Grass clippings should not be left in the basin. Sediment should be removed from the basin as needed.

- Once the system is operational, inspections should occur after every major storm event for the first few months. After the system is in operation, inspections should be every six months. Special attention should be directed towards the depth of sediment in the leaching structures. Sediment removal from the leaching structures accomplished as needed by means of a labor crew. Sediment shall be removed off-site and disposed of in a legal manner. Inspections should also include checking for potential problems that include, but are not limited to, any forms of erosion, tree growth in the leaching area, and sediment accumulation, etc. Trash and debris accumulated within any portion of the Infiltration Structures should be removed at this time. Silt and debris are to be removed using vacuum pumping techniques as required.

- The Owner, is to be responsible for the maintenance of the project after construction has been completed. The owner is to provide the Planning Department, Conservation Commission and Building Department with a contact name and telephone number for purposes of communication between the owner and the Town Boards and Commissions. At each time that the contact person changes, the above Boards and Commission are to be notified of the new contact information.

- The Owner shall hire a Stormwater Professional to inspect the system quarterly as required.

- This Operations and Maintenance plan is to be incorporated into all necessary documents with the stormwater operations and maintenance plan to ensure that a long-term maintenance program is adhered to by the developer and all future property owners.

- Waste shall be properly stored in sealed containers if stored outside. The preferred method is to store waste either indoors or in a structure with a locking cover to prevent entrance from animals. The containers shall be covered to prevent rainfall from leaching through the household waste.

- Vehicle washing shall be performed with non-detergent cleaners. The preferred method is to clean a vehicle at a vehicle washing facility.

- Yard maintenance equipment, including lawn mowers and chainsaws shall be stored in a covered area. Periodic maintenance shall be performed on all equipment to ensure that no gas or oil leak into the ground.

- Yard waste shall be disposed in an approved off-site disposal facility or stored on-site in a composting pile.

- Septic systems shall be properly maintained and inspected in accordance with the State Environmental Code, Title 5. A failing septic system shall be repaired immediately to prevent effluent from discharging into the storm drains. Never discharge gasoline, oils or chemicals into septic systems.

- Gasoline and oils shall be stored in sealed containers and in a covered, secure, and level area to prevent accidental spills. All gasoline, oil, and chemical spills shall be reported to the Wareham Fire Department and Regional DEP office.

- Lawn fertilizers and pesticides shall be in sealed containers within a covered area and remain dry. Slow release lawn fertilizers shall be used to limit the amount of fertilizer entering the groundwater. Limit the application of fertilizers to lawn area only. Sweep up any spills on impervious material to prevent runoff into the storm drains.

- Pet waste shall be properly disposed of to prevent bacteria from washing into storm drains. Small amounts of waste can be buried or sealed in a plastic bag and thrown into the trash. The preferred method is to flush the waste down the toilet.

- Snow de-icing chemicals shall be stored in a sealed container and a covered area.

- Snow shall be removed from all parking surfaces and fire truck clearance areas to provide adequate access for all safety vehicles. Snow shall be removed from all catch basin grates to avoid flooding during snow melt.

- All sand and loam piles stored on-site shall be properly stabilized or covered to prevent sediment from entering the storm drains. All piles shall be contained in a level, upland area and surrounded by a silt fence and/or haybales.

- All structural and non-structural stormwater management facilities shall be maintained to ensure proper working condition during construction and shall be fully maintained in accordance with this plan. The owner shall be responsible for maintaining the site's storm water management system in compliance with Federal, state, and local requirements and in accordance with best management practices. In the event that the Town determines that the owner has materially failed in its obligation to maintain the drainage system in accordance with best management practices and the Stormwater Operation and Maintenance Plan, the Town shall have the right, upon written notice to the Owner, and Owner's failure to remedy the maintenance issue within fifteen (15) days' notice thereof, to enter upon the site to perform the required maintenance. All costs incurred by the Town in connection with its performance of such required maintenance on the site shall be reimbursed by the Owner to the Town within thirty (30) days of the Owner's receipt of the Town's invoice for such costs.

Stormwater BMP Inspection and Maintenance Log

Facility Name	HIDDEN TRAILS
Address	OFF COUNTY ROAD, WEST WAREHAM, MA
Begin Date	End Date

Date	BMP ID#	BMP Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

Instructions: Record all inspections and maintenance for all treatment BMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary. Submit a copy of the completed log with the annual independent inspectors' report to the municipality, and start a new log at that time.

- BMP ID# — Always use ID# from the Operation and Maintenance Manual.
- Inspected by — Note all inspections and maintenance on this form, including the required independent annual inspection.
- Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.
- Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.
- Comments and actions taken — Describe any maintenance done and need for follow-up.

REFERENCES

HydroCAD. Stormwater Analysis Software, Heastead Methods, Inc. 1998.

Massachusetts Department of Environmental Protection & Massachusetts Office of Coastal Zone Management. March 1997. *Stormwater Management Handboo*k. Volume 1 & 2.

U.S. Soil Conservation Service 1969. *Soil Survey of Plymouth County*, *Massachusetts.*

U.S. Soil Conservation Service. June 1986. *Urban Hydrology for Small Watersheds (Technical Release 55)*

DRAINAGE AREA PLANS

NAD 83

EX-1

EX-2

EX-3

EX-4

EX-5

EX-6

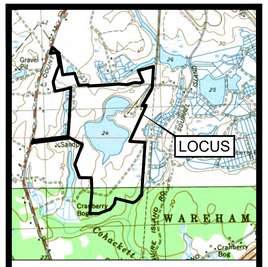
EX-7

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)

1 inch = 150 ft.



LOCUS MAP

SCALE 1" = 2000'

DEFINITIVE SUBDIVISION PLAN

OF

HIDDEN TRAILS

OFF

COUNTY ROAD

IN

W. WAREHAM
MASSACHUSETTS
(PLYMOUTH COUNTY)

EX-DA

REVISIONS:

No.	DATE	DESC.

PREPARED FOR:

SARAJON REALTY, LLC
2854 CRANBERRY HIGHWAY
E. WAREHAM, MA 02538

PREPARED BY:

JC ENGINEERING, INC.
2854 CRANBERRY HIGHWAY
EAST WAREHAM, MA 02538
508-273-0377

DATE: SEPTEMBER 7, 2023

DRAWN: BMB

CHECK: JLC

SCALE: AS NOTED

JOB NO: 6924

NAD 83

PR-1
PR-1
PR-2
PR-4
PR-3
PR-5
PR-5
PR-6
PR-4
PR-6
PR-6
PR-6

GRAPHIC SCALE
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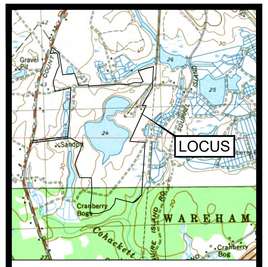
(IN FEET)
1 inch = 150 ft.



LOCUS MAP
SCALE 1" = 2000'

DEFINITIVE SUBDIVISION PLAN
OF
HIDDEN TRAILS
OFF
COUNTY ROAD
IN
W. WAREHAM
MASSACHUSETTS
(PLYMOUTH COUNTY)

PR-DA

REVISIONS:

No.	DATE	DESC.

PREPARED FOR:
SARAJON REALTY, LLC
2854 CRANBERRY HIGHWAY
E. WAREHAM, MA 02538

PREPARED BY:
JC ENGINEERING, INC.
2854 CRANBERRY HIGHWAY
EAST WAREHAM, MA 02538
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DATE: SEPTEMBER 7, 2023
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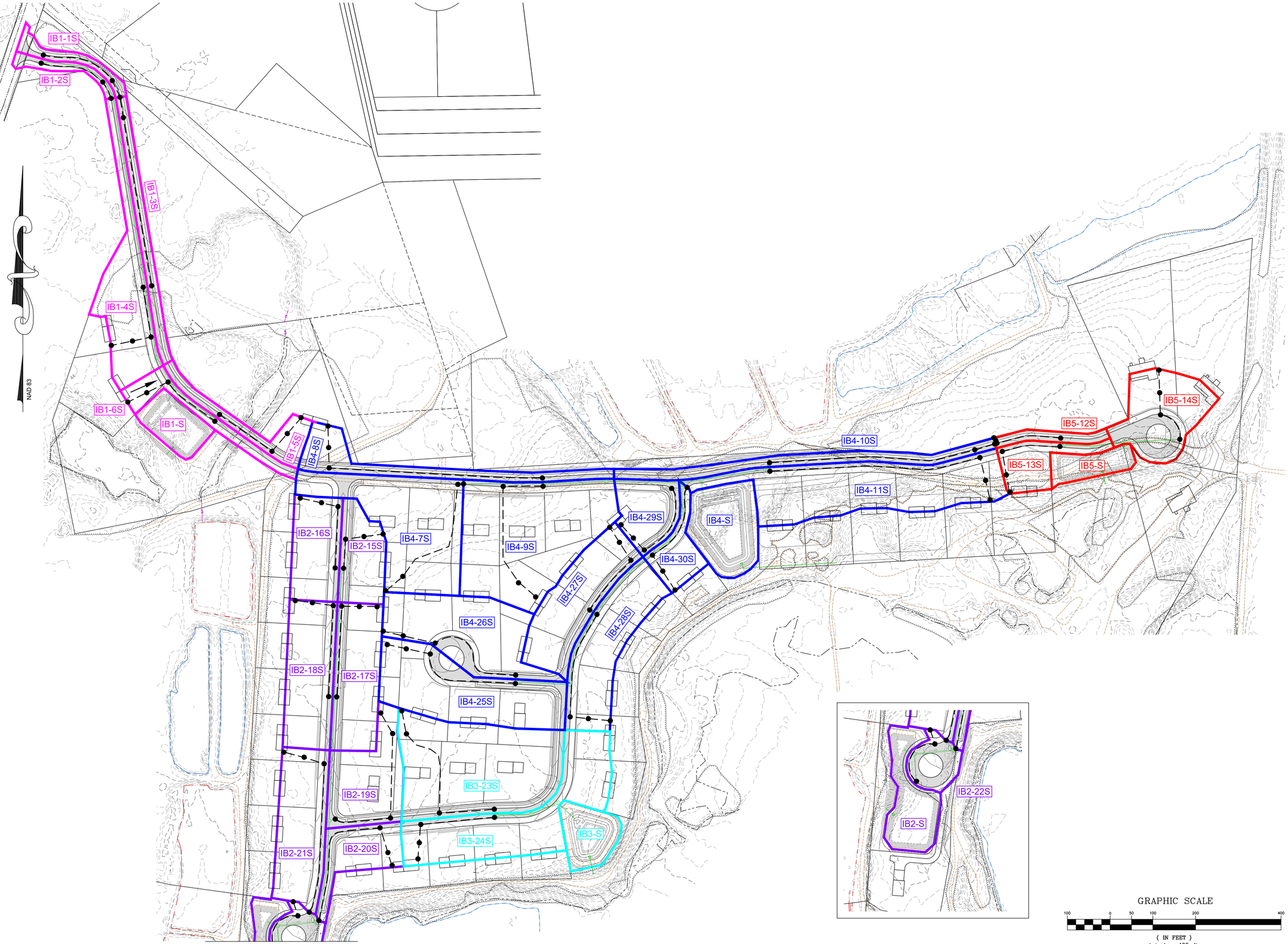

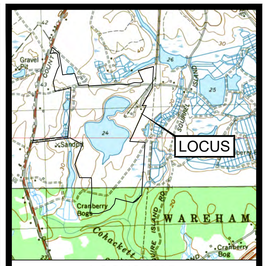

LOCUS MAP
SCALE 1" = 2000'

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

DEFINITIVE SUBDIVISION PLAN
OF
HIDDEN TRAILS
OFF
COUNTY ROAD
IN
W. WAREHAM
MASSACHUSETTS
(PLYMOUTH COUNTY)

PR-DA FOR DRAINAGE SYSTEM

REVISIONS:

No.	DATE	DESC.

PREPARED FOR:
SARAJON REALTY, LLC
2854 CRANBERRY HIGHWAY
E. WAREHAM, MA 02538

PREPARED BY:
JC ENGINEERING, INC.
2854 CRANBERRY HIGHWAY
EAST WAREHAM, MA 02538
508-273-0377

DATE: SEPTEMBER 7, 2023
DRAWN: BMB
CHECK: JLC
SCALE: AS NOTED
JOB NO: 6924