HOWARD STEIN HUDSON

Engineers + Planners

SUPPLEMENTAL DATA REPORT

Sheldon Meadow

20 Hancock Street
1139 West Street

Wrentham, Massachusetts

4/11/22

COMMONWEALTH OF MASSACHUSETTS
KATIE L. ENRIGHT
CIVIL
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Existing Conditions

The subject site for the Sheldon Meadow Development exists as the eastern portion of property located at 1139 West Street and 20 Hancock Street, Wrentham, MA. The subject site is considered a single lot in common ownership, however for the purposes of the Sheldon Meadow Development, this report will focus on a portion of the 20 Hancock Street portion of the property and 1139 West Street Property with frontage on Hancock Street.

The property located totals approximately 20.16 acres in the R-87 Agricultural and Residential Zoning District. The parcel is developed by a single family home that is currently a rental property. The remainder of the property consists of field and patches of trees and shrubs that turn into dense forest as it approaches the wetlands and perennial stream to the west. The site is bounced to the north by an intermittent stream and to the south by single family residences.

Throughout the site, the topography generally slopes from northeast to southwest where a bordering vegetated wetland and a perennial stream exist. A portion of the front of the existing site flows to the abutter, directly southeast of the existing home on 20 Hancock Street. In addition, a portion of the southeastern edge of the property flows to the abutting property along the southeast edge of the site.

The existing parcel entirely drains to three analysis points representing the wetland system to the southwest of the site; the abutter along the southeastern property line; and the abutter to the southeast of the frontage on Hancock Street.

Soil conditions on site are characterized as Sudbury fine sandy loam which has a hydrologic soil group of B. Soil testing has been performed and has confirmed these soil groups.

The site currently services water and electric utility via the Hancock Street Right of Way. There is not believed to be the availability of gas or sewer services within the Hancock Street Right of Way.

Proposed Conditions

The Sheldon Meadow Development proposes to construct 16 single family homes within a Senior Living Community (SLC), with an internal, formal greenspace and paved walking loop and with an exterior accessible walking loop to add to the existing wooded trails that navigate through the wooded, natural areas adjacent to the proposed development. The exterior walking loop is proposed to be six (6) feet wide to aide in two-way walking pedestrian traffic and is also depicted with benches every 150'± apart to increase the usability.

The single-family homes have been located and designed as two clusters to provide a communal area between the clusters of homes. Both clusters feature entrances on the courtyard side of the units which enter the interconnected walkways. This allows direct connections from each unit to the communal spaces in the center of the development. The road for Sheldon Meadow wraps around the exterior of the clusters, where it closes a loop before exiting to the Hancock Street intersection.

The road has been designed as 22' wide, per SLC requirements, and totals approximately 1,771 LF. The exterior of the road is proposed to be curbed while the interior is proposed as a 10' pervious parking shoulder. The use of the pervious parking shoulder will allow for the reduction in overall runoff, while still allowing adequate parking on site.

Electric, cable, and communications service as well as water service will be provided through the available connections within Hancock Street. Sewer will be serviced through an on-site community septic system. The septic system is proposed to be located beneath the centralized green space within the community.

The proposed stormwater management utilizes treatment BMP's, grassed swales, subsurface infiltration systems, as well as an infiltration basin on the southwestern side of the site. Providing the low point on the southwestern edge of the site most closely mimics the existing topographical conditions and allows the site to remain as close to existing as possible. The main entry drive is proposed to be superelevated towards the northwest, where the stormwater will enter a catch basin to be treated, and flow to a subsurface infiltration system. The loop will be superelevated towards the outside of the road, entering the stormwater management system via curb cuts, or catch basins. The stormwater management system runs along the exterior of the road in the form of stone lined grassed swales leading to headwalls with subsurface piping. Stormwater will be piped toward proprietary treatment devices prior to be discharged to the infiltration basin. The infiltration basin will accept stormwater on site, further treat the stormwater, infiltrate, and release excess stormwater via an overflow weir. A portion of the proposed loop will drain to a catch basin which is connected to a subsurface infiltration system within the center common of the site. This subsurface infiltration system will treat, infiltrate, and release excess stormwater via an overflow grate within the center common. Discharged stormwater from the subsurface infiltration system will continue to flow southwest toward the infiltration basin where it will be captured, further treated, and infiltrated within the larger basin.

Using these series of treatment BMP's, swales, and the infiltration basin, the stormwater management system is designed to capture, treat, and infiltrate stormwater as required by the Massachusetts Stormwater Standards, as well as the local Wrentham Board of Health Stormwater Regulations. See the hydrology section of this report for further detail and information.

Zoning

The proposed parcel will remain within the R-87 Agricultural and Residential Zoning District. Within this district, a Senior Living Community (SLC) is approvable via a Site Plan and Special Permit Application to the Planning Board. This section with demonstrate compliance with appropriate dimensional requirements and special permit criteria as it relates to Section 13.5 (Senior Living Community) of the Wrentham Zoning Bylaws.

Dimensional Requirements

While the parcel exists within the R-87 Agricultural and Residential Zoning District, the SLC Special Permit allows adjusted dimensional requirements from the R-87 Agricultural and Residential Zoning District.

20 Hancock Street, Wrentham, MA
R-87 Agricultural and Residential
Proposed Use: Senior Living Community

Dimensional Requirements (R-87 Agricultural and Residential) (SLC)	Required	Proposed
Lot Area (SLC)	871,200 SF (20 AC)	878,327 SF (20.1 AC)
Continuous Lot Frontage (SLC)	100’ min.	134’±
Minimum Front Yard (SLC)	30’ min.	221’±
Minimum Side Yard (SLC)	30’ min.	54’±
Minimum Rear Yard (SLC)	30’ min.	1,810’±
Maximum Building Coverage (SLC)	35% max.	3.6%
Minimum Open Space (SLC)	30% min.	40%
Maximum Stories (SLC)	2 max.	2
Maximum Building Height (SLC)	28’ max.	23’-8”
Maximum Density (SLC)	4 Units/AC	0.80 Units/AC
Average Distance Between (SLC)	15’	25.3’
Parking Requirements	**Required**	**Proposed**
Number of Parking Spaces	40 Spaces	32 Garage Spaces 29 Surface Spaces 61 Total Spaces

OPEN SPACE CALCULATION

Total Site Area = 878,327 SF

Total Wetland Area = 445,084 SF

Total Non-Usable Space = 145,385 SF

Required Open Space = (0.30) * 878,327 SF = 263,498 SF*

**Per the requirements of the SLC, not more than 25% of the required common open space may be wetland.'*

Allowable Wetland Area = (0.25) * 263,498 SF = 65,875 SF

Upland Open Space = 878,327 SF – (445,084 SF + 145,385 SF) = 287,858 SF

Total Open Space = 287,858 + 65,875 = 353,733 SF

Open Space % = 353,733 SF / 878,327 SF = 40%

Senior Living Community – Special Permit Criteria

Per Wrentham Bylaws Section 13.5.4 – Basic Requirements

A. A Senior Living Community Shall Comply with the following density regulations: 4 Units/Acre

   As shown within the Zoning Table, the Sheldon West project has an overall density of 0.80 Units/Acre.

B. Maximum building coverage shall not exceed thirty-five percent (35%) of the lot area for new construction or expansion of existing structures.

   The proposed building coverage on site totals 3.6%.

C. For single family, cottage dwellings, duplexes or triplex style dwellings, the minimum setback shall be thirty feet (30') from all property lines in the Residential Districts, unless the Planning Board determines that a reduced setback is necessary to achieve the purposes of this section and will not have a detrimental impact on the neighborhood.

   All units on site are proposed as single family. All proposed buildings remain at least thirty feet from all property lines.

D. No dwelling unit in a SLC shall have more than two bedrooms.

   No dwelling unit is proposed to have more than two (2) bedrooms.

E. The minimum distance between buildings in any SLC shall be fifteen feet (15').

The minimum distance between buildings proposed on site is equal or more than 15'. Many of the buildings maintain approximately 20' or more of separation.

F. The minimum common open space in the development shall be thirty percent (30%) of the lot area and not more than twenty-five percent (25%) of the required minimum common open space shall consist of wetlands (as defined in MGL c.131, s40). The upland open space shall be contiguous and usable by residents of the development. A permanent Conversation Restriction running to or enforceable by the Town shall be recorded for the common open space area and shall include restrictions that the land be retained in perpetuity for conservation or passive recreation.

See Dimensional Requirements section for calculation of Common Open Space.

G. All SLC dwelling units shall be subject to an age restriction described in a deed, deed rider, restrictive covenant, or other document approved by the Planning Board that shall be recorded at the Registry of Deeds and/or Land Court. The age restriction shall limit occupancy of dwelling units to at least one individual age fifty-five (55) or over ad their spouse/partner and may provide for time-limited guest visitation rights of not more than one (1) month per year. The restriction, if the Planning Board so approved and specifies in the special permit, may authorize special exceptions that allow persons of all ages to live in a dwelling unit together with a senior resident for purposes such as care of a senior in ill health or enabling seniors to fulfill legal responsibilities of guardianship or custody. The special permit including age restriction shall run with the land in perpetuity and shall be enforceable by the Town and/or any owner(s) of the SLC dwelling units. In the event of the death of a qualifying owner or occupant(s) of a dwelling unit, or foreclosure or other involuntary transfer of a unit within the SLC, a one-year exemption to the restriction shall be allowed for the transfer of the unit to another eligible occupant.

This requirement is understood and agreeable to the applicant.

H. Minimum off-street parking requirements shall comply with Article 6.4, except as modified by the following standards:

   a. Single Family or Cottage style dwellings: two (2) spaces per unit

   b. Guest parking: one (1) space per two (2) units or three (3) beds, as applicable.

I. *Per these requirements, the project is subject to the requirement of 40 parking spaces. The project proposes a total of 32 garage spaces and 29 surface spaces for a total of 61 proposed parking spaces on site.*

J. All streets within a SLC shall be private, and all sewerage, drainage facilities and utilities shall be designed and constructed in compliance with the Town of Wrentham Subdivision Rules and Regulations, except as modified by the following standards:

   a. The minimum width of paved roadways shall be twenty-two feet (22').

   b. There shall be a five-foot (5') sidewalk installed along one side of the roadway.

The roadway within the proposed SLC is shown at 22' wide, with an additional 10' wide pervious paver shoulder and a 6' sidewalk along the exterior loop of the roadway with direct connection to the intersection of Hancock Street.

K. A SLC may have one (1) free standing sign at each principal access to the development from a public way, indicating the name and/or street address of the SLC. Such sign shall not exceed twelve (12) square feet in area per side or four (4') feet in height. The provisions of Article 18 shall also apply to signage within the SLC.

Signage has not been proposed at this time. Proposed signage will be designed and addressed at a later date further along in the permitting process and will meet the requirements of the SLC.

L. A SLC shall have an amenity structure designed to allow for a variety of passive and active recreational activities that support the residents of the SLC. Such uses that may be considered are community program spaces, fitness/therapeutic space, educational, recreational and accessory space; areas for neighborhood meetings and event space; and any other amenities and opportunities that are intended to create and promote an integrated neighborhood type environment.

A community amenity space has been provided within the common green area on the interior of the proposed units. This space can be utilized for a number of different activities and includes an interconnected walking loop to each unit, as well an open green space to be utilized as desired by the residents. The project is also serviced by a 6' wide meandering sidewalk with benches placed intermittently at the outside of the project allowing a longer, uninterrupted loop at the edge of the wetland and forested areas for the use of the residents.

Per Wrentham Bylaws Section 13.5.8 – Development Standards

As part of the Planning Board's special permit review process, the Board shall evaluate the proposed Senior Living Community (SLC) for conformance to the following minimum design standards.

A. Architectural planning and design shall incorporate energy efficient design techniques, such as natural heating and cooling systems, use of sun and wind energy generation systems, and so forth.

   The architectural design of the single-family homes of the development will incorporate solar panel ready roof design for future installation of solar panels by unit owners. Also, all habitable rooms will have operable double hung windows to take advantage of natural cooling/ventilation at the unit owners' discretion. The building envelope will be high efficiency so that mechanical system design loads can be reduced and be more energy efficient. The mechanical heating and cooling systems will be high efficiency electric heat pump split systems in conjunction with electric high efficiency water heaters.

   Also, exterior bollard style pedestrian lighting for the interior green space is a solar charged light fixture.

B. Structures located near the project property lines shall be designed and located in a manner that reflects consistency and compatibility with neighboring areas, and shall include appropriate use of building density, heights, and design to minimize intrusion on neighbors.

   Though the structures are not near the property lines due to the nature of the development, the new homes being constructed could possibly be seen by adjacent abutting properties, so attention has been given to the design of the new homes as if they were close to the adjacent property lines. All the new homes are over 50' from adjacent property lines. The new homes being built are consistent with the existing neighborhood in building footprint as well as in building height. The design of the roof lines is consistent with the surrounding neighborhood incorporating a main gable roof, gable and shed dormers, asphalt shingle roofs, horizontal lap and shake siding and double hung windows. Options are provided to allow for diversity within the development and provide visual interest. Providing (3) garage door styles and (3) exterior siding color options also provide further design diversity within the development. Most importantly, the development is treating the new homes as having (2) front elevations – one front elevation facing the ring road and the adjacent abutters as well as one front elevation facing inward to the "village green". The architectural design will not detract from the current feel of the surrounding neighborhood as this development enhances, reflects and is consistent with the surrounding existing neighborhood.

C. Outdoor recreation or gathering areas, particularly those that may generate significant noise and/or light and glare, shall be located to minimize intrusion on neighboring properties.

The outdoor gathering area is located away from all property lines within the center of all the units, proposed as a "village green". All noise, light, or glare generated from this area will be shielded by the proposed structures. There is also a meandering perimeter sidewalk along the ring road of the development that allows for pedestrian walking without having to cross individual home driveways making for an uninterrupted walk within benches placed intermittently along the path. This increases the safety of pedestrians walking in and around the development. Lighting is provided along the ring road that are full cut off light fixtures so that there will not be any light spillage or glare onto adjacent abutting properties. These measures minimize any intrusion on neighboring properties.

D. Structures shall be clustered to reduce site disturbance and protect open spaces, natural and environmentally sensitive areas.

The proposed new homes are clustered around an internal "village green" common area to minimize site disturbance and protect open spaces on the site. The site plan and building placement respects natural land features and environmentally sensitive areas of the site.

E. Site design shall limit large grass areas and provide adequate access to shared amenities.

The site has been designed utilizing interior sidewalks within the formal greenspace and an exterior walking loop to interconnect and create universal accessibility to all areas on site. Large grass areas are avoided and the natural environment is celebrated by clustering the project and limiting the land disturbance to allow for significant existing natural areas to be preserved by this development.

F. Building design shall avoid use of long unbroken facades, and shall include use of balconies, offset wall, trellises and other design elements to provide visual interest.

The structures have been designed with several gables to break up long facades on both the exterior facing and interior faces of the structure. Patios and porches have also been incorporated into the design to provide visual interest to the exterior of the building.

G. Building design, colors and materials shall generally correspond to the natural setting of the project site and promote the appearance of the Town's New England character.

The buildings have been designed with the New England aesthetic in mind utilizing colors such as brown, blue, and gray with vinyl shake siding, and vinyl lap siding. The visual design also promotes the New England aesthetic by incorporating gables to the structure.

H. Walking trails shall be accessible to all abilities and installed throughout the project.

An exterior walking loop has been proposed to meander around the exterior of the site. This walking loop, as well as the interior sidewalks interconnecting the units, has been proposed to be paved and adhere to all current ADA requirements.

I. The development shall be served by public water.

This development will be served by public water, accessed from the Hancock Street Right of Way.

Hydrology

Standard 1. No New Untreated Discharges

The Massachusetts Stormwater Handbook requires that the project demonstrates that no new stormwater conveyances (e.g. outfalls) discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The proposed project will not discharge stormwater directly to, or cause erosion in, wetlands or water of the Commonwealth and will treat stormwater prior to discharge or infiltration.

The infiltration basin is adjacent to a wetland and has been proposed with an outlet weir to allow treated discharge to flow from the pond to the wetland. All outlets have been designed to incorporate rip rap to minimize or eliminate erosion to wetlands.

Storm Event	2-inch	2-year	10-year	50-year	100-year
AP1 Peak Discharge (cfs)	0.05	0.48	1.61	7.71	10.34

Standard 2. Post-development Peak Discharge Rates Not to Exceed Pre-development Peak Discharge Rates

Post-development peak discharge rates do not exceed the pre-development peak discharge rates and total runoff volumes for all storm events. The proposed condition reduces rates by collecting and controlling the stormwater runoff within the stormwater management system.

Storm Event	2-inch	2-year	10-year	50-year	100-year
Pre-development rates (cfs) AP1 *to Wetland System*	0.03	0.76	3.15	8.24	11.59
Volume (cf)	734	6,028	17,950	42,343	58,515
Post-development rates (cfs) AP1 *to Wetland System*	0.05	0.48	1.61	7.71	10.34
Volume (cf)	320	2,283	8,054	25,098	37,942
Rate reductions (cfs)	**0.02**	**-0.28**	**-1.54**	**-0.53**	**-1.25**
Volume Reductions (cf)	**-414**	**-3745**	**-9,896**	**-17,245**	**-20,573**

Storm Event	2-inch	2-year	10-year	50-year	100-year
Pre-development rates (cfs) AP2 *to Abutter*	0.03	0.62	2.29	5.66	7.84
Volume (cf)	648	4,218	11,807	26,912	36,798
Post-development rates (cfs) AP2 *to Abutter*	0.02	0.40	1.34	3.15	4.30
Volume (cf)	311	1,688	4,469	9,864	13,352
Rate reductions (cfs)	**-0.01**	**-0.22**	**-0.95**	**-2.51**	**-3.54**
Volume Reductions (cf)	**-337**	**-2,530**	**-7,338**	**-17,048**	**-23,446**

Storm Event	2-inch	2-year	10-year	50-year	100-year
Pre-development rates (cfs) AP3 *to Abutter Depression*	0.00	0.05	0.86	2.04	2.76
Volume (cf)	0	28	1,064	3,641	5,425
Post-development rates (cfs) AP3 *to Abutter Depression*	0.00	0.0	0.64	1.73	2.41
Volume (cf)	0	0	934	3,718	5,701
Rate reductions (cfs)	**0.0**	**-0.05**	**-0.22**	**-0.31**	**-0.35**
Volume Reductions (cf)	**-0**	**-28**	**-130**	**77**	**276**

*AP3 sees negligible increase in 50-Year and 100-Year 24-Hour Storm Events totaling 2% and 5%, respectively. Overall, there is a negligible **decrease** in ponding elevation on abutting property by 0.01' in the 100-Year Storm.

Standard 3. Minimize or Eliminate Loss of Annual Recharge to Groundwater

Groundwater recharge will be accomplished using the surface infiltration practices. As shown in the table summary for Standard 2, the project decreases the total volume and runoff for all storm events. All storms have a significant decrease over the existing condition for both volume and rate of runoff. This reduction in volume is generated by collecting and infiltrating all the impervious surfaces created on site.

RECHARGE VOLUME REQUIREMENT

- Rv = F x impervious area
- Rv = Required Recharge Volume, expressed in Ft3, cubic yards, or acre-feet
- F= Target Depth Factor associated with each Hydrologic Soil Group
- Impervious Area = pavement and rooftop area on site

RECHARGE VOLUME FOR THE ENTIRE SITE

Hydrologic Group Volume to Recharge (x Total Impervious Area)

A: 0.60 inches of runoff	No A soils were found on site
B: 0.35 inches of runoff	0.35 in x (1 ft/12 in) x 108,116 sf = 3,154 cf
C: 0.25 inches of runoff	No C soils were found on site
D: 0.10 inches of runoff	No D soils were found on site

- Total Volume Provided Pond P1: 20,179 CF

- Total Volume Provided in Subsurface Infiltration System 1 (SIS1): 2,620 CF
- Total Volume Provided in Subsurface Infiltration System 2 (SIS2): 3,670 CF

Capture Area Adjustment

Total Recharge volume required: 3,154 cf
Impervious areas that drain to recharge areas: 476 SF
Total Site Impervious/Impervious to Infiltration= 108,116 SF/ 107,640 SF = 1.004
Total adjusted recharge needed= 3,167 CF

Volumes and surface area for ponds acquired from HydroCAD stage storage tables. These tables are attached as an appendix at the end of the HydroCAD analysis.

TOTAL SITE RECHARGE PROVIDED = 26,469 CF RECHARGE VOLUME (BELOW THE OUTLET) > 3,167 CF REQUIRED

DRAWDOWN REQUIREMENT

DRAWDOWN WITHIN 72 HOURS

- Pond P1: 20,179 cf / [(8.27 in/hr)*(1 ft/12 in)*(8,532 sf)] = 3.43 hours < 72 hours, OK
- Pond SIS1: 2,620 cf / [(8.27 in/hr)*(1 ft/12 in)*(1,242 sf)] = 3.06 hours < 72 hours, OK
- Pond SIS2: 3,670 cf / [(8.27 in/hr)*(1 ft/12 in)*(1,735 sf)] = 3.07 hours < 72 hours, OK

10 YEAR DRAWDOWN WITHIN 24 HOURS

- Pond P1: 9,092 cf / [(8.27 in/hr)*(1 ft/12 in)*(8,532 sf)] = 1.55 hours < 24 hours, OK
- Pond SIS1: 676 cf / [(8.27 in/hr)*(1 ft/12 in)*(1,242 sf)] = 0.79 hours < 24 hours, OK
- Pond SIS2: 1,556 cf / [(8.27 in/hr)*(1 ft/12 in)*(1,735 sf)] = 1.30 hours < 24 hours, OK

Volumes and surface area for ponds acquired from HydroCAD stage storage tables. These tables are attached as an appendix at the end of the HydroCAD analysis.

Standard 4. Stormwater Management System to Remove 80% of the Average Annual Load of Total Suspended Solids (TSS)

The stormwater management system is designed to remove > 80% annual total suspended solids (TSS) from the proposed roadway, driveways, and sidewalks.

TSS REMOVAL CALCULATION

TREATMENT TRAIN #1 – CB TO ISOLATOR ROW TO SUBSURFACE INFILTRATION SYSTEM (R1, R2)

Area of Impervious = 21,788 SF

BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load
Deep Sump Hooded Catch Basin	0.25	1.00	0.25	0.75
Isolator Row and Stormtech Chambers	0.80	0.75	0.60	0.15
		Total TSS Removal	**85.0%**	

TREATMENT TRAIN #2 – SWALE TO DOWNSTREAM DEFENDER TO INFILTRATION BASIN (S3, S4, S8)

Area of Impervious = 4,791 SF

BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load
Downstream Defender	0.50	1.00	0.50	0.50
Infiltration Basin	0.80	0.50	0.40	0.10
		Total TSS Removal	**90.0%**	

TREATMENT TRAIN #3 – RGB TO DOWNSTREAM DEFENDER TO INFILTRATION BASIN (R3, R9)

Area of Impervious = 13,690 SF

BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load
Rain Guardian Bunker	0.91	1.00	0.91	0.09
Downstream Defender	0.50	0.09	0.05	0.04
Infiltration Basin	0.80	0.04	0.03	0.01
		Total TSS Removal	**99.0%**	

TREATMENT TRAIN #4 – RGB TO DOWNSTREAM DEFENDER TO INFILTRATION BASIN (R8)

Area of Impervious = 11,017 SF

BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load
Rain Guardian Bunker	0.75	1.00	0.75	0.25
Downstream Defender	0.50	0.25	0.12	0.13
Infiltration Basin	0.80	0.13	0.10	0.03
		Total TSS Removal	**97.0%**	

TREATMENT TRAIN #5 – CB TO DOWNSTREAM DEFENDER TO INFILTRATION BASIN (R4, R6, R7)

Area of Impervious = 34,915 SF

BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load
Deep Sump Hooded Catch Basin	0.25	1.00	0.25	0.75

Downstream Defender	0.50	0.75	0.37	0.38
Infiltration Basin	0.80	0.38	0.30	0.08
		Total TSS Removal	**92.0%**	

TREATMENT TRAIN #6 – RAIN GUARDIAN FOXHOLE TO INFILTRATION BASIN (R5)

Area of Impervious = 17,705 SF

BMP	TSS Removal Rate	Starting TSS Load	Amount Removed	Remaining Load
Rain Guardian Foxhole	0.79	1.00	0.79	0.21
Infiltration Basin	0.80	0.21	0.16	0.05
		Total TSS Removal	**95.0%**	

TREATMENT TRAIN #7 – UNTREATED IMPERVIOUS

Area of Impervious = 476 SF

- No Treatment – 0%

WEIGHTED TSS REMOVAL CALCULATION

On-Site Impervious Area – 104,382

(Total analyzed impervious [112,470 SF] – off-site impervious [4,354 SF] – untreated clean roof runoff [3,734])

- Treatment Train # 1 – 21,788 SF
  Percentage of Site Impervious = 21,788 SF / 104,382 SF = 20.9%

Weighted TSS Removal = 85% x 20.9% = 17.8%

- Treatment Train # 2 – 4,791 SF
  Percentage of Site Impervious = 4,791 SF / 104,382 SF = 4.6%

Weighted TSS Removal = 90% x 4.6% = 4.1%

- Treatment Train # 3 – 13,690 SF
  Percentage of Site Impervious = 13,690 SF / 104,382 SF = 13.1%

Weighted TSS Removal = 99% x 23.7% = 23.5%

- Treatment Train # 4 – 11,017 SF
  Percentage of Site Impervious = 11,017 SF / 104,382 SF = 10.5%

Weighted TSS Removal = 97% x 23.7% = 23.5%

- Treatment Train # 5 – 34,915 SF
  Percentage of Site Impervious = 34,915 SF / 104,382 SF = 33.4%

Weighted TSS Removal = 92% x 33.4% = 30.7%

- Treatment Train # 6 – 17,705 SF
  Percentage of Site Impervious = 17,705 SF / 104,382 SF = 17.0%

Weighted TSS Removal = 95% x 17.0% = 16.1%

- Treatment Train # 7 – 476 SF
  Percentage of Site Impervious = 476 SF / 104,382 SF = 0.5%

Weighted TSS Removal = 0% x 0.5% =0%

Total Sitewide TSS removal = 17.8% + 4.1% + 13.1% + 10.5% + 30.7% +16.1% = 92.3% > 80% OK

WATER QUALITY VOLUME

For new development, stormwater management systems must be designed to remove 80% of the average annual load (post-development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:

a) *Suitable nonstructural practices for source control and pollution prevention are implemented.*
b) *Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and*
c) *Stormwater management BMPs are maintained as designed.*

In order to achieve the rated TSS Removal Rates, each BMP must be sized adequately. This development proposes to use ACF Rain Guardian Turrets, ACF Rain Guardian Foxholes, as well as *an infiltration basin. The ACF Rain Guardian Turrets and ACF Rain Guardian Foxholes are flow based devices, and the flow calculations can be found below.*

Flow rate associated with ACF Rain Guardian Bunker 1:

Q = (qu)*(A)*(WQV), where:

Q = Peak flow rate associated with first 1-inch of runoff

qu = the unit peak discharge, in csm/in (774 csm/in for Tc associated with 6 minutes)

A = impervious surface drainage area (in square miles)

WQV = water quality volume in watershed inches

ACF Rain Guardian Bunker 1 (RGB1):

ACF Rain Guardian Bunker rated for 75% removal up to 0.50 cfs

ACF Rain Guardian Bunker rated for 91% removal up to 0.25 cfs

Q = (774 csm/in)*(0.000230 square miles)*(1 inch)

Q = 0.18 CFS

Required Capacity = 0.18 CFS

ACF Bunker 91% Removal Capacity = 0.25 CFS (See Appendix C for calculation)

0.25 CFS > 0.18 CFS, **OK 91% Removal**

ACF Rain Guardian Bunker 2 (RGB2):

ACF Rain Guardian Bunker rated for 75% removal up to 0.50 cfs

ACF Rain Guardian Bunker rated for 91% removal up to 0.25 cfs

Q = (774 csm/in)*(0.000395 square miles)*(1 inch)

Q = 0.31 CFS

Required Capacity = 0.31 CFS

ACF Bunker 75% Removal Capacity = 0.50 CFS (See Appendix C for calculation)

0.50 CFS > 0.31 CFS, **OK 75% Removal**

ACF Rain Guardian Bunker 3 (RGB3):

ACF Rain Guardian Bunker rated for 75% removal up to 0.50 cfs

ACF Rain Guardian Bunker rated for 91% removal up to 0.25 cfs

Q = (774 csm/in)*(0.000260 square miles)*(1 inch)

Q = 0.20 CFS

Required Capacity = 0.20 CFS

ACF Bunker 91% Removal Capacity = 0.25 CFS (See Appendix C for calculation)

0.25 CFS > 0.20 CFS, **OK 91% Removal**

Downstream Defender 8ft dia. (DD-1):

Downstream Defender rated for 50% removal up to 4.49 cfs

Q = (774 csm/in)*(0.00159 square miles)*(1 inch)

Q = 1.23 CFS

Required Capacity = 1.23 CFS

DD 8ft dia 50% Removal Capacity = 4.49 CFS

4.49 CFS > 1.23 CFS, **OK 50% Removal**

Downstream Defender 8ft dia. (DD-2):

Downstream Defender rated for 50% removal up to 4.49 cfs

Q = (774 csm/in)*(0.00072 square miles)*(1 inch)

Q = 0.56 CFS

Required Capacity = 0.56 CFS

DD 8ft dia 50% Removal Capacity = 4.49 CFS

4.49 CFS > 0.56 CFS, **OK 50% Removal**

ACF Rain Guardian Foxhole (FH):

ACF Rain Guardian Foxhole rated for 79% removal up to 0.50 cfs

Q = (774 csm/in)*(0.000635 square miles)*(1 inch)

Q = 0.49 CFS

Required Capacity = 0.49 CFS

ACF Foxhole 79% Removal Capacity = 0.49 CFS (See Appendix C for calculation)

0.50 CFS ≥ 0.49 CFS, **OK 79% Removal**

ADS Stormtech SC-740 Isolator Row:

SIS1

Q = (774 csm/in)*(0.00028 square miles)*(1 inch)

Q = 0.22 CFS

Required Capacity = 0.22 CFS

ADS Stormtech SC-740 Isolator Row 80% Removal Capacity = 0.15 cfs/chamber x 8 chambers = 1.2 cfs

1.20 CFS ≥ 0.22 CFS, **OK 80% Removal**

SIS2

Q = (774 csm/in)*(0.00050 square miles)*(1 inch)

Q = 0.39 CFS

Required Capacity = 0.39 CFS

ADS Stormtech SC-740 Isolator Row 80% Removal Capacity = 0.15 cfs/chamber x 5 chambers = 0.75 cfs

0.75 CFS ≥ 0.39 CFS, **OK 80% Removal**

Standard 5. Land Uses with Higher Potential Pollutant Loads

The development is not considered a land use that generally produces higher potential pollutant loads.

Standard 6. Stormwater Discharges to Critical Areas

The proposed stormwater system does not discharge to a critical area.

Standard 7. Redevelopment Projects

The project is not considered a redevelopment project.

Standard 8. Control Construction-related Impacts

The project will install erosion and sediment controls prior to any earthwork activity. Erosion control barriers will be placed down slope from the proposed construction to prevent erosion and sedimentation into the surrounding areas. The barriers will be maintained and inspected periodically during construction; sediment buildup will be removed, and any damaged barrier will be replaced as needed.

Standard 9. Long-Term Operation and Maintenance Plan

See **Appendix A** for the operation and maintenance requirements of the stormwater management system.

Standard 10. No Illicit Discharges

An illicit discharge compliance statement will be provided by the property owner under separate cover.

Appendix A – Operation and Maintenance Plan

Infiltration Basin

System Owner: Sheldon Meadow, LLC, or future owner.
Estimated Annual Maintenance: $1,000
(Per DEP Stormwater Structural BMP's Vol 2)

In many cases, a landscaping contractor working elsewhere on the site can complete maintenance tasks. Inspect the basin and outlet structure to ensure no structural damage has occurred and that they are functioning properly and up to design standards.

Inspection and preventive maintenance are required at least twice per year, and after each major storm event. Note how long water remains standing in the basin after a storm. If water remains standing after 48 to 72 hours after a storm, the infiltration basin may be clogged.

At least twice per year, mow the buffer area, side slopes, and basin bottom. Remove grass clippings, accumulated organic matter, trash and debris at this time.

Remove sediment from the basin as necessary when the basin is dry. Use light equipment when removing the top layer, as to not compact the underlying soil. Use deep tilling to break and remove any clogged surfaces and revegetate immediately.

Important items to check during inspections include:

- Signs of differential settlement
- Cracking
- Erosion
- Leakage in the embankments
- Tree growth on the embankments
- Condition of rip rap
- Sediment accumulation
- Health of vegetation, turf

**** Paying careful attention to pretreatment, and operation and maintenance can extend the life of the soil media***

Date	Inspector	Condition	Maintenance Performed*

**Evidence of maintenance (i.e. receipts) must be provided.*

Deep Sump Hooded Catch Basin

System Owner: Sheldon Meadow, LLC, or future owner.
Estimated Annual Maintenance: $2,000-$4,000
(Per DEP Stormwater Structural BMP's Vol 2)

Inspect or clean deep sump basins at least four times per year and at the end of the foliage and snow removal seasons. Sediments must also be removed four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. If handling runoff from land uses with higher potential pollutant loads or discharging runoff near or to a critical area, more frequent cleaning may be necessary. Clamshell buckets are typically used to remove sediment in Massachusetts. However, vacuum trucks are preferable because they remove more trapped sediment and supernatant than clamshells. Vacuuming is also a speedier process and is less likely to snap the cast iron hood within the deep sump catch basin.

Date	Inspector	Condition	Maintenance Performed*

ACF Rain Guardian Bunker

System Owner: Sheldon Meadow, LLC, or future owner.
Estimated Annual Maintenance: $250-$500
(Per Manufacturer)

Depending on the characteristics of the contributing watershed and seasonal variation, common maintenance needs include periodic removal of accumulated leaves (and other organic debris) and garbage from the top grate and sediment and fine debris from the concrete dry filter box. Contributing watersheds with high sediment concentrations may require inspections monthly and clean them out at least four times a year. More frequent visits may be needed to satisfy maintenance needs.

If sediment accumulates beyond an acceptable level in the system, it will be necessary to remove. This can be done by manual removal with a shovel or mechanical device. The filter screen can be cleaned manually through brushing or with pressurized water.

Date	Inspector	Condition	Maintenance Performed*

**Evidence of maintenance (i.e. receipts) must be provided.*

ACF Rain Guardian Foxhole

System Owner: Sheldon Meadow, LLC, or future owner.
Estimated Annual Maintenance: $250-$500
(Per Manufacturer)

Depending on the characteristics of the contributing watershed and seasonal variation, common maintenance needs include periodic removal of accumulated leaves (and other organic debris) and garbage from the top grate and sediment and fine debris from the concrete dry filter box. Contributing watersheds with high sediment concentrations may require inspections monthly and clean them out at least four times a year. More frequent visits may be needed to satisfy maintenance needs.

If sediment accumulates beyond an acceptable level in the system, it will be necessary to remove. This can be done by manual removal with a shovel or mechanical device. The filter screen can be cleaned manually through brushing or with pressurized water.

Date	Inspector	Condition	Maintenance Performed*

**Evidence of maintenance (i.e. receipts) must be provided.*

Subsurface Infiltration System

System Owner: Sheldon Meadow, LLC, or future owner.

Estimated Annual Maintenance: $500-$750

(Per DEP Stormwater Structural BMP's Vol 2)

For the first 3 months after construction, the subsurface infiltration system should be inspected after every storm greater than 1" for standing water for periods in excess of 72 hours. Therein after, the subsurface infiltration system should be inspected biannually. If standing water is observed for longer than 72 hours, a pump should be placed in the basin and discharged through the outlet pipe. After the system is dewatered, it should be observed by a Professional Engineer. A Professional Engineer should provide an opinion as to why the infiltration system is not draining and provide recommendations to restore infiltration capacity to the system.

Date	Inspector	Condition	Maintenance Performed*

**Evidence of maintenance (i.e. receipts) must be provided.*

Stormtech Isolator Row Plus

System Owner: Sheldon Meadow, LLC, or future owner.

Estimated Annual Maintenance: $250-$500

(Per StormTech Maintenance Manual)

In the first year of operation, the Isolator Row should be inspected every 6 months for depth of sediment. Therein after, the Isolator Row should be inspected annually. If sediment is present, a stadia rod should be inserted into the inspection port to determine depth of sediment. If/when the depth exceeds 3 inches throughout the length of the Isolator Row, clean out should be performed. Please see the Isolator Row Maintenance Manual for cleanout procedures.

Date	Inspector	Condition	Maintenance Performed*

**Evidence of maintenance (i.e. receipts) must be provided.*

Rip Rap and Swale Areas

System Owner: Sheldon Meadow, LLC, or future owner.

Estimated Annual Maintenance: $250-$500

Inspect semi-annually the first year, and at least once a year thereafter. For swales inspect the grass for growth and the side slopes for signs of erosion and formation of rills and gullies. Plant an alternative grass species if the original grass cover is not successfully established. If grass growth is impaired by winter road salt or other deicer use, re-establish the grass in the spring. For rip-rap and swale areas: *Trash/Debris Removal:* Remove accumulated trash and debris. *Sediment removal:* Check on a yearly basis and clean as needed. Use hand methods (i.e., a person with a shovel) when cleaning to minimize disturbance to vegetation and or rip rap and underlying soils. Mow on an as-needed basis during the growing season so that the grass height does not exceed 6 inches.

Date	Inspector	Condition	Maintenance Performed*

**Evidence of maintenance (i.e. receipts) must be provided.*

Downstream Defender

System Owner: Sheldon Meadow, LLC, or future owner.

Estimated Annual Maintenance: $500-$750

See manufacturer specific maintenance information below.

Appendix B – Erosion and Sediment Control Notes and General Construction Sequence

Erosion and Sediment Control Notes

1) Erosion and sediment control measures must be installed prior to the start of construction and maintained and upgraded as necessary during construction by the contractor. It is the contractor's responsibility to inspect and install additional control measures as needed during construction.
2) All catch basins receiving drainage from the project site must be provided with a catch basin filter.
3) Stabilization of all re-graded and soil stockpile areas must be maintained during all phases of construction.
4) Sediment removed from erosion and sediment control devices must be properly removed and disposed. All damaged controls must be removed and replaced.
5) The contractor is responsible for implementing the erosion and sediment control plan. This includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan, and notifying the proper city agency of any transfer of this responsibility.
6) The contractor shall be responsible for controlling wind erosion and dust throughout the life of his contract. Dust control may include, but is not limited to, sprinkling of water on exposed soils and street sweeping adjacent roadways.
7) If final grading is to be delayed for more than 21 days after land disturbance activities cease, temporary vegetation or mulch shall be used to stabilize soils within 14 days of the last disturbance.
8) If a disturbed area will be exposed for greater than one year, permanent grasses or other approved cover must be installed.
9) The contractor must keep on-site at all times additional silt fence and hay bales for the installation at the direction of the engineer or the city to mitigate any emergency condition.
10) The construction fencing and erosion and sediment controls as shown may not be practical during all stages of construction. Earthwork activity on-site must be done in a manner such that runoff is directed to a sediment control device or infiltrated to the ground.
11) Demolition and construction debris must be properly contained and disposed of.
12) Disposal of all demolished materials is the responsibility of the contractor and must be hauled off-site in accordance with all federal, state, and local requirements.

General Construction Sequence

1) Install erosion and sediment controls prior to starting any earthworks activity.
2) Begin clearing, grubbing and demolition.
3) Begin utility installations.
4) Construct building foundation.
5) Install site furnishings.
6) Install landscaping.
7) Erosion and sediment controls shall be maintained until permanent cover is established.

Appendix C – ACF Rain Guardian Supplemental Information

RAIN GUARDIAN TURRET AND FOXHOLE
ENGINEERING PROPERTIES

RAIN GUARDIAN TURRET:

Turret Flow Rate Capacity:

Outflow is possible through three locations. Please note the vertical filter within the chamber was assumed to be 100% clogged because its primary function is to allow the chamber to dry out between rain events.

1) Filter overflow – water can pass between the top of the filter and the bottom of the metal grate; calculated using the continuity equation (i.e. Q=V*A)

2) Grate overflow – water can pass through the top metal grate beyond the vertical filter wall; calculated using an orifice equation (i.e. Q=0.0108*A*√d)

3) High volume overflow – water can overtop the front debris wall onto the splash pad; calculated using a standard broad crested weir equation (i.e. Q=C*L*H^(3/2))

Filter overflow – 0.45 CFS

Grate overflow – 2.59 CFS

Emergency overflow - 0.41 CFS

TOTAL: 3.45 CFS

Turret Internal Storage Vol: (i.e. storage capacity below the top of the filter wall): **4.02 ft^3**

RAIN GUARDIAN FOXHOLE:

Below are the flow and storage data for the Rain Guardian Foxhole with an inlet, middle, and outlet (i.e. 6' top lid). (the addition of mid section (for longer units) would improve the sediment storage capacity).

Foxhole Flow Rate Capacity:
Outflow is possible through three locations. Please note the vertical filter within the chamber was assumed to be 100% clogged because its primary function is to allow the chamber to dry out between rain events.

1) Filter overflow – water can pass between the top of the filter and the bottom of the metal grate; calculated using the continuity equation (i.e. Q=V*A)

2) Grate overflow – water can pass through the top metal grate beyond the vertical filter wall; calculated using an orifice equation (i.e. $Q=0.0108*A*\sqrt{d}$)

3) High volume overflow – water can overtop the front debris wall onto the splash pad; calculated using a standard broad crested weir equation (i.e. $Q=C*L*H^{(3/2)}$)

Filter overflow – 0.30 CFS

Grate overflow – 2.69 CFS

Emergency overflow - 0.52 CFS

TOTAL: **3.51 CFS**

<u>Foxhole Internal Storage Volume</u> (i.e. storage capacity below the top of the filter wall):

Inlet + Outlet: 2.0 ft^3

Middle: 2.65 ft^3

TOTAL: **4.65 ft^3**

From: Lee Jones
To: Patrick Bogle
Subject: FW: ACF Environmental - Rain Guardians
Date: Friday, December 4, 2020 9:30:52 AM
Attachments: 2017.11.21 Flow Data.pdf

Patrick,
Good morning
Great talking with you yesterday.
Per our discussion, I have reviewed the study.
The study was performed by flow rates which are shown and not by storm events.
I am also attaching the Flow Data pdf.

- Rain Guardian Gross Solids and Sediment Removal Report
    - Bunker sediment capture – 75.6% at 0.5 CFS and 91.7% at 0.25 CFS
    - Bunker gross solids capture – 61.4% at 0.5 CFS and 78.8% at 0.25 CFS
    - Turret sediment capture – 79.1% at 0.5 CFS and 88.4% at 0.25 CFS
    - Turret gross solids capture – 72.4% at 0.5 CFS and 86.7% at 0.25 CFS
    - NOTE: Grass and rock lined inlets were also tested and achieved similar removal efficiencies. While the grass lined inlet and rock lined inlets removed similar amounts of sediment under the flow rates tested, the ease of maintenance, long-term effectiveness, storage capacity, and stability of the Rain Guardians set them apart from the grass and rock. The 'Maintenance Considerations' section (5.4) on pages 65 – 68 of the report highlights some advantages of the Rain Guardian products.

Please let me know if I can be of help
Best regards,
Lee

Leland (Lee) Jones, QSM
BMP Specialist – New England
ACF Environmental
508-745-7052 cell
ljones@acfenv.com
www.acfenvironmental.com
"Start each day with a positive
thought and a grateful heart"
Roy T. Bennett

Appendix D – ADS Stormtech Isolator Row TSS Removal Rates

4. Technology

Specific size/capacity of MTD assessed (include units):

The StormTech Isolator row can be sized to meet the needs of the project. Sizing can be either volume based for sites with good infiltrative soils, or the more commonly used practice of rate based sizing using a maximum water quality flow of less than 2.5 gpm/sqft of bottom area using two layers of woven geotextile (315W by ADS).

Range of drainage areas served by MTD (acres):

Site configuration is the only limiting factor as to the drainage area that can be served. In general, StormTech recommends the length of the Isolator Row be limited to less than 175 feet for cleaning/maintenance purposes. Multiple Isolator Rows can be placed side by side to increase the size of the area served.

Include sizing chart or describe sizing criteria:

Volume Based - For sites with good infiltration rates, a volume based approach can be used with a corresponding stage storage curves based on the number of StormTech Isolator Chambers provided. Bare chamber storage volumes listed in table are in cubic feet per chamber:

SC-310	14.7	cf/chamber
SC-740	45.9	cf/chamber
DC-780	46.2	cf/chamber
MC3500	113.0	cf/chamber
MC4500	106.5	cf/chamber

Table 1 - Storage Volume per Chamber

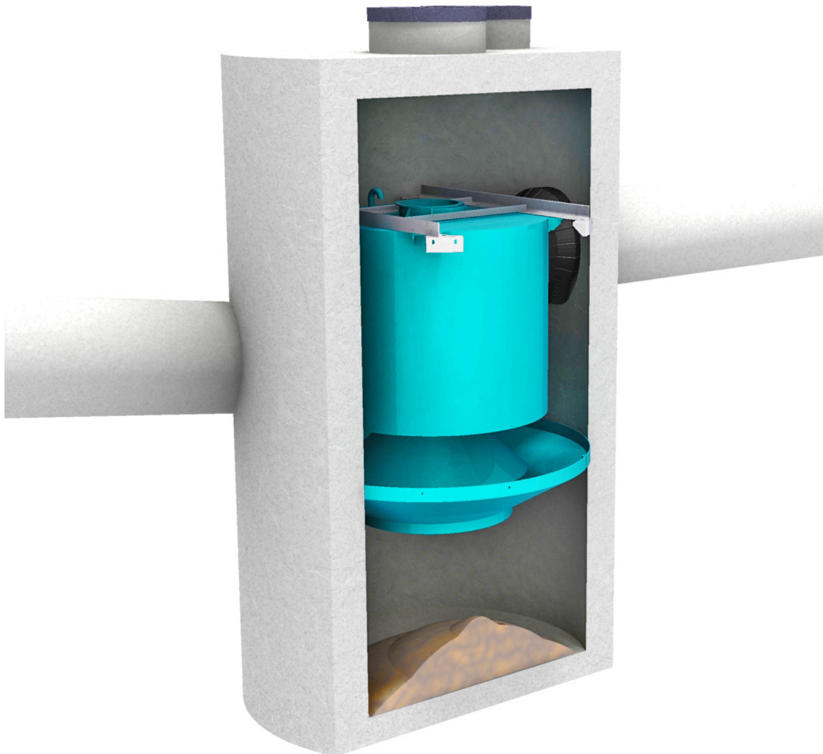
Rate Based - For sites with where a combination of infiltration and detention/retention is used, at rate based approach is typically used. The treatments rates are based on available surface treatment area and factors of safety that were developed from extensive testing. 80% TSS removal and 40% TP removal can be achieved by sizing the Isolator Rows base on these maximum flows per chamber:

Chamber	Specific Flow Rate	Bottom Area	Flow Per Chamber
SC-310	2.5 gpm/sf	17.7 sf	0.10 cfs
RC-310	2.5 gpm/sf	17.7 sf	0.10 cfs
SC-740	2.5 gpm/sf	27.8 sf	0.15 cfs
RC-750	2.5 gpm/sf	27.8 sf	0.15 cfs
DC-780	2.5 gpm/sf	27.8 sf	0.15 cfs
MC-3500	2.5 gpm/sf	43.2 sf	0.24 cfs
MC-4500	2.5 gpm/sf	30.1 sf	0.17 cfs

Table 2 – Treatment Rate per Chamber

Appendix E – Downstream Defender Supplemental Information

Hydro International®



Operation and Maintenance Manual

Downstream Defender®

Vortex Separator for Stormwater Treatment

Turning Water Around ...®

Table of Contents

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Downstream Defender® by Hydro International

The Downstream Defender® is an advanced Hydrodynamic Vortex Separator designed to provide high removal efficiencies of settleable solids and their associated pollutants, oil, and floatables over a wide range of flow rates.

The Downstream Defender® has unique, flow-modifying internal components developed from extensive full-scale testing, CFD modeling and over thirty years of hydrodynamic separation experience in wastewater, combined sewer and stormwater applications. These internal components distinguish the Downstream Defender® from simple swirl-type devices and conventional oil/grit separators by minimizing turbulence and headlosses, enhancing separation, and preventing washout of previously stored pollutants.

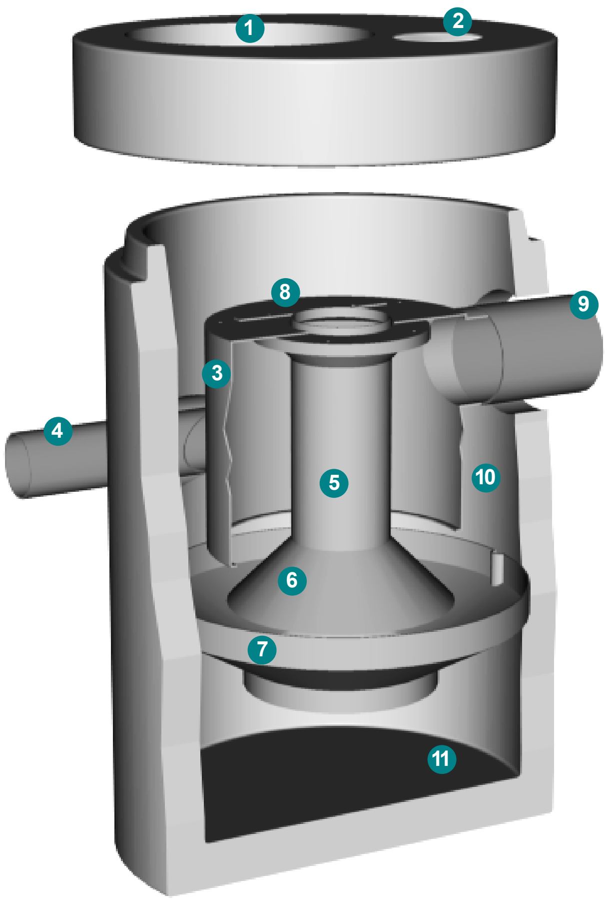
The high removal efficiencies and inherent low headlosses of the Downstream Defender® allow for a small footprint making it a compact and economical solution for the treatment of non-point source pollution.

Benefits of the Downstream Defender®

- Removes sediment, floatables, oil and grease
- No pollutant washouts
- Small footprint
- No loss of treatment capacity between clean-outs
- Low headloss
- Efficient over a wide ranges of flows
- Easy to install
- Low maintenance

Applications

- New developments and retrofits
- Utility yards
- Streets and roadways
- Parking lots
- Pre-treatment for filters, infiltration and storage
- Industrial and commercial facilities
- Wetlands protection



Downstream Defender® Components

1. Central Access Port
2. Floatables Access Port (6-ft., 8-ft. and 10-ft. models only)
3. Dip Plate
4. Tangential Inlet
5. Center Shaft
6. Center Cone
7. Benching Skirt
8. Floatables Lid
9. Outlet Pipe
10. Floatables Storage
11. Isolated Sediment Storage Zone

Operation

Introduction

The Downstream Defender® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The Downstream Defender® has been designed to allow for easy and safe access for inspection/monitoring and clean-out procedures. Entry into the unit or removal of the internal components is not necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the Downstream Defender® have been designed to protect the oil, floatables and sediment storage volumes so that separator performance is not reduced as pollutants accumulate between clean-outs. Additionally, the Downstream Defender® is designed and installed into the storm drain system so that the vessel remains wet between storm events. Oil and floatables are stored on the water surface in the outer annulus separate from the sediment storage volume in the sump of the unit providing the option for separate oil disposal, and accessories such as adsorbant pads. Since the oil/floatables and sediment storage volumes are isolated from the active separation region, the potential for re-suspension and washout of stored pollutants between clean-outs is minimized.

Wet Sump

The sump of the Downstream Defender® retains a standing water level between storm events. The water in the sump prevents stored sediment from solidifying in the base of the unit. The clean-out procedure becomes more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. Dried sediment must be manually removed by maintenance crews. This is a labor intensive operation in a hazardous environment.

Blockage Protection

The Downstream Defender® has large clear openings and no internal restrictions or weirs, minimizing the risk of blockage and hydraulic losses. In addition to increasing the system headloss, orifices and internal weirs can increase the risk of blockage within the unit.

Maintenance

Overview

The Downstream Defender® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the Downstream Defender®. The Downstream Defender® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the Downstream Defender® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

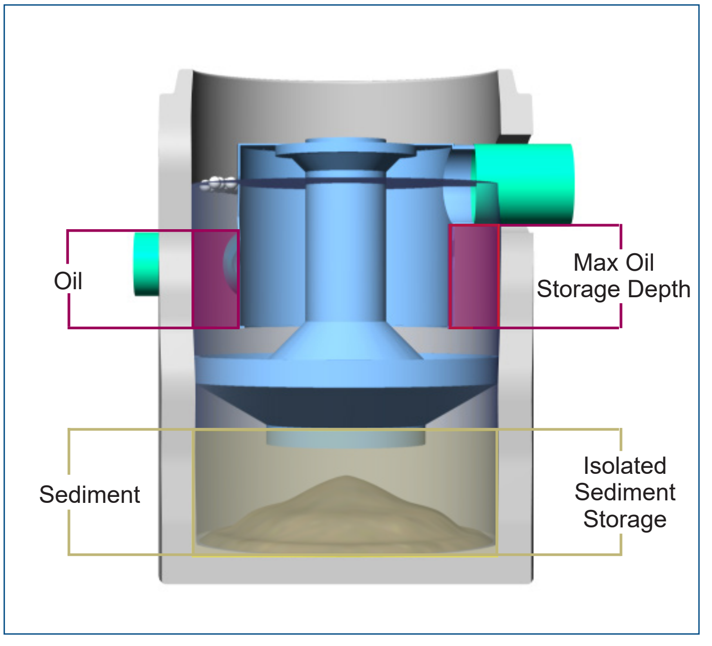


Fig.1 Pollutant storage volumes of the Downswtream Defender®.

The Downstream Defender® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. On the 6-ft, 8-ft and 10-ft units, the floatables access port is above the outlet pipe between the concrete manhole wall and the dip plate. The sediment removal access ports for all Downstream Defender® models are located directly over the hollow center shaft.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the Downstream Defender®, nor do they require the internal components of the Downstream Defender® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Determining Your Maintenance Schedule

The frequency of cleanout is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil/flotables removal, for a 6-ft Downstream Defender® typically takes less than 30 minutes and removes a combined water/oil volume of about 500 gallons.

Inspection Procedures

Inspection is a simple process that does not involve entry into the Downstream Defender®. Maintenance crews should be familiar with the Downstream Defender® and its components prior to inspection.

Scheduling

- It is important to inspect your Downstream Defender® every six months during the first year of operation to determine your site-specific rate of pollutant accumulation
- Typically, inspection may be conducted during any season of the year
- Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1

Recommended Equipment

- Safety Equipment and Personal Protective Equipment (traffic cones, work gloves, etc.)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net
- Sediment probe (such as a Sludge Judge®)
- Trash bag for removed floatables
- Downstream Defender® Maintenance Log

Table 1. Downstream Defender® Pollutant Storage Capacities and Max. Cleanout Depths.

Unit Diameter	Total Oil Storage	Oil Clean-out Depth	Total Sediment Storage	Sediment Clean-out Depth	Max. Liquid Volume Removed
(feet)	(gallons)	(inches)	(gallons)	(inches)	(gallons)
4	70	<16	141	<18	384
6	216	<23	424	<24	1,239
8	540	<33	939	<30	2,884
10	1,050	<42	1,757	<36	5,546
12	1,770	<49	2,970	<42	9,460

NOTES

1. Refer to Dowmstream Defender® Clean-out Detail (Fig. 1) for measurement of depths.

2. Oil accumulation is typically less than sediment, however, removal of oil and sediment during the same service is recommended.

3. Remove floatables first, then remove sediment storage volume.

4. Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1.

Fig.4

Fig.5

Fig.6

Inspection Procedures

1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the lids to the manhole (Fig. 4). NOTE: The 4-ft Downstream Defender® will only have one lid.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. See Fig.7 and 8 for typical inspection views.

4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the outer annulus of the chamber.

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel (Fig.5).

6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.

7. Securely replace the grate or lid.

8. Take down safety equipment.

9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Cleanout

Floatables cleanout is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.6).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling

- Floatables and sump cleanout are typically conducted once a year during any season.

- If sediment depths are greater than 75% of maximum clean-out depths stated in Table 1, sediment removal is required.

- Floatables and sump cleanout should occur as soon as possible following a spill in the contributing drainage area.

Fig.7 View over center shaft into sediment storage zone.

Fig.8 View of outer annulus of floatables and oil collection zone.

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Recommended Equipment

- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (6-inch flexible hose recommended)
- Downstream Defender® Maintenance Log

1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lids to the manhole (NOTE: The 4-ft Downstream Defender® will only have one lid).
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
4. Using the Floatables Port for access, remove oil and floatables stored on the surface of the water with the vactor hose or the skimmer net (Fig.9).
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (Pg.9).
6. Once all floatables have been removed, drop the vactor hose to the base of the sump via the Central Access Port. Vactor out the sediment and gross debris off the sump floor (Fig.6).
7. Retract the vactor hose from the vessel.
8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
9. Securely replace the grate or lid.

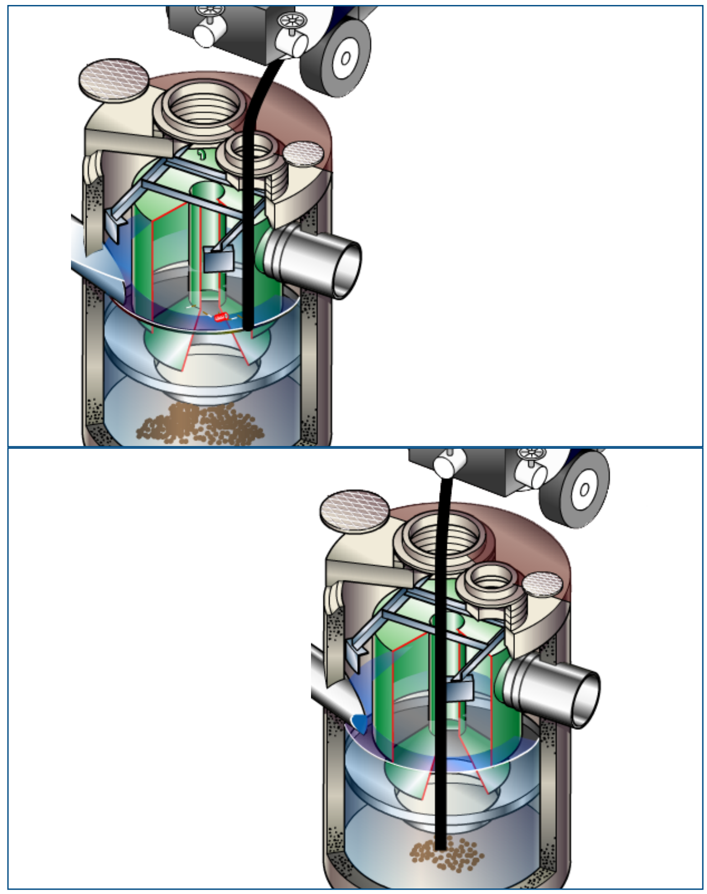


Fig.9 Floatables and sediment are removed with a vactor hose

Maintenance at a Glance

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area

NOTE: For most cleanouts it is not necessary to remove the entire volume of liquid in the vessel. Only removing the first few inches of oils/floatables and the sediment storage volume is required.

Hydro Maintenance Services

Hydro International has been engineering stormwater treatment systems for over 30 years. We understand the mechanics of removing pollutants from stormwater and how to keep systems running at an optimal level.

Nobody Knows our Systems Better than we do

Avoid Service Negligence

Sanitation services providers not intimately familiar with stormwater treatment systems are at risk of the following:

- Inadvertently breaking parts or failing to clean/replace system components appropriately.
- Charging you for more frequent maintenance because they lacked the tools to service your system properly in the first place.
- Billing you for replacement parts that might have been covered under your Hydro warranty plan
- Charging for maintenance that may not yet have been required.

Leave the Dirty Work to us

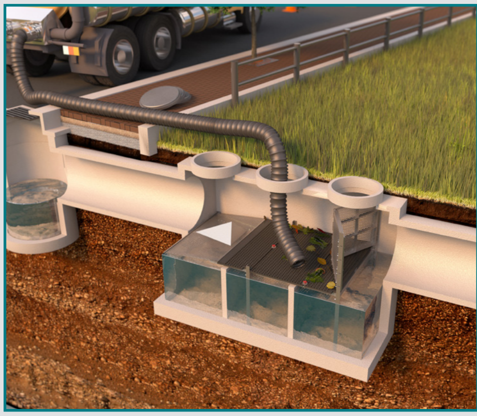
Trash, sediment and polluted water is stored inside treatment systems until they are removed by our team with a vactor truck. Sometimes teams must physically enter the system chambers in order to prepare the system for maintenance and install any replacement parts. Services include but are not limited to:

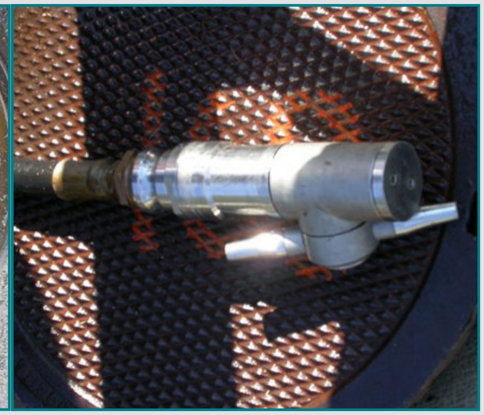
- Solids removal
- Removal of liquid pollutants
- Replacement media installation (when applicable)

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Better Tools, Better Results

Not all vactor trucks are created equal. Appropriate tools and suction power are needed to service stormwater systems appropriately. Companies who don't specialize in stormwater treatment won't have the tools to properly clean systems or install new parts.



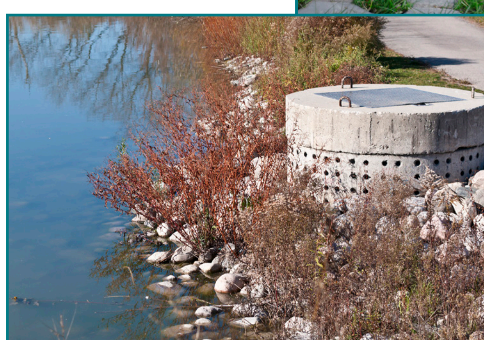


Service Warranty

Make sure you're not paying for service that is covered under your warranty plan. Only Hydro International's service teams can identify tune-ups that should be on us, not you.

Treatment Systems Serviced by Hydro:

- Stormwwater filters
- Stormwater separators
- Baffle boxes
- Biofilters/biorention systems
- Storage structures
- Catch basins
- Stormwater ponds
- Permeable pavement


SAVE TIME & MONEY: CALL HYDRO FOR A QUOTE

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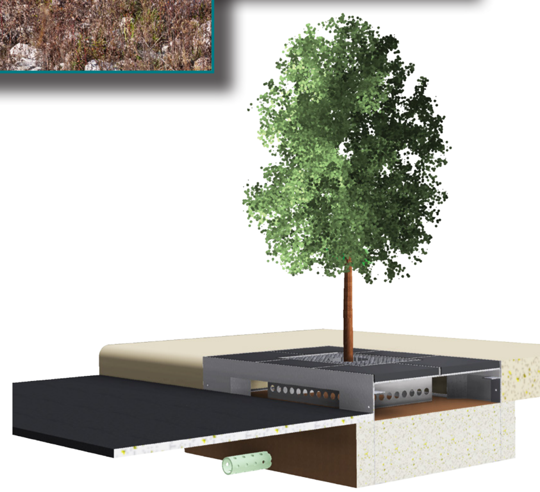
LEARN MORE AT HYDRO-INT.COM/SERVICE



Downstream Defender® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL (CIRCLE ONE): **4-FT** **6-FT** **8-FT** **10-FT** **CUSTOM**

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Hydro International®

Downstream Defender® Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment * Depth Measured	Volume of Sediment Removed	Site Activity and Comments

*Note: Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1.

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Do it Right the First Time

Learn more at hydro-int.com/service

CALL **1 (888) 382-7808** TO SCHEDULE AN INSPECTION

Stormwater Solutions

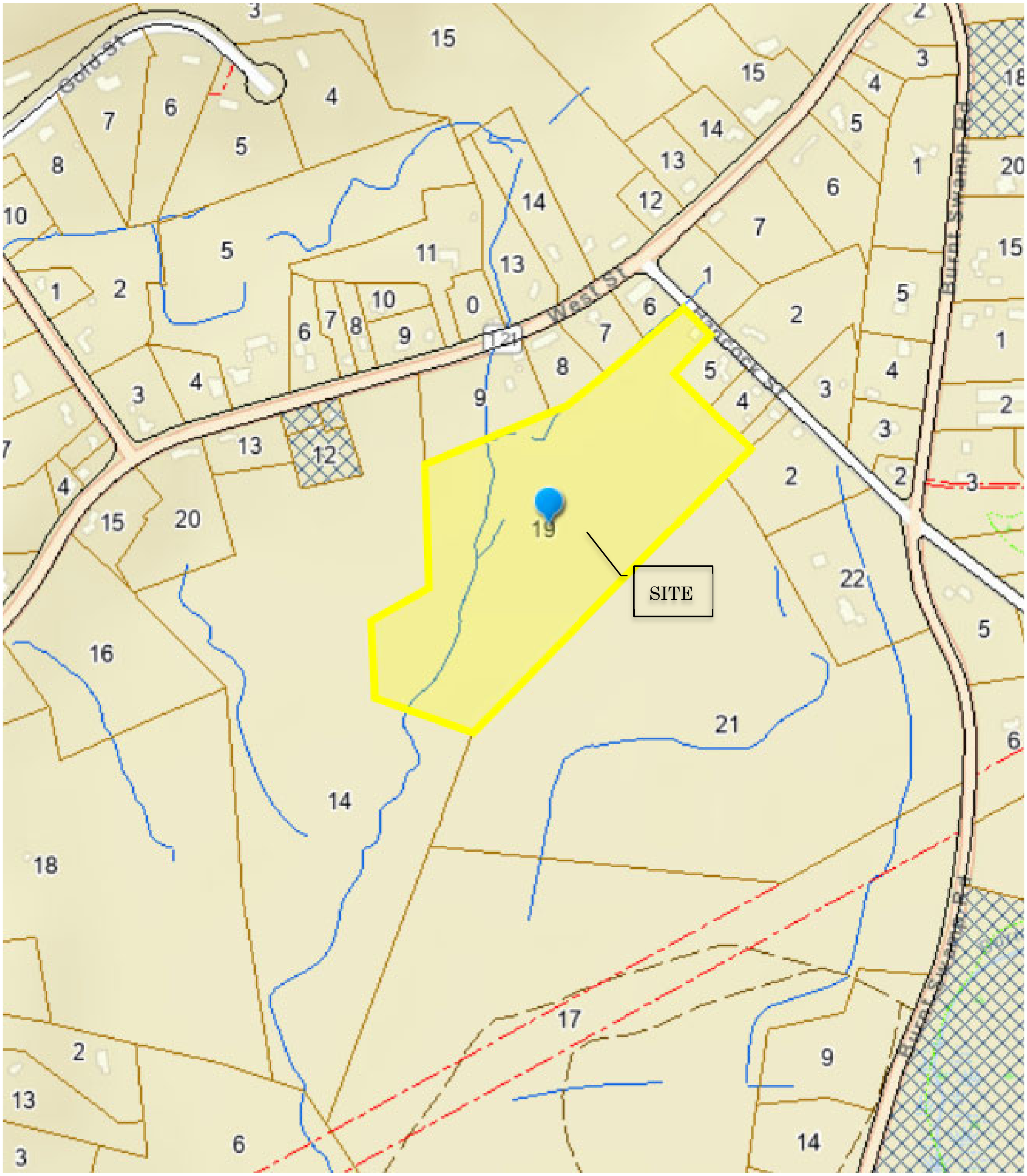
94 Hutchins Drive
Portland, ME 04102

Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

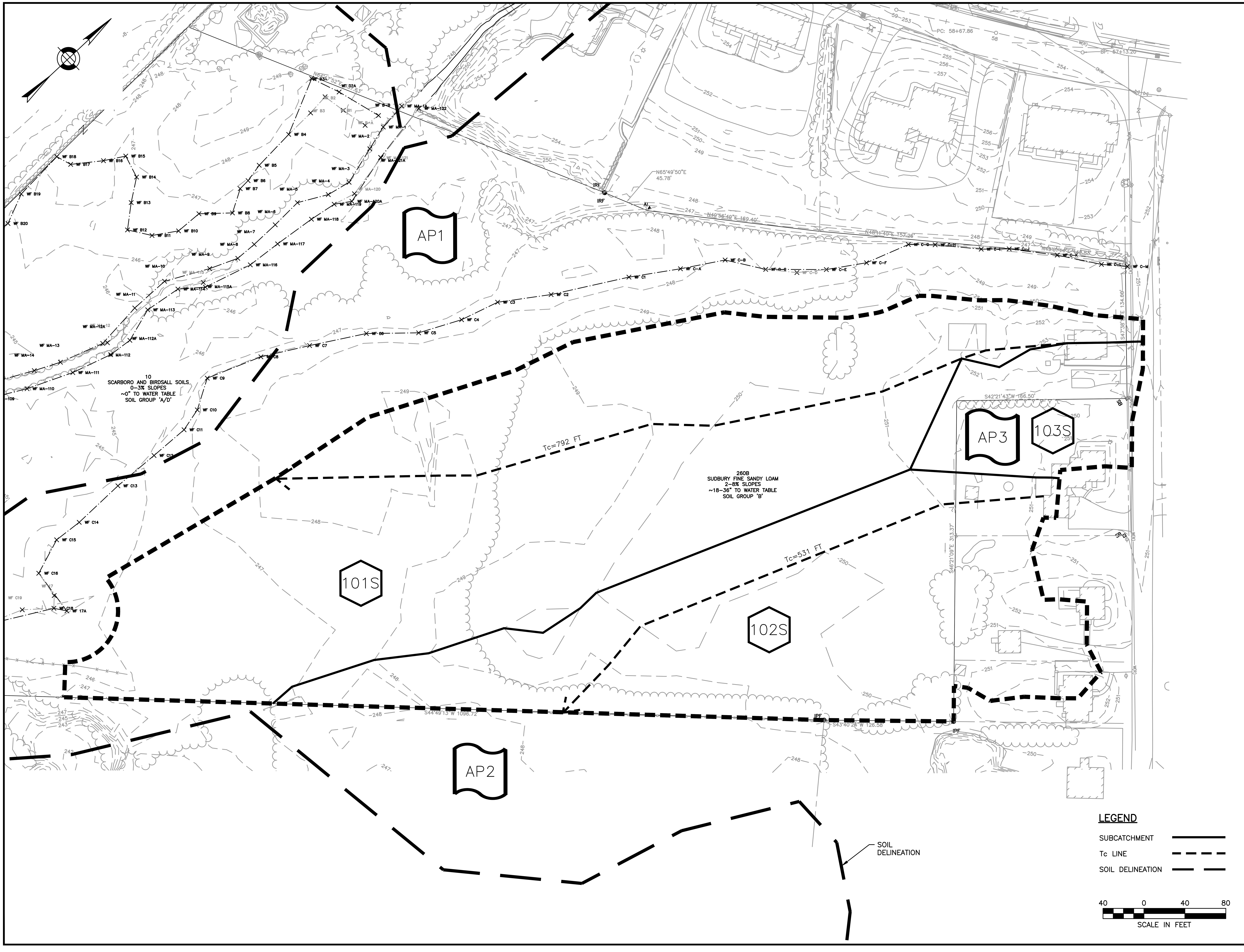
www.hydro-int.com

Turning Water Around...®

Appendix F – Locus Map


SITE
West St
Hancock St
Gold St
Burnt Swamp Rd

Appendix G – Pre and Post Drainage Maps



HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
Chelmsford, MA 01824
www.hshassoc.com

PREPARED FOR:

SHELDON MEADOW
480 TURNPIKE STREET
SOUTH EASTON, MA 02375

SHELDON MEADOW
20 HANCOCK STREET
WRENTHAM, MA 02093
NORFOLK COUNTY

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

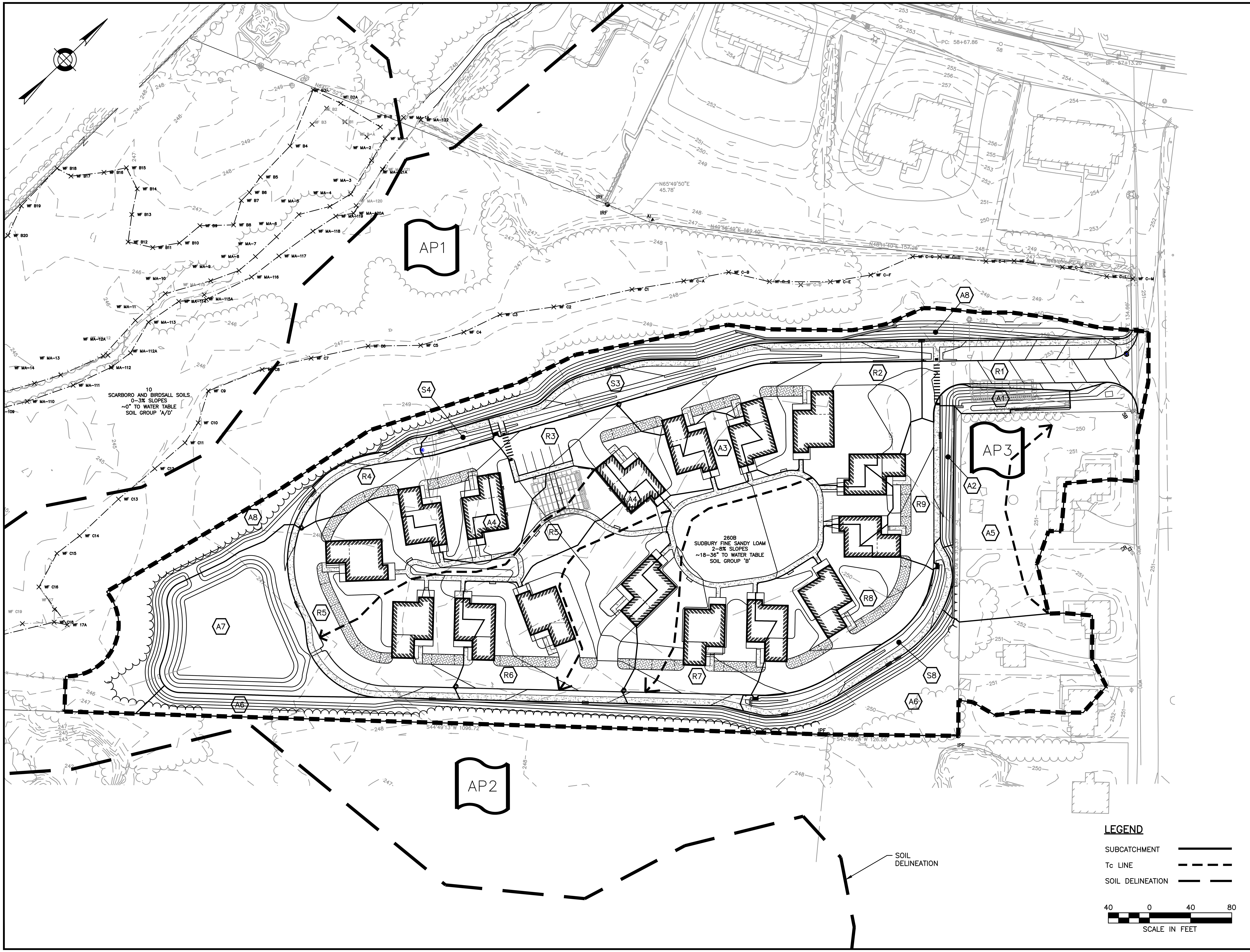
PRE-DEVELOPMENT DRAINAGE MAP

DATE:	APRIL 11, 2022
PROJECT NUMBER:	19227.01
DESIGNED BY:	KNL
DRAWN BY:	KNL
CHECKED BY:	KE

1.0

SHEET 1 OF 2

4/11/2022 L:\19227\Hancock St - CURRENT\Drainage\19227 - Drainage - HS.dwg
Last Saved by: KLABRIE
Printed by: Kristen LaBrie



HOWARD STEIN HUDSON
114 Turnpike Road, Suite 2C
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www.hshassoc.com

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480 TURNPIKE STREET
SOUTH EASTON, MA 02375

SHELDON MEADOW
20 HANCOCK STREET
WRENTHAM, MA 02093
NORFOLK COUNTY

REVISIONS:

NO	BY	DATE	DESCRIPTION

SITE PLAN

POST-DEVELOPMENT DRAINAGE MAP

DATE:	APRIL 11, 2022
PROJECT NUMBER:	19227.01
DESIGNED BY:	KNL
DRAWN BY:	KNL
CHECKED BY:	KE

2.0

SHEET 2 OF 2

4/11/2022 L:\19227\Hancock St - CURRENT\Drainage\19227 - Drainage - HS.dwg
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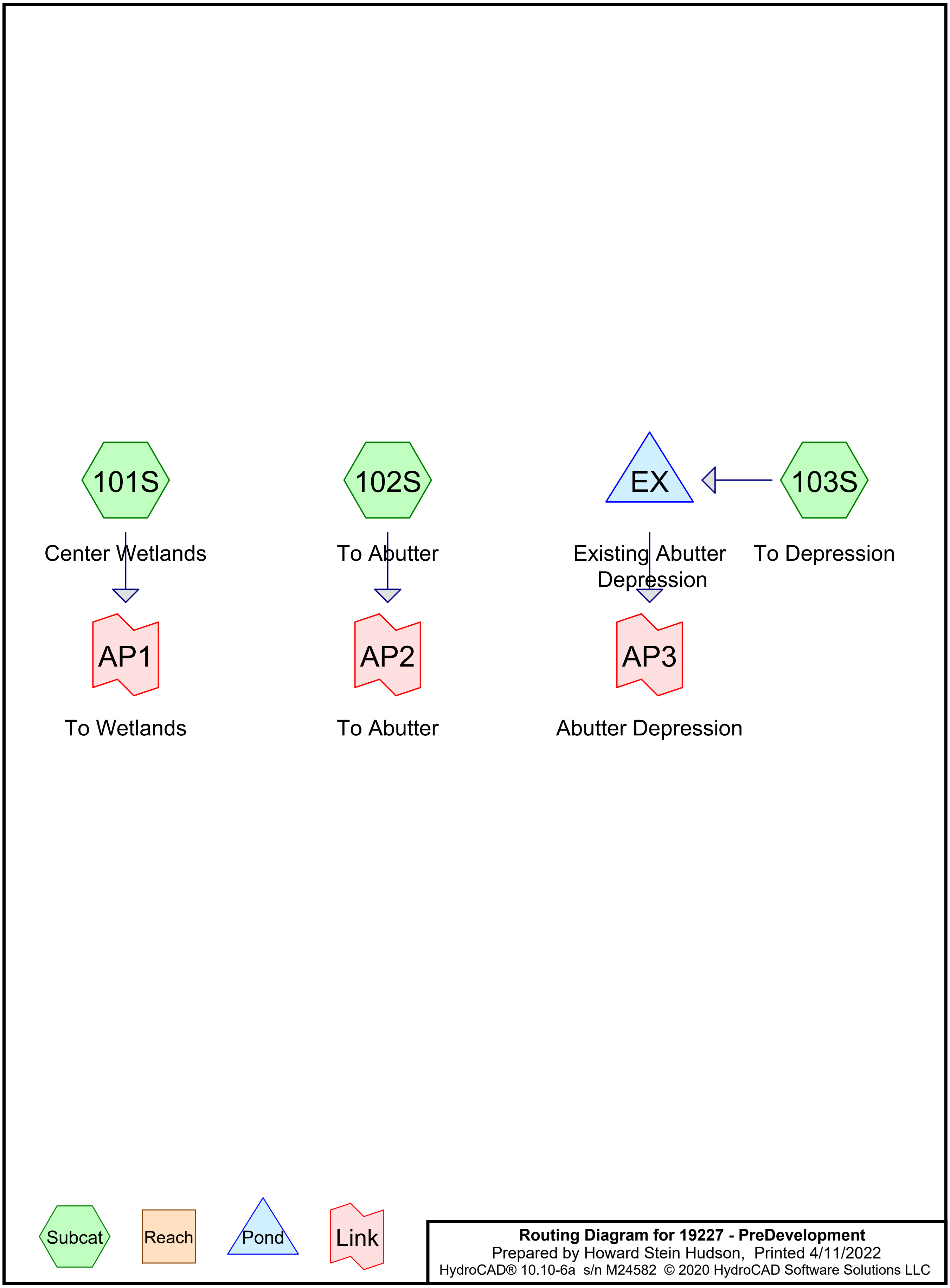
Printed by: Kristen LaBrie

Appendix H – HydroCAD, Stage Storage and Hydrographs



Routing Diagram for 19227 - PreDevelopment
Prepared by Howard Stein Hudson, Printed 4/11/2022
HydroCAD® 10.10-6a s/n M24582 © 2020 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Inch	Type III 24-hr		Default	24.00	1	2.00	2
2	2-yr	Type III 24-hr		Default	24.00	1	3.27	2
3	10-yr	Type III 24-hr		Default	24.00	1	4.92	2
4	50-yr	Type III 24-hr		Default	24.00	1	7.42	2
5	100-yr	Type III 24-hr		Default	24.00	1	8.86	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
205,109	61	>75% Grass cover, Good, HSG B (101S, 102S, 103S)
3,780	98	Paved parking, HSG B (101S, 102S, 103S)
5,006	98	Roofs, HSG B (101S, 102S, 103S)
99,520	55	Woods, Good, HSG B (101S, 102S)
313,415	**60**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
313,415	HSG B	101S, 102S, 103S
0	HSG C	
0	HSG D	
0	Other	
313,415		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	205,109	0	0	0	205,109	>75% Grass cover, Good	
0	3,780	0	0	0	3,780	Paved parking	
0	5,006	0	0	0	5,006	Roofs	
0	99,520	0	0	0	99,520	Woods, Good	
0	**313,415**	**0**	**0**	**0**	**313,415**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 101S: Center Wetlands Runoff Area=182,426 sf 0.74% Impervious Runoff Depth>0.05"
Flow Length=789' Tc=24.4 min CN=59 Runoff=0.03 cfs 734 cf

Subcatchment 102S: To Abutter Runoff Area=107,837 sf 3.38% Impervious Runoff Depth>0.07"
Flow Length=530' Tc=20.7 min CN=61 Runoff=0.03 cfs 648 cf

Subcatchment 103S: To Depression Runoff Area=23,152 sf 16.37% Impervious Runoff Depth>0.17"
Tc=6.0 min CN=67 Runoff=0.04 cfs 334 cf

Pond EX: Existing Abutter Depression Peak Elev=249.91' Storage=30 cf Inflow=0.04 cfs 334 cf
Discarded=0.02 cfs 333 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 333 cf

Link AP1: To Wetlands Inflow=0.03 cfs 734 cf
Primary=0.03 cfs 734 cf

Link AP2: To Abutter Inflow=0.03 cfs 648 cf
Primary=0.03 cfs 648 cf

Link AP3: Abutter Depression Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 313,415 sf Runoff Volume = 1,716 cf Average Runoff Depth = 0.07"
97.20% Pervious = 304,629 sf 2.80% Impervious = 8,786 sf

Summary for Subcatchment 101S: Center Wetlands

Runoff = 0.03 cfs @ 14.99 hrs, Volume= 734 cf, Depth> 0.05"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
943	98	Paved parking, HSG B
102,339	61	>75% Grass cover, Good, HSG B
78,735	55	Woods, Good, HSG B
409	98	Roofs, HSG B
182,426	59	Weighted Average
181,074		99.26% Pervious Area
1,352		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0300	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.5	524	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	215	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.4	789	Total			

Summary for Subcatchment 102S: To Abutter

Runoff = 0.03 cfs @ 13.81 hrs, Volume= 648 cf, Depth> 0.07"
Routed to Link AP2 : To Abutter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
1,237	98	Paved parking, HSG B
83,409	61	>75% Grass cover, Good, HSG B
20,785	55	Woods, Good, HSG B
2,406	98	Roofs, HSG B
107,837	61	Weighted Average
104,194		96.62% Pervious Area
3,643		3.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.7	446	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.7	530	Total			

Summary for Subcatchment 103S: To Depression

Runoff = 0.04 cfs @ 12.31 hrs, Volume= 334 cf, Depth> 0.17"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
1,600	98	Paved parking, HSG B
19,361	61	>75% Grass cover, Good, HSG B
2,191	98	Roofs, HSG B
23,152	67	Weighted Average
19,361		83.63% Pervious Area
3,791		16.37% Impervious Area

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

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 23,152 sf, 16.37% Impervious, Inflow Depth > 0.17" for 2-Inch event
Inflow = 0.04 cfs @ 12.31 hrs, Volume= 334 cf
Outflow = 0.02 cfs @ 12.59 hrs, Volume= 333 cf, Atten= 46%, Lag= 16.8 min
Discarded = 0.02 cfs @ 12.59 hrs, Volume= 333 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 249.91' @ 12.59 hrs Surf.Area= 385 sf Storage= 30 cf

Plug-Flow detention time= 9.4 min calculated for 333 cf (100% of inflow)
Center-of-Mass det. time= 8.6 min (955.4 - 946.8)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.02 cfs @ 12.59 hrs HW=249.91' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=249.80' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link AP1: To Wetlands

Inflow Area =	182,426 sf,	0.74% Impervious,	Inflow Depth > 0.05" for 2-Inch event
Inflow =	0.03 cfs @	14.99 hrs, Volume=	734 cf
Primary =	0.03 cfs @	14.99 hrs, Volume=	734 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: To Abutter

Inflow Area =	107,837 sf,	3.38% Impervious,	Inflow Depth > 0.07"	for 2-Inch event
Inflow =	0.03 cfs @	13.81 hrs, Volume=	648 cf	
Primary =	0.03 cfs @	13.81 hrs, Volume=	648 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	23,152 sf,	16.37% Impervious,	Inflow Depth = 0.00"	for 2-Inch event	
Inflow =	0.00 cfs @	0.00 hrs,	Volume=	0 cf	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 101S: Center Wetlands Runoff Area=182,426 sf 0.74% Impervious Runoff Depth>0.40"
Flow Length=789' Tc=24.4 min CN=59 Runoff=0.76 cfs 6,028 cf

Subcatchment 102S: To Abutter Runoff Area=107,837 sf 3.38% Impervious Runoff Depth>0.47"
Flow Length=530' Tc=20.7 min CN=61 Runoff=0.62 cfs 4,218 cf

Subcatchment 103S: To Depression Runoff Area=23,152 sf 16.37% Impervious Runoff Depth>0.72"
Tc=6.0 min CN=67 Runoff=0.38 cfs 1,395 cf

Pond EX: Existing Abutter Depression Peak Elev=250.26' Storage=337 cf Inflow=0.38 cfs 1,395 cf
Discarded=0.09 cfs 1,366 cf Primary=0.05 cfs 28 cf Outflow=0.14 cfs 1,394 cf

Link AP1: To Wetlands Inflow=0.76 cfs 6,028 cf
Primary=0.76 cfs 6,028 cf

Link AP2: To Abutter Inflow=0.62 cfs 4,218 cf
Primary=0.62 cfs 4,218 cf

Link AP3: Abutter Depression Inflow=0.05 cfs 28 cf
Primary=0.05 cfs 28 cf

Total Runoff Area = 313,415 sf Runoff Volume = 11,642 cf Average Runoff Depth = 0.45"
97.20% Pervious = 304,629 sf 2.80% Impervious = 8,786 sf

Summary for Subcatchment 101S: Center Wetlands

Runoff = 0.76 cfs @ 12.51 hrs, Volume= 6,028 cf, Depth> 0.40"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
943	98	Paved parking, HSG B
102,339	61	>75% Grass cover, Good, HSG B
78,735	55	Woods, Good, HSG B
409	98	Roofs, HSG B
182,426	59	Weighted Average
181,074		99.26% Pervious Area
1,352		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0300	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.5	524	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	215	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.4	789	Total			

Summary for Subcatchment 102S: To Abutter

Runoff = 0.62 cfs @ 12.41 hrs, Volume= 4,218 cf, Depth> 0.47"
Routed to Link AP2 : To Abutter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
1,237	98	Paved parking, HSG B
83,409	61	>75% Grass cover, Good, HSG B
20,785	55	Woods, Good, HSG B
2,406	98	Roofs, HSG B
107,837	61	Weighted Average
104,194		96.62% Pervious Area
3,643		3.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.7	446	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.7	530	Total			

Summary for Subcatchment 103S: To Depression

Runoff = 0.38 cfs @ 12.11 hrs, Volume= 1,395 cf, Depth> 0.72"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
1,600	98	Paved parking, HSG B
19,361	61	>75% Grass cover, Good, HSG B
2,191	98	Roofs, HSG B
23,152	67	Weighted Average
19,361		83.63% Pervious Area
3,791		16.37% Impervious Area

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

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 23,152 sf, 16.37% Impervious, Inflow Depth > 0.72" for 2-yr event
Inflow = 0.38 cfs @ 12.11 hrs, Volume= 1,395 cf
Outflow = 0.14 cfs @ 12.49 hrs, Volume= 1,394 cf, Atten= 63%, Lag= 22.7 min
Discarded = 0.09 cfs @ 12.49 hrs, Volume= 1,366 cf
Primary = 0.05 cfs @ 12.49 hrs, Volume= 28 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.26' @ 12.49 hrs Surf.Area= 1,523 sf Storage= 337 cf

Plug-Flow detention time= 39.4 min calculated for 1,391 cf (100% of inflow)
Center-of-Mass det. time= 38.8 min (923.1 - 884.4)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.09 cfs @ 12.49 hrs HW=250.26' (Free Discharge)
└─**1=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=0.05 cfs @ 12.49 hrs HW=250.26' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.05 cfs @ 0.25 fps)

Summary for Link AP1: To Wetlands

Inflow Area =	182,426 sf,	0.74% Impervious,	Inflow Depth > 0.40"	for 2-yr event	
Inflow =	0.76 cfs @	12.51 hrs,	Volume=	6,028 cf	
Primary =	0.76 cfs @	12.51 hrs,	Volume=	6,028 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: To Abutter

Inflow Area =	107,837 sf,	3.38% Impervious,	Inflow Depth > 0.47"	for 2-yr event	
Inflow =	0.62 cfs @	12.41 hrs, Volume=	4,218 cf		
Primary =	0.62 cfs @	12.41 hrs, Volume=	4,218 cf,	Atten= 0%,	Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	23,152 sf,	16.37% Impervious,	Inflow Depth = 0.01"	for 2-yr event
Inflow =	0.05 cfs @	12.49 hrs, Volume=	28 cf	
Primary =	0.05 cfs @	12.49 hrs, Volume=	28 cf, Atten= 0%, Lag= 0.0 min	

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 101S: Center Wetlands Runoff Area=182,426 sf 0.74% Impervious Runoff Depth>1.18"
Flow Length=789' Tc=24.4 min CN=59 Runoff=3.15 cfs 17,950 cf

Subcatchment 102S: To Abutter Runoff Area=107,837 sf 3.38% Impervious Runoff Depth>1.31"
Flow Length=530' Tc=20.7 min CN=61 Runoff=2.29 cfs 11,807 cf

Subcatchment 103S: To Depression Runoff Area=23,152 sf 16.37% Impervious Runoff Depth>1.75"
Tc=6.0 min CN=67 Runoff=1.03 cfs 3,368 cf

Pond EX: Existing Abutter Depression Peak Elev=250.31' Storage=427 cf Inflow=1.03 cfs 3,368 cf
Discarded=0.11 cfs 2,287 cf Primary=0.86 cfs 1,064 cf Outflow=0.97 cfs 3,352 cf

Link AP1: To Wetlands Inflow=3.15 cfs 17,950 cf
Primary=3.15 cfs 17,950 cf

Link AP2: To Abutter Inflow=2.29 cfs 11,807 cf
Primary=2.29 cfs 11,807 cf

Link AP3: Abutter Depression Inflow=0.86 cfs 1,064 cf
Primary=0.86 cfs 1,064 cf

Total Runoff Area = 313,415 sf Runoff Volume = 33,124 cf Average Runoff Depth = 1.27"
97.20% Pervious = 304,629 sf 2.80% Impervious = 8,786 sf

Summary for Subcatchment 101S: Center Wetlands

Runoff = 3.15 cfs @ 12.39 hrs, Volume= 17,950 cf, Depth> 1.18"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
943	98	Paved parking, HSG B
102,339	61	>75% Grass cover, Good, HSG B
78,735	55	Woods, Good, HSG B
409	98	Roofs, HSG B
182,426	59	Weighted Average
181,074		99.26% Pervious Area
1,352		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0300	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.5	524	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	215	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.4	789	Total			

Summary for Subcatchment 102S: To Abutter

Runoff = 2.29 cfs @ 12.32 hrs, Volume= 11,807 cf, Depth> 1.31"
Routed to Link AP2 : To Abutter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
1,237	98	Paved parking, HSG B
83,409	61	>75% Grass cover, Good, HSG B
20,785	55	Woods, Good, HSG B
2,406	98	Roofs, HSG B
107,837	61	Weighted Average
104,194		96.62% Pervious Area
3,643		3.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.7	446	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.7	530	Total			

Summary for Subcatchment 103S: To Depression

Runoff = 1.03 cfs @ 12.10 hrs, Volume= 3,368 cf, Depth> 1.75"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
1,600	98	Paved parking, HSG B
19,361	61	>75% Grass cover, Good, HSG B
2,191	98	Roofs, HSG B
23,152	67	Weighted Average
19,361		83.63% Pervious Area
3,791		16.37% Impervious Area

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

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 23,152 sf, 16.37% Impervious, Inflow Depth > 1.75" for 10-yr event
Inflow = 1.03 cfs @ 12.10 hrs, Volume= 3,368 cf
Outflow = 0.97 cfs @ 12.13 hrs, Volume= 3,352 cf, Atten= 6%, Lag= 1.8 min
Discarded = 0.11 cfs @ 12.13 hrs, Volume= 2,287 cf
Primary = 0.86 cfs @ 12.13 hrs, Volume= 1,064 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.31' @ 12.13 hrs Surf.Area= 1,763 sf Storage= 427 cf

Plug-Flow detention time= 33.2 min calculated for 3,345 cf (99% of inflow)
Center-of-Mass det. time= 30.4 min (886.2 - 855.8)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.11 cfs @ 12.13 hrs HW=250.31' (Free Discharge)
1=Exfiltration (Controls 0.11 cfs)

Primary OutFlow Max=0.84 cfs @ 12.13 hrs HW=250.31' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.84 cfs @ 0.67 fps)

Summary for Link AP1: To Wetlands

Inflow Area =	182,426 sf,	0.74% Impervious,	Inflow Depth > 1.18"	for 10-yr event	
Inflow =	3.15 cfs @	12.39 hrs,	Volume=	17,950 cf	
Primary =	3.15 cfs @	12.39 hrs,	Volume=	17,950 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: To Abutter

Inflow Area =	107,837 sf,	3.38% Impervious,	Inflow Depth > 1.31" for 10-yr event
Inflow =	2.29 cfs @	12.32 hrs, Volume=	11,807 cf
Primary =	2.29 cfs @	12.32 hrs, Volume=	11,807 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	23,152 sf,	16.37% Impervious,	Inflow Depth = 0.55"	for 10-yr event
Inflow =	0.86 cfs @	12.13 hrs, Volume=	1,064 cf	
Primary =	0.86 cfs @	12.13 hrs, Volume=	1,064 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 101S: Center Wetlands Runoff Area=182,426 sf 0.74% Impervious Runoff Depth>2.79"
Flow Length=789' Tc=24.4 min CN=59 Runoff=8.24 cfs 42,343 cf

Subcatchment 102S: To Abutter Runoff Area=107,837 sf 3.38% Impervious Runoff Depth>2.99"
Flow Length=530' Tc=20.7 min CN=61 Runoff=5.66 cfs 26,912 cf

Subcatchment 103S: To Depression Runoff Area=23,152 sf 16.37% Impervious Runoff Depth>3.64"
Tc=6.0 min CN=67 Runoff=2.22 cfs 7,026 cf

Pond EX: Existing Abutter Depression Peak Elev=250.36' Storage=519 cf Inflow=2.22 cfs 7,026 cf
Discarded=0.12 cfs 3,319 cf Primary=2.04 cfs 3,641 cf Outflow=2.16 cfs 6,960 cf

Link AP1: To Wetlands Inflow=8.24 cfs 42,343 cf
Primary=8.24 cfs 42,343 cf

Link AP2: To Abutter Inflow=5.66 cfs 26,912 cf
Primary=5.66 cfs 26,912 cf

Link AP3: Abutter Depression Inflow=2.04 cfs 3,641 cf
Primary=2.04 cfs 3,641 cf

Total Runoff Area = 313,415 sf Runoff Volume = 76,281 cf Average Runoff Depth = 2.92"
97.20% Pervious = 304,629 sf 2.80% Impervious = 8,786 sf

Summary for Subcatchment 101S: Center Wetlands

Runoff = 8.24 cfs @ 12.36 hrs, Volume= 42,343 cf, Depth> 2.79"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
943	98	Paved parking, HSG B
102,339	61	>75% Grass cover, Good, HSG B
78,735	55	Woods, Good, HSG B
409	98	Roofs, HSG B
182,426	59	Weighted Average
181,074		99.26% Pervious Area
1,352		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0300	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.5	524	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	215	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.4	789	Total			

Summary for Subcatchment 102S: To Abutter

Runoff = 5.66 cfs @ 12.30 hrs, Volume= 26,912 cf, Depth> 2.99"
Routed to Link AP2 : To Abutter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,237	98	Paved parking, HSG B
83,409	61	>75% Grass cover, Good, HSG B
20,785	55	Woods, Good, HSG B
2,406	98	Roofs, HSG B
107,837	61	Weighted Average
104,194		96.62% Pervious Area
3,643		3.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.7	446	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.7	530	Total			

Summary for Subcatchment 103S: To Depression

Runoff = 2.22 cfs @ 12.09 hrs, Volume= 7,026 cf, Depth> 3.64"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,600	98	Paved parking, HSG B
19,361	61	>75% Grass cover, Good, HSG B
2,191	98	Roofs, HSG B
23,152	67	Weighted Average
19,361		83.63% Pervious Area
3,791		16.37% Impervious Area

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

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 23,152 sf, 16.37% Impervious, Inflow Depth > 3.64" for 50-yr event
Inflow = 2.22 cfs @ 12.09 hrs, Volume= 7,026 cf
Outflow = 2.16 cfs @ 12.11 hrs, Volume= 6,960 cf, Atten= 3%, Lag= 1.2 min
Discarded = 0.12 cfs @ 12.11 hrs, Volume= 3,319 cf
Primary = 2.04 cfs @ 12.11 hrs, Volume= 3,641 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.36' @ 12.11 hrs Surf.Area= 1,981 sf Storage= 519 cf

Plug-Flow detention time= 25.6 min calculated for 6,960 cf (99% of inflow)
Center-of-Mass det. time= 20.0 min (854.1 - 834.1)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.12 cfs @ 12.11 hrs HW=250.36' (Free Discharge)
└─**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=1.98 cfs @ 12.11 hrs HW=250.36' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.98 cfs @ 0.89 fps)

Summary for Link AP1: To Wetlands

Inflow Area =	182,426 sf,	0.74% Impervious,	Inflow Depth > 2.79"	for 50-yr event	
Inflow =	8.24 cfs @	12.36 hrs,	Volume=	42,343 cf	
Primary =	8.24 cfs @	12.36 hrs,	Volume=	42,343 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: To Abutter

Inflow Area =	107,837 sf,	3.38% Impervious,	Inflow Depth > 2.99"	for 50-yr event
Inflow =	5.66 cfs @	12.30 hrs, Volume=	26,912 cf	
Primary =	5.66 cfs @	12.30 hrs, Volume=	26,912 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	23,152 sf,	16.37% Impervious,	Inflow Depth = 1.89"	for 50-yr event
Inflow =	2.04 cfs @	12.11 hrs, Volume=	3,641 cf	
Primary =	2.04 cfs @	12.11 hrs, Volume=	3,641 cf, Atten= 0%, Lag= 0.0 min	

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 101S: Center Wetlands Runoff Area=182,426 sf 0.74% Impervious Runoff Depth>3.85"
Flow Length=789' Tc=24.4 min CN=59 Runoff=11.59 cfs 58,515 cf

Subcatchment 102S: To Abutter Runoff Area=107,837 sf 3.38% Impervious Runoff Depth>4.09"
Flow Length=530' Tc=20.7 min CN=61 Runoff=7.84 cfs 36,798 cf

Subcatchment 103S: To Depression Runoff Area=23,152 sf 16.37% Impervious Runoff Depth>4.84"
Tc=6.0 min CN=67 Runoff=2.96 cfs 9,339 cf

Pond EX: Existing Abutter Depression Peak Elev=250.39' Storage=571 cf Inflow=2.96 cfs 9,339 cf
Discarded=0.13 cfs 3,822 cf Primary=2.76 cfs 5,425 cf Outflow=2.89 cfs 9,247 cf

Link AP1: To Wetlands Inflow=11.59 cfs 58,515 cf
Primary=11.59 cfs 58,515 cf

Link AP2: To Abutter Inflow=7.84 cfs 36,798 cf
Primary=7.84 cfs 36,798 cf

Link AP3: Abutter Depression Inflow=2.76 cfs 5,425 cf
Primary=2.76 cfs 5,425 cf

Total Runoff Area = 313,415 sf Runoff Volume = 104,652 cf Average Runoff Depth = 4.01"
97.20% Pervious = 304,629 sf 2.80% Impervious = 8,786 sf

Summary for Subcatchment 101S: Center Wetlands

Runoff = 11.59 cfs @ 12.35 hrs, Volume= 58,515 cf, Depth> 3.85"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
943	98	Paved parking, HSG B
102,339	61	>75% Grass cover, Good, HSG B
78,735	55	Woods, Good, HSG B
409	98	Roofs, HSG B
182,426	59	Weighted Average
181,074		99.26% Pervious Area
1,352		0.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0300	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.5	524	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	215	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.4	789	Total			

Summary for Subcatchment 102S: To Abutter

Runoff = 7.84 cfs @ 12.30 hrs, Volume= 36,798 cf, Depth> 4.09"
Routed to Link AP2 : To Abutter

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
1,237	98	Paved parking, HSG B
83,409	61	>75% Grass cover, Good, HSG B
20,785	55	Woods, Good, HSG B
2,406	98	Roofs, HSG B
107,837	61	Weighted Average
104,194		96.62% Pervious Area
3,643		3.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
12.7	446	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.7	530	Total			

Summary for Subcatchment 103S: To Depression

Runoff = 2.96 cfs @ 12.09 hrs, Volume= 9,339 cf, Depth> 4.84"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
1,600	98	Paved parking, HSG B
19,361	61	>75% Grass cover, Good, HSG B
2,191	98	Roofs, HSG B
23,152	67	Weighted Average
19,361		83.63% Pervious Area
3,791		16.37% Impervious Area

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

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 23,152 sf, 16.37% Impervious, Inflow Depth > 4.84" for 100-yr event
Inflow = 2.96 cfs @ 12.09 hrs, Volume= 9,339 cf
Outflow = 2.89 cfs @ 12.11 hrs, Volume= 9,247 cf, Atten= 3%, Lag= 1.1 min
Discarded = 0.13 cfs @ 12.11 hrs, Volume= 3,822 cf
Primary = 2.76 cfs @ 12.11 hrs, Volume= 5,425 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.39' @ 12.11 hrs Surf.Area= 2,093 sf Storage= 571 cf

Plug-Flow detention time= 22.9 min calculated for 9,227 cf (99% of inflow)
Center-of-Mass det. time= 17.0 min (842.9 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.13 cfs @ 12.11 hrs HW=250.39' (Free Discharge)
└─**1=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=2.69 cfs @ 12.11 hrs HW=250.39' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.69 cfs @ 0.99 fps)

Summary for Link AP1: To Wetlands

Inflow Area =	182,426 sf,	0.74% Impervious,	Inflow Depth > 3.85"	for 100-yr event
Inflow =	11.59 cfs @	12.35 hrs, Volume=	58,515 cf	
Primary =	11.59 cfs @	12.35 hrs, Volume=	58,515 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP2: To Abutter

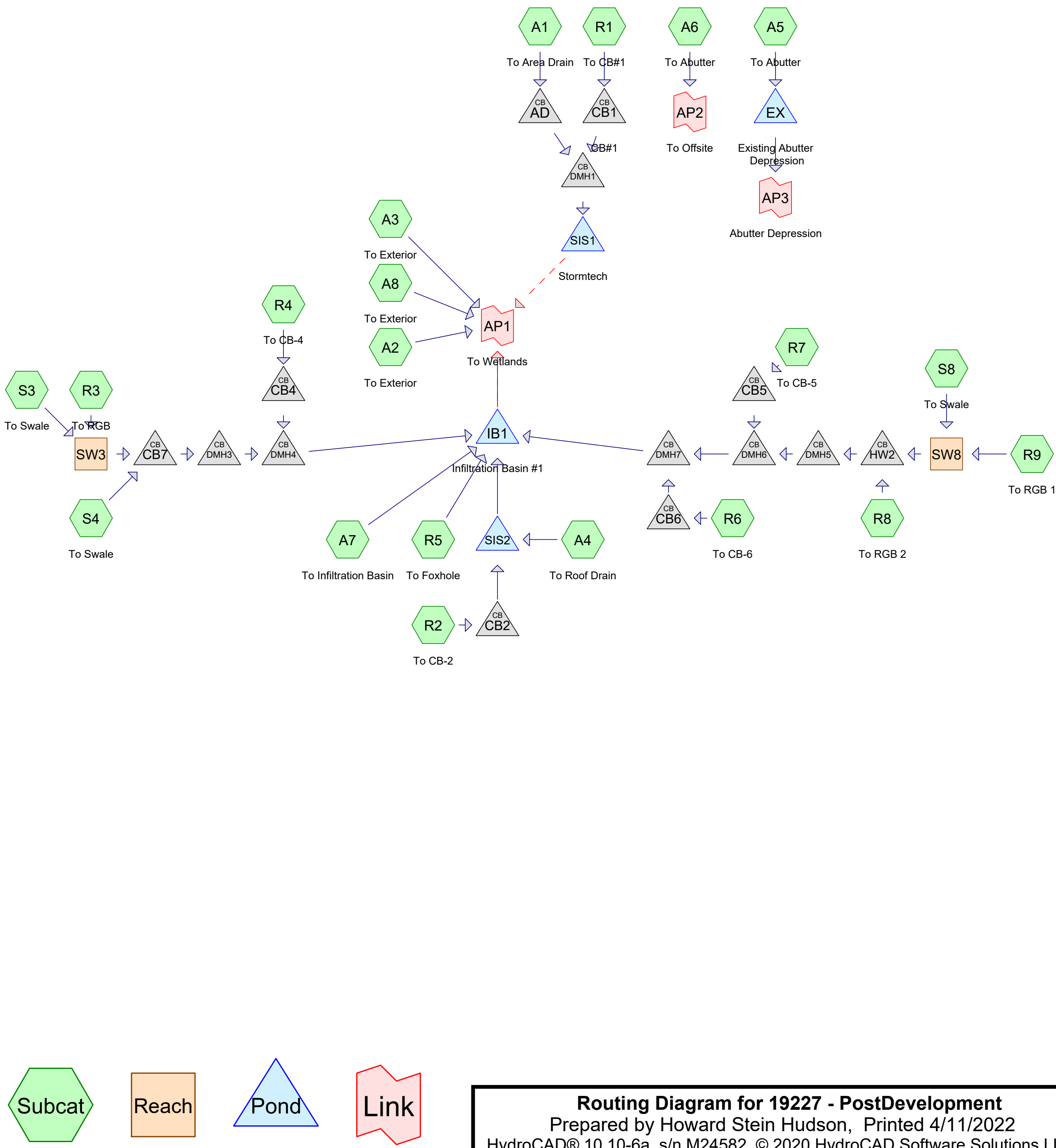
Inflow Area = 107,837 sf, 3.38% Impervious, Inflow Depth > 4.09" for 100-yr event
Inflow = 7.84 cfs @ 12.30 hrs, Volume= 36,798 cf
Primary = 7.84 cfs @ 12.30 hrs, Volume= 36,798 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	23,152 sf,	16.37% Impervious,	Inflow Depth = 2.81"	for 100-yr event
Inflow =	2.76 cfs @	12.11 hrs, Volume=	5,425 cf	
Primary =	2.76 cfs @	12.11 hrs, Volume=	5,425 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Routing Diagram for 19227 - PostDevelopment
Prepared by Howard Stein Hudson, Printed 4/11/2022
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Inch	Type III 24-hr		Default	24.00	1	2.00	2
2	2-yr	Type III 24-hr		Default	24.00	1	3.27	2
3	10-yr	Type III 24-hr		Default	24.00	1	4.92	2
4	50-yr	Type III 24-hr		Default	24.00	1	7.42	2
5	100-yr	Type III 24-hr		Default	24.00	1	8.86	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
182,276	61	>75% Grass cover, Good, HSG B (A1, A2, A3, A5, A6, A7, A8, R1, R2, R3, R4, R5, R6, R7, R8, R9, S3, S4, S8)
74,339	98	Paved parking, HSG B (A6, A8, R1, R2, R3, R4, R5, R6, R7, R8, R9, S3, S4, S8)
38,131	98	Roofs, HSG B (A3, A4, A5, A6, R2, R3, R4, R5, R6, R7, R8, R9)
18,669	55	Woods, Good, HSG B (A5, A6, A8)
313,415	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
313,415	HSG B	A1, A2, A3, A4, A5, A6, A7, A8, R1, R2, R3, R4, R5, R6, R7, R8, R9, S3, S4, S8
0	HSG C	
0	HSG D	
0	Other	
313,415		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	182,276	0	0	0	182,276	>75% Grass cover, Good	
0	74,339	0	0	0	74,339	Paved parking	
0	38,131	0	0	0	38,131	Roofs	
0	18,669	0	0	0	18,669	Woods, Good	
0	**313,415**	**0**	**0**	**0**	**313,415**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	AD	248.60	248.47	26.4	0.0049	0.011	0.0	8.0	0.0
2	CB1	249.00	248.53	93.3	0.0050	0.011	0.0	12.0	0.0
3	CB2	251.20	250.46	73.9	0.0100	0.011	0.0	12.0	0.0
4	CB4	247.83	247.55	14.5	0.0193	0.011	0.0	12.0	0.0
5	CB5	250.30	250.20	8.5	0.0118	0.011	0.0	12.0	0.0
6	CB6	248.30	248.26	6.3	0.0063	0.011	0.0	12.0	0.0
7	CB7	248.00	247.50	88.3	0.0057	0.011	0.0	18.0	0.0
8	DMH1	248.40	248.35	6.0	0.0083	0.010	0.0	12.0	0.0
9	DMH1	248.28	248.25	4.0	0.0075	0.010	0.0	24.0	0.0
10	DMH3	247.45	247.10	68.2	0.0051	0.011	0.0	18.0	0.0
11	DMH4	246.60	246.43	34.6	0.0049	0.011	0.0	24.0	0.0
12	DMH5	251.65	250.46	116.8	0.0102	0.011	0.0	15.0	0.0
13	DMH6	249.71	248.10	160.8	0.0100	0.011	0.0	18.0	0.0
14	DMH7	247.60	246.65	111.5	0.0085	0.011	0.0	24.0	0.0
15	HW2	253.00	251.75	14.6	0.0856	0.013	0.0	15.0	0.0
16	IB1	247.00	246.00	62.2	0.0161	0.012	0.0	18.0	0.0

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: To Area Drain Runoff Area=2,664 sf 0.00% Impervious Runoff Depth>0.07"
Tc=6.0 min CN=61 Runoff=0.00 cfs 16 cf

Subcatchment A2: To Exterior Runoff Area=1,761 sf 0.00% Impervious Runoff Depth>0.07"
Tc=6.0 min CN=61 Runoff=0.00 cfs 11 cf

Subcatchment A3: To Exterior Runoff Area=3,301 sf 50.05% Impervious Runoff Depth>0.56"
Tc=6.0 min CN=80 Runoff=0.05 cfs 154 cf

Subcatchment A4: To Roof Drain Runoff Area=2,082 sf 100.00% Impervious Runoff Depth>1.77"
Tc=6.0 min CN=98 Runoff=0.09 cfs 308 cf

Subcatchment A5: To Abutter Runoff Area=26,605 sf 5.66% Impervious Runoff Depth>0.10"
Flow Length=212' Tc=11.8 min CN=63 Runoff=0.02 cfs 224 cf

Subcatchment A6: To Abutter Runoff Area=36,823 sf 7.73% Impervious Runoff Depth>0.10"
Tc=6.0 min CN=63 Runoff=0.02 cfs 311 cf

Subcatchment A7: To Infiltration Basin Runoff Area=18,226 sf 0.00% Impervious Runoff Depth>0.07"
Tc=6.0 min CN=61 Runoff=0.00 cfs 111 cf

Subcatchment A8: To Exterior Runoff Area=30,601 sf 1.56% Impervious Runoff Depth>0.06"
Tc=6.0 min CN=60 Runoff=0.01 cfs 154 cf

Subcatchment R1: To CB#1 Runoff Area=11,152 sf 70.59% Impervious Runoff Depth>0.90"
Tc=6.0 min CN=87 Runoff=0.27 cfs 841 cf

Subcatchment R2: To CB-2 Runoff Area=22,269 sf 62.49% Impervious Runoff Depth>0.74"
Tc=6.0 min CN=84 Runoff=0.43 cfs 1,379 cf

Subcatchment R3: To RGB Runoff Area=10,217 sf 71.15% Impervious Runoff Depth>0.90"
Tc=6.0 min CN=87 Runoff=0.25 cfs 770 cf

Subcatchment R4: To CB-4 Runoff Area=14,887 sf 66.43% Impervious Runoff Depth>0.85"
Tc=6.0 min CN=86 Runoff=0.33 cfs 1,052 cf

Subcatchment R5: To Foxhole Runoff Area=33,967 sf 52.12% Impervious Runoff Depth>0.56"
Flow Length=327' Tc=10.1 min CN=80 Runoff=0.41 cfs 1,588 cf

Subcatchment R6: To CB-6 Runoff Area=26,016 sf 47.47% Impervious Runoff Depth>0.52"
Flow Length=248' Tc=16.0 min CN=79 Runoff=0.24 cfs 1,128 cf

Subcatchment R7: To CB-5 Runoff Area=31,901 sf 39.74% Impervious Runoff Depth>0.41"
Flow Length=303' Tc=11.9 min CN=76 Runoff=0.24 cfs 1,096 cf

Subcatchment R8: To RGB 2 Runoff Area=17,230 sf 63.94% Impervious Runoff Depth>0.79"
Tc=6.0 min CN=85 Runoff=0.36 cfs 1,140 cf

Subcatchment R9: To RGB 1 Runoff Area=7,051 sf 91.07% Impervious Runoff Depth>1.48"
Tc=6.0 min CN=95 Runoff=0.27 cfs 870 cf

Subcatchment S3: To Swale Runoff Area=10,077 sf 25.91% Impervious Runoff Depth>0.27"
Tc=6.0 min CN=71 Runoff=0.04 cfs 223 cf

Subcatchment S4: To Swale Runoff Area=1,346 sf 29.12% Impervious Runoff Depth>0.29"
Tc=6.0 min CN=72 Runoff=0.01 cfs 33 cf

Subcatchment S8: To Swale Runoff Area=5,239 sf 34.13% Impervious Runoff Depth>0.35"
Tc=6.0 min CN=74 Runoff=0.04 cfs 152 cf

Reach SW3: Avg. Flow Depth=0.13' Max Vel=0.81 fps Inflow=0.29 cfs 993 cf
n=0.041 L=501.0' S=0.0100 '/' Capacity=28.59 cfs Outflow=0.20 cfs 981 cf

Reach SW8: Avg. Flow Depth=0.32' Max Vel=0.23 fps Inflow=0.31 cfs 1,023 cf
n=0.240 L=232.0' S=0.0102 '/' Capacity=4.93 cfs Outflow=0.18 cfs 1,009 cf

Pond AD: Peak Elev=248.62' Inflow=0.00 cfs 16 cf
8.0" Round Culvert n=0.011 L=26.4' S=0.0049 '/' Outflow=0.00 cfs 16 cf

Pond CB1: CB#1 Peak Elev=249.28' Inflow=0.27 cfs 841 cf
12.0" Round Culvert n=0.011 L=93.3' S=0.0050 '/' Outflow=0.27 cfs 841 cf

Pond CB2: Peak Elev=251.53' Inflow=0.43 cfs 1,379 cf
12.0" Round Culvert n=0.011 L=73.9' S=0.0100 '/' Outflow=0.43 cfs 1,379 cf

Pond CB4: Peak Elev=248.11' Inflow=0.33 cfs 1,052 cf
12.0" Round Culvert n=0.011 L=14.5' S=0.0193 '/' Outflow=0.33 cfs 1,052 cf

Pond CB5: Peak Elev=250.55' Inflow=0.24 cfs 1,096 cf
12.0" Round Culvert n=0.011 L=8.5' S=0.0118 '/' Outflow=0.24 cfs 1,096 cf

Pond CB6: Peak Elev=248.58' Inflow=0.24 cfs 1,128 cf
12.0" Round Culvert n=0.011 L=6.3' S=0.0063 '/' Outflow=0.24 cfs 1,128 cf

Pond CB7: Peak Elev=248.21' Inflow=0.21 cfs 1,014 cf
18.0" Round Culvert n=0.011 L=88.3' S=0.0057 '/' Outflow=0.21 cfs 1,014 cf

Pond DMH1: Peak Elev=248.50' Inflow=0.27 cfs 857 cf
Outflow=0.27 cfs 857 cf

Pond DMH3: Peak Elev=247.67' Inflow=0.21 cfs 1,014 cf
18.0" Round Culvert n=0.011 L=68.2' S=0.0051 '/' Outflow=0.21 cfs 1,014 cf

Pond DMH4: Peak Elev=247.08' Inflow=0.50 cfs 2,066 cf
24.0" Round Culvert n=0.011 L=34.6' S=0.0049 '/' Outflow=0.50 cfs 2,066 cf

Pond DMH5: Peak Elev=251.98' Inflow=0.51 cfs 2,150 cf
15.0" Round Culvert n=0.011 L=116.8' S=0.0102 '/' Outflow=0.51 cfs 2,150 cf

Pond DMH6: Peak Elev=250.08' Inflow=0.70 cfs 3,245 cf
18.0" Round Culvert n=0.011 L=160.8' S=0.0100 '/' Outflow=0.70 cfs 3,245 cf

Pond DMH7: Peak Elev=247.98' Inflow=0.88 cfs 4,373 cf
24.0" Round Culvert n=0.011 L=111.5' S=0.0085 '/' Outflow=0.88 cfs 4,373 cf

Pond EX: Existing Abutter Depression Peak Elev=249.82' Storage=5 cf Inflow=0.02 cfs 224 cf
Discarded=0.01 cfs 224 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 224 cf

Pond HW2: Peak Elev=253.33' Inflow=0.51 cfs 2,150 cf
15.0" Round Culvert n=0.013 L=14.6' S=0.0856 '/' Outflow=0.51 cfs 2,150 cf

Pond IB1: Infiltration Basin #1 Peak Elev=247.01' Storage=112 cf Inflow=1.77 cfs 8,137 cf
Discarded=1.65 cfs 8,134 cf Primary=0.00 cfs 1 cf Secondary=0.00 cfs 0 cf Outflow=1.65 cfs 8,135 cf

Pond SIS1: Stormtech Peak Elev=247.77' Storage=10 cf Inflow=0.27 cfs 857 cf
Discarded=0.24 cfs 857 cf Secondary=0.00 cfs 0 cf Outflow=0.24 cfs 857 cf

Pond SIS2: Peak Elev=249.10' Storage=72 cf Inflow=0.52 cfs 1,686 cf
Discarded=0.35 cfs 1,686 cf Primary=0.00 cfs 0 cf Outflow=0.35 cfs 1,686 cf

Link AP1: To Wetlands Inflow=0.05 cfs 320 cf
Primary=0.05 cfs 320 cf

Link AP2: To Offsite Inflow=0.02 cfs 311 cf
Primary=0.02 cfs 311 cf

Link AP3: Abutter Depression Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 313,415 sf Runoff Volume = 11,560 cf Average Runoff Depth = 0.44"
64.11% Pervious = 200,945 sf 35.89% Impervious = 112,470 sf

Summary for Subcatchment A1: To Area Drain

Runoff = 0.00 cfs @ 12.50 hrs, Volume= 16 cf, Depth> 0.07"
Routed to Pond AD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
2,664	61	>75% Grass cover, Good, HSG B
2,664		100.00% Pervious Area

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

Summary for Subcatchment A2: To Exterior

Runoff = 0.00 cfs @ 12.50 hrs, Volume= 11 cf, Depth> 0.07"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
1,761	61	>75% Grass cover, Good, HSG B
1,761		100.00% Pervious Area

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

Summary for Subcatchment A3: To Exterior

Runoff = 0.05 cfs @ 12.10 hrs, Volume= 154 cf, Depth> 0.56"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
1,649	61	>75% Grass cover, Good, HSG B
1,652	98	Roofs, HSG B
3,301	80	Weighted Average
1,649		49.95% Pervious Area
1,652		50.05% Impervious Area

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

Summary for Subcatchment A4: To Roof Drain

Runoff = 0.09 cfs @ 12.08 hrs, Volume= 308 cf, Depth> 1.77"
Routed to Pond SIS2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
2,082	98	Roofs, HSG B
2,082		100.00% Impervious Area

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

Summary for Subcatchment A5: To Abutter

Runoff = 0.02 cfs @ 12.51 hrs, Volume= 224 cf, Depth> 0.10"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
23,897	61	>75% Grass cover, Good, HSG B
1,201	55	Woods, Good, HSG B
1,507	98	Roofs, HSG B
26,605	63	Weighted Average
25,098		94.34% Pervious Area
1,507		5.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0120	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.0	162	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	212	Total			

Summary for Subcatchment A6: To Abutter

Runoff = 0.02 cfs @ 12.42 hrs, Volume= 311 cf, Depth> 0.10"
Routed to Link AP2 : To Offsite

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
1,281	98	Paved parking, HSG B
25,992	61	>75% Grass cover, Good, HSG B
7,984	55	Woods, Good, HSG B
1,566	98	Roofs, HSG B
36,823	63	Weighted Average
33,976		92.27% Pervious Area
2,847		7.73% Impervious Area

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

Summary for Subcatchment A7: To Infiltration Basin

Runoff = 0.00 cfs @ 12.50 hrs, Volume= 111 cf, Depth> 0.07"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
18,226	61	>75% Grass cover, Good, HSG B
18,226		100.00% Pervious Area

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

Summary for Subcatchment A8: To Exterior

Runoff = 0.01 cfs @ 13.76 hrs, Volume= 154 cf, Depth> 0.06"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
476	98	Paved parking, HSG B
20,641	61	>75% Grass cover, Good, HSG B
9,484	55	Woods, Good, HSG B
30,601	60	Weighted Average
30,125		98.44% Pervious Area
476		1.56% Impervious Area

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

Summary for Subcatchment R1: To CB#1

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 841 cf, Depth> 0.90"
Routed to Pond CB1 : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
7,872	98	Paved parking, HSG B
3,280	61	>75% Grass cover, Good, HSG B
11,152	87	Weighted Average
3,280		29.41% Pervious Area
7,872		70.59% Impervious Area

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

Summary for Subcatchment R2: To CB-2

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 1,379 cf, Depth> 0.74"
Routed to Pond CB2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
8,993	98	Paved parking, HSG B
8,353	61	>75% Grass cover, Good, HSG B
4,923	98	Roofs, HSG B
22,269	84	Weighted Average
8,353		37.51% Pervious Area
13,916		62.49% Impervious Area

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

Summary for Subcatchment R3: To RGB

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 770 cf, Depth> 0.90"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
5,386	98	Paved parking, HSG B
2,948	61	>75% Grass cover, Good, HSG B
1,883	98	Roofs, HSG B
10,217	87	Weighted Average
2,948		28.85% Pervious Area
7,269		71.15% Impervious Area

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

Summary for Subcatchment R4: To CB-4

Runoff = 0.33 cfs @ 12.09 hrs, Volume= 1,052 cf, Depth> 0.85"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
7,280	98	Paved parking, HSG B
4,998	61	>75% Grass cover, Good, HSG B
2,609	98	Roofs, HSG B
14,887	86	Weighted Average
4,998		33.57% Pervious Area
9,889		66.43% Impervious Area

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

Summary for Subcatchment R5: To Foxhole

Runoff = 0.41 cfs @ 12.16 hrs, Volume= 1,588 cf, Depth> 0.56"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
11,765	98	Paved parking, HSG B
16,262	61	>75% Grass cover, Good, HSG B
5,940	98	Roofs, HSG B
33,967	80	Weighted Average
16,262		47.88% Pervious Area
17,705		52.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	68	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.9	187	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	327	Total			

Summary for Subcatchment R6: To CB-6

Runoff = 0.24 cfs @ 12.25 hrs, Volume= 1,128 cf, Depth> 0.52"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
7,642	98	Paved parking, HSG B
13,667	61	>75% Grass cover, Good, HSG B
4,707	98	Roofs, HSG B
26,016	79	Weighted Average
13,667		52.53% Pervious Area
12,349		47.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0030	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
3.8	158	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0130	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.0	248	Total			

Summary for Subcatchment R7: To CB-5

Runoff = 0.24 cfs @ 12.19 hrs, Volume= 1,096 cf, Depth> 0.41"
Routed to Pond CB5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
7,161	98	Paved parking, HSG B
19,224	61	>75% Grass cover, Good, HSG B
5,516	98	Roofs, HSG B
31,901	76	Weighted Average
19,224		60.26% Pervious Area
12,677		39.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.7	226	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
11.9	303	Total			

Summary for Subcatchment R8: To RGB 2

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 1,140 cf, Depth> 0.79"
Routed to Pond HW2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
6,729	98	Paved parking, HSG B
6,213	61	>75% Grass cover, Good, HSG B
4,288	98	Roofs, HSG B
17,230	85	Weighted Average
6,213		36.06% Pervious Area
11,017		63.94% Impervious Area

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

Summary for Subcatchment R9: To RGB 1

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 870 cf, Depth> 1.48"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
4,963	98	Paved parking, HSG B
630	61	>75% Grass cover, Good, HSG B
1,458	98	Roofs, HSG B
7,051	95	Weighted Average
630		8.93% Pervious Area
6,421		91.07% Impervious Area

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

Summary for Subcatchment S3: To Swale

Runoff = 0.04 cfs @ 12.13 hrs, Volume= 223 cf, Depth> 0.27"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
2,611	98	Paved parking, HSG B
7,466	61	>75% Grass cover, Good, HSG B
10,077	71	Weighted Average
7,466		74.09% Pervious Area
2,611		25.91% Impervious Area

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

Summary for Subcatchment S4: To Swale

Runoff = 0.01 cfs @ 12.12 hrs, Volume= 33 cf, Depth> 0.29"
Routed to Pond CB7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
392	98	Paved parking, HSG B
954	61	>75% Grass cover, Good, HSG B
1,346	72	Weighted Average
954		70.88% Pervious Area
392		29.12% Impervious Area

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

Summary for Subcatchment S8: To Swale

Runoff = 0.04 cfs @ 12.11 hrs, Volume= 152 cf, Depth> 0.35"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Inch Rainfall=2.00"

Area (sf)	CN	Description
1,788	98	Paved parking, HSG B
3,451	61	>75% Grass cover, Good, HSG B
5,239	74	Weighted Average
3,451		65.87% Pervious Area
1,788		34.13% Impervious Area

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

Summary for Reach SW3:

Inflow Area = 20,294 sf, 48.68% Impervious, Inflow Depth > 0.59" for 2-Inch event
Inflow = 0.29 cfs @ 12.10 hrs, Volume= 993 cf
Outflow = 0.20 cfs @ 12.19 hrs, Volume= 981 cf, Atten= 30%, Lag= 5.4 min
Routed to Pond CB7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 0.81 fps, Min. Travel Time= 10.3 min
Avg. Velocity = 0.32 fps, Avg. Travel Time= 26.5 min

Peak Storage= 124 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 2.28'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 28.59 cfs

1.50' x 1.50' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 501.0' Slope= 0.0100 '/'
Inlet Invert= 256.12', Outlet Invert= 251.10'

Summary for Reach SW8:

Inflow Area = 12,290 sf, 66.79% Impervious, Inflow Depth > 1.00" for 2-Inch event
Inflow = 0.31 cfs @ 12.09 hrs, Volume= 1,023 cf
Outflow = 0.18 cfs @ 12.20 hrs, Volume= 1,009 cf, Atten= 41%, Lag= 7.0 min
Routed to Pond HW2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 0.23 fps, Min. Travel Time= 16.8 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 44.6 min

Peak Storage= 183 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.32' , Surface Width= 3.42'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 4.93 cfs

1.50' x 1.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 232.0' Slope= 0.0102 '/'
Inlet Invert= 255.37', Outlet Invert= 253.00'

Summary for Pond AD:

Inflow Area = 2,664 sf, 0.00% Impervious, Inflow Depth > 0.07" for 2-Inch event
Inflow = 0.00 cfs @ 12.50 hrs, Volume= 16 cf
Outflow = 0.00 cfs @ 12.50 hrs, Volume= 16 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 12.50 hrs, Volume= 16 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.62' @ 12.50 hrs
Flood Elev= 250.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.60'	**8.0" Round Culvert** L= 26.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.60' / 248.47' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 12.50 hrs HW=248.62' TW=248.40' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.00 cfs @ 0.41 fps)

Summary for Pond CB1: CB#1

Inflow Area = 11,152 sf, 70.59% Impervious, Inflow Depth > 0.90" for 2-Inch event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 841 cf
Outflow = 0.27 cfs @ 12.09 hrs, Volume= 841 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.09 hrs, Volume= 841 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.28' @ 12.09 hrs
Flood Elev= 251.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	**12.0" Round Culvert** L= 93.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.00' / 248.53' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.27 cfs @ 12.09 hrs HW=249.28' TW=248.50' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.27 cfs @ 2.26 fps)

Summary for Pond CB2:

Inflow Area = 22,269 sf, 62.49% Impervious, Inflow Depth > 0.74" for 2-Inch event
Inflow = 0.43 cfs @ 12.09 hrs, Volume= 1,379 cf
Outflow = 0.43 cfs @ 12.09 hrs, Volume= 1,379 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.43 cfs @ 12.09 hrs, Volume= 1,379 cf
Routed to Pond SIS2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.53' @ 12.09 hrs
Flood Elev= 254.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.20'	**12.0" Round Culvert** L= 73.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.20' / 250.46' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.43 cfs @ 12.09 hrs HW=251.52' TW=249.06' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.43 cfs @ 1.94 fps)

Summary for Pond CB4:

Inflow Area = 14,887 sf, 66.43% Impervious, Inflow Depth > 0.85" for 2-Inch event
Inflow = 0.33 cfs @ 12.09 hrs, Volume= 1,052 cf
Outflow = 0.33 cfs @ 12.09 hrs, Volume= 1,052 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.09 hrs, Volume= 1,052 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.11' @ 12.09 hrs
Flood Elev= 250.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.83'	**12.0" Round Culvert** L= 14.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.83' / 247.55' S= 0.0193 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.09 hrs HW=248.11' TW=247.07' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.33 cfs @ 1.81 fps)

Summary for Pond CB5:

Inflow Area = 31,901 sf, 39.74% Impervious, Inflow Depth > 0.41" for 2-Inch event
Inflow = 0.24 cfs @ 12.19 hrs, Volume= 1,096 cf
Outflow = 0.24 cfs @ 12.19 hrs, Volume= 1,096 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.19 hrs, Volume= 1,096 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.55' @ 12.19 hrs
Flood Elev= 252.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	250.30'	**12.0" Round Culvert** L= 8.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 250.30' / 250.20' S= 0.0118 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.24 cfs @ 12.19 hrs HW=250.55' TW=250.07' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.24 cfs @ 2.27 fps)

Summary for Pond CB6:

Inflow Area = 26,016 sf, 47.47% Impervious, Inflow Depth > 0.52" for 2-Inch event
Inflow = 0.24 cfs @ 12.25 hrs, Volume= 1,128 cf
Outflow = 0.24 cfs @ 12.25 hrs, Volume= 1,128 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.25 hrs, Volume= 1,128 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.58' @ 12.25 hrs
Flood Elev= 250.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.30'	**12.0" Round Culvert** L= 6.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.30' / 248.26' S= 0.0063 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.24 cfs @ 12.25 hrs HW=248.58' TW=247.97' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.24 cfs @ 1.96 fps)

Summary for Pond CB7:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 0.56" for 2-Inch event
Inflow = 0.21 cfs @ 12.19 hrs, Volume= 1,014 cf
Outflow = 0.21 cfs @ 12.19 hrs, Volume= 1,014 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.19 hrs, Volume= 1,014 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.21' @ 12.19 hrs
Flood Elev= 253.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**18.0" Round Culvert** L= 88.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0057 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=0.21 cfs @ 12.19 hrs HW=248.21' TW=247.67' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.21 cfs @ 2.07 fps)

Summary for Pond DMH1:

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 0.74" for 2-Inch event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 857 cf
Outflow = 0.27 cfs @ 12.09 hrs, Volume= 857 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.09 hrs, Volume= 857 cf
Routed to Pond SIS1 : Stormtech

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.50' @ 12.09 hrs
Flood Elev= 252.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.40'	**12.0" Round MANIFOLD** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.40' / 248.35' S= 0.0083 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	248.28'	**24.0" Round ISOLATOR** L= 4.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.28' / 248.25' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.27 cfs @ 12.09 hrs HW=248.50' TW=247.77' (Dynamic Tailwater)
1=MANIFOLD (Barrel Controls 0.04 cfs @ 1.41 fps)
2=ISOLATOR (Barrel Controls 0.23 cfs @ 1.79 fps)

Summary for Pond DMH3:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 0.56" for 2-Inch event
Inflow = 0.21 cfs @ 12.19 hrs, Volume= 1,014 cf
Outflow = 0.21 cfs @ 12.19 hrs, Volume= 1,014 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.19 hrs, Volume= 1,014 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.67' @ 12.19 hrs
Flood Elev= 251.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.45'	**18.0" Round Culvert** L= 68.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.45' / 247.10' S= 0.0051 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=0.21 cfs @ 12.19 hrs HW=247.67' TW=247.07' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.21 cfs @ 2.00 fps)

Summary for Pond DMH4:

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=310)

Inflow Area = 36,527 sf, 55.19% Impervious, Inflow Depth > 0.68" for 2-Inch event
Inflow = 0.50 cfs @ 12.11 hrs, Volume= 2,066 cf
Outflow = 0.50 cfs @ 12.11 hrs, Volume= 2,066 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.11 hrs, Volume= 2,066 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.08' @ 12.11 hrs
Flood Elev= 251.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	246.60'	**24.0" Round Culvert** L= 34.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 246.60' / 246.43' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=0.50 cfs @ 12.11 hrs HW=247.08' TW=247.01' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.50 cfs @ 1.31 fps)

Summary for Pond DMH5:

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 0.87" for 2-Inch event
Inflow = 0.51 cfs @ 12.11 hrs, Volume= 2,150 cf
Outflow = 0.51 cfs @ 12.11 hrs, Volume= 2,150 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.11 hrs, Volume= 2,150 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.98' @ 12.11 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.65'	**15.0" Round Culvert** L= 116.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.65' / 250.46' S= 0.0102 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.50 cfs @ 12.11 hrs HW=251.98' TW=250.07' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.50 cfs @ 1.95 fps)

Summary for Pond DMH6:

Inflow Area = 61,421 sf, 51.94% Impervious, Inflow Depth > 0.63" for 2-Inch event
Inflow = 0.70 cfs @ 12.13 hrs, Volume= 3,245 cf
Outflow = 0.70 cfs @ 12.13 hrs, Volume= 3,245 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.13 hrs, Volume= 3,245 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.08' @ 12.13 hrs
Flood Elev= 252.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.71'	**18.0" Round Culvert** L= 160.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.71' / 248.10' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=0.69 cfs @ 12.13 hrs HW=250.08' TW=247.98' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.69 cfs @ 2.07 fps)

Summary for Pond DMH7:

Inflow Area = 87,437 sf, 50.61% Impervious, Inflow Depth > 0.60" for 2-Inch event
Inflow = 0.88 cfs @ 12.17 hrs, Volume= 4,373 cf
Outflow = 0.88 cfs @ 12.17 hrs, Volume= 4,373 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.88 cfs @ 12.17 hrs, Volume= 4,373 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.98' @ 12.17 hrs
Flood Elev= 251.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.60'	**24.0" Round Culvert** L= 111.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.60' / 246.65' S= 0.0085 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=0.88 cfs @ 12.17 hrs HW=247.98' TW=247.01' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.88 cfs @ 2.11 fps)

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth > 0.10" for 2-Inch event
Inflow = 0.02 cfs @ 12.51 hrs, Volume= 224 cf
Outflow = 0.01 cfs @ 12.70 hrs, Volume= 224 cf, Atten= 23%, Lag= 11.2 min
Discarded = 0.01 cfs @ 12.70 hrs, Volume= 224 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.82' @ 12.70 hrs Surf.Area= 213 sf Storage= 5 cf

Plug-Flow detention time= 3.3 min calculated for 223 cf (100% of inflow)
Center-of-Mass det. time= 2.4 min (994.7 - 992.2)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.01 cfs @ 12.70 hrs HW=249.82' (Free Discharge)
└—**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=249.80' TW=0.00' (Dynamic Tailwater)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond HW2:

[62] Hint: Exceeded Reach SW8 OUTLET depth by 0.06' @ 12.06 hrs

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 0.87" for 2-Inch event
Inflow = 0.51 cfs @ 12.11 hrs, Volume= 2,150 cf
Outflow = 0.51 cfs @ 12.11 hrs, Volume= 2,150 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.11 hrs, Volume= 2,150 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 253.33' @ 12.11 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0" Round Culvert** L= 14.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 251.75' S= 0.0856 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.50 cfs @ 12.11 hrs HW=253.33' TW=251.98' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.50 cfs @ 1.95 fps)

Summary for Pond IB1: Infiltration Basin #1

[80] Warning: Exceeded Pond DMH4 by 0.31' @ 2.00 hrs (0.76 cfs 2,649 cf)

Inflow Area = 200,508 sf, 48.93% Impervious, Inflow Depth > 0.49" for 2-Inch event
Inflow = 1.77 cfs @ 12.14 hrs, Volume= 8,137 cf
Outflow = 1.65 cfs @ 12.21 hrs, Volume= 8,135 cf, Atten= 7%, Lag= 3.8 min
Discarded = 1.65 cfs @ 12.21 hrs, Volume= 8,134 cf
Primary = 0.00 cfs @ 12.21 hrs, Volume= 1 cf
Routed to Link AP1 : To Wetlands
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.01' @ 12.21 hrs Surf.Area= 8,551 sf Storage= 112 cf

Plug-Flow detention time= 0.9 min calculated for 8,135 cf (100% of inflow)
Center-of-Mass det. time= 0.7 min (867.2 - 866.5)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	32,758 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
247.00	8,532	373.0	0	0	8,532
248.00	10,075	398.2	9,293	9,293	10,126
249.00	11,718	423.3	10,886	20,179	11,817
250.00	13,461	448.4	12,579	32,758	13,612

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 244.93' Phase-In= 0.01'
#2	Primary	247.00'	**18.0" Round Culvert** L= 62.2' Ke= 0.500 Inlet / Outlet Invert= 247.00' / 246.00' S= 0.0161 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#3	Device 2	247.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	248.20'	**2.0" x 2.0" Horiz. Orifice/Grate X 8.00 columns** X 8 rows C= 0.600 in 24.0" x 24.0" Grate (44% open area) Limited to weir flow at low heads
#5	Secondary	249.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=1.65 cfs @ 12.21 hrs HW=247.01' (Free Discharge)
└─**1=Exfiltration** (Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 12.21 hrs HW=247.01' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.00 cfs of 0.00 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.39 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SIS1: Stormtech

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 0.74" for 2-Inch event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 857 cf
Outflow = 0.24 cfs @ 12.13 hrs, Volume= 857 cf, Atten= 11%, Lag= 2.5 min
Discarded = 0.24 cfs @ 12.13 hrs, Volume= 857 cf
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.77' @ 12.13 hrs Surf.Area= 1,242 sf Storage= 10 cf

Plug-Flow detention time= 0.4 min calculated for 856 cf (100% of inflow)
Center-of-Mass det. time= 0.3 min (843.4 - 843.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	247.75'	1,151 cf	**20.50'W x 60.58'L x 3.50'H Field A** 4,346 cf Overall - 1,470 cf Embedded = 2,876 cf x 40.0% Voids
#2A	248.25'	1,470 cf	**ADS_StormTech SC-740 +Cap** x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
#3	248.00'	35 cf	**4.00'D x 2.75'H Vertical Cone/Cylinder**-Impervious
		2,655 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.75'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.51' Phase-In= 0.01'
#2	Secondary	250.60'	**2.0" x 2.0" Horiz. Orifice/Grate X 7.00 columns** X 7 rows C= 0.600 in 24.0" x 24.0" Grate (34% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.24 cfs @ 12.13 hrs HW=247.77' (Free Discharge)
1=Exfiltration (Controls 0.24 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.75' TW=0.00' (Dynamic Tailwater)
2=Orifice/Grate (Controls 0.00 cfs)

Pond SIS1: Stormtech - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

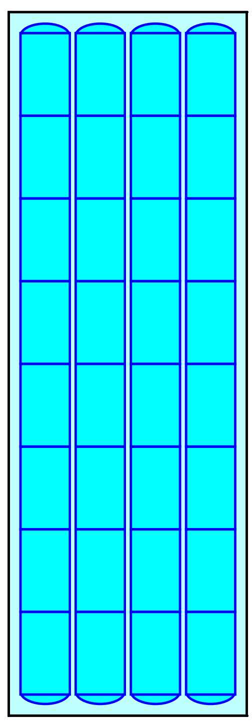
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

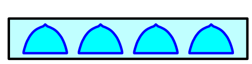
32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af
Overall Storage Efficiency = 60.3%
Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers
161.0 cy Field
106.5 cy Stone





Summary for Pond SIS2:

Inflow Area = 24,351 sf, 65.70% Impervious, Inflow Depth > 0.83" for 2-Inch event
Inflow = 0.52 cfs @ 12.09 hrs, Volume= 1,686 cf
Outflow = 0.35 cfs @ 12.19 hrs, Volume= 1,686 cf, Atten= 33%, Lag= 5.6 min
Discarded = 0.35 cfs @ 12.19 hrs, Volume= 1,686 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.10' @ 12.19 hrs Surf.Area= 1,735 sf Storage= 72 cf

Plug-Flow detention time= 0.9 min calculated for 1,685 cf (100% of inflow)
Center-of-Mass det. time= 0.8 min (837.9 - 837.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	249.00'	1,603 cf	**44.25'W x 39.22'L x 3.50'H Field A** 6,074 cf Overall - 2,067 cf Embedded = 4,006 cf x 40.0% Voids
#2A	249.50'	2,067 cf	**ADS_StormTech SC-740 +Cap** x 45 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 45 Chambers in 9 Rows
#3	250.80'	38 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder**
		3,708 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	253.50'	**2.0" x 2.0" Horiz. Orifice/Grate X 6.00 columns** X 6 rows C= 0.600 in 24.0" x 24.0" Grate (25% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.35 cfs @ 12.19 hrs HW=249.10' (Free Discharge)
└─**1=Exfiltration** (Controls 0.35 cfs)

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=249.00' TW=247.00' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS2: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

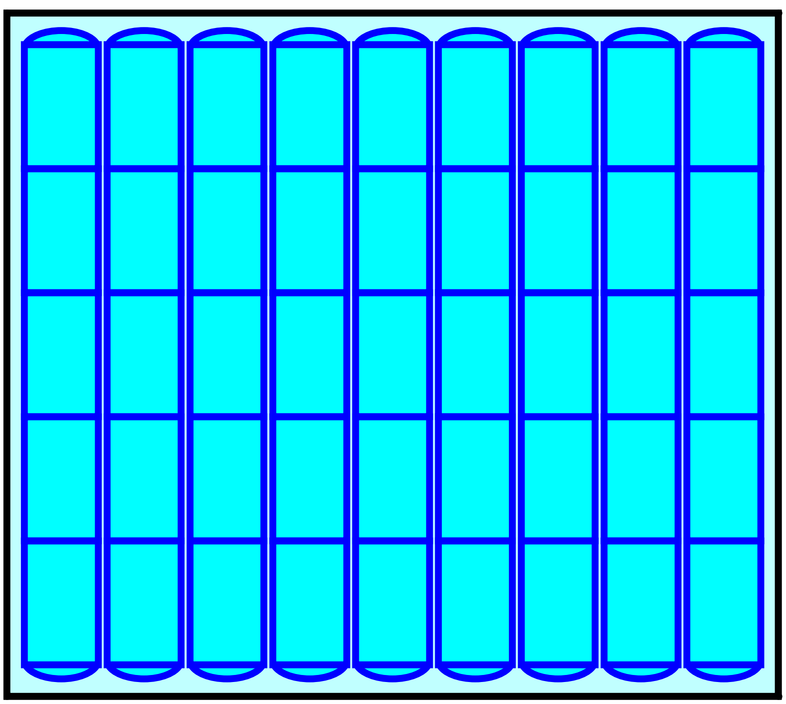
5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +12.0" End Stone x 2 = 39.22' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

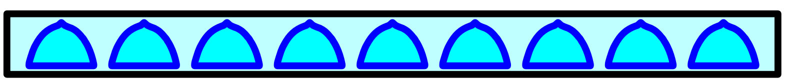
45 Chambers x 45.9 cf = 2,067.3 cf Chamber Storage

6,073.7 cf Field - 2,067.3 cf Chambers = 4,006.4 cf Stone x 40.0% Voids = 1,602.6 cf Stone Storage

Chamber Storage + Stone Storage = 3,669.9 cf = 0.084 af
Overall Storage Efficiency = 60.4%
Overall System Size = 39.22' x 44.25' x 3.50'

45 Chambers
225.0 cy Field
148.4 cy Stone





Summary for Link AP1: To Wetlands

Inflow Area =	236,171 sf,	42.45% Impervious,	Inflow Depth >	0.02"	for 2-Inch event
Inflow =	0.05 cfs @	12.10 hrs,	Volume=	320 cf	
Primary =	0.05 cfs @	12.10 hrs,	Volume=	320 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP2: To Offsite

Inflow Area =	36,823 sf,	7.73% Impervious,	Inflow Depth > 0.10"	for 2-Inch event
Inflow =	0.02 cfs @	12.42 hrs, Volume=	311 cf	
Primary =	0.02 cfs @	12.42 hrs, Volume=	311 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	26,605 sf,	5.66% Impervious,	Inflow Depth = 0.00"	for 2-Inch event	
Inflow =	0.00 cfs @	2.00 hrs,	Volume=	0 cf	
Primary =	0.00 cfs @	2.00 hrs,	Volume=	0 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: To Area Drain Runoff Area=2,664 sf 0.00% Impervious Runoff Depth>0.47"
Tc=6.0 min CN=61 Runoff=0.02 cfs 105 cf

Subcatchment A2: To Exterior Runoff Area=1,761 sf 0.00% Impervious Runoff Depth>0.47"
Tc=6.0 min CN=61 Runoff=0.01 cfs 69 cf

Subcatchment A3: To Exterior Runoff Area=3,301 sf 50.05% Impervious Runoff Depth>1.45"
Tc=6.0 min CN=80 Runoff=0.13 cfs 400 cf

Subcatchment A4: To Roof Drain Runoff Area=2,082 sf 100.00% Impervious Runoff Depth>3.03"
Tc=6.0 min CN=98 Runoff=0.15 cfs 526 cf

Subcatchment A5: To Abutter Runoff Area=26,605 sf 5.66% Impervious Runoff Depth>0.55"
Flow Length=212' Tc=11.8 min CN=63 Runoff=0.23 cfs 1,217 cf

Subcatchment A6: To Abutter Runoff Area=36,823 sf 7.73% Impervious Runoff Depth>0.55"
Tc=6.0 min CN=63 Runoff=0.40 cfs 1,688 cf

Subcatchment A7: To Infiltration Basin Runoff Area=18,226 sf 0.00% Impervious Runoff Depth>0.47"
Tc=6.0 min CN=61 Runoff=0.15 cfs 717 cf

Subcatchment A8: To Exterior Runoff Area=30,601 sf 1.56% Impervious Runoff Depth>0.44"
Tc=6.0 min CN=60 Runoff=0.22 cfs 1,109 cf

Subcatchment R1: To CB#1 Runoff Area=11,152 sf 70.59% Impervious Runoff Depth>1.97"
Tc=6.0 min CN=87 Runoff=0.59 cfs 1,835 cf

Subcatchment R2: To CB-2 Runoff Area=22,269 sf 62.49% Impervious Runoff Depth>1.74"
Tc=6.0 min CN=84 Runoff=1.04 cfs 3,227 cf

Subcatchment R3: To RGB Runoff Area=10,217 sf 71.15% Impervious Runoff Depth>1.97"
Tc=6.0 min CN=87 Runoff=0.54 cfs 1,681 cf

Subcatchment R4: To CB-4 Runoff Area=14,887 sf 66.43% Impervious Runoff Depth>1.89"
Tc=6.0 min CN=86 Runoff=0.76 cfs 2,350 cf

Subcatchment R5: To Foxhole Runoff Area=33,967 sf 52.12% Impervious Runoff Depth>1.45"
Flow Length=327' Tc=10.1 min CN=80 Runoff=1.14 cfs 4,112 cf

Subcatchment R6: To CB-6 Runoff Area=26,016 sf 47.47% Impervious Runoff Depth>1.38"
Flow Length=248' Tc=16.0 min CN=79 Runoff=0.71 cfs 3,001 cf

Subcatchment R7: To CB-5 Runoff Area=31,901 sf 39.74% Impervious Runoff Depth>1.20"
Flow Length=303' Tc=11.9 min CN=76 Runoff=0.82 cfs 3,184 cf

Subcatchment R8: To RGB 2 Runoff Area=17,230 sf 63.94% Impervious Runoff Depth>1.82"
Tc=6.0 min CN=85 Runoff=0.84 cfs 2,607 cf

Subcatchment R9: To RGB 1 Runoff Area=7,051 sf 91.07% Impervious Runoff Depth>2.71"
Tc=6.0 min CN=95 Runoff=0.49 cfs 1,593 cf

Subcatchment S3: To Swale Runoff Area=10,077 sf 25.91% Impervious Runoff Depth>0.92"
Tc=6.0 min CN=71 Runoff=0.23 cfs 772 cf

Subcatchment S4: To Swale Runoff Area=1,346 sf 29.12% Impervious Runoff Depth>0.97"
Tc=6.0 min CN=72 Runoff=0.03 cfs 109 cf

Subcatchment S8: To Swale Runoff Area=5,239 sf 34.13% Impervious Runoff Depth>1.08"
Tc=6.0 min CN=74 Runoff=0.15 cfs 473 cf

Reach SW3: Avg. Flow Depth=0.24' Max Vel=1.14 fps Inflow=0.77 cfs 2,453 cf
n=0.041 L=501.0' S=0.0100 '/' Capacity=28.59 cfs Outflow=0.60 cfs 2,436 cf

Reach SW8: Avg. Flow Depth=0.48' Max Vel=0.29 fps Inflow=0.63 cfs 2,066 cf
n=0.240 L=232.0' S=0.0102 '/' Capacity=4.93 cfs Outflow=0.41 cfs 2,045 cf

Pond AD: Peak Elev=248.70' Inflow=0.02 cfs 105 cf
8.0" Round Culvert n=0.011 L=26.4' S=0.0049 '/' Outflow=0.02 cfs 105 cf

Pond CB1: CB#1 Peak Elev=249.42' Inflow=0.59 cfs 1,835 cf
12.0" Round Culvert n=0.011 L=93.3' S=0.0050 '/' Outflow=0.59 cfs 1,835 cf

Pond CB2: Peak Elev=251.73' Inflow=1.04 cfs 3,227 cf
12.0" Round Culvert n=0.011 L=73.9' S=0.0100 '/' Outflow=1.04 cfs 3,227 cf

Pond CB4: Peak Elev=248.27' Inflow=0.76 cfs 2,350 cf
12.0" Round Culvert n=0.011 L=14.5' S=0.0193 '/' Outflow=0.76 cfs 2,350 cf

Pond CB5: Peak Elev=250.82' Inflow=0.82 cfs 3,184 cf
12.0" Round Culvert n=0.011 L=8.5' S=0.0118 '/' Outflow=0.82 cfs 3,184 cf

Pond CB6: Peak Elev=248.81' Inflow=0.71 cfs 3,001 cf
12.0" Round Culvert n=0.011 L=6.3' S=0.0063 '/' Outflow=0.71 cfs 3,001 cf

Pond CB7: Peak Elev=248.38' Inflow=0.63 cfs 2,545 cf
18.0" Round Culvert n=0.011 L=88.3' S=0.0057 '/' Outflow=0.63 cfs 2,545 cf

Pond DMH1: Peak Elev=248.61' Inflow=0.61 cfs 1,940 cf
Outflow=0.61 cfs 1,940 cf

Pond DMH3: Peak Elev=247.83' Inflow=0.63 cfs 2,545 cf
18.0" Round Culvert n=0.011 L=68.2' S=0.0051 '/' Outflow=0.63 cfs 2,545 cf

Pond DMH4: Peak Elev=247.37' Inflow=1.31 cfs 4,895 cf
24.0" Round Culvert n=0.011 L=34.6' S=0.0049 '/' Outflow=1.32 cfs 4,894 cf

Pond DMH5: Peak Elev=252.17' Inflow=1.17 cfs 4,652 cf
15.0" Round Culvert n=0.011 L=116.8' S=0.0102 '/' Outflow=1.17 cfs 4,652 cf

Pond DMH6: Peak Elev=250.34' Inflow=1.89 cfs 7,836 cf
18.0" Round Culvert n=0.011 L=160.8' S=0.0100 '/' Outflow=1.89 cfs 7,836 cf

Pond DMH7: Peak Elev=248.26' Inflow=2.48 cfs 10,837 cf
24.0" Round Culvert n=0.011 L=111.5' S=0.0085 '/' Outflow=2.48 cfs 10,837 cf

Pond EX: Existing Abutter Depression Peak Elev=250.21' Storage=263 cf Inflow=0.23 cfs 1,217 cf
Discarded=0.08 cfs 1,215 cf Primary=0.00 cfs 0 cf Outflow=0.08 cfs 1,215 cf

Pond HW2: Peak Elev=253.52' Inflow=1.17 cfs 4,652 cf
15.0" Round Culvert n=0.013 L=14.6' S=0.0856 '/' Outflow=1.17 cfs 4,652 cf

Pond IB1: Infiltration Basin #1 Peak Elev=247.35' Storage=3,113 cf Inflow=5.02 cfs 20,561 cf
Discarded=2.02 cfs 19,852 cf Primary=0.30 cfs 704 cf Secondary=0.00 cfs 0 cf Outflow=2.32 cfs 20,556 cf

Pond SIS1: Stormtech Peak Elev=248.15' Storage=200 cf Inflow=0.61 cfs 1,940 cf
Discarded=0.28 cfs 1,940 cf Secondary=0.00 cfs 0 cf Outflow=0.28 cfs 1,940 cf

Pond SIS2: Peak Elev=249.65' Storage=562 cf Inflow=1.19 cfs 3,754 cf
Discarded=0.44 cfs 3,753 cf Primary=0.00 cfs 0 cf Outflow=0.44 cfs 3,753 cf

Link AP1: To Wetlands Inflow=0.48 cfs 2,283 cf
Primary=0.48 cfs 2,283 cf

Link AP2: To Offsite Inflow=0.40 cfs 1,688 cf
Primary=0.40 cfs 1,688 cf

Link AP3: Abutter Depression Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 313,415 sf Runoff Volume = 30,775 cf Average Runoff Depth = 1.18"
64.11% Pervious = 200,945 sf 35.89% Impervious = 112,470 sf

Summary for Subcatchment A1: To Area Drain

Runoff = 0.02 cfs @ 12.12 hrs, Volume= 105 cf, Depth> 0.47"
Routed to Pond AD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
2,664	61	>75% Grass cover, Good, HSG B
2,664		100.00% Pervious Area

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

Summary for Subcatchment A2: To Exterior

Runoff = 0.01 cfs @ 12.12 hrs, Volume= 69 cf, Depth> 0.47"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
1,761	61	>75% Grass cover, Good, HSG B
1,761		100.00% Pervious Area

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

Summary for Subcatchment A3: To Exterior

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 400 cf, Depth> 1.45"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
1,649	61	>75% Grass cover, Good, HSG B
1,652	98	Roofs, HSG B
3,301	80	Weighted Average
1,649		49.95% Pervious Area
1,652		50.05% Impervious Area

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

Summary for Subcatchment A4: To Roof Drain

Runoff = 0.15 cfs @ 12.08 hrs, Volume= 526 cf, Depth> 3.03"
Routed to Pond SIS2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
2,082	98	Roofs, HSG B
2,082		100.00% Impervious Area

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

Summary for Subcatchment A5: To Abutter

Runoff = 0.23 cfs @ 12.20 hrs, Volume= 1,217 cf, Depth> 0.55"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
23,897	61	>75% Grass cover, Good, HSG B
1,201	55	Woods, Good, HSG B
1,507	98	Roofs, HSG B
26,605	63	Weighted Average
25,098		94.34% Pervious Area
1,507		5.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0120	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.0	162	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	212	Total			

Summary for Subcatchment A6: To Abutter

Runoff = 0.40 cfs @ 12.11 hrs, Volume= 1,688 cf, Depth> 0.55"
Routed to Link AP2 : To Offsite

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
1,281	98	Paved parking, HSG B
25,992	61	>75% Grass cover, Good, HSG B
7,984	55	Woods, Good, HSG B
1,566	98	Roofs, HSG B
36,823	63	Weighted Average
33,976		92.27% Pervious Area
2,847		7.73% Impervious Area

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

Summary for Subcatchment A7: To Infiltration Basin

Runoff = 0.15 cfs @ 12.12 hrs, Volume= 717 cf, Depth> 0.47"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
18,226	61	>75% Grass cover, Good, HSG B
18,226		100.00% Pervious Area

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

Summary for Subcatchment A8: To Exterior

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 1,109 cf, Depth> 0.44"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
476	98	Paved parking, HSG B
20,641	61	>75% Grass cover, Good, HSG B
9,484	55	Woods, Good, HSG B
30,601	60	Weighted Average
30,125		98.44% Pervious Area
476		1.56% Impervious Area

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

Summary for Subcatchment R1: To CB#1

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 1,835 cf, Depth> 1.97"
Routed to Pond CB1 : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
7,872	98	Paved parking, HSG B
3,280	61	>75% Grass cover, Good, HSG B
11,152	87	Weighted Average
3,280		29.41% Pervious Area
7,872		70.59% Impervious Area

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

Summary for Subcatchment R2: To CB-2

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 3,227 cf, Depth> 1.74"
Routed to Pond CB2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
8,993	98	Paved parking, HSG B
8,353	61	>75% Grass cover, Good, HSG B
4,923	98	Roofs, HSG B
22,269	84	Weighted Average
8,353		37.51% Pervious Area
13,916		62.49% Impervious Area

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

Summary for Subcatchment R3: To RGB

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 1,681 cf, Depth> 1.97"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
5,386	98	Paved parking, HSG B
2,948	61	>75% Grass cover, Good, HSG B
1,883	98	Roofs, HSG B
10,217	87	Weighted Average
2,948		28.85% Pervious Area
7,269		71.15% Impervious Area

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

Summary for Subcatchment R4: To CB-4

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 2,350 cf, Depth> 1.89"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
7,280	98	Paved parking, HSG B
4,998	61	>75% Grass cover, Good, HSG B
2,609	98	Roofs, HSG B
14,887	86	Weighted Average
4,998		33.57% Pervious Area
9,889		66.43% Impervious Area

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

Summary for Subcatchment R5: To Foxhole

Runoff = 1.14 cfs @ 12.15 hrs, Volume= 4,112 cf, Depth> 1.45"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
11,765	98	Paved parking, HSG B
16,262	61	>75% Grass cover, Good, HSG B
5,940	98	Roofs, HSG B
33,967	80	Weighted Average
16,262		47.88% Pervious Area
17,705		52.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	68	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.9	187	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	327	Total			

Summary for Subcatchment R6: To CB-6

Runoff = 0.71 cfs @ 12.23 hrs, Volume= 3,001 cf, Depth> 1.38"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
7,642	98	Paved parking, HSG B
13,667	61	>75% Grass cover, Good, HSG B
4,707	98	Roofs, HSG B
26,016	79	Weighted Average
13,667		52.53% Pervious Area
12,349		47.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0030	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
3.8	158	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0130	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.0	248	Total			

Summary for Subcatchment R7: To CB-5

Runoff = 0.82 cfs @ 12.17 hrs, Volume= 3,184 cf, Depth> 1.20"
Routed to Pond CB5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
7,161	98	Paved parking, HSG B
19,224	61	>75% Grass cover, Good, HSG B
5,516	98	Roofs, HSG B
31,901	76	Weighted Average
19,224		60.26% Pervious Area
12,677		39.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.7	226	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
11.9	303	Total			

Summary for Subcatchment R8: To RGB 2

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 2,607 cf, Depth> 1.82"
Routed to Pond HW2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
6,729	98	Paved parking, HSG B
6,213	61	>75% Grass cover, Good, HSG B
4,288	98	Roofs, HSG B
17,230	85	Weighted Average
6,213		36.06% Pervious Area
11,017		63.94% Impervious Area

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

Summary for Subcatchment R9: To RGB 1

Runoff = 0.49 cfs @ 12.08 hrs, Volume= 1,593 cf, Depth> 2.71"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
4,963	98	Paved parking, HSG B
630	61	>75% Grass cover, Good, HSG B
1,458	98	Roofs, HSG B
7,051	95	Weighted Average
630		8.93% Pervious Area
6,421		91.07% Impervious Area

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

Summary for Subcatchment S3: To Swale

Runoff = 0.23 cfs @ 12.10 hrs, Volume= 772 cf, Depth> 0.92"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
2,611	98	Paved parking, HSG B
7,466	61	>75% Grass cover, Good, HSG B
10,077	71	Weighted Average
7,466		74.09% Pervious Area
2,611		25.91% Impervious Area

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

Summary for Subcatchment S4: To Swale

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 109 cf, Depth> 0.97"
Routed to Pond CB7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
392	98	Paved parking, HSG B
954	61	>75% Grass cover, Good, HSG B
1,346	72	Weighted Average
954		70.88% Pervious Area
392		29.12% Impervious Area

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

Summary for Subcatchment S8: To Swale

Runoff = 0.15 cfs @ 12.10 hrs, Volume= 473 cf, Depth> 1.08"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-yr Rainfall=3.27"

Area (sf)	CN	Description
1,788	98	Paved parking, HSG B
3,451	61	>75% Grass cover, Good, HSG B
5,239	74	Weighted Average
3,451		65.87% Pervious Area
1,788		34.13% Impervious Area

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

Summary for Reach SW3:

Inflow Area = 20,294 sf, 48.68% Impervious, Inflow Depth > 1.45" for 2-yr event
Inflow = 0.77 cfs @ 12.09 hrs, Volume= 2,453 cf
Outflow = 0.60 cfs @ 12.16 hrs, Volume= 2,436 cf, Atten= 22%, Lag= 4.0 min
Routed to Pond CB7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 1.14 fps, Min. Travel Time= 7.3 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 21.1 min

Peak Storage= 264 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 2.93'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 28.59 cfs

1.50' x 1.50' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 501.0' Slope= 0.0100 '/'
Inlet Invert= 256.12', Outlet Invert= 251.10'

Summary for Reach SW8:

Inflow Area = 12,290 sf, 66.79% Impervious, Inflow Depth > 2.02" for 2-yr event
Inflow = 0.63 cfs @ 12.09 hrs, Volume= 2,066 cf
Outflow = 0.41 cfs @ 12.18 hrs, Volume= 2,045 cf, Atten= 36%, Lag= 5.8 min
Routed to Pond HW2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 0.29 fps, Min. Travel Time= 13.5 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 37.0 min

Peak Storage= 328 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 4.38'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 4.93 cfs

1.50' x 1.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 232.0' Slope= 0.0102 '/'
Inlet Invert= 255.37', Outlet Invert= 253.00'

Summary for Pond AD:

Inflow Area = 2,664 sf, 0.00% Impervious, Inflow Depth > 0.47" for 2-yr event
Inflow = 0.02 cfs @ 12.12 hrs, Volume= 105 cf
Outflow = 0.02 cfs @ 12.12 hrs, Volume= 105 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.12 hrs, Volume= 105 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.70' @ 12.11 hrs
Flood Elev= 250.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.60'	**8.0" Round Culvert** L= 26.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.60' / 248.47' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.35 sf

Primary OutFlow Max=0.02 cfs @ 12.12 hrs HW=248.70' TW=248.60' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.02 cfs @ 0.99 fps)

Summary for Pond CB1: CB#1

Inflow Area = 11,152 sf, 70.59% Impervious, Inflow Depth > 1.97" for 2-yr event
Inflow = 0.59 cfs @ 12.09 hrs, Volume= 1,835 cf
Outflow = 0.59 cfs @ 12.09 hrs, Volume= 1,835 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.09 hrs, Volume= 1,835 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.42' @ 12.09 hrs
Flood Elev= 251.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	**12.0" Round Culvert** L= 93.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.00' / 248.53' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.59 cfs @ 12.09 hrs HW=249.42' TW=248.61' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.59 cfs @ 2.78 fps)

Summary for Pond CB2:

Inflow Area = 22,269 sf, 62.49% Impervious, Inflow Depth > 1.74" for 2-yr event
Inflow = 1.04 cfs @ 12.09 hrs, Volume= 3,227 cf
Outflow = 1.04 cfs @ 12.09 hrs, Volume= 3,227 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.04 cfs @ 12.09 hrs, Volume= 3,227 cf
Routed to Pond SIS2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.73' @ 12.09 hrs
Flood Elev= 254.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.20'	**12.0" Round Culvert** L= 73.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.20' / 250.46' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.03 cfs @ 12.09 hrs HW=251.73' TW=249.39' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.03 cfs @ 2.47 fps)

Summary for Pond CB4:

Inflow Area = 14,887 sf, 66.43% Impervious, Inflow Depth > 1.89" for 2-yr event
Inflow = 0.76 cfs @ 12.09 hrs, Volume= 2,350 cf
Outflow = 0.76 cfs @ 12.09 hrs, Volume= 2,350 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 12.09 hrs, Volume= 2,350 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.27' @ 12.09 hrs
Flood Elev= 250.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.83'	**12.0" Round Culvert** L= 14.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.83' / 247.55' S= 0.0193 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.75 cfs @ 12.09 hrs HW=248.27' TW=247.25' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.75 cfs @ 2.26 fps)

Summary for Pond CB5:

Inflow Area = 31,901 sf, 39.74% Impervious, Inflow Depth > 1.20" for 2-yr event
Inflow = 0.82 cfs @ 12.17 hrs, Volume= 3,184 cf
Outflow = 0.82 cfs @ 12.17 hrs, Volume= 3,184 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.17 hrs, Volume= 3,184 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.82' @ 12.17 hrs
Flood Elev= 252.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	250.30'	**12.0" Round Culvert** L= 8.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 250.30' / 250.20' S= 0.0118 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.82 cfs @ 12.17 hrs HW=250.82' TW=250.32' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.82 cfs @ 2.91 fps)

Summary for Pond CB6:

Inflow Area =	26,016 sf,	47.47% Impervious,	Inflow Depth > 1.38"	for 2-yr event	
Inflow =	0.71 cfs @	12.23 hrs,	Volume=	3,001 cf	
Outflow =	0.71 cfs @	12.23 hrs,	Volume=	3,001 cf,	Atten= 0%, Lag= 0.0 min
Primary =	0.71 cfs @	12.23 hrs,	Volume=	3,001 cf	

Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.81' @ 12.23 hrs
Flood Elev= 250.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.30'	**12.0" Round Culvert** L= 6.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.30' / 248.26' S= 0.0063 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.23 hrs HW=248.81' TW=248.23' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.70 cfs @ 2.54 fps)

Summary for Pond CB7:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 1.41" for 2-yr event
Inflow = 0.63 cfs @ 12.15 hrs, Volume= 2,545 cf
Outflow = 0.63 cfs @ 12.15 hrs, Volume= 2,545 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.15 hrs, Volume= 2,545 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.38' @ 12.15 hrs
Flood Elev= 253.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**18.0" Round Culvert** L= 88.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0057 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=0.63 cfs @ 12.15 hrs HW=248.38' TW=247.83' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.63 cfs @ 2.71 fps)

Summary for Pond DMH1:

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 1.69" for 2-yr event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 1,940 cf
Outflow = 0.61 cfs @ 12.09 hrs, Volume= 1,940 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.09 hrs, Volume= 1,940 cf
Routed to Pond SIS1 : Stormtech

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.61' @ 12.09 hrs
Flood Elev= 252.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.40'	**12.0" Round MANIFOLD** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.40' / 248.35' S= 0.0083 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	248.28'	**24.0" Round ISOLATOR** L= 4.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.28' / 248.25' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.61 cfs @ 12.09 hrs HW=248.61' TW=247.95' (Dynamic Tailwater)
1=MANIFOLD (Barrel Controls 0.14 cfs @ 1.86 fps)
2=ISOLATOR (Barrel Controls 0.46 cfs @ 2.09 fps)

Summary for Pond DMH3:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 1.41" for 2-yr event
Inflow = 0.63 cfs @ 12.15 hrs, Volume= 2,545 cf
Outflow = 0.63 cfs @ 12.15 hrs, Volume= 2,545 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.15 hrs, Volume= 2,545 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.83' @ 12.15 hrs
Flood Elev= 251.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.45'	**18.0" Round Culvert** L= 68.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.45' / 247.10' S= 0.0051 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=0.63 cfs @ 12.15 hrs HW=247.83' TW=247.29' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.63 cfs @ 2.67 fps)

Summary for Pond DMH4:

Inflow Area = 36,527 sf, 55.19% Impervious, Inflow Depth > 1.61" for 2-yr event
Inflow = 1.31 cfs @ 12.11 hrs, Volume= 4,895 cf
Outflow = 1.32 cfs @ 12.11 hrs, Volume= 4,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.11 hrs, Volume= 4,894 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.37' @ 12.45 hrs
Flood Elev= 251.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	246.60'	**24.0" Round Culvert** L= 34.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 246.60' / 246.43' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=1.31 cfs @ 12.11 hrs HW=247.27' TW=247.11' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.31 cfs @ 2.13 fps)

Summary for Pond DMH5:

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 1.89" for 2-yr event
Inflow = 1.17 cfs @ 12.10 hrs, Volume= 4,652 cf
Outflow = 1.17 cfs @ 12.10 hrs, Volume= 4,652 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.10 hrs, Volume= 4,652 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 252.17' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.65'	**15.0" Round Culvert** L= 116.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.65' / 250.46' S= 0.0102 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=1.17 cfs @ 12.10 hrs HW=252.17' TW=250.33' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.17 cfs @ 2.45 fps)

Summary for Pond DMH6:

Inflow Area = 61,421 sf, 51.94% Impervious, Inflow Depth > 1.53" for 2-yr event
Inflow = 1.89 cfs @ 12.13 hrs, Volume= 7,836 cf
Outflow = 1.89 cfs @ 12.13 hrs, Volume= 7,836 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.89 cfs @ 12.13 hrs, Volume= 7,836 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.34' @ 12.13 hrs
Flood Elev= 252.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.71'	**18.0" Round Culvert** L= 160.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.71' / 248.10' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=1.89 cfs @ 12.13 hrs HW=250.34' TW=248.25' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.89 cfs @ 2.70 fps)

Summary for Pond DMH7:

Inflow Area = 87,437 sf, 50.61% Impervious, Inflow Depth > 1.49" for 2-yr event
Inflow = 2.48 cfs @ 12.15 hrs, Volume= 10,837 cf
Outflow = 2.48 cfs @ 12.15 hrs, Volume= 10,837 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.48 cfs @ 12.15 hrs, Volume= 10,837 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.26' @ 12.15 hrs
Flood Elev= 251.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.60'	**24.0" Round Culvert** L= 111.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.60' / 246.65' S= 0.0085 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=2.47 cfs @ 12.15 hrs HW=248.26' TW=247.17' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.47 cfs @ 2.76 fps)

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth > 0.55" for 2-yr event
Inflow = 0.23 cfs @ 12.20 hrs, Volume= 1,217 cf
Outflow = 0.08 cfs @ 12.73 hrs, Volume= 1,215 cf, Atten= 67%, Lag= 31.3 min
Discarded = 0.08 cfs @ 12.73 hrs, Volume= 1,215 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.21' @ 12.73 hrs Surf.Area= 1,289 sf Storage= 263 cf

Plug-Flow detention time= 36.6 min calculated for 1,215 cf (100% of inflow)
Center-of-Mass det. time= 36.0 min (941.3 - 905.3)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.08 cfs @ 12.73 hrs HW=250.21' (Free Discharge)
└─**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=249.80' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond HW2:

[62] Hint: Exceeded Reach SW8 OUTLET depth by 0.10' @ 12.06 hrs

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 1.89" for 2-yr event
Inflow = 1.17 cfs @ 12.10 hrs, Volume= 4,652 cf
Outflow = 1.17 cfs @ 12.10 hrs, Volume= 4,652 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.10 hrs, Volume= 4,652 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 253.52' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0" Round Culvert** L= 14.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 251.75' S= 0.0856 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.17 cfs @ 12.10 hrs HW=253.52' TW=252.17' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.17 cfs @ 2.45 fps)

Summary for Pond IB1: Infiltration Basin #1

[80] Warning: Exceeded Pond DMH4 by 0.31' @ 2.00 hrs (0.76 cfs 2,021 cf)

Inflow Area = 200,508 sf, 48.93% Impervious, Inflow Depth > 1.23" for 2-yr event
Inflow = 5.02 cfs @ 12.14 hrs, Volume= 20,561 cf
Outflow = 2.32 cfs @ 12.48 hrs, Volume= 20,556 cf, Atten= 54%, Lag= 20.7 min
Discarded = 2.02 cfs @ 12.48 hrs, Volume= 19,852 cf
Primary = 0.30 cfs @ 12.48 hrs, Volume= 704 cf
Routed to Link AP1 : To Wetlands
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.35' @ 12.48 hrs Surf.Area= 9,063 sf Storage= 3,113 cf

Plug-Flow detention time= 7.7 min calculated for 20,537 cf (100% of inflow)
Center-of-Mass det. time= 7.6 min (849.6 - 842.0)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	32,758 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
247.00	8,532	373.0	0	0	8,532
248.00	10,075	398.2	9,293	9,293	10,126
249.00	11,718	423.3	10,886	20,179	11,817
250.00	13,461	448.4	12,579	32,758	13,612

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 244.93' Phase-In= 0.01'
#2	Primary	247.00'	**18.0" Round Culvert** L= 62.2' Ke= 0.500 Inlet / Outlet Invert= 247.00' / 246.00' S= 0.0161 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#3	Device 2	247.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	248.20'	**2.0" x 2.0" Horiz. Orifice/Grate X 8.00 columns** X 8 rows C= 0.600 in 24.0" x 24.0" Grate (44% open area) Limited to weir flow at low heads
#5	Secondary	249.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=2.02 cfs @ 12.48 hrs HW=247.35' (Free Discharge)
└─**1=Exfiltration** (Controls 2.02 cfs)

Primary OutFlow Max=0.30 cfs @ 12.48 hrs HW=247.35' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.30 cfs of 0.64 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 0.30 cfs @ 2.03 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SIS1: Stormtech

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 1.69" for 2-yr event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 1,940 cf
Outflow = 0.28 cfs @ 12.29 hrs, Volume= 1,940 cf, Atten= 54%, Lag= 11.8 min
Discarded = 0.28 cfs @ 12.29 hrs, Volume= 1,940 cf
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.15' @ 12.29 hrs Surf.Area= 1,242 sf Storage= 200 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.2 min (825.6 - 822.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	247.75'	1,151 cf	**20.50'W x 60.58'L x 3.50'H Field A** 4,346 cf Overall - 1,470 cf Embedded = 2,876 cf x 40.0% Voids
#2A	248.25'	1,470 cf	**ADS_StormTech SC-740 +Cap** x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
#3	248.00'	35 cf	**4.00'D x 2.75'H Vertical Cone/Cylinder**-Impervious
		2,655 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.75'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.51' Phase-In= 0.01'
#2	Secondary	250.60'	**2.0" x 2.0" Horiz. Orifice/Grate X 7.00 columns** X 7 rows C= 0.600 in 24.0" x 24.0" Grate (34% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.28 cfs @ 12.29 hrs HW=248.15' (Free Discharge)
└─**1=Exfiltration** (Controls 0.28 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.75' TW=0.00' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS1: Stormtech - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

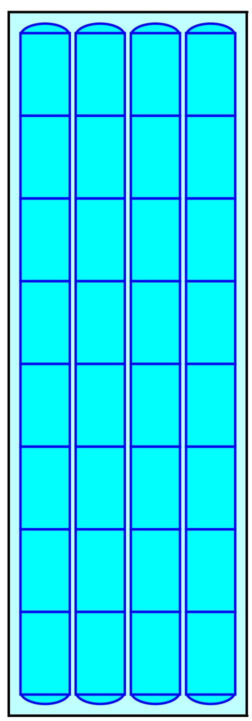
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

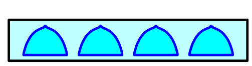
32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af
Overall Storage Efficiency = 60.3%
Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers
161.0 cy Field
106.5 cy Stone





Summary for Pond SIS2:

Inflow Area = 24,351 sf, 65.70% Impervious, Inflow Depth > 1.85" for 2-yr event
Inflow = 1.19 cfs @ 12.09 hrs, Volume= 3,754 cf
Outflow = 0.44 cfs @ 12.37 hrs, Volume= 3,753 cf, Atten= 63%, Lag= 16.7 min
Discarded = 0.44 cfs @ 12.37 hrs, Volume= 3,753 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.65' @ 12.37 hrs Surf.Area= 1,735 sf Storage= 562 cf

Plug-Flow detention time= 6.4 min calculated for 3,750 cf (100% of inflow)
Center-of-Mass det. time= 6.3 min (824.1 - 817.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	249.00'	1,603 cf	**44.25'W x 39.22'L x 3.50'H Field A** 6,074 cf Overall - 2,067 cf Embedded = 4,006 cf x 40.0% Voids
#2A	249.50'	2,067 cf	**ADS_StormTech SC-740 +Cap** x 45 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 45 Chambers in 9 Rows
#3	250.80'	38 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder**
		3,708 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	253.50'	**2.0" x 2.0" Horiz. Orifice/Grate X 6.00 columns** X 6 rows C= 0.600 in 24.0" x 24.0" Grate (25% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.44 cfs @ 12.37 hrs HW=249.65' (Free Discharge)
└─**1=Exfiltration** (Controls 0.44 cfs)

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=249.00' TW=247.00' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS2: - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

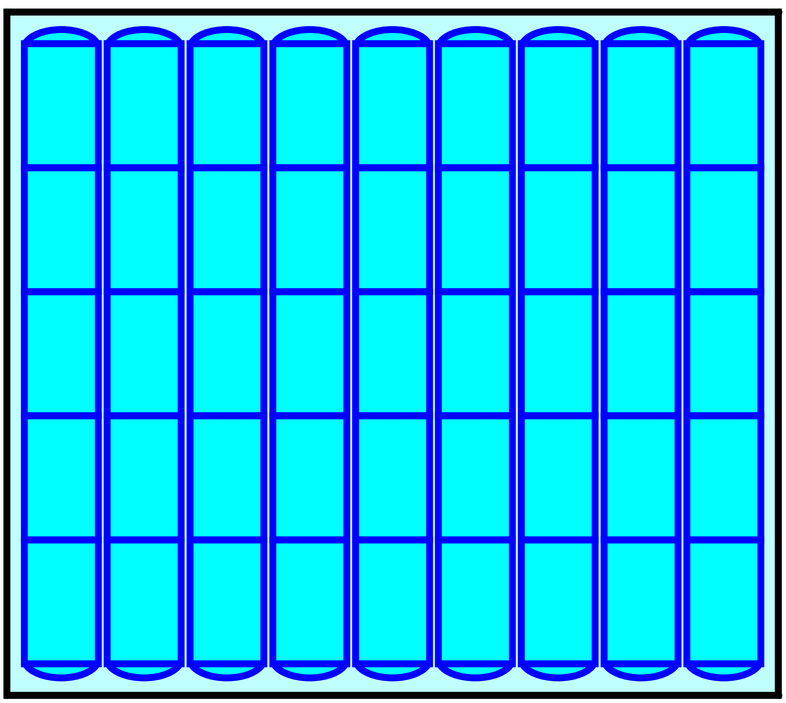
5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +12.0" End Stone x 2 = 39.22' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

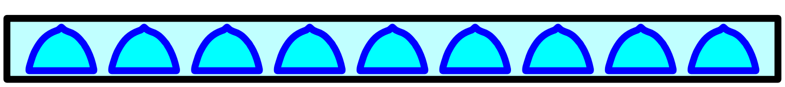
45 Chambers x 45.9 cf = 2,067.3 cf Chamber Storage

6,073.7 cf Field - 2,067.3 cf Chambers = 4,006.4 cf Stone x 40.0% Voids = 1,602.6 cf Stone Storage

Chamber Storage + Stone Storage = 3,669.9 cf = 0.084 af
Overall Storage Efficiency = 60.4%
Overall System Size = 39.22' x 44.25' x 3.50'

45 Chambers
225.0 cy Field
148.4 cy Stone





Summary for Link AP1: To Wetlands

Inflow Area =	236,171 sf,	42.45% Impervious,	Inflow Depth > 0.12"	for 2-yr event
Inflow =	0.48 cfs @	12.37 hrs, Volume=	2,283 cf	
Primary =	0.48 cfs @	12.37 hrs, Volume=	2,283 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP2: To Offsite

Inflow Area =	36,823 sf,	7.73% Impervious,	Inflow Depth > 0.55"	for 2-yr event
Inflow =	0.40 cfs @	12.11 hrs, Volume=	1,688 cf	
Primary =	0.40 cfs @	12.11 hrs, Volume=	1,688 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP3: Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: To Area Drain	Runoff Area=2,664 sf 0.00% Impervious Runoff Depth>1.32" Tc=6.0 min CN=61 Runoff=0.09 cfs 293 cf
Subcatchment A2: To Exterior	Runoff Area=1,761 sf 0.00% Impervious Runoff Depth>1.32" Tc=6.0 min CN=61 Runoff=0.06 cfs 194 cf
Subcatchment A3: To Exterior	Runoff Area=3,301 sf 50.05% Impervious Runoff Depth>2.82" Tc=6.0 min CN=80 Runoff=0.25 cfs 776 cf
Subcatchment A4: To Roof Drain	Runoff Area=2,082 sf 100.00% Impervious Runoff Depth>4.67" Tc=6.0 min CN=98 Runoff=0.23 cfs 810 cf
Subcatchment A5: To Abutter	Runoff Area=26,605 sf 5.66% Impervious Runoff Depth>1.45" Flow Length=212' Tc=11.8 min CN=63 Runoff=0.79 cfs 3,223 cf
Subcatchment A6: To Abutter	Runoff Area=36,823 sf 7.73% Impervious Runoff Depth>1.46" Tc=6.0 min CN=63 Runoff=1.34 cfs 4,469 cf
Subcatchment A7: To Infiltration Basin	Runoff Area=18,226 sf 0.00% Impervious Runoff Depth>1.32" Tc=6.0 min CN=61 Runoff=0.59 cfs 2,004 cf
Subcatchment A8: To Exterior	Runoff Area=30,601 sf 1.56% Impervious Runoff Depth>1.25" Tc=6.0 min CN=60 Runoff=0.92 cfs 3,194 cf
Subcatchment R1: To CB#1	Runoff Area=11,152 sf 70.59% Impervious Runoff Depth>3.49" Tc=6.0 min CN=87 Runoff=1.03 cfs 3,242 cf
Subcatchment R2: To CB-2	Runoff Area=22,269 sf 62.49% Impervious Runoff Depth>3.19" Tc=6.0 min CN=84 Runoff=1.90 cfs 5,928 cf
Subcatchment R3: To RGB	Runoff Area=10,217 sf 71.15% Impervious Runoff Depth>3.49" Tc=6.0 min CN=87 Runoff=0.94 cfs 2,970 cf
Subcatchment R4: To CB-4	Runoff Area=14,887 sf 66.43% Impervious Runoff Depth>3.39" Tc=6.0 min CN=86 Runoff=1.34 cfs 4,205 cf
Subcatchment R5: To Foxhole	Runoff Area=33,967 sf 52.12% Impervious Runoff Depth>2.82" Flow Length=327' Tc=10.1 min CN=80 Runoff=2.25 cfs 7,976 cf
Subcatchment R6: To CB-6	Runoff Area=26,016 sf 47.47% Impervious Runoff Depth>2.72" Flow Length=248' Tc=16.0 min CN=79 Runoff=1.41 cfs 5,906 cf
Subcatchment R7: To CB-5	Runoff Area=31,901 sf 39.74% Impervious Runoff Depth>2.46" Flow Length=303' Tc=11.9 min CN=76 Runoff=1.74 cfs 6,550 cf
Subcatchment R8: To RGB 2	Runoff Area=17,230 sf 63.94% Impervious Runoff Depth>3.29" Tc=6.0 min CN=85 Runoff=1.51 cfs 4,725 cf

Subcatchment R9: To RGB 1 Runoff Area=7,051 sf 91.07% Impervious Runoff Depth>4.34"
Tc=6.0 min CN=95 Runoff=0.76 cfs 2,548 cf

Subcatchment S3: To Swale Runoff Area=10,077 sf 25.91% Impervious Runoff Depth>2.05"
Tc=6.0 min CN=71 Runoff=0.55 cfs 1,725 cf

Subcatchment S4: To Swale Runoff Area=1,346 sf 29.12% Impervious Runoff Depth>2.13"
Tc=6.0 min CN=72 Runoff=0.08 cfs 239 cf

Subcatchment S8: To Swale Runoff Area=5,239 sf 34.13% Impervious Runoff Depth>2.30"
Tc=6.0 min CN=74 Runoff=0.32 cfs 1,003 cf

Reach SW3: Avg. Flow Depth=0.35' Max Vel=1.39 fps Inflow=1.49 cfs 4,695 cf
n=0.041 L=501.0' S=0.0100 '/' Capacity=28.59 cfs Outflow=1.23 cfs 4,670 cf

Reach SW8: Avg. Flow Depth=0.64' Max Vel=0.34 fps Inflow=1.08 cfs 3,551 cf
n=0.240 L=232.0' S=0.0102 '/' Capacity=4.93 cfs Outflow=0.74 cfs 3,524 cf

Pond AD: Peak Elev=248.81' Inflow=0.09 cfs 293 cf
8.0" Round Culvert n=0.011 L=26.4' S=0.0049 '/' Outflow=0.09 cfs 293 cf

Pond CB1: CB#1 Peak Elev=249.57' Inflow=1.03 cfs 3,242 cf
12.0" Round Culvert n=0.011 L=93.3' S=0.0050 '/' Outflow=1.03 cfs 3,242 cf

Pond CB2: Peak Elev=251.96' Inflow=1.90 cfs 5,928 cf
12.0" Round Culvert n=0.011 L=73.9' S=0.0100 '/' Outflow=1.90 cfs 5,928 cf

Pond CB4: Peak Elev=248.44' Inflow=1.34 cfs 4,205 cf
12.0" Round Culvert n=0.011 L=14.5' S=0.0193 '/' Outflow=1.34 cfs 4,205 cf

Pond CB5: Peak Elev=251.12' Inflow=1.74 cfs 6,550 cf
12.0" Round Culvert n=0.011 L=8.5' S=0.0118 '/' Outflow=1.74 cfs 6,550 cf

Pond CB6: Peak Elev=249.07' Inflow=1.41 cfs 5,906 cf
12.0" Round Culvert n=0.011 L=6.3' S=0.0063 '/' Outflow=1.41 cfs 5,906 cf

Pond CB7: Peak Elev=248.57' Inflow=1.29 cfs 4,909 cf
18.0" Round Culvert n=0.011 L=88.3' S=0.0057 '/' Outflow=1.29 cfs 4,909 cf

Pond DMH1: Peak Elev=248.72' Inflow=1.11 cfs 3,535 cf
Outflow=1.11 cfs 3,535 cf

Pond DMH3: Peak Elev=248.05' Inflow=1.29 cfs 4,909 cf
18.0" Round Culvert n=0.011 L=68.2' S=0.0051 '/' Outflow=1.29 cfs 4,909 cf

Pond DMH4: Peak Elev=247.99' Inflow=2.52 cfs 9,114 cf
24.0" Round Culvert n=0.011 L=34.6' S=0.0049 '/' Outflow=2.52 cfs 9,114 cf

Pond DMH5: Peak Elev=252.37' Inflow=2.13 cfs 8,249 cf
15.0" Round Culvert n=0.011 L=116.8' S=0.0102 '/' Outflow=2.13 cfs 8,249 cf

Pond DMH6: Peak Elev=250.63' Inflow=3.69 cfs 14,799 cf
18.0" Round Culvert n=0.011 L=160.8' S=0.0100 '/' Outflow=3.69 cfs 14,799 cf

Pond DMH7: Peak Elev=248.57' Inflow=4.88 cfs 20,705 cf
24.0" Round Culvert n=0.011 L=111.5' S=0.0085 '/' Outflow=4.88 cfs 20,705 cf

Pond EX: Existing Abutter Depression Peak Elev=250.30' Storage=407 cf Inflow=0.79 cfs 3,223 cf
Discarded=0.10 cfs 2,270 cf Primary=0.64 cfs 934 cf Outflow=0.75 cfs 3,204 cf

Pond HW2: Peak Elev=253.72' Inflow=2.13 cfs 8,249 cf
15.0" Round Culvert n=0.013 L=14.6' S=0.0856 '/' Outflow=2.13 cfs 8,249 cf

Pond IB1: Infiltration Basin #1 Peak Elev=247.98' Storage=9,094 cf Inflow=10.09 cfs 39,799 cf
Discarded=2.75 cfs 35,901 cf Primary=0.81 cfs 3,890 cf Secondary=0.00 cfs 0 cf Outflow=3.56 cfs 39,791 cf

Pond SIS1: Stormtech Peak Elev=248.67' Storage=681 cf Inflow=1.11 cfs 3,535 cf
Discarded=0.34 cfs 3,535 cf Secondary=0.00 cfs 0 cf Outflow=0.34 cfs 3,535 cf

Pond SIS2: Peak Elev=250.38' Storage=1,561 cf Inflow=2.13 cfs 6,738 cf
Discarded=0.56 cfs 6,737 cf Primary=0.00 cfs 0 cf Outflow=0.56 cfs 6,737 cf

Link AP1: To Wetlands Inflow=1.61 cfs 8,054 cf
Primary=1.61 cfs 8,054 cf

Link AP2: To Offsite Inflow=1.34 cfs 4,469 cf
Primary=1.34 cfs 4,469 cf

Link AP3: Abutter Depression Inflow=0.64 cfs 934 cf
Primary=0.64 cfs 934 cf

Total Runoff Area = 313,415 sf Runoff Volume = 61,979 cf Average Runoff Depth = 2.37"
64.11% Pervious = 200,945 sf 35.89% Impervious = 112,470 sf

Summary for Subcatchment A1: To Area Drain

Runoff = 0.09 cfs @ 12.10 hrs, Volume= 293 cf, Depth> 1.32"
Routed to Pond AD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
2,664	61	>75% Grass cover, Good, HSG B
2,664		100.00% Pervious Area

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

Summary for Subcatchment A2: To Exterior

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 194 cf, Depth> 1.32"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
1,761	61	>75% Grass cover, Good, HSG B
1,761		100.00% Pervious Area

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

Summary for Subcatchment A3: To Exterior

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 776 cf, Depth> 2.82"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
1,649	61	>75% Grass cover, Good, HSG B
1,652	98	Roofs, HSG B
3,301	80	Weighted Average
1,649		49.95% Pervious Area
1,652		50.05% Impervious Area

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

Summary for Subcatchment A4: To Roof Drain

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 810 cf, Depth> 4.67"
Routed to Pond SIS2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
2,082	98	Roofs, HSG B
2,082		100.00% Impervious Area

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

Summary for Subcatchment A5: To Abutter

Runoff = 0.79 cfs @ 12.18 hrs, Volume= 3,223 cf, Depth> 1.45"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
23,897	61	>75% Grass cover, Good, HSG B
1,201	55	Woods, Good, HSG B
1,507	98	Roofs, HSG B
26,605	63	Weighted Average
25,098		94.34% Pervious Area
1,507		5.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0120	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.0	162	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	212	Total			

Summary for Subcatchment A6: To Abutter

Runoff = 1.34 cfs @ 12.10 hrs, Volume= 4,469 cf, Depth> 1.46"
Routed to Link AP2 : To Offsite

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
1,281	98	Paved parking, HSG B
25,992	61	>75% Grass cover, Good, HSG B
7,984	55	Woods, Good, HSG B
1,566	98	Roofs, HSG B
36,823	63	Weighted Average
33,976		92.27% Pervious Area
2,847		7.73% Impervious Area

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

Summary for Subcatchment A7: To Infiltration Basin

Runoff = 0.59 cfs @ 12.10 hrs, Volume= 2,004 cf, Depth> 1.32"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
18,226	61	>75% Grass cover, Good, HSG B
18,226		100.00% Pervious Area

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

Summary for Subcatchment A8: To Exterior

Runoff = 0.92 cfs @ 12.10 hrs, Volume= 3,194 cf, Depth> 1.25"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
476	98	Paved parking, HSG B
20,641	61	>75% Grass cover, Good, HSG B
9,484	55	Woods, Good, HSG B
30,601	60	Weighted Average
30,125		98.44% Pervious Area
476		1.56% Impervious Area

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

Summary for Subcatchment R1: To CB#1

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 3,242 cf, Depth> 3.49"
Routed to Pond CB1 : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
7,872	98	Paved parking, HSG B
3,280	61	>75% Grass cover, Good, HSG B
11,152	87	Weighted Average
3,280		29.41% Pervious Area
7,872		70.59% Impervious Area

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

Summary for Subcatchment R2: To CB-2

Runoff = 1.90 cfs @ 12.09 hrs, Volume= 5,928 cf, Depth> 3.19"
Routed to Pond CB2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
8,993	98	Paved parking, HSG B
8,353	61	>75% Grass cover, Good, HSG B
4,923	98	Roofs, HSG B
22,269	84	Weighted Average
8,353		37.51% Pervious Area
13,916		62.49% Impervious Area

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

Summary for Subcatchment R3: To RGB

Runoff = 0.94 cfs @ 12.09 hrs, Volume= 2,970 cf, Depth> 3.49"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
5,386	98	Paved parking, HSG B
2,948	61	>75% Grass cover, Good, HSG B
1,883	98	Roofs, HSG B
10,217	87	Weighted Average
2,948		28.85% Pervious Area
7,269		71.15% Impervious Area

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

Summary for Subcatchment R4: To CB-4

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 4,205 cf, Depth> 3.39"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
7,280	98	Paved parking, HSG B
4,998	61	>75% Grass cover, Good, HSG B
2,609	98	Roofs, HSG B
14,887	86	Weighted Average
4,998		33.57% Pervious Area
9,889		66.43% Impervious Area

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

Summary for Subcatchment R5: To Foxhole

Runoff = 2.25 cfs @ 12.14 hrs, Volume= 7,976 cf, Depth> 2.82"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
11,765	98	Paved parking, HSG B
16,262	61	>75% Grass cover, Good, HSG B
5,940	98	Roofs, HSG B
33,967	80	Weighted Average
16,262		47.88% Pervious Area
17,705		52.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	68	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.9	187	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	327	Total			

Summary for Subcatchment R6: To CB-6

Runoff = 1.41 cfs @ 12.22 hrs, Volume= 5,906 cf, Depth> 2.72"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
7,642	98	Paved parking, HSG B
13,667	61	>75% Grass cover, Good, HSG B
4,707	98	Roofs, HSG B
26,016	79	Weighted Average
13,667		52.53% Pervious Area
12,349		47.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0030	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
3.8	158	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0130	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.0	248	Total			

Summary for Subcatchment R7: To CB-5

Runoff = 1.74 cfs @ 12.17 hrs, Volume= 6,550 cf, Depth> 2.46"
Routed to Pond CB5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
7,161	98	Paved parking, HSG B
19,224	61	>75% Grass cover, Good, HSG B
5,516	98	Roofs, HSG B
31,901	76	Weighted Average
19,224		60.26% Pervious Area
12,677		39.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.7	226	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
11.9	303	Total			

Summary for Subcatchment R8: To RGB 2

Runoff = 1.51 cfs @ 12.09 hrs, Volume= 4,725 cf, Depth> 3.29"
Routed to Pond HW2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
6,729	98	Paved parking, HSG B
6,213	61	>75% Grass cover, Good, HSG B
4,288	98	Roofs, HSG B
17,230	85	Weighted Average
6,213		36.06% Pervious Area
11,017		63.94% Impervious Area

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

Summary for Subcatchment R9: To RGB 1

Runoff = 0.76 cfs @ 12.08 hrs, Volume= 2,548 cf, Depth> 4.34"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
4,963	98	Paved parking, HSG B
630	61	>75% Grass cover, Good, HSG B
1,458	98	Roofs, HSG B
7,051	95	Weighted Average
630		8.93% Pervious Area
6,421		91.07% Impervious Area

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

Summary for Subcatchment S3: To Swale

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 1,725 cf, Depth> 2.05"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
2,611	98	Paved parking, HSG B
7,466	61	>75% Grass cover, Good, HSG B
10,077	71	Weighted Average
7,466		74.09% Pervious Area
2,611		25.91% Impervious Area

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

Summary for Subcatchment S4: To Swale

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 239 cf, Depth> 2.13"
Routed to Pond CB7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
392	98	Paved parking, HSG B
954	61	>75% Grass cover, Good, HSG B
1,346	72	Weighted Average
954		70.88% Pervious Area
392		29.12% Impervious Area

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

Summary for Subcatchment S8: To Swale

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 1,003 cf, Depth> 2.30"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-yr Rainfall=4.92"

Area (sf)	CN	Description
1,788	98	Paved parking, HSG B
3,451	61	>75% Grass cover, Good, HSG B
5,239	74	Weighted Average
3,451		65.87% Pervious Area
1,788		34.13% Impervious Area

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

Summary for Reach SW3:

Inflow Area = 20,294 sf, 48.68% Impervious, Inflow Depth > 2.78" for 10-yr event
Inflow = 1.49 cfs @ 12.09 hrs, Volume= 4,695 cf
Outflow = 1.23 cfs @ 12.14 hrs, Volume= 4,670 cf, Atten= 18%, Lag= 3.4 min
Routed to Pond CB7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 1.39 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 17.9 min

Peak Storage= 441 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.35' , Surface Width= 3.58'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 28.59 cfs

1.50' x 1.50' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 501.0' Slope= 0.0100 '/'
Inlet Invert= 256.12', Outlet Invert= 251.10'

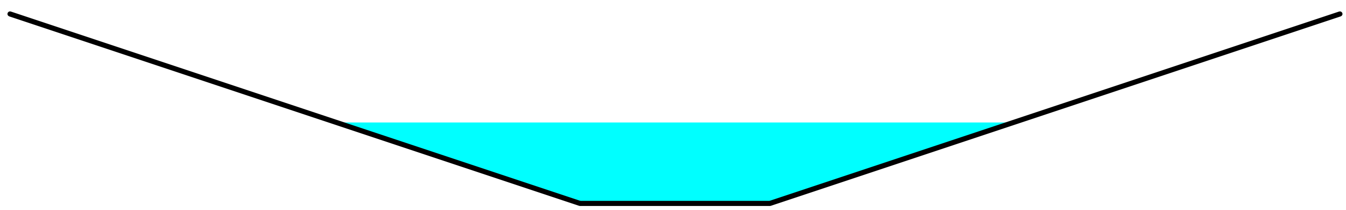
Summary for Reach SW8:

Inflow Area = 12,290 sf, 66.79% Impervious, Inflow Depth > 3.47" for 10-yr event
Inflow = 1.08 cfs @ 12.09 hrs, Volume= 3,551 cf
Outflow = 0.74 cfs @ 12.17 hrs, Volume= 3,524 cf, Atten= 32%, Lag= 5.1 min
Routed to Pond HW2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 0.34 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 31.7 min

Peak Storage= 508 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.64' , Surface Width= 5.34'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 4.93 cfs

1.50' x 1.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 232.0' Slope= 0.0102 '/'
Inlet Invert= 255.37', Outlet Invert= 253.00'



Summary for Pond AD:

Inflow Area = 2,664 sf, 0.00% Impervious, Inflow Depth > 1.32" for 10-yr event
Inflow = 0.09 cfs @ 12.10 hrs, Volume= 293 cf
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 293 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 293 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.81' @ 12.09 hrs
Flood Elev= 250.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.60'	**8.0" Round Culvert** L= 26.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.60' / 248.47' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.35 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=248.81' TW=248.72' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.09 cfs @ 1.32 fps)

Summary for Pond CB1: CB#1

Inflow Area = 11,152 sf, 70.59% Impervious, Inflow Depth > 3.49" for 10-yr event
Inflow = 1.03 cfs @ 12.09 hrs, Volume= 3,242 cf
Outflow = 1.03 cfs @ 12.09 hrs, Volume= 3,242 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.03 cfs @ 12.09 hrs, Volume= 3,242 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.57' @ 12.09 hrs
Flood Elev= 251.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	**12.0" Round Culvert** L= 93.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.00' / 248.53' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.09 hrs HW=249.57' TW=248.72' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.02 cfs @ 3.18 fps)

Summary for Pond CB2:

Inflow Area = 22,269 sf, 62.49% Impervious, Inflow Depth > 3.19" for 10-yr event
Inflow = 1.90 cfs @ 12.09 hrs, Volume= 5,928 cf
Outflow = 1.90 cfs @ 12.09 hrs, Volume= 5,928 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.90 cfs @ 12.09 hrs, Volume= 5,928 cf
Routed to Pond SIS2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.96' @ 12.09 hrs
Flood Elev= 254.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.20'	**12.0" Round Culvert** L= 73.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.20' / 250.46' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.89 cfs @ 12.09 hrs HW=251.96' TW=249.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.89 cfs @ 2.96 fps)

Summary for Pond CB4:

Inflow Area = 14,887 sf, 66.43% Impervious, Inflow Depth > 3.39" for 10-yr event
Inflow = 1.34 cfs @ 12.09 hrs, Volume= 4,205 cf
Outflow = 1.34 cfs @ 12.09 hrs, Volume= 4,205 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.09 hrs, Volume= 4,205 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.44' @ 12.09 hrs
Flood Elev= 250.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.83'	**12.0" Round Culvert** L= 14.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.83' / 247.55' S= 0.0193 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.09 hrs HW=248.44' TW=247.54' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.33 cfs @ 2.66 fps)

Summary for Pond CB5:

Inflow Area = 31,901 sf, 39.74% Impervious, Inflow Depth > 2.46" for 10-yr event
Inflow = 1.74 cfs @ 12.17 hrs, Volume= 6,550 cf
Outflow = 1.74 cfs @ 12.17 hrs, Volume= 6,550 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.74 cfs @ 12.17 hrs, Volume= 6,550 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.12' @ 12.17 hrs
Flood Elev= 252.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	250.30'	**12.0" Round Culvert** L= 8.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 250.30' / 250.20' S= 0.0118 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.73 cfs @ 12.17 hrs HW=251.12' TW=250.60' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.73 cfs @ 3.43 fps)

Summary for Pond CB6:

Inflow Area = 26,016 sf, 47.47% Impervious, Inflow Depth > 2.72" for 10-yr event
Inflow = 1.41 cfs @ 12.22 hrs, Volume= 5,906 cf
Outflow = 1.41 cfs @ 12.22 hrs, Volume= 5,906 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.22 hrs, Volume= 5,906 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.07' @ 12.22 hrs
Flood Elev= 250.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.30'	**12.0" Round Culvert** L= 6.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.30' / 248.26' S= 0.0063 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.41 cfs @ 12.22 hrs HW=249.07' TW=248.57' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 1.41 cfs @ 3.03 fps)

Summary for Pond CB7:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 2.72" for 10-yr event
Inflow = 1.29 cfs @ 12.14 hrs, Volume= 4,909 cf
Outflow = 1.29 cfs @ 12.14 hrs, Volume= 4,909 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.14 hrs, Volume= 4,909 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.57' @ 12.15 hrs
Flood Elev= 253.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**18.0" Round Culvert** L= 88.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0057 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=1.27 cfs @ 12.14 hrs HW=248.57' TW=248.04' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.27 cfs @ 3.09 fps)

Summary for Pond DMH1:

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 3.07" for 10-yr event
Inflow = 1.11 cfs @ 12.09 hrs, Volume= 3,535 cf
Outflow = 1.11 cfs @ 12.09 hrs, Volume= 3,535 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.11 cfs @ 12.09 hrs, Volume= 3,535 cf
Routed to Pond SIS1 : Stormtech

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.72' @ 12.09 hrs
Flood Elev= 252.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.40'	**12.0" Round MANIFOLD** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.40' / 248.35' S= 0.0083 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	248.28'	**24.0" Round ISOLATOR** L= 4.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.28' / 248.25' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.11 cfs @ 12.09 hrs HW=248.72' TW=248.33' (Dynamic Tailwater)
├─**1=MANIFOLD** (Barrel Controls 0.31 cfs @ 2.19 fps)
└─**2=ISOLATOR** (Barrel Controls 0.79 cfs @ 2.37 fps)

Summary for Pond DMH3:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 2.72" for 10-yr event
Inflow = 1.29 cfs @ 12.14 hrs, Volume= 4,909 cf
Outflow = 1.29 cfs @ 12.14 hrs, Volume= 4,909 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.14 hrs, Volume= 4,909 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.05' @ 12.42 hrs
Flood Elev= 251.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.45'	**18.0" Round Culvert** L= 68.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.45' / 247.10' S= 0.0051 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=1.29 cfs @ 12.14 hrs HW=248.04' TW=247.64' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.29 cfs @ 2.93 fps)

Summary for Pond DMH4:

Inflow Area = 36,527 sf, 55.19% Impervious, Inflow Depth > 2.99" for 10-yr event
Inflow = 2.52 cfs @ 12.11 hrs, Volume= 9,114 cf
Outflow = 2.52 cfs @ 12.11 hrs, Volume= 9,114 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.52 cfs @ 12.11 hrs, Volume= 9,114 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.99' @ 12.52 hrs
Flood Elev= 251.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	246.60'	**24.0" Round Culvert** L= 34.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 246.60' / 246.43' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=2.51 cfs @ 12.11 hrs HW=247.59' TW=247.42' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.51 cfs @ 2.38 fps)

Summary for Pond DMH5:

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 3.35" for 10-yr event
Inflow = 2.13 cfs @ 12.10 hrs, Volume= 8,249 cf
Outflow = 2.13 cfs @ 12.10 hrs, Volume= 8,249 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 12.10 hrs, Volume= 8,249 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 252.37' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.65'	**15.0" Round Culvert** L= 116.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.65' / 250.46' S= 0.0102 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=2.13 cfs @ 12.10 hrs HW=252.37' TW=250.61' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.13 cfs @ 2.89 fps)

Summary for Pond DMH6:

Inflow Area = 61,421 sf, 51.94% Impervious, Inflow Depth > 2.89" for 10-yr event
Inflow = 3.69 cfs @ 12.13 hrs, Volume= 14,799 cf
Outflow = 3.69 cfs @ 12.13 hrs, Volume= 14,799 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.69 cfs @ 12.13 hrs, Volume= 14,799 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.63' @ 12.13 hrs
Flood Elev= 252.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.71'	**18.0" Round Culvert** L= 160.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.71' / 248.10' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=3.68 cfs @ 12.13 hrs HW=250.62' TW=248.54' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.68 cfs @ 3.26 fps)

Summary for Pond DMH7:

Inflow Area = 87,437 sf, 50.61% Impervious, Inflow Depth > 2.84" for 10-yr event
Inflow = 4.88 cfs @ 12.15 hrs, Volume= 20,705 cf
Outflow = 4.88 cfs @ 12.15 hrs, Volume= 20,705 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.88 cfs @ 12.15 hrs, Volume= 20,705 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.57' @ 12.19 hrs
Flood Elev= 251.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.60'	**24.0" Round Culvert** L= 111.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.60' / 246.65' S= 0.0085 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=4.87 cfs @ 12.15 hrs HW=248.56' TW=247.54' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 4.87 cfs @ 4.80 fps)

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth > 1.45" for 10-yr event
Inflow = 0.79 cfs @ 12.18 hrs, Volume= 3,223 cf
Outflow = 0.75 cfs @ 12.23 hrs, Volume= 3,204 cf, Atten= 6%, Lag= 3.0 min
Discarded = 0.10 cfs @ 12.23 hrs, Volume= 2,270 cf
Primary = 0.64 cfs @ 12.23 hrs, Volume= 934 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.30' @ 12.23 hrs Surf.Area= 1,713 sf Storage= 407 cf

Plug-Flow detention time= 34.9 min calculated for 3,202 cf (99% of inflow)
Center-of-Mass det. time= 31.6 min (902.7 - 871.1)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.10 cfs @ 12.23 hrs HW=250.30' (Free Discharge)
└─**1=Exfiltration** (Controls 0.10 cfs)

Primary OutFlow Max=0.64 cfs @ 12.23 hrs HW=250.30' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.64 cfs @ 0.61 fps)

Summary for Pond HW2:

[62] Hint: Exceeded Reach SW8 OUTLET depth by 0.15' @ 12.06 hrs

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 3.35" for 10-yr event
Inflow = 2.13 cfs @ 12.10 hrs, Volume= 8,249 cf
Outflow = 2.13 cfs @ 12.10 hrs, Volume= 8,249 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 12.10 hrs, Volume= 8,249 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 253.72' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0" Round Culvert** L= 14.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 251.75' S= 0.0856 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.13 cfs @ 12.10 hrs HW=253.72' TW=252.37' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.13 cfs @ 2.89 fps)

Summary for Pond IB1: Infiltration Basin #1

[80] Warning: Exceeded Pond DMH4 by 0.31' @ 2.00 hrs (0.76 cfs 1,415 cf)

Inflow Area = 200,508 sf, 48.93% Impervious, Inflow Depth > 2.38" for 10-yr event
Inflow = 10.09 cfs @ 12.13 hrs, Volume= 39,799 cf
Outflow = 3.56 cfs @ 12.53 hrs, Volume= 39,791 cf, Atten= 65%, Lag= 24.3 min
Discarded = 2.75 cfs @ 12.53 hrs, Volume= 35,901 cf
Primary = 0.81 cfs @ 12.53 hrs, Volume= 3,890 cf
Routed to Link AP1 : To Wetlands
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 247.98' @ 12.53 hrs Surf.Area= 10,043 sf Storage= 9,094 cf

Plug-Flow detention time= 18.0 min calculated for 39,755 cf (100% of inflow)
Center-of-Mass det. time= 17.8 min (842.4 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	32,758 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
247.00	8,532	373.0	0	0	8,532
248.00	10,075	398.2	9,293	9,293	10,126
249.00	11,718	423.3	10,886	20,179	11,817
250.00	13,461	448.4	12,579	32,758	13,612

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 244.93' Phase-In= 0.01'
#2	Primary	247.00'	**18.0" Round Culvert** L= 62.2' Ke= 0.500 Inlet / Outlet Invert= 247.00' / 246.00' S= 0.0161 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#3	Device 2	247.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	248.20'	**2.0" x 2.0" Horiz. Orifice/Grate X 8.00 columns** X 8 rows C= 0.600 in 24.0" x 24.0" Grate (44% open area) Limited to weir flow at low heads
#5	Secondary	249.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=2.75 cfs @ 12.53 hrs HW=247.98' (Free Discharge)
└─**1=Exfiltration** (Controls 2.75 cfs)

Primary OutFlow Max=0.81 cfs @ 12.53 hrs HW=247.98' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.81 cfs of 4.12 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 0.81 cfs @ 4.11 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SIS1: Stormtech

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 3.07" for 10-yr event
Inflow = 1.11 cfs @ 12.09 hrs, Volume= 3,535 cf
Outflow = 0.34 cfs @ 12.42 hrs, Volume= 3,535 cf, Atten= 70%, Lag= 20.2 min
Discarded = 0.34 cfs @ 12.42 hrs, Volume= 3,535 cf
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.67' @ 12.42 hrs Surf.Area= 1,242 sf Storage= 681 cf

Plug-Flow detention time= 10.9 min calculated for 3,535 cf (100% of inflow)
Center-of-Mass det. time= 10.9 min (818.0 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	247.75'	1,151 cf	**20.50'W x 60.58'L x 3.50'H Field A** 4,346 cf Overall - 1,470 cf Embedded = 2,876 cf x 40.0% Voids
#2A	248.25'	1,470 cf	**ADS_StormTech SC-740 +Cap** x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
#3	248.00'	35 cf	**4.00'D x 2.75'H Vertical Cone/Cylinder**-Impervious
		2,655 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.75'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.51' Phase-In= 0.01'
#2	Secondary	250.60'	**2.0" x 2.0" Horiz. Orifice/Grate X 7.00 columns** X 7 rows C= 0.600 in 24.0" x 24.0" Grate (34% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.34 cfs @ 12.42 hrs HW=248.67' (Free Discharge)
└─**1=Exfiltration** (Controls 0.34 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.75' TW=0.00' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS1: Stormtech - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

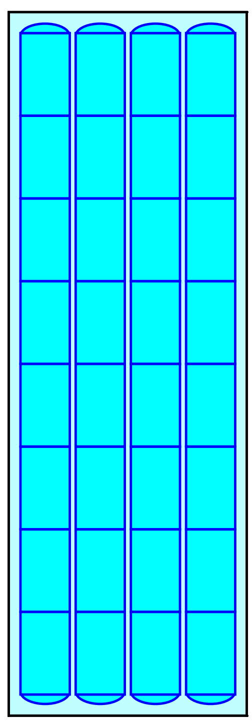
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

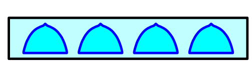
32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af
Overall Storage Efficiency = 60.3%
Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers
161.0 cy Field
106.5 cy Stone





Summary for Pond SIS2:

Inflow Area = 24,351 sf, 65.70% Impervious, Inflow Depth > 3.32" for 10-yr event
Inflow = 2.13 cfs @ 12.09 hrs, Volume= 6,738 cf
Outflow = 0.56 cfs @ 12.46 hrs, Volume= 6,737 cf, Atten= 74%, Lag= 22.4 min
Discarded = 0.56 cfs @ 12.46 hrs, Volume= 6,737 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.38' @ 12.46 hrs Surf.Area= 1,735 sf Storage= 1,561 cf

Plug-Flow detention time= 16.9 min calculated for 6,737 cf (100% of inflow)
Center-of-Mass det. time= 16.9 min (820.1 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	249.00'	1,603 cf	**44.25'W x 39.22'L x 3.50'H Field A** 6,074 cf Overall - 2,067 cf Embedded = 4,006 cf x 40.0% Voids
#2A	249.50'	2,067 cf	**ADS_StormTech SC-740 +Cap** x 45 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 45 Chambers in 9 Rows
#3	250.80'	38 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder**
		3,708 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	253.50'	**2.0" x 2.0" Horiz. Orifice/Grate X 6.00 columns** X 6 rows C= 0.600 in 24.0" x 24.0" Grate (25% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.56 cfs @ 12.46 hrs HW=250.38' (Free Discharge)
└─**1=Exfiltration** (Controls 0.56 cfs)

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=249.00' TW=247.00' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS2: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

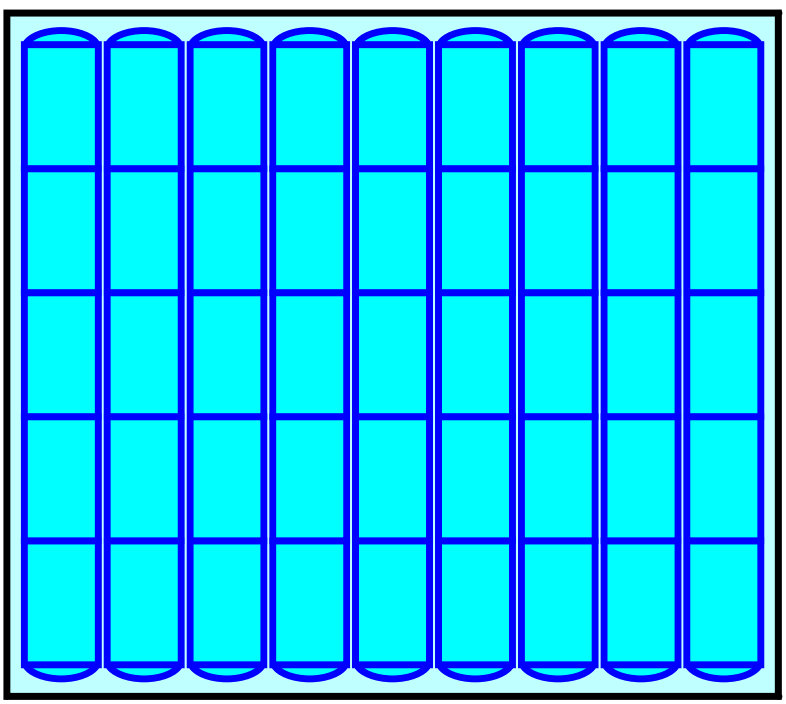
5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +12.0" End Stone x 2 = 39.22' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

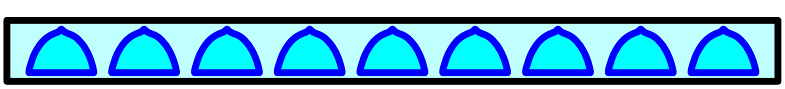
45 Chambers x 45.9 cf = 2,067.3 cf Chamber Storage

6,073.7 cf Field - 2,067.3 cf Chambers = 4,006.4 cf Stone x 40.0% Voids = 1,602.6 cf Stone Storage

Chamber Storage + Stone Storage = 3,669.9 cf = 0.084 af
Overall Storage Efficiency = 60.4%
Overall System Size = 39.22' x 44.25' x 3.50'

45 Chambers
225.0 cy Field
148.4 cy Stone





Summary for Link AP1: To Wetlands

Inflow Area =	236,171 sf,	42.45% Impervious,	Inflow Depth > 0.41"	for 10-yr event
Inflow =	1.61 cfs @	12.12 hrs, Volume=	8,054 cf	
Primary =	1.61 cfs @	12.12 hrs, Volume=	8,054 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP2: To Offsite

Inflow Area =	36,823 sf,	7.73% Impervious,	Inflow Depth > 1.46"	for 10-yr event	
Inflow =	1.34 cfs @	12.10 hrs,	Volume=	4,469 cf	
Primary =	1.34 cfs @	12.10 hrs,	Volume=	4,469 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	26,605 sf,	5.66% Impervious,	Inflow Depth = 0.42"	for 10-yr event
Inflow =	0.64 cfs @	12.23 hrs, Volume=	934 cf	
Primary =	0.64 cfs @	12.23 hrs, Volume=	934 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: To Area Drain Runoff Area=2,664 sf 0.00% Impervious Runoff Depth>3.01"
Tc=6.0 min CN=61 Runoff=0.21 cfs 667 cf

Subcatchment A2: To Exterior Runoff Area=1,761 sf 0.00% Impervious Runoff Depth>3.01"
Tc=6.0 min CN=61 Runoff=0.14 cfs 441 cf

Subcatchment A3: To Exterior Runoff Area=3,301 sf 50.05% Impervious Runoff Depth>5.08"
Tc=6.0 min CN=80 Runoff=0.45 cfs 1,397 cf

Subcatchment A4: To Roof Drain Runoff Area=2,082 sf 100.00% Impervious Runoff Depth>7.14"
Tc=6.0 min CN=98 Runoff=0.35 cfs 1,239 cf

Subcatchment A5: To Abutter Runoff Area=26,605 sf 5.66% Impervious Runoff Depth>3.21"
Flow Length=212' Tc=11.8 min CN=63 Runoff=1.88 cfs 7,117 cf

Subcatchment A6: To Abutter Runoff Area=36,823 sf 7.73% Impervious Runoff Depth>3.21"
Tc=6.0 min CN=63 Runoff=3.15 cfs 9,864 cf

Subcatchment A7: To Infiltration Basin Runoff Area=18,226 sf 0.00% Impervious Runoff Depth>3.01"
Tc=6.0 min CN=61 Runoff=1.45 cfs 4,564 cf

Subcatchment A8: To Exterior Runoff Area=30,601 sf 1.56% Impervious Runoff Depth>2.90"
Tc=6.0 min CN=60 Runoff=2.33 cfs 7,398 cf

Subcatchment R1: To CB#1 Runoff Area=11,152 sf 70.59% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=87 Runoff=1.69 cfs 5,465 cf

Subcatchment R2: To CB-2 Runoff Area=22,269 sf 62.49% Impervious Runoff Depth>5.53"
Tc=6.0 min CN=84 Runoff=3.23 cfs 10,271 cf

Subcatchment R3: To RGB Runoff Area=10,217 sf 71.15% Impervious Runoff Depth>5.88"
Tc=6.0 min CN=87 Runoff=1.55 cfs 5,007 cf

Subcatchment R4: To CB-4 Runoff Area=14,887 sf 66.43% Impervious Runoff Depth>5.77"
Tc=6.0 min CN=86 Runoff=2.23 cfs 7,152 cf

Subcatchment R5: To Foxhole Runoff Area=33,967 sf 52.12% Impervious Runoff Depth>5.07"
Flow Length=327' Tc=10.1 min CN=80 Runoff=4.00 cfs 14,365 cf

Subcatchment R6: To CB-6 Runoff Area=26,016 sf 47.47% Impervious Runoff Depth>4.96"
Flow Length=248' Tc=16.0 min CN=79 Runoff=2.55 cfs 10,745 cf

Subcatchment R7: To CB-5 Runoff Area=31,901 sf 39.74% Impervious Runoff Depth>4.62"
Flow Length=303' Tc=11.9 min CN=76 Runoff=3.27 cfs 12,290 cf

Subcatchment R8: To RGB 2 Runoff Area=17,230 sf 63.94% Impervious Runoff Depth>5.65"
Tc=6.0 min CN=85 Runoff=2.54 cfs 8,112 cf

Subcatchment R9: To RGB 1 Runoff Area=7,051 sf 91.07% Impervious Runoff Depth>6.82"
Tc=6.0 min CN=95 Runoff=1.16 cfs 4,005 cf

Subcatchment S3: To Swale Runoff Area=10,077 sf 25.91% Impervious Runoff Depth>4.08"
Tc=6.0 min CN=71 Runoff=1.11 cfs 3,422 cf

Subcatchment S4: To Swale Runoff Area=1,346 sf 29.12% Impervious Runoff Depth>4.18"
Tc=6.0 min CN=72 Runoff=0.15 cfs 469 cf

Subcatchment S8: To Swale Runoff Area=5,239 sf 34.13% Impervious Runoff Depth>4.41"
Tc=6.0 min CN=74 Runoff=0.62 cfs 1,923 cf

Reach SW3: Avg. Flow Depth=0.47' Max Vel=1.65 fps Inflow=2.65 cfs 8,429 cf
n=0.041 L=501.0' S=0.0100 '/' Capacity=28.59 cfs Outflow=2.26 cfs 8,395 cf

Reach SW8: Avg. Flow Depth=0.83' Max Vel=0.39 fps Inflow=1.78 cfs 5,929 cf
n=0.240 L=232.0' S=0.0102 '/' Capacity=4.93 cfs Outflow=1.28 cfs 5,892 cf

Pond AD: Peak Elev=249.63' Inflow=0.21 cfs 667 cf
8.0" Round Culvert n=0.011 L=26.4' S=0.0049 '/' Outflow=0.21 cfs 667 cf

Pond CB1: CB#1 Peak Elev=249.78' Inflow=1.69 cfs 5,465 cf
12.0" Round Culvert n=0.011 L=93.3' S=0.0050 '/' Outflow=1.69 cfs 5,465 cf

Pond CB2: Peak Elev=252.43' Inflow=3.23 cfs 10,271 cf
12.0" Round Culvert n=0.011 L=73.9' S=0.0100 '/' Outflow=3.23 cfs 10,271 cf

Pond CB4: Peak Elev=248.68' Inflow=2.23 cfs 7,152 cf
12.0" Round Culvert n=0.011 L=14.5' S=0.0193 '/' Outflow=2.23 cfs 7,152 cf

Pond CB5: Peak Elev=251.77' Inflow=3.27 cfs 12,290 cf
12.0" Round Culvert n=0.011 L=8.5' S=0.0118 '/' Outflow=3.27 cfs 12,290 cf

Pond CB6: Peak Elev=249.59' Inflow=2.55 cfs 10,745 cf
12.0" Round Culvert n=0.011 L=6.3' S=0.0063 '/' Outflow=2.55 cfs 10,745 cf

Pond CB7: Peak Elev=248.89' Inflow=2.39 cfs 8,865 cf
18.0" Round Culvert n=0.011 L=88.3' S=0.0057 '/' Outflow=2.39 cfs 8,865 cf

Pond DMH1: Peak Elev=249.63' Inflow=1.90 cfs 6,132 cf
Outflow=1.90 cfs 6,132 cf

Pond DMH3: Peak Elev=248.66' Inflow=2.39 cfs 8,865 cf
18.0" Round Culvert n=0.011 L=68.2' S=0.0051 '/' Outflow=2.39 cfs 8,865 cf

Pond DMH4: Peak Elev=248.61' Inflow=4.47 cfs 16,017 cf
24.0" Round Culvert n=0.011 L=34.6' S=0.0049 '/' Outflow=4.47 cfs 16,017 cf

Pond DMH5: Peak Elev=252.66' Inflow=3.63 cfs 14,004 cf
15.0" Round Culvert n=0.011 L=116.8' S=0.0102 '/' Outflow=3.63 cfs 14,004 cf

Pond DMH6: Peak Elev=251.06' Inflow=6.60 cfs 26,294 cf
18.0" Round Culvert n=0.011 L=160.8' S=0.0100 '/' Outflow=6.60 cfs 26,294 cf

Pond DMH7: Peak Elev=249.14' Inflow=8.78 cfs 37,039 cf
24.0" Round Culvert n=0.011 L=111.5' S=0.0085 '/' Outflow=8.78 cfs 37,039 cf

Pond EX: Existing Abutter Depression Peak Elev=250.35' Storage=496 cf Inflow=1.88 cfs 7,117 cf
Discarded=0.12 cfs 3,324 cf Primary=1.73 cfs 3,718 cf Outflow=1.85 cfs 7,042 cf

Pond HW2: Peak Elev=254.01' Inflow=3.63 cfs 14,004 cf
15.0" Round Culvert n=0.013 L=14.6' S=0.0856 '/' Outflow=3.63 cfs 14,004 cf

Pond IB1: Infiltration Basin #1 Peak Elev=248.60' Storage=15,583 cf Inflow=18.37 cfs 71,985 cf
Discarded=3.52 cfs 56,110 cf Primary=6.48 cfs 15,862 cf Secondary=0.00 cfs 0 cf Outflow=10.00 cfs 71,973 cf

Pond SIS1: Stormtech Peak Elev=249.63' Storage=1,588 cf Inflow=1.90 cfs 6,132 cf
Discarded=0.44 cfs 6,132 cf Secondary=0.00 cfs 0 cf Outflow=0.44 cfs 6,132 cf

Pond SIS2: Peak Elev=251.84' Storage=3,221 cf Inflow=3.57 cfs 11,511 cf
Discarded=0.81 cfs 11,510 cf Primary=0.00 cfs 0 cf Outflow=0.81 cfs 11,510 cf

Link AP1: To Wetlands Inflow=7.71 cfs 25,098 cf
Primary=7.71 cfs 25,098 cf

Link AP2: To Offsite Inflow=3.15 cfs 9,864 cf
Primary=3.15 cfs 9,864 cf

Link AP3: Abutter Depression Inflow=1.73 cfs 3,718 cf
Primary=1.73 cfs 3,718 cf

Total Runoff Area = 313,415 sf Runoff Volume = 115,917 cf Average Runoff Depth = 4.44"
64.11% Pervious = 200,945 sf 35.89% Impervious = 112,470 sf

Summary for Subcatchment A1: To Area Drain

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 667 cf, Depth> 3.01"
Routed to Pond AD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
2,664	61	>75% Grass cover, Good, HSG B
2,664		100.00% Pervious Area

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

Summary for Subcatchment A2: To Exterior

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 441 cf, Depth> 3.01"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,761	61	>75% Grass cover, Good, HSG B
1,761		100.00% Pervious Area

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

Summary for Subcatchment A3: To Exterior

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 1,397 cf, Depth> 5.08"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,649	61	>75% Grass cover, Good, HSG B
1,652	98	Roofs, HSG B
3,301	80	Weighted Average
1,649		49.95% Pervious Area
1,652		50.05% Impervious Area

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

Summary for Subcatchment A4: To Roof Drain

Runoff = 0.35 cfs @ 12.08 hrs, Volume= 1,239 cf, Depth> 7.14"
Routed to Pond SIS2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
2,082	98	Roofs, HSG B
2,082		100.00% Impervious Area

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

Summary for Subcatchment A5: To Abutter

Runoff = 1.88 cfs @ 12.17 hrs, Volume= 7,117 cf, Depth> 3.21"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
23,897	61	>75% Grass cover, Good, HSG B
1,201	55	Woods, Good, HSG B
1,507	98	Roofs, HSG B
26,605	63	Weighted Average
25,098		94.34% Pervious Area
1,507		5.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0120	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.0	162	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	212	Total			

Summary for Subcatchment A6: To Abutter

Runoff = 3.15 cfs @ 12.09 hrs, Volume= 9,864 cf, Depth> 3.21"
Routed to Link AP2 : To Offsite

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,281	98	Paved parking, HSG B
25,992	61	>75% Grass cover, Good, HSG B
7,984	55	Woods, Good, HSG B
1,566	98	Roofs, HSG B
36,823	63	Weighted Average
33,976		92.27% Pervious Area
2,847		7.73% Impervious Area

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

Summary for Subcatchment A7: To Infiltration Basin

Runoff = 1.45 cfs @ 12.09 hrs, Volume= 4,564 cf, Depth> 3.01"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
18,226	61	>75% Grass cover, Good, HSG B
18,226		100.00% Pervious Area

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

Summary for Subcatchment A8: To Exterior

Runoff = 2.33 cfs @ 12.09 hrs, Volume= 7,398 cf, Depth> 2.90"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
476	98	Paved parking, HSG B
20,641	61	>75% Grass cover, Good, HSG B
9,484	55	Woods, Good, HSG B
30,601	60	Weighted Average
30,125		98.44% Pervious Area
476		1.56% Impervious Area

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

Summary for Subcatchment R1: To CB#1

Runoff = 1.69 cfs @ 12.08 hrs, Volume= 5,465 cf, Depth> 5.88"
Routed to Pond CB1 : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
7,872	98	Paved parking, HSG B
3,280	61	>75% Grass cover, Good, HSG B
11,152	87	Weighted Average
3,280		29.41% Pervious Area
7,872		70.59% Impervious Area

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

Summary for Subcatchment R2: To CB-2

Runoff = 3.23 cfs @ 12.09 hrs, Volume= 10,271 cf, Depth> 5.53"
Routed to Pond CB2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
8,993	98	Paved parking, HSG B
8,353	61	>75% Grass cover, Good, HSG B
4,923	98	Roofs, HSG B
22,269	84	Weighted Average
8,353		37.51% Pervious Area
13,916		62.49% Impervious Area

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

Summary for Subcatchment R3: To RGB

Runoff = 1.55 cfs @ 12.08 hrs, Volume= 5,007 cf, Depth> 5.88"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
5,386	98	Paved parking, HSG B
2,948	61	>75% Grass cover, Good, HSG B
1,883	98	Roofs, HSG B
10,217	87	Weighted Average
2,948		28.85% Pervious Area
7,269		71.15% Impervious Area

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

Summary for Subcatchment R4: To CB-4

Runoff = 2.23 cfs @ 12.09 hrs, Volume= 7,152 cf, Depth> 5.77"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
7,280	98	Paved parking, HSG B
4,998	61	>75% Grass cover, Good, HSG B
2,609	98	Roofs, HSG B
14,887	86	Weighted Average
4,998		33.57% Pervious Area
9,889		66.43% Impervious Area

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

Summary for Subcatchment R5: To Foxhole

Runoff = 4.00 cfs @ 12.14 hrs, Volume= 14,365 cf, Depth> 5.07"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
11,765	98	Paved parking, HSG B
16,262	61	>75% Grass cover, Good, HSG B
5,940	98	Roofs, HSG B
33,967	80	Weighted Average
16,262		47.88% Pervious Area
17,705		52.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	68	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.9	187	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	327	Total			

Summary for Subcatchment R6: To CB-6

Runoff = 2.55 cfs @ 12.22 hrs, Volume= 10,745 cf, Depth> 4.96"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
7,642	98	Paved parking, HSG B
13,667	61	>75% Grass cover, Good, HSG B
4,707	98	Roofs, HSG B
26,016	79	Weighted Average
13,667		52.53% Pervious Area
12,349		47.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0030	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
3.8	158	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0130	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.0	248	Total			

Summary for Subcatchment R7: To CB-5

Runoff = 3.27 cfs @ 12.16 hrs, Volume= 12,290 cf, Depth> 4.62"
Routed to Pond CB5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
7,161	98	Paved parking, HSG B
19,224	61	>75% Grass cover, Good, HSG B
5,516	98	Roofs, HSG B
31,901	76	Weighted Average
19,224		60.26% Pervious Area
12,677		39.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.7	226	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
11.9	303	Total			

Summary for Subcatchment R8: To RGB 2

Runoff = 2.54 cfs @ 12.09 hrs, Volume= 8,112 cf, Depth> 5.65"
Routed to Pond HW2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
6,729	98	Paved parking, HSG B
6,213	61	>75% Grass cover, Good, HSG B
4,288	98	Roofs, HSG B
17,230	85	Weighted Average
6,213		36.06% Pervious Area
11,017		63.94% Impervious Area

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

Summary for Subcatchment R9: To RGB 1

Runoff = 1.16 cfs @ 12.08 hrs, Volume= 4,005 cf, Depth> 6.82"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
4,963	98	Paved parking, HSG B
630	61	>75% Grass cover, Good, HSG B
1,458	98	Roofs, HSG B
7,051	95	Weighted Average
630		8.93% Pervious Area
6,421		91.07% Impervious Area

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

Summary for Subcatchment S3: To Swale

Runoff = 1.11 cfs @ 12.09 hrs, Volume= 3,422 cf, Depth> 4.08"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
2,611	98	Paved parking, HSG B
7,466	61	>75% Grass cover, Good, HSG B
10,077	71	Weighted Average
7,466		74.09% Pervious Area
2,611		25.91% Impervious Area

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

Summary for Subcatchment S4: To Swale

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 469 cf, Depth> 4.18"
Routed to Pond CB7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
392	98	Paved parking, HSG B
954	61	>75% Grass cover, Good, HSG B
1,346	72	Weighted Average
954		70.88% Pervious Area
392		29.12% Impervious Area

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

Summary for Subcatchment S8: To Swale

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 1,923 cf, Depth> 4.41"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,788	98	Paved parking, HSG B
3,451	61	>75% Grass cover, Good, HSG B
5,239	74	Weighted Average
3,451		65.87% Pervious Area
1,788		34.13% Impervious Area

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

Summary for Reach SW3:

Inflow Area = 20,294 sf, 48.68% Impervious, Inflow Depth > 4.98" for 50-yr event
Inflow = 2.65 cfs @ 12.09 hrs, Volume= 8,429 cf
Outflow = 2.26 cfs @ 12.14 hrs, Volume= 8,395 cf, Atten= 15%, Lag= 3.0 min
Routed to Pond CB7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 1.65 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 15.4 min

Peak Storage= 688 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 4.33'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 28.59 cfs

1.50' x 1.50' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 501.0' Slope= 0.0100 '/'
Inlet Invert= 256.12', Outlet Invert= 251.10'

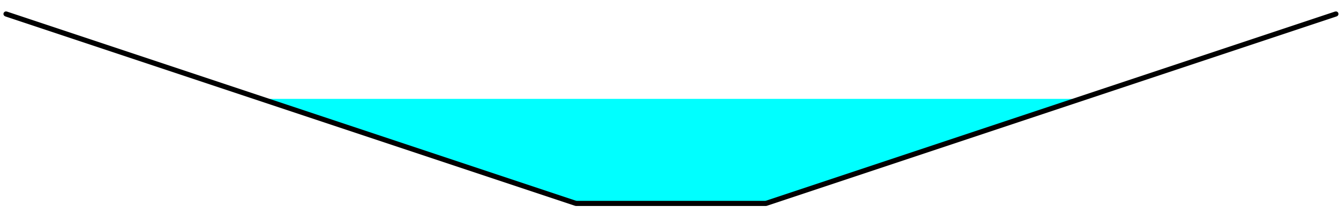
Summary for Reach SW8:

Inflow Area = 12,290 sf, 66.79% Impervious, Inflow Depth > 5.79" for 50-yr event
Inflow = 1.78 cfs @ 12.09 hrs, Volume= 5,929 cf
Outflow = 1.28 cfs @ 12.16 hrs, Volume= 5,892 cf, Atten= 28%, Lag= 4.6 min
Routed to Pond HW2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 0.39 fps, Min. Travel Time= 9.9 min
Avg. Velocity = 0.14 fps, Avg. Travel Time= 26.9 min

Peak Storage= 765 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.83' , Surface Width= 6.46'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 4.93 cfs

1.50' x 1.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 232.0' Slope= 0.0102 '/'
Inlet Invert= 255.37', Outlet Invert= 253.00'



Summary for Pond AD:

Inflow Area = 2,664 sf, 0.00% Impervious, Inflow Depth > 3.01" for 50-yr event
Inflow = 0.21 cfs @ 12.09 hrs, Volume= 667 cf
Outflow = 0.21 cfs @ 12.09 hrs, Volume= 667 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 12.09 hrs, Volume= 667 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.63' @ 12.49 hrs
Flood Elev= 250.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.60'	**8.0" Round Culvert** L= 26.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.60' / 248.47' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.35 sf

Primary OutFlow Max=0.21 cfs @ 12.09 hrs HW=249.02' TW=248.95' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.21 cfs @ 1.31 fps)

Summary for Pond CB1: CB#1

Inflow Area = 11,152 sf, 70.59% Impervious, Inflow Depth > 5.88" for 50-yr event
Inflow = 1.69 cfs @ 12.08 hrs, Volume= 5,465 cf
Outflow = 1.69 cfs @ 12.08 hrs, Volume= 5,465 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.69 cfs @ 12.08 hrs, Volume= 5,465 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.78' @ 12.08 hrs
Flood Elev= 251.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	**12.0" Round Culvert** L= 93.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.00' / 248.53' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.08 hrs HW=249.77' TW=248.92' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.68 cfs @ 3.56 fps)

Summary for Pond CB2:

Inflow Area = 22,269 sf, 62.49% Impervious, Inflow Depth > 5.53" for 50-yr event
Inflow = 3.23 cfs @ 12.09 hrs, Volume= 10,271 cf
Outflow = 3.23 cfs @ 12.09 hrs, Volume= 10,271 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.23 cfs @ 12.09 hrs, Volume= 10,271 cf
Routed to Pond SIS2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 252.43' @ 12.09 hrs
Flood Elev= 254.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.20'	**12.0" Round Culvert** L= 73.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.20' / 250.46' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=3.21 cfs @ 12.09 hrs HW=252.42' TW=250.51' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.21 cfs @ 4.08 fps)

Summary for Pond CB4:

Inflow Area = 14,887 sf, 66.43% Impervious, Inflow Depth > 5.77" for 50-yr event
Inflow = 2.23 cfs @ 12.09 hrs, Volume= 7,152 cf
Outflow = 2.23 cfs @ 12.09 hrs, Volume= 7,152 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.23 cfs @ 12.09 hrs, Volume= 7,152 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.68' @ 12.32 hrs
Flood Elev= 250.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.83'	**12.0" Round Culvert** L= 14.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.83' / 247.55' S= 0.0193 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=2.21 cfs @ 12.09 hrs HW=248.67' TW=248.04' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.21 cfs @ 3.13 fps)

Summary for Pond CB5:

Inflow Area = 31,901 sf, 39.74% Impervious, Inflow Depth > 4.62" for 50-yr event
Inflow = 3.27 cfs @ 12.16 hrs, Volume= 12,290 cf
Outflow = 3.27 cfs @ 12.16 hrs, Volume= 12,290 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.27 cfs @ 12.16 hrs, Volume= 12,290 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.77' @ 12.15 hrs
Flood Elev= 252.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	250.30'	**12.0" Round Culvert** L= 8.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 250.30' / 250.20' S= 0.0118 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=3.26 cfs @ 12.16 hrs HW=251.76' TW=251.01' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.26 cfs @ 4.15 fps)

Summary for Pond CB6:

Inflow Area = 26,016 sf, 47.47% Impervious, Inflow Depth > 4.96" for 50-yr event
Inflow = 2.55 cfs @ 12.22 hrs, Volume= 10,745 cf
Outflow = 2.55 cfs @ 12.22 hrs, Volume= 10,745 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.55 cfs @ 12.22 hrs, Volume= 10,745 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.59' @ 12.21 hrs
Flood Elev= 250.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.30'	**12.0" Round Culvert** L= 6.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.30' / 248.26' S= 0.0063 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=2.55 cfs @ 12.22 hrs HW=249.59' TW=249.14' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.55 cfs @ 3.24 fps)

Summary for Pond CB7:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 4.92" for 50-yr event
Inflow = 2.39 cfs @ 12.13 hrs, Volume= 8,865 cf
Outflow = 2.39 cfs @ 12.13 hrs, Volume= 8,865 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.39 cfs @ 12.13 hrs, Volume= 8,865 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.89' @ 12.16 hrs
Flood Elev= 253.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**18.0" Round Culvert** L= 88.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0057 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=2.25 cfs @ 12.13 hrs HW=248.88' TW=248.48' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.25 cfs @ 3.01 fps)

Summary for Pond DMH1:

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 5.33" for 50-yr event
Inflow = 1.90 cfs @ 12.09 hrs, Volume= 6,132 cf
Outflow = 1.90 cfs @ 12.09 hrs, Volume= 6,132 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.90 cfs @ 12.09 hrs, Volume= 6,132 cf
Routed to Pond SIS1 : Stormtech

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.63' @ 12.49 hrs
Flood Elev= 252.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.40'	**12.0" Round MANIFOLD** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.40' / 248.35' S= 0.0083 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	248.28'	**24.0" Round ISOLATOR** L= 4.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.28' / 248.25' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.91 cfs @ 12.09 hrs HW=248.93' TW=248.81' (Dynamic Tailwater)
├─**1=MANIFOLD** (Outlet Controls 0.62 cfs @ 2.14 fps)
└─**2=ISOLATOR** (Outlet Controls 1.29 cfs @ 2.19 fps)

Summary for Pond DMH3:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 4.92" for 50-yr event
Inflow = 2.39 cfs @ 12.13 hrs, Volume= 8,865 cf
Outflow = 2.39 cfs @ 12.13 hrs, Volume= 8,865 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.39 cfs @ 12.13 hrs, Volume= 8,865 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.66' @ 12.33 hrs
Flood Elev= 251.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.45'	**18.0" Round Culvert** L= 68.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.45' / 247.10' S= 0.0051 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=2.39 cfs @ 12.13 hrs HW=248.48' TW=248.24' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.39 cfs @ 2.59 fps)

Summary for Pond DMH4:

Inflow Area = 36,527 sf, 55.19% Impervious, Inflow Depth > 5.26" for 50-yr event
Inflow = 4.47 cfs @ 12.11 hrs, Volume= 16,017 cf
Outflow = 4.47 cfs @ 12.11 hrs, Volume= 16,017 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.47 cfs @ 12.11 hrs, Volume= 16,017 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.61' @ 12.36 hrs
Flood Elev= 251.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	246.60'	**24.0" Round Culvert** L= 34.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 246.60' / 246.43' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=4.46 cfs @ 12.11 hrs HW=248.13' TW=247.97' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.46 cfs @ 2.39 fps)

Summary for Pond DMH5:

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 5.69" for 50-yr event
Inflow = 3.63 cfs @ 12.10 hrs, Volume= 14,004 cf
Outflow = 3.63 cfs @ 12.10 hrs, Volume= 14,004 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.10 hrs, Volume= 14,004 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 252.66' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.65'	**15.0" Round Culvert** L= 116.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.65' / 250.46' S= 0.0102 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=3.62 cfs @ 12.10 hrs HW=252.66' TW=251.02' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.62 cfs @ 3.42 fps)

Summary for Pond DMH6:

Inflow Area = 61,421 sf, 51.94% Impervious, Inflow Depth > 5.14" for 50-yr event
Inflow = 6.60 cfs @ 12.13 hrs, Volume= 26,294 cf
Outflow = 6.60 cfs @ 12.13 hrs, Volume= 26,294 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.60 cfs @ 12.13 hrs, Volume= 26,294 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.06' @ 12.13 hrs
Flood Elev= 252.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.71'	**18.0" Round Culvert** L= 160.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.71' / 248.10' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=6.58 cfs @ 12.13 hrs HW=251.05' TW=249.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.58 cfs @ 3.94 fps)

Summary for Pond DMH7:

Inflow Area = 87,437 sf, 50.61% Impervious, Inflow Depth > 5.08" for 50-yr event
Inflow = 8.78 cfs @ 12.15 hrs, Volume= 37,039 cf
Outflow = 8.78 cfs @ 12.15 hrs, Volume= 37,039 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.78 cfs @ 12.15 hrs, Volume= 37,039 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.14' @ 12.21 hrs
Flood Elev= 251.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.60'	**24.0" Round Culvert** L= 111.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.60' / 246.65' S= 0.0085 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=8.77 cfs @ 12.15 hrs HW=249.08' TW=248.18' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 8.77 cfs @ 4.89 fps)

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth > 3.21" for 50-yr event
Inflow = 1.88 cfs @ 12.17 hrs, Volume= 7,117 cf
Outflow = 1.85 cfs @ 12.19 hrs, Volume= 7,042 cf, Atten= 2%, Lag= 1.3 min
Discarded = 0.12 cfs @ 12.19 hrs, Volume= 3,324 cf
Primary = 1.73 cfs @ 12.19 hrs, Volume= 3,718 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.35' @ 12.19 hrs Surf.Area= 1,929 sf Storage= 496 cf

Plug-Flow detention time= 25.7 min calculated for 7,042 cf (99% of inflow)
Center-of-Mass det. time= 19.5 min (866.8 - 847.2)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.12 cfs @ 12.19 hrs HW=250.35' (Free Discharge)
└─**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=1.72 cfs @ 12.19 hrs HW=250.35' TW=0.00' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.72 cfs @ 0.85 fps)

Summary for Pond HW2:

[58] Hint: Peaked 0.01' above defined flood level
[62] Hint: Exceeded Reach SW8 OUTLET depth by 0.25' @ 12.08 hrs

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 5.69" for 50-yr event
Inflow = 3.63 cfs @ 12.10 hrs, Volume= 14,004 cf
Outflow = 3.63 cfs @ 12.10 hrs, Volume= 14,004 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.10 hrs, Volume= 14,004 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 254.01' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0" Round Culvert** L= 14.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 251.75' S= 0.0856 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.62 cfs @ 12.10 hrs HW=254.01' TW=252.66' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.62 cfs @ 3.42 fps)

Summary for Pond IB1: Infiltration Basin #1

[80] Warning: Exceeded Pond DMH4 by 0.31' @ 2.00 hrs (0.76 cfs 859 cf)

Inflow Area = 200,508 sf, 48.93% Impervious, Inflow Depth > 4.31" for 50-yr event
Inflow = 18.37 cfs @ 12.13 hrs, Volume= 71,985 cf
Outflow = 10.00 cfs @ 12.37 hrs, Volume= 71,973 cf, Atten= 46%, Lag= 14.5 min
Discarded = 3.52 cfs @ 12.37 hrs, Volume= 56,110 cf
Primary = 6.48 cfs @ 12.37 hrs, Volume= 15,862 cf
Routed to Link AP1 : To Wetlands
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.60' @ 12.37 hrs Surf.Area= 11,039 sf Storage= 15,583 cf

Plug-Flow detention time= 21.1 min calculated for 71,907 cf (100% of inflow)
Center-of-Mass det. time= 20.9 min (830.0 - 809.1)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	32,758 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
247.00	8,532	373.0	0	0	8,532
248.00	10,075	398.2	9,293	9,293	10,126
249.00	11,718	423.3	10,886	20,179	11,817
250.00	13,461	448.4	12,579	32,758	13,612

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 244.93' Phase-In= 0.01'
#2	Primary	247.00'	**18.0" Round Culvert** L= 62.2' Ke= 0.500 Inlet / Outlet Invert= 247.00' / 246.00' S= 0.0161 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#3	Device 2	247.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	248.20'	**2.0" x 2.0" Horiz. Orifice/Grate X 8.00 columns** X 8 rows C= 0.600 in 24.0" x 24.0" Grate (44% open area) Limited to weir flow at low heads
#5	Secondary	249.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=3.52 cfs @ 12.37 hrs HW=248.60' (Free Discharge)
└─**1=Exfiltration** (Controls 3.52 cfs)

Primary OutFlow Max=6.48 cfs @ 12.37 hrs HW=248.60' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 6.48 cfs of 7.82 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 1.10 cfs @ 5.59 fps)
  └─**4=Orifice/Grate** (Orifice Controls 5.38 cfs @ 3.03 fps)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SIS1: Stormtech

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 5.33" for 50-yr event
Inflow = 1.90 cfs @ 12.09 hrs, Volume= 6,132 cf
Outflow = 0.44 cfs @ 12.49 hrs, Volume= 6,132 cf, Atten= 77%, Lag= 24.2 min
Discarded = 0.44 cfs @ 12.49 hrs, Volume= 6,132 cf
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.63' @ 12.49 hrs Surf.Area= 1,242 sf Storage= 1,588 cf

Plug-Flow detention time= 23.7 min calculated for 6,127 cf (100% of inflow)
Center-of-Mass det. time= 23.7 min (817.1 - 793.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	247.75'	1,151 cf	**20.50'W x 60.58'L x 3.50'H Field A** 4,346 cf Overall - 1,470 cf Embedded = 2,876 cf x 40.0% Voids
#2A	248.25'	1,470 cf	**ADS_StormTech SC-740 +Cap** x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
#3	248.00'	35 cf	**4.00'D x 2.75'H Vertical Cone/Cylinder**-Impervious
		2,655 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.75'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.51' Phase-In= 0.01'
#2	Secondary	250.60'	**2.0" x 2.0" Horiz. Orifice/Grate X 7.00 columns** X 7 rows C= 0.600 in 24.0" x 24.0" Grate (34% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.44 cfs @ 12.49 hrs HW=249.63' (Free Discharge)
└─**1=Exfiltration** (Controls 0.44 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.75' TW=0.00' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS1: Stormtech - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

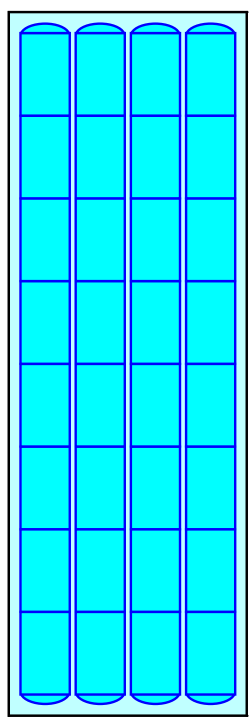
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

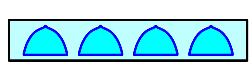
32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af
Overall Storage Efficiency = 60.3%
Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers
161.0 cy Field
106.5 cy Stone





Summary for Pond SIS2:

Inflow Area = 24,351 sf, 65.70% Impervious, Inflow Depth > 5.67" for 50-yr event
Inflow = 3.57 cfs @ 12.09 hrs, Volume= 11,511 cf
Outflow = 0.81 cfs @ 12.49 hrs, Volume= 11,510 cf, Atten= 77%, Lag= 24.3 min
Discarded = 0.81 cfs @ 12.49 hrs, Volume= 11,510 cf
Primary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.84' @ 12.49 hrs Surf.Area= 1,748 sf Storage= 3,221 cf

Plug-Flow detention time= 29.8 min calculated for 11,499 cf (100% of inflow)
Center-of-Mass det. time= 29.7 min (819.4 - 789.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	249.00'	1,603 cf	**44.25'W x 39.22'L x 3.50'H Field A** 6,074 cf Overall - 2,067 cf Embedded = 4,006 cf x 40.0% Voids
#2A	249.50'	2,067 cf	**ADS_StormTech SC-740 +Cap** x 45 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 45 Chambers in 9 Rows
#3	250.80'	38 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder**
		3,708 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	253.50'	**2.0" x 2.0" Horiz. Orifice/Grate X 6.00 columns** X 6 rows C= 0.600 in 24.0" x 24.0" Grate (25% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.81 cfs @ 12.49 hrs HW=251.84' (Free Discharge)
1=Exfiltration (Controls 0.81 cfs)

Primary OutFlow Max=0.00 cfs @ 2.00 hrs HW=249.00' TW=247.00' (Dynamic Tailwater)
2=Orifice/Grate (Controls 0.00 cfs)

Pond SIS2: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

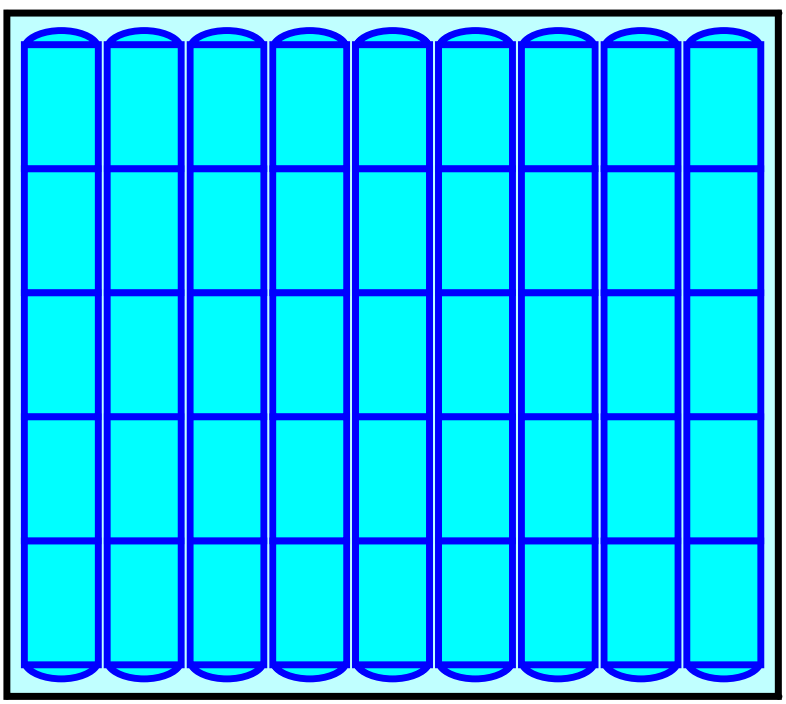
5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +12.0" End Stone x 2 = 39.22' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

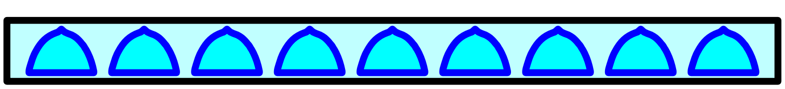
45 Chambers x 45.9 cf = 2,067.3 cf Chamber Storage

6,073.7 cf Field - 2,067.3 cf Chambers = 4,006.4 cf Stone x 40.0% Voids = 1,602.6 cf Stone Storage

Chamber Storage + Stone Storage = 3,669.9 cf = 0.084 af
Overall Storage Efficiency = 60.4%
Overall System Size = 39.22' x 44.25' x 3.50'

45 Chambers
225.0 cy Field
148.4 cy Stone





Summary for Link AP1: To Wetlands

Inflow Area =	236,171 sf,	42.45% Impervious,	Inflow Depth > 1.28"	for 50-yr event	
Inflow =	7.71 cfs @	12.33 hrs,	Volume=	25,098 cf	
Primary =	7.71 cfs @	12.33 hrs,	Volume=	25,098 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP2: To Offsite

Inflow Area =	36,823 sf,	7.73% Impervious,	Inflow Depth > 3.21"	for 50-yr event	
Inflow =	3.15 cfs @	12.09 hrs,	Volume=	9,864 cf	
Primary =	3.15 cfs @	12.09 hrs,	Volume=	9,864 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP3: Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth = 1.68" for 50-yr event
Inflow = 1.73 cfs @ 12.19 hrs, Volume= 3,718 cf
Primary = 1.73 cfs @ 12.19 hrs, Volume= 3,718 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Time span=2.00-24.00 hrs, dt=0.02 hrs, 1101 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: To Area Drain Runoff Area=2,664 sf 0.00% Impervious Runoff Depth>4.11"
Tc=6.0 min CN=61 Runoff=0.29 cfs 912 cf

Subcatchment A2: To Exterior Runoff Area=1,761 sf 0.00% Impervious Runoff Depth>4.11"
Tc=6.0 min CN=61 Runoff=0.19 cfs 603 cf

Subcatchment A3: To Exterior Runoff Area=3,301 sf 50.05% Impervious Runoff Depth>6.43"
Tc=6.0 min CN=80 Runoff=0.56 cfs 1,769 cf

Subcatchment A4: To Roof Drain Runoff Area=2,082 sf 100.00% Impervious Runoff Depth>8.56"
Tc=6.0 min CN=98 Runoff=0.42 cfs 1,486 cf

Subcatchment A5: To Abutter Runoff Area=26,605 sf 5.66% Impervious Runoff Depth>4.35"
Flow Length=212' Tc=11.8 min CN=63 Runoff=2.57 cfs 9,635 cf

Subcatchment A6: To Abutter Runoff Area=36,823 sf 7.73% Impervious Runoff Depth>4.35"
Tc=6.0 min CN=63 Runoff=4.30 cfs 13,352 cf

Subcatchment A7: To Infiltration Basin Runoff Area=18,226 sf 0.00% Impervious Runoff Depth>4.11"
Tc=6.0 min CN=61 Runoff=2.00 cfs 6,239 cf

Subcatchment A8: To Exterior Runoff Area=30,601 sf 1.56% Impervious Runoff Depth>3.99"
Tc=6.0 min CN=60 Runoff=3.25 cfs 10,166 cf

Subcatchment R1: To CB#1 Runoff Area=11,152 sf 70.59% Impervious Runoff Depth>7.28"
Tc=6.0 min CN=87 Runoff=2.07 cfs 6,768 cf

Subcatchment R2: To CB-2 Runoff Area=22,269 sf 62.49% Impervious Runoff Depth>6.92"
Tc=6.0 min CN=84 Runoff=3.99 cfs 12,837 cf

Subcatchment R3: To RGB Runoff Area=10,217 sf 71.15% Impervious Runoff Depth>7.28"
Tc=6.0 min CN=87 Runoff=1.90 cfs 6,201 cf

Subcatchment R4: To CB-4 Runoff Area=14,887 sf 66.43% Impervious Runoff Depth>7.16"
Tc=6.0 min CN=86 Runoff=2.73 cfs 8,884 cf

Subcatchment R5: To Foxhole Runoff Area=33,967 sf 52.12% Impervious Runoff Depth>6.42"
Flow Length=327' Tc=10.1 min CN=80 Runoff=5.02 cfs 18,186 cf

Subcatchment R6: To CB-6 Runoff Area=26,016 sf 47.47% Impervious Runoff Depth>6.30"
Flow Length=248' Tc=16.0 min CN=79 Runoff=3.22 cfs 13,650 cf

Subcatchment R7: To CB-5 Runoff Area=31,901 sf 39.74% Impervious Runoff Depth>5.93"
Flow Length=303' Tc=11.9 min CN=76 Runoff=4.17 cfs 15,775 cf

Subcatchment R8: To RGB 2 Runoff Area=17,230 sf 63.94% Impervious Runoff Depth>7.04"
Tc=6.0 min CN=85 Runoff=3.12 cfs 10,107 cf

Subcatchment R9: To RGB 1 Runoff Area=7,051 sf 91.07% Impervious Runoff Depth>8.25"
Tc=6.0 min CN=95 Runoff=1.39 cfs 4,845 cf

Subcatchment S3: To Swale Runoff Area=10,077 sf 25.91% Impervious Runoff Depth>5.33"
Tc=6.0 min CN=71 Runoff=1.44 cfs 4,475 cf

Subcatchment S4: To Swale Runoff Area=1,346 sf 29.12% Impervious Runoff Depth>5.45"
Tc=6.0 min CN=72 Runoff=0.20 cfs 611 cf

Subcatchment S8: To Swale Runoff Area=5,239 sf 34.13% Impervious Runoff Depth>5.70"
Tc=6.0 min CN=74 Runoff=0.80 cfs 2,487 cf

Reach SW3: Avg. Flow Depth=0.53' Max Vel=1.76 fps Inflow=3.34 cfs 10,675 cf
n=0.041 L=501.0' S=0.0100 '/' Capacity=28.59 cfs Outflow=2.88 cfs 10,637 cf

Reach SW8: Avg. Flow Depth=0.92' Max Vel=0.41 fps Inflow=2.19 cfs 7,331 cf
n=0.240 L=232.0' S=0.0102 '/' Capacity=4.93 cfs Outflow=1.61 cfs 7,290 cf

Pond AD: Peak Elev=250.30' Inflow=0.29 cfs 912 cf
8.0" Round Culvert n=0.011 L=26.4' S=0.0049 '/' Outflow=0.29 cfs 912 cf

Pond CB1: CB#1 Peak Elev=250.32' Inflow=2.07 cfs 6,768 cf
12.0" Round Culvert n=0.011 L=93.3' S=0.0050 '/' Outflow=2.07 cfs 6,768 cf

Pond CB2: Peak Elev=254.00' Inflow=3.99 cfs 12,837 cf
12.0" Round Culvert n=0.011 L=73.9' S=0.0100 '/' Outflow=3.99 cfs 12,837 cf

Pond CB4: Peak Elev=249.05' Inflow=2.73 cfs 8,884 cf
12.0" Round Culvert n=0.011 L=14.5' S=0.0193 '/' Outflow=2.73 cfs 8,884 cf

Pond CB5: Peak Elev=252.58' Inflow=4.17 cfs 15,775 cf
12.0" Round Culvert n=0.011 L=8.5' S=0.0118 '/' Outflow=4.17 cfs 15,775 cf

Pond CB6: Peak Elev=250.18' Inflow=3.22 cfs 13,650 cf
12.0" Round Culvert n=0.011 L=6.3' S=0.0063 '/' Outflow=3.22 cfs 13,650 cf

Pond CB7: Peak Elev=249.13' Inflow=3.06 cfs 11,248 cf
18.0" Round Culvert n=0.011 L=88.3' S=0.0057 '/' Outflow=3.06 cfs 11,248 cf

Pond DMH1: Peak Elev=250.30' Inflow=2.36 cfs 7,680 cf
Outflow=2.36 cfs 7,680 cf

Pond DMH3: Peak Elev=249.02' Inflow=3.06 cfs 11,248 cf
18.0" Round Culvert n=0.011 L=68.2' S=0.0051 '/' Outflow=3.06 cfs 11,248 cf

Pond DMH4: Peak Elev=248.98' Inflow=5.61 cfs 20,132 cf
24.0" Round Culvert n=0.011 L=34.6' S=0.0049 '/' Outflow=5.61 cfs 20,132 cf

Pond DMH5: Peak Elev=252.85' Inflow=4.50 cfs 17,397 cf
15.0" Round Culvert n=0.011 L=116.8' S=0.0102 '/' Outflow=4.50 cfs 17,397 cf

Pond DMH6: Peak Elev=251.41' Inflow=8.31 cfs 33,172 cf
18.0" Round Culvert n=0.011 L=160.8' S=0.0100 '/' Outflow=8.31 cfs 33,172 cf

Pond DMH7: Peak Elev=249.46' Inflow=11.07 cfs 46,822 cf
24.0" Round Culvert n=0.011 L=111.5' S=0.0085 '/' Outflow=11.07 cfs 46,822 cf

Pond EX: Existing Abutter Depression Peak Elev=250.38' Storage=546 cf Inflow=2.57 cfs 9,635 cf
Discarded=0.12 cfs 3,825 cf Primary=2.41 cfs 5,701 cf Outflow=2.53 cfs 9,526 cf

Pond HW2: Peak Elev=254.20' Inflow=4.50 cfs 17,397 cf
15.0" Round Culvert n=0.013 L=14.6' S=0.0856 '/' Outflow=4.50 cfs 17,397 cf

Pond IB1: Infiltration Basin #1 Peak Elev=248.96' Storage=19,697 cf Inflow=23.28 cfs 91,751 cf
Discarded=3.99 cfs 66,331 cf Primary=8.69 cfs 25,405 cf Secondary=0.00 cfs 0 cf Outflow=12.68 cfs 91,736 cf

Pond SIS1: Stormtech Peak Elev=250.30' Storage=2,134 cf Inflow=2.36 cfs 7,680 cf
Discarded=0.51 cfs 7,680 cf Secondary=0.00 cfs 0 cf Outflow=0.51 cfs 7,680 cf

Pond SIS2: Peak Elev=253.64' Storage=3,706 cf Inflow=4.40 cfs 14,323 cf
Discarded=1.11 cfs 13,952 cf Primary=1.38 cfs 371 cf Outflow=2.49 cfs 14,322 cf

Link AP1: To Wetlands Inflow=10.34 cfs 37,942 cf
Primary=10.34 cfs 37,942 cf

Link AP2: To Offsite Inflow=4.30 cfs 13,352 cf
Primary=4.30 cfs 13,352 cf

Link AP3: Abutter Depression Inflow=2.41 cfs 5,701 cf
Primary=2.41 cfs 5,701 cf

Total Runoff Area = 313,415 sf Runoff Volume = 148,988 cf Average Runoff Depth = 5.70"
64.11% Pervious = 200,945 sf 35.89% Impervious = 112,470 sf

Summary for Subcatchment A1: To Area Drain

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 912 cf, Depth> 4.11"
Routed to Pond AD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
2,664	61	>75% Grass cover, Good, HSG B
2,664		100.00% Pervious Area

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

Summary for Subcatchment A2: To Exterior

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 603 cf, Depth> 4.11"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
1,761	61	>75% Grass cover, Good, HSG B
1,761		100.00% Pervious Area

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

Summary for Subcatchment A3: To Exterior

Runoff = 0.56 cfs @ 12.09 hrs, Volume= 1,769 cf, Depth> 6.43"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
1,649	61	>75% Grass cover, Good, HSG B
1,652	98	Roofs, HSG B
3,301	80	Weighted Average
1,649		49.95% Pervious Area
1,652		50.05% Impervious Area

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

Summary for Subcatchment A4: To Roof Drain

Runoff = 0.42 cfs @ 12.08 hrs, Volume= 1,486 cf, Depth> 8.56"
Routed to Pond SIS2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
2,082	98	Roofs, HSG B
2,082		100.00% Impervious Area

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

Summary for Subcatchment A5: To Abutter

Runoff = 2.57 cfs @ 12.17 hrs, Volume= 9,635 cf, Depth> 4.35"
Routed to Pond EX : Existing Abutter Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
23,897	61	>75% Grass cover, Good, HSG B
1,201	55	Woods, Good, HSG B
1,507	98	Roofs, HSG B
26,605	63	Weighted Average
25,098		94.34% Pervious Area
1,507		5.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0120	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.0	162	0.0060	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	212	Total			

Summary for Subcatchment A6: To Abutter

Runoff = 4.30 cfs @ 12.09 hrs, Volume= 13,352 cf, Depth> 4.35"
Routed to Link AP2 : To Offsite

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
1,281	98	Paved parking, HSG B
25,992	61	>75% Grass cover, Good, HSG B
7,984	55	Woods, Good, HSG B
1,566	98	Roofs, HSG B
36,823	63	Weighted Average
33,976		92.27% Pervious Area
2,847		7.73% Impervious Area

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

Summary for Subcatchment A7: To Infiltration Basin

Runoff = 2.00 cfs @ 12.09 hrs, Volume= 6,239 cf, Depth> 4.11"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
18,226	61	>75% Grass cover, Good, HSG B
18,226		100.00% Pervious Area

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

Summary for Subcatchment A8: To Exterior

Runoff = 3.25 cfs @ 12.09 hrs, Volume= 10,166 cf, Depth> 3.99"
Routed to Link AP1 : To Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
476	98	Paved parking, HSG B
20,641	61	>75% Grass cover, Good, HSG B
9,484	55	Woods, Good, HSG B
30,601	60	Weighted Average
30,125		98.44% Pervious Area
476		1.56% Impervious Area

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

Summary for Subcatchment R1: To CB#1

Runoff = 2.07 cfs @ 12.08 hrs, Volume= 6,768 cf, Depth> 7.28"
Routed to Pond CB1 : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
7,872	98	Paved parking, HSG B
3,280	61	>75% Grass cover, Good, HSG B
11,152	87	Weighted Average
3,280		29.41% Pervious Area
7,872		70.59% Impervious Area

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

Summary for Subcatchment R2: To CB-2

Runoff = 3.99 cfs @ 12.08 hrs, Volume= 12,837 cf, Depth> 6.92"
Routed to Pond CB2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
8,993	98	Paved parking, HSG B
8,353	61	>75% Grass cover, Good, HSG B
4,923	98	Roofs, HSG B
22,269	84	Weighted Average
8,353		37.51% Pervious Area
13,916		62.49% Impervious Area

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

Summary for Subcatchment R3: To RGB

Runoff = 1.90 cfs @ 12.08 hrs, Volume= 6,201 cf, Depth> 7.28"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
5,386	98	Paved parking, HSG B
2,948	61	>75% Grass cover, Good, HSG B
1,883	98	Roofs, HSG B
10,217	87	Weighted Average
2,948		28.85% Pervious Area
7,269		71.15% Impervious Area

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

Summary for Subcatchment R4: To CB-4

Runoff = 2.73 cfs @ 12.08 hrs, Volume= 8,884 cf, Depth> 7.16"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
7,280	98	Paved parking, HSG B
4,998	61	>75% Grass cover, Good, HSG B
2,609	98	Roofs, HSG B
14,887	86	Weighted Average
4,998		33.57% Pervious Area
9,889		66.43% Impervious Area

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

Summary for Subcatchment R5: To Foxhole

Runoff = 5.02 cfs @ 12.14 hrs, Volume= 18,186 cf, Depth> 6.42"
Routed to Pond IB1 : Infiltration Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
11,765	98	Paved parking, HSG B
16,262	61	>75% Grass cover, Good, HSG B
5,940	98	Roofs, HSG B
33,967	80	Weighted Average
16,262		47.88% Pervious Area
17,705		52.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	68	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.9	187	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	327	Total			

Summary for Subcatchment R6: To CB-6

Runoff = 3.22 cfs @ 12.21 hrs, Volume= 13,650 cf, Depth> 6.30"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
7,642	98	Paved parking, HSG B
13,667	61	>75% Grass cover, Good, HSG B
4,707	98	Roofs, HSG B
26,016	79	Weighted Average
13,667		52.53% Pervious Area
12,349		47.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0030	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
3.8	158	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0130	2.31		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.0	248	Total			

Summary for Subcatchment R7: To CB-5

Runoff = 4.17 cfs @ 12.16 hrs, Volume= 15,775 cf, Depth> 5.93"
Routed to Pond CB5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
7,161	98	Paved parking, HSG B
19,224	61	>75% Grass cover, Good, HSG B
5,516	98	Roofs, HSG B
31,901	76	Weighted Average
19,224		60.26% Pervious Area
12,677		39.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
5.7	226	0.0090	0.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
11.9	303	Total			

Summary for Subcatchment R8: To RGB 2

Runoff = 3.12 cfs @ 12.08 hrs, Volume= 10,107 cf, Depth> 7.04"
Routed to Pond HW2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
6,729	98	Paved parking, HSG B
6,213	61	>75% Grass cover, Good, HSG B
4,288	98	Roofs, HSG B
17,230	85	Weighted Average
6,213		36.06% Pervious Area
11,017		63.94% Impervious Area

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

Summary for Subcatchment R9: To RGB 1

Runoff = 1.39 cfs @ 12.08 hrs, Volume= 4,845 cf, Depth> 8.25"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
4,963	98	Paved parking, HSG B
630	61	>75% Grass cover, Good, HSG B
1,458	98	Roofs, HSG B
7,051	95	Weighted Average
630		8.93% Pervious Area
6,421		91.07% Impervious Area

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

Summary for Subcatchment S3: To Swale

Runoff = 1.44 cfs @ 12.09 hrs, Volume= 4,475 cf, Depth> 5.33"
Routed to Reach SW3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
2,611	98	Paved parking, HSG B
7,466	61	>75% Grass cover, Good, HSG B
10,077	71	Weighted Average
7,466		74.09% Pervious Area
2,611		25.91% Impervious Area

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

Summary for Subcatchment S4: To Swale

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 611 cf, Depth> 5.45"
Routed to Pond CB7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
392	98	Paved parking, HSG B
954	61	>75% Grass cover, Good, HSG B
1,346	72	Weighted Average
954		70.88% Pervious Area
392		29.12% Impervious Area

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

Summary for Subcatchment S8: To Swale

Runoff = 0.80 cfs @ 12.09 hrs, Volume= 2,487 cf, Depth> 5.70"
Routed to Reach SW8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-yr Rainfall=8.86"

Area (sf)	CN	Description
1,788	98	Paved parking, HSG B
3,451	61	>75% Grass cover, Good, HSG B
5,239	74	Weighted Average
3,451		65.87% Pervious Area
1,788		34.13% Impervious Area

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

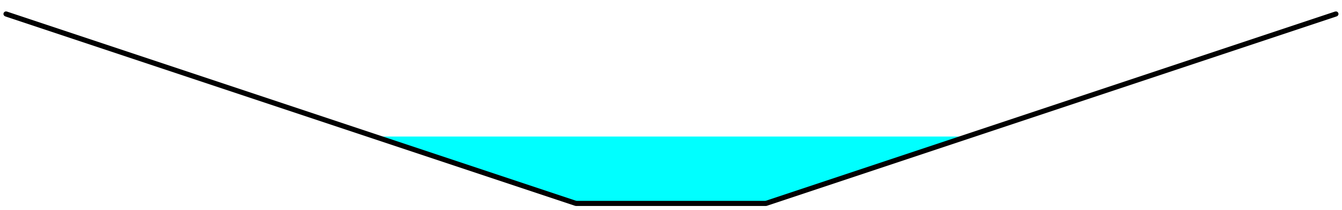
Summary for Reach SW3:

Inflow Area = 20,294 sf, 48.68% Impervious, Inflow Depth > 6.31" for 100-yr event
Inflow = 3.34 cfs @ 12.09 hrs, Volume= 10,675 cf
Outflow = 2.88 cfs @ 12.13 hrs, Volume= 10,637 cf, Atten= 14%, Lag= 2.9 min
Routed to Pond CB7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 1.76 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.58 fps, Avg. Travel Time= 14.4 min

Peak Storage= 821 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.53' , Surface Width= 4.68'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 28.59 cfs

1.50' x 1.50' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 501.0' Slope= 0.0100 '/'
Inlet Invert= 256.12', Outlet Invert= 251.10'



Summary for Reach SW8:

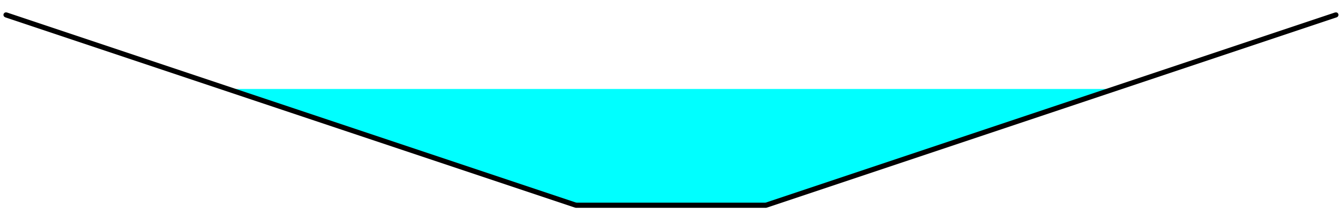
[82] Warning: Early inflow requires earlier time span

Inflow Area = 12,290 sf, 66.79% Impervious, Inflow Depth > 7.16" for 100-yr event
Inflow = 2.19 cfs @ 12.08 hrs, Volume= 7,331 cf
Outflow = 1.61 cfs @ 12.16 hrs, Volume= 7,290 cf, Atten= 27%, Lag= 4.4 min
Routed to Pond HW2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Max. Velocity= 0.41 fps, Min. Travel Time= 9.4 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 25.1 min

Peak Storage= 904 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.92' , Surface Width= 7.00'
Bank-Full Depth= 1.50' Flow Area= 9.0 sf, Capacity= 4.93 cfs

1.50' x 1.50' deep channel, n= 0.240 Sheet flow over Dense Grass
Side Slope Z-value= 3.0 '/' Top Width= 10.50'
Length= 232.0' Slope= 0.0102 '/'
Inlet Invert= 255.37', Outlet Invert= 253.00'



Summary for Pond AD:

Inflow Area = 2,664 sf, 0.00% Impervious, Inflow Depth > 4.11" for 100-yr event
Inflow = 0.29 cfs @ 12.09 hrs, Volume= 912 cf
Outflow = 0.29 cfs @ 12.09 hrs, Volume= 912 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.09 hrs, Volume= 912 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.30' @ 12.50 hrs
Flood Elev= 250.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.60'	**8.0" Round Culvert** L= 26.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.60' / 248.47' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.35 sf

Primary OutFlow Max=0.30 cfs @ 12.09 hrs HW=249.26' TW=249.23' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.30 cfs @ 1.05 fps)

Summary for Pond CB1: CB#1

Inflow Area = 11,152 sf, 70.59% Impervious, Inflow Depth > 7.28" for 100-yr event
Inflow = 2.07 cfs @ 12.08 hrs, Volume= 6,768 cf
Outflow = 2.07 cfs @ 12.08 hrs, Volume= 6,768 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.07 cfs @ 12.08 hrs, Volume= 6,768 cf
Routed to Pond DMH1 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.32' @ 12.49 hrs
Flood Elev= 251.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.00'	**12.0" Round Culvert** L= 93.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.00' / 248.53' S= 0.0050 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=2.08 cfs @ 12.08 hrs HW=249.89' TW=249.19' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.08 cfs @ 3.73 fps)

Summary for Pond CB2:

Inflow Area = 22,269 sf, 62.49% Impervious, Inflow Depth > 6.92" for 100-yr event
Inflow = 3.99 cfs @ 12.08 hrs, Volume= 12,837 cf
Outflow = 3.99 cfs @ 12.08 hrs, Volume= 12,837 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.99 cfs @ 12.08 hrs, Volume= 12,837 cf
Routed to Pond SIS2 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 254.00' @ 12.27 hrs
Flood Elev= 254.02'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.20'	**12.0" Round Culvert** L= 73.9' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.20' / 250.46' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=3.97 cfs @ 12.08 hrs HW=252.80' TW=250.99' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.97 cfs @ 5.05 fps)

Summary for Pond CB4:

Inflow Area = 14,887 sf, 66.43% Impervious, Inflow Depth > 7.16" for 100-yr event
Inflow = 2.73 cfs @ 12.08 hrs, Volume= 8,884 cf
Outflow = 2.73 cfs @ 12.08 hrs, Volume= 8,884 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.73 cfs @ 12.08 hrs, Volume= 8,884 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.05' @ 12.33 hrs
Flood Elev= 250.69'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.83'	**12.0" Round Culvert** L= 14.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.83' / 247.55' S= 0.0193 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=2.72 cfs @ 12.08 hrs HW=248.88' TW=248.36' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.72 cfs @ 3.46 fps)

Summary for Pond CB5:

[58] Hint: Peaked 0.13' above defined flood level

Inflow Area = 31,901 sf, 39.74% Impervious, Inflow Depth > 5.93" for 100-yr event
Inflow = 4.17 cfs @ 12.16 hrs, Volume= 15,775 cf
Outflow = 4.17 cfs @ 12.16 hrs, Volume= 15,775 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.17 cfs @ 12.16 hrs, Volume= 15,775 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 252.58' @ 12.15 hrs
Flood Elev= 252.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	250.30'	**12.0" Round Culvert** L= 8.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 250.30' / 250.20' S= 0.0118 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=4.17 cfs @ 12.16 hrs HW=252.56' TW=251.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.17 cfs @ 5.30 fps)

Summary for Pond CB6:

Inflow Area = 26,016 sf, 47.47% Impervious, Inflow Depth > 6.30" for 100-yr event
Inflow = 3.22 cfs @ 12.21 hrs, Volume= 13,650 cf
Outflow = 3.22 cfs @ 12.21 hrs, Volume= 13,650 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.22 cfs @ 12.21 hrs, Volume= 13,650 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.18' @ 12.21 hrs
Flood Elev= 250.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.30'	**12.0" Round Culvert** L= 6.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.30' / 248.26' S= 0.0063 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=3.21 cfs @ 12.21 hrs HW=250.18' TW=249.45' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.21 cfs @ 4.09 fps)

Summary for Pond CB7:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 6.24" for 100-yr event
Inflow = 3.06 cfs @ 12.13 hrs, Volume= 11,248 cf
Outflow = 3.06 cfs @ 12.13 hrs, Volume= 11,248 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.06 cfs @ 12.13 hrs, Volume= 11,248 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.13' @ 12.18 hrs
Flood Elev= 253.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**18.0" Round Culvert** L= 88.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.00' / 247.50' S= 0.0057 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=2.75 cfs @ 12.13 hrs HW=249.10' TW=248.79' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.75 cfs @ 2.77 fps)

Summary for Pond DMH1:

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 6.67" for 100-yr event
Inflow = 2.36 cfs @ 12.09 hrs, Volume= 7,680 cf
Outflow = 2.36 cfs @ 12.09 hrs, Volume= 7,680 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.36 cfs @ 12.09 hrs, Volume= 7,680 cf
Routed to Pond SIS1 : Stormtech

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.30' @ 12.50 hrs
Flood Elev= 252.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	248.40'	**12.0" Round MANIFOLD** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.40' / 248.35' S= 0.0083 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Primary	248.28'	**24.0" Round ISOLATOR** L= 4.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 248.28' / 248.25' S= 0.0075 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.37 cfs @ 12.09 hrs HW=249.19' TW=249.12' (Dynamic Tailwater)
├─**1=MANIFOLD** (Outlet Controls 0.79 cfs @ 1.64 fps)
└─**2=ISOLATOR** (Outlet Controls 1.58 cfs @ 1.67 fps)

Summary for Pond DMH3:

Inflow Area = 21,640 sf, 47.47% Impervious, Inflow Depth > 6.24" for 100-yr event
Inflow = 3.06 cfs @ 12.13 hrs, Volume= 11,248 cf
Outflow = 3.06 cfs @ 12.13 hrs, Volume= 11,248 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.06 cfs @ 12.13 hrs, Volume= 11,248 cf
Routed to Pond DMH4 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.02' @ 12.34 hrs
Flood Elev= 251.98'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.45'	**18.0" Round Culvert** L= 68.2' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.45' / 247.10' S= 0.0051 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=3.05 cfs @ 12.13 hrs HW=248.79' TW=248.59' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 3.05 cfs @ 2.42 fps)

Summary for Pond DMH4:

Inflow Area = 36,527 sf, 55.19% Impervious, Inflow Depth > 6.61" for 100-yr event
Inflow = 5.61 cfs @ 12.11 hrs, Volume= 20,132 cf
Outflow = 5.61 cfs @ 12.11 hrs, Volume= 20,132 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.61 cfs @ 12.11 hrs, Volume= 20,132 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.98' @ 12.36 hrs
Flood Elev= 251.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	246.60'	**24.0" Round Culvert** L= 34.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 246.60' / 246.43' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=5.60 cfs @ 12.11 hrs HW=248.47' TW=248.32' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 5.60 cfs @ 2.37 fps)

Summary for Pond DMH5:

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 7.07" for 100-yr event
Inflow = 4.50 cfs @ 12.10 hrs, Volume= 17,397 cf
Outflow = 4.50 cfs @ 12.10 hrs, Volume= 17,397 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.50 cfs @ 12.10 hrs, Volume= 17,397 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 252.85' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	251.65'	**15.0" Round Culvert** L= 116.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 251.65' / 250.46' S= 0.0102 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=4.49 cfs @ 12.10 hrs HW=252.84' TW=251.36' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 4.49 cfs @ 3.72 fps)

Summary for Pond DMH6:

Inflow Area = 61,421 sf, 51.94% Impervious, Inflow Depth > 6.48" for 100-yr event
Inflow = 8.31 cfs @ 12.13 hrs, Volume= 33,172 cf
Outflow = 8.31 cfs @ 12.13 hrs, Volume= 33,172 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.31 cfs @ 12.13 hrs, Volume= 33,172 cf
Routed to Pond DMH7 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 251.41' @ 12.13 hrs
Flood Elev= 252.93'

Device	Routing	Invert	Outlet Devices
#1	Primary	249.71'	**18.0" Round Culvert** L= 160.8' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 249.71' / 248.10' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=8.28 cfs @ 12.13 hrs HW=251.41' TW=249.35' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 8.28 cfs @ 4.69 fps)

Summary for Pond DMH7:

Inflow Area = 87,437 sf, 50.61% Impervious, Inflow Depth > 6.43" for 100-yr event
Inflow = 11.07 cfs @ 12.15 hrs, Volume= 46,822 cf
Outflow = 11.07 cfs @ 12.15 hrs, Volume= 46,822 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.07 cfs @ 12.15 hrs, Volume= 46,822 cf
Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 249.46' @ 12.21 hrs
Flood Elev= 251.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	247.60'	**24.0" Round Culvert** L= 111.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 247.60' / 246.65' S= 0.0085 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf

Primary OutFlow Max=11.05 cfs @ 12.15 hrs HW=249.40' TW=248.54' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 11.05 cfs @ 4.90 fps)

Summary for Pond EX: Existing Abutter Depression

Inflow Area = 26,605 sf, 5.66% Impervious, Inflow Depth > 4.35" for 100-yr event
Inflow = 2.57 cfs @ 12.17 hrs, Volume= 9,635 cf
Outflow = 2.53 cfs @ 12.19 hrs, Volume= 9,526 cf, Atten= 1%, Lag= 1.2 min
Discarded = 0.12 cfs @ 12.19 hrs, Volume= 3,825 cf
Primary = 2.41 cfs @ 12.19 hrs, Volume= 5,701 cf
Routed to Link AP3 : Abutter Depression

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.38' @ 12.19 hrs Surf.Area= 2,039 sf Storage= 546 cf

Plug-Flow detention time= 22.5 min calculated for 9,517 cf (99% of inflow)
Center-of-Mass det. time= 16.0 min (854.5 - 838.5)

Volume	Invert	Avail.Storage	Storage Description
#1	249.80'	1,122 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.80	164	0	0
250.00	562	73	73
250.20	1,261	182	255
250.40	2,144	341	595
250.60	3,127	527	1,122

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.80'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	250.25'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.12 cfs @ 12.19 hrs HW=250.38' (Free Discharge)
└—**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=2.40 cfs @ 12.19 hrs HW=250.38' TW=0.00' (Dynamic Tailwater)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.40 cfs @ 0.95 fps)

Summary for Pond HW2:

[58] Hint: Peaked 0.20' above defined flood level
[62] Hint: Exceeded Reach SW8 OUTLET depth by 0.34' @ 12.08 hrs

Inflow Area = 29,520 sf, 65.13% Impervious, Inflow Depth > 7.07" for 100-yr event
Inflow = 4.50 cfs @ 12.10 hrs, Volume= 17,397 cf
Outflow = 4.50 cfs @ 12.10 hrs, Volume= 17,397 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.50 cfs @ 12.10 hrs, Volume= 17,397 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 254.20' @ 12.10 hrs
Flood Elev= 254.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**15.0" Round Culvert** L= 14.6' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 251.75' S= 0.0856 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.49 cfs @ 12.10 hrs HW=254.19' TW=252.84' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.49 cfs @ 3.72 fps)

Summary for Pond IB1: Infiltration Basin #1

[80] Warning: Exceeded Pond DMH4 by 0.31' @ 2.00 hrs (0.76 cfs 661 cf)

Inflow Area = 200,508 sf, 48.93% Impervious, Inflow Depth > 5.49" for 100-yr event
Inflow = 23.28 cfs @ 12.13 hrs, Volume= 91,751 cf
Outflow = 12.68 cfs @ 12.37 hrs, Volume= 91,736 cf, Atten= 46%, Lag= 14.8 min
Discarded = 3.99 cfs @ 12.37 hrs, Volume= 66,331 cf
Primary = 8.69 cfs @ 12.37 hrs, Volume= 25,405 cf
Routed to Link AP1 : To Wetlands
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 248.96' @ 12.37 hrs Surf.Area= 11,648 sf Storage= 19,697 cf

Plug-Flow detention time= 21.1 min calculated for 91,736 cf (100% of inflow)
Center-of-Mass det. time= 21.0 min (823.6 - 802.6)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	32,758 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
247.00	8,532	373.0	0	0	8,532
248.00	10,075	398.2	9,293	9,293	10,126
249.00	11,718	423.3	10,886	20,179	11,817
250.00	13,461	448.4	12,579	32,758	13,612

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 244.93' Phase-In= 0.01'
#2	Primary	247.00'	**18.0" Round Culvert** L= 62.2' Ke= 0.500 Inlet / Outlet Invert= 247.00' / 246.00' S= 0.0161 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#3	Device 2	247.00'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	248.20'	**2.0" x 2.0" Horiz. Orifice/Grate X 8.00 columns** X 8 rows C= 0.600 in 24.0" x 24.0" Grate (44% open area) Limited to weir flow at low heads
#5	Secondary	249.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=3.98 cfs @ 12.37 hrs HW=248.96' (Free Discharge)
└─**1=Exfiltration** (Controls 3.98 cfs)

Primary OutFlow Max=8.69 cfs @ 12.37 hrs HW=248.96' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 8.69 cfs of 9.35 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 1.24 cfs @ 6.29 fps)
  └─**4=Orifice/Grate** (Orifice Controls 7.45 cfs @ 4.19 fps)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.00' TW=0.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SIS1: Stormtech

Inflow Area = 13,816 sf, 56.98% Impervious, Inflow Depth > 6.67" for 100-yr event
Inflow = 2.36 cfs @ 12.09 hrs, Volume= 7,680 cf
Outflow = 0.51 cfs @ 12.50 hrs, Volume= 7,680 cf, Atten= 78%, Lag= 25.0 min
Discarded = 0.51 cfs @ 12.50 hrs, Volume= 7,680 cf
Secondary = 0.00 cfs @ 2.00 hrs, Volume= 0 cf
Routed to Link AP1 : To Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 250.30' @ 12.50 hrs Surf.Area= 1,242 sf Storage= 2,134 cf

Plug-Flow detention time= 29.8 min calculated for 7,673 cf (100% of inflow)
Center-of-Mass det. time= 29.8 min (817.7 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	247.75'	1,151 cf	**20.50'W x 60.58'L x 3.50'H Field A** 4,346 cf Overall - 1,470 cf Embedded = 2,876 cf x 40.0% Voids
#2A	248.25'	1,470 cf	**ADS_StormTech SC-740 +Cap** x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
#3	248.00'	35 cf	**4.00'D x 2.75'H Vertical Cone/Cylinder**-Impervious
		2,655 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.75'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.51' Phase-In= 0.01'
#2	Secondary	250.60'	**2.0" x 2.0" Horiz. Orifice/Grate X 7.00 columns** X 7 rows C= 0.600 in 24.0" x 24.0" Grate (34% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.51 cfs @ 12.50 hrs HW=250.30' (Free Discharge)
└**1=Exfiltration** (Controls 0.51 cfs)

Secondary OutFlow Max=0.00 cfs @ 2.00 hrs HW=247.75' TW=0.00' (Dynamic Tailwater)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SIS1: Stormtech - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

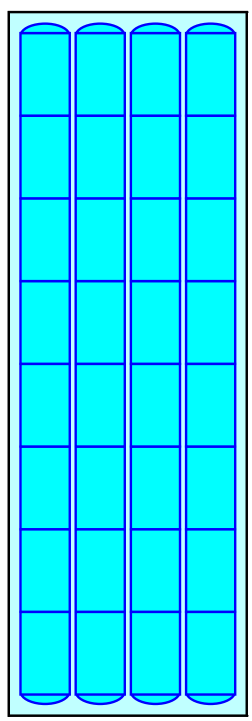
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

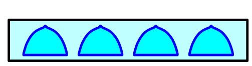
32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af
Overall Storage Efficiency = 60.3%
Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers
161.0 cy Field
106.5 cy Stone





Summary for Pond SIS2:

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=4)

Inflow Area =	24,351 sf, 65.70% Impervious,	Inflow Depth > 7.06" for 100-yr event		
Inflow =	4.40 cfs @	12.08 hrs, Volume=	14,323 cf	
Outflow =	2.49 cfs @	12.26 hrs, Volume=	14,322 cf,	Atten= 43%, Lag= 10.6 min
Discarded =	1.11 cfs @	12.26 hrs, Volume=	13,952 cf	
Primary =	1.38 cfs @	12.26 hrs, Volume=	371 cf	

Routed to Pond IB1 : Infiltration Basin #1

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs / 3
Peak Elev= 253.64' @ 12.26 hrs Surf.Area= 1,748 sf Storage= 3,706 cf

Plug-Flow detention time= 31.1 min calculated for 14,309 cf (100% of inflow)
Center-of-Mass det. time= 31.1 min (815.3 - 784.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	249.00'	1,603 cf	**44.25'W x 39.22'L x 3.50'H Field A** 6,074 cf Overall - 2,067 cf Embedded = 4,006 cf x 40.0% Voids
#2A	249.50'	2,067 cf	**ADS_StormTech SC-740 +Cap** x 45 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 45 Chambers in 9 Rows
#3	250.80'	38 cf	**4.00'D x 3.00'H Vertical Cone/Cylinder**
		3,708 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	249.00'	**8.270 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 247.00' Phase-In= 0.01'
#2	Primary	253.50'	**2.0" x 2.0" Horiz. Orifice/Grate X 6.00 columns** X 6 rows C= 0.600 in 24.0" x 24.0" Grate (25% open area) Limited to weir flow at low heads

Discarded OutFlow Max=1.11 cfs @ 12.26 hrs HW=253.64' (Free Discharge)
↑**1=Exfiltration** (Controls 1.11 cfs)

Primary OutFlow Max=1.28 cfs @ 12.26 hrs HW=253.63' TW=248.87' (Dynamic Tailwater)
↑**2=Orifice/Grate** (Weir Controls 1.28 cfs @ 1.20 fps)

Pond SIS2: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

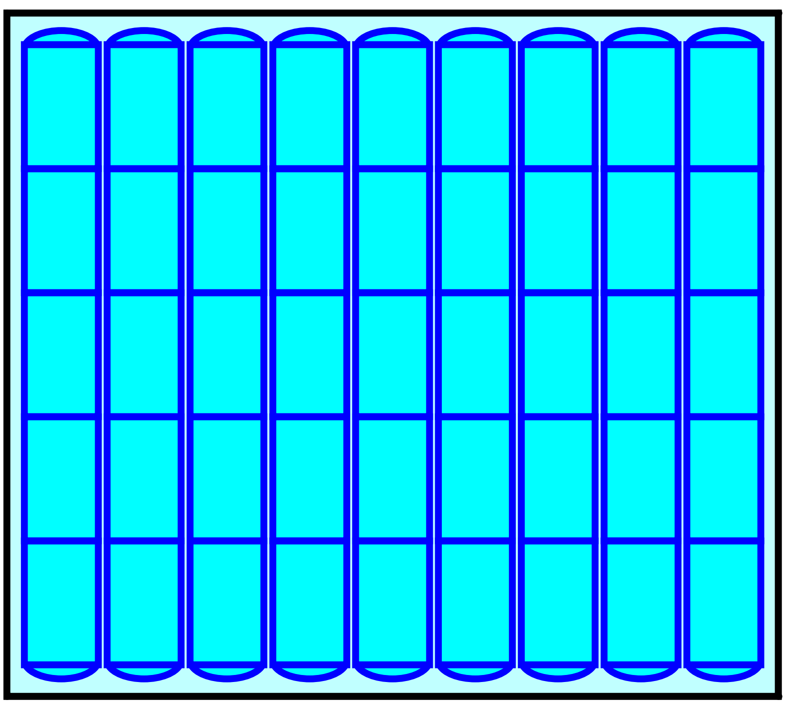
5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +12.0" End Stone x 2 = 39.22' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

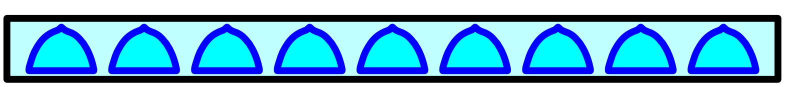
45 Chambers x 45.9 cf = 2,067.3 cf Chamber Storage

6,073.7 cf Field - 2,067.3 cf Chambers = 4,006.4 cf Stone x 40.0% Voids = 1,602.6 cf Stone Storage

Chamber Storage + Stone Storage = 3,669.9 cf = 0.084 af
Overall Storage Efficiency = 60.4%
Overall System Size = 39.22' x 44.25' x 3.50'

45 Chambers
225.0 cy Field
148.4 cy Stone





Summary for Link AP1: To Wetlands

Inflow Area =	236,171 sf,	42.45% Impervious,	Inflow Depth > 1.93"	for 100-yr event	
Inflow =	10.34 cfs @	12.32 hrs,	Volume=	37,942 cf	
Primary =	10.34 cfs @	12.32 hrs,	Volume=	37,942 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP2: To Offsite

Inflow Area =	36,823 sf,	7.73% Impervious,	Inflow Depth > 4.35"	for 100-yr event	
Inflow =	4.30 cfs @	12.09 hrs,	Volume=	13,352 cf	
Primary =	4.30 cfs @	12.09 hrs,	Volume=	13,352 cf,	Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Summary for Link AP3: Abutter Depression

Inflow Area =	26,605 sf,	5.66% Impervious,	Inflow Depth = 2.57"	for 100-yr event
Inflow =	2.41 cfs @	12.19 hrs, Volume=	5,701 cf	
Primary =	2.41 cfs @	12.19 hrs, Volume=	5,701 cf, Atten= 0%,	Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs

Stage-Area-Storage for Pond AD:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.60	**0**	249.66	0	250.72	0
248.62	0	249.68	0	250.74	0
248.64	0	249.70	0		
248.66	0	249.72	0		
248.68	0	249.74	0		
248.70	0	249.76	0		
248.72	0	249.78	0		
248.74	0	249.80	0		
248.76	0	249.82	0		
248.78	0	249.84	0		
248.80	0	249.86	0		
248.82	0	249.88	0		
248.84	0	249.90	0		
248.86	0	249.92	0		
248.88	0	249.94	0		
248.90	0	249.96	0		
248.92	0	249.98	0		
248.94	0	250.00	0		
248.96	0	250.02	0		
248.98	0	250.04	0		
249.00	0	250.06	0		
249.02	0	250.08	0		
249.04	0	250.10	0		
249.06	0	250.12	0		
249.08	0	250.14	0		
249.10	0	250.16	0		
249.12	0	250.18	0		
249.14	0	250.20	0		
249.16	0	250.22	0		
249.18	0	250.24	0		
249.20	0	250.26	0		
249.22	0	250.28	0		
249.24	0	250.30	0		
249.26	0	250.32	0		
249.28	0	250.34	0		
249.30	0	250.36	0		
249.32	0	250.38	0		
249.34	0	250.40	0		
249.36	0	250.42	0		
249.38	0	250.44	0		
249.40	0	250.46	0		
249.42	0	250.48	0		
249.44	0	250.50	0		
249.46	0	250.52	0		
249.48	0	250.54	0		
249.50	0	250.56	0		
249.52	0	250.58	0		
249.54	0	250.60	0		
249.56	0	250.62	0		
249.58	0	250.64	0		
249.60	0	250.66	0		
249.62	0	250.68	0		
249.64	0	250.70	0		

Stage-Area-Storage for Pond CB1: CB#1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
249.00	**0**	250.06	0	251.12	0
249.02	0	250.08	0	251.14	0
249.04	0	250.10	0	251.16	0
249.06	0	250.12	0	251.18	0
249.08	0	250.14	0	251.20	0
249.10	0	250.16	0	251.22	0
249.12	0	250.18	0	251.24	0
249.14	0	250.20	0	251.26	0
249.16	0	250.22	0	251.28	0
249.18	0	250.24	0	251.30	0
249.20	0	250.26	0	251.32	0
249.22	0	250.28	0	251.34	0
249.24	0	250.30	0	251.36	0
249.26	0	250.32	0	251.38	0
249.28	0	250.34	0	251.40	0
249.30	0	250.36	0	251.42	0
249.32	0	250.38	0	251.44	0
249.34	0	250.40	0	251.46	0
249.36	0	250.42	0	251.48	0
249.38	0	250.44	0	251.50	0
249.40	0	250.46	0		
249.42	0	250.48	0		
249.44	0	250.50	0		
249.46	0	250.52	0		
249.48	0	250.54	0		
249.50	0	250.56	0		
249.52	0	250.58	0		
249.54	0	250.60	0		
249.56	0	250.62	0		
249.58	0	250.64	0		
249.60	0	250.66	0		
249.62	0	250.68	0		
249.64	0	250.70	0		
249.66	0	250.72	0		
249.68	0	250.74	0		
249.70	0	250.76	0		
249.72	0	250.78	0		
249.74	0	250.80	0		
249.76	0	250.82	0		
249.78	0	250.84	0		
249.80	0	250.86	0		
249.82	0	250.88	0		
249.84	0	250.90	0		
249.86	0	250.92	0		
249.88	0	250.94	0		
249.90	0	250.96	0		
249.92	0	250.98	0		
249.94	0	251.00	0		
249.96	0	251.02	0		
249.98	0	251.04	0		
250.00	0	251.06	0		
250.02	0	251.08	0		
250.04	0	251.10	0		

Stage-Area-Storage for Pond CB2:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
251.20	**0**	252.26	0	253.32	0
251.22	0	252.28	0	253.34	0
251.24	0	252.30	0	253.36	0
251.26	0	252.32	0	253.38	0
251.28	0	252.34	0	253.40	0
251.30	0	252.36	0	253.42	0
251.32	0	252.38	0	253.44	0
251.34	0	252.40	0	253.46	0
251.36	0	252.42	0	253.48	0
251.38	0	252.44	0	253.50	0
251.40	0	252.46	0	253.52	0
251.42	0	252.48	0	253.54	0
251.44	0	252.50	0	253.56	0
251.46	0	252.52	0	253.58	0
251.48	0	252.54	0	253.60	0
251.50	0	252.56	0	253.62	0
251.52	0	252.58	0	253.64	0
251.54	0	252.60	0	253.66	0
251.56	0	252.62	0	253.68	0
251.58	0	252.64	0	253.70	0
251.60	0	252.66	0	253.72	0
251.62	0	252.68	0	253.74	0
251.64	0	252.70	0	253.76	0
251.66	0	252.72	0	253.78	0
251.68	0	252.74	0	253.80	0
251.70	0	252.76	0	253.82	0
251.72	0	252.78	0	253.84	0
251.74	0	252.80	0	253.86	0
251.76	0	252.82	0	253.88	0
251.78	0	252.84	0	253.90	0
251.80	0	252.86	0	253.92	0
251.82	0	252.88	0	253.94	0
251.84	0	252.90	0	253.96	0
251.86	0	252.92	0	253.98	0
251.88	0	252.94	0	254.00	0
251.90	0	252.96	0	254.02	0
251.92	0	252.98	0		
251.94	0	253.00	0		
251.96	0	253.02	0		
251.98	0	253.04	0		
252.00	0	253.06	0		
252.02	0	253.08	0		
252.04	0	253.10	0		
252.06	0	253.12	0		
252.08	0	253.14	0		
252.10	0	253.16	0		
252.12	0	253.18	0		
252.14	0	253.20	0		
252.16	0	253.22	0		
252.18	0	253.24	0		
252.20	0	253.26	0		
252.22	0	253.28	0		
252.24	0	253.30	0		

Stage-Area-Storage for Pond CB4:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
247.83	**0**	248.89	0	249.95	0
247.85	0	248.91	0	249.97	0
247.87	0	248.93	0	249.99	0
247.89	0	248.95	0	250.01	0
247.91	0	248.97	0	250.03	0
247.93	0	248.99	0	250.05	0
247.95	0	249.01	0	250.07	0
247.97	0	249.03	0	250.09	0
247.99	0	249.05	0	250.11	0
248.01	0	249.07	0	250.13	0
248.03	0	249.09	0	250.15	0
248.05	0	249.11	0	250.17	0
248.07	0	249.13	0	250.19	0
248.09	0	249.15	0	250.21	0
248.11	0	249.17	0	250.23	0
248.13	0	249.19	0	250.25	0
248.15	0	249.21	0	250.27	0
248.17	0	249.23	0	250.29	0
248.19	0	249.25	0	250.31	0
248.21	0	249.27	0	250.33	0
248.23	0	249.29	0	250.35	0
248.25	0	249.31	0	250.37	0
248.27	0	249.33	0	250.39	0
248.29	0	249.35	0	250.41	0
248.31	0	249.37	0	250.43	0
248.33	0	249.39	0	250.45	0
248.35	0	249.41	0	250.47	0
248.37	0	249.43	0	250.49	0
248.39	0	249.45	0	250.51	0
248.41	0	249.47	0	250.53	0
248.43	0	249.49	0	250.55	0
248.45	0	249.51	0	250.57	0
248.47	0	249.53	0	250.59	0
248.49	0	249.55	0	250.61	0
248.51	0	249.57	0	250.63	0
248.53	0	249.59	0	250.65	0
248.55	0	249.61	0	250.67	0
248.57	0	249.63	0	250.69	0
248.59	0	249.65	0		
248.61	0	249.67	0		
248.63	0	249.69	0		
248.65	0	249.71	0		
248.67	0	249.73	0		
248.69	0	249.75	0		
248.71	0	249.77	0		
248.73	0	249.79	0		
248.75	0	249.81	0		
248.77	0	249.83	0		
248.79	0	249.85	0		
248.81	0	249.87	0		
248.83	0	249.89	0		
248.85	0	249.91	0		
248.87	0	249.93	0		

Stage-Area-Storage for Pond CB5:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
250.30	**0**	251.36	0	252.42	0
250.32	0	251.38	0	252.44	0
250.34	0	251.40	0		
250.36	0	251.42	0		
250.38	0	251.44	0		
250.40	0	251.46	0		
250.42	0	251.48	0		
250.44	0	251.50	0		
250.46	0	251.52	0		
250.48	0	251.54	0		
250.50	0	251.56	0		
250.52	0	251.58	0		
250.54	0	251.60	0		
250.56	0	251.62	0		
250.58	0	251.64	0		
250.60	0	251.66	0		
250.62	0	251.68	0		
250.64	0	251.70	0		
250.66	0	251.72	0		
250.68	0	251.74	0		
250.70	0	251.76	0		
250.72	0	251.78	0		
250.74	0	251.80	0		
250.76	0	251.82	0		
250.78	0	251.84	0		
250.80	0	251.86	0		
250.82	0	251.88	0		
250.84	0	251.90	0		
250.86	0	251.92	0		
250.88	0	251.94	0		
250.90	0	251.96	0		
250.92	0	251.98	0		
250.94	0	252.00	0		
250.96	0	252.02	0		
250.98	0	252.04	0		
251.00	0	252.06	0		
251.02	0	252.08	0		
251.04	0	252.10	0		
251.06	0	252.12	0		
251.08	0	252.14	0		
251.10	0	252.16	0		
251.12	0	252.18	0		
251.14	0	252.20	0		
251.16	0	252.22	0		
251.18	0	252.24	0		
251.20	0	252.26	0		
251.22	0	252.28	0		
251.24	0	252.30	0		
251.26	0	252.32	0		
251.28	0	252.34	0		
251.30	0	252.36	0		
251.32	0	252.38	0		
251.34	0	252.40	0		

Stage-Area-Storage for Pond CB6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.30	**0**	249.36	0	250.42	0
248.32	0	249.38	0	250.44	0
248.34	0	249.40	0	250.46	0
248.36	0	249.42	0	250.48	0
248.38	0	249.44	0	250.50	0
248.40	0	249.46	0	250.52	0
248.42	0	249.48	0	250.54	0
248.44	0	249.50	0	250.56	0
248.46	0	249.52	0	250.58	0
248.48	0	249.54	0	250.60	0
248.50	0	249.56	0	250.62	0
248.52	0	249.58	0	250.64	0
248.54	0	249.60	0	250.66	0
248.56	0	249.62	0	250.68	0
248.58	0	249.64	0	250.70	0
248.60	0	249.66	0	250.72	0
248.62	0	249.68	0	250.74	0
248.64	0	249.70	0	250.76	0
248.66	0	249.72	0	250.78	0
248.68	0	249.74	0	250.80	0
248.70	0	249.76	0	250.82	0
248.72	0	249.78	0		
248.74	0	249.80	0		
248.76	0	249.82	0		
248.78	0	249.84	0		
248.80	0	249.86	0		
248.82	0	249.88	0		
248.84	0	249.90	0		
248.86	0	249.92	0		
248.88	0	249.94	0		
248.90	0	249.96	0		
248.92	0	249.98	0		
248.94	0	250.00	0		
248.96	0	250.02	0		
248.98	0	250.04	0		
249.00	0	250.06	0		
249.02	0	250.08	0		
249.04	0	250.10	0		
249.06	0	250.12	0		
249.08	0	250.14	0		
249.10	0	250.16	0		
249.12	0	250.18	0		
249.14	0	250.20	0		
249.16	0	250.22	0		
249.18	0	250.24	0		
249.20	0	250.26	0		
249.22	0	250.28	0		
249.24	0	250.30	0		
249.26	0	250.32	0		
249.28	0	250.34	0		
249.30	0	250.36	0		
249.32	0	250.38	0		
249.34	0	250.40	0		

Stage-Area-Storage for Pond CB7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.00	**0**	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0	251.05	0
248.45	0	251.10	0
248.50	0	251.15	0
248.55	0	251.20	0
248.60	0	251.25	0
248.65	0	251.30	0
248.70	0	251.35	0
248.75	0	251.40	0
248.80	0	251.45	0
248.85	0	251.50	0
248.90	0	251.55	0
248.95	0	251.60	0
249.00	0	251.65	0
249.05	0	251.70	0
249.10	0	251.75	0
249.15	0	251.80	0
249.20	0	251.85	0
249.25	0	251.90	0
249.30	0	251.95	0
249.35	0	252.00	0
249.40	0	252.05	0
249.45	0	252.10	0
249.50	0	252.15	0
249.55	0	252.20	0
249.60	0	252.25	0
249.65	0	252.30	0
249.70	0	252.35	0
249.75	0	252.40	0
249.80	0	252.45	0
249.85	0	252.50	0
249.90	0	252.55	0
249.95	0	252.60	0
250.00	0	252.65	0
250.05	0	252.70	0
250.10	0	252.75	0
250.15	0	252.80	0
250.20	0	252.85	0
250.25	0	252.90	0
250.30	0	252.95	0
250.35	0	253.00	0
250.40	0		
250.45	0		
250.50	0		
250.55	0		
250.60	0		

Stage-Area-Storage for Pond DMH1:

Elevation (feet)	Storage (cubic-feet)
248.28	**0**
248.33	0
248.38	0
248.43	0
248.48	0
248.53	0
248.58	0
248.63	0
248.68	0
248.73	0
248.78	0
248.83	0
248.88	0
248.93	0
248.98	0
249.03	0
249.08	0
249.13	0
249.18	0
249.23	0
249.28	0
249.33	0
249.38	0
249.43	0
249.48	0
249.53	0
249.58	0
249.63	0
249.68	0
249.73	0
249.78	0
249.83	0
249.88	0
249.93	0
249.98	0
250.03	0
250.08	0
250.13	0
250.18	0
250.23	0
250.28	0
250.33	0
250.38	0
250.43	0
250.48	0
250.53	0
250.58	0
250.63	0
250.68	0
250.73	0
250.78	0
250.83	0
250.88	0
250.93	0
250.98	0
251.03	0
251.08	0
251.13	0
251.18	0
251.23	0
251.28	0
251.33	0
251.38	0
251.43	0
251.48	0
251.53	0
251.58	0
251.63	0
251.68	0
251.73	0
251.78	0
251.83	0
251.88	0
251.93	0
251.98	0
252.03	0
252.08	0
252.13	0
252.18	0
252.23	0
252.28	0
252.33	0
252.38	0
252.43	0
252.48	0

Stage-Area-Storage for Pond DMH3:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
247.45	**0**	250.10	0
247.50	0	250.15	0
247.55	0	250.20	0
247.60	0	250.25	0
247.65	0	250.30	0
247.70	0	250.35	0
247.75	0	250.40	0
247.80	0	250.45	0
247.85	0	250.50	0
247.90	0	250.55	0
247.95	0	250.60	0
248.00	0	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0	251.05	0
248.45	0	251.10	0
248.50	0	251.15	0
248.55	0	251.20	0
248.60	0	251.25	0
248.65	0	251.30	0
248.70	0	251.35	0
248.75	0	251.40	0
248.80	0	251.45	0
248.85	0	251.50	0
248.90	0	251.55	0
248.95	0	251.60	0
249.00	0	251.65	0
249.05	0	251.70	0
249.10	0	251.75	0
249.15	0	251.80	0
249.20	0	251.85	0
249.25	0	251.90	0
249.30	0	251.95	0
249.35	0		
249.40	0		
249.45	0		
249.50	0		
249.55	0		
249.60	0		
249.65	0		
249.70	0		
249.75	0		
249.80	0		
249.85	0		
249.90	0		
249.95	0		
250.00	0		
250.05	0		

Stage-Area-Storage for Pond DMH4:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
246.60	**0**	249.25	0
246.65	0	249.30	0
246.70	0	249.35	0
246.75	0	249.40	0
246.80	0	249.45	0
246.85	0	249.50	0
246.90	0	249.55	0
246.95	0	249.60	0
247.00	0	249.65	0
247.05	0	249.70	0
247.10	0	249.75	0
247.15	0	249.80	0
247.20	0	249.85	0
247.25	0	249.90	0
247.30	0	249.95	0
247.35	0	250.00	0
247.40	0	250.05	0
247.45	0	250.10	0
247.50	0	250.15	0
247.55	0	250.20	0
247.60	0	250.25	0
247.65	0	250.30	0
247.70	0	250.35	0
247.75	0	250.40	0
247.80	0	250.45	0
247.85	0	250.50	0
247.90	0	250.55	0
247.95	0	250.60	0
248.00	0	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0		
248.45	0		
248.50	0		
248.55	0		
248.60	0		
248.65	0		
248.70	0		
248.75	0		
248.80	0		
248.85	0		
248.90	0		
248.95	0		
249.00	0		
249.05	0		
249.10	0		
249.15	0		
249.20	0		

Stage-Area-Storage for Pond DMH5:

Elevation (feet)	Storage (cubic-feet)
251.65	**0**
251.67	0
251.69	0
251.71	0
251.73	0
251.75	0
251.77	0
251.79	0
251.81	0
251.83	0
251.85	0
251.87	0
251.89	0
251.91	0
251.93	0
251.95	0
251.97	0
251.99	0
252.01	0
252.03	0
252.05	0
252.07	0
252.09	0
252.11	0
252.13	0
252.15	0
252.17	0
252.19	0
252.21	0
252.23	0
252.25	0
252.27	0
252.29	0
252.31	0
252.33	0
252.35	0
252.37	0
252.39	0
252.41	0
252.43	0
252.45	0
252.47	0
252.49	0
252.51	0
252.53	0
252.55	0
252.57	0
252.59	0
252.61	0
252.63	0
252.65	0
252.67	0
252.69	0
252.71	0
252.73	0
252.75	0
252.77	0
252.79	0
252.81	0
252.83	0
252.85	0
252.87	0
252.89	0
252.91	0
252.93	0
252.95	0
252.97	0
252.99	0
253.01	0
253.03	0
253.05	0
253.07	0
253.09	0
253.11	0
253.13	0
253.15	0
253.17	0
253.19	0
253.21	0
253.23	0
253.25	0
253.27	0
253.29	0
253.31	0
253.33	0
253.35	0
253.37	0
253.39	0
253.41	0
253.43	0
253.45	0
253.47	0
253.49	0
253.51	0
253.53	0
253.55	0
253.57	0
253.59	0
253.61	0
253.63	0
253.65	0
253.67	0
253.69	0
253.71	0
253.73	0
253.75	0
253.77	0
253.79	0
253.81	0
253.83	0
253.85	0
253.87	0
253.89	0
253.91	0
253.93	0
253.95	0
253.97	0
253.99	0

Stage-Area-Storage for Pond DMH6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
249.71	**0**	252.36	0
249.76	0	252.41	0
249.81	0	252.46	0
249.86	0	252.51	0
249.91	0	252.56	0
249.96	0	252.61	0
250.01	0	252.66	0
250.06	0	252.71	0
250.11	0	252.76	0
250.16	0	252.81	0
250.21	0	252.86	0
250.26	0	252.91	0
250.31	0		
250.36	0		
250.41	0		
250.46	0		
250.51	0		
250.56	0		
250.61	0		
250.66	0		
250.71	0		
250.76	0		
250.81	0		
250.86	0		
250.91	0		
250.96	0		
251.01	0		
251.06	0		
251.11	0		
251.16	0		
251.21	0		
251.26	0		
251.31	0		
251.36	0		
251.41	0		
251.46	0		
251.51	0		
251.56	0		
251.61	0		
251.66	0		
251.71	0		
251.76	0		
251.81	0		
251.86	0		
251.91	0		
251.96	0		
252.01	0		
252.06	0		
252.11	0		
252.16	0		
252.21	0		
252.26	0		
252.31	0		

Stage-Area-Storage for Pond DMH7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
247.60	**0**	250.25	0
247.65	0	250.30	0
247.70	0	250.35	0
247.75	0	250.40	0
247.80	0	250.45	0
247.85	0	250.50	0
247.90	0	250.55	0
247.95	0	250.60	0
248.00	0	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0	251.05	0
248.45	0	251.10	0
248.50	0	251.15	0
248.55	0	251.20	0
248.60	0	251.25	0
248.65	0		
248.70	0		
248.75	0		
248.80	0		
248.85	0		
248.90	0		
248.95	0		
249.00	0		
249.05	0		
249.10	0		
249.15	0		
249.20	0		
249.25	0		
249.30	0		
249.35	0		
249.40	0		
249.45	0		
249.50	0		
249.55	0		
249.60	0		
249.65	0		
249.70	0		
249.75	0		
249.80	0		
249.85	0		
249.90	0		
249.95	0		
250.00	0		
250.05	0		
250.10	0		
250.15	0		
250.20	0		

Stage-Area-Storage for Pond EX: Existing Abutter Depression

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
249.80	164	0	250.33	1,835	456
249.81	184	2	250.34	1,879	475
249.82	204	4	250.35	1,923	494
249.83	224	6	250.36	1,967	513
249.84	244	8	250.37	2,012	533
249.85	264	11	250.38	2,056	553
249.86	283	13	250.39	2,100	574
249.87	303	16	250.40	2,144	595
249.88	323	19	250.41	2,193	617
249.89	343	23	250.42	2,242	639
249.90	363	26	250.43	2,291	662
249.91	383	30	250.44	2,341	685
249.92	403	34	250.45	2,390	709
249.93	423	38	250.46	2,439	733
249.94	443	42	250.47	2,488	758
249.95	463	47	250.48	2,537	783
249.96	482	52	250.49	2,586	808
249.97	502	57	250.50	2,636	834
249.98	522	62	250.51	2,685	861
249.99	542	67	250.52	2,734	888
250.00	562	73	250.53	2,783	916
250.01	597	78	250.54	2,832	944
250.02	632	85	250.55	2,881	972
250.03	667	91	250.56	2,930	1,001
250.04	702	98	250.57	2,980	1,031
250.05	737	105	250.58	3,029	1,061
250.06	772	113	250.59	3,078	1,091
250.07	807	121	250.60	**3,127**	**1,122**
250.08	842	129			
250.09	877	137			
250.10	912	146			
250.11	946	156			
250.12	981	165			
250.13	1,016	175			
250.14	1,051	186			
250.15	1,086	196			
250.16	1,121	207			
250.17	1,156	219			
250.18	1,191	230			
250.19	1,226	242			
250.20	1,261	255			
250.21	1,305	268			
250.22	1,349	281			
250.23	1,393	295			
250.24	1,438	309			
250.25	1,482	323			
250.26	1,526	339			
250.27	1,570	354			
250.28	1,614	370			
250.29	1,658	386			
250.30	1,703	403			
250.31	1,747	420			
250.32	1,791	438			

Stage-Area-Storage for Pond HW2:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
253.00	**0**	253.53	0	254.06	0
253.01	0	253.54	0	254.07	0
253.02	0	253.55	0	254.08	0
253.03	0	253.56	0	254.09	0
253.04	0	253.57	0	254.10	0
253.05	0	253.58	0	254.11	0
253.06	0	253.59	0	254.12	0
253.07	0	253.60	0	254.13	0
253.08	0	253.61	0	254.14	0
253.09	0	253.62	0	254.15	0
253.10	0	253.63	0	254.16	0
253.11	0	253.64	0	254.17	0
253.12	0	253.65	0	254.18	0
253.13	0	253.66	0	254.19	0
253.14	0	253.67	0	254.20	0
253.15	0	253.68	0	254.21	0
253.16	0	253.69	0	254.22	0
253.17	0	253.70	0	254.23	0
253.18	0	253.71	0	254.24	0
253.19	0	253.72	0	254.25	0
253.20	0	253.73	0		
253.21	0	253.74	0		
253.22	0	253.75	0		
253.23	0	253.76	0		
253.24	0	253.77	0		
253.25	0	253.78	0		
253.26	0	253.79	0		
253.27	0	253.80	0		
253.28	0	253.81	0		
253.29	0	253.82	0		
253.30	0	253.83	0		
253.31	0	253.84	0		
253.32	0	253.85	0		
253.33	0	253.86	0		
253.34	0	253.87	0		
253.35	0	253.88	0		
253.36	0	253.89	0		
253.37	0	253.90	0		
253.38	0	253.91	0		
253.39	0	253.92	0		
253.40	0	253.93	0		
253.41	0	253.94	0		
253.42	0	253.95	0		
253.43	0	253.96	0		
253.44	0	253.97	0		
253.45	0	253.98	0		
253.46	0	253.99	0		
253.47	0	254.00	0		
253.48	0	254.01	0		
253.49	0	254.02	0		
253.50	0	254.03	0		
253.51	0	254.04	0		
253.52	0	254.05	0		

Stage-Area-Storage for Pond IB1: Infiltration Basin #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
247.00	8,532	0	249.65	12,837	28,157
247.05	8,606	428	249.70	12,925	28,801
247.10	8,681	861	249.75	13,014	29,449
247.15	8,755	1,297	249.80	13,103	30,102
247.20	8,830	1,736	249.85	13,192	30,759
247.25	8,906	2,180	249.90	13,281	31,421
247.30	8,981	2,627	249.95	13,371	32,088
247.35	9,057	3,078	250.00	**13,461**	**32,758**
247.40	9,134	3,532			
247.45	9,210	3,991			
247.50	9,287	4,454			
247.55	9,365	4,920			
247.60	9,442	5,390			
247.65	9,520	5,864			
247.70	9,599	6,342			
247.75	9,677	6,824			
247.80	9,756	7,310			
247.85	9,835	7,800			
247.90	9,915	8,293			
247.95	9,995	8,791			
248.00	10,075	9,293			
248.05	10,154	9,799			
248.10	10,234	10,308			
248.15	10,314	10,822			
248.20	10,394	11,340			
248.25	10,474	11,861			
248.30	10,555	12,387			
248.35	10,636	12,917			
248.40	10,717	13,451			
248.45	10,799	13,989			
248.50	10,881	14,531			
248.55	10,963	15,077			
248.60	11,046	15,627			
248.65	11,129	16,181			
248.70	11,212	16,740			
248.75	11,296	17,302			
248.80	11,379	17,869			
248.85	11,464	18,440			
248.90	11,548	19,016			
248.95	11,633	19,595			
249.00	11,718	20,179			
249.05	11,802	20,767			
249.10	11,887	21,359			
249.15	11,972	21,956			
249.20	12,057	22,556			
249.25	12,142	23,161			
249.30	12,228	23,771			
249.35	12,314	24,384			
249.40	12,401	25,002			
249.45	12,487	25,624			
249.50	12,574	26,251			
249.55	12,662	26,882			
249.60	12,749	27,517			

Stage-Area-Storage for Pond SIS1: Stormtech

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
247.75	**1,242**	0	250.40	1,242	2,204
247.80	1,242	25	250.45	1,242	2,237
247.85	1,242	50	250.50	1,242	2,269
247.90	1,242	75	250.55	1,242	2,299
247.95	1,242	99	250.60	1,242	2,327
248.00	1,242	124	250.65	1,242	2,354
248.05	1,242	150	250.70	1,242	2,381
248.10	1,242	175	250.75	1,242	2,407
248.15	1,242	201	250.80	1,242	2,432
248.20	1,242	226	250.85	1,242	2,456
248.25	1,242	252	250.90	1,242	2,481
248.30	1,242	302	250.95	1,242	2,506
248.35	1,242	353	251.00	1,242	2,531
248.40	1,242	404	251.05	1,242	2,556
248.45	1,242	455	251.10	1,242	2,581
248.50	1,242	505	251.15	1,242	2,605
248.55	1,242	556	251.20	1,242	2,630
248.60	1,242	606	251.25	1,242	**2,655**
248.65	1,242	656			
248.70	1,242	706			
248.75	1,242	755			
248.80	1,242	805			
248.85	1,242	854			
248.90	1,242	903			
248.95	1,242	952			
249.00	1,242	1,000			
249.05	1,242	1,048			
249.10	1,242	1,096			
249.15	1,242	1,144			
249.20	1,242	1,192			
249.25	1,242	1,239			
249.30	1,242	1,286			
249.35	1,242	1,332			
249.40	1,242	1,379			
249.45	1,242	1,424			
249.50	1,242	1,470			
249.55	1,242	1,515			
249.60	1,242	1,560			
249.65	1,242	1,604			
249.70	1,242	1,648			
249.75	1,242	1,692			
249.80	1,242	1,735			
249.85	1,242	1,778			
249.90	1,242	1,820			
249.95	1,242	1,861			
250.00	1,242	1,902			
250.05	1,242	1,942			
250.10	1,242	1,982			
250.15	1,242	2,021			
250.20	1,242	2,059			
250.25	1,242	2,097			
250.30	1,242	2,134			
250.35	1,242	2,169			

Stage-Area-Storage for Pond SIS2:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
249.00	1,735	0	251.65	1,748	3,056
249.05	1,735	35	251.70	1,748	3,102
249.10	1,735	69	251.75	1,748	3,146
249.15	1,735	104	251.80	1,748	3,188
249.20	1,735	139	251.85	1,748	3,227
249.25	1,735	174	251.90	1,748	3,265
249.30	1,735	208	251.95	1,748	3,302
249.35	1,735	243	252.00	1,748	3,338
249.40	1,735	278	252.05	1,748	3,373
249.45	1,735	312	252.10	1,748	3,409
249.50	1,735	347	252.15	1,748	3,444
249.55	1,735	418	252.20	1,748	3,479
249.60	1,735	488	252.25	1,748	3,515
249.65	1,735	558	252.30	1,748	3,550
249.70	1,735	628	252.35	1,748	3,585
249.75	1,735	698	252.40	1,748	3,621
249.80	1,735	768	252.45	1,748	3,656
249.85	1,735	837	252.50	1,748	3,691
249.90	1,735	907	252.55	1,748	3,692
249.95	1,735	976	252.60	1,748	3,692
250.00	1,735	1,044	252.65	1,748	3,693
250.05	1,735	1,113	252.70	1,748	3,694
250.10	1,735	1,181	252.75	1,748	3,694
250.15	1,735	1,249	252.80	1,748	3,695
250.20	1,735	1,316	252.85	1,748	3,696
250.25	1,735	1,383	252.90	1,748	3,696
250.30	1,735	1,450	252.95	1,748	3,697
250.35	1,735	1,516	253.00	1,748	3,697
250.40	1,735	1,582	253.05	1,748	3,698
250.45	1,735	1,648	253.10	1,748	3,699
250.50	1,735	1,713	253.15	1,748	3,699
250.55	1,735	1,778	253.20	1,748	3,700
250.60	1,735	1,843	253.25	1,748	3,701
250.65	1,735	1,907	253.30	1,748	3,701
250.70	1,735	1,970	253.35	1,748	3,702
250.75	1,735	2,033	253.40	1,748	3,703
250.80	**1,748**	2,095	253.45	1,748	3,703
250.85	1,748	2,158	253.50	1,748	3,704
250.90	1,748	2,220	253.55	1,748	3,704
250.95	1,748	2,281	253.60	1,748	3,705
251.00	1,748	2,342	253.65	1,748	3,706
251.05	1,748	2,402	253.70	1,748	3,706
251.10	1,748	2,462	253.75	1,748	3,707
251.15	1,748	2,520	253.80	1,748	**3,708**
251.20	1,748	2,578			
251.25	1,748	2,635			
251.30	1,748	2,691			
251.35	1,748	2,747			
251.40	1,748	2,801			
251.45	1,748	2,855			
251.50	1,748	2,907			
251.55	1,748	2,958			
251.60	1,748	3,008			

Stage-Area-Storage for Pond AD:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.60	**0**	249.66	0	250.72	0
248.62	0	249.68	0	250.74	0
248.64	0	249.70	0		
248.66	0	249.72	0		
248.68	0	249.74	0		
248.70	0	249.76	0		
248.72	0	249.78	0		
248.74	0	249.80	0		
248.76	0	249.82	0		
248.78	0	249.84	0		
248.80	0	249.86	0		
248.82	0	249.88	0		
248.84	0	249.90	0		
248.86	0	249.92	0		
248.88	0	249.94	0		
248.90	0	249.96	0		
248.92	0	249.98	0		
248.94	0	250.00	0		
248.96	0	250.02	0		
248.98	0	250.04	0		
249.00	0	250.06	0		
249.02	0	250.08	0		
249.04	0	250.10	0		
249.06	0	250.12	0		
249.08	0	250.14	0		
249.10	0	250.16	0		
249.12	0	250.18	0		
249.14	0	250.20	0		
249.16	0	250.22	0		
249.18	0	250.24	0		
249.20	0	250.26	0		
249.22	0	250.28	0		
249.24	0	250.30	0		
249.26	0	250.32	0		
249.28	0	250.34	0		
249.30	0	250.36	0		
249.32	0	250.38	0		
249.34	0	250.40	0		
249.36	0	250.42	0		
249.38	0	250.44	0		
249.40	0	250.46	0		
249.42	0	250.48	0		
249.44	0	250.50	0		
249.46	0	250.52	0		
249.48	0	250.54	0		
249.50	0	250.56	0		
249.52	0	250.58	0		
249.54	0	250.60	0		
249.56	0	250.62	0		
249.58	0	250.64	0		
249.60	0	250.66	0		
249.62	0	250.68	0		
249.64	0	250.70	0		

Stage-Area-Storage for Pond CB1: CB#1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
249.00	**0**	250.06	0	251.12	0
249.02	0	250.08	0	251.14	0
249.04	0	250.10	0	251.16	0
249.06	0	250.12	0	251.18	0
249.08	0	250.14	0	251.20	0
249.10	0	250.16	0	251.22	0
249.12	0	250.18	0	251.24	0
249.14	0	250.20	0	251.26	0
249.16	0	250.22	0	251.28	0
249.18	0	250.24	0	251.30	0
249.20	0	250.26	0	251.32	0
249.22	0	250.28	0	251.34	0
249.24	0	250.30	0	251.36	0
249.26	0	250.32	0	251.38	0
249.28	0	250.34	0	251.40	0
249.30	0	250.36	0	251.42	0
249.32	0	250.38	0	251.44	0
249.34	0	250.40	0	251.46	0
249.36	0	250.42	0	251.48	0
249.38	0	250.44	0	251.50	0
249.40	0	250.46	0		
249.42	0	250.48	0		
249.44	0	250.50	0		
249.46	0	250.52	0		
249.48	0	250.54	0		
249.50	0	250.56	0		
249.52	0	250.58	0		
249.54	0	250.60	0		
249.56	0	250.62	0		
249.58	0	250.64	0		
249.60	0	250.66	0		
249.62	0	250.68	0		
249.64	0	250.70	0		
249.66	0	250.72	0		
249.68	0	250.74	0		
249.70	0	250.76	0		
249.72	0	250.78	0		
249.74	0	250.80	0		
249.76	0	250.82	0		
249.78	0	250.84	0		
249.80	0	250.86	0		
249.82	0	250.88	0		
249.84	0	250.90	0		
249.86	0	250.92	0		
249.88	0	250.94	0		
249.90	0	250.96	0		
249.92	0	250.98	0		
249.94	0	251.00	0		
249.96	0	251.02	0		
249.98	0	251.04	0		
250.00	0	251.06	0		
250.02	0	251.08	0		
250.04	0	251.10	0		

Stage-Area-Storage for Pond CB2:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
251.20	**0**	252.26	0	253.32	0
251.22	0	252.28	0	253.34	0
251.24	0	252.30	0	253.36	0
251.26	0	252.32	0	253.38	0
251.28	0	252.34	0	253.40	0
251.30	0	252.36	0	253.42	0
251.32	0	252.38	0	253.44	0
251.34	0	252.40	0	253.46	0
251.36	0	252.42	0	253.48	0
251.38	0	252.44	0	253.50	0
251.40	0	252.46	0	253.52	0
251.42	0	252.48	0	253.54	0
251.44	0	252.50	0	253.56	0
251.46	0	252.52	0	253.58	0
251.48	0	252.54	0	253.60	0
251.50	0	252.56	0	253.62	0
251.52	0	252.58	0	253.64	0
251.54	0	252.60	0	253.66	0
251.56	0	252.62	0	253.68	0
251.58	0	252.64	0	253.70	0
251.60	0	252.66	0	253.72	0
251.62	0	252.68	0	253.74	0
251.64	0	252.70	0	253.76	0
251.66	0	252.72	0	253.78	0
251.68	0	252.74	0	253.80	0
251.70	0	252.76	0	253.82	0
251.72	0	252.78	0	253.84	0
251.74	0	252.80	0	253.86	0
251.76	0	252.82	0	253.88	0
251.78	0	252.84	0	253.90	0
251.80	0	252.86	0	253.92	0
251.82	0	252.88	0	253.94	0
251.84	0	252.90	0	253.96	0
251.86	0	252.92	0	253.98	0
251.88	0	252.94	0	254.00	0
251.90	0	252.96	0	254.02	0
251.92	0	252.98	0		
251.94	0	253.00	0		
251.96	0	253.02	0		
251.98	0	253.04	0		
252.00	0	253.06	0		
252.02	0	253.08	0		
252.04	0	253.10	0		
252.06	0	253.12	0		
252.08	0	253.14	0		
252.10	0	253.16	0		
252.12	0	253.18	0		
252.14	0	253.20	0		
252.16	0	253.22	0		
252.18	0	253.24	0		
252.20	0	253.26	0		
252.22	0	253.28	0		
252.24	0	253.30	0		

Stage-Area-Storage for Pond CB4:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
247.83	**0**	248.89	0	249.95	0
247.85	0	248.91	0	249.97	0
247.87	0	248.93	0	249.99	0
247.89	0	248.95	0	250.01	0
247.91	0	248.97	0	250.03	0
247.93	0	248.99	0	250.05	0
247.95	0	249.01	0	250.07	0
247.97	0	249.03	0	250.09	0
247.99	0	249.05	0	250.11	0
248.01	0	249.07	0	250.13	0
248.03	0	249.09	0	250.15	0
248.05	0	249.11	0	250.17	0
248.07	0	249.13	0	250.19	0
248.09	0	249.15	0	250.21	0
248.11	0	249.17	0	250.23	0
248.13	0	249.19	0	250.25	0
248.15	0	249.21	0	250.27	0
248.17	0	249.23	0	250.29	0
248.19	0	249.25	0	250.31	0
248.21	0	249.27	0	250.33	0
248.23	0	249.29	0	250.35	0
248.25	0	249.31	0	250.37	0
248.27	0	249.33	0	250.39	0
248.29	0	249.35	0	250.41	0
248.31	0	249.37	0	250.43	0
248.33	0	249.39	0	250.45	0
248.35	0	249.41	0	250.47	0
248.37	0	249.43	0	250.49	0
248.39	0	249.45	0	250.51	0
248.41	0	249.47	0	250.53	0
248.43	0	249.49	0	250.55	0
248.45	0	249.51	0	250.57	0
248.47	0	249.53	0	250.59	0
248.49	0	249.55	0	250.61	0
248.51	0	249.57	0	250.63	0
248.53	0	249.59	0	250.65	0
248.55	0	249.61	0	250.67	0
248.57	0	249.63	0	250.69	0
248.59	0	249.65	0		
248.61	0	249.67	0		
248.63	0	249.69	0		
248.65	0	249.71	0		
248.67	0	249.73	0		
248.69	0	249.75	0		
248.71	0	249.77	0		
248.73	0	249.79	0		
248.75	0	249.81	0		
248.77	0	249.83	0		
248.79	0	249.85	0		
248.81	0	249.87	0		
248.83	0	249.89	0		
248.85	0	249.91	0		
248.87	0	249.93	0		

Stage-Area-Storage for Pond CB5:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
250.30	**0**	251.36	0	252.42	0
250.32	0	251.38	0	252.44	0
250.34	0	251.40	0	252.46	0
250.36	0	251.42	0	252.48	0
250.38	0	251.44	0	252.50	0
250.40	0	251.46	0	252.52	0
250.42	0	251.48	0	252.54	0
250.44	0	251.50	0	252.56	0
250.46	0	251.52	0	252.58	0
250.48	0	251.54	0	252.60	0
250.50	0	251.56	0	252.62	0
250.52	0	251.58	0		
250.54	0	251.60	0		
250.56	0	251.62	0		
250.58	0	251.64	0		
250.60	0	251.66	0		
250.62	0	251.68	0		
250.64	0	251.70	0		
250.66	0	251.72	0		
250.68	0	251.74	0		
250.70	0	251.76	0		
250.72	0	251.78	0		
250.74	0	251.80	0		
250.76	0	251.82	0		
250.78	0	251.84	0		
250.80	0	251.86	0		
250.82	0	251.88	0		
250.84	0	251.90	0		
250.86	0	251.92	0		
250.88	0	251.94	0		
250.90	0	251.96	0		
250.92	0	251.98	0		
250.94	0	252.00	0		
250.96	0	252.02	0		
250.98	0	252.04	0		
251.00	0	252.06	0		
251.02	0	252.08	0		
251.04	0	252.10	0		
251.06	0	252.12	0		
251.08	0	252.14	0		
251.10	0	252.16	0		
251.12	0	252.18	0		
251.14	0	252.20	0		
251.16	0	252.22	0		
251.18	0	252.24	0		
251.20	0	252.26	0		
251.22	0	252.28	0		
251.24	0	252.30	0		
251.26	0	252.32	0		
251.28	0	252.34	0		
251.30	0	252.36	0		
251.32	0	252.38	0		
251.34	0	252.40	0		

Stage-Area-Storage for Pond CB6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.30	**0**	249.36	0	250.42	0
248.32	0	249.38	0	250.44	0
248.34	0	249.40	0	250.46	0
248.36	0	249.42	0	250.48	0
248.38	0	249.44	0	250.50	0
248.40	0	249.46	0	250.52	0
248.42	0	249.48	0	250.54	0
248.44	0	249.50	0	250.56	0
248.46	0	249.52	0	250.58	0
248.48	0	249.54	0	250.60	0
248.50	0	249.56	0	250.62	0
248.52	0	249.58	0	250.64	0
248.54	0	249.60	0	250.66	0
248.56	0	249.62	0	250.68	0
248.58	0	249.64	0	250.70	0
248.60	0	249.66	0	250.72	0
248.62	0	249.68	0	250.74	0
248.64	0	249.70	0	250.76	0
248.66	0	249.72	0	250.78	0
248.68	0	249.74	0	250.80	0
248.70	0	249.76	0	250.82	0
248.72	0	249.78	0		
248.74	0	249.80	0		
248.76	0	249.82	0		
248.78	0	249.84	0		
248.80	0	249.86	0		
248.82	0	249.88	0		
248.84	0	249.90	0		
248.86	0	249.92	0		
248.88	0	249.94	0		
248.90	0	249.96	0		
248.92	0	249.98	0		
248.94	0	250.00	0		
248.96	0	250.02	0		
248.98	0	250.04	0		
249.00	0	250.06	0		
249.02	0	250.08	0		
249.04	0	250.10	0		
249.06	0	250.12	0		
249.08	0	250.14	0		
249.10	0	250.16	0		
249.12	0	250.18	0		
249.14	0	250.20	0		
249.16	0	250.22	0		
249.18	0	250.24	0		
249.20	0	250.26	0		
249.22	0	250.28	0		
249.24	0	250.30	0		
249.26	0	250.32	0		
249.28	0	250.34	0		
249.30	0	250.36	0		
249.32	0	250.38	0		
249.34	0	250.40	0		

Stage-Area-Storage for Pond CB7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.00	**0**	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0	251.05	0
248.45	0	251.10	0
248.50	0	251.15	0
248.55	0	251.20	0
248.60	0	251.25	0
248.65	0	251.30	0
248.70	0	251.35	0
248.75	0	251.40	0
248.80	0	251.45	0
248.85	0	251.50	0
248.90	0	251.55	0
248.95	0	251.60	0
249.00	0	251.65	0
249.05	0	251.70	0
249.10	0	251.75	0
249.15	0	251.80	0
249.20	0	251.85	0
249.25	0	251.90	0
249.30	0	251.95	0
249.35	0	252.00	0
249.40	0	252.05	0
249.45	0	252.10	0
249.50	0	252.15	0
249.55	0	252.20	0
249.60	0	252.25	0
249.65	0	252.30	0
249.70	0	252.35	0
249.75	0	252.40	0
249.80	0	252.45	0
249.85	0	252.50	0
249.90	0	252.55	0
249.95	0	252.60	0
250.00	0	252.65	0
250.05	0	252.70	0
250.10	0	252.75	0
250.15	0	252.80	0
250.20	0	252.85	0
250.25	0	252.90	0
250.30	0	252.95	0
250.35	0	253.00	0
250.40	0		
250.45	0		
250.50	0		
250.55	0		
250.60	0		

Stage-Area-Storage for Pond DMH1:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
248.28	**0**	250.93	0
248.33	0	250.98	0
248.38	0	251.03	0
248.43	0	251.08	0
248.48	0	251.13	0
248.53	0	251.18	0
248.58	0	251.23	0
248.63	0	251.28	0
248.68	0	251.33	0
248.73	0	251.38	0
248.78	0	251.43	0
248.83	0	251.48	0
248.88	0	251.53	0
248.93	0	251.58	0
248.98	0	251.63	0
249.03	0	251.68	0
249.08	0	251.73	0
249.13	0	251.78	0
249.18	0	251.83	0
249.23	0	251.88	0
249.28	0	251.93	0
249.33	0	251.98	0
249.38	0	252.03	0
249.43	0	252.08	0
249.48	0	252.13	0
249.53	0	252.18	0
249.58	0	252.23	0
249.63	0	252.28	0
249.68	0	252.33	0
249.73	0	252.38	0
249.78	0	252.43	0
249.83	0	252.48	0
249.88	0		
249.93	0		
249.98	0		
250.03	0		
250.08	0		
250.13	0		
250.18	0		
250.23	0		
250.28	0		
250.33	0		
250.38	0		
250.43	0		
250.48	0		
250.53	0		
250.58	0		
250.63	0		
250.68	0		
250.73	0		
250.78	0		
250.83	0		
250.88	0		

Stage-Area-Storage for Pond DMH3:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
247.45	**0**	250.10	0
247.50	0	250.15	0
247.55	0	250.20	0
247.60	0	250.25	0
247.65	0	250.30	0
247.70	0	250.35	0
247.75	0	250.40	0
247.80	0	250.45	0
247.85	0	250.50	0
247.90	0	250.55	0
247.95	0	250.60	0
248.00	0	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0	251.05	0
248.45	0	251.10	0
248.50	0	251.15	0
248.55	0	251.20	0
248.60	0	251.25	0
248.65	0	251.30	0
248.70	0	251.35	0
248.75	0	251.40	0
248.80	0	251.45	0
248.85	0	251.50	0
248.90	0	251.55	0
248.95	0	251.60	0
249.00	0	251.65	0
249.05	0	251.70	0
249.10	0	251.75	0
249.15	0	251.80	0
249.20	0	251.85	0
249.25	0	251.90	0
249.30	0	251.95	0
249.35	0		
249.40	0		
249.45	0		
249.50	0		
249.55	0		
249.60	0		
249.65	0		
249.70	0		
249.75	0		
249.80	0		
249.85	0		
249.90	0		
249.95	0		
250.00	0		
250.05	0		

Stage-Area-Storage for Pond DMH4:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
246.60	**0**	249.25	0
246.65	0	249.30	0
246.70	0	249.35	0
246.75	0	249.40	0
246.80	0	249.45	0
246.85	0	249.50	0
246.90	0	249.55	0
246.95	0	249.60	0
247.00	0	249.65	0
247.05	0	249.70	0
247.10	0	249.75	0
247.15	0	249.80	0
247.20	0	249.85	0
247.25	0	249.90	0
247.30	0	249.95	0
247.35	0	250.00	0
247.40	0	250.05	0
247.45	0	250.10	0
247.50	0	250.15	0
247.55	0	250.20	0
247.60	0	250.25	0
247.65	0	250.30	0
247.70	0	250.35	0
247.75	0	250.40	0
247.80	0	250.45	0
247.85	0	250.50	0
247.90	0	250.55	0
247.95	0	250.60	0
248.00	0	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0		
248.45	0		
248.50	0		
248.55	0		
248.60	0		
248.65	0		
248.70	0		
248.75	0		
248.80	0		
248.85	0		
248.90	0		
248.95	0		
249.00	0		
249.05	0		
249.10	0		
249.15	0		
249.20	0		

Stage-Area-Storage for Pond DMH5:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
251.65	**0**	252.71	0	253.77	0
251.67	0	252.73	0	253.79	0
251.69	0	252.75	0	253.81	0
251.71	0	252.77	0	253.83	0
251.73	0	252.79	0	253.85	0
251.75	0	252.81	0	253.87	0
251.77	0	252.83	0	253.89	0
251.79	0	252.85	0	253.91	0
251.81	0	252.87	0	253.93	0
251.83	0	252.89	0	253.95	0
251.85	0	252.91	0	253.97	0
251.87	0	252.93	0	253.99	0
251.89	0	252.95	0		
251.91	0	252.97	0		
251.93	0	252.99	0		
251.95	0	253.01	0		
251.97	0	253.03	0		
251.99	0	253.05	0		
252.01	0	253.07	0		
252.03	0	253.09	0		
252.05	0	253.11	0		
252.07	0	253.13	0		
252.09	0	253.15	0		
252.11	0	253.17	0		
252.13	0	253.19	0		
252.15	0	253.21	0		
252.17	0	253.23	0		
252.19	0	253.25	0		
252.21	0	253.27	0		
252.23	0	253.29	0		
252.25	0	253.31	0		
252.27	0	253.33	0		
252.29	0	253.35	0		
252.31	0	253.37	0		
252.33	0	253.39	0		
252.35	0	253.41	0		
252.37	0	253.43	0		
252.39	0	253.45	0		
252.41	0	253.47	0		
252.43	0	253.49	0		
252.45	0	253.51	0		
252.47	0	253.53	0		
252.49	0	253.55	0		
252.51	0	253.57	0		
252.53	0	253.59	0		
252.55	0	253.61	0		
252.57	0	253.63	0		
252.59	0	253.65	0		
252.61	0	253.67	0		
252.63	0	253.69	0		
252.65	0	253.71	0		
252.67	0	253.73	0		
252.69	0	253.75	0		

Stage-Area-Storage for Pond DMH6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
249.71	**0**	252.36	0
249.76	0	252.41	0
249.81	0	252.46	0
249.86	0	252.51	0
249.91	0	252.56	0
249.96	0	252.61	0
250.01	0	252.66	0
250.06	0	252.71	0
250.11	0	252.76	0
250.16	0	252.81	0
250.21	0	252.86	0
250.26	0	252.91	0
250.31	0		
250.36	0		
250.41	0		
250.46	0		
250.51	0		
250.56	0		
250.61	0		
250.66	0		
250.71	0		
250.76	0		
250.81	0		
250.86	0		
250.91	0		
250.96	0		
251.01	0		
251.06	0		
251.11	0		
251.16	0		
251.21	0		
251.26	0		
251.31	0		
251.36	0		
251.41	0		
251.46	0		
251.51	0		
251.56	0		
251.61	0		
251.66	0		
251.71	0		
251.76	0		
251.81	0		
251.86	0		
251.91	0		
251.96	0		
252.01	0		
252.06	0		
252.11	0		
252.16	0		
252.21	0		
252.26	0		
252.31	0		

Stage-Area-Storage for Pond DMH7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
247.60	**0**	250.25	0
247.65	0	250.30	0
247.70	0	250.35	0
247.75	0	250.40	0
247.80	0	250.45	0
247.85	0	250.50	0
247.90	0	250.55	0
247.95	0	250.60	0
248.00	0	250.65	0
248.05	0	250.70	0
248.10	0	250.75	0
248.15	0	250.80	0
248.20	0	250.85	0
248.25	0	250.90	0
248.30	0	250.95	0
248.35	0	251.00	0
248.40	0	251.05	0
248.45	0	251.10	0
248.50	0	251.15	0
248.55	0	251.20	0
248.60	0	251.25	0
248.65	0		
248.70	0		
248.75	0		
248.80	0		
248.85	0		
248.90	0		
248.95	0		
249.00	0		
249.05	0		
249.10	0		
249.15	0		
249.20	0		
249.25	0		
249.30	0		
249.35	0		
249.40	0		
249.45	0		
249.50	0		
249.55	0		
249.60	0		
249.65	0		
249.70	0		
249.75	0		
249.80	0		
249.85	0		
249.90	0		
249.95	0		
250.00	0		
250.05	0		
250.10	0		
250.15	0		
250.20	0		

Stage-Area-Storage for Pond EX: Existing Abutter Depression

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
249.80	164	0
249.81	184	2
249.82	204	4
249.83	224	6
249.84	244	8
249.85	264	11
249.86	283	13
249.87	303	16
249.88	323	19
249.89	343	23
249.90	363	26
249.91	383	30
249.92	403	34
249.93	423	38
249.94	443	42
249.95	463	47
249.96	482	52
249.97	502	57
249.98	522	62
249.99	542	67
250.00	562	73
250.01	597	78
250.02	632	85
250.03	667	91
250.04	702	98
250.05	737	105
250.06	772	113
250.07	807	121
250.08	842	129
250.09	877	137
250.10	912	146
250.11	946	156
250.12	981	165
250.13	1,016	175
250.14	1,051	186
250.15	1,086	196
250.16	1,121	207
250.17	1,156	219
250.18	1,191	230
250.19	1,226	242
250.20	1,261	255
250.21	1,305	268
250.22	1,349	281
250.23	1,393	295
250.24	1,438	309
250.25	1,482	323
250.26	1,526	339
250.27	1,570	354
250.28	1,614	370
250.29	1,658	386
250.30	1,703	403
250.31	1,747	420
250.32	1,791	438
250.33	1,835	456
250.34	1,879	475
250.35	1,923	494
250.36	1,967	513
250.37	2,012	533
250.38	2,056	553
250.39	2,100	574
250.40	2,144	595
250.41	2,193	617
250.42	2,242	639
250.43	2,291	662
250.44	2,341	685
250.45	2,390	709
250.46	2,439	733
250.47	2,488	758
250.48	2,537	783
250.49	2,586	808
250.50	2,636	834
250.51	2,685	861
250.52	2,734	888
250.53	2,783	916
250.54	2,832	944
250.55	2,881	972
250.56	2,930	1,001
250.57	2,980	1,031
250.58	3,029	1,061
250.59	3,078	1,091
250.60	**3,127**	**1,122**

Stage-Area-Storage for Pond HW2:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
253.00	**0**	253.53	0	254.06	0
253.01	0	253.54	0	254.07	0
253.02	0	253.55	0	254.08	0
253.03	0	253.56	0	254.09	0
253.04	0	253.57	0	254.10	0
253.05	0	253.58	0	254.11	0
253.06	0	253.59	0	254.12	0
253.07	0	253.60	0	254.13	0
253.08	0	253.61	0	254.14	0
253.09	0	253.62	0	254.15	0
253.10	0	253.63	0	254.16	0
253.11	0	253.64	0	254.17	0
253.12	0	253.65	0	254.18	0
253.13	0	253.66	0	254.19	0
253.14	0	253.67	0	254.20	0
253.15	0	253.68	0	254.21	0
253.16	0	253.69	0	254.22	0
253.17	0	253.70	0	254.23	0
253.18	0	253.71	0	254.24	0
253.19	0	253.72	0	254.25	0
253.20	0	253.73	0		
253.21	0	253.74	0		
253.22	0	253.75	0		
253.23	0	253.76	0		
253.24	0	253.77	0		
253.25	0	253.78	0		
253.26	0	253.79	0		
253.27	0	253.80	0		
253.28	0	253.81	0		
253.29	0	253.82	0		
253.30	0	253.83	0		
253.31	0	253.84	0		
253.32	0	253.85	0		
253.33	0	253.86	0		
253.34	0	253.87	0		
253.35	0	253.88	0		
253.36	0	253.89	0		
253.37	0	253.90	0		
253.38	0	253.91	0		
253.39	0	253.92	0		
253.40	0	253.93	0		
253.41	0	253.94	0		
253.42	0	253.95	0		
253.43	0	253.96	0		
253.44	0	253.97	0		
253.45	0	253.98	0		
253.46	0	253.99	0		
253.47	0	254.00	0		
253.48	0	254.01	0		
253.49	0	254.02	0		
253.50	0	254.03	0		
253.51	0	254.04	0		
253.52	0	254.05	0		

Stage-Area-Storage for Pond IB1: Infiltration Basin #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
247.00	8,532	0	249.65	12,837	28,157
247.05	8,606	428	249.70	12,925	28,801
247.10	8,681	861	249.75	13,014	29,449
247.15	8,755	1,297	249.80	13,103	30,102
247.20	8,830	1,736	249.85	13,192	30,759
247.25	8,906	2,180	249.90	13,281	31,421
247.30	8,981	2,627	249.95	13,371	32,088
247.35	9,057	3,078	250.00	**13,461**	**32,758**
247.40	9,134	3,532			
247.45	9,210	3,991			
247.50	9,287	4,454			
247.55	9,365	4,920			
247.60	9,442	5,390			
247.65	9,520	5,864			
247.70	9,599	6,342			
247.75	9,677	6,824			
247.80	9,756	7,310			
247.85	9,835	7,800			
247.90	9,915	8,293			
247.95	9,995	8,791			
248.00	10,075	9,293			
248.05	10,154	9,799			
248.10	10,234	10,308			
248.15	10,314	10,822			
248.20	10,394	11,340			
248.25	10,474	11,861			
248.30	10,555	12,387			
248.35	10,636	12,917			
248.40	10,717	13,451			
248.45	10,799	13,989			
248.50	10,881	14,531			
248.55	10,963	15,077			
248.60	11,046	15,627			
248.65	11,129	16,181			
248.70	11,212	16,740			
248.75	11,296	17,302			
248.80	11,379	17,869			
248.85	11,464	18,440			
248.90	11,548	19,016			
248.95	11,633	19,595			
249.00	11,718	20,179			
249.05	11,802	20,767			
249.10	11,887	21,359			
249.15	11,972	21,956			
249.20	12,057	22,556			
249.25	12,142	23,161			
249.30	12,228	23,771			
249.35	12,314	24,384			
249.40	12,401	25,002			
249.45	12,487	25,624			
249.50	12,574	26,251			
249.55	12,662	26,882			
249.60	12,749	27,517			

Stage-Area-Storage for Pond SIS1: Stormtech

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
247.75	**1,242**	0
247.80	1,242	25
247.85	1,242	50
247.90	1,242	75
247.95	1,242	99
248.00	1,242	124
248.05	1,242	150
248.10	1,242	175
248.15	1,242	201
248.20	1,242	226
248.25	1,242	252
248.30	1,242	302
248.35	1,242	353
248.40	1,242	404
248.45	1,242	455
248.50	1,242	505
248.55	1,242	556
248.60	1,242	606
248.65	1,242	656
248.70	1,242	706
248.75	1,242	755
248.80	1,242	805
248.85	1,242	854
248.90	1,242	903
248.95	1,242	952
249.00	1,242	1,000
249.05	1,242	1,048
249.10	1,242	1,096
249.15	1,242	1,144
249.20	1,242	1,192
249.25	1,242	1,239
249.30	1,242	1,286
249.35	1,242	1,332
249.40	1,242	1,379
249.45	1,242	1,424
249.50	1,242	1,470
249.55	1,242	1,515
249.60	1,242	1,560
249.65	1,242	1,604
249.70	1,242	1,648
249.75	1,242	1,692
249.80	1,242	1,735
249.85	1,242	1,778
249.90	1,242	1,820
249.95	1,242	1,861
250.00	1,242	1,902
250.05	1,242	1,942
250.10	1,242	1,982
250.15	1,242	2,021
250.20	1,242	2,059
250.25	1,242	2,097
250.30	1,242	2,134
250.35	1,242	2,169
250.40	1,242	2,204
250.45	1,242	2,237
250.50	1,242	2,269
250.55	1,242	2,299
250.60	1,242	2,327
250.65	1,242	2,354
250.70	1,242	2,381
250.75	1,242	2,407
250.80	1,242	2,432
250.85	1,242	2,456
250.90	1,242	2,481
250.95	1,242	2,506
251.00	1,242	2,531
251.05	1,242	2,556
251.10	1,242	2,581
251.15	1,242	2,605
251.20	1,242	2,630
251.25	1,242	**2,655**

Stage-Area-Storage for Pond SIS2:

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
249.00	1,735	0	251.65	1,748	3,056
249.05	1,735	35	251.70	1,748	3,102
249.10	1,735	69	251.75	1,748	3,146
249.15	1,735	104	251.80	1,748	3,188
249.20	1,735	139	251.85	1,748	3,227
249.25	1,735	174	251.90	1,748	3,265
249.30	1,735	208	251.95	1,748	3,302
249.35	1,735	243	252.00	1,748	3,338
249.40	1,735	278	252.05	1,748	3,373
249.45	1,735	312	252.10	1,748	3,409
249.50	1,735	347	252.15	1,748	3,444
249.55	1,735	418	252.20	1,748	3,479
249.60	1,735	488	252.25	1,748	3,515
249.65	1,735	558	252.30	1,748	3,550
249.70	1,735	628	252.35	1,748	3,585
249.75	1,735	698	252.40	1,748	3,621
249.80	1,735	768	252.45	1,748	3,656
249.85	1,735	837	252.50	1,748	3,691
249.90	1,735	907	252.55	1,748	3,692
249.95	1,735	976	252.60	1,748	3,692
250.00	1,735	1,044	252.65	1,748	3,693
250.05	1,735	1,113	252.70	1,748	3,694
250.10	1,735	1,181	252.75	1,748	3,694
250.15	1,735	1,249	252.80	1,748	3,695
250.20	1,735	1,316	252.85	1,748	3,696
250.25	1,735	1,383	252.90	1,748	3,696
250.30	1,735	1,450	252.95	1,748	3,697
250.35	1,735	1,516	253.00	1,748	3,697
250.40	1,735	1,582	253.05	1,748	3,698
250.45	1,735	1,648	253.10	1,748	3,699
250.50	1,735	1,713	253.15	1,748	3,699
250.55	1,735	1,778	253.20	1,748	3,700
250.60	1,735	1,843	253.25	1,748	3,701
250.65	1,735	1,907	253.30	1,748	3,701
250.70	1,735	1,970	253.35	1,748	3,702
250.75	1,735	2,033	253.40	1,748	3,703
250.80	**1,748**	2,095	253.45	1,748	3,703
250.85	1,748	2,158	253.50	1,748	3,704
250.90	1,748	2,220	253.55	1,748	3,704
250.95	1,748	2,281	253.60	1,748	3,705
251.00	1,748	2,342	253.65	1,748	3,706
251.05	1,748	2,402	253.70	1,748	3,706
251.10	1,748	2,462	253.75	1,748	3,707
251.15	1,748	2,520	253.80	1,748	**3,708**
251.20	1,748	2,578			
251.25	1,748	2,635			
251.30	1,748	2,691			
251.35	1,748	2,747			
251.40	1,748	2,801			
251.45	1,748	2,855			
251.50	1,748	2,907			
251.55	1,748	2,958			
251.60	1,748	3,008			

Appendix I – Mounding Calculations

Sheldon Meadow - Infiltration Basin 1

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
0.1650	***R***	**Recharge (infiltration) rate (feet/day)**
0.260	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
1.65	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
47.500	**x**	**1/2 length of basin (x direction, in feet)**
45.000	**y**	**1/2 width of basin (y direction, in feet)**
1.000	**t**	**duration of infiltration period (days)**
15.000	**hi(0)**	**initial thickness of saturated zone (feet)**

Conversion Table

inch/hour	**feet/day**
0.67	1.33
2.00	4.00

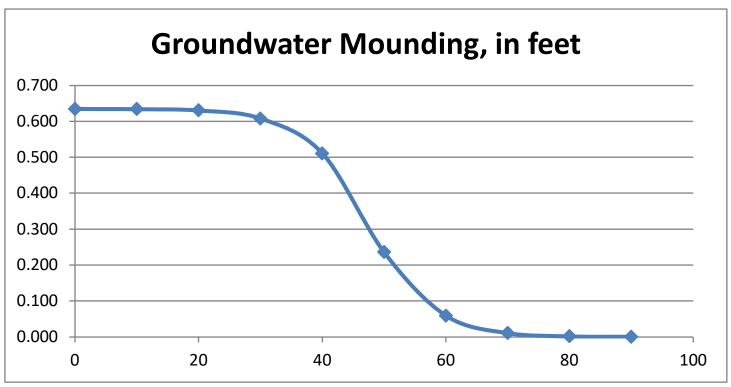
hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

15.634	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.634	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
0.634	**0**
0.634	**10**
0.631	**20**
0.608	**30**
0.511	**40**
0.236	**50**
0.059	**60**
0.011	**70**
0.001	**80**
0.000	**90**

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Sheldon Meadow - Subsurface Infiltration System 1

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values				
0.1650	***R***	**Recharge (infiltration) rate (feet/day)**		
0.260	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**		
1.65	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***		
28.450	**x**	**1/2 length of basin (x direction, in feet)**		
9.250	**y**	**1/2 width of basin (y direction, in feet)**		
1.000	**t**	**duration of infiltration period (days)**		
15.000	**hi(0)**	**initial thickness of saturated zone (feet)**		

Conversion Table

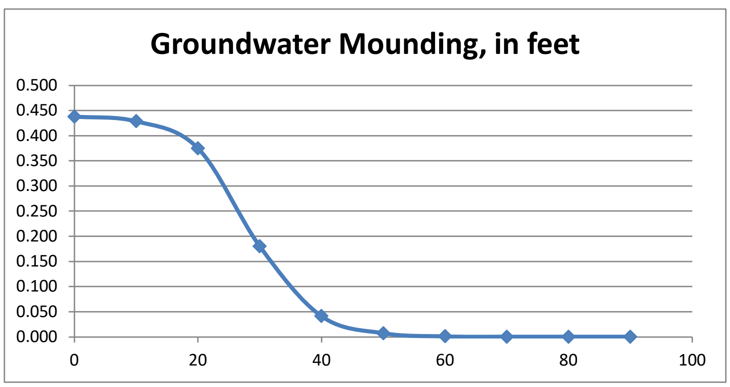
inch/hour	**feet/day**
0.67	1.33
2.00	4.00
hours	**days**
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

15.438	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.438	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
0.438	**0**
0.429	**10**
0.375	**20**
0.180	**30**
0.041	**40**
0.007	**50**
0.001	**60**
0.000	**70**
0.000	**80**
0.000	**90**

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

Sheldon Meadow - Subsurface Infiltration System 2

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

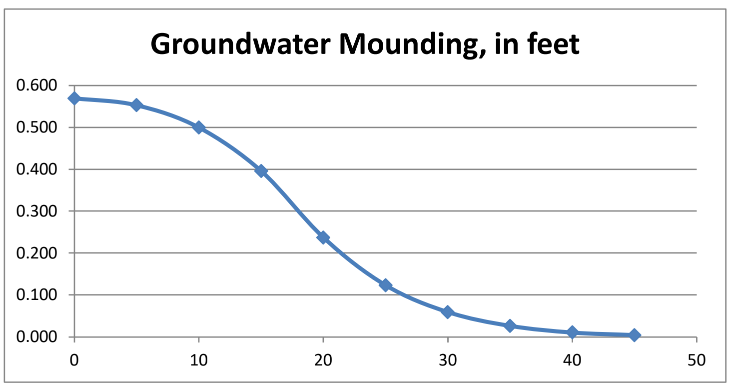
Input Values			Conversion Table	
			inch/hour	**feet/day**
0.1650	***R***	**Recharge (infiltration) rate (feet/day)**	0.67	1.33
0.260	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**		
1.65	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***	2.00	4.00
17.800	**x**	**1/2 length of basin (x direction, in feet)**		
23.500	**y**	**1/2 width of basin (y direction, in feet)**	**hours**	**days**
1.000	**t**	**duration of infiltration period (days)**	36	1.50
15.000	**hi(0)**	**initial thickness of saturated zone (feet)**		

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

15.569	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.569	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	**Distance from center of basin in x direction, in feet**
0.569	**0**
0.553	**5**
0.500	**10**
0.396	**15**
0.237	**20**
0.123	**25**
0.059	**30**
0.026	**35**
0.011	**40**
0.004	**45**

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.