# **EXHIBIT K**:

Stormwater Management Report



# Exhibit **K**Stormwater Management Report

The items listed below are included in Exhibit K.

- 1 Nutmeg Solar Project Stormwater Management Report
- 2 Nutmeg Solar Project Construction Sequencing Figures

# POST CONSTRUCTION STORMWATER MANAGEMENT REPORT



**Tighe**&Bond

Nutmeg Solar Project Enfield, CT

# **Stormwater Management Report**

Prepared For:

**Nutmeg Solar, LLC** 

September 2018

## **Section 1 Project Introduction**

Section 2	? Project Description	
2.1	Existing Conditions	2-1
2.2	Proposed Improvements	2-3
2.3	Hydrologic Analysis	2-7
Section 3	Regulatory Compliance	
3.1	Stormwater Manual Compliance	3-1
	3.1.1 Water Quality Volume	3-1
	3.1.2 Water Quality Flow	3-1
	3.1.3 Groundwater Recharge	3-1
3.2	Soil Erosion and Sediment Control Guidelines	3-2
	3.2.1 Erosion and Sedimentation Control Narrative	3-2
	3.2.2 Erosion and Sedimentation Control Notes	3-2
	3.2.3 Construction Sequence	3-3
3.3	Watershed Management	3-5

#### **Appendices**

Α	Figures

Figure 1: USGS Site Locus Map

Figure 2: Soils Area Map

Figure 3: Existing Conditions Drainage Area Map

Figure 4: Proposed Conditions Drainage Area Map

Figure 5: Scantic River Watershed Map

B Soils Data

C Hydrologic and Hydraulic Calculations

# Section 1 Project Introduction

Tighe & Bond has prepared the following Stormwater Management Report to support the proposed installation of a 19.6 megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) facility to be constructed in the Town of Enfield, Connecticut (Project). The Project Site is generally bounded by Bailey Road to the north, Broad Brook Road to the west, forested areas to the south and the Eversource Scitico to Franconia 115 kV transmission line to the east. Combined, the Project Area/Site parcels under lease or purchase option agreements encompass approximately 162 acres. As proposed, the Development Area/ limit of work of the proposed project will occupy approximately 131 acres of the 162-acre Project Area/ Site.

The following Stormwater Management Report details how the project will impact local hydrology and to document compliance with local, state, and federal stormwater management regulations. Note that this Report focuses primarily on post-construction stormwater management; the Applicant has submitted a Stormwater Permit application to the CT Department of Energy and Environmental Protection (DEEP) to demonstrate compliance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("Construction Stormwater General Permit").

# Section 2 Project Description

### 2.1 Existing Conditions

The Project Site consists of 9 parcels located in the southeast portion of the Town of Enfield, in Hartford County, Connecticut. A Site Locus Map, Figure 1, is provided in Appendix A.

The site occurs in a mixed rural and agricultural area within Enfield, Connecticut, with residential homes occurring generally north and west of the Project Site. A locally-owned orchard is located to the northeast, and an active concrete batch plant is located immediately southeast of the Project Site. A locally-owned orchard is located to the northeast, and an active concrete batch plant is located immediately southeast of the Project Site.

The surrounding land uses include residential development, agricultural production, and industrial use, including an inactive railroad line and the Enfield Transit Mix batch plant located on the west side of Broad Brook Raod. The Scantic River is located north of the Project Site across Bailey Road.

The western portion of the Project Site consists of predominantly flat areas in current use as agricultural fields, with accompanying outbuildings (i.e. tobacco barns). The area has been actively used for agricultural purposes, and has been used most recently for the cultivation of tobacco and gourd (i.e. pumpkin and squash) crops.

The eastern portion of the Project Site primarily consists of mixed second-growth forest. There is an existing network of recreational vehicle trails and tree stands indicating the current use of this land is primarily for hunting and recreational activities. There is evidence of past timber harvesting and gravel extraction activities on the property. The topography throughout the Project Site ranges in elevation from approximately 166 to 320 feet above mean sea level according to the National Geodetic Vertical Datum.

Natural Resource Conservation Service (NRCS) soil data was obtained through the Web Soil Survey portal on the USDA NRCS website. The areas surrounding the property were queried for soil types according to the record soil survey maps maintained by NRCS. Soil types depicted on the soils map on the subject property include Haven and Enfield association, Windsor association, Manchester association, Wapping association, Narragansett association, Ninigret and Tisbury association, and Agawam association. Each soil classification is further detailed below. NRCS soils information is provided in Appendix B.

Table 2.1 NRCS Soil Summary

Map Unit Designation	Soil Association	Additional Description	Hydrologic Soil Group (HSG)
21A	Ninigret and Tisbury association	Fine sandy loam	С
32A, B	Haven and Enfield association	Fine sandy loam	В
37C	Manchester association	Gravelly sandy loam	А
66C	Narragansett association	Silt loam	В
68D	Narragansett association	Silt loam, extremely stony	В

Soils designated as HSG A are generally well draining and have a high capacity for water infiltration. Soils designated as HSG B generally have a moderate infiltration capacity and are well drained despite their finer texture. Soils designated as HSG C have a slow infiltration rate due to layers of finer texture soils. Based on this, soils within the project area are generally well draining with some potential to infiltrate water. A Soils Area Map is provided as Figure 2 in Appendix A. The NRCS Soils Mapping is provided in Appendix B.

The topography of the existing conditions site conveys stormwater towards numerous design points. A ridgeline within the eastern portion of the project area divides the site to drain easterly and westerly. A portion of the site drains northerly to the Scantic River. The far western portion of the side drains easterly towards Broad Brook Road. The central portion of the site also drains westerly to Broad Brook Road. Existing conditions drainage areas are presented on Figure 3 in Appendix A.

Existing groundcover types and soil conditions were used to determine a Runoff Curve Number (CN) value for each drainage area. Weighted CN values were determined for each drainage area using the following CN values, as described in the United States Department of Agriculture (USDA) Technical Release (TR) 55:

- Woods, Good condition, HSG A (CN 30)
- Woods, Good condition, HSG B (CN 55)
- Woods, Good condition, HSG C (CN 70)
- Row crops, HSG A (CN 67)
- Row crops, HSG B (CN 78)
- Row crops, HSG C (CN 85)
- Existing structure, HSG A (CN 98)
- Existing structure, HSG B (CN 98)
- Gravel, HSG B (CN 96)

A summary of the existing conditions drainage area sizes and runoff curve number is provided in Table 2.2 below.

**Table 2.2** Existing Conditions Drainage Area Summary

Subcatchment Designation	Area (acres)	Weighted Runoff Curve Number
Drainage Area 1S	27.2	65
Drainage Area 2S	25.4	66
Drainage Area 3S	8.0	75
Drainage Area 4S	28.0	61
Drainage Area 5S	9.7	55
Drainage Area 6S	4.8	55
Drainage Area 7S	31.5	55
Drainage Area 8S	26.6	55
Drainage Area 9S	1.5	57
Overall Existing Analysis Area	162.7 Acres	60

## 2.2 Proposed Improvements

The Nutmeg Solar Project is a fixed tilt solar PV energy system that will consist of solar modules, inverters, a collector substation, site roads, fencing, and stormwater management features, along with related infrastructure. It is important to note that final equipment selection is subject to change, but the size of the Project Development Area will not increase. The Project consists of a western array and an eastern array. The western array is located within the western portion of the Development Area, which consists primarily of open agricultural fields. The eastern array is located within the eastern portion of the Development Area, which consists primarily of second-growth forest.

A series of gravel site roads will be constructed within the Development Area to provide access to the solar arrays, substation and centralized inverter/ transformer stations. Site roads for the Project will utilize site roads currently present throughout the Project Site to the greatest extent practicable.

The majority of the 1.4 miles of proposed site roads will be approximately 16 feet wide. At the proposed substation location, the road is approximately 20 feet wide for a short section to provide a turning radius necessary for component delivery. Site roads will be comprised of a 12-inch thick crushed stone base and a 4-inch thick traffic bound gravel surface. Minor grading will be required along the proposed site roads in select locations to address minor variations in site topography.

A temporary designated lay-down area will be located within the northern portion of the Development Area and adjacent to the proposed collector substation. The laydown area will be used during construction for component delivery, off-loading and storage. The area will employ appropriate erosion controls, which will be kept in place until the Project Site is determined to be suitably stable.

Approximately 91 acres of vegetation will be cleared and grubbed, to allow for the construction and operation of the Project and to minimize shading impacts. No clearing will occur in wetlands or watercourses. The areas to be cleared are designated on Project Site Plans.

Selective vegetation management is proposed to be employed on approximately **5** acres. This will occur in the forested area surrounding the identified vernal pool habitat. In the selective vegetation management area, clearing impacts will be minimized through use of hand cutting for incompatible vegetation, using chain saws or brush saws, and loppers or hand pruners. The selective cutting areas will be inspected and vegetation present within the buffer observed to be capable of exceeding the canopy height limit (20-40 feet) within the next 5 years will be removed. The remaining vegetation will, over time, be expected to develop into early successional communities that would naturally inhibit the growth of tree species capable of growing to a height that would exceed the canopy limits, thereby reducing the need for maintenance or disturbance. Shrub plantings will be employed along the eastern edge of the proposed site road to the west of the vernal pool after clearing and grading, to provide cover and habitat for amphibian species.

The ground within the Development Area will be planted with native seed mix to establish a meadow habitat that will be maintained for the life of the Project.

Appropriate erosion control and sedimentation prevention measures will be implemented during construction and operation in accordance with the 2004 Connecticut Stormwater Quality Manual (Stormwater Manual) and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (SESC Guidelines). A separate Stormwater Pollution Control Plan (SWPCP) has been prepared for the project to further detail project phasing, stabilization and erosion and sedimentation control practices through construction. General construction sequencing information is provided in Section 3.2.3 of this report.

The topography of the site will not substantially change as a result of the proposed development. Within the solar array, micro-grading, or the grading of existing undulations, will occur prior to installation of the solar array; however, this activity will not cause substantial changes to drainage areas or stormwater flow paths on the site. While the proposed site roads require both areas of cut and fill, general site topography will be maintained, resulting in no net impact to watershed drainage patterns.

Under proposed conditions, large portions of the agricultural uses will be converted to solar array where panels will be installed using driven posts; in some areas, ground screws may be used in lieu of or in addition to the posts. Existing woodland within the eastern portion of the project will be cleared and grubbed and allowed to stabilize prior to construction of solar infrastructure.

Throughout the project, stormwater will fall onto solar panels and will flow off the edge into the vegetated surface and flow along existing flow paths as under existing conditions. Therefore, the only solar panels that are considered impervious will be the most up-

gradient panels in each subcatchment.<sup>1</sup> The remainder of the solar facility within the limit of work will be considered meadow, non-grazed. Concrete equipment pads or skids, existing and proposed gravel site roads, woodland, remaining agricultural fields and water surfaces were also included in the post-development analysis.

Since the project will not substantially alter topography of the site, the Proposed Conditions Drainage Area Map, provided as Figure 4 in Appendix A, indicates that the nine existing conditions design points will be maintained under proposed conditions. The contributing drainage areas will convey stormwater runoff generally as under existing conditions. Proposed groundcover types within the limit of work, along with existing groundcover types outside of the limit of work and existing soil conditions were used to determine a Runoff Curve Number (CN) value for each proposed condition drainage area. Existing groundcovers utilized in proposed conditions computations are provided in Section 2.1. Weighted CN values were determined for each drainage area using the following CN values, as described in the United States Department of Agriculture (USDA) Technical Release (TR) 55:

- Proposed gravel roads, HSG A (CN 96)
- Proposed gravel roads, HSG B (CN 96)
- Proposed gravel roads, HSG C (CN 96)
- Meadow, HSG A (CN 30)
- Meadow, HSG B (CN 58)
- Meadow, HSG C (CN 71)
- Woods/Grass Combination, HSG B (CN 65)
- Solar Panels (CN 98)
- Concrete Pad (CN 98)
- Water Surface/Basin (CN 98)

Proposed drainage areas are further summarized in Table 2.3 below.

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<sup>&</sup>lt;sup>1</sup> Cook, L.M. & McCuen, R. H., (2013). Hydrologic Response of Solar Farms. *Journal of Hydrologic Engineering*, 18(5). pp.536-541

**Table 2.3**Proposed Conditions Drainage Area Summary

Subcatchment Designation	Area (acres)	Weighted Runoff Curve Number
Drainage Area 1AS	17.4	55
Drainage Area 1BS	9.8	62
Drainage Area 1CS	4.6	82
Drainage Area 2AS	11.5	59
Drainage Area 2BS	15.6	58
Drainage Area 3AS	6.3	63
Drainage Area 4AS	4.7	58
Drainage Area 4BS	24.8	58
Drainage Area 5AS	1.8	58
Drainage Area 5BS	1.2	58
Drainage Area 5S	6.7	56
Drainage Area 6AS	1.2	59
Drainage Area 6BS	0.5	59
Drainage Area 6S	3.1	57
Drainage Area 7AS	11.9	58
Drainage Area 7S	19.5	57
Drainage Area 8AS	6.5	58
Drainage Area 8BS	4.3	58
Drainage Area 8S	9.9	61
Drainage Area 9S	1.0	59
Overall Proposed Analysis Area	162.7 acres	59

The slight decrease in the runoff curve number is due to the conversation of agricultural fields to a grassy meadow condition, which offsets the impacts of the proposed gravel site roads, concrete equipment pads and solar panel installation. Within the solar array, stormwater will fall onto the PV modules and will flow off the edge into the grassy ground cover. Stormwater runoff will continue to flow across the ground surface as under existing conditions along existing flow paths.

Under proposed conditions, the time of concentration (Tc) decreases due to the conversion of woods to meadow, as water flows faster through meadow than a woodland scenario. To attenuate peak runoff rate and volume, additional infiltration is provided through the use of constructing berms to collect, contain and infiltrate runoff. The berms were

designed to avoid substantial excavation, which maintains the existing separation to seasonal high groundwater depths in order to mimic existing conditions. The berms are designed to infiltrate the 100-year storm event and are equipped with an emergency spillway.

## 2.3 Hydrologic Analysis

A hydrologic analysis of the pre-development and post-development site was performed to determine the impacts of the proposed project to peak discharge rates and stormwater runoff volumes. HydroCAD Release 9.10 is a hydrology and hydraulics software using Technical Release (TR) 20 and TR-55 methodologies for the determination of stormwater runoff quantities. The HydroCAD Report for both pre- and post-development conditions for the 2-, 10-, 25- and 100-year storm events is provided in Appendix C.

The proposed Project will not substantially alter stormwater flow paths and will result in decreased peak discharge rates as a result of a reduction in the composite Curve Number (CN) under the proposed conditions analysis and additional infiltration. The existing site is primarily woodland and agricultural with existing buildings and paved and gravel roads. As previously presented, the CN value for the existing site is 60 and the proposed CN value is 59 for the entire site. Composite runoff curve number calculations are provided in the HydroCAD Report in Appendix C. As previously presented, additional infiltration to attenuate runoff rate and volume was achieved through the construction of berms.

The hydrologic analysis assumes that in each drainage subcatchment, only the topographically highest row of panels is considered impervious due to the nature of how stormwater will continue to travel on the site beneath subsequent rows of panels. This approach is conservative, in that the panels from which the time of concentration was calculated is not the most hydrologically remote point, but results in a reduction in peak discharge rates from the site.

The HydroCAD Report includes the analysis for the 2-, 10-, 25- and 100-year storm events for both existing and proposed conditions. Rainfall depths used in the analysis are consistent with those published in the 2004 Connecticut Stormwater Quality Manual for Hartford County and as provided in the Table below.

Table 2.4
Design Rainfall Depths

Storm Event	Rainfall Depth (inches)
2-Year	2.6
10-Year	4.7
25-Year	5.5
100-Year	6.9

Table 2.5 presents the results of the pre-development stormwater runoff analysis versus the post-development stormwater runoff analysis for each design point.

**Table 2.5**Peak Discharge Rate Comparison

		2-year Storm Event (cfs)	10-year Storm Event (cfs)	25-year Storm Event (cfs)	100-year Storm Event (cfs)
Design Point	Existing	7.5	21.4	30.2	46.9
1	Proposed	2.0	7.7	12.8	23.7
Design Point	Existing	7.7	20.9	29.2	44.9
2	Proposed	2.1	8.9	13.6	23.1
Design Point	Existing	7.0	14.7	19.2	27.2
3	Proposed	2.3	7.7	11.1	17.7
Design Point	Existing	5.5	19.2	28.4	46.3
4	Proposed	3.8	16.4	25.3	43.1
Design Point	Existing	0.8	4.7	7.7	14.0
5	Proposed	0.8	4.3	7.0	12.5
Design Point	Existing	0.4	2.0	3.3	5.9
6	Proposed	0.4	1.9	3.0	5.2
Design Point	Existing	2.6	15.0	24.8	44.8
7	Proposed	2.7	13.2	21.0	37.0
Design Point	Existing	1.8	9.9	16.1	29.1
8	Proposed	2.5	9.5	14.1	23.1
Design Point	Existing	0.2	1.0	1.6	2.8
9	Proposed	0.2	0.9	1.4	2.4
Project	Existing	33.4	108.8	160.4	261.8
Total	Proposed	16.7	70.6	109.4	187.6

Table 2.5 indicates that existing peak discharge rates from the proposed development are reduced for the 2-, 10-, 25- and 100-year storm events.

# Section 3 Regulatory Compliance

### 3.1 Stormwater Manual Compliance

The project has been designed to comply with the 2004 Connecticut Stormwater Quality Manual (Stormwater Manual) and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (SESC Guidelines). The following section describes how the project complies with the criteria outlined in each document.

The project has been designed to comply with the Stormwater Quality requirements of the Stormwater Manual for both Water Quality and Groundwater Recharge. Both requirements are based on the imperviousness of the proposed development.

#### 3.1.1 Water Quality Volume

The required Water Quality Volume (WQV) for the proposed conditions is based on the acreage of impervious surfaces including gravel site roads and impervious concrete pads. While the hydrologic analysis assumed that a portion of the solar panels in each drainage area were considered impervious in order to determine anticipated peak discharge rates, they have been excluded from WQV computations. The panels, as well as the concrete equipment pads, will not be subject to vehicular access, and therefore do not produce any pollutants to stormwater runoff.

All other impervious surfaces, specifically gravel site roads, will not be curbed in order to promote a "country drainage" scenario. Roadside swales have been designed to convey runoff from the proposed site roads to engineered discharge locations, where energy dissipation devices have been designed to reduce stormwater flow velocity. The swales will remove any sediment from the runoff prior to discharge off-site.

Further discussion pertaining to water quality concerns of the Scantic River, located to the north of the project, is provided in Section 3.3.

#### 3.1.2 Water Quality Flow

The Water Quality Flow (WQF) is a quantity of stormwater runoff based on the water quality design storm, or a 1-inch rainfall depth. This flow is important when designing water quality swales or other runoff diversion features to endure the property treatment is provided. The proposed project does not include any Best Management Practice (BMPs) that requires a WQF rate for design purposes, therefore this calculation was not performed.

#### 3.1.3 Groundwater Recharge

The required Groundwater Recharge Volume (GRV) is based on impervious ground coverage as well as the Hydrologic Soil Group of the underlying soils. In general, runoff from the proposed solar panels will be allowed to recharge within the grassy vegetation below the panels. Runoff from the proposed site roads will be conveyed through roadside swales to engineered discharge locations to avoid erosive velocities, and will discharge to vegetated areas to promote further groundwater recharge. The project does not include large, uninterrupted spans of impervious ground coverage. Concrete equipment pads are relatively small in comparison to the overall watershed, will not adversely impact

groundwater recharge capabilities of the proposed conditions site. The total development area (area within the limit of work shown on the project drawings) is 131 acres. Of that 131 acres, impervious ground coverage will increase from 0.88% of the entire project area to 2.67% of the entire project area. Since this increase is negligible in relation to the entire project area and larger watershed, no further calculations to determine the volume of required groundwater recharge have been provided as part of this report.

#### 3.2 Soil Erosion and Sediment Control Guidelines

#### 3.2.1 Erosion and Sedimentation Control Narrative

Erosion and sedimentation control measures are an important component of site construction to limit impacts to environmental features and abutting properties. The contractor will be required to install erosion and sedimentation control measures prior to construction. All installed erosion and sedimentation control measures shall be maintained by the Contractor through the duration of construction. The Contractor shall have additional erosion and sedimentation control measure materials on-site during construction. Silt fencing will be installed along the limit of work where the project abuts a wetland resource area, as well as where the limit of work abuts a property line. Stone construction entrances will be construction to limit sediment tracking outside of the construction zone. Soil erosion and sedimentation control measures shall conform to the standards outlined in the DEEP "2002 Connecticut Guidelines for Soil Erosion and Sediment Control", latest revision.

A separate Stormwater Pollution Control Plan (SWPCP) has been prepared for the project to further detail project phasing, stabilization and erosion and sedimentation control practices through construction.

#### 3.2.2 Erosion and Sedimentation Control Notes

The following notes have been included on the Site Plans and are to be followed throughout the construction duration.

- Install all erosion control measures shown, specified and required by the Engineer prior to any construction or immediately upon request. Maintain all such control measures until final surface treatments are in place and/or until permanent vegetation is established.
- 2. Mark work limit line(s) prior to starting work. Do not disturb vegetation and topsoil beyond the proposed limit line. Coordinate with the Engineer for the location for the temporary stockpiling of topsoil during construction.
- 3. Fine grade and immediately seed all side slopes, shoulder areas, and disturbed vegetated areas. All grading to be a maximum slope of 2:1, compacted, and stabilized. Slopes greater than 3:1 to be stabilized with erosion control blanket.
- 4. Remove and dispose of all silt trapped at barriers in upland areas outside of buffer zones. Remove materials deposited in any temporary settling traps and/or basins at the completion of the project. Restore all disturbed areas to pre-construction conditions.
- 5. Remove any sediment tracked on public Rights-of-Ways at the end of each day.

#### 3.2.3 Construction Sequence

The Project is proposed to be constructed in phases to minimize disturbance. The Project will be constructed in four major phases, and 34 sub-phases. Within each major phase, sub-phases will be designed to be less than 10 acres and each will have a temporary sediment basin or trap as required. The major phases include the following:

- Phase 1: Site Roads and Staging
- Phase 2: Eastern Array Grubbing and Stormwater Controls
- Phase 3: Western Array Stormwater Controls and Solar Equipment Installation
- Phase 4: Eastern Array Stormwater Controls and Solar Equipment Installation

Note that Phase 2 and Phase 4 occur in the same location, with differing construction activities. Phase 4 is the installation of solar infrastructure in the area that was grubbed and temporarily stabilized in Phase 2.

The construction sequence described below has been developed in close consultation with DEEP staff in in support of the application for Registration in accordance with the DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction General Permit). Phasing plans for construction are provided in Exhibit K of the Petition. Detailed drawings depicting stormwater controls for each sub-phase will be provided to DEEP as part of the Construction General Permit registration.

During construction, Nutmeg Solar will employ a full-time environmental monitor present on site to document conditions and ensure compliance with the terms of the DEEP Construction General Permit. As required by the DEEP, a third-party certified inspector also will provide oversight and compliance monitoring for the construction process.

#### **Pre-Construction**

- 1. Demarcation of clearing limits, selective cutting zones, and buffer areas.
- 2. Cut trees above ground (retain stumps) in frozen conditions.
- 3. Barn relocation and removal (no ground disturbance).
- 4. Environmental restriction and safety training for all site personnel.
- 5. Preconstruction meeting.

#### Phase 1 - Site Roads and Staging

- 1. Flag the limits of construction necessary to facilitate the preconstruction meeting.
- 2. Environmental restriction and safety training for all site personnel.
- Preconstruction meeting.
- 4. Install construction entrance.
- 5. Install perimeter controls to establish phase work area in accordance with site plan and stormwater pollution control plan (SWPCP).
- 6. Prior to installing surface water controls such as temporary diversions and stone check dam, inspect existing conditions to ensure discharge locations are stable. If

- not stable, review discharge conditions with the design engineer and implement additional stabilized measures prior to installing surface water controls.
- 7. Construct temporary sediment traps and/ or basins, diversion swales and berms with check dams.
- Once temporary stormwater controls area established, clear and grub existing stumps.
- 9. Strip, re-distribute, and stabilize all topsoil that is within the footprint of the site road, site road appurtenances and the collector substation (see 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, Chapter 4, Part ii and the Farmland Soils Mitigation Plan in Exhibit E).
- 10. Construct site roads, roadside swales and buried utility conduits.
- 11. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all disturbed areas. Monitor hydroseeded area and amend with additional seeding as needed.
- 12. Upon stabilization, temporary controls may be removed or relocated to construct subsequent sub-phases.

#### Phase 2 – Eastern Array Grubbing and Stormwater Controls

- 1. Flag the limits of construction.
- 2. Install perimeter controls to establish phase work area in accordance with site plan and SWPCP plans.
- 3. Prior to installing surface water controls such as temporary diversions and stone check dams, inspect existing conditions to ensure discharge locations are stable. If not stable, review discharge conditions with the design engineer and implement additional stabilized measures prior to installing surface water controls.
- 4. Construct temporary sediment traps and/ or basins, diversion swales and berms with checkdams.
- 5. Once temporary stormwater controls area established, grub existing stumps from previously cleared trees.
- Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all ground-disturbed areas. Monitor hydroseeded area and amend with additional seeding as needed.
- 7. Check and repair temporary controls as needed. Temporary controls to remain in place through Phase 4 construction.

#### Phase 3 – Western Array Stormwater Controls and Solar Equipment Installation

- 1. Flag the limits of construction.
- 2. Install perimeter controls to establish phase work area in accordance with site plan and SWPCP plans.
- 3. Prior to installing surface water controls such as temporary diversions and stone check dams, inspect existing conditions to ensure discharge locations are stable. If not stable, review discharge conditions with the design engineer and implement additional stabilized measures prior to installing surface water controls.

- 4. Construct temporary sediment traps and/ or basins, diversion swales and berms with check dams.
- 5. Clear and grub existing stumps as needed.
- 6. Install solar infrastructure including racking, solar modules, utility connections, and equipment pads. Solar array construction will begin with posts or ground screws being driven into the ground; racking will then be affixed to the posts; and modules will be mounted and installed on the racks.
- 7. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all disturbed areas. Monitor hydroseeded area daily and amend with additional seeding as needed.
- 8. After site is fully stabilized, remove temporary stormwater controls.

#### Phase 4 – Eastern Array Stormwater Controls and Solar Equipment Installation

- 1. Inspect and install perimeter controls established in Phase 2 to ensure phase work area is in accordance with site plan and SWPCP plans.
- 2. Inspect and construct temporary sediment traps and/ or basins, diversion swales and berms with check dams installed in Phase 2.
- 3. Install solar infrastructure including racking, solar modules, utility connections, and equipment pads. Solar array construction will begin with posts or ground screws being driven into the ground; racking will then be affixed to the posts; and modules will be mounted and installed on the racks.
- Construct collector substation
- 5. Stabilize site by hydroseeding with bonded fiber matrix or installing erosion control blanket in all disturbed areas. Monitor hydroseeded area daily and amend with additional seeding as needed.
- 6. After site is fully stabilized, remove temporary stormwater controls.

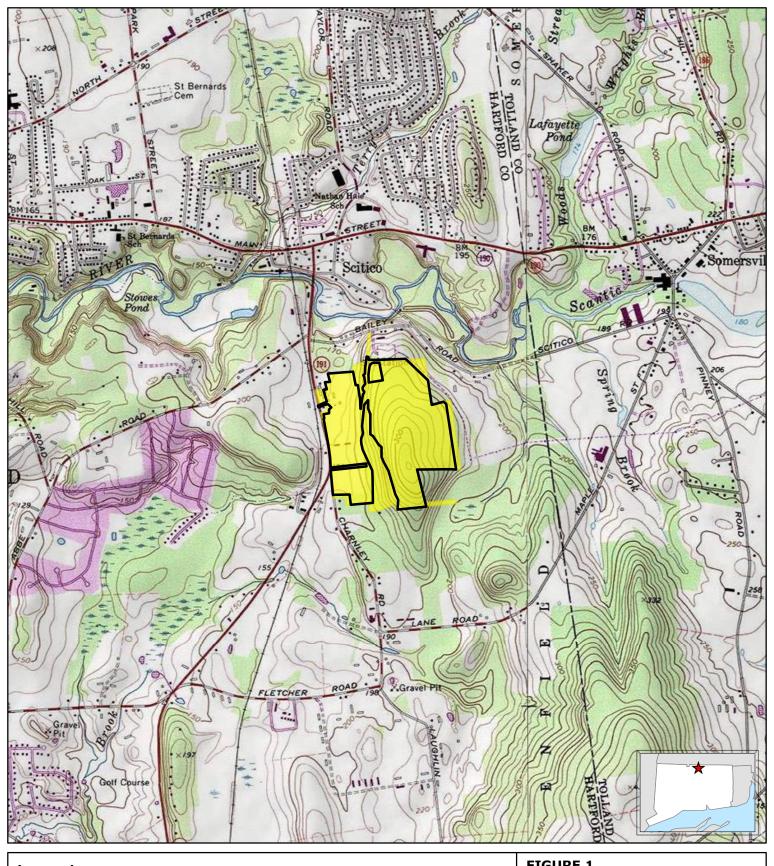
## 3.3 Watershed Management

The Scantic River is located to the north of the project. Stormwater runoff from the post-construction project will ultimately discharge to the Scantic River. The Scantic River watershed is approximately 170 square kilometers<sup>2</sup> and extends into the Towns of Hampden and Somers, Connecticut. The watershed includes a variety of land uses, primarily agricultural, residential, commercial, recreational and undeveloped woodland. According to the State of Connecticut Department of Energy and Environmental Projection (CTDEEP) 2017 Integrated Water Quality Report, the impairments observed in the Scantic River include Escherichia coli, with potential sources including stormwater, insufficient on-site treatment/septic systems, and agricultural activities. The proposed project will not result in an increase in the identified pollutants.

<sup>&</sup>lt;sup>2</sup> From EPA's MyWatersMapper and Geospatial Tool for Google Earth.

# Exhibit K: Stormwater Management Report

**Appendix A: Figures** 





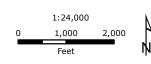
Limit of Work/Development Area



Project Site



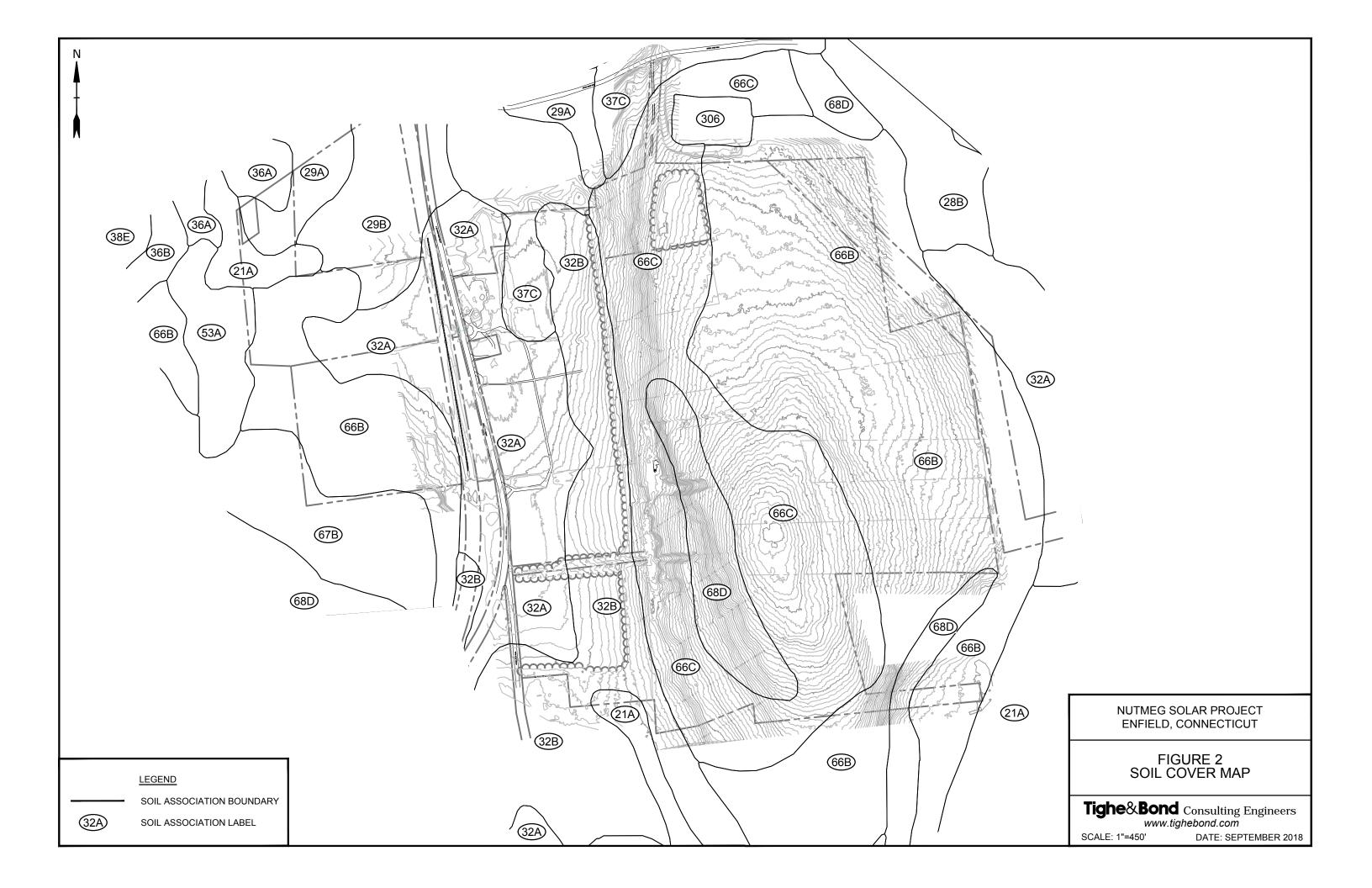
Based on USGS Topographic Map for Broad Brook, & Ellington, CT

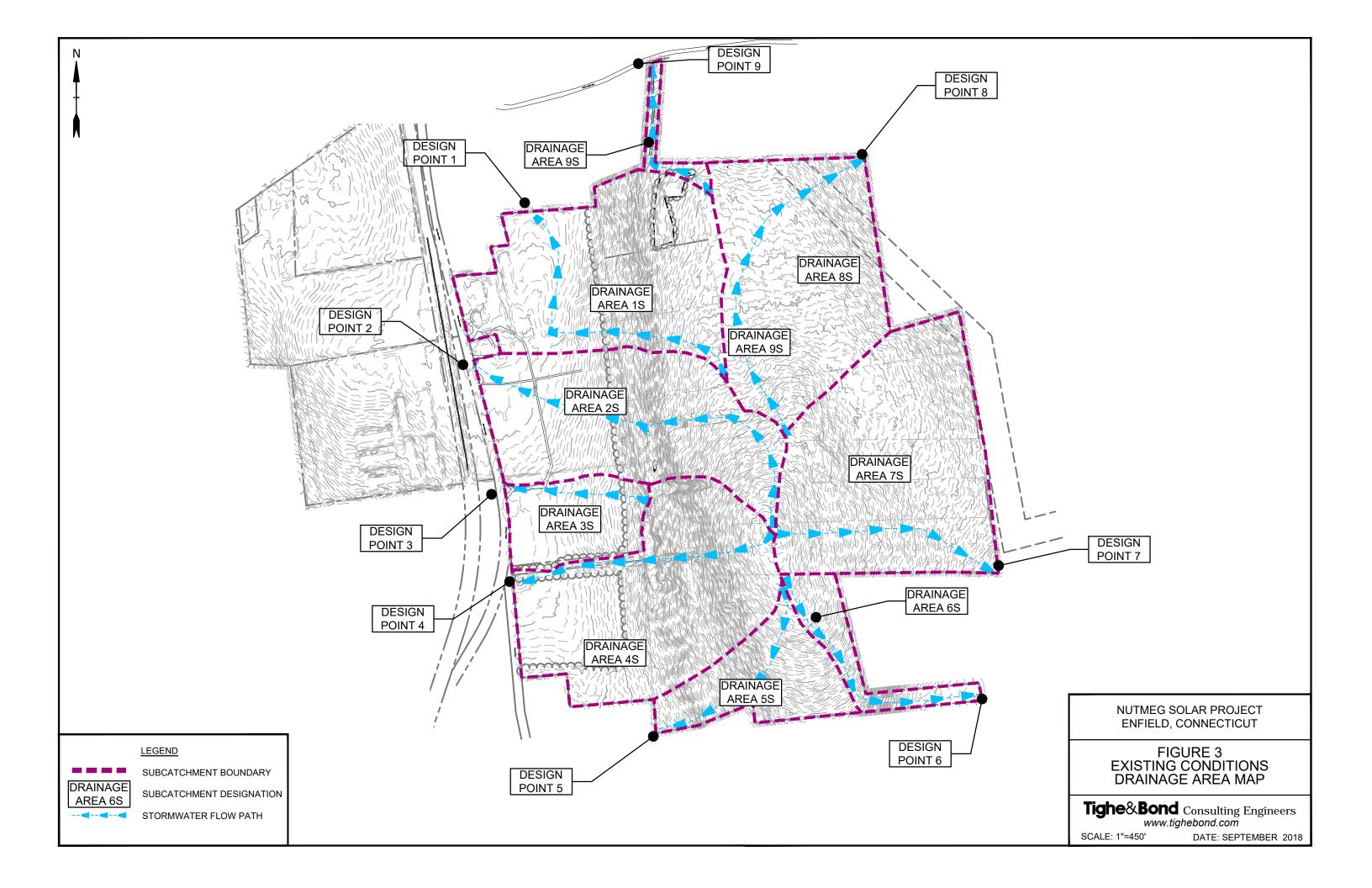


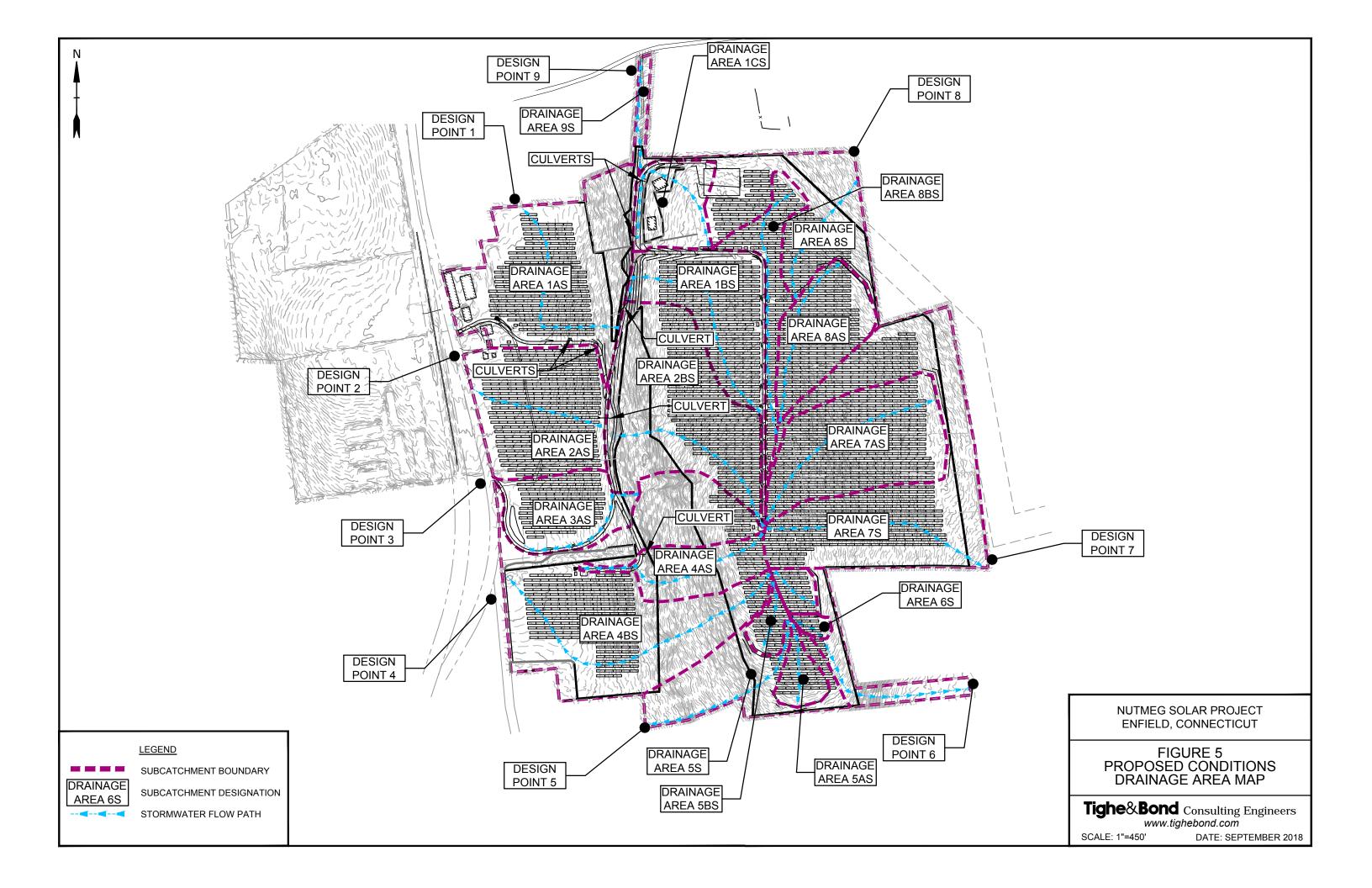
### FIGURE 1 SITE LOCATION

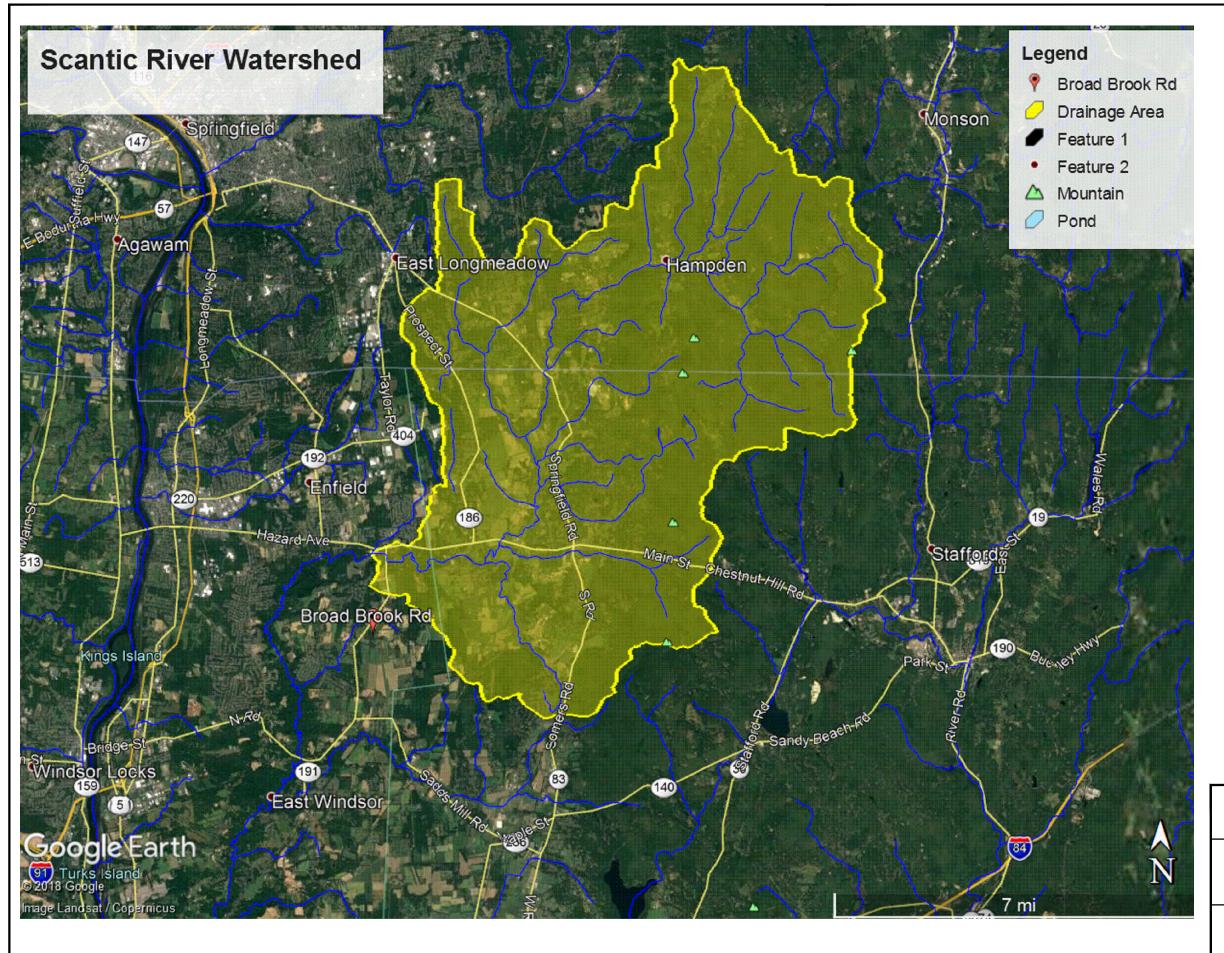
Nutmeg Solar Enfield, Connecticut

August 2018









NUTMEG SOLAR PROJECT ENFIELD, CONNECTICUT

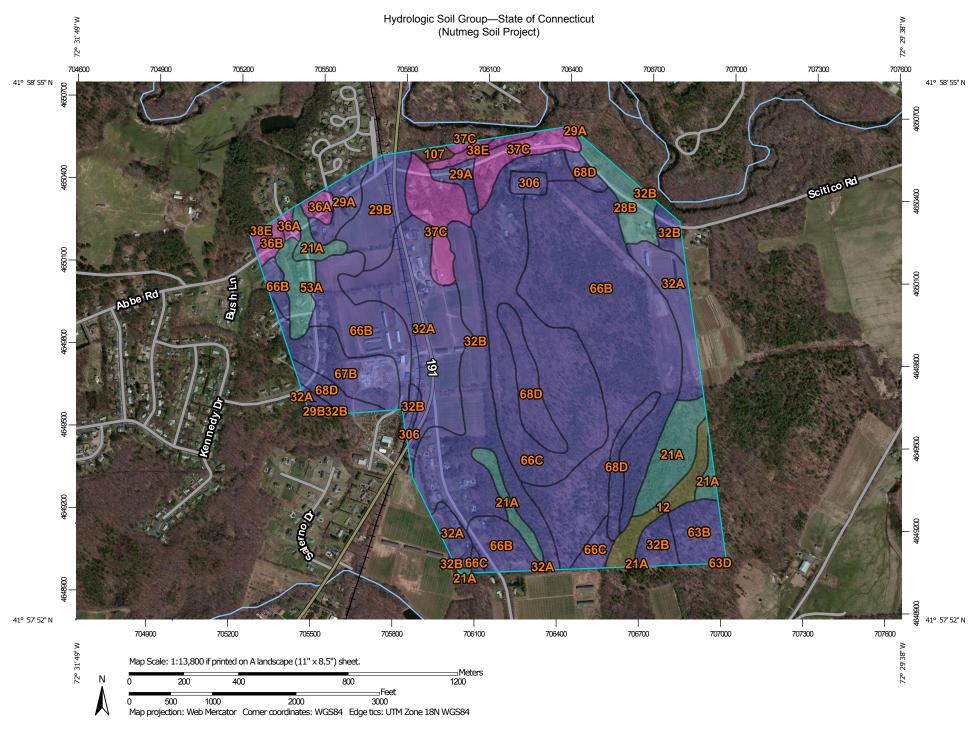
FIGURE 5 SCANTIC RIVER WATERSHED

Tighe&Bond Consulting Engineers
www.tighebond.com DATE: SEPTEMBER 2018

SCALE: NO SCALE

# Exhibit K: Stormwater Management Report

**Appendix B: Soils Data** 



#### MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) С 1:12.000. Area of Interest (AOI) C/D Please rely on the bar scale on each map sheet for map Soils D measurements. Soil Rating Polygons Not rated or not available Α Source of Map: Natural Resources Conservation Service Web Soil Survey URL: **Water Features** A/D Coordinate System: Web Mercator (EPSG:3857) Streams and Canals В Maps from the Web Soil Survey are based on the Web Mercator Transportation projection, which preserves direction and shape but distorts B/D Rails --distance and area. A projection that preserves area, such as the С Albers equal-area conic projection, should be used if more Interstate Highways accurate calculations of distance or area are required. C/D **US Routes** This product is generated from the USDA-NRCS certified data as D Major Roads of the version date(s) listed below. Not rated or not available -Local Roads Soil Survey Area: State of Connecticut Soil Rating Lines Survey Area Data: Version 15, Sep 28, 2016 Background Aerial Photography Soil map units are labeled (as space allows) for map scales 1:50,000 or larger. A/D Date(s) aerial images were photographed: Mar 28, 2011—Apr 18, 2011 B/D The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor C/D shifting of map unit boundaries may be evident. D Not rated or not available **Soil Rating Points** Α A/D B/D

# **Hydrologic Soil Group**

H	lydrologic Soil Group— So	ummary by Map Unit —	State of Connecticut (CT600	))
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
12	Raypol silt loam	C/D	9.5	1.9%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	С	24.6	5.0%
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	С	10.1	2.1%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	В	10.1	2.1%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	В	16.7	3.4%
32A	Haven and Enfield soils, 0 to 3 percent slopes	В	59.6	12.1%
32B	Haven and Enfield soils, 3 to 8 percent slopes	В	57.4	11.7%
36A	Windsor loamy sand, 0 to 3 percent slopes	А	3.9	0.8%
36B	Windsor loamy sand, 3 to 8 percent slopes	А	2.3	0.5%
37C	Manchester gravelly sandy loam, 3 to 15 percent slopes	A	23.7	4.8%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	3.7	0.7%
53A	Wapping very fine sandy loam, 0 to 3 percent slopes	С	7.9	1.6%
63B	Cheshire fine sandy loam, 3 to 8 percent slopes	В	9.9	2.0%
63D	Cheshire fine sandy loam, 15 to 25 percent slopes	В	0.1	0.0%
66B	Narragansett silt loam, 2 to 8 percent slopes	В	137.3	28.0%
66C	Narragansett silt loam, 8 to 15 percent slopes	В	67.8	13.8%
67B	Narragansett silt loam, 3 to 8 percent slopes, very stony	В	16.7	3.4%

F	lydrologic Soil Group— S	Summary by Map Unit —	State of Connecticut (CT60	00)
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
68D	Narragansett silt loam, 15 to 25 percent slopes, extremely stony	В	25.4	5.2%
107	Limerick and Lim soils	B/D	1.5	0.3%
306	Udorthents-Urban land complex	В	2.8	0.6%
Totals for Area of Inter	est	-	491.0	100.0%

### **Description**

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

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

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

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

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

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

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

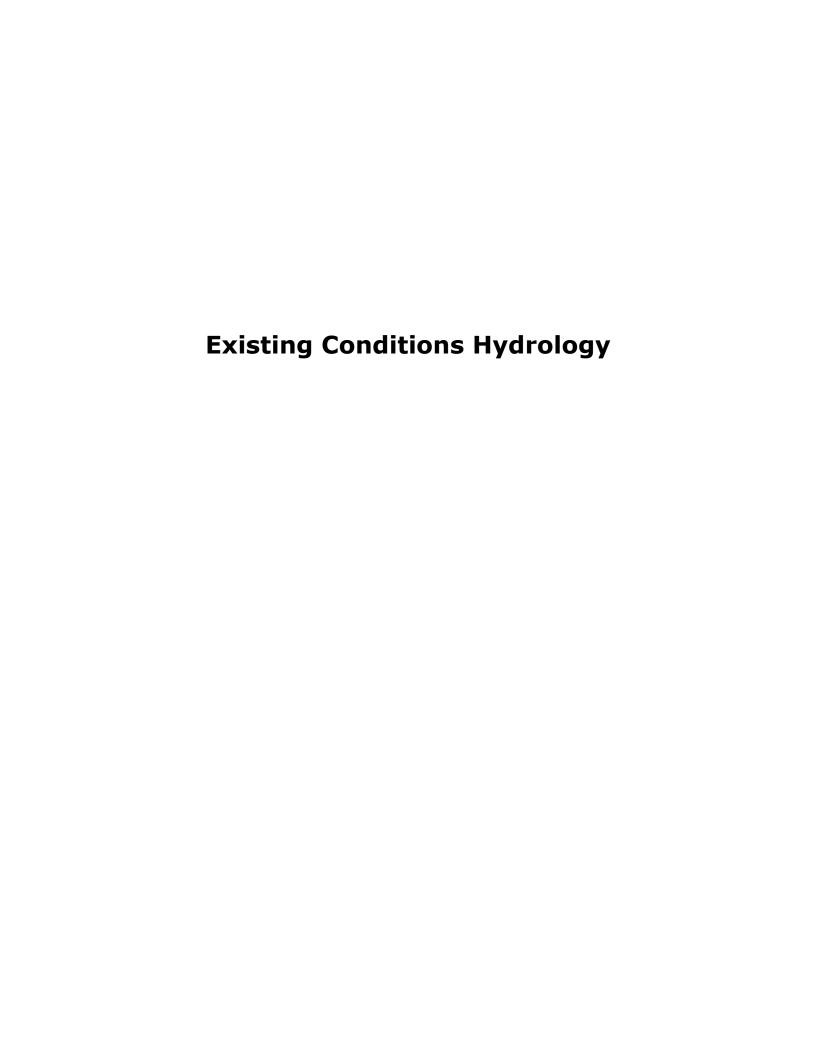
## **Rating Options**

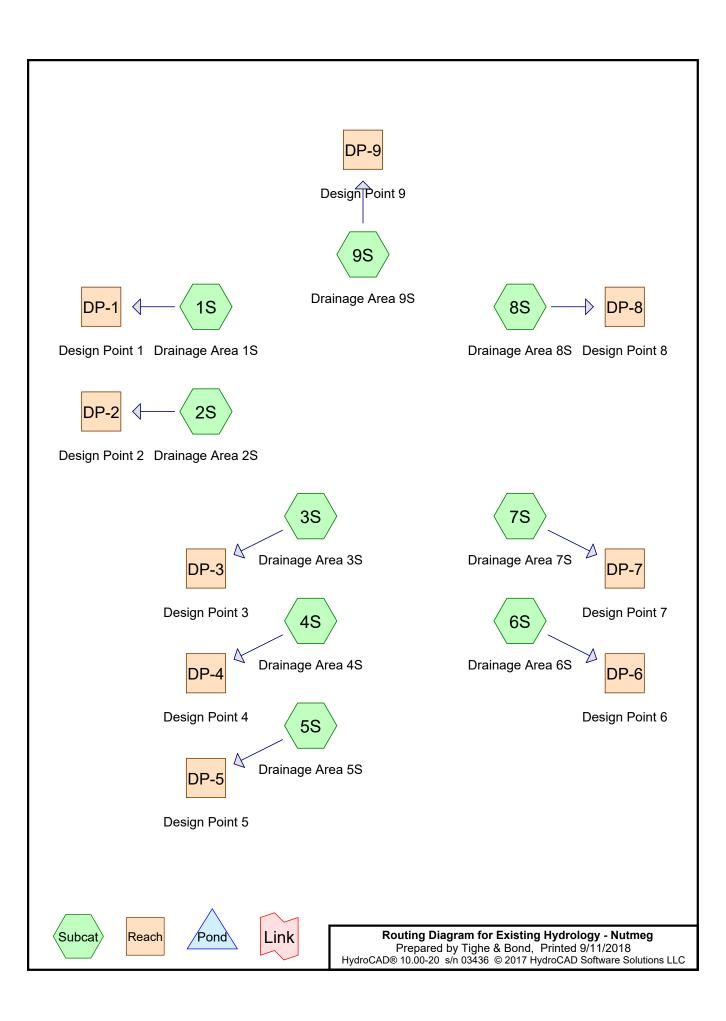
Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

# Exhibit K: Stormwater Management Report

Appendix C: Hydrologic and Hydraulic Calculations





Existing Hydrology - Nutmeg
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Printed 9/11/2018 Page 2

## **Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.262	98	Existing Structure, HSG A (1S)
0.869	98	Existing Structure, HSG B (1S, 2S)
0.048	96	Gravel surface, HSG A (9S)
0.651	96	Gravel surface, HSG B (1S, 9S)
3.538	67	Row crops, straight row, Good, HSG A (1S)
32.722	78	Row crops, straight row, Good, HSG B (1S, 2S, 3S, 4S)
0.187	30	Woods, Good, HSG A (9S)
124.053	55	Woods, Good, HSG B (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S)
0.380	70	Woods, Good, HSG C (4S)
162.710	60	TOTAL AREA

## **Existing Hydrology - Nutmeg**

Nutmeg Solar Project - Existing Type III 24-hr 2-Year Rainfall=3.20" Printed 9/11/2018

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Page 3

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area 1S	Runoff Area=27.185 ac 3.18% Impervious Runoff Depth=0.60" Flow Length=1,752' Tc=39.8 min CN=65 Runoff=7.52 cfs 1.360 af
Subcatchment 2S: Drainage Area 2S	Runoff Area=25.406 ac 1.05% Impervious Runoff Depth=0.64" Flow Length=2,263' Tc=40.8 min CN=66 Runoff=7.65 cfs 1.361 af
Subcatchment 3S: Drainage Area 3S	Runoff Area=8.003 ac 0.00% Impervious Runoff Depth=1.09" Flow Length=836' Tc=17.1 min CN=75 Runoff=6.98 cfs 0.730 af
Subcatchment 4S: Drainage Area 4S	Runoff Area=28.046 ac 0.00% Impervious Runoff Depth=0.44" Flow Length=1,476' Tc=31.6 min CN=61 Runoff=5.49 cfs 1.038 af
Subcatchment 5S: Drainage Area 5S	Runoff Area=9.675 ac 0.00% Impervious Runoff Depth=0.25" Flow Length=1,196' Tc=21.8 min CN=55 Runoff=0.82 cfs 0.202 af
Subcatchment 6S: Drainage Area 6S	Runoff Area=4.792 ac 0.00% Impervious Runoff Depth=0.25" Flow Length=1,486' Tc=32.4 min CN=55 Runoff=0.35 cfs 0.100 af
Subcatchment 7S: Drainage Area 7S	Runoff Area=31.477 ac 0.00% Impervious Runoff Depth=0.25" Flow Length=1,268' Tc=22.8 min CN=55 Runoff=2.63 cfs 0.658 af
Subcatchment 8S: Drainage Area 8S	Runoff Area=26.599 ac 0.00% Impervious Runoff Depth=0.25" Flow Length=1,700' Tc=40.7 min CN=55 Runoff=1.75 cfs 0.556 af
Subcatchment9S: Drainage Area 9S	Runoff Area=1.527 ac 0.00% Impervious Runoff Depth=0.31" Flow Length=925' Tc=16.0 min CN=57 Runoff=0.20 cfs 0.039 af
Reach DP-1: Design Point 1	Inflow=7.52 cfs 1.360 af Outflow=7.52 cfs 1.360 af
Reach DP-2: Design Point 2	Inflow=7.65 cfs 1.361 af
	Outflow=7.65 cfs 1.361 af
Reach DP-3: Design Point 3	Outflow=7.65 cfs 1.361 af  Inflow=6.98 cfs 0.730 af  Outflow=6.98 cfs 0.730 af
Reach DP-3: Design Point 3  Reach DP-4: Design Point 4	Inflow=6.98 cfs 0.730 af
-	Inflow=6.98 cfs 0.730 af Outflow=6.98 cfs 0.730 af Inflow=5.49 cfs 1.038 af
Reach DP-4: Design Point 4	Inflow=6.98 cfs 0.730 af Outflow=6.98 cfs 0.730 af Inflow=5.49 cfs 1.038 af Outflow=5.49 cfs 1.038 af Inflow=0.82 cfs 0.202 af

Nutmeg Solar Project - Existing Type III 24-hr 2-Year Rainfall=3.20"

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Page 4

Reach DP-8: Design Point 8

Inflow=1.75 cfs 0.556 af Outflow=1.75 cfs 0.556 af

Reach DP-9: Design Point 9

Inflow=0.20 cfs 0.039 af Outflow=0.20 cfs 0.039 af

Total Runoff Area = 162.710 ac Runoff Volume = 6.045 af Average Runoff Depth = 0.45" 99.30% Pervious = 161.579 ac 0.70% Impervious = 1.131 ac

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Page 5

### **Summary for Subcatchment 1S: Drainage Area 1S**

Runoff = 7.52 cfs @ 12.66 hrs, Volume= 1.360 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-Year Rainfall=3.20"

	Area	(ac)	CN	Desc	ription						
*	0.	262	98	Exist	ing Structi	ure, HSG A	1				
*	0.	603	98	Exist	ing Structi	ure, HSG E	3				
	0.	000	30	Woo	ds, Good,	HSG A					
	14.	767	55	Woo	ds, Good,	HSG B					
	0.	000	70	Woo	Woods, Good, HSG C						
	3.	538	67		Row crops, straight row, Good, HSG A						
		488	78		Row crops, straight row, Good, HSG B						
		000	85				Good, HSG C				
	0.	527	96	Grav	el surface	, HSG B					
	27.	185	65		jhted Aver						
	26.320			96.8	96.82% Pervious Area						
	0.865		3.18	% Impervi	ous Area						
	Тс	Lengtl		Slope	Velocity	Capacity	Description				
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)					
	10.5	50	0.	0300	0.08		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.20"				
	3.0	154	1 0.	0292	0.85		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	5.3	564	10.	1277	1.79		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	2.5	27	1 0.	0664	1.80		Shallow Concentrated Flow,				
	40.5	74		0004	0.04		Short Grass Pasture Kv= 7.0 fps				
	18.5	713	3 U.	0084	0.64		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				
	39.8	1,752	2 To	otal							

## **Summary for Subcatchment 2S: Drainage Area 2S**

Runoff = 7.65 cfs @ 12.67 hrs, Volume= 1.361 af, Depth= 0.64"

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Page 6

	Area	(ac) C	N Desc	cription						
*	0.000 98 Existing Structure, HSG A				ure. HSG A	4				
*				Existing Structure, HSG B						
	_			ds, Good,						
				ds, Good,						
				Woods, Good, HSG C						
						Good, HSG A				
				Row crops, straight row, Good, HSG B Row crops, straight row, Good, HSG C						
_						3004, 1100 0				
	25.406 66 Weighted Average 25.140 98.95% Pervious Area									
				1.05% Impervious Area						
	0.266		1.03	70 Impervi	ous Area					
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	'				
	9.3	50	0.0400	0.09		Sheet Flow,				
						Woods: Light underbrush n= 0.400 P2= 3.20"				
	13.5	1,037	0.0656	1.28		Shallow Concentrated Flow,				
		,				Woodland Kv= 5.0 fps				
	2.5	311	0.1768	2.10		Shallow Concentrated Flow,				
		• • • •				Woodland Kv= 5.0 fps				
	2.6	304	0.0757	1.93		Shallow Concentrated Flow,				
			3.0.0.			Short Grass Pasture Kv= 7.0 fps				
	12.9	561	0.0107	0.72		Shallow Concentrated Flow,				
			3.0.01	J <b>–</b>		Short Grass Pasture Kv= 7.0 fps				
_	40.8	2,263	Total							

## **Summary for Subcatchment 3S: Drainage Area 3S**

Runoff = 6.98 cfs @ 12.26 hrs, Volume= 0.730 af, Depth= 1.09"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	1.186	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	6.817	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	8.003	75	Weighted Average
	8.003		100.00% Pervious Area

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Page 7

	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0	50	0.1200	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	0.9	85	0.1059	1.63		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.9	296	0.0574	1.68		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.3	405	0.0173	0.92		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	17.1	836	Total			

## **Summary for Subcatchment 4S: Drainage Area 4S**

Runoff = 5.49 cfs @ 12.59 hrs, Volume= 1.038 af, Depth= 0.44"

	Area	(ac) (	N Des	cription						
*	0.	000	98 Exis	ting Struct	ure, HSG A	4				
*					ure, HSG E					
	0.			Woods, Good, HSG A						
	20.	410	55 Woo	ds, Good,	HSG B					
	0.	380	70 Woo	ds, Good,	HSG C					
	0.	000	98 Pav	Paved parking, HSG B						
	0.	000	67 Row	Row crops, straight row, Good, HSG A						
	7.	256	78 Row	crops, str	aight row, (	Good, HSG B				
_	0.	000	85 Row	crops, str	aight row, (	Good, HSG C				
	28.046 61 Weighted Ave				age					
	28.	046	100.	00% Pervi	ous Area					
	Tc	Length		Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	12.3	50	0.0200	0.07		Sheet Flow,				
						Woods: Light underbrush n= 0.400 P2= 3.20"				
	1.0	65	0.0462	1.07		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	4.6	581	0.1756	2.10		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	3.9	306	0.0686	1.31		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	6.1	321	0.0312	0.88		Shallow Concentrated Flow,				
	0.7	450	0.0000	0.00		Woodland Kv= 5.0 fps				
	3.7	153	0.0098	0.69		Shallow Concentrated Flow,				
_						Short Grass Pasture Kv= 7.0 fps				
	31.6	1,476	Total							

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Page 8

#### **Summary for Subcatchment 5S: Drainage Area 5S**

Runoff = 0.82 cfs @ 12.57 hrs, Volume= 0.202 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-Year Rainfall=3.20"

	Area	(ac)	CN	Desc	ription						
*	0.	000	98	Exist	existing Structure, HSG A						
*	0.	000	98	Exist	Existing Structure, HSG B						
	0.000 30 Woods, Good, HSG A										
	9.675 55 Woods, Good, HSG B										
	0.	000	70	Woo	ds, Good,	HSG C					
	0.	000	98	Pave	ed parking,	HSG B					
	0.	000	67	Row	crops, stra	aight row, C	Good, HSG A				
	0.	000	78				Good, HSG B				
_	0.000 85 Row crops, straight row, Good, HSG C										
9.675 55 Weighted Average						age					
	9.675 100.00% Pervious Area					ous Area					
	Тс	Lengt	h S	Slope	Velocity	Capacity	Description				
_	(min)	(feet	<u>:</u> )	(ft/ft)	(ft/sec)	(cfs)					
	9.3	5	0 0.	.0400	0.09		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.20"				
	1.5	9:	5 0.	.0421	1.03		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	11.0	1,05	1 0.	1018	1.60		Shallow Concentrated Flow,				
_							Woodland Kv= 5.0 fps				
	21.8	1,19	6 To	otal							

# Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 0.35 cfs @ 12.72 hrs, Volume= 0.100 af, Depth= 0.25"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	4.792	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	0.000	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	4.792	55	Weighted Average
	4.792		100.00% Pervious Area

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Page 9

Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
12.3	50	0.0200	0.07		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.20"
4.3	236	0.0339	0.92		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
6.5	554	0.0812	1.42		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
1.3	187	0.2406	2.45		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
8.0	459	0.0370	0.96		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
32.4	1.486	Total	•		

### **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 2.63 cfs @ 12.58 hrs, Volume= 0.658 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-Year Rainfall=3.20"

	Area	(ac)	CN	Desc	ription		
*	0.	000	98	Exist	ing Structi	ure, HSG A	1
*	0.	000	98	Exist	ing Structi	ure, HSG B	3
	0.	000	30	Woo	ds, Good,	HSG A	
	31.	477	55		ds, Good,		
	0.	000	70	Woo	ds, Good,	HSG C	
	0.	000	98		ed parking,		
		000	67				Good, HSG A
		000	78				Good, HSG B
0.000 85 Row crops, straight row, Good, HSG C							Good, HSG C
	31.477 55 Weighted Average					age	
	31.	477		100.0	00% Pervi	ous Area	
	Тс	Lengt	h .	Slope	Velocity	Capacity	Description
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)	
	7.9	5	0 0	.0600	0.10		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.20"
	14.9	1,21	8 0	.0747	1.37		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	22.8	1,26	8 T	otal			

### **Summary for Subcatchment 8S: Drainage Area 8S**

Runoff = 1.75 cfs @ 12.86 hrs, Volume= 0.556 af, Depth= 0.25"

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Page 10

	Area	(ac) C	N Desc	cription						
*	0.	000	98 Exis	ting Structi	ure, HSG A	1				
*	0.	0.000 98 Existing Structure, HSG B				3				
				Woods, Good, HSG A						
				ds, Good,						
				ds, Good,						
	_			Paved parking, HSG B						
				Row crops, straight row, Good, HSG A						
				Row crops, straight row, Good, HSG B						
_						Good, HSG C				
	26.599 55			hted Aver						
	26.	599	100.	00% Pervi	ous Area					
	-		01	\		D. C. C.				
	Tc	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	12.3	50	0.0200	0.07		Sheet Flow,				
	2.2	115	0.0404	1 10		Woods: Light underbrush n= 0.400 P2= 3.20"				
	2.2	145	0.0484	1.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps				
	7.6	499	0.0481	1.10		Shallow Concentrated Flow,				
	7.0	499	0.0401	1.10		Woodland Kv= 5.0 fps				
	12.8	510	0.0176	0.66		Shallow Concentrated Flow,				
	12.0	010	0.0170	0.00		Woodland Kv= 5.0 fps				
	2.8	208	0.0625	1.25		Shallow Concentrated Flow,				
			0.00_0	0		Woodland Kv= 5.0 fps				
	3.0	288	0.1007	1.59		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
_										

### **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 0.20 cfs @ 12.44 hrs, Volume= 0.039 af, Depth= 0.31"

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	Area	(ac)	CN	Desc	cription						
*	0.	000	98	Exis	xisting Structure, HSG A						
*	0.	000	98	Exis	ting Structi	ure, HSG B	}				
	0.	187	30	Woo	ds, Good,	HSG A					
	1.	168	55	Woo	ds, Good,	HSG B					
	0.	000	70	Woo	ds, Good,	HSG C					
	0.	000	98	Pave	ed parking,	HSG B					
	0.	000	67	Row	crops, stra	aight row, C	Good, HSG A				
	0.	000	78	Row	crops, stra	aight row, C	Good, HSG B				
	0.000 85 Row crops, straight row, Good, HSG C										
	0.048 96 Gravel surface, HSG A										
	0.	124	96	Grav	el surface	, HSG B					
1.527 57 Weighted Average											
	1.	527		100.	00% Pervi	ous Area					
	Тс	Length	ı Sl	lope	Velocity	Capacity	Description				
	(min)	(feet)	) (	ft/ft)	(ft/sec)	(cfs)					
	9.3	50	0.0	400	0.09		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.20"				
	4.9	388	0.0	696	1.32		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	1.8	487	0.0	801	4.56		Shallow Concentrated Flow,				
_							Unpaved Kv= 16.1 fps				
	16.0	925	Tot	tal							

### **Summary for Reach DP-1: Design Point 1**

Inflow Area	a =	27.185 ac,	3.18% Impervious,	Inflow Depth = 0.60	)" for 2-Year event
Inflow	=	7.52 cfs @	12.66 hrs, Volume	= 1.360 af	
Outflow	=	7.52 cfs @	12.66 hrs, Volume	= 1.360 af. <i>A</i>	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-2: Design Point 2**

Inflow Area	a =	25.406 ac,	1.05% Impervious,	Inflow Depth = $0.6$	64" for 2-Year event
Inflow	=	7.65 cfs @	12.67 hrs, Volume	= 1.361 af	
Outflow	=	7.65 cfs @	12.67 hrs, Volume	= 1.361 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

# **Summary for Reach DP-3: Design Point 3**

Inflow Are	a =	8.003 ac,	0.00% Impervious,	Inflow Depth = $1.0$	9" for 2-Year event
Inflow	=	6.98 cfs @	12.26 hrs, Volume	= 0.730 af	
Outflow	=	6.98 cfs @	12.26 hrs, Volume	= 0.730 af.	Atten= 0%, Lag= 0.0 min

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Page 12

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 28.046 ac, 0.00% Impervious, Inflow Depth = 0.44" for 2-Year event

Inflow = 5.49 cfs @ 12.59 hrs, Volume= 1.038 af

Outflow = 5.49 cfs @ 12.59 hrs, Volume= 1.038 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-5: Design Point 5

Inflow Area = 9.675 ac, 0.00% Impervious, Inflow Depth = 0.25" for 2-Year event

Inflow = 0.82 cfs @ 12.57 hrs, Volume= 0.202 af

Outflow = 0.82 cfs @ 12.57 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 0.00% Impervious, Inflow Depth = 0.25" for 2-Year event

Inflow = 0.35 cfs @ 12.72 hrs, Volume= 0.100 af

Outflow = 0.35 cfs @ 12.72 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-7: Design Point 7**

Inflow Area = 31.477 ac, 0.00% Impervious, Inflow Depth = 0.25" for 2-Year event

Inflow = 2.63 cfs @ 12.58 hrs, Volume= 0.658 af

Outflow = 2.63 cfs @ 12.58 hrs, Volume= 0.658 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-8: Design Point 8**

Inflow Area = 26.599 ac, 0.00% Impervious, Inflow Depth = 0.25" for 2-Year event

Inflow = 1.75 cfs @ 12.86 hrs, Volume= 0.556 af

Outflow = 1.75 cfs @ 12.86 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## Summary for Reach DP-9: Design Point 9

Inflow Area = 1.527 ac, 0.00% Impervious, Inflow Depth = 0.31" for 2-Year event

Inflow = 0.20 cfs @ 12.44 hrs, Volume= 0.039 af

Outflow = 0.20 cfs @ 12.44 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Nutmeg Solar Project - Existing Type III 24-hr 2-Year Rainfall=3.20" Printed 9/11/2018

Page 13

Existing Hydrology - Nutmeg

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Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Existing Hydrology - Nutmeg Prepared by Tighe & Bond

Nutmeg Solar Project - Existing Type III 24-hr 10-Year Rainfall=4.70" Printed 9/11/2018

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Page 14

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area 1S	Runoff Area=27.185 ac 3.18% Impervious Runoff Depth=1.46" Flow Length=1,752' Tc=39.8 min CN=65 Runoff=21.44 cfs 3.301 af
Subcatchment 2S: Drainage Area 2S	Runoff Area=25.406 ac 1.05% Impervious Runoff Depth=1.53" Flow Length=2,263' Tc=40.8 min CN=66 Runoff=20.91 cfs 3.232 af
Subcatchment 3S: Drainage Area 3S	Runoff Area=8.003 ac 0.00% Impervious Runoff Depth=2.21" Flow Length=836' Tc=17.1 min CN=75 Runoff=14.70 cfs 1.473 af
Subcatchment 4S: Drainage Area 4S	Runoff Area=28.046 ac 0.00% Impervious Runoff Depth=1.19" Flow Length=1,476' Tc=31.6 min CN=61 Runoff=19.23 cfs 2.787 af
Subcatchment 5S: Drainage Area 5S	Runoff Area=9.675 ac 0.00% Impervious Runoff Depth=0.83" Flow Length=1,196' Tc=21.8 min CN=55 Runoff=4.68 cfs 0.673 af
Subcatchment 6S: Drainage Area 6S	Runoff Area=4.792 ac 0.00% Impervious Runoff Depth=0.83" Flow Length=1,486' Tc=32.4 min CN=55 Runoff=1.99 cfs 0.333 af
Subcatchment 7S: Drainage Area 7S	Runoff Area=31.477 ac 0.00% Impervious Runoff Depth=0.83" Flow Length=1,268' Tc=22.8 min CN=55 Runoff=15.01 cfs 2.189 af
Subcatchment 8S: Drainage Area 8S	Runoff Area=26.599 ac 0.00% Impervious Runoff Depth=0.83" Flow Length=1,700' Tc=40.7 min CN=55 Runoff=9.87 cfs 1.850 af
Subcatchment9S: Drainage Area 9S	Runoff Area=1.527 ac 0.00% Impervious Runoff Depth=0.95" Flow Length=925' Tc=16.0 min CN=57 Runoff=1.00 cfs 0.121 af
Reach DP-1: Design Point 1	Inflow=21.44 cfs 3.301 af Outflow=21.44 cfs 3.301 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2	
·	Outflow=21.44 cfs 3.301 af Inflow=20.91 cfs 3.232 af
Reach DP-2: Design Point 2	Outflow=21.44 cfs 3.301 af  Inflow=20.91 cfs 3.232 af Outflow=20.91 cfs 3.232 af Inflow=14.70 cfs 1.473 af
Reach DP-2: Design Point 2  Reach DP-3: Design Point 3	Outflow=21.44 cfs 3.301 af  Inflow=20.91 cfs 3.232 af Outflow=20.91 cfs 3.232 af  Inflow=14.70 cfs 1.473 af Outflow=14.70 cfs 1.473 af Inflow=19.23 cfs 2.787 af
Reach DP-2: Design Point 2  Reach DP-3: Design Point 3  Reach DP-4: Design Point 4	Outflow=21.44 cfs 3.301 af  Inflow=20.91 cfs 3.232 af Outflow=20.91 cfs 3.232 af  Inflow=14.70 cfs 1.473 af Outflow=14.70 cfs 1.473 af Outflow=19.23 cfs 2.787 af Outflow=19.23 cfs 2.787 af Inflow=4.68 cfs 0.673 af

Nutmeg Solar Project - Existing Type III 24-hr 10-Year Rainfall=4.70"

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Page 15

Reach DP-8: Design Point 8

Inflow=9.87 cfs 1.850 af Outflow=9.87 cfs 1.850 af

Reach DP-9: Design Point 9

Inflow=1.00 cfs 0.121 af Outflow=1.00 cfs 0.121 af

Total Runoff Area = 162.710 ac Runoff Volume = 15.960 af Average Runoff Depth = 1.18" 99.30% Pervious = 161.579 ac 0.70% Impervious = 1.131 ac

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Page 16

#### **Summary for Subcatchment 1S: Drainage Area 1S**

Runoff = 21.44 cfs @ 12.60 hrs, Volume= 3.301 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.70"

	Area	(ac)	CN De	escription					
*	0.	262	98 Ex	isting Struc	ture, HSG	A			
*	* 0.603 98		98 Ex	Existing Structure, HSG B					
	0.	000	30 W	oods, Good	I, HSG A				
	14.	767	55 W	oods, Good	I, HSG B				
	0.	000	70 W	oods, Good	I, HSG C				
	3.	538	67 Ro	w crops, st	raight row,	Good, HSG A			
	7.	488	78 Ro	w crops, st	raight row,	Good, HSG B			
		000				Good, HSG C			
_	0.	527	96 Gr	avel surfac	e, HSG B				
	27.	185	65 W	eighted Ave	erage				
	26.	320	96	.82% Pervi	ous Area				
	0.	865	3.	18% Imperv	∕ious Area				
	Тс	Length				Description			
	(min)	(feet	(ft/f	t) (ft/sec)	(cfs)				
	10.5	50	0.030	0.08	1	Sheet Flow,			
						Woods: Light underbrush n= 0.400 P2= 3.20"			
	3.0	154	0.029	2 0.85	;	Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	5.3	564	0.127	7 1.79	)	Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	2.5	271	0.066	4 1.80		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	18.5	713	0.008	4 0.64		Shallow Concentrated Flow,			
_						Short Grass Pasture Kv= 7.0 fps			
	39.8	1,752	Total						

## Summary for Subcatchment 2S: Drainage Area 2S

Runoff = 20.91 cfs @ 12.61 hrs, Volume= 3.232 af, Depth= 1.53"

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	Area	(ac) (	CN Des	cription		
*	0.	000	98 Exis	ting Struct	ure, HSG A	4
*	0.	266	98 Exis	ting Struct	ure, HSG E	3
	0.	000	30 Woo	ds, Good,	HSG A	
	13.	979	55 Woo	ds, Good,	HSG B	
	0.	000	70 Woo	ds, Good,	HSG C	
	0.	000	67 Row	crops, str	aight row, (	Good, HSG A
	11.	161				Good, HSG B
	0.	000				Good, HSG C
	25.	406	66 Weid	ghted Aver	age	
	25.	140		5% Pervio		
	0.	266	1.05	% Impervi	ous Area	
				•		
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	9.3	50	0.0400	0.09		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	13.5	1,037	0.0656	1.28		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.5	311	0.1768	2.10		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.6	304	0.0757	1.93		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	12.9	561	0.0107	0.72		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	40.8	2,263	Total	·		

# **Summary for Subcatchment 3S: Drainage Area 3S**

14.70 cfs @ 12.24 hrs, Volume= 1.473 af, Depth= 2.21" Runoff

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	1.186	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	6.817	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	8.003	75	Weighted Average
	8.003		100.00% Pervious Area

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Page 18

	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	6.0	50	0.1200	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	0.9	85	0.1059	1.63		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.9	296	0.0574	1.68		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.3	405	0.0173	0.92		Shallow Concentrated Flow,
_						Short Grass Pasture Kv= 7.0 fps
	17.1	836	Total			

## **Summary for Subcatchment 4S: Drainage Area 4S**

Runoff = 19.23 cfs @ 12.50 hrs, Volume= 2.787 af, Depth= 1.19"

	Area	(ac) C	N Des	cription		
*	0.	000	98 Exis	ting Structi	ure, HSG A	1
*	0.	000	98 Exis	ting Structi	ure, HSG E	3
	0.	000	30 Woo	ds, Good,	HSG A	
	20.	410	55 Woo	ds, Good,	HSG B	
	0.	380		ds, Good,		
				ed parking,		
						Good, HSG A
						Good, HSG B
_						Good, HSG C
				ghted Aver		
	28.	046	100.	00% Pervi	ous Area	
	_					
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	12.3	50	0.0200	0.07		Sheet Flow,
	4.0	0.5	0.0400	4.07		Woods: Light underbrush n= 0.400 P2= 3.20"
	1.0	65	0.0462	1.07		Shallow Concentrated Flow,
	4.6	E04	0.4756	2.40		Woodland Kv= 5.0 fps
	4.6	581	0.1756	2.10		Shallow Concentrated Flow,
	3.9	306	0.0686	1.31		Woodland Kv= 5.0 fps Shallow Concentrated Flow,
	3.9	300	0.0000	1.51		Woodland Kv= 5.0 fps
	6.1	321	0.0312	0.88		Shallow Concentrated Flow,
	0.1	021	0.0012	0.00		Woodland Kv= 5.0 fps
	3.7	153	0.0098	0.69		Shallow Concentrated Flow,
	0.7	.50	3.0000	0.00		Short Grass Pasture Kv= 7.0 fps
_	31.6	1,476	Total			
	51.0	1,410	1 Oldi			

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Page 19

#### **Summary for Subcatchment 5S: Drainage Area 5S**

Runoff = 4.68 cfs @ 12.39 hrs, Volume= 0.673 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.70"

	Area	(ac)	CN	Desc	ription							
*	0.	000	98	Exist	ixisting Structure, HSG A							
*	0.	000	98	Exist	ing Structi	ure, HSG B	3					
	0.000 30 Woods, Good, HSG A											
9.675 55 Woods, Good, HSG B												
	0.	000	70	Woo	ds, Good,	HSG C						
	0.	000	98	Pave	ed parking,	HSG B						
	0.	000	67	Row	crops, stra	aight row, C	Good, HSG A					
	0.	000	78				Good, HSG B					
_	0.	000	85	Row	crops, stra	aight row, C	Good, HSG C					
9.675 55 Weighted Average						age						
	9.	675		100.0	00% Pervi	ous Area						
	Тс	Lengt	h S	Slope	Velocity	Capacity	Description					
_	(min)	(feet	<u>:</u> )	(ft/ft)	(ft/sec)	(cfs)						
	9.3	5	0 0.	.0400	0.09		Sheet Flow,					
							Woods: Light underbrush n= 0.400 P2= 3.20"					
	1.5	9:	5 0.	.0421	1.03		Shallow Concentrated Flow,					
							Woodland Kv= 5.0 fps					
	11.0	1,05	1 0.	1018	1.60		Shallow Concentrated Flow,					
_							Woodland Kv= 5.0 fps					
	21.8	1,19	6 To	otal								

# Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 1.99 cfs @ 12.56 hrs, Volume= 0.333 af, Depth= 0.83"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	4.792	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	0.000	78	Row crops, straight row, Good, HSG B
_	0.000	85	Row crops, straight row, Good, HSG C
	4.792	55	Weighted Average
	4.792		100.00% Pervious Area

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Page 20

	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	12.3	50	0.0200	0.07		Sheet Flow,
	4.3	236	0.0339	0.92		Woods: Light underbrush n= 0.400 P2= 3.20" <b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
	6.5	554	0.0812	1.42		Shallow Concentrated Flow,
	1.3	187	0.2406	2.45		Woodland Kv= 5.0 fps  Shallow Concentrated Flow,  Woodland Kv= 5.0 fps
	8.0	459	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
_	32.4	1,486	Total			Troduction 111 0.0 tpo

### **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 15.01 cfs @ 12.41 hrs, Volume= 2.189 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.70"

	Area	(ac)	CN	Desc	cription					
*	0.	000	98	Exist	kisting Structure, HSG A					
*	0.	000	98	Exist	ing Structi	ure, HSG B	}			
	0.	000	30	Woo	ds, Good,	HSG A				
	31.	477	55	Woo	ds, Good,	HSG B				
	0.	000	70	Woo	ds, Good,	HSG C				
	0.	000	98		ed parking,					
	0.	000	67				Good, HSG A			
	0.000 78 Row o						Good, HSG B			
0.000 85 Row crops, straight row, Good, HSG C							Good, HSG C			
31.477 55			Weig	hted Aver	age					
	31.	477		100.	00% Pervi	ous Area				
	Тс	Lengt	h :	Slope	Velocity	Capacity	Description			
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	7.9	5	0 0	.0600	0.10		Sheet Flow,			
							Woods: Light underbrush n= 0.400 P2= 3.20"			
	14.9	1,21	8 0.	.0747	1.37		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	22.8	1,26	8 T	otal		·				

## Summary for Subcatchment 8S: Drainage Area 8S

Runoff = 9.87 cfs @ 12.68 hrs, Volume= 1.850 af, Depth= 0.83"

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ч	_	_

	Area	(ac) (	ON D	escription		
*	0.	000	98 E	xisting Struc	cture, HSG A	4
*	0.	000			cture, HSG E	
	0.	000		oods, Good		
	26.	599	55 W	oods, Good	, HSG B	
	0.	000	70 W	oods, Good	d, HSG C	
	0.	000	98 P	aved parkin	g, HSG B	
	0.	000	67 R	ow crops, s	traight row, (	Good, HSG A
	0.	000	78 R	ow crops, s	traight row, (	Good, HSG B
	0.	000	85 R	ow crops, s	traight row,	Good, HSG C
	26.	599	55 W	eighted Av	erage	
	26.	599	10	00.00% Per	vious Area	
	Tc	Length	Slop	e Velocity	/ Capacity	Description
	(min)	(feet)	(ft/	ft) (ft/sec	(cfs)	•
	12.3	50	0.020	0.07	7	Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	2.2	145	0.048	34 1.10	)	Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	7.6	499	0.048	31 1.10	)	Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	12.8	510	0.017	<b>7</b> 6 0.66	6	Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.8	208	0.062	25 1.25	5	Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	3.0	288	0.100	)7 1.59	)	Shallow Concentrated Flow,
_						Woodland Kv= 5.0 fps
	40.7	1,700	Total			

### **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 1.00 cfs @ 12.27 hrs, Volume= 0.121 af, Depth= 0.95"

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	Area	(ac)	CN	Desc	cription		
*	0.	000	98	Exist	ting Structi	ure, HSG A	1
*	0.	000	98	Exist	ting Structi	ure, HSG B	3
	0.	187	30	Woo	ds, Good,	HSG A	
	1.	168	55	Woo	ds, Good,	HSG B	
	0.	000	70	Woo	ds, Good,	HSG C	
	0.	000	98	Pave	ed parking,	, HSG B	
	0.	000	67	Row	crops, stra	aight row, C	Good, HSG A
	0.	000	78				Good, HSG B
		000	85				Good, HSG C
		048	96		el surface	•	
_	0.	124	96	Grav	<u>el surface</u>	, HSG B	
	1.	527	57	Weig	hted Aver	age	
	1.	527		100.	00% Pervi	ous Area	
	Тс	Length	n S	Slope	Velocity	Capacity	Description
_	(min)	(feet	)	(ft/ft)	(ft/sec)	(cfs)	
	9.3	50	0.	0400	0.09		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.20"
	4.9	388	3 0.	0696	1.32		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	1.8	487	7 0.	0801	4.56		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	16.0	925	5 To	otal			

### **Summary for Reach DP-1: Design Point 1**

Inflow Area	a =	27.185 ac,	3.18% Impervious,	Inflow Depth = 1.4	6" for 10-Year event
Inflow	=	21.44 cfs @	12.60 hrs, Volume	= 3.301 af	
Outflow	=	21.44 cfs @	12.60 hrs, Volume	= 3.301 af, <i>i</i>	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-2: Design Point 2**

Inflow Are	a =	25.406 ac,	1.05% Impervious,	Inflow Depth = $1.5$	53" for 10-Year event
Inflow	=	20.91 cfs @	12.61 hrs, Volume	= 3.232 af	
Outflow	=	20.91 cfs @	12.61 hrs, Volume	= 3.232 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

# **Summary for Reach DP-3: Design Point 3**

Inflow Are	a =	8.003 ac,	0.00% Impervious,	Inflow Depth = $2.2$	21" for 10-Year event
Inflow	=	14.70 cfs @	12.24 hrs, Volume	= 1.473 af	
Outflow	=	14.70 cfs @	12.24 hrs. Volume	= 1.473 af.	Atten= 0%. Lag= 0.0 min

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Page 23

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 28.046 ac, 0.00% Impervious, Inflow Depth = 1.19" for 10-Year event

Inflow = 19.23 cfs @ 12.50 hrs, Volume= 2.787 af

Outflow = 19.23 cfs @ 12.50 hrs, Volume= 2.787 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-5: Design Point 5

Inflow Area = 9.675 ac, 0.00% Impervious, Inflow Depth = 0.83" for 10-Year event

Inflow = 4.68 cfs @ 12.39 hrs, Volume= 0.673 af

Outflow = 4.68 cfs @ 12.39 hrs, Volume= 0.673 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 0.00% Impervious, Inflow Depth = 0.83" for 10-Year event

Inflow = 1.99 cfs @ 12.56 hrs, Volume= 0.333 af

Outflow = 1.99 cfs @ 12.56 hrs, Volume= 0.333 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-7: Design Point 7**

Inflow Area = 31.477 ac, 0.00% Impervious, Inflow Depth = 0.83" for 10-Year event

Inflow = 15.01 cfs @ 12.41 hrs, Volume= 2.189 af

Outflow = 15.01 cfs @ 12.41 hrs, Volume= 2.189 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-8: Design Point 8**

Inflow Area = 26.599 ac, 0.00% Impervious, Inflow Depth = 0.83" for 10-Year event

Inflow = 9.87 cfs @ 12.68 hrs, Volume= 1.850 af

Outflow = 9.87 cfs @ 12.68 hrs, Volume= 1.850 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## Summary for Reach DP-9: Design Point 9

Inflow Area = 1.527 ac, 0.00% Impervious, Inflow Depth = 0.95" for 10-Year event

Inflow = 1.00 cfs @ 12.27 hrs, Volume= 0.121 af

Outflow = 1.00 cfs @ 12.27 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

Nutmeg Solar Project - Existing Type III 24-hr 10-Year Rainfall=4.70" Existing Hydrology - Nutmeg

Type III 24-hr 10-Year Rainfall=4.70"

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Page 24

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Existing Hydrology - Nutmeg Prepared by Tighe & Bond

Nutmeg Solar Project - Existing Type III 24-hr 25-Year Rainfall=5.50" Printed 9/11/2018

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Page 25

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area 1S	Runoff Area=27.185 ac 3.18% Impervious Runoff Depth=1.99" Flow Length=1,752' Tc=39.8 min CN=65 Runoff=30.20 cfs 4.519 af
Subcatchment 2S: Drainage Area 2S	Runoff Area=25.406 ac 1.05% Impervious Runoff Depth=2.08" Flow Length=2,263' Tc=40.8 min CN=66 Runoff=29.17 cfs 4.396 af
Subcatchment3S: Drainage Area 3S	Runoff Area=8.003 ac 0.00% Impervious Runoff Depth=2.86" Flow Length=836' Tc=17.1 min CN=75 Runoff=19.15 cfs 1.908 af
Subcatchment4S: Drainage Area 4S	Runoff Area=28.046 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=1,476' Tc=31.6 min CN=61 Runoff=28.38 cfs 3.924 af
Subcatchment 5S: Drainage Area 5S	Runoff Area=9.675 ac 0.00% Impervious Runoff Depth=1.24" Flow Length=1,196' Tc=21.8 min CN=55 Runoff=7.74 cfs 0.999 af
Subcatchment 6S: Drainage Area 6S	Runoff Area=4.792 ac 0.00% Impervious Runoff Depth=1.24" Flow Length=1,486' Tc=32.4 min CN=55 Runoff=3.25 cfs 0.495 af
Subcatchment 7S: Drainage Area 7S	Runoff Area=31.477 ac 0.00% Impervious Runoff Depth=1.24" Flow Length=1,268' Tc=22.8 min CN=55 Runoff=24.75 cfs 3.251 af
Subcatchment8S: Drainage Area 8S	Runoff Area=26.599 ac 0.00% Impervious Runoff Depth=1.24" Flow Length=1,700' Tc=40.7 min CN=55 Runoff=16.13 cfs 2.747 af
Subcatchment9S: Drainage Area 9S	Runoff Area=1.527 ac 0.00% Impervious Runoff Depth=1.38" Flow Length=925' Tc=16.0 min CN=57 Runoff=1.59 cfs 0.176 af
Subcatchment9S: Drainage Area 9S  Reach DP-1: Design Point 1	
-	Flow Length=925' Tc=16.0 min CN=57 Runoff=1.59 cfs 0.176 af Inflow=30.20 cfs 4.519 af
Reach DP-1: Design Point 1	Flow Length=925' Tc=16.0 min CN=57 Runoff=1.59 cfs 0.176 af  Inflow=30.20 cfs 4.519 af Outflow=30.20 cfs 4.519 af Inflow=29.17 cfs 4.396 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2	Flow Length=925' Tc=16.0 min CN=57 Runoff=1.59 cfs 0.176 af  Inflow=30.20 cfs 4.519 af Outflow=30.20 cfs 4.519 af Inflow=29.17 cfs 4.396 af Outflow=29.17 cfs 4.396 af Inflow=19.15 cfs 1.908 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2  Reach DP-3: Design Point 3	Flow Length=925' Tc=16.0 min CN=57 Runoff=1.59 cfs 0.176 af  Inflow=30.20 cfs 4.519 af Outflow=30.20 cfs 4.519 af Outflow=29.17 cfs 4.396 af Outflow=29.17 cfs 4.396 af Outflow=19.15 cfs 1.908 af Outflow=19.15 cfs 1.908 af Inflow=28.38 cfs 3.924 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2  Reach DP-3: Design Point 3  Reach DP-4: Design Point 4	Flow Length=925' Tc=16.0 min CN=57 Runoff=1.59 cfs 0.176 af  Inflow=30.20 cfs 4.519 af Outflow=30.20 cfs 4.519 af Outflow=29.17 cfs 4.396 af Outflow=29.17 cfs 4.396 af Outflow=19.15 cfs 1.908 af Outflow=19.15 cfs 1.908 af Outflow=28.38 cfs 3.924 af Outflow=28.38 cfs 3.924 af Inflow=7.74 cfs 0.999 af

Nutmeg Solar Project - Existing Type III 24-hr 25-Year Rainfall=5.50" Printed 9/11/2018

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Page 26

Reach DP-8: Design Point 8

Inflow=16.13 cfs 2.747 af Outflow=16.13 cfs 2.747 af

Reach DP-9: Design Point 9

Inflow=1.59 cfs 0.176 af Outflow=1.59 cfs 0.176 af

Total Runoff Area = 162.710 ac Runoff Volume = 22.414 af Average Runoff Depth = 1.65" 99.30% Pervious = 161.579 ac 0.70% Impervious = 1.131 ac

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Page 27

#### **Summary for Subcatchment 1S: Drainage Area 1S**

Runoff = 30.20 cfs @ 12.59 hrs, Volume= 4.519 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 25-Year Rainfall=5.50"

	Area	(ac)	CN D	)esc	cription		
*	0.	262	98 E	xist	ting Struct	ure, HSG A	4
*	0.	603				ure, HSG E	3
		000			ds, Good,		
		767			ds, Good,		
		000			ds, Good,		
		538					Good, HSG A
		488					Good, HSG B
		000					Good, HSG C
		527			el surface	•	
		185		_	hted Aver	•	
		320	-		2% Pervio		
	0.	865	3	.18	% Impervi	ous Area	
	т.	المراجع الما	Cla		\/alaaitu	Canacity	Description
	Tc (min)	Length			Velocity	Capacity	Description
_	(min)	(feet		<u>/ft)</u>	(ft/sec)	(cfs)	Ob and Element
	10.5	50	0.03	UU	0.08		Sheet Flow,
	2.0	15/	0.00	00	0.05		Woods: Light underbrush n= 0.400 P2= 3.20"
	3.0	154	0.02	92	0.85		Shallow Concentrated Flow,
	5.3	56/	0.12	77	1.79		Woodland Kv= 5.0 fps Shallow Concentrated Flow,
	5.5	302	0.12	, ,	1.19		Woodland Kv= 5.0 fps
	2.5	271	0.06	64	1.80		Shallow Concentrated Flow,
	۷.5	21	0.00	U <del>-1</del>	1.00		Short Grass Pasture Kv= 7.0 fps
	18.5	713	0.00	84	0.64		Shallow Concentrated Flow,
	10.0	, 10	0.00	<b>-</b>	0.04		Short Grass Pasture Kv= 7.0 fps
_	39.8	1,752	? Tota	ı			enert erace ractare itt rio ipe
	00.0	1,702	. iota				

## **Summary for Subcatchment 2S: Drainage Area 2S**

Runoff = 29.17 cfs @ 12.60 hrs, Volume= 4.396 af, Depth= 2.08"

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Page 28

_	Area	(ac)	CN De	scription		
*	0.	000	98 Exi	sting Struct	ure, HSG A	4
*	0.	266		sting Struct		
	0.	000		ods, Good,		
		979		ods, Good,		
		000		ods, Good,		
		000				Good, HSG A
		161				Good, HSG B
		000				Good, HSG C
_		406		ighted Ave		
	_	140		95% Pervio		
		266		5% Impervi		
	0.	200	1.0	o /o impervi	ous Aica	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)		(ft/sec)	(cfs)	•
	9.3	50	0.0400	0.09		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	13.5	1,037	0.0656	1.28		Shallow Concentrated Flow,
		,				Woodland Kv= 5.0 fps
	2.5	311	0.1768	2.10		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.6	304	0.0757	1.93		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	12.9	561	0.0107	0.72		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	40.8	2,263	Total			·

# **Summary for Subcatchment 3S: Drainage Area 3S**

Runoff = 19.15 cfs @ 12.24 hrs, Volume= 1.908 af, Depth= 2.86"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	1.186	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	6.817	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	8.003	75	Weighted Average
	8.003		100.00% Pervious Area

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Page 29

	Тс	Length	Slope	Velocity	Capacity	Description
(n	ոin)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0	50	0.1200	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	0.9	85	0.1059	1.63		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.9	296	0.0574	1.68		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.3	405	0.0173	0.92		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
1	7.1	836	Total			

### **Summary for Subcatchment 4S: Drainage Area 4S**

Runoff = 28.38 cfs @ 12.48 hrs, Volume= 3.924 af, Depth= 1.68"

	Area	(ac) C	N Des	cription		
*	0.	000	98 Exis	ting Struct	ure, HSG A	1
*	0.	000	98 Exis	ting Struct	ure, HSG E	3
	0.	000	30 Woo	ods, Good,	HSG A	
	20.	410	55 Woo	ods, Good,	HSG B	
	0.	380	70 Woo	ods, Good,	HSG C	
	_			ed parking		
						Good, HSG A
					•	Good, HSG B
	0.	000				Good, HSG C
				ghted Aver		
	28.	046	100	.00% Pervi	ous Area	
	_				_	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	12.3	50	0.0200	0.07		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	1.0	65	0.0462	1.07		Shallow Concentrated Flow,
	4.0	504	0.4750	0.40		Woodland Kv= 5.0 fps
	4.6	581	0.1756	2.10		Shallow Concentrated Flow,
	2.0	200	0.0000	4 04		Woodland Kv= 5.0 fps
	3.9	306	0.0686	1.31		Shallow Concentrated Flow,
	6.1	321	0.0312	0.00		Woodland Kv= 5.0 fps
	0.1	321	0.0312	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
	3.7	153	0.0098	0.69		Shallow Concentrated Flow,
	5.1	133	0.0030	0.09		Short Grass Pasture Kv= 7.0 fps
_	21.6	1 176	Total			Onort Orass r asture Tiv- 1.0 ips
	31.6	1,476	Total			

Page 30

### **Existing Hydrology - Nutmeg**

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**Summary for Subcatchment 5S: Drainage Area 5S** 

Runoff = 7.74 cfs @ 12.36 hrs, Volume= 0.999 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 25-Year Rainfall=5.50"

	Area	(ac)	CN	Desc	cription						
*	0.	000	98	Exist	Existing Structure, HSG A						
*	0.	000	98		Existing Structure, HSG B						
	0.	0.000 30 Woods, Good, HSG A									
9.675 55 Woods, Good, HSG B											
0.000 70 Woods, Good, HSG C											
	0.	000	98	Pave	ed parking,	HSG B					
	0.	000	67	Row	crops, stra	aight row, C	Good, HSG A				
	0.	000	78				Good, HSG B				
	0.	000	85	Row	crops, stra	aight row, C	Good, HSG C				
9.675 55 Weighted Average											
	9.675				, 00% Pervi						
	Tc	Lengt	h S	Slope	Velocity	Capacity	Description				
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)					
	9.3	5	0 0.	0400	0.09		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.20"				
	1.5	9:	5 0.	0421	1.03		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	11.0	1,05	1 0.	1018	1.60		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	21.8	1,19	6 To	otal							

### Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 3.25 cfs @ 12.53 hrs, Volume= 0.495 af, Depth= 1.24"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	4.792	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	0.000	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	4.792	55	Weighted Average
	4.792		100.00% Pervious Area

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Page 31

	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	12.3	50	0.0200	0.07		Sheet Flow,
	4.3	236	0.0339	0.92		Woods: Light underbrush n= 0.400 P2= 3.20" <b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
	6.5	554	0.0812	1.42		Shallow Concentrated Flow,
	1.3	187	0.2406	2.45		Woodland Kv= 5.0 fps  Shallow Concentrated Flow,  Woodland Kv= 5.0 fps
	8.0	459	0.0370	0.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
_	32.4	1,486	Total			Troduction 111 0.0 tpo

### **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 24.75 cfs @ 12.37 hrs, Volume= 3.251 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 25-Year Rainfall=5.50"

	Area	(ac)	CN	Desc	cription					
*	0.	000	98	Exist	existing Structure, HSG A					
*	0.	000	98	Exist	xisting Structure, HSG B					
	0.	000	30	Woo	ds, Good,	HSG A				
	31.	477	55	Woo	ds, Good,	HSG B				
	0.	000	70	Woo	ds, Good,	HSG C				
	0.	000	98	Pave	ed parking,	, HSG B				
	0.	000	67	Row	crops, stra	aight row, 0	Good, HSG A			
	0.	000	78				Good, HSG B			
_	0.	000	85	Row	crops, stra	aight row, 0	Good, HSG C			
	31.	477	55	Weig	hted Aver	age				
	31.	477		100.	100.00% Pervious Area					
	Тс	Lengtl	า ร	Slope	Velocity	Capacity	Description			
_	(min)	(feet	)	(ft/ft)	(ft/sec)	(cfs)				
	7.9	50	0.	0600	0.10		Sheet Flow,			
							Woods: Light underbrush n= 0.400 P2= 3.20"			
	14.9	1,218	3 0.	0747	1.37		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	22.8	1,268	3 T	otal						

### **Summary for Subcatchment 8S: Drainage Area 8S**

Runoff = 16.13 cfs @ 12.65 hrs, Volume= 2.747 af, Depth= 1.24"

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Page 32

	Area	(ac) (	N Des	cription					
*	0.	000	98 Exis	ting Struct	ure, HSG A	4			
*					ure, HSG E				
	0.	000	30 Woo	Woods, Good, HSG A					
	26.	599	55 Woo	ds, Good,	HSG B				
	0.	000	70 Woo	ds, Good,	HSG C				
	0.	000	98 Pave	ed parking	, HSG B				
	0.	000	67 Row	crops, str	aight row, (	Good, HSG A			
	0.	000	78 Row	crops, str	aight row, (	Good, HSG B			
_	0.	000	85 Row	crops, str	aight row, (	Good, HSG C			
	26.	599	55 Wei	ghted Aver	age				
	26.	599	100.	00% Pervi	ous Area				
	Tc	Length		Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	12.3	50	0.0200	0.07		Sheet Flow,			
						Woods: Light underbrush n= 0.400 P2= 3.20"			
	2.2	145	0.0484	1.10		Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	7.6	499	0.0481	1.10		Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	12.8	510	0.0176	0.66		Shallow Concentrated Flow,			
		000		4.05		Woodland Kv= 5.0 fps			
	2.8	208	0.0625	1.25		Shallow Concentrated Flow,			
	0.0	000	0.4007	4.50		Woodland Kv= 5.0 fps			
	3.0	288	0.1007	1.59		Shallow Concentrated Flow,			
_						Woodland Kv= 5.0 fps			
	40.7	1,700	Total						

### **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 1.59 cfs @ 12.25 hrs, Volume= 0.176 af, Depth= 1.38"

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Page 3	33
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	Area	(ac)	CN	Desc	cription						
*	0.	000	98	Exis	xisting Structure, HSG A						
*	0.	000	98	Exis	kisting Structure, HSG B						
	0.	187	30	Woo	ds, Good,	HSG A					
	1.	168	55	Woo	ds, Good,	HSG B					
	0.	000	70	Woo	ds, Good,	HSG C					
	0.	000	98	Pave	ed parking,	HSG B					
	0.	000	67	Row	crops, stra	aight row, C	Good, HSG A				
	0.	000	78	Row	crops, stra	aight row, C	Good, HSG B				
	0.	000	85	Row	crops, stra	aight row, C	Good, HSG C				
		048	96	Grav	el surface	, HSG A					
	0.	124	96	Grav	el surface	, HSG B					
1.527 57 Weighted Average											
	1.	527		100.	00% Pervi	ous Area					
	Тс	Length	ı Sl	lope	Velocity	Capacity	Description				
	(min)	(feet)	) (	ft/ft)	(ft/sec)	(cfs)					
	9.3	50	0.0	400	0.09		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.20"				
	4.9	388	0.0	696	1.32		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	1.8	487	0.0	801	4.56		Shallow Concentrated Flow,				
_							Unpaved Kv= 16.1 fps				
	16.0	925	Tot	tal							

## **Summary for Reach DP-1: Design Point 1**

Inflow Are	a =	27.185 ac,	3.18% Impervious, In	flow Depth = 1.99"	for 25-Year event
Inflow	=	30.20 cfs @	12.59 hrs, Volume=	4.519 af	
Outflow	=	30.20 cfs @	12.59 hrs, Volume=	4.519 af, At	tten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

# **Summary for Reach DP-2: Design Point 2**

Inflow Are	ea =	25.406 ac,	1.05% Impervious,	Inflow Depth = $2.0$	8" for 25-Year event
Inflow	=	29.17 cfs @	12.60 hrs, Volume	= 4.396 af	
Outflow	=	29.17 cfs @	12.60 hrs, Volume	= 4.396 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

# **Summary for Reach DP-3: Design Point 3**

Inflow Area =		8.003 ac,	0.00% Impervious,	Inflow Depth = $2.8$	36" for 25-Year event
Inflow	=	19.15 cfs @	12.24 hrs, Volume	= 1.908 af	
Outflow	=	19.15 cfs @	12.24 hrs. Volume:	= 1.908 af.	Atten= 0%. Lag= 0.0 min

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Page 34

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-4: Design Point 4**

Inflow Area = 28.046 ac, 0.00% Impervious, Inflow Depth = 1.68" for 25-Year event

Inflow = 28.38 cfs @ 12.48 hrs, Volume= 3.924 af

Outflow = 28.38 cfs @ 12.48 hrs, Volume= 3.924 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-5: Design Point 5

Inflow Area = 9.675 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25-Year event

Inflow = 7.74 cfs @ 12.36 hrs, Volume= 0.999 af

Outflow = 7.74 cfs @ 12.36 hrs, Volume= 0.999 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25-Year event

Inflow = 3.25 cfs @ 12.53 hrs, Volume= 0.495 af

Outflow = 3.25 cfs @ 12.53 hrs, Volume= 0.495 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-7: Design Point 7**

Inflow Area = 31.477 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25-Year event

Inflow = 24.75 cfs @ 12.37 hrs, Volume= 3.251 af

Outflow = 24.75 cfs @ 12.37 hrs, Volume= 3.251 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-8: Design Point 8**

Inflow Area = 26.599 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25-Year event

Inflow = 16.13 cfs @ 12.65 hrs, Volume= 2.747 af

Outflow = 16.13 cfs @ 12.65 hrs, Volume= 2.747 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-9: Design Point 9**

Inflow Area = 1.527 ac, 0.00% Impervious, Inflow Depth = 1.38" for 25-Year event

Inflow = 1.59 cfs @ 12.25 hrs, Volume= 0.176 af

Outflow = 1.59 cfs @ 12.25 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

Nutmeg Solar Project - Existing Existing Hydrology - Nutmeg

Type III 24-hr 25-Year Rainfall=5.50"

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Page 35

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Nutmeg Solar Project - Existing Type III 24-hr 100-Year Rainfall=6.90" Printed 9/11/2018

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Page 36

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Drainage Area 1S	Runoff Area=27.185 ac 3.18% Impervious Runoff Depth=3.03" Flow Length=1,752' Tc=39.8 min CN=65 Runoff=46.89 cfs 6.854 af
Subcatchment 2S: Drainage Area 2S	Runoff Area=25.406 ac 1.05% Impervious Runoff Depth=3.13" Flow Length=2,263' Tc=40.8 min CN=66 Runoff=44.85 cfs 6.618 af
Subcatchment3S: Drainage Area 3S	Runoff Area=8.003 ac 0.00% Impervious Runoff Depth=4.06" Flow Length=836' Tc=17.1 min CN=75 Runoff=27.23 cfs 2.709 af
Subcatchment4S: Drainage Area 4S	Runoff Area=28.046 ac 0.00% Impervious Runoff Depth=2.63" Flow Length=1,476' Tc=31.6 min CN=61 Runoff=46.28 cfs 6.147 af
Subcatchment 5S: Drainage Area 5S	Runoff Area=9.675 ac 0.00% Impervious Runoff Depth=2.06" Flow Length=1,196' Tc=21.8 min CN=55 Runoff=14.00 cfs 1.661 af
Subcatchment 6S: Drainage Area 6S	Runoff Area=4.792 ac 0.00% Impervious Runoff Depth=2.06" Flow Length=1,486' Tc=32.4 min CN=55 Runoff=5.86 cfs 0.823 af
Subcatchment 7S: Drainage Area 7S	Runoff Area=31.477 ac 0.00% Impervious Runoff Depth=2.06" Flow Length=1,268' Tc=22.8 min CN=55 Runoff=44.78 cfs 5.405 af
Subcatchment8S: Drainage Area 8S	Runoff Area=26.599 ac 0.00% Impervious Runoff Depth=2.06" Flow Length=1,700' Tc=40.7 min CN=55 Runoff=29.08 cfs 4.568 af
Subcatchment9S: Drainage Area 9S	Runoff Area=1.527 ac 0.00% Impervious Runoff Depth=2.25" Flow Length=925' Tc=16.0 min CN=57 Runoff=2.78 cfs 0.286 af
Subcatchment 9S: Drainage Area 9S  Reach DP-1: Design Point 1	
-	Flow Length=925' Tc=16.0 min CN=57 Runoff=2.78 cfs 0.286 af Inflow=46.89 cfs 6.854 af
Reach DP-1: Design Point 1	Flow Length=925' Tc=16.0 min CN=57 Runoff=2.78 cfs 0.286 af  Inflow=46.89 cfs 6.854 af Outflow=46.89 cfs 6.854 af Inflow=44.85 cfs 6.618 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2	Flow Length=925' Tc=16.0 min CN=57 Runoff=2.78 cfs 0.286 af  Inflow=46.89 cfs 6.854 af Outflow=46.89 cfs 6.854 af  Inflow=44.85 cfs 6.618 af Outflow=44.85 cfs 6.618 af Inflow=27.23 cfs 2.709 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2  Reach DP-3: Design Point 3	Flow Length=925' Tc=16.0 min CN=57 Runoff=2.78 cfs 0.286 af  Inflow=46.89 cfs 6.854 af Outflow=46.89 cfs 6.854 af Inflow=44.85 cfs 6.618 af Outflow=44.85 cfs 6.618 af Outflow=27.23 cfs 2.709 af Outflow=27.23 cfs 2.709 af Inflow=46.28 cfs 6.147 af
Reach DP-1: Design Point 1  Reach DP-2: Design Point 2  Reach DP-3: Design Point 3  Reach DP-4: Design Point 4	Flow Length=925' Tc=16.0 min CN=57 Runoff=2.78 cfs 0.286 af  Inflow=46.89 cfs 6.854 af Outflow=44.85 cfs 6.618 af Outflow=27.23 cfs 2.709 af Outflow=27.23 cfs 2.709 af Outflow=46.28 cfs 6.147 af Outflow=46.28 cfs 6.147 af Inflow=14.00 cfs 1.661 af

Nutmeg Solar Project - Existing Type III 24-hr 100-Year Rainfall=6.90"

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Page 37

Reach DP-8: Design Point 8

Inflow=29.08 cfs 4.568 af Outflow=29.08 cfs 4.568 af

Reach DP-9: Design Point 9

Inflow=2.78 cfs 0.286 af Outflow=2.78 cfs 0.286 af

Total Runoff Area = 162.710 ac Runoff Volume = 35.071 af Average Runoff Depth = 2.59" 99.30% Pervious = 161.579 ac 0.70% Impervious = 1.131 ac

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Page 38

### **Summary for Subcatchment 1S: Drainage Area 1S**

Runoff = 46.89 cfs @ 12.57 hrs, Volume= 6.854 af, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=6.90"

	Area	(ac) (	CN Des	cription					
*	0.	262	98 Exis	4					
*	0.003 96 Existing Structure, HSG B					3			
	0.000 30			Woods, Good, HSG A					
				Woods, Good, HSG B					
		000		Woods, Good, HSG C					
				Row crops, straight row, Good, HSG A					
		488		Row crops, straight row, Good, HSG B					
						Good, HSG C			
_				vel surface	•				
				ghted Aver					
	_	320		2% Pervio					
	0.	865	3.18	% Impervi	ous Area				
	-		01						
	Tc	Length		Velocity	Capacity	Description			
_	(min)	(feet)	- '	(ft/sec)	(cfs)				
	10.5	50	0.0300	0.08		Sheet Flow,			
	0.0	454	0.0000	0.05		Woods: Light underbrush n= 0.400 P2= 3.20"			
	3.0	154	0.0292	0.85		Shallow Concentrated Flow,			
	<b>5</b> 0	FC4	0.4077	4.70		Woodland Kv= 5.0 fps			
	5.3	564	0.1277	1.79		Shallow Concentrated Flow,			
	2.5	074	0.0004	4.00		Woodland Kv= 5.0 fps			
	2.5	271	0.0664	1.80		Shallow Concentrated Flow,			
	18.5	713	0.0084	0.64		Short Grass Pasture Kv= 7.0 fps  Shallow Concentrated Flow,			
	10.5	113	0.0004	0.04		Short Grass Pasture Kv= 7.0 fps			
_	20.0	1 750	Total			Onon Orass rasture INV-1.0 1ps			
	39.8	1,752	Total						

## **Summary for Subcatchment 2S: Drainage Area 2S**

Runoff = 44.85 cfs @ 12.58 hrs, Volume= 6.618 af, Depth= 3.13"

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Page 39

	Area	(ac)	CN	Desc	ription		
*	0.	000	98	Exist	ing Structi	ure, HSG A	1
*	0.	266	98	Exist	ing Structi	ure, HSG E	3
	0.	000	30	Woo	ds, Good,	HSG A	
	13.	979	55	Woo	ds, Good,	HSG B	
	0.	000	70	Woo	ds, Good,	HSG C	
	0.	000	67				Good, HSG A
	11.	161	78	Row	crops, stra	aight row, 0	Good, HSG B
	0.	000	85	Row	crops, stra	aight row, 0	Good, HSG C
	25.	406	66	Weig	hted Aver	age	
	25.	140		98.9	5% Pervio	us Area	
	0.266		1.059	% Impervi	ous Area		
	Тс	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(feet	t)	(ft/ft)	(ft/sec)	(cfs)	
	9.3	5	0 (	0.0400	0.09		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.20"
	13.5	1,03	7 (	0.0656	1.28		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	2.5	31	1 (	0.1768	2.10		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	2.6	30	4 (	0.0757	1.93		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
	12.9	56	1 (	0.0107	0.72		Shallow Concentrated Flow,
_							Short Grass Pasture Kv= 7.0 fps
	40.8	2,26	3	Γotal			

# **Summary for Subcatchment 3S: Drainage Area 3S**

Runoff = 27.23 cfs @ 12.24 hrs, Volume= 2.709 af, Depth= 4.06"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	1.186	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	6.817	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	8.003	75	Weighted Average
	8.003		100.00% Pervious Area

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Page 40

	Тс	Length	Slope	Velocity	Capacity	Description
(n	ոin)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0	50	0.1200	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	0.9	85	0.1059	1.63		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	2.9	296	0.0574	1.68		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.3	405	0.0173	0.92		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
1	7.1	836	Total			

### **Summary for Subcatchment 4S: Drainage Area 4S**

Runoff = 46.28 cfs @ 12.47 hrs, Volume= 6.147 af, Depth= 2.63"

	Area	(ac) C	N Des	cription					
*	0.	000	98 Exis	ting Struct	ure, HSG A	1			
*	0.	000	98 Exis	ting Struct	ure, HSG E	3			
	0.	000	30 Woo	Woods, Good, HSG A					
	20.	410	55 Woo	ods, Good,	HSG B				
	0.	380	70 Woo	ods, Good,	HSG C				
	_			ed parking					
						Good, HSG A			
					•	Good, HSG B			
	0.	000				Good, HSG C			
				ghted Aver					
	28.	046	100	.00% Pervi	ous Area				
	_				_				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	12.3	50	0.0200	0.07		Sheet Flow,			
						Woods: Light underbrush n= 0.400 P2= 3.20"			
	1.0	65	0.0462	1.07		Shallow Concentrated Flow,			
	4.0	504	0.4750	0.40		Woodland Kv= 5.0 fps			
	4.6	581	0.1756	2.10		Shallow Concentrated Flow,			
	2.0	200	0.0000	4 04		Woodland Kv= 5.0 fps			
	3.9	306	0.0686	1.31		Shallow Concentrated Flow,			
	6.1	321	0.0312	0.00		Woodland Kv= 5.0 fps			
	0.1	321	0.0312	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps			
	3.7	153	0.0098	0.69		Shallow Concentrated Flow,			
	5.1	133	0.0030	0.09		Short Grass Pasture Kv= 7.0 fps			
_	21.6	1 176	Total			Onort Orass r asture Tiv- 1.0 ips			
	31.6	1,476	Total						

Page 41

#### **Existing Hydrology - Nutmeg**

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#### **Summary for Subcatchment 5S: Drainage Area 5S**

Runoff = 14.00 cfs @ 12.33 hrs, Volume= 1.661 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=6.90"

	Area	(ac)	CN	Desc	cription					
*	0.	000	98	Exist	ing Structu	ure, HSG A	1			
*	0.	000	98	Exist	Existing Structure, HSG B					
	0.	000	30	Woo	ds, Good,	HSG A				
	9.	675	55	Woo	ds, Good,	HSG B				
	0.	000	70	Woo	Woods, Good, HSG C					
	0.	000	98	Pave	ed parking,	HSG B				
	0.	000	67			•	Good, HSG A			
		000	78				Good, HSG B			
_	0.	000	85	Row	crops, stra	aight row, C	Good, HSG C			
		675	55		hted Aver					
	9.	675		100.	00% Pervi	ous Area				
	_		_							
	Tc	Length		Slope	Velocity	Capacity	Description			
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)				
	9.3	50	0.0	0400	0.09		Sheet Flow,			
							Woods: Light underbrush n= 0.400 P2= 3.20"			
	1.5	98	5 0.0	0421	1.03		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	11.0	1,05	I 0.	1018	1.60		Shallow Concentrated Flow,			
_							Woodland Kv= 5.0 fps			
	21.8	1,196	3 To	otal						

### **Summary for Subcatchment 6S: Drainage Area 6S**

Runoff = 5.86 cfs @ 12.50 hrs, Volume= 0.823 af, Depth= 2.06"

	Area (ac)	CN	Description
*	0.000	98	Existing Structure, HSG A
*	0.000	98	Existing Structure, HSG B
	0.000	30	Woods, Good, HSG A
	4.792	55	Woods, Good, HSG B
	0.000	70	Woods, Good, HSG C
	0.000	98	Paved parking, HSG B
	0.000	67	Row crops, straight row, Good, HSG A
	0.000	78	Row crops, straight row, Good, HSG B
	0.000	85	Row crops, straight row, Good, HSG C
	4.792	55	Weighted Average
	4.792		100.00% Pervious Area

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Page 42

	Length	Slope	Velocity	Capacity	Description
 (min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
12.3	50	0.0200	0.07		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.20"
4.3	236	0.0339	0.92		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
6.5	554	0.0812	1.42		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
1.3	187	0.2406	2.45		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
8.0	459	0.0370	0.96		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
32.4	1.486	Total			

#### **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 44.78 cfs @ 12.35 hrs, Volume= 5.405 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=6.90"

	Area	(ac)	CN	Desc	cription					
*	0.	000	98	Exist	ing Structi	ure, HSG A	1			
*	0.	000	98	Exist	ing Structi	ure, HSG B	}			
	0.	000	30	Woo	ds, Good,	HSG A				
	31.	477	55	Woo	Woods, Good, HSG B					
	0.	000	70	Woo	Woods, Good, HSG C					
	0.	000	98		ed parking,					
	0.	000	67				Good, HSG A			
		000	78				Good, HSG B			
	0.	000	85	Row	crops, stra	aight row, C	Good, HSG C			
	31.	477	55	Weig	hted Aver	age				
	31.	477		100.	00% Pervi	ous Area				
	Тс	Lengt	h :	Slope	Velocity	Capacity	Description			
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	7.9	5	0 0	.0600	0.10		Sheet Flow,			
							Woods: Light underbrush n= 0.400 P2= 3.20"			
	14.9	1,21	8 0.	.0747	1.37		Shallow Concentrated Flow,			
							Woodland Kv= 5.0 fps			
	22.8	1,26	8 T	otal		·				

### Summary for Subcatchment 8S: Drainage Area 8S

Runoff = 29.08 cfs @ 12.62 hrs, Volume= 4.568 af, Depth= 2.06"

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Page 43

	Area	(ac) (	N Des	cription		
*	0.	000	98 Exis	ting Struct	ure, HSG A	4
*					ure, HSG E	
	0.	000	30 Woo	ds, Good,	HSG A	
	26.	599	55 Woo	ds, Good,	HSG B	
	0.	000	70 Woo	ds, Good,	HSG C	
	0.	000	98 Pave	ed parking	, HSG B	
	0.	000	67 Row	crops, str	aight row, (	Good, HSG A
	0.	000	78 Row	crops, str	aight row, (	Good, HSG B
_	0.	000	85 Row	crops, str	aight row, (	Good, HSG C
	26.	599	55 Wei	ghted Aver	age	
	26.	599	100.	00% Pervi	ous Area	
	Tc	Length		Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	12.3	50	0.0200	0.07		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	2.2	145	0.0484	1.10		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	7.6	499	0.0481	1.10		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	12.8	510	0.0176	0.66		Shallow Concentrated Flow,
		000		4.05		Woodland Kv= 5.0 fps
	2.8	208	0.0625	1.25		Shallow Concentrated Flow,
	0.0	000	0.4007	4.50		Woodland Kv= 5.0 fps
	3.0	288	0.1007	1.59		Shallow Concentrated Flow,
_						Woodland Kv= 5.0 fps
	40.7	1,700	Total			

### **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 2.78 cfs @ 12.24 hrs, Volume= 0.286 af, Depth= 2.25"

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	Area	(ac)	CN	Desc	cription		
*	0.	000	98	Exist	ting Structi	ure, HSG A	1
*	0.	000	98	Exist	ting Structi	ure, HSG B	
	0.	187	30	Woo	ds, Good,	HSG A	
	1.	168	55	Woo	ds, Good,	HSG B	
	0.	000	70	Woo	ds, Good,	HSG C	
	0.	000	98	Pave	ed parking,	HSG B	
	0.	000	67				Good, HSG A
	0.	000	78				Good, HSG B
		000	85				Good, HSG C
		048	96		el surface	•	
	0.	124	96	Grav	<u>el surface</u>	, HSG B	
	1.	527	57	Weig	ghted Aver	age	
	1.	527		100.	00% Pervi	ous Area	
	Тс	Lengt		Slope	Velocity	Capacity	Description
	(min)	(feet	:)	(ft/ft)	(ft/sec)	(cfs)	
	9.3	5	0 0	.0400	0.09		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.20"
	4.9	38	8 0	.0696	1.32		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	1.8	48	7 0	.0801	4.56		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	16.0	92	5 T	otal			

### **Summary for Reach DP-1: Design Point 1**

Inflow Are	a =	27.185 ac,	3.18% Impervious,	Inflow Depth = $3.0$	03" for 100-Year event
Inflow	=	46.89 cfs @	12.57 hrs, Volume	= 6.854 af	
Outflow	=	46.89 cfs @	12.57 hrs, Volume	= 6.854 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-2: Design Point 2**

Inflow Are	ea =	25.406 ac,	1.05% Impervious,	Inflow Depth = $3.^{\circ}$	13" for 100-Year event
Inflow	=	44.85 cfs @	12.58 hrs, Volume	= 6.618 af	
Outflow	=	44.85 cfs @	12.58 hrs, Volume	= 6.618 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-3: Design Point 3**

Inflow Are	ea =	8.003 ac,	0.00% Impervious,	Inflow Depth = $4.0$	06" for 100-Year event
Inflow	=	27.23 cfs @	12.24 hrs, Volume	= 2.709 af	
Outflow	=	27.23 cfs @	12.24 hrs. Volume:	= 2.709 af.	Atten= 0%. Lag= 0.0 min

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Page 45

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 28.046 ac, 0.00% Impervious, Inflow Depth = 2.63" for 100-Year event

Inflow = 46.28 cfs @ 12.47 hrs, Volume= 6.147 af

Outflow = 46.28 cfs @ 12.47 hrs, Volume= 6.147 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-5: Design Point 5

Inflow Area = 9.675 ac, 0.00% Impervious, Inflow Depth = 2.06" for 100-Year event

Inflow = 14.00 cfs @ 12.33 hrs, Volume= 1.661 af

Outflow = 14.00 cfs @ 12.33 hrs, Volume= 1.661 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 0.00% Impervious, Inflow Depth = 2.06" for 100-Year event

Inflow = 5.86 cfs @ 12.50 hrs, Volume= 0.823 af

Outflow = 5.86 cfs @ 12.50 hrs, Volume= 0.823 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-7: Design Point 7**

Inflow Area = 31.477 ac, 0.00% Impervious, Inflow Depth = 2.06" for 100-Year event

Inflow = 44.78 cfs @ 12.35 hrs, Volume= 5.405 af

Outflow = 44.78 cfs @ 12.35 hrs, Volume= 5.405 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-8: Design Point 8**

Inflow Area = 26.599 ac, 0.00% Impervious, Inflow Depth = 2.06" for 100-Year event

Inflow = 29.08 cfs @ 12.62 hrs, Volume= 4.568 af

Outflow = 29.08 cfs @ 12.62 hrs, Volume= 4.568 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-9: Design Point 9**

Inflow Area = 1.527 ac, 0.00% Impervious, Inflow Depth = 2.25" for 100-Year event

Inflow = 2.78 cfs @ 12.24 hrs, Volume= 0.286 af

Outflow = 2.78 cfs @ 12.24 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min

Nutmeg Solar Project - Existing Type III 24-hr 100-Year Rainfall=6.90" Printed 9/11/2018

Page 46

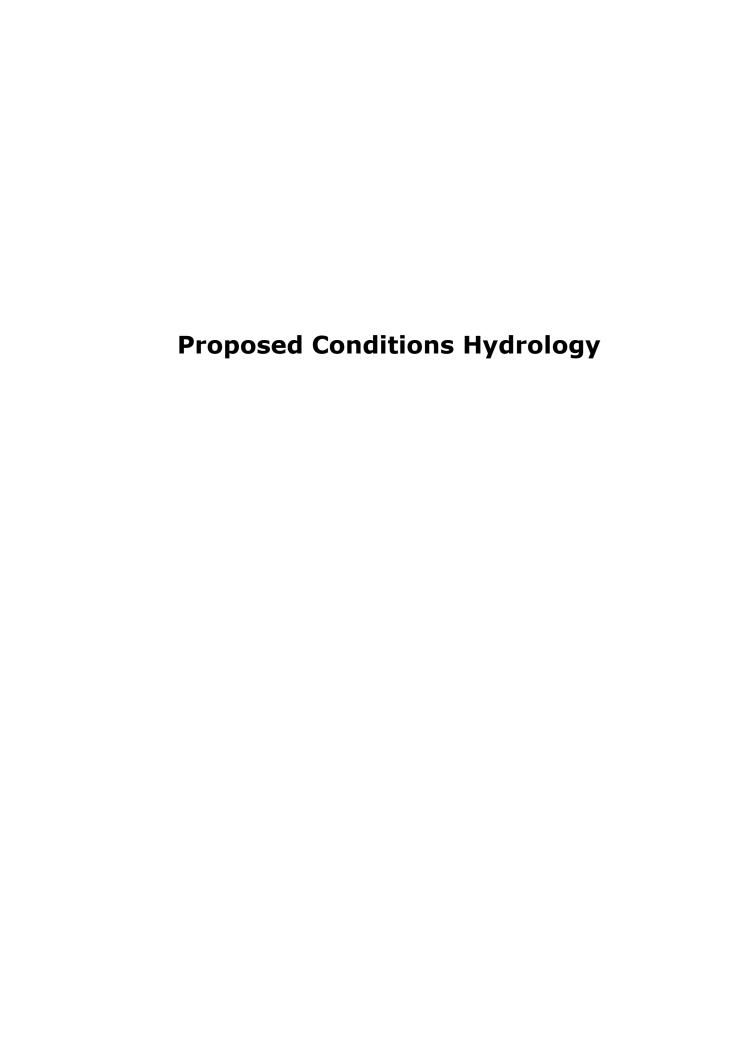
Existing Hydrology - Nutmeg

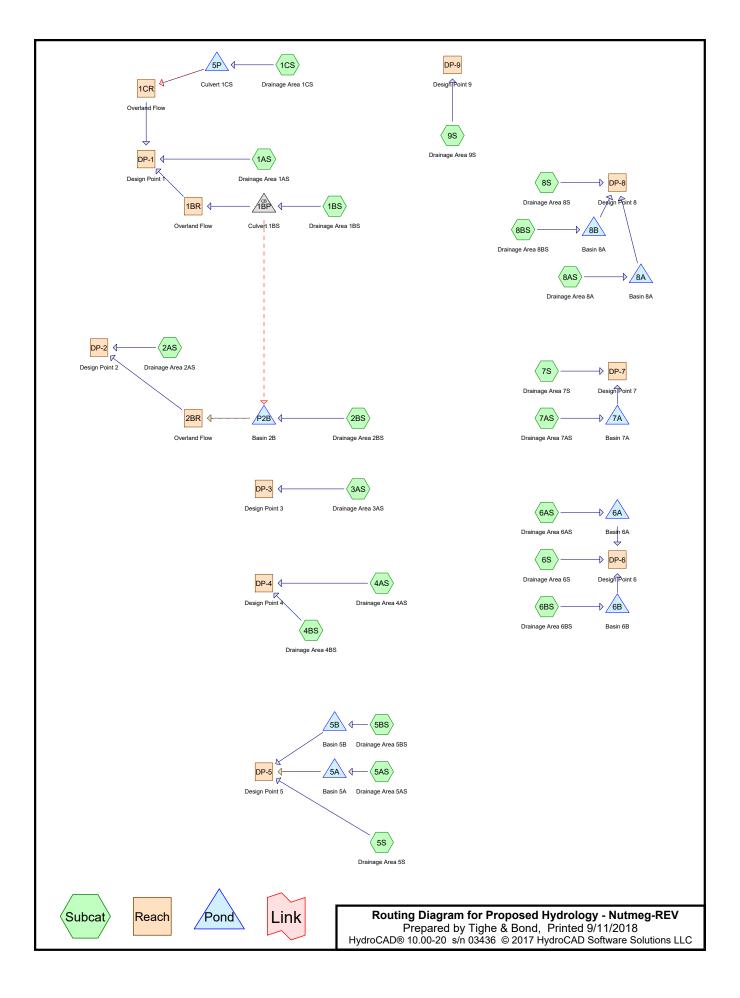
Type III 24-hr 100

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Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs





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### **Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.164	98	Existing Structure, HSG A (1AS)
0.678	98	Existing Structure, HSG B (1AS, 1CS, 2AS)
0.089	96	Gravel surface, HSG A (1AS, 9S)
5.822	96	Gravel surface, HSG B (1AS, 1BS, 1CS, 2AS, 2BS, 3AS, 4AS, 4BS, 8S, 9S)
3.589	30	Meadow, non-grazed, HSG A (1AS)
116.398	58	Meadow, non-grazed, HSG B (1AS, 1BS, 1CS, 2AS, 2BS, 3AS, 4AS, 4BS, 5AS,
		5BS, 5S, 6AS, 6BS, 6S, 7AS, 7S, 8AS, 8BS, 8S, 9S)
0.393	71	Meadow, non-grazed, HSG C (4BS)
0.006	98	Unconnected pavement, HSG A (1AS)
2.389	98	Unconnected pavement, HSG B (1AS, 1BS, 1CS, 2AS, 2BS, 3AS, 4AS, 4BS, 6AS,
		6BS, 7AS, 7S, 8AS, 8BS, 8S)
0.370	98	Water Surface, HSG B (2BS, 3AS)
0.187	30	Woods, Good, HSG A (9S)
32.027	55	Woods, Good, HSG B (1AS, 1CS, 2BS, 3AS, 4AS, 4BS, 5S, 6S, 7S, 8S, 9S)
0.274	65	Woods/grass comb., Fair, HSG B (1AS, 2AS, 4BS)
162.386	59	TOTAL AREA

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Page 3

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1AS: Drainage Area 1AS Runoff Area=17.426 ac 5.85% Impervious Runoff Depth=0.25" Flow Length=1,146' Tc=29.0 min CN=55 Runoff=1.33 cfs 0.364 af

**Subcatchment 1BS: Drainage Area 1BS**Runoff Area=9.780 ac 2.10% Impervious Runoff Depth=0.48"
Flow Length=1,301' Tc=17.2 min CN=62 Runoff=2.67 cfs 0.392 af

**Subcatchment 1CS: Drainage Area 1CS** Runoff Area=4.622 ac 6.34% Impervious Runoff Depth=1.54" Flow Length=870' Tc=16.6 min UI Adjusted CN=82 Runoff=5.99 cfs 0.592 af

Subcatchment 2AS: Drainage Area 2AS Runoff Area=11.522 ac 2.97% Impervious Runoff Depth=0.37" Flow Length=747' Tc=16.5 min CN=59 Runoff=2.09 cfs 0.359 af

**Subcatchment 2BS: Drainage Area 2BS**Runoff Area=15.629 ac 0.72% Impervious Runoff Depth=0.34"
Flow Length=1,098' Tc=14.2 min CN=58 Runoff=2.50 cfs 0.444 af

**Subcatchment3AS: Drainage Area 3AS** Runoff Area=6.262 ac 7.41% Impervious Runoff Depth=0.52" Flow Length=840' Tc=9.8 min UI Adjusted CN=63 Runoff=2.31 cfs 0.271 af

**Subcatchment 4AS: Drainage Area 4AS**Runoff Area=4.677 ac 2.67% Impervious Runoff Depth=0.34"
Flow Length=1,146' Tc=13.7 min CN=58 Runoff=0.75 cfs 0.133 af

**Subcatchment 4BS: Drainage Area 4BS**Runoff Area=24.770 ac 0.45% Impervious Runoff Depth=0.34"
Flow Length=1,845' Tc=29.3 min CN=58 Runoff=3.25 cfs 0.704 af

**Subcatchment 5AS: Drainage Area 5AS**Runoff Area=1.754 ac 0.00% Impervious Runoff Depth=0.34"
Flow Length=445' Tc=5.4 min CN=58 Runoff=0.32 cfs 0.050 af

**Subcatchment 5BS: Drainage Area 5BS**Runoff Area=1.232 ac 0.00% Impervious Runoff Depth=0.34"
Flow Length=394' Tc=8.0 min CN=58 Runoff=0.21 cfs 0.035 af

**Subcatchment 5S: Drainage Area 5S**Runoff Area=6.687 ac 0.00% Impervious Runoff Depth=0.28"

Flow Length=1,088' Tc=13.1 min CN=56 Runoff=0.78 cfs 0.156 af

**Subcatchment 6AS: Drainage Area 6AS** Runoff Area=1.181 ac 6.35% Impervious Runoff Depth=0.37" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=0.26 cfs 0.037 af

**Subcatchment 6BS: Drainage Area 6BS** Runoff Area=0.525 ac 4.76% Impervious Runoff Depth=0.37" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=0.11 cfs 0.016 af

**Subcatchment 6S: Drainage Area 6S**Runoff Area=3.086 ac 0.00% Impervious Runoff Depth=0.31"

Flow Length=1,253' Tc=19.3 min CN=57 Runoff=0.39 cfs 0.080 af

Subcatchment 7AS: Drainage Area 7AS Runoff Area=11.944 ac 0.52% Impervious Runoff Depth=0.34" Flow Length=1,206' Tc=14.8 min CN=58 Runoff=1.90 cfs 0.340 af

**Subcatchment 7S: Drainage Area 7S**Runoff Area=19.533 ac 0.35% Impervious Runoff Depth=0.31"
Flow Length=1,268' Tc=14.5 min UI Adjusted CN=57 Runoff=2.65 cfs 0.504 af

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Reach DP-9: Design Point 9

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Page 4

Runoff Area=6.478 ac 0.57% Impervious Runoff Depth=0.34" Subcatchment8AS: Drainage Area 8A Flow Length=984' Tc=16.1 min CN=58 Runoff=1.01 cfs 0.184 af Subcatchment8BS: Drainage Area 8BS Runoff Area=4.301 ac 0.98% Impervious Runoff Depth=0.34" Flow Length=1,438' Tc=24.0 min CN=58 Runoff=0.61 cfs 0.122 af Runoff Area=9.946 ac 6.29% Impervious Runoff Depth=0.44" Subcatchment 8S: Drainage Area 8S Flow Length=794' Tc=13.8 min UI Adjusted CN=61 Runoff=2.52 cfs 0.368 af Subcatchment9S: Drainage Area 9S Runoff Area=1.031 ac 0.00% Impervious Runoff Depth=0.37" Flow Length=613' Tc=10.6 min CN=59 Runoff=0.20 cfs 0.032 af Reach 1BR: Overland Flow Avg. Flow Depth=0.01' Max Vel=0.36 fps Inflow=2.67 cfs 0.392 af n=0.030 L=940.0' S=0.0426 '/' Capacity=0.71 cfs Outflow=1.25 cfs 0.391 af Avg. Flow Depth=0.09' Max Vel=0.55 fps Inflow=5.71 cfs 0.592 af Reach 1CR: Overland Flow n=0.030 L=6,700.0' S=0.0084 '/' Capacity=17.41 cfs Outflow=0.99 cfs 0.541 af Reach 2BR: Overland Flow Avg. Flow Depth=0.02' Max Vel=0.31 fps Inflow=2.06 cfs 0.286 af n=0.030 L=785.0' S=0.0280 '/' Capacity=0.46 cfs Outflow=0.99 cfs 0.285 af Reach DP-1: Design Point 1 Inflow=1.97 cfs 1.297 af Outflow=1.97 cfs 1.297 af Inflow=2.09 cfs 0.644 af Reach DP-2: Design Point 2 Outflow=2.09 cfs 0.644 af Inflow=2.31 cfs 0.271 af Reach DP-3: Design Point 3 Outflow=2.31 cfs 0.271 af Reach DP-4: Design Point 4 Inflow=3.82 cfs 0.837 af Outflow=3.82 cfs 0.837 af Inflow=0.78 cfs 0.156 af Reach DP-5: Design Point 5 Outflow=0.78 cfs 0.156 af Inflow=0.39 cfs 0.080 af Reach DP-6: Design Point 6 Outflow=0.39 cfs 0.080 af Inflow=2.65 cfs 0.504 af Reach DP-7: Design Point 7 Outflow=2.65 cfs 0.504 af Reach DP-8: Design Point 8 Inflow=2.52 cfs 0.368 af Outflow=2.52 cfs 0.368 af

Pond 1BP: Culvert 1BS Peak Elev=213.06' Inflow=2.67 cfs 0.392 af

Primary=2.67 cfs 0.392 af Secondary=0.00 cfs 0.000 af Outflow=2.67 cfs 0.392 af

Inflow=0.20 cfs 0.032 af

Outflow=0.20 cfs 0.032 af

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Type III 24-hr 2-Year Rainfall=3.20"
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LLC Page 5

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Pond 5A: Basin 5A	Peak Elev=273.08' Storage=221 cf Inflow=0.32 cfs 0.050 af Discarded=0.16 cfs 0.050 af Primary=0.00 cfs 0.000 af Outflow=0.16 cfs 0.050 af
Pond 5B: Basin 5B	Peak Elev=290.18' Storage=365 cf Inflow=0.21 cfs 0.035 af Discarded=0.05 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.035 af
Pond 5P: Culvert 1CS	Peak Elev=226.32' Storage=617 cf Inflow=5.99 cfs 0.592 af Primary=5.71 cfs 0.592 af Secondary=0.00 cfs 0.000 af Outflow=5.71 cfs 0.592 af
Pond 6A: Basin 6A	Peak Elev=302.04' Storage=116 cf Inflow=0.26 cfs 0.037 af Discarded=0.17 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.037 af
Pond 6B: Basin 6B	Peak Elev=292.40' Storage=143 cf Inflow=0.11 cfs 0.016 af Discarded=0.03 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.016 af
Pond 7A: Basin 7A	Peak Elev=250.98' Storage=5,302 cf Inflow=1.90 cfs 0.340 af Discarded=0.35 cfs 0.333 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.333 af
Pond 8A: Basin 8A	Peak Elev=249.39' Storage=2,385 cf Inflow=1.01 cfs 0.184 af Discarded=0.22 cfs 0.184 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.184 af
Pond 8B: Basin 8A	Peak Elev=243.76' Storage=1,308 cf Inflow=0.61 cfs 0.122 af Discarded=0.17 cfs 0.122 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.122 af

**Pond P2B: Basin 2B**Peak Elev=196.45' Storage=1,234 cf Inflow=2.50 cfs 0.444 af Discarded=0.20 cfs 0.158 af Primary=2.06 cfs 0.286 af Secondary=0.00 cfs 0.000 af Outflow=2.26 cfs 0.444 af

Total Runoff Area = 162.386 ac Runoff Volume = 5.185 af Average Runoff Depth = 0.38" 97.78% Pervious = 158.779 ac 2.22% Impervious = 3.607 ac

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Page 6

### **Summary for Subcatchment 1AS: Drainage Area 1AS**

Runoff = 1.33 cfs @ 12.67 hrs, Volume= 0.364 af, Depth= 0.25"

	Area	(ac) C	N Des	cription								
*	0.	164	98 Exis	Existing Structure, HSG A								
*	0.	533	98 Exis	Existing Structure, HSG B								
	0.	000	30 Woo	ds, Good,	HSG A							
	3.	149		ds, Good,								
	0.	000	70 Woo	ds, Good,	HSG C							
	0.	041		el surface								
	0.	371	96 Grav	el surface	, HSG B							
	0.	000	96 Grav	el surface	, HSG C							
	3.	589	30 Mea	dow, non-g	grazed, HS	G A						
	9.	178	58 Mea	dow, non-	grazed, HS	GB						
	0.	000	71 Mea	dow, non-	grazed, HS	GC						
	0.	006	98 Unc	onnected p	avement, l	HSG A						
	0.	317	98 Unc	onnected p	avement, I	HSG B						
					avement, I	HSG C						
				er Surface,								
				er Surface,								
				er Surface,								
					omb., Fair,	HSG B						
				ghted Aver								
		406		5% Pervio								
		020		% Impervi								
	0.	323	31.6	7% Uncon	nected							
	То	Longth	Clana	\/alaaity	Canacity	Description						
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
_			<u> </u>		(CIS)	Observat Filmer						
	6.0	50	0.1200	0.14		Sheet Flow,						
	0.5	00	0.4450	0.07		Woods: Light underbrush n= 0.400 P2= 3.20"						
	0.5	82	0.1459	2.67		Shallow Concentrated Flow,						
	2.0	226	0.0760	4.00		Short Grass Pasture Kv= 7.0 fps						
	2.0	236	0.0762	1.93		Shallow Concentrated Flow,						
	4.0	60	0.0447	0.85		Short Grass Pasture Kv= 7.0 fps						
	1.3	68	0.0147	0.65		Shallow Concentrated Flow,						
	11.9	445	0.0079	0.62		Short Grass Pasture Kv= 7.0 fps						
	11.9	445	0.0079	0.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps						
	7.3	265	0.0075	0.61		• • • • • • • • • • • • • • • • • • •						
	1.3	203	0.0075	0.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps						
_	20.0	1 1 1 1 0	Total			OHOIL OIASS FASILIE INV-1.0 IPS						
	29.0	1,146	Total									

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Page 7

#### **Summary for Subcatchment 1BS: Drainage Area 1BS**

Runoff = 2.67 cfs @ 12.33 hrs, Volume= 0.392 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-Year Rainfall=3.20"

	Area	(ac) (	CN Des	cription						
*	0.	000	98 Exis	tina Struct	ure, HSG A					
*		000 98 Existing Structure, HSG B								
				ods, Good,						
	0.			ods, Good,						
	0.			ods, Good,						
	0.	000		vel surface						
	0.	922		vel surface						
	0.	000	96 Gra	vel surface	, HSG C					
	0.	000	30 Mea	idow, non-	grazed, HS	G A				
	8.	653	58 Mea	dow, non-	grazed, HS	G B				
	0.	000	71 Mea	dow, non-	grazed, HS	GC				
	0.	000	98 Und	onnected p	pavement, I	HSG A				
				onnected p	pavement, I	HSG B				
	0.				pavement, I	HSG C				
				er Surface						
				er Surface	,					
_	0.	000	<u>98 Wat</u>	<u>er Surface</u>	, HSG C					
				ghted Aver						
		575		00% Pervio						
		205		% Impervi						
	0.	205	100	.00% Unco	nnected					
	То	Longth	Clono	Valaaitv	Conneity	Description				
	Tc (min)	Length (feet)		Velocity (ft/sec)	Capacity (cfs)	Description				
_					(015)	Chaot Flaur				
	3.2	50	0.0800	0.26		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"				
	10.1	765	0.0327	1.27						
	10.1	700	0.0327	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps				
	2.8	278	0.0576	1.68		Shallow Concentrated Flow,				
	2.0	210	0.0370	1.00		Short Grass Pasture Kv= 7.0 fps				
	0.4	82	0.2560	3.54		Shallow Concentrated Flow,				
	0.4	02	0.2000	5.54		Short Grass Pasture Kv= 7.0 fps				
	0.7	126	0.0397	3.21		Shallow Concentrated Flow,				
	0.7	120	3.0007	0.21		Unpaved Kv= 16.1 fps				
_	17.2	1,301	Total							
		.,								

#### **Summary for Subcatchment 1CS: Drainage Area 1CS**

Runoff = 5.99 cfs @ 12.24 hrs, Volume= 0.592 af, Depth= 1.54"

Page 8

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	Area	(ac)	CN Adj	Descript	ion						
*	* 0.000 98 Existing S				Structure,	HSG A					
*	0.	120	98	Existing	Structure,	HSG B					
	0.	000	30	Woods,	Good, HS0	G A					
	0.	613	55	Woods, Good, HSG B							
		000	70	Woods,	Good, HS0	G C					
		000	96		surface, HS						
		738	96		surface, HS						
		000	96		surface, HS						
		000	30			ed, HSG A					
		978	58		Meadow, non-grazed, HSG B						
		000	71		Meadow, non-grazed, HSG C						
		000	98		Unconnected pavement, HSG A						
		173	98			ment, HSG B					
		000	98			ment, HSG C					
		000	98		urface, HS						
		000	98	Water Surface, HSG B							
		000	98		Water Surface, HSG C						
		622	83 82			, UI Adjusted					
		329			Pervious A						
		293			mpervious .						
	0.	173		59.04%	Unconnect	ied					
	Тс	Length		Velocity	Capacity	Description					
	(min)	(feet)		(ft/sec)	(cfs)						
	5.6	50	0.0200	0.15		Sheet Flow,					
						Grass: Short n= 0.150 P2= 3.20"					
	3.9	160	0.0094	0.68		Shallow Concentrated Flow,					
	4.0	400		4.07		Short Grass Pasture Kv= 7.0 fps					
	1.6	122	0.0328	1.27		Shallow Concentrated Flow,					
	0.0	000	0.0070	4.00		Short Grass Pasture Kv= 7.0 fps					
	2.8	222	0.0676	1.30		Shallow Concentrated Flow,					
	0.0	20	0.4040	0.44		Woodland Kv= 5.0 fps					
	0.2	33	0.1212	2.44		Shallow Concentrated Flow,					
	2.5	283	0.0141	1.91		Short Grass Pasture Kv= 7.0 fps					
	2.5	203	0.0141	1.91		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps					
_	10.0	070	Tatal			Olipaved IV- 10.1 lps					
	16.6	870	Total								

### **Summary for Subcatchment 2AS: Drainage Area 2AS**

Runoff = 2.09 cfs @ 12.39 hrs, Volume= 0.359 af, Depth= 0.37"

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Page 9

	Area	(ac)	CN [	Desc	ription								
*	0.	000	98 I	Exist	ixisting Structure, HSG A								
*	0.	025	98 I	Exist	Existing Structure, HSG B								
	0.	000	30 \	Woo	ds, Good,	HSG A							
	0.	000	55 \	Woo	ds, Good,	HSG B							
	0.	000	70 \	Woo	ds, Good,	HSG C							
		000		Grav	el surface	, HSG A							
		079		Grav	el surface	, HSG B							
		000			el surface	,							
	_	000				grazed, HS							
		084				grazed, HS							
		000				grazed, HS							
		000				avement, l							
		317				avement, l							
		000				avement, l	HSG C						
		000			er Surface								
		000			er Surface								
		000			er Surface		1100 B						
		017				omb., Fair,	, HSG B						
		522			hted Aver								
		180			3% Pervio								
		342			% Impervi								
	0.	317	,	92.6	9% Uncon	nectea							
	Тс	Length	Sic	ре	Velocity	Capacity	Description						
	(min)	(feet)		t/ft)	(ft/sec)	(cfs)	Description						
_	3.2	50			0.26	(013)	Sheet Flow,						
	5.2	30	0.00	000	0.20		Grass: Short n= 0.150 P2= 3.20"						
	2.9	284	0.05	528	1.61		Shallow Concentrated Flow,						
	2.5	207	0.00	<i>J</i> 20	1.01		Short Grass Pasture Kv= 7.0 fps						
	1.2	80	0.02	250	1.11		Shallow Concentrated Flow,						
	1.2	00	0.02	-00	1.11		Short Grass Pasture Kv= 7.0 fps						
	9.2	333	0.00	)75	0.61		Shallow Concentrated Flow,						
	٥.٢	000	0.00		0.01		Short Grass Pasture Kv= 7.0 fps						
	16.5	747	Tota	al									

### **Summary for Subcatchment 2BS: Drainage Area 2BS**

Runoff = 2.50 cfs @ 12.38 hrs, Volume= 0.444 af, Depth= 0.34"

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Page 10

	Area	(ac) (	N Des	cription		
*	0.	000	98 Exis	ting Struct	ure, HSG A	
*				•	ure, HSG B	
	0.	000		ds, Good,		
	5.	460		ds, Good,		
	0.	000	70 Woo	ds, Good,	HSG C	
	0.	000		el surface		
	0.	340	96 Grav	el surface	, HSG B	
	0.	000	96 Grav	el surface	, HSG C	
	0.	000	30 Mea	dow, non-	grazed, HS	GA
	9.	717	58 Mea	dow, non-	grazed, HS	GB
	0.	000	71 Mea	dow, non-	grazed, HS	GC
	0.	000	98 Unc	onnected p	avement, I	HSG A
					avement, I	
					avement, l	HSG C
				er Surface		
				er Surface		
	0.	000	98 Wat	er Surface	, HSG C	
				ghted Aver		
		517		8% Pervio		
		112		% Impervi		
	0.	031	27.6	8% Uncon	nected	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•
	5.6	50	0.0200	0.15		Sheet Flow,
						Grass: Short n= 0.150 P2= 3.20"
	1.8	182	0.0549	1.64		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	3.3	410	0.0879	2.08		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	0.9	120	0.1083	2.30		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	2.4	291	0.1684	2.05		Shallow Concentrated Flow,
						Woodland Kv= 5.0 fps
	0.2	45	0.2426	3.45		Shallow Concentrated Flow,
_						Short Grass Pasture Kv= 7.0 fps
	14.2	1,098	Total			

### **Summary for Subcatchment 3AS: Drainage Area 3AS**

Runoff = 2.31 cfs @ 12.18 hrs, Volume= 0.271 af, Depth= 0.52"

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Page 11

_	Area	(ac) C	N Adj	Descript	ion						
*	0.	000	98	Existing	Structure,	HSG A					
*	0.	000	98	Existing	Structure,	HSG B					
	0.	000	30	Woods,	Woods, Good, HSG A						
	0.	153	55	Woods,	Woods, Good, HSG B						
	0.	000	70	Woods,	Woods, Good, HSG C						
	0.	000	96	Gravel s	surface, HS	G A					
	0.	496	96	Gravel s	surface, HS	G B					
	0.	000	96	Gravel s	surface, HS	GC					
	0.	000	30	Meadow	Meadow, non-grazed, HSG A						
	5.	149	58	Meadow	Meadow, non-grazed, HSG B						
	0.	000	71	Meadow	/, non-graze	ed, HSG C					
			98			ment, HSG A					
			98			ment, HSG B					
			98			ment, HSG C					
			98		urface, HS						
			98		Water Surface, HSG B						
_			98		Water Surface, HSG C						
	6.262 64 63					, UI Adjusted					
		798			92.59% Pervious Area 7.41% Impervious Area						
		464									
	0.	175		37.72%	Unconnect	ed					
	Тс	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	'					
	5.4	50	0.1600	0.16	, ,	Sheet Flow,					
						Woods: Light underbrush n= 0.400 P2= 3.20"					
	0.3	38	0.1316	1.81		Shallow Concentrated Flow,					
						Woodland Kv= 5.0 fps					
	0.2	32	0.0938	2.14		Shallow Concentrated Flow,					
						Short Grass Pasture Kv= 7.0 fps					
	0.1	25	0.0800	4.55		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	2.4	463	0.0390	3.18		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	1.4	232	0.0302	2.80		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	9.8	840	Total								

### **Summary for Subcatchment 4AS: Drainage Area 4AS**

Runoff = 0.75 cfs @ 12.38 hrs, Volume= 0.133 af, Depth= 0.34"

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Page 12

	Area	(ac) C	N Des	cription					
*	0.	000	98 Exis	Existing Structure, HSG A					
*	0.	000	98 Exis	ting Structi	ure, HSG B				
	0.	000	30 Woo	ds, Good,	HSG A				
	3.	033	55 Woo	ds, Good,	HSG B				
	0.	000	70 Woo	ds, Good,	HSG C				
				el surface					
				el surface	, HSG B				
				el surface					
					grazed, HS				
					grazed, HS				
					grazed, HS				
					avement, l				
					avement, I				
					avement, I	HSG C			
				er Surface,					
				er Surface,					
				er Surface,					
		-	,	ghted Aver	•				
		552 125		3% Pervio % Impervi					
		125		00% Unco					
	0.	123	100.	00 /0 01100	IIIIecteu				
	Tc	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	5.6	50	0.0200	0.15		Sheet Flow,			
						Grass: Short n= 0.150 P2= 3.20"			
	1.0	79	0.0380	1.36		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	8.0	107	0.0935	2.14		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	4.3	532	0.1729	2.08		Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	8.0	67	0.0448	1.48		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	1.2	311	0.0676	4.19		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	13.7	1,146	Total						

### **Summary for Subcatchment 4BS: Drainage Area 4BS**

Runoff = 3.25 cfs @ 12.61 hrs, Volume= 0.704 af, Depth= 0.34"

Page 13

### **Proposed Hydrology - Nutmeg-REV**

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	Area (	(ac) (	CN De	scription							
*	0.0	000	98 Ex	istina Struc	ture, HSG A	4					
*				Existing Structure, HSG B							
	0.0			oods, Good							
				oods, Good							
	0.0	000		oods, Good							
	0.0	000		avel surfac							
				avel surfac							
	0.0	000		avel surfac							
	0.0	000			-grazed, HS	SG A					
	17.0	042			-grazed, HS						
	0.3	393			-grazed, HS						
	0.0	000	98 Ur	connected	pavement,	HSG A					
	0.	111			pavement,						
	0.0	000	98 Ur	connected	pavement,	HSG C					
	0.0	000		ater Surface							
	0.0	000	98 W	ater Surface	e, HSG B						
	0.0	000	98 W	ater Surface	e, HSG C						
_	0.	179	65 W	oods/grass	comb., Fair	, HSG B					
				eighted Ave							
		659		.55% Pervi							
		111		15% Imperv							
	0.	111	10	0.00% Unc	onnected						
	Тс	Length	Slop	e Velocity	Capacity	Description					
	(min)	(feet)				Description					
	5.6	50				Shoot Flow					
	5.0	50	0.020	0.15	1	Sheet Flow, Grass: Short n= 0.150 P2= 3.20"					
	1.6	186	0.080	6 1.99							
	1.0	100	0.000	0 1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps					
	0.4	72	0.166	8 2.86		Shallow Concentrated Flow,					
	0.4	12	0.100	2.00		Short Grass Pasture Kv= 7.0 fps					
	3.7	439	0.155	0 1.97		Shallow Concentrated Flow,					
	3.1	439	0.155	0 1.97		Woodland Kv= 5.0 fps					
	3.7	411	0.068	1 1.83		Shallow Concentrated Flow,					
	5.1	411	0.000	1.03		Short Grass Pasture Kv= 7.0 fps					
	14.3	687	0.013	1 0.80		Shallow Concentrated Flow,					
	14.5	007	0.013	0.00		Short Grass Pasture Kv= 7.0 fps					
_	29.3	1,845	Total			οποιτ οπασσ τ ασιατο τιν – 1.0 τρο					
	29.3	1,040	Total								

### **Summary for Subcatchment 5AS: Drainage Area 5AS**

Runoff = 0.32 cfs @ 12.16 hrs, Volume= 0.050 af, Depth= 0.34"

Description

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Area (ac)

CN

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Page 14

	1104	<del>uo, c</del>	711 000	onpaon		
*	0.0	000	98 Exis	ting Struct	ure, HSG A	
*	0.0	000	98 Exis	ting Struct	ure, HSG B	}
	0.0	000	30 Woo	ds, Good,	HSG A	
	0.0	000	55 Woo	ds, Good,	HSG B	
	0.0	000	70 Woo	ds, Good,	HSG C	
	0.0	000	96 Grav	vel surface	, HSG A	
	0.0	000	96 Grav	vel surface	, HSG B	
				vel surface	, HSG C	
					grazed, HS	
					grazed, HS	
					grazed, HS	
					oavement, l	
					oavement, l	
					oavement, l	HSG C
				er Surface		
				er Surface		
	0.0	000		<u>er Surface</u>		
	1.7	754		ghted Aver		
	1.7	754	100.	00% Pervi	ous Area	
		Length	Slope	Velocity	Capacity	Description
<u>(r</u>	nin)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	3.2	50	0.0800	0.26		Sheet Flow,
						Grass: Short n= 0.150 P2= 3.20"
	2.2	395	0.1800	2.97		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	5.4	445	Total			

#### **Summary for Subcatchment 5BS: Drainage Area 5BS**

Runoff = 0.21 cfs @ 12.20 hrs, Volume= 0.035 af, Depth= 0.34"

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Page 15

	Area	(ac)	CI	N Desc	ription		
*	0.	000	9	8 Exist	ing Structi	ure, HSG A	1
*	0.	000	9	8 Exist	ing Structi	ure, HSG E	3
	_	000	3		ds, Good,		
		000	5		ds, Good,		
	_	000	7		ds, Good,		
	_	000	9		el surface		
		000	9		el surface	•	
		000	9		el surface	,	
		000	3			grazed, HS	
		232	5			grazed, HS	
		000	7			grazed, HS	
		000	9			avement, l	
		000 000	9			avement, l	
		000	9		er Surface,	avement, I	13G C
		000	9		er Surface, er Surface,		
		000	9		er Surface,		
_		232	5		hted Aver		
		232 232	5	_	00% Pervi	•	
	١.	232		100.	JU /0 F CI VI	ous Alea	
	Tc	Leng	th	Slope	Velocity	Capacity	Description
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	Booshphon
_	4.3		50	0.0400	0.20	(===)	Sheet Flow,
	1.0	`		0.0100	0.20		Grass: Short n= 0.150 P2= 3.20"
	1.3	1.	13	0.0442	1.47		Shallow Concentrated Flow,
		•	. •	5.52			Short Grass Pasture Kv= 7.0 fps
	2.4	23	31	0.0520	1.60		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
	8.0	39	94	Total			·

#### **Summary for Subcatchment 5S: Drainage Area 5S**

Runoff = 0.78 cfs @ 12.42 hrs, Volume= 0.156 af, Depth= 0.28"

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Page 16

	Area	(ac) (	CN Des	cription						
*	0.	000	98 Exis	ting Struct	ure, HSG A	1				
*	0.	000	98 Exis	ting Struct	ting Structure, HSG B					
	0.	000	30 Woo	ods, Good,	HSG A					
	4.	693	55 Woo	Woods, Good, HSG B						
	0.	000	70 Woo	ds, Good,	HSG C					
	0.									
	0.	000	96 Grav	vel surface	, HSG B					
	0.	000	96 Grav	Gravel surface, HSG C						
	0.			Meadow, non-grazed, HSG A						
	1.994 58 Meadow, non-grazed, HSG B									
				,	grazed, HS					
					pavement, I					
0.000 98 Unconnected pavement, HSG B										
0.000 98 Unconnected pavement, HSG C										
	0.000 98 Water Surface, HSG A									
	0.000 98 Water Surface, HSG B									
0.000 98 Water Surface, HSG C										
	_			ghted Aver	•					
	6.	687	100.	.00% Pervi	ous Area					
	Тс	Length	•	Velocity	Capacity	Description				
	(min)	(feet)		(ft/sec)	(cfs)					
	3.2	50	0.0800	0.26		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	3.0	396	0.0959	2.17		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	4.2	435	0.1172	1.71		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	2.7	207	0.0676	1.30		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	13.1	1,088	Total							

### **Summary for Subcatchment 6AS: Drainage Area 6AS**

Runoff = 0.26 cfs @ 12.17 hrs, Volume= 0.037 af, Depth= 0.37"

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Page 17

	Area	(ac)	C١	N Adj	Descript	ion					
*	0.	000	98	3	Existing	Structure,	HSG A				
*	0.	000	98	3		Structure,					
	0.	000	30	)		Good, HSC					
	0.000 55				Woods,	Good, HS0	G B				
	0.	000	70	)	Woods,	Woods, Good, HSG C					
	0.	000	96	3	Gravel surface, HSG A						
	0.	000	96	3	Gravel surface, HSG B						
	0.	000	96	3	Gravel s	urface, HS	GC				
		000	30			Meadow, non-grazed, HSG A					
		106	58				ed, HSG B				
		000	7				ed, HSG C				
		000	98		Unconnected pavement, HSG A						
		075	98				ment, HSG B				
		000	98				ment, HSG C				
		000	98			urface, HS					
		000	98			urface, HS					
	0.	000	98	3	Water S	<u>urface, HS</u>	G C				
	1.	181	6	1 59	Weighted Average, UI Adjusted						
	1.	106			93.65% Pervious Area						
	0.	075			6.35% lı	mpervious .	Area				
	0.	075			100.00%	6 Unconne	cted				
	Tc	Lengtl	h	Slope	Velocity	Capacity	Description				
_	(min)	(feet	<u>:)                                    </u>	(ft/ft)	(ft/sec)	(cfs)					
	4.8	50	0	0.0300	0.17		Sheet Flow,				
							Grass: Short n= 0.150 P2= 3.20"				
	2.5	240	0	0.0542	1.63		Shallow Concentrated Flow,				
_							Short Grass Pasture Kv= 7.0 fps				
	7.3	290	0	Total							

### **Summary for Subcatchment 6BS: Drainage Area 6BS**

Runoff = 0.11 cfs @ 12.17 hrs, Volume= 0.016 af, Depth= 0.37"

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Page 18

_	Area (	ac)	CN A	lj Descrip	tion					
*	0.0	000	98	Existing	Structure,	HSG A				
*	0.0	000	98	Existing	Structure,	HSG B				
	0.0	000	30	Woods	Good, HS0	G A				
	0.0	000	55	Woods	, Good, HS0	G B				
	0.0	000	70	Woods	, Good, HS0	GC				
	0.0	000	96	Gravel	Gravel surface, HSG A					
	0.0	000	96	Gravel	Gravel surface, HSG B					
	0.0	000	96	Gravel	surface, HS	SG C				
	0.0	000	30	Meado	Meadow, non-grazed, HSG A					
		500	58	Meado	Meadow, non-grazed, HSG B					
	0.0	000	71	Meado	ν, non-graz	ed, HSG C				
		000	98		Unconnected pavement, HSG A					
		025	98			ment, HSG B				
		000	98			ment, HSG C				
		000	98		Surface, HS					
		000	98		Surface, HS					
	0.0	000	98	Water 9	Water Surface, HSG C					
	0.8	525	60 5	9 Weight	ed Average	, UI Adjusted				
	0.5	500		95.24%	95.24% Pervious Area					
	0.0	025		4.76%	Impervious .	Area				
	0.0	025		100.00	% Unconne	cted				
	Tc	Length	Slope	e Velocity	Capacity	Description				
	(min)	(feet	(ft/ft	) (ft/sec)	(cfs)					
	4.8	50	0.0300	0.17		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	2.5	240	0.0542	2 1.63		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	7.3	290	Total		<del></del>					

### Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 0.39 cfs @ 12.49 hrs, Volume= 0.080 af, Depth= 0.31"

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Page 19

	Area	(ac)	CN D	esc	ription					
*	0.	000	98 E	xist	ing Structi	ure, HSG A	\			
* 0.000 98 Existing Structure, HSG B										
	0.	000	30 W	/00	ds, Good,	HSG A				
	1.	480	55 W	Woods, Good, HSG B						
	0.	000	70 W	Woods, Good, HSG C						
	0.	000	96 G	Gravel surface, HSG A						
	0.	000	96 G	Gravel surface, HSG B						
	0.	000	96 G	Gravel surface, HSG C						
	0.000 30				Meadow, non-grazed, HSG A					
		606		Meadow, non-grazed, HSG B						
		000				grazed, HS				
		000				avement, l				
0.000 98 Unconnected pavement, HSG B										
0.000 98 Unconnected pavement, HSG C							HSG C			
0.000 98 Water Surface, HSG A										
0.000 98 Water Surface, HSG B										
		000			r Surface,					
		086		_	hted Aver	•				
	3.	086	10	00.0	00% Pervi	ous Area				
	То	Longth	Clar		Valacity	Canacity	Description			
	Tc	Length			Velocity	Capacity	Description			
	(min)	(feet)			(ft/sec)	(cfs)	Oh a of Elassi			
	4.3	50	0.040	JU	0.20		Sheet Flow,			
	4.0	E74	0.000	20	4.00		Grass: Short n= 0.150 P2= 3.20"			
	4.8	571	0.080	JU	1.98		Shallow Concentrated Flow,			
	2.0	257	0.190	20	2.18		Short Grass Pasture Kv= 7.0 fps			
	2.0	237	0.190	)()	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps			
	8.2	375	0.023	25	0.77		Shallow Concentrated Flow,			
	0.2	373	0.020	,,	0.11		Woodland Kv= 5.0 fps			
_	19.3	1,253	Total				vvoodidita 13v- 0.0 ipo			
	19.3	1,200	Total							

### **Summary for Subcatchment 7AS: Drainage Area 7AS**

Runoff = 1.90 cfs @ 12.39 hrs, Volume= 0.340 af, Depth= 0.34"

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Page 20

	Area	(ac)	CN	N Desc	cription					
*	0.	000	98	8 Exist	ting Structi	ure, HSG A	\			
*	* 0.000 98 Existing Structure, HSG B					ure, HSG B				
		000	30		ds, Good,	HSG A				
		000	5	5 Woo	Woods, Good, HSG B					
	0.	000	70		ds, Good,	HSG C				
	_	000	96		el surface					
		000	96		el surface					
		000	96		el surface	•				
	_	000	30 58			grazed, HS				
	11.	G B								
0.000 71 Meadow, non-grazed, HSG C										
	0.000 98 Unconnected pavement, HS									
	0.062 98 Unconnected pavement, HS									
	0.000 98 Unconnected pavement, H						HSG C			
0.000 98 Water Surface, HSG A										
		000	98		er Surface,					
_		000	98		er Surface,					
		944	58		hted Aver					
		882			99.48% Pervious Area					
		062			0.52% Impervious Area					
	0.	062		100.	00% Unco	nnected				
	_		41.	01	V. I	0	December			
	Tc	Leng		Slope	Velocity	Capacity	Description			
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)				
	3.4	,	50	0.0700	0.24		Sheet Flow,			
	44.4			0.0570	4.00		Grass: Short n= 0.150 P2= 3.20"			
	11.4	1,15	56	0.0579	1.68		Shallow Concentrated Flow,			
		:					Short Grass Pasture Kv= 7.0 fps			
	14.8	1,20	06	Total						

### **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 2.65 cfs @ 12.42 hrs, Volume= 0.504 af, Depth= 0.31"

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Page 21

	Area	(ac)	CN Ad	j Descrip	tion					
*	0.	000	98	Existing	Structure,	HSG A				
*	0.	000	98	Existing	Existing Structure, HSG B					
	0.000 30			Woods,	Woods, Good, HSG A					
	3.	886	55	Woods,	Woods, Good, HSG B					
	0.	000	70	Woods,	Woods, Good, HSG C					
	0.	000	96	Gravel	Gravel surface, HSG A					
	0.	000	96	Gravels	Gravel surface, HSG B					
	0.	000	96	Gravels	Gravel surface, HSG C					
	0.	000	30	Meadov	Meadow, non-grazed, HSG A					
	15.579 58			Meadov	Meadow, non-grazed, HSG B					
	0.000 71			Meadov	v, non-graz	ed, HSG C				
		000	98	Unconn	Unconnected pavement, HSG A					
		068	98		Unconnected pavement, HSG B					
		000	98			ment, HSG C				
	0.000 98				Surface, HS					
	0.000 98				Surface, HS					
	0.000 98			Water S	<u> Surface, HS</u>	G C				
	19.	533	58 57	' Weighte	ed Average,	UI Adjusted				
	19.	465		99.65%	Pervious A	rea				
	0.	068		0.35% I	mpervious .	Area				
	0.	068		100.009	6 Unconnect	cted				
	Tc	Length	n Slope	Velocity	Capacity	Description				
	(min)	(feet	) (ft/ft)	(ft/sec)	(cfs)					
	3.6	50	0.0600	0.23		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	9.8	1,125	0.0747	1.91		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.1	93	0.0753	1.37		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	14.5	1,268	3 Total							

### Summary for Subcatchment 8AS: Drainage Area 8A

Runoff = 1.01 cfs @ 12.42 hrs, Volume= 0.184 af, Depth= 0.34"

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Page 22

	Area (a	ac)	CN	Desc	cription						
*	0.0	000	98	Exist	ting Structu	ıre, HSG A	l e e e e e e e e e e e e e e e e e e e				
*	0.0	000	98	Exist	ting Structu	ıre, HSG B					
	0.0	000	30	Woo	oods, Good, HSG A						
	0.0	000	55	Woo	ds, Good,	HSG B					
	0.0	000	70		Woods, Good, HSG C						
	0.0		96		el surface						
	0.0		96		el surface						
	0.0		96	Grav	el surface	, HSG C					
	0.0		30			grazed, HS					
	6.4		58			grazed, HS					
	0.0		71			grazed, HS					
0.000 98 Unconnected pavement, HSG A											
0.037 98 Unconnected pavement, HSG B											
0.000 98 Unconnected pavement, HSG C							HSG C				
0.000 98 Water Surface, HSG A											
	0.0		98		er Surface,						
_	0.0		98		er Surface,						
	6.4	_	58		ghted Aver						
	6.4			99.43% Pervious Area							
		)37		0.57% Impervious Area							
	0.0	)37		100.	00% Unco	nnected					
	_		_			O ::	D 18				
		Length		lope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)					
	5.6	50	0.0	0200	0.15		Sheet Flow,				
							Grass: Short n= 0.150 P2= 3.20"				
	10.5	934	0.0	0450	1.48		Shallow Concentrated Flow,				
_							Short Grass Pasture Kv= 7.0 fps				
	16.1	984	- To	tal							

### **Summary for Subcatchment 8BS: Drainage Area 8BS**

Runoff = 0.61 cfs @ 12.53 hrs, Volume= 0.122 af, Depth= 0.34"

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Page 23

	Area	(ac) C	N Des	cription		
*	0.	000	98 Exis	ting Structi	ure, HSG A	l .
*	0.	000			ure, HSG B	
	0.	000	30 Woo	ds, Good,	HSG A	
	0.					
	0.					
	0.	000	96 Grav	el surface	, HSG A	
	0.					
	0.	000	96 Grav	el surface	, HSG C	
	0.	G A				
	4.	GB				
	0.	GC				
					avement, I	
	0.	HSG B				
	0.	HSG C				
	0.					
0.000 98 Water Surface, HSG B 0.000 98 Water Surface, HSG C						
	0.					
	4.					
		259		2% Pervio		
		042		% Impervi		
	0.	042	100.	00% Unco	nnected	
	_					
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	5.6	50	0.0200	0.15		Sheet Flow,
						Grass: Short n= 0.150 P2= 3.20"
	1.6	145	0.0484	1.54		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	5.4	499	0.0481	1.54		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	9.2	510	0.0176	0.93		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	2.2	234	0.0625	1.75		Shallow Concentrated Flow,
_						Short Grass Pasture Kv= 7.0 fps
	24.0	1,438	Total			

### **Summary for Subcatchment 8S: Drainage Area 8S**

Runoff = 2.52 cfs @ 12.28 hrs, Volume= 0.368 af, Depth= 0.44"

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Page 24

	Area	(ac)	CN	Adj	Descript	ion						
*	0.	000	98		Existing	Existing Structure, HSG A						
*	0.	000	98		Existing	Existing Structure, HSG B						
	0.	000	30		Woods,	Woods, Good, HSG A						
	2.	137	55		Woods,	Woods, Good, HSG B						
	0.	000	70		Woods,	Good, HSC	G C					
	0.	000	96		Gravel surface, HSG A							
	0.	543	96		Gravel surface, HSG B							
	0.	000	96		Gravel surface, HSG C							
	0.	000	30		Meadow, non-grazed, HSG A							
	6.	640	58		Meadow, non-grazed, HSG B							
		000	71			Meadow, non-grazed, HSG C						
		000	98				ment, HSG A					
		626	98			Unconnected pavement, HSG B						
		000	98			Unconnected pavement, HSG C						
		000	98			urface, HS						
		000	98			urface, HS						
	0.	000	98		Water S	<u>urface, HS</u>	G C					
	9.946 62 61				0 /	, UI Adjusted						
		320				Pervious A						
		626			6.29% Impervious Area							
	0.	626			100.00% Unconnected							
	_					_						
	Тс	Length		ope	Velocity	Capacity	Description					
	(min)	(feet		ft/ft)	(ft/sec)	(cfs)						
	5.6	50	0.02	200	0.15		Sheet Flow,					
							Grass: Short n= 0.150 P2= 3.20"					
	2.8	175	0.02	228	1.06		Shallow Concentrated Flow,					
							Short Grass Pasture Kv= 7.0 fps					
	3.5	385	0.0	701	1.85		Shallow Concentrated Flow,					
							Short Grass Pasture Kv= 7.0 fps					
	1.9	184	0.10	007	1.59		Shallow Concentrated Flow,					
							Woodland Kv= 5.0 fps					
	13.8	794	Tota	al								

## **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 0.20 cfs @ 12.26 hrs, Volume= 0.032 af, Depth= 0.37"

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Page 25

	Area	(ac)	CN	Desc	ription						
*	0.	000	98	Exist	ing Structi	ure, HSG A	1				
*	0.	000	98	Exist	ing Structi	ure, HSG B	}				
	0.	187	30	Woo	ds, Good,	HSG A					
	0.	424	55	Woo	Woods, Good, HSG B						
	0.	000	70	Woo	ods, Good, HSG C						
	0.	048	96	Grav	el surface	, HSG A					
	0.	139	96	Grav	el surface	, HSG B					
	0.	000	96		ravel surface, HSG C						
	_	000	30		Meadow, non-grazed, HSG A						
		233	58			grazed, HS					
		000	71		,	grazed, HS					
		000	98			avement, l					
0.000 98 Unconnected pavement, HSG B											
0.000 98 Unconnected pavement, HSG C											
		000	98		er Surface,						
		000	98		r Surface,						
		000	98		r Surface,						
		031	59	J	hted Aver	0					
	1.	031		100.0	00% Pervi	ous Area					
	_			01			B				
	Tc	Lengt		Slope	Velocity	Capacity	Description				
	<u>(min)</u>	(fee		(ft/ft)	(ft/sec)	(cfs)					
	4.3	5	0 0	0.0400	0.20		Sheet Flow,				
		_					Grass: Short n= 0.150 P2= 3.20"				
	0.3	7	0 (	0.0572	3.85		Shallow Concentrated Flow,				
		_					Unpaved Kv= 16.1 fps				
	0.9	8	2 (	0.0971	1.56		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	5.1	41	1 (	0.0730	1.35		Shallow Concentrated Flow,				
_							Woodland Kv= 5.0 fps				
	10.6	61	3 7	Γotal							

### Summary for Reach 1BR: Overland Flow

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 0.48" for 2-Year event

Inflow = 2.67 cfs @ 12.33 hrs, Volume= 0.392 af

Outflow = 1.25 cfs @ 13.51 hrs, Volume= 0.391 af, Atten= 53%, Lag= 70.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.36 fps, Min. Travel Time= 43.9 min Avg. Velocity = 0.21 fps, Avg. Travel Time= 73.9 min

Peak Storage= 3,294 cf @ 12.77 hrs Average Depth at Peak Storage= 0.01'

Bank-Full Depth= 0.01' Flow Area= 2.2 sf, Capacity= 0.71 cfs

Custom cross-section, Length= 940.0' Slope= 0.0426 '/'

Constant n= 0.030 Short grass

Inlet Invert= 209.00', Outlet Invert= 169.00'

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Page 26

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
290.00	-0.01	0.01
330.00	-0.01	0.01
405.00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	40.0	0	0.00
0.01	2.2	405.0	2,092	0.71

#### **Summary for Reach 1CR: Overland Flow**

Inflow Area = 4.622 ac, 6.34% Impervious, Inflow Depth = 1.54" for 2-Year event

Inflow = 5.71 cfs @ 12.29 hrs, Volume= 0.592 af

Outflow = 0.99 cfs @ 16.44 hrs, Volume= 0.541 af, Atten= 83%, Lag= 249.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.55 fps, Min. Travel Time= 201.9 min Avg. Velocity = 0.37 fps, Avg. Travel Time= 298.7 min

Peak Storage= 12,001 cf @ 13.07 hrs Average Depth at Peak Storage= 0.09'

Bank-Full Depth= 0.25' Flow Area= 15.4 sf, Capacity= 17.41 cfs

Custom cross-section, Length= 6,700.0' Slope= 0.0084 '/'

Constant n= 0.030 Short grass

Inlet Invert= 224.00', Outlet Invert= 168.00'

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
100.00	-0.25	0.25
123.00	0.00	0.00

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Page 27

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	0.0	0	0.00
0.25	15.4	123.0	103,013	17.41

#### **Summary for Reach 2BR: Overland Flow**

Inflow Area = 15.629 ac, 0.72% Impervious, Inflow Depth = 0.22" for 2-Year event

Inflow = 2.06 cfs @ 12.51 hrs, Volume= 0.286 af

Outflow = 0.99 cfs @ 13.67 hrs, Volume= 0.285 af, Atten= 52%, Lag= 69.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.31 fps, Min. Travel Time= 42.0 min Avg. Velocity = 0.17 fps, Avg. Travel Time= 76.5 min

Peak Storage= 2,482 cf @ 12.97 hrs Average Depth at Peak Storage= 0.02'

Bank-Full Depth= 0.01' Flow Area= 1.7 sf, Capacity= 0.46 cfs

Custom cross-section, Length= 785.0' Slope= 0.0280 '/'

Constant n= 0.030 Short grass

Inlet Invert= 194.00', Outlet Invert= 172.00'

‡

Offset	Elevation	Chan.Depth	
(feet)	(feet)	(feet)	
0.00	0.00	0.00	
120.00	-0.01	0.01	
170.00	-0.01	0.01	
290.00	0.00	0.00	

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	50.0	0	0.00
0.01	1.7	290.0	1,335	0.46

### Summary for Reach DP-1: Design Point 1

Inflow Area = 31.828 ac, 4.77% Impervious, Inflow Depth > 0.49" for 2-Year event

Inflow = 1.97 cfs @ 13.45 hrs, Volume= 1.297 af

Outflow = 1.97 cfs @ 13.45 hrs, Volume= 1.297 af, Atten= 0%, Lag= 0.0 min

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Page 28

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-2: Design Point 2**

Inflow Area = 27.151 ac, 1.67% Impervious, Inflow Depth > 0.28" for 2-Year event

Inflow = 2.09 cfs @ 12.39 hrs, Volume= 0.644 af

Outflow = 2.09 cfs @ 12.39 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-3: Design Point 3**

Inflow Area = 6.262 ac, 7.41% Impervious, Inflow Depth = 0.52" for 2-Year event

Inflow = 2.31 cfs @ 12.18 hrs, Volume= 0.271 af

Outflow = 2.31 cfs @ 12.18 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 29.447 ac, 0.80% Impervious, Inflow Depth = 0.34" for 2-Year event

Inflow = 3.82 cfs @ 12.57 hrs, Volume= 0.837 af

Outflow = 3.82 cfs @ 12.57 hrs, Volume= 0.837 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-5: Design Point 5**

Inflow Area = 9.673 ac, 0.00% Impervious, Inflow Depth = 0.19" for 2-Year event

Inflow = 0.78 cfs @ 12.42 hrs, Volume= 0.156 af

Outflow = 0.78 cfs @ 12.42 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-6: Design Point 6**

Inflow Area = 4.792 ac, 2.09% Impervious, Inflow Depth = 0.20" for 2-Year event

Inflow = 0.39 cfs @ 12.49 hrs, Volume= 0.080 af

Outflow = 0.39 cfs @ 12.49 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Summary for Reach DP-7: Design Point 7

Inflow Area = 31.477 ac, 0.41% Impervious, Inflow Depth = 0.19" for 2-Year event

Inflow = 2.65 cfs @ 12.42 hrs, Volume= 0.504 af

Outflow = 2.65 cfs @ 12.42 hrs, Volume= 0.504 af, Atten= 0%, Lag= 0.0 min

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Page 29

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-8: Design Point 8**

Inflow Area = 20.725 ac, 3.40% Impervious, Inflow Depth = 0.21" for 2-Year event

Inflow = 2.52 cfs @ 12.28 hrs, Volume= 0.368 af

Outflow = 2.52 cfs @ 12.28 hrs, Volume= 0.368 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-9: Design Point 9

Inflow Area = 1.031 ac, 0.00% Impervious, Inflow Depth = 0.37" for 2-Year event

Inflow = 0.20 cfs @ 12.26 hrs, Volume= 0.032 af

Outflow = 0.20 cfs @ 12.26 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Pond 1BP: Culvert 1BS**

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 0.48" for 2-Year event

Inflow = 2.67 cfs @ 12.33 hrs, Volume= 0.392 af

Outflow = 2.67 cfs @ 12.33 hrs, Volume= 0.392 af, Atten= 0%, Lag= 0.0 min

Primary = 2.67 cfs @ 12.33 hrs, Volume= 0.392 af Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 213.06' @ 12.33 hrs

Flood Elev= 215.00'

<u>Device</u>	Routing	Invert	Outlet Devices
#1	Primary	212.50'	18.0" Round Culvert X 2.00 L= 72.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 212.50' / 210.00' S= 0.0347 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	214.25'	6.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=2.66 cfs @ 12.33 hrs HW=213.06' (Free Discharge) 1=Culvert (Inlet Controls 2.66 cfs @ 2.24 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=212.50' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Page 30

#### Summary for Pond 5A: Basin 5A

Inflow Area = 1.754 ac, 0.00% Impervious, Inflow Depth = 0.34" for 2-Year event

Inflow = 0.32 cfs @ 12.16 hrs, Volume= 0.050 af

Outflow = 0.16 cfs (a) 12.55 hrs, Volume= 0.050 af, Atten= 50%, Lag= 23.6 min

Discarded = 0.16 cfs @ 12.55 hrs, Volume= 0.050 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 273.08' @ 12.55 hrs Surf.Area= 2,878 sf Storage= 221 cf

Flood Elev= 275.00' Surf.Area= 11,878 sf Storage= 13,898 cf

Plug-Flow detention time= 9.4 min calculated for 0.050 af (100% of inflow)

Center-of-Mass det. time= 9.4 min ( 941.7 - 932.2 )

Volume	Inver	t Avail	.Storage	Storage Description	n		
#1	273.00	' 1	13,898 cf	Custom Stage Dat	ta (Irregular)Listed	l below (Recalc)	
Elevatio	-	urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
273.0		2,606	536.7	(cubic-leet) 0	(cubic-leet) 0	2,606	
274.0		6,939	667.0	4,599	4,599	15,102	
275.0	)()	11,878	730.0	9,299	13,898	22,140	
Device	Routing	Inv	ert Outle	et Devices			
#1	Discarded	273.		0 in/hr Exfiltration			
<b>"</b> 0	ъ.	074		ductivity to Groundw			
#2	Primary	274.		' long x 8.0' breadt		<b>Rectangular Weir</b> 20	2 00
				3.00 3.50 4.00 4.		20 1.40 1.00 1.00 2	1.00
						2.68 2.66 2.64 2.6	34
			2.64	2.65 2.65 2.66 2.	66 2.68 2.70 2.74	4	

**Discarded OutFlow** Max=0.16 cfs @ 12.55 hrs HW=273.08' (Free Discharge) **1=Exfiltration** (Controls 0.16 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=273.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## Summary for Pond 5B: Basin 5B

Inflow Area =	1.232 ac, (	0.00% Impervious, Inflow De	epth = 0.34" for 2-Year event
Inflow =	0.21 cfs @	12.20 hrs, Volume=	0.035 af
Outflow =	0.05 cfs @	13.92 hrs, Volume=	0.035 af, Atten= 75%, Lag= 103.3 min
Discarded =	0.05 cfs @	13.92 hrs, Volume=	0.035 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 290.18' @ 13.92 hrs Surf.Area= 951 sf Storage= 365 cf Flood Elev= 293.00' Surf.Area= 9,526 sf Storage= 13,669 cf

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Page 31

Plug-Flow detention time= 96.6 min calculated for 0.035 af (100% of inflow) Center-of-Mass det. time= 96.5 min (1,031.1 - 934.7)

Volume	Inver	t Avail	l.Storage	Storage Description	on	
#1	289.00	)'	13,669 cf	Custom Stage Da	ata (Irregular)Liste	ed below (Recalc)
Elevatio		Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
289.0	00	0	0.0	0	0	0
290.0	00	670	199.3	223	223	3,162
291.0	00	2,920	369.2	1,663	1,886	10,854
292.0	00	5,718	494.6	4,241	6,128	19,485
293.0	00	9,526	525.0	7,541	13,669	22,003
Device	Routing	Inv	vert Outle	et Devices		
#1	Discarded	289.	.00' <b>2.41</b>	0 in/hr Exfiltration	over Surface are	ea
			Cond	ductivity to Ground	water Elevation =	194.00'
#2	Primary	292.	.30' <b>15.0</b> '	long x 8.0' bread	Ith Broad-Creste	d Rectangular Weir
			Head	d (feet) 0.20 0.40	0.60 0.80 1.00	1.20 1.40 1.60 1.80 2.00
			2.50	3.00 3.50 4.00 4	1.50 5.00 5.50	
			Coef	f. (English) 2.43 2	.54 2.70 2.69 2.6	68 2.68 2.66 2.64 2.64
			2.64	2.65 2.65 2.66 2	2.66 2.68 2.70 2.	.74

**Discarded OutFlow** Max=0.05 cfs @ 13.92 hrs HW=290.18' (Free Discharge) **1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=289.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## **Summary for Pond 5P: Culvert 1CS**

Inflow Area =	4.622 ac,	6.34% Impervious, Inflow D	epth = 1.54" for 2-Year event
Inflow =	5.99 cfs @	12.24 hrs, Volume=	0.592 af
Outflow =	5.71 cfs @	12.29 hrs, Volume=	0.592 af, Atten= 5%, Lag= 3.3 min
Primary =	5.71 cfs @	12.29 hrs, Volume=	0.592 af
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 226.32' @ 12.29 hrs Surf.Area= 1,310 sf Storage= 617 cf

Plug-Flow detention time= 0.8 min calculated for 0.591 af (100% of inflow) Center-of-Mass det. time= 0.8 min ( 846.9 - 846.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	225.00'	8,119 cf	Custom Stage Data (Irregular)Listed below (Recalc)

Wet.Area

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Surf.Area

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Elevation

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Page 32

(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)
225.0	00	0	0.0	0	0	0
226.0	00	823	554.8	274	274	24,496
227.0	00	2,690	609.2	1,667	1,941	29,568
228.0	00	4,726	653.1	3,661	5,602	34,023
228.5	50	5,351	662.0	2,518	8,119	35,011
Device	Routing	Inver	t Outle	t Devices		
#1	Primary	225.00	' 18.0"	Round Culvert		
			L= 54	.0' CPP, mitered to	conform to fill, Ke=	= 0.700
			Inlet /	Outlet Invert= 225.0	0' / 224.00' S= 0.0	185 '/' Cc= 0.900
			n = 0.0	013 Corrugated PE,	smooth interior, Flo	ow Area= 1.77 sf
#2	Secondary	228.40	' 7.0 <b>'</b> lo	ong x 25.0' breadth	<b>Broad-Crested Re</b>	ectangular Weir
			Head	(feet) 0.20 0.40 0.6	60 0.80 1.00 1.20	1.40 1.60
			Coef.	(English) 2.68 2.70	2.70 2.64 2.63 2	2.64 2.64 2.63

Inc.Store

Cum.Store

Primary OutFlow Max=5.68 cfs @ 12.29 hrs HW=226.32' (Free Discharge) 1=Culvert (Inlet Controls 5.68 cfs @ 3.45 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=225.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## Summary for Pond 6A: Basin 6A

Inflow Area =	1.181 ac,	6.35% Impervious, Inflow D	epth = 0.37" for 2-Year event
Inflow =	0.26 cfs @	12.17 hrs, Volume=	0.037 af
Outflow =	0.17 cfs @	12.49 hrs, Volume=	0.037 af, Atten= 35%, Lag= 19.0 min
Discarded =	0.17 cfs @	12.49 hrs, Volume=	0.037 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 302.04' @ 12.49 hrs Surf.Area= 2,961 sf Storage= 116 cf Flood Elev= 304.00' Surf.Area= 11,352 sf Storage= 13,687 cf

Plug-Flow detention time= 6.7 min calculated for 0.037 af (100% of inflow) Center-of-Mass det. time= 6.7 min ( 934.3 - 927.6 )

Volume	Invert	. Avai	I.Storage	Storage Descriptio	n		
#1	302.00		13,687 cf	Custom Stage Da	ita (Irregular)Liste	ed below (Recalc)	
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
302.0	00	2,834	486.7	0	0	2,834	
303.0	00	6,833	540.2	4,689	4,689	7,236	
304.0	00	11,352	606.8	8,997	13,687	13,342	
Device	Routing	Inv	vert Outle	et Devices			
#1	Discarded	302		0 in/hr Exfiltration			
#2	Primary	303		ductivity to Groundw ' long x 8.0' bread		I Rectangular Weir	

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Volume

Invert

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Page 33

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.17 cfs @ 12.49 hrs HW=302.04' (Free Discharge) 1=Exfiltration (Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=302.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 6B: Basin 6B

Inflow Area =	0.525 ac,	4.76% Impervious, Inflow De	epth = 0.37" for 2-Year event
Inflow =	0.11 cfs @	12.17 hrs, Volume=	0.016 af
Outflow =	0.03 cfs @	13.07 hrs, Volume=	0.016 af, Atten= 73%, Lag= 54.2 min
Discarded =	0.03 cfs @	13.07 hrs, Volume=	0.016 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 292.40' @ 13.07 hrs Surf.Area= 517 sf Storage= 143 cf Flood Elev= 294.00' Surf.Area= 2,686 sf Storage= 2,540 cf

Plug-Flow detention time= 48.8 min calculated for 0.016 af (100% of inflow) Center-of-Mass det. time= 48.7 min ( 976.3 - 927.6 )

Avail.Storage Storage Description

10.01110		, , , , , , , , , , , , , , , , , , ,		eterage Becompate	!!		
#1	292.00'	1	2,540 cf	Custom Stage Da	ta (Irregular)Listed	below (Recalc)	
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
292.0 293.0		214 1,206	119.6 200.7	0 643	0 643	214 2,287	
294.0	_	2,686	286.0	1,897	2,540	5,600	
Device	Routing	lnv	ert Outle	et Devices			
#1	Discarded	292.		<b>0 in/hr Exfiltration</b> ductivity to Groundw		8.00'	
#2	Primary	293.	75' <b>15.0</b> Head 2.50 Coef	l long x 8.0' breadt d (feet) 0.20 0.40 ( 3.00 3.50 4.00 4. f. (English) 2.43 2.5 2.65 2.65 2.66 2.	th Broad-Crested F 0.60 0.80 1.00 1.2 .50 5.00 5.50 54 2.70 2.69 2.68	Rectangular Weir 20 1.40 1.60 1.80 2.68 2.66 2.64 2	

**Discarded OutFlow** Max=0.03 cfs @ 13.07 hrs HW=292.40' (Free Discharge) 1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=292.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Page 34

#### **Summary for Pond 7A: Basin 7A**

Inflow Area = 11.944 ac. 0.52% Impervious, Inflow Depth = 0.34" for 2-Year event

1.90 cfs @ 12.39 hrs, Volume= Inflow 0.340 af

0.35 cfs @ 15.71 hrs, Volume= 0.333 af, Atten= 81%, Lag= 199.2 min Outflow

Discarded = 0.35 cfs @ 15.71 hrs, Volume= 0.333 af Primary 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 250.98' @ 15.71 hrs Surf.Area= 6,249 sf Storage= 5,302 cf

Flood Elev= 254.00' Surf.Area= 44,034 sf Storage= 75,130 cf

Plug-Flow detention time= 218.9 min calculated for 0.332 af (98% of inflow)

Center-of-Mass det. time= 208.9 min (1,149.9 - 941.0)

Volume	Inver	t Ava	il.Storage	Storage Descripti	on		
#1	248.00	'	75,130 cf	Custom Stage D	ata (Irregular)List	ed below (Recalc)	
Clayatia		urf Araa	Dorina	Ina Ctara	Cum Store	Mot Aroo	
Elevation		urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
248.0	00	0	0.0	0	0	0	
249.0	00	520	128.5	173	173	1,316	
250.0	00	2,102	372.1	1,222	1,396	11,023	
251.0	00	6,364	802.0	4,041	5,437	51,194	
252.0	00	16,015	1,315.7	10,825	16,262	137,769	
253.0	00	29,426	1,401.6	22,383	38,645	156,394	
254.0	00	44,034	1,517.9	36,485	75,130	183,453	
Device	Routing	In	vert Outl	et Devices			
#1	Discarded	248	3.00' <b>2.41</b>	0 in/hr Exfiltration	n over Surface are	ea	
			Con	ductivity to Ground	lwater Elevation =	194.00'	
#2	Primary	253				d Rectangular Weir	
	•					1.20 1.40 1.60 1.8	
				3.00 3.50 4.00			
						68 2.68 2.66 2.64	2.64
			COE	i. (Liigiisii) 2.43 2	2.09 2.	2.00 2.00 2.04	2.0 <del>4</del>

**Discarded OutFlow** Max=0.35 cfs @ 15.71 hrs HW=250.98' (Free Discharge) 1=Exfiltration (Controls 0.35 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## **Summary for Pond 8A: Basin 8A**

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Inflow Area =	6.478 ac, 0.57% Impervious, Inflo	w Depth = 0.34" for 2-Year event
Inflow =	1.01 cfs @ 12.42 hrs, Volume=	0.184 af
Outflow =	0.22 cfs @ 15.12 hrs, Volume=	0.184 af, Atten= 78%, Lag= 162.4 min
Discarded =	0.22 cfs @ 15.12 hrs, Volume=	0.184 af
Primarv =	0.00 cfs @ 5.00 hrs. Volume=	0.000 af

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Page 35

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 249.39' @ 15.12 hrs Surf.Area= 3,985 sf Storage= 2,385 cf Flood Elev= 252.50' Surf.Area= 21,546 sf Storage= 38,517 cf

Plug-Flow detention time= 145.6 min calculated for 0.184 af (100% of inflow) Center-of-Mass det. time= 145.5 min (1,087.7 - 942.2)

Volume	Invert	t Avail.	Storage	age Storage Description				
#1	248.00	' 3	8,517 cf	Custom Stage Da	ata (Irregular)Liste	ed below (Recalc)		
Elevatio	-	urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area		
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)		
248.0	00	123	99.2	0	0	123		
249.0	00	2,613	493.4	1,101	1,101	18,715		
250.0	00	6,683	622.8	4,492	5,593	30,222		
251.0	00	11,513	733.8	8,989	14,582	42,224		
252.0	00	17,210	829.8	14,266	28,848	54,195		
252.5	50	21,546	830.5	9,669	38,517	54,620		
Device	Routing	Inv	ert Outle	et Devices				
#1	Discarded	248.00' <b>2.41</b>		410 in/hr Exfiltration over Surface area				
			Cond	Conductivity to Groundwater Elevation = 194.00'				
#2	Primary	252.2		15.0' long x 8.0' breadth Broad-Crested Rectangular Weir				
	-		Head	d (feet) 0.20 0.40	0.60 0.80 1.00 1	.20 1.40 1.60 1.80 2.00	)	
			2.50	3.00 3.50 4.00 4	.50 5.00 5.50			
			Coef	f. (English) 2.43 2.	54 2.70 2.69 2.6	8 2.68 2.66 2.64 2.64		
			2.64	2.65 2.65 2.66 2	2.66 2.68 2.70 2.	74		

**Discarded OutFlow** Max=0.22 cfs @ 15.12 hrs HW=249.39' (Free Discharge) **1=Exfiltration** (Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## Summary for Pond 8B: Basin 8A

Inflow Area =	4.301 ac, 0.98	3% Impervious, Inflow De	pth = 0.34" for 2-Year event
Inflow =	0.61 cfs @ 12.	53 hrs, Volume=	0.122 af
Outflow =	0.17 cfs @ 14.4	41 hrs, Volume=	0.122 af, Atten= 71%, Lag= 112.5 min
Discarded =	0.17 cfs @ 14.	41 hrs, Volume=	0.122 af
Primary =	0.00 cfs @ 5.	00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 243.76' @ 14.41 hrs Surf.Area= 3,098 sf Storage= 1,308 cf Flood Elev= 246.00' Surf.Area= 16,698 sf Storage= 21,360 cf

Plug-Flow detention time= 98.2 min calculated for 0.122 af (100% of inflow) Center-of-Mass det. time= 98.0 min (1,047.5 - 949.5)

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Page 36

Volume	Invert	. Avail	l.Storage	Storage Description	n		
#1	243.00	2	21,360 cf	ocf Custom Stage Data (Irregu		below (Recalc)	
Elevatio (fee		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
243.0			429.6	0	0	649	
244.0	0	4,253	502.8	2,188	2,188	6,100	
245.0	0	9,040	671.8	6,498	8,686	21,908	
246.00 16,698		842.9	12,675	21,360	42,546		
Device	Routing	ln۱	vert Outle	et Devices			
#1	Discarded	243.	.00' <b>2.41</b>	0 in/hr Exfiltration o	over Surface area		
			Cond	ductivity to Groundw	ater Elevation = 19	9.00'	
#2 Primary 245.75'		Head 2.50 Coef	<b>15.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74				

**Discarded OutFlow** Max=0.17 cfs @ 14.41 hrs HW=243.76' (Free Discharge) 1=Exfiltration (Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=243.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### **Summary for Pond P2B: Basin 2B**

Inflow Area =	15.629 ac, 0.72%	Impervious, Inflow [	Depth = 0.34" for 2-Y	ear event
Inflow =	2.50 cfs @ 12.38 h	nrs, Volume=	0.444 af	
Outflow =	2.26 cfs @ 12.51 h	nrs, Volume=	0.444 af, Atten= 10%	, Lag= 7.7 min
Discarded =	0.20 cfs @ 12.51 h	nrs, Volume=	0.158 af	
Primary =	2.06 cfs @ 12.51 h	nrs, Volume=	0.286 af	
Secondary =	0.00 cfs @ 5.00 h	nrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 196.45' @ 12.51 hrs Surf.Area= 3,006 sf Storage= 1,234 cf Flood Elev= 198.50' Surf.Area= 6,749 sf Storage= 10,528 cf

Plug-Flow detention time= 13.6 min calculated for 0.444 af (100% of inflow)

Center-of-Mass det. time= 13.4 min ( 953.8 - 940.4 )

Volume	Invert	Avail.	Storage	Storage Description	1		
#1	196.00'	3.00' 10,528 cf		Custom Stage Data (Irregular)Listed below (Recalc)			
Elevation		Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(feet)	(:	sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
196.00	2	2,453	396.9	0	0	2,453	
197.00	3	3,748	465.9	3,078	3,078	7,210	
198.00	5	5,223	506.0	4,465	7,543	10,349	
198.50	6	3,749	523.0	2,985	10,528	11,765	

# Proposed Hydrology - Nutmeg-REV Nutmeg Solar Project - Proposed Type III 24-hr 2-Year Rainfall=3.20" Printed 9/11/2018

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Page 37

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	24.0" Round Culvert
			L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 195.50' / 195.00' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	196.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 194.00'
#3	Secondary	198.00'	50.0' long x 20.0' 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
#4	Device 1	196.00'	18.0" Vert. Orifice/Grate X 2.00 C= 0.600
#5	Device 1	198.00'	27.0" Horiz. Orifice/Grate C= 0.600
			Limited to weir flow at low heads

**Discarded OutFlow** Max=0.20 cfs @ 12.51 hrs HW=196.45' (Free Discharge) **2=Exfiltration** (Controls 0.20 cfs)

Primary OutFlow Max=2.05 cfs @ 12.51 hrs HW=196.45' (Free Discharge)

-1=Culvert (Passes 2.05 cfs of 4.32 cfs potential flow)

4=Orifice/Grate (Orifice Controls 2.05 cfs @ 2.29 fps)

5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=196.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Nutmeg Solar Project - Proposed Type III 24-hr 10-Year Rainfall=4.70" Printed 9/11/2018

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Page 38

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1AS: Drainage Area 1AS Runoff Area=17.426 ac 5.85% Impervious Runoff Depth=0.83" Flow Length=1,146' Tc=29.0 min CN=55 Runoff=7.58 cfs 1.212 af

Subcatchment 1BS: Drainage Area 1BS Runoff Area=9.780 ac 2.10% Impervious Runoff Depth=1.26" Flow Length=1,301' Tc=17.2 min CN=62 Runoff=9.22 cfs 1.024 af

Subcatchment 1CS: Drainage Area 1CS Runoff Area=4.622 ac 6.34% Impervious Runoff Depth=2.81" Flow Length=870' Tc=16.6 min UI Adjusted CN=82 Runoff=11.01 cfs 1.083 af

Subcatchment 2AS: Drainage Area 2AS Runoff Area=11.522 ac 2.97% Impervious Runoff Depth=1.07" Flow Length=747' Tc=16.5 min CN=59 Runoff=8.87 cfs 1.025 af

Subcatchment 2BS: Drainage Area 2BS Runoff Area=15.629 ac 0.72% Impervious Runoff Depth=1.01" Flow Length=1,098' Tc=14.2 min CN=58 Runoff=11.63 cfs 1.312 af

**Subcatchment3AS: Drainage Area 3AS** Runoff Area=6.262 ac 7.41% Impervious Runoff Depth=1.32" Flow Length=840' Tc=9.8 min UI Adjusted CN=63 Runoff=7.71 cfs 0.690 af

Subcatchment 4AS: Drainage Area 4AS Runoff Area=4.677 ac 2.67% Impervious Runoff Depth=1.01" Flow Length=1,146' Tc=13.7 min CN=58 Runoff=3.55 cfs 0.393 af

**Subcatchment 4BS: Drainage Area 4BS** Runoff Area=24.770 ac 0.45% Impervious Runoff Depth=1.01" Flow Length=1,845' Tc=29.3 min CN=58 Runoff=14.03 cfs 2.080 af

**Subcatchment 5AS: Drainage Area 5AS**Runoff Area=1.754 ac 0.00% Impervious Runoff Depth=1.01"
Flow Length=445' Tc=5.4 min CN=58 Runoff=1.74 cfs 0.147 af

Subcatchment 5BS: Drainage Area 5BS

Runoff Area=1.232 ac 0.00% Impervious Runoff Depth=1.01"
Flow Length=394' Tc=8.0 min CN=58 Runoff=1.10 cfs 0.103 af

**Subcatchment 5S: Drainage Area 5S**Runoff Area=6.687 ac 0.00% Impervious Runoff Depth=0.89"
Flow Length=1,088' Tc=13.1 min CN=56 Runoff=4.30 cfs 0.496 af

**Subcatchment 6AS: Drainage Area 6AS** Runoff Area=1.181 ac 6.35% Impervious Runoff Depth=1.07" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=1.19 cfs 0.105 af

**Subcatchment 6BS: Drainage Area 6BS** Runoff Area=0.525 ac 4.76% Impervious Runoff Depth=1.07" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=0.53 cfs 0.047 af

**Subcatchment 6S: Drainage Area 6S**Runoff Area=3.086 ac 0.00% Impervious Runoff Depth=0.95"

Flow Length=1,253' Tc=19.3 min CN=57 Runoff=1.89 cfs 0.244 af

**Subcatchment 7AS: Drainage Area 7AS**Runoff Area=11.944 ac 0.52% Impervious Runoff Depth=1.01"
Flow Length=1,206' Tc=14.8 min CN=58 Runoff=8.78 cfs 1.003 af

**Subcatchment 7S: Drainage Area 7S**Runoff Area=19.533 ac 0.35% Impervious Runoff Depth=0.95"
Flow Length=1,268' Tc=14.5 min UI Adjusted CN=57 Runoff=13.24 cfs 1.544 af

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Page 39

**Subcatchment 8AS: Drainage Area 8A**Runoff Area=6.478 ac 0.57% Impervious Runoff Depth=1.01"
Flow Length=984' Tc=16.1 min CN=58 Runoff=4.63 cfs 0.544 af

Subcatchment 8BS: Drainage Area 8BS Runoff Area=4.301 ac 0.98% Impervious Runoff Depth=1.01" Flow Length=1,438' Tc=24.0 min CN=58 Runoff=2.64 cfs 0.361 af

**Subcatchment 8S: Drainage Area 8S**Runoff Area=9.946 ac 6.29% Impervious Runoff Depth=1.19"
Flow Length=794' Tc=13.8 min UI Adjusted CN=61 Runoff=9.52 cfs 0.988 af

Subcatchment 9S: Drainage Area 9S

Runoff Area = 1.031 ac 0.00% Impervious Runoff Depth = 1.07"

Flow Length = 613' Tc = 10.6 min CN = 59 Runoff = 0.93 cfs 0.092 af

**Reach 1BR: Overland Flow**Avg. Flow Depth=0.03' Max Vel=0.40 fps Inflow=9.22 cfs 1.024 af n=0.030 L=940.0' S=0.0426 '/' Capacity=0.71 cfs Outflow=4.41 cfs 1.023 af

**Reach 1CR: Overland Flow**Avg. Flow Depth=0.12' Max Vel=0.68 fps Inflow=9.02 cfs 1.083 af n=0.030 L=6,700.0' S=0.0084 '/' Capacity=17.41 cfs Outflow=2.24 cfs 1.023 af

**Reach 2BR: Overland Flow**Avg. Flow Depth=0.05' Max Vel=0.35 fps Inflow=10.28 cfs 1.125 af n=0.030 L=785.0' S=0.0280 '/' Capacity=0.46 cfs Outflow=4.98 cfs 1.124 af

Reach DP-1: Design Point 1 Inflow=7.70 cfs 3.258 af
Outflow=7.70 cfs 3.258 af

Reach DP-2: Design Point 2 Inflow=8.87 cfs 2.150 af Outflow=8.87 cfs 2.150 af

Reach DP-3: Design Point 3 Inflow=7.71 cfs 0.690 af Outflow=7.71 cfs 0.690 af

Reach DP-4: Design Point 4 Inflow=16.43 cfs 2.473 af Outflow=16.43 cfs 2.473 af

Reach DP-5: Design Point 5 Inflow=4.30 cfs 0.496 af
Outflow=4.30 cfs 0.496 af

Reach DP-6: Design Point 6 Inflow=1.89 cfs 0.244 af Outflow=1.89 cfs 0.244 af

Reach DP-7: Design Point 7 Inflow=13.24 cfs 1.544 af
Outflow=13.24 cfs 1.544 af

Reach DP-8: Design Point 8 Inflow=9.52 cfs 0.988 af Outflow=9.52 cfs 0.988 af

Reach DP-9: Design Point 9 Inflow=0.93 cfs 0.092 af
Outflow=0.93 cfs 0.092 af

Pond 1BP: Culvert 1BS Peak Elev=213.64' Inflow=9.22 cfs 1.024 af

Primary=9.22 cfs 1.024 af Secondary=0.00 cfs 0.000 af Outflow=9.22 cfs 1.024 af

## Proposed Hydrology - Nutmeg-REV Prepared by Tighe & Bond

Nutmeg Solar Project - Proposed

Type III 24-hr 10-Year Rainfall=4.70"

Printed 9/11/2018

IS LLC Page 40

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Pond 5A: Basin 5A	Peak Elev=273.53' Storage=1,913 cf Inflow=1.74 cfs 0.147 af Discarded=0.26 cfs 0.147 af Primary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.147 af
Pond 5B: Basin 5B	Peak Elev=290.90' Storage=1,604 cf Inflow=1.10 cfs 0.103 af Discarded=0.15 cfs 0.103 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.103 af
Pond 5P: Culvert 1CS	Peak Elev=227.19' Storage=2,494 cf Inflow=11.01 cfs 1.083 af Primary=9.02 cfs 1.083 af Secondary=0.00 cfs 0.000 af Outflow=9.02 cfs 1.083 af
Pond 6A: Basin 6A	Peak Elev=302.36' Storage=1,232 cf Inflow=1.19 cfs 0.105 af Discarded=0.23 cfs 0.105 af Primary=0.00 cfs 0.000 af Outflow=0.23 cfs 0.105 af
Pond 6B: Basin 6B	Peak Elev=293.03' Storage=676 cf Inflow=0.53 cfs 0.047 af Discarded=0.08 cfs 0.047 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.047 af
Pond 7A: Basin 7A	Peak Elev=252.16' Storage=18,979 cf Inflow=8.78 cfs 1.003 af Discarded=1.02 cfs 0.962 af Primary=0.00 cfs 0.000 af Outflow=1.02 cfs 0.962 af
Pond 8A: Basin 8A	Peak Elev=250.59' Storage=10,325 cf Inflow=4.63 cfs 0.544 af Discarded=0.53 cfs 0.536 af Primary=0.00 cfs 0.000 af Outflow=0.53 cfs 0.536 af
Pond 8B: Basin 8A	Peak Elev=244.69' Storage=6,157 cf Inflow=2.64 cfs 0.361 af Discarded=0.42 cfs 0.361 af Primary=0.00 cfs 0.000 af Outflow=0.42 cfs 0.361 af
Pond P2B: Basin 2B Discarded=0.31 cfs 0.187 af	Peak Elev=197.13' Storage=3,567 cf Inflow=11.63 cfs 1.312 af Primary=10.28 cfs 1.125 af Secondary=0.00 cfs 0.000 af Outflow=10.59 cfs 1.312 af

Total Runoff Area = 162.386 ac Runoff Volume = 14.496 af Average Runoff Depth = 1.07" 97.78% Pervious = 158.779 ac 2.22% Impervious = 3.607 ac

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Page 41

## **Summary for Subcatchment 1AS: Drainage Area 1AS**

Runoff = 7.58 cfs @ 12.51 hrs, Volume= 1.212 af, Depth= 0.83"

	Area	(ac) C	N Des	cription		
*	0.	164	98 Exis	ting Structi	ure, HSG A	1
*	0.	533			ure, HSG B	
				ds, Good,		
	3.	149	55 Woo	ds, Good,	HSG B	
	0.	000		ds, Good,		
	0.	041		el surface		
	0.3	371		el surface		
				el surface		
	3.	589			razed, HS	G A
	9.	178			grazed, HS	
	0.	000			grazed, HS	
	0.	006			avement, I	
	0.	317	98 Unce	onnected p	avement, l	HSG B
	0.	000	98 Unce	onnected p	avement, l	HSG C
	0.	000	98 Wate	er Surface,	, HSG A	
	0.	000	98 Wate	er Surface	HSG B	
	0.	000		er Surface,		
	0.	078			omb., Fair,	HSG B
	17.	426	55 Weig	ghted Aver	age	
	16.	406	94.1	5% Pervio	us Area	
		020	5.85	% Impervi	ous Area	
	0.	323	31.6	7% Uncon	nected	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0	50	0.1200	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.20"
	0.5	82	0.1459	2.67		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	2.0	236	0.0762	1.93		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.3	68	0.0147	0.85		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	11.9	445	0.0079	0.62		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	7.3	265	0.0075	0.61		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	29.0	1,146	Total			

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Page 42

## **Summary for Subcatchment 1BS: Drainage Area 1BS**

Runoff = 9.22 cfs @ 12.27 hrs, Volume= 1.024 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.70"

	Area	(ac) C	N Des	cription		
*	0.	000	98 Exis	ting Struct	ure, HSG A	1
*	0.	000	98 Exis	ting Struct	ure, HSG E	3
	0.	000		ds, Good,		
	0.	000	55 Woo	ds, Good,	HSG B	
	0.	000	70 Woo	ds, Good,	HSG C	
	0.	000	96 Grav	el surface	, HSG A	
	0.	922	96 Grav	el surface	, HSG B	
	0.	000	96 Grav	el surface	, HSG C	
	0.	000	30 Mea	dow, non-	grazed, HS	G A
	8.	653	58 Mea	dow, non-	grazed, HS	G B
	0.				grazed, HS	
					pavement, I	
				•	pavement, I	
					pavement, I	HSG C
				er Surface	•	
				er Surface		
				er Surface		
				ghted Aver		
		575		0% Pervio		
		205		% Impervi		
0.205 100.00% Unconnected					nnected	
	Tc Length Slope Velocity Capacity			Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Boompaon
	3.2	50	0.0800	0.26	(===)	Sheet Flow,
	0.2	00	0.0000	0.20		Grass: Short n= 0.150 P2= 3.20"
	10.1	765	0.0327	1.27		Shallow Concentrated Flow,
			0.002.			Short Grass Pasture Kv= 7.0 fps
	2.8	278	0.0576	1.68		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	0.4	82	0.2560	3.54		Shallow Concentrated Flow,
	-					Short Grass Pasture Kv= 7.0 fps
	0.7	126	0.0397	3.21		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	17.2	1,301	Total			

## **Summary for Subcatchment 1CS: Drainage Area 1CS**

Runoff = 11.01 cfs @ 12.23 hrs, Volume= 1.083 af, Depth= 2.81"

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Pag	ıе	43

		, , ,	<b>.</b>	5							
*	Area (		CN Adj	Descript							
*			98		Structure,						
*			98		Existing Structure, HSG B Woods, Good, HSG A						
			30								
			55 70	,	Woods, Good, HSG B Woods, Good, HSG C						
			70								
			96		Gravel surface, HSG A						
			96	Gravel surface, HSG B							
			96		Gravel surface, HSG C						
			30		Meadow, non-grazed, HSG A						
			58		Meadow, non-grazed, HSG B						
			71		Meadow, non-grazed, HSG C						
			98		Unconnected pavement, HSG A						
			98		Unconnected pavement, HSG B						
			98		Unconnected pavement, HSG C						
			98		Water Surface, HSG A Water Surface, HSG B						
			98								
			98		urface, HS						
		-	83 82			, UI Adjusted					
		329			Pervious A						
		293			mpervious .						
	0.	173		59.04%	Unconnect	160					
	Тс	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	•	(ft/sec)	(cfs)	Description					
					(CIS)	Oh a of Flavo					
	5.6	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"					
	3.9	460	0.0004	0.60							
	3.9	160	0.0094	0.68		Shallow Concentrated Flow,					
	1.6	100	0.0220	1.07		Short Grass Pasture Kv= 7.0 fps					
	1.6	122	0.0328	1.27		Shallow Concentrated Flow,					
	2.0	222	0.0676	4 20		Short Grass Pasture Kv= 7.0 fps					
	2.8	222	0.0676	1.30		Shallow Concentrated Flow,					
	0.0	22	0.4040	0.44		Woodland Kv= 5.0 fps					
	0.2	33	0.1212	2.44		Shallow Concentrated Flow,					
	2.5	283	0.0141	1.91		Short Grass Pasture Kv= 7.0 fps					
	2.5	203	0.0141	1.91		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps					
	40.0	070	T = 4 - 1			011paveu r.v- 10.11ps					
	16.6	870	Total								

# **Summary for Subcatchment 2AS: Drainage Area 2AS**

Runoff 8.87 cfs @ 12.27 hrs, Volume= 1.025 af, Depth= 1.07"

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Page 44

	Area	(ac)	CN De	scription								
*	0.	000	98 Ex	isting Struct	ture, HSG A	1						
*	0.	025	98 Ex	xisting Structure, HSG B								
	0.	000	30 W	ods, Good,	HSG A							
	0.	000	55 W	ods, Good	HSG B							
	0.	000	70 W	ods, Good,	, HSG C							
	0.	000	96 Gr	avel surface								
	0.	079	96 Gr	Gravel surface, HSG B								
	0.	000	96 Gr	avel surface	e, HSG C							
	0.	000	30 Me	adow, non-	grazed, HS	G A						
	11.	084		adow, non-								
	0.	000	71 Me	adow, non-	grazed, HS	G C						
	0.	000	98 Un	connected	pavement, l	HSG A						
	0.	317	98 Un	connected	pavement, l	HSG B						
	0.	000	98 Un	connected	pavement, l	HSG C						
	0.	000		ater Surface								
	0.	000	98 Wa	ater Surface	e, HSG B							
	0.	000	98 Wa	ater Surface	e, HSG C							
	0.	017	65 W	oods/grass	comb., Fair,	, HSG B						
	11.	522	59 We	eighted Ave	rage							
	11.	180	97	.03% Pervio	ous Area							
	0.	342	2.9	2.97% Impervious Area								
	0.	317	92	.69% Uncor	nnected							
	т.	1	Ola II		0	Description						
	Tc	Length			Capacity	Description						
	(min)	(feet)		<del></del>	(cfs)	01 (5)						
	3.2	50	0.080	0.26		Sheet Flow,						
	0.0	00.4	0.050			Grass: Short n= 0.150 P2= 3.20"						
	2.9	284	0.052	3 1.61		Shallow Concentrated Flow,						
	4.0	0.0	0.005			Short Grass Pasture Kv= 7.0 fps						
	1.2	80	0.025	1.11		Shallow Concentrated Flow,						
	0.0	200	0.007	- 0.04		Short Grass Pasture Kv= 7.0 fps						
	9.2	333	0.007	5 0.61		Shallow Concentrated Flow,						
_	10 -		<del>-</del>			Short Grass Pasture Kv= 7.0 fps						
	16.5	747	Total									

## **Summary for Subcatchment 2BS: Drainage Area 2BS**

Runoff = 11.63 cfs @ 12.23 hrs, Volume= 1.312 af, Depth= 1.01"

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Page 45

	Area	(ac) C	N Des	cription						
*	0.	000	98 Exis	ting Struct	ure, HSG A	1				
*	0.	000			ure, HSG B					
	0.	000		ods, Good,						
	5.	460	55 Woo	ods, Good,	HSG B					
	0.	000	70 Woo	ods, Good,	HSG C					
			96 Gra	vel surface	, HSG A					
	0.	340	96 Gra	vel surface	, HSG B					
	0.	000	96 Gra	vel surface	, HSG C					
					grazed, HS					
					v, non-grazed, HSG B					
				Meadow, non-grazed, HSG C						
				Unconnected pavement, HSG A						
					oavement, l					
					pavement, I	HSG C				
				er Surface						
				er Surface	•					
				er Surface						
				ghted Aver	•					
	15.517 0.112			28% Pervio						
				2% Impervi						
	0.	031	21.0	88% Uncon	nected					
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	5.6	50	0.0200	0.15		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	1.8	182	0.0549	1.64		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	3.3	410	0.0879	2.08		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	0.9	120	0.1083	2.30		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.4	291	0.1684	2.05		Shallow Concentrated Flow,				
	0.0	4 -	0.0400	0.45		Woodland Kv= 5.0 fps				
	0.2	45	0.2426	3.45		Shallow Concentrated Flow,				
	110	4.000	<b>T</b> ( )			Short Grass Pasture Kv= 7.0 fps				
	14.2	1,098	Total							

# **Summary for Subcatchment 3AS: Drainage Area 3AS**

Runoff = 7.71 cfs @ 12.16 hrs, Volume= 0.690 af, Depth= 1.32"

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Page 46

	Area (	(ac) C	N Adj	Descript	ion					
*	0.0	000	98	Existing	Existing Structure, HSG A					
*	0.0	000	98	Existing	Existing Structure, HSG B					
	0.0	000	30	Woods, Good, HSG A						
	0.	153	55	Woods, Good, HSG B						
	0.0	000	70	Woods,	Good, HSC	G C				
	0.0	000	96	Gravel s	Gravel surface, HSG A					
	0.4	496 9	96	Gravel surface, HSG B						
			96	Gravel surface, HSG C						
			30	Meadow, non-grazed, HSG A						
			58		Meadow, non-grazed, HSG B					
			71		Meadow, non-grazed, HSG C					
			98		Unconnected pavement, HSG A					
			98			ment, HSG B				
			98			ment, HSG C				
			98	Water Surface, HSG A Water Surface, HSG B						
			98		Water Surface, HSG C					
			98							
	6.262 64 63 5.798				a Average, Pervious A	UI Adjusted				
		796 464								
		175			7.41% Impervious Area 37.72% Unconnected					
	0.	175		37.72% Officonfilected						
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·				
	5.4	50	0.1600	0.16		Sheet Flow,				
						Woods: Light underbrush n= 0.400 P2= 3.20"				
	0.3	38	0.1316	1.81		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	0.2	32	0.0938	2.14		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	0.1	25	0.0800	4.55		Shallow Concentrated Flow,				
		4.0				Unpaved Kv= 16.1 fps				
	2.4	463	0.0390	3.18		Shallow Concentrated Flow,				
	4.4	000	0.0000	0.00		Unpaved Kv= 16.1 fps				
	1.4	232	0.0302	2.80		Shallow Concentrated Flow,				
		0.10	<b>T</b> ( )			Unpaved Kv= 16.1 fps				
	9.8	840	Total							

# **Summary for Subcatchment 4AS: Drainage Area 4AS**

Runoff = 3.55 cfs @ 12.22 hrs, Volume= 0.393 af, Depth= 1.01"

Description

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CN

Area (ac)

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Page 47

	Alea	(ac) C	N Desi	ripuon		
*	0.	000	98 Exis	ting Struct	ure, HSG A	1
*	0.	000	98 Exis	ting Struct	ure, HSG B	}
	0.	000 3	30 Woo	ds, Good,	HSG A	
	3.	033 5	55 Woo	ds, Good,	HSG B	
	0.	000 7	70 Woo	ds, Good,	HSG C	
				el surface	, HSG A	
				el surface	•	
				el surface	•	
					grazed, HS	
					grazed, HS	
					grazed, HS	
					avement, I	
					avement, l	
					avement, I	HSG C
				er Surface		
				er Surface		
_				er Surface		
				ghted Aver		
		552 125		3% Pervio		
		125 125		% Impervi 00% Unco		
	0.	125	100.	00 % Offico	mected	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description
_	5.6	50	0.0200	0.15	(0.0)	Sheet Flow,
	5.0	50	0.0200	0.10		Grass: Short n= 0.150 P2= 3.20"
	1.0	79	0.0380	1.36		Shallow Concentrated Flow,
			0.0000	1.00		Short Grass Pasture Kv= 7.0 fps
	0.8	107	0.0935	2.14		Shallow Concentrated Flow,
	0.0		0.000			Short Grass Pasture Kv= 7.0 fps
	4.3	532	0.1729	2.08		Shallow Concentrated Flow,
				_		Woodland Kv= 5.0 fps
	0.8	67	0.0448	1.48		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.2	311	0.0676	4.19		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	13.7	1,146	Total			
		•				

# **Summary for Subcatchment 4BS: Drainage Area 4BS**

Runoff = 14.03 cfs @ 12.49 hrs, Volume= 2.080 af, Depth= 1.01"

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Page 48

	Area	(ac) (	CN Des	cription						
*	0.	000	98 Exis	stina Struct	ure, HSG A					
*					ure, HSG B					
	0.	000		ods, Good,						
				ods, Good,						
				ods, Good,						
				vel surface						
				vel surface						
				vel surface	•					
					grazed, HS	GA				
					grazed, HS					
					grazed, HS					
					oavement, I					
					oavement, l					
	0.	000			oavement, l					
	0.	000		ter Surface						
	0.	000	98 Wat	ter Surface	, HSG B					
	0.	000	98 Wat	ter Surface	, HSG C					
	0.	179			omb., Fair,	HSG B				
	24.	770	58 Wei	ghted Aver	age					
	24.	659	99.5	55% Pervio	us Area					
	0.111			0.45% Impervious Area						
	0.	111	100	.00% Unco	nnected					
	То	Longth	Clana	Valacity	Consoitu	Description				
		Length			Capacity (cfs)	Description				
	(min)	(feet)		(ft/sec)	(CIS)	01 (F)				
	5.6	50	0.0200	0.15		Sheet Flow,				
	4.0	400	0.0000	4.00		Grass: Short n= 0.150 P2= 3.20"				
	1.6	186	0.0806	1.99		Shallow Concentrated Flow,				
	0.4	70	0.4000	0.00		Short Grass Pasture Kv= 7.0 fps				
	0.4	72	0.1668	2.86		Shallow Concentrated Flow,				
	0.7	400	0.4550	4.07		Short Grass Pasture Kv= 7.0 fps				
	3.7	439	0.1550	1.97		Shallow Concentrated Flow,				
	0.7	444	0.0004	4.00		Woodland Kv= 5.0 fps				
	3.7	411	0.0681	1.83		Shallow Concentrated Flow,				
	440	607	0.0404	0.00		Short Grass Pasture Kv= 7.0 fps				
	14.3	687	0.0131	0.80		Shallow Concentrated Flow,				
		4.0.4=	<del></del>			Short Grass Pasture Kv= 7.0 fps				
	29.3	1,845	Total							

# **Summary for Subcatchment 5AS: Drainage Area 5AS**

Runoff = 1.74 cfs @ 12.10 hrs, Volume= 0.147 af, Depth= 1.01"

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Page 49

_	Area	(ac)	CI	N Desc	cription					
*	0.	000	9	8 Exist	ting Structi	ure, HSG A	1			
*	0.	000	9	8 Exist	ting Structi	ure, HSG B	}			
	0.	000	3		ds, Good,	HSG A				
		000	5		ds, Good,					
		000	7		ds, Good,					
		000	9		el surface	•				
		000	9		el surface	•				
		000	9		el surface					
		000	3			grazed, HS				
		754	5			grazed, HS				
		000	7			grazed, HS				
	0.000 98 Unconnected pavement, HSG A									
		000	9			avement, l				
		000	9			avement, I	18G C			
		000	9		er Surface,					
		000	9		er Surface,					
_		000	9		er Surface,					
		754	5		hted Aver	•				
	1.	754		100.	00% Pervi	ous Area				
	То	Lana	+h	Clana	\/alaaitu	Canacity	Description			
	Tc (min)	Leng (fee		Slope	Velocity	Capacity (cfs)	Description			
_	(min)			(ft/ft)	(ft/sec)	(CIS)	Oh a of Elassi			
	3.2	;	50	0.0800	0.26		Sheet Flow,			
	2.2	20	).E	0.4000	2.07		Grass: Short n= 0.150 P2= 3.20"			
	2.2	3	95	0.1800	2.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps			
_		4	4.5	Tatal			Short Grass Fasture RV- 1.0 Ips			
	5.4	44	45	Total						

## **Summary for Subcatchment 5BS: Drainage Area 5BS**

Runoff = 1.10 cfs @ 12.14 hrs, Volume= 0.103 af, Depth= 1.01"

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Page 50

	Area	(ac)	CI	N Desc	cription					
*	0.	.000	98	8 Exist	ing Structi	ure, HSG A	1			
*	0.	.000	98	8 Exist	ing Structi	3				
	0.	.000	30	O Woo	ds, Good,	HSG A				
	0.	.000	5	5 Woo	ds, Good,	HSG B				
		.000	70		ds, Good,					
		.000	90		el surface	,				
		.000	90		el surface	•				
		.000	90		el surface	,				
		.000	30			grazed, HS				
		.232	58			grazed, HS				
		.000	7			grazed, HS				
		.000	98			oavement, l				
		.000	98			pavement, I				
		.000	98			pavement, I	HSG C			
	_	.000	98		er Surface,					
		.000	98		er Surface,					
		.000	98		er Surface,	<u> </u>				
		232	58		Weighted Average 100.00% Pervious Area					
	1.	.232		100.	00% Pervi	ous Area				
	То	Long	.th	Clana	Volocity	Conneity	Description			
	Tc (min)	Leng		Slope	Velocity	Capacity	Description			
_	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	Ob and Electric			
	4.3	;	50	0.0400	0.20		Sheet Flow,			
	4.0	4.	10	0.0440	4 47		Grass: Short n= 0.150 P2= 3.20"			
	1.3	T	13	0.0442	1.47		Shallow Concentrated Flow,			
	2.4	2	31	0.0520	1.60		Short Grass Pasture Kv= 7.0 fps			
	2.4	۷.	J 1	0.0020	1.00		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps			
	8.0	20	94	Total			Onort Orass r asture TV- 1.0 ips			
	0.0	ડ:	94	าบเลเ						

## Summary for Subcatchment 5S: Drainage Area 5S

Runoff = 4.30 cfs @ 12.22 hrs, Volume= 0.496 af, Depth= 0.89"

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Page 51

	Area	(ac)	CN	Desc	cription						
*	0.	000	98	Exist	ting Structi	ure, HSG A	1				
*	0.	000	98	Exist	ting Structi	ure, HSG E	3				
	0.	000	30	Woo	ds, Good,	HSG A					
	4.	693	55	Woo	ds, Good,	HSG B					
		000	70		ds, Good,						
		000	96		el surface						
		000	96		el surface						
		000	96		Gravel surface, HSG C						
		000	30		Meadow, non-grazed, HSG A						
		994	58			grazed, HS					
		000	71			grazed, HS					
		000	98			avement, l					
		000	98			avement, I					
		000	98			avement, I	HSG C				
		000	98		er Surface,						
		000	98		er Surface,						
_		000	98		er Surface,						
		687	56		hted Aver	•					
	6.	687		100.	00% Pervi	ous Area					
	Тс	Length		lope	Velocity	Capacity	Description				
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	Description				
_	3.2	50		0800	0.26	(013)	Sheet Flow,				
	3.2	50	0.0	J000	0.20		Grass: Short n= 0.150 P2= 3.20"				
	3.0	396	s 0 (	0959	2.17		Shallow Concentrated Flow,				
	3.0	330	0.0	3333	2.17		Short Grass Pasture Kv= 7.0 fps				
	4.2	435	5 0 2	1172	1.71		Shallow Concentrated Flow,				
	7.4	700	<i>.</i>	1112	1.7 1		Woodland Kv= 5.0 fps				
	2.7	207	7 0 (	0676	1.30		Shallow Concentrated Flow,				
	۷.,	201	0.0	2010	1.00		Woodland Kv= 5.0 fps				
_	13.1	1,088	3 To	tal			Treesiana III olo ipo				
	13.1	1,000	, 10	ıaı							

# **Summary for Subcatchment 6AS: Drainage Area 6AS**

Runoff = 1.19 cfs @ 12.12 hrs, Volume= 0.105 af, Depth= 1.07"

Page 52

# **Proposed Hydrology - Nutmeg-REV**

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	Area (	(ac)	10	N Adj	Descript	tion					
*		000	9			Structure,	HSG A				
*		000	9			Structure,					
		000	3			Good, HSC					
		000	5			Good, HSC					
	0.0	000	7			Woods, Good, HSG C					
	0.0	000	9	6	Gravel surface, HSG A						
	0.0	000	9	6	Gravel surface, HSG B						
	0.0	000	9	6	Gravel s	surface, HS	G C				
	0.0	000	3	0	Meadov	, non-graz	ed, HSG A				
	1.	106	5	8	Meadov	/, non-graz	ed, HSG B				
	0.0	000	7	1			ed, HSG C				
	0.0	000	9	8	Unconnected pavement, HSG A						
	0.075 98				Unconn	Unconnected pavement, HSG B					
	0.000 98				Unconn	ected pave	ment, HSG C				
	0.000 98					urface, HS					
		000	9		Water S	Water Surface, HSG B					
	0.0	000	9	8	Water S	Water Surface, HSG C					
	1.	181	6	1 59	Weighted Average, UI Adjusted						
	1.	106			93.65%	93.65% Pervious Area					
	0.0	075			6.35% I	6.35% Impervious Area					
	0.0	075			100.00%	6 Unconnect	cted				
	Тс	Lengt		Slope	Velocity	Capacity	Description				
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)					
	4.8	5	0	0.0300	0.17		Sheet Flow,				
							Grass: Short n= 0.150 P2= 3.20"				
	2.5	24	0	0.0542	1.63		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				
	7.3	29	0	Total							

## **Summary for Subcatchment 6BS: Drainage Area 6BS**

Runoff = 0.53 cfs @ 12.12 hrs, Volume= 0.047 af, Depth= 1.07"

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Page 53

Area (ac) CN Adj			Descrip	Description						
*	0.0	000	9	8	Existing	Structure,	HSG A			
*	0.0	000	9	8		Structure,				
	0.0	000	3	0	Woods,	Good, HSC	G A			
	0.0	000	5	5	Woods,	Good, HS0	G B			
	0.0	000	7	-	Woods,	Good, HS0	G C			
	_	000	9		Gravel surface, HSG A					
		000	9		Gravel surface, HSG B					
		000	9			urface, HS				
		000	3				ed, HSG A			
		500	5				ed, HSG B			
		000	7				ed, HSG C			
		000	9			Unconnected pavement, HSG A				
		025	9				ment, HSG B			
		000	9				ment, HSG C			
		000	9			urface, HS				
		000	9			Water Surface, HSG B				
	0.0	000	9	8		Water Surface, HSG C				
		525	6	0 59	Weighted Average, UI Adjusted					
		500				95.24% Pervious Area				
		025			4.76% l	4.76% Impervious Area				
	0.0	025			100.00%	6 Unconne	cted			
	Тс	Lengt		Slope	Velocity	Capacity	Description			
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)				
	4.8	5	0	0.0300	0.17		Sheet Flow,			
							Grass: Short n= 0.150 P2= 3.20"			
	2.5	24	0	0.0542	1.63		Shallow Concentrated Flow,			
							Short Grass Pasture Kv= 7.0 fps			
	7.3	29	0	Total						

## Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 1.89 cfs @ 12.32 hrs, Volume= 0.244 af, Depth= 0.95"

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Page 54

	Area	(ac) (	CN Des	cription					
*	0.	000	98 Exis	sting Struct	ure, HSG A	1			
*	0.	000	98 Exis	sting Struct	ure, HSG B	}			
	0.	000		ods, Good,					
	1.	480	55 Wo	ods, Good,	HSG B				
	0.	000	70 Wo	ods, Good,	HSG C				
				vel surface	, HSG A				
				vel surface					
				vel surface	,				
					grazed, HS				
					grazed, HS				
					grazed, HS				
	_				pavement, l				
	0.000 98 Unconnected pavement, HSG B								
	0.000 98 Unconnected pavement, HSG C								
				ter Surface					
				ter Surface	•				
				ter Surface	•				
				ighted Ave					
	3.	086	100	.00% Pervi	ous Area				
	-		01			D			
	Tc	Length			Capacity	Description			
	(min)	(feet)			(cfs)				
	4.3	50	0.0400	0.20		Sheet Flow,			
						Grass: Short n= 0.150 P2= 3.20"			
	4.8	571	0.0800	1.98		Shallow Concentrated Flow,			
		0.5-	0.4000	0.40		Short Grass Pasture Kv= 7.0 fps			
	2.0	257	0.1900	2.18		Shallow Concentrated Flow,			
			0.0005			Woodland Kv= 5.0 fps			
	8.2	375	0.0235	0.77		Shallow Concentrated Flow,			
_		1.055				Woodland Kv= 5.0 fps			
	19.3	1,253	Total						

# **Summary for Subcatchment 7AS: Drainage Area 7AS**

Runoff = 8.78 cfs @ 12.24 hrs, Volume= 1.003 af, Depth= 1.01"

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Page 55

	Area (	ac)	CN	Desc	cription		
*	0.0	000	98	Exist	ing Structu	ure, HSG A	·
*	0.0	000	98	Exist	ing Structu	ure, HSG B	
	0.0	000	30	Woo	ds, Good,	HSG A	
	0.0	000	55	Woo	ds, Good,	HSG B	
	0.0	000	70		ds, Good,		
		000	96		el surface		
		000	96		el surface		
		000	96	Grav	el surface	, HSG C	
		000	30			grazed, HS	
	11.8		58			grazed, HS	
		000	71			grazed, HS	
		000	98			avement, l	
0.062 98 Unconnected pavement, HSG B							
		000	98			avement, I	HSG C
		000	98		er Surface,		
		000	98		er Surface,		
		000	98		er Surface,		
	11.9	_	58		hted Aver		
	11.8				8% Pervio		
		062			% Impervi		
	0.0	062		100.	00% Unco	nnected	
	_			<u> </u>			
		Lengt		Slope	Velocity	Capacity	Description
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	
	3.4	5	0 0	.0700	0.24		Sheet Flow,
							Grass: Short n= 0.150 P2= 3.20"
	11.4	1,15	6 0	.0579	1.68		Shallow Concentrated Flow,
_							Short Grass Pasture Kv= 7.0 fps
	14.8	1,20	6 T	otal			

## **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 13.24 cfs @ 12.24 hrs, Volume= 1.544 af, Depth= 0.95"

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Page 56

	Area	(ac) (	CN Adj	Descript	tion				
*	0.	000	98	Existing	Existing Structure, HSG A				
*	0.	000	98	Existing	Structure,	HSG B			
	0.	000	30		Good, HSC				
	3.	886	55	Woods,	Good, HSC	G B			
	0.	000	70	Woods,	Woods, Good, HSG C				
	0.	000	96	Gravel s	surface, HS	G A			
	0.	000	96	Gravel s	surface, HS	G B			
	0.	000	96	Gravel s	surface, HS	G C			
	0.	000	30	Meadov	, non-graz	ed, HSG A			
	15.	579	58	Meadov	/, non-graz	ed, HSG B			
	0.	000	71	Meadov	, non-graz	ed, HSG C			
	0.	000	98	Unconn	ected pave	ment, HSG A			
	0.	068	98	Unconnected pavement, HSG B					
	0.000 98				Unconnected pavement, HSG C				
	0.000 98				Water Surface, HSG A				
	0.000 98				Water Surface, HSG B				
	0.	000	98	Water S	urface, HS	G C			
	19.	533	58 57	Weighte	d Average,	, UI Adjusted			
	19.	465		99.65%	Pervious A	vrea			
	0.	068		0.35% I	0.35% Impervious Area				
	0.	068		100.00%	100.00% Unconnected				
	Тс	Length		Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	3.6	50	0.0600	0.23		Sheet Flow,			
						Grass: Short n= 0.150 P2= 3.20"			
	9.8	1,125	0.0747	1.91		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	1.1	93	0.0753	1.37		Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	14.5	1,268	Total						

# Summary for Subcatchment 8AS: Drainage Area 8A

Runoff = 4.63 cfs @ 12.26 hrs, Volume= 0.544 af, Depth= 1.01"

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Page 57

	Area	(ac)	CN	N Desc	cription		
*	0.	000	98	8 Exist	ing Structi	ure, HSG A	1
* 0.000 98 Existing Structure, HSG B						ure, HSG B	}
		000	30		ds, Good,	HSG A	
		000	5		ds, Good,		
		000	70		ds, Good,		
		000	96		el surface	•	
		000	96		el surface		
		000	96		el surface	•	
		000	30			grazed, HS	
		441	58			grazed, HS	
		000	7			grazed, HS	
		000	98			avement, l	
		037	98			avement, I	
		000	98			avement, I	HSG C
	_	000	98		er Surface,		
		000	98		er Surface,		
_		000	98		er Surface,		
		478	58		hted Aver		
	_	441			3% Pervio		
		037			% Impervi		
	0.	037		100.0	00% Unco	nnected	
	т.		41_	Class.	\/-l:4··	0	Description
	Tc	Lengt		Slope	Velocity	Capacity	Description
_	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	01 (5)
	5.6	5	50	0.0200	0.15		Sheet Flow,
	40.5	00	. 4	0.0450	4 40		Grass: Short n= 0.150 P2= 3.20"
	10.5	93	54	0.0450	1.48		Shallow Concentrated Flow,
	10.1			<del></del>			Short Grass Pasture Kv= 7.0 fps
	16.1	98	34	Total			

## **Summary for Subcatchment 8BS: Drainage Area 8BS**

Runoff = 2.64 cfs @ 12.40 hrs, Volume= 0.361 af, Depth= 1.01"

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Page 58

	Area	(ac) (	CN Des	cription		
*	0.	000	98 Exis	ting Struct	ure, HSG A	1
*	0.	000	98 Exis	ting Struct	ure, HSG E	3
	0.	000	30 Woo	ds, Good,	HSG A	
	0.	000	55 Woo	ds, Good,	HSG B	
	0.	000	70 Woo	ds, Good,	HSG C	
	0.	000	96 Grav	vel surface	, HSG A	
				vel surface	,	
				vel surface	, HSG C	
				,	grazed, HS	
					grazed, HS	
					grazed, HS	
					oavement, l	
					pavement, I	
					pavement, I	HSG C
				er Surface	•	
				er Surface	•	
				er Surface		
				ghted Aver		
		259		2% Pervio		
		042		% Impervi		
	0.	042	100.	00% Unco	nnected	
	т.	1 41-	01	\/-1:4	0	Description
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	01 (5)
	5.6	50	0.0200	0.15		Sheet Flow,
	4.0	4.45	0.0404	4.54		Grass: Short n= 0.150 P2= 3.20"
	1.6	145	0.0484	1.54		Shallow Concentrated Flow,
	- A	400	0.0404	4 5 4		Short Grass Pasture Kv= 7.0 fps
	5.4	499	0.0481	1.54		Shallow Concentrated Flow,
	0.0	<b>540</b>	0.0470	0.00		Short Grass Pasture Kv= 7.0 fps
	9.2	510	0.0176	0.93		Shallow Concentrated Flow,
	2.2	234	0.0625	1 75		Short Grass Pasture Kv= 7.0 fps
	2.2	∠34	0.0025	1.75		Shallow Concentrated Flow,
_	04.0	4 400	<b>T</b>			Short Grass Pasture Kv= 7.0 fps
	24.0	1,438	Total			

## **Summary for Subcatchment 8S: Drainage Area 8S**

Runoff = 9.52 cfs @ 12.22 hrs, Volume= 0.988 af, Depth= 1.19"

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	Area	(ac) (	CN Adj	Descrip	tion			
*	0.	000	98	Existing	Structure,	HSG A		
*	0.	000	98	Existing	Structure,	HSG B		
	0.	000	30		Good, HSC			
	2.	137	55		Good, HS0			
	0.	000	70	Woods,	Good, HS0	G C		
	0.	000	96		surface, HS			
	0.	543	96		surface, HS			
	0.	000	96	Gravels	surface, HS	GC		
	0.	000	30		, non-graz			
	6.	640	58		, non-graz			
	0.	000	71	Meadov	/, non-graz	ed, HSG C		
	0.	000	98	Unconn	ected pave	ment, HSG A		
	0.	626	98	Unconn	ected pave	ment, HSG B		
	0.	000	98	Unconn	Unconnected pavement, HSG C			
	0.	000	98	Water S	Water Surface, HSG A			
			98		Water Surface, HSG B			
	0.	000	98	Water S	urface, HS	G C		
	9.	946	62 61	Weighte	d Average	UI Adjusted		
		320		93.71%	Pervious A	rea		
		626			mpervious .			
	0.	626		100.00%	6 Unconne	cted		
	_							
	Тс	Length		Velocity	Capacity	Description		
	(min)	(feet)	, ,	(ft/sec)	(cfs)			
	5.6	50	0.0200	0.15		Sheet Flow,		
						Grass: Short n= 0.150 P2= 3.20"		
	2.8	175	0.0228	1.06		Shallow Concentrated Flow,		
						Short Grass Pasture Kv= 7.0 fps		
	3.5	385	0.0701	1.85		Shallow Concentrated Flow,		
						Short Grass Pasture Kv= 7.0 fps		
	1.9	184	0.1007	1.59		Shallow Concentrated Flow,		
						Woodland Kv= 5.0 fps		
	13.8	794	Total					

# **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 0.93 cfs @ 12.17 hrs, Volume= 0.092 af, Depth= 1.07"

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Page 60

	Area	(ac)	CN	Desc	cription		
*	0.	000	98	Exist	ing Structi	ure, HSG A	1
*	0.	000	98	Exist	ing Structi	ure, HSG E	}
	0.	187	30	Woo	ds, Good,	HSG A	
	0.	424	55	Woo	ds, Good,	HSG B	
		000	70		ds, Good,		
		048	96		el surface		
		139	96		el surface		
		000	96		el surface	,	
		000	30			grazed, HS	
		233	58			grazed, HS	
		000	71			grazed, HS	
		000	98			avement, l	
		000	98			avement, l	
0.000 98 Unconnected pavement, HSG C							HSG C
0.000 98 Water Surface, HSG A							
		000	98		er Surface,		
_		000	98		er Surface,		
		031	59		hted Aver	•	
	1.	031		100.0	00% Pervi	ous Area	
	Тс	Longtk		Slope	Velocity	Canacity	Description
	(min)	Length (feet		Slope (ft/ft)	(ft/sec)	Capacity (cfs)	Description
_						(CIS)	Oh a of Flavo
	4.3	50	0.	0400	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
	0.3	70		0572	2.05		
	0.3	70	0.	0572	3.85		Shallow Concentrated Flow,
	0.9	82		0971	1.56		Unpaved Kv= 16.1 fps
	0.9	04	۷.۱	UB/ I	1.00		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
	5.1	41′	1 0	0730	1.35		Shallow Concentrated Flow,
	J. 1	41	ı U.	0130	1.55		Woodland Kv= 5.0 fps
_	10.6	613	) T	otal			1100diana 111- 0.0 ipo
	10.0	OIS	) (	ııdı			

## **Summary for Reach 1BR: Overland Flow**

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 1.26" for 10-Year event

Inflow = 9.22 cfs @ 12.27 hrs, Volume= 1.024 af

Outflow = 4.41 cfs @ 13.30 hrs, Volume= 1.023 af, Atten= 52%, Lag= 61.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.40 fps, Min. Travel Time= 38.9 min Avg. Velocity = 0.25 fps, Avg. Travel Time= 63.2 min

Peak Storage= 10,304 cf @ 12.65 hrs Average Depth at Peak Storage= 0.03'

Bank-Full Depth= 0.01' Flow Area= 2.2 sf, Capacity= 0.71 cfs

Custom cross-section, Length= 940.0' Slope= 0.0426 '/'

Constant n= 0.030 Short grass

Inlet Invert= 209.00', Outlet Invert= 169.00'

Nutmeg Solar Project - Proposed Type III 24-hr 10-Year Rainfall=4.70" Printed 9/11/2018

#### **Proposed Hydrology - Nutmeg-REV**

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Page 61

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
290.00	-0.01	0.01
330.00	-0.01	0.01
405.00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	40.0	0	0.00
0.01	2.2	405.0	2,092	0.71

#### **Summary for Reach 1CR: Overland Flow**

Inflow Area = 4.622 ac, 6.34% Impervious, Inflow Depth = 2.81" for 10-Year event

Inflow = 9.02 cfs @ 12.35 hrs, Volume= 1.083 af

Outflow = 2.24 cfs @ 15.63 hrs, Volume= 1.023 af, Atten= 75%, Lag= 196.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.68 fps, Min. Travel Time= 164.6 min Avg. Velocity = 0.42 fps, Avg. Travel Time= 268.7 min

Peak Storage= 22,151 cf @ 12.88 hrs Average Depth at Peak Storage= 0.12'

Bank-Full Depth= 0.25' Flow Area= 15.4 sf, Capacity= 17.41 cfs

Custom cross-section, Length= 6,700.0' Slope= 0.0084 '/'

Constant n= 0.030 Short grass

Inlet Invert= 224.00', Outlet Invert= 168.00'

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
100.00	-0.25	0.25
123.00	0.00	0.00

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Page 62

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	0.0	0	0.00
0.25	15.4	123.0	103,013	17.41

## **Summary for Reach 2BR: Overland Flow**

Inflow Area = 15.629 ac, 0.72% Impervious, Inflow Depth = 0.86" for 10-Year event

Inflow = 10.28 cfs @ 12.32 hrs, Volume= 1.125 af

Outflow = 4.98 cfs @ 13.34 hrs, Volume= 1.124 af, Atten= 52%, Lag= 60.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.35 fps, Min. Travel Time= 37.4 min Avg. Velocity = 0.23 fps, Avg. Travel Time= 57.5 min

Peak Storage= 11,180 cf @ 12.71 hrs Average Depth at Peak Storage= 0.05'

Bank-Full Depth= 0.01' Flow Area= 1.7 sf, Capacity= 0.46 cfs

Custom cross-section, Length= 785.0' Slope= 0.0280 '/'

Constant n= 0.030 Short grass

Inlet Invert= 194.00', Outlet Invert= 172.00'

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
120.00	-0.01	0.01
170.00	-0.01	0.01
290.00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	50.0	0	0.00
0.01	1.7	290.0	1,335	0.46

## **Summary for Reach DP-1: Design Point 1**

Inflow Area = 31.828 ac, 4.77% Impervious, Inflow Depth > 1.23" for 10-Year event

Inflow = 7.70 cfs @ 12.52 hrs, Volume= 3.258 af

Outflow = 7.70 cfs @ 12.52 hrs, Volume= 3.258 af, Atten= 0%, Lag= 0.0 min

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Page 63

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-2: Design Point 2**

Inflow Area = 27.151 ac, 1.67% Impervious, Inflow Depth > 0.95" for 10-Year event

Inflow = 8.87 cfs @ 12.27 hrs, Volume= 2.150 af

Outflow = 8.87 cfs @ 12.27 hrs, Volume= 2.150 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-3: Design Point 3**

Inflow Area = 6.262 ac, 7.41% Impervious, Inflow Depth = 1.32" for 10-Year event

Inflow = 7.71 cfs @ 12.16 hrs, Volume= 0.690 af

Outflow = 7.71 cfs @ 12.16 hrs, Volume= 0.690 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 29.447 ac, 0.80% Impervious, Inflow Depth = 1.01" for 10-Year event

Inflow = 16.43 cfs @ 12.46 hrs, Volume= 2.473 af

Outflow = 16.43 cfs @ 12.46 hrs, Volume= 2.473 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-5: Design Point 5**

Inflow Area = 9.673 ac, 0.00% Impervious, Inflow Depth = 0.62" for 10-Year event

Inflow = 4.30 cfs @ 12.22 hrs, Volume= 0.496 af

Outflow = 4.30 cfs @ 12.22 hrs, Volume= 0.496 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 2.09% Impervious, Inflow Depth = 0.61" for 10-Year event

Inflow = 1.89 cfs @ 12.32 hrs, Volume= 0.244 af

Outflow = 1.89 cfs @ 12.32 hrs, Volume= 0.244 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## Summary for Reach DP-7: Design Point 7

Inflow Area = 31.477 ac, 0.41% Impervious, Inflow Depth = 0.59" for 10-Year event

Inflow = 13.24 cfs @ 12.24 hrs, Volume= 1.544 af

Outflow = 13.24 cfs @ 12.24 hrs, Volume= 1.544 af, Atten= 0%, Lag= 0.0 min

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Page 64

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-8: Design Point 8**

Inflow Area = 3.40% Impervious, Inflow Depth = 0.57" for 10-Year event 20.725 ac,

Inflow 9.52 cfs @ 12.22 hrs, Volume= 0.988 af

Outflow = 9.52 cfs @ 12.22 hrs, Volume= 0.988 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-9: Design Point 9**

1.031 ac, 0.00% Impervious, Inflow Depth = 1.07" for 10-Year event Inflow Area =

Inflow 0.93 cfs @ 12.17 hrs, Volume= 0.092 af

Outflow 0.93 cfs @ 12.17 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Pond 1BP: Culvert 1BS**

Inflow Area = 2.10% Impervious, Inflow Depth = 1.26" for 10-Year event 9.780 ac. 9.22 cfs @ 12.27 hrs, Volume= Inflow = 1.024 af 9.22 cfs @ 12.27 hrs, Volume= Outflow = 1.024 af, Atten= 0%, Lag= 0.0 min 9.22 cfs @ 12.27 hrs, Volume= 1.024 af Primary

Secondary = 0.000 af 0.00 cfs @ 5.00 hrs, Volume=

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 213.64' @ 12.27 hrs

Flood Elev= 215.00'

<u>Device</u>	Routing	Invert	Outlet Devices
#1	Primary	212.50'	18.0" Round Culvert X 2.00 L= 72.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 212.50' / 210.00' S= 0.0347 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	214.25'	6.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=9.13 cfs @ 12.27 hrs HW=213.63' (Free Discharge) 1=Culvert (Inlet Controls 9.13 cfs @ 3.19 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=212.50' (Free Discharge) -2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Page 65

#### Summary for Pond 5A: Basin 5A

Inflow Area = 1.754 ac, 0.00% Impervious, Inflow Depth = 1.01" for 10-Year event

Inflow = 1.74 cfs @ 12.10 hrs, Volume= 0.147 af

Outflow = 0.26 cfs @ 13.01 hrs, Volume= 0.147 af, Atten= 85%, Lag= 54.3 min

Discarded = 0.26 cfs @ 13.01 hrs, Volume= 0.147 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 273.53' @ 13.01 hrs Surf.Area= 4,660 sf Storage= 1,913 cf

Flood Elev= 275.00' Surf.Area= 11,878 sf Storage= 13,898 cf

Plug-Flow detention time= 74.4 min calculated for 0.147 af (100% of inflow)

Center-of-Mass det. time= 74.3 min ( 960.9 - 886.6 )

Volume	Inver	t Avail.	Storage	Storage Description	n		
#1	273.00	' 1	3,898 cf	Custom Stage Date	<b>ta (Irregular)</b> Liste	d below (Recalc)	
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
273.0	00	2,606	536.7	Ó	0	2,606	
274.0 275.0	_	6,939 11,878	667.0 730.0	4,599 9,299	4,599 13,898	15,102 22,140	
Device	Routing	lnv	ert Outle	et Devices			
#1	Discarded	273.0		0 in/hr Exfiltration			
#2	Primary	274.7	75' <b>15.0</b> ' Head 2.50	3.00 3.50 4.00 4.	th Broad-Crested 0.60 0.80 1.00 1 50 5.00 5.50		

**Discarded OutFlow** Max=0.26 cfs @ 13.01 hrs HW=273.53' (Free Discharge) **1=Exfiltration** (Controls 0.26 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=273.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### Summary for Pond 5B: Basin 5B

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Inflow Area =	1.232 ac,	0.00% Impervious, Inflow De	epth = 1.01" for 10-Year event
Inflow =	1.10 cfs @	12.14 hrs, Volume=	0.103 af
Outflow =	0.15 cfs @	13.65 hrs, Volume=	0.103 af, Atten= 87%, Lag= 90.5 min
Discarded =	0.15 cfs @	13.65 hrs, Volume=	0.103 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 290.90' @ 13.65 hrs Surf.Area= 2,618 sf Storage= 1,604 cf Flood Elev= 293.00' Surf.Area= 9,526 sf Storage= 13,669 cf

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Page 66

Plug-Flow detention time= 152.5 min calculated for 0.103 af (100% of inflow)

Center-of-Mass det. time= 152.6 min ( 1,041.6 - 889.0 )

Volume	Invert	Avail.S	Storage	Storage Description			
#1	289.00'	13	,669 cf	Custom Stage Data	a (Irregular)Listed	below (Recalc)	
Elevation	on Su	ırf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
289.0	00	0	0.0	0	0	0	
290.0	00	670	199.3	223	223	3,162	
291.0	00	2,920	369.2	1,663	1,886	10,854	
292.0	00	5,718	494.6	4,241	6,128	19,485	
293.0	00	9,526	525.0	7,541	13,669	22,003	
Device	Routing	Inve	rt Outle	et Devices			
#1	Discarded	289.0	0' <b>2.41</b>	0 in/hr Exfiltration o	ver Surface area		
			Cond	ductivity to Groundwa	iter Elevation = 19	4.00'	
#2	Primary	292.3		' long x 8.0' breadth			
						20 1.40 1.60 1.80 2.0	00
			2.50	3.00 3.50 4.00 4.5	0 5.00 5.50		
						2.68 2.66 2.64 2.64	
			2.64	2.65 2.65 2.66 2.6	6 2.68 2.70 2.74		

**Discarded OutFlow** Max=0.15 cfs @ 13.65 hrs HW=290.90' (Free Discharge) 1=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=289.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### **Summary for Pond 5P: Culvert 1CS**

Inflow Area =	4.622 ac,	6.34% Impervious, Inflow	Depth = 2.81"	for 10-Year event
Inflow =	11.01 cfs @	12.23 hrs, Volume=	1.083 af	
Outflow =	9.02 cfs @	12.35 hrs, Volume=	1.083 af, Atte	en= 18%, Lag= 7.4 min
Primary =	9.02 cfs @	12.35 hrs, Volume=	1.083 af	_
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 227.19' @ 12.35 hrs Surf.Area= 3,038 sf Storage= 2,494 cf

Plug-Flow detention time= 1.6 min calculated for 1.081 af (100% of inflow) Center-of-Mass det. time= 1.6 min (830.3 - 828.7)

Volume	Invert	Avail.Storage	Storage Description
#1	225.00'	8,119 cf	Custom Stage Data (Irregular)Listed below (Recalc)

Wet.Area

Cum.Store

Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Surf.Area

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Elevation

#2

Primary

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Perim.

Page 67

			. •		• • • • • • • • • • • • • • • • • • • •	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)
225.0	00	0	0.0	0	0	0
226.0	00	823	554.8	274	274	24,496
227.0	00	2,690	609.2	1,667	1,941	29,568
228.0	00	4,726	653.1	3,661	5,602	34,023
228.	50	5,351	662.0	2,518	8,119	35,011
Device	Routing	Inve	ert Outlet	Devices		
#1	Primary	225.0	0' <b>18.0"</b>	Round Culvert		
			Inlet / 0	Outlet Invert= 225.0	o conform to fill, Ke 00' / 224.00' S= 0. , smooth interior, F	.0185 '/' Cc= 0.900
#2	Secondary	/ 228.4	0' <b>7.0' lo</b> ı	ng x 25.0' breadth	n Broad-Crested F .60 0.80 1.00 1.2	Rectangular Weir

Inc.Store

Primary OutFlow Max=9.01 cfs @ 12.35 hrs HW=227.19' (Free Discharge) 1=Culvert (Inlet Controls 9.01 cfs @ 5.10 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=225.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 6A: Basin 6A

Inflow Area = 6.35% Impervious, Inflow Depth = 1.07" for 10-Year event 1.181 ac, 1.19 cfs @ 12.12 hrs, Volume= Inflow 0.105 af 0.23 cfs @ 12.80 hrs, Volume= Outflow 0.105 af, Atten= 81%, Lag= 40.5 min 0.23 cfs @ 12.80 hrs, Volume= Discarded = 0.105 af Primary 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 302.36' @ 12.80 hrs Surf.Area= 4,069 sf Storage= 1,232 cf Flood Elev= 304.00' Surf.Area= 11,352 sf Storage= 13,687 cf

Plug-Flow detention time= 47.3 min calculated for 0.105 af (100% of inflow) Center-of-Mass det. time= 47.2 min (932.0 - 884.8)

303.75'

Volume	Invert	Avail.	Storage	Storage Description	n		
#1	302.00'	1	3,687 cf	Custom Stage Da	ita (Irregular)Liste	d below (Recalc)	
Elevation (feet)	Sı	urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
302.00		2,834	486.7	0	0	2,834	
303.00		6,833	540.2	4,689	4,689	7,236	
304.00		11,352	606.8	8,997	13,687	13,342	
Device R	outing	Inve	ert Outle	et Devices			
#1 D	iscarded	302.0		0 in/hr Exfiltration ductivity to Groundy			

15.0' long x 8.0' breadth Broad-Crested Rectangular Weir

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Volume

Invert

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Page 68

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.23 cfs @ 12.80 hrs HW=302.36' (Free Discharge) **1=Exfiltration** (Controls 0.23 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=302.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 6B: Basin 6B

Inflow Area =	0.525 ac,	4.76% Impervious, Inflow D	epth = 1.07" for 10-Year event
Inflow =	0.53 cfs @	12.12 hrs, Volume=	0.047 af
Outflow =	0.08 cfs @	13.10 hrs, Volume=	0.047 af, Atten= 85%, Lag= 58.5 min
Discarded =	0.08 cfs @	13.10 hrs, Volume=	0.047 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 293.03' @ 13.10 hrs Surf.Area= 1,239 sf Storage= 676 cf Flood Elev= 294.00' Surf.Area= 2,686 sf Storage= 2,540 cf

Plug-Flow detention time= 111.6 min calculated for 0.047 af (100% of inflow) Center-of-Mass det. time= 111.5 min (996.3 - 884.8)

Avail.Storage Storage Description

#1	292.0	00'	2,540 cf	Custom Stage Da	ata (Irregular)Listed	d below (Recalc)
Elevation (fee		Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
292.0	00	214	119.6	0	0	214
293.0	00	1,206	200.7	643	643	2,287
294.0	00	2,686	286.0	1,897	2,540	5,600
Device	Routing	In	vert Outle	et Devices		
#1	Discarde	ed 292	.00' <b>2.41</b>	0 in/hr Exfiltration	over Surface area	1
			Cond	ductivity to Ground	vater Elevation = 28	38.00'
#2	Primary	293				Rectangular Weir
				3.00 3.50 4.00 4		20 1.40 1.60 1.80 2.00

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64

**Discarded OutFlow** Max=0.08 cfs @ 13.10 hrs HW=293.03' (Free Discharge) **1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=292.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Page 69

#### **Summary for Pond 7A: Basin 7A**

Inflow Area = 11.944 ac, 0.52% Impervious, Inflow Depth = 1.01" for 10-Year event

Inflow = 8.78 cfs @ 12.24 hrs, Volume= 1.003 af

Outflow = 1.02 cfs @ 15.02 hrs, Volume= 0.962 af, Atten= 88%, Lag= 166.8 min

Discarded = 1.02 cfs @ 15.02 hrs, Volume= 0.962 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 252.16' @ 15.02 hrs Surf.Area= 17,893 sf Storage= 18,979 cf

Flood Elev= 254.00' Surf.Area= 44,034 sf Storage= 75,130 cf

Plug-Flow detention time= 267.0 min calculated for 0.962 af (96% of inflow)

Center-of-Mass det. time= 245.5 min (1,140.8 - 895.3)

Volume	Invert	t Ava	il.Storage	Storage Description	on		
#1	248.00	•	75,130 cf	Custom Stage Da	ata (Irregular)Liste	ed below (Recalc)	
Clayatia		urf Araa	Dorim	Ina Ctara	Cum Stara	Mot Area	
Elevatio		urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
248.0	00	0	0.0	0	0	0	
249.0	00	520	128.5	173	173	1,316	
250.0	00	2,102	372.1	1,222	1,396	11,023	
251.0	00	6,364	802.0	4,041	5,437	51,194	
252.0	00	16,015	1,315.7	10,825	16,262	137,769	
253.0	00	29,426	1,401.6	22,383	38,645	156,394	
254.0	00	44,034	1,517.9	36,485	75,130	183,453	
Device	Routing	ln	vert Outle	et Devices			
#1	Discarded	248	.00' <b>2.41</b>	0 in/hr Exfiltration	over Surface are	a	
			Con	ductivity to Ground	water Elevation = '	194.00'	
#2	Primary	253	.75' <b>15.0</b>	' long x 8.0' bread	Ith Broad-Crested	d Rectangular Weir	
	•		Hea	d (feet) 0.20 0.40	0.60 0.80 1.00	1.20 1.40 1.60 1.80	2.00
				3.00 3.50 4.00 4			
						88 2.68 2.66 2.64 2	64
			COE	i. (Liigiisii <i>)</i> 2.43 2.	.07 2.10 2.03 2.0	2.00 2.00 2.04 2	.0-

**Discarded OutFlow** Max=1.02 cfs @ 15.02 hrs HW=252.16' (Free Discharge) **1=Exfiltration** (Controls 1.02 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 8A: Basin 8A

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Inflow Area =	6.478 ac, 0.57% Impervious, Inflow Depth = 1.01" for 10-Year event	
Inflow =	4.63 cfs @ 12.26 hrs, Volume= 0.544 af	
Outflow =	0.53 cfs @ 15.17 hrs, Volume= 0.536 af, Atten= 88%, Lag= 174.6 min	
Discarded =	0.53 cfs @ 15.17 hrs, Volume= 0.536 af	
Primary =	0.00 cfs @ 5.00 hrs, Volume= 0.000 af	

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Page 70

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 250.59' @ 15.17 hrs Surf.Area= 9,384 sf Storage= 10,325 cf Flood Elev= 252.50' Surf.Area= 21,546 sf Storage= 38,517 cf

Plug-Flow detention time= 262.7 min calculated for 0.536 af (99% of inflow) Center-of-Mass det. time= 255.1 min (1,151.6 - 896.5)

Volume	Invert	t Avail.9	Storage	Storage Description	า		
#1	248.00	' 38	3,517 cf	Custom Stage Date	ta (Irregular)Listed	below (Recalc)	
Elevatio	on S	urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft <u>)</u>	
248.0	00	123	99.2	0	0	123	
249.0	00	2,613	493.4	1,101	1,101	18,715	
250.0	00	6,683	622.8	4,492	5,593	30,222	
251.0	00	11,513	733.8	8,989	14,582	42,224	
252.0	00	17,210	829.8	14,266	28,848	54,195	
252.5	50	21,546	830.5	9,669	38,517	54,620	
Device	Routing	Inve	ert Outle	et Devices			
#1	Discarded	248.0	0' <b>2.41</b>	0 in/hr Exfiltration o	over Surface area		
			Cond	ductivity to Groundw	ater Elevation = 19	4.00'	
#2	Primary	252.2		long x 8.0' breadt			
			Head	d (feet) 0.20 0.40 (	0.60 0.80 1.00 1.2	0 1.40 1.60 1.80 2.	00
				3.00 3.50 4.00 4.			
						2.68 2.66 2.64 2.64	ļ
			2.64	2.65 2.65 2.66 2.	66 2.68 2.70 2.74		

**Discarded OutFlow** Max=0.53 cfs @ 15.17 hrs HW=250.59' (Free Discharge) **1=Exfiltration** (Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### **Summary for Pond 8B: Basin 8A**

Inflow Area =	4.301 ac, 0.98% Impervious, Inflow Depth = 1.01" for 10-Year event	
Inflow =	2.64 cfs @ 12.40 hrs, Volume= 0.361 af	
Outflow =	0.42 cfs @ 14.56 hrs, Volume= 0.361 af, Atten= 84%, Lag= 129.4 min	
Discarded =	0.42 cfs @ 14.56 hrs, Volume= 0.361 af	
Primary =	0.00 cfs @ 5.00 hrs, Volume= 0.000 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 244.69' @ 14.56 hrs Surf.Area= 7,372 sf Storage= 6,157 cf Flood Elev= 246.00' Surf.Area= 16,698 sf Storage= 21,360 cf

Plug-Flow detention time= 197.3 min calculated for 0.361 af (100% of inflow) Center-of-Mass det. time= 197.2 min (1,101.0 - 903.8)

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Page 71

Volume	Invert	Avail.	Storage	Storage Description					
#1	243.00'	2	1,360 cf	0 cf Custom Stage Data (Irregular)Listed below (Recalc)					
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)			
243.0	0	649	429.6	0	0	649			
244.0	0	4,253	502.8	2,188	2,188	6,100			
245.0	0	9,040	671.8	6,498	8,686	21,908			
246.0	0	16,698	842.9	12,675	21,360	42,546			
Device Routing Invert			ert Outle	et Devices					
#1	Discarded	243.0	00' <b>2.41</b>	2.410 in/hr Exfiltration over Surface area					
			Cond	Conductivity to Groundwater Elevation = 199.00'					
#2	Primary	245.7	75' <b>15.0</b> '	long x 8.0' breadt	th Broad-Crested	Rectangular Weir			
			Head	d (feet) 0.20 0.40 (	0.60 0.80 1.00 1.2	20 1.40 1.60 1.80 2.00			
			2.50	3.00 3.50 4.00 4.	.50 5.00 5.50				
			Coef	f. (English) 2.43 2.5	54 2.70 2.69 2.68	2.68 2.66 2.64 2.64			
			2.64	2.65 2.65 2.66 2.	.66 2.68 2.70 2.74	4			

**Discarded OutFlow** Max=0.42 cfs @ 14.56 hrs HW=244.69' (Free Discharge) 1=Exfiltration (Controls 0.42 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=243.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### **Summary for Pond P2B: Basin 2B**

Inflow Area =	15.629 ac,	0.72% Impervious, Inflov	v Depth = 1.01"	for 10-Year event
Inflow =	11.63 cfs @	12.23 hrs, Volume=	1.312 af	
Outflow =	10.59 cfs @	12.32 hrs, Volume=	1.312 af, Atte	en= 9%, Lag= 5.4 min
Discarded =	0.31 cfs @	12.32 hrs, Volume=	0.187 af	
Primary =	10.28 cfs @	12.32 hrs, Volume=	1.125 af	
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 197.13' @ 12.32 hrs Surf.Area= 3,922 sf Storage= 3,567 cf Flood Elev= 198.50' Surf.Area= 6,749 sf Storage= 10,528 cf

Plug-Flow detention time= 9.9 min calculated for 1.310 af (100% of inflow) Center-of-Mass det. time= 9.9 min ( 904.6 - 894.7 )

Volume	Invert	Avail.Storage	Storage Descripti	on		
#1	196.00'	10,528 cf	Custom Stage D	Custom Stage Data (Irregular)Listed below (Re		
Elevation (feet)	Surf.A (so	rea Perim. ı-ft) (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
196.00	,	153 396.9	0	0	2,453	
197.00 198.00	5,2	748 465.9 223 506.0	3,078 4,465	3,078 7,543	7,210 10,349	
198.50	6,7	749 523.0	2,985	10,528	11,765	

#### Nutmeg Solar Project - Proposed **Proposed Hydrology - Nutmeg-REV** Prepared by Tighe & Bond

Type III 24-hr 10-Year Rainfall=4.70" Printed 9/11/2018

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Page 72

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	24.0" Round Culvert
			L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 195.50' / 195.00' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	196.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 194.00'
#3	Secondary	198.00'	50.0' long x 20.0' 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
#4	Device 1	196.00'	<b>18.0" Vert. Orifice/Grate X 2.00</b> C= 0.600
#5	Device 1	198.00'	27.0" Horiz. Orifice/Grate C= 0.600
			Limited to weir flow at low heads

**Discarded OutFlow** Max=0.31 cfs @ 12.32 hrs HW=197.12' (Free Discharge) **2=Exfiltration** (Controls 0.31 cfs)

Primary OutFlow Max=10.21 cfs @ 12.32 hrs HW=197.12' (Free Discharge)

-1=Culvert (Barrel Controls 10.21 cfs @ 5.10 fps)

4=Orifice/Grate (Passes 10.21 cfs of 10.22 cfs potential flow)

**5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=196.00' (Free Discharge)

3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Nutmeg Solar Project - Proposed Type III 24-hr 25-Year Rainfall=5.50" Printed 9/11/2018

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Page 73

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

- Subcatchment 1AS: Drainage Area 1AS Runoff Area=17.426 ac 5.85% Impervious Runoff Depth=1.24" Flow Length=1,146' Tc=29.0 min CN=55 Runoff=12.43 cfs 1.800 af
- Subcatchment 1BS: Drainage Area 1BS Runoff Area=9.780 ac 2.10% Impervious Runoff Depth=1.76" Flow Length=1,301' Tc=17.2 min CN=62 Runoff=13.48 cfs 1.431 af
- **Subcatchment 1CS: Drainage Area 1CS** Runoff Area=4.622 ac 6.34% Impervious Runoff Depth=3.53" Flow Length=870' Tc=16.6 min UI Adjusted CN=82 Runoff=13.78 cfs 1.360 af
- Subcatchment 2AS: Drainage Area 2AS Runoff Area=11.522 ac 2.97% Impervious Runoff Depth=1.53" Flow Length=747' Tc=16.5 min CN=59 Runoff=13.56 cfs 1.467 af
- Subcatchment 2BS: Drainage Area 2BS Runoff Area=15.629 ac 0.72% Impervious Runoff Depth=1.45" Flow Length=1,098' Tc=14.2 min CN=58 Runoff=18.28 cfs 1.893 af
- **Subcatchment3AS: Drainage Area 3AS** Runoff Area=6.262 ac 7.41% Impervious Runoff Depth=1.83" Flow Length=840' Tc=9.8 min UI Adjusted CN=63 Runoff=11.12 cfs 0.957 af
- Subcatchment 4AS: Drainage Area 4AS Runoff Area=4.677 ac 2.67% Impervious Runoff Depth=1.45" Flow Length=1,146' Tc=13.7 min CN=58 Runoff=5.54 cfs 0.567 af
- **Subcatchment 4BS: Drainage Area 4BS** Runoff Area=24.770 ac 0.45% Impervious Runoff Depth=1.45" Flow Length=1,845' Tc=29.3 min CN=58 Runoff=21.69 cfs 3.001 af
- **Subcatchment 5AS: Drainage Area 5AS**Runoff Area=1.754 ac 0.00% Impervious Runoff Depth=1.45"
  Flow Length=445' Tc=5.4 min CN=58 Runoff=2.70 cfs 0.212 af
- Subcatchment 5BS: Drainage Area 5BS

  Runoff Area=1.232 ac 0.00% Impervious Runoff Depth=1.45"
  Flow Length=394' Tc=8.0 min CN=58 Runoff=1.71 cfs 0.149 af
- **Subcatchment 5S: Drainage Area 5S**Runoff Area=6.687 ac 0.00% Impervious Runoff Depth=1.31"

  Flow Length=1,088' Tc=13.1 min CN=56 Runoff=7.00 cfs 0.730 af
- **Subcatchment 6AS: Drainage Area 6AS** Runoff Area=1.181 ac 6.35% Impervious Runoff Depth=1.53" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=1.82 cfs 0.150 af
- **Subcatchment 6BS: Drainage Area 6BS** Runoff Area=0.525 ac 4.76% Impervious Runoff Depth=1.53" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=0.81 cfs 0.067 af
- Subcatchment 6S: Drainage Area 6S

  Runoff Area=3.086 ac 0.00% Impervious Runoff Depth=1.38"
  Flow Length=1,253' Tc=19.3 min CN=57 Runoff=3.00 cfs 0.355 af
- Subcatchment 7AS: Drainage Area 7AS Runoff Area=11.944 ac 0.52% Impervious Runoff Depth=1.45" Flow Length=1,206' Tc=14.8 min CN=58 Runoff=13.66 cfs 1.447 af
- **Subcatchment 7S: Drainage Area 7S**Runoff Area=19.533 ac 0.35% Impervious Runoff Depth=1.38"
  Flow Length=1,268' Tc=14.5 min UI Adjusted CN=57 Runoff=21.03 cfs 2.248 af

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Page 74

Outflow=21.03 cfs 2.248 af

**Subcatchment 8AS: Drainage Area 8A**Runoff Area=6.478 ac 0.57% Impervious Runoff Depth=1.45"
Flow Length=984' Tc=16.1 min CN=58 Runoff=7.21 cfs 0.785 af

Subcatchment 8BS: Drainage Area 8BS Runoff Area=4.301 ac 0.98% Impervious Runoff Depth=1.45" Flow Length=1,438' Tc=24.0 min CN=58 Runoff=4.09 cfs 0.521 af

**Subcatchment 8S: Drainage Area 8S**Runoff Area=9.946 ac 6.29% Impervious Runoff Depth=1.68"
Flow Length=794' Tc=13.8 min UI Adjusted CN=61 Runoff=14.12 cfs 1.391 af

Subcatchment 9S: Drainage Area 9S

Runoff Area = 1.031 ac 0.00% Impervious Runoff Depth = 1.53"

Flow Length = 613' Tc = 10.6 min CN = 59 Runoff = 1.43 cfs 0.131 af

**Reach 1BR: Overland Flow**Avg. Flow Depth=0.04' Max Vel=0.41 fps Inflow=13.48 cfs 1.431 af n=0.030 L=940.0' S=0.0426'/ Capacity=0.71 cfs Outflow=6.52 cfs 1.430 af

**Reach 1CR: Overland Flow**Avg. Flow Depth=0.13' Max Vel=0.73 fps Inflow=10.39 cfs 1.360 af n=0.030 L=6,700.0' S=0.0084 '/' Capacity=17.41 cfs Outflow=3.05 cfs 1.296 af

**Reach 2BR: Overland Flow**Avg. Flow Depth=0.08' Max Vel=0.35 fps Inflow=14.54 cfs 1.690 af n=0.030 L=785.0' S=0.0280 '/' Capacity=0.46 cfs Outflow=8.01 cfs 1.689 af

Reach DP-1: Design Point 1 Inflow=12.82 cfs 4.525 af
Outflow=12.82 cfs 4.525 af

Reach DP-2: Design Point 2 Inflow=13.56 cfs 3.155 af Outflow=13.56 cfs 3.155 af

Reach DP-3: Design Point 3 Inflow=11.12 cfs 0.957 af
Outflow=11.12 cfs 0.957 af

Reach DP-4: Design Point 4 Inflow=25.31 cfs 3.567 af Outflow=25.31 cfs 3.567 af

Reach DP-5: Design Point 5 Inflow=7.00 cfs 0.730 af
Outflow=7.00 cfs 0.730 af

Reach DP-6: Design Point 6 Inflow=3.00 cfs 0.355 af
Outflow=3.00 cfs 0.355 af

Reach DP-7: Design Point 7 Inflow=21.03 cfs 2.248 af

Reach DP-8: Design Point 8 Inflow=14.12 cfs 1.391 af Outflow=14.12 cfs 1.391 af

Reach DP-9: Design Point 9 Inflow=1.43 cfs 0.131 af
Outflow=1.43 cfs 0.131 af

Pond 1BP: Culvert 1BS Peak Elev=214.06' Inflow=13.48 cfs 1.431 af

Primary=13.48 cfs 1.431 af Secondary=0.00 cfs 0.000 af Outflow=13.48 cfs 1.431 af

#### Proposed Hydrology - Nutmeg-REV Prepared by Tighe & Bond

Nutmeg Solar Project - Proposed Type III 24-hr 25-Year Rainfall=5.50" Printed 9/11/2018

Page 75

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Pond 5A: Basin 5A	Peak Elev=273.79' Storage=3,236 cf Inflow=2.70 cfs 0.212 af Discarded=0.33 cfs 0.212 af Primary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.212 af
Pond 5B: Basin 5B	Peak Elev=291.22' Storage=2,587 cf Inflow=1.71 cfs 0.149 af Discarded=0.19 cfs 0.149 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.149 af
Pond 5P: Culvert 1CS	Peak Elev=227.67' Storage=4,147 cf Inflow=13.78 cfs 1.360 af Primary=10.39 cfs 1.360 af Secondary=0.00 cfs 0.000 af Outflow=10.39 cfs 1.360 af
Pond 6A: Basin 6A	Peak Elev=302.56' Storage=2,118 cf Inflow=1.82 cfs 0.150 af Discarded=0.27 cfs 0.150 af Primary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.150 af
Pond 6B: Basin 6B	Peak Elev=293.31' Storage=1,079 cf Inflow=0.81 cfs 0.067 af Discarded=0.10 cfs 0.067 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.067 af
Pond 7A: Basin 7A	Peak Elev=252.66' Storage=29,454 cf Inflow=13.66 cfs 1.447 af Discarded=1.39 cfs 1.371 af Primary=0.00 cfs 0.000 af Outflow=1.39 cfs 1.371 af
Pond 8A: Basin 8A	Peak Elev=251.15' Storage=16,355 cf Inflow=7.21 cfs 0.785 af Discarded=0.70 cfs 0.752 af Primary=0.00 cfs 0.000 af Outflow=0.70 cfs 0.752 af
Pond 8B: Basin 8A	Peak Elev=245.12' Storage=9,836 cf Inflow=4.09 cfs 0.521 af Discarded=0.56 cfs 0.520 af Primary=0.00 cfs 0.000 af Outflow=0.56 cfs 0.520 af

**Pond P2B: Basin 2B**Peak Elev=197.69' Storage=5,982 cf Inflow=18.28 cfs 1.893 af Discarded=0.42 cfs 0.204 af Primary=14.54 cfs 1.690 af Secondary=0.00 cfs 0.000 af Outflow=14.96 cfs 1.893 af

Total Runoff Area = 162.386 ac Runoff Volume = 20.662 af Average Runoff Depth = 1.53" 97.78% Pervious = 158.779 ac 2.22% Impervious = 3.607 ac

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Page 76

### **Summary for Subcatchment 1AS: Drainage Area 1AS**

Runoff = 12.43 cfs @ 12.47 hrs, Volume= 1.800 af, Depth= 1.24"

	Area	(ac) C	N Des	cription								
*	0.	164	98 Exis	Existing Structure, HSG A								
*	0.	533	98 Exis	Existing Structure, HSG B								
	0.	000	30 Woo	Voods, Good, HSG A								
	3.	149		ds, Good,								
	0.	000	70 Woo	ds, Good,	HSG C							
	0.	041		el surface								
	0.	371	96 Grav	el surface	, HSG B							
	0.	000	96 Grav	el surface	, HSG C							
	3.	589	30 Mea	dow, non-g	grazed, HS	G A						
	9.	178	58 Mea	dow, non-	grazed, HS	GB						
	0.	000	71 Mea	dow, non-	grazed, HS	GC						
	0.	006	98 Unc	onnected p	avement, l	HSG A						
	0.	317	98 Unc	onnected p	avement, I	HSG B						
					avement, I	HSG C						
				er Surface,								
				er Surface,								
				er Surface,								
					omb., Fair,	HSG B						
				ghted Aver								
		406		5% Pervio								
		020		% Impervi								
	0.	323	31.6	7% Uncon	nected							
	То	Longth	Clana	\/alaaity	Canacity	Description						
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
_			<u> </u>		(CIS)	Observat Filmer						
	6.0	50	0.1200	0.14		Sheet Flow,						
	0.5	00	0.4450	0.07		Woods: Light underbrush n= 0.400 P2= 3.20"						
	0.5	82	0.1459	2.67		Shallow Concentrated Flow,						
	2.0	226	0.0760	4.00		Short Grass Pasture Kv= 7.0 fps						
	2.0	236	0.0762	1.93		Shallow Concentrated Flow,						
	4.0	60	0.0447	0.85		Short Grass Pasture Kv= 7.0 fps						
	1.3	68	0.0147	0.65		Shallow Concentrated Flow,						
	11.9	445	0.0079	0.62		Short Grass Pasture Kv= 7.0 fps						
	11.9	445	0.0079	0.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps						
	7.3	265	0.0075	0.61		• • • • • • • • • • • • • • • • • • •						
	1.3	203	0.0075	0.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps						
_	20.0	1 1 1 1 0	Total			OHOIL OIASS FASILIE INV-1.0 IPS						
	29.0	1,146	Total									

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Page 77

### **Summary for Subcatchment 1BS: Drainage Area 1BS**

Runoff = 13.48 cfs @ 12.26 hrs, Volume= 1.431 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 25-Year Rainfall=5.50"

	Area	(ac) (	CN Des	cription					
*	0.	000	98 Exis	tina Struct	ure, HSG A				
*					ure, HSG E				
0.000 30 Woods, Good, HSG A									
	0.000 55 Woods, Good, HSG B								
	0.			ods, Good,					
	0.	000		vel surface					
	0.	922		vel surface					
	0.	000	96 Gra	vel surface	, HSG C				
	0.	000	30 Mea	idow, non-	grazed, HS	G A			
	8.	653	58 Mea	dow, non-	grazed, HS	G B			
	0.	000	71 Mea	dow, non-	grazed, HS	GC			
	0.	000	98 Und	onnected p	pavement, I	HSG A			
				onnected p	pavement, I	HSG B			
	0.				pavement, I	HSG C			
				er Surface					
				er Surface	,				
_	0.	000	<u>98 Wat</u>	<u>er Surface</u>	, HSG C				
				ghted Aver					
		575		00% Pervio					
		205		% Impervi					
	0.	205	100	.00% Unco	nnected				
	То	Longth	Clono	Valaaitv	Conneity	Description			
	Tc (min)	Length (feet)		Velocity (ft/sec)	Capacity (cfs)	Description			
_					(015)	Chaot Flour			
	3.2	50	0.0800	0.26		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"			
	10.1	765	0.0327	1.27					
	10.1	700	0.0327	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps			
	2.8	278	0.0576	1.68		Shallow Concentrated Flow,			
	2.0	210	0.0370	1.00		Short Grass Pasture Kv= 7.0 fps			
	0.4	82	0.2560	3.54		Shallow Concentrated Flow,			
	0.4	02	0.2000	5.54		Short Grass Pasture Kv= 7.0 fps			
	0.7	126	0.0397	3.21		Shallow Concentrated Flow,			
	0.7	120	3.0007	0.21		Unpaved Kv= 16.1 fps			
_	17.2	1,301	Total						
		.,							

#### **Summary for Subcatchment 1CS: Drainage Area 1CS**

Runoff = 13.78 cfs @ 12.23 hrs, Volume= 1.360 af, Depth= 3.53"

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Page 78

	Area	(ac) (	CN Adj	Descript	tion					
*	0.	000	98	Existing	Existing Structure, HSG A					
*	0.	120	98	Existing	Existing Structure, HSG B					
		000	30	Woods,	Woods, Good, HSG A					
			55		Good, HSC					
			70		Woods, Good, HSG C					
			96		Gravel surface, HSG A					
			96		surface, HS					
			96		surface, HS					
			30		, non-graz					
			58		, non-graz					
			71		, non-graz					
			98			ment, HSG A				
			98		•	ment, HSG B				
			98 98			ment, HSG C				
			96 98		Water Surface, HSG A Water Surface, HSG B					
			98		Water Surface, HSG C					
			83 82		Weighted Average, UI Adjusted					
	4.	329		93.66%	93.66% Pervious Area					
	0.	293		6.34% I	6.34% Impervious Area					
	0.	173		59.04%	Unconnect	ed				
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)		(ft/sec)	(cfs)	Boompton				
	5.6	50		0.15	(0.0)	Sheet Flow,				
	0.0	00	0.0200	0.10		Grass: Short n= 0.150 P2= 3.20"				
	3.9	160	0.0094	0.68		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.6	122	0.0328	1.27		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.8	222	0.0676	1.30		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	0.2	33	0.1212	2.44		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.5	283	0.0141	1.91		Shallow Concentrated Flow,				
_						Unpaved Kv= 16.1 fps				
	16.6	870	Total							

# **Summary for Subcatchment 2AS: Drainage Area 2AS**

Runoff = 13.56 cfs @ 12.26 hrs, Volume= 1.467 af, Depth= 1.53"

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Page 79

	Area	(ac)	CN	Desc	cription								
*	0.	000	98	Exist	ting Structi	1							
*	0.	025	98	Exist	xisting Structure, HSG B								
	0.	000	30	Woo	Voods, Good, HSG A								
	0.	000	55	Woo	ds, Good,	HSG B							
	0.	000	70	Woo	ds, Good,	HSG C							
	0.	000	96	Grav	el surface	, HSG A							
	0.	079	96	Grav	el surface	, HSG B							
	0.	000	96	Grav	el surface	, HSG C							
	0.	000	30	Mea	dow, non-g	grazed, HS	G A						
		084	58	Mea	dow, non-	grazed, HS	G B						
		000	71			grazed, HS							
		000	98			oavement, I							
		317	98			oavement, I							
		000	98			oavement, I	HSG C						
		000	98		er Surface,								
		000	98		er Surface,								
		000	98		er Surface,								
_		017	65			omb., Fair,	, HSG B						
		522	59		ghted Aver								
		180		-	3% Pervio								
		342			% Impervi								
	0.	317		92.69	9% Uncon	nected							
	_		_				<b>—</b>						
	Tc	Lengtl		Slope	Velocity	Capacity	Description						
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)							
	3.2	50	0.	0800	0.26		Sheet Flow,						
							Grass: Short n= 0.150 P2= 3.20"						
	2.9	284	4 0.	0528	1.61		Shallow Concentrated Flow,						
							Short Grass Pasture Kv= 7.0 fps						
	1.2	80	0.	0250	1.11		Shallow Concentrated Flow,						
							Short Grass Pasture Kv= 7.0 fps						
	9.2	333	3 0.	0075	0.61		Shallow Concentrated Flow,						
_							Short Grass Pasture Kv= 7.0 fps						
	16.5	747	7 To	otal									

# **Summary for Subcatchment 2BS: Drainage Area 2BS**

Runoff = 18.28 cfs @ 12.22 hrs, Volume= 1.893 af, Depth= 1.45"

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Page 80

	Area	(ac) (	N Des	cription					
*	0.	000	98 Exis	ting Struct	ure, HSG A				
*				•	ure, HSG B				
	0.	000		ds, Good,					
	5.	460		ds, Good,					
	0.	000	70 Woo	ds, Good,	HSG C				
	0.	000		el surface					
	0.	340	96 Grav	el surface	, HSG B				
	0.	000	96 Grav	el surface	, HSG C				
	0.	000	30 Mea	dow, non-	grazed, HS	GA			
	9.	717	58 Mea	dow, non-	grazed, HS	GB			
	0.	000	71 Mea	dow, non-	grazed, HS	GC			
	0.	000	98 Unc	onnected p	avement, I	HSG A			
					avement, I				
					avement, l	HSG C			
				er Surface					
				er Surface					
	0.	000	98 Wat	er Surface	, HSG C				
				ghted Aver					
		517		99.28% Pervious Area					
		112		0.72% Impervious Area					
	0.	031	27.6	8% Uncon	nected				
	Тс	Length	Slope	Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•			
	5.6	50	0.0200	0.15		Sheet Flow,			
						Grass: Short n= 0.150 P2= 3.20"			
	1.8	182	0.0549	1.64		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	3.3	410	0.0879	2.08		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	0.9	120	0.1083	2.30		Shallow Concentrated Flow,			
						Short Grass Pasture Kv= 7.0 fps			
	2.4	291	0.1684	2.05		Shallow Concentrated Flow,			
						Woodland Kv= 5.0 fps			
	0.2	45	0.2426	3.45		Shallow Concentrated Flow,			
_						Short Grass Pasture Kv= 7.0 fps			
	14.2	1,098	Total						

# **Summary for Subcatchment 3AS: Drainage Area 3AS**

Runoff = 11.12 cfs @ 12.15 hrs, Volume= 0.957 af, Depth= 1.83"

Page 81

### **Proposed Hydrology - Nutmeg-REV**

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	Area	(ac)	CN A	dj	Descript	ion					
*		000	98			Structure,	HSG A				
*		000	98			Structure,					
		000	30		Woods, Good, HSG A						
		153	55		Woods, Good, HSG B						
		000	70		Woods, Good, HSG C						
		000	96		Gravel surface, HSG A						
	0.4	496	96		Gravel surface, HSG B						
	0.	000	96		Gravel surface, HSG C						
	0.	000	30		Meadow, non-grazed, HSG A						
	5.	149	58		Meadow	, non-graze	ed, HSG B				
		000	71			, non-graze					
		000	98				ment, HSG A				
		175	98				ment, HSG B				
		000	98				ment, HSG C				
		000	98		Water Surface, HSG A						
		289	98			urface, HS					
_		000	98			urface, HS					
	6.262 64 63 5.798 0.464			53			UI Adjusted				
						Pervious A					
		404 175			7.41% Impervious Area 37.72% Unconnected						
	0.	173			37.72 % Officerifiected						
	Тс	Length			√elocity	Capacity	Description				
_	(min)	(feet	) (ft/f	ft)	(ft/sec)	(cfs)					
	5.4	50	0.160	00	0.16		Sheet Flow,				
							Woods: Light underbrush n= 0.400 P2= 3.20"				
	0.3	38	3 0.131	6	1.81		Shallow Concentrated Flow,				
					0.44		Woodland Kv= 5.0 fps				
	0.2	32	2 0.093	88	2.14		Shallow Concentrated Flow,				
	0.1	2	5 0.080		4 55		Short Grass Pasture Kv= 7.0 fps				
	0.1	23	0.060	JU	4.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps				
	2.4	463	0.039	an a	3.18		Shallow Concentrated Flow,				
	۵.٦	700	. 0.000		0.10		Unpaved Kv= 16.1 fps				
	1.4	232	2 0.030	)2	2.80		Shallow Concentrated Flow,				
				-			Unpaved Kv= 16.1 fps				
	9.8	840	) Total				•				

# **Summary for Subcatchment 4AS: Drainage Area 4AS**

Runoff = 5.54 cfs @ 12.21 hrs, Volume= 0.567 af, Depth= 1.45"

Description

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CN

Area (ac)

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Page 82

	Alea	(ac) C	N Desi	ripuon		
*	0.	000	98 Exis	ting Struct	ure, HSG A	1
*	0.	000	98 Exis	ting Struct	ure, HSG B	}
	0.	000 3	30 Woo	ds, Good,	HSG A	
	3.	033 5	55 Woo	ds, Good,	HSG B	
	0.	000 7	70 Woo	ds, Good,	HSG C	
				el surface	, HSG A	
				el surface	•	
				el surface	•	
					grazed, HS	
					grazed, HS	
					grazed, HS	
					avement, I	
					avement, l	
					avement, I	ASG C
				er Surface		
				er Surface		
_				er Surface		
				ghted Aver		
		552 125		3% Pervio		
		125 125		% Impervi 00% Unco		
	0.	125	100.	00 % Offico	mected	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description
_	5.6	50	0.0200	0.15	(0.0)	Sheet Flow,
	5.0	50	0.0200	0.10		Grass: Short n= 0.150 P2= 3.20"
	1.0	79	0.0380	1.36		Shallow Concentrated Flow,
			0.0000	1.00		Short Grass Pasture Kv= 7.0 fps
	0.8	107	0.0935	2.14		Shallow Concentrated Flow,
	0.0		0.000			Short Grass Pasture Kv= 7.0 fps
	4.3	532	0.1729	2.08		Shallow Concentrated Flow,
				_		Woodland Kv= 5.0 fps
	0.8	67	0.0448	1.48		Shallow Concentrated Flow,
						Short Grass Pasture Kv= 7.0 fps
	1.2	311	0.0676	4.19		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	13.7	1,146	Total			
		•				

# **Summary for Subcatchment 4BS: Drainage Area 4BS**

Runoff = 21.69 cfs @ 12.46 hrs, Volume= 3.001 af, Depth= 1.45"

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Page	83
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	Area	(ac) (	CN De	scription						
*	0.	000	98 Ex	sting Struct	ure, HSG A	1				
*	0.	000		sting Struct						
	0.	000		ods, Good,						
	6.	999	55 Wo	ods, Good,	HSG B					
				ods, Good,						
	0.	000		avel surface						
	0.	046		avel surface						
	0.	000	96 Gr	avel surface	, HSG C					
	0.	000	30 Me	adow, non-	grazed, HS	G A				
	17.	042		adow, non-						
	0.	393	71 Me	Meadow, non-grazed, HSG C						
	0.	000	98 Un	Unconnected pavement, HSG A						
				connected p						
				connected p		HSG C				
				iter Surface						
				Water Surface, HSG B						
				iter Surface	•					
0.179 65 Woods/grass comb., Fair, HSG B										
	24.									
		659		55% Pervio						
		111		5% Impervi						
	0.	111	10	0.00% Unco	nnected					
	Тс	Length	Slope	e Velocity	Capacity	Description				
	(min)	(feet)			(cfs)	'				
	5.6	50	0.0200		,	Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	1.6	186	0.0806	1.99		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	0.4	72	0.1668	3 2.86		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	3.7	439	0.1550	1.97		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	3.7	411	$0.068^{\circ}$	1.83		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	14.3	687	0.013	0.80		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	29.3	1,845	Total							

# **Summary for Subcatchment 5AS: Drainage Area 5AS**

Runoff = 2.70 cfs @ 12.10 hrs, Volume= 0.212 af, Depth= 1.45"

Description

CN

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Area (ac)

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Page 84

*	0.000	Ç	98 Exis	ting Struct	ure, HSG A	1					
*	0.000	Ç	98 Exis	ting Struct	ure, HSG B	}					
	0.000	3	30 Woo	ds, Good,	HSG A						
	0.000	5	55 Woo	ds, Good,	HSG B						
	0.000	7	70 Woo	ds, Good,	HSG C						
	0.000	Ç	96 Grav	vel surface	, HSG A						
	0.000	Ś	96 Grav	vel surface	, HSG B						
	0.000	Ś	96 Grav	vel surface	, HSG C						
	0.000				grazed, HS						
1.754 58 Meadow, non-grazed, HSG B											
	0.000 71 Meadow, non-grazed, HSG C										
	0.000 98 Unconnected pavement, HSG A										
	0.000 98 Unconnected pavement, HSG B										
	0.000				avement, I	HSG C					
	0.000			er Surface							
	0.000			er Surface							
	0.000			er Surface							
	1.754			ghted Aver							
	1.754		100.	00% Pervi	ous Area						
			01			B					
		ngth	Slope	Velocity	Capacity	Description					
(m		eet)	(ft/ft)	(ft/sec)	(cfs)						
3	3.2	50	0.0800	0.26		Sheet Flow,					
_	_					Grass: Short n= 0.150 P2= 3.20"					
2	2.2	395	0.1800	2.97		Shallow Concentrated Flow,					
						Short Grass Pasture Kv= 7.0 fps					
5	5.4	445	Total								

### **Summary for Subcatchment 5BS: Drainage Area 5BS**

Runoff = 1.71 cfs @ 12.13 hrs, Volume= 0.149 af, Depth= 1.45"

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Page 85

	Area	(ac)	CI	N Desc	cription							
*	0.	.000	98	8 Exist	ing Structi	ure, HSG A	1					
*	0.	.000	98	8 Exist	Existing Structure, HSG B							
	0.	.000	30	O Woo	ds, Good,	HSG A						
	0.	.000	5	5 Woo	ds, Good,	HSG B						
		.000	70		ds, Good,							
		.000	90		el surface	,						
		.000	90		el surface	•						
		.000	90		el surface	,						
		.000	30			grazed, HS						
		.232	58			grazed, HS						
		.000	7			grazed, HS						
0.000 98 Unconnected pavement, HSG A												
0.000 98 Unconnected pavement, HSG B												
		.000	98			pavement, I	HSG C					
	_	.000	98		er Surface,							
		.000	98		er Surface,							
		.000	98		er Surface,	<u> </u>						
		232	58		hted Aver	•						
	1.	.232		100.	100.00% Pervious Area							
	То	Long	.th	Clana	Volocity	Conneity	Description					
	Tc (min)	Leng		Slope	Velocity	Capacity	Description					
_	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	Object Floor					
	4.3	;	50	0.0400	0.20		Sheet Flow,					
	4.0	4.	10	0.0440	4 47		Grass: Short n= 0.150 P2= 3.20"					
	1.3	T	13	0.0442	1.47		Shallow Concentrated Flow,					
	2.4	2	31	0.0520	1.60		Short Grass Pasture Kv= 7.0 fps					
	2.4	۷.	J 1	0.0020	1.00		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps					
	8.0	20	94	Total			Onort Orass r asture TV- 1.0 ips					
	0.0	ડ:	94	าบเลเ								

### **Summary for Subcatchment 5S: Drainage Area 5S**

Runoff = 7.00 cfs @ 12.21 hrs, Volume= 0.730 af, Depth= 1.31"

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Page 86

	Area	(ac) (	CN Des	scription							
*	0.	000	98 Exi	sting Struct	ure, HSG A	1					
*	0.	000	98 Exi	Existing Structure, HSG B							
	0.	000	30 Wo								
	4.										
	0.000 70 Woods, Good, HSG C										
				vel surface							
				vel surface	,						
				vel surface	,						
					grazed, HS						
					grazed, HS						
					grazed, HS						
					pavement, l						
0.000 98 Unconnected pavement, HSG B											
					pavement, l	HSG C					
				ter Surface							
				ter Surface ter Surface	•						
					•						
				ighted Avei 0.00% Pervi							
	О.	687	100	0.00% Perv	ious Area						
	Тс	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	•		(cfs)	Description					
	3.2	50			(010)	Sheet Flow,					
	0.2	50	0.0000	0.20		Grass: Short n= 0.150 P2= 3.20"					
	3.0	396	0.0959	2.17		Shallow Concentrated Flow,					
	0.0	000	0.0000	2.17		Short Grass Pasture Kv= 7.0 fps					
	4.2	435	0.1172	1.71		Shallow Concentrated Flow,					
		.50	J2			Woodland Kv= 5.0 fps					
	2.7	207	0.0676	1.30		Shallow Concentrated Flow,					
		_•.				Woodland Kv= 5.0 fps					
	13.1	1,088	Total			•					

# **Summary for Subcatchment 6AS: Drainage Area 6AS**

Runoff = 1.82 cfs @ 12.12 hrs, Volume= 0.150 af, Depth= 1.53"

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Page 87

_	Area (	ac)	CN	Adj	Descript	ion					
*	0.0	000	98		Existing	Existing Structure, HSG A					
*	0.0	000	98		Existing Structure, HSG B						
	0.0	000	30		Woods, Good, HSG A						
	0.0	000	55		Woods, Good, HSG B						
	0.0	000	70		Woods, Good, HSG C						
	0.0	000	96		Gravel surface, HSG A						
	0.0	000	96		Gravel surface, HSG B						
	0.0	000	96		Gravel s	urface, HS	SG C				
	0.0	000	30		Meadow	Meadow, non-grazed, HSG A					
	1.	106	58		Meadow	, non-graz	ed, HSG B				
	0.0	000	71		Meadow	Meadow, non-grazed, HSG C					
		000	98			Unconnected pavement, HSG A					
		075	98				ment, HSG B				
		000	98				ment, HSG C				
		000	98			urface, HS					
		000	98			Water Surface, HSG B					
	0.0	000	98		Water S	Water Surface, HSG C					
	1.	181	61	59	Weighted Average, UI Adjusted						
	1.	106			93.65% Pervious Area						
	0.0	075			6.35% lı	6.35% Impervious Area					
	0.0	075			100.00%	6 Unconne	cted				
	Tc	Length	n SI	lope	Velocity	Capacity	Description				
	(min)	(feet	) (	ft/ft)	(ft/sec)	(cfs)					
	4.8	50	0.0	300	0.17		Sheet Flow,				
							Grass: Short n= 0.150 P2= 3.20"				
	2.5	240	0.0	542	1.63		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				
	7.3	290	) Tot	tal							

### **Summary for Subcatchment 6BS: Drainage Area 6BS**

Runoff = 0.81 cfs @ 12.12 hrs, Volume= 0.067 af, Depth= 1.53"

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Page 88

	Area	(ac)	CI	N Adj	Descript	ion						
*	0.	000	9	8	Existing	Structure,	HSG A					
*	0.	000	9	8	Existing Structure, HSG B							
	0.	000	3	0	Woods, Good, HSG A							
	0.	000	5	5	Woods, Good, HSG B							
	0.	000	7	0	Woods,	Woods, Good, HSG C						
	0.	000	9	6	Gravel surface, HSG A							
	0.	000	9		Gravel s	Gravel surface, HSG B						
	0.	000	9	6	Gravel s	Gravel surface, HSG C						
	0.	000	3	0	Meadow	, non-graz	ed, HSG A					
	0.	500	5	8	Meadow	, non-graz	ed, HSG B					
	0.	000	7	1	Meadow	, non-graz	ed, HSG C					
	_	000	9		Unconnected pavement, HSG A							
		025	9		Unconn	Unconnected pavement, HSG B						
		000	9				ment, HSG C					
		000	9		Water S	urface, HS	G A					
		000	9		Water Surface, HSG B							
_	0.	000	9	8	Water Surface, HSG C							
	0.	525	6	0 59	Weighte	d Average,	, UI Adjusted					
	0.	500			95.24%	Pervious A	rea					
	0.	025			4.76% lı	mpervious .	Area					
	0.	025			100.00%	6 Unconne	cted					
	Тс	Lengt	:h	Slope	Velocity	Capacity	Description					
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)						
	4.8	5	0	0.0300	0.17		Sheet Flow,					
							Grass: Short n= 0.150 P2= 3.20"					
	2.5	24	0	0.0542	1.63		Shallow Concentrated Flow,					
							Short Grass Pasture Kv= 7.0 fps					
	7.3	29	0	Total			<u> </u>					

### Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 3.00 cfs @ 12.31 hrs, Volume= 0.355 af, Depth= 1.38"

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Page 89

_	Area	(ac) (	CN Des	cription				
*	0.	000	98 Exis	sting Struct	ure, HSG A	1		
*	0.	000	98 Exis	sting Struct	ure, HSG E	3		
	0.	000	30 Wo	ods, Good,	HSG A			
	1.	480	55 Wo	ods, Good,	HSG B			
	0.	000						
	0.							
0.000 96 Gravel surface, HSG C								
0.000 30 Meadow, non-grazed, HSG A								
					grazed, HS			
					grazed, HS			
					pavement, I			
					pavement, I			
					pavement, I	HSG C		
				ter Surface	•			
				ter Surface				
_				ter Surface	<i>.</i>			
				ighted Aver				
	3.	086	100	.00% Pervi	ous Area			
	_							
	Tc	Length			Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	4.3	50	0.0400	0.20		Sheet Flow,		
						Grass: Short n= 0.150 P2= 3.20"		
	4.8	571	0.0800	1.98		Shallow Concentrated Flow,		
						Short Grass Pasture Kv= 7.0 fps		
	2.0	257	0.1900	2.18		Shallow Concentrated Flow,		
						Woodland Kv= 5.0 fps		
	8.2	375	0.0235	0.77		Shallow Concentrated Flow,		
_						Woodland Kv= 5.0 fps		
	19.3	1,253	Total					

# **Summary for Subcatchment 7AS: Drainage Area 7AS**

Runoff = 13.66 cfs @ 12.23 hrs, Volume= 1.447 af, Depth= 1.45"

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Page 90

Area (ac) CN Description										
*	0.	000	98	B Exist	ing Structu	ure, HSG A	1			
*	0.	000	98	B Exist	ing Structu	ure, HSG B	}			
	0.	000	30	) Woo	ds, Good,	HSG A				
	0.	000	55	5 Woo	ds, Good,	HSG B				
	0.	000	70	) Woo	ds, Good,	HSG C				
		000	96		el surface	,				
		000	96		el surface	, HSG B				
		000	96		el surface	•				
	_	000	30			grazed, HS				
11.882 58 Meadow, non-grazed, HSG B										
0.000 71 Meadow, non-grazed, HSG C										
		000	98			avement, l				
0.062 98 Unconnected pavement, HSG B 0.000 98 Unconnected pavement, HSG C										
	0.	HSG C								
		000	98		er Surface,					
		000	98		Water Surface, HSG B					
		000	98		Water Surface, HSG C					
		944	58							
		882			99.48% Pervious Area					
		062			% Impervio					
	0.	062		100.	00% Unco	nnected				
	т.	1	41_	Class.	\	0	Description			
	Tc	Leng		Slope	Velocity	Capacity	Description			
_	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	01 (F)			
	3.4	5	50	0.0700	0.24		Sheet Flow,			
	44.4	4 4 5		0.0570	4.00		Grass: Short n= 0.150 P2= 3.20"			
	11.4	1,15	oo	0.0579	1.68		Shallow Concentrated Flow,			
_	44.0	4.65		<del></del>			Short Grass Pasture Kv= 7.0 fps			
	14.8	1,20	16	Total						

### **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 21.03 cfs @ 12.23 hrs, Volume= 2.248 af, Depth= 1.38"

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Page 91

	Area	(ac)	CN Ad	Descrip	tion					
*	0.	000	98	Existing	Existing Structure, HSG A					
*	0.	000	98	Existing	Existing Structure, HSG B					
	0.	000	30	Woods,	Woods, Good, HSG A					
	3.	886	55		Woods, Good, HSG B					
	0.	000	70		Woods, Good, HSG C					
	0.	000	96	Gravel	Gravel surface, HSG A					
	0.	000	96	Gravels	Gravel surface, HSG B					
	0.	000	96	Gravels	Gravel surface, HSG C					
	0.000 30			Meadov	Meadow, non-grazed, HSG A					
	15.	579	58	Meadov	Meadow, non-grazed, HSG B					
	0.	000	71	Meadov	v, non-graz	ed, HSG C				
	0.	000	98	Unconn	Unconnected pavement, HSG A					
	0.	068	98	Unconn	Unconnected pavement, HSG B					
	0.	000	98	Unconn	ected pave	ment, HSG C				
		000	98	Water S	urface, HS	G A				
	0.000 98				urface, HS					
	0.	000	98	Water S	urface, HS	G C				
	19.	533	58 57	Weighte	ed Average,	, UI Adjusted				
	19.	465		99.65%	Pervious A	rea				
	0.	068		0.35% Impervious Area						
	0.	068		100.00%	100.00% Unconnected					
	Тс	Length			Capacity	Description				
	(min)	(feet	(ft/ft)	(ft/sec)	(cfs)					
	3.6	50	0.0600	0.23		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	9.8	1,125	0.0747	1.91		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.1	93	0.0753	1.37		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	14.5	1,268	Total							

# Summary for Subcatchment 8AS: Drainage Area 8A

Runoff = 7.21 cfs @ 12.25 hrs, Volume= 0.785 af, Depth= 1.45"

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Page 92

	Area (	(ac)	CN	Desc	cription						
* 0.000 98 Existing Structure, HSG A											
*	0.0	000	98	8 Existing Structure, HSG B							
	0.000 30 Woods, Good, HSG A										
	0.0	000	55	Woo	ds, Good,	HSG B					
		000	70		ds, Good,						
		000	96		el surface						
		000	96		el surface						
	0.0	000	96		el surface	•					
	_	000	30			grazed, HS					
		441	58			grazed, HS					
		000	71			grazed, HS					
		000	98			avement, l					
		037	98			avement, l					
		000	98			avement, I	HSG C				
		000	98		er Surface,						
		000	98		er Surface,						
		000	98		er Surface,						
	_	478	58		jhted Aver						
		441			3% Pervio						
		037			% Impervi						
	0.0	037		100.0	00% Unco	nnected					
	_		_	<b>.</b> .		O ::	B. C. C.				
	Tc	Length		Slope	Velocity	Capacity	Description				
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)					
	5.6	50	0.	0200	0.15		Sheet Flow,				
	40.5	00	4 0	0.450	4 40		Grass: Short n= 0.150 P2= 3.20"				
	10.5	934	4 0.	0450	1.48		Shallow Concentrated Flow,				
_							Short Grass Pasture Kv= 7.0 fps				
	16.1	984	4 To	otal							

### **Summary for Subcatchment 8BS: Drainage Area 8BS**

Runoff = 4.09 cfs @ 12.38 hrs, Volume= 0.521 af, Depth= 1.45"

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Page 93

	Area	(ac) C	N Des	cription						
*	0.	000	98 Exis	Existing Structure, HSG A						
*	0.	000			ructure, HSG B					
	0.	000	30 Woo	ods, Good, HSG A						
	0.	000	55 Woo	ds, Good,	HSG B					
	0.	000	70 Woo	ds, Good,	HSG C					
	0.	000	96 Grav	el surface	, HSG A					
	0.	000	96 Grav	el surface	, HSG B					
	0.	000	96 Grav	el surface	, HSG C					
	0.	000	30 Mea	dow, non-g	grazed, HS	G A				
	4.	259	58 Mea	dow, non-	grazed, HS	GB				
					grazed, HS					
					avement, I					
					avement, l					
					oavement, l	HSG C				
				er Surface,						
				er Surface,						
				er Surface,						
				ghted Aver						
		259		2% Pervio						
		042		% Impervi						
	0.	042	100.	00% Unco	nnected					
	_									
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	5.6	50	0.0200	0.15		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	1.6	145	0.0484	1.54		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	5.4	499	0.0481	1.54		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	9.2	510	0.0176	0.93		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.2	234	0.0625	1.75		Shallow Concentrated Flow,				
_						Short Grass Pasture Kv= 7.0 fps				
	24.0	1,438	Total							

### **Summary for Subcatchment 8S: Drainage Area 8S**

Runoff = 14.12 cfs @ 12.21 hrs, Volume= 1.391 af, Depth= 1.68"

13.8

794

Total

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			-20 s/n 03		7 HydroCAE	) Software Solutions LLC	Page 94
	Area (a	ıc) C	N Adj	Descrip	tion		
*	0.00		98		Structure,	HSG A	
*	0.00	900	98		Structure,		
	0.00	00	30		Good, HS		
	2.13	37	55	Woods,	Good, HS0	G B	
	0.00	00	70	Woods,	Good, HS0	GC	
	0.00		96	Gravels	surface, HS	SG A	
	0.54		96		surface, HS		
	0.00		96		surface, HS		
	0.00		30			red, HSG A	
	6.64		58			ed, HSG B	
	0.00		71			ed, HSG C	
	0.00		98			ement, HSG A	
	0.62		98			ement, HSG B	
	0.00		98			ement, HSG C	
	0.00 0.00		98 98		surface, HS surface, HS		
	0.00		98		surface, HS		
_	9.94						
	9.92		62 61		Pervious A	, UI Adjusted	
	0.62				mpervious <i>F</i>		
	0.62				6 Unconne		
	0.02	20		100.007	o Oncomic	olou	
	Tc L	ength	Slope	Velocity	Capacity	Description	
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	2 0001112111	
_	5.6	50	0.0200	0.15		Sheet Flow,	
				• • • • • • • • • • • • • • • • • • • •		Grass: Short n= 0.150 P2= 3.20"	
	2.8	175	0.0228	1.06		Shallow Concentrated Flow,	
						Short Grass Pasture Kv= 7.0 fps	
	3.5	385	0.0701	1.85		Shallow Concentrated Flow,	
						Short Grass Pasture Kv= 7.0 fps	
	1.9	184	0.1007	1.59		Shallow Concentrated Flow,	
_						Woodland Kv= 5.0 fps	

### **Summary for Subcatchment 9S: Drainage Area 9S**

1.43 cfs @ 12.17 hrs, Volume= 0.131 af, Depth= 1.53" Runoff

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Page 95

	Area	(ac)	CN	Desc	ription						
*	0.	000	98	Exist	Existing Structure, HSG A						
*	0.	000	98	Exist	ing Structi	ure, HSG B	}				
	0.	187	30	Woo	ds, Good,	HSG A					
	0.	424	55	Woo	ds, Good,	HSG B					
	0.	000	70	Woo	ds, Good,	HSG C					
	0.	048	96	Grav	el surface	, HSG A					
	0.	139	96	Grav	el surface	, HSG B					
	0.	000	96		el surface						
	_	000	30			grazed, HS					
		233	58			grazed, HS					
		000	71		,	grazed, HS					
		000	98			avement, l					
		000	98		•	avement, I					
		000	98			avement, I	HSG C				
		000	98		er Surface,						
		000	98		r Surface,						
		000	98		r Surface,						
		031	59	J	hted Aver	0					
	1.	031		100.0	00% Pervi	ous Area					
	_			01			B				
	Tc	Lengt		Slope	Velocity	Capacity	Description				
	<u>(min)</u>	(fee		(ft/ft)	(ft/sec)	(cfs)					
	4.3	5	0 0	0.0400	0.20		Sheet Flow,				
		_					Grass: Short n= 0.150 P2= 3.20"				
	0.3	7	0 (	0.0572	3.85		Shallow Concentrated Flow,				
		_				Unpaved Kv= 16.1 fps					
	0.9	8	2 (	0.0971	1.56		Shallow Concentrated Flow,				
							Woodland Kv= 5.0 fps				
	5.1	41	1 (	0.0730	1.35		Shallow Concentrated Flow,				
_							Woodland Kv= 5.0 fps				
	10.6	61	3 7	Γotal							

### **Summary for Reach 1BR: Overland Flow**

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 1.76" for 25-Year event

Inflow = 13.48 cfs @ 12.26 hrs, Volume= 1.431 af

Outflow = 6.52 cfs @ 13.26 hrs, Volume= 1.430 af, Atten= 52%, Lag= 60.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.41 fps, Min. Travel Time= 38.3 min Avg. Velocity = 0.26 fps, Avg. Travel Time= 60.4 min

Peak Storage= 15,002 cf @ 12.62 hrs Average Depth at Peak Storage= 0.04'

Bank-Full Depth= 0.01' Flow Area= 2.2 sf, Capacity= 0.71 cfs

Custom cross-section, Length= 940.0' Slope= 0.0426 '/'

Constant n= 0.030 Short grass

Inlet Invert= 209.00', Outlet Invert= 169.00'

Nutmeg Solar Project - Proposed Type III 24-hr 25-Year Rainfall=5.50" Printed 9/11/2018

### **Proposed Hydrology - Nutmeg-REV**

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Page 96

‡

Offs	et	Elevation	Chan.Depth
(fee	et)	(feet)	(feet)
0.0	00	0.00	0.00
290.	00	-0.01	0.01
330.	00	-0.01	0.01
405.	00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	40.0	0	0.00
0.01	2.2	405.0	2,092	0.71

#### **Summary for Reach 1CR: Overland Flow**

Inflow Area = 4.622 ac, 6.34% Impervious, Inflow Depth = 3.53" for 25-Year event

Inflow = 10.39 cfs @ 12.38 hrs, Volume= 1.360 af

Outflow = 3.05 cfs @ 15.42 hrs, Volume= 1.296 af, Atten= 71%, Lag= 182.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.73 fps, Min. Travel Time= 152.5 min

Avg. Velocity = 0.43 fps, Avg. Travel Time= 258.5 min

Peak Storage= 27,876 cf @ 12.87 hrs Average Depth at Peak Storage= 0.13'

Bank-Full Depth= 0.25' Flow Area= 15.4 sf, Capacity= 17.41 cfs

Custom cross-section, Length= 6,700.0' Slope= 0.0084 '/'

Constant n= 0.030 Short grass

Inlet Invert= 224.00', Outlet Invert= 168.00'

‡

Of	ffset l	Elevatio	n Char	า.Depth
(f	eet)	(fee	t)	(feet)
	0.00	0.0	0	0.00
100	0.00	-0.2	5	0.25
123	3.00	0.0	0	0.00

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Page 97

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	0.0	0	0.00
0.25	15.4	123.0	103,013	17.41

#### **Summary for Reach 2BR: Overland Flow**

Inflow Area = 15.629 ac, 0.72% Impervious, Inflow Depth = 1.30" for 25-Year event

Inflow = 14.54 cfs @ 12.35 hrs, Volume= 1.690 af

Outflow = 8.01 cfs @ 13.32 hrs, Volume= 1.689 af, Atten= 45%, Lag= 57.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.35 fps, Min. Travel Time= 36.9 min Avg. Velocity = 0.24 fps, Avg. Travel Time= 54.5 min

Peak Storage= 17,771 cf @ 12.70 hrs Average Depth at Peak Storage= 0.08'

Bank-Full Depth= 0.01' Flow Area= 1.7 sf, Capacity= 0.46 cfs

Custom cross-section, Length= 785.0' Slope= 0.0280 '/'

Constant n= 0.030 Short grass

Inlet Invert= 194.00', Outlet Invert= 172.00'

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
120.00	-0.01	0.01
170.00	-0.01	0.01
290.00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	50.0	0	0.00
0.01	1.7	290.0	1,335	0.46

### **Summary for Reach DP-1: Design Point 1**

Inflow Area = 31.828 ac, 4.77% Impervious, Inflow Depth > 1.71" for 25-Year event

Inflow = 12.82 cfs @ 12.49 hrs, Volume= 4.525 af

Outflow = 12.82 cfs @ 12.49 hrs, Volume= 4.525 af, Atten= 0%, Lag= 0.0 min

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Page 98

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-2: Design Point 2**

Inflow Area = 27.151 ac, 1.67% Impervious, Inflow Depth > 1.39" for 25-Year event

Inflow = 13.56 cfs @ 12.26 hrs, Volume= 3.155 af

Outflow = 13.56 cfs @ 12.26 hrs, Volume= 3.155 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-3: Design Point 3**

Inflow Area = 6.262 ac, 7.41% Impervious, Inflow Depth = 1.83" for 25-Year event

Inflow = 11.12 cfs @ 12.15 hrs, Volume= 0.957 af

Outflow = 11.12 cfs @ 12.15 hrs, Volume= 0.957 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 29.447 ac, 0.80% Impervious, Inflow Depth = 1.45" for 25-Year event

Inflow = 25.31 cfs @ 12.44 hrs, Volume= 3.567 af

Outflow = 25.31 cfs @ 12.44 hrs, Volume= 3.567 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-5: Design Point 5**

Inflow Area = 9.673 ac, 0.00% Impervious, Inflow Depth = 0.91" for 25-Year event

Inflow = 7.00 cfs @ 12.21 hrs, Volume= 0.730 af

Outflow = 7.00 cfs @ 12.21 hrs, Volume= 0.730 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 2.09% Impervious, Inflow Depth = 0.89" for 25-Year event

Inflow = 3.00 cfs @ 12.31 hrs, Volume= 0.355 af

Outflow = 3.00 cfs @ 12.31 hrs, Volume= 0.355 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Summary for Reach DP-7: Design Point 7

Inflow Area = 31.477 ac, 0.41% Impervious, Inflow Depth = 0.86" for 25-Year event

Inflow = 21.03 cfs @ 12.23 hrs, Volume= 2.248 af

Outflow = 21.03 cfs @ 12.23 hrs, Volume= 2.248 af, Atten= 0%, Lag= 0.0 min

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Page 99

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### **Summary for Reach DP-8: Design Point 8**

Inflow Area = 20.725 ac, 3.40% Impervious, Inflow Depth = 0.81" for 25-Year event

Inflow = 14.12 cfs @ 12.21 hrs, Volume= 1.391 af

Outflow = 14.12 cfs @ 12.21 hrs, Volume= 1.391 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-9: Design Point 9

Inflow Area = 1.031 ac, 0.00% Impervious, Inflow Depth = 1.53" for 25-Year event

Inflow = 1.43 cfs @ 12.17 hrs, Volume= 0.131 af

Outflow = 1.43 cfs @ 12.17 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Pond 1BP: Culvert 1BS**

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 1.76" for 25-Year event

Inflow = 13.48 cfs @ 12.26 hrs, Volume= 1.431 af

Outflow = 13.48 cfs @ 12.26 hrs, Volume= 1.431 af, Atten= 0%, Lag= 0.0 min

Primary = 13.48 cfs @ 12.26 hrs, Volume= 1.431 af Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 214.06' @ 12.26 hrs

Flood Elev= 215.00'

<u>Device</u>	Routing	Invert	Outlet Devices
#1	Primary	212.50'	<b>18.0"</b> Round Culvert X 2.00 L= 72.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 212.50' / 210.00' S= 0.0347 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	214.25'	6.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=13.39 cfs @ 12.26 hrs HW=214.05' (Free Discharge) 1=Culvert (Inlet Controls 13.39 cfs @ 3.79 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=212.50' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Page 100

#### Summary for Pond 5A: Basin 5A

Inflow Area = 1.754 ac, 0.00% Impervious, Inflow Depth = 1.45" for 25-Year event

Inflow = 2.70 cfs @ 12.10 hrs, Volume= 0.212 af

Outflow = 0.33 cfs @ 13.15 hrs, Volume= 0.212 af, Atten= 88%, Lag= 62.9 min

Discarded = 0.33 cfs @ 13.15 hrs, Volume= 0.212 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 273.79' @ 13.15 hrs Surf.Area= 5,838 sf Storage= 3,236 cf

Flood Elev= 275.00' Surf.Area= 11,878 sf Storage= 13,898 cf

Plug-Flow detention time= 110.4 min calculated for 0.212 af (100% of inflow)

Center-of-Mass det. time= 110.2 min ( 984.1 - 873.9 )

Volume	Invert	Avail.9	Storage	Storage Descripti	on	
#1	273.00'	13	3,898 cf	Custom Stage D	ata (Irregular)Lis	ted below (Recalc)
Elevation (feet)	Surf. <i>i</i> (s	Area sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
273.00	2	,606	536.7	0	0	2,606
274.00	6	,939	667.0	4,599	4,599	15,102
275.00	11	,878	730.0	9,299	13,898	22,140
Device R	outing	Inve	ert Outle	et Devices		
D				A —		

Device	Routing	invert	Outlet Devices
#1	Discarded	273.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 194.00'
#2	Primary	274.75'	15.0' long x 8.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64
			2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.33 cfs @ 13.15 hrs HW=273.79' (Free Discharge) **1=Exfiltration** (Controls 0.33 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=273.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### Summary for Pond 5B: Basin 5B

Inflow Area = 1.232 ac, 0.00% Impervious, Inflow Depth = 1.45" for 25-Year event Inflow = 0.149 af

Outflow = 0.19 cfs @ 13.75 hrs, Volume= 0.149 af, Atten= 89%, Lag= 97.1 min

Discarded = 0.19 cfs @ 13.75 hrs, Volume= 0.149 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 291.22' @ 13.75 hrs Surf.Area= 3,456 sf Storage= 2,587 cf Flood Elev= 293.00' Surf.Area= 9,526 sf Storage= 13,669 cf

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Page 101

Plug-Flow detention time= 181.2 min calculated for 0.149 af (100% of inflow)

Center-of-Mass det. time= 181.2 min (1,057.5 - 876.3)

Volume	Inve	rt Avail	l.Storage	Storage Description	on			
#1	289.00	)'	13,669 cf	Custom Stage D	ata (Irregular)Listo	ed below (Recalc)		
Elevatio		Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)		
289.0	00	0	0.0	0	0	0		
290.0	00	670	199.3	223	223	3,162		
291.0	00	2,920	369.2	1,663	1,886	10,854		
292.0	00	5,718	494.6	4,241	6,128	19,485		
293.0	00	9,526	525.0	7,541	13,669	22,003		
Device	Routing	Inv	vert Outle	et Devices				
#1	Discarded	289.	.00' <b>2.41</b>	0 in/hr Exfiltration	over Surface are	ea		
			Cond	ductivity to Ground	water Elevation =	194.00'		
#2	#2 Primary 292.30' <b>15</b>			15.0' long x 8.0' breadth Broad-Crested Rectangular Weir				
				Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.6				
				2.50 3.00 3.50 4.00 4.50 5.00 5.50				
						68 2.68 2.66 2.64 2.64		
			2.64	2.65 2.65 2.66 2	2.66 2.68 2.70 2.	.74		

**Discarded OutFlow** Max=0.19 cfs @ 13.75 hrs HW=291.22' (Free Discharge) 1=Exfiltration (Controls 0.19 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=289.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## **Summary for Pond 5P: Culvert 1CS**

Inflow Area =	4.622 ac,	6.34% Impervious, Inf	flow Depth = 3.53"	for 25-Year event
Inflow =	13.78 cfs @	12.23 hrs, Volume=	1.360 af	
Outflow =	10.39 cfs @	12.38 hrs, Volume=	1.360 af, Atte	en= 25%, Lag= 9.3 min
Primary =	10.39 cfs @	12.38 hrs, Volume=	1.360 af	
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 227.67' @ 12.38 hrs Surf.Area= 3,981 sf Storage= 4,147 cf

Plug-Flow detention time= 2.3 min calculated for 1.357 af (100% of inflow) Center-of-Mass det. time= 2.3 min ( 824.5 - 822.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	225.00'	8,119 cf	Custom Stage Data (Irregular)Listed below (Recalc)

Wet Area

## **Proposed Hydrology - Nutmeg-REV**

Surf Area

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Page 102

(sq-ft)	(cubic-feet)	(cubic-feet)	(feet)	(sq-ft)		(fee
0	0	0	0.0	0	00	225.0
24,496	274	274	554.8	823	00	226.0
29,568	1,941	1,667	609.2	2,690	00	227.0
34,023	5,602	3,661	653.1	4,726	00	228.0
35,011	8,119	2,518	662.0	5,351	50	228.5
		)evices	ert Outlet D	Inve	Routing	Device
		Round Culvert	0' <b>18.0" R</b>	225.0	Primary	#1
0.700	conform to fill. Ke	CPP, mitered to	L= 54.0'			

Inc Store

Cum Store

#2 Secondary 228.40' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 225.00' / 224.00' S= 0.0185 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

7.0' long x 25.0' 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 2.63

Primary OutFlow Max=10.37 cfs @ 12.38 hrs HW=227.66' (Free Discharge) 1=Culvert (Inlet Controls 10.37 cfs @ 5.87 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=225.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 6A: Basin 6A

Inflow Area =	1.181 ac,	6.35% Impervious, Inflow Do	epth = 1.53" for 25-Year event
Inflow =	1.82 cfs @	12.12 hrs, Volume=	0.150 af
Outflow =	0.27 cfs @	12.96 hrs, Volume=	0.150 af, Atten= 85%, Lag= 50.6 min
Discarded =	0.27 cfs @	12.96 hrs, Volume=	0.150 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 302.56' @ 12.96 hrs Surf.Area= 4,851 sf Storage= 2,118 cf Flood Elev= 304.00' Surf.Area= 11,352 sf Storage= 13,687 cf

Plug-Flow detention time= 77.2 min calculated for 0.150 af (100% of inflow) Center-of-Mass det. time= 77.0 min ( 949.7 - 872.7 )

Volume	Inver	t Avai	l.Storage	Storage Description	n		
#1	302.00	'	13,687 cf	Custom Stage Da	<b>ta (Irregular)</b> Liste	ed below (Recalc)	
Elevatio	-	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
302.0 303.0 304.0	00	2,834 6,833 11,352	486.7 540.2 606.8	0 4,689 8,997	0 4,689 13,687	2,834 7,236 13,342	
Device #1	Routing			et Devices	over Curtoes ere		

#1	Discarded	302.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 194.00'
#2	Primary	303.75'	15.0' long x 8.0' breadth Broad-Crested Rectangular Weir

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Page 103

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.27 cfs @ 12.96 hrs HW=302.56' (Free Discharge) **1=Exfiltration** (Controls 0.27 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=302.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 6B: Basin 6B

Inflow Area =	0.525 ac,	4.76% Impervious, Inflow De	epth = 1.53" for 25-Year event
Inflow =	0.81 cfs @	12.12 hrs, Volume=	0.067 af
Outflow =	0.10 cfs @	13.15 hrs, Volume=	0.067 af, Atten= 87%, Lag= 62.1 min
Discarded =	0.10 cfs @	13.15 hrs, Volume=	0.067 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 293.31' @ 13.15 hrs Surf.Area= 1,605 sf Storage= 1,079 cf Flood Elev= 294.00' Surf.Area= 2,686 sf Storage= 2,540 cf

Plug-Flow detention time= 136.5 min calculated for 0.067 af (100% of inflow) Center-of-Mass det. time= 136.4 min (1,009.1 - 872.7)

Volume	Invert	t Avai	I.Storage	Storage Description	1	
#1	292.00'	1	2,540 cf	<b>Custom Stage Dat</b>	t <b>a (Irregular)</b> Listed	below (Recalc)
Elevatio	-	urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
292.0 293.0 294.0	00	214 1,206 2,686	119.6 200.7 286.0	0 643 1,897	0 643 2,540	214 2,287 5,600
Device #1	Routing Discarded	In:		et Devices		

#1	Discarded	292.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 288.00'
#2	Primary	293.75'	15.0' long x 8.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64
			2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.10 cfs @ 13.15 hrs HW=293.31' (Free Discharge) **1=Exfiltration** (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=292.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Page 104

#### Summary for Pond 7A: Basin 7A

Inflow Area = 11.944 ac, 0.52% Impervious, Inflow Depth = 1.45" for 25-Year event

Inflow = 13.66 cfs @ 12.23 hrs, Volume= 1.447 af

Outflow = 1.39 cfs @ 14.97 hrs, Volume= 1.371 af, Atten= 90%, Lag= 164.6 min

Discarded = 1.39 cfs @ 14.97 hrs, Volume= 1.371 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 252.66' @ 14.97 hrs Surf.Area= 24,382 sf Storage= 29,454 cf

Flood Elev= 254.00' Surf.Area= 44,034 sf Storage= 75,130 cf

Plug-Flow detention time= 294.5 min calculated for 1.371 af (95% of inflow)

Center-of-Mass det. time= 267.0 min (1,149.6 - 882.6)

<u>Volume</u>	Inver	t Avai	il.Storage	Storage Descriptio	n		
#1	248.00	'	75,130 cf	Custom Stage Da	ta (Irregular)Listed	d below (Recalc)	
Elevation	on S	Surf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
248.0	00	0	0.0	0	0	0	
249.0	00	520	128.5	173	173	1,316	
250.0	00	2,102	372.1	1,222	1,396	11,023	
251.0	00	6,364	802.0	4,041	5,437	51,194	
252.0	00	16,015	1,315.7	10,825	16,262	137,769	
253.0	00	29,426	1,401.6	22,383	38,645	156,394	
254.0	00	44,034	1,517.9	36,485	75,130	183,453	
Device	Routing	In	vert Outle	et Devices			
#1	Discarded	248	.00' <b>2.41</b>	0 in/hr Exfiltration	over Surface area	1	
			Cond	ductivity to Groundy	vater Elevation = 19	94.00'	
#2	Primary	253	.75' <b>15.0</b> '	5.0' long x 8.0' breadth Broad-Crested Rectangular Weir			
			Head	d (feet) 0.20 0.40	0.60 0.80 1.00 1.	20 1.40 1.60 1.80	2.00
			2.50	3.00 3.50 4.00 4	.50 5.00 5.50		

**Discarded OutFlow** Max=1.39 cfs @ 14.97 hrs HW=252.66' (Free Discharge) 1=Exfiltration (Controls 1.39 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 8A: Basin 8A

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64

Inflow Area =	6.478 ac, 0.57% Impervious, Inflow Depth = 1.45'	' for 25-Year event
Inflow =	7.21 cfs @ 12.25 hrs, Volume= 0.785 af	
Outflow =	0.70 cfs @ 15.27 hrs, Volume= 0.752 af, A	tten= 90%, Lag= 180.8 min
Discarded =	0.70 cfs @ 15.27 hrs, Volume= 0.752 af	
Primary =	0.00 cfs @ 5.00 hrs, Volume= 0.000 af	

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Page 105

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 251.15' @ 15.27 hrs Surf.Area= 12,289 sf Storage= 16,355 cf

Flood Elev= 252.50' Surf.Area= 21,546 sf Storage= 38,517 cf

Plug-Flow detention time= 310.0 min calculated for 0.751 af (96% of inflow) Center-of-Mass det. time= 288.3 min (1,172.1 - 883.8)

Volume	Invert	t Avail	.Storage	Storage Description	n			
#1	248.00	' 3	38,517 cf	Custom Stage Da	<b>ta (Irregular)</b> Listed	d below (Recalc)		
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)		
248.0	00	123	99.2	0	0	123		
249.0	00	2,613	493.4	1,101	1,101	18,715		
250.0	00	6,683	622.8	4,492	5,593	30,222		
251.0	00	11,513	733.8	8,989	9 14,582	42,224		
252.0	00	17,210	829.8	14,266	28,848	54,195		
252.5	50	21,546	830.5	9,669	38,517	54,620		
Device Routing Invert		vert Outle	et Devices					
#1	Discarded	248.	00' 2.41	410 in/hr Exfiltration over Surface area				
		Con		onductivity to Groundwater Elevation = 194.00'				
#2	Primary	252.	25' <b>15.0</b> '	long x 8.0' breadt	th Broad-Crested	Rectangular Weir		
		•		d (feet) 0.20 0.40 (	0.60 0.80 1.00 1.	20 1.40 1.60 1.80 2.00		
			2.50	3.00 3.50 4.00 4.	50 5.00 5.50			
						3 2.68 2.66 2.64 2.64		
			2.64	2.65 2.65 2.66 2.	.66 2.68 2.70 2.7	4		

**Discarded OutFlow** Max=0.70 cfs @ 15.27 hrs HW=251.15' (Free Discharge) **1=Exfiltration** (Controls 0.70 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 8B: Basin 8A

Inflow Area =	4.301 ac,	0.98% Impervious, Inflow De	epth = 1.45" for 25-Year event
Inflow =	4.09 cfs @	12.38 hrs, Volume=	0.521 af
Outflow =	0.56 cfs @	14.61 hrs, Volume=	0.520 af, Atten= 86%, Lag= 133.9 min
Discarded =	0.56 cfs @	14.61 hrs, Volume=	0.520 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 245.12' @ 14.61 hrs Surf.Area= 9,848 sf Storage= 9,836 cf Flood Elev= 246.00' Surf.Area= 16,698 sf Storage= 21,360 cf

Plug-Flow detention time= 239.2 min calculated for 0.519 af (100% of inflow) Center-of-Mass det. time= 238.7 min (1,129.9 - 891.2)

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Page 106

Volume	Invert	. Avail	.Storage	torage Storage Description				
#1	243.00	2	21,360 cf	cf Custom Stage Data (Irregular)Listed below (Recalc)				
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)		
243.0	00	649	429.6	0	0	649		
244.0	00	4,253	502.8	2,188	2,188	6,100		
245.0	00	9,040	671.8	6,498	8,686	21,908		
246.0	00	16,698	842.9	12,675	21,360	42,546		
Device	Routing	Inv	ert Outle	et Devices				
#1	Discarded	ed 243.00' <b>2</b> .		2.410 in/hr Exfiltration over Surface area				
				ductivity to Groundw				
#2 Primary 245.75'		Head 2.50 Coef	<b>15.0' long x 8.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.68 2.68 2.70 2.74					

**Discarded OutFlow** Max=0.56 cfs @ 14.61 hrs HW=245.12' (Free Discharge) 1=Exfiltration (Controls 0.56 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=243.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### **Summary for Pond P2B: Basin 2B**

Inflow Area =	15.629 ac,	0.72% Impervious, Inflo	ow Depth = 1.45"	for 25-Year event
Inflow =	18.28 cfs @	12.22 hrs, Volume=	1.893 af	
Outflow =	14.96 cfs @	12.35 hrs, Volume=	1.893 af, Atte	n= 18%, Lag= 8.0 min
Discarded =	0.42 cfs @	12.35 hrs, Volume=	0.204 af	
Primary =	14.54 cfs @	12.35 hrs, Volume=	1.690 af	
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 197.69' @ 12.35 hrs Surf.Area= 4,734 sf Storage= 5,982 cf Flood Elev= 198.50' Surf.Area= 6,749 sf Storage= 10,528 cf

Plug-Flow detention time= 9.0 min calculated for 1.890 af (100% of inflow) Center-of-Mass det. time= 9.1 min (891.1 - 882.1)

Volume		Invert	Avaii.	.Storage	Storage Description	1				
	#1 196.00'		10,528 cf		Custom Stage Data (Irregular)Listed below (Recalc)					
	Elevation (feet)		.Area sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)			
	196.00	2	2,453	396.9	0	0	2,453			
	197.00	3	3,748	465.9	3,078	3,078	7,210			
	198.00	5	5,223	506.0	4,465	7,543	10,349			
	198.50	6	5,749	523.0	2,985	10,528	11,765			

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Page 107

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	24.0" Round Culvert
	•		L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 195.50' / 195.00' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	196.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 194.00'
#3	Secondary	198.00'	50.0' long x 20.0' 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
#4	Device 1	196.00'	18.0" Vert. Orifice/Grate X 2.00 C= 0.600
#5	Device 1	198.00'	27.0" Horiz. Orifice/Grate C= 0.600
			Limited to weir flow at low heads

**Discarded OutFlow** Max=0.42 cfs @ 12.35 hrs HW=197.68' (Free Discharge) **2=Exfiltration** (Controls 0.42 cfs)

Primary OutFlow Max=14.53 cfs @ 12.35 hrs HW=197.68' (Free Discharge)
1=Culvert (Inlet Controls 14.53 cfs @ 4.62 fps)

**4=Orifice/Grate** (Passes 14.53 cfs of 16.45 cfs potential flow)

5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=196.00' (Free Discharge) 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Nutmeg Solar Project - Proposed Type III 24-hr 100-Year Rainfall=6.90" Printed 9/11/2018

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Page 108

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1AS: Drainage Area 1AS Runoff Area=17.426 ac 5.85% Impervious Runoff Depth=2.06" Flow Length=1,146' Tc=29.0 min CN=55 Runoff=22.41 cfs 2.992 af

Subcatchment 1BS: Drainage Area 1BS Runoff Area=9.780 ac 2.10% Impervious Runoff Depth=2.73" Flow Length=1,301' Tc=17.2 min CN=62 Runoff=21.74 cfs 2.223 af

Subcatchment 1CS: Drainage Area 1CS Runoff Area=4.622 ac 6.34% Impervious Runoff Depth=4.82" Flow Length=870' Tc=16.6 min UI Adjusted CN=82 Runoff=18.74 cfs 1.857 af

Subcatchment 2AS: Drainage Area 2AS Runoff Area=11.522 ac 2.97% Impervious Runoff Depth=2.44" Flow Length=747' Tc=16.5 min CN=59 Runoff=22.83 cfs 2.340 af

Subcatchment 2BS: Drainage Area 2BS Runoff Area=15.629 ac 0.72% Impervious Runoff Depth=2.34" Flow Length=1,098' Tc=14.2 min CN=58 Runoff=31.34 cfs 3.050 af

**Subcatchment3AS: Drainage Area 3AS** Runoff Area=6.262 ac 7.41% Impervious Runoff Depth=2.83" Flow Length=840' Tc=9.8 min UI Adjusted CN=63 Runoff=17.68 cfs 1.475 af

Subcatchment 4AS: Drainage Area 4AS Runoff Area=4.677 ac 2.67% Impervious Runoff Depth=2.34" Flow Length=1,146' Tc=13.7 min CN=58 Runoff=9.50 cfs 0.913 af

**Subcatchment 4BS: Drainage Area 4BS** Runoff Area=24.770 ac 0.45% Impervious Runoff Depth=2.34" Flow Length=1,845' Tc=29.3 min CN=58 Runoff=36.98 cfs 4.833 af

**Subcatchment 5AS: Drainage Area 5AS**Runoff Area=1.754 ac 0.00% Impervious Runoff Depth=2.34"
Flow Length=445' Tc=5.4 min CN=58 Runoff=4.59 cfs 0.342 af

Subcatchment 5BS: Drainage Area 5BS

Runoff Area=1.232 ac 0.00% Impervious Runoff Depth=2.34"
Flow Length=394' Tc=8.0 min CN=58 Runoff=2.97 cfs 0.240 af

**Subcatchment 5S: Drainage Area 5S**Runoff Area=6.687 ac 0.00% Impervious Runoff Depth=2.15"

Flow Length=1,088' Tc=13.1 min CN=56 Runoff=12.45 cfs 1.200 af

**Subcatchment 6AS: Drainage Area 6AS** Runoff Area=1.181 ac 6.35% Impervious Runoff Depth=2.44" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=3.06 cfs 0.240 af

**Subcatchment 6BS: Drainage Area 6BS** Runoff Area=0.525 ac 4.76% Impervious Runoff Depth=2.44" Flow Length=290' Tc=7.3 min UI Adjusted CN=59 Runoff=1.36 cfs 0.107 af

**Subcatchment 6S: Drainage Area 6S**Runoff Area=3.086 ac 0.00% Impervious Runoff Depth=2.25"

Flow Length=1,253' Tc=19.3 min CN=57 Runoff=5.22 cfs 0.578 af

Subcatchment 7AS: Drainage Area 7AS Runoff Area=11.944 ac 0.52% Impervious Runoff Depth=2.34" Flow Length=1,206' Tc=14.8 min CN=58 Runoff=23.59 cfs 2.331 af

**Subcatchment 7S: Drainage Area 7S**Runoff Area=19.533 ac 0.35% Impervious Runoff Depth=2.25"
Flow Length=1,268' Tc=14.5 min UI Adjusted CN=57 Runoff=36.99 cfs 3.658 af

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Page 109

Outflow=36.99 cfs 3.658 af

**Subcatchment 8AS: Drainage Area 8A**Runoff Area=6.478 ac 0.57% Impervious Runoff Depth=2.34"
Flow Length=984' Tc=16.1 min CN=58 Runoff=12.35 cfs 1.264 af

Subcatchment8BS: Drainage Area 8BS Runoff Area=4.301 ac 0.98% Impervious Runoff Depth=2.34" Flow Length=1,438' Tc=24.0 min CN=58 Runoff=7.00 cfs 0.839 af

**Subcatchment 8S: Drainage Area 8S**Runoff Area=9.946 ac 6.29% Impervious Runoff Depth=2.63"
Flow Length=794' Tc=13.8 min UI Adjusted CN=61 Runoff=23.08 cfs 2.180 af

Subcatchment 9S: Drainage Area 9S

Runoff Area = 1.031 ac 0.00% Impervious Runoff Depth = 2.44"

Flow Length = 613' Tc = 10.6 min CN = 59 Runoff = 2.40 cfs 0.209 af

**Reach 1BR: Overland Flow**Avg. Flow Depth=0.06' Max Vel=0.41 fps Inflow=17.81 cfs 2.161 af n=0.030 L=940.0' S=0.0426'' Capacity=0.71 cfs Outflow=9.94 cfs 2.160 af

**Reach 1CR: Overland Flow**Avg. Flow Depth=0.15' Max Vel=0.81 fps Inflow=12.62 cfs 1.857 af n=0.030 L=6,700.0' S=0.0084 '/' Capacity=17.41 cfs Outflow=4.55 cfs 1.788 af

**Reach 2BR: Overland Flow**Avg. Flow Depth=0.14' Max Vel=0.36 fps Inflow=35.20 cfs 2.877 af n=0.030 L=785.0' S=0.0280'/' Capacity=0.46 cfs Outflow=14.07 cfs 2.876 af

Reach DP-1: Design Point 1 Inflow=23.66 cfs 6.940 af Outflow=23.66 cfs 6.940 af

Reach DP-2: Design Point 2 Inflow=23.05 cfs 5.216 af Outflow=23.05 cfs 5.216 af

Reach DP-3: Design Point 3 Inflow=17.68 cfs 1.475 af
Outflow=17.68 cfs 1.475 af

Reach DP-4: Design Point 4 Inflow=43.07 cfs 5.746 af Outflow=43.07 cfs 5.746 af

Reach DP-5: Design Point 5 Inflow=12.45 cfs 1.200 af Outflow=12.45 cfs 1.200 af

Reach DP-6: Design Point 6 Inflow=5.22 cfs 0.578 af
Outflow=5.22 cfs 0.578 af

Reach DP-7: Design Point 7 Inflow=36.99 cfs 3.658 af

Reach DP-8: Design Point 8 Inflow=23.08 cfs 2.180 af Outflow=23.08 cfs 2.180 af

Reach DP-9: Design Point 9 Inflow=2.40 cfs 0.209 af Outflow=2.40 cfs 0.209 af

Pond 1BP: Culvert 1BS Peak Elev=214.66' Inflow=21.74 cfs 2.223 af

Primary=17.81 cfs 2.161 af Secondary=3.93 cfs 0.062 af Outflow=21.74 cfs 2.223 af

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Nutmeg Solar Project - Proposed
Type III 24-hr 100-Year Rainfall=6.90"
Printed 9/11/2018
pns LLC Page 110

Pond 5A: Basin 5A	Peak Elev=274.20' Storage=6,080 cf Inflow=4.59 cfs 0.342 af Discarded=0.44 cfs 0.342 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.342 af
Pond 5B: Basin 5B	Peak Elev=291.73' Storage=4,715 cf Inflow=2.97 cfs 0.240 af Discarded=0.27 cfs 0.240 af Primary=0.00 cfs 0.000 af Outflow=0.27 cfs 0.240 af
Pond 5P: Culvert 1CS	Peak Elev=228.46' Storage=7,904 cf Inflow=18.74 cfs 1.857 af Primary=12.36 cfs 1.856 af Secondary=0.26 cfs 0.002 af Outflow=12.62 cfs 1.857 af
Pond 6A: Basin 6A	Peak Elev=302.89' Storage=3,990 cf Inflow=3.06 cfs 0.240 af Discarded=0.35 cfs 0.240 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.240 af
Pond 6B: Basin 6B	Peak Elev=293.75' Storage=1,925 cf Inflow=1.36 cfs 0.107 af Discarded=0.15 cfs 0.107 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.107 af
Pond 7A: Basin 7A	Peak Elev=253.41' Storage=51,978 cf Inflow=23.59 cfs 2.331 af Discarded=2.01 cfs 2.152 af Primary=0.00 cfs 0.000 af Outflow=2.01 cfs 2.152 af
Pond 8A: Basin 8A	Peak Elev=252.01' Storage=29,096 cf Inflow=12.35 cfs 1.264 af Discarded=1.00 cfs 1.142 af Primary=0.00 cfs 0.000 af Outflow=1.00 cfs 1.142 af
Pond 8B: Basin 8A	Peak Elev=245.75' Storage=17,434 cf Inflow=7.00 cfs 0.839 af Discarded=0.83 cfs 0.818 af Primary=0.00 cfs 0.000 af Outflow=0.83 cfs 0.818 af

**Pond P2B: Basin 2B**Peak Elev=198.26' Storage=8,983 cf Inflow=34.97 cfs 3.112 af Discarded=0.56 cfs 0.234 af Primary=17.69 cfs 2.617 af Secondary=17.51 cfs 0.261 af Outflow=35.76 cfs 3.112 af

Total Runoff Area = 162.386 ac Runoff Volume = 32.871 af Average Runoff Depth = 2.43" 97.78% Pervious = 158.779 ac 2.22% Impervious = 3.607 ac

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Page 111

## **Summary for Subcatchment 1AS: Drainage Area 1AS**

Runoff = 22.41 cfs @ 12.45 hrs, Volume= 2.992 af, Depth= 2.06"

	Area	(ac) (	CN Des	cription						
*	0.	164	98 Exis	Existing Structure, HSG A						
*	0.	533	98 Exis	sting Struct	ure, HSG B	}				
	0.	000	30 Wo	ods, Good,	HSG A					
	3.	149	55 Wo	ods, Good,	HSG B					
	0.	000	70 Wo	ods, Good,	HSG C					
	0.	041		vel surface						
	0.	371	96 Gra	vel surface	, HSG B					
	0.	000	96 Gra	vel surface	, HSG C					
	3.	589	30 Mea	adow, non-	grazed, HS	G A				
	9.	178	58 Mea	adow, non-	grazed, HS	G B				
	0.	000	71 Mea	adow, non-	grazed, HS	GC				
	0.	006	98 Und	connected p	oavement, l	HSG A				
	0.	317	98 Und	connected p	oavement, l	HSG B				
	0.	000	98 Und	connected p	oavement, l	HSG C				
	0.	000		ter Surface						
			98 Wa	ter Surface	, HSG B					
			98 Wa	ter Surface	, HSG C					
	0.	078	<u>65 Wo</u>	ods/grass c	omb., Fair,	HSG B				
				ighted Aver	•					
		406	94.	15% Pervio	us Area					
		020		5% Impervi						
	0.	323	31.0	67% Uncon	nected					
	Тс	Length			Capacity	Description				
	(min)	(feet)			(cfs)					
	6.0	50	0.1200	0.14		Sheet Flow,				
						Woods: Light underbrush n= 0.400	P2= 3.20"			
	0.5	82	0.1459	2.67		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.0	236	0.0762	1.93		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.3	68	0.0147	0.85		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	11.9	445	0.0079	0.62		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	7.3	265	0.0075	0.61		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	29.0	1,146	Total							

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Page 112

#### **Summary for Subcatchment 1BS: Drainage Area 1BS**

Runoff = 21.74 cfs @ 12.25 hrs, Volume= 2.223 af, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=6.90"

	Area	(ac) (	CN Des	cription		
*	0.	000	98 Exis	tina Struct	ure, HSG A	
*					ure, HSG E	
				ods, Good,		
	0.			ods, Good,		
	0.			ods, Good,		
	0.	000		vel surface		
	0.	922		vel surface		
	0.	000	96 Gra	vel surface	, HSG C	
	0.	000	30 Mea	idow, non-	grazed, HS	G A
	8.	653	58 Mea	dow, non-	grazed, HS	G B
	0.	000	71 Mea	dow, non-	grazed, HS	GC
	0.	000	98 Und	onnected p	pavement, I	HSG A
				onnected p	pavement, I	HSG B
	0.				pavement, I	HSG C
				er Surface		
				er Surface	,	
_	0.	000	<u>98 Wat</u>	<u>er Surface</u>	, HSG C	
				ghted Aver		
		575		00% Pervio		
		205		% Impervi		
	0.	205	100	.00% Unco	nnected	
	То	Longth	Clono	Valaaitv	Conneity	Description
	Tc (min)	Length (feet)		Velocity (ft/sec)	Capacity (cfs)	Description
_					(615)	Chaot Flour
	3.2	50	0.0800	0.26		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
	10.1	765	0.0327	1.27		
	10.1	700	0.0327	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
	2.8	278	0.0576	1.68		Shallow Concentrated Flow,
	2.0	210	0.0370	1.00		Short Grass Pasture Kv= 7.0 fps
	0.4	82	0.2560	3.54		Shallow Concentrated Flow,
	0.4	02	0.2000	5.54		Short Grass Pasture Kv= 7.0 fps
	0.7	126	0.0397	3.21		Shallow Concentrated Flow,
	0.7	120	3.0007	0.21		Unpaved Kv= 16.1 fps
_	17.2	1,301	Total			
		.,				

#### **Summary for Subcatchment 1CS: Drainage Area 1CS**

Runoff = 18.74 cfs @ 12.22 hrs, Volume= 1.857 af, Depth= 4.82"

Page 113

## **Proposed Hydrology - Nutmeg-REV**

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16.6

870 Total

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	Area	(ac) (	CN Adj	Descript	tion					
*	0.	000	98	Existing	Structure,	HSG A				
*	0.	120	98	Existing	Structure,	HSG B				
	0.	000	30	Woods,	Good, HS0	G A				
	0.	613	55	Woods,	Woods, Good, HSG B					
	0.	000	70	Woods,	Woods, Good, HSG C					
			96	Gravel s	surface, HS	G A				
			96		surface, HS					
			96		surface, HS					
			30		v, non-graz					
			58		v, non-graz					
			71		v, non-graz					
	0.000 98					ment, HSG A				
	0.173 98					ment, HSG B				
			98		Unconnected pavement, HSG C					
	0.000 98				Water Surface, HSG A					
			98		Water Surface, HSG B Water Surface, HSG C					
	0.000 98									
		622 329	83 82			, UI Adjusted				
		329 293			Pervious A					
		293 173			6.34% Impervious Area 59.04% Unconnected					
	0.	173		39.04 70	Unconnect	eu				
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	2 ocompani				
	5.6	50	0.0200	0.15	, ,	Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	3.9	160	0.0094	0.68		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.6	122	0.0328	1.27		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.8	222	0.0676	1.30		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	0.2	33	0.1212	2.44		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.5	283	0.0141	1.91		Shallow Concentrated Flow,				
_						Unpaved Kv= 16.1 fps				

# **Summary for Subcatchment 2AS: Drainage Area 2AS**

Runoff = 22.83 cfs @ 12.25 hrs, Volume= 2.340 af, Depth= 2.44"

Page 114

# **Proposed Hydrology - Nutmeg-REV**

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	Area	(ac)	CN Des	cription						
*	0.	000	98 Exis	Existing Structure, HSG A						
*	0.	025	98 Exis	sting Struct	ure, HSG E	3				
	0.	000	30 Wo	ods, Good,	HSG A					
	0.	000	55 Wo	ods, Good,	HSG B					
	0.	000	70 Wo	ods, Good,	HSG C					
	0.	000	96 Gra	vel surface	, HSG A					
	0.	079	96 Gra	vel surface	, HSG B					
	0.	000	96 Gra	vel surface	, HSG C					
	0.	000	30 Mea	adow, non-	grazed, HS	SG A				
	11.	084	58 Mea	adow, non-	grazed, HS	SG B				
	0.	000			grazed, HS					
		000			pavement,					
		317			pavement,					
		000			pavement,	HSG C				
		000		er Surface						
		000		er Surface	•					
		000		er Surface						
		017			comb., Fair	, HSG B				
		522		ghted Aver						
		180	_	97.03% Pervious Area						
		342		2.97% Impervious Area						
	0.	317	92.6	39% Uncon	nected					
	_		٥.							
	Tc	Length		Velocity	Capacity	Description				
	(min)	(feet)		(ft/sec)	(cfs)					
	3.2	50	0.0800	0.26		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	2.9	284	0.0528	1.61		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	1.2	80	0.0250	1.11		Shallow Concentrated Flow,				
		000	0.0075	0.04		Short Grass Pasture Kv= 7.0 fps				
	9.2	333	0.0075	0.61		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	16.5	747	′ Total							

## **Summary for Subcatchment 2BS: Drainage Area 2BS**

Runoff = 31.34 cfs @ 12.21 hrs, Volume= 3.050 af, Depth= 2.34"

1,098 Total

14.2

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			)-20 s/n 0		7 HydroCAE	) Software Solutions LLC	Page 115			
					•					
	Area	, ,		scription						
*		000			ure, HSG A					
*		000			ure, HSG E	3				
		000		ods, Good,						
		460		ods, Good,						
		000		ods, Good,						
		000		vel surface						
		340		vel surface	•					
		000		vel surface	•					
		000			grazed, HS					
		717			grazed, HS					
		000			grazed, HS					
		000			pavement, l					
		031			pavement, l					
		000			pavement, I	13G C				
		000 081		ter Surface ter Surface						
		000		ter Surface						
		629		ighted Aver	,					
		517		28% Pervio						
		112		0.72% Impervious Area						
		031		38% Uncon						
	0.	001	21.	30 70 0110011	mootod					
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)			(cfs)	•				
	5.6	50	0.0200	0.15		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	1.8	182	0.0549	1.64		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	3.3	410	0.0879	2.08		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	0.9	120	0.1083	2.30		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	2.4	291	0.1684	2.05		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	0.2	45	0.2426	3.45		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				

# **Summary for Subcatchment 3AS: Drainage Area 3AS**

1.475 af, Depth= 2.83" Runoff 17.68 cfs @ 12.15 hrs, Volume=

840 Total

9.8

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							1111100 0/11/2010				
<u>H</u>	/droCAl	D® 10.00	-20 s/n 03	436 © 201	7 HydroCAE	Software Solutions LLC	Page 116				
	Area	(ac) (	CN Adj	Descrip	tion						
*		, ,	98		Structure,	HSC V					
*			98								
			30	-	Existing Structure, HSG B Woods, Good, HSG A						
			55								
			55 70		Good, HSO						
			70 96		Woods, Good, HSG C Gravel surface, HSG A						
			96 96	Gravel surface, HSG B							
			96		Gravel surface, HSG C						
			30								
			58		Meadow, non-grazed, HSG A Meadow, non-grazed, HSG B						
			71		Meadow, non-grazed, HSG C						
			7 1 98			ment, HSG A					
			98								
			98		Unconnected pavement, HSG B Unconnected pavement, HSG C						
			98		Surface, HS						
			98		Surface, HS						
			98		Surface, HS						
_			64 63			, UI Adjusted	-				
		798	04 03		Pervious A						
		7 90 464			mpervious <i>F</i>						
		175			Unconnect						
	0.	175		01.1270	Officonfice	icu					
	Тс	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	2 3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
	5.4	50		0.16	7	Sheet Flow,					
	_					Woods: Light underbrush n= 0.400	P2= 3.20"				
	0.3	38	0.1316	1.81		Shallow Concentrated Flow,					
						Woodland Kv= 5.0 fps					
	0.2	32	0.0938	2.14		Shallow Concentrated Flow,					
						Short Grass Pasture Kv= 7.0 fps					
	0.1	25	0.0800	4.55		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	2.4	463	0.0390	3.18		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					
	1.4	232	0.0302	2.80		Shallow Concentrated Flow,					
						Unpaved Kv= 16.1 fps					

# **Summary for Subcatchment 4AS: Drainage Area 4AS**

9.50 cfs @ 12.21 hrs, Volume= 0.913 af, Depth= 2.34" Runoff

Page 117

## **Proposed Hydrology - Nutmeg-REV**

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1,146 Total

13.7

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_										
	Area	(ac) (	CN Des	cription						
*		•			ure, HSG A					
*				existing Structure, HSG B						
				ods, Good,						
	3.	033		ods, Good,						
	0.	000	70 Woo	ds, Good,	HSG C					
	0.	000	96 Gra	vel surface	, HSG A					
	0.	148	96 Gra	vel surface	, HSG B					
	0.	000	96 Gra	vel surface	, HSG C					
				dow, non-	grazed, HS	G A				
					grazed, HS					
					grazed, HS					
					avement, l					
				•	avement, l					
					avement, I	HSG C				
				er Surface						
				er Surface						
_				er Surface						
				ghted Aver	•					
		552		3% Pervio						
		125 125		'% Impervi .00% Unco						
	U.	123	100	.00% 01100	mecteu					
	Тс	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	5.6	50	0.0200	0.15		Sheet Flow,				
						Grass: Short n= 0.150 P2= 3.20"				
	1.0	79	0.0380	1.36		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	8.0	107	0.0935	2.14		Shallow Concentrated Flow,				
						Short Grass Pasture Kv= 7.0 fps				
	4.3	532	0.1729	2.08		Shallow Concentrated Flow,				
						Woodland Kv= 5.0 fps				
	0.8	67	0.0448	1.48		Shallow Concentrated Flow,				
				4.45		Short Grass Pasture Kv= 7.0 fps				
	1.2	311	0.0676	4.19		Shallow Concentrated Flow,				
						Unpaved Kv= 16.1 fps				

# **Summary for Subcatchment 4BS: Drainage Area 4BS**

Runoff = 36.98 cfs @ 12.44 hrs, Volume= 4.833 af, Depth= 2.34"

Page 118

## **Proposed Hydrology - Nutmeg-REV**

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	Area (	(ac)	CN	l Desc	cription						
*	0.0	000	98	B Exist	ing Structi	ure, HSG A	·				
*	0.0	000	98	8 Exist	ing Structi	ure, HSG B					
	0.0	000	30	) Woo	ds, Good,	HSG A					
	6.9	999	55	. Woo	ds, Good,	HSG B					
	0.0	000	70	) Woo	ds, Good,	HSG C					
	0.0	000	96	Grav	el surface	, HSG A					
	0.0	046	96	Grav	el surface	, HSG B					
	0.0	000	96	Grav	el surface	, HSG C					
	0.0	000	30	) Mea	dow, non-g	grazed, HS	G A				
	17.0	042	58	8 Mea	dow, non-g	grazed, HS	G B				
	0.3	393	71			grazed, HS					
		000	98			avement, F					
		111	98		Unconnected pavement, HSG B						
		000	98			avement, F	HSG C				
		000	98		er Surface,						
		000	98		er Surface,						
		000	98		Water Surface, HSG C						
	0.	<u> 179</u>	65	<u>Woo</u>	Woods/grass comb., Fair, HSG B						
	24.	770	58	3 Weig	hted Aver	age					
	24.0	659		99.5	99.55% Pervious Area						
		111			0.45% Impervious Area						
	0.	111		100.	00% Unco	nnected					
	Тс	Lengt		Slope	Velocity	Capacity	Description				
	(min)	(fee	et)	(ft/ft)	(ft/sec)	(cfs)					
	5.6	5	0	0.0200	0.15		Sheet Flow,				
							Grass: Short n= 0.150 P2= 3.20"				
	1.6	18	86	0.0806	1.99		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				
	0.4	7	′2	0.1668	2.86		Shallow Concentrated Flow,				
							Short Grass Pasture Kv= 7.0 fps				

1,845 Total

687

439 0.1550

411 0.0681

0.0131

3.7

3.7

14.3

29.3

# **Summary for Subcatchment 5AS: Drainage Area 5AS**

**Shallow Concentrated Flow**,

**Shallow Concentrated Flow,**Short Grass Pasture Kv= 7.0 fps

Short Grass Pasture Kv= 7.0 fps

Woodland Kv= 5.0 fps

Shallow Concentrated Flow,

Runoff = 4.59 cfs @ 12.09 hrs, Volume= 0.342 af, Depth= 2.34"

1.97

1.83

0.80

Description

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CN

Area (ac)

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Page 119

AICE	i (ac)	Oiv		npuon								
* (	0.000	98	B Exist	ing Structi	ıre, HSG A							
* (	0.000	98	8 Exist	ing Structi	ure, HSG B							
(	0.000	30	) Woo	ds, Good,	HSG A							
(	0.000	55	5 Woo	ds, Good,	HSG B							
(	0.000	70	) Woo	ds, Good,	HSG C							
(	0.000	96		Gravel surface, HSG A								
(	0.000	96	Grav	el surface	, HSG B							
	0.000	96		el surface								
	0.000	30			grazed, HS							
	1.754	58			grazed, HS							
	0.000	71			grazed, HS							
	0.000	98			avement, l							
	0.000	98		•	avement, l							
	0.000	98		•	avement, I	HSG C						
	0.000	98		er Surface,								
	0.000	98		er Surface,								
	0.000	98		er Surface,								
	1.754	58	_	ghted Aver								
1	1.754		100.0	00% Pervi	ous Area							
_					_							
Тс	_		Slope	Velocity	Capacity	Description						
<u>(min)</u>	,		(ft/ft)	(ft/sec)	(cfs)							
3.2		50	0.0800	0.26		Sheet Flow,						
						Grass: Short n= 0.150 P2= 3.20"						
2.2	3	95	0.1800	2.97		Shallow Concentrated Flow,						
						Short Grass Pasture Kv= 7.0 fps						
5.4	4	45	Total									

## **Summary for Subcatchment 5BS: Drainage Area 5BS**

Runoff = 2.97 cfs @ 12.12 hrs, Volume= 0.240 af, Depth= 2.34"

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Page 120

	Area	(ac)	CI	N Desc	cription		
*	0.	000	9	8 Exist	ting Structi	ure, HSG A	1
*	0.	000	9			ure, HSG E	
	0.	000	3	0 Woo	ds, Good,	HSG A	
		000			ds, Good,		
		000	7		ds, Good,		
		000	9		el surface		
		000			el surface	•	
		000	9		el surface	•	
		000				grazed, HS	
		232	5			grazed, HS	
		000	7			grazed, HS	
	_	000	9			avement, l	
		000	9			avement, I	
		000	9			avement, I	HSG C
		000			er Surface,		
		000	9		er Surface,		
_		000	9		er Surface,		
		232	5		ghted Aver	0	
	1.	232		100.	00% Pervi	ous Area	
	_						
	Тс	Leng		Slope	Velocity	Capacity	Description
	(min)	(fee		(ft/ft)	(ft/sec)	(cfs)	
	4.3		50	0.0400	0.20		Sheet Flow,
							Grass: Short n= 0.150 P2= 3.20"
	1.3	1	13	0.0442	1.47		Shallow Concentrated Flow,
							Short Grass Pasture Kv= 7.0 fps
	2.4	2	31	0.0520	1.60		Shallow Concentrated Flow,
_							Short Grass Pasture Kv= 7.0 fps
	8.0	39	94	Total			

## **Summary for Subcatchment 5S: Drainage Area 5S**

12.45 cfs @ 12.20 hrs, Volume= 1.200 af, Depth= 2.15" Runoff

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Pag	e '	1	2	1

	Area	(ac)	CN	Desc	cription							
*	0.	000	98	Exist	ing Structi	ure, HSG A	1					
*	0.	000	98	Exist	ing Structi	ure, HSG B	}					
		000	30		ds, Good,							
		693	55	Woo	ds, Good,	HSG B						
		000	70		ds, Good,							
		000	96		el surface	,						
		000	96		el surface							
		000	96		el surface	•						
		000	30		Meadow, non-grazed, HSG A							
		994	58		Meadow, non-grazed, HSG B							
		000	71			grazed, HS						
		000	98			avement, l						
		000	98		•	avement, I						
		000	98			avement, I	HSG C					
		000	98		er Surface,							
		000	98		er Surface,							
		000	98		er Surface,							
		687	56		hted Aver	•						
	6.	687		100.	00% Pervi	ous Area						
	т.	Longth		lana	Valacity	Canacity	Description					
	Tc (min)	Length		lope ft/ft)	Velocity	Capacity (cfs)	Description					
	(min)	(feet)			(ft/sec)	(CIS)	Oh a of Flavo					
	3.2	50	0.0	008	0.26		Sheet Flow,					
	2.0	200		050	0.47		Grass: Short n= 0.150 P2= 3.20"					
	3.0	396	0.0	959	2.17		Shallow Concentrated Flow,					
	4.2	435	. 01	172	1.71		Short Grass Pasture Kv= 7.0 fps					
	4.2	430	0.1	1/2	1.71		Shallow Concentrated Flow,					
	2.7	207	, ,,	676	1.30		Woodland Kv= 5.0 fps Shallow Concentrated Flow,					
	۷.۱	201	0.0	010	1.50		Woodland Kv= 5.0 fps					
_	12 1	1 000	) Tot	tal			vvoodiand itv- 3.0 ips					
	13.1	1,088	3 Tot	ıaı								

# **Summary for Subcatchment 6AS: Drainage Area 6AS**

Runoff = 3.06 cfs @ 12.11 hrs, Volume= 0.240 af, Depth= 2.44"

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Page 122

_	Area (	ac)	CN	Adj	Descript	ion						
*	0.0	000	98		Existing	Structure,	HSG A					
*	0.0	000	98		Existing	Structure,	HSG B					
	0.0	000	30		Woods,	Good, HS0	G A					
	0.0	000	55		Woods,	Good, HS0	G B					
	0.0	000	70		Woods,	Good, HS0	G C					
	0.0	000	96		Gravel s	avel surface, HSG A						
	0.0	000	96		Gravel s	Gravel surface, HSG B						
	0.0	000	96		Gravel s	urface, HS	SG C					
	0.0	000	30		Meadow	Meadow, non-grazed, HSG A						
	1.	106	58		Meadow	, non-graz	ed, HSG B					
	0.0	000	71		Meadow	, non-graz	ed, HSG C					
		000	98		Unconnected pavement, HSG A							
		075	98			Unconnected pavement, HSG B						
		000	98			Unconnected pavement, HSG C						
		000	98			urface, HS						
		000	98			Water Surface, HSG B						
	0.0	000	98		Water Surface, HSG C							
	1.	181	61	59	Weighted Average, UI Adjusted							
	1.	106			93.65% Pervious Area							
	0.0	075			6.35% lı	6.35% Impervious Area						
	0.0	075			100.00%	6 Unconne	cted					
	Tc	Length	n SI	lope	Velocity	Capacity	Description					
	(min)	(feet	) (	ft/ft)	(ft/sec)	(cfs)						
	4.8	50	0.0	300	0.17		Sheet Flow,					
							Grass: Short n= 0.150 P2= 3.20"					
	2.5	240	0.0	542	1.63		Shallow Concentrated Flow,					
							Short Grass Pasture Kv= 7.0 fps					
	7.3	290	) Tot	tal								

## **Summary for Subcatchment 6BS: Drainage Area 6BS**

Runoff = 1.36 cfs @ 12.11 hrs, Volume= 0.107 af, Depth= 2.44"

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Page 123

	Area (	(ac)	CI	N Adj	Descrip	ion						
*	0.0	000	9	8	Existing	Structure,	HSG A					
*	0.0	000	9	8		Structure,						
	0.0	000	3	0	Woods,	Good, HSC	G A					
	0.0	000	5	5	Woods,	Good, HS0	G B					
	0.0	000	7	-	Woods,	Woods, Good, HSG C						
	_	000	9		Gravel surface, HSG A							
		000	9			Gravel surface, HSG B						
		000	9			urface, HS						
		000	3			Meadow, non-grazed, HSG A						
		500	5			Meadow, non-grazed, HSG B						
		000	7				ed, HSG C					
		000	9		Unconnected pavement, HSG A							
		025	9				ment, HSG B					
		000	9				ment, HSG C					
		000	9			urface, HS						
		000	9			Water Surface, HSG B						
	0.0	000	9	8		Water Surface, HSG C						
		525	6	0 59	Weighted Average, UI Adjusted							
		500				95.24% Pervious Area						
		025			4.76% l	4.76% Impervious Area						
	0.0	025			100.00%	6 Unconne	cted					
	Tc	Lengt		Slope	Velocity	Capacity	Description					
	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)						
	4.8	5	0	0.0300	0.17		Sheet Flow,					
							Grass: Short n= 0.150 P2= 3.20"					
	2.5	24	0	0.0542	1.63		Shallow Concentrated Flow,					
							Short Grass Pasture Kv= 7.0 fps					
	7.3	29	0	Total								

## Summary for Subcatchment 6S: Drainage Area 6S

Runoff = 5.22 cfs @ 12.29 hrs, Volume= 0.578 af, Depth= 2.25"

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Page 124

	Area	(ac) (	CN Des	cription				
*	0.	000	98 Exis	ting Struct	ure, HSG A	1		
*	0.	000	98 Exis	ting Struct	ure, HSG E	3		
	0.	000	30 Woo	ds, Good,	HSG A			
	1.	480	55 Woo	ds, Good,	HSG B			
	0.	000	70 Woo	ds, Good,	HSG C			
	0.	000						
	0.	000	96 Grav	vel surface	, HSG B			
	0.	000	96 Grav	vel surface	, HSG C			
	0.			dow, non-	grazed, HS	G A		
	1.	606	58 Mea	dow, non-	grazed, HS	GB		
					grazed, HS			
	_				pavement, I			
					pavement, I			
					pavement, I	HSG C		
				er Surface	,			
				er Surface				
	0.	000	<u>98 Wat</u>	<u>er Surface</u>	, HSG C			
	3.	086		ghted Aver	•			
	3.	086	100.	00.00% Pervious Area				
	Тс	Length		Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	4.3	50	0.0400	0.20		Sheet Flow,		
						Grass: Short n= 0.150 P2= 3.20"		
	4.8	571	0.0800	1.98		Shallow Concentrated Flow,		
						Short Grass Pasture Kv= 7.0 fps		
	2.0	257	0.1900	2.18		Shallow Concentrated Flow,		
						Woodland Kv= 5.0 fps		
	8.2	375	0.0235	0.77		Shallow Concentrated Flow,		
						Woodland Kv= 5.0 fps		
	19.3	1,253	Total					

# **Summary for Subcatchment 7AS: Drainage Area 7AS**

Runoff = 23.59 cfs @ 12.22 hrs, Volume= 2.331 af, Depth= 2.34"

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Page 125

	Area (a	ac) (	CN	Desc	ription					
*	0.0	000	98	Exist	ing Structi	ure, HSG A	4			
*	0.0	000	98	Exist	ing Structi	ure, HSG E	3			
	0.0	000	30	Woo	ds, Good,	HSG A				
	0.0	000	55	Woo	ds, Good,	HSG B				
	0.0	000	70	Woo	ds, Good,	HSG C				
	0.0	000	96	Grav	el surface	, HSG A				
	0.0		96	Grav	el surface	, HSG B				
	0.0		96	Grav	el surface	, HSG C				
	0.0		30			grazed, HS				
	11.8		58			grazed, HS				
	0.0		71			grazed, HS				
	0.0		98			avement,				
	0.0		98			avement,				
	0.0		98			avement,	HSG C			
	0.0		98		r Surface,					
	0.0		98		r Surface,					
	0.0		98	Water Surface, HSG C						
	11.9		58	Weig						
	11.8				3% Pervio					
	0.0				% Impervi					
	0.0	162		100.0	00% Unco	nnected				
	_		-							
		Length		ope	Velocity	Capacity	Description			
	(min)	(feet)		ft/ft)	(ft/sec)	(cfs)				
	3.4	50	0.0	700	0.24		Sheet Flow,			
							Grass: Short n= 0.150 P2= 3.20"			
	11.4	1,156	0.0	579	1.68		Shallow Concentrated Flow,			
							Short Grass Pasture Kv= 7.0 fps			
	14.8	1,206	Tot	tal						

## **Summary for Subcatchment 7S: Drainage Area 7S**

Runoff = 36.99 cfs @ 12.22 hrs, Volume= 3.658 af, Depth= 2.25"

Page 126

# **Proposed Hydrology - Nutmeg-REV**

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	Area	(ac)	CN	Adj	Descript	ion		
*	0.	0.000 98 Existing			Existing	Structure,	HSG A	
*	0.	000	98		Existing	Structure,	HSG B	
	0.	000	30		Woods,	Good, HS0	G A	
	3.	886	55		Woods,	Good, HS0	3 B	
	0.	000	70		Woods,	Good, HS0	G C	
	0.	000	96		Gravel s	surface, HS	G A	
	0.	000	96		Gravel s	surface, HS	G B	
	0.	000	96		Gravel s	surface, HS	GC	
		000	30				ed, HSG A	
		579	58				ed, HSG B	
		000	71				ed, HSG C	
	_	000	98				ment, HSG A	
		068	98		Unconnected pavement, HSG B			
		000	98				ment, HSG C	
		000	98			urface, HS		
		000	98			urface, HS		
_	0.	000	98		Water S	<u>urface, HS</u>	G C	
		533	58	57	Weighte	d Average,	, UI Adjusted	
		465			99.65%	Pervious A	ırea	
		068				mpervious <i>i</i>		
	0.	068			100.00%	6 Unconne	cted	
	Тс	Lengtl		Slope	Velocity	Capacity	Description	
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)		
	3.6	50	0 0	0.0600	0.23		Sheet Flow,	
							Grass: Short n= 0.150 P2= 3.20"	
	9.8	1,12	5 C	0.0747	1.91		Shallow Concentrated Flow,	
							Short Grass Pasture Kv= 7.0 fps	
	1.1	9:	3 0	0.0753	1.37		Shallow Concentrated Flow,	
_							Woodland Kv= 5.0 fps	
	14.5	1,26	8 T	Γotal				

# Summary for Subcatchment 8AS: Drainage Area 8A

Runoff = 12.35 cfs @ 12.24 hrs, Volume= 1.264 af, Depth= 2.34"

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Page 127

	Area (	ac)	CN	l Desc	cription				
*	0.0	000	98	B Exist	ing Structu	ure, HSG A	·		
*	0.0	000	98	B Exist	ing Structu	ure, HSG B			
	0.0	000	30	) Woo	ds, Good,	HSG A			
	0.0	000	55	5 Woo	ds, Good,	HSG B			
	0.0	000	70	) Woo	ds, Good,	HSG C			
		000	96		el surface	,			
		000	96		el surface	, HSG B			
		000	96		el surface	, HSG C			
		000	30			grazed, HS			
		441	58			grazed, HS			
		000	71			grazed, HS			
		000	98			avement, l			
		037	98			avement, l			
		000	98			avement, F	HSG C		
		000	98		er Surface,				
		000	98		er Surface,				
		000	98	<u> Wate</u>	<u>er Surface,</u>	HSG C			
	_	478	58	3 Weig	Weighted Average				
		441			3% Pervio				
		037		0.57	0.57% Impervious Area				
	0.0	037		100.	00% Unco	nnected			
	Тс	Lengt		Slope	Velocity	Capacity	Description		
_	(min)	(fee	t)	(ft/ft)	(ft/sec)	(cfs)			
	5.6	5	0	0.0200	0.15		Sheet Flow,		
							Grass: Short n= 0.150 P2= 3.20"		
	10.5	93	84	0.0450	1.48		Shallow Concentrated Flow,		
_							Short Grass Pasture Kv= 7.0 fps		
	16.1	98	34	Total					

## **Summary for Subcatchment 8BS: Drainage Area 8BS**

Runoff = 7.00 cfs @ 12.36 hrs, Volume= 0.839 af, Depth= 2.34"

Page 128

## **Proposed Hydrology - Nutmeg-REV**

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1,438 Total

24.0

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<u>:::</u>	G. 0 07 1	30 10.00	20 0,11 0	<del>5 100 ° 20 1</del>	7 11y 41007 tz	o contrar o conduction and a conduction	<u> </u>
	Area	(ac) (	CN Des	scription			
*				•	ure, HSG A		
*					ure, HSG E		
				ods, Good,			
				ods, Good,			
				ods, Good,			
	0.	000	96 Gra	vel surface	, HSG A		
	0.	000	96 Gra	vel surface	, HSG B		
	0.	000	96 Gra	vel surface	, HSG C		
	0.			adow, non-	grazed, HS	G A	
				adow, non-	grazed, HS	G B	
					grazed, HS		
					pavement, I		
					pavement, l		
					pavement, I	HSG C	
				ter Surface	•		
				ter Surface			
_				ter Surface	•		
				ghted Ave	•		
		259		02% Pervio			
		042		3% Impervi			
	U.	042	100	.00% Uncc	mectea		
	Тс	Length	Slope	Velocity	Capacity	Description	
	(min)	(feet)	•	(ft/sec)	(cfs)	Description	
_	5.6	50	, ,		(010)	Sheet Flow,	
	3.0	30	0.0200	0.13		Grass: Short n= 0.150 P2= 3.20"	
	1.6	145	0.0484	1.54		Shallow Concentrated Flow,	
	1.0		0.0101	1.01		Short Grass Pasture Kv= 7.0 fps	
	5.4	499	0.0481	1.54		Shallow Concentrated Flow,	
	• • •		0.0.0.			Short Grass Pasture Kv= 7.0 fps	
	9.2	510	0.0176	0.93		Shallow Concentrated Flow,	
						Short Grass Pasture Kv= 7.0 fps	
	2.2	234	0.0625	1.75		Shallow Concentrated Flow,	
						Short Grass Pasture Kv= 7.0 fps	

## **Summary for Subcatchment 8S: Drainage Area 8S**

Runoff = 23.08 cfs @ 12.20 hrs, Volume= 2.180 af, Depth= 2.63"

Page 129

# **Proposed Hydrology - Nutmeg-REV**

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13.8

794

Total

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	,			, <u></u>			<u> </u>	
	Aron (	(aa) (	CN Adj	Dogorin	tion			
*	Area (					1100 4		
*		000	98		Structure,			
		000	98		Structure,			
		000	30 55		Woods, Good, HSG A			
		137			Woods, Good, HSG B			
		000 000	70 96		Woods, Good, HSG C Gravel surface, HSG A			
		543	96 96		surface, HS			
		000	96		surface, HS			
		000	30		v, non-graz			
		340	58		v, non-graz v, non-graz			
		000	71		v, non graz v, non-graz	· · · · · · · · · · · · · · · · · · ·		
		000	98			ment, HSG A		
		326	98			ment, HSG B		
		000	98		Unconnected pavement, HSG C			
		000	98		Surface, HS			
	0.0	000	98		Surface, HS			
	0.0	000	98	Water S	Surface, HS	GC		
	9.9	946	62 61	Weighte	ed Average	, UI Adjusted	_	
	9.3	320			Pervious A			
	0.6	326		6.29% I	mpervious .	Area		
	0.6	326		100.00%	6 Unconne	cted		
	Tc	Length		Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	5.6	50	0.0200	0.15		Sheet Flow,		
						Grass: Short n= 0.150 P2= 3.20"		
	2.8	175	0.0228	1.06		Shallow Concentrated Flow,		
						Short Grass Pasture Kv= 7.0 fps		
	3.5	385	0.0701	1.85		Shallow Concentrated Flow,		
						Short Grass Pasture Kv= 7.0 fps		
	1.9	184	0.1007	1.59		Shallow Concentrated Flow,		
						Woodland Kv= 5.0 fps		

# **Summary for Subcatchment 9S: Drainage Area 9S**

Runoff = 2.40 cfs @ 12.16 hrs, Volume= 0.209 af, Depth= 2.44"

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Page 130

	Area	(ac)	CN [	Desc	cription		
*	0.	000	98 E	Exist	ting Struct	ure, HSG A	l .
*	0.	000	98 E	Exist	ting Struct	ure, HSG B	
	0.	187	30 \	Woo	ds, Good,	HSG A	
	0.	424	55 \	Woo	ds, Good,	HSG B	
	0.	000	70 \	Woo	ds, Good,	HSG C	
	0.	048	96 (	Grav	el surface	, HSG A	
	0.	139	96 (	Grav	el surface	, HSG B	
	0.	000	96 (	Grav	el surface	, HSG C	
	0.	000	30	Mea	dow, non-	grazed, HS	G A
		233	58 I	Mea	dow, non-g	grazed, HS	G B
		000			,	grazed, HS	
		000				oavement, I	
		000			•	pavement, I	
		000				oavement, l	HSG C
		000			er Surface		
0.000 98 Water Surface, HSG B							
		000			er Surface	<u> </u>	
		031			ghted Aver	•	
	1.	031	•	100.	00% Pervi	ous Area	
	Тс	Length		pe	Velocity	Capacity	Description
	(min)	(feet)		t/ft)	(ft/sec)	(cfs)	
	4.3	50	0.04	100	0.20		Sheet Flow,
							Grass: Short n= 0.150 P2= 3.20"
	0.3	70	0.05	572	3.85		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	0.9	82	0.09	971	1.56		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	5.1	411	0.07	730	1.35		Shallow Concentrated Flow,
							Woodland Kv= 5.0 fps
	10.6	613	Tota	al			

## **Summary for Reach 1BR: Overland Flow**

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 2.65" for 100-Year event

Inflow = 17.81 cfs @ 12.25 hrs, Volume= 2.161 af

Outflow = 9.94 cfs @ 13.25 hrs, Volume= 2.160 af, Atten= 44%, Lag= 60.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.41 fps, Min. Travel Time= 37.8 min Avg. Velocity = 0.27 fps, Avg. Travel Time= 57.1 min

Peak Storage= 22,594 cf @ 12.62 hrs Average Depth at Peak Storage= 0.06'

Bank-Full Depth= 0.01' Flow Area= 2.2 sf, Capacity= 0.71 cfs

Custom cross-section, Length= 940.0' Slope= 0.0426 '/'

Constant n= 0.030 Short grass

Inlet Invert= 209.00', Outlet Invert= 169.00'

Nutmeg Solar Project - Proposed Type III 24-hr 100-Year Rainfall=6.90" Printed 9/11/2018

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Page 131

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
290.00	-0.01	0.01
330.00	-0.01	0.01
405.00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	40.0	0	0.00
0.01	2.2	405.0	2,092	0.71

#### **Summary for Reach 1CR: Overland Flow**

Inflow Area = 4.622 ac, 6.34% Impervious, Inflow Depth = 4.82" for 100-Year event

Inflow = 12.62 cfs @ 12.42 hrs, Volume= 1.857 af

Outflow = 4.55 cfs @ 15.28 hrs, Volume= 1.788 af, Atten= 64%, Lag= 171.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.81 fps, Min. Travel Time= 138.0 min

Avg. Velocity = 0.46 fps, Avg. Travel Time= 244.6 min

Peak Storage= 37,640 cf @ 12.98 hrs Average Depth at Peak Storage= 0.15'

Bank-Full Depth= 0.25' Flow Area= 15.4 sf, Capacity= 17.41 cfs

Custom cross-section, Length= 6,700.0' Slope= 0.0084 '/'

Constant n= 0.030 Short grass

Inlet Invert= 224.00', Outlet Invert= 168.00'

‡

Offset	Elevation	Chan.Depth
(feet)	(feet)	(feet)
0.00	0.00	0.00
100.00	-0.25	0.25
123.00	0.00	0.00

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Page 132

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	0.0	0	0.00
0.25	15.4	123.0	103,013	17.41

#### **Summary for Reach 2BR: Overland Flow**

Inflow Area = 15.629 ac, 0.72% Impervious, Inflow Depth = 2.21" for 100-Year event

Inflow = 35.20 cfs @ 12.26 hrs, Volume= 2.877 af

Outflow = 14.07 cfs @ 13.30 hrs, Volume= 2.876 af, Atten= 60%, Lag= 62.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.36 fps, Min. Travel Time= 36.6 min Avg. Velocity = 0.25 fps, Avg. Travel Time= 51.7 min

Peak Storage= 30,935 cf @ 12.69 hrs Average Depth at Peak Storage= 0.14'

Bank-Full Depth= 0.01' Flow Area= 1.7 sf, Capacity= 0.46 cfs

Custom cross-section, Length= 785.0' Slope= 0.0280 '/'

Constant n= 0.030 Short grass

Inlet Invert= 194.00', Outlet Invert= 172.00'



Oliset	Lievation	Спап.Берш
(feet)	(feet)	(feet)
0.00	0.00	0.00
120.00	-0.01	0.01
170.00	-0.01	0.01
290.00	0.00	0.00

Depth	End Area	Perim.	Storage	Discharge
(feet)	(sq-ft)	(feet)	(cubic-feet)	(cfs)
0.00	0.0	50.0	0	0.00
0.01	1.7	290.0	1,335	0.46

## Summary for Reach DP-1: Design Point 1

Inflow Area = 31.828 ac, 4.77% Impervious, Inflow Depth > 2.62" for 100-Year event

Inflow = 23.66 cfs @ 12.46 hrs, Volume= 6.940 af

Outflow = 23.66 cfs @ 12.46 hrs, Volume= 6.940 af, Atten= 0%, Lag= 0.0 min

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Page 133

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-2: Design Point 2**

Inflow Area = 27.151 ac, 1.67% Impervious, Inflow Depth > 2.31" for 100-Year event

Inflow = 23.05 cfs @ 12.25 hrs, Volume= 5.216 af

Outflow = 23.05 cfs @ 12.25 hrs, Volume= 5.216 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-3: Design Point 3**

Inflow Area = 6.262 ac, 7.41% Impervious, Inflow Depth = 2.83" for 100-Year event

Inflow = 17.68 cfs @ 12.15 hrs, Volume= 1.475 af

Outflow = 17.68 cfs @ 12.15 hrs, Volume= 1.475 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### Summary for Reach DP-4: Design Point 4

Inflow Area = 29.447 ac, 0.80% Impervious, Inflow Depth = 2.34" for 100-Year event

Inflow = 43.07 cfs @ 12.41 hrs, Volume= 5.746 af

Outflow = 43.07 cfs @ 12.41 hrs, Volume= 5.746 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## **Summary for Reach DP-5: Design Point 5**

Inflow Area = 9.673 ac, 0.00% Impervious, Inflow Depth = 1.49" for 100-Year event

Inflow = 12.45 cfs @ 12.20 hrs, Volume= 1.200 af

Outflow = 12.45 cfs @ 12.20 hrs, Volume= 1.200 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## Summary for Reach DP-6: Design Point 6

Inflow Area = 4.792 ac, 2.09% Impervious, Inflow Depth = 1.45" for 100-Year event

Inflow = 5.22 cfs @ 12.29 hrs, Volume= 0.578 af

Outflow = 5.22 cfs @ 12.29 hrs, Volume= 0.578 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

## Summary for Reach DP-7: Design Point 7

Inflow Area = 31.477 ac, 0.41% Impervious, Inflow Depth = 1.39" for 100-Year event

Inflow = 36.99 cfs @ 12.22 hrs, Volume= 3.658 af

Outflow = 36.99 cfs @ 12.22 hrs, Volume= 3.658 af, Atten= 0%, Lag= 0.0 min

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Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-8: Design Point 8**

Inflow Area = 20.725 ac, 3.40% Impervious, Inflow Depth = 1.26" for 100-Year event

Inflow = 23.08 cfs @ 12.20 hrs, Volume= 2.180 af

Outflow = 23.08 cfs @ 12.20 hrs, Volume= 2.180 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Reach DP-9: Design Point 9**

Inflow Area = 1.031 ac, 0.00% Impervious, Inflow Depth = 2.44" for 100-Year event

Inflow = 2.40 cfs @ 12.16 hrs, Volume= 0.209 af

Outflow = 2.40 cfs @ 12.16 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

#### **Summary for Pond 1BP: Culvert 1BS**

Inflow Area = 9.780 ac, 2.10% Impervious, Inflow Depth = 2.73" for 100-Year event

Inflow = 21.74 cfs @ 12.25 hrs, Volume= 2.223 af

Outflow = 21.74 cfs @ 12.25 hrs, Volume= 2.223 af, Atten= 0%, Lag= 0.0 min

Primary = 17.81 cfs @ 12.25 hrs, Volume= 2.161 af Secondary = 3.93 cfs @ 12.25 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 214.66' @ 12.25 hrs

Flood Elev= 215.00'

<u>Device</u>	Routing	Invert	Outlet Devices
#1	Primary	212.50'	18.0" Round Culvert X 2.00 L= 72.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 212.50' / 210.00' S= 0.0347 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	214.25'	6.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=17.80 cfs @ 12.25 hrs HW=214.66' (Free Discharge) 1=Culvert (Inlet Controls 17.80 cfs @ 5.04 fps)

Secondary OutFlow Max=3.91 cfs @ 12.25 hrs HW=214.66' (Free Discharge) 2=Broad-Crested Rectangular Weir (Weir Controls 3.91 cfs @ 1.60 fps)

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Page 135

#### Summary for Pond 5A: Basin 5A

Inflow Area = 1.754 ac, 0.00% Impervious, Inflow Depth = 2.34" for 100-Year event

Inflow = 4.59 cfs @ 12.09 hrs, Volume= 0.342 af

Outflow = 0.44 cfs @ 13.53 hrs, Volume= 0.342 af, Atten= 90%, Lag= 86.4 min

Discarded = 0.44 cfs @ 13.53 hrs, Volume = 0.342 afPrimary = 0.00 cfs @ 5.00 hrs, Volume = 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 274.20' @ 13.53 hrs Surf.Area= 7,824 sf Storage= 6,080 cf

Flood Elev= 275.00' Surf.Area= 11,878 sf Storage= 13,898 cf

Plug-Flow detention time= 165.8 min calculated for 0.342 af (100% of inflow)

Center-of-Mass det. time= 165.5 min (1,024.2 - 858.7)

<u>Volume</u>	Inve	rt Avail.	.Storage	Storage Description	า		
#1	273.00	)' 1	3,898 cf	Custom Stage Dat	ta (Irregular)Listed	below (Recalc)	
Elevatio		Surf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee		(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
273.0	00	2,606	536.7	0	0	2,606	
274.0	00	6,939	667.0	4,599	4,599	15,102	
275.0	00	11,878	730.0	9,299	13,898	22,140	
Device	Routing	Inv	ert Outle	et Devices			
#1	Discarded	273.	00' <b>2.41</b>	0 in/hr Exfiltration o	over Surface area		
		_	Cond	ductivity to Groundw	ater Elevation = 19	4.00'	
#2	Primary	274.		long x 8.0' breadt			
	,			d (feet) 0.20 0.40 0			2.00
				3.00 3.50 4.00 4.			
				. (English) 2.43 2.5		268 266 264 2	64
				2.65 2.65 2.66 2.0			•
			∠.∪+	2.00 2.00 2.00 2.	00 2.00 2.10 2.1-	т	

**Discarded OutFlow** Max=0.44 cfs @ 13.53 hrs HW=274.20' (Free Discharge) **1=Exfiltration** (Controls 0.44 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=273.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 5B: Basin 5B

Inflow Area =	1.232 ac,	0.00% Impervious, Inflow De	epth = 2.34" for 100-Year event
Inflow =	2.97 cfs @	12.12 hrs, Volume=	0.240 af
Outflow =	0.27 cfs @	13.90 hrs, Volume=	0.240 af, Atten= 91%, Lag= 106.6 min
Discarded =	0.27 cfs @	13.90 hrs, Volume=	0.240 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 291.73' @ 13.90 hrs Surf.Area= 4,880 sf Storage= 4,715 cf Flood Elev= 293.00' Surf.Area= 9,526 sf Storage= 13,669 cf

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Page 136

Plug-Flow detention time= 230.5 min calculated for 0.240 af (100% of inflow) Center-of-Mass det. time= 228.9 min (1,090.1 - 861.1)

Volume Invert Avail.Storage Storage Description Custom Stage Data (Irregular)Listed below (Recalc) #1 289.00' 13.669 cf Inc.Store Surf.Area Cum.Store Wet.Area Elevation Perim. (feet) (sq-ft) (feet) (cubic-feet) (cubic-feet) (sq-ft) 289.00 0.0 0 0 290.00 670 199.3 223 223 3,162 291.00 369.2 1.886 2,920 1.663 10,854 292.00 5,718 494.6 4,241 6,128 19,485 293.00 9,526 525.0 7,541 13,669 22,003 Device Routing Invert **Outlet Devices** #1 Discarded 289.00' 2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 194.00' #2 Primary 292.30' 15.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50

**Discarded OutFlow** Max=0.27 cfs @ 13.90 hrs HW=291.73' (Free Discharge) **1=Exfiltration** (Controls 0.27 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=289.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## Summary for Pond 5P: Culvert 1CS

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64

Inflow Area = 4.622 ac, 6.34% Impervious, Inflow Depth = 4.82" for 100-Year event
Inflow = 18.74 cfs @ 12.22 hrs, Volume= 1.857 af

Outflow = 12.62 cfs @ 12.42 hrs, Volume= 1.857 af, Atten= 33%, Lag= 11.7 min
Primary = 12.36 cfs @ 12.42 hrs, Volume= 1.856 af
Secondary = 0.26 cfs @ 12.42 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 228.46' @ 12.42 hrs Surf.Area= 5.299 sf Storage= 7,904 cf

Plug-Flow detention time= 3.6 min calculated for 1.854 af (100% of inflow) Center-of-Mass det. time= 3.6 min ( 817.0 - 813.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	225.00'	8,119 cf	Custom Stage Data (Irregular)Listed below (Recalc)

Wet.Area

(sq-ft)

## **Proposed Hydrology - Nutmeg-REV**

Surf.Area

(sq-ft)

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Elevation

#2

Primary

(feet)

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Perim.

(feet)

Page 137

225.	00	0	0.0	0	0	0
226.	00	823	554.8	274	274	24,496
227.	00	2,690	609.2	1,667	1,941	29,568
228.	00	4,726	653.1	3,661	5,602	34,023
228.	50	5,351	662.0	2,518	8,119	35,011
<u>Device</u>	Routing	Inver	t Outlet D	evices		
#1	Primary	225.00	)' 18.0" R	ound Culvert		
	-		L= 54.0'	CPP, mitered to co	onform to fill, Ke	= 0.700
			Inlet / O	utlet Invert= 225.00'	/ 224.00' S= 0.0	0185 '/' Cc= 0.900
			n= 0.013	3 Corrugated PE, sn	nooth interior, Fl	low Area= 1.77 sf
#2	Secondary	228.40	)' 7.0' long	g x 25.0' breadth B	road-Crested Re	ectangular Weir
	•		Head (fe	eet) 0.20 0.40 0.60	0.80 1.00 1.20	1.40 1.60

Inc.Store

(cubic-feet)

Cum.Store

(cubic-feet)

Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=12.34 cfs @ 12.42 hrs HW=228.45' (Free Discharge) **1=Culvert** (Inlet Controls 12.34 cfs @ 6.98 fps)

Secondary OutFlow Max=0.22 cfs @ 12.42 hrs HW=228.45' (Free Discharge) 2=Broad-Crested Rectangular Weir (Weir Controls 0.22 cfs @ 0.61 fps)

### **Summary for Pond 6A: Basin 6A**

Inflow Area =	1.181 ac,	6.35% Impervious, Inflow D	epth = 2.44" for 100-Year event
Inflow =	3.06 cfs @	12.11 hrs, Volume=	0.240 af
Outflow =	0.35 cfs @	13.12 hrs, Volume=	0.240 af, Atten= 88%, Lag= 60.3 min
Discarded =	0.35 cfs @	13.12 hrs, Volume=	0.240 af
Primary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 302.89' @ 13.12 hrs Surf.Area= 6,326 sf Storage= 3,990 cf Flood Elev= 304.00' Surf.Area= 11,352 sf Storage= 13,687 cf

Plug-Flow detention time= 124.4 min calculated for 0.239 af (100% of inflow) Center-of-Mass det. time= 124.1 min ( 982.1 - 858.0 )

303.75'

Volume	Invert	Avai	I.Storage	Storage Descriptio	n		
#1	302.00'		13,687 cf	Custom Stage Da	ta (Irregular)Liste	ed below (Recalc)	
Elevation (feet)	Sı	urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
302.00		2,834	486.7	0	0	2,834	
303.00		6,833	540.2	4,689	4,689	7,236	
304.00		11,352	606.8	8,997	13,687	13,342	
Device R	outing	ln	vert Outle	et Devices			
#1 D	iscarded	302		<pre>0 in/hr Exfiltration ductivity to Groundw</pre>			

15.0' long x 8.0' breadth Broad-Crested Rectangular Weir

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Page 138

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.35 cfs @ 13.12 hrs HW=302.89' (Free Discharge) **1=Exfiltration** (Controls 0.35 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=302.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 6B: Basin 6B

Inflow Area = 0.525 ac, 4.76% Impervious, Inflow Depth = 2.44" for 100-Year event Inflow = 1.36 cfs @ 12.11 hrs, Volume= 0.107 af Outflow = 0.15 cfs @ 13.17 hrs, Volume= 0.107 af, Atten= 89%, Lag= 63.1 min Discarded = 0.00 cfs @ 13.17 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 293.75' @ 13.17 hrs Surf.Area= 2,263 sf Storage= 1,925 cf Flood Elev= 294.00' Surf.Area= 2,686 sf Storage= 2,540 cf

Plug-Flow detention time= 170.8 min calculated for 0.106 af (100% of inflow) Center-of-Mass det. time= 170.8 min ( 1,028.8 - 858.0 )

Volume	Invert	Avai	I.Storage	Storage Descriptio	n		
#1	292.00'		2,540 cf	Custom Stage Da	<b>ita (Irregular)</b> List	ed below (Recalc)	
Elevation	Sur	f.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(feet)		(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
292.00		214	119.6	0	0	214	
293.00		1,206	200.7	643	643	2,287	
294.00		2,686	286.0	1,897	2,540	5,600	
Device Ro	outing	In	vert Outle	et Devices			

DCVICC	rtouting	IIIVCIL	Outlet Devices
#1	Discarded	292.00'	2.410 in/hr Exfiltration over Surface area
<b>4</b> 0	Duine e m /	202 751	Conductivity to Groundwater Elevation = 288.00'
#2	Primary	293.75	15.0' long x 8.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64
			2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

**Discarded OutFlow** Max=0.15 cfs @ 13.17 hrs HW=293.75' (Free Discharge) 1=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 13.17 hrs HW=293.75' (Free Discharge) 2=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.08 fps)

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Page 139

#### **Summary for Pond 7A: Basin 7A**

Inflow Area = 11.944 ac, 0.52% Impervious, Inflow Depth = 2.34" for 100-Year event

Inflow = 23.59 cfs @ 12.22 hrs, Volume= 2.331 af

Outflow = 2.01 cfs @ 15.06 hrs, Volume= 2.152 af, Atten= 91%, Lag= 170.5 min

Discarded = 2.01 cfs @ 15.06 hrs, Volume= 2.152 af Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 253.41' @ 15.06 hrs Surf.Area= 35,113 sf Storage= 51,978 cf

Flood Elev= 254.00' Surf.Area= 44,034 sf Storage= 75,130 cf

Plug-Flow detention time= 340.0 min calculated for 2.152 af (92% of inflow)

Center-of-Mass det. time= 301.1 min ( 1,168.6 - 867.4 )

Volume	Invert	t Ava	il.Storage	Storage Description	on		
#1	248.00	•	75,130 cf	Custom Stage Da	ata (Irregular)Liste	ed below (Recalc)	
Clayatia		urf Araa	Dorim	Ina Ctara	Cum Stara	Mot Area	
Elevation		urf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area	
(fee	et)	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	(sq-ft)	
248.0	00	0	0.0	0	0	0	
249.0	00	520	128.5	173	173	1,316	
250.0	00	2,102	372.1	1,222	1,396	11,023	
251.0	00	6,364	802.0	4,041	5,437	51,194	
252.0	00	16,015	1,315.7	10,825	16,262	137,769	
253.0	00	29,426	1,401.6	22,383	38,645	156,394	
254.0	00	44,034	1,517.9	36,485	75,130	183,453	
Device	Routing	ln	vert Outle	et Devices			
#1	Discarded	248	.00' <b>2.41</b>	0 in/hr Exfiltration	over Surface are	a	
			Con	ductivity to Ground	water Elevation = '	194.00'	
#2	Primary	253	.75' <b>15.0</b>	' long x 8.0' bread	Ith Broad-Crested	d Rectangular Weir	
	•		Hea	d (feet) 0.20 0.40	0.60 0.80 1.00	1.20 1.40 1.60 1.80	2.00
				3.00 3.50 4.00 4			
						88 2.68 2.66 2.64 2	64
			COE	i. (Liigiisii <i>)</i> 2.43 2.	.07 2.10 2.03 2.0	2.00 2.00 2.04 2	.0-

**Discarded OutFlow** Max=2.01 cfs @ 15.06 hrs HW=253.41' (Free Discharge) **1=Exfiltration** (Controls 2.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### Summary for Pond 8A: Basin 8A

2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Inflow Area =	6.478 ac, 0.57% Impervious, Inflow	Depth = 2.34" for 100-Year event
Inflow =	12.35 cfs @ 12.24 hrs, Volume=	1.264 af
Outflow =	1.00 cfs @ 15.40 hrs, Volume=	1.142 af, Atten= 92%, Lag= 189.8 min
Discarded =	1.00 cfs @ 15.40 hrs, Volume=	1.142 af
Primary =	0.00 cfs @ 5.00 hrs, Volume=	0.000 af

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Page 140

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 252.01' @ 15.40 hrs Surf.Area= 17,328 sf Storage= 29,096 cf Flood Elev= 252.50' Surf.Area= 21,546 sf Storage= 38,517 cf

Plug-Flow detention time= 369.2 min calculated for 1.140 af (90% of inflow) Center-of-Mass det. time= 322.4 min (1,191.0 - 868.6)

Volume	Invert	Avail.	Storage	Storage Description	on	
#1	248.00'	3	8,517 cf	Custom Stage Da	ata (Irregular)Liste	ed below (Recalc)
Elevatio	_	urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
248.0 249.0	0	123 2,613	99.2 493.4	0 1,101	0 1,101	123 18.715
250.0 251.0	0	6,683 11,513	622.8 733.8	4,492 8,989	5,593 14,582	30,222 42,224
252.0 252.5	0	17,210 21,546	829.8 830.5	14,266 9,669	28,848 38,517	54,195 54,620
Device	Routing	Inve		et Devices	33,317	01,020
#1	Discarded	248.0		<b>0 in/hr Exfiltration</b> ductivity to Groundy		
#2	Primary	252.2	25' <b>15.0</b> ' Head 2.50 Coef	'long x 8.0' bread d (feet) 0.20 0.40 3.00 3.50 4.00 4	th Broad-Crested 0.60 0.80 1.00 1 .50 5.00 5.50 54 2.70 2.69 2.6	Rectangular Weir 1.20 1.40 1.60 1.80 2.00 88 2.68 2.66 2.64 2.64

**Discarded OutFlow** Max=1.00 cfs @ 15.40 hrs HW=252.01' (Free Discharge) 1=Exfiltration (Controls 1.00 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=248.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

## **Summary for Pond 8B: Basin 8A**

Inflow Area =	4.301 ac, 0.98% Imperviou	s, Inflow Depth = 2.34" for 100-Year event
Inflow =	7.00 cfs @ 12.36 hrs, Volur	ne= 0.839 af
Outflow =	0.83 cfs @ 14.62 hrs, Volur	ne= 0.818 af, Atten= 88%, Lag= 135.5 min
Discarded =	0.83 cfs @ 14.62 hrs, Volur	ne= 0.818 af
Primary =	0.00 cfs @ 5.00 hrs, Volur	ne= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 245.75' @ 14.62 hrs Surf.Area= 14,553 sf Storage= 17,434 cf

Flood Elev= 246.00' Surf.Area= 16,698 sf Storage= 21,360 cf

Plug-Flow detention time= 286.6 min calculated for 0.818 af (98% of inflow) Center-of-Mass det. time= 272.8 min (1,148.7 - 876.0)

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Page 141

Volume	Invert	Avail.9	Storage	Storage Description	า		
#1	243.00'	2′	1,360 cf	Custom Stage Dat	ta (Irregular)Listed	below (Recalc)	
Elevatio		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
243.0 244.0	00	649 4,253	429.6 502.8	0 2,188	0 2,188	649 6,100	
245.0 246.0	-	9,040 16,698	671.8 842.9	6,498 12,675	8,686 21,360	21,908 42,546	
Device	Routing	Inve	ert Outle	et Devices			
#1	Discarded	243.0		<b>0 in/hr Exfiltration</b> ductivity to Groundwa		9.00'	
#2	Primary	245.7	75' <b>15.0</b> ' Head 2.50 Coef	l long x 8.0' breadt d (feet) 0.20 0.40 0 3.00 3.50 4.00 4.5 f. (English) 2.43 2.5 2.65 2.65 2.66 2.0	h Broad-Crested F 0.60 0.80 1.00 1.2 50 5.00 5.50 54 2.70 2.69 2.68	Rectangular Weir 20 1.40 1.60 1.80 2.68 2.66 2.64 2.	

**Discarded OutFlow** Max=0.83 cfs @ 14.62 hrs HW=245.75' (Free Discharge) **1=Exfiltration** (Controls 0.83 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=243.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### **Summary for Pond P2B: Basin 2B**

Inflow Area =	15.629 ac,	0.72% Impervious, Inflow D	epth = 2.39" for 100-Year event
Inflow =	34.97 cfs @	12.22 hrs, Volume=	3.112 af
Outflow =	35.76 cfs @	12.26 hrs, Volume=	3.112 af, Atten= 0%, Lag= 2.2 min
Discarded =	0.56 cfs @	12.26 hrs, Volume=	0.234 af
Primary =	17.69 cfs @	12.26 hrs, Volume=	2.617 af
Secondary =	17.51 cfs @	12.26 hrs, Volume=	0.261 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 198.26' @ 12.26 hrs Surf.Area= 5,984 sf Storage= 8,983 cf Flood Elev= 198.50' Surf.Area= 6,749 sf Storage= 10,528 cf

Plug-Flow detention time= 7.9 min calculated for 3.105 af (100% of inflow) Center-of-Mass det. time= 7.9 min (872.2 - 864.3)

Volume	Invert	Avaii.	.Storage	Storage Description	1	
#1	196.00'	1	0,528 cf	Custom Stage Dat	a (Irregular)Listed	below (Recalc
Elevation (feet)		.Area sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
196.00	2	2,453	396.9	0	0	2,453
197.00	3	3,748	465.9	3,078	3,078	7,210
198.00	5	5,223	506.0	4,465	7,543	10,349
198.50	6	5,749	523.0	2,985	10,528	11,765

Nutmeg Solar Project - Proposed Type III 24-hr 100-Year Rainfall=6.90" Printed 9/11/2018

Page 142

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Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	24.0" Round Culvert
			L= 50.0' CPP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 195.50' / 195.00' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Discarded	196.00'	2.410 in/hr Exfiltration over Surface area
			Conductivity to Groundwater Elevation = 194.00'
#3	Secondary	198.00'	50.0' long x 20.0' 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
#4	Device 1	196.00'	18.0" Vert. Orifice/Grate X 2.00 C= 0.600
#5	Device 1	198.00'	27.0" Horiz. Orifice/Grate C= 0.600
			Limited to weir flow at low heads

**Discarded OutFlow** Max=0.56 cfs @ 12.26 hrs HW=198.25' (Free Discharge) **2=Exfiltration** (Controls 0.56 cfs)

Primary OutFlow Max=17.65 cfs @ 12.26 hrs HW=198.25' (Free Discharge)

-1=Culvert (Inlet Controls 17.65 cfs @ 5.62 fps)

**4=Orifice/Grate** (Passes < 20.84 cfs potential flow)

5=Orifice/Grate (Passes < 2.88 cfs potential flow)

Secondary OutFlow Max=16.75 cfs @ 12.26 hrs HW=198.25' (Free Discharge) 3=Broad-Crested Rectangular Weir (Weir Controls 16.75 cfs @ 1.34 fps)

# CONSTRUCTION PERIOD PHASING PLANS

