STORMWATER MANAGEMENT REPORT

South County Hospital Off-Site Surface Parking

South Kingstown, Rhode Island

PREPARED FOR

South County Hospital Healthcare Systems
100 Kenyon Avenue
Wakefield, RI 02879

PREPARED BY

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August 2025

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Existing Conditions

The Site is an approximately 39,945 square foot area currently occupied by an existing structure, which will be demolished to allow for the full use of the parcel as a surface parking lot. The proposed work includes the construction of a new paved parking area, stormwater management improvements, associated landscaping, site lighting, and a pedestrian walking path leading to a new crosswalk. This crosswalk will provide pedestrian access to the existing sidewalk located across Kenyon Avenue, enhancing connectivity between the parking lot and the hospital campus.

The existing building is surrounded by an impervious paved parking and landscape beds.

The Site is 40.68% impervious under existing conditions, with approximately 3,572 square feet of the Site area comprising the building roofs, and 12,675 square feet of paved parking with a curve number of CN = 63.

Under existing conditions, stormwater runoff from the roof of the existing building currently sheet flows to the existing drainage system on Salt Pond Road. This Town drainage system discharges to Point Judith Pond. Point Judith Pond has an established TMDL for fecal coliform (bacteria).

Elevations range from approximately 38′ at the northern portion of the Site to 21′ at the southeastern portion of the Site.

There is a wetland across Salt Pond Road. The 50′ buffer zone does not extend into the property but there will be disturbance within the buffer zone for the proposed driveway connection to Salt Pond Road.

The Natural Resource Conservation Service (NRCS) has mapped the soil type on site as Merrimac Urban Land Complex, 0-8% slopes (HSG A). The NRCS soils are mapped on the Existing and proposed Drainage Figures, Figure 1 and 2.

Exploratory test pits will be completed subsequent to the building demolition for confirmation of soils. The infiltration rate of 2.41 in/hr, applied to the soils is somewhat conservative for a Hydrological Soil Group designation of A, which are highly permeable and well-drained.

The project is not located within the 100-year flood plain as shown on FEMA Map number 44009C0211J, included in **Appendix B**.

Proposed Conditions

The project involves the construction of a new parking lot for 56 vehicles, a sidewalk/stairway to provide a pedestrian connection to the existing sidewalk on Kenyon Ave that leads to the hospital campus, landscaping, and stormwater management. Best management practices (BMPs) have been proposed to mitigate the impact of this activity, as described in greater details in Section 5 of this memorandum. Existing drainage patterns were maintained to the maximum extent practicable in the proposed design.

This project disturbs less than 1 acre of land and is considered a redevelopment with greater than 40% existing impervious cover, as described in the Stormwater Management, Design, and Installation Rules (250-RICR-150-10-8). The stormwater design for this project meets the minimum standards for this type of development.

A 24' wide paved access drive enters the northeastern corner of the Site from Salt Pond Road. The proposed access drive encroaches into the 50' Buffer Zone creating about 156.0 square feet of impervious surface.

The proposed design includes a below grade infiltration system which will allow the required water quality volume to infiltrate providing recharge and water quality. Infiltration practices provide 90% pollutant removal for bacteria. Pretreatment requirements are achieved using deep sump hooded catch basins and an Isolator Row as part of the ADS StormTech chamber system. All applicable stormwater features have been sized to adequately convey the discharge from the drainage areas.

The summary below presents the results of the analysis provided in Appendix D.

Stormwater Runoff from the Site contributing to the onsite wetlands (Design Point 1).

Design Point 1 Salt Pond Road

Peak Runoff Rate

Existing Conditions		**Proposed Conditions**	
10-year storm:	1.4 CFS	10-year storm:	0.99 CFS
25-year storm	2.28 CFS	25-year-storm	1.25 CFS
100-year storm:	4.24 CFS	100-year storm:	2.44 CFS

Site Surface Coverage Tabulation (Overall Drainage Area)

Ground Cover Summary

Existing Conditions		**Proposed Conditions**	
Impervious Surface	0.373 AC	Impervious Surface	0.553 AC
Pervious Surface	0.544 AC	Pervious Surface	0.364 AC

The results of the analysis show that there is no increase in peak rates between existing and proposed conditions for the 10- 100-year storm events.

Stormwater Management Regulations

The purpose of the Stormwater Management Plan (the Plan) is to provide long-term protection of natural resources in and around the Site. This is achieved by implementing water quality and quantity control measures designed to decrease the amount of pollutants discharged from the Site, increase the quality of stormwater recharged on the Site, and control discharge rates.

The following sections describe the regulations pertinent to stormwater management and the specific components of the Plan to be implemented.

Stormwater Regulations and Permitting

The following stormwater related regulations and guidelines apply to the proposed site development:

- Rhode Island Stormwater Design and Installation Standards Manual (RISDISM), (Rhode Island Department of Environmental Management and Coastal Resources Management Council 2015).
- Rhode Island Pollutant Discharge Elimination System Program (RIPDES) Stormwater Permit for Construction Activities disturbing greater than one acre (Rhode Island Department of Environmental Management 2003).

Compliance with these regulations is detailed in the Stormwater Management Checklist A found in Appendix A.

Conclusion

The below grade infiltration – storage system will treat stormwater quality, manage stormwater quantity and promote ground water recharge.

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Location Map
South County Hospital - Off Site
Surface Parking
South Kingstown, Rhode Island

Figure 1

7/29/2025

Appendix A – Minimum Standard 1 – RISDISM Stormwater Management Checklist A and LID Planning Report

APPENDIX A: STORMWATER MANAGEMENT PLAN CHECKLIST AND LID PLANNING REPORT – STORMWATER DESIGN SUMMARY

PROJECT NAME **South County Hospital Off-Site Surface Parking**	**(RIDEM USE ONLY)**
TOWN **South Kingstown, Rhode Island**	**STW/WQC File #:**
BRIEF PROJECT DESCRIPTION: This project involves the demolition of an existing building, including associated features such as the garage, porch, two-way driveways, and existing parking areas. The proposed redevelopment will create an off-site employee parking facility to serve South County Hospital. The design includes a pedestrian walkway that connects the parking area to a designated crosswalk, providing safe access to the existing sidewalk network leading to the hospital campus. Comprehensive site improvements will be undertaken, including grading, landscaping, and stormwater management measures, to ensure the functionality, accessibility, and sustainability of the new facility.measures will be done for this project.	**Date Received:**

Stormwater Management Plan (SMP) Elements – Minimum Standards

When submitting a SMP,[1] submit four separately bound documents: Appendix A Checklist; Stormwater Site Planning, Analysis and Design Report with Plan Set/Drawings; Soil Erosion and Sediment Control (SESC) Plan, and Post Construction Operations and Maintenance (O&M) Plan. Please refer to Suggestions to Promote Brevity.

Note: **All stormwater construction projects must create a Stormwater Management Plan (SMP). However, not every element listed below is required per the RIDEM Stormwater Rules and the RIPDES Construction General Permit (CGP). This checklist will help identify the required elements to be submitted with an Application for Stormwater Construction Permit & Water Quality Certification.**

PART 1. PROJECT AND SITE INFORMATION

PROJECT TYPE (Check all that apply)

☐ Residential	☐ Commercial	☐ Federal	☐ Retrofit	☐ Restoration
☐ Road	☐ Utility	☐ Fill	☐ Dredge	☐ Mine
☒ Other (specify): Parking lot				

SITE INFORMATION

☒ Vicinity Map

INITIAL DISCHARGE LOCATION(S): The WQv discharges to: (You may choose more than one answer if several discharge points are associated with the project.)

☒ **Groundwater**	☐ **Surface Water**	☒ **MS4**
☐ GAA	☐ Isolated Wetland	☐ RIDOT
☒ GA	☐ Named Waterbody	☐ RIDOT Alteration Permit is Approved
☐ GB	☐ Unnamed Waterbody Connected to Named Waterbody	☒ Town
		☐ Other (specify):

ULTIMATE RECEIVING WATERBODY LOCATION(S): Include pertinent information that applies to both WQ_v and flow from larger storm events including overflows. Choose all that apply, and repeat table for each waterbody.

☒ Groundwater or Disconnected Wetland	☐ SRWP		
☒ Waterbody Name: Point Judith Pond	☐ Coldwater	☐ Warmwater	☒ Unassessed
☒ Waterbody ID: RI0010043E-06B	☐ 4th order stream of pond 50 acres or more		
☒ TMDL for: Fecal Coliform	☐ Watershed of flood prone river (e.g., Pocasset River)		

[1] Applications for a Construction General Permit that do not require any other permits from RIDEM and will disturb less than 5 acres over the entire course of the project do not need to submit a SMP. The Appendix A checklist must still be submitted.

☐ Contributes to a priority outfall listed in the TMDL	☐ Contributes stormwater to a public beach
☒ 303(d) list – Impairment(s) for: Fecal Coliform	☐ Contributes to shellfishing grounds

PROJECT HISTORY		
☒ RIDEM Pre- Application Meeting	Meeting Date: 08/01/2025	☒ Minutes Attached
☐ Municipal Master Plan Approval	Approval Date:	☐ Minutes Attached
☐ Subdivision Suitability Required	Approval #:	
☐ Previous Enforcement Action has been taken on the property	Enforcement #:	

FLOODPLAIN & FLOODWAY See Guidance Pertaining to Floodplain and Floodways

☐ Riverine 100-year floodplain: **FEMA FLOODPLAIN FIRMETTE** has been reviewed and the 100-year floodplain is on site	
☐ Delineated from FEMA Maps	
NOTE: Per Rule 250-RICR-150-10-8-1.1(B)(5)(d)(3), provide volumetric floodplain compensation calculations for cut and fill/displacement calculated by qualified professional	
☐ Calculated by Professional Engineer	
☐ Calculations are provided for cut vs. fill/displacement volumes proposed within the 100-year floodplain	Amount of Fill (CY):
	Amount of Cut (CY):
☐ Restrictions or modifications are proposed to the flow path or velocities in a floodway	
☐ Floodplain storage capacity is impacted	
☒ Project area is not within 100-year floodplain as defined by RIDEM	

CRMC JURISDICTION
☐ CRMC Assent required
☐ Property subject to a Special Area Management Plan (SAMP). If so, specify which SAMP:
☐ Sea level rise mitigation has been designed into this project

LUHPPL IDENTIFICATION - MINIMUM STANDARD 8:		
1. OFFICE OF Land Revitalization and Sustainable Materials Management (OLRSMM)		
	☐ Known or suspected releases of HAZARDOUS MATERIAL are present at the site (Hazardous Material is defined in Rule 1.4(A)(33) of 250-140-30-1 of the RIDEM Rules and Regulations for Investigation and Remediation of Hazardous Materials (the Remediation Regulations))	**RIDEM CONTACT:**
	☐ Known or suspected releases of PETROLEUM PRODUCT are present at the site (Petroleum Product as defined in Rule 1.5(A)(84) of 250-140-25-1 of the RIDEM Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials)	
	☐ This site is identified on the RIDEM Environmental Resources Map as one of the following regulated facilities	**SITE ID#:**
	☐ CERCLIS/Superfund (NPL)	
	☐ State Hazardous Waste Site (SHWS)	
	☐ Environmental Land Usage Restriction (ELUR)	
	☐ Leaking Underground Storage Tank (LUST)	
	☐ Closed Landfill	
Note: If any boxes in 1 above are checked, the applicant must contact the RIDEM OLRSMM Project Manager associated with the Site to determine if subsurface infiltration of stormwater is allowable for the project. Indicate if the infiltration corresponds to "Red," "Yellow" or "Green" as described in Section 3.2.8 of the RISDISM Guidance (Subsurface Contamination Guidance). Also, note and reference approval in PART 3, Minimum Standard 2: Groundwater Recharge/Infiltration.		
2. PER MINIMUM STANDARD 8 of RICR 8.14.C.1-6 "LUHPPLS," THE SITE IS/HAS:		
	☐ Industrial Site with RIPDES MSGP, except where No Exposure Certification exists. http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/status.php	
	☐ Auto Fueling Facility (e.g., gas station)	
	☐ Exterior Vehicles Service, Maintenance, or Equipment Cleaning Area	

	☐ Road Salt Storage and Loading Areas (exposed to rainwater)	
	☐ Outdoor Storage and Loading/Unloading of Hazardous Substances	
3.	**STORMWATER INDUSTRIAL PERMITTING**	
	☐ The site is associated with existing or proposed activities that are considered Land Uses with Higher Potential Pollutant Loads (LUHPPLS) (see RICR 8.14.C)	Activities: Sector:
	☐ Construction is proposed on a site that is subject to THE MULTI-SECTOR GENERAL PERMIT (MSGP) UNDER RULE 31(B)15 OF THE RIPDES REGULATIONS.	MSGP permit #
	☐ Additional stormwater treatment is required by the MSGP Explain:	

REDEVELOPMENT STANDARD – MINIMUM STANDARD 6		
☒ Pre Construction Impervious Area		
	☒ Total Pre-Construction Impervious Area (**TIA**): 0.37 ac	
	☒ Total Site Area (**TSA**): 0.92 ac	
	☐ Jurisdictional Wetlands (**JW**)	
	☐ Conservation Land (**CL**)	
☒ Calculate the Site Size (defined as contiguous properties under same ownership)		
	☒ Site Size (**SS**) = (**TSA**) – (**JW**) – (**CL**): 0.92 ac	
	☒ (**TIA**) / (**SS**) = 0.37 / 0.92 = 0.402 ac	☒ (**TIA**) / (**SS**) >**0.4**?
☒ YES, Redevelopment		

PART 2. LOW IMPACT DEVELOPMENT ASSESSMENT – MINIMUM STANDARD 1

(NOT REQUIRED FOR REDEVELOPMENT OR RETROFITS)
This section may be deleted if not required.

Note: A written description must be provided specifying why each method is not being used or is not applicable at the Site. Appropriate answers may include:

- Town requires … (state the specific local requirement)
- Meets Town's dimensional requirement of …
- Not practical for site because …
- Applying for waiver/variance to achieve this (pending/approved/denied)
- Applying for wavier/variance to seek relief from this (pending/approved/denied)

A) PRESERVATION OF UNDISTURBED AREAS, BUFFERS, AND FLOODPLAINS	**IF NOT IMPLEMENTED, EXPLAIN HERE**
☒ Sensitive resource areas and site constraints are identified (required) ☒ Local development regulations have been reviewed (required) ☐ All vegetated buffers and coastal and freshwater wetlands will be protected during and after construction ☐ Conservation Development or another site design technique has been incorporated to protect open space and pre-development hydrology. **Note:** If Conservation Development has been used, check box and skip to Subpart C ☒ As much natural vegetation and pre-development hydrology as possible has been maintained	

B) LOCATE DEVELOPMENT IN LESS SENSITIVE AREAS AND WORK WITH THE NATURAL LANDSCAPE CONDITIONS, HYDROLOGY, AND SOILS ☒ Development sites and building envelopes have been appropriately distanced from wetlands and waterbodies ☒ Development and stormwater systems have been located in areas with greatest infiltration capacity (e.g., soil groups A and B) ☐ Plans show measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPA's) ☒ Development sites and building envelopes have been positioned outside of floodplains ☒ Site design positions buildings, roadways and parking areas in a manner that avoids impacts to surface water features ☒ Development sites and building envelopes have been located to minimize impacts to steep slopes (≥15%) ☐ Other (describe):	
C) MINIMIZE CLEARING AND GRADING ☐ Site clearing has been restricted to minimum area needed for building footprints, development activities, construction access, and safety. ☐ Site has been designed to position buildings, roadways, and parking areas in a manner that minimizes grading (cut and fill quantities) ☒ Protection for stands of trees and individual trees and their root zones to be preserved has been specified, and such protection extends at least to the tree canopy drip line(s) ☐ Plan notes specify that public trees removed or damaged during construction shall be replaced with equivalent	Tree protection fencing will be implemented to preserve existing vegetation during construction. The site layout has been strategically planned to work within the constraints of the existing tree cover, with careful consideration given to minimizing disturbance and retaining as many mature trees as possible.
D) REDUCE IMPERVIOUS COVER ☐ Reduced roadway widths (≤22 feet for ADT ≤ 400; ≤ 26 feet for ADT 400 - 2,000) ☐ Reduced driveway areas (length minimized via reduced ROW width (≤ 45 ft.) and/or reduced (or absolute minimum) front yard setback; width minimized to ≤ 9 ft. wide one lane; ≤ 18 ft. wide two lanes; shared driveways; pervious surface) ☐ Reduced building footprint: Explain approach: ☐ Reduced sidewalk area (≤ 4 ft. wide; one side of the street; unpaved path; pervious surface) ☐ Reduced cul-de-sacs (radius < 45 ft; vegetated island; alternative turn-around) ☐ Reduced parking lot area: Explain approach ☐ Use of pervious surfaces for driveways, sidewalks, parking areas/overflow parking areas, etc. ☐ Minimized impervious surfaces (project meets or is less than maximum specified by Zoning Ordinance) ☒ Other (describe):	The amount of impervious surface is needed to provide additional parking opportunities to address hospital needs. The parking and circulation conforms to local standards
E) DISCONNECT IMPERVIOUS AREA ☐ Impervious surfaces have been disconnected, and runoff has been diverted to QPAs to the maximum extent possible ☐ Residential street edges allow side-of-the-road drainage into vegetated open swales ☐ Parking lot landscaping breaks up impervious expanse AND accepts runoff ☒ Other (describe):	The Project proposes disconnecting impervious areas by directing runoff to a subsurface basin prior to DP-1 (Existing drainage system at Salt Pond Road).
F) MITIGATE RUNOFF AT THE POINT OF GENERATION ☒ Small-scale BMPs have been designated to treat runoff as close as possible to the source	

G) PROVIDE LOW-MAINTENANCE NATIVE VEGETATION ☒ Low-maintenance landscaping has been proposed using native species and cultivars ☐ Plantings of native trees and shrubs in areas previously cleared of native vegetation are shown on site plan ☐ Lawn areas have been limited/minimized, and yards have been kept undisturbed to the maximum extent practicable on residential lots	
H) RESTORE STREAMS/WETLANDS ☐ Historic drainage patterns have been restored by removing closed drainage systems, daylighting buried streams, and/or restoring degraded stream channels and/or wetlands ☐ Removal of invasive species ☐ Other	The opportunity to restore streams or wetlands does not exist for this project.

PART 3. SUMMARY OF REMAINING STANDARDS

GROUNDWATER RECHARGE – MINIMUM STANDARD 2		
YES	**NO**	
☒	☐	The project has been designed to meet the groundwater recharge standard.
☐	☐	If "No," the justification for groundwater recharge criterion waiver has been explained in the Narrative (e.g., threat of groundwater contamination or physical limitation), if applicable (see RICR 8.8.D);
☐	☐	Your waiver request has been explained in the Narrative, if applicable.
☐	☒	Is this site identified as a Regulated Facility in Part 1, Minimum Standard 8: LUHPPL Identification?
☐	☐	If "Yes," has approval for infiltration by the OLRSMM Site Project Manager, per Part 1, Minimum Standard 8, been requested?

TABLE 2-1: Summary of Recharge (see RISDISM Section 3.3.2)
(Add or Subtract Rows as Necessary)

Design Point	Impervious Area Treated (sq ft)	Total Re_v Required (cu ft)	LID Stormwater Credits (see RISDISM Section 4.6.1)	Recharge Required by Remaining BMPs (cu ft)	Recharge Provided by BMPs (cu ft)
			Portion of Re_v directed to a QPA (cu ft)		
DP-1 Ex Drainage System Salt Pond Road	15,101	1,204	0	1,204	1,220
TOTALS:	15,101	1,204	0	1,204	1,220

Notes:
1. Only BMPs listed in RISDISM Table 3-5 "List of BMPs Acceptable for Recharge" may be used to meet the recharge requirement.
2. Recharge requirement must be satisfied for each waterbody ID.

☒ Indicate where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.):

Stormwater Report, Appendix B

WATER QUALITY – MINIMUM STANDARD 3		
YES	**NO**	
☒	☐	Does this project meet or exceed the required water quality volume WQv (see RICR 8.9.E-I)?
☒	☐	Is the proposed final impervious cover greater than 20% of the disturbed area (see RICR 8.9.E-I)?
☒	☐	If "Yes," either the Modified Curve Number Method or the Split Pervious/Impervious method in Hydro-CAD was used to calculate WQv; or,
☒	☐	If "Yes," either TR-55 or TR-20 was used to calculate WQv; and,
☐	☐	If "No," the project meets the minimum WQv of 0.2 watershed inches over the entire disturbed area.
☐	☐	Not Applicable
☒	☐	Does this project meet or exceed the ability to treat required water quality flow WQf (see RICR 8.9.I.1-3)?
☒	☐	Does this project propose an increase of impervious cover to a receiving water body with impairments? If "Yes," please indicate below the method that was used to address the water quality requirements of no further degradation to a low-quality water.
☐	☒	RICR 8.36. A Pollutant Loading Analysis is needed and has been completed.
☒	☐	The Water Quality Guidance Document (Water Quality Goals and Pollutant Loading Analysis Guidance for Discharges to Impaired Waters) has been followed as applicable.
☐	☒	BMPs are proposed that are on the approved technology list . If "Yes," please provide all required worksheets from the manufacturer.
☐	☒	Additional pollutant-specific requirements and/or pollutant removal efficiencies are applicable to the site as the result of a TMDL, SAMP, or other watershed-specific requirements. If "Yes," please describe:

TABLE 3-1: Summary of Water Quality (see RICR 8.9)

Design Point and WB ID	**Impervious area treated (sq ft)**	**Total WQ_v Required (cu ft)**	**LID Stormwater Credits** (see RICR 8.18) **WQv directed to a QPA (cu ft)**	**Water Quality Treatment Remaining (cu ft)**	**Water Quality Provided by BMPs (cu ft)**
DP-1: Existing Drainage System at Salt Pond Road	15,101	1,307	0	1,307	3,469
TOTALS:	15,101	1,307	0	1,307	3,469

Notes:
1. Only BMPs listed in RICR 8.20 and 8.25 or the Approved Technologies List of BMPs is Acceptable for Water Quality treatment.
2. For each Design Point, the Water Quality Volume Standard must be met for each Waterbody ID.

☒ YES ☐ NO	This project has met the setback requirements for each BMP. If "No," please explain:

☒ Indicate where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.):

Stormwater Report, Appendix C

CONVEYANCE AND NATURAL CHANNEL PROTECTION (RICR 8.10) – MINIMUM STANDARD 4		
YES	**NO**	
☒	☐	Is this standard waived? If "Yes," please indicate one or more of the reasons below:
		☐ The project directs discharge to a large river (i.e., 4th-order stream or larger. See RISDISM Appendix I for State-wide list and map of stream orders), bodies of water >50.0 acres in surface area (i.e., lakes, ponds, reservoirs), or tidal waters. ☒ The project is a small facility with impervious cover of less than or equal to 1 acre. ☐ The project has a post-development peak discharge rate from the facility that is less than 2 cfs for the 1-year, 24-hour Type III design storm event (prior to any attenuation). (Note: LID design strategies can greatly reduce the peak discharge rate).
☒	☐	Conveyance and natural channel protection for the site have been met. If "No,' explain why:

TABLE 4-1: Summary of Channel Protection Volumes (see RICR 8.10)					
Design Point	**Receiving Water Body Name**	**Coldwater Fishery? (Y/N)**	**Total CPv Required (cu ft)**	**Total CPv Provided (cu ft)**	**Average Release Rate Modeled in the 1-yr storm (cfs)**
DP-1: Existing Drainage System at Salt Pond Road					
TOTALS:					
Note: The Channel Protection Volume Standard must be met in each waterbody ID.					
☐ YES ☐ NO	The CPv is released at roughly a uniform rate over a 24-hour duration (see examples of sizing calculations in Appendix D of the RISDISM).				
☐ YES ☐ NO	Do additional design restrictions apply resulting from any discharge to cold-water fisheries; If "Yes," please indicate restrictions and solutions below.				
☐ Indicate below where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.).					

OVERBANK FLOOD PROTECTION (RICR 8.11) AND OTHER POTENTIAL HIGH FLOWS – MINIMUM STANDARD 5			
YES	**NO**		
☐	☒	Is this standard waived? If yes, please indicate one or more of the reasons below:	
		☐	The project directs discharge to a large river (i.e., 4th-order stream or larger. See Appendix I for state-wide list and map of stream orders), bodies of water >50.0 acres in surface area (i.e., lakes, ponds, reservoirs), or tidal waters.
		☐	A Downstream Analysis (see RICR 8.11.D and E) indicates that peak discharge control would not be beneficial or would exacerbate peak flows in a downstream tributary of a particular site (e.g., through coincident peaks).
☒	☐	Does the project flow to an MS4 system or subject to other stormwater requirements? If "Yes," indicate as follows:	
		☐	RIDOT
		☒	Other (specify): Town of South Kingstown
Note: The project could be approved by RIDEM but not meet RIDOT or Town standards. RIDOT's regulations indicate that post-volumes must be **less** than pre-volumes for the 10-yr storm at the design point entering the RIDOT system. If you have not already received approval for the discharge to an MS4, please explain below your strategy to comply with RIDEM and the MS4.			
		Indicate below which model was used for your analysis. ☐ TR-55 ☐ TR-20 ☒ HydroCAD ☐ Bentley/Haestad ☐ Intellisolve ☐ Other (Specify):	
YES	**NO**		
☒	☐	Does the drainage design demonstrate that flows from the 100-year storm event through a BMP will safely manage and convey the 100-year storm? If "No," please explain briefly below and reference where in the application further documentation can be found (i.e., name of report/document, page numbers, appendices, etc.):	
☐	☒	Do off-site areas contribute to the sub-watersheds and design points? If "Yes,"	
☐	☒	Are the areas modeled as "present condition" for both pre- and post-development analysis?	
☐	☒	Are the off-site areas shown on the subwatershed maps?	
☒	☐	Does the drainage design confirm safe passage of the 100-year flow through the site for off-site runoff?	
☐	☒	Is a Downstream Analysis required (see RICR 8.11.E.1)?	
☒	☐	Calculate the following:	
		☒	Area of disturbance within the sub-watershed (areas) **0.917 Acres**
		☒	Impervious cover (%) **74.6%**
☐	☒	Is a dam breach analysis required (earthen embankments over six (6) feet in height, or a capacity of 15 acre-feet or more, and contributes to a significant or high hazard dam)?	
☒	☐	Does this project meet the overbank flood protection standard?	

Table 5-1 Hydraulic Analysis Summary								
Subwatershed (Design Point)	**1.2" Peak Flow** (cfs) **		**1-yr Peak Flow** (cfs)		**10-yr Peak Flow** (cfs)		**100-yr Peak Flow** (cfs)	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
DP-1	0.0	0.23	0.20	0.56	1.40	0.99	4.24	2.44
TOTALS:								

** Utilize modified curve number method or split pervious /impervious method in HydroCAD.

Note: The hydraulic analysis must demonstrate no impact to each individual subwatershed DP unless each DP discharges to the same wetland or water resource.

Indicate as follows where the pertinent calculations and/or information for the items above are provided	**Name of report/document, page numbers, appendices, etc.**
Existing conditions analysis for each subwatershed, including curve numbers, times of concentration, runoff rates, volumes, and water surface elevations showing methodologies used and supporting calculations.	Stormwater Report, Appendix D
Proposed conditions analysis for each subwatershed, including curve numbers, times of concentration, runoff rates, volumes, water surface elevations, and routing showing the methodologies used and supporting calculations.	Stormwater Report, Appendix D
Final sizing calculations for structural stormwater BMPs, including contributing drainage area, storage, and outlet configuration.	Stormwater Report, Appendix D
Stage-storage, inflow and outflow hydrographs for storage facilities (e.g., detention, retention, or infiltration facilities).	Stormwater Report, Appendix D

Table 5-2 Summary of Best Management Practices											
BMP ID	**DP #**	**BMP Type** (e.g., bioretention, tree filter)	**BMP Functions**					**Bypass Type**	**Horizontal Setback Criteria are met per RICR 8.21.B.10, 8.22.D.11, and 8.35.B.4**		
			Pre-Treatment (Y/N/ NA)	Re_v	WQ_v	CP_v (Y/N/ NA)	Overbank Flood Reduction (Y/N/NA)	External (E) Internal (I) or NA	Yes/ No	Technical Justification (Design Report page number)	Distance Provided
INF-1	DP-1	Subsurface Infiltration System	Y	Y	Y	Y	Y	I	Y		
		TOTALS:									

Table 5.3 Summary of Soils to Evaluate Each BMP									
DP #	**BMP ID**	**BMP Type** (e.g., bioretention, tree filter)	**Soils Analysis for Each BMP**						
			Test Pit ID# and Ground Elevation		SHWT Elevation (ft)	Bottom of Practice Elevation* (ft)	Separation Distance Provided (ft)	Hydrologic Soil Group (A, B, C, D)	Exfiltration Rate Applied (in/hr)
			Primary	Secondary					
DP-1	INF-1	Subsurface Infiltration System	-	-	-	19		A	2.41
		TOTALS:							

* For underground infiltration systems (UICs) bottom equals bottom of stone, for surface infiltration basins bottom equals bottom of basin, for filters bottom equals interface of storage and top of filter layer

LAND USES WITH HIGHER POTENTIAL POLLUTANTS LOADS (LUHPPLs) – MINIMUM STANDARD 8			
YES	**NO**	**N/A**	
☐	☐	☒	Describe any LUHPPLs identified in Part 1, Minimum Standard 8, Section 2. If not applicable, continue to Minimum Standard 9.
☐	☐	☐	Are these activities already covered under an MSGP? If "No," please explain if you have applied for an MSGP or intend to do so?
☐	☐	☐	List the specific BMPs that are proposed for this project that receive stormwater from LUHPPL drainage areas. These BMP types must be listed in RISDISM Table 3-3, "Acceptable BMPs for Use at LUHPPLs." Please list BMPs:
☐	☐	☐	Additional BMPs, or additional pretreatment BMP's if any, that meet RIPDES MSGP requirements; Please list BMPs:
			Indicate below where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.).

ILLICIT DISCHARGES – MINIMUM STANDARD 9			
Illicit discharges are defined as unpermitted discharges to Waters of the State that do not consist entirely of stormwater or uncontaminated groundwater, except for certain discharges identified in the RIPDES Phase II Stormwater General Permit.			
YES	**NO**	**N/A**	
☒	☐	☐	Have you checked for illicit discharges?
☐	☒	☐	Have any been found and/or corrected? If "Yes," please identify.
☒	☐	☐	Does your report explain preventative measures that keep non-stormwater discharges out of the Waters of the State (during and after construction)?

SOIL EROSION AND SEDIMENT CONTROL (SESC) – MINIMUM STANDARD 10			
YES	**NO**	**N/A**	
☒	☐	☐	Have you included a Soil Erosion and Sediment Control Plan Set and/or Complete Construction Plan Set?

☐	☐	☒	Have you provided a **separately-bound** document based upon the SESC Template? If yes, proceed to Minimum Standard 11 (the following items can be assumed to be addressed).	
			If "No," include a document with your submittal that addresses the following elements of an SESC Plan:	
			☐	Soil Erosion and Sediment Control Plan Project Narrative, including a description of how the fifteen (15) Performance Criteria have been met:
			☐	Provide Natural Buffers and Maintain Existing Vegetation
			☐	Minimize Area of Disturbance
			☐	Minimize the Disturbance of Steep Slopes
			☐	Preserve Topsoil
			☐	Stabilize Soils
			☐	Protect Storm Drain Inlets
			☐	Protect Storm Drain Outlets
			☐	Establish Temporary Controls for the Protection of Post-Construction Stormwater Control Measures
			☐	Establish Perimeter Controls and Sediment Barriers
			☐	Divert or Manage Run-On from Up-Gradient Areas
			☐	Properly Design Constructed Stormwater Conveyance Channels
			☐	Retain Sediment On-Site
			☐	Control Temporary Increases in Stormwater Velocity, Volume, and Peak Flows
			☐	Apply Construction Activity Pollution Prevention Control Measures
			☐	Install, Inspect, and Maintain Control Measures and Take Corrective Actions
			☐	Qualified SESC Plan Preparer's Information and Certification
			☐	Operator's Information and Certification; if not known at the time of application, the Operator must certify the SESC Plan upon selection and prior to initiating site activities
			☐	Description of Control Measures, such as Temporary Sediment Trapping and Conveyance Practices, including design calculations and supporting documentation, as required

STORMWATER MANAGEMENT SYSTEM OPERATION, MAINTENANCE, AND POLLUTION PREVENTION PLAN – MINIMUM STANDARDS 7 AND 9		
Operation and Maintenance Section		
YES	**NO**	
☒	☐	Have you minimized all sources of pollutant contact with stormwater runoff, to the maximum extent practicable?
☒	☐	Have you provided a **separately-bound** Operation and Maintenance Plan for the site and for all of the BMPs, and does it address each element of RICR 8.17 and RISDISM Appendix C and E?
☒	☐	Lawn, Garden, and Landscape Management meet the requirements of RISDISM Section G.7? If "No," why not?
☒	☐	Is the property owner or homeowner's association responsible for the stormwater maintenance of all BMP's? If "No," you must provide a legally binding and enforceable maintenance agreement (see RISDISM Appendix E, page 26) that identifies the entity that will be responsible for maintenance of the stormwater. Indicate where this agreement can be found in your report (i.e., name of report/document, page numbers, appendices, etc.).
☐	☒	Do you anticipate that you will need legal agreements related to the stormwater structures? (e.g. off-site easements, deed restrictions, covenants, or ELUR per the Remediation Regulations). If "Yes," have you obtained them? Or please explain your plan to obtain them:
☐	☒	Is stormwater being directed from public areas to private property? If "Yes," note the following: Note: This is not allowed unless a funding mechanism is in place to provide the finances for the long-term maintenance of the BMP and drainage, or a funding mechanism is demonstrated that can guarantee the long-term maintenance of a stormwater BMP by an individual homeowner.

Pollution Prevention Section		
☐	☒	Designated snow stockpile locations?
☐	☒	Trash racks to prevent floatables, trash, and debris from discharging to Waters of the State?
☒	☐	Asphalt-only based sealants?
☐	☒	Pet waste stations? (Note: If a receiving water has a bacterial impairment, and the project involves housing units, then this could be an important part of your pollution prevention plan).
☒	☐	Regular sweeping? Please describe:
☒	☐	De-icing specifications, in accordance with RISDISM Appendix G. (NOTE: If the groundwater is GAA, or this area contributes to a drinking water supply, then this could be an important part of your pollution prevention plan).
☐	☒	A prohibition of phosphate-based fertilizers? (Note: If the site discharges to a phosphorus impaired waterbody, then this could be an important part of your pollution prevention plan).

PART 4. SUBWATERSHED MAPPING AND SITE-PLAN DETAILS

Existing and Proposed Subwatershed Mapping (REQUIRED)			
YES	**NO**		
☒	☐		Existing and proposed drainage area delineations
☐	☒		Locations of all streams and drainage swales
☒	☐		Drainage flow paths, mapped according to the DEM *Guidance for Preparation of Drainage Area Maps* (included in RISDISM Appendix K)
☐	☒		Complete drainage area boundaries; include off-site areas in both mapping and analyses, as applicable
☐	☒		Logs of borings and/or test pit investigations along with supporting soils/geotechnical report
☐	☒		Mapped seasonal high-water-table test pit locations
☐	☒		Mapped locations of the site-specific borings and/or test pits and soils information from the test pits at the locations of the BMPs
☒	☐		Mapped locations of the BMPs, with the BMPs consistently identified on the Site Construction Plans
☐	☒		Mapped bedrock outcrops adjacent to any infiltration BMP
☐	☒		Soils were logged by a:
		☐	DEM-licensed Class IV soil evaluator Name:
		☐	RI-registered P.E. Name:

Subwatershed and Impervious Area Summary				
Subwatershed (area to each design point)	**First Receiving Water ID or MS4**	**Area Disturbed (units)**	**Existing Impervious (units)**	**Proposed Impervious (units)**
DP-1:	RI0010043E-06B	0.917	0.373	0.553
TOTALS:		0.917	0.373	0.553

Site Construction Plans (Indicate that the following applicable specifications are provided)		
YES	**NO**	
☒	☐	Existing and proposed plans (scale not greater than 1" = 40') with North arrow
☒	☐	Existing and proposed site topography (with 1 or 2-foot contours); 10-foot contours accepted for off-site areas
☒	☐	Boundaries of existing predominant vegetation and proposed limits of clearing
☒	☐	Site Location clarification
☐	☒	Location and field-verified boundaries of resource protection areas such as: ▸ freshwater and coastal wetlands, including lakes and ponds ▸ coastal shoreline features Perennial and intermittent streams, in addition to Areas Subject to Storm Flowage (ASSFs)
☐	☒	All required setbacks (e.g., buffers, water-supply wells, septic systems)
☒	☐	Representative cross-section and profile drawings, and notes and details of structural stormwater management practices and conveyances (i.e., storm drains, open channels, swales, etc.), which include: ▸ Location and size of the stormwater treatment practices (type of practice, depth, area). Stormwater treatment practices (BMPs) must have labels that correspond to RISDISM Table 5-2; ▸ Design water surface elevations (applicable storms); ▸ Structural details of outlet structures, embankments, spillways, stilling basins, grade-control structures, conveyance channels, etc.; ▸ Existing and proposed structural elevations (e.g., inverts of pipes, manholes, etc.); ▸ Location of floodplain and, if applicable, floodway limits and relationship of site to upstream and downstream properties or drainage that could be affected by work in the floodplain; ▸ Planting plans for structural stormwater BMPs, including species, size, planting methods, and maintenance requirements of proposed planting
☐	☒	Logs of borings and/or test pit investigations along with supporting soils/geotechnical report and corresponding water tables
☐	☒	Mapping of any OLRSMM-approved remedial actions/systems (including ELURs)
☒	☐	Location of existing and proposed roads, buildings, and other structures including limits of disturbance; ▸ Existing and proposed utilities (e.g., water, sewer, gas, electric) and easements; ▸ Location of existing and proposed conveyance systems, such as grass channels, swales, and storm drains, and location(s) of final discharge point(s) (wetland, waterbody, etc.); ▸ Cross sections of roadways, with edge details such as curbs and sidewalks; ▸ Location and dimensions of channel modifications, such as bridge or culvert crossings
☐	☒	Locations, cross sections, and profiles of all stream or wetland crossings and their method of stabilization

Appendix B – NRCS Soils Data

NRCS Soils Data

Map Scale: 1:1,260 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties
Survey Area Data: Version 24, Aug 30, 2024

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

Date(s) aerial images were photographed: Jun 14, 2022—Jul 1, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MU	Merrimac-Urban land complex, 0 to 8 percent slopes	5.0	72.3%
Sb	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	1.8	25.5%
Ur	Urban land	0.2	2.2%
Totals for Area of Interest		**6.9**	**100.0%**

Appendix C – FEMA Flood Map

National Flood Hazard Layer FIRMette

FEMA

71°29'54"W 41°26'4"N

71°29'17"W 41°25'38"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/27/2025 at 7:36 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix D – Minimum Standards 2 through 6

Minimum Standard 2 – Groundwater Recharge Calculations

Computations

Project:	South County Hospital – Off Site Surface Parking	**Project #**	73605.00
Location:	South Kingstown, RI	**Sheet:**	1 **of** 1
Calculated By:	ED	**Date:**	7/29/2025
Checked By:	KC	**Date:**	7/29/2025
Title:	Groundwater Recharge		

Section 3.2.2 Minimum Standard 2: Groundwater Recharge (Re_v.)

- Re_v = X" * (F)*(I)/12

  Where:

  Re_v = required recharge volume (CF)

  F = Recharge Factors Based on Hydrologic Soil Group (HSG) from Table 3-4 of RISDISM (pg 3-11)

HSG	Recharge Factor (F)
A	0.60
B	0.35
C	0.25
D	0.10

  I = Total impervious surface within project limits = 0.553 Ac x 43,560 (proposed Impervious Area) SF/Ac = 24,088 SF

  X = 1"

- Re_v = (1") * 24,088 SF * 0.6 * 1/12 = 1,204 CF

Subsurface Infiltration Basin recharges 1,220 CF

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 2P: Subsurface Basin Peak Elev=19.68' Storage=337 cf Inflow=0.34 cfs 0.028 af
Discarded=0.07 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.028 af

Minimum Standard 3 – Water Quality Calculations

Computations

Project:	South County Hospital – Off Site Surface Parking	**Project #**	73605.00
Location:	South Kingstown, RI	**Sheet:**	1 **of** 1
Calculated By:	ED	**Date:**	7/29/2025
Checked By:	KC	**Date:**	7/29/2025
Title:	Water Quality Volume (WQV)		

Section 3.2.3 Minimum Standard 3: Water Quality

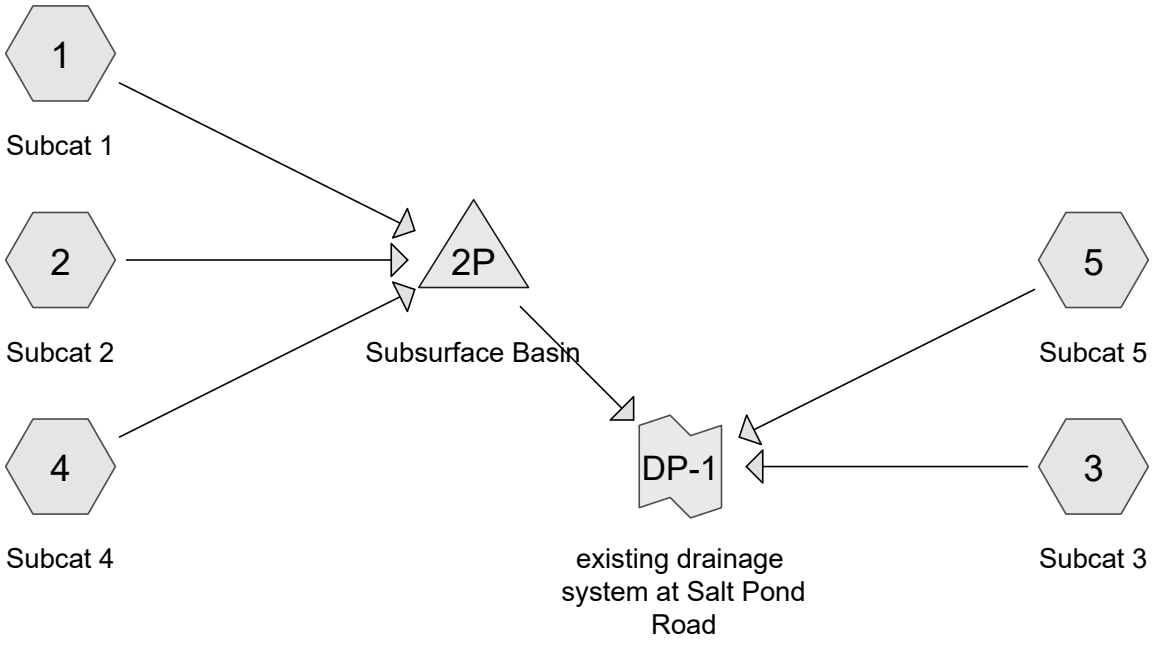
- Required Stormwater Treatment Area = -0.36 acres for <u>one inch</u> of treatment (see calculation titled "Water Quality Volume Calculation Worksheet") 0.36 AC x 1/12= 1,307 CF

- Provided Stormwater Treatment Area:

  Subsurface Basin: 0.35 AC 1,271 CF

The additional 0.01 Ac of impervious surface that requires treatment and is not collected and treated is the driveway area beyond the property line 675 sf or 0.015 AC

Water quality for the site has been met



Subcat Reach Pond Link

Routing Diagram for 73605.00 - PR-DRAINAGE
Prepared by VHB, Inc, Printed 7/29/2025

Summary for Pond 2P: Subsurface Basin

Inflow Area = 0.413 ac, 83.94% Impervious, Inflow Depth = 0.83" for WQV event
Inflow = 0.34 cfs @ 12.03 hrs, Volume= 0.028 af
Outflow = 0.07 cfs @ 11.75 hrs, Volume= 0.028 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.07 cfs @ 11.75 hrs, Volume= 0.028 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link DP-1 : existing drainage system at Salt Pond Road

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 19.68' @ 12.49 hrs Surf.Area= 1,243 sf Storage= 337 cf

Plug-Flow detention time= 30.5 min calculated for 0.028 af (100% of inflow)
Center-of-Mass det. time= 30.4 min (809.7 - 779.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	19.00'	1,807 cf	**29.92'W x 41.55'L x 5.50'H Field A** 6,837 cf Overall - 2,318 cf Embedded = 4,518 cf x 40.0% Voids
#2A	19.75'	2,318 cf	**ADS_StormTech MC-3500 d +Cap** x 20 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 20 Chambers in 4 Rows Cap Storage= 14.9 cf x 2 x 4 rows = 119.2 cf
		4,126 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	19.00'	**2.410 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	23.20'	**12.0" Round Culvert** L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.20' / 23.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.07 cfs @ 11.75 hrs HW=19.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.00' (Free Discharge)
↑**2=Culvert** (Controls 0.00 cfs)

Stage-Area-Storage for Pond 2P: Subsurface Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
19.00	**1,243**	0
19.10	1,243	50
19.20	1,243	99
19.30	1,243	149
19.40	1,243	199
19.50	1,243	249
19.60	1,243	298
19.70	1,243	348
19.80	1,243	424
19.90	1,243	527
20.00	1,243	629
20.10	1,243	731
20.20	1,243	833
20.30	1,243	934
20.40	1,243	1,034
20.50	1,243	1,134
20.60	1,243	1,234
20.70	1,243	1,333
20.80	1,243	1,432
20.90	1,243	1,530
21.00	1,243	1,627
21.10	1,243	1,724
21.20	1,243	1,820
21.30	1,243	1,915
21.40	1,243	2,009
21.50	1,243	2,102
21.60	1,243	2,195
21.70	1,243	2,286
21.80	1,243	2,377
21.90	1,243	2,466
22.00	1,243	2,555
22.10	1,243	2,642
22.20	1,243	2,727
22.30	1,243	2,811
22.40	1,243	2,894
22.50	1,243	2,975
22.60	1,243	3,054
22.70	1,243	3,130
22.80	1,243	3,205
22.90	1,243	3,277
23.00	1,243	3,346
23.10	1,243	3,410
23.20	1,243	3,469
23.30	1,243	3,524
23.40	1,243	3,578
23.50	1,243	3,628
23.60	1,243	3,678
23.70	1,243	3,728
23.80	1,243	3,778
23.90	1,243	3,827
24.00	1,243	3,877
24.10	1,243	3,927
24.20	1,243	3,976
24.30	1,243	4,026
24.40	1,243	4,076
24.50	1,243	**4,126**

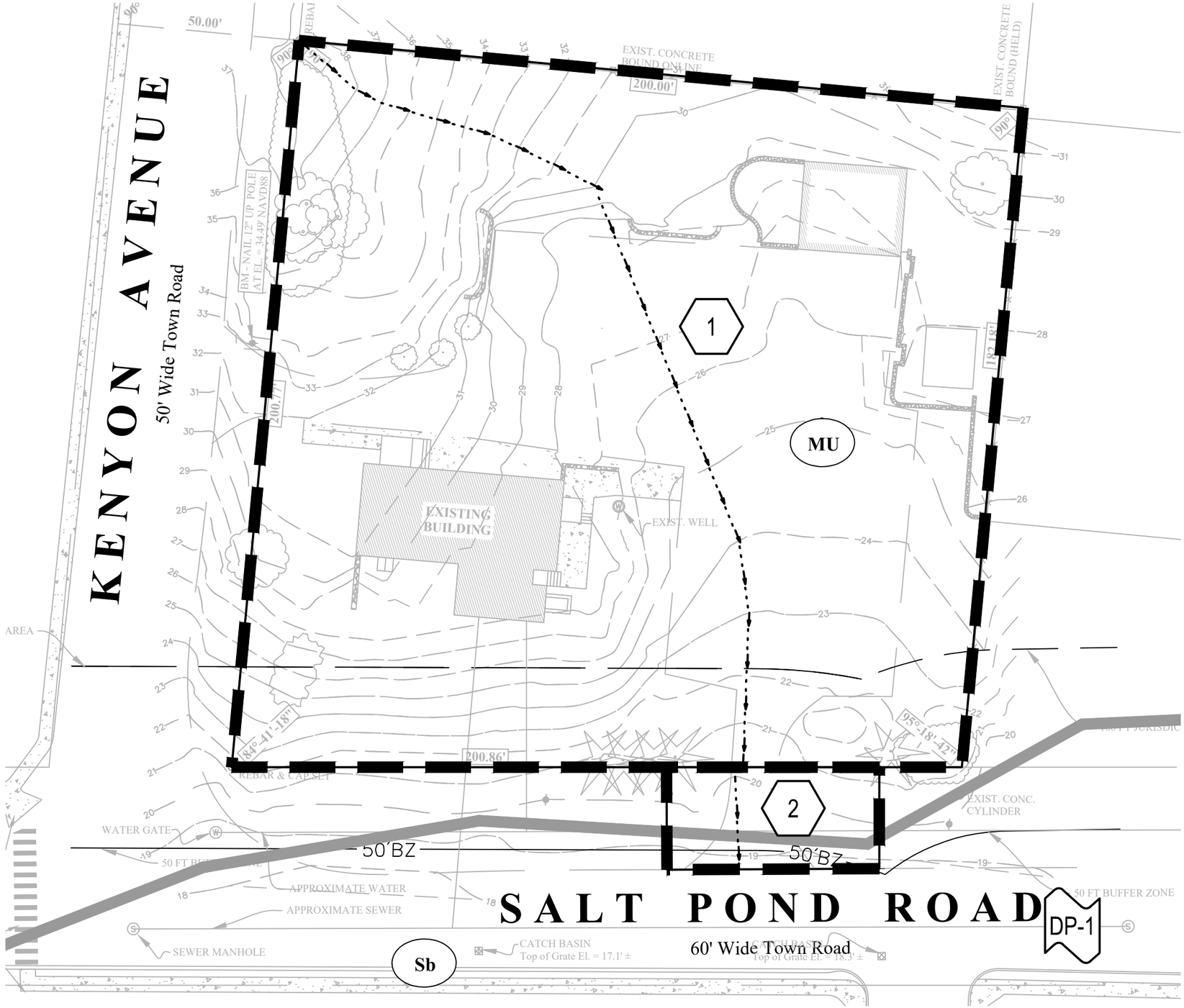
Stage-Area-Storage for Pond 2P: Subsurface Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
19.00	**1,243**	0
19.10	1,243	50
19.20	1,243	99
19.30	1,243	149
19.40	1,243	199
19.50	1,243	249
19.60	1,243	298
19.70	1,243	348
19.80	1,243	424
19.90	1,243	527
20.00	1,243	629
20.10	1,243	731
20.20	1,243	833
20.30	1,243	934
20.40	1,243	1,034
20.50	1,243	1,134
20.60	1,243	1,234
20.70	1,243	1,333
20.80	1,243	1,432
20.90	1,243	1,530
21.00	1,243	1,627
21.10	1,243	1,724
21.20	1,243	1,820
21.30	1,243	1,915
21.40	1,243	2,009
21.50	1,243	2,102
21.60	1,243	2,195
21.70	1,243	2,286
21.80	1,243	2,377
21.90	1,243	2,466
22.00	1,243	2,555
22.10	1,243	2,642
22.20	1,243	2,727
22.30	1,243	2,811
22.40	1,243	2,894
22.50	1,243	2,975
22.60	1,243	3,054
22.70	1,243	3,130
22.80	1,243	3,205
22.90	1,243	3,277
23.00	1,243	3,346
23.10	1,243	3,410
23.20	1,243	3,469
23.30	1,243	3,524
23.40	1,243	3,578
23.50	1,243	3,628
23.60	1,243	3,678
23.70	1,243	3,728
23.80	1,243	3,778
23.90	1,243	3,827
24.00	1,243	3,877
24.10	1,243	3,927
24.20	1,243	3,976
24.30	1,243	4,026
24.40	1,243	4,076
24.50	1,243	**4,126**

Minimum Standard 5 – Overbank Flood Protection – HydroCAD Calculations

Existing Conditions – HydroCAD Model

\\vhb\gbl\proj\Providence\73605.00\05_Work\cad\ld\Planmisc\Stormwater\73605.00 - EX Drainage.dwg



Legend

SYMBOLS

- X — **DESIGN POINT**
- X — **DRAINAGE AREA DESIGNATION**
- X — **POND**

LINETYPES

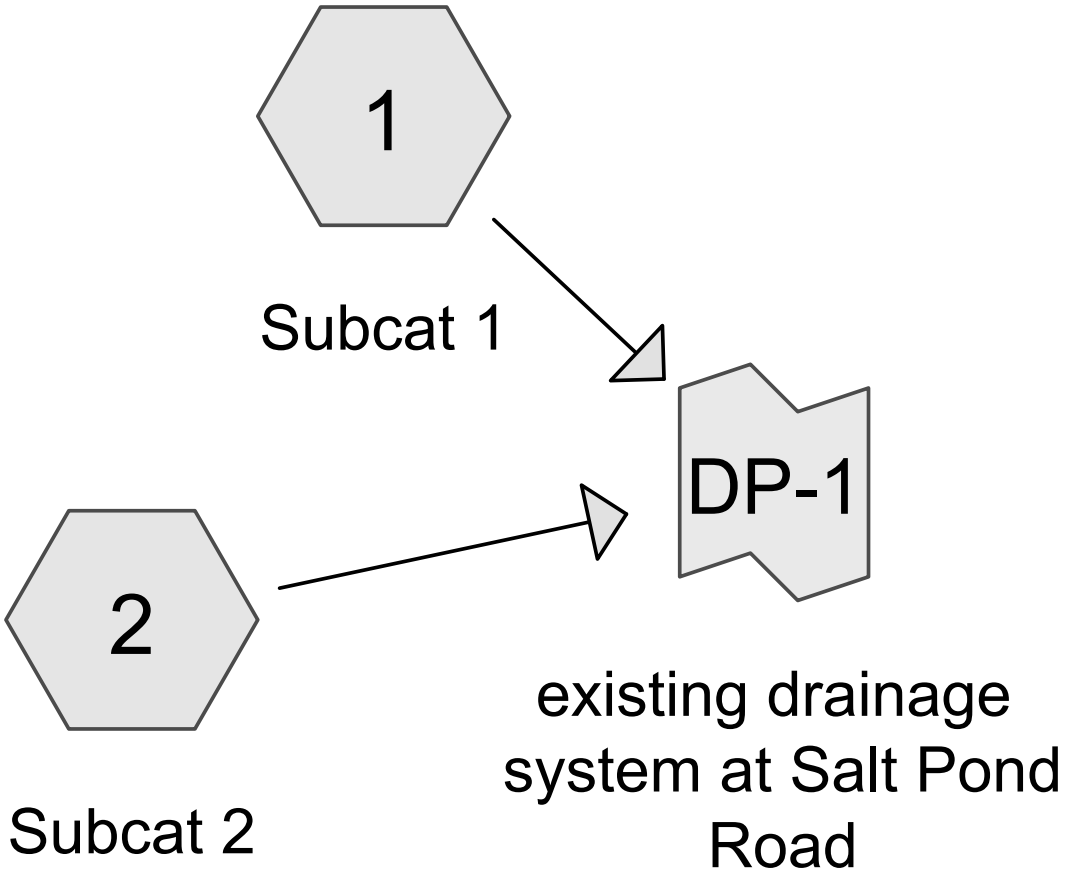
- **DRAINAGE AREA BOUNDARY**
- **TIME OF CONCENTRATION FLOW LINE**
- **SOIL TYPE BOUNDARY**
- **100' WETLAND BUFFER**
- **50' NO DISTURB ZONE**
- 4–220 4–219 **WETLAND BOUNDARY**

SCS SOIL CLASSIFICATIONS

- MU — **MERRIMAC-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES, HSG A**
- Sb — **SCARBORO MUCKY FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, HSG A/D**

0 15 30 Feet

Existing Drainage Figure **Figure 1**
South County Hospital - Off Site Parking
11 Kenyon Avenue 04/16/2025
South Kingstown, RI



Subcat Reach Pond Link

Routing Diagram for 73605.00 - EX-DRAINAGE
Prepared by VHB, Inc, Printed 7/29/2025

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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 1: Subcat 1 Runoff Area=0.879 ac 41.03% Impervious Runoff Depth=0.35"
Flow Length=260' Tc=6.0 min CN=63 Runoff=0.20 cfs 0.026 af

Subcatchment 2: Subcat 2 Runoff Area=0.038 ac 32.59% Impervious Runoff Depth=0.21"
Flow Length=25' Slope=0.0600 '/' Tc=6.0 min CN=58 Runoff=0.00 cfs 0.001 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=0.20 cfs 0.026 af
Primary=0.20 cfs 0.026 af

Total Runoff Area = 0.917 ac Runoff Volume = 0.026 af Average Runoff Depth = 0.35"
59.32% Pervious = 0.544 ac 40.68% Impervious = 0.373 ac

Summary for Subcatchment 1: Subcat 1

Runoff = 0.20 cfs @ 12.14 hrs, Volume= 0.026 af, Depth= 0.35"
Routed to Link DP-1 : existing drainage system at Salt Pond Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (ac)	CN	Description
0.498	39	>75% Grass cover, Good, HSG A
0.021	30	Brush, Good, HSG A
0.278	98	Paved parking, HSG A
0.082	98	Roofs, HSG A
0.879	63	Weighted Average
0.518		58.97% Pervious Area
0.361		41.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	52	0.0910	0.28		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.44"
0.2	55	0.1270	5.74		**Shallow Concentrated Flow, Shallow Flow 1** Unpaved Kv= 16.1 fps
0.5	153	0.0522	4.64		**Shallow Concentrated Flow, Shallow Flow 2** Paved Kv= 20.3 fps
3.8	260	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2: Subcat 2

Runoff = 0.00 cfs @ 12.34 hrs, Volume= 0.001 af, Depth= 0.21"
Routed to Link DP-1 : existing drainage system at Salt Pond Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (ac)	CN	Description
0.025	39	>75% Grass cover, Good, HSG A
0.012	98	Paved parking, HSG A
0.038	58	Weighted Average
0.025		67.41% Pervious Area
0.012		32.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	25	0.0600	1.68		**Sheet Flow, Sheet flow** Smooth surfaces n= 0.011 P2= 3.44"
0.2	25	Total, Increased to minimum Tc = 6.0 min			

Summary for Link DP-1: existing drainage system at Salt Pond Road

Inflow Area = 0.917 ac, 40.68% Impervious, Inflow Depth = 0.35" for 1 YEARS event
Inflow = 0.20 cfs @ 12.14 hrs, Volume= 0.026 af
Primary = 0.20 cfs @ 12.14 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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 1: Subcat 1 Runoff Area=0.879 ac 41.03% Impervious Runoff Depth=1.45"
Flow Length=260' Tc=6.0 min CN=63 Runoff=1.36 cfs 0.106 af

Subcatchment 2: Subcat 2 Runoff Area=0.038 ac 32.59% Impervious Runoff Depth=1.11"
Flow Length=25' Slope=0.0600 '/' Tc=6.0 min CN=58 Runoff=0.04 cfs 0.003 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=1.40 cfs 0.109 af
Primary=1.40 cfs 0.109 af

Total Runoff Area = 0.917 ac Runoff Volume = 0.109 af Average Runoff Depth = 1.43"
59.32% Pervious = 0.544 ac 40.68% Impervious = 0.373 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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 1: Subcat 1 Runoff Area=0.879 ac 41.03% Impervious Runoff Depth=2.25"
Flow Length=260' Tc=6.0 min CN=63 Runoff=2.21 cfs 0.165 af

Subcatchment 2: Subcat 2 Runoff Area=0.038 ac 32.59% Impervious Runoff Depth=1.82"
Flow Length=25' Slope=0.0600 '/' Tc=6.0 min CN=58 Runoff=0.07 cfs 0.006 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=2.28 cfs 0.170 af
Primary=2.28 cfs 0.170 af

Total Runoff Area = 0.917 ac Runoff Volume = 0.170 af Average Runoff Depth = 2.23"
59.32% Pervious = 0.544 ac 40.68% Impervious = 0.373 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

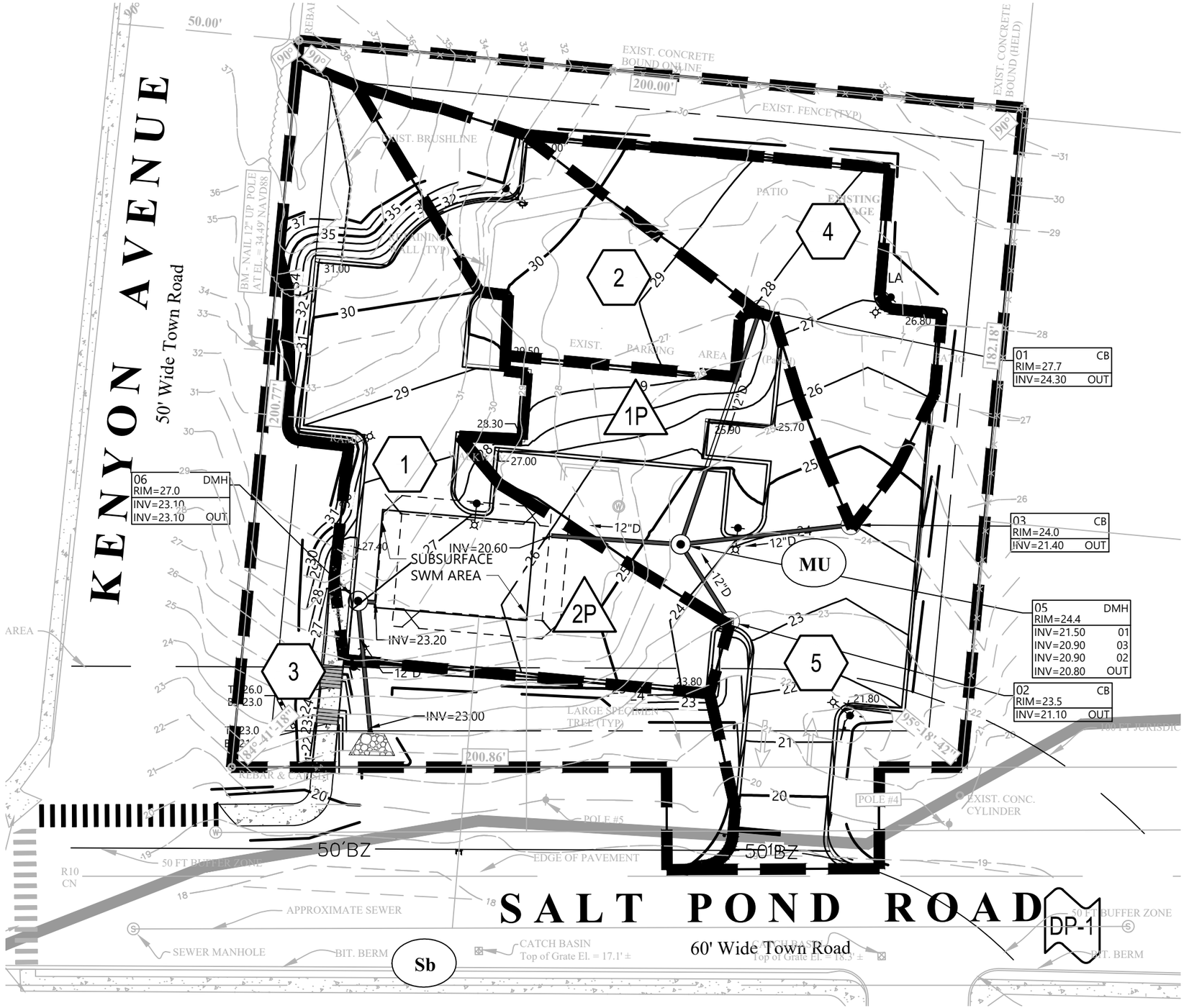
Subcatchment 1: Subcat 1 Runoff Area=0.879 ac 41.03% Impervious Runoff Depth=4.07"
Flow Length=260' Tc=6.0 min CN=63 Runoff=4.10 cfs 0.298 af

Subcatchment 2: Subcat 2 Runoff Area=0.038 ac 32.59% Impervious Runoff Depth=3.48"
Flow Length=25' Slope=0.0600 '/' Tc=6.0 min CN=58 Runoff=0.15 cfs 0.011 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=4.24 cfs 0.309 af
Primary=4.24 cfs 0.309 af

Total Runoff Area = 0.917 ac Runoff Volume = 0.309 af Average Runoff Depth = 4.04"
59.32% Pervious = 0.544 ac 40.68% Impervious = 0.373 ac

Proposed Conditions – HydroCAD Model



Legend

SYMBOLS

- DESIGN POINT
- DRAINAGE AREA DESIGNATION
- POND

LINETYPES

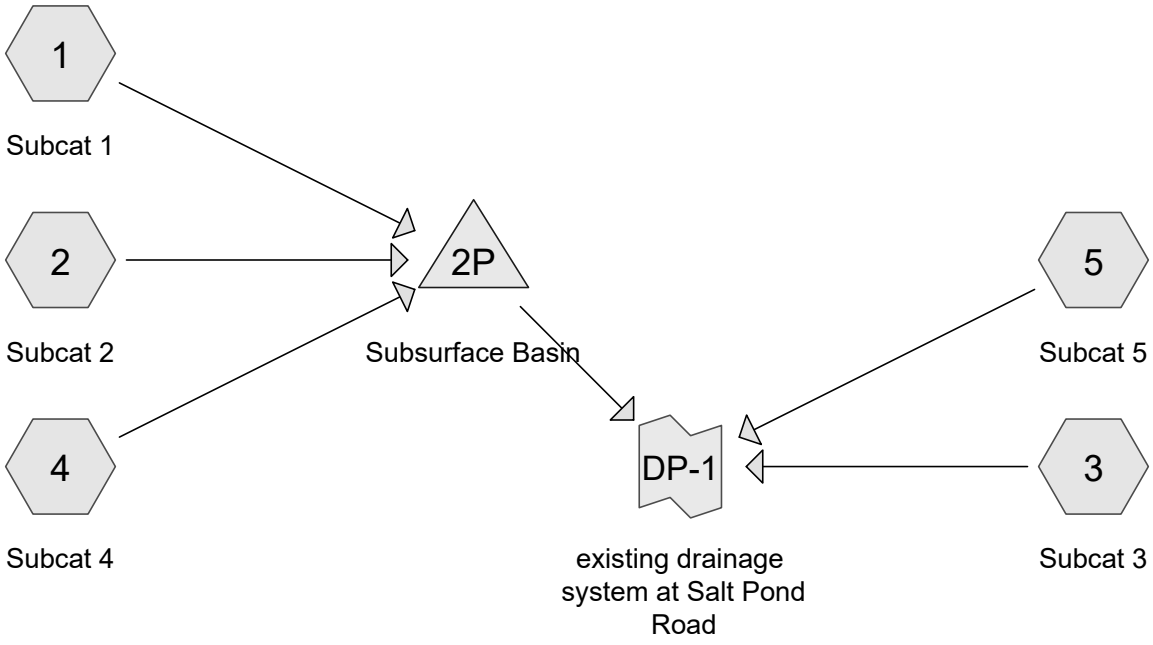
- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION FLOW LINE
- SOIL TYPE BOUNDARY
- 100' WETLAND BUFFER
- 50' NO DISTURB ZONE
- WETLAND BOUNDARY

SCS SOIL CLASSIFICATIONS

- MU — MERRIMAC-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES, HSG A
- Sb — SCARBORO MUCKY FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, HSG A/D

0 15 30 Feet

Proposed Drainage Figure **Figure 2**
South County Hospital - Off Site Parking
11 Kenyon Avenue 04/24/2025
South Kingstown, RI



Subcat Reach Pond Link

Routing Diagram for 73605.00 - PR-DRAINAGE
Prepared by VHB, Inc, Printed 7/29/2025

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Subcat 1 Runoff Area=9,572 sf 79.10% Impervious Runoff Depth=2.03"
Tc=6.0 min CN=35/98 Runoff=0.46 cfs 0.037 af

Subcatchment 2: Subcat 2 Runoff Area=3,915 sf 78.14% Impervious Runoff Depth=2.01"
Tc=0.0 min CN=39/98 Runoff=0.22 cfs 0.015 af

Subcatchment 3: Subcat 3 Runoff Area=5,619 sf 45.07% Impervious Runoff Depth=1.16"
Tc=6.0 min CN=39/98 Runoff=0.15 cfs 0.012 af

Subcatchment 4: Subcat 4 Runoff Area=4,487 sf 99.32% Impervious Runoff Depth=2.55"
Tc=0.0 min CN=39/98 Runoff=0.32 cfs 0.022 af

Subcatchment 5: Subcat 5 Runoff Area=16,319 sf 39.54% Impervious Runoff Depth=1.02"
Tc=0.0 min CN=39/98 Runoff=0.46 cfs 0.032 af

Pond 2P: Subsurface Basin Peak Elev=20.62' Storage=1,250 cf Inflow=0.86 cfs 0.074 af
Discarded=0.07 cfs 0.074 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.074 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=0.56 cfs 0.044 af
Primary=0.56 cfs 0.044 af

Total Runoff Area = 0.916 ac Runoff Volume = 0.118 af Average Runoff Depth = 1.55"
39.69% Pervious = 0.364 ac 60.31% Impervious = 0.553 ac

Summary for Subcatchment 1: Subcat 1

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.037 af, Depth= 2.03"
Routed to Pond 2P : Subsurface Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (sf)	CN	Description
7,572	98	Paved parking, HSG A
854	30	Brush, Good, HSG A
1,146	39	>75% Grass cover, Good, HSG A
9,572	85	Weighted Average
2,000	35	20.90% Pervious Area
7,572	98	79.10% Impervious Area

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

Summary for Subcatchment 2: Subcat 2

Runoff = 0.22 cfs @ 12.00 hrs, Volume= 0.015 af, Depth= 2.01"
Routed to Pond 2P : Subsurface Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (sf)	CN	Description
856	39	>75% Grass cover, Good, HSG A
3,059	98	Paved parking, HSG A
3,915	85	Weighted Average
856	39	21.86% Pervious Area
3,059	98	78.14% Impervious Area

Summary for Subcatchment 3: Subcat 3

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 1.16"
Routed to Link DP-1 : existing drainage system at Salt Pond Road

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (sf)	CN	Description
2,533	98	Paved parking, HSG A
15	30	Brush, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
5,619	66	Weighted Average
3,087	39	54.93% Pervious Area
2,533	98	45.07% Impervious Area

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

Summary for Subcatchment 4: Subcat 4

Runoff = 0.32 cfs @ 12.00 hrs, Volume= 0.022 af, Depth= 2.55"
Routed to Pond 2P : Subsurface Basin

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (sf)	CN	Description
30	39	>75% Grass cover, Good, HSG A
4,457	98	Paved parking, HSG A
4,487	98	Weighted Average
30	39	0.68% Pervious Area
4,457	98	99.32% Impervious Area

Summary for Subcatchment 5: Subcat 5

Runoff = 0.46 cfs @ 12.00 hrs, Volume= 0.032 af, Depth= 1.02"
Routed to Link DP-1 : existing drainage system at Salt Pond Road

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YEARS Rainfall=2.80"

Area (sf)	CN	Description
6,453	98	Paved parking, HSG A
0	30	Brush, Good, HSG A
9,866	39	>75% Grass cover, Good, HSG A
16,319	62	Weighted Average
9,866	39	60.46% Pervious Area
6,453	98	39.54% Impervious Area

Summary for Pond 2P: Subsurface Basin

Inflow Area = 0.413 ac, 83.94% Impervious, Inflow Depth = 2.16" for 1 YEARS event
Inflow = 0.86 cfs @ 12.02 hrs, Volume= 0.074 af
Outflow = 0.07 cfs @ 11.15 hrs, Volume= 0.074 af, Atten= 92%, Lag= 0.0 min
Discarded = 0.07 cfs @ 11.15 hrs, Volume= 0.074 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link DP-1 : existing drainage system at Salt Pond Road

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 20.62' @ 13.12 hrs Surf.Area= 1,243 sf Storage= 1,250 cf

Plug-Flow detention time= 137.4 min calculated for 0.074 af (100% of inflow)
Center-of-Mass det. time= 137.3 min (893.8 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	19.00'	1,807 cf	**29.92'W x 41.55'L x 5.50'H Field A** 6,837 cf Overall - 2,318 cf Embedded = 4,518 cf x 40.0% Voids
#2A	19.75'	2,318 cf	**ADS_StormTech MC-3500 d +Cap** x 20 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 20 Chambers in 4 Rows Cap Storage= 14.9 cf x 2 x 4 rows = 119.2 cf
		4,126 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	19.00'	**2.410 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	23.20'	**12.0" Round Culvert** L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 23.20' / 23.00' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.07 cfs @ 11.15 hrs HW=19.06' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.00' (Free Discharge)
2=Culvert (Controls 0.00 cfs)

Stage-Area-Storage for Pond 2P: Subsurface Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
19.00	**1,243**	0
19.10	1,243	50
19.20	1,243	99
19.30	1,243	149
19.40	1,243	199
19.50	1,243	249
19.60	1,243	298
19.70	1,243	348
19.80	1,243	424
19.90	1,243	527
20.00	1,243	629
20.10	1,243	731
20.20	1,243	833
20.30	1,243	934
20.40	1,243	1,034
20.50	1,243	1,134
20.60	1,243	1,234
20.70	1,243	1,333
20.80	1,243	1,432
20.90	1,243	1,530
21.00	1,243	1,627
21.10	1,243	1,724
21.20	1,243	1,820
21.30	1,243	1,915
21.40	1,243	2,009
21.50	1,243	2,102
21.60	1,243	2,195
21.70	1,243	2,286
21.80	1,243	2,377
21.90	1,243	2,466
22.00	1,243	2,555
22.10	1,243	2,642
22.20	1,243	2,727
22.30	1,243	2,811
22.40	1,243	2,894
22.50	1,243	2,975
22.60	1,243	3,054
22.70	1,243	3,130
22.80	1,243	3,205
22.90	1,243	3,277
23.00	1,243	3,346
23.10	1,243	3,410
23.20	1,243	3,469
23.30	1,243	3,524
23.40	1,243	3,578
23.50	1,243	3,628
23.60	1,243	3,678
23.70	1,243	3,728
23.80	1,243	3,778
23.90	1,243	3,827
24.00	1,243	3,877
24.10	1,243	3,927
24.20	1,243	3,976
24.30	1,243	4,026
24.40	1,243	4,076
24.50	1,243	**4,126**

Summary for Link DP-1: existing drainage system at Salt Pond Road

Inflow Area = 0.916 ac, 60.31% Impervious, Inflow Depth = 0.58" for 1 YEARS event
Inflow = 0.56 cfs @ 12.01 hrs, Volume= 0.044 af
Primary = 0.56 cfs @ 12.01 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Subcat 1 Runoff Area=9,572 sf 79.10% Impervious Runoff Depth=3.70"
Tc=6.0 min CN=35/98 Runoff=0.81 cfs 0.068 af

Subcatchment 2: Subcat 2 Runoff Area=3,915 sf 78.14% Impervious Runoff Depth=3.68"
Tc=0.0 min CN=39/98 Runoff=0.39 cfs 0.028 af

Subcatchment 3: Subcat 3 Runoff Area=5,619 sf 45.07% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=39/98 Runoff=0.27 cfs 0.024 af

Subcatchment 4: Subcat 4 Runoff Area=4,487 sf 99.32% Impervious Runoff Depth=4.63"
Tc=0.0 min CN=39/98 Runoff=0.56 cfs 0.040 af

Subcatchment 5: Subcat 5 Runoff Area=16,319 sf 39.54% Impervious Runoff Depth=1.95"
Tc=0.0 min CN=39/98 Runoff=0.81 cfs 0.061 af

Pond 2P: Subsurface Basin Peak Elev=22.36' Storage=2,861 cf Inflow=1.52 cfs 0.135 af
Discarded=0.07 cfs 0.135 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.135 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=0.99 cfs 0.085 af
Primary=0.99 cfs 0.085 af

Total Runoff Area = 0.916 ac Runoff Volume = 0.220 af Average Runoff Depth = 2.88"
39.69% Pervious = 0.364 ac 60.31% Impervious = 0.553 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Subcat 1 Runoff Area=9,572 sf 79.10% Impervious Runoff Depth=4.69"
Tc=6.0 min CN=35/98 Runoff=1.01 cfs 0.086 af

Subcatchment 2: Subcat 2 Runoff Area=3,915 sf 78.14% Impervious Runoff Depth=4.68"
Tc=0.0 min CN=39/98 Runoff=0.48 cfs 0.035 af

Subcatchment 3: Subcat 3 Runoff Area=5,619 sf 45.07% Impervious Runoff Depth=2.90"
Tc=6.0 min CN=39/98 Runoff=0.34 cfs 0.031 af

Subcatchment 4: Subcat 4 Runoff Area=4,487 sf 99.32% Impervious Runoff Depth=5.83"
Tc=0.0 min CN=39/98 Runoff=0.70 cfs 0.050 af

Subcatchment 5: Subcat 5 Runoff Area=16,319 sf 39.54% Impervious Runoff Depth=2.60"
Tc=0.0 min CN=39/98 Runoff=1.02 cfs 0.081 af

Pond 2P: Subsurface Basin Peak Elev=23.38' Storage=3,565 cf Inflow=1.90 cfs 0.171 af
Discarded=0.07 cfs 0.160 af Primary=0.09 cfs 0.011 af Outflow=0.16 cfs 0.171 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=1.25 cfs 0.124 af
Primary=1.25 cfs 0.124 af

Total Runoff Area = 0.916 ac Runoff Volume = 0.284 af Average Runoff Depth = 3.71"
39.69% Pervious = 0.364 ac 60.31% Impervious = 0.553 ac

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Subcat 1 Runoff Area=9,572 sf 79.10% Impervious Runoff Depth=6.74"
Tc=6.0 min CN=35/98 Runoff=1.44 cfs 0.123 af

Subcatchment 2: Subcat 2 Runoff Area=3,915 sf 78.14% Impervious Runoff Depth=6.75"
Tc=0.0 min CN=39/98 Runoff=0.70 cfs 0.051 af

Subcatchment 3: Subcat 3 Runoff Area=5,619 sf 45.07% Impervious Runoff Depth=4.48"
Tc=6.0 min CN=39/98 Runoff=0.55 cfs 0.048 af

Subcatchment 4: Subcat 4 Runoff Area=4,487 sf 99.32% Impervious Runoff Depth=8.21"
Tc=0.0 min CN=39/98 Runoff=0.98 cfs 0.071 af

Subcatchment 5: Subcat 5 Runoff Area=16,319 sf 39.54% Impervious Runoff Depth=4.10"
Tc=0.0 min CN=39/98 Runoff=1.70 cfs 0.128 af

Pond 2P: Subsurface Basin Peak Elev=23.96' Storage=3,856 cf Inflow=2.68 cfs 0.244 af
Discarded=0.07 cfs 0.177 af Primary=1.44 cfs 0.068 af Outflow=1.50 cfs 0.244 af

Link DP-1: existing drainage system at Salt Pond Road Inflow=2.44 cfs 0.244 af
Primary=2.44 cfs 0.244 af

Total Runoff Area = 0.916 ac Runoff Volume = 0.421 af Average Runoff Depth = 5.51"
39.69% Pervious = 0.364 ac 60.31% Impervious = 0.553 ac

Minimum Standard 6 – Redevelopment and Infill Calculations

Version: 4/2015

Project Name th County Hospital - Off Site Park

Date 5.28.2025

Water Quality Volume Calculation WorkSheet

This worksheet is designed to assist the project engineer with a determination of the required water quality treatment area. The worksheet leads the designer through redevelopment applicability first and then receiving water requirements. This tool is intended to compliment to the Redevelopment Criteria Guidance and the Water Quality Guidance and assist both the designer and the permit application reviewer towards consistent results. Enter information into only the YELLOW Boxes.

Redevelopment Criteria Guidance

Water Quality Goals "Stormwater Compensation Method"

Step 1 - Determine which office in OWR you are applying to: Application Guidance

Step 2 - Site Information		value/calculation	units
Total Site Area (total area of project parcels)	TS	0.92	acres
Total Jurisdictional Wetlands and/or floodplain within the above TSA	JW1	0.16	acres
Existing impervious also within the Jurisdictonal Wetlands	-JW2	0.04	acres
Conservation Land within the TSA	C	0.00	acres
Site Size = (TSA)-(JW1-JW2)-CL	**SS=**	**0.80**	acres

Step 3 - Redevelopment Applicability			
Total Impervious Area (pre-construction)	TIA=	0.37	acres
% Impervious (if ≥40% - redevelopment standard 3.2.6 applies)		**0.47**	

REPEAT IF NECESSARY Steps 4, 5 and 6 for EACH Waterbody ID (RIVER-ID as found in the GIS Map Server)

Step 4 - Receiving waterbody information

Waterbody ID or RIVER ID from GIS Map Server	
Waterbody Name from GIS Map Server	
Name the sub-watersheds (design-points) contributing to this Waterbody ID	
Is this Waterbody Impaired/TMDL for any Phosphorus, Metals or Bacteria?	YES
Is this Waterbody Impaired for Nitrogen?	NO

Step 5 - Pre-Post Construction Conditions to the Waterbody

Total Pre-Construction Impervious Surface to this Waterbody ID	0.37	acres
Total Disturbed Existing Impervious (DI)	0.37	acres
Total Post-Construction Impervious to this Waterbody ID	0.55	acres
Net Increased Impervious (NII)	0.18	acres

Step 6 - Infiltration and BMP information - Note: Increasing infiltration will likely decrease stormwater treatment area for Metals, Bacteria and Phosporus

I am proposing to infiltrate this percentage WQv to this WBID	100%	%
I am proposing this number of BMP's	1	#

RESULTS - Select the Larger Number of the 2 numbers provided

Applicable Condition	**Min Water Quality Treatment Area**	**Min Treatment w/o WQ consideration**
No Impairement or TMDL - New Development		
No Impairment or TMDL - Redevelopment		
Only Phosphorus, Metals or Bacteria Impairment - New Development		
Only Phosphorus, Metals or Bacteria Impairment - Redevelopment	0.18	0.36
Nitrogen Impairment - New Development		
Nitrogen Impairment - Redevelopment		

REQUIRED STORMWATER TREATMENT AREA **0.4** acres

* Enter the name of the STP (both type and label) which has been designed to treat this particular Rev or Rea.

Appendix E – Minimum Standard 7 and 11 – Stormwater Management System Operation and Maintenance Plan and Source Control and Pollution Prevention Plan (Bound Separately)

Appendix F – Minimum Standard 10 – Soil Erosion and Sediment Control Plan (Bound Separately)