

LOCATION PLAN SCALE: 1" = 1,000'

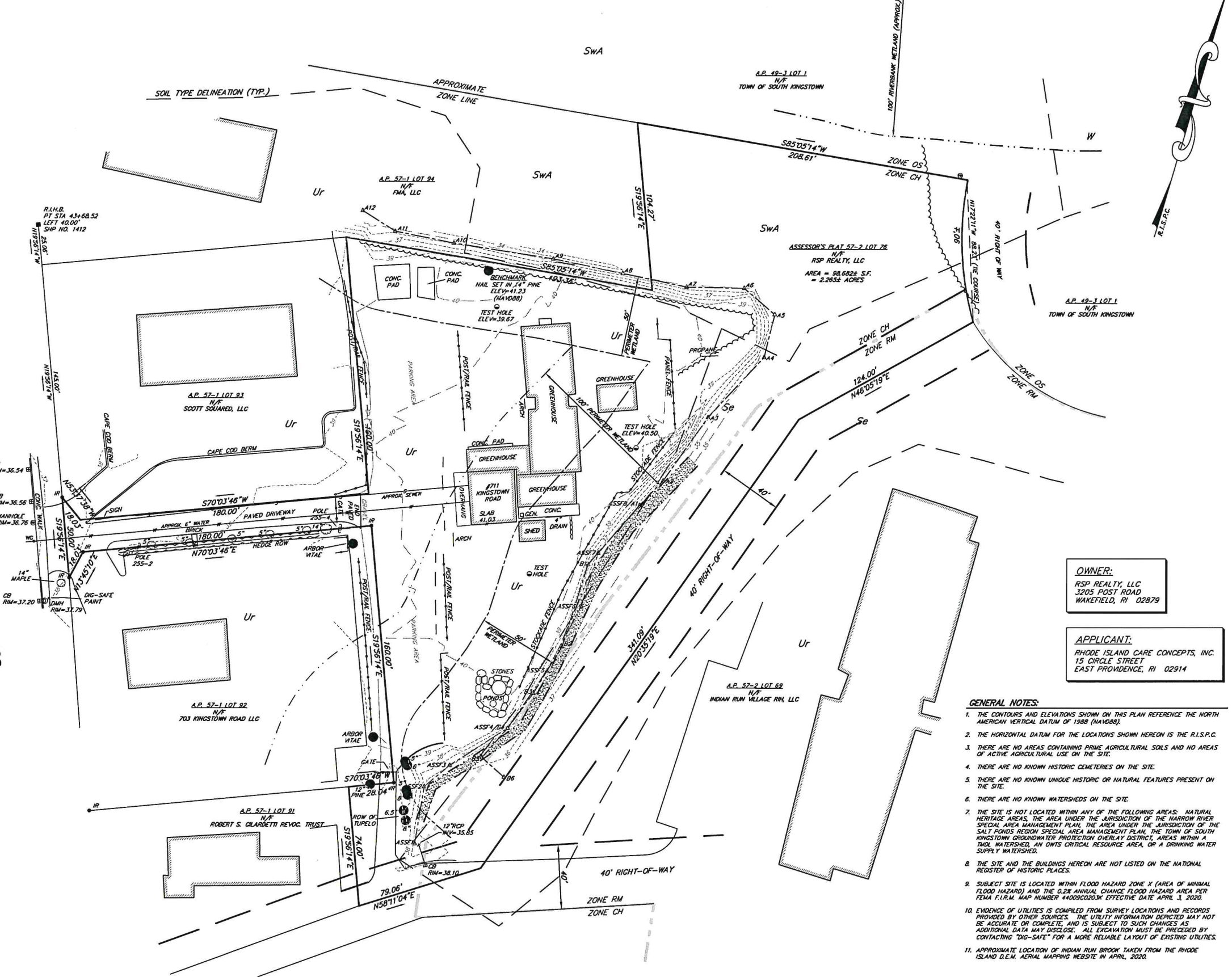
SOIL DATA CHART

Se	STRESSING SILT LOAM
SwA	SWANSEA MUCK, 0-1% SLOPES
Ur	URBAN LAND
W	WATER

- REFERENCES**
- PLAN ENTITLED "DIVISION OF LAND AT THE VILLAGE OF WAKEFIELD IN THE TOWN OF SOUTH KINGSTOWN, RHODE ISLAND OWNED BY MARY D. FRISSELLA & STEVE VESTER A. CAPALDO MAY 1977" BY JOSEPH W. FRISSELLA, CIVIL ENGINEER" RECORDED IN THE SOUTH KINGSTOWN LAND EVIDENCE RECORDS AT BOOK 16, PAGE 1464.
 - PLAN ENTITLED "LAND AT WAKEFIELD IN SOUTH KINGSTOWN, R.I. OWNED BY PEACEDALE OFFICES, INC. LOTS 3 & 4 TO BE DEEDED TO IRVING E. YOST SCALE 1"=100" AUG. 7, 1939" BY T. G. HAZARD, JR. SURVEYOR.
 - RHODE ISLAND STATE HIGHWAY PLAT #1412

ZONING DATA

ZONE CH	20,000 S.F.
MINIMUM LOT AREA	100'
MINIMUM LOT FRONTAGE	100'
MINIMUM LOT WIDTH	40'
MINIMUM SETBACKS	30'
FRONT YARD	30'
SIDE YARD	30'
REAR YARD	30'
MAXIMUM BUILDING COVERAGE	30%
MAXIMUM BUILDING HEIGHT	35'



FOR STREET INDEX FILE UNDER:
KINGSTOWN ROAD



410 TIGHE AVENUE
COVENTRY, RHODE ISLAND 02816
401.821.8101

LAND SURVEYING/MAPPING/SITE PLANNING



DEED RECORDATION
THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE R.I.S.P.C. AND WILL BE FILED FOR RECORDATION IN THE OFFICE OF THE REGISTER OF DEEDS, STATE OF RHODE ISLAND, PROVIDENCE, RHODE ISLAND.

TYPE OF SURVEY
COMPREHENSIVE RECONSTRUCTION SURVEY

CLASSIFICATION
CLASS I

MEASUREMENT TECHNIQUE
MEASUREMENT TECHNIQUE CLASS II, CLASS II

DATE OF SURVEY
DATE OF SURVEY: 06/15/2020

DATE OF PLAN
DATE OF PLAN: 06/15/2020

PREPARED BY
ANGIELO M. RAIMONDI
PROFESSIONAL LAND SURVEYOR
No. 1762

DATE OF SURVEY
DATE OF SURVEY: 06/15/2020

DATE OF PLAN
DATE OF PLAN: 06/15/2020

REVISIONS
REVISIONS: NONE

OWNER:
RSP REALTY, LLC
3205 POST ROAD
WAKEFIELD, RI 02879

APPLICANT:
RHODE ISLAND CARE CONCEPTS, INC.
15 CIRCLE STREET
EAST PROVIDENCE, RI 02914

- GENERAL NOTES:**
- THE CONTOURS AND ELEVATIONS SHOWN ON THIS PLAN REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - THE HORIZONTAL DATUM FOR THE LOCATIONS SHOWN HEREON IS THE R.I.S.P.C.
 - THERE ARE NO AREAS CONTAINING PRIME AGRICULTURAL SOILS AND NO AREAS OF ACTIVE AGRICULTURAL USE ON THE SITE.
 - THERE ARE NO KNOWN HISTORIC CEMETERIES ON THE SITE.
 - THERE ARE NO KNOWN UNIQUE HISTORIC OR NATURAL FEATURES PRESENT ON THE SITE.
 - THERE ARE NO KNOWN WATERSHEDS ON THE SITE.
 - THE SITE IS NOT LOCATED WITHIN ANY OF THE FOLLOWING AREAS: NATURAL HERITAGE AREAS, THE AREA UNDER THE JURISDICTION OF THE NARROW RIVER SPECIAL AREA MANAGEMENT PLAN, THE AREA UNDER THE JURISDICTION OF THE SALT POND REGION SPECIAL AREA MANAGEMENT PLAN, THE TOWN OF SOUTH KINGSTOWN GROUNDWATER PROTECTION OVERLAY DISTRICT, AREAS WITHIN A TRAIL WATERSHED, AN DWTS CRITICAL RESOURCE AREA, OR A DRINKING WATER SUPPLY WATERSHED.
 - THE SITE AND THE BUILDINGS HEREON ARE NOT LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES.
 - SUBJECT SITE IS LOCATED WITHIN FLOOD HAZARD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AND THE 0.2% ANNUAL CHANCE FLOOD HAZARD AREA PER FEMA F.I.R.M. MAP NUMBER 44050C0203K EFFECTIVE DATE APRIL 3, 2020.
 - EVIDENCE OF UTILITIES IS COMPILED FROM SURVEY LOCATIONS AND RECORDS PROVIDED BY OTHER SOURCES. THE UTILITY INFORMATION DEPICTED MAY NOT BE ACCURATE OR COMPLETE, AND IS SUBJECT TO SUCH CHANGES AS ADDITIONAL DATA MAY DISCLOSE. ALL EXCAVATION MUST BE PRECEDED BY CONTACTING "DIG-SAFE" FOR A MORE RELIABLE LAYOUT OF EXISTING UTILITIES.
 - APPROXIMATE LOCATION OF INDIAN RUN BROOK TAKEN FROM THE RHODE ISLAND D.E.M. AERIAL MAPPING WEBSITE IN APRIL, 2020.

- LEGEND**
- AP ASSESSOR'S PLAT
 - N/F NOW OR FORMERLY
 - S.F. SQUARE FEET
 - R.I.H.B. RHODE ISLAND HIGHWAY BOUND FOUND
 - IR IRON ROD FOUND
 - CB CATCH BASIN
 - DM DRAIN MANHOLE
 - WG WATER GATE
 - MH MANHOLE
 - UP UTILITY POLE
 - WFL WETLAND FLAG
 - ASSFb AREA SUBJECT TO STORM FLOWAGE
 - OH EXISTING TEST HOLE

EXISTING CONDITIONS PLAN
OF
PROPOSED COMMISSION CENTER
ASSESSOR'S PLAT 57-2 LOT 76
KINGSTOWN ROAD
SOUTH KINGSTOWN, RHODE ISLAND
PREPARED FOR
RHODE ISLAND CARE CONCEPTS, INC.



Town of South Kingstown, RI

509 Commodore Perry Highway
Wakefield, RI 02879
Tel. 401-789-9331
Fax. 401-782-8068

PUBLIC SERVICES DEPARTMENT

SEWER SERVICE ENGINEERING REVIEW REQUEST

Review Requested By: David Johnston

Phone # 401-737-3050

Email

Property Address: 711 Kingstown Road – Clarks' Farm Property

Plat: 57-2 76 Road Status: Town Private State

SEWER SERVICE IS AVAILABLE AT THIS TIME* (See Note)

SEWER SERVICE IS AVAILABLE AT THIS TIME, BUT REQUIRES
LATERAL INSTALLATION AT PROPERTY OWNER'S EXPENSE

SEWER SERVICE IS NOT AVAILABLE AT THIS TIME

SEWER MAIN EXTENSION REQUIRED

GREASE TRAP REQUIRED; CONTACT KRYSTAL FURLONG, PRETREATMENT
COORDINATOR, AT 788-9771 FOR MORE INFORMATION.

OTHER: The Wastewater Divison is unable to confirm if the subject property is
physically connected to the Town's sanitary sewer system. Confirmation of a sewer
connection and installation of a pretreatment manhole at the property line and payment of
any wastewater related fees will be required as a condition of approval.



JON R. SCHOCK, Public Services Director
KATHY PEREZ, Wastewater Superintendent

JUNE 22, 2020

DATE

**NOTE: The Town makes no warranty either written or implied as to the accuracy of lateral installation. Confirmation of lateral is only warranted upon test-pit verification at property owner's expense.*

6/22/20

Mark Dowdell, PE
Superintendent, RI Division

Suez Water Rhode Island
10 High St, Suite K
Wakefield, RI 02879
TEL 401-789-0271 x1025



June 4, 2020

David Johnston
Johnston Law

RE: Water Availability at 711 Kingstown Rd, South Kingstown RI

Dear David,

This letter is to inform you that water service from the SWRI system is currently available at the above referenced property. There is an existing 6" main, which is reduced to a 2" service feeding the current property. Per our conversation about the proposed use, we recommend reducing the line to a 1" inside of the building. A new service application will need to be completed prior to work being done.

If you have any further questions, let me know.

Very truly yours,

A handwritten signature in black ink, appearing to read "M Dowdell", written in a cursive, flowing style.

Mark Dowdell, PE



UNION FIRE DISTRICT OF SOUTH KINGSTOWN
131 ASA POND ROAD
SOUTH KINGSTOWN, RI 02879



TEL (401) 789-8354

FAX (401) 789-8750

July 13, 2020

Mr. Jason Parker, Principal Planner
Town of South Kingstown
180 High Street
Wakefield, RI 02879

Re: 711 Kingstown Rd

Dear Mr. Parker;

The Union Fire District's Fire Marshal's Office has no objections to the planned building at the above address. Fire Code compliance for the building will be reviewed at the time of plans submittal at the office of the Building Official.

If you need anything further, please don't hesitate to contact us.

Regards,

A handwritten signature in cursive script that reads "Chris Hiener".

Chris Hiener, Fire Marshal
Union Fire District
131 Asa Pond Rd
Wakefield, RI 02879
Phone (401)789-8354
Cell (401)255-5921
Fax (401)789-8750
chiener@unionfiredistrict.com
www.unionfiredistrict.com

“Safety Always”

STORM WATER ANALYSIS

For

RHODE ISLAND CARE CONCEPTS, INC.

**A.P. 57-2, LOT 76
711 KINGSTOWN ROAD**

SOUTH KINGSTOWN RI

June 2020



Prepared For: RSP Realty, LLC
3205 Post Road
Wakefield, RI 02879
(401)742-4146

Prepared By: SFM Engineering Associates
410 Tiogue Avenue
Coventry, RI 02816
(401)826-3736

SFM882

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Attachments: RIDEM Appendix A Checklist, Operation & Maintenance Plan,
Site Plans, Soil Evaluation Data, SESC Plan

Project Description

The Rhode Island Care Concepts Inc. development consists of improvements to the existing site located at 711 Kingstown Road in South Kingstown, RI. The site is identified as assessors plat 57-2, Lot 76. The site is located on the east side of Kingstown Road. The redevelopment project will convert the existing buildings and greenhouses into a commercial use. Areas not covered by buildings will be used as parking and landscape areas or maintained as undisturbed wetland areas. The total site area is approximately 2.27 acres.

The site development, lot grading, storm water mitigation and utilities are designed to meet the Town of South Kingstown standards. The site is serviced by municipal water and sewer system. Site freshwater wetlands are under RIDEM jurisdiction. The site falls under the redevelopment requirements of the Rhode Island Stormwater Design and Installation Standards Manual (RISDISM).

Site Information

Existing Site

The existing site is developed with buildings, greenhouses and bituminous or compacted gravel parking areas. Freshwater wetlands on the site include swamp and its 50' perimeter wetland, an area subject to storm flow, and the 100' riverbank wetland associated with the Indian Run Brook. The existing site has approximately 45,290 sf (1.04 acres) of impervious cover or 45% of the total site area of 2.27 acres.

Proposed Site

Under the redevelopment rules of the RISDISM, "for redevelopment sites with 40% or more existing impervious surface coverage...recharge and stormwater quality shall be managed for in accordance with ...use of on-site structural bmp's to provide recharge and water quality (WQ) management for a least 50% of redevelopment areas."

The new impervious surfaces on the site are 24,940 sf. Redevelopment requires that 50% of the new impervious, 12,470 sf, be managed for recharge and water quality (WQ). **The intent of the project is to provide treatment of the entire 24,940 sf of new impervious surfaces on the site.** The sediment forebays and bioretention areas will provide pretreatment and WQ treatment for the project.

The proposed activities on the site do not qualify as Land Use with Higher Potential Pollutant Loads (LUPHHL) and no illicit discharges are expected or proposed. Pollution prevention best management practices will be utilized on the project site. A Soil Erosion and Sediment Control Plan and an Operation and Maintenance Plan will be prepared for the project.

Soil Characteristics

A copy of the Web Soil Survey of Rhode Island depicting the subject property is included in this report.

Urban Land (Ur – soil type A): Urban Land Complex with C soil group in surrounding lands

100-Year Flood Plain

The site is located in flood hazard zone X (area of minimal flood hazard) per FEMA flood map 44009 C0203K, dated April 3, 2020.

Rainfall Data

The 24 hour (Type III) design rainfall amounts (in inches) used in these calculations is as follows:

County/Storm Event	WQ	1-Year	10-Year	100-Year
Washington County	1.2"	2.8	4.9	8.5

Drainage Narrative

The proposed storm water drainage system has been designed to safely collect and convey surface runoff and is designed to comply with the requirements of the Rhode Island Stormwater Design and Installation Standards Manual for treatment of the water quality volume on redevelopment sites.

Storm water runoff from the new impervious surfaces will be directed to the on-site stormwater system for water quality treatment and groundwater recharge. The bituminous parking areas will be graded so that runoff will be collected in deep sump catch basins. These catch basins will provide an initial sediment trap prior to runoff discharge into the sediment forebays. The sediment forebays provide pretreatment of the runoff prior to the bioretention areas. The bioretention areas are the primary source of water quality treatment of the stormwater runoff.

Rooftop runoff is directed toward the bioretention area 1.

The *Intellisolve Hydraflow* model was used to evaluate the stormwater best management practices. Design reports and hydrographs results are included in this report.

The post-development watershed follows the same runoff patterns as the existing condition. Stormwater runoff flows north and east from the site towards the freshwater wetlands and the Indian Run Brook.

Storm Water Management System Design

The stormwater management system is comprised of three catch basin sediment traps, 2 sediment forebays and two bioretention areas. The catch basin sediment traps and sediment forebays will provide pretreatment of the stormwater runoff before directing the flow to a bioretention area for water quality treatment.

An Intellisolve Hydraflow model was developed to evaluate the proposed drainage condition on the site. The model assumes that runoff from the parking areas is directed first to the catch basin sediment traps which will overflow to the sediment forebay. Once the sediment forebay fills to the water quality weir, runoff will be directed to the bioretention area. The bioretention area provides water quality treatment. When the bioretention area is filled, runoff will overflow from the primary weir toward the freshwater wetlands and the Indian Run Brook.

The development area of the site has Group C soils. Recharge volume calculations use the Soil Group C recharge factor $F = 0.25$. (Reference RISDISM Table 3-4)

Stormwater Treatment System:

Catch Basin Sediment Traps/Sediment Forebays/Bioretention Area

There are two sub-watershed areas:

1. Runoff to sediment forebay 1 and bioretention area 1
2. Runoff to sediment forebay 2 and bioretention area 2

Each forebay/bioretention area must be sized to 75% of the Water Quality Volume.

Catch Basin Sediment Traps:

Three catch basin sediment traps are provided prior to the sediment forebays. One trap is located prior to sediment forebay 1. Two traps are located prior to sediment forebay 2. Each sediment trap is a deep sump, four foot diameter catch basin that will contain 50 cf of sediment.

To Sediment Forebay 1:

Proposed Impervious Area (A_{imp}): 7607 sf of parking area (4345 sf) and rooftop (3262 sf)

$$\begin{aligned} \text{Recharge Volume:} \quad Re_v &= (1" \times F \times A_{imp}) / 12 \\ &= 1 \text{ inch} \times .25 \times 7607 \times (1 \text{ ft}/12 \text{ in}) = 159 \text{ cf} \end{aligned}$$

$$\begin{aligned} \text{Water Quality Volume:} \quad WQ_v &= (1" \times A_{imp}) / 12 \\ &= 1 \text{ inch} \times 7607 \times (1 \text{ ft}/12 \text{ in}) = 634 \text{ cf} \end{aligned}$$

Surface Area Calculation

Per Section 6.4.1 of the RISDISM, the required surface area of the sediment forebay is calculated by: $A_s = 5750 \times Q$; where $Q = \%WQ_v \div 86,400 \text{ sec}$ and $\%WQ_v = 25\%$

$$\begin{aligned} Q &= (.25 \times WQ_v) \div 86,400 \text{ sec} = (.25 \times 634) \div 86,400 \text{ sec} = .0018 \text{ cfs} \\ A_s &= 5750 \times Q = 5750 \times .0018 = 11 \text{ sf (req'd)} = 12 \text{ sf min (provided)} \quad \mathbf{OK} \end{aligned}$$

Length to Width Ratio

The minimum length to width ratio is 1:1 or greater.
2:1 ratio provided **OK**

Minimum Volume Calculation

Volume (min) = $.25 \times WQ_v = .25 \times 634 = 159 \text{ cf (req'd)} < 305$ (255 provided at overflow weir + 50 in sediment trap) **OK**

Required Treatment Volume 1: Forebay + Bioretention Area must provide 75% of WQ_v

$$75\% \text{ of } WQ_v: 0.75 \times WQ_v = .75 \times 634 = 476 \text{ cf}$$

Sediment Forebay provides 255 cf

Bioretention Area must provide 476 - 255 = 221 cf

Bioretention Area Design Criteria/Required Volume Computations

The design guidelines include:

- The bottom of the bioretention area shall be located at or above the seasonal high groundwater table (SHGT) with the top of the bioretention area located at least 3' above the SHGT.
- Size the bioretention area to store the remaining volume of the 75% of the WQ_v .
- Treatment area shall consist of an 24" deep bioretention soil bed, 2" (min) mulch and an 8" deep ponding layer
- Design Infiltration Rate (RISDISM Table 5-3): Sandy loam: 1.02 in/hr

Where: **Minimum required filter area** is: $A_f = (WQ_v)(d_f) / [(k)(h_f + d_f)(t_f)]$

A_f = Surface area of filter bed (ft²)
 d_f = Filter bed depth = 24" = 2.0'
 k = coefficient of permeability of filter media (ft/day)
= 1.0 ft/day for bioretention (sandy loam) soils
 h_f = avg height of water above soil bed (ft) = 8"/2 = 0.330'
 t_f = design filter bed drain time (2 days max)

$$\text{Total Bio Area Req'd: } A_f = (221)(2.0) / [(1.0)(.33 + 2.0)(2)] = 95 \text{ sf}$$

A_f ; Using the WQ_v of 221 cf - $A_f = 95 \text{ sf (req'd)} < 320 \text{ sf (provided)} \quad \mathbf{OK}$

The sediment forebay provides 255 cf and the bioretention area provides 716 cf of storage at elevation 39.0 – the overflow weir elevation – for a total of 971 cf.

System 1 provides 971 cf of storage and treatment volume within the sediment forebay and the bioretention area. The calculations require a treatment volume of 476 cf (75% of the WQv). The proposed system exceeds the required treatment volume. **OK**

To Sediment Forebay 2:

Proposed Impervious Area (A_{imp}): 13205 sf of parking area

$$\begin{aligned} \text{Recharge Volume:} \quad Re_v &= (1" \times F \times A_{imp}) / 12 \\ &= 1 \text{ inch} \times .25 \times 13205 \times (1 \text{ ft}/12 \text{ in}) = 275 \text{ cf} \end{aligned}$$

$$\begin{aligned} \text{Water Quality Volume:} \quad WQ_v &= (1" \times A_{imp}) / 12 \\ &= 1 \text{ inch} \times 13205 \times (1 \text{ ft}/12 \text{ in}) = 1100 \text{ cf} \end{aligned}$$

Surface Area Calculation

Per Section 6.4.1 of the RISDISM, the required surface area of the sediment forebay is calculated by: $A_s = 5750 \times Q$; where $Q = \%WQ_v \div 86,400 \text{ sec}$ and $\%WQ_v = 25\%$

$$\begin{aligned} Q &= (.25 \times WQ_v) \div 86,400 \text{ sec} = (.25 \times 1100) \div 86,400 \text{ sec} = .0032 \text{ cfs} \\ A_s &= 5750 \times Q = 5750 \times .0032 = 18.3 \text{ sf (req'd)} = 12 \text{ sf min (provided)} \end{aligned}$$

Length to Width Ratio

The minimum length to width ratio is 1:1 or greater.
2:1 ratio provided **OK**

Minimum Volume Calculation

Volume (min) = $.25 \times WQ_v = .25 \times 1100 = 275 \text{ cf (req'd)} < 355$ (255 provided at overflow weir + 100 (2 @ 50 cf in sediment traps) **OK**

Required Treatment Volume: Forebays + Bioretention Area must provide 75% of WQv

$$\begin{aligned} 75\% \text{ of } WQ_v: \quad &0.75 \times WQ_v = 0.75 \times 1100 = 825 \text{ cf} \\ \text{Sediment Forebays provides} &255 \text{ cf} \\ \text{Bioretention area must provide} &825 - 255 = 570 \text{ cf} \end{aligned}$$

Bioretention Area Design Criteria/Required Volume Computations

The design guidelines include:

- The bottom of the bioretention area shall be located at or above the seasonal high groundwater table with the top of the bioretention area located at least 3' above the SHGT.
- Size the bioretention area to store the remaining volume of the 75% of the WQV.
- Treatment area shall consist of an 24" deep bioretention soil bed, 2" (min) mulch and an 8" deep ponding layer
- Design Infiltration Rate (RISDISM Table 5-3): Sandy loam: 1.02 in/hr

$$\text{Minimum required filter area is: } A_f = (WQ_v)(d_f) / [(k)(h_f + d_f)(t_f)]$$

Where:

A_f = Surface area of filter bed (ft²)

d_f = Filter bed depth = 24" = 2.0'

k = coefficient of permeability of filter media (ft/day)

= 1.0 ft/day for bioretention (sandy loam) soils

h_f = avg height of water above soil bed (ft) = 8"/2 = 0.330'

t_f = design filter bed drain time (2 days max)

Total Bio Area Req'd: $A_f = (570)(2.0)/[(1.0)(.33 + 2.0)(2)] = 245 \text{ sf}$

Af; Using the WQv of 825 cf - $A_f = 245 \text{ sf (req'd)} < 480 \text{ sf (provided)} \text{ OK}$

The forebay provides 255 cf and the bioretention area provides 1017 cf of storage at elevation 38.5 – the overflow weir elevation – for a total of 1272 cf.

The system provides 1272 cf of storage and treatment volume within the sediment forebay and the bioretention area. The calculations require a treatment volume of 825 cf. The proposed system exceeds the required treatment volume. **OK**

Groundwater Separation and Design Elevations

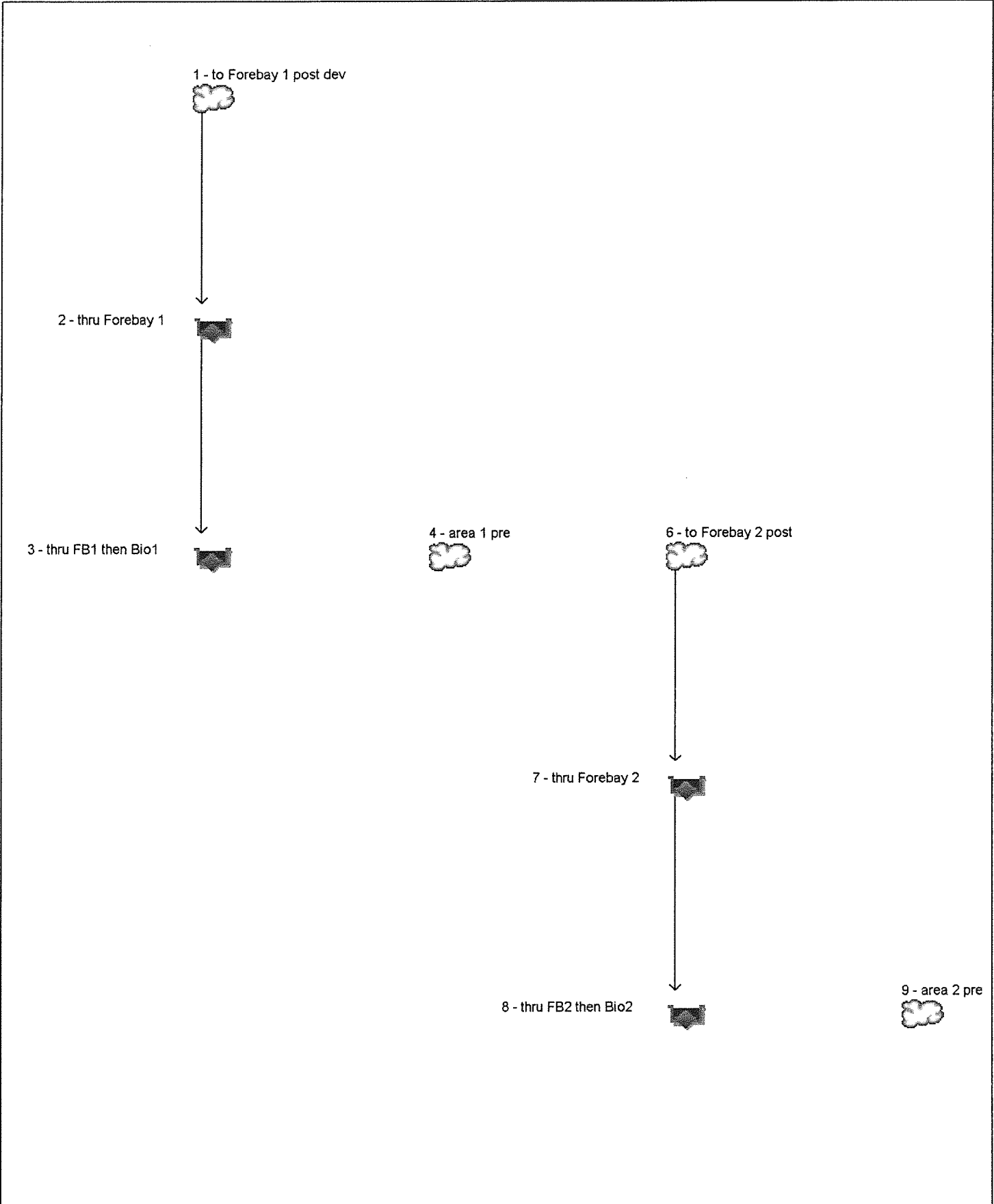
Seasonal high groundwater elevations and separation to proposed best management practices are shown on the site plans.

Conclusion

As designed, the proposed site development will manage storm water runoff from the new impervious surfaces and site development. The stormwater management system will provide recharge and water quality treatment for the new impervious surfaces associated with the proposed site development. Drainage flow patterns will be unchanged to the extent possible.

It is our professional opinion that as designed, the proposed storm water drainage system complies with the redevelopment requirements of the RISDISM for the stormwater runoff from the development.

Watershed Model Schematic



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description	
1	SCS Runoff	0.119	2	726	404	---	----	----	to Forebay 1 post dev	
2	Reservoir	0.010	2	828	149	1	38.67	256	thru Forebay 1	
3	Reservoir	0.000	2	1178	0	2	36.97	122	thru FB1 then Bio1	
4	SCS Runoff	0.250	2	724	870	---	----	----	area 1 pre	
6	SCS Runoff	0.210	2	726	715	---	----	----	to Forebay 2 post	
7	Reservoir	0.106	2	738	460	6	38.19	262	thru Forebay 2	
8	Reservoir	0.000	2	876	0	7	37.41	333	thru FB2 then Bio2	
9	SCS Runoff	0.442	2	724	1,540	---	----	----	area 2 pre	
882 RI care concepts rev.gpw					Return Period: 1.2" WQv		Tuesday, Jun 16, 2020			

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description	
1	SCS Runoff	0.477	2	724	1,591	—	—	—	to Forebay 1 post dev	
2	Reservoir	0.476	2	726	1,335	1	38.74	276	thru Forebay 1	
3	Reservoir	0.032	2	782	148	2	39.00	719	thru FB1 then Bio1	
4	SCS Runoff	0.618	2	724	2,269	—	—	—	area 1 pre	
6	SCS Runoff	0.844	2	724	2,814	—	—	—	to Forebay 2 post	
7	Reservoir	0.842	2	726	2,559	6	38.27	286	thru Forebay 2	
8	Reservoir	0.339	2	740	811	7	38.55	1,061	thru FB2 then Bio2	
9	SCS Runoff	1.093	2	724	4,014	—	—	—	area 2 pre	
882 RI care concepts rev.gpw					Return Period: 1 Year			Tuesday, Jun 16, 2020		

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description	
1	SCS Runoff	0.975	2	724	3,338	---	----	-----	to Forebay 1 post dev	
2	Reservoir	0.966	2	724	3,082	1	38.78	289	thru Forebay 1	
3	Reservoir	0.951	2	726	1,711	2	39.09	784	thru FB1 then Bio1	
4	SCS Runoff	1.094	2	724	4,118	---	----	-----	area 1 pre	
6	SCS Runoff	1.725	2	724	5,905	---	----	-----	to Forebay 2 post	
7	Reservoir	1.708	2	724	5,650	6	38.33	304	thru Forebay 2	
8	Reservoir	1.689	2	726	3,673	7	38.64	1,147	thru FB2 then Bio2	
9	SCS Runoff	1.936	2	724	7,285	---	----	-----	area 2 pre	
882 RI care concepts rev.gpw					Return Period: 10 Year		Tuesday, Jun 16, 2020			

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description	
1	SCS Runoff	1.817	2	724	6,444	—	—	—	to Forebay 1 post dev	
2	Reservoir	1.799	2	724	6,189	1	38.84	306	thru Forebay 1	
3	Reservoir	1.788	2	726	4,676	2	39.14	820	thru FB1 then Bio1	
4	SCS Runoff	1.906	2	724	7,293	—	—	—	area 1 pre	
6	SCS Runoff	3.215	2	724	11,401	—	—	—	to Forebay 2 post	
7	Reservoir	3.196	2	724	11,146	6	38.42	330	thru Forebay 2	
8	Reservoir	3.175	2	726	9,009	7	38.71	1,215	thru FB2 then Bio2	
9	SCS Runoff	3.372	2	724	12,904	—	—	—	area 2 pre	
882 RI care concepts rev.gpw					Return Period: 100 Year			Tuesday, Jun 16, 2020		

Pond Report

Pond No. 2 - bioretention area 1

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 35.80 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	35.80	105	0	0
2.20	38.00	105	231	231
2.21	38.01	320	2	233
2.87	38.67	545	285	519
3.20	39.00	650	197	716
3.70	39.50	815	366	1,082
4.20	40.00	2,900	929	2,011

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	0.00	0.00	0.00
Crest El. (ft)	= 39.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 1.020 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	35.80	---	---	---	---	0.00	---	---	---	0.000	---	0.000
2.20	231	38.00	---	---	---	---	0.00	---	---	---	0.002	---	0.002
2.21	233	38.01	---	---	---	---	0.00	---	---	---	0.008	---	0.008
2.87	519	38.67	---	---	---	---	0.00	---	---	---	0.013	---	0.013
3.20	716	39.00	---	---	---	---	0.00	---	---	---	0.015	---	0.015
3.70	1,082	39.50	---	---	---	---	11.77	---	---	---	0.019	---	11.79
4.20	2,011	40.00	---	---	---	---	33.30	---	---	---	0.068	---	33.37

Pond Report

Pond No. 4 - bioretention 2

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 35.30 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	35.30	158	0	0
2.20	37.50	158	348	348
2.21	37.51	480	3	351
2.87	38.17	740	403	753
3.20	38.50	860	264	1,017
3.70	39.00	1,040	475	1,492
4.20	39.50	5,180	1,555	3,047

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	0.00	0.00	0.00
Crest El. (ft)	= 38.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil. (In/hr)	= 1.020 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control Weir users checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	35.30	---	---	---	---	0.00	---	---	---	0.000	---	0.000
2.20	348	37.50	---	---	---	---	0.00	---	---	---	0.004	---	0.004
2.21	351	37.51	---	---	---	---	0.00	---	---	---	0.011	---	0.011
2.87	753	38.17	---	---	---	---	0.00	---	---	---	0.017	---	0.017
3.20	1,017	38.50	---	---	---	---	0.00	---	---	---	0.020	---	0.020
3.70	1,492	39.00	---	---	---	---	11.77	---	---	---	0.025	---	11.80
4.20	3,047	39.50	---	---	---	---	33.30	---	---	---	0.122	---	33.42

Project: RI Care Concepts User: jzl Date: 06/12/2020
 County: Washington State: RI
 Subtitle: Post-Development: Bioretention Area 1

TR-55: Sub-Area Land Use and Curve Number Details

Land Use	Hydrologic Soil Group	Area (ac)	Sub-Area Curve Number
Open space;grass cover >75%(good)	C	0.09	74
Paved parking lots, roofs, driveways	C	0.17	98
Total Area / Weighted Curve Number		0.26	90

TR-55: Sub-Area Time of Concentration Details

Flow Type	Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
SHEET	90	0.012	0.011(smooth)				0.037
Time of Concentration							0.100

TR-55: Watershed Peak Table

Sub-Area Identifier	Peak Flow by Rainfall Return Period			
	1.2" (cfs)	1-Yr (cfs)	10-Yr (cfs)	100-Yr (cfs)
OUTLET	0.12	0.48	0.97	1.79

Project: RI Care Concepts User: jzl Date: 06/12/2020
 County: Washington State: RI
 Subtitle: Post-Development: Bioretention Area 2

TR-55: Sub-Area Land Use and Curve Number Details

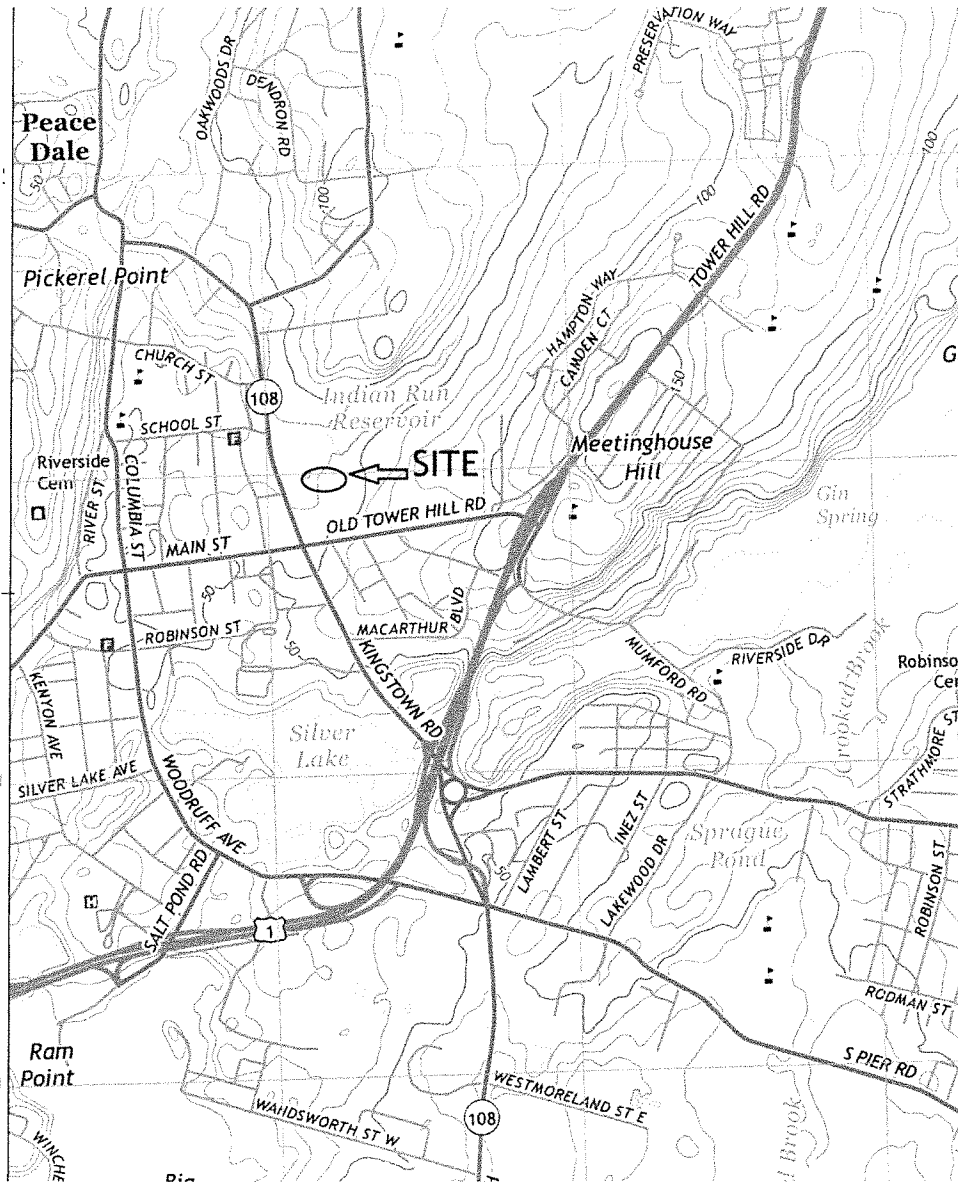
Land Use	Hydrologic Soil Group	Area (ac)	Sub-Area Curve Number
Open space;grass cover >75%(good)	C	0.16	74
Paved parking lots, roofs, driveways	C	0.30	98
Total Area / Weighted Curve Number		0.46	90

TR-55: Sub-Area Time of Concentration Details

Flow Type	Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
SHEET	100	0.012	0.011(smooth)				0.040
SHALLOW	20	0.012	0.025				0.002
Time of Concentration							0.100

TR-55: Watershed Peak Table

Sub-Area Identifier	Peak Flow by Rainfall Return Period			
	1.2" (cfs)	1-Yr (cfs)	10-Yr (cfs)	100-Yr (cfs)
OUTLET	0.22	0.84	1.70	3.15



LOCUS PLAN
1" = 2000'

Soil Map—State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties



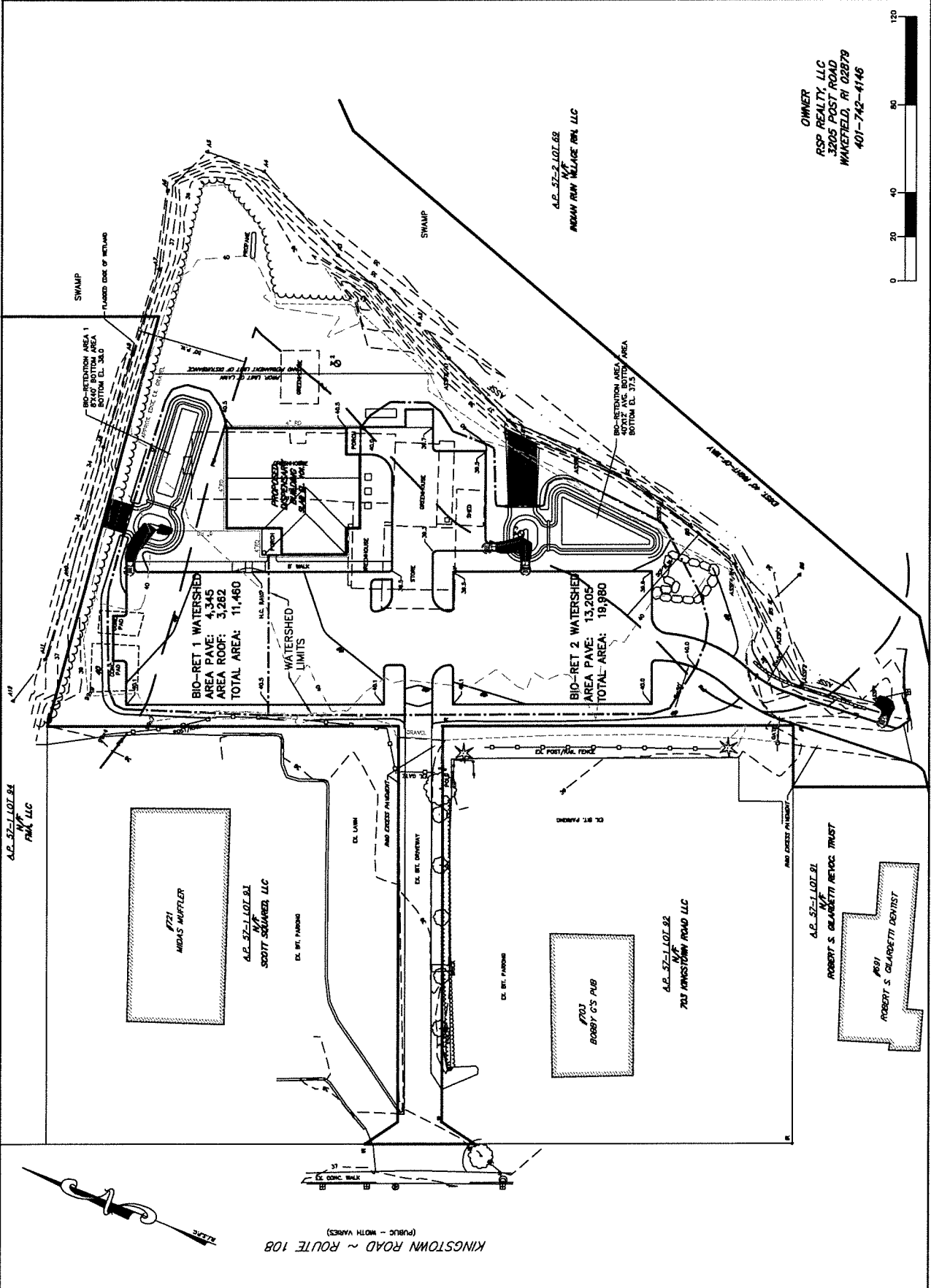
PROPOSED COMPASSION CENTER
RHODE ISLAND CARB. CONCEPTS, INC.
 ASSESSOR'S PLAT 97-2 LOT 78
 711 KINGSTOWN ROAD
 SOUTH KINGSTOWN, RI

WATERSHED PLAN

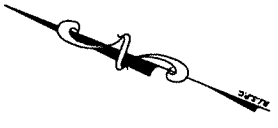


SCOTT F. MOOREHEAD
 REGISTERED PROFESSIONAL ENGINEER
 S.F.M. ENGINEERING ASSOCIATES
 410 TOUCAN AVENUE
 COVENTRY, RI 02816
 PHONE: 401-826-3736
 FAX: 401-826-1711
 SCOTT@SFM.ATLANTICBB.NET

SFM
 DRN. BY: SFM
 CHK. BY: SFM
 SCALE: 1" = 40'
 DATE: JUNE 16, 2020
 DWG: SFMBB2-WS
 SHEET 1 OF 1
 DEM. PERMITTING SUBMISSION



OWNER
 RSP REALTY, LLC
 3205 POST ROAD
 WAKEFIELD, RI 02878
 401-742-4148



KINGSTOWN ROAD ~ ROUTE 108
 (PUBLIC - NORTH VARIES)

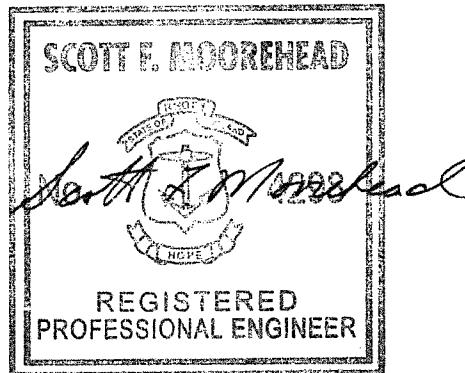
OPERATION AND MAINTENANCE PLAN

for

RHODE ISLAND CARE CONCEPTS, INC. Stormwater Management System

711 Kingstown Road
South Kingstown, RI
A.P. 57-2, Lot 76

June 2020



Prepared For: RSP Realty, LLC
3205 Post Road
Wakefield, RI 02879

Prepared By: SFM Engineering Associates
410 Tiogue Avenue
Coventry, RI 02816
(401)826-3736

SFM 882

**STORM WATER MANAGEMENT SYSTEM OPERATION & MAINTENANCE PLAN
RI CARE CONCEPTS, INC., SOUTH KINGSTOWN, RI**

RESPONSIBLE PARTY: The site contractor shall be responsible for all site stormwater system protection, inspection and maintenance prior to, during and post construction until final acceptance of construction. Upon final acceptance of the construction, the Owner shall be responsible for inspection & maintenance of pavement and all elements of the stormwater management system. A legally binding and enforceable maintenance agreement shall be executed between the facility owner and the responsible authority to ensure the following operation and maintenance plan is conducted.

Owner

RSP Realty, LLC
3205 Post Road
Wakefield, RI 02879
401-742-4146

ANNUAL MAINTENANCE TASKS:

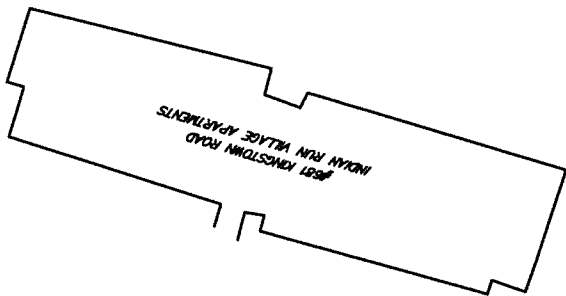
1. The bioretention areas shall be maintained according to the following schedule. This schedule is also included on the site plans:
 - a. Bioretention areas shall be inspected twice per year.
 - b. Soil erosion gullies shall be repaired when they occur.
 - c. If standing water remains in the bioretention area 48 hours after a rainfall event, the bottom shall be rototilled and then reseeded, mulched and or planted.
 - d. The grass shall be mowed at least three (3) times between the months of May and October. Mowed height of vegetation shall not be less than two inches. Maximum height of vegetation is limited to 12 inches.
 - e. Mulch layer shall be replenished to original depth every other year. The previous mulch layer shall be removed.
 - f. Pruning or replacement of vegetation should occur when dead or dying vegetation is observed. Fertilizer shall not be applied except for starter fertilizer when reseeded.
 - g. Silt and debris shall be removed when the accumulation exceeds one inch.
2. The sediment forebays shall be maintained according to the following schedule:
 - h. The grass in the forebays shall be mowed three (3) times between the months of May and October. Mowed height of vegetation shall not be less than two inches. Maximum height of vegetation in the sediment forebay is limited to 18 inches.
 - i. The inlet and outlet structures shall be kept clean of silt and debris. The structures shall be cleaned at the three mowings and once during the winter months.
 - j. Silt and debris shall be removed from the sediment forebay every year or when the depth of accumulation exceeds the lesser of one foot or ½ the design depth.
 - k. If standing water remains in the forebay 36 hours after a rainfall event, the bottom shall be rototilled and then reseeded.
3. Catch basin sediment traps shall be cleaned and maintained twice per year. Accumulated silt, sand, debris and oil shall be removed and disposed of at a licensed waste facility.
4. All paved areas shall be swept as needed. Accumulated silt, sand and debris shall be removed and disposed.

LONG TERM MAINTENANCE TASKS:

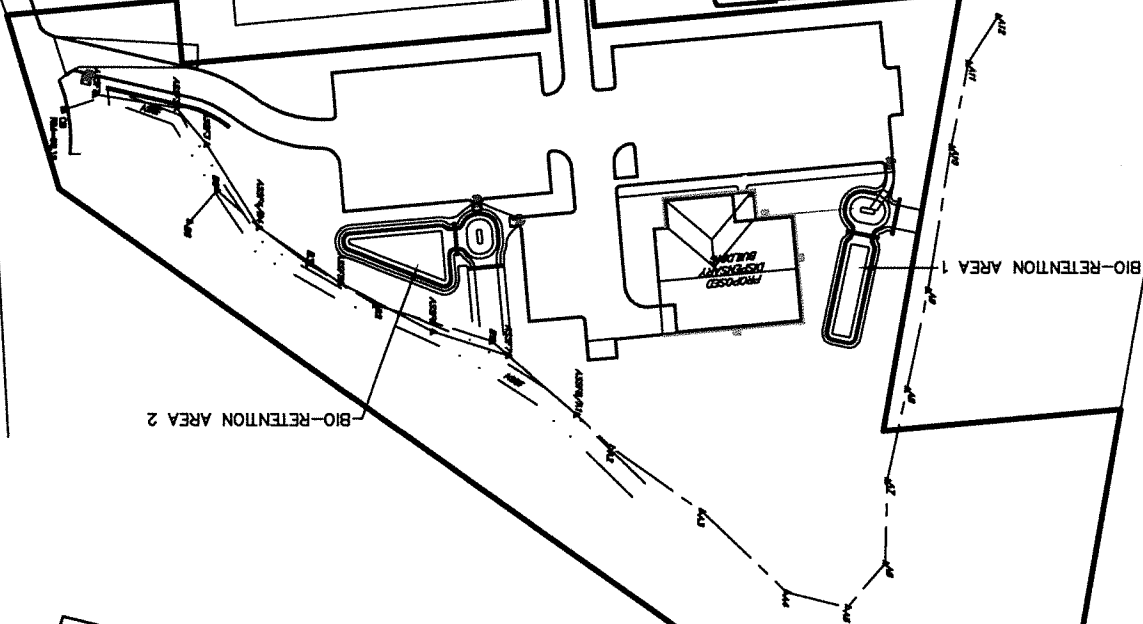
1. Trash and recycling collection shall occur on a regular basis.
2. Deicing and sanding shall occur when necessary for safety during winter storms. Sand and deicing chemicals shall be stored under cover to prevent exposure to storm water.
3. Snow disposal shall be deposited away from the sediment forebays and bioretention areas.

A LOCATION MAP OF ALL STORM WATER MANAGEMENT PRACTICES IS INCLUDED

PROPOSED COMPASSION CENTER
 RHODE ISLAND CARE CONCEPTS, INC.
 ASSESSOR'S PLAT 57-2, LOT 78
 711 KINGSTOWN ROAD
 SOUTH KINGSTOWN, RI
 BMP LOCATION PLAN
 SCALE: 1"=80'



BIO-RETENTION AREA 2



BIO-RETENTION AREA 1

KINGSTOWN ROAD ~ ROUTE 108

EXIST. DRAGON PALACE

#721 MOLLY WOFFLER

EX. WRT. PARKING

EX. LIGHT

EX. WRT. IMPROVEMENT

EX. WRT. PARKING

#703 BOBBY'S PUB

EX. WRT. PARKING

#891 ROBERT S. CLARICETTI DENTIST



Natural Resource Services, Inc.

Written Narrative in Support of a
Request for Preliminary Determination

for

Rhode Island Care Concepts
711 Kingstown Road
AP 57-2, Lot 76
South Kingstown, Rhode Island



Prepared by:

A handwritten signature in blue ink, appearing to read 'Scott P. Rabideau'.

Scott P. Rabideau, PWS
Principal Biologist

June 30, 2020

INTRODUCTION

Natural Resource Services, Inc. (NRS) has been retained to assist with the preparation and submission of a Request for Preliminary Determination (PD) to the RI Department of Environmental Management (DEM), Office of Water Resources (OWR), Freshwater Wetland Program (FWP). Rhode Island Care Concepts, Inc. (RICC) is proposing the redevelopment of an existing commercial property to construct a licensed marijuana dispensary. The property owner is RSP Realty, LLC, hereafter referred to as the applicant.

The subject property contains freshwater wetlands which are regulated by the DEM, OWR pursuant to their authority under the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (250-RICR-150-15-1). This written narrative has been prepared to fulfill the PD application requirements outlined in Section 1.9(B)(1)(a-d).

Other design professionals retained by RICC to assist with the preparation of this PD submission include SFM Engineering Associates (SFM), Scituate Surveys, Inc. (SSI), and Hali Beckman, Ltd. (Beckman).

PROJECT SCOPE

SSI has calculated the area of Lot 76 to be 2.265 acres. The property is irregular in shape and situated behind existing commercial developments with frontage along Kingstown Road. Lot 76 has only 50 feet of frontage on this public highway.

The property is also commercially developed and most recently utilized as a retail store and seasonal growing facility for Clark Farms. A review of historic aerial photographs reveal that this combination retail/agricultural use dates back to the mid-1980's. Figure 1 is an aerial image retrieved from the DEM GIS database depicting the site conditions in 1981. While no greenhouses or other structures are present, the general configuration of the cleared land is consistent with the present-day conditions.

Figure 1: 1981 Aerial Image of Subject Property



Figure 2: 2020 Current Site Conditions



The applicant is seeking permission to remove all of the existing structures and redevelop the site for use as a marijuana dispensary. This redevelopment will include the construction of a 3,094 square foot commercial building, parking areas and other paved surfaces, and stormwater management structures. As proposed, the redevelopment by RICC will reduce the disturbed areas within the lot and restore one quarter acre of area to vegetated green space, including over 6,000 square feet of 50-foot perimeter wetland restoration.

The PD application submitted to the DEM represents the entire project scope. There are no additional phases to the project nor are any expansions of the building area anticipated.

PROJECT AND SITE DESCRIPTION

NRS delineated the limits of freshwater wetland within the subject property on April 6, 2020. The wetland flagging was survey located by SSI and is properly depicted on all of the plans submitted with the PD application. The flag series labeled A1-A12 and B1-B6 depict the limit of a swamp. This wetland delineation is established at the base of a fill slope. The majority of the vegetation at the swamp/50-foot perimeter wetland interface consists of state listed invasive species. The two dominant invasive plants are multiflora rose (*Rosa multiflora*) and Japanese knotweed (*Fallopia japonica*).

NRS also identified an area subject to storm flowage (ASSF1-ASSF3) in the southern section of the property. The hydrology supporting the ASSF is from a 12" RCP culvert emanating from a paved access roadway for an adjacent development.

The USGS Topographic Survey map depicts a blue-lined perennial stream within the swamp along the northern border of the lot. SSI did not observe or locate the bank of this stream as being within 100 feet of the property.

As can be seen from viewing Figure 2, in the current condition the majority of the 50-foot perimeter wetland is disturbed. The project as proposed seeks only to redevelop areas within regulated wetlands which have been historically used by the previous retail/agricultural operation.

AVOIDANCE AND MINIMIZATION

The freshwater wetland regulations require that all applicant's submitting a Request for Preliminary Determination include a written narrative that demonstrates that all probable impacts to freshwater wetland functions and values from the project have been avoided to the maximum extent possible. For any impacts which are considered unavoidable, the applicant must satisfactorily demonstrate that these impacts have been minimized to the maximum extent possible.

The assessment of impact avoidance and minimization must be performed with a clear knowledge of the primary project purpose. In this instance, the project purpose is to

redevelop an existing retail/agricultural operation to construct a medical marijuana dispensary.

Avoidance

(AA) Whether the primary proposed activity is water-dependent or whether it requires access to freshwater wetlands as a central element of its primary purpose (e.g., a pier);

The project proposed by the applicant is not water dependent nor does it require access to freshwater wetlands as an element of its primary purpose.

(BB) Whether any areas within the same property or other properties owned or controlled by the applicant could be used to achieve the project purpose without altering the natural character of any freshwater wetlands;

As described in an earlier section of this narrative and as can be seen from viewing the SFM plan, the subject property is irregular in shape and freshwater wetlands surround most of the useable area. There is not sufficient space available outside of the 50-foot perimeter wetland which could be used to construct the dispensary and its required infrastructure.

(CC) Whether any other properties reasonably available to, but not currently owned or controlled by, the applicant could be used to achieve the project purpose while avoiding wetland alterations. A property is reasonably available if, in whole or in part, it can be acquired without excessive cost, taking individual circumstances into account, or, in the case of property owned or controlled by the same family, entity, group of affiliated entities, or local, state or federal government, may be obtained without excessive hardship;

The applicant is seeking local approval to site this dispensary in the commercial district within the Village of Wakefield. The facility must be a stand alone building with ample parking available. These requirements limited the applicant's options in securing properly zoned commercial space. There is not currently on the market other land in the immediate vicinity which could be used for this specialized retail operation.

(DD) Whether alternative designs, layouts or technologies could be used to avoid freshwater wetlands or impacts on functions and values on the subject property or whether the project purpose could be achieved on other property that is reasonably available and would avoid wetlands;

SFM has designed the project to utilize only the currently disturbed areas within the 50-foot perimeter wetland. The dispensary building is located within the footprint of the existing structure. All parking areas are proposed within existing impervious surfaces which are used for parking or vehicle travel corridors. The stormwater management features are situated within the 50-foot perimeter wetland, but also in areas currently

classified as impervious. The applicant is proposing to restore a portion of the 50-foot perimeter wetland in the rear of the property, eliminating excess impervious surface.

In all, it is apparent that SFM has utilized design layouts and available technologies to the greatest extent possible while still achieving the project purpose.

(EE) Whether the applicant has made any attempts (and if so what they were) to avoid alterations to freshwater wetlands by overcoming or removing constraints imposed by zoning, infrastructure, parcel size or the like;

The applicant developed the plan such that the actual building is outside of the 50-foot perimeter wetland. Any subsequent zoning relief would not result in any additional wetland avoidance. It is necessary to demonstrate that the facility has the minimum required parking spaces and vehicle travel corridors which meet public safety standards.

(FF) Whether the feasible alternatives that would not alter the natural character of any freshwater wetlands on the subject property or on property that is reasonably available, if incorporated into the proposed project would adversely affect public health, safety or the environment.

This standard is not applicable at this location.

Minimization

(AA) Whether the proposed project is necessary at the proposed scale or whether the scale of the wetland alteration could be reduced and still achieve the project purpose;

As proposed, the applicant is seeking permission to redevelop the subject property. The effort involves removing all of the existing structures and constructing a 3,094 square foot commercial building. The new structure will be situated over the footprint of the existing retail building. Overall, the site redevelopment will reduce existing impervious surfaces by more than 10,000 square feet. This demonstrates the applicant's commitment to reduce the scale of the project to the minimum necessary to achieve the primary project purpose.

(BB) Whether the proposed project is necessary at the proposed location or whether another location within the site could achieve the project purpose while resulting in less impact to the wetland;

As noted in the avoidance section, lot 76 is quite irregular in shape and maintains just 50 feet of road frontage. The odd configuration, along with the location of existing structures on the parcel, limit where any new commercial building can be sited. There are no alternative locations within the site which can accommodate the building, parking areas, and stormwater management features while reducing the direct impacts to the 50-foot perimeter wetland.

(CC) Whether there are feasible alternative designs, layouts, densities or technologies, that would result in less impact to the wetland while still achieving the project purpose;

SFM has developed the site plan using all best management practices and available technologies in an effort to minimize wetland impacts. An example of this successful effort is the fact that approximately 6,000 square feet of disturbed perimeter wetland shall be restored under the proposed redevelopment scenario.

(DD) Whether reduction in the scale or relocation of the proposed project to minimize impact to the wetland would result in adverse consequences to public health, safety or the environment.

This standard is not applicable to the project proposed at this location.

MITIGATION MEASURES

Mitigation measures have been incorporated into the redevelopment plan in an effort by the applicant to reduce potential short and long-term impacts to freshwater wetland functions and values. SFM has designed the project using all recognized best management practices (BMP) found in the RI Stormwater Design and Implementation Standards Manual (RISDISM) and the RI Soil Erosion and Sedimentation Control Handbook.

In the site's current condition, all impervious surfaces discharge stormwater runoff directly into the adjacent swamp without treatment. The redevelopment of the site will bring all stormwater runoff treatment into compliance with the standards found in the RISDISM. The BMP designed for treating stormwater have been sited within the 50-foot perimeter wetland in an effort to concentrate any required paved parking areas outside of this regulated area.

The applicant retained Beckman as the landscape architect in an effort to establish appropriate screening vegetation between the development and the swamp. Beckman is also involved in the preparation of the perimeter wetland restoration plan. In total, Beckman estimates that 4,000 square feet of landscaped area shall be added to the site.

CONCLUSION

RICC is seeking permission to redevelop a commercial property in the village of Wakefield. The site has been historically used by Clark Farms as a retail store and seasonal growing facility. This Request for Preliminary Determination is being submitted because portions of the redevelopment occur within the 50-foot perimeter wetland associated with an on-site swamp.

The applicant has demonstrated that the redevelopment will result in stormwater from impervious surfaces receiving proper treatment prior to discharge into the swamp. The landscape plan for the redevelopment adds 4,000 square feet of managed green space

and 6,000 square feet of perimeter wetland restoration. Written documentation has been provided to demonstrate that wetland impacts have been avoided where possible and unavoidable impacts have been minimized to the maximum extent possible.

Therefore, as presented to the DEM, OWR, FWP, the application meets all of the submission requirements of Section 1.9 of the freshwater wetland regulations. Based upon this documentation, the applicant has demonstrated that the proposed redevelopment of this commercial property does not represent a random, unnecessary or undesirable alteration to freshwater wetlands and qualifies for approval as an Insignificant Alteration.

References

- RI Department of Environmental Management. (2015). *Rhode Island stormwater design and installation standards manual*. Providence, Rhode Island.
- RI Department of Environmental Management. (2015). *Rules and Regulations governing the administration and enforcement of the freshwater wetlands act*. Providence, Rhode Island.
- RI Department of Environmental Management. (2010). *Wetland BMP Manual: techniques for avoidance and minimization*. Providence, Rhode Island.
- RIGIS. 1939- 2014. *Topo map & aerial photoviewer*. RI Department of Environmental Management. Providence, Rhode Island.
- RI Soil Erosion and Sedimentation Control Handbook. (2016). *Rhode Island State Conservation Committee With the Support from Rhode Island Department of Environmental Management Rhode Island Coastal Resources Management Council Rhode Island Department of Transportation The University of Rhode Island*. Retrieved from: <http://www.dem.ri.gov/programs/bnatres/water/pdf/riesc-handbook16.pdf>

Appendix



State listed invasive plant species dominate the 50-foot perimeter wetland.



Existing condition of the 50-perimeter wetland to be restored.



Fill slope at the swamp/perimeter wetland interface.