

# Saint George's School Wellness Center

372 Purgatory Road  
Middletown, Rhode Island

PREPARED FOR

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St. George's School  
372 Purgatory Road  
Middletown, Rhode Island 02842

PREPARED BY

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1 Cedar Street, Suite 400  
Providence, RI 02903  
401.272.8100

March, 2022

## List of Appendices

<b>Appendix No.</b>	<b>Description</b>
Appendix A	Water Quality Calculations
Appendix B	HydroCAD Calculations
Appendix C	Soils Information
Appendix D	SWPPP Erosion Control Narrative, Long Term Stormwater Control Operation & Maintenance Plan, Pollution Prevention and Source Control Plan, and Maintenance Checklist



## Project Description

### Existing Conditions

The project site ("the Site") is approximately 0.75 acres located within the St. George's School campus located on Purgatory Road in Middletown, RI (see Figure 1). The site is located on a portion of PIN 121SW Lot 39. The site directly abuts the school's existing fieldhouse to the west, the buildings entrance vestibule to the south, and a grassed sloped hill leading to an athletic field to the east. The site is currently a sloped grassed area with some vegetation.

The site is mostly pervious grass area with  $\pm 0.06$  acres of impervious consisting of a section of roof drainage and concrete plaza, and stormwater generally flows from the east to the west overland, into an existing drainage structure which leads to an existing stormwater control basin in the northwest corner of the property, and into the Town's closed drainage system.

Elevations range from approximately 130' at the eastern portion of the Site to 116' at the northwest portion of the Site.

An existing 6"/12" drainpipe leads fieldhouse roof drainage to a single catch basin at the northeast corner of the fieldhouse. This catch basin is the only inlet structure for the drainage area flowing down the slope.

An existing 12" PVC drainpipe leading from the Hamblet Campus Center area directs an unknown flow through the proposed building expansion limits and is planned to be rerouted. A majority of the runoff on site ultimately enters the school's drainage system leading to an existing stormwater control basin before discharging into the

Wolcott Street drainage system. The Wolcott Street drainage system discharges to coastal waters. Refer to Figure 2 for existing drainage patterns.

The Aquidneck Island – Frontal Atlantic Ocean has no associated TMDLs per RIDEM Environmental Resource Map accessed on January 6, 2021.

Based on the NRCS mapping, the in-situ soils are predominantly a silty loam texture. Based on the soil findings of silty loam, which has an infiltration rate of <0.5 inches per hour, groundwater recharge is not achievable.

## **Proposed Conditions**

The project involves the construction of a two level building expansion housing a student wellness center ( $\pm 5,250$  SF) with associated sidewalks for pedestrian access and stormwater infrastructure. The project roughly disturbs 0.80 acres. Low impact development (LID) and other best management practices (BMPs) have been proposed to mitigate the impact of this activity. Existing drainage patterns were maintained to the maximum extent practicable in the proposed design.

The proposed design includes a bioretention area and an oversized detention pipe with an outlet control structure to mitigate peak flows. The bioretention captures a portion of stormwater flow from the plaza area in front of the entrance vestibule. The oversized detention pipe only captures roof drainage from the proposed building addition and releases flows at a flow rate less than the existing condition through the use of small orifices in a concrete weir wall located in the control structure. Both of these BMPs discharge their respective peak flows into an upsized version of the existing stormwater drainage system bordering the fieldhouse. Additional catch basins and landscape/area drains have been added to the upsized system to alleviate existing ponding issues and to direct flow away from building doors.

Pre-treatment is not provided for the detention BMP due to the only contributing drainage area is from a rooftop where pretreatment is not required. Pre-treatment is provided for the bioretention due to the contributing area being a section of impervious that experiences golf cart traffic. Pre-treatment is achieved by collecting runoff in a sediment forebay. All applicable stormwater features have been sized to adequately convey the discharge from the drainage areas.

It should be emphasized that the entire drainage area encompassed in the area of interest currently flows into an existing BMP west of the fieldhouse where it is controlled for both water quality and peak flows. The improvements shown in the proposed condition will be a precursor to the existing system as a method to decrease the peak flows as a result of the construction of the wellness center addition. It should also be noted that the sidewalk in front of the entrance vestibule is being removed and replaced to direct flow away from the building entrance and into the proposed bioretention sediment forebay.

**Design Point 1 Drainage System to Existing BMP**

**Peak Runoff Rate**

<b>Existing Conditions</b>		<b>Proposed Conditions</b>	
2-year storm:	1.11 CFS	2-year storm:	0.97 CFS
10-year storm:	2.33 CFS	10-year storm:	1.79 CFS
25-year storm:	3.32 CFS	25-year storm:	2.44 CFS
100-year storm:	5.49 CFS	100-year storm:	5.20 CFS

**Site Surface Coverage Tabulation (Overall Drainage Area)**

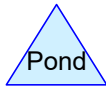
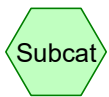
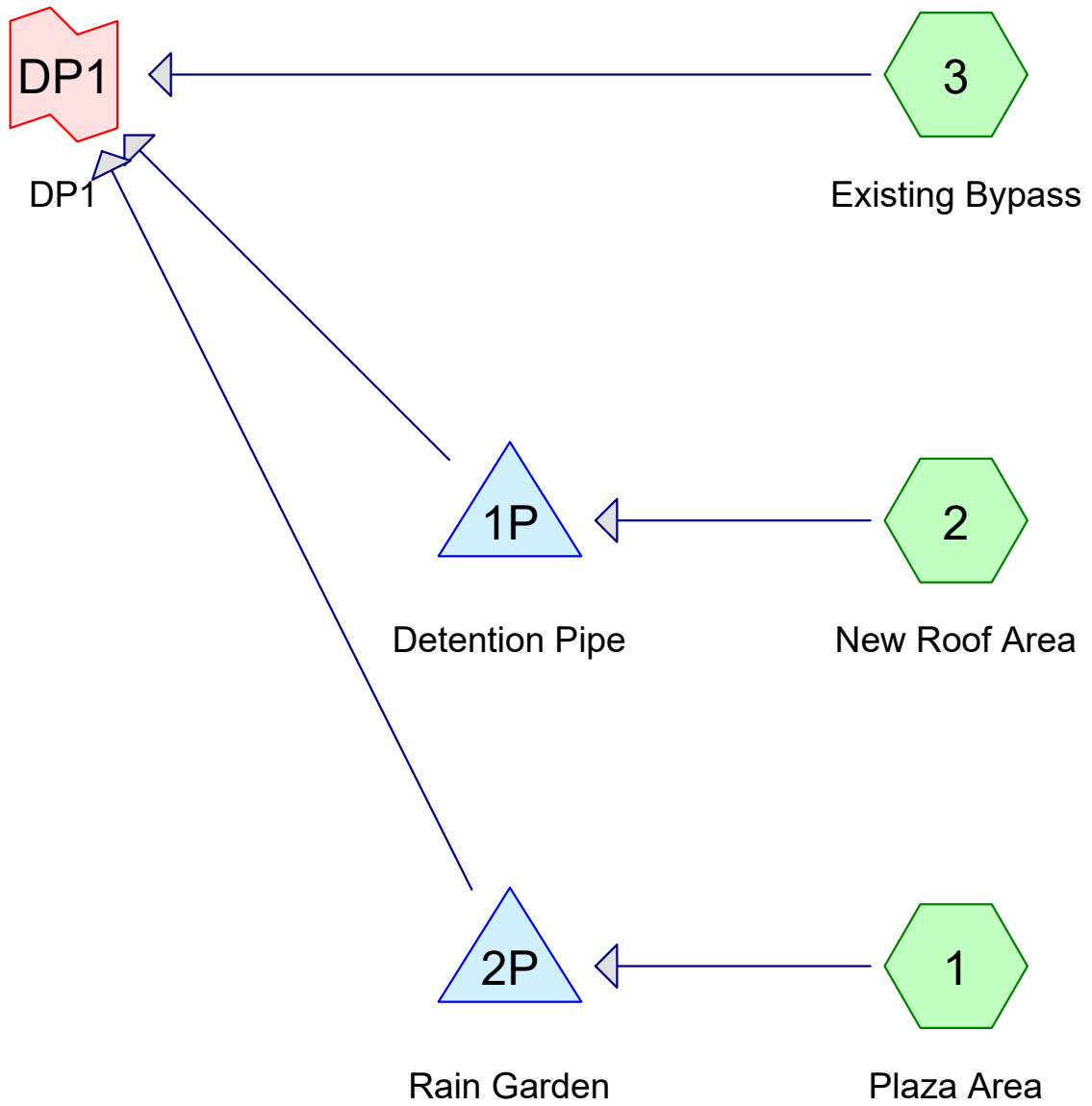
**Ground Cover Summary**

<b>Existing Conditions</b>		<b>Proposed Conditions</b>	
Impervious Surface	0.06 AC	Impervious Surface	0.214 AC
Pervious Surface	0.84 AC	Pervious Surface	0.686 AC



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## Appendix A – Water Quality Calculations





# Water Quality Volume Calculations

Project SGS - Wellness Project # 73096.30  
Calculated by DDH Date 1/18/2022  
Checked by AC/JS Date \_\_\_\_\_

**Bioretention**

Runoff from subcatchment area 1

Water Quality Storm Runoff Depth (in)	1.0
Total Impervious Area (ft <sup>2</sup> )	1,535

**BASIN WQV:**

Required Volume:	Runoff Depth to be Treated (in)	Required Volume (ft <sup>3</sup> )
	1.0	128



# Computations

Project:	SGS-Wellness	Project #	73096.30
Location:	Providence, RI	Sheet	1 of 1
Calculated by:	WSV	Date:	2//22/2022
Checked by:	AEC	Date:	2/22/2022
Title	Bioretention Filter		BIO

## Bioretention Filter Design Criteria

### Section 5.5.1 Feasibility

- Minimum 3' separation between top of basin and seasonal high groundwater table.
- The bottom of the filtering system must be located at or above the seasonal high groundwater table.
- \* The proposed bioretention is lined and therefore groundwater separation does not apply

### Section 5.5.2 Conveyance

- Synthetic filter fabrics should not be used to separate soil filter media from underdrain bedding material.

### Section 5.5.3 Pretreatment

$$WQV = 1 \text{ in} * (1 \text{ ft}/12 \text{ in}) * 1535 \text{ sf} = 128 \text{ cf}$$

$$\text{Pretreatment} = 25\% \text{ WQV} = 32 \text{ cf}$$

### Section 5.5.4 Treatment

Pretreatment and treatment = 75% WQV = 96 cf

25% WQV provided by pretreatment, 50% required in treatment: 64 cf

$$\text{Basin Area} = A_f = \frac{(WQV)(d_f)}{[(k)(h_f + d_f)(t_f)]} = 46.5 \text{ sf}$$

Where:

df = Filter Bed Depth = 2 ft

k = Coeff. of perm. filter media = 1 ft/day

hf = Ave. height of water above surface = 0.75 ft

tf = Drain Downtime (2 days max) = 2 day(s)

### Summary:

Area provided = 751 sf ( > required 46.5 sf )

BMP volume provided = 1047 cf ( > required 64 cf )

Pretreatment and treatment have been designed per RISDISM, therefore:

WQV Provided = 128 cf

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SGS Wellness Center

Type III 24-hr Wqv Rainfall=1.20"

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Page 1

**Stage-Area-Storage for Pond 2P: Rain Garden**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
124.50	751	0	127.05	769	663
124.55	751	12	127.10	787	702
124.60	751	25	127.15	806	741
124.65	751	37	127.20	824	782
124.70	751	50	127.25	843	824
124.75	751	62	127.30	862	866
124.80	751	74	127.35	881	910
124.85	751	87	127.40	901	955
124.90	751	99	127.45	920	1,000
124.95	751	112	127.50	940	1,047
125.00	751	124	127.55	960	1,094
125.05	751	136	127.60	981	1,143
125.10	751	149	127.65	1,001	1,192
125.15	751	161	127.70	1,022	1,243
125.20	751	173	127.75	1,043	1,294
125.25	751	186	127.80	1,064	1,347
125.30	751	198	127.85	1,086	1,401
125.35	751	211	127.90	1,107	1,456
125.40	751	223	127.95	1,129	1,512
125.45	751	235	128.00	<b>1,151</b>	<b>1,569</b>
125.50	751	248	128.05	1,151	1,569
125.55	751	260	128.10	1,151	1,569
125.60	751	273	128.15	1,151	1,569
125.65	751	285	128.20	1,151	1,569
125.70	751	297	128.25	1,151	1,569
125.75	751	310	128.30	1,151	1,569
125.80	751	322	128.35	1,151	1,569
125.85	751	335	128.40	1,151	1,569
125.90	751	347	128.45	1,151	1,569
125.95	751	359	128.50	1,151	1,569
126.00	751	372			
126.05	751	384			
126.10	751	397			
126.15	751	409			
126.20	751	421			
126.25	751	434			
126.30	751	446			
126.35	751	458			
126.40	751	471			
126.45	751	483			
126.50	751	496			
126.55	751	508			
126.60	751	520			
126.65	751	533			
126.70	751	545			
126.75	751	558			
126.80	751	570			
126.85	751	582			
126.90	751	595			
126.95	751	607			
127.00	751	625			

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Type III 24-hr Wqv Rainfall=1.20"

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Page 1

**Summary for Pond 2P: Rain Garden**

Inflow Area = 7,971 sf, 19.26% Impervious, Inflow Depth = 0.24" for Wqv event  
 Inflow = 0.04 cfs @ 12.09 hrs, Volume= 159 cf  
 Outflow = 0.01 cfs @ 11.85 hrs, Volume= 159 cf, Atten= 84%, Lag= 0.0 min  
 Primary = 0.01 cfs @ 11.85 hrs, Volume= 159 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 123.00' @ 12.70 hrs Surf.Area= 260 sf Storage= 43 cf

Plug-Flow detention time= 59.3 min calculated for 159 cf (100% of inflow)  
 Center-of-Mass det. time= 59.3 min ( 884.3 - 825.0 )

Volume	Invert	Avail.Storage	Storage Description	
#1	122.50'	1,927 cf	<b>Rain Garden (Prismatic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.50	260	0.0	0	0
125.50	260	33.0	257	257
126.00	370	100.0	158	415
126.50	490	100.0	215	630
127.00	635	100.0	281	911
127.50	1,075	100.0	428	1,339
128.00	1,280	100.0	589	1,927

Device	Routing	Invert	Outlet Devices
#1	Primary	122.20'	<b>6.0" Round Outlet Culvert</b> L= 15.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 122.20' / 122.00' S= 0.0127 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	127.00'	<b>Nyloplast Dome Grate 12-in</b>
#3	Device 4	122.50'	<b>1.020 in/hr Underdrain Exfiltration over Surface area</b>
#4	Primary	122.50'	<b>4.0" Round 4" Underdrain</b> L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 122.50' / 122.35' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf

**Primary OutFlow** Max=0.01 cfs @ 11.85 hrs HW=122.59' (Free Discharge)

- 1=Outlet Culvert (Passes 0.00 cfs of 0.32 cfs potential flow)
- 2=Nyloplast Dome Grate 12-in ( Controls 0.00 cfs)
- 4=4" Underdrain (Passes 0.01 cfs of 0.01 cfs potential flow)
- 3=Underdrain Exfiltration (Exfiltration Controls 0.01 cfs)



Project:	SGS-Wellness	Project #	73096.30
Location:	Providence, RI	Sheet	1 of 1
Calculated by:	WSV	Date:	2/22/2022
Checked by:	AEC	Date:	2/22/2022
Title	Sediment Forebay		SFB

## Section 6.4 Sediment Forebay

$$As = 5,750 \times Q$$

Where:

Q = Discharge from drainage area (CFS) = % WQV / 86,400 sec = 1 cfs

As = Sedimentation surface area (SF) = 3 sf

Area provided = 6000 sf ( > required 3 sf)

The forebay shall be sized to contain a percent of the WQv as well as the required sediment volume.

Percent Required = 25%

Sediment Volume SV=  $\{(76.6 \times RA \times TE) + (5.3 \times DA \times TE)\} \times T$

RA = area of roadway or parking lots = 1 acres

TE = basin trap efficiency (80% standard)= 1%

DA = contributing land use area = 1 acres

T = time in years = 1 year(s)

$$SV = 1 \text{ cf}$$

For % WQV refer to Chapter 5, for pretreatment requirements for each BMP used.

WQV % Required = 25%

WQV = 128 cf

WQV Required = 32 cf

SV Required = 1 cf

Total volume required = 32 cf + 1 cf = 33 cf

Volume provided = 103 cf ( > required 33 cf )

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Type III 24-hr Wqv Rainfall=1.20"

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Page 1

**Summary for Pond 3P: SFB**

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description			
#1	127.00'	103 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
127.00	43	35.0	0	0	43	
128.00	179	54.0	103	103	185	

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Type III 24-hr Wqvr Rainfall=1.20"

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Page 1

**Stage-Area-Storage for Pond 3P: SFB**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
127.00	43	0	127.51	101	36
127.01	44	0	127.52	102	37
127.02	45	1	127.53	103	38
127.03	46	1	127.54	105	39
127.04	47	2	127.55	106	40
127.05	48	2	127.56	108	41
127.06	49	3	127.57	109	42
127.07	49	3	127.58	111	43
127.08	50	4	127.59	112	44
127.09	51	4	127.60	113	45
127.10	52	5	127.61	115	46
127.11	53	5	127.62	116	48
127.12	54	6	127.63	118	49
127.13	55	6	127.64	119	50
127.14	56	7	127.65	121	51
127.15	57	8	127.66	122	52
127.16	59	8	127.67	124	54
127.17	60	9	127.68	125	55
127.18	61	9	127.69	127	56
127.19	62	10	127.70	128	57
127.20	63	11	127.71	130	59
127.21	64	11	127.72	132	60
127.22	65	12	127.73	133	61
127.23	66	12	127.74	135	63
127.24	67	13	127.75	136	64
127.25	68	14	127.76	138	65
127.26	69	14	127.77	139	67
127.27	71	15	127.78	141	68
127.28	72	16	127.79	143	70
127.29	73	17	127.80	144	71
127.30	74	17	127.81	146	72
127.31	75	18	127.82	148	74
127.32	76	19	127.83	149	75
127.33	78	20	127.84	151	77
127.34	79	20	127.85	153	78
127.35	80	21	127.86	154	80
127.36	81	22	127.87	156	81
127.37	82	23	127.88	158	83
127.38	84	24	127.89	159	85
127.39	85	24	127.90	161	86
127.40	86	25	127.91	163	88
127.41	88	26	127.92	165	90
127.42	89	27	127.93	166	91
127.43	90	28	127.94	168	93
127.44	91	29	127.95	170	95
127.45	93	30	127.96	172	96
127.46	94	31	127.97	174	98
127.47	95	32	127.98	175	100
127.48	97	33	127.99	177	101
127.49	98	34	128.00	<b>179</b>	<b>103</b>
127.50	99	35			

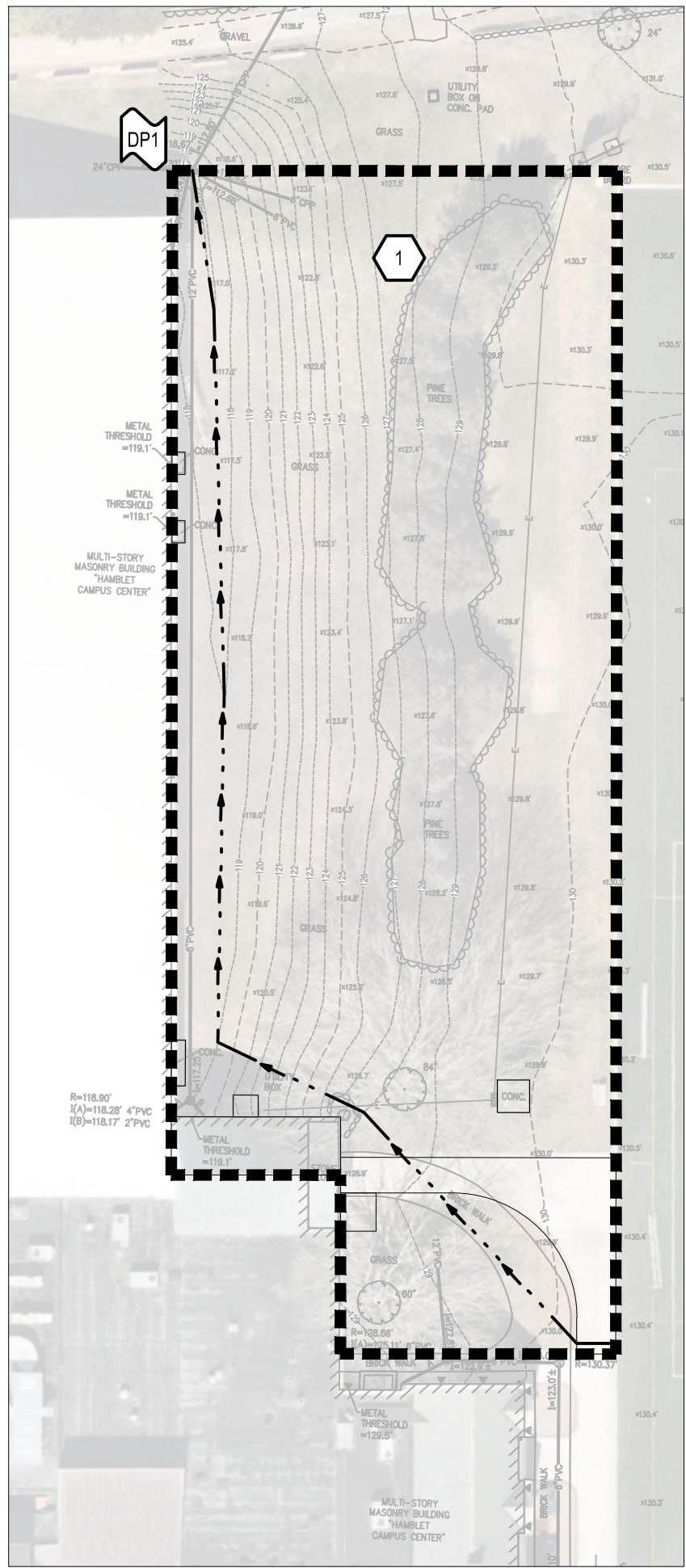
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## Appendix B – HydroCAD Calculations

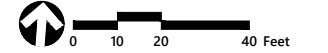
## Existing Conditions – Drainage Map



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



**EXISTING CONDITIONS DRAINAGE MAP**  
SCALE = 1" = 20'



**SGS Wellness Center**  
372 Purgatory Road  
Middletown, RI

No.	Revision	Date	Apprd.

Designed by **DDH** Checked by **JS**

Issued for **Not for Construction** Date **03/10/2022**

**NOT FOR CONSTRUCTION**  
Drawing Title  
**EXISTING CONDITIONS DRAINAGE MAP**

Drawing Number

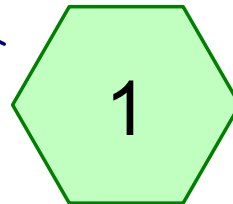
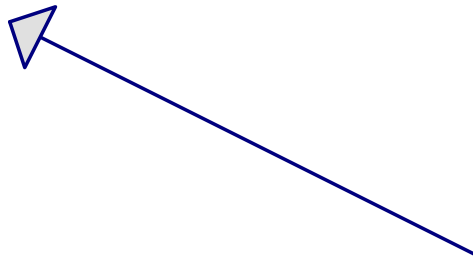
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Sheet 1 of 2

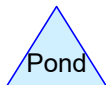
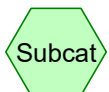
Project Number  
**73096.30**



DP1



DA1



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 Type III 24-hr 2 year Rainfall=3.30"

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**Summary for Subcatchment 1: DA1**

Runoff = 1.11 cfs @ 12.11 hrs, Volume= 3,869 cf, Depth= 1.18"

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 2 year Rainfall=3.30"

Area (sf)	CN	Description
31,270	74	>75% Grass cover, Good, HSG C
1,866	98	Paved parking, HSG C
779	98	Roofs, HSG C
5,321	70	Woods, Good, HSG C
39,235	75	Weighted Average
36,590	73	93.26% Pervious Area
2,645	98	6.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0184	0.15		<b>Sheet Flow, Grass/Sidewalk Sheet Flow</b> Grass: Short n= 0.150 P2= 3.28"
0.2	50	0.0300	3.52		<b>Shallow Concentrated Flow, Grass/Sidewalk Shallow Flow</b> Paved Kv= 20.3 fps
0.1	45	0.2000	7.20		<b>Shallow Concentrated Flow, Hillside Shallow Flow</b> Unpaved Kv= 16.1 fps
1.0	245	0.0100	4.26	31.91	<b>Channel Flow, Bottom of Hill Channel Flow</b> Area= 7.5 sf Perim= 15.0' r= 0.50' n= 0.022 Earth, clean & straight
7.0	390	Total			

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*Type III 24-hr 2 year Rainfall=3.30"*

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**Summary for Link DP1: DP1**

Inflow Area = 39,235 sf, 6.74% Impervious, Inflow Depth = 1.18" for 2 year event  
Inflow = 1.11 cfs @ 12.11 hrs, Volume= 3,869 cf  
Primary = 1.11 cfs @ 12.11 hrs, Volume= 3,869 cf, Atten= 0%, Lag= 0.0 min

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

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73096.30 SGS Wellness Center  
Type III 24-hr 2 year Rainfall=3.30"

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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

**Subcatchment1: DA1**

Runoff Area=39,235 sf 6.74% Impervious Runoff Depth=1.18"  
Flow Length=390' Tc=7.0 min CN=73/98 Runoff=1.11 cfs 3,869 cf

**Link DP1: DP1**

Inflow=1.11 cfs 3,869 cf  
Primary=1.11 cfs 3,869 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 3,869 cf Average Runoff Depth = 1.18"**  
**93.26% Pervious = 36,590 sf 6.74% Impervious = 2,645 sf**

**73096.30 - EX HYDROCAD**

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73096.30 SGS Wellness Center  
Type III 24-hr 10 year Rainfall=4.90"

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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

**Subcatchment1: DA1**

Runoff Area=39,235 sf 6.74% Impervious Runoff Depth=2.37"  
Flow Length=390' Tc=7.0 min CN=73/98 Runoff=2.33 cfs 7,743 cf

**Link DP1: DP1**

Inflow=2.33 cfs 7,743 cf  
Primary=2.33 cfs 7,743 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 7,743 cf Average Runoff Depth = 2.37"**  
**93.26% Pervious = 36,590 sf 6.74% Impervious = 2,645 sf**

**73096.30 - EX HYDROCAD**

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73096.30 SGS Wellness Center  
Type III 24-hr 25 year Rainfall=6.10"

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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

**Subcatchment1: DA1**

Runoff Area=39,235 sf 6.74% Impervious Runoff Depth=3.35"  
Flow Length=390' Tc=7.0 min CN=73/98 Runoff=3.32 cfs 10,963 cf

**Link DP1: DP1**

Inflow=3.32 cfs 10,963 cf  
Primary=3.32 cfs 10,963 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 10,963 cf Average Runoff Depth = 3.35"**  
**93.26% Pervious = 36,590 sf 6.74% Impervious = 2,645 sf**

**73096.30 - EX HYDROCAD**

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73096.30 SGS Wellness Center  
Type III 24-hr 100 year Rainfall=8.60"

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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

**Subcatchment1: DA1**

Runoff Area=39,235 sf 6.74% Impervious Runoff Depth=5.55"  
Flow Length=390' Tc=7.0 min CN=73/98 Runoff=5.49 cfs 18,141 cf

**Link DP1: DP1**

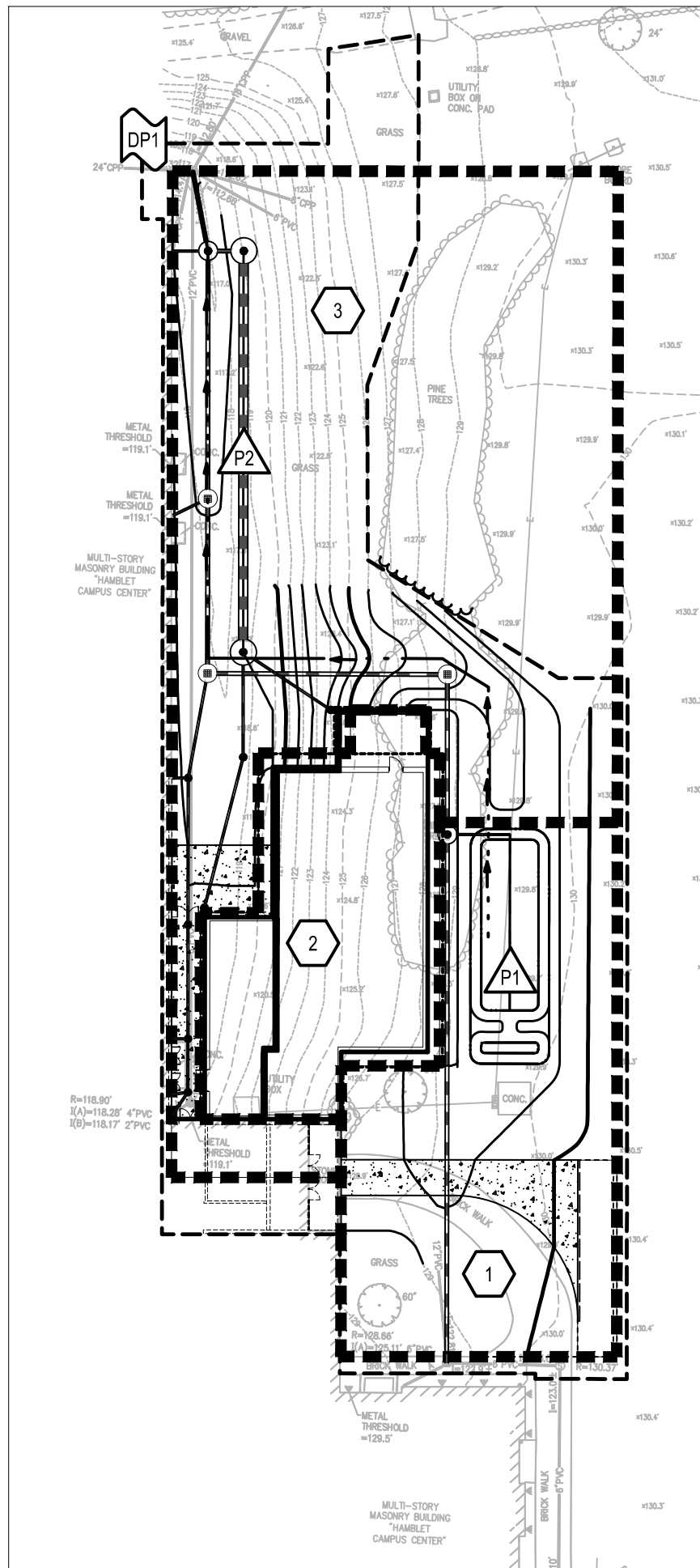
Inflow=5.49 cfs 18,141 cf  
Primary=5.49 cfs 18,141 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 18,141 cf Average Runoff Depth = 5.55"**  
**93.26% Pervious = 36,590 sf 6.74% Impervious = 2,645 sf**

## **Proposed Conditions – Drainage Map**



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



**PROPOSED CONDITIONS DRAINAGE PLAN**  
SCALE = 1" = 20'



**SGS Wellness Center**  
372 Purgatory Road  
Middletown, RI

No.	Revision	Date	App'd.

Designed by **DDH** Checked by **JS**

Issued for **Not for Construction** Date **03/10/2022**

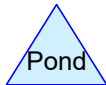
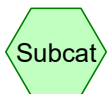
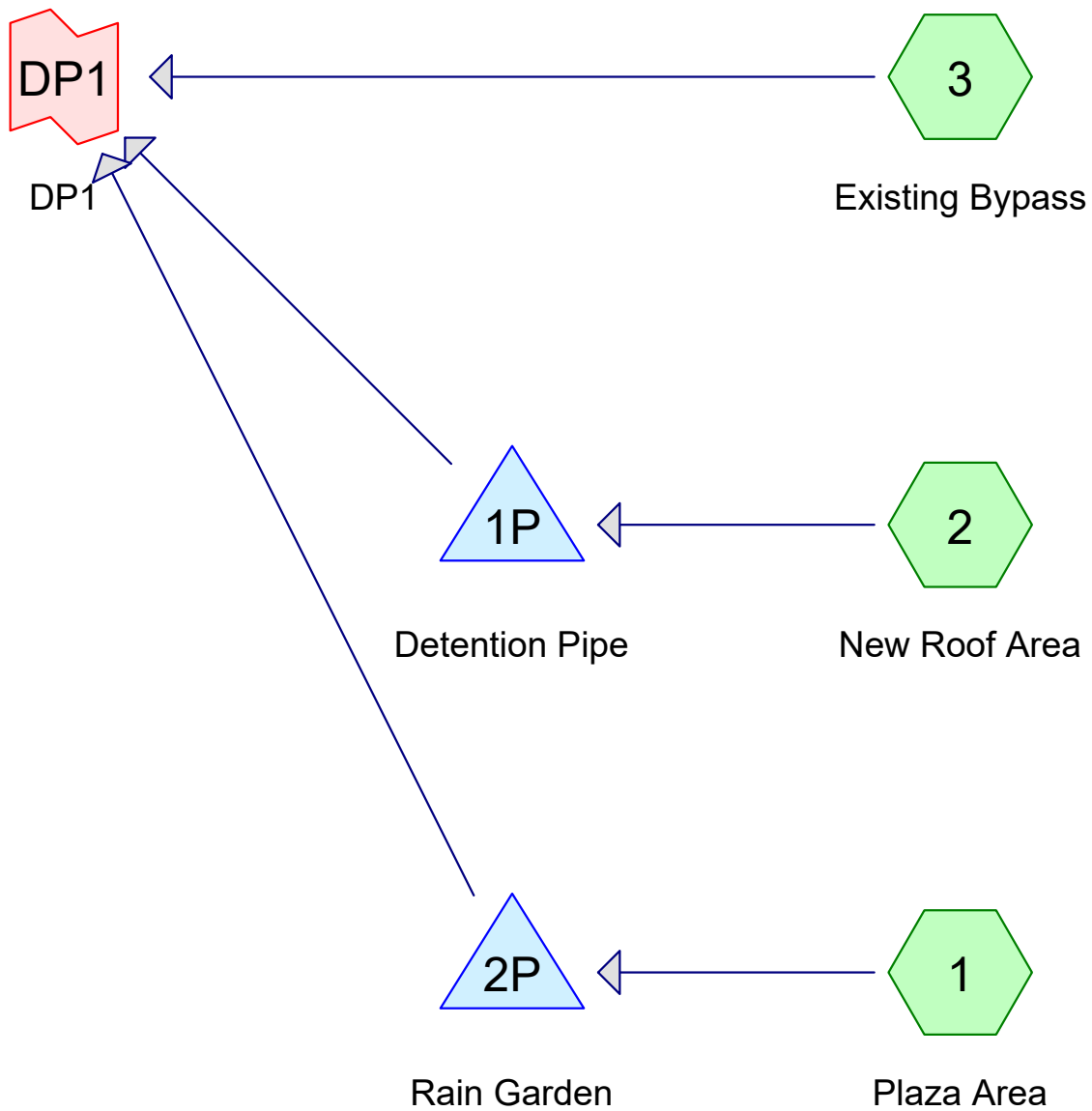
**NOT FOR CONSTRUCTION**  
Drawing Title  
**PROPOSED CONDITIONS  
DRAINAGE PLANS**

Drawing Number

**FIG. 3**

Sheet **2** of **2**

Project Number  
**73096.30**



**73096.30 - PR HYDROCAD.**

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SGS Wellness Center

Type III 24-hr 2 year Rainfall=3.30"

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**Summary for Subcatchment 1: Plaza Area**

Runoff = 0.34 cfs @ 12.10 hrs, Volume= 1,146 cf, Depth= 1.41"

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 2 year Rainfall=3.30"

Area (sf)	CN	Description
8,191	74	>75% Grass cover, Good, HSG C
1,535	98	Paved parking, HSG C
0	98	Roofs, HSG C
9,727	78	Weighted Average
8,191	74	84.21% Pervious Area
1,535	98	15.79% Impervious Area

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

**Summary for Subcatchment 2: New Roof Area**

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 1,538 cf, Depth= 3.07"

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 2 year Rainfall=3.30"

Area (sf)	CN	Description
6,015	98	Roofs, HSG C
6,015	98	100.00% Impervious Area

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

**Summary for Subcatchment 3: Existing Bypass**

Runoff = 0.73 cfs @ 12.10 hrs, Volume= 2,440 cf, Depth= 1.25"

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 2 year Rainfall=3.30"

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Type III 24-hr 2 year Rainfall=3.30"

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Area (sf)	CN	Description
18,919	74	>75% Grass cover, Good, HSG C
46	96	Gravel surface, HSG C
927	98	Paved parking, HSG C
779	98	Roofs, HSG C
2,822	70	Woods, Good, HSG C
23,493	75	Weighted Average
21,787	74	92.74% Pervious Area
1,706	98	7.26% Impervious Area

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

**Summary for Pond 1P: Detention Pipe**

Inflow Area = 6,015 sf, 100.00% Impervious, Inflow Depth = 3.07" for 2 year event  
 Inflow = 0.43 cfs @ 12.09 hrs, Volume= 1,538 cf  
 Outflow = 0.25 cfs @ 12.21 hrs, Volume= 1,537 cf, Atten= 43%, Lag= 7.4 min  
 Primary = 0.25 cfs @ 12.21 hrs, Volume= 1,537 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 114.25' @ 12.21 hrs Surf.Area= 259 sf Storage= 154 cf

Plug-Flow detention time= 3.6 min calculated for 1,537 cf (100% of inflow)  
 Center-of-Mass det. time= 3.5 min ( 759.3 - 755.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	113.16'	550 cf	<b>30.0" Round Pipe Storage</b> L= 112.0' S= 0.0050 'f'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.16'	<b>12.0" Round Culvert Out</b> L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 113.16' / 113.11' S= 0.0050 'f' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	115.50'	<b>6.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#3	Device 1	113.16'	<b>2.0" Vert. 2" Drawdown Orifice</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	113.40'	<b>2.5" Vert. 2.5" Orifice</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.25 cfs @ 12.21 hrs HW=114.24' (Free Discharge)

- 1=Culvert Out (Passes 0.25 cfs of 2.35 cfs potential flow)
- 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)
- 3=2" Drawdown Orifice (Orifice Controls 0.10 cfs @ 4.81 fps)
- 4=2.5" Orifice (Orifice Controls 0.14 cfs @ 4.14 fps)

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SGS Wellness Center  
Type III 24-hr 2 year Rainfall=3.30"

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**Summary for Pond 2P: Rain Garden**

Inflow Area = 9,727 sf, 15.79% Impervious, Inflow Depth = 1.41" for 2 year event  
 Inflow = 0.34 cfs @ 12.10 hrs, Volume= 1,146 cf  
 Outflow = 0.02 cfs @ 11.65 hrs, Volume= 1,146 cf, Atten= 95%, Lag= 0.0 min  
 Primary = 0.02 cfs @ 11.65 hrs, Volume= 1,146 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 126.78' @ 15.27 hrs Surf.Area= 751 sf Storage= 566 cf

Plug-Flow detention time= 324.7 min calculated for 1,145 cf (100% of inflow)  
 Center-of-Mass det. time= 325.1 min ( 1,149.5 - 824.4 )

Volume	Invert	Avail.Storage	Storage Description			
#1	124.50'	1,569 cf	<b>Rain Garden (Irregular)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
124.50	751	124.0	0.0	0	0	751
125.01	751	124.0	33.0	126	126	814
126.99	751	124.0	33.0	491	617	1,060
127.00	751	124.0	100.0	8	625	1,061
128.00	1,151	143.0	100.0	944	1,569	1,486

Device	Routing	Invert	Outlet Devices
#1	Primary	124.20'	<b>6.0" Round Outlet Culvert</b> L= 15.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 124.20' / 122.00' S= 0.1392 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	127.50'	<b>Nyloplast Dome Grate 12-in</b>
#3	Device 4	124.50'	<b>1.020 in/hr Underdrain Exfiltration over Surface area</b>
#4	Device 1	124.50'	<b>4.0" Round 4" Underdrain</b> L= 44.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 124.50' / 124.30' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf

**Primary OutFlow** Max=0.02 cfs @ 11.65 hrs HW=124.63' (Free Discharge)

- ↑ 1=Outlet Culvert (Passes 0.02 cfs of 0.40 cfs potential flow)
- ↑ 2=Nyloplast Dome Grate 12-in ( Controls 0.00 cfs)
- ↑ 4=4" Underdrain (Passes 0.02 cfs of 0.02 cfs potential flow)
- ↑ 3=Underdrain Exfiltration (Exfiltration Controls 0.02 cfs)

**Summary for Pond 3P: SFB**

Volume	Invert	Avail.Storage	Storage Description
#1	127.00'	103 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)

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Type III 24-hr 2 year Rainfall=3.30"

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
127.00	43	35.0	0	0	43
128.00	179	54.0	103	103	185

**Summary for Pond 4P: Rain Garden**

Volume	Invert	Avail.Storage	Storage Description
#1	124.50'	976 cf	<b>Rain Garden (Irregular)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
124.50	457	86.0	0.0	0	0	457
125.01	457	86.0	33.0	77	77	501
126.99	457	86.0	33.0	299	376	671
127.00	457	86.0	100.0	5	380	672
128.00	746	106.0	100.0	596	976	992

Device	Routing	Invert	Outlet Devices
#1	Primary	124.20'	<b>6.0" Round Outlet Culvert</b> L= 15.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 124.20' / 124.00' S= 0.0127 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	127.50'	<b>Nyloplast Dome Gate 12-in</b>
#3	Device 4	124.50'	<b>1.020 in/hr Underdrain Exfiltration over Surface area</b>
#4	Device 1	124.50'	<b>4.0" Round 4" Underdrain</b> L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 124.50' / 124.35' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

- ↑ 1=Outlet Culvert ( Controls 0.00 cfs)
- ↑ 2=Nyloplast Dome Gate 12-in ( Controls 0.00 cfs)
- ↑ 4=4" Underdrain ( Controls 0.00 cfs)
- ↑ 3=Underdrain Exfiltration ( Controls 0.00 cfs)

**Summary for Link DP1: DP1**

Inflow Area = 39,235 sf, 23.59% Impervious, Inflow Depth = 1.57" for 2 year event  
 Inflow = 0.97 cfs @ 12.10 hrs, Volume= 5,124 cf  
 Primary = 0.97 cfs @ 12.10 hrs, Volume= 5,124 cf, Atten= 0%, Lag= 0.0 min

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

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SGS Wellness Center

Type III 24-hr 2 year Rainfall=3.30"

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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

**Subcatchment1: Plaza Area** Runoff Area=9,727 sf 15.79% Impervious Runoff Depth=1.41"  
Tc=6.0 min CN=74/98 Runoff=0.34 cfs 1,146 cf

**Subcatchment2: New Roof Area** Runoff Area=6,015 sf 100.00% Impervious Runoff Depth=3.07"  
Tc=6.0 min CN=0/98 Runoff=0.43 cfs 1,538 cf

**Subcatchment3: Existing Bypass** Runoff Area=23,493 sf 7.26% Impervious Runoff Depth=1.25"  
Tc=6.0 min CN=74/98 Runoff=0.73 cfs 2,440 cf

**Pond 1P: Detention Pipe** Peak Elev=114.25' Storage=154 cf Inflow=0.43 cfs 1,538 cf  
Outflow=0.25 cfs 1,537 cf

**Pond 2P: Rain Garden** Peak Elev=126.78' Storage=566 cf Inflow=0.34 cfs 1,146 cf  
Outflow=0.02 cfs 1,146 cf

**Pond 3P: SFB** Peak Elev=0.00' Storage=0 cf

**Pond 4P: Rain Garden** Peak Elev=0.00' Storage=0 cf  
Primary=0.00 cfs 0 cf

**Link DP1: DP1** Inflow=0.97 cfs 5,124 cf  
Primary=0.97 cfs 5,124 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 5,124 cf Average Runoff Depth = 1.57"**  
**76.41% Pervious = 29,978 sf 23.59% Impervious = 9,257 sf**

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Type III 24-hr 10 year Rainfall=4.90"

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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

<b>Subcatchment1: Plaza Area</b>	Runoff Area=9,727 sf 15.79% Impervious Runoff Depth=2.66" Tc=6.0 min CN=74/98 Runoff=0.66 cfs 2,156 cf
<b>Subcatchment2: New Roof Area</b>	Runoff Area=6,015 sf 100.00% Impervious Runoff Depth=4.66" Tc=6.0 min CN=0/98 Runoff=0.65 cfs 2,338 cf
<b>Subcatchment3: Existing Bypass</b>	Runoff Area=23,493 sf 7.26% Impervious Runoff Depth=2.46" Tc=6.0 min CN=74/98 Runoff=1.49 cfs 4,811 cf
<b>Pond 1P: Detention Pipe</b>	Peak Elev=114.77' Storage=298 cf Inflow=0.65 cfs 2,338 cf Outflow=0.31 cfs 2,338 cf
<b>Pond 2P: Rain Garden</b>	Peak Elev=127.51' Storage=1,056 cf Inflow=0.66 cfs 2,156 cf Outflow=0.07 cfs 2,156 cf
<b>Pond 3P: SFB</b>	Peak Elev=0.00' Storage=0 cf
<b>Pond 4P: Rain Garden</b>	Peak Elev=0.00' Storage=0 cf Primary=0.00 cfs 0 cf
<b>Link DP1: DP1</b>	Inflow=1.79 cfs 9,305 cf Primary=1.79 cfs 9,305 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 9,305 cf Average Runoff Depth = 2.85"**  
**76.41% Pervious = 29,978 sf 23.59% Impervious = 9,257 sf**

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Type III 24-hr 25 year Rainfall=6.10"

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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

<b>Subcatchment1: Plaza Area</b>	Runoff Area=9,727 sf 15.79% Impervious Runoff Depth=3.68" Tc=6.0 min CN=74/98 Runoff=0.91 cfs 2,982 cf
<b>Subcatchment2: New Roof Area</b>	Runoff Area=6,015 sf 100.00% Impervious Runoff Depth=5.86" Tc=6.0 min CN=0/98 Runoff=0.81 cfs 2,938 cf
<b>Subcatchment3: Existing Bypass</b>	Runoff Area=23,493 sf 7.26% Impervious Runoff Depth=3.46" Tc=6.0 min CN=74/98 Runoff=2.11 cfs 6,769 cf
<b>Pond 1P: Detention Pipe</b>	Peak Elev=115.23' Storage=421 cf Inflow=0.81 cfs 2,938 cf Outflow=0.36 cfs 2,938 cf
<b>Pond 2P: Rain Garden</b>	Peak Elev=127.58' Storage=1,119 cf Inflow=0.91 cfs 2,982 cf Outflow=0.37 cfs 2,977 cf
<b>Pond 3P: SFB</b>	Peak Elev=0.00' Storage=0 cf
<b>Pond 4P: Rain Garden</b>	Peak Elev=0.00' Storage=0 cf Primary=0.00 cfs 0 cf
<b>Link DP1: DP1</b>	Inflow=2.44 cfs 12,685 cf Primary=2.44 cfs 12,685 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 12,689 cf Average Runoff Depth = 3.88"**  
**76.41% Pervious = 29,978 sf 23.59% Impervious = 9,257 sf**

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Type III 24-hr 100 year Rainfall=8.60"

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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

<b>Subcatchment1: Plaza Area</b>	Runoff Area=9,727 sf 15.79% Impervious Runoff Depth=5.92" Tc=6.0 min CN=74/98 Runoff=1.46 cfs 4,800 cf
<b>Subcatchment2: New Roof Area</b>	Runoff Area=6,015 sf 100.00% Impervious Runoff Depth=8.36" Tc=6.0 min CN=0/98 Runoff=1.14 cfs 4,191 cf
<b>Subcatchment3: Existing Bypass</b>	Runoff Area=23,493 sf 7.26% Impervious Runoff Depth=5.68" Tc=6.0 min CN=74/98 Runoff=3.45 cfs 11,112 cf
<b>Pond 1P: Detention Pipe</b>	Peak Elev=115.59' Storage=500 cf Inflow=1.14 cfs 4,191 cf Outflow=0.92 cfs 4,176 cf
<b>Pond 2P: Rain Garden</b>	Peak Elev=127.75' Storage=1,297 cf Inflow=1.46 cfs 4,800 cf Outflow=1.19 cfs 4,795 cf
<b>Pond 3P: SFB</b>	Peak Elev=0.00' Storage=0 cf
<b>Pond 4P: Rain Garden</b>	Peak Elev=0.00' Storage=0 cf Primary=0.00 cfs 0 cf
<b>Link DP1: DP1</b>	Inflow=5.20 cfs 20,083 cf Primary=5.20 cfs 20,083 cf

**Total Runoff Area = 39,235 sf Runoff Volume = 20,103 cf Average Runoff Depth = 6.15"**  
**76.41% Pervious = 29,978 sf 23.59% Impervious = 9,257 sf**

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Type III 24-hr 100 year Rainfall=8.60"

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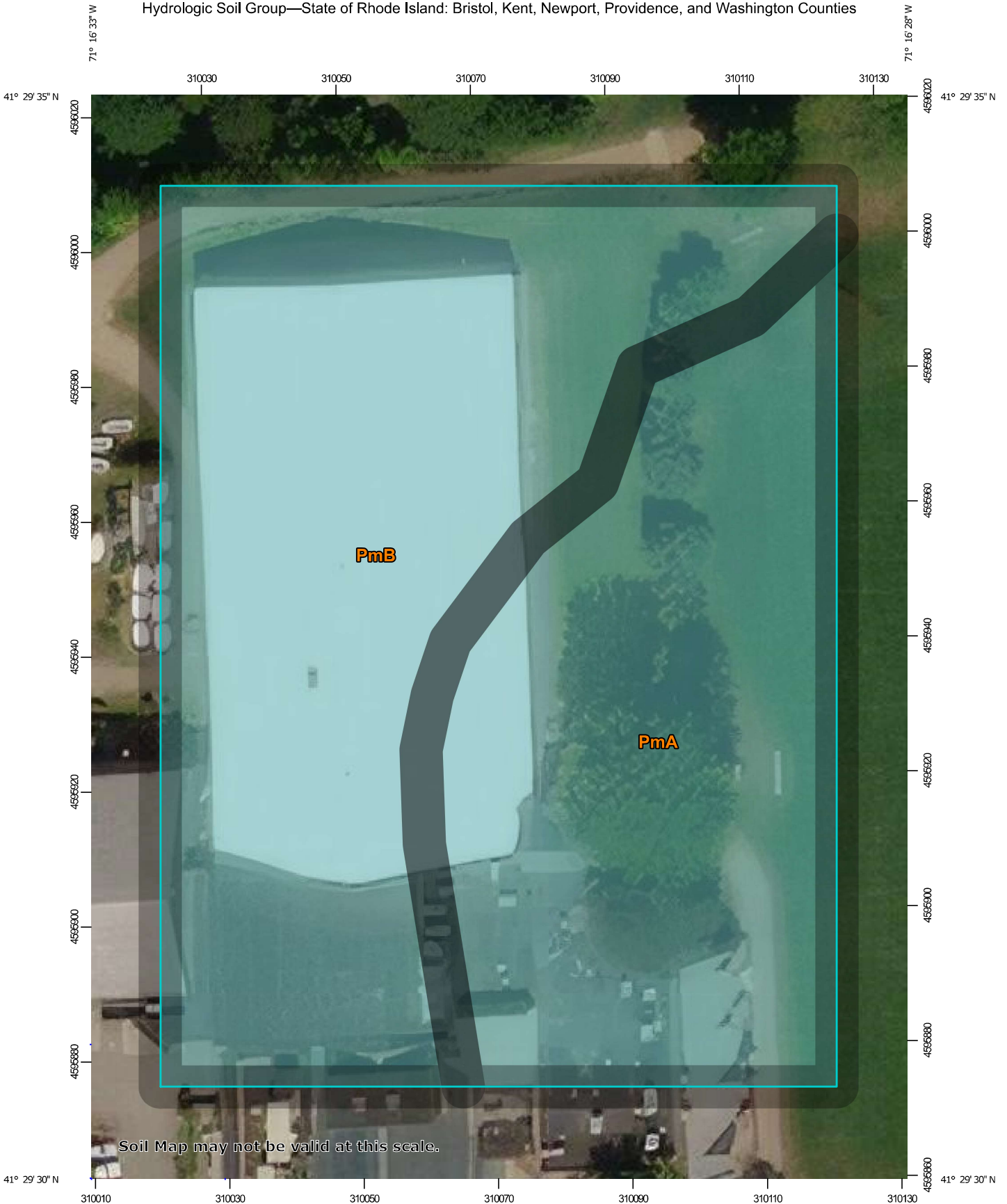
**Hydrograph for Pond 2P: Rain Garden**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	124.50	0.00
1.00	0.00	1	124.50	0.00
2.00	0.00	5	124.52	0.00
3.00	0.00	9	124.54	0.00
4.00	0.00	11	124.55	0.00
5.00	0.00	12	124.55	0.00
6.00	0.00	13	124.55	0.00
7.00	0.01	16	124.56	0.01
8.00	0.01	21	124.58	0.01
9.00	0.02	30	124.62	0.02
10.00	0.04	71	124.79	0.02
11.00	0.07	188	125.26	0.02
12.00	<b>0.75</b>	<b>835</b>	<b>127.26</b>	<b>0.02</b>
13.00	<b>0.11</b>	<b>1,067</b>	<b>127.52</b>	<b>0.12</b>
14.00	0.07	1,057	127.51	0.07
15.00	0.06	1,053	127.51	0.06
16.00	0.04	1,050	127.50	0.04
17.00	0.03	1,048	127.50	0.03
18.00	0.02	1,047	127.50	0.02
19.00	0.02	1,046	127.50	0.02
20.00	0.02	1,039	127.49	0.02
21.00	0.02	1,025	127.48	0.02
22.00	0.02	1,006	127.46	0.02
23.00	0.01	983	127.43	0.02
24.00	0.01	954	127.40	0.02
25.00	0.00	883	127.32	0.02
26.00	0.00	810	127.23	0.02
27.00	0.00	740	127.15	0.02
28.00	0.00	673	127.06	0.02
29.00	0.00	609	126.96	0.02
30.00	0.00	545	126.70	0.02
31.00	0.00	481	126.44	0.02
32.00	0.00	417	126.18	0.02
33.00	0.00	353	125.93	0.02
34.00	0.00	290	125.67	0.02
35.00	0.00	226	125.41	0.02
36.00	0.00	162	125.15	0.02
37.00	0.00	98	124.90	0.02
38.00	0.00	34	124.64	0.02
39.00	0.00	9	124.54	0.00
40.00	0.00	5	124.52	0.00
41.00	0.00	4	124.51	0.00
42.00	0.00	3	124.51	0.00
43.00	0.00	2	124.51	0.00
44.00	0.00	1	124.50	0.00
45.00	0.00	1	124.50	0.00
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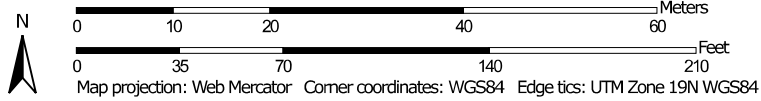
Drains within 48 hours

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













## Appendix C – Soils Calculations



Map Scale: 1:782 if printed on A portrait (8.5" x 11") sheet.



## MAP LEGEND

<b>Area of Interest (AOI)</b>	 C
<b>Area of Interest (AOI)</b>	 C/D
<b>Soils</b>	 D
<b>Soil Rating Polygons</b>	 Not rated or not available
<b>Soil Rating Polygons</b>	 A
<b>Soil Rating Polygons</b>	 A/D
<b>Soil Rating Polygons</b>	 B
<b>Soil Rating Polygons</b>	 B/D
<b>Soil Rating Polygons</b>	 C
<b>Soil Rating Polygons</b>	 C/D
<b>Soil Rating Polygons</b>	 D
<b>Soil Rating Polygons</b>	 Not rated or not available
<b>Soil Rating Lines</b>	 A
<b>Soil Rating Lines</b>	 A/D
<b>Soil Rating Lines</b>	 B
<b>Soil Rating Lines</b>	 B/D
<b>Soil Rating Lines</b>	 C
<b>Soil Rating Lines</b>	 C/D
<b>Soil Rating Lines</b>	 D
<b>Soil Rating Lines</b>	Not rated or not available
<b>Soil Rating Points</b>	A
<b>Soil Rating Points</b>	A/D
<b>Soil Rating Points</b>	B
<b>Soil Rating Points</b>	B/D

## 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 21, Sep 3, 2021

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 12, 2017

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

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PmA	Pittstown silt loam, 0 to 3 percent slopes	C	1.4	43.5%
PmB	Pittstown silt loam, 3 to 8 percent slopes	C	1.9	56.5%
<b>Totals for Area of Interest</b>			<b>3.3</b>	<b>100.0%</b>

### Description

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

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

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

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

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

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

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

### Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

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## Appendix D – SWPPP

# Saint George's School Wellness Center

372 Purgatory Road  
Middletown, Rhode Island

PREPARED FOR

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St. George's School  
372 Purgatory Road  
Middletown, Rhode Island 02842

PREPARED BY

---



1 Cedar Street, Suite 400  
Providence, RI 02903  
401.272.8100

March, 2022

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## Erosion and Sedimentation Control Plan

The project site ("the Site") is approximately 0.75 acres located within the St. George's School campus located on Purgatory Road in Middletown, RI. The site is located on a portion of PIN 121SW Lot 39. The site directly abuts the school's existing fieldhouse to the west, the buildings entrance vestibule to the south, and a grassed sloped hill leading to an athletic field to the east. The site is currently a sloped grassed area with some vegetation.

The project involves the construction of a two level building expansion housing a student wellness center ( $\pm 5,250$  SF) with associated sidewalks for pedestrian access and stormwater infrastructure. Grading activities includes a bioretention area and pretreatment and an oversized detention pipe with an outlet control structure. The bioretention captures a portion of stormwater flow from the plaza area in front of the entrance vestibule.

The following erosion and sedimentation controls are for use during the earthwork and construction phases of the project. The following controls are provided as recommendations for the site contractor and do not constitute or replace the final Soil Erosion and Sediment Control Plan that must be fully implemented by the Contractor and Owner in Compliance with RIDEM RIPDES regulations and local regulations. Refer to attached Planset for locations of erosion control and stormwater measures and their associated details.

### **Siltsocks**

siltsocks will be placed to trap sediment transported by runoff before it reaches the drainage system or leaves the construction site. Bales will be set at least four inches into the existing ground to minimize undercutting by runoff.

### **Catch Basin Protection**

Newly constructed and existing catch basins will be protected with hay bale barriers (where appropriate) or silt sack sediment traps throughout construction.

### **Gravel and Construction Exit**

A temporary crushed-stone construction exit will be constructed. A cross slope will be placed in the entrance to direct runoff to a protected catch basin inlet or settling

area. If deemed necessary after construction begins, a wash pad may be included to wash off vehicle wheels before leaving the project site.

## **Vegetative Slope Stabilization**

Stabilization of open soil surfaces will be implemented within 14 days after grading or construction activities have temporarily or permanently ceased, unless there is sufficient snow cover to prohibit implementation. Vegetative slope stabilization will be used to minimize erosion on slopes of 3:1 or flatter. Annual grasses, such as annual rye, will be used to ensure rapid germination and production of root mass. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Establishment of temporary and permanent vegetative cover may be established by hydro seeding or sodding. A suitable topsoil, good seedbed preparation, and adequate lime, fertilizer and water will be provided for effective establishment of these vegetative stabilization methods. Mulch will also be used after permanent seeding to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

## **Maintenance**

- › Under the supervision of the owner, the contractor or subcontractor will be responsible for implementing each control shown on the SESC Plans.
- › The on site contractor will inspect all sediment and erosion control structures periodically and after each rainfall event that exceeds 0.25 inches in 24-hours. Records of the inspections will be prepared and maintained on site by the contractor. Following final stabilization of the site, the owner shall maintain these records for a period of five years.
- › Silt shall be removed from behind barriers if greater than 6 inches from the top of the barrier.
- › Damaged or deteriorated items shall be repaired immediately after identification.
- › The underside of siltsocks should be kept in close contact with the earth and reset as necessary.
- › Sediment that is collected in structures shall be disposed of properly or covered, if stored on site.
- › Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.

## **Nature and Sequence of Construction Activities**

Prior to initiating work, perimeter sediment controls will be installed at the limits of work as depicted on the SESC Plans.

Construction will commence with clearing and grubbing and earthwork activities including excavation and temporary stockpiling of topsoil and grading the land

surface. If soil is to be temporarily stockpiled on-Site, soil piles will be located in a suitable upland location away from stormwater structures and other proposed stormwater management areas as shown on the SESC Plans and covered with a tarp between periods of disturbance to minimize exposure to precipitation. Alternatively, if these stockpiles are not to be disturbed within 21 days, they may be seeded and mulched as soon as possible but not more than fourteen (14) days after the stockpiling has been completed.

If groundwater is encountered during excavation, diversion trenches and a temporary dewatering basin(s) will be utilized proximate to the work area to detain and filter turbid pump discharges. Soils removed from the excavation will be stockpiled as described above.

Throughout these various processes, general site dust control will be maintained through the use of water. Once construction is complete and the site is stabilized, perimeter sediment controls and any accumulated sediment will be removed and disposed of properly.

## **Prohibited Discharges**

The following discharges are prohibited at the construction site:

- › Contaminated groundwater, unless authorized by separate the RIDEM RIDPES permit.
- › Wastewater from washout of concrete, stucco, paint, form release oils, curing compounds, and other construction materials.
- › Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all construction sites.
- › Soaps or solvents used in vehicle and equipment washing.
- › Toxic or hazardous substances from a spill or other release.

## **Proper Waste Disposal**

Building materials and other construction site wastes must be properly managed and disposed of in a manner consistent with State Law and/or regulations.

- › A waste collection area shall be designated on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody or storm drain.
- › All waste containers shall be covered to avoid contact with wind and precipitation.
- › Waste collection shall be scheduled frequently enough to prevent containers from overflowing.

- › All construction site wastes shall be collected, removed, and disposed of in accordance with applicable regulatory requirements and only at authorized disposal sites.
- › Equipment and containers shall be checked for leaks, corrosion, support or foundation failure, or other signs of deterioration. Those that are found to be defective shall be immediately repaired or replaced.

## **Spill Prevention and Control**

All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be described. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The operator must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site.

- › A field spill plan would include information on fuels and oils being used, approximate amounts in each container or type of equipment, location, fueling location, secondary containment, response and notification procedures, including contact phone numbers, etc. All personnel shall be briefed on spill prevention and response prior to the commencement of construction. The state-specific EG-501 and EG-502 shall be followed in the event of a spill.
- › All spills of OHM shall be immediately stopped and contained, if it is safe to do so. For releases of oils or hazardous materials owned by a contractor, the contractor is responsible to make all required notifications to regulatory agencies and to ensure that the release is properly responded to. The contractor is also responsible for hiring contractors for the cleanup of these releases and proper disposal of any related waste off-site at an appropriate facility. All releases of OHM to the environment in Rhode Island are considered "Reportable"



# Saint George's School Wellness Center

372 Purgatory Road  
Middletown, Rhode Island

PREPARED FOR

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372 Purgatory Road  
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1 Cedar Street, Suite 400  
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March, 2022

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<b>Pollution Prevention and Source Control .....</b>	<b>4</b>



# Long Term Stormwater Operation and Maintenance Measures

## Owner/Operator Responsible for Operation and Maintenance

St. George's School  
372 Purgatory Road  
Middletown, Rhode Island 02842

## Maintenance of Stormwater Systems

The following maintenance program shall ensure the continued effectiveness of the structural water quantity and quality controls shown on the project Site Plans prepared by VHB.

## Structural Stormwater Management Devices

### Catch Basins and Outlet Control Structures

- › Inspect the unit post construction, prior to being placed into service and ensure unit is clean and free of any structural damage.
- › Inspect quarterly for the first year to determine the oil and sediment accumulation rate.
- › Cleaning is required annually and whenever the depth of sediment is greater than or equal to half the sump depth.
- › Inspect the units immediately after an oil, fuel or chemical spill.
- › A licensed waste management company should remove oil and sediment and dispose per state and local regulations.

### Roof Drain Leaders

- › Perform routine roof inspections twice per year.
- › Keep roofs clean and free of debris.
- › Keep roof drainage systems clear.
- › Keep roof access limited to authorized personnel.
- › Clean inlets twice per year as necessary.

## **Vegetated Stormwater Management Devices**

### **Bioretention Area**

Mulching is an important part of Bioretention Area maintenance. Mulch keeps the soil moist, allowing for easy infiltration of rain water. Un-mulched surfaces may develop into a hardpan, a condition in which the soil surface becomes cemented together, forming a hard, impervious layer. Mulching also protects plants and reduces weed growth.

#### Initial Post-Construction Inspection

- › During the initial period of vegetation establishment, pruning and weeding are required twice in first year by contractor.
- › Any dead vegetation found after the first year must be replaced.
- › Proper mulching is mandatory and regular watering may be required initially to ensure proper establishment of new vegetation.
- › During the six months immediately after construction, inspect area following at least the first two precipitation events of at least 1.0 inch to ensure that the system is functioning properly. If sediment build-up is found, core aeration or cultivating of un-vegetated areas may be required to ensure adequate filtration.

#### Long-Term Maintenance

- › Weeds and invasive plant species shall be removed by hand, annually.
- › Leaf litter and other detritus shall be removed annually.
- › If needed to maintain aesthetic appearance, perennial plantings may be trimmed at the end of the growing season.
- › Trees and shrubs should be inspected once per year to evaluate health and attended to as necessary. Pruning or replacement of woody vegetation should occur when dead or dying vegetation, or over-crowding is observed.
- › Re-mulch Bioretention Area with hardwood mulch to a depth of 3 inches each spring or whenever erosion is evident. The entire area may require mulch replacement once every two to three years. Mulch depth shall not exceed 3 inches.

#### Inspections and Cleaning

- › Bioretention Area shall be inspected twice during for the first year and annually thereafter and after storm events greater than or equal to the 1-year, 2.7 inch rainfall event for sediment buildup, erosion, vegetative conditions, etc. Sediment shall be cleaned out if accumulation exceeds 1 inch. Core aeration or cultivating of un-vegetated areas may be required to ensure adequate filtration.
- › The inflow location should be inspected annually for clogging. Sediment build up is a common problem where runoff leaves an impervious surface and enters a vegetative or earthen surface. Any built-up sediment should be removed to prevent runoff from bypassing the facility.

- › When the filtering capacity of the filter diminishes substantially (i.e., when water ponds on the surface of the filter bed for more than 48 hours), the top few inches of discolored material shall be removed and shall be replaced with fresh material. The removed sediments shall be disposed in an acceptable manner at an approved and permitted location.
- › The overflow catch basin structure should be inspected annually to ensure that it is functioning.
- › Trash and debris shall be removed as necessary.

### **Sediment Forebay**

- › Inspect the forebay yearly and remove any deposited sediment (sand from winter sanding operations). Correct any ponding, erosion, and replant any vegetation that has died. Reset or replace any dislodged stones.

### **General Vegetated Areas Maintenance**

Although not a structural component of the drainage system, the maintenance of vegetated areas may affect the functioning of stormwater management practices. This includes the health/density of vegetative cover and activities such as the application and disposal of lawn and garden care products, disposal of leaves and yard trimmings.

- › Inspect planted areas on a semi-annual basis and remove any litter.
- › Maintain planted areas adjacent to pavement to prevent soil washout.
- › Immediately clean any soil deposited on pavement.
- › Re-seed bare areas; install appropriate erosion control measures when native soil is exposed or erosion channels are forming.
- › Plant alternative mixture of grass species in the event of unsuccessful establishment.
- › The grass vegetation should be cut to a height between three and four inches.
- › Pesticide/Herbicide Usage – No pesticides are to be used unless a single spot treatment is required for a specific control application.
- › Fertilizer usage should be avoided. If deemed necessary, slow release fertilizer should be used. Fertilizer may be used to begin the establishment of vegetation in bare or damaged areas, but should not be applied on a regular basis unless necessary.



## Pollution Prevention and Source Control

A comprehensive source control program will be implemented at the Site, which includes the following components:

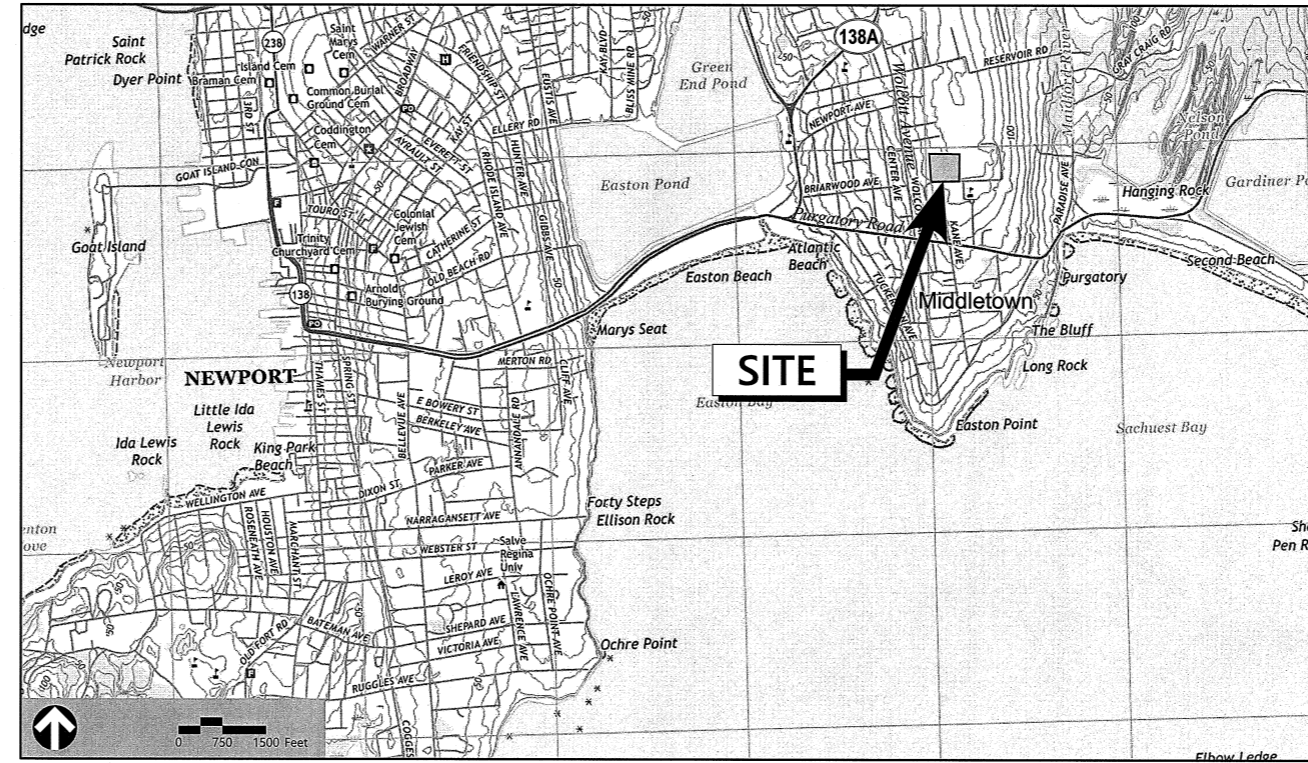
- › Regular pavement sweeping and vacuuming as defined previously in this manual.
- › Asphalt pavement sealants are a major source of polycyclic aromatic hydrocarbons (PAHs) in our environment. Asphalt based sealants are allowed. Coal-tar based sealants are not allowed.
- › Catch basin cleaning.
- › Clearing litter from the parking area, islands, and perimeter landscape areas.
- › Trash and recycling receptacles must be provided with regular collection.
- › Enclosure and regular maintenance of all dumpsters.
- › Spill Prevention training. Maintenance personnel will be instructed in the proper clean-up procedures for spilled materials and the location of clean-up materials. Any washing water used on machinery will be discharge to the sanitary sewerage system after filtering of sediment.
- › Sand and deicing chemicals shall be stored under cover so as to prevent exposure to stormwater. Use calcium chloride and calcium magnesium acetate (CMA) in sensitive ecosystem areas.
- › Snow storage areas will be managed to prevent blockage of storm drain catch basins and stormwater drainage swales. Snow combined with sand and debris may block a storm drainage system, diminishing the infiltration capacity of the system and causing localized flooding.
- › Snow shall not be dumped into any water body, pond, or wetland resource area.
- › Grounds Management:
  - Conduct soil evaluation every 1-3 years to determine suitability for supporting lawn, and to determine how to optimize growing conditions.
  - Mowing and thatch management.
  - Weed management.
  - Pest management.
  - Sensible irrigation.

# Site Plans

Issued for Permit  
 Date Issued Feb. 23, 2022  
 Latest Issue May 17, 2022

## Saint George's School Wellness Center

372 Purgatory Road  
 Middletown, Rhode Island



vhb.com

1 Cedar Street  
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 401.272.8100

### Owner/Applicant

St. George's School  
 372 Purgatory Road  
 Middletown, Rhode Island 02842

### Sheet Index

No.	Drawing Title	Latest Issue
C1.0	Legend and General Notes	May 17, 2022
C2.0	Layout and Materials Plan, Grading and Drainage Plan, Erosion Control Plan	May 17, 2022
C3.0	Site Details	May 17, 2022

### Reference Drawings

No.	Drawing Title	Latest Issue
Sv-1	Existing Conditions Plan of Land	January 8, 2018
Sv-4	Existing Conditions Plan of Land	January 8, 2018
Sv-1	Administrative Subdivision Plan of Land	February 14, 2022
Sv-2	Administrative Subdivision Plan of Land	February 14, 2022
Sv-3	Administrative Subdivision Plan of Land	February 14, 2022
Sv-4	Administrative Subdivision Plan of Land	February 14, 2022
Sv-5	Administrative Subdivision Plan of Land	February 14, 2022

Assessor's Map: Plat 121SW  
 Lot: 39



**Legend**

Exist.	Prop.	Exist.	Prop.	
				PROPERTY LINE
				PROJECT LIMIT LINE
				RIGHT-OF-WAY/PROPERTY LINE
				EASEMENT
				BUILDING SETBACK
				PARKING SETBACK
				BASELINE
				CONSTRUCTION LAYOUT
				ZONING LINE
				TOWN LINE
				LIMIT OF DISTURBANCE
				GRAVEL ROAD
				EDGE OF PAVEMENT
				BITUMINOUS BERM
				BITUMINOUS CURB
				CONCRETE CURB
				CURB AND GUTTER
				EXTRUDED CONCRETE CURB
				MONOLITHIC CONCRETE CURB
				PRECAST CONC. CURB
				SLOPED GRAN. EDGING
				VERT. GRAN. CURB
				LIMIT OF CURB TYPE
				SAWCUT
				BUILDING
				BUILDING ENTRANCE
				LOADING DOCK
				BOLLARD
				DUMPSTER PAD
				SIGN
				DOUBLE SIGN
				STEEL GUARDRAIL
				WOOD GUARDRAIL
				PATH
				TREE LINE
				WIRE FENCE
				FENCE
				STOCKADE FENCE
				STONE WALL
				RETAINING WALL
				STREAM / POND / WATER COURSE
				DETENTION BASIN
				HAY BALES
				SILT FENCE
				SILT SOCK / STRAW WATTLE
				MINOR CONTOUR
				MAJOR CONTOUR
				PARKING COUNT
				COMPACT PARKING STALLS
				DOUBLE YELLOW LINE
				STOP LINE
				CROSSWALK
				ACCESSIBLE CURB RAMP
				ACCESSIBLE PARKING
				VAN-ACCESSIBLE PARKING
				MATCHLINE

**Abbreviations**

General	
ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL
Utility	
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PV	POST INDICATOR VALVE
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RFC	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
RIM=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE

**Notes**

- General**
- CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
  - ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
  - AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6 INCHES LOAM AND SEED.
  - WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
  - UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
  - AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
  - IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
  - CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
  - DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
  - CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
  - STORMWATER MANAGEMENT PLANS SHALL DEMONSTRATE SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH THE TOWN OF PROVIDENCE CONSTRUCTION SITE EROSION CONTROL ORDINANCE AND THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, AS AMENDED.
- Utilities**
- THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
  - WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
  - SET CATCH BASIN AIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
    - PAVEMENTS AND CONCRETE SURFACES: FLUSH
    - ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
    - LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
  - THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
  - CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
  - UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
    - STORM DRAINAGE PIPES SHALL BE HDPE, HIGH DENSITY CORRUGATED POLYETHYLENE
  - CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL CONTRACTOR RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
  - ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
- Layout and Materials**
- DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
  - SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
  - PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LAND SURVEYOR.
  - PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
- Demolition**
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
  - EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
  - CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
  - THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO

CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.

UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

**Erosion Control**

- PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
- CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS (MINIMUM) OR AS REQUIRED PER THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
- CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
- UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.

**Existing Conditions Information**

- BASE PLAN: THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY VHB, BETWEEN DECEMBER 8, 2017 AND DECEMBER 22, 2017 AND AERIAL IMAGERY.
- TOPOGRAPHY: ELEVATIONS ARE BASED ON NGVD 1988.

**Document Use**

- THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
- CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
- SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

**Saint George's School**

**Wellness Center**

372 Purgatory Rd  
Middletown, RI 02842

**VMA**

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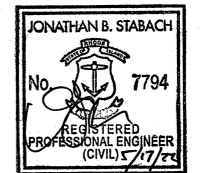
Vanasse Hangen Brustlin  
1 Cedar Street, Suite 400  
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1635 Market Street, Suite 1705  
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**MEP & FIRE PROTECTION ENGINEER**

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Danbury, CT 06810  
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**Permit**

**Revision**

Date May 17, 2022  
Title LEGEND AND GENERAL NOTES

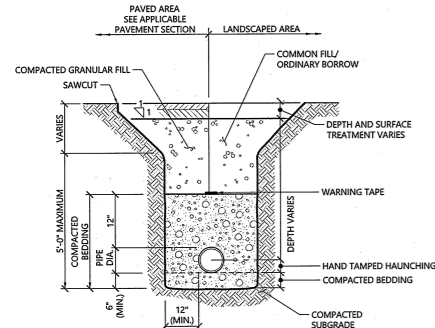
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Drawn By DDH

Drawing Number

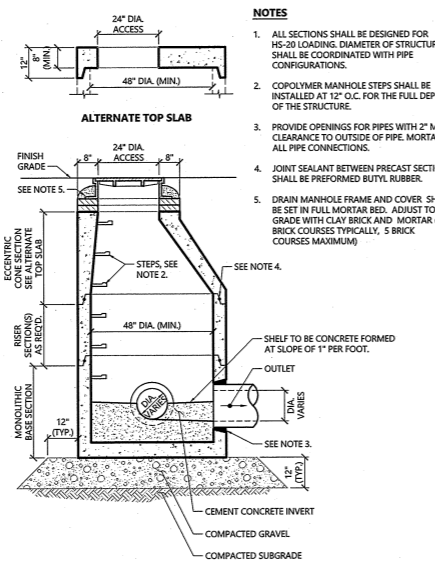
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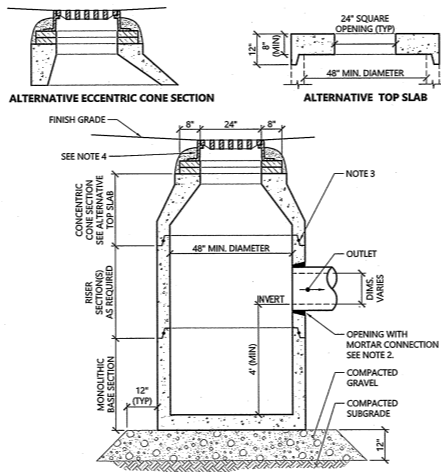


- NOTES**
- WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
  - USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.

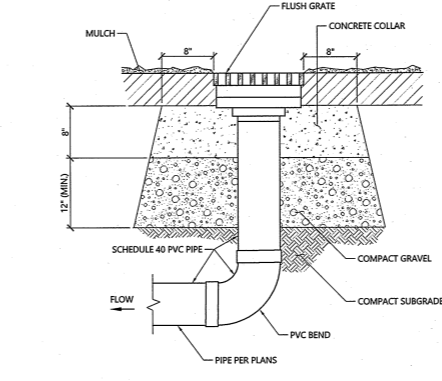
**Utility Trench** 1/16  
N.T.S. Source: VHB LD\_300



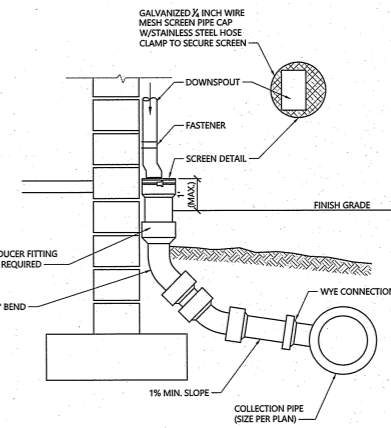
**Drain Manhole (DMH)** 1/16  
N.T.S. Source: VHB LD\_115



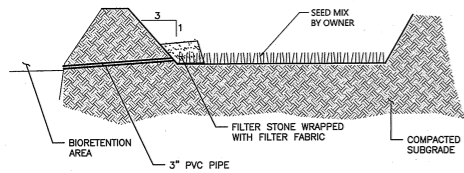
**Catch Basin (CB)** 1/16  
N.T.S. Source: VHB LD\_100



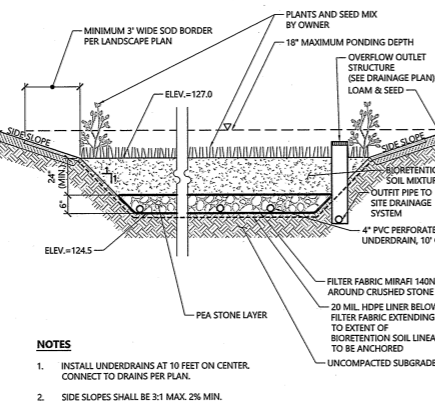
**Area Drain (AD)** 1/16  
N.T.S. Source: VHB LD\_193



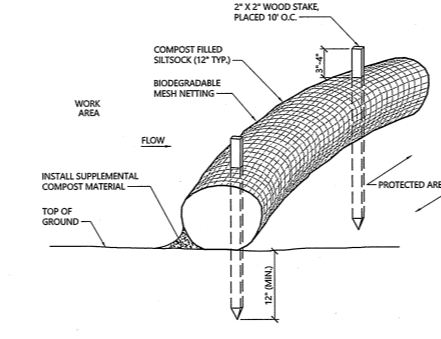
**Downspout Rain Leader** 1/16  
N.T.S. Source: VHB LD\_195



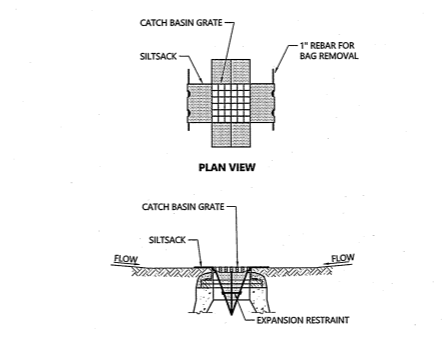
**Sediment Forebay** NOT TO SCALE 3/22  
N.T.S. Source: VHB LD



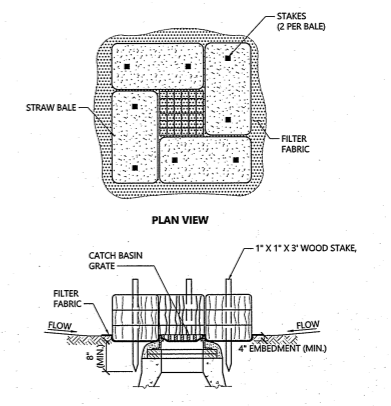
**Bioretention Basin** 1/16  
N.T.S. Source: VHB REV LD\_353



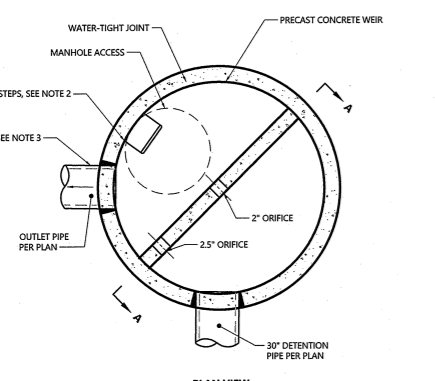
**Siltsock - Erosion Control Barrier** 1/16  
N.T.S. Source: VHB LD\_658



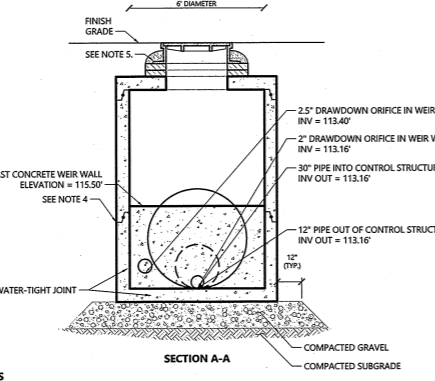
**Siltsock Sediment Trap** 1/16  
N.T.S. Source: VHB LD\_674



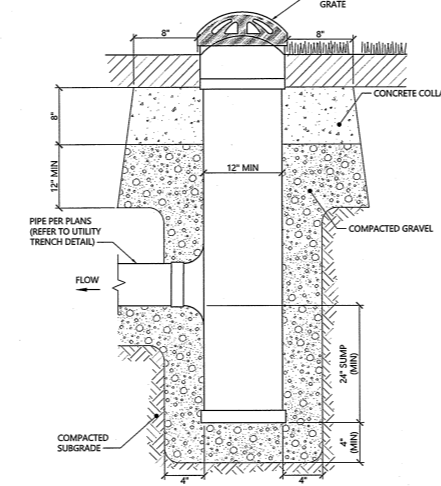
**Catch Basin Sediment Trap** 1/16  
N.T.S. Source: VHB LD\_673



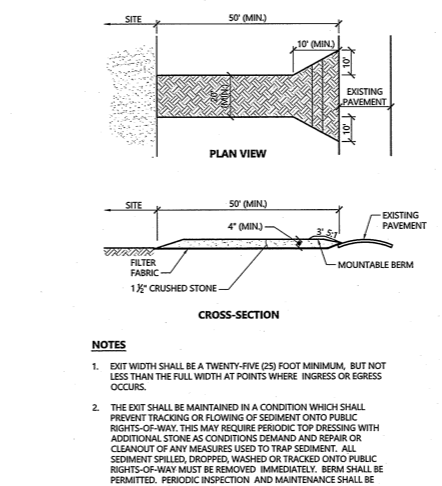
**Outlet Control Structure with Weir (OCS)** 3/20  
N.T.S. Source: VHB REV LD\_162A



**Landscape Drain (LD)** 9/17  
N.T.S. Source: VHB LD\_197



**Stabilized Construction Exit** 1/16  
N.T.S. Source: VHB LD\_682



**Tree Protection Fence** 1/16  
N.T.S. Source: VHB LD\_610

Saint George's School  
Wellness Center  
372 Purgatory Rd  
Middletown, RI 02842

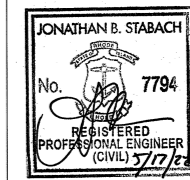
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Permit  
Revision  
Date May 17, 2022  
Title SITE DETAILS  
Scale Refer to Plans  
Drawn By DDH  
Drawing Number

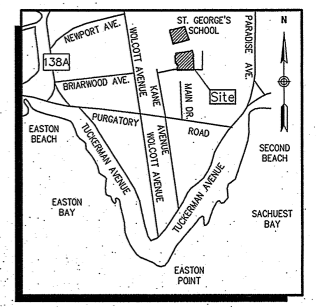
**C3.0**

Contractor to verify all dimensions in field and inform Architect of any discrepancies before starting work.



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100

ST. GEORGE'S SCHOOL  
Because the journey matters.



LOCUS MAP  
NOT TO SCALE

St. George's School  
Athletic Fields  
372 Purgatory Road  
Middletown, Rhode Island

Revision table with columns: No., Revision, Date, Apprd.

Issued for: Date: Jan. 8, 2018

Design  
Property Line and Existing Conditions Plan  
A.P. 121SW Lot 23 and Portion of Lot 39

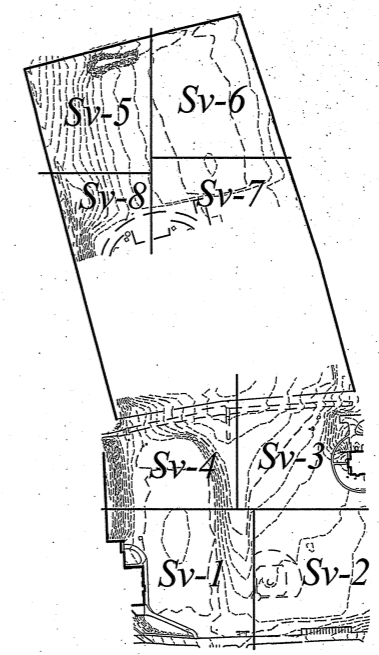
Professional seal for Patrick W. McCourt, P.L.S. #1964, C.O.A. #A92. Includes sheet number 1 of 8 and drawing number Sv-1.

General Notes

- 1. ALL ELEVATIONS ARE BASED ON N.A.V.D. 1988.
2. THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE LOCATED BY A FIELD SURVEY, CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC. BETWEEN DECEMBER 8, 2017 AND DECEMBER 22, 2017.
3. AT THE TIME OF OUR FIELD SURVEY, THE PROJECT AREA WAS PARTIALLY COVERED BY SNOW AND ICE. ACCORDINGLY, ALL GROUND FEATURES MAY NOT BE SHOWN.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO INFORMATION DISCLOSED IN SUCH.
5. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
6. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

Plan References

- 1. PLAN OF NEWPORT HOSPITAL PROPERTY, PARADISE ROAD MIDDLETOWN, R.I. SCALE 1"=100' MAY 7, 1928 C. ROBT. LYNCH, C.E.
2. PLAN OF LOTS SOLD FROM LAND OF MANUEL C. & MARY A. SILVA, MIDDLETOWN, R.I. 15 SEPT 1941 SCALE 1"=50'. PLAN BOOK 2 PAGES 65 & 66
3. ST. GEORGE'S SCHOOL AP 121SW, LOTS 36 & 39, MIDDLETOWN, RHODE ISLAND. ADMINISTRATIVE SUBDIVISION, MERGER OF LOTS 36 & 39. SCALE: 1"=100' DATE: 27NOV02. NORTHEAST ENGINEERS & CONSULTANTS, INC. PLAN 2003-10
4. LOT LAYOUT FOR MALONEY LANE. DATE: 3-25-78 SCALE: 1"=40'. MALCOLM E. BARRET PE. PLAT BOOK 13 PAGE 36



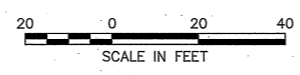
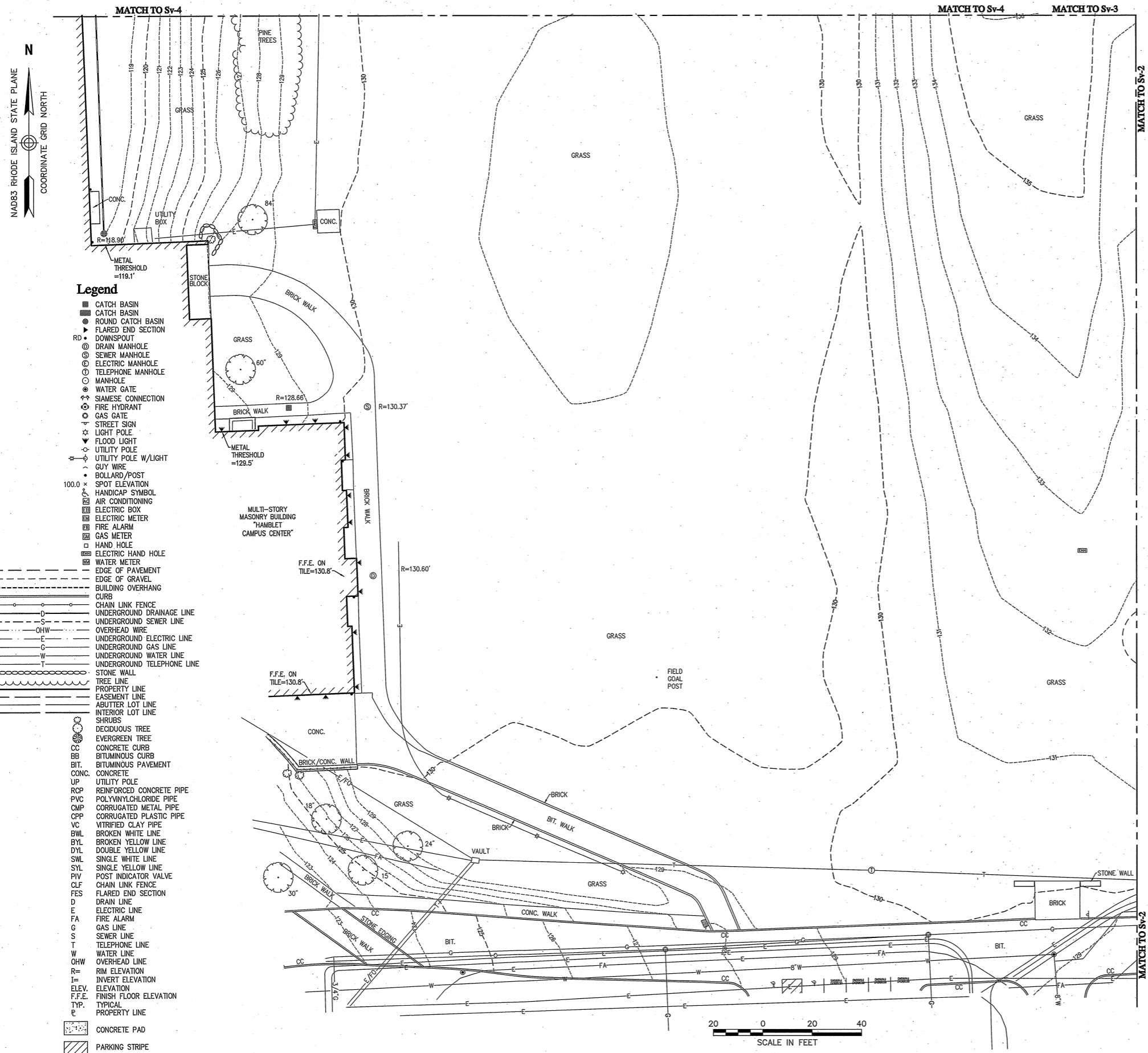
Sheet Layout

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:

- (A) TYPE OF BOUNDARY SURVEY: LIMITED CONTENT BOUNDARY SURVEY MEASUREMENT SPECIFICATION: I
(B) OTHER TYPE OF SURVEY: DATA ACCUMULATION SURVEY TOPOGRAPHIC SURVEY ACCURACY III T2
(C) STATEMENT OF PURPOSE

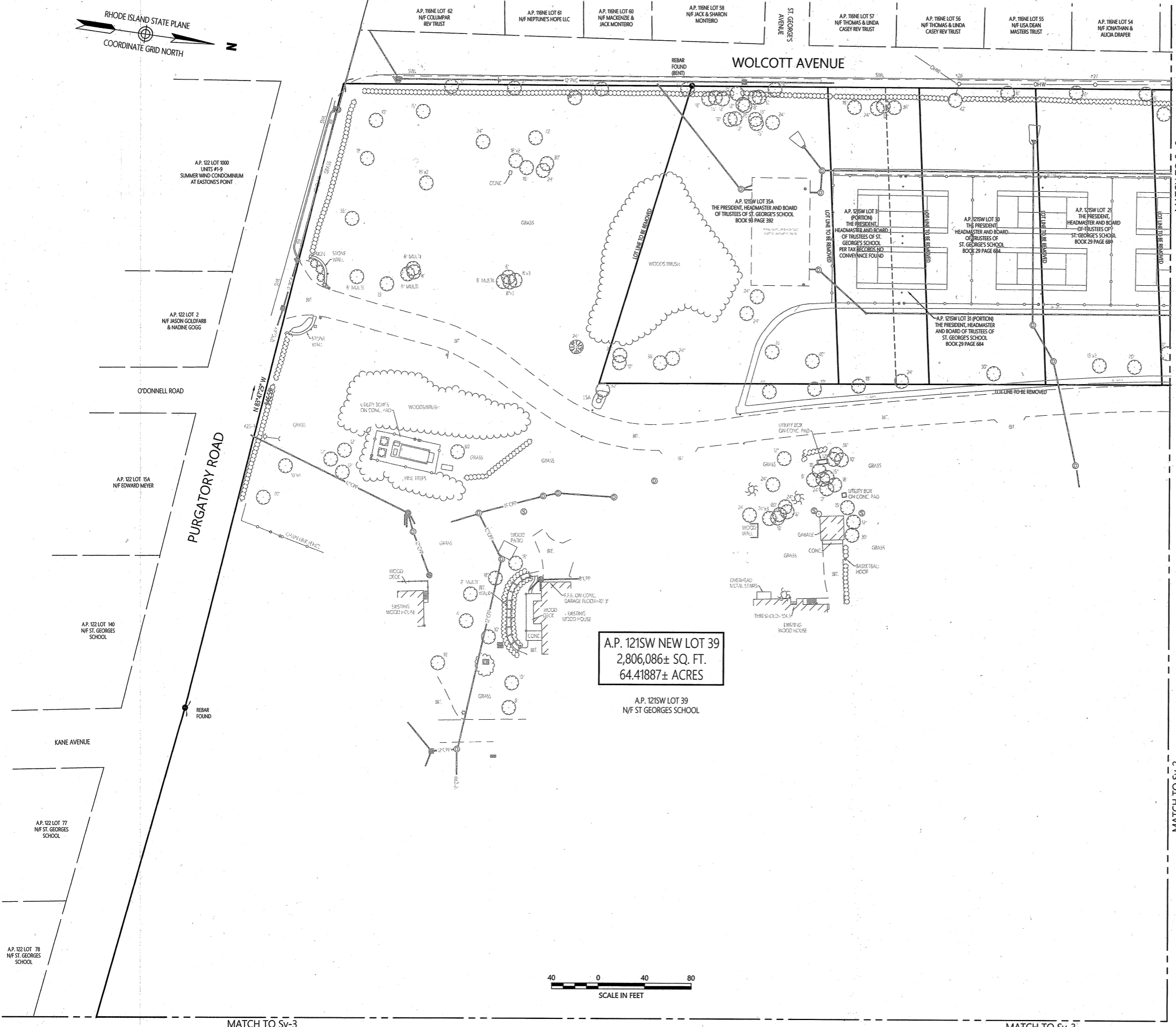
THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: DESIGN OF NEW ATHLETIC FIELDS

BY: Patrick W. McCourt, P.L.S. #1964, C.O.A. #A92. Date: 1/8/18



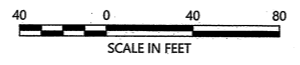
- Legend: CATCH BASIN, DOWNSPOUT, DRAIN MANHOLE, SEWER MANHOLE, ELECTRIC MANHOLE, TELEPHONE MANHOLE, MANHOLE, WATER GATE, SIAMENSE CONNECTION, FIRE HYDRANT, GAS GATE, STREET SIGN, LIGHT POLE, FLOOD LIGHT, UTILITY POLE, UTILITY POLE W/LIGHT, GUY WIRE, BOLLARD/POST, SPOT ELEVATION, HANDICAP SYMBOL, AIR CONDITIONING, ELECTRIC BOX, ELECTRIC METER, FIRE ALARM, GAS METER, HAND HOLE, ELECTRIC HAND HOLE, WATER METER, EDGE OF PAVEMENT, EDGE OF GRAVEL, BUILDING OVERHANG, CURB, CHAIN LINK FENCE, UNDERGROUND DRAINAGE LINE, UNDERGROUND SEWER LINE, OVERHEAD WIRE, UNDERGROUND ELECTRIC LINE, UNDERGROUND GAS LINE, UNDERGROUND WATER LINE, UNDERGROUND TELEPHONE LINE, STONE WALL, TREE LINE, PROPERTY LINE, EASEMENT LINE, ABUTTER LOT LINE, INTERIOR LOT LINE, SHRUBS, DECIDUOUS TREE, EVERGREEN TREE, CONCRETE CURB, BITUMINOUS CURB, BITUMINOUS PAVEMENT, CONCRETE, UTILITY POLE, REINFORCED CONCRETE PIPE, POLYVINYLCHLORIDE PIPE, CORRUGATED METAL PIPE, CORRUGATED PLASTIC PIPE, VITRIFIED CLAY PIPE, BROKEN WHITE LINE, BROKEN YELLOW LINE, DOUBLE YELLOW LINE, SINGLE WHITE LINE, SINGLE YELLOW LINE, POST INDICATOR VALVE, CHAIN LINK FENCE, FLARED END SECTION, DRAIN LINE, ELECTRIC LINE, FIRE ALARM, GAS LINE, SEWER LINE, TELEPHONE LINE, WATER LINE, OVERHEAD LINE, RIM ELEVATION, INVERT ELEVATION, ELEVATION, FINISH FLOOR ELEVATION, TYPICAL, PROPERTY LINE, CONCRETE PAD, PARKING STRIPE, RIP-RAP





**A.P. 121SW NEW LOT 39**  
2,806,086± SQ. FT.  
64.41887± ACRES

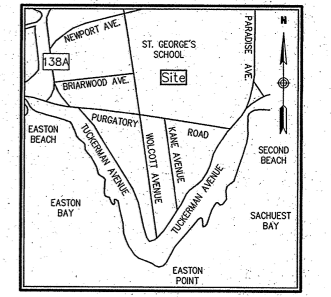
A.P. 121SW LOT 39  
N/F ST GEORGES SCHOOL



Index By:  
Wolcott Avenue &  
Purgatory Road



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



Locus Map  
(NOT TO SCALE)

Legend

- A.P. ASSESSOR'S PLAT
- N/F NOW OR FORMERLY
- P PROPERTY LINE
- F FEDERAL EMERGENCY MANAGEMENT AGENCY
- EMA
- PROPERTY LINE
- ABUTTER LOT LINE
- STATE FREEWAY LINE
- STATE HIGHWAY LINE
- CITY/TOWN LAYOUT LINE
- ZONING BOUNDARY LINE
- STONE WALL

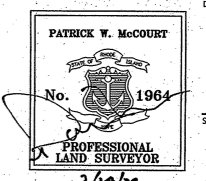
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**St. George's School**  
Wolcott Avenue & Purgatory Road  
Middletown, Rhode Island

No.	Revision	Date	Appr.

Administrative Subdivision  
Plan of Land  
Assessor's Plat 121SW  
Lots 28-31, 35A & 39



**Sv-1**

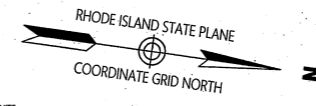
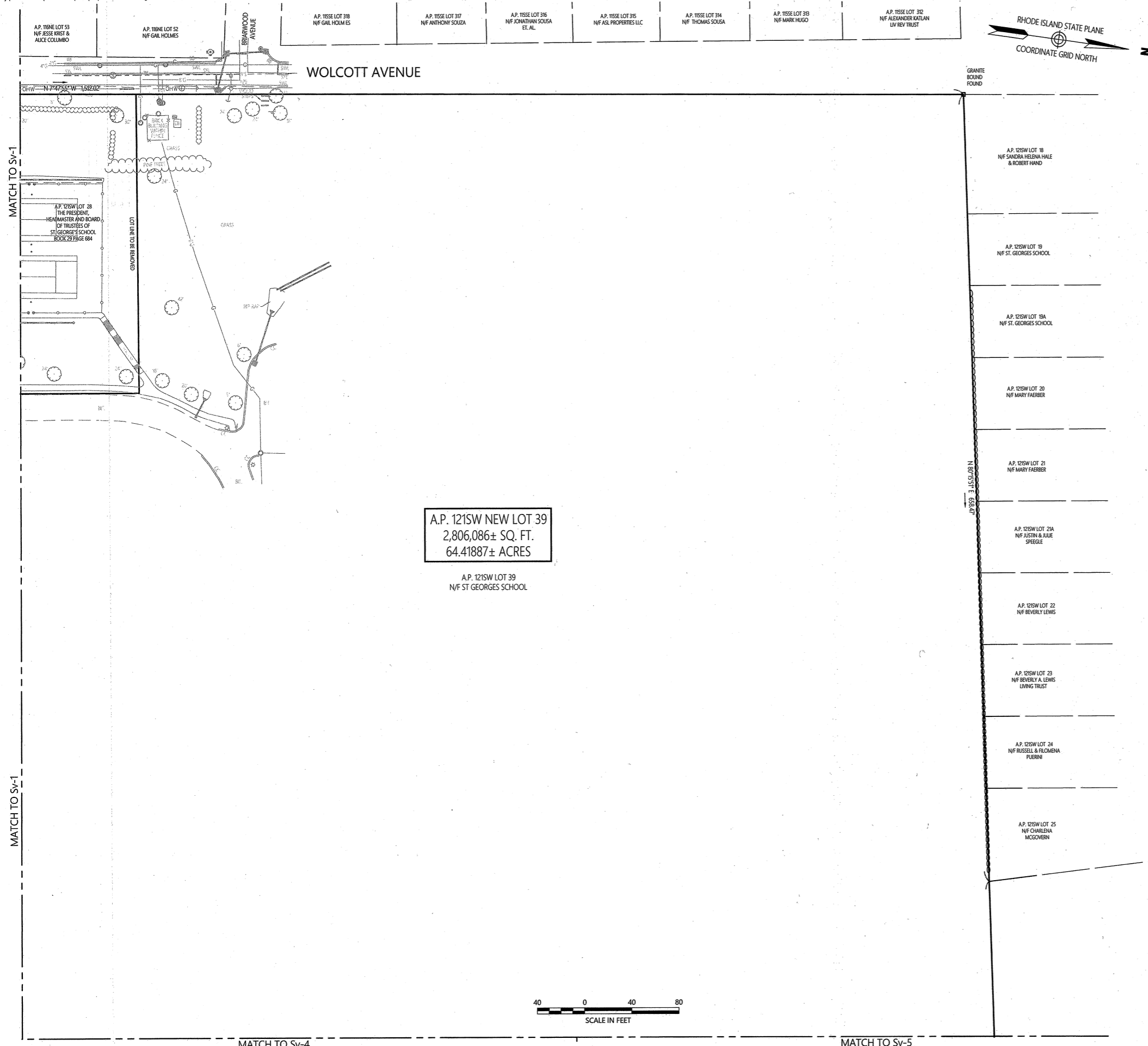
Sheet 1 of 5

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THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: COMBINE LOTS 28-31, 35A AND 39

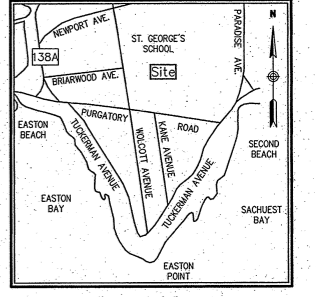
BY *Patrick W. McCourt* 2/14/22  
PATRICK W. McCOURT, P.L.S. #1984  
C.O.A. #A92



Index By:  
 Wolcott Avenue &  
 Purgatory Road



1 Cedar Street  
 Suite 400  
 Providence, RI 02903  
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Legend

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St. George's School  
 Wolcott Avenue & Purgatory Road  
 Middletown, Rhode Island

No.	Revision	Date	App'd.

February 14, 2022

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THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: COMBINE LOTS 28-31, 35A AND 39

BY *Patrick W. McCourt* 2/14/22  
 PATRICK W. MCCOURT, P.L.S. #1964  
 C.O.A. #A92

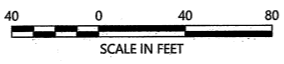
Administrative Subdivision  
 Plan of Land  
 Assessor's Plat 121SW  
 Lots 28-31, 35A & 39



Sv-2

Sheet 2 of 5

Project Number: 73096.20





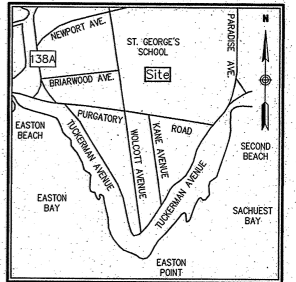
MATCH TO Sv-1

MATCH TO Sv-1

Index By:  
Wolcott Avenue &  
Purgatory Road



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



Locus Map  
(NOT TO SCALE)

Legend

A.P.	ASSESSOR'S PLAT
N/F	NOW OR FORMERLY
P	PROPERTY LINE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
---	PROPERTY LINE
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St. George's School  
Wolcott Avenue & Purgatory Road  
Middletown, Rhode Island

No.	Revision	Date	Appr.

Issued for: \_\_\_\_\_ Date: **February 14, 2022**

Administrative Subdivision  
Plan of Land  
Assessor's Plat 121SW  
Lots 28-31, 35A & 39

Drawing Number: **Sv-3**

Sheet **3** of **5**

PROFESSIONAL LAND SURVEYOR  
PATRICK W. McCourt, P.L.S. #1964  
2/14/22

A.P. 121SW NEW LOT 39  
2,806,086± SQ. FT.  
64.41887± ACRES

A.P. 121SW LOT 39  
N/F ST GEORGES SCHOOL

MATCH TO Sv-4

MATCH TO Sv-4

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- |     |   |                                 |
|-----|---|---------------------------------|
| (A) | TYPE OF BOUNDARY SURVEY:<br>LIMITED CONTENT BOUNDARY SURVEY | MEASUREMENT SPECIFICATION:<br>I |
| (B) | OTHER TYPE OF SURVEY:<br>DATA ACCUMULATION SURVEY           | III                             |
| (C) | STATEMENT OF PURPOSE  |                                 |

THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: COMBINE LOTS 28-31, 35A AND 39

BY *Patrick W. McCourt* 2/14/22  
PATRICK W. McCourt, P.L.S. #1964  
C.O.A. #A92

ASHURST AVENUE

A.P. 122 LOT 108  
N/F ROBERT & MARGARET CERES LIFE ESTATE

A.P. 122 LOT 109  
N/F ROBERT & MARGARET CERES LIFE ESTATE

A.P. 121 LOT 42  
N/F ST GEORGES SCHOOL

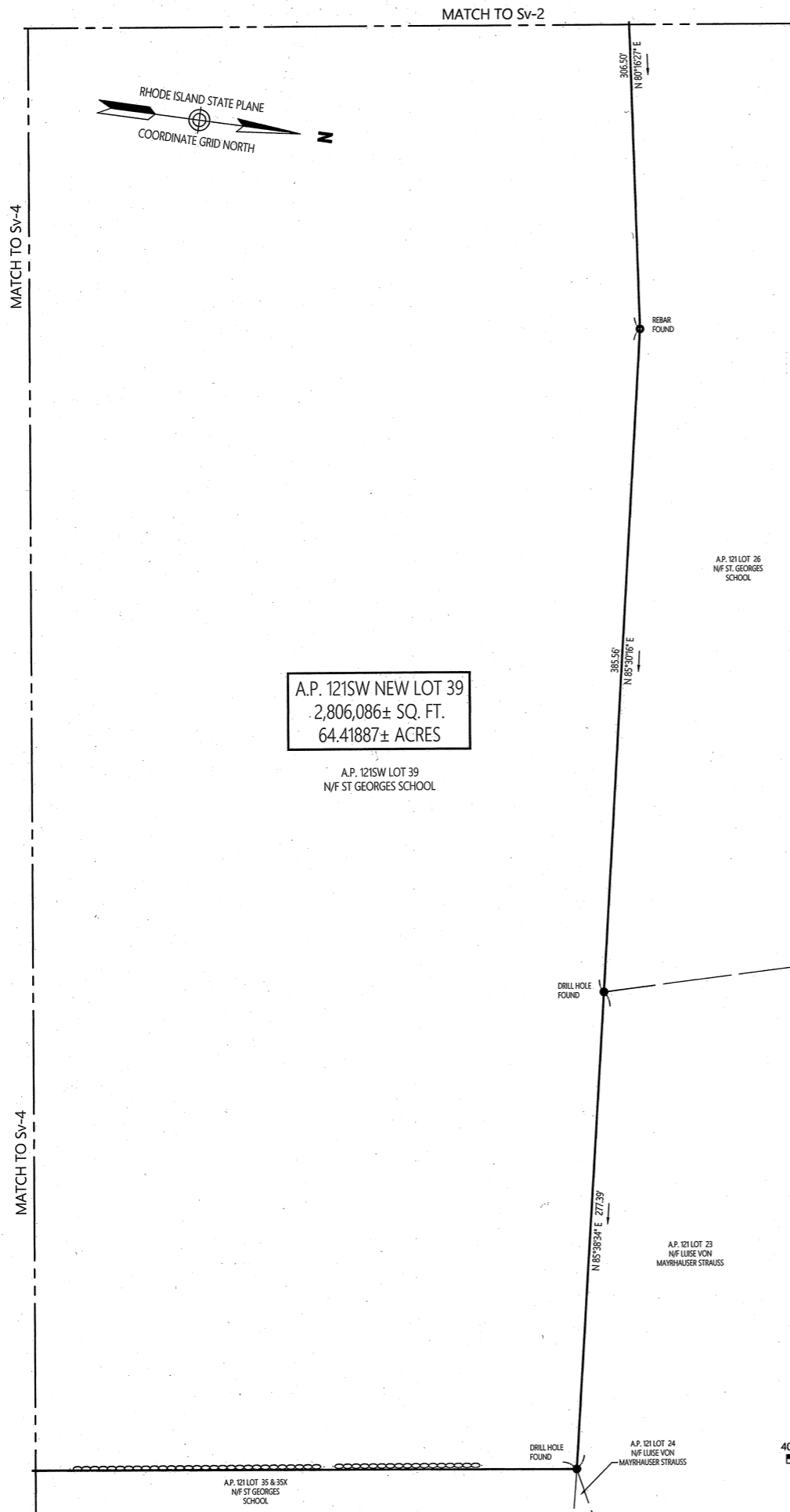
A.P. 121 LOT 44  
N/F SG HOLDINGS LLC

A.P. 121 LOT 46  
N/F KON & ANELLANES

A.P. 121 LOT 38 & 39  
N/F ST GEORGES SCHOOL





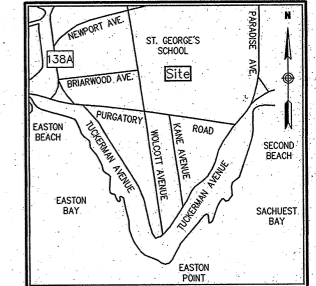


Saved Monday, February 14, 2022 12:03:08 PM BFORIER Plotted Wednesday, February 16, 2022 11:10:36 AM Patrick McCourt

Index By:  
Wolcott Avenue &  
Purgatory Road



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



Locus Map  
(NOT TO SCALE)

Legend

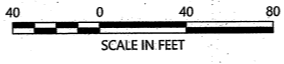
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Wolcott Avenue & Purgatory Road  
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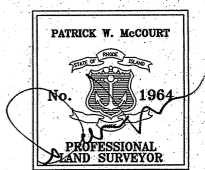
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BY: *Patrick W. McCourt* 2/4/22  
PATRICK W. MCCOURT, P.L.S. #1964  
C.O.A. #A92

Administrative Subdivision  
Plan of Land  
Assessor's Plat 121SW  
Lots 28-31, 35A & 39



Drawing Number  
**Sv-5**

Sheet 5 of 5

Project Number  
73096.20

Inspection Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Inspection Performed By: \_\_\_\_\_

**Catch Basins / Landscape Drains / Area Drains** – Inspect quarterly for first year to determine oil and sediment accumulation rate. Clean annually and when sediment depth is greater than half the sump depth.

Catch Basin	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damaged)
LD14				/ /	
CB16				/ /	
CB18				/ /	
CB17				/ /	
AD11				/ /	
AD10				/ /	
AD09				/ /	
EX2				/ /	
EX1				/ /	

**Outlet Control Structures** – Inspect quarterly for first year to determine debris and sediment accumulation rate. Clean annually and when sediment blocks outlet orifices.

Outlet Control Structure	Inspected (Y/N)	Debris clogging outlets (Y/N)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Damage)
MH20				/ /	
CS21				/ /	

**Roof Runoff Downspouts** – Inspect downspouts and roofs twice per year. Keep roofs clean of debris. Clean inlets twice per year.

Bldg #	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
RD07				/ /	
RD08				/ /	
RD09				/ /	

Inspection Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Inspection Performed By: \_\_\_\_\_

***Rain Gardens / Bioretention Basin*** – Inspect twice during for the first year and annually thereafter for sediment buildup, erosion, vegetative conditions, etc. Replace dead vegetation. If sediment build-up is found, core aeration or cultivating of unvegetated areas may be required to ensure adequate filtration. Remove weeds, invasive plants, leaf litter, sediment and debris annually. The overflow structure should be inspected annually to ensure that it is functioning. Apply hardwood mulch annually to a depth of 3 inches. If water remains on the surface for more than 48 hours, the filter media shall be replaced. Remove the top 6 inches, core aerate and revegetate.

Rain Garden/Bioretention Basins	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
Bioretention Area 1				/ /	

***Sediment Forebay*** – Inspect annually and remove any deposited sediment. Correct any ponding and erosion, and replant vegetation, as needed. Reset or replace any dislodged stones.

Sediment Forebay	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
Bioretention Area 1's Sediment Forebay				/ /	

***Landscape Areas*** - Inspect twice per year. Remove any deposited sediment, leaf litter and debris. Reseed or replace any vegetation that has died. Keep mowed to about 4-inches. Fertilizer usage should be avoided. If needed, a slow release fertilizer should be used.

Areas	Inspected (Y/N)	Sediment Depth (inches)	Cleaning needed (Y/N)	Date Cleaned	Comments (Trash, Oil, Pet waste, Lawn Debris, Damage)
Landscaping and Lawn Areas				/ /	