

STUDY POINT 2
FLOW WEST TO WETLANDS "2"

STORM EVENT	PEAK RATE	VOLUME
2YR STORM	0.42 CFS	1,855 CF
10YR STORM	1.18 CFS	4,533 CF
25YR STORM	1.88 CFS	7,008 CF
100YR STORM	3.44 CFS	12,634 CF

STUDY POINT 1
FLOW NORTH TO WETLANDS "1"

STORM EVENT	PEAK RATE	VOLUME
2YR STORM	4.02 CFS	16,300 CF
10YR STORM	8.78 CFS	34,201 CF
25YR STORM	12.95 CFS	49,831 CF
100YR STORM	21.68 CFS	83,878 CF

STUDY POINT 4
FLOW LEAVING WETLANDS VIA 18" RCP

STORM EVENT	PEAK RATE	VOLUME	MAX. ELEV.
2YR STORM	6.22 CFS	49,086 CF	49.81
10YR STORM	12.17 CFS	96,328 CF	49.93
25YR STORM	14.32 CFS	136,425 CF	50.71
100YR STORM	17.48 CFS	222,086 CF	52.10

STUDY POINT 5
ON-SITE DEPRESSION TO WEST

STORM EVENT	PEAK RATE	VOLUME
2YR STORM	0.01 CFS	8,931 CF
10YR STORM	0.02 CFS	18,188 CF
25YR STORM	0.02 CFS	28,139 CF
100YR STORM	0.03 CFS	43,273 CF

STUDY POINT 4B
FLOW TO VERNAL POOL "A" NORTH

STORM EVENT	PEAK RATE	VOLUME
2YR STORM	6.27 CFS	28,293 CF
10YR STORM	12.81 CFS	55,861 CF
25YR STORM	17.87 CFS	79,318 CF
100YR STORM	28.83 CFS	129,515 CF

STUDY POINT 3
FLOWS SOUTHWEST

STORM EVENT	PEAK RATE	VOLUME
2YR STORM	0.33 CFS	1,638 CF
10YR STORM	0.92 CFS	3,978 CF
25YR STORM	1.47 CFS	6,150 CF
100YR STORM	2.69 CFS	11,087 CF

LEGEND

- EXISTING WATERSHED
- SCS SOILS BOUNDARY
- To FLOW PATH
- SUBCATCHMENT LABEL
- SUBCATCHMENT BOUNDARY
- FLOW DIRECTION

- NOTES:**
1. 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.
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 3. BASE PLAN TAKEN FROM PLAN ENTITLED "EXISTING CONDITIONS, SHEETS V-101 & V-102" PREPARED BY ALLEN & MAJOR ASSOCIATES, REVISED THROUGH MAY 27, 2021 ORIGINAL SCALE 1"=50'.
 4. ALL EXISTING AND PROPOSED COVER TYPES SHALL BE CONSIDERED "GOOD" FOR MODELING PURPOSES UNLESS OTHERWISE NOTED.
 5. TOTAL SITE WATERSHED AREA IS 743,298± S.F.

ILSF WATERSHED AREA (E-5)

ISSUED FOR DRAINAGE REPORT
MAY 4, 2022

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
B	05-04-2022	REVISED PER COMMENTS
A	03-23-2022	REVISED PER COMMENTS

APPLICANT/OWNER:
SLV SCHOOL STREET, LLC
257 HILLSIDE AVENUE
NEEDHAM, MA 02494

PROJECT:
THE SANCTUARY
SCHOOL STREET
MANCHESTER-BY-THE-SEA, MA

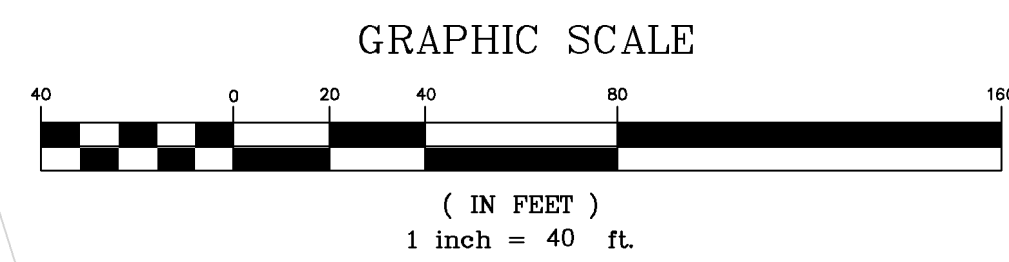
PROJECT NO.	DATE:
2725-01	07-16-2021
SCALE:	DWG. NAME:
1"=40'	C-2725-01
DESIGNED BY:	CHECKED BY:
CMQ/SIL	CMQ

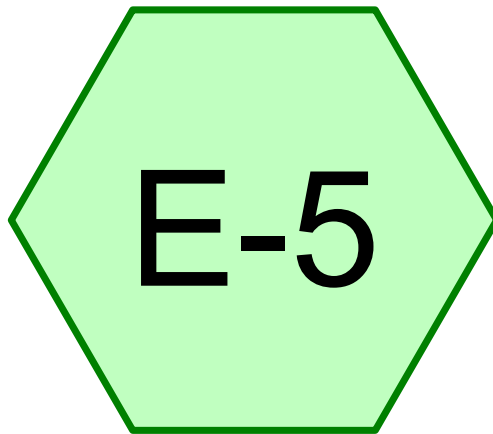
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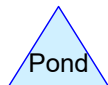
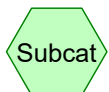
DRAWING TITLE: EXISTING WATERSHED PLAN SHEET No. EWS-1

DIG SAFE
BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233





Off-Site Runoff NorthEast



2725-01 - ILSF Calculation

Prepared by Allen & Major Associates, Inc.

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Page 2

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type III 24-hr		Default	24.00	1	2.50	2

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Page 3

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
0	0	0	3,378	0	3,378	Gravel surface	
0	0	0	8,184	0	8,184	Wetlands, Good	
0	607	0	74,730	0	75,337	Woods, Good	
0	607	0	86,292	0	86,899	TOTAL AREA	

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Page 4

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment E-5: Off-Site Runoff

Runoff Area=86,899 sf 0.00% Impervious Runoff Depth=0.79"
Flow Length=299' Tc=9.8 min CN=78 Runoff=1.50 cfs 5,706 cf

Total Runoff Area = 86,899 sf Runoff Volume = 5,706 cf Average Runoff Depth = 0.79"
100.00% Pervious = 86,899 sf 0.00% Impervious = 0 sf

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Page 5

Summary for Subcatchment E-5: Off-Site Runoff NorthEast

Runoff = 1.50 cfs @ 12.15 hrs, Volume= 5,706 cf, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.50"

Area (sf)	CN	Description
3,378	96	Gravel surface, HSG D
607	55	Woods, Good, HSG B
74,730	77	Woods, Good, HSG D
* 8,184	77	Wetlands, Good, HSG D
86,899	78	Weighted Average
86,899		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.3460	0.12		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.16"
2.9	249	0.3267	1.43		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
9.8	299	Total			

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Events for Subcatchment E-5: Off-Site Runoff NorthEast

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-Year	2.50	1.50	5,706	0.79