

# **ENGINEERING SUMMARY REPORT**

**FOR  
“Delamar Residences”**

**LOCATED AT  
68-70 SEAVIEW AVENUE  
STAMFORD, CONNECTICUT**

**PREPARED FOR  
SEAVIEW HOUSE, LLC**

**May 20, 2022**

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Derek E. Daunais, PE  
CT License No. 22861

21VP\_DSR\_0

*D'Andrea Surveying & Engineering, PC*

LAND PLANNERS • ENGINEERS • SURVEYORS

**Applicant / Site Information:**

**Applicant:** Seaview House, LLC

**c/o Agent:** Carmody Torrance Sandak & Hennessey LLP

**William J. Hennessey Jr.**

**1055 Washington Boulevard**

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**Site Information:**

**68 -70 Seaview Avenue**

**Map 134, Block 150, Lot 8**

**Existing / Proposed Zone: R-5 Zoning District**

**Existing Use: Commercial**

**Proposed Use: Residential/Commercial**

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## **Introduction**

The purpose of this report is to summarize both the flood safety and stormwater treatment improvements for the site as part of the proposed mixed-use residential/commercial redevelopment for 70 Seaview Avenue in Stamford, Connecticut. The property is located at the terminus of Seaview Avenue and is bordered by a condominium complex to the west, City of Stamford owned Cummings Park to the north, which is also used by Halloween Yacht Club, and Westcott Cove/Long Island Sound to the east. The property has a total area of 1.3771 acres in the R-5 zoning district and contains two structurally separate buildings with two different uses. Building #68 operates as a marina office for the adjacent docks to the east. This building and its present use will remain the same under proposed conditions. Building #70 operates as a commercial office building and parking garage. This building is proposed to be renovated for both residential apartment use and commercial office space under proposed conditions.

The proposed redevelopment of the property will include both flood access safety measures and stormwater treatment improvements. The following is a summary narrative of both of those improvements.

## **Flood Safety Improvements Summary Narrative**

The property is located partially within Flood Hazard Zones “X”, “AE (El. 14)”, and “VE (El. 15)” (refer to Exhibit D). Access to the site is from Seaview Avenue, which is a public road. The elevation of Seaview Avenue at its lowest centerline point is approximately 9.5’, which is below the 100-year FEMA designated base flood elevation of 14.0’. The elevation of the existing on-site parking garage and access driveway range from a low elevation of approximately 10.2’ by the driveway entrance to the site up to 12.0’ within the covered surface parking area, which is also below the base flood elevation.

An analysis was performed by RACE Coastal Engineering that included wave modeling in order to predict a more accurate assessment of the base flood water surface elevations in the area. Refer to a report for 68-70 Seaview Avenue, Stamford, CT 06902, dated April 25, 2022, as prepared by RACE Coastal Engineering. The total water level elevation for the base flood was

modeled to be 12.0' during the 100-year base flood along the Seaview Avenue access road and property driveway entrance. The City fire chief has stated during conversations with the design team that the site can be safely accessed by emergency vehicles when up to 15" of water is on the road. Currently, under a base flood water surface elevation of 12.0', the road would have water depths of up to 30" along its centerline at the low-point.

Therefore, the proposed redevelopment of the property includes regrading improvements along the southern end of Seaview Avenue that would raise the surface elevation of the road along its centerline up to a minimum of 10.8', so that emergency vehicles can safely access the site during a 100-year base flood event. Site grades along the building frontage and main entry are also being proposed to be raised, so that dry access to the building is available to emergency vehicles as they enter the site. Refer to Sheet 3 of 7 of the civil site plan set for a depiction of the proposed roadway regrading and its impacts to the adjoining driveway entrances.

All regrading activities within the Seaview Avenue City of Stamford right-of-way and adjoining properties will need to be coordinated and approved by both the City of Stamford and the adjoining property owners.

### **Stormwater Improvements Summary Narrative**

The proposed improvements will include the renovation of the existing office building including the removal and reconstruction of the ground floor level, the regrading and repaving of the existing on-site parking lot and access driveway, the construction of a new pool and pool patio area, utility infrastructure upgrades, the installation of a new stormwater runoff collection and treatment system, and the implementation of a planting plan. The proposed stormwater collection and conveyance system will collect runoff from the proposed driveway and parking lot surfaces and route the collected runoff through a proposed stormwater treatment system structure prior to discharge into the waters of Long Island Sound. Refer to the Site Plan Review Set, prepared by D'Andrea Surveying & Engineering, P.C. for a depiction of existing conditions and the proposed site improvements.

The total on-site impervious coverage is approximately 52,389 square feet (s.f.) or 87.3% under existing conditions. The proposed site improvements will increase the total on-site impervious coverage by approximately 3,633 s.f., resulting in a proposed on-site impervious coverage of approximately 56,022 s.f. or 93.4%. Therefore, the proposed improvements will result in an increase in both stormwater runoff peak flow and volume from the site as compared to existing conditions. However, due to the proximate location of the property to the waters of Long Island Sound reducing peak flows is not a requirement and the increase in runoff will be acceptable. A proposed cyclonic hydrodynamic stormwater treatment system has been proposed to treat stormwater runoff from the majority of the proposed impervious surfaces including all of the proposed parking lot areas prior to discharge into Long Island Sound to help mitigate the impacts on water quality from the site, as compared to existing conditions. There is currently no stormwater treatment on the site. Drainage patterns and discharge points will be similar as under existing conditions.

Currently, the property supports both a commercial marina office building and a commercial office building that are structurally separate from each other. There is a small lawn area in the southern corner of the property and a boardwalk along the eastern side of the property. Beneath the office building is a covered surface parking lot. Additional exterior parking spaces are located along the north side of the building. There is a narrow strip of land along the western side of the existing building. The stormwater runoff from this area, Drainage Area 1 (DA-1) flows overland toward the off-site condominium driveway area to the west, Point of Concern (P.O.C.) "A". DA-2 consists of the driveway entrance area. Stormwater runoff from this area flows overland onto Seaview Avenue where it is collected by catch basins and routed through the City of Stamford storm drainage system, P.O.C. "B", out to Long Island Sound, P.O.C. "C". DA-3 consists of the majority of the site, including the building, parking lot, and majority of the driveway areas. Stormwater runoff from DA-3 is collected by the on-site storm drainage system and then discharged into Long Island Sound, P.O.C. "C" watershed. Refer to Exhibit "A" for a depiction of existing conditions stormwater runoff flow patterns and watershed areas.

Under proposed conditions drainage patterns and discharge points will be similar as under existing conditions with a few slight changes. Refer to the “Drainage Area Breakdown and Comparison” tables in Appendix “A” of this report. Refer to Exhibit “B” for a depiction of proposed conditions stormwater runoff flow patterns and watershed areas.

DA-1 will remain practically the same as under existing conditions with no increase in stormwater runoff being directed to the adjoining condominium property to the west, P.O.C. “A”. DA-2 will have a decrease in both total area and impervious surfaces, which will result in a decrease in stormwater runoff to the City of Stamford storm drainage system in Seaview Avenue, P.O.C. “B”.

Proposed DA-3 will consist of the proposed pool/pool patio area and the boardwalk and marina office area adjacent to Long Island Sound. No changes will be made to either the boardwalk or marina office area. Stormwater runoff from the proposed pool/pool patio area will be collected by a proposed drainage system and routed through a proposed level spreader prior to discharging into Long Island Sound.

Proposed DA-4 will consist of the majority of the site including the proposed residential/office building and surface parking lot area and front driveway. The stormwater runoff from the driveway and parking lot areas will be collected by catch basins equipped with deep sumps and hooded traps over the outlet pipes, which will be used to pretreat the stormwater runoff prior to discharge downstream. Proposed building roof drains will be routed into the proposed storm drainage system. The proposed storm drainage system will then route stormwater runoff through a cyclonic oil/grit separator stormwater treatment system before being discharged into Long Island Sound. The cyclonic oil/grit separator stormwater treatment system will be designed to treat a minimum of the water quality flow rate from its contributing watershed area. Refer to Appendix “A” for water quality flow calculations.

During the construction phase of the project, pretreatment of stormwater runoff will be provided by the use of temporary soil and erosion controls as outlined on the “Site Plan Review

Set,” prepared by D'Andrea Surveying & Engineering, P.C. This includes the stockpiling of excess materials for control of sediment and periodic on-site inspections to ensure that the development of the site remains “tight” and stable throughout the construction phase.

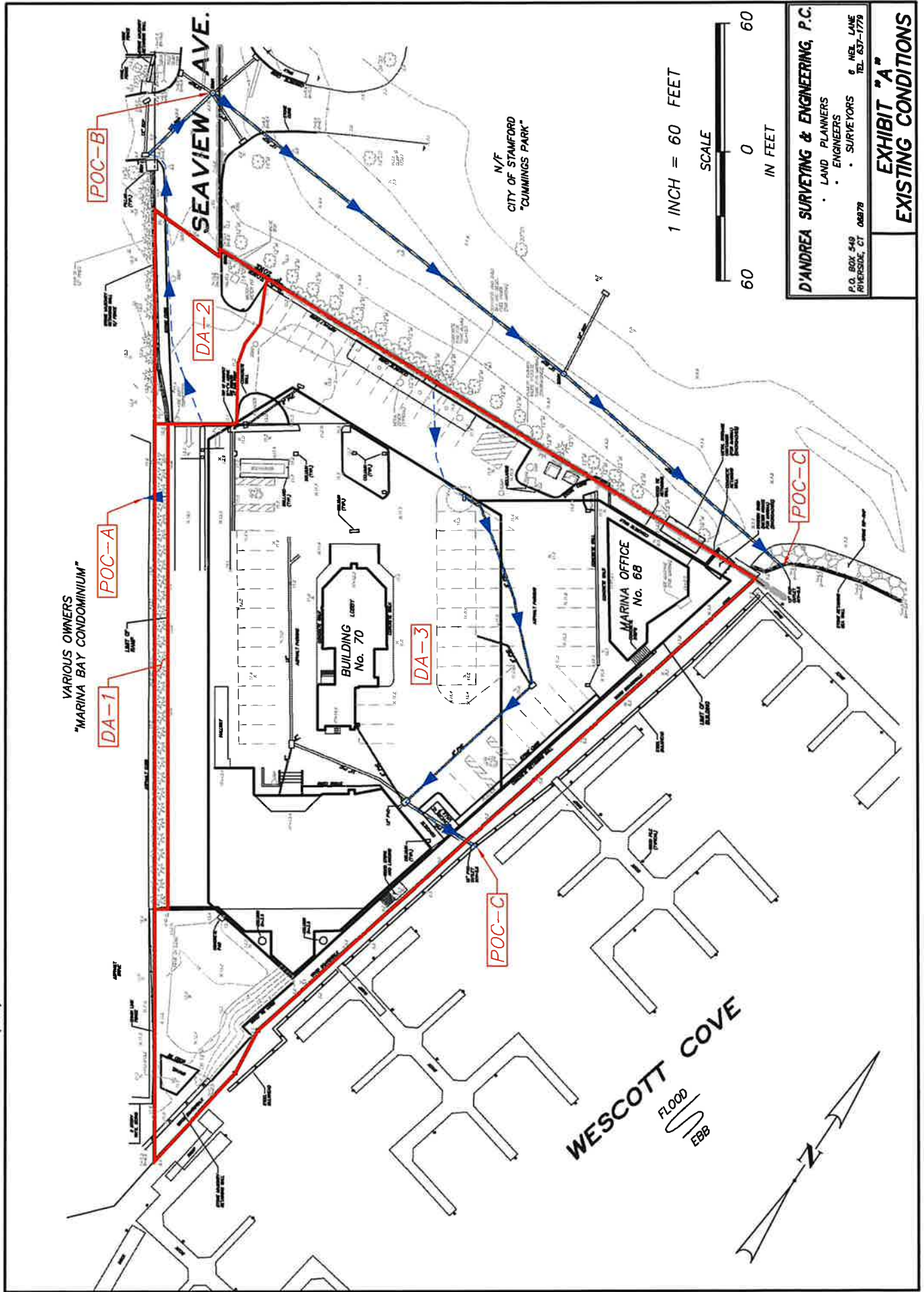
### **Conclusion**

Based on the above information, the proposed improvements have been designed to provide both safe emergency access to the site in accordance with local standards and water quality treatment measures that will mitigate stormwater runoff from the site. The proposed redevelopment of the site is an improvement over existing conditions and will not adversely impact adjacent properties or City-owned drainage facilities.



**Exhibits "A" & "B"**

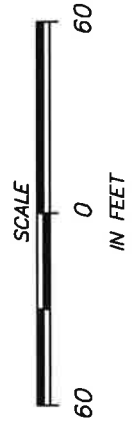
**Watershed Maps**  
**Existing & Proposed Conditions**



VARIOUS OWNERS  
"MARINA BAY CONDOMINIUM"

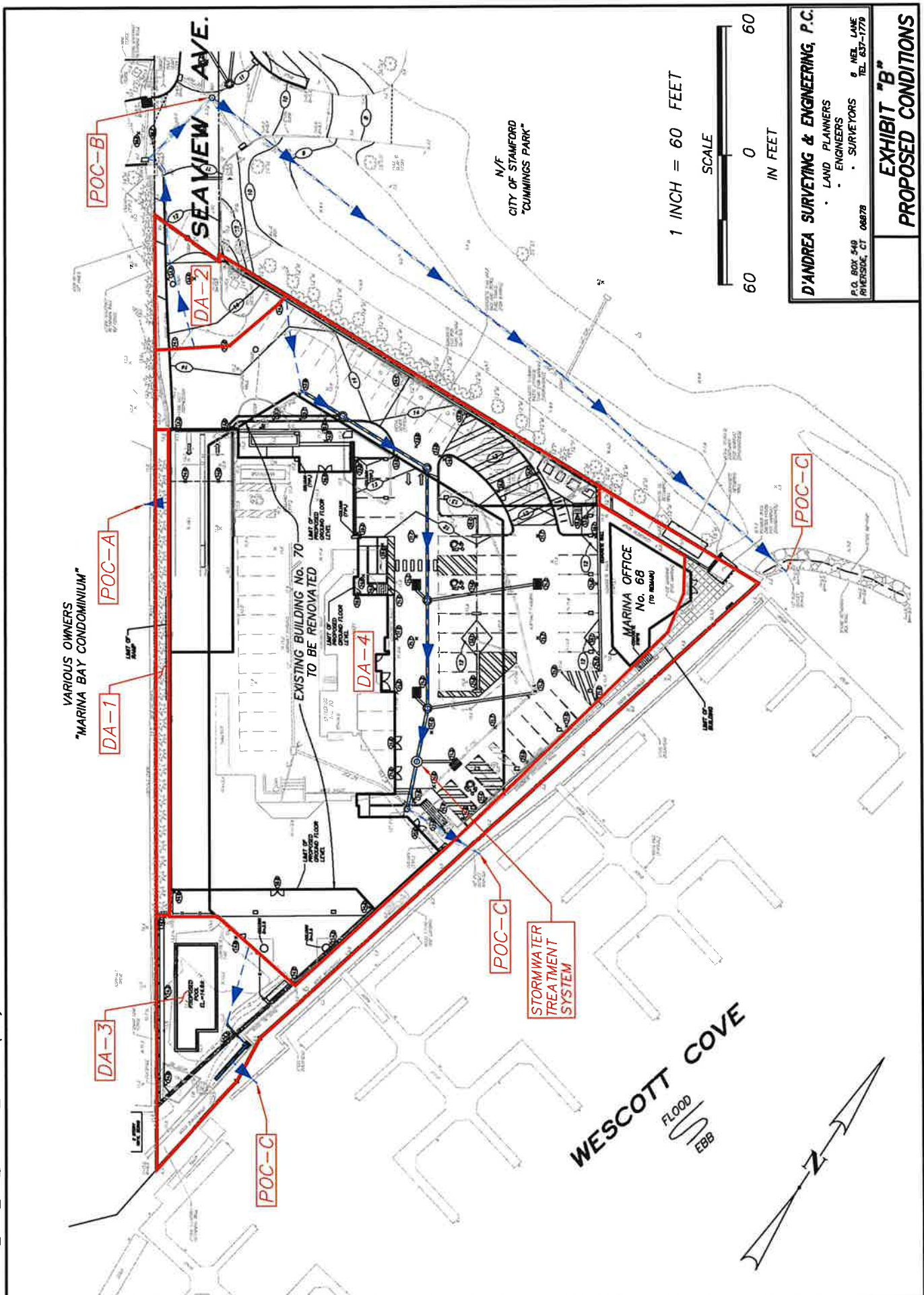
N/E  
CITY OF STAMFORD  
"CUMMINGS PARK"

1 INCH = 60 FEET



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EXHIBIT "A"  
EXISTING CONDITIONS



VARIOUS OWNERS  
"MARINA BAY CONDOMINIUM"

N/F  
CITY OF STAMFORD  
"CUMMINGS PARK"

WESCOTT COVE  
FLOOD  
EBB

1 INCH = 60 FEET



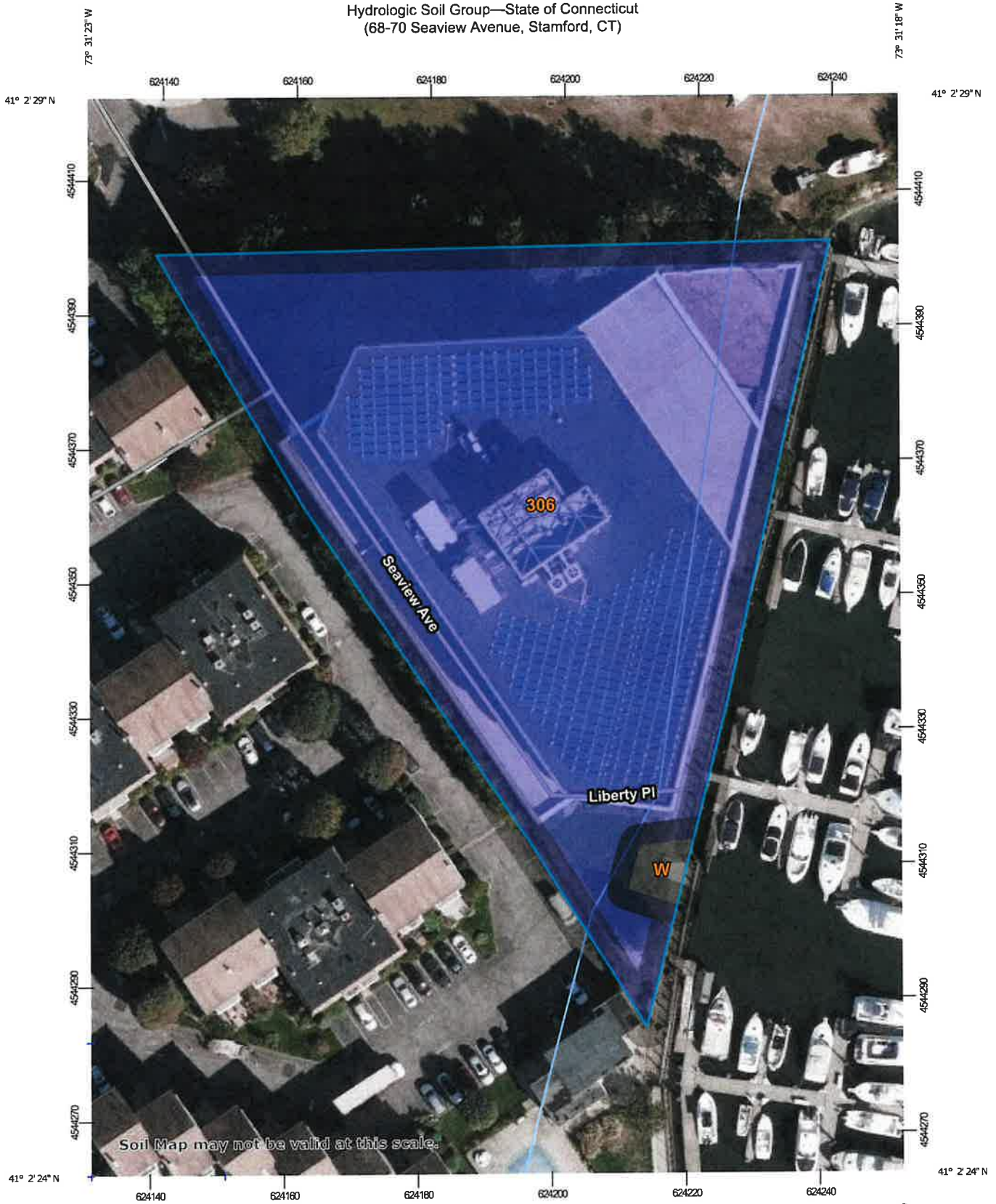
**D'ANDREA SURVEYING & ENGINEERING, P.C.**  
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 P.O. BOX 549  
 RIVERSIDE, CT 06878  
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**EXHIBIT "B"**  
**PROPOSED CONDITIONS**

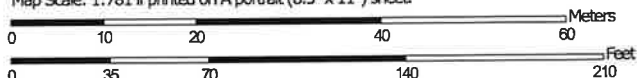
**Exhibit "C"**

**NRCS Soil Map &  
Hydraulic Soil Group Rating**

Hydrologic Soil Group—State of Connecticut  
(68-70 Seaview Avenue, Stamford, CT)



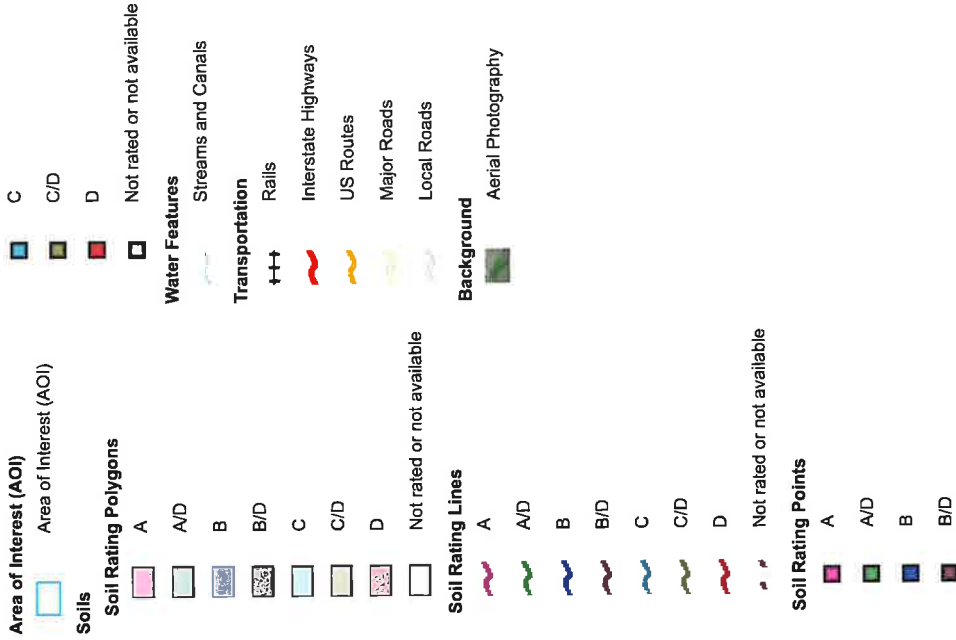
Map Scale: 1:781 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



## MAP LEGEND



## 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 Connecticut  
 Survey Area Data: Version 21, Sep 7, 2021

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

Date(s) aerial images were photographed: Oct 4, 2020—Oct 31, 2020

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
306	Udorthents-Urban land complex	B	1.5	98.9%
W	Water		0.0	1.1%
<b>Totals for Area of Interest</b>			<b>1.5</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*



**Exhibit "D"**

**FIRM Map**

# National Flood Hazard Layer FIRMette



73°31'39"W 41°24'1"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery; Data refreshed October, 2020

## Legend

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

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE)  
Zone A, V, AE9
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

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

**OTHER AREAS**

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

**GENERAL STRUCTURES**

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

**OTHER FEATURES**

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

**MAP PANELS**

- Digital Data Available
- No Digital Data Available
- Unmapped



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

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

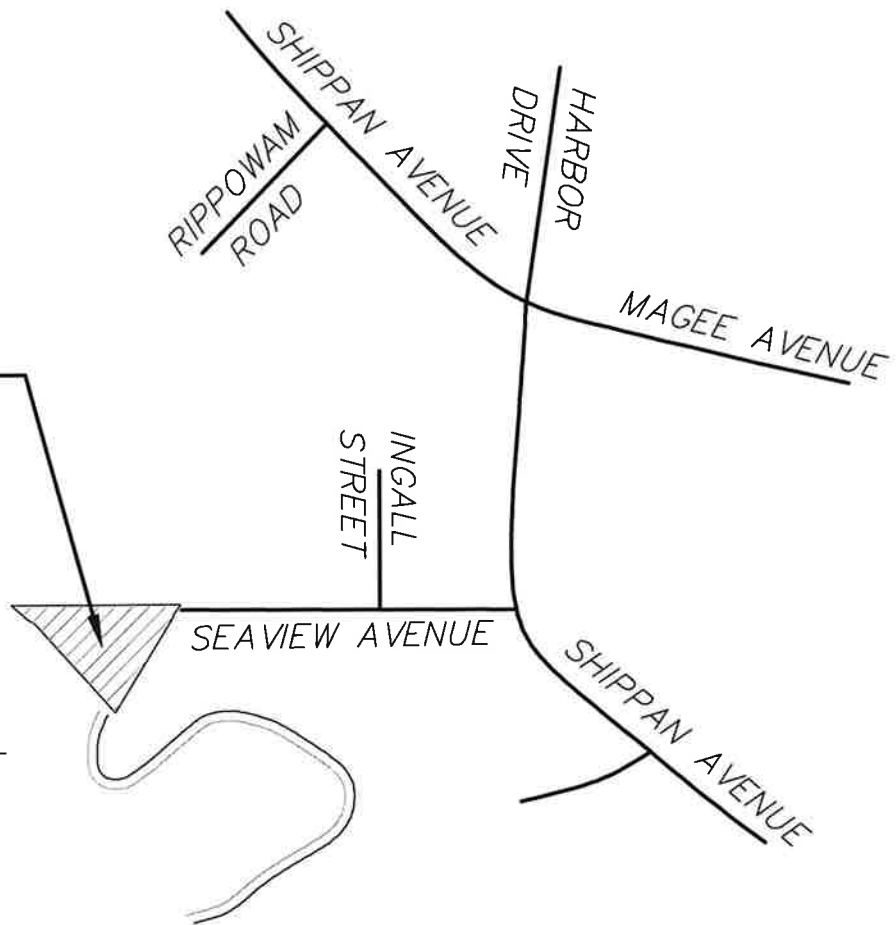
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/2/2022 at 12:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

**Exhibit "E"**  
**Site Vicinity Map**

SUBJECT  
PARCEL

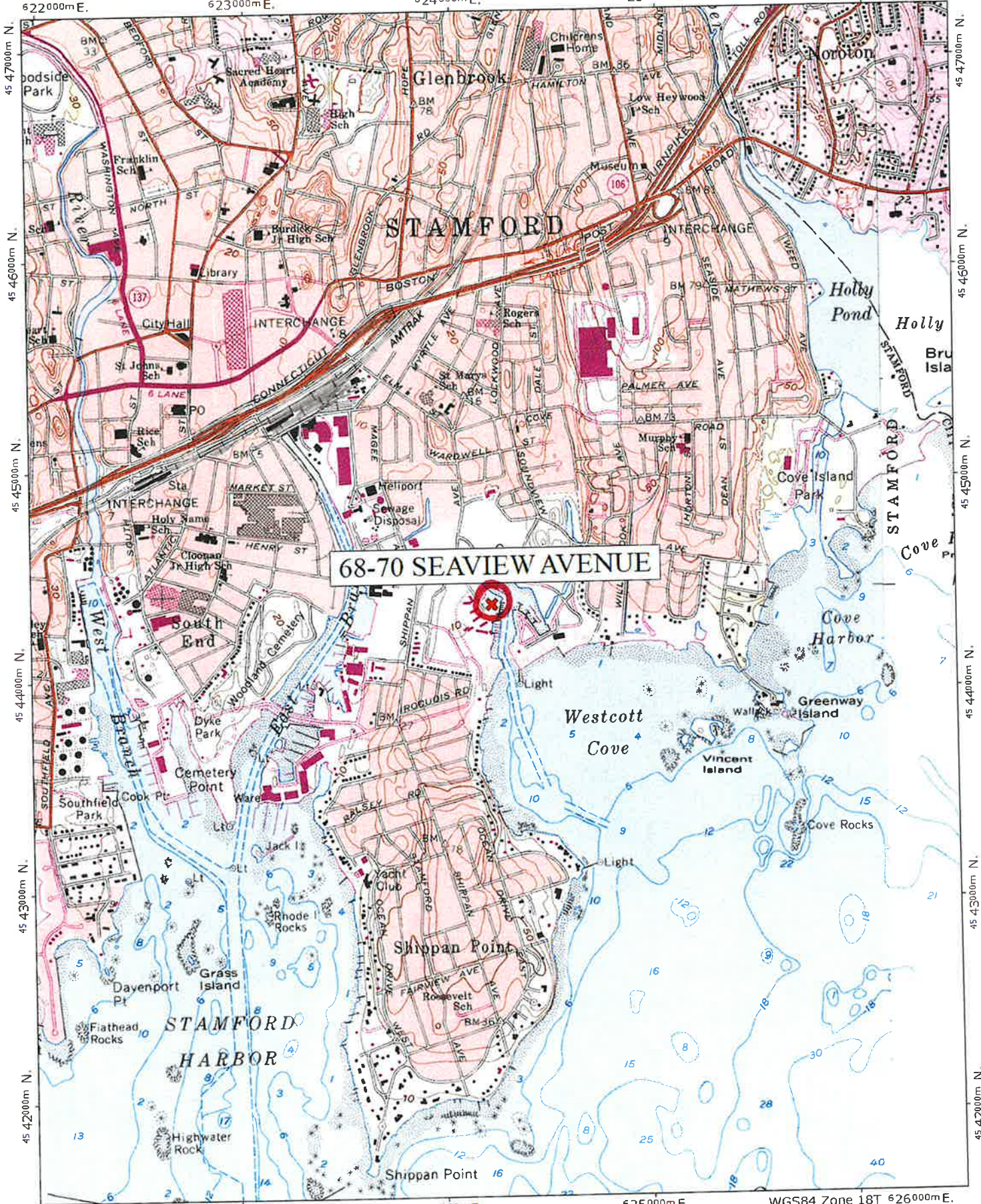
WESTCOTT  
COVE



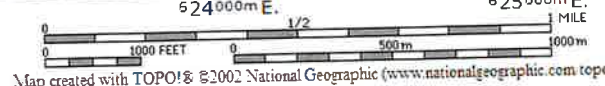
LOCATION MAP - 1" = 500'±

**Exhibit "F"**

**USGS Topographic Quad Map**



68-70 SEAVIEW AVENUE



**Appendix "A"**  
**Stormwater Calculations**

## DRAINAGE AREA BREAKDOWN AND COMPARISON

The following is a summary of the drainage area surfaces for both existing and proposed conditions and a comparison of the area of impervious surfaces directing stormwater runoff to each point of concern (POC).

### EXISTING CONDITIONS

P.O.C.	Drainage Area	Total Area (S.F.)	Impervious Area (CN=98) (S.F.)	Lawn B Area (CN=61) (S.F.)
A	DA-1	1,379	0	1,379
B	DA-2	3,702	2,692	1,010
C	DA-3	54,905	49,697	5,208
	<b>TOTAL</b>	<b>59,986</b>	<b>52,389</b>	<b>7,597</b>

### PROPOSED CONDITIONS

P.O.C.	Drainage Area	Total Area (S.F.)	Impervious Area (CN=98) (S.F.)	Lawn B Area (CN=61) (S.F.)
A	DA-1	1,374	0	1,374
B	DA-2	2,248	1,818	430
C	DA-3	7,864	6,539	1,325
C	DA-4	48,500	47,665	835
	<b>TOTAL</b>	<b>59,986</b>	<b>56,022</b>	<b>3,964</b>

### COMPARISON OF IMPERVIOUS SURFACE AREAS TO EACH P.O.C.

P.O.C.	Existing Impervious Area (S.F.)	Proposed Impervious Area (S.F.)	Change in Impervious Area (S.F.)
A	0	0	0
B	2,692	1,818	-874
C	49,697	54,204	+4,507
<b>TOTAL</b>	<b>52,389</b>	<b>56,022</b>	<b>+3,633</b>



## Water Quality Volume and Flow Calculations For Proposed Stormwater Treatment System

The following calculations have been performed for Drainage Area 4.

---

- **Calculate the Water Quality Volume (WQV)**

$$WQV = \left(\frac{1\text{in}}{12\frac{\text{in}}{\text{ft}}}\right)RA$$

$$A = \text{Drainage Area 4} = 48,500\text{ft}^2$$

$$A_{\text{impervious}} = 47,665\text{ft}^2$$

$$I = \% \text{Impervious} = \frac{A_{\text{impervious}}}{A} = \frac{47,665\text{ft}^2}{48,500\text{ft}^2} (100) = 98.3\%$$

$$R = \text{Runoff Coefficient} = 0.05 + 0.009I = 0.05 + 0.009(98.3\%) = 0.9347$$

$$WQV = \left(\frac{1\text{in}}{12\frac{\text{in}}{\text{ft}}}\right)(0.9347)(48,500\text{ft}^2) = 3777.7\text{ft}^3$$

### Compute the Water Quality Flow Rate (WQF)

$$WQF = q_u AQ$$

$$Q = \frac{WQV(12\frac{\text{in}}{\text{ft}})}{A} = \frac{3777.7\text{ft}^3(12\frac{\text{in}}{\text{ft}})}{48,500\text{ft}^2} = 0.9347\text{in}$$

$$P = \text{Design Precipitation} = 1\text{inch}$$

$$CN = \frac{1000}{10 + 5(1\text{in}) + 10(0.9347\text{in}) - 10((0.9347\text{in})^2 + 1.25(0.9347\text{in})(1\text{in}))^{1/2}} = 99.4$$

$$T_c = 0.167\text{hr} = 10\text{min} (\text{Minimum value used in calculation})$$

$$I_a = 0.012\text{in} (\text{extrapolated from Table 4-1 2004 CT Stormwater Quality Manual})$$

$$\frac{I_a}{P} = 0.012 \rightarrow q_u \approx 700 \frac{\text{csm}}{\text{in}} (\text{From Exhibit 4-111 2004 CT Stormwater Quality Manual})$$

$$WQF = q_u AQ = \left(700 \frac{\text{csm}}{\text{in}}\right) \left(\frac{48,500\text{ft}^2}{\left(5,280\frac{\text{mi}}{\text{ft}}\right)^2}\right) (0.9347\text{in}) = 1.14 \frac{\text{ft}^3}{\text{s}} \quad WQF = 1.14 \frac{\text{ft}^3}{\text{s}}$$

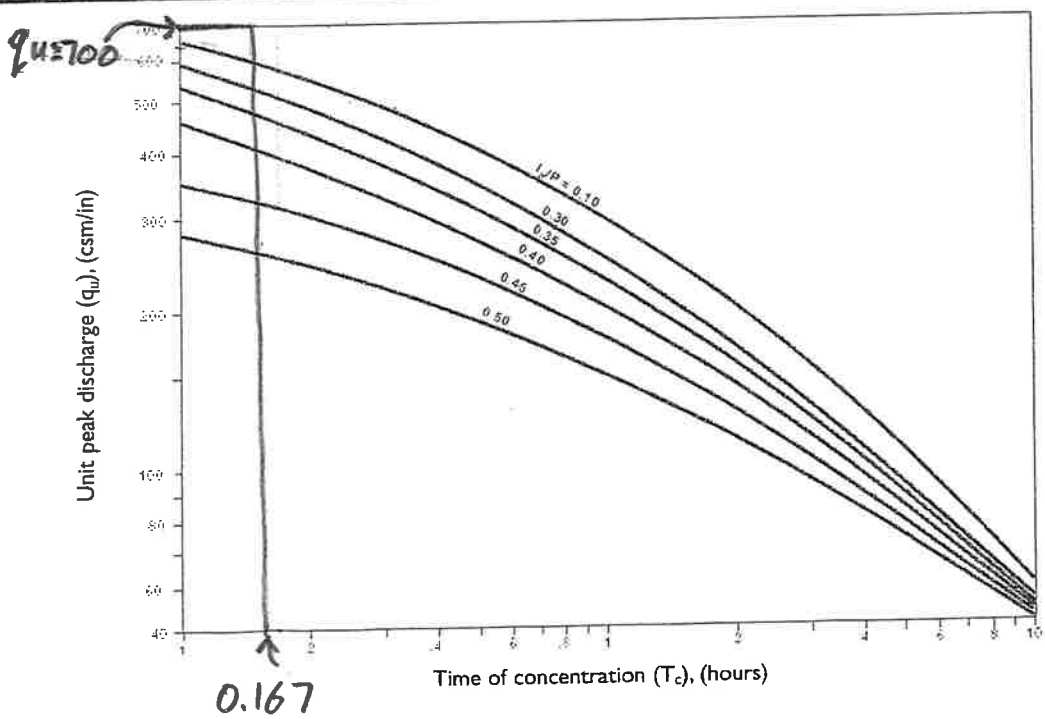
2. Compute the time of concentration ( $t_c$ ) based on the methods described in Chapter 3 of TR-55. A minimum value of 0.167 hours (10 minutes) should be used. For sheet flow, the flow path should not be longer than 300 feet.
3. Using the computed CN,  $t_c$ , and drainage area (A) in acres, compute the peak discharge for the water quality storm (i.e., the water quality flow [WQF]), based on the procedures described in Chapter 4 of TR-55.
  - Read initial abstraction ( $I_a$ ) from Table 4-1 in Chapter 4 of TR-55 (reproduced below); compute  $I_a/P$

**Table 4-1  $I_a$  values for runoff curve numbers**

Curve number	$I_a$ (in)	Curve number	$I_a$ (in)	Curve number	$I_a$ (in)	Curve number	$I_a$ (in)
40	3.000	55	1.636	70	0.857	85	0.353
41	2.878	56	1.571	71	0.817	86	0.326
42	2.762	57	1.509	72	0.778	87	0.299
43	2.651	58	1.448	73	0.740	88	0.273
44	2.545	59	1.390	74	0.703	89	0.247
45	2.444	60	1.333	75	0.667	90	0.222
46	2.348	61	1.279	76	0.632	91	0.198
47	2.255	62	1.226	77	0.597	92	0.174
48	2.167	63	1.175	78	0.564	93	0.151
49	2.082	64	1.125	79	0.532	94	0.128
50	2.000	65	1.077	80	0.500	95	0.105
51	1.922	66	1.030	81	0.469	96	0.083
52	1.846	67	0.985	82	0.439	97	0.062
53	1.774	68	0.941	83	0.410	98	0.041
54	1.704	69	0.899	84	0.381	99.4	0.012

- Read the unit peak discharge ( $q_u$ ) from Exhibit 4-III in Chapter 4 of TR-55 (reproduced below) for appropriate  $t_c$

**Exhibit 4-III Unit peak discharge ( $q_u$ ) for NRCS (SCS) type III rainfall distribution**



**Appendix "B"**  
**DCIA Worksheet**

Directly Connected Impervious Area Tracking Worksheet  
City of Stamford Drainage Manual



**Note to user: complete all cells of this color only, as indicated by section headings**

**Part 1: General Information (All Projects)**

Project Name	Delamar Residences
Project Address	68 - 70 Seaview Avenue
Project Applicant	Seaview House, LLC
Title of Plan	Site Grading and Layout Plan
Revision Date of Plan	5/20/2022
Tax Account Number	003-1647

**Part 2: Project Details (All Projects)**

1. What type of development is this? (choose from dropdown)	Redevelopment	
2. What is the total area of the project site?	59,986	ft <sup>2</sup>
3. What is the total area of land disturbance for this project?	52,165	ft <sup>2</sup>
4. Does project site drain to High Quality Waters, a Direct Waterfront, or within 500 ft. of Tidal Wetlands? (Yes/No)	Yes	
Does Standard 1 apply based on information above?	Yes	

**Part 3: Water Quality Target Total (Only for Standard 1 Projects)**

5. What is the <u>current</u> (pre-development) <b>DCIA</b> for the site?	2,692	ft <sup>2</sup>
6. Will the proposed development increase <b>DCIA</b> (without consideration of proposed stormwater management)? (Yes/No)	No	
7. What is the <u>proposed-development</u> <b>total impervious area</b> for the site?	1,818	ft <sup>2</sup>
Water Quality Volume (WQV)	386.3	ft <sup>3</sup>
Standard 1 requirement	Retain WQV on-site	
Required retention volume	386.3	ft <sup>3</sup>
Provided retention volume for proposed development	0.0	ft <sup>3</sup>

**Part 4: Proposed DCIA Tracking (Only for Standard 1 Projects)**

<u>Pre-development</u> <b>total impervious area</b>	52,389	ft <sup>2</sup>
<u>Current</u> <b>DCIA</b>	2,692	ft <sup>2</sup>
<u>Proposed-development</u> <b>total impervious area</b>	56,022	ft <sup>2</sup>
<u>Proposed-development</u> <b>DCIA</b> (after stormwater management)	1,818	ft <sup>2</sup>
Net change in <b>DCIA</b> from <u>current</u> to <u>proposed-development</u>	-874	ft <sup>2</sup>

**Part 5: Post-Development (As-Built Certified) DCIA Tracking (Only for Standard 1 Projects)**

<u>Post-development</u> (per as-built) <b>total impervious area</b>		ft <sup>2</sup>
<u>Post-development</u> (per as-built) <b>DCIA</b> (after stormwater management)		ft <sup>2</sup>
Net change in <b>DCIA</b> from <u>current</u> to <u>post-development</u>		ft <sup>2</sup>

**Certification Statement**

I hereby certify that the information contained in this worksheet is true and correct.

Engineer's Signature \_\_\_\_\_ Date \_\_\_\_\_ Engineer's Seal \_\_\_\_\_