



Kousidis Engineering, LLC
Land Development Consultants & Site Design

DRAINAGE ANALYSIS

**LOCATED AT
238 HILLSPPOINT ROAD
WESTPORT, CONNECTICUT**

**PREPARED FOR
COASTAL LUXURY HOMES**

September 18, 2024

Jim Kousidis, P.E.
CT License No. 26830

1. EXISTING CONDITIONS

This 3,712-sq. ft. residential property is currently developed with a single-family residence and driveway. Test pits at the site indicate highly pervious soils that are adequate to accept a subsurface storm drain system. The topography of the property slopes to the east. According to the Web Soil Survey website (map and soil table attached) the soils in the subject area consist of Charlton-Urban land complex, 8 to 15 percent slopes, a well-drained soil with a Hydrologic Soil Group "B".

2. PROPOSED CONDITIONS

A new development is being proposed for the subject property. The owner is proposing to demolish the existing dwelling and construct a new single-family residence with a new driveway, with associated site improvements. The total proposed impervious surface is 2,225-sq.ft. A subsurface drainage system has been proposed to collect the first flush from all the proposed impervious surfaces directed to it. The new roof area and the driveway drains must be directed to the proposed retention system.

3. DRAINAGE

The subject property is located approximately 125 ft from the tidal waters of the Lond Island Sound. After discussion with the Town of Westport Engineering Department, it was determined that the drainage system for the property is to be designed to collect the water quality volume from the new impervious surfaces. The drainage system was checked for the capacity to hold the first flush from all the new impervious surfaces. The runoff volume from 1" of rainfall is (2,225 sq. ft. x 1.3"/12"/ft. = 241 cu. ft.). The holding capacity of the set of concrete galleries is 244 cu.ft. which exceeds the 1.3" minimum requirement of pure storage volume.

4. CONCLUSION

The proposed development will increase the amount of impervious area to this site. With the installation of the proposed stormwater retention systems, the original flow patterns will be maintained and the requirement for water quality volume will be met. The proposed design incorporates stormwater treatment to control pollution and provide groundwater recharge capacity. The implementation of these techniques and the overall site design layout will result in a finished project that will minimize sediment and erosion impacts during construction and will have no adverse impacts to adjoining properties upon completion.

EXISTING DIRECTLY CONNECTED IMPERVIOUS AREA

EXHIBIT "A"

238 HILLSPPOINT ROAD, WESTPORT, CT

PREPARED FOR

COASTAL LUXURY HOMES

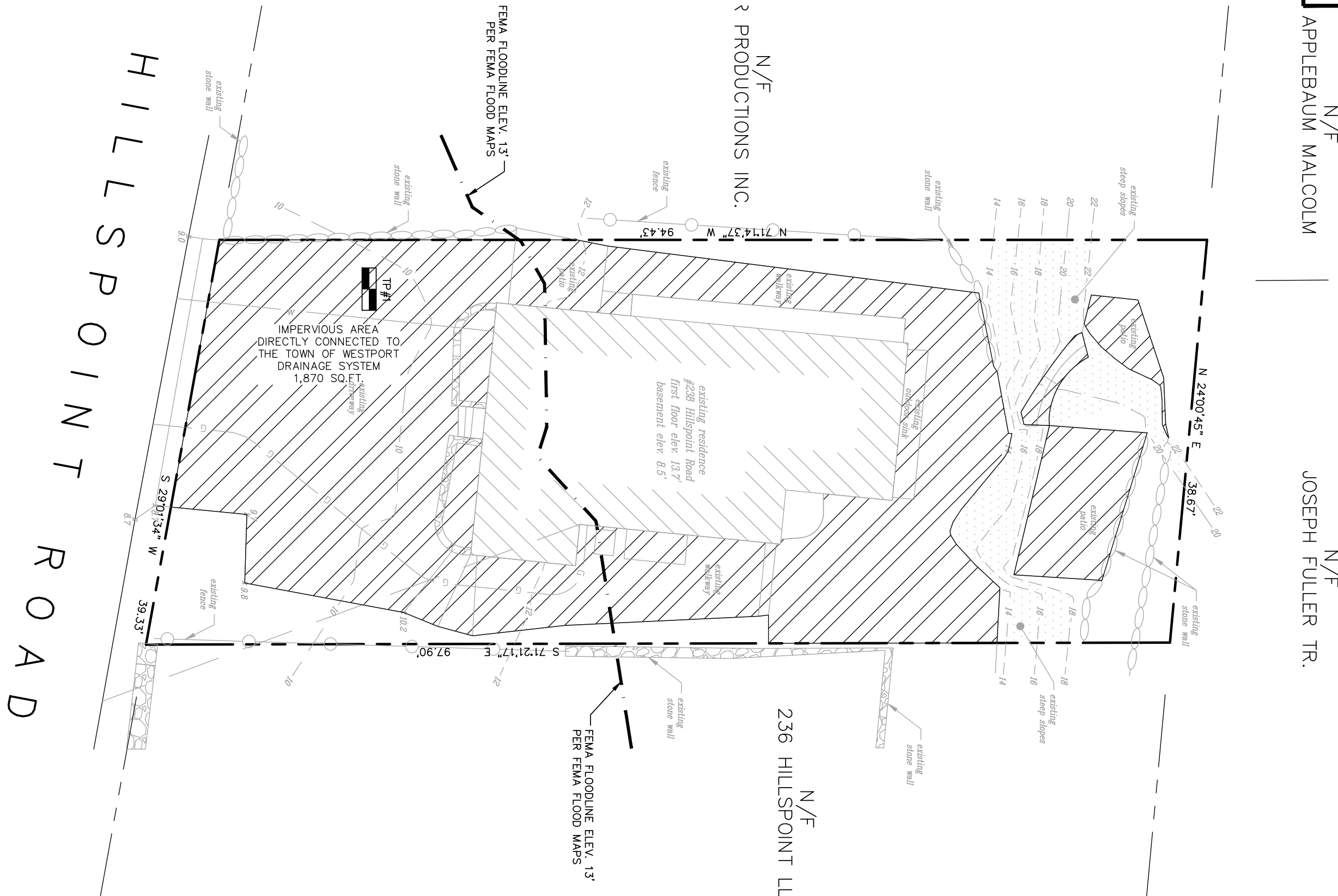


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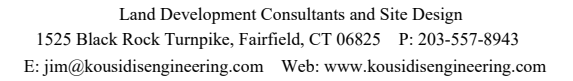
Land Development Consultants and Site Design

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SCALE:

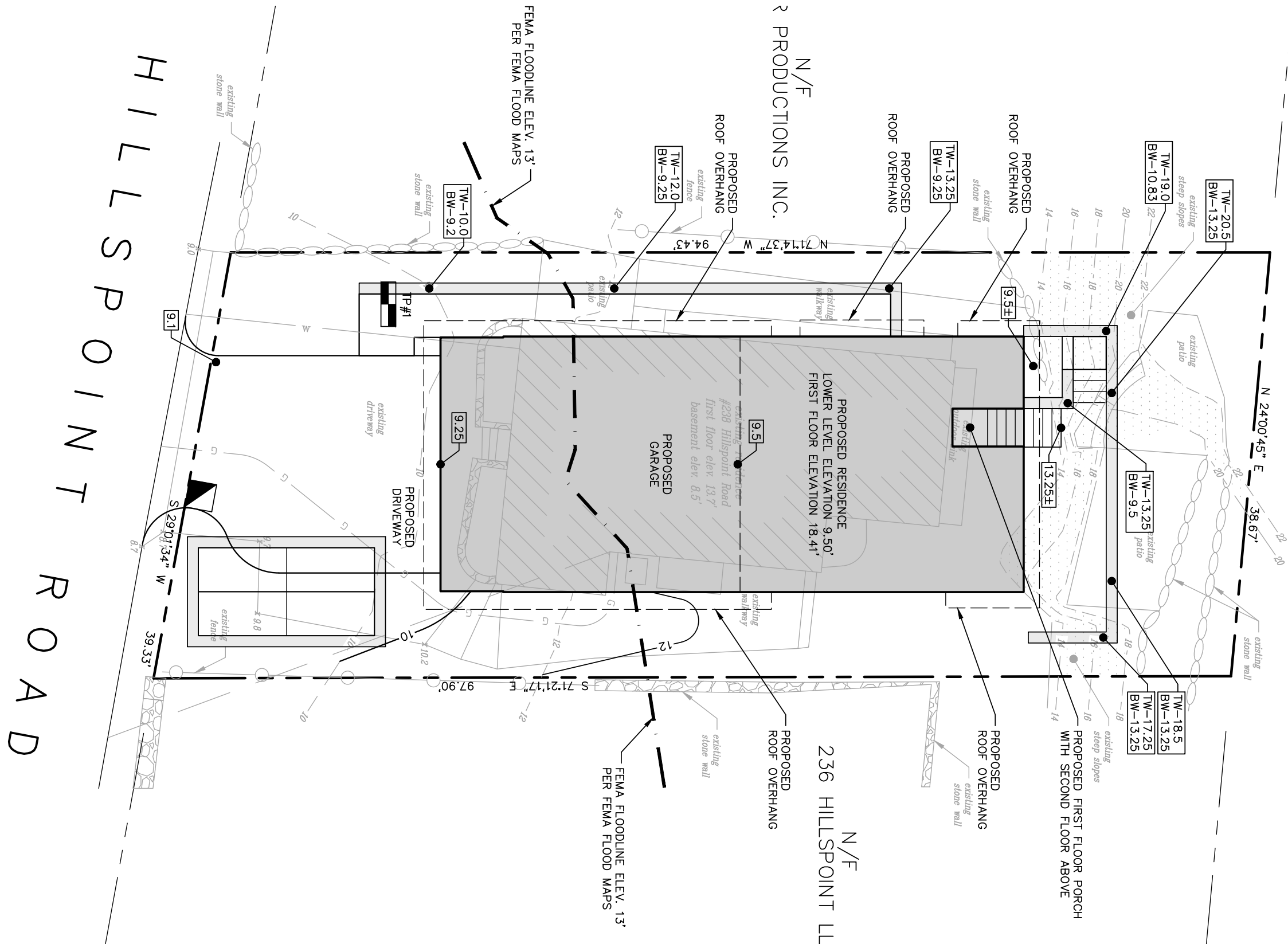
$$1'' = 10'$$


COASTAL LUXURY HOMES



SCALE:
1" = 10'

JOSEPH FULLER TR. N/F





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Date: 09/18/2024
Revised: -

MS4 Impervious Cover Tracking Worksheet

Address:	238 Hillspoint Road
GIS ID #:	E04 / 023 / 000
Lot Area:	3,712 SF

Existing Conditions

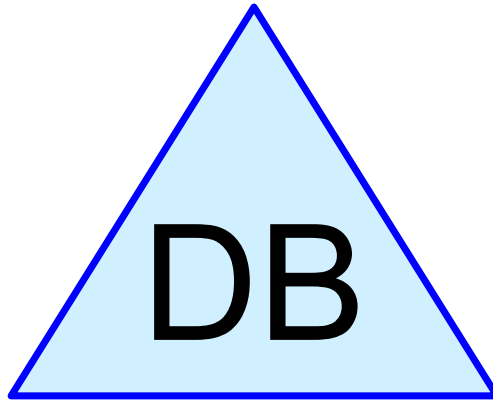
Impervious Area	Disconnected	Connected
Item	Area (SF)	
Building	790	0
Driveway	0	822
Patio/Walks	7	1048
Pool	0	0
Coping & Equip. Pad	0	0
(Miscellaneous)	0	0
Totals	797	1870

Proposed Conditions

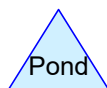
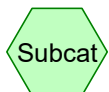
Impervious Area	Disconnected	Connected
Item	Area (SF)	
Building	1275	0
Driveway	450	0
Patio/Walks	500	0
Pool	0	0
Coping & Equip. Pad	0	0
(Miscellaneous)	0	0
Totals	2225	0

Connected Impervious Area Reduction

Existing Connected Impervious	1870	SF
Proposed Connected Impervious	0	SF
Reduction	-1870	SF
Percent Reduction	-100%	



24" High Precast Concrete Galleries



Routing Diagram for 238HillspointRd(09-11-24)_WQV-Concrete
Prepared by Kousidis Engineering, LLC, Printed 9/18/2024
HydroCAD® 10.00-22 s/n 09068 © 2018 HydroCAD Software Solutions LLC

238HillspointRd(09-11-24)_WQV-Concrete

Type III 24-hr 25 yr Rainfall=6.40"

Prepared by Kousidis Engineering, LLC

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond DB: 24" High Precast Concrete Galleries

Peak Elev=0.00' Storage=0 cf

Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf

Summary for Pond DB: 24" High Precast Concrete Galleries

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

Volume	Invert	Avail.Storage	Storage Description
#1	5.00'	43 cf	10.00'W x 18.00'L x 2.00'H Stone Bed 360 cf Overall - 253 cf Embedded = 107 cf x 40.0% Voids
#2	5.00'	181 cf	Concrete Galley 4x8x2 x 4 Inside #1 Inside= 42.0"W x 21.0"H => 6.04 sf x 7.50'L = 45.3 cf Outside= 48.0"W x 24.0"H => 7.92 sf x 8.00'L = 63.4 cf
#3	5.00'	20 cf	2.00'W x 2.00'L x 5.00'H Yard Drain
		244 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	8.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Discarded	5.00'	4.000 in/hr Exfiltration over Wetted area

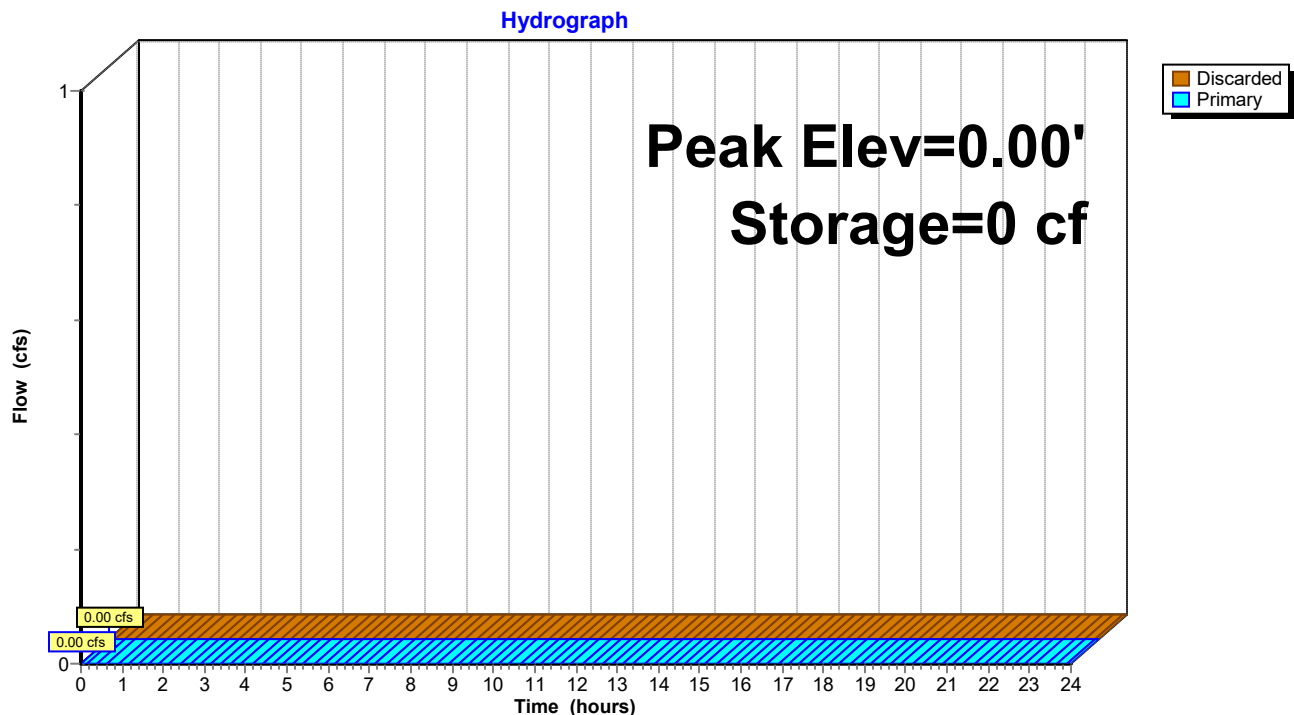
Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

↑**2=Exfiltration** (Controls 0.00 cfs)

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

↑**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond DB: 24" High Precast Concrete Galleries



238HillspointRd(09-11-24)_WQV-Concrete

Type III 24-hr 25 yr Rainfall=6.40"

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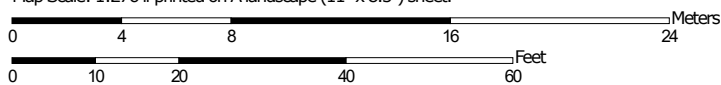
Stage-Area-Storage for Pond DB: 24" High Precast Concrete Galleries

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
5.00	184	0	7.60	317	234
5.05	187	7	7.65	317	234
5.10	190	13	7.70	318	235
5.15	194	20	7.75	318	235
5.20	197	26	7.80	318	235
5.25	200	33	7.85	319	235
5.30	203	39	7.90	319	235
5.35	206	46	7.95	320	236
5.40	210	52	8.00	320	236
5.45	213	59	8.05	320	236
5.50	216	65	8.10	321	236
5.55	219	72	8.15	321	236
5.60	222	78	8.20	322	237
5.65	226	85	8.25	322	237
5.70	229	91	8.30	322	237
5.75	232	98	8.35	323	237
5.80	235	104	8.40	323	237
5.85	238	111	8.45	324	238
5.90	242	117	8.50	324	238
5.95	245	124	8.55	324	238
6.00	248	130	8.60	325	238
6.05	251	137	8.65	325	238
6.10	254	143	8.70	326	239
6.15	258	150	8.75	326	239
6.20	261	156	8.80	326	239
6.25	264	163	8.85	327	239
6.30	267	169	8.90	327	239
6.35	270	176	8.95	328	240
6.40	274	182	9.00	328	240
6.45	277	189	9.05	328	240
6.50	280	195	9.10	329	240
6.55	283	202	9.15	329	240
6.60	286	208	9.20	330	241
6.65	290	214	9.25	330	241
6.70	293	220	9.30	330	241
6.75	296	225	9.35	331	241
6.80	299	227	9.40	331	241
6.85	302	228	9.45	332	242
6.90	306	229	9.50	332	242
6.95	309	231	9.55	332	242
7.00	312	232	9.60	333	242
7.05	312	232	9.65	333	242
7.10	313	232	9.70	334	243
7.15	313	232	9.75	334	243
7.20	314	233	9.80	334	243
7.25	314	233	9.85	335	243
7.30	314	233	9.90	335	243
7.35	315	233	9.95	336	244
7.40	315	233	10.00	336	244
7.45	316	234			
7.50	316	234			
7.55	316	234			

Hydrologic Soil Group—State of Connecticut, Western Part
(238 Hillspoint Road)



Map Scale: 1:276 if printed on A landscape (11" x 8.5") sheet.



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



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

9/10/2024
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Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
260C	Charlton-Urban land complex, 8 to 15 percent slopes	B	0.1	53.4%
260D	Charlton-Urban land complex, 15 to 25 percent slopes	B	0.1	46.2%
642	Beaches-Hooksan-Urban land complex, 0 to 8 percent slopes		0.0	0.4%
Totals for Area of Interest			0.2	100.0%