

# **Basic Code Review Fitness & Canoe Club**

2 Garner Lane, Bay Shore, NY

Town of Islip – BUS-1 Zoning

ARC 486 Fall 2025

**KARIM MOUSSA & ZAYNAB BADER**

# Occupancy Classification

**1**

**A-3 Assembly:** Fitness Center (gym, exercise rooms)

**2**

**A-2 Assembly:** Café (16 seats on green roof)

**3**

**U Utility:** Outdoor boat storage for canoes/kayaks

**4**

**Accessory use areas (office, storage < 10 %)**

# Construction Type

**1** Recommended for this low-rise non-combustible facility:  
Type IIB or IIA per NYS Building Code Ch. 6 (non-combustible framing, steel or concrete roof deck).

- 2** Fire-Resistance Ratings (Table 601):
- Bearing walls: 1 hr (Type IIB) / 2 hr (Type IIA)
  - Floors & roofs: 0–1 hr depending on material and distance to property lines.

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV		TYPE V	
	A	B	A	B	A	B	HT	A	B	
Primary structural frame <sup>f</sup> (see Section 202)	3 <sup>a, b</sup>	2 <sup>a, b</sup>	1 <sup>b</sup>	0	1 <sup>b</sup>	0	HT	1 <sup>b</sup>	0	
Bearing walls										
Exterior <sup>e, f</sup>	3	2	1	0	2	2	2	1	0	
Interior	3 <sup>a</sup>	2 <sup>a</sup>	1	0	1	0	1/HT	1	0	
Nonbearing walls and partitions	See Table 602									
Exterior										
Nonbearing walls and partitions Interior <sup>d</sup>	0	0	0	0	0	0	See Section 2304.11.2	0	0	
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0	
Roof construction and associated secondary members (see Section 202)	1½ <sup>b</sup>	1 <sup>b, c</sup>	1 <sup>b, c</sup>	0 <sup>c</sup>	1 <sup>b, c</sup>	0	HT	1 <sup>b, c</sup>	0	

## 5 Types of Construction - NYS Building Code

Type	Description	Example
Type I	Fire-resistive construction. Structural elements are noncombustible (steel, concrete) with highest fire-resistance ratings.	High-rise office buildings, hospitals, large arenas
Type II	Noncombustible construction with lower fire-resistance ratings. Structural members may have reduced or no fireproofing.	Low-rise commercial buildings, gyms, retail centers
Type III	Exterior walls noncombustible; interior elements may be combustible. "Ordinary construction."	Small apartment buildings, schools, mixed-use main streets
Type IV	Heavy timber construction. Large solid or laminated wood members that have inherent fire resistance.	Historic mills, modern mass timber buildings
Type V	Wood-frame construction. Both exterior and interior elements may be combustible.	Single-family homes, small community centers

# Sprinkler Requirements

**1**

**NYS Building Code §903.2.1 requires automatic sprinklers for:**

- Assembly occupancies (A-2 & A-3) > 300 occupants or > 12,000 SF.
- Mixed-use buildings with multiple assembly spaces.

**2**

**Result:** Sprinkler system required throughout.

# Egress & Occupant Load

**1**

## **Occupant Load (NYS Table 1004.5):**

- Fitness areas = 50 SF/person
- Café = 15 SF/person
- Courts = 50 SF/person

**2**

**At least two remote exits from each assembly space.**

**3**

**Max exit travel distance:** 200 ft unsprinklered / 250 ft sprinklered (Table 1017.2).

**4**

**Minimum corridor width:** 44 in. (> 50 occupants).

## Egress & Occupant Load (cont.)

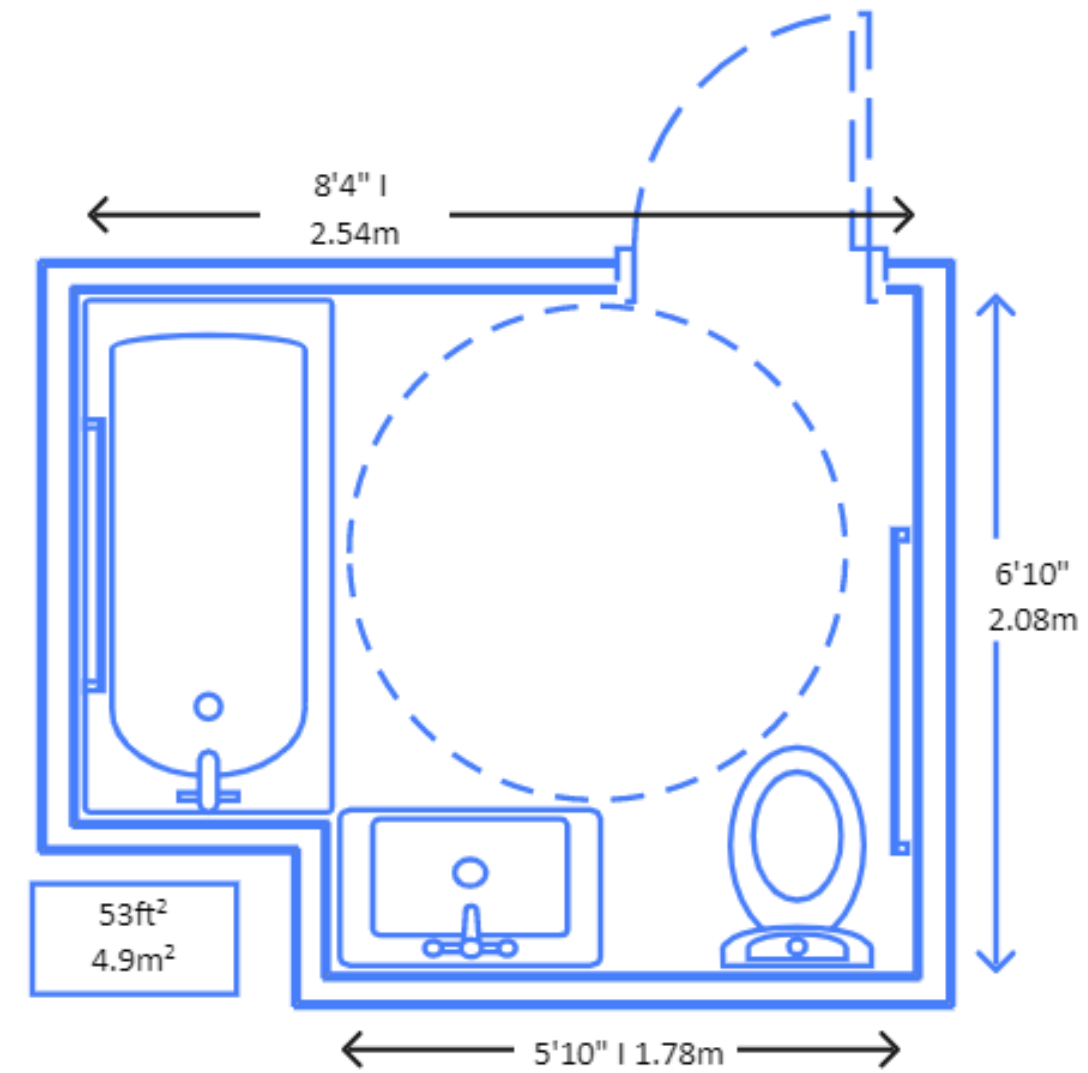
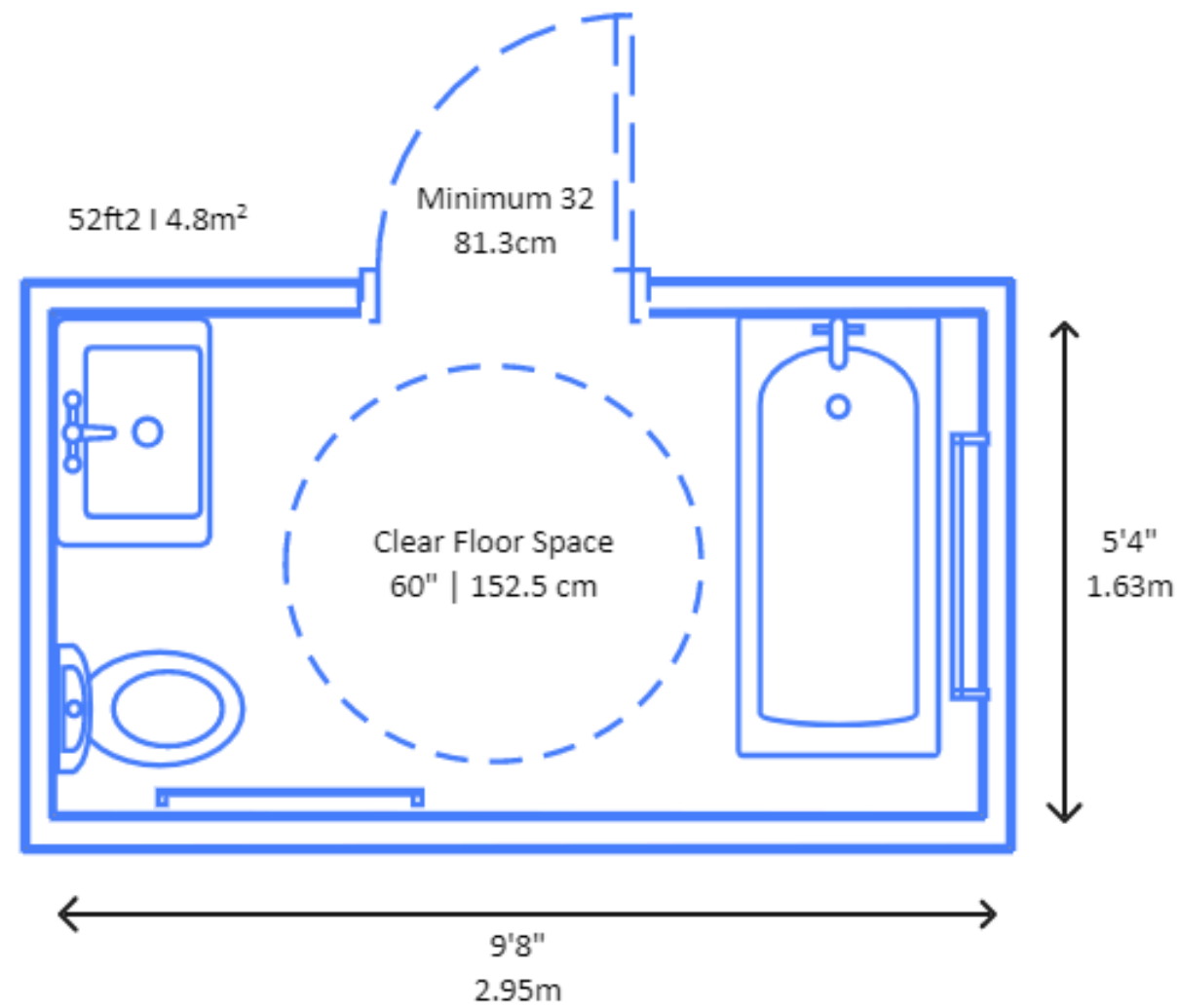
- 1** **Minimum stair width:** 44 in. ( $> 50$  occupants); riser  $\leq 7$  in., tread  $\geq 11$  in.
- 2** **Ramp slope:** 1:12 max; min clear width 36 in.

# Plumbing Fixtures

Space Type	Occupant Estimate	Required WC (M/F)	Lavatories (M/F)	Drinking Fountain	Service Sink
Fitness Center	~75 ea	2 / 2	2 / 2	1 / 1	1
Café	~8 ea	1 / 1	1 / 1	-	-
Outdoor Courts	< 50	1 unisex	1 unisex	1	-

All restrooms must include ADA accessible stalls and lavatories (ICC A117.1).

# ADA Restroom Layout



# Accessibility

- 1** Provide barrier-free routes from parking to main entrances and courts.
- 2** At least 1 accessible route to green roof café (via elevator or ramp).
- 3** Parking: Per Table 1106.1 – 4 % of total stalls accessible (1 van minimum).
- 4** Restrooms, lockers, showers, service counters, and seating to meet ADA clearances.

## Fire Separation & Mixed-Use Analysis

- 1** A-2 (café) and A-3 (fitness) occupancies require a 1-hr horizontal or vertical separation if combined under NYSBC §508.4 (separated mixed use).
- 2** Alternatively treat as non-separated mixed use if fully sprinklered and meets aggregate area limits per §508.3.

# Building Height & Area Limits

**1**

## Type IIB (A-3/A-2):

- Max Height = 55 ft / 2 stories
- Max Floor Area = 24,000 SF per story
- Sprinkler increase can raise to ~36,000 SF per story.

**2**

**Project GFA expected  $\approx$  15,000–20,000 SF  $\rightarrow$  compliant.**

# Zoning

Regulation	BUS -1 Standard
Permitted Uses	Commercial recreation clubs, restaurants, community centers
FAR (max)	0.35 (Floor Area Ratio)
Building Height	35 ft max
Front Yard Setback	40 ft min
Side Yard Setback	15 ft min each
Rear Yard Setback	25 ft min (plus 25 ft water buffer)
Lot Coverage	60 % max building + parking
Landscaping	≥ 20 % lot area (≥ 10 % front yard)

## Utilities & Environmental Constraints

- 1 Septic:** SCDHS Zone VII standard 600 gpd/acre; design for 3.74 ac adjusted lot area.
- 2 Stormwater:** On-site retention required per Islip Land Development Regs.
- 3 Groundwater:** 11 ft below grade → use shallow foundations and elevated mechanicals.

# Sustainability & Green Roof

- 1** Green roof (café access + stormwater benefit).
- 2** Add  $\geq 3$  strategies per outline (e.g., solar PV, permeable paving, natural ventilation).



# Project 2 - Site Analysis

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Zaynab Bader

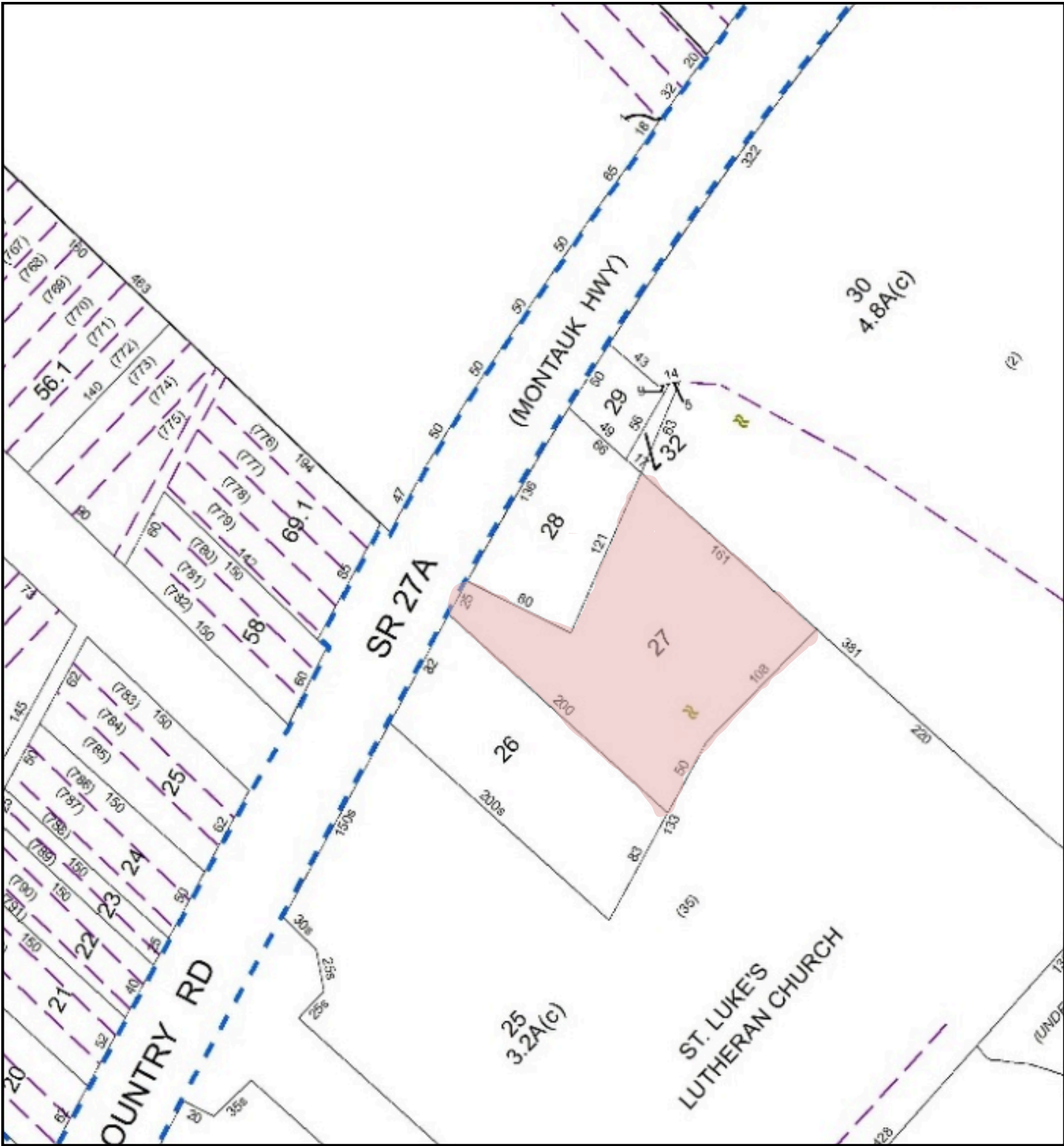
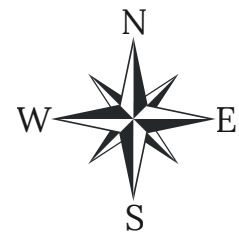
Karim Moussa

ARC 486 - Design V

Professor LoPiccolo



2 Garner Lane, Bay Shore, NY 11706 (SCTM #0500-418.00-03.00-030.000)



TAX MAP



AERIAL MAP

# Town Of Islip - Suffolk County

Zone: Business I (BUS-1)

Lot Area: 4.8 acres  
Adjusted: 3.74 acres  
(Site area minus lake area)

Setbacks:

Front Yard: 10 ft min.  
Side Yards: 10 ft min.  
Rear Yard: 10 ft min.  
\*25' Setback from West Water Line

Building Height: 35ft max.

Max. F.A.R: 0.40 (40%)  
Calculated F.A.R: 83,635.2 sqft

Min. Buffer Area of 25 feet  
(adjacent to any residential zone.)  
Min. Landscape Area: 20%



# Topography & Infrastructure

- Existing contour lines show a gradual grade change across the site, suitable for accessible paths and stormwater management.
- The highest elevation occurs near Garner Lane, with elevation decreasing toward the lakefront.
- Sewer manholes are concentrated along Montauk Highway and Garner Lane, confirming municipal sewer access near the property edge.

Legend

Sewer Manholes

Existing Contour Lines

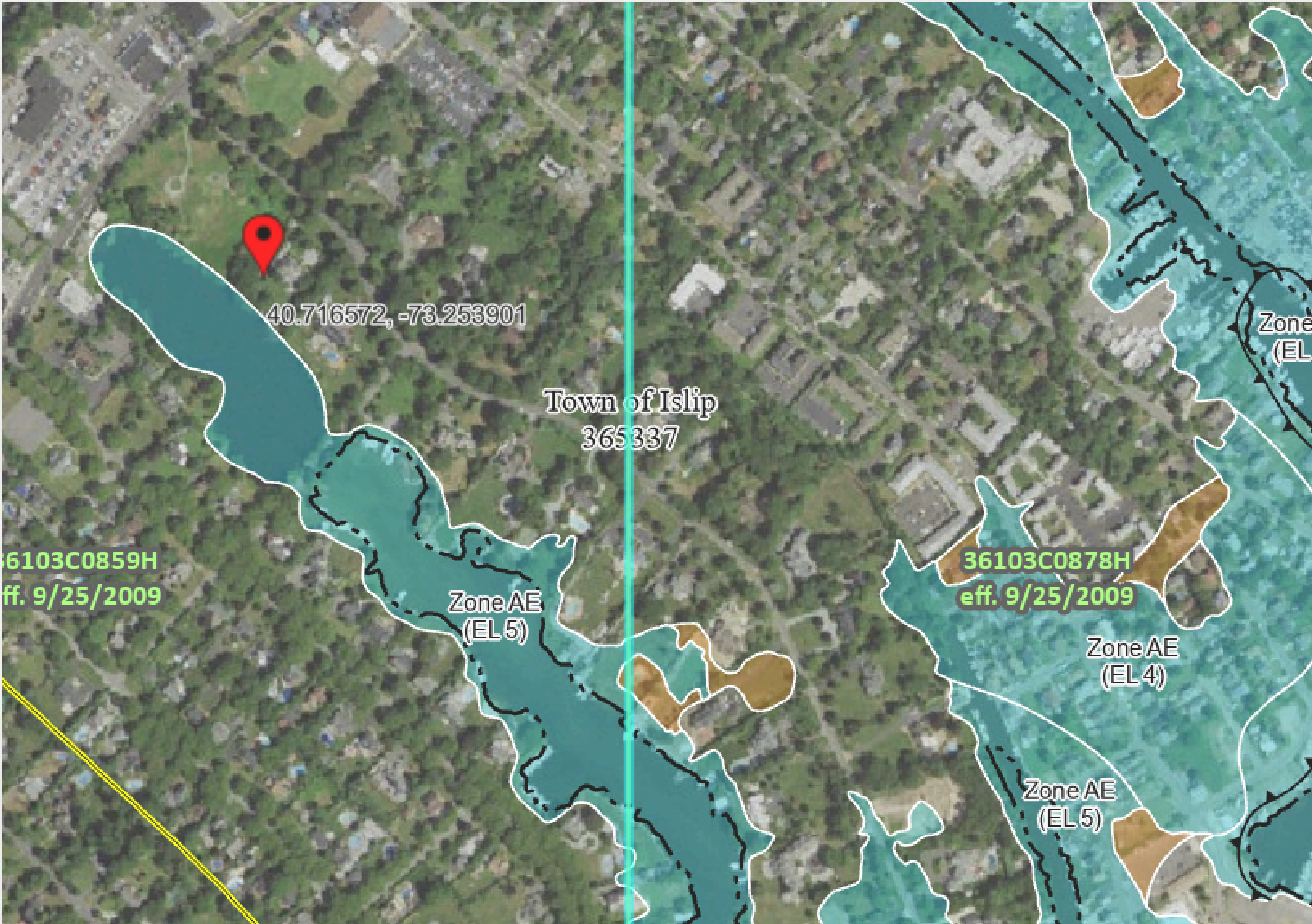




## Sun Path & Prevailing Winds

- The site receives strong southern sunlight throughout the day, ideal for orienting public or gathering spaces toward the lakefront for maximum daylight and views.
- Morning sun rises over the east (Garner Ln side), while afternoon light comes from the southwest across Lawrence Lake.
- Prevailing winds from the southwest and west suggest that outdoor seating or courtyards should be placed on the leeward (southeast) side of structures to reduce wind exposure.

# Flood Plain Information



- Zone AE, with base flood elevations (BFE) between 4 ft – 5 ft.
- Zone AE designates areas subject to a 1% annual chance of flooding (100-year flood), requiring structures to be elevated above the mapped base flood elevation.
- The western portion of the site near Montauk Highway sits slightly higher and remains outside the flood zone boundary.



Avg Annual Rainfall: 45 inches  
Avg Snowfall: 28 inches  
Wettest Months: March–April, Nov – Dec  
Predominant Wind: SW

# Circulation



- Vehicular circulation is concentrated along Montauk Highway, a major east-west traffic route with continuous flow and limited pedestrian crossings.
- Primary site access would likely occur from Garner Lane, providing a quieter entry point away from the heavy traffic corridor.
- Sound exposure is strongest along Montauk Highway due to vehicle flow and commercial activity, decreasing toward the lakefront.
- Residential zones east of the site require careful buffering from noise and headlights

LEGEND	
	Pedestrian Path
	Vehicular Path
	Site Boundary
	Existing Trees
	Sound
	Residential Zone
	Bus Stops

# Site Context

- Neighboring buildings show a mix of mid-century brick and concrete block construction, flat or shallow-pitched roofs, and large glass storefronts.
- Material palette: predominately red and tan brick, stone veneer, and metal storefront systems, with painted steel trim and awnings.
- Datum lines are consistent along Montauk Highway—most façades maintain a uniform one- to two-story height with parapet tops around 18–25 ft.
- Streetscape: narrow sidewalks, overhead power lines, minimal setbacks, and small landscaped planters create a strong linear edge along the roadway.
- Landmarks nearby: St. Luke’s Lutheran Church, St. Patrick’s School, and Lawrence Lake to the south.





View 3

View 2

View 1



View 1

View 2



From Garner Lane - View 3

## Programming

GFA Goal: 8,380 SF

### Cafe:

Seating for 16 people (+ Additional Space) **488 SF**

Restrooms Two ADA **112 SF**

Circulation (10–15%) Use 15% **270 SF**

Customer space at counter (5 SF net) **50 SF**

Food / Drink prep **180 SF**

Kitchen **250 SF**

Cold Storage **50 SF**

Dry Storage **200 SF**

Cashier / Customer Service Area **64 SF**

Mechanical Room **60 SF**

Office / Manager's Office **56 SF**

**Café Total GFA 1,800 SF**

### Fitness Center & Canoe Club

Circulation 10% **658 SF**

Entry / Lobby / Check-in **300 SF**

Admin Office (Fitness + Canoe Club) **180 SF**

Trainer Workroom / Desk **100 SF**

Fitness Area (cardio + strength) **2,100 SF**

Stretch / Warm-up Zone **120 SF**

Yoga / Pilates Studio **450 SF**

Multipurpose Room (spin / HIIT) **450 SF**

Storage – Studios (mats / bikes / props) **80 SF**

Storage – Equipment (cages, extra weights) **120 SF**

Men's Locker + Showers + Toilets **650 SF**

Women's Locker + Showers + Toilets **650 SF**

All-gender / Family Changing + Shower **82 SF**

Laundry / Linen **60 SF**

Janitor Closet (w/ mop sink) **50 SF**

IT Closet **15 SF**

Mechanical / Electrical Service **150 SF**

Staff Break / Kitchenette **50 SF**

Canoe Boat Storage Bay (16 boats on racks) **900 SF**

Canoe Gear Cage (PFDs, paddles, drybags) **120 SF**

Canoe Repair / Wash-down (floor drain) **75 SF**

**Fitness Center & Canoe Club Total GFA 6,580**