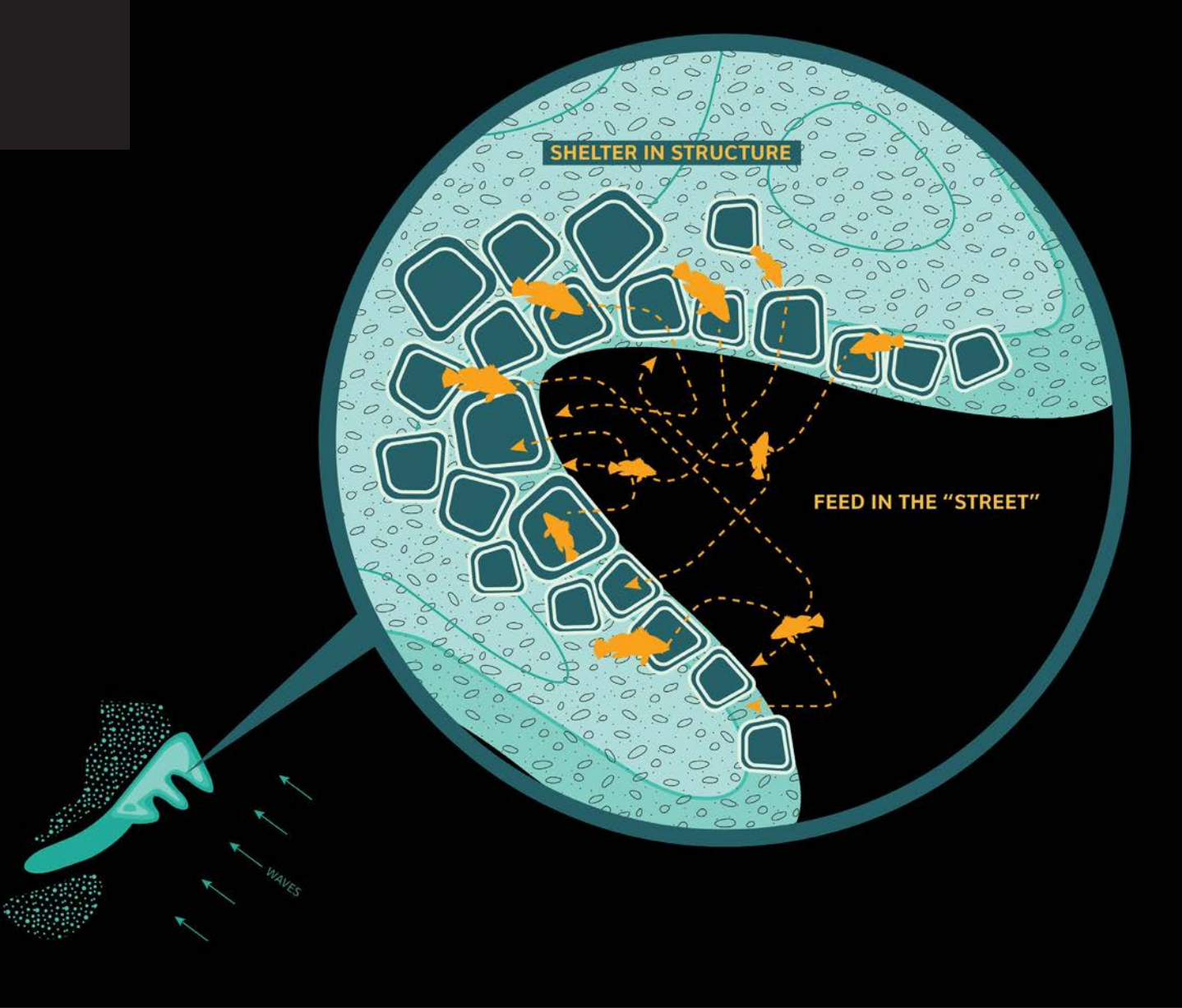
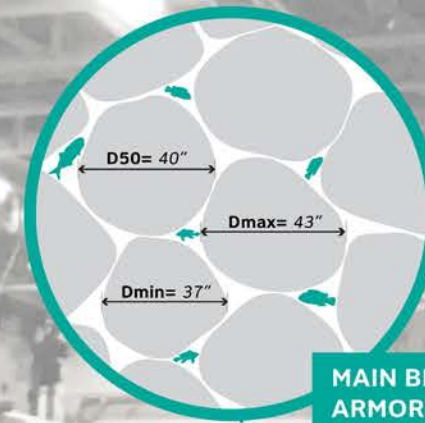


REEF STREETS





REEF RIDGE ARMOR STONE
Higher stone gradation creates greater diversity in size crevices



MAIN BREAKWATER ARMOR STONE
Largers stones create larger crevice space for growing juvenile fish species

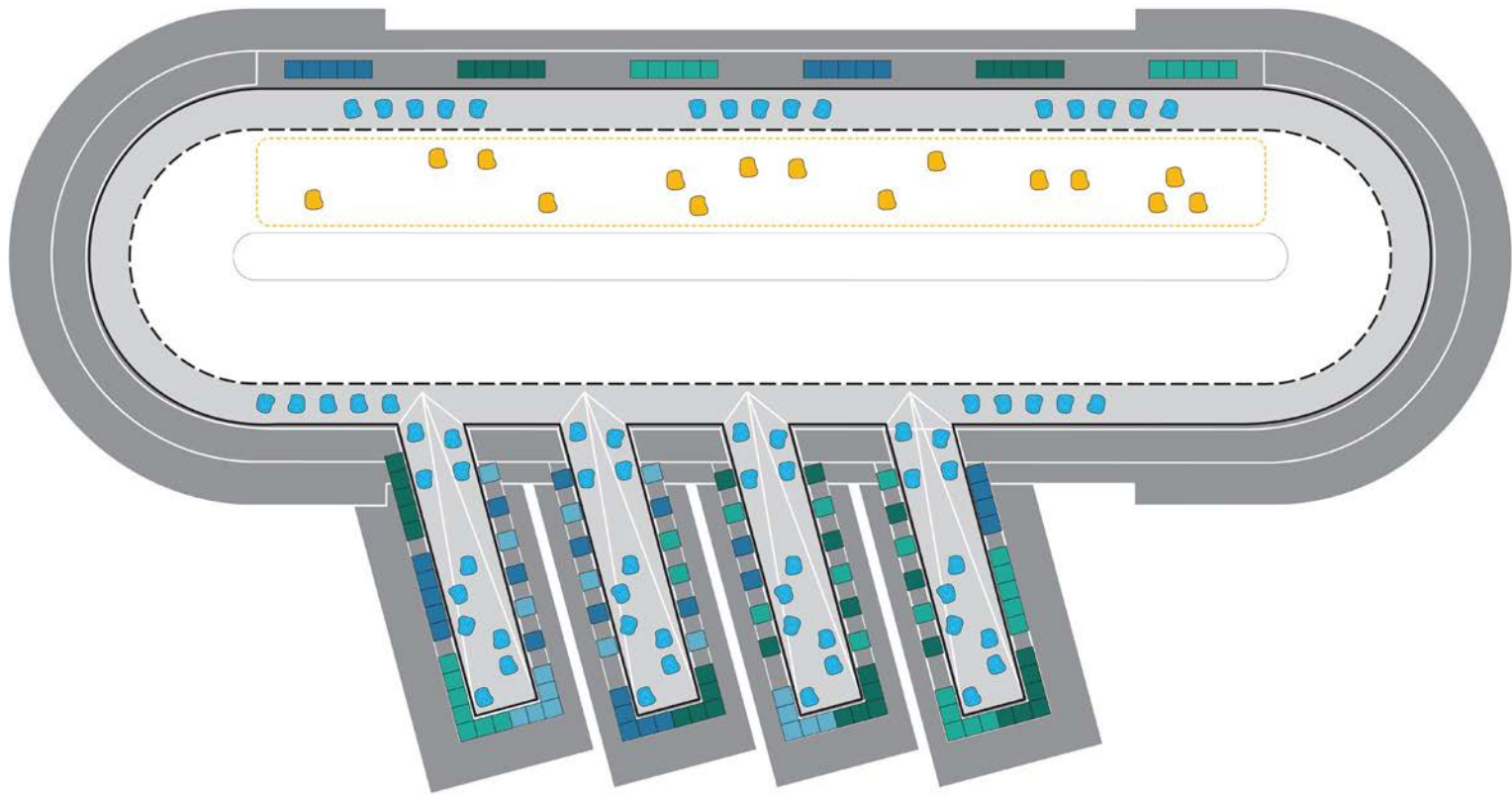


BIO- ENHANCING TIDE POOL UNIT
Shallow slopes and water retaining elements



BIO- ENHANCING ARMOR UNIT
Steep complex surfaces





BIO-ENHANCING CONCRETE ARMOR UNITS

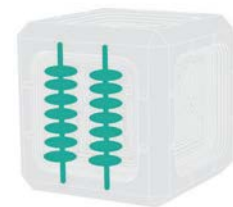
BIO-ENHANCING CONCRETE TIDE POOLS



FISH HUB 1
(with mesh)



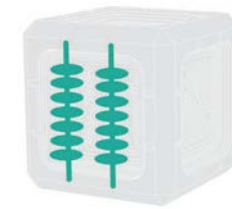
FISH HUB 2
(with mesh + rock)



OYSTER HUB 1
(seeded discs)



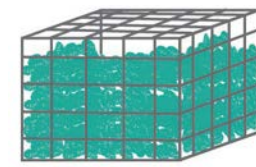
OYSTER HUB 2
(with mesh + seeded shell)



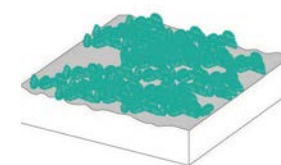
OYSTER HUB 1
(seeded discs)



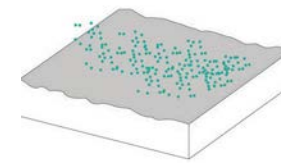
OYSTER HUB 2
(with mesh + seeded shell)



OYSTER GABION
(contained seeded shell)

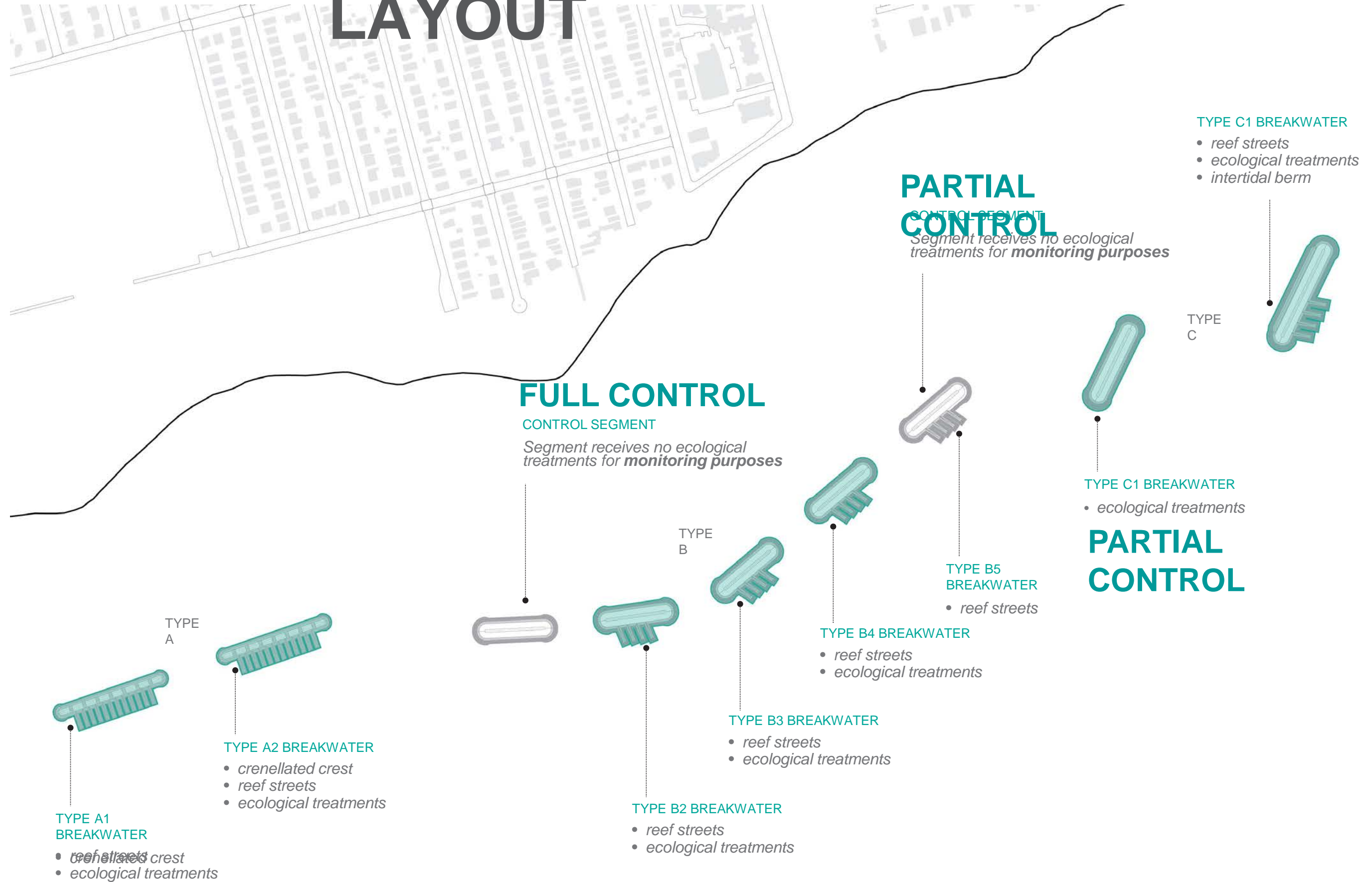









LOOSE SPAT-ON-SHELL

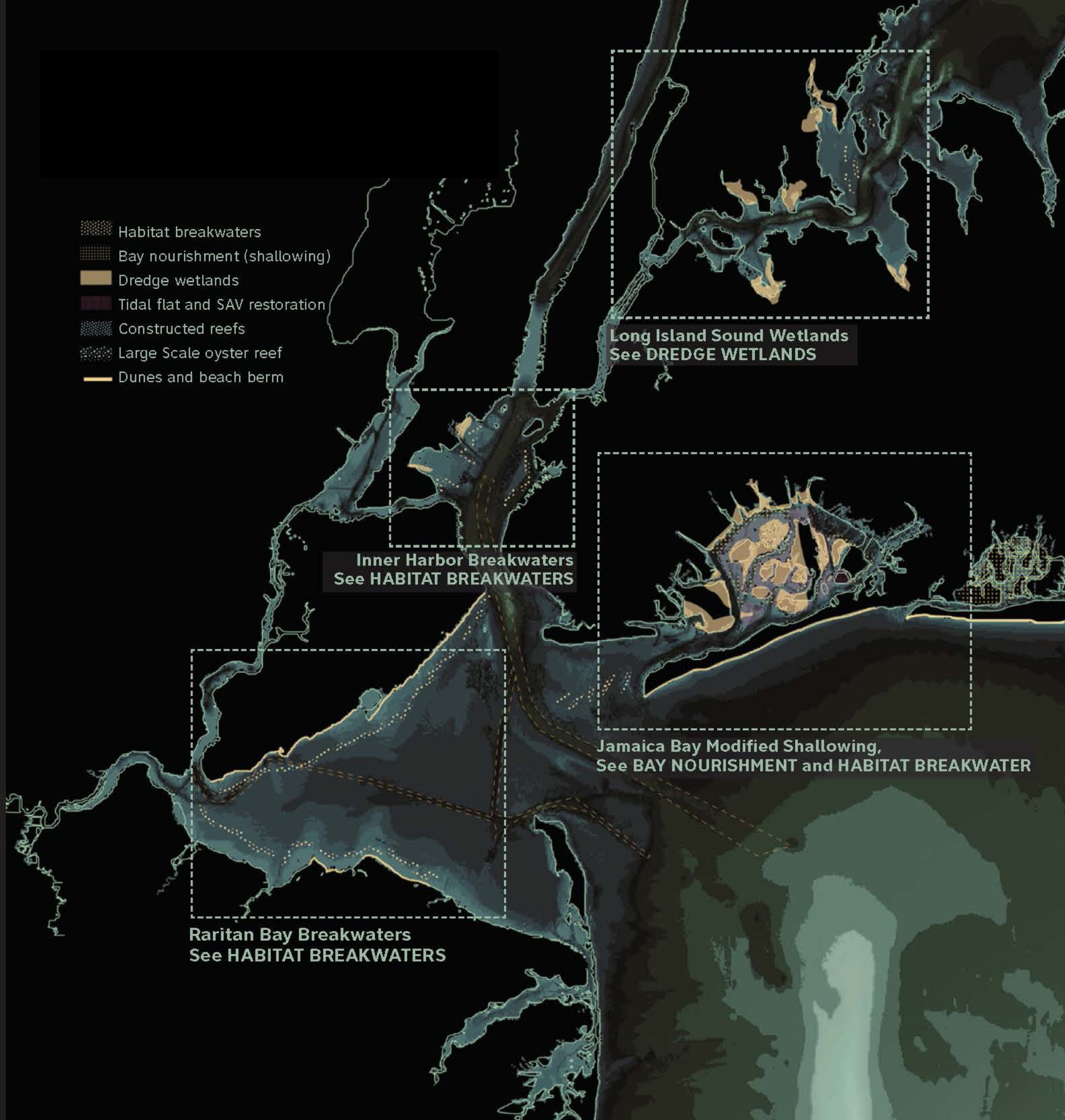


IN-SITU SETTING

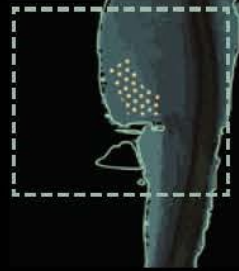
STATISTICAL SAMPLING LAYOUT



-  Habitat breakwaters
-  Bay nourishment (shallowing)
-  Dredge wetlands
-  Tidal flat and SAV restoration
-  Constructed reefs
-  Large Scale oyster reef
-  Dunes and beach berm



Piermont Breakwater
See HABITAT BREAKWATER



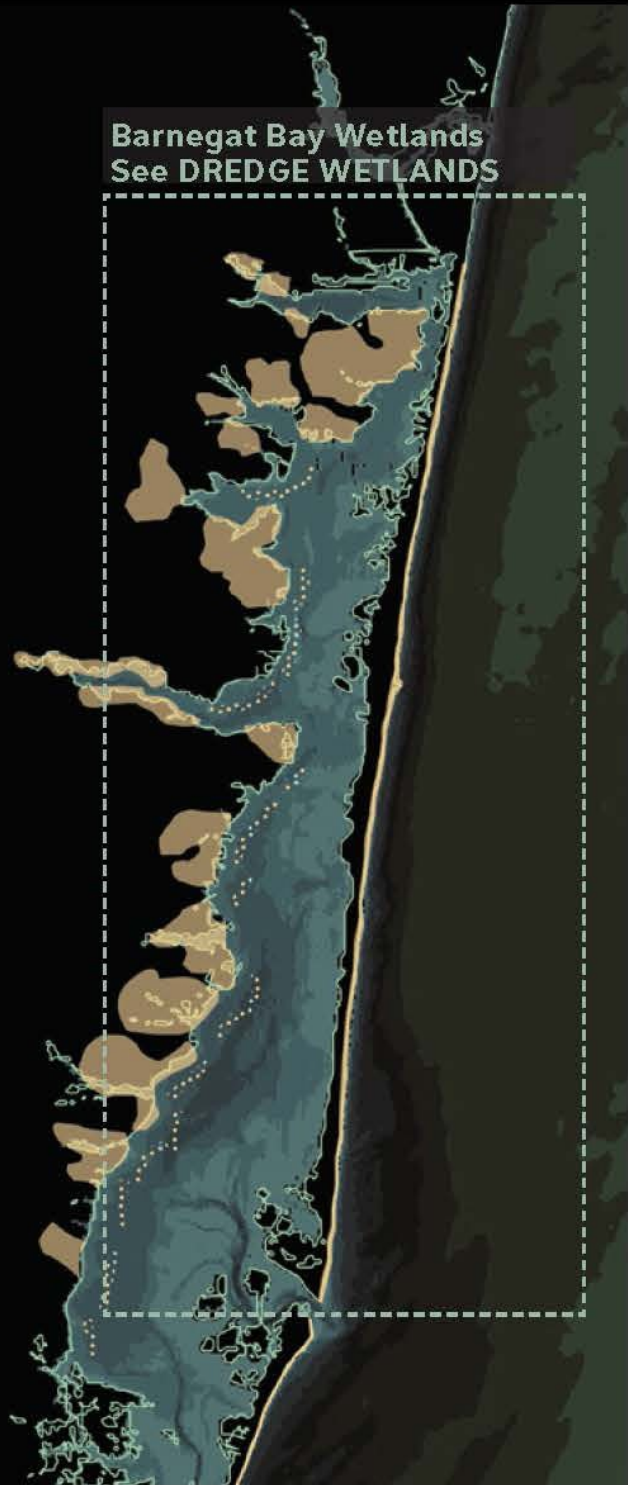
Long Island Sound Wetlands
See DREDGE WETLANDS

Inner Harbor Breakwaters
See HABITAT BREAKWATERS

Jamaica Bay Modified Shallowing,
See BAY NOURISHMENT and HABITAT BREAKWATER

Raritan Bay Breakwaters
See HABITAT BREAKWATERS

Barnegat Bay Wetlands
See DREDGE WETLANDS

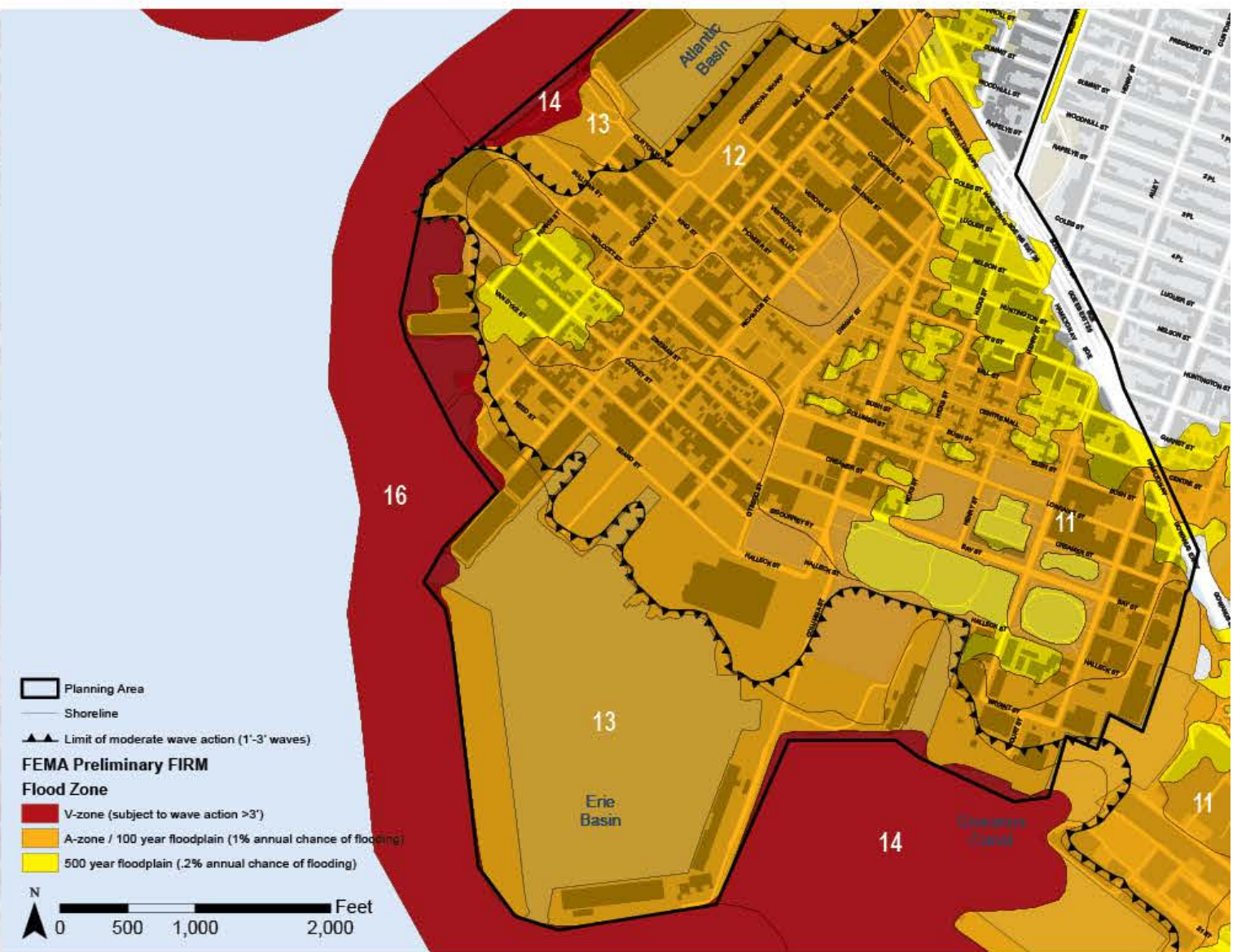


ALL SCALES
ALL CONTEXTS



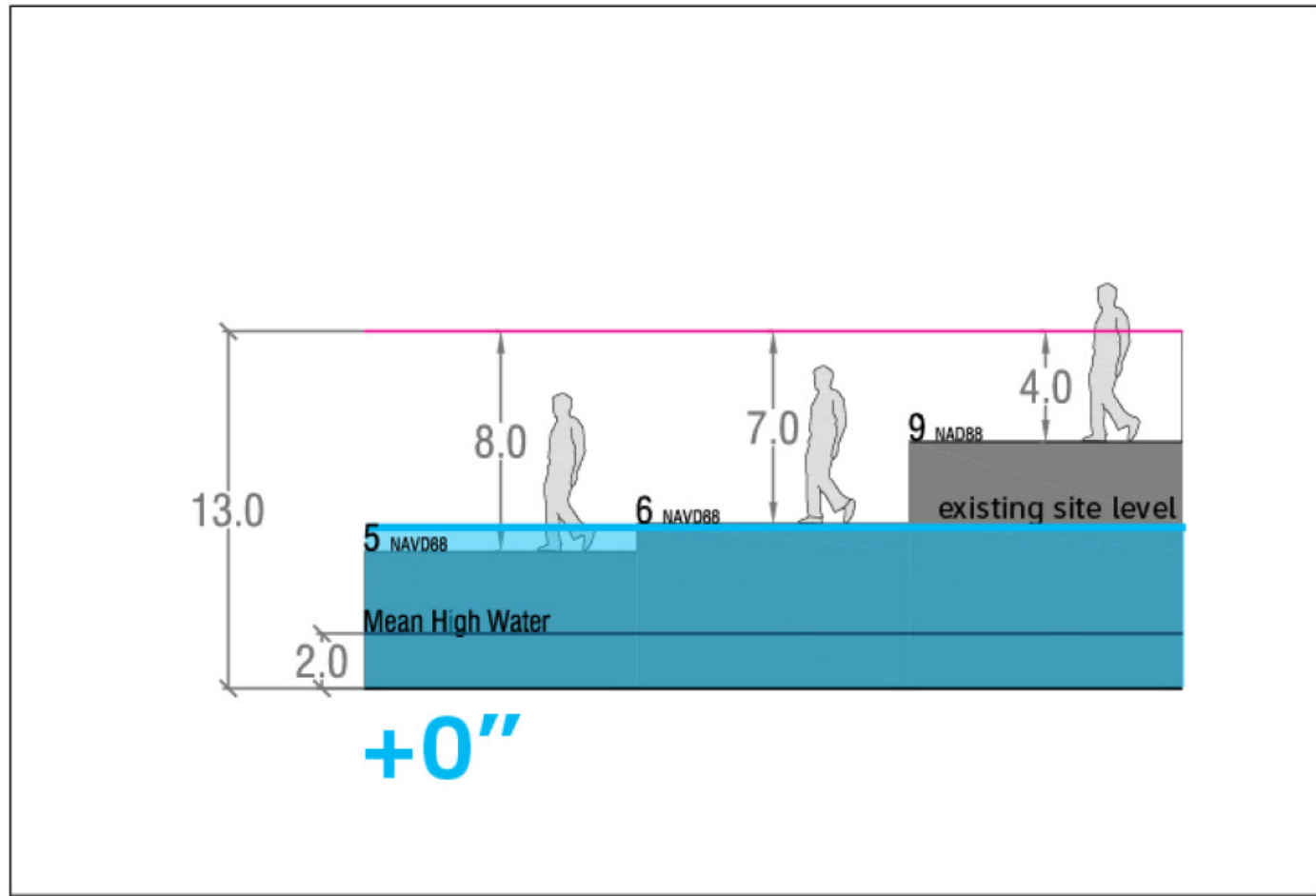


FLOODING



RISING TIDES

TODAY



PREDICTIONS ...

Mean Annual Changes – Sea Level Rise

Sea Level Rise Baseline (2000 – 2004)	Low-estimate (10 th percentile)	Middle range (25 th to 75 th percentile)	High-estimate (90 th percentile)
2020s	+ 2 in	+ 4 in to 8 in	+ 10 in
2050s	+ 8 in	+ 11 in to 21 in	+ 30 in
2080s	+ 13 in	+ 18 in to 39 in	+ 58 in
2100	+ 15 in	+ 22 in to 50 in	+ 75 in

Based on 24 GCMs and two Representative Concentration Pathways. Shown are the low-estimate (10th percentile), middle range (25th percentile to 75th percentile), and high-estimate (90th percentile).

The NPCC incorporated additional information based on recently-released IPCC AR5 Report, resulting in small changes to the sea level rise projections for 2020s and 2050s

Higher sea levels are extremely likely for New York City

BFE & SLR: WHAT IT MEANS ON THE GROUND



THOR EQUITIES
DEVELOPMENT SITE AVAILABLE
GLENN VOGEL - 212-529-7427 - GVOGEL@THOREQUITIES.COM

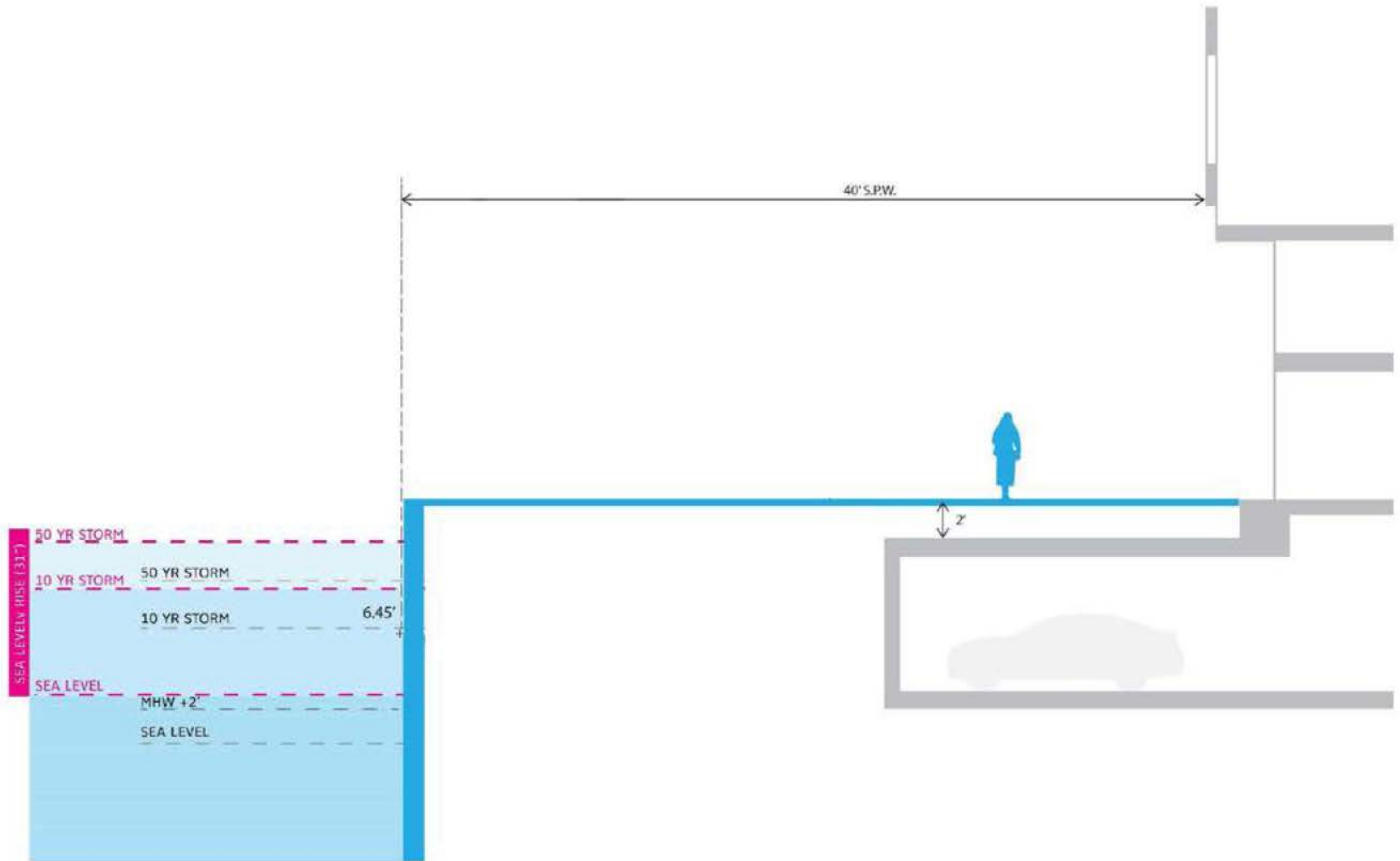
NOW HIRING MECHANICS
HADDAD'S TRUCK RENTAL
(512) 653-8822

DASH 7
HARRIS COUNTY
4817 BEAR

+ 16.5 NAVD88
(BFE + 30" SLR + 1' FREEBOARD)

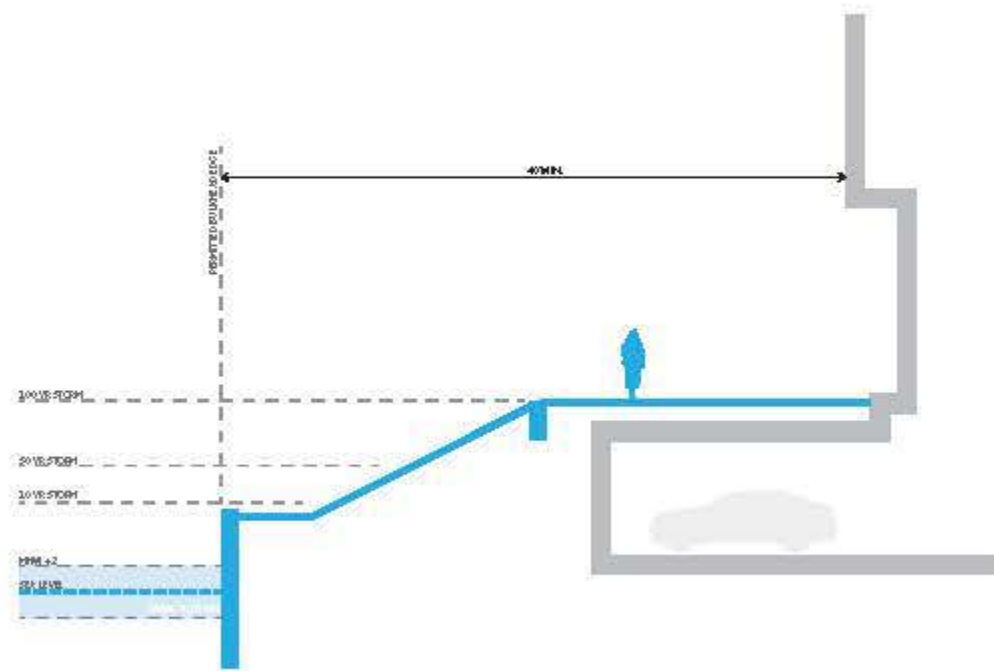
+ 14 NAVD88
(BFE + 1' FREEBOARD)

+ 6 NAVD88 EXISTING SITE LEVEL



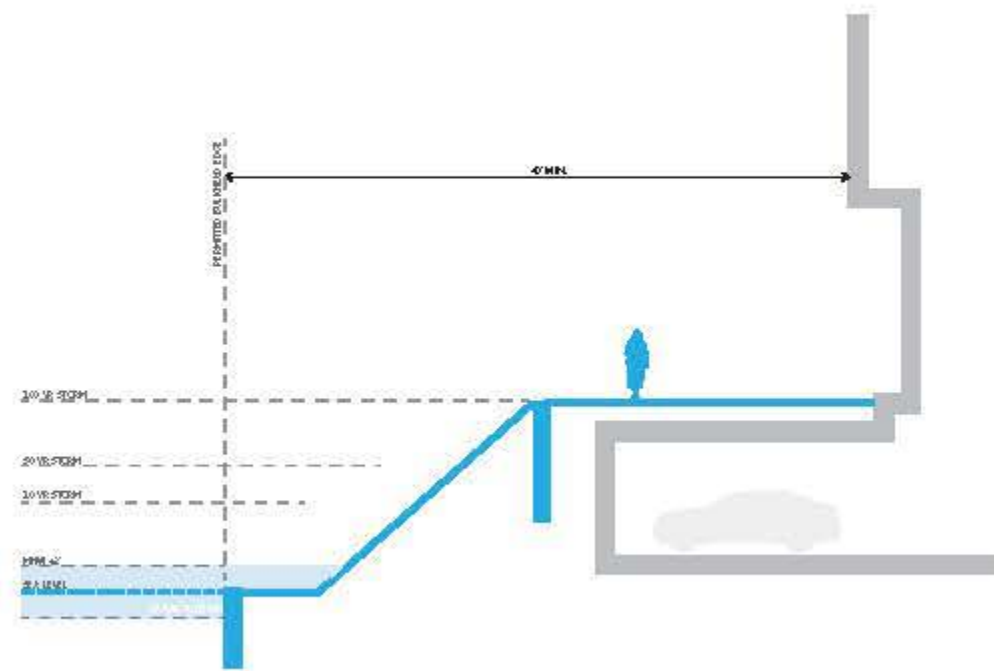
CERTIFICATION

A



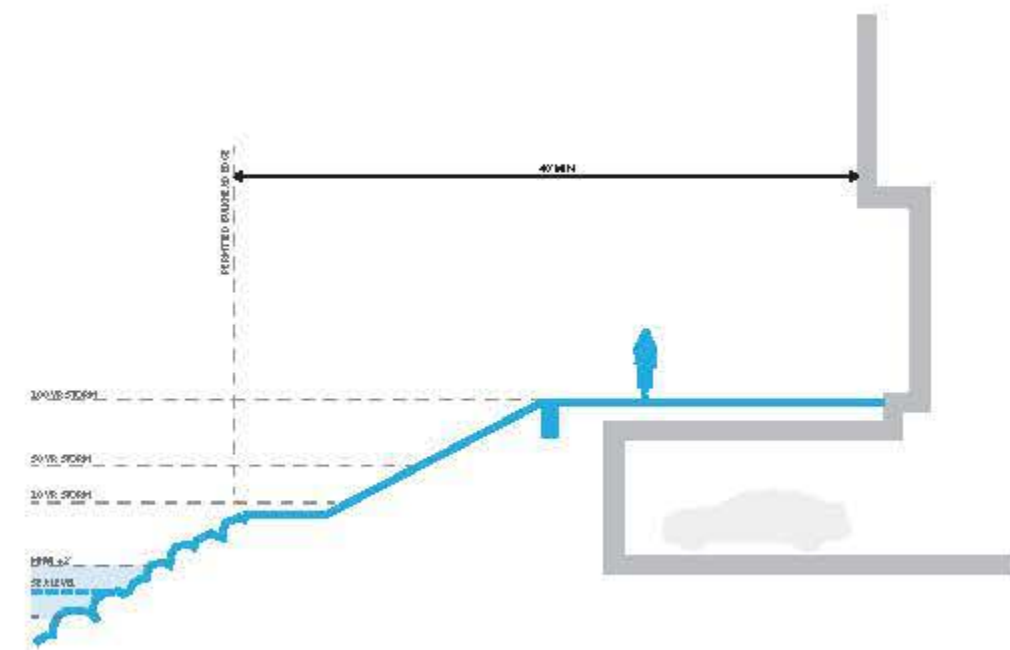
DESIRED CONDITION

B



COMPENSATORY MITIGATION

C

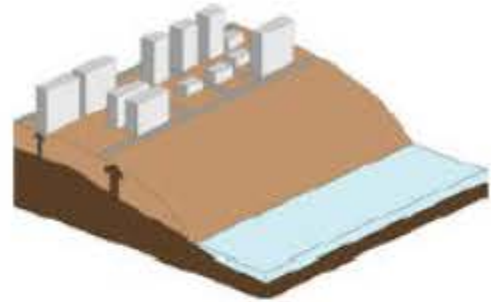


REACH

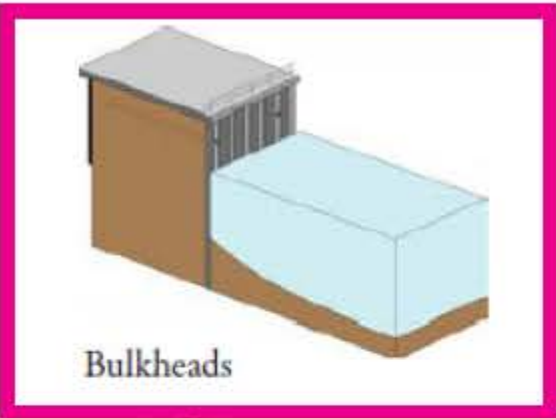
UPLAND

SHORELINE

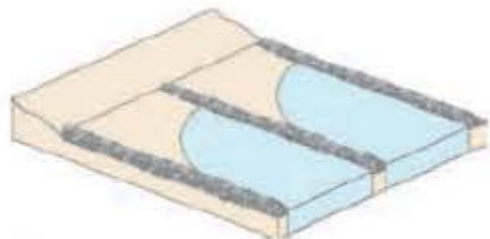
IN-WATER



Elevation of Land and Streets



Bulkheads



Groins



Floodwalls



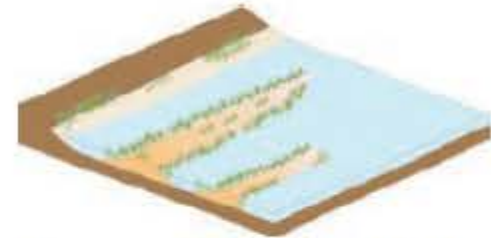
Revetments



Constructed Wetlands



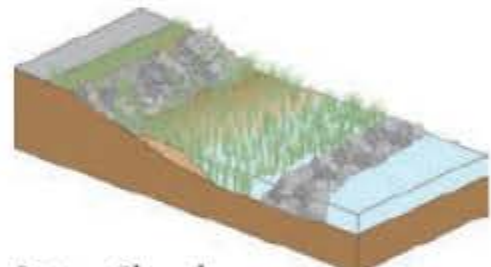
Levees (or Dikes)



Constructed Breakwater Islands



Waterfront Parks



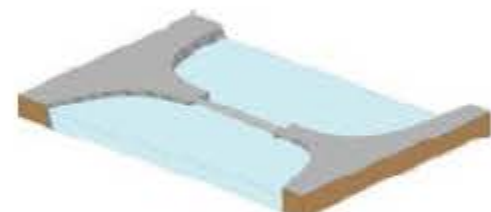
Living Shorelines



Breakwaters



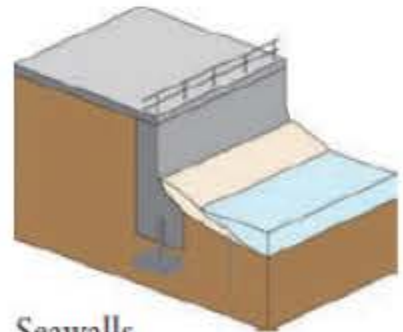
Multi-purpose Levees



Surge Barriers



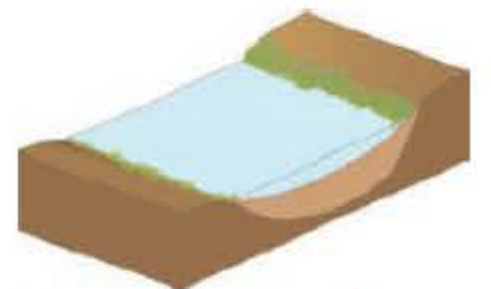
Strategic Retreat



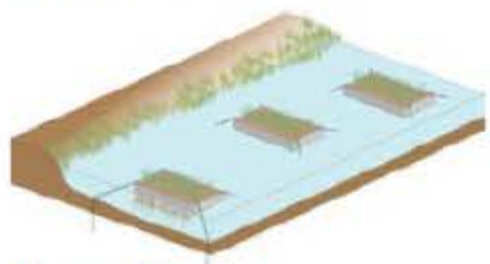
Seawalls



Artificial Reefs



Coastal Morphology Alteration



Floating Islands



Polders

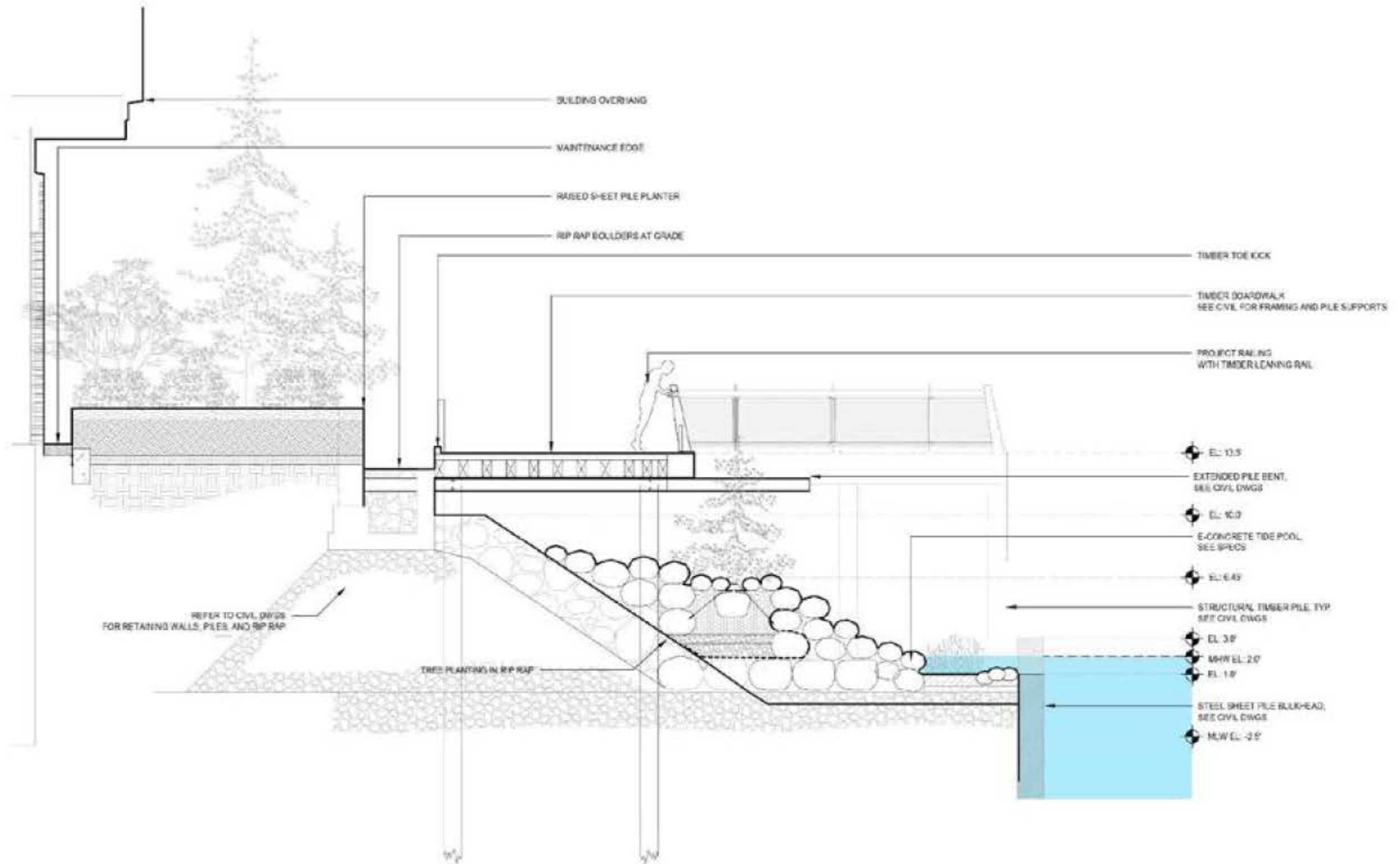


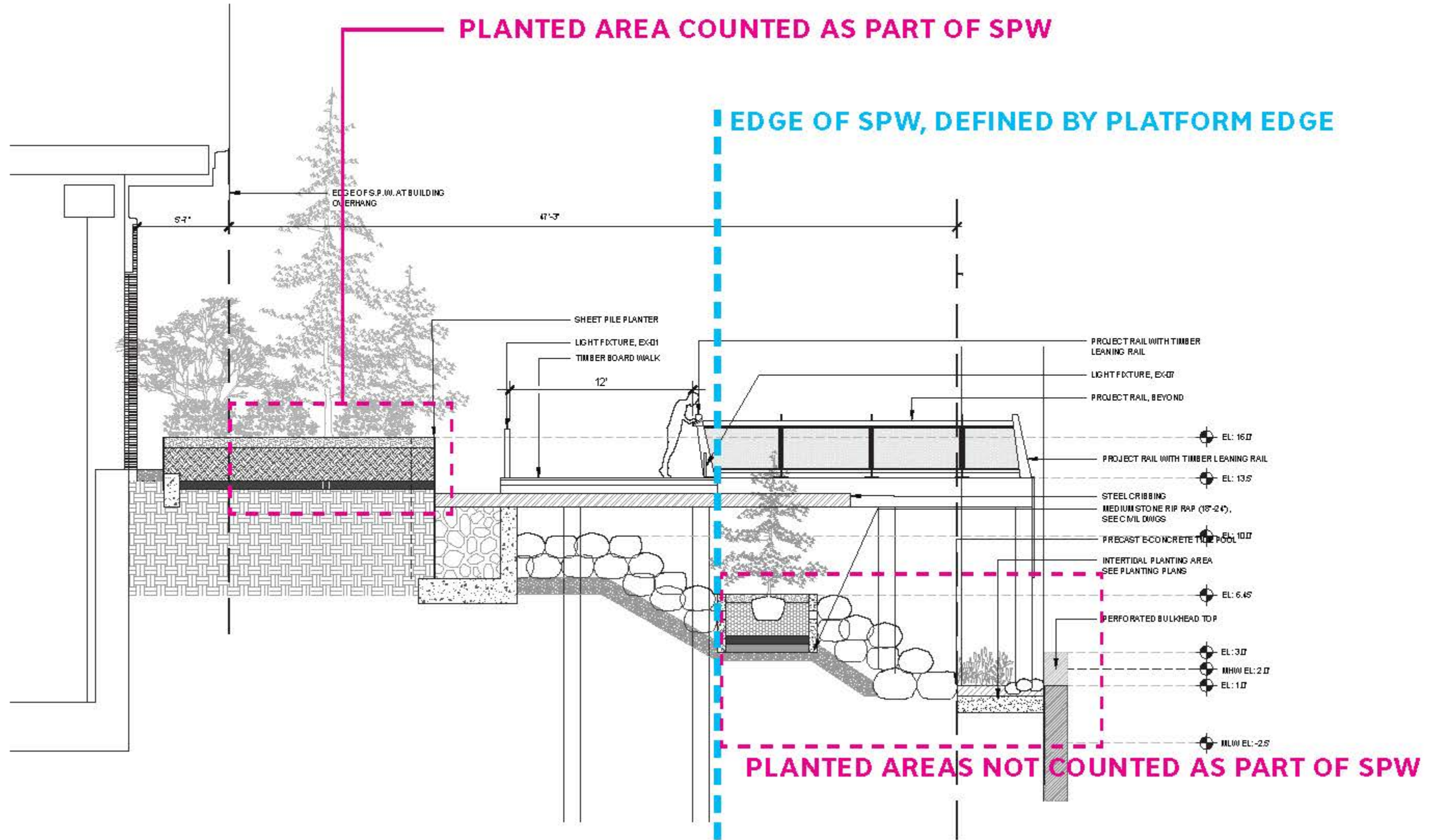
Beaches and Dunes

EASIEST OPTION FOR CERTIFICATION

(AUTHORIZATION ISN'T EASY OR CHEAP)

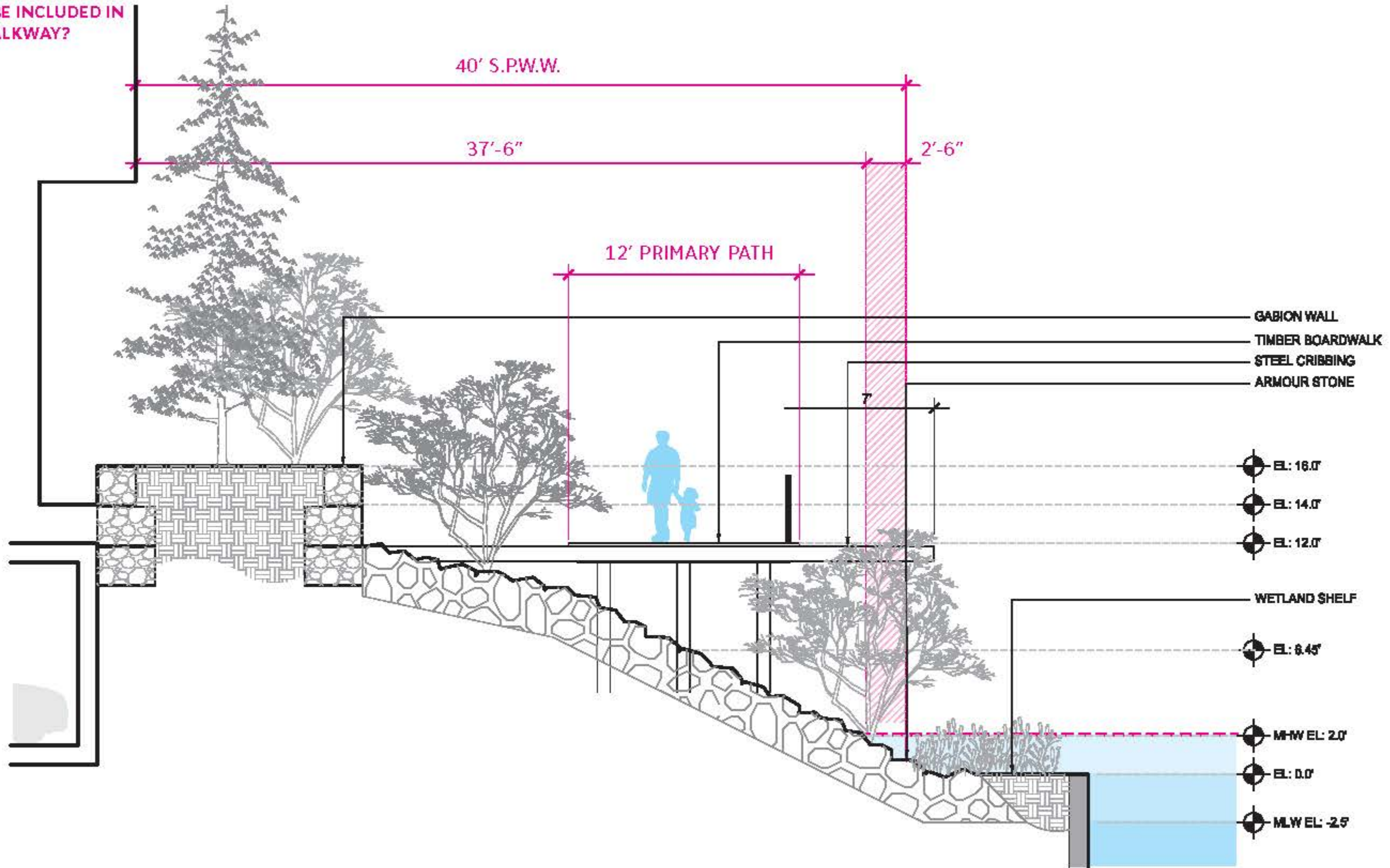






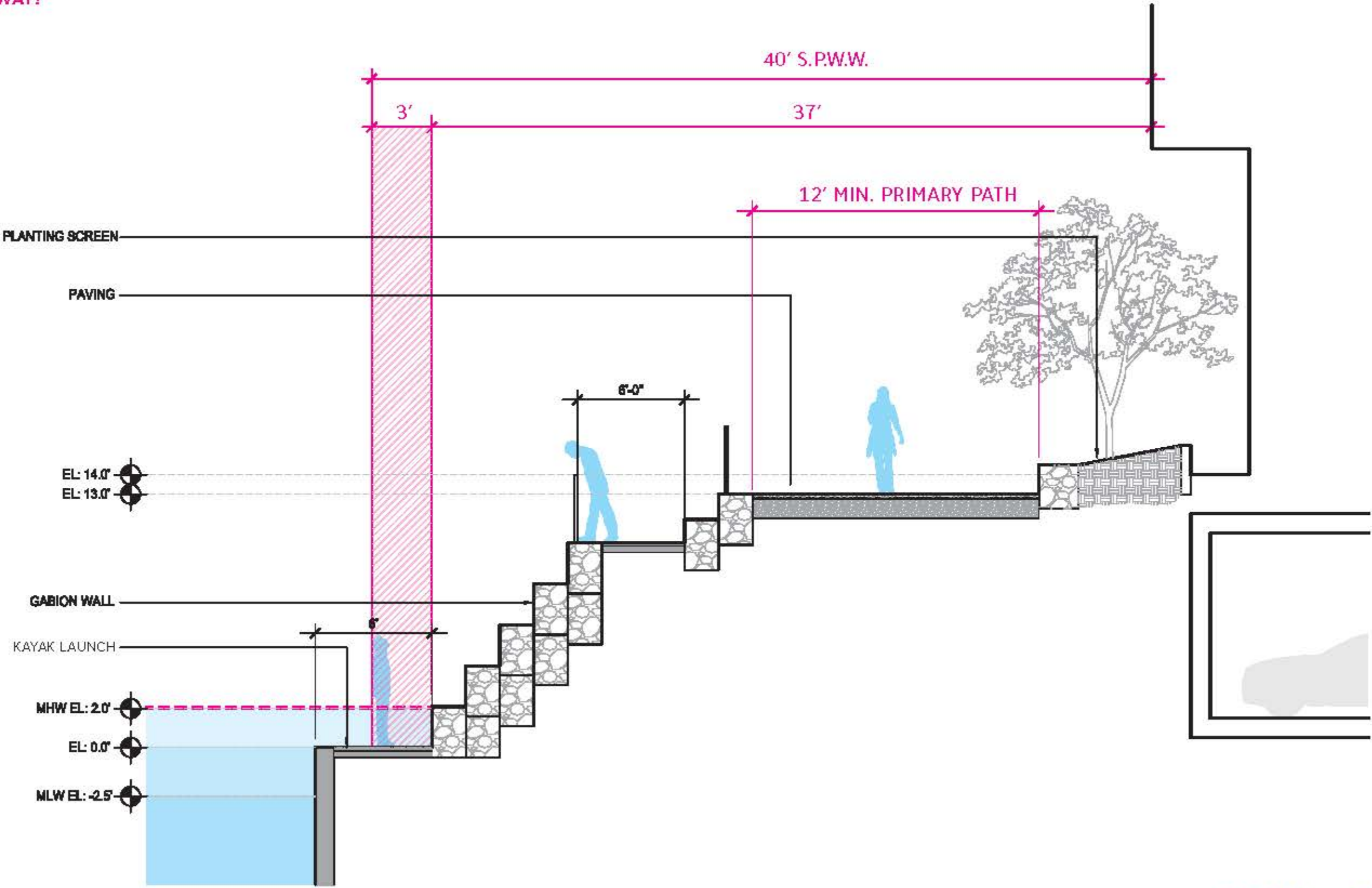
SITE SECTION - 1

CAN TIDAL ZONE BE INCLUDED IN SHORE PUBLIC WALKWAY?



SITE SECTION - 4

CAN TIDAL ZONE BE INCLUDED IN SHORE PUBLIC WALKWAY?





THANK YOU!