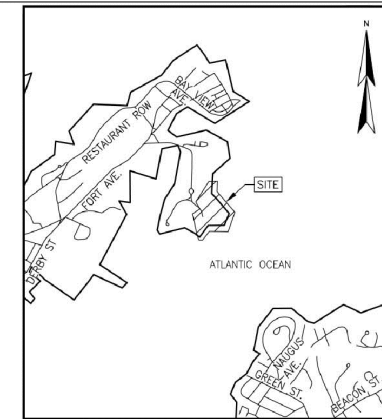
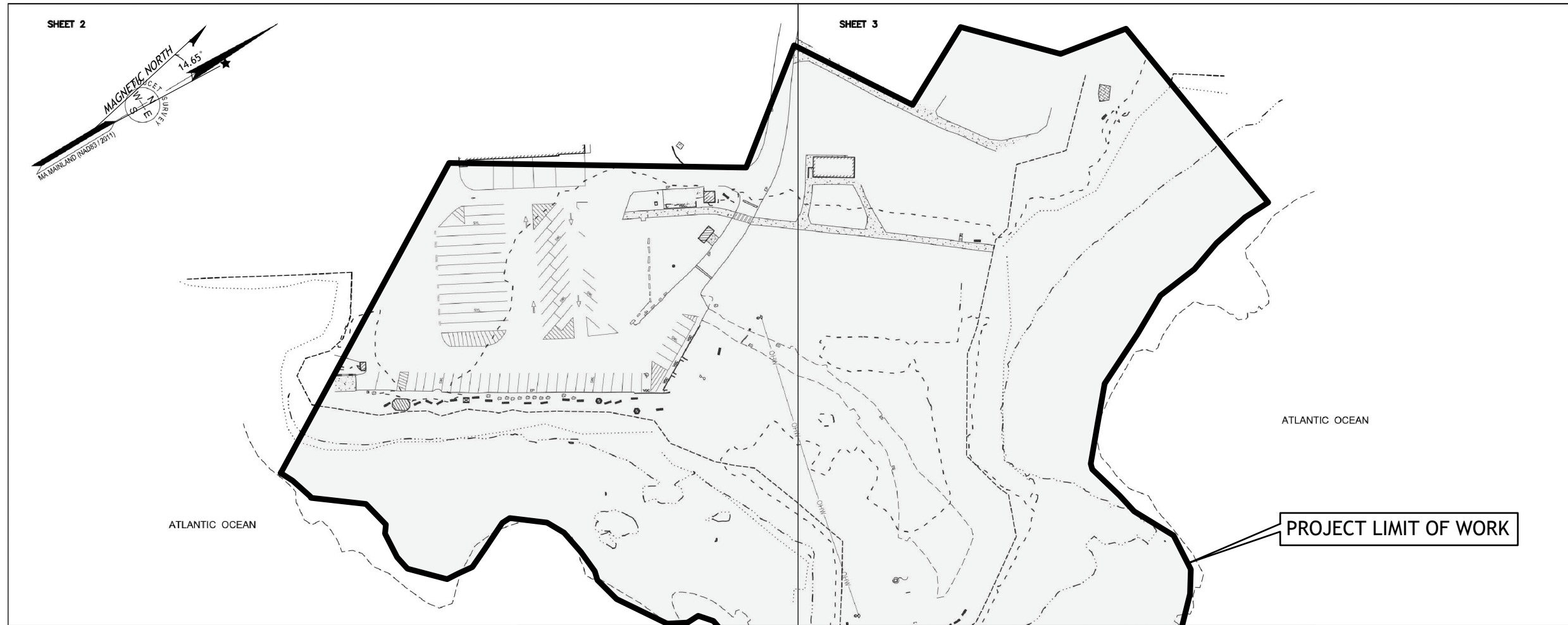


Figure 1. Location of the Winter Island Park Project area on the Marblehead North, MA USGS topographic quadrangle, 7.5-minute series.

\\PAL-File\Vol1\Projects\4708 Winter Island Park Pathways & Bank\Production\Mapping\Maps_CAD\4708 Base Map_UTM83-19F.dwg, 6/21/2024 5:11:13 PM



- NOTES:
- REFERENCE: WINTER ISLAND PARK, SALEM, MASSACHUSETTS
 - FIELD SURVEY PERFORMED BY S.N.F., E.D.P., D.J.B., D.D.L., A.E.K., & E.A.K. (DOUCET SURVEY) DURING APRIL 2024 USING A TOTAL STATION AND A SURVEY GRADE GPS WITH A DATA COLLECTOR AND A DIGITAL LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
 - AERIAL SURVEY PERFORMED BY E.D.P. (DOUCET SURVEY) ON APRIL 26, 2024 USING A DJI PHANTOM 4 RTK.

HORIZONTAL

"THIS DATA SET WAS PRODUCED TO MEET ASPRS POSITIONAL ACCURACY STANDARDS FOR DIGITAL GEOSPATIAL DATA (2014) FOR A 5.0 cm RMSE_x / RMSE_y HORIZONTAL ACCURACY CLASS WHICH EQUATES TO POSITIONAL HORIZONTAL ACCURACY = ± 12.2 cm AT A 95% CONFIDENCE LEVEL."

VERTICAL

"THIS DATA SET WAS PRODUCED TO MEET ASPRS POSITIONAL ACCURACY STANDARDS FOR DIGITAL GEOSPATIAL DATA (2014) FOR A 5.0 cm RMSE_z VERTICAL ACCURACY CLASS EQUATING TO NVA = ± 9.8 cm AT 95% CONFIDENCE LEVEL."
 - HORIZONTAL DATUM BASED ON NAD83(2011) MASSACHUSETTS STATE PLANE MAINLAND COORDINATE ZONE (2001) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
 - VERTICAL DATUM IS BASED ON APPROXIMATE NAVD83(GEOID18) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS USING NGS OPUS SOLUTIONS.
 - JURISDICTIONAL WETLANDS DELINEATED BY GZA GEOENVIRONMENTAL INC DURING APRIL 2024 USING THE FOLLOWING STANDARDS:
 - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH-CENTRAL AND NORTH-EAST REGION, (VERSION 2.0) JANUARY 2012, U.S. ARMY CORPS OF ENGINEERS.
 - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, VERSION 8.2, UNITED STATES DEPARTMENT OF AGRICULTURE (2018).
 - NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE, 2020 VERSION 4, FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
 - U.S. ARMY CORPS OF ENGINEERS NATIONAL WETLAND PLANT LIST, VERSION 3.5, (2020)
 - COASTAL BANK, COASTAL BEACH, AND INTERTIDAL ZONE WERE IDENTIFIED ACCORDING TO CRITERIA FOUND IN THE MASSACHUSETTS WETLAND PROTECTION ACT, 310 CMR 10.21-10.31.
 - PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
 - UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
 - THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
 - ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL, WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.
 - OVERALL PARCEL BOUNDARIES AS SHOWN HEREON ARE BASED ON GIS DATA FROM THE "BUREAU OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS, EXECUTIVE OFFICE OF TECHNOLOGY AND SECURITY SERVICES", AND ARE IN THEIR ORIGINAL LOCATION. THE PARCEL BOUNDARIES HAVE NOT BEEN ADJUSTED TO MATCH FOUND PROPERTY MONUMENTS OR THE EDGE OF RIGHT OF WAY AS DETERMINED BY THE SURVEYOR.

PROJECT LIMIT OF WORK

TOPOGRAPHIC PLAN
FOR
GZA GEOENVIRONMENTAL, INC.
OF
WINTER ISLAND PARK
SALEM, MASSACHUSETTS

DATUM ELEVATION REFERENCE TABLE	
REFERENCE	NAVD88
HIGHEST OBSERVED TIDE	14.3
MEAN HIGH WATER (MHW)	4.0
NORTH AMERICAN VERTICAL DATUM (NAVD88)	0.0
MEAN LOWER LOW WATER (MLLW)	-5.2

NO.	DATE	DESCRIPTION	E.A.K. BY
1	06/03/24	GENERAL REVISIONS	E.A.K.

DRAWN BY: G.A.N.	DATE: MAY 10, 2024
CHECKED BY: E.A.K.	DRAWING NO. 8453A
JOB NO. 8453	SHEET 1 OF 7

Winter Island Park

Source/Revision/Issue	Date
PAL modified	06-21-2024
Map source: City of Salem, GZA Geoenvironmental, Inc.	05-22-2024

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PRIVILEGED INFORMATION - DO NOT RELEASE

THE TIDAL DATUM INFORMATION AND THE RELATIONSHIP BETWEEN SAID TIDAL DATUM AND NAVD88 IS BASED ON THE BENCH MARK SHEET PUBLISHED BY THE U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE FOR BENCHMARK "NO 19 1916", DESIGNATION: "844 2645 TIDAL 19" STATION ID: 8442645 SALEM TIDAL STATION, PUBLISHED: 02/05/2004, LENGTH OF SERIES: 1 MONTH, TIME PERIOD: SEPTEMBER 1992 - SEPTEMBER 1992, TIDAL EPOCH: 1983-2001, CONTROL TIDE STATION: 8443970 BOSTON, BOSTON HARBOR.

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Figure 2. Winter Island Park Topographic Plan showing Project Limit of Work (source: City of Salem and GZA Geoenvironmental, Inc.).



Figure 3 (Figure 8 in Report). Map showing historic aboveground properties listed in the State and National Registers and in MACRIS and nonhistoric resources in the recommended APE.

Winter Island Park Pathway and Bank Restoration Project Historic and Archaeological Resources Assessment, Photos



Photo 1. South side of Fort Pickering, Winter Island Revetments, and Fort Pickering Lighthouse (left to right), view northeast.



Photo 2. Coastal bank along parking lot, view south towards Gazebo and Flagpole.



Photo 3. Coastal bank along parking lot, view southwest towards Pier, Flagpole, and Gazebo (left to right).



Photo 4. East side of Fort Pickering and Winter Island Revetments with informal dirt trail, view southwest.



Photo 5. North side of Fort Pickering and Winter Island Revetments, view southeast.



Photo 6. Informal dirt trail ascending west side of Fort Pickering, view east.



Photo 7. Dirt trail and park features on Fort Pickering's west side, view south with Fort Pickering Lighthouse partially visible.



Photo 8. Interior of Fort Pickering, view south towards park amenities on south and east sides.



Photo 9. Ammunition storage in Fort Pickering, view southeast.



Photo 10. Fort Pickering walls, view northeast.



Photo 11. Interior of Igloos (North Bastion), view north.



Photo 12. Battery Shop/Office (right and left), view north from parking lot.



Photo 13. Restrooms/Bathhouse, view north.



Photo 14. Ramp and Pier, view south from parking lot.