Office of Water Resources, Michael A. Bilandic Building, 160 N. LaSalle St., S-703, Chicago, IL 60601

Illinois Department of Natural Resources, Office of Water Resources
Public Notice

Placement of Beach Nourishment, in Lake Michigan, at Forest Park Beach, 801 Lake Road, Lake Forest, IL 60045

The City of Lake Forest, 800 North Field Drive, Lake Forest, IL 60045 has applied for an Illinois Department of Natural Resources, Office of Water Resources permit for the placement of beach nourishment, in Lake Michigan, in Cell 2 of Forest Park Beach. Forest Park Beach is located at 801 Lake Road, Lake Forest, IL 60045.

The applicant proposes to place approximately 2,680 cubic yards of torpedo grain sand in Cell 2 of the Forest Park Beach. Cell 2 is the second beach cell south of the north end of Forest Park Beach. The proposed project will be reviewed using the Department's Part 3704 Rules. A location map and plans are attached to this notice.

No work is to start on this project unless and until such a time that the permit is issued.

An expanded version of the public notice can be viewed at dnr.illinois.gov/waterresources/publicnotices.html. Any questions can be directed to Jim Casey of the Chicago Office at james.casey@illinois.gov. You are invited to send comments regarding the work to the Chicago Office through **June 24, 2024**.

JOINT APPLICATION FOR
LAKE MICHIGAN REGIONAL GENERAL PERMIT
For
Lake Forest Beach Cell 2 Nourishment
LRC-2022-112
801 N. Lake Rd
Lake Forest, IL 60045
May 16, 2024

Prepared for

City of Lake Forest

800 North Field Drive
Lake Forest, IL 60045

Prepared by

915 Harger Road, Suite 330
Oak Brook, IL 60523

TABLE OF CONTENTS

TAB 1

Joint Application Form

JOINT APPLICATION FORM FOR ILLINOIS

ITEMS 1 AND 2 FOR AGENCY USE

1. Application Number	2. Date Received

3. and 4. (SEE SPECIAL INSTRUCTIONS) NAME, MAILING ADDRESS AND TELEPHONE NUMBERS

3a. Applicant's Name:	3b. Co-Applicant/Property Owner Name (if needed or if different from applicant):	4. Authorized Agent (an agent is not required):
Chuck Myers Company Name (if any) : City of Lake Forest Address: 800 North Field Drive, Lake Forest, Illinois 60045 Email Address:	Company Name (if any): Address: Email Address:	Dan Veriotti Company Name (if any): GZA GeoEnvironmental, Inc. Address: 915 Harger Road Suite 330 Oak Brook, IL 60523 Email Address: dan.veriotti@gza.com
Applicant's Phone Nos. w/area code Business: Residence: Cell: Fax:	Applicant's Phone Nos. w/area code Business: Residence: Cell: Fax:	Agent's Phone Nos. w/area code Business: Residence: Cell: Fax:

STATEMENT OF AUTHORIZATION

I hereby authorize, Dan Veriotti, PE to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

5/13/24
Date

5. ADJOINING PROPERTY OWNERS (Upstream and Downstream of the water body and within Visual Reach of Project)

Name	Mailing Address	Phone No. w/area code
a. See attached list b. c. d.		

6. PROJECT TITLE:
Lake Forest Park Beach Cell 2 Nourishment

7. PROJECT LOCATION:
801 N. Lake Road, Lake Forest, IL 60045

LATITUDE: 42.25438 °N LONGITUDE: 87.82041 °W	UTMs Northing: 4678346.18 Easting: 432326.65				
STREET, ROAD, OR OTHER DESCRIPTIVE LOCATION 1 mile east of intersection of East Deerpath Road and North Western Avenue.	LEGAL DESCRIPT	QUARTER SE	SECTION 27	TOWNSHIP NO. 44N	RANGE 12E

☒ IN OR ☐ NEAR CITY OF TOWN (check appropriate box) Municipality Name City of Lake Forest			WATERWAY Lake Michigan	RIVER MILE (if applicable)
COUNTY Lake	STATE IL	ZIP CODE 60045		

Revised 2010

☐ Corps of Engineers ☐ IL Dep't of Natural Resources ☐ IL Environmental Protection Agency ☐ Applicant's Copy

8. PROJECT DESCRIPTION (Include all features):

The project involves placing clean quarry sand without fines (source to be established during competitive municipal procurement process) within Cell 2 to replenish the public recreational beach area and protect the existing driveway and parking lot from erosion.

9. PURPOSE AND NEED OF PROJECT:

The purpose of the project is to replenish the eroding beach area with sand.

COMPLETE THE FOLLOWING FOUR BLOCKS IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

10. REASON(S) FOR DISCHARGE:

The project involves beach nourishment as a maintenance activity, to prevent shoreline erosion and allow the recreational activities to continue.

11. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS FOR WATERWAYS:

TYPE: Bird's Eyes and Torpedo Sand Fill, approximate gradations shown on Drawing No. 2.

AMOUNT IN CUBIC YARDS:

Bird's Eye Sand: 2,680 CYDS, Torpedo Sand: 330 CYDS placed below the OHWM (as shown on the attached plans)

12. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (See Instructions)

0.91 Acres under the OHWM of 583.37' IGLD85.

13. DESCRIPTION OF AVOIDANCE, MINIMIZATION AND COMPENSATION (See instructions)

Due to the nature of the project and the minimal environmental impacts, compensatory migration is not planned.

14. Date activity is proposed to commence: 10/1/24

Date activity is expected to be completed: 10/30/2024

15. Is any portion of the activity for which authorization is sought now complete? Yes [ ] No [X]

NOTE: If answer is "YES" give reasons in the Project Description and Remarks section. Indicate the existing work on drawings.

Month and Year the activity was completed

16. List all approvals or certification and denials received from other Federal, interstate, state, or local agencies for structures, construction, discharges or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial

17. CONSENT TO ENTER PROPERTY LISTED IN PART 7 ABOVE IS HEREBY GRANTED. Yes [X] No

18. APPLICATION VERIFICATION (SEE SPECIAL INSTRUCTIONS)

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my know

Signature of Applicant or Authorized Agent	5/13/24 Date
Signature of Applicant or Authorized Agent	Date
Signature of Applicant or Authorized Agent	Date

☐ Corps of Engineers Revised 2010 ☐ IL Dep't of Natural Resources ☐ IL Environmental Protection Agency ☐ Applicant's Copy

SEE INSTRUCTIONS FOR ADDRESS

LOCATION MAP

See attached plan set as part of application materials.

Revised 2010

☐ Corps of Engineers ☐ IL Dep't of Natural Resources ☐ IL Environmental Protection Agency ☐ Applicant's Copy

PLAN VIEW

See attached plan set as part of application materials.

FOR AGENCY USE ONLY

Revised 2010

☐ Corps of Engineers ☐ IL Dep't of Natural Resources ☐ IL Environmental Protection Agency ☐ Applicant's Copy

TAB 2

Introduction

Project Description

Existing Conditions

Qualitative Habitat Assessment

Mitigation

Alternatives Assessment

TAB 2

Project Description

The City of Lake Forest (City) is proposing beach nourishment at the Forest Park Beach in Lake County, Illinois. The proposed activity is intended to be authorized under a Lake Michigan Regional General Permit. The project limits are depicted on Drawing No. 1 of the attached permit set.

The proposed work will consist of the placement of clean, imported sand within Beach Cell No. 2 (Cell 2, second cell from the north). The proposed beach nourishment is intended to be placed as a one-time operation. The purpose of the project is to replenish the beach area to allow the public to safely access the water and alleviate future erosion of the beach and adjacent structures.

The need for the project is a result of the Lake Michigan storms causing significant erosion and sand migration from the beach area.

The proposed work is shown in the permit plans included in Tab 3.

Please find the Joint Application form attaches as Tab 1. The proposed work will be both above and below the OHWM of Lake Michigan of 583.37 feet IGLD85, as delineated by GZA on April 19, 2024. GZA's OHWM delineation report is included as Tab 5. The proposed fill below the OHWM is 3,010 CYDS, the total placed quantities are shown on Drawing No. 2 of the attached permit set.

Existing Conditions

Existing land use within and immediately adjacent to the project limits includes a public park and private residences. The park is used extensively by the Public and Cell 2 has experienced significantly more sand migration and erosion than the southern on-site cells. Recent photographs of Cell 2 are shown on Drawing No. 2 of the attached permit set.

Qualitative Habitat Assessment

Very little habitat is present in the proposed work areas due to the presence of historic shoreline stabilization and recreational land uses directly adjacent to the water's edge. The lake substrate appears to be a combination of sand and gravel near the beach area. There is no visible aquatic vegetation present within the proposed work area.

Terrestrial vegetation is not present in the project area due to the presence of a beach area and the upland parking lot.

The nearest tributary, the Waukegan River, is approximately 7 miles north of the project area. Fort Sheridan Forest Preserve with upland ravines and other aquatic resources is approximately 1.8 miles south of the project area.

There are no known reef/shoal or other habitat features within 1 mile of the project area.

The project plans in Tab 3 on Drawing No. 4 though Drawing No. 6 show the shoreline, lakebed contours and grades within beach cells 1 and 2 as they appeared in were collect by GZA on October 27, 2023 and supplemented on April 19, 2024.

Mitigation

The proposed work will minimize impacts to Waters of the US to the maximum extent practicable. The work is anticipated to be conducted from the land and will be conducted in a manner that limits the potential for environmental impacts, therefore, compensatory mitigation is not planned. The sand will be trucked to the site from the quarry and offloaded to the north end of Cell 2. The contractor will use construction equipment to place the sand materials in place and grade according to the project plans.

Alternatives Assessment

The project alternatives include the following:

1. No Action Alternate

   If no action were taken at Cell 2, continued erosion would put the existing parking lot at risk of undermining, and ultimately potential collapse, which would endanger public safety and eliminate public access to the Forest Park Beach facility, as well as require a more costly future intervention.

2. Alternate Project Locations

   As the proposed work is intended to prolong the life and serviceability of existing facilities, no alternate project locations are available.

3. Other Alternatives

   Other alternatives considered at Cell 2 included (a) a greater volume of beach nourishment, which was rejected based on high cost, (b) adding riprap erosion prevention material in lieu of sand nourishment, which was rejected due to loss of public use of the area, and (c) rehabilitation and enlargement of the armor stone shore connected breakwaters, which was rejected as it is significantly more costly.

TAB 3

Permit Plans

LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
CITY OF LAKE FOREST
LAKE FOREST, ILLINOIS 60045
MAY, 2024
ISSUED FOR REGULATORY PERMITTING

PREPARED FOR:

MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

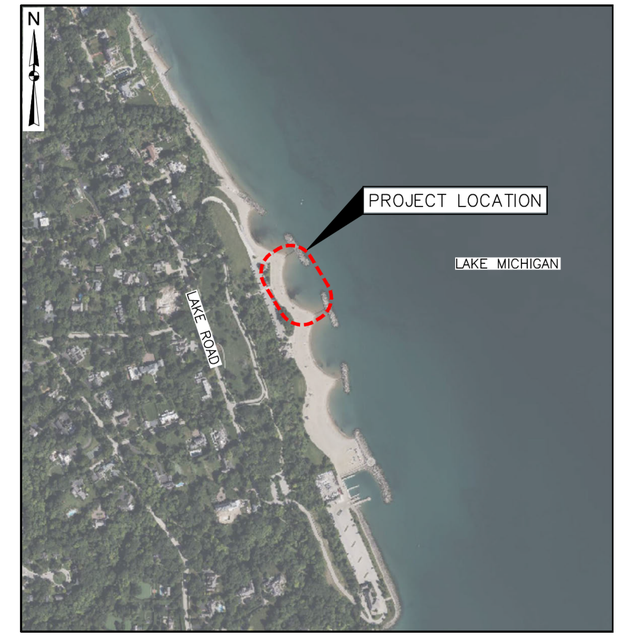
DESIGNED BY:

GZA GEOENVIRONMENTAL, INC.
915 HARGER ROAD
OAK BROOK, IL 60523
(630)-323-3905

PROJECT LOCATION MAP

0 1000' 2000' 4000' 6000'
SCALE IN FEET

SOURCE: BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP: HIGHLAND PARK, IL AND WAUKEGAN, IL DIGITAL TOPOGRAPHIC MAPS PROVIDED BY USGSSTORE.GOV.



PROJECT VICINITY MAP

0 250' 500' 1000' 1500'
SCALE IN FEET

AERIAL BASE MAP DEVELOPED FROM AN ELECTRONIC IMAGE FILE PROVIDED BY MICROSOFT CORPORATION / DIGITAL GLOBE / CNES DISTRIBUTION AIRBUS DC IN 2023.

ILLINOIS

INDEX OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
1	TITLE SHEET
2	GENERAL NOTES AND MATERIAL SPECIFICATIONS
3	SITE PHOTOS
4	EXISTING UTILITIES, TRUCKING ROUTES AND STAGING AREA
5	EXISTING CONDITIONS
6	GRADING PLAN
7	CROSS SECTIONS (1 OF 2)
8	CROSS SECTIONS (2 OF 2)

WISCONSIN DAN VERIOTTI 40519 DOWNERS GROVE, IL PROFESSIONAL ENGINEER

DATED: 05/06/2024

ISSUED FOR REGULATORY PERMITTING

NO.	ISSUE/DESCRIPTION	BY	DATE

LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

TITLE SHEET

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		MR. CHUCK MYERS CITY OF LAKE FOREST 800 NORTH FIELD DRIVE LAKE FOREST, IL 60045	
PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	DRAWING NO. 1
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	

GENERAL NOTES

1. BEACH TOPOGRAPHIC AND BATHYMETRIC DATA COLLECTED BY GZA GEOENVIRONMENTAL, INC. ON OCTOBER 27, 2023 AND SUPPLEMENTED ON APRIL 19, 2024.
2. ALL ELEVATIONS SHOWN REFERENCE THE INTERNATIONAL GREAT LAKES DATUM OF 1985 (IGLD85). NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) – 0.45' = IGLD85.
3. THE SURVEY RESULTS SHOWN ON THE SHEET CAN ONLY BE CONSIDERED REPRESENTATIVE OF THE CONDITIONS AT THE TIME OF SURVEY.
4. ALL WORK IS SUBJECT TO CITY OF LAKE FOREST, IDNR AND USACE REGULATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE SITE AND RESTORATION AFTER THE WORK IS COMPLETE.
6. CONTRACTOR TO VERIFY EXISTING SITE CONDITIONS BEFORE STARTING WORK, INCLUDING ALL EXISTING UTILITIES.
7. CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPLACE DAMAGED EXISTING UTILITIES AND SITE FEATURES.
8. THE SAND FOR THE BEACH CELL NOURISHMENT SHALL BE BROUGHT IN BY TRUCKING AND TEMPORARILY STORED ABOVE THE ORDINARY HIGH WATER MARK, FOR PLACEMENT IN THE BEACH CELL.
9. NO DISTURBANCE SHALL OCCUR OUTSIDE SITE BOUNDARIES.
10. CONTRACTOR SHALL USE MATERIALS THAT CONFORM TO THE SPECIFICATIONS.
11. CONTRACTOR SHALL SMOOTHLY GRADE TRANSITIONS BETWEEN EXISTING AND PROPOSED.

ASSUMED VALUES, MATERIAL PROPERTIES AND QUANTITY ESTIMATES

FILL AREA: 1.44 ACRES

FILL AREA BELOW O.H.W.M.: 0.91 ACRES

SAND FILL VOLUME: 4,475 CYDS

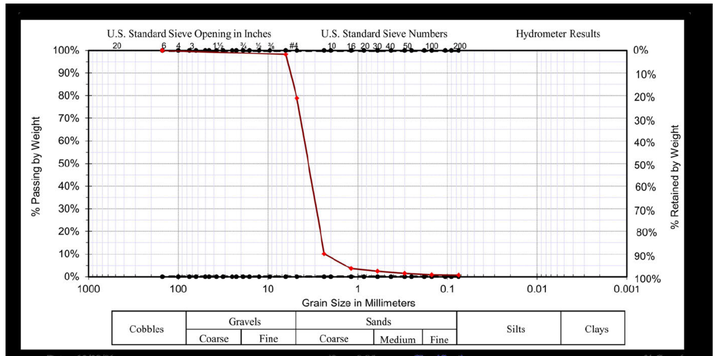
SAND FILL VOLUME BELOW O.H.W.M: 3,010 CYDS

TORPEDO SAND (IL FA-2 OR APPROVED EQUAL)

TOTAL QUANTITY: 1,735 CYDS, QUANTITY BELOW OHWM: 330 CYDS

BIRD'S EYE SAND

TOTAL QUANTITY: 2,740 CYDS, QUANTITY BELOW OHWM: 2,680 CYDS



Date : 10/08/21
Sample #: S1
Sample ID: Birdseye
Source: Antioch
Project: n/a
Location: n/a
Boring #: n/a
Depth: n/a

D_{10} = 2.35
D_{30} = 3.05
D_{60} = 4.09
C_c = 0.97
C_u = 1.74
Liquid Limit= 0.00
Plastic Limit= 0.00
Plasticity Index= 0.00

Classification
SP, Poorly graded Sand with Gravel

Specifications
No Specs

Fineness Modulus
5.03

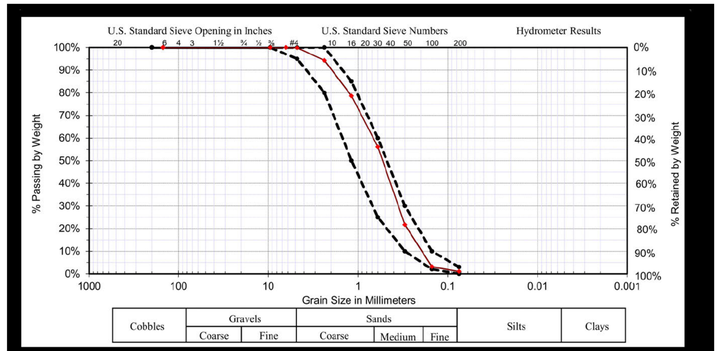
% Gravel
21.14%
% Sand
78.17%
% Silt & Clay
0.69%
Sample Meets Specs
Yes

Coarse Section Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
6.00"	150.00		100.0%		
4.00"	100.00		100.0%		
3.00"	75.00		100.0%		
2.50"	63.00		100.0%		
2.00"	50.00		100.0%		
1.75"	45.00		100.0%		
1.50"	37.50		100.0%		
1.25"	31.50		100.0%		
1.00"	25.00		100.0%		
7/8"	22.40		100.0%		
3/4"	19.00		100.0%		
5/8"	16.00		100.0%		
1/2"	12.50		100.0%		
3/8"	9.50		100.0%		
1/4"	6.30	98.2%	98.2%		
#4	4.75	78.9%	78.9%		

Fines Section Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
#4	4.750		78.9%		
#8	2.360	10.1%	10.1%		
#10	2.000		8.1%		
#16	1.180	3.5%	3.5%		
#20	0.850		2.5%		
#30	0.600	2.4%	2.4%		
#40	0.425		1.8%		
#50	0.300	1.5%	1.5%		
#60	0.250		1.3%		
#80	0.180		1.0%		
#100	0.150	0.5%	0.5%		
#140	0.106		0.8%		
#170	0.090		0.7%		
#200	0.075	0.7%	0.7%		
#270	0.053				

BIRD'S EYE SAND GRADATION SPECIFICATION

(TYPICAL, TO BE APPROVED BY THE ENGINEER)



Date : 11/12/21
Sample #: S4
Sample ID: Torpedo Sand
Source: Thelen
Project: n/a
Location: Antioch
Boring #: n/a
Depth: n/a

D_{10} = 0.21
D_{30} = 0.37
D_{60} = 0.70
C_c = 0.96
C_u = 3.41
Liquid Limit= 0.00
Plastic Limit= 0.00
Plasticity Index= 0.00

Classification
SP, Poorly graded Sand

Specifications
ASTM C-33 Sand

Fineness Modulus
2.45

% Gravel
0.15%
% Sand
98.82%
% Silt & Clay
1.03%
Sample Meets Specs
Yes

Coarse Section Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
6.00"	150.00		100.0%		
4.00"	100.00		100.0%		
3.00"	75.00		100.0%		
2.50"	63.00		100.0%		
2.00"	50.00		100.0%		
1.75"	45.00		100.0%		
1.50"	37.50		100.0%		
1.25"	31.50		100.0%		
1.00"	25.00		100.0%		
7/8"	22.40		100.0%		
3/4"	19.00		100.0%		
5/8"	16.00		100.0%		
1/2"	12.50		100.0%		
3/8"	9.50	100.0%	100.0%	100.0%	100.0%
1/4"	6.30	100.0%	100.0%		
#4	4.75	99.9%	99.9%	100.0%	95.0%

Fines Section Sieve Size US	Sieve Size Metric	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
#4	4.750	99.9%	99.9%	100.0%	95.0%
#8	2.360	94.3%	94.3%	100.0%	80.0%
#10	2.000		89.5%		
#16	1.180	78.6%	78.6%	85.0%	50.0%
#20	0.850		65.8%		
#30	0.600	56.1%	56.1%	60.0%	25.0%
#40	0.425		36.0%		
#50	0.300	21.7%	21.7%	30.0%	10.0%
#60	0.250		13.5%		
#80	0.180		6.9%		
#100	0.150	3.2%	3.2%	10.0%	2.0%
#140	0.106		1.9%		
#170	0.090		1.5%		
#200	0.075	1.0%	1.0%	3.0%	0.0%
#270	0.053				

Thelen Sand & Gravel, Inc.

TORPEDO SAND GRADATION SPECIFICATION

(TYPICAL, TO BE APPROVED BY THE ENGINEER)

ISSUED FOR REGULATORY PERMITTING

NO.	ISSUE/DESCRIPTION	BY	DATE

LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

GENERAL NOTES AND MATERIAL SPECIFICATIONS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	DRAWING NO. 2
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	

PHOTO 1: LOOKING SOUTHWEST AT BEACH CELL 2 AND THE CONCRETE CURB AT THE SOUTHWEST BORDER OF BEACH CELL 2.

PHOTO 2: LOOKING SOUTH AT THE DRIVEWAY TURN-A-ROUND.

PHOTO 3: LOOKING WEST AT BEACH CELL 2 AND THE SOUTH STEEL SHEET PILE GROIN.

PHOTO 4: LOOKING SOUTHEAST AT BEACH CELL 2.

PHOTO LOCATION MAP

0 100' 200' 400' 600'
SCALE IN FEET

ISSUED FOR REGULATORY PERMITTING

NO.	ISSUE/DESCRIPTION	BY	DATE

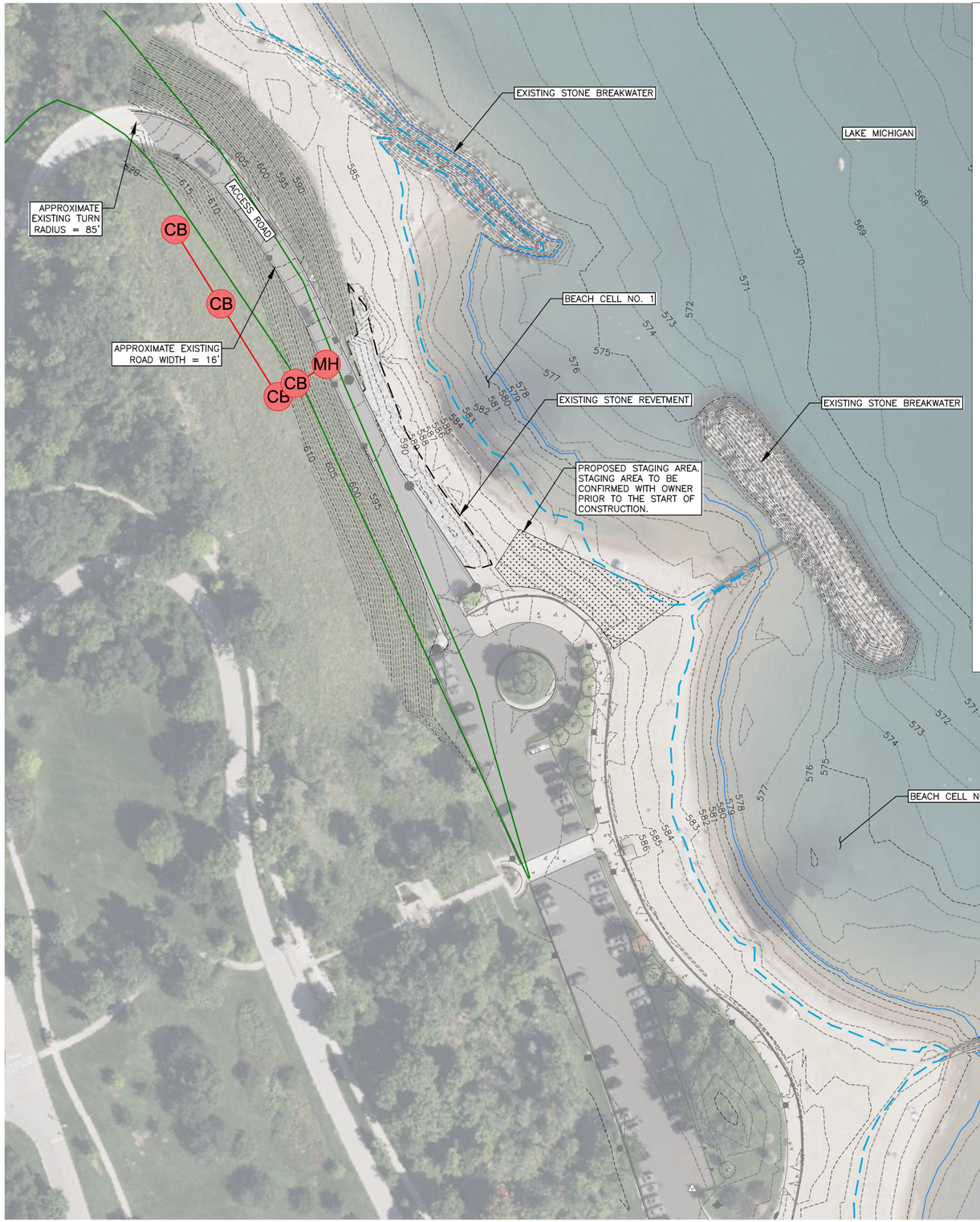
LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

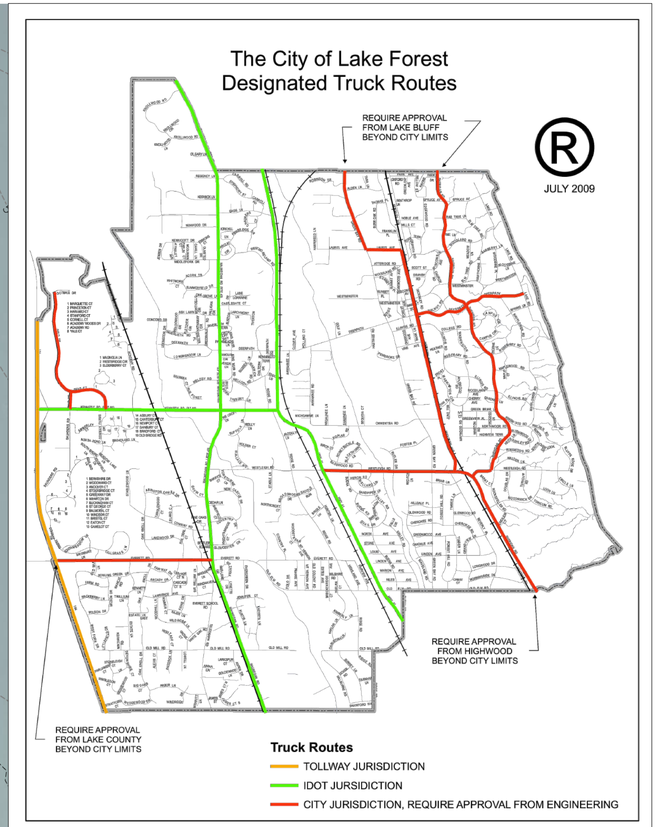
SITE PHOTOS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	DRAWING NO. 3
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	





LEGEND

- EXISTING MAJOR TOPOGRAPHIC CONTOUR LINE
- EXISTING MINOR TOPOGRAPHIC CONTOUR LINE
- APRIL 19, 2024 WATER LEVEL = 579.3' IGLD85
- ORDINARY HIGH WATER MARK = 583.37' IGLD85
- ACCESS ROUTE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- MH EXISTING MANHOLE
- CB EXISTING CATCH BASIN
- PROPOSED STAGING AREA

NOTES:

1. EXISTING UTILITIES WERE NOT SURVEYED AND SHOULD BE CONSIDERED APPROXIMATE.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SITE CONDITIONS BEFORE CONSTRUCTION STARTS.
3. MATERIAL DELIVERY
   A. ALL TRUCKS WILL FOLLOW WESTLEIGH–SHERIDAN–DEERPATH–LAKE ROUTE WHEN COMING AND GOING.
   B. NO TRUCK TRAFFIC ON SPRING LANE OR WESTMINSTER.
6. NO VEHICLES OR MATERIAL WILL BE PARKED OR PLACED ON THE UPPER FOREST PARK ROADWAY OR ANYWHERE IN THE PARK.
7. REFER TO DRAWING NO. 2 FOR GENERAL NOTES.

ISSUED FOR REGULATORY PERMITTING

N W E S

0 25' 50' 100' 150'
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

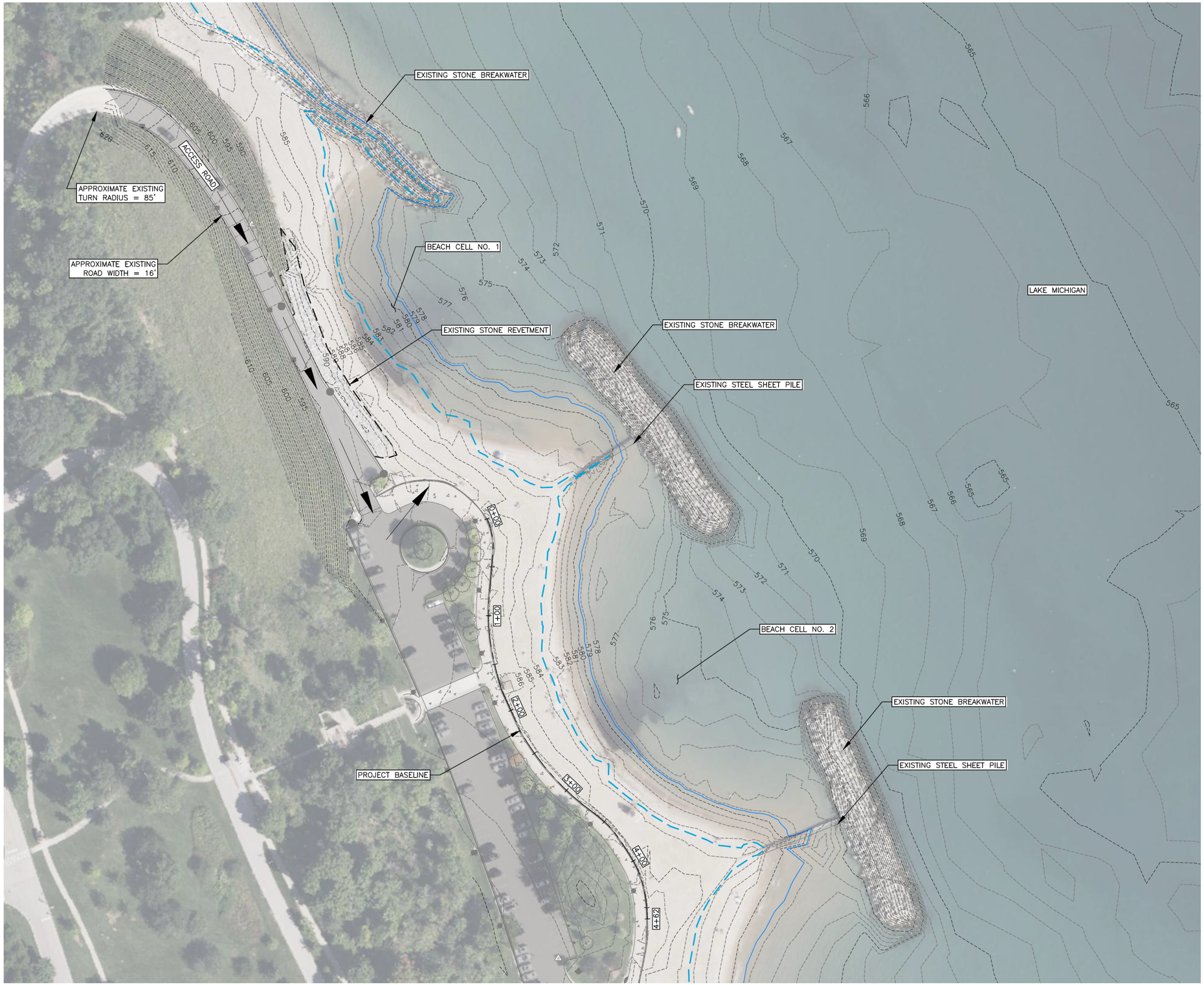
LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

EXISTING UTILITIES, TRUCKING ROUTES AND STAGING AREA

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	DRAWING NO. 4
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	



LEGEND

- EXISTING MAJOR TOPOGRAPHIC CONTOUR LINE
- EXISTING MINOR TOPOGRAPHIC CONTOUR LINE
- APRIL 19, 2024 WATER LEVEL = 579.3' IGLD85
- ORDINARY HIGH WATER MARK = 583.37' IGLD85
- ACCESS ROUTE

NOTES:

1. REFER TO DRAWING NO. 2 FOR GENERAL NOTES.

PROJECT BASELINE ALIGNMENT COORDINATES		
STATION	NORTHING	EASTING
0+00	2,035,883.0	1,123,077.4
0+50	2,035,834.0	1,123,082.2
1+00	2,035,784.1	1,123,078.9
1+50	2,035,734.6	1,123,085.3
2+00	2,035,687.6	1,123,101.7
2+50	2,035,643.9	1,123,125.8
3+00	2,035,606.2	1,123,158.5
3+50	2,035,574.3	1,123,196.9
4+00	2,035,534.2	1,123,226.4
4+50	2,035,486.6	1,123,240.3
4+61	2,035,475.1	1,123,240.9

ISSUED FOR REGULATORY PERMITTING

N W E S

0 25' 50' 100' 150'
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

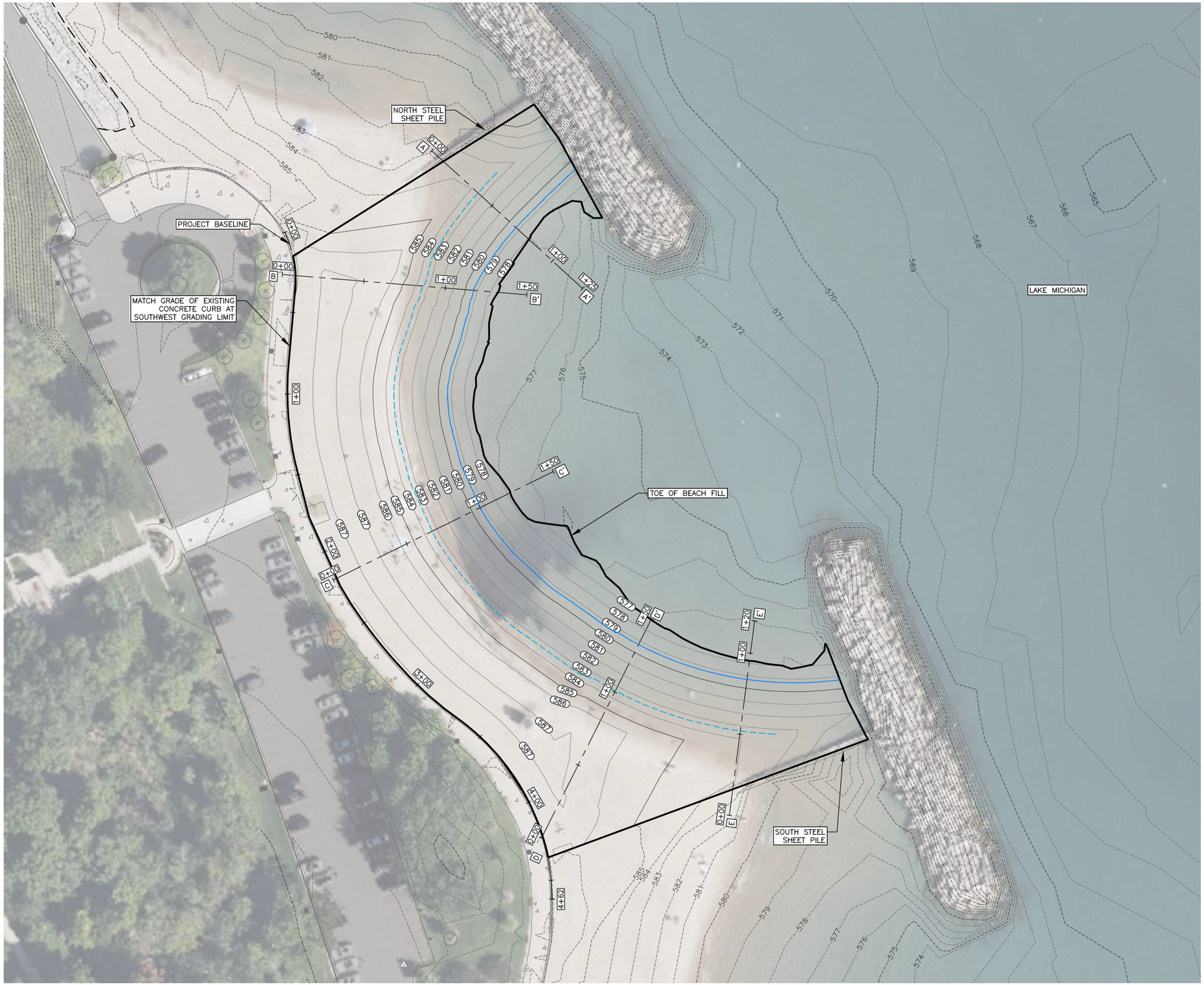
LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

EXISTING CONDITIONS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY:	CHECKED BY: DV	DRAWING NO. 5
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	



LEGEND

- EXISTING MAJOR TOPOGRAPHIC CONTOUR LINE
- EXISTING MINOR TOPOGRAPHIC CONTOUR LINE
- PROPOSED MAJOR TOPOGRAPHIC CONTOUR LINE
- PROPOSED MINOR TOPOGRAPHIC CONTOUR LINE
- APRIL 19, 2024 WATER LEVEL = 579.3' IGLD85
- ORDINARY HIGH WATER MARK = 583.37' IGLD85
- GRADING LIMIT

NOTES

1. APPROXIMATE FILL VOLUME = 4,475 CYDS.
2. REFER TO DRAWING NO. 2 FOR GENERAL NOTES.

ALIGNMENT COORDINATES		
ALIGNMENT/STATION	NORTHING	EASTING
A–A' STA. 0+00	2,035,932.9	1,123,167.2
A–A' STA. 1+25	2,035,848.6	1,123,259.5
B–B' STA. 0+00	2,035,857.2	1,123,075.9
B–B' STA. 1+50	2,035,844.8	1,123,225.4
C–C' STA. 0+00	2,035,670.3	1,123,107.1
C–C' STA. 1+50	2,035,736.6	1,123,241.6
D–D' STA. 0+00	2,035,506.2	1,123,231.2
D–D' STA. 1+50	2,035,646.4	1,123,301.6
E–E' STA. 0+00	2,035,526.3	1,123,349.3
E–E' STA. 1+20	2,035,645.3	1,123,364.8

ISSUED FOR REGULATORY PERMITTING

N
W E
S

0 15' 30' 60' 90'
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

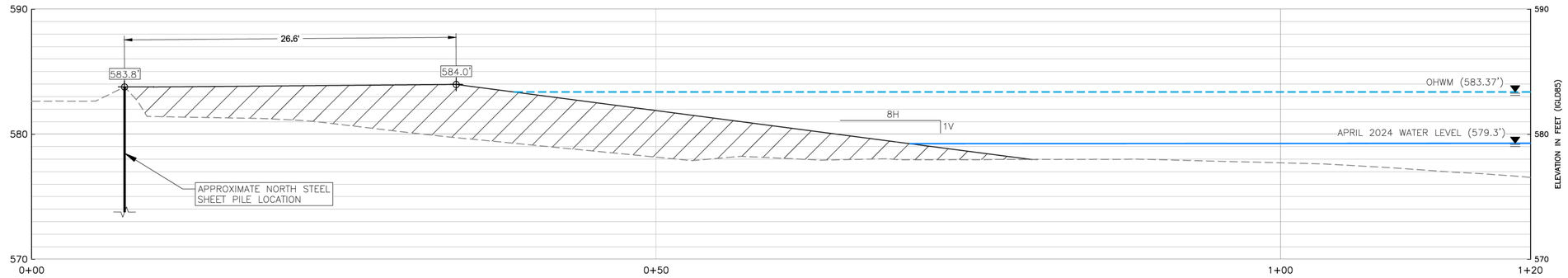
LAKE FOREST PARK BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

GRADING PLAN

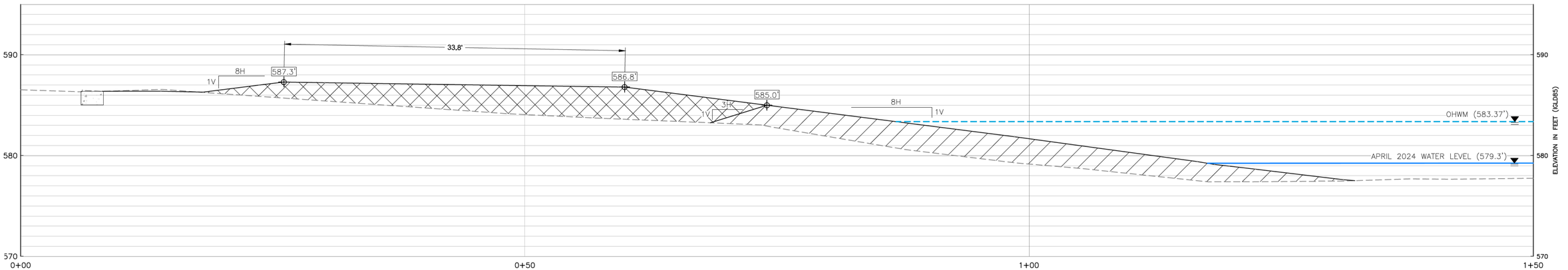
PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	DRAWING NO.	
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	6	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.		



CROSS SECTION A–A'



CROSS SECTION B–B'

ISSUED FOR REGULATORY PERMITTING

0 2.5' 5' 10' 15'

HORIZONTAL AND VERTICAL SCALE IN FEET

LEGEND

- EXISTING GRADE (OCTOBER 2023)
- PROPOSED GRADE
- APRIL 19, 2024 WATER LEVEL = 579.3' IGLD85
- OHWM = 583.37' IGLD85
- EXISTING CONCRETE CURB
- BIRD'S EYE SAND FILL
- TORPEDO SAND FILL
- 585.0' SPOT ELEVATION

NO.	ISSUE/DESCRIPTION	BY	DATE

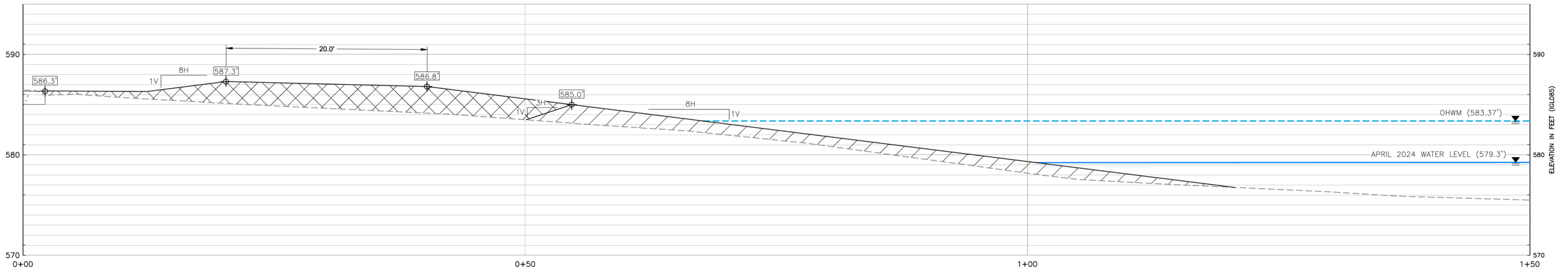
LAKE FOREST PARK BEACH CELL NO. 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

CROSS SECTIONS (1 OF 2)

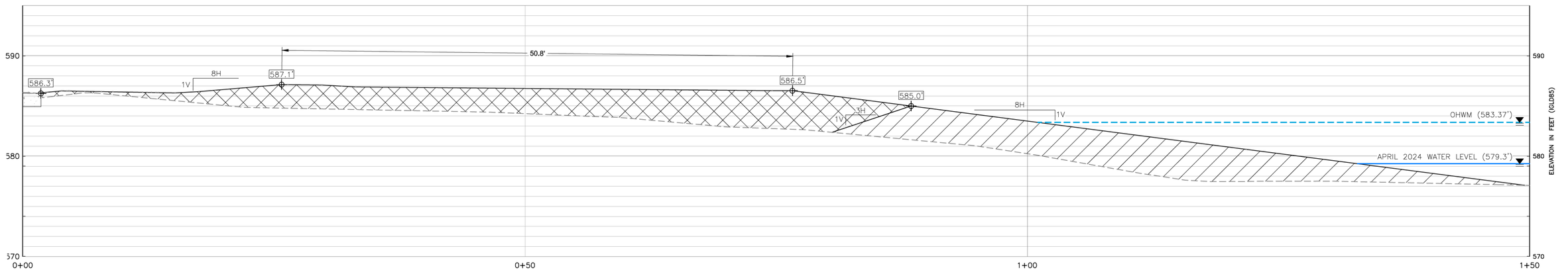
PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

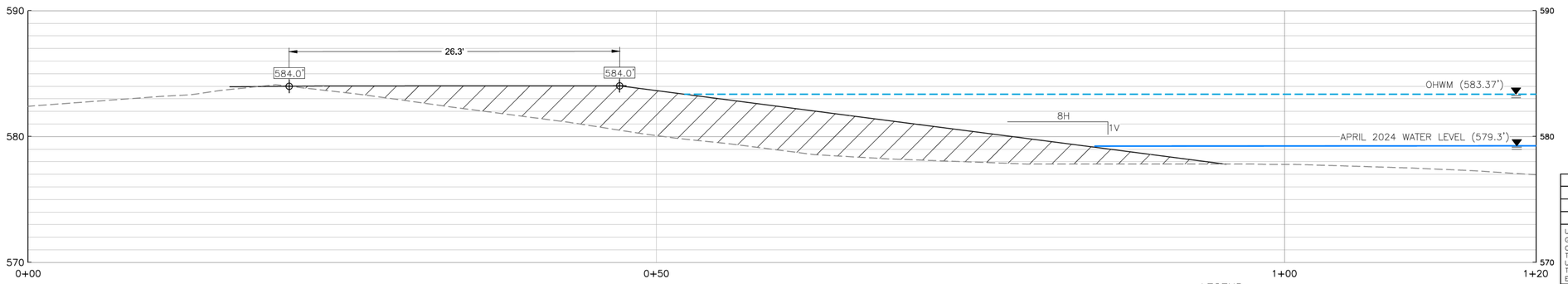
PROJ MGR: DV	REVIEWED BY:	CHECKED BY: DV	DRAWING NO. 7
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	



CROSS SECTION C–C'



CROSS SECTION D–D'



CROSS SECTION E–E'

LEGEND

- EXISTING GRADE (OCTOBER 2023)
- PROPOSED GRADE
- APRIL 19, 2024 WATER LEVEL = 579.3' IGLD85
- OHWM = 583.37' IGLD85
- EXISTING CONCRETE CURB
- BIRD'S EYE SAND FILL
- TORPEDO SAND FILL
- 585.0' SPOT ELEVATION

ISSUED FOR REGULATORY PERMITTING

0 2.5' 5' 10' 15'

HORIZONTAL AND VERTICAL SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

LAKE FOREST PARK BEACH CELL NO. 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

CROSS SECTIONS (2 OF 2)

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	DRAWING NO.
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	8
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	

TAB 4

Adjacent Property Owner List

City of Lake Forest – Parks & Recreation Department
Lake Forest Park Beach Cell 2 Nourishment
USACE Permit Application # LRC-2022-112

South Property Owners – Mailing Address

Henrik Clausen

CTLTC TTEE

Harris Bank Glencoe Northbrook

Chicago Title Land Trust No.

Desmond R Laplace TTEE UTD

David Moore

Harris Trust & Savings Bank

Northern Trust Bank/Lake Forest

Graham D & Beth S Cook Co TTEES

Thomas Duckworth

North Property Owners – Mailing Address

Sue Cantlev Kowlzan Trustee

ATG Trust Company Trustee

TAB 5

ORDINARY HIGH WATER MARK DELINEATION

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: LRC-2022-112	Site Name: Lake Forest Beach Cell No. 2	Date and Time: 5/9/2024
Location (lat/long): 42.254375, -87.8204808	Investigator(s): Dan Veriotti, PE, Colin Byron, EIT (GZA)	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [x] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [x] Other: Field Observation

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

The Site is subject to Lake Michigan water level variations between 582.39' (June/July 2020) and 576.02' (January 2013) IGLD 85.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

The Site consists of a series of four beach cells with detached armor stone breakwaters. Beach Cell No. 2 is the second from the north.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** a
  - [ ] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [ ] **Change in vegetation type and/or density:**

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [ ] *vegetation absent to:*
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [x] **Wracking/presence of organic litter:** a
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Detailed photographs with respective elevations and locations (IGLD85) were collected and shown in Appendices A, B & C.

Project ID #: LRC-2022-112

Step 4 Is additional information needed to support this determination? [x] Yes [ ] No If yes, describe and attach information to datasheet:

OHWM point locations, elevations and grain size distribution graphs are provided as appendices.

Step 5 Describe rationale for location of OHWM

The average water level at the time of the site visit was 579.1' as recorded by the NOAA Calumet Harbor, IL gauge. Survey flags were placed at the location of slope breaks and presence of organic debris. The elevations at the locations of the survey flags were recorded in the IGLD85 vertical datum. The average elevation of the OHWM was 583.37' IGLD85. Beach Cell 2 does not have sufficient site indicators to delineate the OHWM. The beach is re-graded every Fall to create a protective dune by the public access (back of beach), and re-graded again before the public beach opens in May. The beach slope is therefore highly modified, impacting the OHWM location. The south steel sheet piling (SSP) groin between Cells 1 and 2 was surveyed with an approximate OHWM elevation of 582.8' IGLD85. The field survey focused on the neighboring Cell 1, as this cell was not re-graded. It was decided to adopt the more conservative surveyed elevation (SSP vs. Cell 1) of 583.37'.

Additional observations or notes

Beach Cell 2 is eroding and needs periodic sand nourishment. The Site survey data collection from Beach Cell 1 showed an average OHWM elevation of 583.37' IGLD85, which was adopted for the project. It is noted this elevation is higher than the observed OHWM at the SSP groin (582.8' IGLD85).

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? [x] Yes [ ] No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
1.	Beach Cell No. 1 with flags placed at OHWM.
2.	Beach Cell No. 1 with flags placed at OHWM.
3.	Beach Cell No. 1 with flags placed at OHWM.
4.	Beach Cell No. 1 with flags placed at OHWM.
5.	Beach Cell No. 1 with flags placed at OHWM.
6.	Beach Cell No. 1 with flags placed at OHWM.
7.	Beach Cell No. 1 with flags placed at OHWM.
8.	Beach Cell No. 1 with flags placed at OHWM.
9.	Beach Cell No. 2 with berms.
10.	SSP between Beach Cell 1 and Beach Cell 2.

OHWM Field Identification Datasheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on datasheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape.

a. **Note on the datasheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious man-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the datasheet** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence

Assemble evidence by checking the boxes next to each line of evidence:

a. If needed, use a separate scratch datasheet to check boxes next to possible indicators, or check boxes of possible indicators in pencil and use pen for final decision.
b. If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation Indicators**	**Ancillary indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?		Is there vegetation growing on the channel bed?	
Is there an easily identifiable top of bank?	Are there mudcracks present?	If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?			
Are the banks undercut?	Is there evidence of sediment sorting by grain size?	Where are the significant transitions in vegetation?	Is there large wood deposition?
Are the banks armored?			
Is the channel confined by the surrounding hillslopes?		Is the vegetation tolerant of flowing water?	Is there evidence of water staining?
Are there natural or man-made berms and levees?		Has any vegetation been flattened by flowing water?	
Are there fluvial terraces?			
Are there channel bars?			

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b **Weight each line of evidence and weigh body of evidence**

Weight each indicator by considering its importance based upon:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows?

Tips on how to assess the indicator relative to type of flow:

Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages? Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low flow indicator. The difference between high and extreme flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***Information in Chapter 2 of the OHWM field manual provides information on specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.**

ii. Did recent extreme events and/or land use affect this indicator?

1. Recent floods may have left many extreme flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.
2. Droughts may cause field evidence of OHWM to be obscured, because there has been an extended time since the last high flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.
3. Both man-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can all alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provides specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describes each indicator in detail and provides examples of areas where indicators are difficult to interpret.

d. Weigh body of evidence:

i. Combine weights: integrate the weighted line of evidence (relevance, strength, reliability) of each indicator.

ii. For each of the observed indicators, which are more heavily weighted? Where do high value indicators co-occur along the stream reach? Do they co-occur at a similar elevation along the banks relative to water surface (or channel bed if there is no water).

iii. On datasheet, select the indicators used to identify the OHWM. Information in Chapter 2 of the OHWM field manual provides descriptions of specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.

e. Take photographs of indicators and attach a log using either page 2 of datasheet or another method of logging photos.

i. Annotate photos with descriptions of indicators.

Step 4 **Is additional information needed? Are other resources needed to support the lines of evidence observed in the field?**

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling, weighting, and weighing evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were needed to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the datasheet.

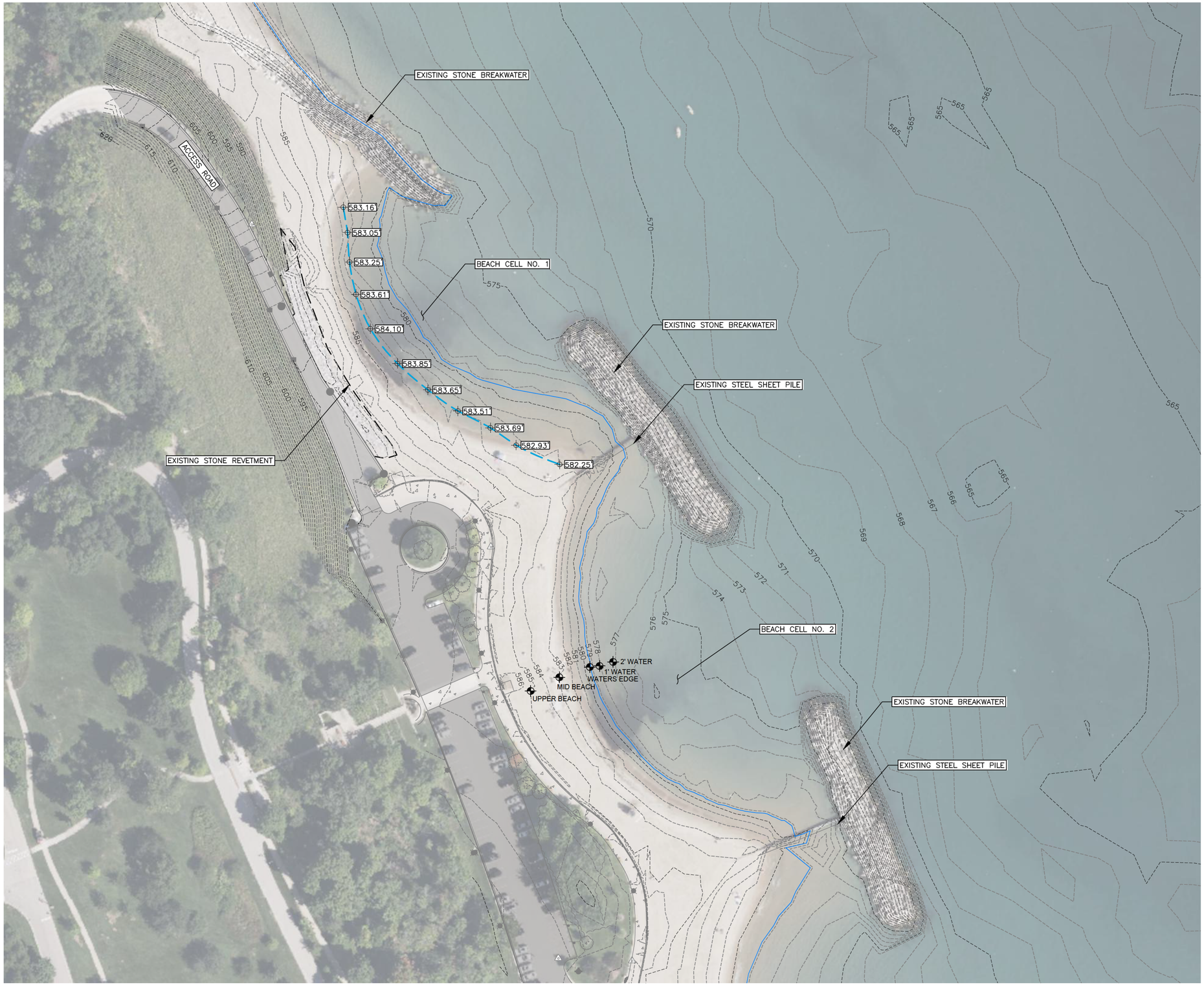
Step 5 **Describe rationale for location of OHWM:**

a. Why do the combination of indicators represent the OHWM?

b. If there are multiple possibilities for the OHWM, explain why there are two (or more) possibilities. Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the datasheet under Step 5.

Point Number	Latitude	Longitude	Elevation (ft, IGLD85)
1	42.25500337	-87.82027005	582.25
2	42.25505779	-87.82043315	582.93
3	42.25510705	-87.82053003	583.69
4	42.25515441	-87.82065149	583.51
5	42.25521419	-87.82076443	583.65
6	42.2552882	-87.82087849	583.85
7	42.25538617	-87.82097955	584.10
8	42.25548258	-87.82103281	583.61
9	42.25557322	-87.82105656	583.25
10	42.25565555	-87.82106327	583.05
11	42.25572672	-87.82107873	583.16
		Maximum	584.10
		Minimum	582.25
		Average	583.37



LEGEND

- EXISTING MAJOR TOPOGRAPHIC CONTOUR LINE
- EXISTING MINOR TOPOGRAPHIC CONTOUR LINE
- APRIL 19, 2024 WATER LEVEL = 579.3' IGLD85
- GZA DELINEATED ORDINARY HIGH WATER MARK = 583.37' IGLD85
- 582.93' GZA OHWM POINT AND ELEVATION
- APPROXIMATE LOCATION OF BEACH SAMPLES (SEE GRAIN SIZE DISTRIBUTION GRAPH)

NOTES:

1. APPROXIMATE GROUND SURFACE DATA WAS COLLECTED BY GZA ON APRIL 19, 2024 WITH AN RTK GPS.
2. BEACH CELL 2 HAD GRADED BERMS PRESENT TO PROVIDE PROTECTION FROM DEBRIS DURING WINTER STORMS. DUE TO THE GRADING OF BEACH CELL 2, AN OHWM DELINEATION WOULD NOT BE ACCURATE. THE ORDINARY HIGH WATER MARK DELINEATION WAS PERFORMED ON BEACH CELL 1.

N
W E
S

0 25' 50' 100' 150'
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

LAKE FOREST BEACH CELL 2 NOURISHMENT
801 N. LAKE ROAD
LAKE FOREST, IL 60045

ORDINARY HIGH WATER MARK DELINEATION

PREPARED BY:
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Engineers and Scientists
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PREPARED FOR:
MR. CHUCK MYERS
CITY OF LAKE FOREST
800 NORTH FIELD DRIVE
LAKE FOREST, ILLINOIS 60045

PROJ MGR: DV	REVIEWED BY: BY	CHECKED BY: DV	FIGURE
DESIGNED BY: DV	DRAWN BY: CJB	SCALE: AS NOTED	1
DATE: MAY, 2024	PROJECT NO. 20.0157734.20	REVISION NO.	

Photographic Log

Client Name:	Site Location:	Project No.
City of Lake Forest – Beach Cell No. 2	801 N. Lake Road, Lake Forest, IL 60045	20.0157734.20

Photo No.	Date:
1	4/19/24

Direction Photo Taken:
South

Description:
Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photo No.	Date:
2	4/19/24

Direction Photo Taken:
South

Description:
Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photographic Log

Client Name:	Site Location:	Project No.
City of Lake Forest – Beach Cell No. 2	801 N. Lake Road, Lake Forest, IL 60045	20.0157734.20

Photo No.	Date:
3	4/19/24

Direction Photo Taken: South

Description: Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photo No.	Date:
4	4/19/24

Direction Photo Taken: South

Description: Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photographic Log

Client Name:	Site Location:	Project No.
City of Lake Forest – Beach Cell No. 2	801 N. Lake Road, Lake Forest, IL 60045	20.0157734.20

Photo No.	Date:
5	4/19/24

Direction Photo Taken:
Southeast

Description:
Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photo No.	Date:
6	4/19/24

Direction Photo Taken:
Southeast

Description:
Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photographic Log

Client Name:	Site Location:	Project No.
City of Lake Forest – Beach Cell No. 2	801 N. Lake Road, Lake Forest, IL 60045	20.0157734.20

Photo No.	Date:
7	4/19/24

Direction Photo Taken:
Southeast

Description:
Beach Cell No. 1 with flags placed by GZA at the approximate OHWM (El. 583.37' IGLD85).

Photo No.	Date:
8	4/16/24

Direction Photo Taken:
Southeast

Description:
Beach Cell No. 1 with flags placed by GZA at the approximate OHWM line (El. 583.37' IGLD85).

Photographic Log

Client Name:	Site Location:	Project No.
City of Lake Forest – Beach Cell No. 2	801 N. Lake Road, Lake Forest, IL 60045	20.0157734.20

Photo No.	Date:
9	4/19/24

Direction Photo Taken: South

Description: Berms graded in Beach Cell No. 2 for protection during winter storms.

Photo No.	Date:
10	4/19/24

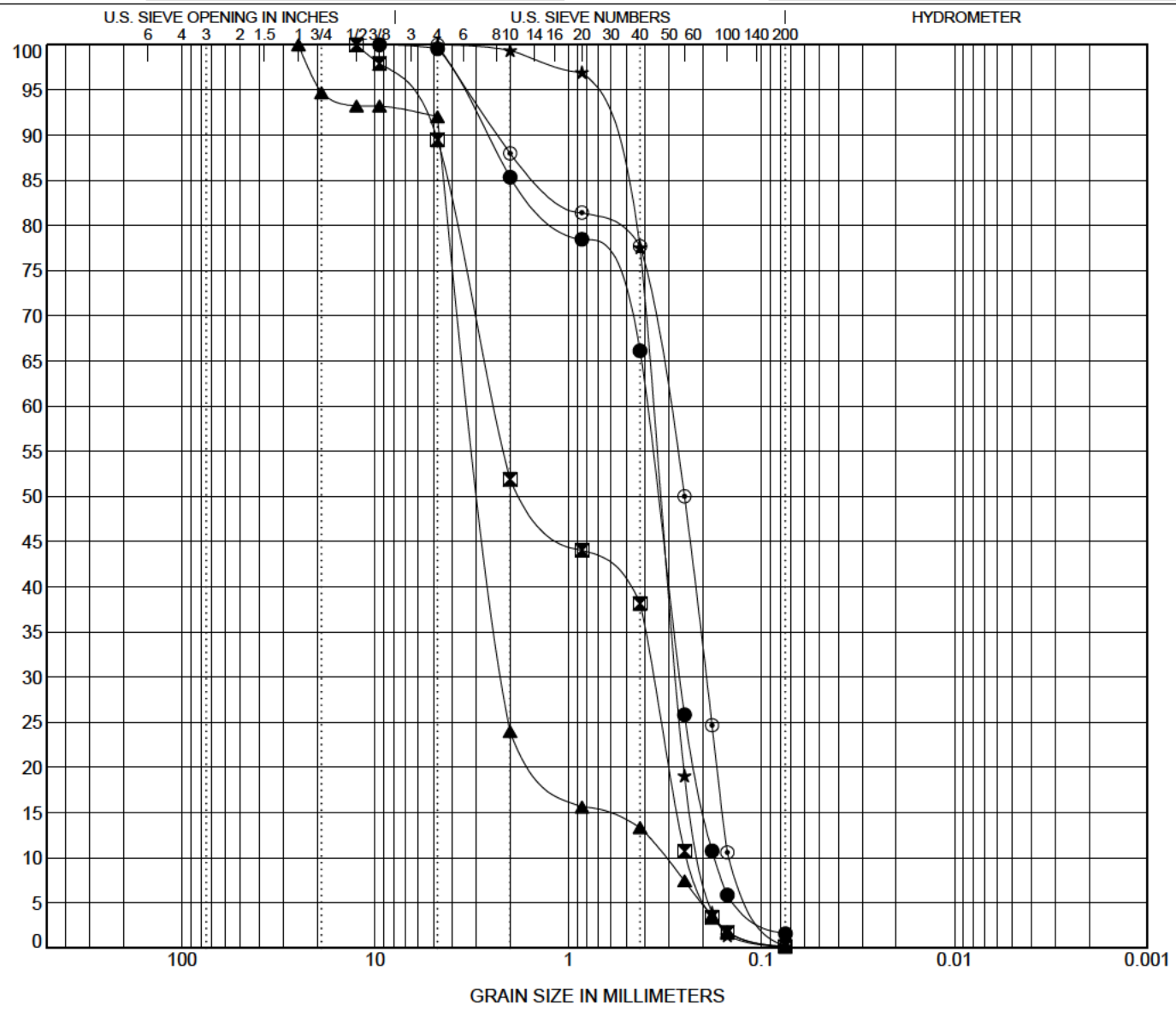
Direction Photo Taken: Southeast

Description: Steel sheet pile between Beach Cell 1 and Beach Cell 2 with approximate OHWM (El. 582.8' IGLD85).

GZA GeoEnvironmental, Inc.
17975 West Sarah Lane, #100
Brookfield, WI 53045
(262) 754-2560

GRAIN SIZE DISTRIBUTION

CLIENT City of Lake Forest, IL
PROJECT NAME Beach Cell No. 02
PROJECT NUMBER 20.0157734.20
PROJECT LOCATION Lake Forest, IL



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SAMPLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● UPPER BEACH	0.0	POORLY GRADED SAND(SP)	NP	NP	NP	1.02	2.24
⊠ ~ 2' WATER	0.0	POORLY GRADED SAND(SP)	NP	NP	NP	0.23	9.97
▲ ~1' WATER	0.0	POORLY GRADED SAND(SP)	NP	NP	NP	4.68	10.04
★ MID BEACH	0.0	POORLY GRADED SAND(SP)	NP	NP	NP	1.02	1.77
⊙ WATER'S EDGE	0.0	POORLY GRADED SAND(SP)	NP	NP	NP	0.85	2.10

SAMPLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● UPPER BEACH	0.0	9.5	0.392	0.264	0.175	0.4	98.0	1.6	
⊠ ~2' WATER	0.0	12.5	2.41	0.363	0.242	10.5	89.3	0.2	
▲ ~1' WATER	0.0	25	3.161	2.159	0.315	8.0	91.8	0.2	
★ MID BEACH	0.0	4.75	0.362	0.276	0.205	0.0	99.8	0.2	
⊙ WATER'S EDGE	0.0	4.75	0.303	0.193	0.144	0.0	99.8	0.2	