

U.S. Army Corps  
of Engineers  
Buffalo District  
CELRB-TD-R

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# Public Notice

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Applicant: Cleveland Metropolitan Park District  
Published: May 19, 2016  
Expires: June 20, 2016

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Application No: 2016-00293  
Section: OH

All written comments should reference the above Application No. and be addressed to:  
**US Army Corps of Engineers, Buffalo District**  
**Regulatory Branch (Attn:) Andy Francisco**  
**1776 Niagara Street**  
**Buffalo, NY 14207**

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**THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE WORK DESCRIBED BELOW. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.**

**Application for Permit under Authority of**  
**Section 10 of the Rivers and Harbors Act of 1899 and**  
**Section 404 of the Clean Water Act (33 U.S.C. 1344).**

APPLICANT: Cleveland Metroparks

WATERWAY & LOCATION: Lake Erie, Perkins Beach, Edgewater Park, Cliff Drive, City of Cleveland, Cuyahoga County, OH 44102

LATITUDE & LONGITUDE: Latitude North: 41.48924  
Longitude West: -81.75344

**EXISTING CONDITIONS:**

The Perkins Beach/Edgewater Park permit areas are located along approximately 5,000 linear feet (lf) of the Lake Erie shoreline. Perkins Beach is located at the west end of the permit area. Five concrete module groins extend waterward from the beach shoreline at distances ranging from 112 lf to 223 lf. The groins are in poor condition and are considered a potential safety hazard. A sewer outfall is located at the east end of Perkins Beach.

Approximately 10 concrete breakwater modules are located along the near-shore area at the west end of Edgewater Beach and an approximately 270 foot-long sandstone block gabion groin is located near the center of Edgewater Beach (See Attachment A, Sheets 1-7 of 14).

PROPOSED WORK: The applicant proposes the following work water-ward of the Lake Erie Ordinary High Water (OHW) elevation of 573.4 feet, International Great Lakes Datum (IGLD) 1985 (See Attachment A, Sheets 8-14 of 14):

1. Removal of 5 existing concrete module groins at Perkins Beach and the construction of three new armor stone groins.
  - The new 90 foot-long groins will be spaced approximately 300 feet on center and extend approximately 120 feet lakeward (detached) of the existing stone revetment crest at Perkins Beach.
  - The groins will be constructed with 2 to 4-ton armor stone placed at a 1.5 horizontal to 1 vertical slope.
  - The two west groins will have a 6-foot wide armor stone crest at an elevation of 576.0 feet IGLD 1985. The east groin will have an 8-foot wide concrete cap with 4 feet of armor stone on each side at a crest elevation of 578.0 feet IGLD 1985.
  - The core of the groins will be constructed with 12 to 24-inch concrete rubble.
  - The toe of the armor stone will be supported with 3 to 5 ton stone entrenched a minimum of 2 feet into shale bedrock.
2. Rehabilitation of the existing stone groin at Edgewater Beach.
  - The groin will be repaired with a single layer of 2 to 4-ton armor stone placed at a 1.5 horizontal to 1 vertical slope to a crest elevation of 576.0 feet IGLD 1985.
  - The crest of the structure will be capped with a 10-foot wide concrete walkway.
  - The toe of the armor stone will be supported with 3 to 5-ton stone entrenched a minimum of 2 feet into shale bedrock.
3. The removal of approximately 10 existing concrete breakwater modules at the west end of Edgewater Beach.
4. Repair the existing sewer outfall at the east end of Perkins Beach.

The work described above will result in the following permanent fill placed below OHW:

- Armor Stone – 3,520 cubic yards;
- Concrete rubble – 1,160 cubic yards;
- Concrete – 5 cubic yards
- Total Area – 17,758 square feet.

#### PROJECT PURPOSE

Basic: Beach Improvements

Overall: Beach improvements along Perkins and Edgewater Beach.

Water Dependency Determination (*describe only if project affecting Special Aquatic Site*): The project will not impact a Special Aquatic Site and is a water dependent activity.

**AVOIDANCE AND MINIMIZATION INFORMATION:** The applicant indicated that the proposed project (Plan of Record) is the Minimum Degradation Alternative (MDA) and has been designed to minimize the structures' footprint and impacts based on the intended function to stabilize the beach. The 5 existing groins are 112 lf, 186 lf, 216 lf, 223 lf, and 190 lf long. These groins will be replaced with three groins that are 90 feet long each and extend approximately 120 feet lakeward (detached) of the existing stone revetment crest at Perkins Beach. The slope of the armor stone has also been selected to be the minimum allowable for structural stability.

**Non-Degradation Alternative (NDA):** Under the NDA (not illustrated) no discharge of fill material would occur below the OHW elevation of Lake Erie and the project would not be constructed. The groins would continue to fail, not function as designed, and ultimately fall into Lake Erie. The submerged groins would become a safety hazard for swimmers and boat navigation and wave action would continue to degrade the beach.

In order to offset potential down drift impacts on sand transport within the littoral system, the Applicant has provided a Sand Monitoring Plan (See Attachment B for full details).

Through the Sand Monitoring Plan (The Plan), the applicant proposes to:

- Perform a pre-construction survey within two weeks prior to any work below the Ordinary High Water mark (573.4 feet IGLD 1985) or when weather permits an accurate survey to be performed. The survey shall include an area extending from 500 feet west of the west groin at Perkins Beach to 500 feet east of the east groin at Perkins Beach. The survey shall include the area 300 feet lakeward from the toe of the existing shoreline revetment.
- Perform a post-construction survey within two weeks after completion of the new armor stone groins or when weather permits an accurate survey to be performed. The post construction survey shall include the same survey area as the pre-construction survey. This survey shall be used as a baseline for comparing beach profiles and sand quantities for future annual monitoring surveys.
- Perform annual spring monitoring surveys in July of each year for 5 years following the construction of the new armor stone groins. The annual monitoring surveys shall include the same survey area as the post-construction baseline survey. In addition to the survey data, Cleveland Metro parks shall monitor beach conditions with annual photographs taken at the time of each monitoring survey.
- Provide annual monitoring reports to the U.S. Army Corps of Engineers (USACE) and the Ohio Department of Natural Resources (ODNR). The proposed contents of the report are provided in Attachment B.

The Plan includes provisions for beach maintenance and contingency plans that will be coordinated with the USACE and ODNR, if necessary, and/or as determined by the results of the

annual monitoring surveys.

PROPOSED MITIGATION: No mitigation is proposed for the project.

Comments or questions pertaining to the work described in this notice should be reference the Application Number and be directed to the attention of Andy Francisco, who can be contacted at the above address, by calling (716) 879-4121, or by e-mail at: [Ernest.a.francisco@usace.army.mil](mailto:Ernest.a.francisco@usace.army.mil). A lack of response will be interpreted as meaning that there is no objection to the work as proposed.

The applicant has certified that the proposed activity complies with Ohio's approved Coastal Zone Management Program and will be conducted in a manner consistent with that program. Any comments on the consistency of the proposed activity with Ohio's Coastal Zone Management Program should be forwarded to:

Mr. John Kessler  
Ohio Department of Natural Resources  
Office of Real Estate  
2045 Morse Rd.  
Columbus, OH 43229-6605  
phone: 614-265-6621  
email: [john.kessler@dnr.state.oh.us](mailto:john.kessler@dnr.state.oh.us)

The following authorization is required for this project:

Water Quality Certification (or waiver thereof) from the Ohio Environmental Protection Agency

Based on preliminary findings, there do not appear to be any properties listed in, or eligible for listing in, the National Register of Historic Places within the permit areas as shown on Sheet 2 of 14. As such, the Corps has determined that proposed project will have no effect on historic properties.

This notice constitutes initiation of consultation with the Ohio Historic Preservation Office (SHPO) per Section 106 of the National Historic Preservation Act. All currently available historic resource information pertaining to this proposed project if any has been provided to the SHPO. Additional information concerning historic properties should be submitted to the Corps before the end of the comment period of this notice. The Corps will forward that information to the SHPO for their review.

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C. 1531), the Corps of Engineers is consulting, under separate cover, with the USFWS to evaluate any potential impacts to: Indiana bat (*Myotis sodalis*, E), Northern Long-eared bat (*Myotis septentrionalis*, T), Kirtland's warbler (*Setophaga kirtlandii*, E), Piping plover (*Charadrius melodus*, E), and the Rufa red knot (*Calidris canutus rufa*, T) and to ensure that the proposed activity is not likely to jeopardize their continued existence or result in the destruction or adverse modification of critical habitat.

This notice is promulgated in accordance with Title 33, Code of Federal Regulations, parts 320-330. Any interested party desiring to comment on the work described herein may do so by submitting their comments, in writing, so that they are received no later than 4:30 pm on the expiration date of this notice.

Comments submitted in response to this notice will be fully considered during the public interest review for this permit application. All written comments will be made a part of the administrative record which is available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

Any individual may request a public hearing by submitting their written request, stating the specific reasons for holding a hearing, in the same manner and time period as other comments.

Public hearings for the purposes of the Corps permit program will be held when the District Commander determines he can obtain additional information, not available in written comments, that will aid him in the decision making process for this application. A Corps hearing is not a source of information for the general public, nor a forum for the resolution of issues or conflicting points of view (witnesses are not sworn and cross examination is prohibited). Hearings will not be held to obtain information on issues unrelated to the work requiring a permit, such as property ownership, neighbor disputes, or the behavior or actions of the public or applicant on upland property not regulated by the Department of the Army. Information obtained from a public hearing is given no greater weight than that obtained from written comments. Therefore, you should not fail to make timely written comments because a hearing might be held.

The decision to approve or deny this permit request will be based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors

listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

**SIGNED**

Diane C. Kozlowski  
Chief, Regulatory Branch

NOTICE TO POSTMASTER: It is requested that this notice be posted continuously and conspicuously for 30 days from the date of issuance.

**ATTACHMENT A**

**Existing and Proposed Site Plans**

# CLEVELAND METROPARKS PERKINS BEACH IMPROVEMENTS EDGEWATER PARK, LAKEFRONT RESERVATION



PROJECT AREA

VICINITY MAP, USGS CLEVELAND SOUTH QUAD, NO SCALE

**COPY**

**GENERAL NOTES:**

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ELEVATIONS AS NOTED ON THE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY INCONSISTENCIES BETWEEN THE DRAWINGS AND THE FIELD MEASUREMENTS.
2. AT LEAST 72 HOURS PRIOR TO EXCAVATION, THE CONTRACTOR SHALL CONTACT THE CITY OF CLEVELAND AND COPS TO DETERMINE THE LOCATION OF ANY CLEVELAND AND UNDERGROUND UTILITIES NOT INDICATED ON THE PRINTS. IF UNCHARTED UTILITIES ARE ENCOUNTERED THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY.

**DRAWING TITLE**

- TITLE SHEET
- EXISTING SITE PLAN, OVERALL
- EXISTING SITE PLAN, PERKINS BEACH
- EXISTING SITE PLAN, BREAKWATER AREA
- EXISTING SITE PLAN, EDGEWATER BEACH
- DEMOLITION DETAILS
- SITE PLAN, OVERALL
- SITE PLAN, PERKINS BEACH
- SITE PLAN, EDGEWATER BEACH
- PERKINS BEACH, WEST GROIN DETAILS
- PERKINS BEACH, CENTER GROIN DETAILS
- PERKINS BEACH, EAST GROIN DETAILS
- OUTFALL & EDGEWATER BEACH GROIN

**SHEET No.**

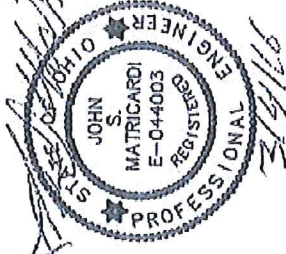
- 1
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Cleveland Metroparks, Perkins Beach Improvements.  
D/A Processing No. 2016-00293  
Cuyahoga County, Ohio  
Quad: Lakewood  
Sheet 1 of 14



**Ohio Utilities Protection Service**  
1-800-362-7764  
www.ohioutilities.com

1. UNDERGROUND UTILITIES ARE SHOWN FROM RECORDS AND FIELD MARKINGS PROVIDED BY THE CONTRACTOR. CONTRACTOR ADVISES: AERIAL LOCATIONS MAY VARY. CONTACT Ohio Utilities Protection Service (OUPS) AT 1-800-362-7764 AT LEAST 72 HOURS PRIOR TO EXCAVATION.  
2. VISIBLE SURFACE UTILITIES HAVE BEEN FIELD LOCATED UNLESS OTHERWISE NOTED.



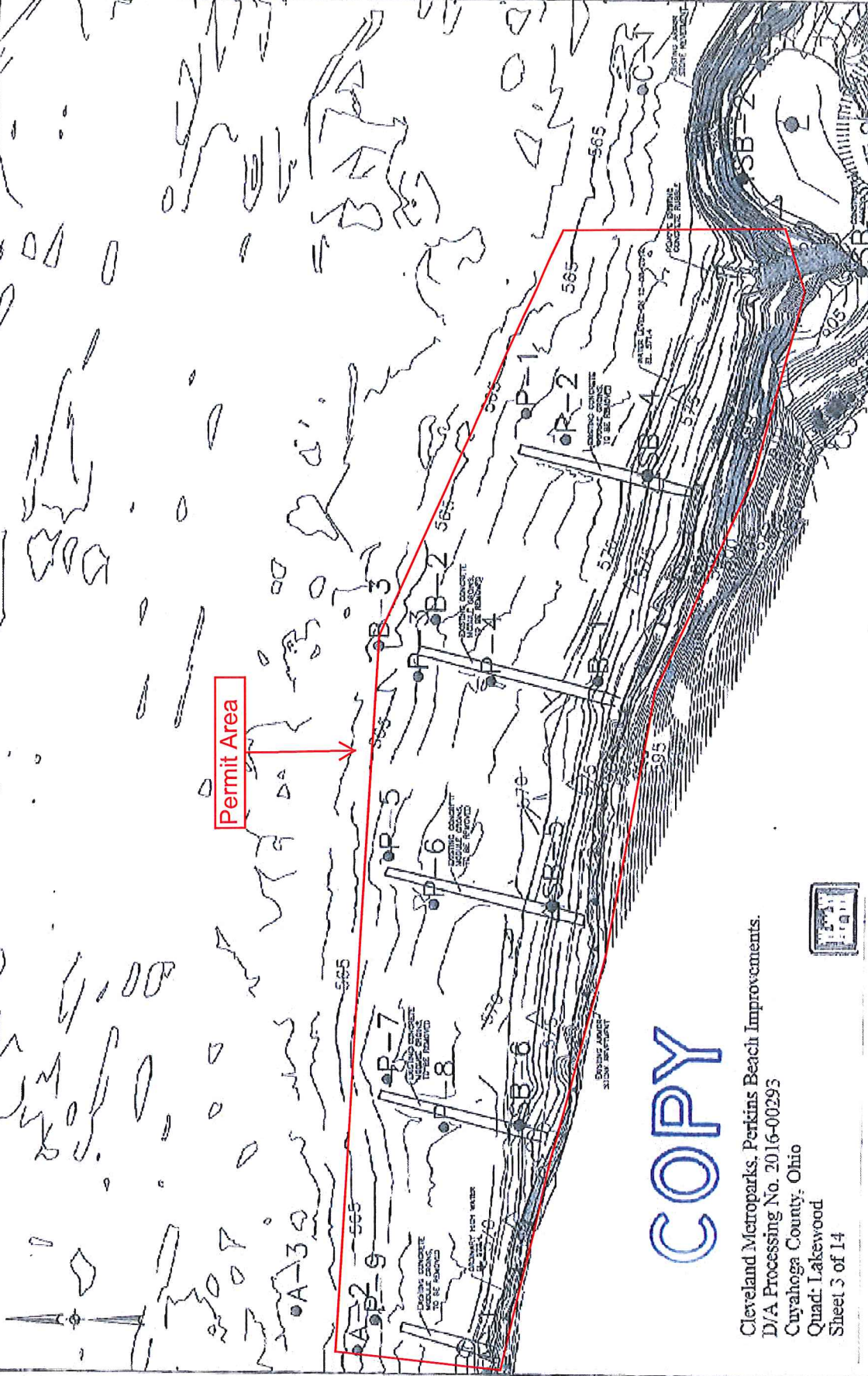
*John S. Matricardi*  
DATE: 3/14/16  
JOHN S. MATRICARDI, P.E. OHIO REG. NO. 44003

<b>RS ASSOCIATES</b> 260 E. 17th St., Suite 200 Cleveland, OH 44115 P: 440.565.4730 F: 440.565.4730 www.rsassociates.com		TITLE SHEET EDGEWATER PARK CLEVELAND METROPARKS 401 FULTON PARKWAY CLEVELAND, OH 44114	SHEET 1 OF 14 JOB NO. 14233-1
DATE: _____ DRAWN BY: _____ CHECKED BY: _____ IN CHARGE: _____	BY: ADJACENT PROPERTY OWNERS 10350 EDGEWATER DRIVE, CLEVELAND, OH CLEVELAND REGIONAL CENTER 9800 WASKET ISLAND DRIVE, CLEVELAND, OH DATUM: D.D. LWD = 569.2 FEET (IGD 1985)		





<b>KS ASSOCIATES</b> 260 East Bay Road, Suite 100 Wm. Woelke, Inc. P 440 305 4700 F 440 305 4700 www.ksoffices.com		CLEVELAND METROPARKS 1400 PERKINS BEACH CLEVELAND, OHIO 44114
DATE: 00 LWD = 569.2 FEET ISLD 1903 5600 WHERREY ISLAND DRIVE, CLEVELAND, OH CLEVELAND REGIONAL SENES 10500 EDGEWATER DRIVE, LLC 10500 EDGEWATER DRIVE, CLEVELAND, OH	SHEET NO. 3 OF 14	PROJECT NO. 142003-1



**EXISTING SITE PLAN, PERKINS BEACH**

**LEGEND**  
 SB-1 SOIL BORING LOCATION  
 A-1, B-1 SAND SAMPLING LOCATION  
 P-1 MOCK PROBING LOCATION

**NOTES**

1. VERTICAL DATUM IS IGLD 1985.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-09-2014 AND 10-10-2014. PHOTOGRAMMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-08-2014.
3. ROCK PROBINGS PERFORMED BY SHORELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY OHIO TEST BONE ON 11-11-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.

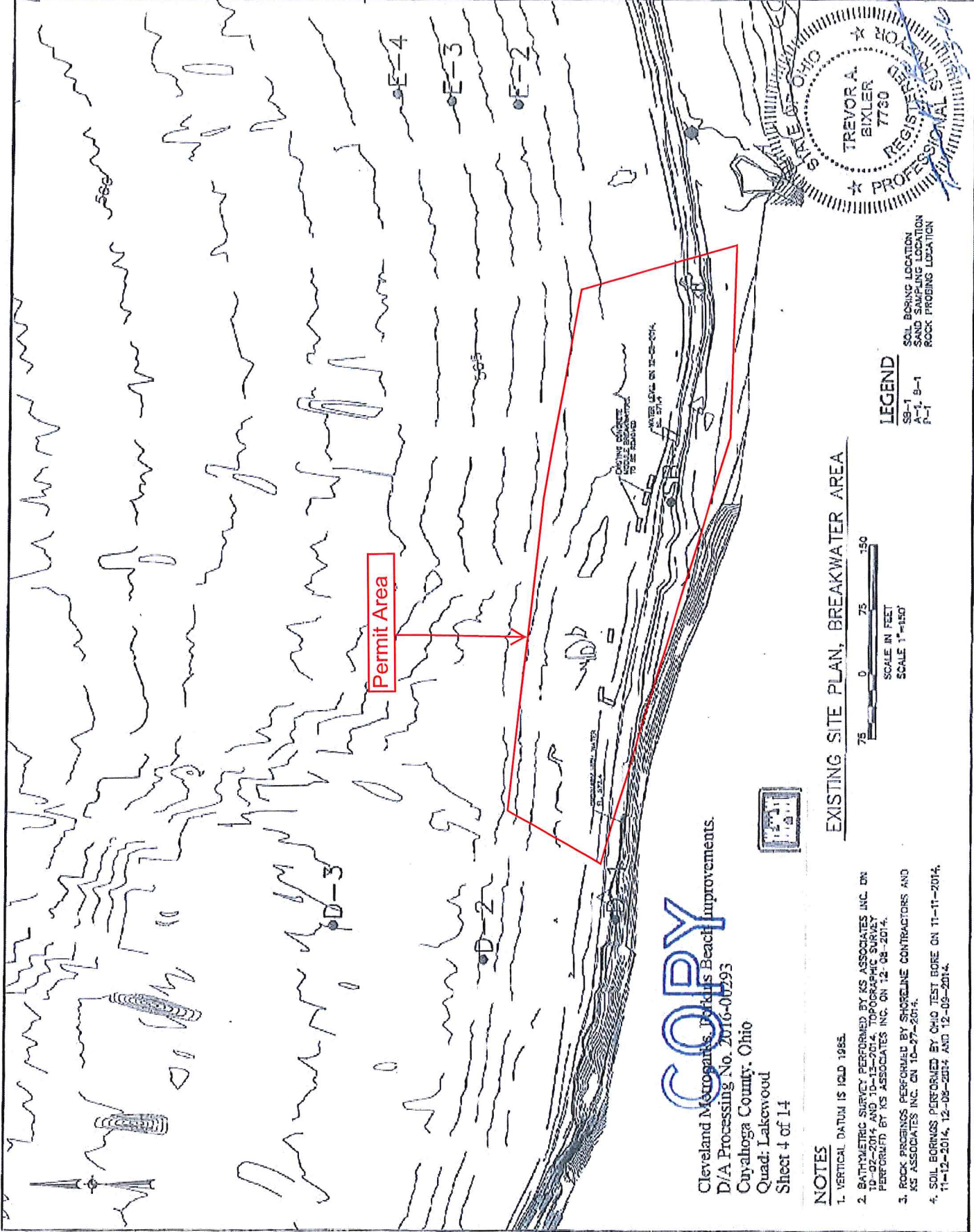
SCALE 1"=100'  
 SCALE IN FEET  
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**COPY**

Cleveland Metroparks, Perkins Beach Improvements.  
 D/A Processing No. 2016-00293  
 Cuyahoga County, Ohio  
 Quad: Lakewood  
 Sheet 3 of 14

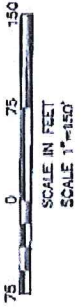
**TREVOR A. BIXLER**  
 REGISTERED PROFESSIONAL SURVEYOR  
 7750

<b>REGISTERED PROFESSIONAL ENGINEER</b> TREVOR A. BIXLER 7780 STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER		JOB NO. 14233-1 SHEET 4 OF 14
<b>KS ASSOCIATES</b> 260 Bury Road, Suite 110 Elyria, OH 44038 P 440.355.4730 F 440.305.4750 www.kassociates.com		EXISTING SITE PLAN, BREAKWATER AREA EDgewater PARK EDgewater METROPARKS 4801 EDgewater PARKWAY CLEVELAND, OH 44134
DATE BY ADVISENT PROPERTY OWNERS	PROJECT NO. SHEET NO. DATE	DATUM: 00 LWD = 569.2 FEET IGD 1985 10500 EDgewater DRIVE, CLEVELAND, OH CLEVELAND REGIONAL CENTER 5500 WHISKEY ISLAND DRIVE, CLEVELAND, OH



Permit Area

EXISTING SITE PLAN, BREAKWATER AREA



LEGEND

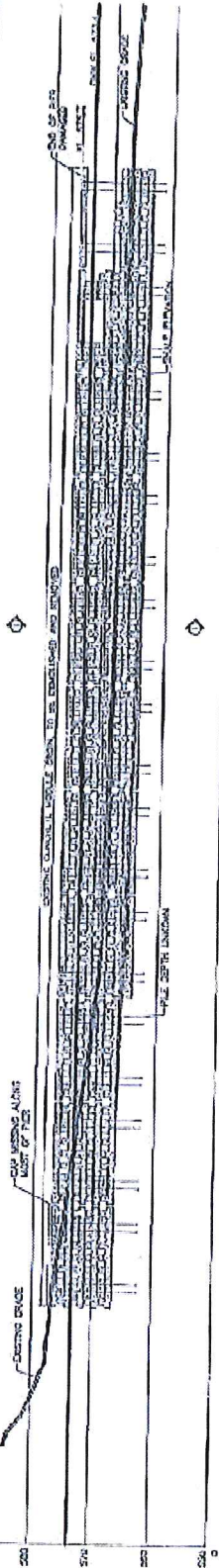
- SB-1 SOIL BORING LOCATION
- A-1, B-1 SAND SAMPLING LOCATION
- P-1 ROCK PROBING LOCATION

**COPY**  
 Cleveland Metropolitan Parklands Beach Improvements.  
 D/A Processing No. 2016-07293  
 Cuyahoga County, Ohio  
 Quad: Lakewood  
 Sheet 4 of 14

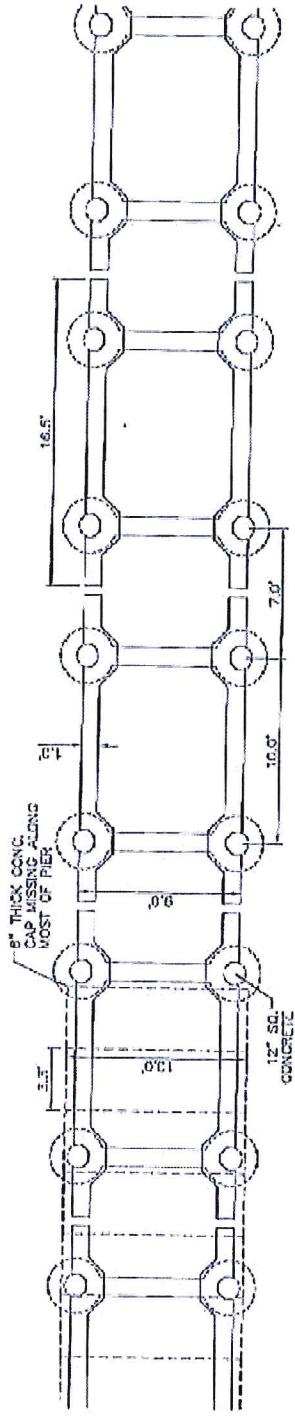
NOTES

1. VERTICAL DATUM IS IGLD 1985.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-02-2014 AND 10-13-2014. TOPOGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-03-2014.
3. ROCK PROBINGS PERFORMED BY SHORELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY CHLO TEST BORE ON 11-11-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.

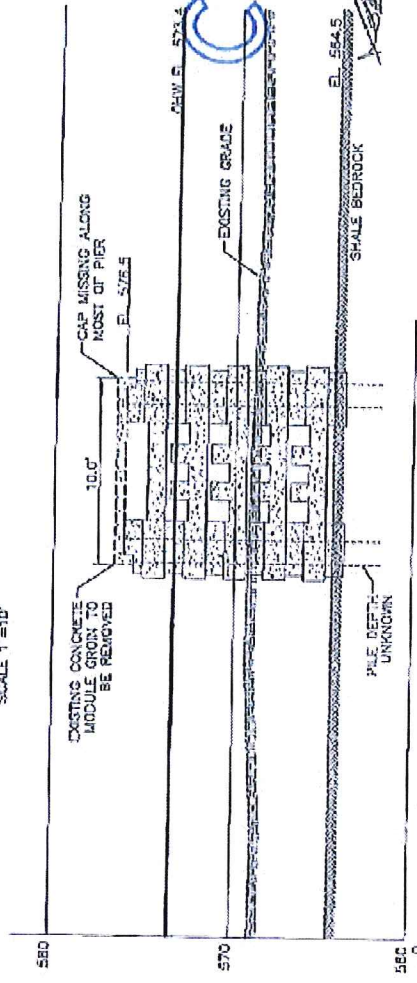




TYPICAL EXISTING GROIN PROFILE  
SCALE IN FEET  
SCALE 1"=30'



PLAN VIEW, EXISTING GROIN DETAIL  
SCALE IN FEET  
SCALE 1"=10'



TYPICAL EXISTING GROIN SEC  
SCALE IN FEET  
SCALE 1"=10'

**NOTES**

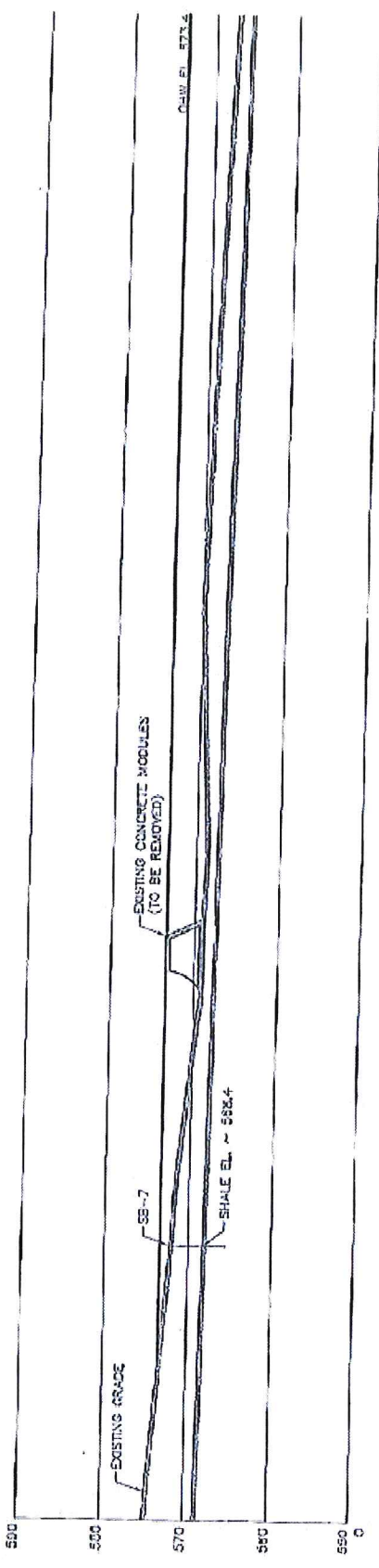
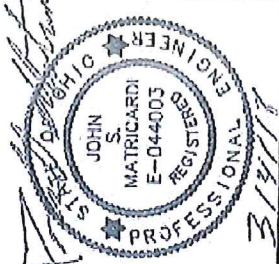
1. VERTICAL DATUM IS IGLD 1985.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-02-2014 AND 10-13-2014. TOPOGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-08-2014.
3. ROCK PROBINGS PERFORMED BY SHORELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY CHIO TEST BORE ON 11-11-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.
5. SUBSURFACE GRADES ARE BASED ON INFORMATION ACQUIRED FROM SOIL BORINGS AND ROCK PROBINGS AND THE NECESSARY ASSUMPTIONS THAT SUBSURFACE CONDITIONS BETWEEN AWAY FROM AND BETWEEN INDIVIDUAL SAMPLING LOCATIONS AND DEPTHS ARE SIMILAR TO THOSE OBTAINED FROM THE FIELD EXPLORATIONS.
6. EXISTING CONCRETE MODULE GROINS WERE NOT INSPECTED BELOW EXISTING GRADE/WATER LEVEL. STRUCTURAL DETAILS ARE ASSUMED TO BE SIMILAR TO VISIBLE STRUCTURE.
7. EXISTING CONCRETE MODULE GROINS ARE TO BE DEMOLISHED AND REMOVED. THE GROINS WERE ORIGINALLY CAPPED WITH CONCRETE PANELS. MANY OF THE PANELS HAVE BEEN DISPLACED FROM THE GROINS AND ARE EXPECTED TO BE IN THE BEACHSORE ADJACENT TO THE STRUCTURES. ALL CONCRETE PANELS ARE TO BE EXCAVATED AND REMOVED.
8. EXISTING CONCRETE MODULE BREAKWATERS TO BE DEMOLISHED AND REMOVED.

**COPY**

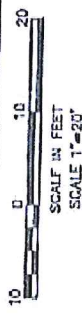
EDgewater PARK  
DEMOLITION DETAILS  
CLEVELAND METROPARKS  
600 EAST 19TH AVENUE  
CLEVELAND, OH 44114

Cleveland Metroparks, Perkins Beach Improvements.  
D/A Processing No. 2016-00293  
Cuyahoga County, Ohio  
Quad: Lakewood  
Sheet 6 of 11

DATE: 02-24-14	PROJECT: 10000 EDgewater DRIVE, LLC	KS ASSOCIATES, Inc. 260 Burt Road, Suite 100 Cuyahoga Falls, OH 44025 P 440.565.4200 F 440.565.4290 www.ksassociates.com
DATE: 02-24-14	PROJECT: 10000 EDgewater DRIVE, LLC	KS ASSOCIATES, Inc. 260 Burt Road, Suite 100 Cuyahoga Falls, OH 44025 P 440.565.4200 F 440.565.4290 www.ksassociates.com
DATE: 02-24-14	PROJECT: 10000 EDgewater DRIVE, LLC	KS ASSOCIATES, Inc. 260 Burt Road, Suite 100 Cuyahoga Falls, OH 44025 P 440.565.4200 F 440.565.4290 www.ksassociates.com
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CONCRETE MODULE TYPICAL SECTION



**NOTES**

1. VERTICAL DATUM IS IGLD 1985.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-02-2014 AND 10-13-2014, TOPOGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-08-2014.
3. ROCK PROBINGS PERFORMED BY SHORELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY OHIO TEST BORE ON 11-11-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.
5. SUBSURFACE GRADINGS ARE BASED ON INFORMATION ACQUIRED FROM SOIL BORINGS AND ROCK PROBINGS AND THE NECESSARY ASSUMPTION THAT SUBSURFACE CONDITIONS BETWEEN, AWAY FROM AND BELOW INDIVIDUAL SAMPLING LOCATIONS AND DEPTHS ARE SIMILAR TO THOSE OBTAINED FROM THE FIELD EXPLORATIONS.
6. EXISTING CONCRETE MODULE GRINGS WERE NOT INSPECTED BELOW FASTING GRADE/WATER LEVEL. STRUCTURAL DETAILS ARE ASSUMED TO BE SIMILAR TO VISIBLE STRUCTURE.
7. EXISTING CONCRETE MODULE GRINGS ARE TO BE DEMOLISHED AND REMOVED. THE GRINGS WERE ORIGINALLY CAPPED WITH CONCRETE PANELS. MANY OF THE PANELS HAVE BEEN DISPLACED FROM THE GRINGS AND ARE EXPECTED TO BE IN THE NEARSHORE ADJACENT TO THE STRUCTURES. ALL CONCRETE PANELS ARE TO BE EXCAVATED AND REMOVED.
8. EXISTING CONCRETE MODULE BREAKWATERS TO BE DEMOLISHED AND REMOVED.

Cleveland Metroparks, Perkins Beach Improvements  
 D/A Processing No. 2016-00293  
 Cuyahoga County, Ohio  
 Quad: Lakewood  
 Sheet 7 of 14

**COPY**







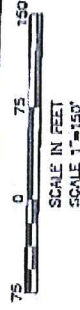


Cleveland Metroparks, Perkins Beach Improvements.  
 D/A Processing No. 2016-00293  
 Cuyahoga County, Ohio  
 Quad: Lakewood  
 Sheet 10 of 14

**COPY**

Permit Area

SITE PLAN, EDGEWATER BEACH



**NOTES**

1. VERTICAL DATUM IS OLD 1984.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-02-2014 AND 10-13-2014. TOPOGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-08-2014.
3. ROCK PROBINGS PERFORMED BY SHORELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY CHD TEST BORE ON 11-11-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.
5. ALL SAND AND GRAVEL IN THE FOOTPRINT OF THE NEW GROINS SHALL BE EXCAVATED AND SIDECAST DOWNDRIFT OF EACH GROIN.
6. TOE STONE (3 TO 5-TON ARMOR STONE) SHALL BE ENRENCHED A MINIMUM OF 2 FEET INTO SHALE BEDROCK.
7. ALL CONCRETE RUBBLE SHALL BE FREE OF EXPOSED REBAR.
8. CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
9. REINFORCEMENT STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 80,000 PSI.

**LEGEND**

- SB-1 SOIL BORING LOCATION
- A-1, B-1 SAND SAMPLING LOCATION
- P-1 ROCK PROBING LOCATION



SITE PLAN, EDGEWATER BEACH  
 EDGEWATER PARK  
 CLEVELAND METROPARKS  
 43100 PARKWAY  
 CLEVELAND, OH 44144

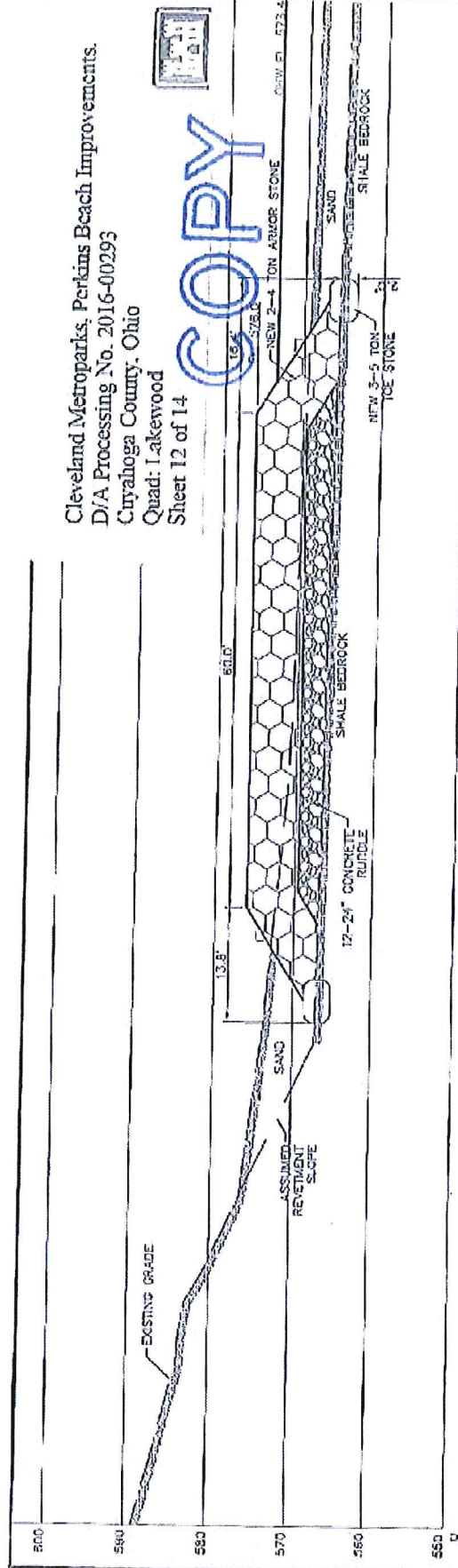
**KS ASSOCIATES**  
 260 Blue Field, Suite 100  
 Elyria, OH 44028  
 P 440 355 4230  
 F 440 355 4293  
 WWW.KSASOCIATES.COM

DATE	BY	DESCRIPTION
DATE PLOTTED = 06/22/2016 2:49 PM		
10500 EDGEWATER DRIVE, L.C.		
10500 EDGEWATER DRIVE, CLEVELAND, OH		
CLEVELAND REGIONAL SEWER		
5900 WHISKEY ISLAND DRIVE, CLEVELAND, OH		

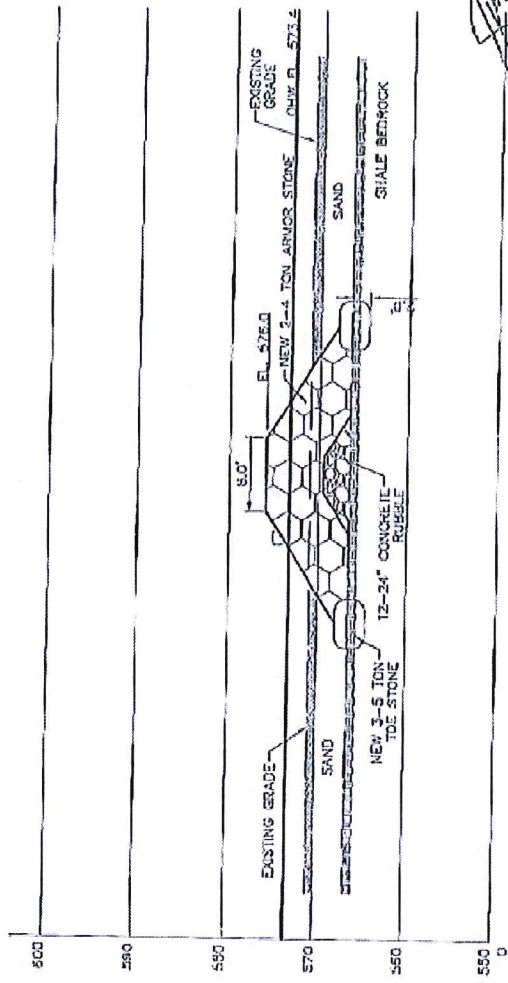
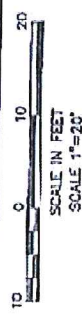


Cleveland Metroparks, Perkins Beach Improvements.  
 D/A Processing No. 2016-00293  
 Cuyahoga County, Ohio  
 Quad: Lakewood  
 Sheet 12 of 14

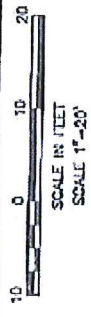
**COPY**



SECTION C-C



SECTION D-D



**NOTES**

1. VERTICAL DATUM IS IGLD 1985.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-02-2014 AND 10-13-2014. TOPOGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-08-2014.
3. ROCK PROBINGS PERFORMED BY SHORELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY OHIO TEST BORE ON 11-11-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.
5. SUBSURFACE GRADERS ARE BASED ON INFORMATION ACQUIRED FROM SOIL BORINGS AND ROCK PROBINGS AND THE NECESSARY ASSUMPTION THAT SUBSURFACE CONDITIONS BETWEEN ANYWAY FROM AND BELOW INDIVIDUAL SAMPLING LOCATIONS AND DEPTHS ARE SIMILAR TO THOSE OBTAINED FROM THE FIELD EXPLORATIONS.
6. STRUCTURE WAS NOT INSPECTED BELOW EXISTING GRADE/WATER LEVEL. STRUCTURAL DETAILS ARE ASSUMED TO BE SIMILAR TO VISIBLE STRUCTURE.
7. ALL SAND AND GRAVEL IN THE FOOTPRINT OF THE NEW GROINS SHALL BE EXCAVATED AND SIDECAST DOWNDRIFT OF EACH GROIN.
8. TOE STONE (3 TO 5-TON ARMOR STONE) SHALL BE ENTRENCHED A MINIMUM OF 2 FEET INTO SHALE BEDROCK.
9. ALL CONCRETE RUBBLE SHALL BE FREE OF EXPOSED REBAR.

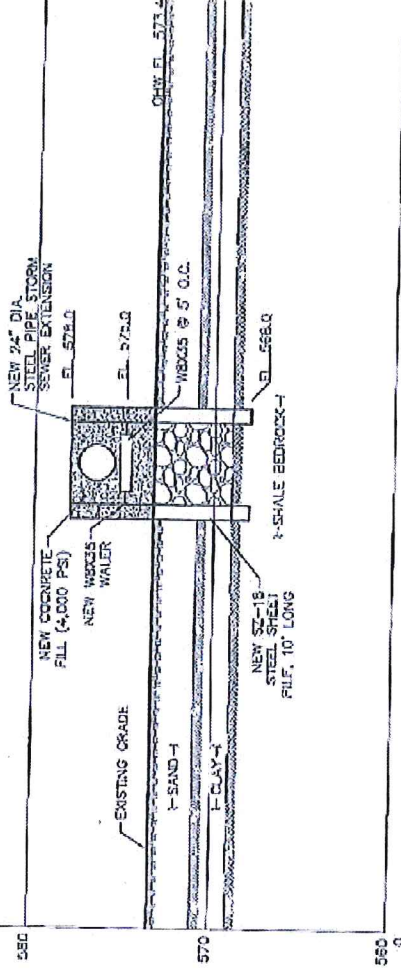


PERKINS BEACH, CENTER GROIN DETAILS EDGEWATER PARK CLEVELAND METROPARKS 4100 TOLON PARKWAY CLEVELAND, OHIO 44114		SHEET 12 OF 14 JOB NO. 140203-1
<b>KS ASSOCIATES</b> 200 Davis Road, Suite 100 Elyria, OH 44035 P 440.365.4700 F 440.365.4700 WWW.KSASSOCIATES.COM		
DATE BY DRAWN BY CHECKED BY IN CHARGE BY PROJECT NO. PROJECT NAME DATE	ENGINEER ARCHITECT SURVEYOR CIVIL ELECTRICAL MECHANICAL PLUMBING PAVEMENT SPECIALTY	PROJECT NO. PROJECT NAME DATE

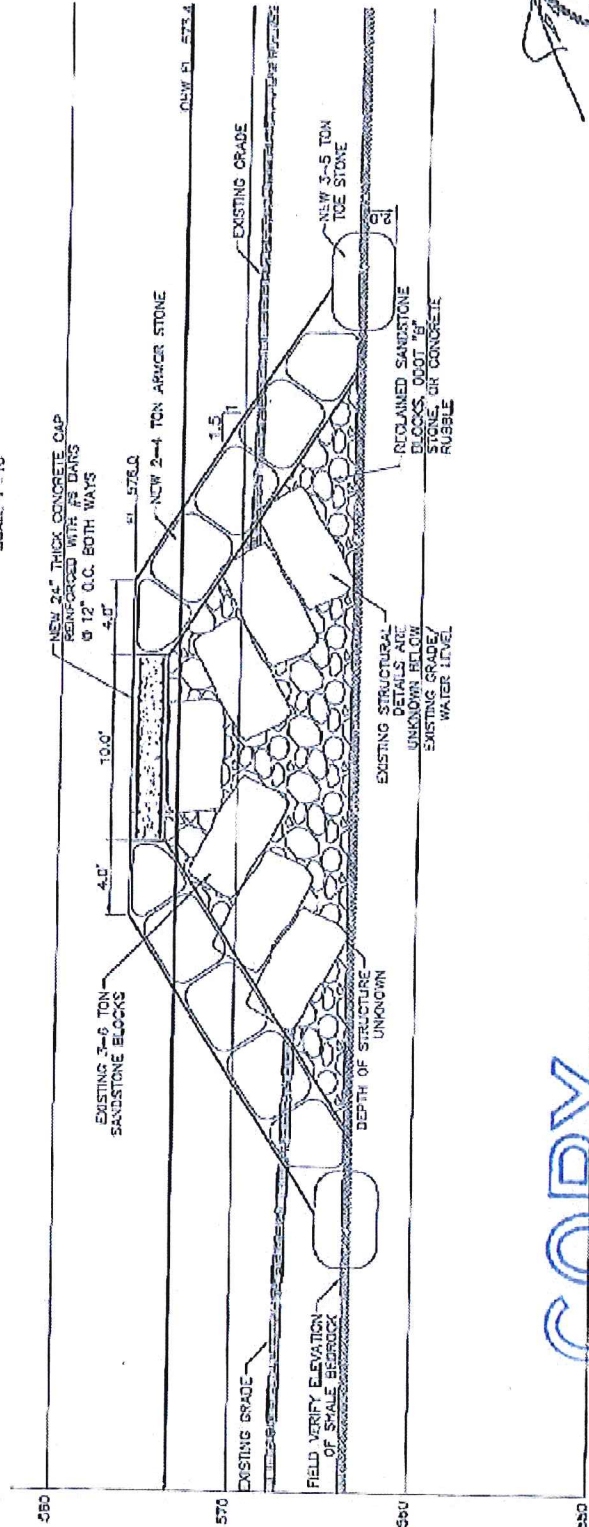


**NOTES**

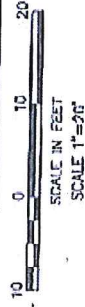
1. VERTICAL DATUM IS IGLD 1985.
2. BATHYMETRIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 10-27-2014 AND 10-15-2014. TOPOGRAPHIC SURVEY PERFORMED BY KS ASSOCIATES INC. ON 12-08-2014.
3. ROCK PROBNCS PERFORMED BY SHURELINE CONTRACTORS AND KS ASSOCIATES INC. ON 10-27-2014.
4. SOIL BORINGS PERFORMED BY OHIO TEST BORE ON 11-17-2014, 11-12-2014, 12-08-2014 AND 12-09-2014.
5. SUBSURFACE GRADES ARE BASED ON INFORMATION ACQUIRED FROM SOIL BORINGS AND ROCK PROBNCS AND THE NECESSARY ASSUMPTION THAT SUBSURFACE CONDITIONS BETWEEN AWAY FROM AND BELOW INDIVIDUAL SAMPLING LOCATIONS AND DEPTHS ARE SIMILAR TO THOSE OBTAINED FROM THE FIELD EXPLORATIONS.
6. STRUCTURE WAS NOT INSPECTED BELOW EXISTING GRADE/WATER LEVEL. STRUCTURAL DETAILS ARE ASSUMED TO BE SIMILAR TO USABLE STRUCTURE.
7. ALL SAND AND GRAVEL IN THE FOOTPRINT OF THE NEW GRONDS GRON SHALL BE EXCAVATED AND SIDECAST DOWNDRIFT OF EACH GRON.
8. TOE STONE (3 TO 5-TON ARMOR STONES) SHALL BE ENTRENCHED IN A MINIMUM OF 2 FEET INTO SHALE BEDROCK.
9. ALL CONCRETE RUBBLE SHALL BE FREE OF EXPOSED REBAR.



SECTION G-G

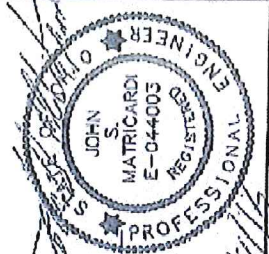


SECTION H-H



**COPY**

Cleveland Metropolitan, Perkins Beach Improvements.  
 D/A Processing No. 2016-00293  
 Cuyahoga County, Ohio  
 Quad: Lakewood  
 Sheet 14 of 14



OUTFALL & EDGEWATER BEACH GRON  
 EDGEWATER PARK  
 CLEVELAND METROPARKS  
 7801 DENTON PARKWAY  
 CLEVELAND, OHIO 44124

**KS ASSOCIATES**  
 200 DEWEY ROAD, SUITE 100  
 FLYNN, OHIO 44035  
 P 440.355.4290  
 WWW.KSASSOCIATES.COM

DATE BY: ADJACENT PROPERTY DATA  
 10500 EDGEWATER DRIVE, LIO  
 CLEVELAND METROPARKS  
 5900 WHISKEY ISLAND DRIVE, CLEVELAND, OH  
 DATUM: C.O.L.W.D = 669.2 FEET ISLD 1985

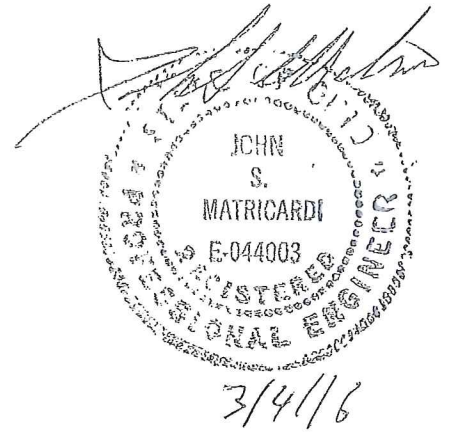
SHEET 14 OF 14  
 JOB NO. 14933-1

**ATTACHMENT B**

**Sand Monitoring Plan**

Cleveland Metroparks  
Lakefront Reservation  
Edgewater Park

**Sand Monitoring Plan**  
Cleveland Metroparks  
Lakefront Reservation, Edgewater Park



The following beach monitoring shall be performed at Edgewater Park:

**1. Pre-construction survey**

A pre-construction survey shall be performed within two weeks prior to any work below the Ordinary High Water mark (573.4 feet IGLD 1985) or when weather permits an accurate survey to be performed. The pre-construction survey shall include an area extending from 500 feet west of the west groin at Perkins Beach to 500 feet east of the east groin at Perkins Beach. The survey shall include the area 300 feet lakeward from the toe of the existing shoreline revetment.

**2. Post-construction baseline survey**

A post-construction survey shall be performed within two weeks after completion of the new armor stone groins or when weather permits an accurate survey to be performed. The post-construction survey shall include the same survey area as the pre-construction survey. This survey shall be used as a baseline for comparing beach profiles and sand quantities for future annual monitoring surveys.

**3. Annual monitoring surveys**

Annual spring monitoring surveys shall be performed in July of each year for 5 years following the construction of the new armor stone groins. The annual monitoring surveys shall include the same survey area as the post-construction baseline survey.

In addition to the survey data, Cleveland Metroparks shall monitor beach conditions with annual photographs taken at the time of each monitoring survey. The photographs shall include but are not limited to the following:

- a. One photograph looking lakeward from the west end of the beach.
- b. One photograph looking southeast along the shoreline from the west end of the beach.
- c. One photograph looking northwest along the shoreline from the west side of the west groin.
- d. One photograph looking lakeward at the west groin from the toe of the revetment.
- e. One photograph looking southeast along the shoreline from the east side of the west groin.
- f. One photograph looking northwest along the shoreline from the west side of the center groin.
- g. One photograph looking lakeward at the center groin from the toe of the revetment.
- h. One photograph looking southeast along the shoreline from the east side of the center groin.
- i. One photograph looking northwest along the shoreline from the west side of the east groin.
- j. One photograph looking lakeward at the east groin from the toe of the revetment.

- k. One photograph looking southeast along the shoreline from the east side of the east groin.
- l. One photograph looking west along the beach from the lakeward end of the concrete cap on the east groin.
- m. One photograph looking west along the shoreline from the top of the bluff near the parking area at Perkins Beach.

#### 4. Annual monitoring reports

Annual monitoring reports shall include the following:

- a. A site plan drawing of the entire survey area showing topography and bathymetry with 1-foot contours.
- b. Cross section drawings at 100-foot spacing with two cross sections evenly spaced in the beach area between each groin. Cross sections shall not be required along the centerline of each groin. The cross section drawings shall depict the beach profile from the post-construction baseline survey and the beach profile from the current annual monitoring survey.
- c. The date of the survey and lake level at the time of the survey shall be noted on the drawings.
- d. Copies of the photographs taken during the annual monitoring survey, as described in Section 3 of this Sand Monitoring Plan.
- e. Verifiable estimates of net sand accretion or erosion in the littoral cell from the west end of the beach to the headland containing the parking area at Perkins Beach.
- f. Estimates of the amount of sand to be by-passed or added as beach nourishment if required to maintain the proposed beach profiles, as described in Section 5 of this Sand Monitoring Plan.

Annual monitoring reports shall be submitted to:

U.S. Army Corps of Engineers  
Buffalo District Regulatory Office  
1776 Niagara Street  
Buffalo, New York 14207

Ohio Department of Natural Resources  
Office of Coastal Management  
105 West Shoreline Drive  
Sandusky, Ohio 44870

#### 5. Beach maintenance

If an annual monitoring survey determines that sand has excessively accumulated updrift of the groins in the project area, Cleveland Metroparks may request authorization under this permit to re-distribute the sand into the nearshore lakeward, to the east or to the west of the project site, as needed to assist in the stabilization of the beach system. If an annual monitoring survey determines that sand has excessively eroded from the project area, Cleveland Metroparks may



request authorization under this permit to place sand pre-fill as beach nourishment. Pre-fill sand will be re-distributed from excess sand accumulation at Edgewater Beach. No grading or beach nourishment shall be performed until written approval is received from the U.S. Army Corps of Engineers and Ohio Department of Natural Resources. The U.S. Army Corps of Engineers and Ohio Department of Natural Resources shall be notified 5 days prior to any beach maintenance activities requiring grading or placement of additional sand as beach nourishment.

#### **6. Contingency plan**

If the annual monitoring surveys demonstrate the beach profile is stable during the first five years of monitoring, additional monitoring surveys shall not be required to be submitted to the U.S. Army Corps of Engineers or Ohio Department of Natural Resources. Annual beach monitoring may still be performed following year five at the option of Cleveland Metroparks. If beach maintenance is proposed following year five, the monitoring survey demonstrating the need for beach maintenance shall be submitted to the U.S. Army Corps of Engineers and Ohio Department of Natural Resources in the form of a monitoring report as described in Section 4 of this Sand Monitoring Plan.

If the annual monitoring surveys demonstrate the need for annual beach maintenance during the first five years, additional monitoring surveys shall be required to be submitted to the U.S. Army Corps of Engineers and Ohio Department of Natural Resources on a year-by-year basis. The U.S. Army Corps of Engineers and Ohio Department of Natural Resources shall make the determination of whether additional annual monitoring is required.

No beach maintenance shall be performed until written approval is received from the U.S. Army Corps of Engineers and/or Ohio Department of Natural Resources, as required by Section 5 of this Sand Monitoring Plan.

Any modifications to or waiver of the requirements of this Sand Monitoring Plan shall be obtained in writing by coordinating with the U.S. Army Corps of Engineers and/or Ohio Department of Natural Resources.

**ATTACHMENT C**

**Site Photos**

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 1: Looking southwest at the shore of the western adjacent property. 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 2: View of the west groin (Groin 1) at Perkins Beach (to be removed). 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 3: View of Groin 2 (to be removed). 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 4: View of Groin 3 (to be removed). 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 5: View of Groin 4 (to be removed). 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 6: View of Groin 5 (to be removed). 10/2/14.



Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 7: View of the east end of Perkins Beach in the area of the sewer outfall (to be repaired). 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 8: View of the existing concrete modules at the west end of Edgewater Beach (to be removed). 10/2/14.

Cleveland Metroparks  
Lakefront Reservation  
Perkins Beach, Edgewater Park



Photograph 9: Looking southeast at the Edgewater Beach groin (to be repaired). 10/2/14.