



Maritime Archaeological Survey Team, Inc.
P.O. Box 93352
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LEPF SG 289-06

Historic Shipwreck Mooring Blocks – Public Access

Final Report

26-August-2007

Kenneth S. Marshall, P.E.
Chair of the Board of Directors
and Project Director

Photographs from MAST activities
taken by

Judd Clover
Ken Marshall
Jack Papes
Georgann Wachter

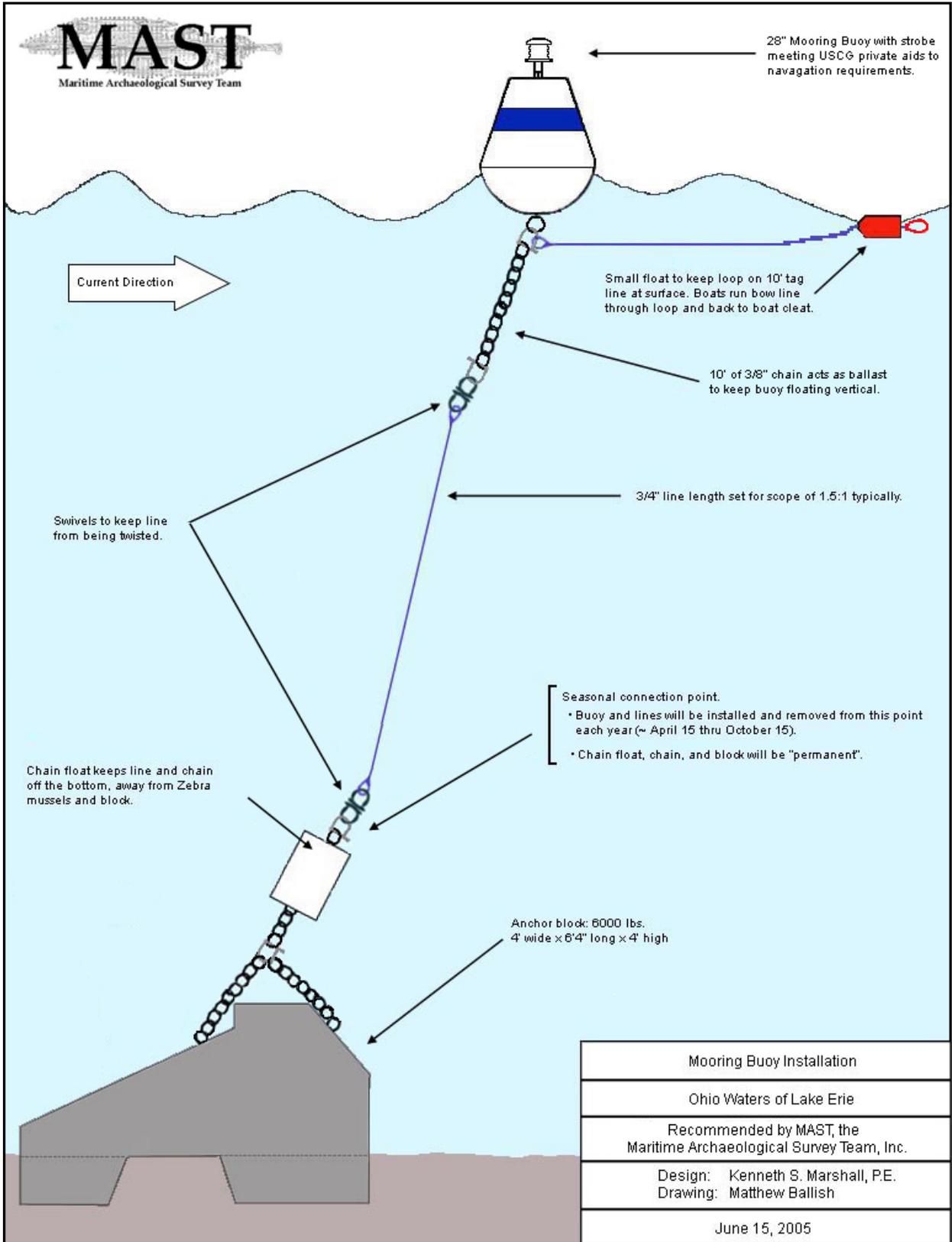
This report discusses the Historic Shipwreck Mooring Blocks – Public Access as managed by the Maritime Archaeological Survey Team, Inc. and funded by the Lake Erie Protection Fund under Small Grant SG 289-06. For ease of reading, this report is broken into sections as follows:

- A. MAST Mooring Buoy Installation Drawing
- B. History of MAST and the Historic Shipwreck Mooring Buoy Program
- C. MAST's implementation of LEPF Small Grant SG 289-06
- D. Results of the grant work

Figures

- Appendix I: USCG Private Aids to Navigation Permit #22-05
- Appendix II: USCG Private Aids to Navigation Permit #03-07
- Appendix III: USACE Letter of Authorization

A. MAST Mooring Buoy Installation Drawing



B. History of MAST and the Historic Shipwreck Mooring Buoy Program

The Maritime Archaeological Survey Team, Inc. (MAST) is an avocational group comprised of over 200 volunteers. Members assist in the education and training of others by publications and workshops. The varied backgrounds of team members such as shipwreck researchers, scuba divers, maritime enthusiasts, archaeologists, geologists, history instructors, professional engineers and Great Lakes authors contributes to a diverse knowledge base.

Our mission statement is "Preserving Great Lakes History one shipwreck at a time". We have educated thousands of people around the Great Lakes in underwater archaeology and cultural resource preservation. We have conducted detailed surveys and published reports on 6 shipwrecks in the Ohio waters of Lake Erie.

There have been attempts to place shipwreck buoys in Ohio waters that date back over 15 years. A discussion of all the people and organizations who have previously tried is beyond the scope of this report. We simply thank them for all their efforts and guidance and begin our history after the December 2003 Incorporation of the Maritime Archaeological Survey Team.

In early 2004 the Ohio Department of Natural Resources - Office of Coastal Management (OCM) became aware of the existence of MAST and our goals to provide a mooring on several shipwrecks. OCM had some funds available for such a project and a grant from OCM to MAST was awarded for FY2005. With funding in place MAST filed a permit application with the United States Coast Guard (USCG) for six Private Aids to Navigation. Over the winter of 2005 discussions took place with the USCG and a final buoy configuration was approved. USCG Permit #22-05 was issued on June 15, 2005. A copy of USCG Permit #22-05 is attached as Appendix I to this report.

Subsequent to the final buoy configuration, materials for the six moorings were purchased. Once the USCG permit was issued, the buoys were deployed for the first time in late June of 2005. The buoys were initially attached directly to the shipwrecks. In October 2005 the buoys were removed and placed in storage for the winter. During the 2005 season, discussions took place between MAST and Franco Ruffini at the OHPO relative to the attachment of the moorings. It was Mr. Ruffini's concern that the moorings might place additional stress on certain shipwrecks. He requested MAST look into alternate ways to attach the moorings other than directly to the shipwreck.

In late 2005 MAST applied to the Ohio Lake Erie Commission – Lake Erie Protection Fund for funding to configure and set six Mooring Anchor Blocks to allow relocation of the moorings off the shipwreck on the more fragile sites.

MAST also applied for additional funding from OCM to expand the shipwreck mooring program to 10 sites. This OCM funding was declined. At the same time, MAST had applied to the USCG for a second permit to allow four additional shipwrecks to be buoyed (10 total). The permit application was resubmitted in 2007 and USCG Permit #03-07 was issued on April 26, 2007. A copy of USCG Permit #03-07 is attached as Appendix II to this report.

Concurrent with the plan for Anchor Blocks and with the second USCG Permit application, MAST applied to the US Army Corps of Engineers (USACE) for either a Permit or Letter of Authorization for placement of the Anchor Blocks. The USACE issued

Letter of Authorization 2006-01137(0) on May 24, 2006. A copy of the USACE Letter of Authorization is attached as Appendix III to this report.

C. MAST's implementation of LEPF Small Grant SG 289-06

The primary purpose of LEPF SG 289-06 was to provide permanent mooring anchor blocks to eliminate the potential for damage to shipwrecks caused by direct connection to the wreck. They also permit larger charter vessels to use the moorings, thereby providing increased access to the non-boating diver. The existing attachment to the shipwrecks was designed to accommodate private recreational vessels. To date, utilization of the existing moorings by larger commercial charter vessels had significantly exceeded expectations. Addition of the off-wreck mooring blocks was needed to provide ongoing protection to the shipwrecks which are unique, submerged, historical resources.

A 6,000 pound Lenson Mobile Breakwall (LMB) unit from Norwalk Concrete Industries (NCI) was selected as the mooring anchor because it should accommodate all known recreational vessels and commercial dive charter vessels operating in the Ohio waters of Lake Erie. In addition, the size and shape of the LMB block make it ideal for the varying conditions of the bottom of Lake Erie. The lake bottom varies from hard shale to soft silt.

The size, shape and scale of the anchor blocks can be seen in Figures 1-2. The large foot print of the block allows it to set stable. The four corner feet dig in to all but the hardest shale and provide resistance to dragging. The tapered shape will promote silting in over time giving the block a pull out strength significantly exceeding its initial dead weight anchorage. Six anchor blocks were prepared by MAST members in 2006. This included rigging each block with chains and an Underwater Chain Float. The floats were labeled (see Figures 3 and 4) for identification and will remain permanently underwater with the blocks.

Equipment to handle the blocks and actual staging delivery can be seen in Figures 5-8. The work boat *Salvage Chief* can be seen in Figure 5. An anchor block in place at the site of the *Dundee* can be observed in Figure 9. This site has a soft bottom and the block is already noticeably submerged. The Underwater Chain Float as seen in Figure 10 keeps the chain out of the silt even after the poly up line is removed for the winter.

The first anchor block was placed at the *Queen of the West* site in August 2006. Weather conditions on Lake Erie did not allow all the blocks to be placed in 2006. A time extension of the grant was made from April 2007 to August 2007 to allow completion. The sixth and final block was placed at the *Morning Star* site in July 2007.

The following sites now have a permanent mooring anchor block in place: *Admiral, Dundee, Morning Star, North Carolina, Queen of the West, The Craftsman.*

D. Results of the grant work

The Great Lakes Historical Society's Peachman Lake Erie Shipwreck Research Center provided information on the location and types of vessels for selection in the 2005 and 2007 mooring programs. GLHS/PLESRC has been advised of the new mooring blocks for informational dissemination to divers/researchers using the archives.

The Ohio Historical Preservation Office is being provided video and photographic documentation of the moorings and anchor blocks for ongoing evaluation of the effectiveness of this system. They are receiving a copy of this report and the accompanying DVD.

Anecdotal information of the effectiveness of the overall buoy system has been obtained. These include on-site congregation of dive vessels at buoyed sites as well as comments at the local dive shops about how many boats are going out to a buoyed site that weekend. Visual verification of the use of buoys by both Recreational and Charter vessels can be seen in Figures 11-12.

Divers using the poly up/down line from the buoy to the anchor block and shipwreck can be seen in Figure 13. These up/down lines provide a stable connection between the surface and the shipwreck. This is very valuable for several reasons. It is common on Lake Erie to have highly variable visibility from day to day and from top to bottom. An thrown anchor can easily miss the wreck by 10-20 feet and in 3-5 foot visibility, the wreck can be lost or worse, the return line lost necessitating a free ascent possibly into boat traffic. These lines ensure a travel path to the wreck and back to the moored craft. They also provide a stable point for the DAN recommended 3-5 minute "Safety Stop" at the end of each dive. They have increased the visitation to these shipwrecks by providing a "sure thing" from identification of the site to getting on the wreck.

An example of the successful multi-use of Lake Erie can be seen in Figure 14. The *Dundee* mooring buoy is in the foreground while an auto-unloading freighter is passing by in the background.

An accompanying DVD/CD to this report includes additional photos of the anchor block work, block deliveries, underwater photos, sidescan sonar images of the block locations, and an underwater video of how the blocks are used.

Figures



Figure 1 Mooring Anchor Blocks (LMB's) in NCI yard



Figure 2 Installation of chain to Mooring Anchor Blocks



Figure 3 Underwater chain float labeling



Figure 4 Typical label on underwater chain float



Figure 5 Mooring Anchor Block staging behind the *Salvage Chief* work boat at Grand River, Ohio



Figure 6 Mooring Anchor Block lowered into Grand River for staging



Figure 7 Mooring Anchor Block staging on the Avon Lake, Ohio power plant intake channel



Figure 8 Mooring Anchor Block lowered into the Avon Lake, Ohio power plant intake channel



Figure 9 Mooring Anchor Block for the *Dundee* imbedded in silt to upper holes (approximately 3 foot imbedded)



Figure 10 Underwater Chain Float on *Dundee* Mooring Anchor Block functioning to keep mooring block chain out of the silt



Figure 11 Recreational boat and diver using mooring system



Figure 12 Charter dive boat using mooring system



Figure 13 Divers using mooring line from surface to shipwreck and return



Figure 14 Multi function use of Lake Erie; Historic Shipwreck Mooring in foreground and freighter in background

Appendix I

USCG Private Aids to Navigation Permit #22-05

DEPARTMENT OF
HOMELAND SECURITY
U.S. COAST GUARD
CG-2554 (Rev. 03-03)

PRIVATE AIDS TO NAVIGATION APPLICATION

(See attached instructions and copy of Code of Fed. Reg., Title 33, Chap. 1, Part 66)

Form Approved
OMB-1625-0011

NO PRIVATE AID TO NAVIGATION MAY BE AUTHORIZED UNLESS A COMPLETED APPLICATION FORM HAS BEEN RECEIVED (14 U.S.C. 83; 33 C.F.R. 66.01-5).

1. ACTION REQUESTED FOR PRIVATE AIDS TO NAVIGATION:

A. ESTABLISH AND MAINTAIN B. DISCONTINUE C. CHANGE D. TRANSFER OWNERSHIP

2. DATE ACTION TO START

April 15, 2005

3. AIDS WILL BE OPERATED:

A. THROUGHOUT THE YEAR B. TEMPORARILY UNTIL

C. ANNUALLY

April 15 to October 15

4. NECESSITY FOR AID (Continue in Block 8)

Provide Moorings on ship wrecks Greater Cove

6. CORPS OF ENGINEERS AUTHORIZED THIS STRUCTURE OR BUOY BY

PERMIT OR LETTER (file and date)

FOR DISTRICT COMMANDERS ONLY

7. APPLICANT WILL FILL IN APPLICABLE REMAINING COLUMNS

LIGHT LIST NUMBER OR PAGE	NAME OF AID	NO. OR LTR. (7a)	LIGHT		POSITION (7e)	DEPTH OF WATER (7f)	CAN-DIE POWER (7g)	HT. ABOVE WATER (7h)	STRUCTURE TYPE, COLOR, AND HEIGHT ABOVE GROUND (7i)	REMARKS (See instructions)
			FLASH LGTH. (7c)	COLOR (7d)						
4260	Admiral	1	1	0.3	W	70'				28" MEDICAL DUTY BUOYS
4263	Craftsman	2	1	0.3	W	40'				10" Fog horn 12177-1A Sur Moor round white with blue stripe
4252	Dundee	3	1	0.3	W	75'				Same
4400	Morning Star	4	1	0.3	W	65'				Same
3907	Queen of the West	5	1	0.3	W	60'				Same
4262	Sand Merchant	6	1	0.3	W	65'				Same

8. ADDITIONAL COMMENTS

These moorings will provide safe and secure mooring for recreational sport divers on the following shipwrecks: 1) Admiral, 2) Craftsman, 3) Dundee 4) Morning Star 5) Queen of the West, 6) Sand Merchant.

9a. NAME AND ADDRESS OF PERSON IN DIRECT CHARGE OF AID

Mike Georgiann Wachter
3326 Bonnieview Drive
Ayer Lake, OH 44012

10a. NAME AND ADDRESS OF PERSON OR CORPORATION AT WHOSE EXPENSE

Maritime Archeological Survey Team, Inc.
480 Main Street
Vermillion, OH 44089

10b. THE APPLICANT AGREES TO SAVE THE COAST GUARD HARMLESS WITH RESPECT TO ANY CLAIM OR CLAIMS THAT MAY RESULT ARISING FROM THE ALLEGED NEGLIGENCE OF THE MAINTENANCE OR OPERATION OF THE APPROVED AID(S).

9b. TELEPHONE NO.

440 930 2525

10c. DATE

9/14/04

10d. SIGNATURE AND TITLE OF OFFICIAL SIGNING

M. D. Hudson, Captain, USCG

FOR USE BY DISTRICT COMMANDER

SERIAL NO. CLASSIFICATION OF AIDS

22-05

II

RECD.

CHART

L. N. M.

14829

DATE APPROVED

6/15/05

SIGNATURE (By director)

M. D. Hudson, Captain, USCG

PREVIOUS EDITIONS ARE OBSOLETE

ENCLOSURE (1)

Appendix II

USCG Private Aids to Navigation Permit #03-07

DEPARTMENT OF
HOMELAND SECURITY
U.S. COAST GUARD
CG-2554 (Rev. 03-03)

PRIVATE AIDS TO NAVIGATION APPLICATION
(See attached instructions and copy of Code of Fed. Reg., Title 33, Chap. 1, Part 66)

Form Approved
OMB-1625-0011

NO PRIVATE AID TO NAVIGATION MAY BE AUTHORIZED UNLESS A COMPLETED APPLICATION FORM HAS BEEN RECEIVED (14 U.S.C. 83; 33 C.F.R. 66.01-5).

1. ACTION REQUESTED FOR PRIVATE AIDS TO NAVIGATION: A. ESTABLISH AND MAINTAIN B. DISCONTINUE C. CHANGE D. TRANSFER OWNERSHIP
2. DATE ACTION TO START: 1 - May - 2007

3. AIDS WILL BE OPERATED: A. THROUGHOUT THE YEAR B. TEMPORARILY UNTIL C. ANNUALLY April 15 TO October 15

4. NECESSITY FOR AID (Continue in Block B)
Provide safe moorings on shipwrecks
6. CORPS OF ENGINEERS AUTHORIZED THIS STRUCTURE OR BUOY BY PERMIT OR LETTER (file and date) 2006-01137 (0) May 24, 2006

FOR DISTRICT COMMANDERS ONLY

LIGHT LIST NUMBER OR PAGE	NAME OF AID	NO. OR LTR. (7a)	LIGHT		POSITION (7e)	DEPTH OF WATER (7f)	CAN- DLE POWER (7g)	HT. ABOVE WATER (7h)	STRUCTURE		REMARKS (See Instructions) (7i)
			FLASH LGTH. (7c)	COLOR (7d)					TYPE, COLOR, AND HEIGHT ABOVE GROUND (7i)		
4540	City of Concord	7	1	0.3	W	41 32.728 82 32.811	1.2	2'			28" Lighted Buoy, White w/Blue stripe, Rolyan B1145
4260	Hickory Stick	8	1	0.3	W	41 32.301 82 06.236	1.2	2'			28" Lighted Buoy, White w/Blue stripe, Rolyan B1145
3907	North Carolina	9	1	0.3	W	41 43.808 81 22.885	1.2	2'			28" Lighted Buoy, White w/Blue stripe, Rolyan B1145
5567	F.H. Prince	10	1	0.3	W	41 36.240 82 40.520	1.2	2'			28" Lighted Buoy, White w/Blue stripe, Rolyan B1145

8. ADDITIONAL COMMENTS
These mooring buoys will provide safe and secure mooring for recreational sport SCUBA divers on the following shipwrecks:
1) City of Concord, 2) Hickory Stick, 3) North Carolina, and 4) F.H. Prince. This application follows the same buoy protocol used successfully during the 2005 and 2006 seasons and approved on application serial number 22-05 dated 6/15/05.

9a. NAME AND ADDRESS OF PERSON IN DIRECT CHARGE OF AID
Kenneth S. Marshall, P.E.
1203 E. 344th, Eastlake, OH 44095

9b. TELEPHONE NO. (440) 478-9944

10a. NAME AND ADDRESS OF PERSON OR CORPORATION AT WHOSE EXPENSE
Maritime Archaeological Survey Team, Inc.
P.O. Box 93352
Cleveland, OH 44101-5352

10b. THE APPLICANT AGREES TO SAVE THE COAST GUARD HARMLESS WITH RESPECT TO ANY CLAIM OR CLAIMS THAT MAY RESULT ARISING FROM THE ALLEGED NEGLIGENCE OF THE MAINTENANCE OR OPERATION OF THE APPROVED AID(S).

10c. DATE: 03/17/2007
10d. SIGNATURE AND TITLE OF OFFICIAL SIGNING: *Semeth S. Marshall*, CHAIR OF MAINT BOARD OF DIRECTORS

DATE APPROVED: 4/26/07
SIGNATURE (By deflection): *[Signature]*

FOR USE BY DISTRICT COMMANDER
SERIAL NO. 03-07
CLASSIFICATION OF AIDS II

M. D. Hudson, Captain, USCG

PREVIOUS EDITIONS ARE OBSOLETE

ENCLOSURE (1)

Appendix III

USACE Letter of Authorization



DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO
ATTENTION OF:

May 24, 2006

Regulatory Branch

SUBJECT: Application No. 2006-01137(0), Marine Archeological Survey Team, Inc., Nationwide Permit No. (10) as Published in the Federal Register, Volume 67, No. 10, on Tuesday January 15, 2002

Mr. Ken Marshall
Marine Archeological Survey Team, Inc.
P.O. Box 93352
Cleveland, Ohio 44101-5352

Dear Mr. Marshall:

This pertains to your application for a Department of the Army permit to place single boat mooring buoys at ten locations in Lake Erie. The bouys will be located in Cuyahoga, Erie, Lake, Lorain, and Ottawa counties in the State of Ohio at the following latitude/longitude locations:

41 38.244N/81 54.197W
41 32.782N/82 32.811W
41 31.942N/82 00.375W
41 41.330N/81 50.634W
41 32.301N/82 06.236W
41 36.813N/82 12.531W
41 43.808N/81 22.885W
41 36.240N/82 40.520W
41 34.428N/81 57.524W
41 50.768N/81 23.135W

I have evaluated the impacts associated with your proposal, and have concluded that they are authorized by the enclosed Nationwide Permit provided that the attached conditions are satisfied.

Verification of the applicability of this Nationwide Permit is valid until March 18, 2007 unless the Nationwide Permit is modified, suspended or revoked. This verification will remain valid for two years if during this two year period the Nationwide Permit is reissued without modification or your activity complies with any subsequent permit modification. Please note that if you commence

or are under contract to commence this activity in reliance of your Permit prior to the date this Nationwide Permit is suspended or revoked, or is modified such that your activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of this Nationwide Permit, unless this Nationwide Permit has been subject to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the Nationwide Permit program. A public notice announcing any changes will be issued when they occur. Finally, note that if your activity is not undertaken within the defined period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

In addition to the general conditions attached to the Nationwide Permit, your attention is directed to the following Special Conditions which are also appended at the end of the Nationwide Permit General Conditions:

1. You must possess prior to placement all necessary Coast Guard authorizations for the buoys, and must abide by all conditions of those authorizations.
2. Your use of the permitted activity must not interfere with the public's right to free navigation.
3. The permittee shall provide a copy of the validated permit to the contractor(s) performing the work to ensure that the contractor(s) are familiar with the terms and conditions of the authorization.
4. You must avoid disturbance to any elements of shipwrecks during placement.

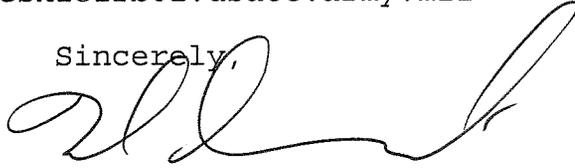
Finally, this affirmation is limited to the attached Nationwide Permit and associated Water Quality Certification, and does not obviate the need to obtain any other project specific Federal, state, or local authorization.

A copy of this letter has been sent to Ms. Mindy Bankey, Office of Legislative Services, 1930 Belcher Drive, Bldg D-3, Columbus, OH 43224-1387.

Questions pertaining to this matter should be directed to me

at (440) 437-5847, by writing to the following address: U.S. Army
Corps of Engineers, 33 Grand Valley Avenue, Orwell, Ohio 44076, or
by e-mail at: Mark.E.Gronceski@lrb01.usace.army.mil

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Gronceski', with a large, sweeping flourish extending to the right.

Mark E. Gronceski
Biologist

Enclosures

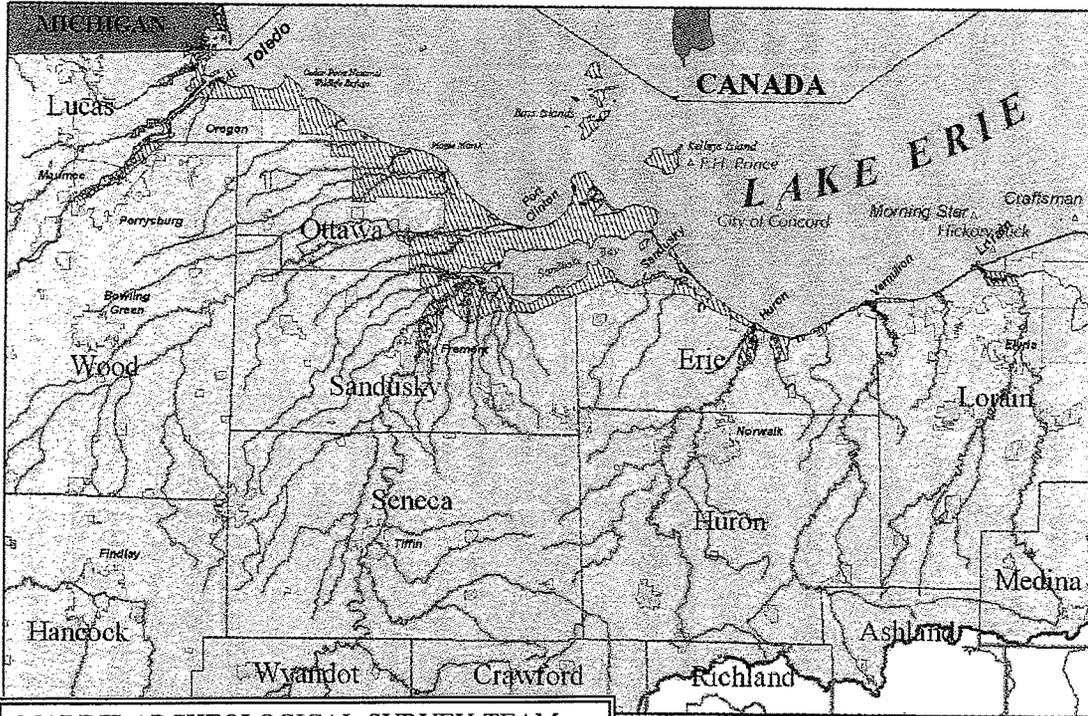
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT – ADDENDUM
 Maritime Archaeological Survey Team, Inc.

Block 18. NATURE OF ACTIVITY – Vicinity Maps, Figures #1 and #2

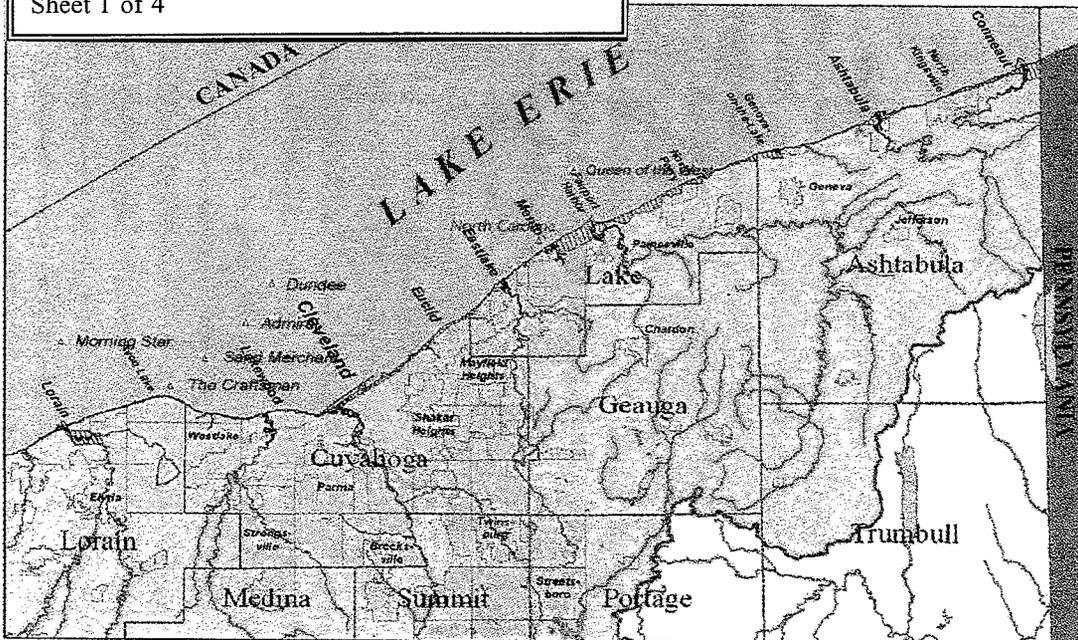
LAKE ERIE COASTAL MANAGEMENT AREA (West)

Please indicate the location of the proposed project

Legend:  Coastal Management Area  Areas Outside CMA  Water  Outside Lake Erie Watershed

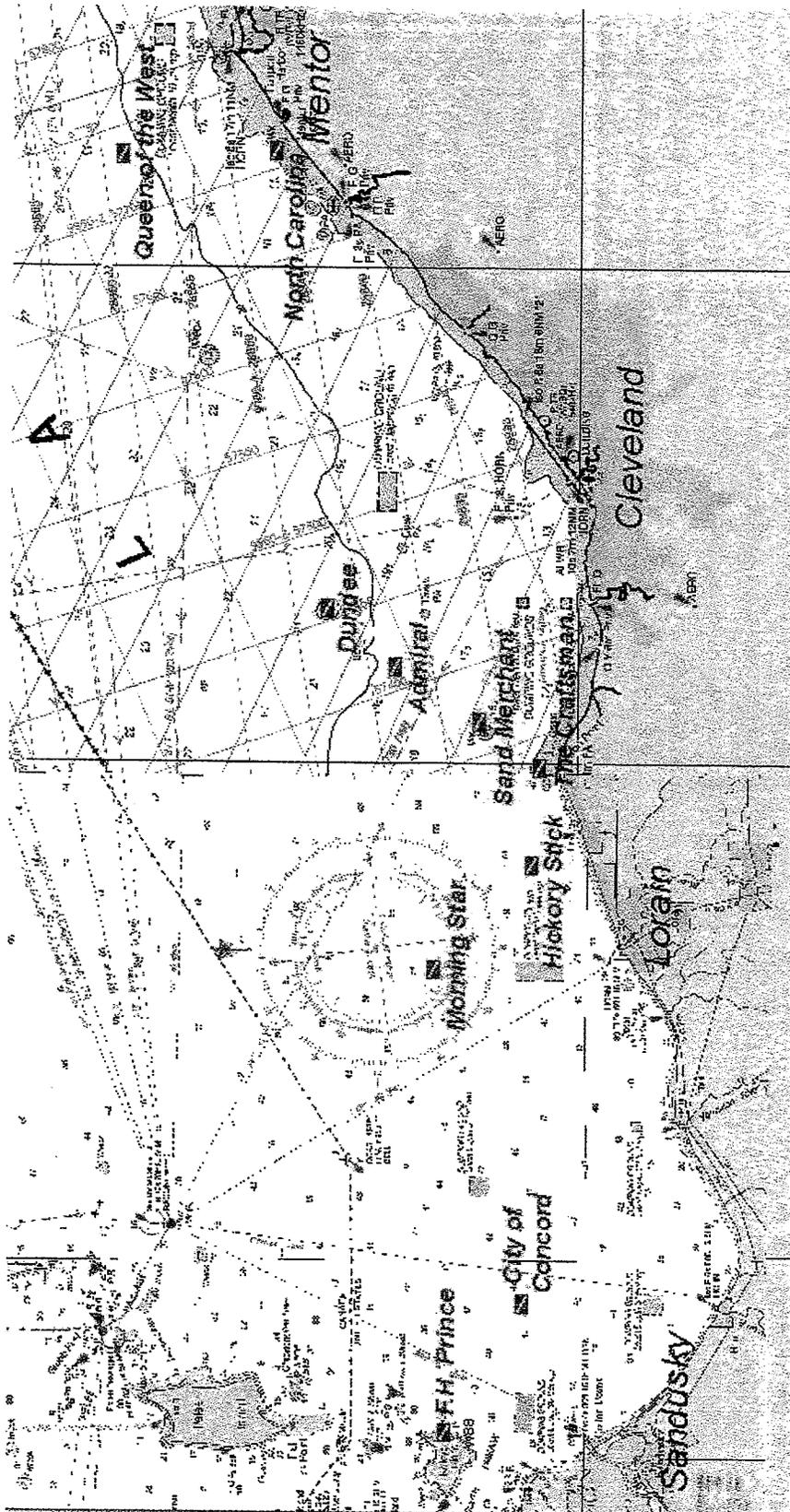


MARINE ARCHEOLOGICAL SURVEY TEAM,
 INC.
 D/A Processing No. 2006-01137(0)
 Cuyahoga County, Ohio Quad:
 Sheet 1 of 4



APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT – ADDENDUM
Maritime Archaeological Survey Team, Inc.

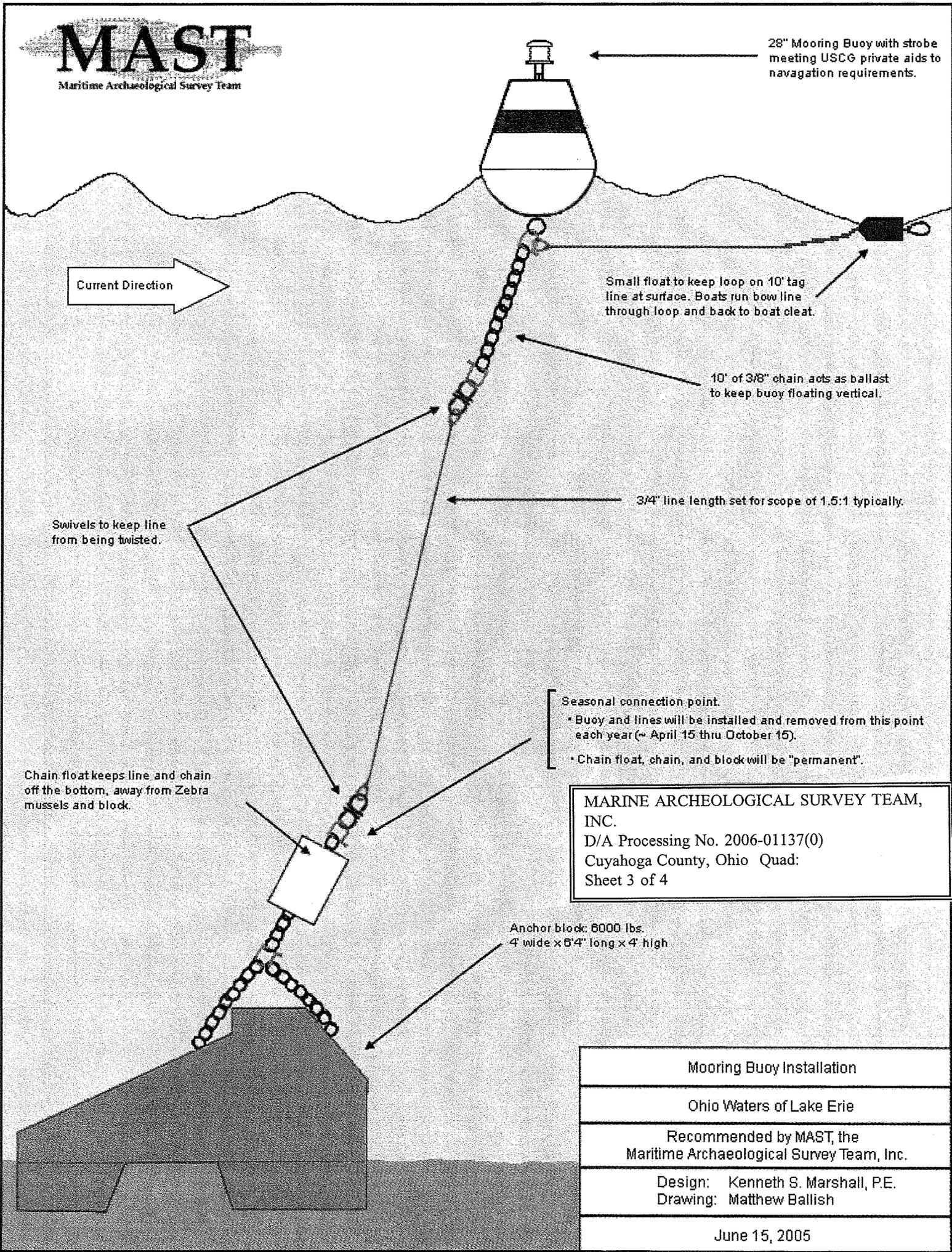
Block 18. NATURE OF ACTIVITY – Navigational Map, Figure #3 (Shipwrecks in red)



MARINE ARCHEOLOGICAL SURVEY TEAM,
INC.
D/A Processing No. 2006-01137(0)
Cuyahoga County, Ohio Quad:
Sheet 2 of 4

MAST

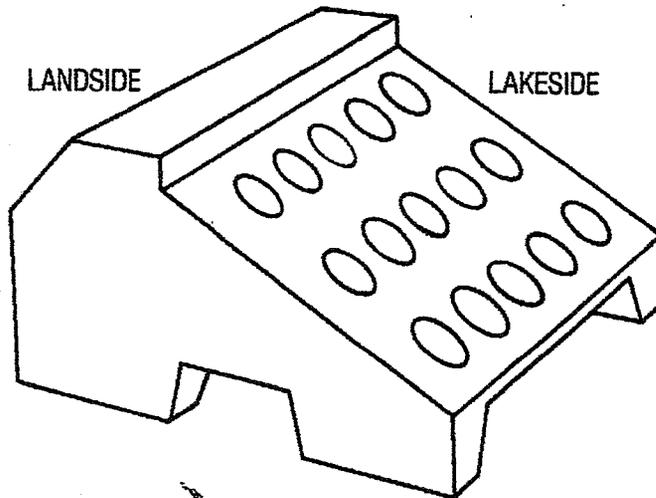
Maritime Archaeological Survey Team



MARINE ARCHEOLOGICAL SURVEY TEAM, INC.
D/A Processing No. 2006-01137(0)
Cuyahoga County, Ohio Quad:
Sheet 3 of 4

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT – ADDENDUM
Maritime Archaeological Survey Team, Inc.

Block 18. NATURE OF ACTIVITY – Anchor Block Detail, Figure #5



BASE — 4'0" x 6'4"
HEIGHT — 4'0"
WEIGHT — 3 TONS
U.S. Patent 4,978,247



For more information call:

**NORWALK
CONCRETE
INDUSTRIES**

191 Woodlawn Ave.
Norwalk, Ohio 44857
1-800-733-3624
FAX: 419-663-0627

MARINE ARCHEOLOGICAL SURVEY TEAM,
INC.
D/A Processing No. 2006-01137(0)
Cuyahoga County, Ohio Quad:
Sheet 4 of 4

COMPLIANCE CERTIFICATION

General Condition 14 of the Nationwide Permit you were affirmed requires that:

"Every permittee who has received a Nationwide permit verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include: a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions; b) A statement that any required mitigation was completed in accordance with the permit conditions; c) The signature of the permittee certifying the completion of the work and mitigation."

APPLICANT
Marine Archeological Survey
Team, Inc.
P.O. Box 93352
Cleveland, OH 44101-5352

POINT of CONTACT:
Mr. Ken Marshall
P.O. Box 93352
Cleveland, Ohio 44101-5352

File Number: 2006-01137(0)
File Closed: 05/24/2006

Upon completion of the activity authorized by this permit sign this certification and return it to the following address within **30-days** of project completion:

Mark E. Gronceski
U.S. Army Corps of Engineers
33 Grand Valley Avenue
Orwell, Ohio 44076

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

Ken Marshall

Date

Project Location: 10 locations in Lake Erie, in Cuyahoga, Erie, Lake, Lorain, and Ottawa counties, Ohio

Project Description: single boat mooring buoys

Authorized Impacts (Waters of U.S. Impacted by Project): 0.006 Acres

Waterway and/or Project Setting: Lake Erie

ACTIVITIES AUTHORIZED BY NATIONWIDE PERMIT

10. Mooring Buoys. Non-commercial, single-boat, mooring buoys. (Section 10)

Water Quality Certification

Water Quality Certification, pursuant to Section 401 of the Clean Water Act, is not required because this Nationwide Permit only authorizes activities that are regulated under Section 10 of the Rivers and Harbors Act.

PERMIT CONDITIONS

C. NATIONWIDE PERMIT GENERAL CONDITIONS

The following General Conditions must be followed in order for any authorization by an NWP to be valid:

1. **Navigation.** No activity may cause more than a minimal adverse effect on navigation.
2. **Proper Maintenance.** Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.
3. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
4. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
5. **Equipment.** Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.
6. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state or tribe in its Section 401 Water Quality Certification and Coastal Zone Management Act consistency determination.
7. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
8. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
9. **Water Quality.**
 - (a) In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (See 33 CFR 330.4(c)).
 - (b) For NWPs 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWPs). This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.
10. **Coastal Zone Management.** In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see 33 CFR 330.4(d)).
11. **Endangered Species.**
 - (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS the District Engineer may add species-specific regional endangered species conditions to the NWPs.
 - (b) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at <http://www.fws.gov/r9endspp/endspp.html> and http://www.nmfs.noaa.gov/prot_res/overview/es.html respectively.
12. **Historic Properties.** No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR part 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.
13. **Notification.**

- (a) Timing; where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:
- (1) Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or
 - (2) If notified in writing by the District or Division Engineer that an Individual Permit is required; or
 - (3) Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- (b) Contents of Notification: The notification must be in writing and include the following information:
- (1) Name, address and telephone numbers of the prospective permittee;
 - (2) Location of the proposed project;
 - (3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);
 - (4) For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 40, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));
 - (5) For NWP 7 (Outfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed;
 - (6) For NWP 14 (Linear Transportation Projects), the PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;
 - (7) For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;
 - (8) For NWP 27 (Stream and Wetland Restoration Activities), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee;
 - (9) For NWP 29 (Single-Family Housing), the PCN must also include:
 - (i) Any past use of this NWP by the Individual Permittee and/or the permittee's spouse;
 - (ii) A statement that the single-family housing activity is for a personal residence of the permittee;
 - (iii) A description of the entire parcel, including its size, and a delineation of wetlands. For the purpose of this NWP, parcels of land measuring 1/4-acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than 1/4-acre in size, formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));
 - (iv) A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;
- (10) For NWP 31 (Maintenance of Existing Flood Control Facilities), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five year (or less) maintenance plan. In addition, the PCN must include all of the following:
- (i) Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided the approved flood control protection or drainage is not increased;
 - (ii) A delineation of any affected special aquatic sites, including wetlands; and,
 - (iii) Location of the dredged material disposal site;
- (11) For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;
- (12) For NWPs 39, 43 and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;
- (13) For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;
- (14) For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the relocation of greater than 300 linear-feet of existing serviceable drainage ditches constructed in non-tidal streams unless, for drainage ditches constructed in intermittent non-tidal streams, the District Engineer waives this criterion in writing, and the District Engineer has determined that the project complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;
- (15) For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;
- (16) For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);
- (17) For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and
- (18) For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.
- (c) Form of Notification: The standard Individual Permit application form

(Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

- (d) **District Engineer's Decision:** In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan.
- (e) **Agency Coordination:** The District Engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. For activities requiring notification to the District Engineer that result in the loss of greater than 1/2-acre of waters of the US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.
- (f) **Wetland Delineations:** Wetland delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than 1/4-acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate
- 14. Compliance Certification.** Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:
- (a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;
 - (b) A statement that any required mitigation was completed in accordance with the permit conditions; and
 - (c) The signature of the permittee certifying the completion of the work and mitigation.
- 15. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre).
- 16. Water Supply Intakes.** No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.
- 17. Shellfish Beds.** No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.
- 18. Suitable Material.** No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the CWA).
- 19. Mitigation.** The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.
- (a) The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).
 - (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
 - (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.
 - (d) Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, 1/4-acre of wetlands cannot be created to change a 3/4-acre loss of wetlands to a 1/2-acre loss associated with NWP 39 verification. However, 1/2-acre of created wetlands can be used to reduce the impacts of a 1/2-acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.
 - (e) To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be

- appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.
- (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineers may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.
 - (g) Compensatory mitigation proposals submitted with the "notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the US.
 - (h) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.
20. **Spawning Areas.** Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.
 21. **Management of Water Flows.** To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow. This condition is only applicable to projects that have the potential to affect waterflows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.
 22. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.
 23. **Waterfowl Breeding Areas.** Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.
 24. **Removal of Temporary Fills.** Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.
 25. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.
 - (a) Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.
 - (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.
 26. **Fills Within 100-Year Floodplains.** For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.
 - (a) Discharges in Floodplain; Below Headwaters. Discharges of dredged or fill material into waters of the US within the mapped 100-year floodplain, below headwaters (i.e. five cfs), resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, 43, and 44.
 - (b) Discharges in Floodway; Above Headwaters. Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, and 44.
 - (c) The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.
 27. **Construction Period.** For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project). For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps. For projects that have been verified by the Corps, an extension of a Corps approved completion date maybe requested. This request must be submitted at least one month before the previously approved completion date.
- D. Further Information**
1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
 2. NWPs do not obviate the need to obtain other Federal, state, or local permits, approvals, or authorizations required by law.
 3. NWPs do not grant any property rights or exclusive privileges.
 4. NWPs do not authorize any injury to the property or rights of others.
 5. NWPs do not authorize interference with any existing or proposed Federal project.
- E. Definitions**
- Best Management Practices (BMPs):** BMPs are policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural. A BMP policy may affect the limits on a development.
- Compensatory Mitigation:** For purposes of Section 10/404, compensatory mitigation is the restoration, creation, enhancement, or in exceptional circumstances, preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable

avoidance and minimization has been achieved.

Creation: The establishment of a wetland or other aquatic resource where one did not formerly exist.

Enhancement: Activities conducted in existing wetlands or other aquatic resources that increase one or more aquatic functions.

Ephemeral Stream: An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Farm Tract: A unit of contiguous land under one ownership that is operated as a farm or part of a farm.

Flood Fringe: That portion of the 100-year floodplain outside of the floodway (often referred to as "floodway fringe").

Floodway: The area regulated by Federal, state, or local requirements to provide for the discharge of the base flood so the cumulative increase in water surface elevation is no more than a designated amount (not to exceed one foot as set by the National Flood Insurance Program) within the 100-year floodplain.

Independent Utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent Stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of Waters of the US: Waters of the US that include the filled area and other waters that are permanently adversely affected by flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent above-grade, at-grade, or below-grade fills that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the US is the threshold measurement of the impact to existing waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and values. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Impacts to ephemeral streams are not included in the linear foot measurement of loss of stream bed for the purpose of determining compliance with the linear foot limits of NWPs 39, 40, 42, and 43. Waters of the US temporarily filled, flooded, excavated, or drained, but restored to preconstruction contours and elevations after construction, are not included in the measurement of loss of waters of the US.

Non-tidal Wetland: A non-tidal wetland is a wetland (i.e., a water of the US) that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open Water: An area that, during a year with normal patterns of precipitation, has standing or flowing water for sufficient duration to establish an ordinary high water mark. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. The term "open water" includes rivers, streams, lakes, and ponds. For the purposes of the NWPs, this term does not include ephemeral waters.

Perennial Stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Permanent Above-grade Fill: A discharge of dredged or fill material into waters of the US, including wetlands, that results in a substantial increase in ground elevation and

permanently converts part or all of the waterbody to dry land. Structural fills authorized by NWPs 3, 25, 36, etc. are not included.

Preservation: The protection of ecologically important wetlands or other aquatic resources in perpetuity through the implementation of appropriate legal and physical mechanisms. Preservation may include protection of upland areas adjacent to wetlands as necessary to ensure protection and/or enhancement of the overall aquatic ecosystem.

Restoration: Re-establishment of wetland and/or other aquatic resource characteristics and function(s) at a site where they have ceased to exist, or exist in a substantially degraded state.

Riffle and Pool Complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Single and Complete Project: The term single and complete project is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers (see definition of independent utility). For linear projects, the single and complete project (i.e., a single and complete crossing) will apply to each crossing of a separate water of the US (i.e., a single waterbody) at that location. An exception is for linear projects crossing a single waterbody several times at separate and distant locations: each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies.

Stormwater Management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater Management Facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and BMPs, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream Bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream Channelization: The manipulation of a stream channel to increase the rate of water flow through the stream channel. Manipulation may include deepening, widening, straightening, armoring, or other activities that change the stream cross-section or other aspects of stream channel geometry to increase the rate of water flow through the stream channel. A channelized stream remains a water of the US, despite the modifications to increase the rate of water flow.

Tidal Wetland: A tidal wetland is a wetland (i.e., water of the US) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line (i.e., spring high tide line) and are inundated by tidal waters two times per lunar month, during spring high tides.

Vegetated Buffer: A vegetated upland or wetland area next to rivers, streams, lakes, or other open waters which separates the open water from developed areas, including agricultural land. Vegetated buffers provide a variety of aquatic habitat functions and values (e.g., aquatic habitat for fish and other aquatic organisms, moderation of water temperature changes, and detritus for aquatic food webs) and help improve or maintain local water quality. A vegetated buffer can be established by maintaining an existing vegetated area or planting native trees, shrubs, and herbaceous plants on land next to open-waters. Mowed lawns are not considered vegetated buffers because they provide little or no aquatic habitat functions and values. The establishment and maintenance of

vegetated buffers is a method of compensatory mitigation that can be used in conjunction with the restoration, creation, enhancement, or preservation of aquatic habitats to ensure that activities authorized by NWP result in minimal adverse effects to the aquatic environment. (See General Condition 19.)

Vegetated Shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: A waterbody is any area that in a normal year has water flowing or standing above ground to the extent that evidence of an ordinary high water mark is established. Wetlands contiguous to the waterbody are considered part of the waterbody.

F. Regional General Conditions

1. Notifications for all Nationwide permits should include a location map (USGS topographical map) and project drawings on 8 1/2 x 11 paper.
2. Nationwide Permits shall not authorize any activity which impact bogs and/or fens.
3. No Nationwide permit may be used in Lake Erie for purposes of diverting water from the Great Lakes.
4. In order to determine if a project meets the terms and conditions of the Ohio EPA s 401 water quality certification, two copies of the following information is necessary:
 - a. All wetland delineations must include the latest approved version of the Ohio Rapid Assessment Method (ORAM) for wetland evaluation, long form. (This will assist OEPA in determining the category of wetland the applicant proposes to impact.)
 - b. Photographs of the wetland.

NOTE: This information is in addition to the required information listed under General Condition 13 (Notification) of the NWP.

5. Notification is required for all work in the following designated Critical Resource Waters:

Special Habitat water of Lake Erie: Special habitat waters of Lake Erie including the shoreline, off shore islands, rock outcrops, and adjacent waters within the boundaries defined as 82°22'30" West Longitude, 83°07'30" West Longitude, 41°33'00" North Latitude, and 42°33'00" North Latitude.

Piping Plover Critical Habitat: In Ohio, two areas have been designated critical habitat for the piping plover (*Charadrius melodus*) and are defined as lands 0.62 miles inland from normal high water line. Unit OH-1, extends from the mouth of Sawmill Creek to the western property boundary of Sheldon Marsh State Natural Area, Erie County, encompassing approximately 2.0 miles. Unit OH-2, extends from the eastern boundary line of Headland Dunes Nature Preserve to the western boundary of the Nature Preserve and Headland Dunes State Park, Lake County, encompassing approximately 0.5 miles.

Big and Little Darby Creeks (National Wild and Scenic River System): Big Darby Creek from Champaign-Union County line downstream to the Conrail railroad trestle and from the confluence with the Little Darby Creek downstream to the Scioto River. Little Darby Creek from the Lafayette-Plain City Road Bridge downstream to within 0.8 mile from the confluence with Big Darby Creek. Total designation is approximately 82 miles.

Little Beaver Creek (National Wild and Scenic River System): Little Beaver Creek main stem, from the confluence of West Fork with Middle Fork near Williamsport to mouth; North Fork from confluence of Brush Run and North Fork to confluence of North Fork with main stem at Fredericktown; Middle Fork from vicinity of County Rd. 901 (Elkton Road) bridge crossing to confluence of Middle Fork with West Fork near Williamsport; West Fork from vicinity of Co. Rd. 914 (Y-Camp Road) bridge crossing east to confluence of West Fork with Middle Fork

near Williamsport. Total designation is 33 miles.

Little Miami River: Scenic component of the National System from Clifton to Foster. The portion from Foster to the Ohio River was designated a Recreational component of the National system. Total designation is 92 miles.

6. Notification is required for all activities in state Wild and Scenic Rivers (see list below). The following are State Wild and Scenic Rivers:

Little Miami River - Clermont County line at Loveland to headwaters, including North Fork, Clermont County line at Loveland to confluence with East Fork and from the confluence with East Fork to Ohio River. Miles designated (approximate): 105

Sandusky River - US Rt. 30 in Upper Sandusky to Roger Young Memorial Park in Fremont. Miles designated (approximate): 65

Olentangy River - Delaware Dam to Old Wilson Bridge Road in Worthington. Miles designated (approximate): 22

Little Beaver Creek - Wild segments - West Fork from 1/4 mile downstream from Twp. Rd. 914 to confluence with Middle Fork. North Fork from Twp Rd. 952 to confluence with Little Beaver Creek. Little Beaver Creek from confluence of West and Middle Forks downstream to 3/4 mile north of Grimm's Bridge. Scenic segments - North Fork from Ohio-Pennsylvania line downstream to Jackman Road. Middle Fork from Elkton Rd. (Twp. Rd. 901) downstream to confluence with West Fork. Little Beaver Creek from 3/4 mile north of Grimm's Bridge downstream to the Ohio-Pennsylvania line. Miles designated (approximate): Wild 20, Scenic 16

Grand River - Wild segment - from Harpersfield covered bridge downstream to Norfolk and Western Railroad trestle south of Painesville. Scenic segment - from St. Rt. 322 bridge in Ashtabula County downstream to Harpersfield covered bridge. Miles designated (approximate): Scenic 33, Wild 23

Upper Cuyahoga River - Troy-Burton Township line in Geauga County to US Rt. 14. Miles designated (approximate): 25

Maumee River - Scenic segment - Ohio-Indiana line to St. Rt. 24 bridge west of Defiance. Recreational segment - St. Rt. 24 bridge west of Defiance to US Rt. 25 bridge near Perrysburg. Miles designated (approximate): Scenic 43, Recreational 53

Stillwater River System - Recreational segment - Englewood dam to confluence with Great Miami River. Scenic segments - Stillwater River from Riffle Road bridge in Darke Co. to Englewood dam. Greenville Creek from the Ohio-Indiana state line to the confluence with the Stillwater. Miles designated (approximate): Scenic 83, Recreational 10

Chagrin River - Aurora Branch from St. Rt. 82 bridge downstream to confluence with Chagrin. Chagrin River from confluence with Aurora Branch downstream to St. Rt. 6 bridge. East Branch from Heath Road bridge downstream to confluence with Chagrin. Miles designated (approximate): 49

Big and Little Darby Creeks - Big Darby Creek from the Champaign-Union County line downstream to the U.S. Rt. 40 Bridge, from the northern boundary of Battelle-Darby Creek Metro Park to the confluence with the Little Darby Creek downstream to the Scioto River. Little Darby Creek from the Lafayette-Plain City Road Bridge downstream to the confluence with Big Darby Creek. Miles designated (approximate): 84

Kokosing River - Knox/Morrow County line to confluence with Mohican River. North Branch of Kokosing from confluence with East Branch downstream to confluence with main stem. Miles designated (approximate): 48

G. Ohio State Certification General Limitations and Conditions (Water Quality Certification)

1. Streams:

- a. Temporary or permanent impacts to intermittent and perennial streams for any single and complete project are limited to a maximum of two hundred (200) linear feet [except for NWPs 3, 12, 21, 27, and 41];

b. Temporary or permanent impacts to ephemeral streams for any single and complete project are limited to a maximum of three hundred (300) linear feet [except for NWP 3, 12, 21, 27, and 41];

c. Temporary or permanent impacts to Exceptional Warmwater Habitat, Cold Water Habitat, Seasonal Salmonid, or any equivalent designation, or with an antidegradation category of State Resource Water, Superior High Quality Water (except as it applies to Lake Erie), Outstanding National Resource Waters, or Outstanding High Quality Waters are prohibited [except for NWP 3 and maintenance activities covered under NWP 7, 12, and 33];

d. Temporary or permanent impacts to the designated portions of national or state scenic rivers are prohibited [except for NWP 3 and maintenance activities covered under NWP 12];

e. Stream reconstruction activities shall adhere to natural channel design techniques;

f. Off-site stream or buffer improvements and/or mitigative measures required by the Corps:

i. In order of priority, these measures shall focus on 1) the stream segment being impacted, 2) upstream segments and tributaries, 3) the receiving stream. The measures should, to the extent practicable, consider the causes and sources of impairment of the stream where the measures would be undertaken if the stream is listed as impaired in the most recent final report submitted to the United States environmental protection agency by the director of Ohio EPA to fulfill the requirements of Section 303(d) of the Clean Water Act. The current list of impaired streams, as of the date of this certification, can be found on the Ohio EPA web site at (Tables 1 through 6):

<http://www.epa.state.oh.us/dsw/tmdl/303dnote.html>

ii. If the applicant cannot find appropriate mitigation on streams listed in section a) above, mitigation shall be in the Ohio EPA 8-digit watershed.

g. On-site stream or buffer improvements and/or mitigative measures required by the Corps:

i. Vegetative buffers on both stream banks an appropriate length; and

ii. A minimum width of 25 feet for preservation of existing vegetative buffers; or

iii. A minimum width of 50 feet for re-vegetating buffers cleared during construction.

h. Compensatory mitigation for linear projects (e.g., highways) in streams may be mitigated for by the following, in descending order of practicability:

i. Stream impacts associated with a linear project may be mitigated on-site, defined as within one mile of the linear project, in each Ohio EPA 8-digit watershed as shown in OAC 3745-1-54(F)(2); or

ii. Stream impacts associated with a linear project may be mitigated at a single stream mitigation location or stream mitigation bank (if and when such a bank is established), acceptable to the director, within each Ohio EPA 8-digit watershed in which such impacts occur; or

iii. If no stream mitigation bank, acceptable to the director, is located within the Ohio EPA 8-digit watershed in which the impact occurs, then mitigation may occur in another Ohio EPA 8-digit watershed impacted by the linear project; at a single stream mitigation location, or a stream mitigation bank, acceptable to the director; or

iv. If no stream mitigation bank exists within any of the watersheds connected with the linear project, then mitigation should occur within the watershed in which the largest impacts (in terms of area) occur.

2. Wetlands:

a. Temporary or permanent impacts to Category 3 wetlands are prohibited.

b. Temporary or permanent impacts to Category 1 and 2 wetlands for any single and complete project are limited to a maximum total of ½ acre [except for NWP 21 & 27].

c. Wetland mitigation shall adhere to the requirements set forth in Ohio EPA's Wetland Water Quality Standards (OAC 3745-1-50 through 54). [In the event that suitable mitigation cannot be located on-site (within one mile) or within the watershed, mitigation may be located outside of the watershed if there are significant ecological reasons to do so].

3. General:

a. Impacts shall be measured linearly from upstream to downstream, including the length of stream impoundments, when calculating the total length of stream impacts [except for NWP 12, for which impacts shall be measured bank-to-bank].

b. NWP's cannot be combined to increase any of the aforementioned limitations.

c. Authorization under this Certification does not relieve the permittee from the responsibility of obtaining any other federal, state or local permits, approvals or authorizations required by law, including without limitation, National Pollutant Discharge Elimination System (NPDES) permits or Permits to install (PTIs).

d. In order to control pollution of public waters by soil sediment from accelerated stream channel erosion and flood plain erosion caused by accelerated stormwater runoff from development areas, permittees shall comply with Ohio Administrative Code 1501:15-1-05 Stream Channel and Floodplain Erosion, or successor rule, as applicable to the project pursuant to OAC 1501:15-1-02.

e. OAC 1501:15-1-05 states that the peak rates of runoff from an area after development may be no greater than the peak rates of runoff from the same area before development for all twenty-four-hour storms from one to one-hundred-year frequency.

f. Locally required post development stormwater ponds shall incorporate specific design features for water quality such as those listed in Chapter One of the Ohio Department of Natural Resource's Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection. 2nd Ed. Mecklenburg, Dan. Ohio Department of Natural Resources, Division of Soil and Water Conservation. 1996 (or successor document), to the extent allowed by local stormwater requirements. These features include: infiltration trenches, extended detention, wet pools, forebays, aquatic benches and wetlands, optimum flow length, reverse flow pipe, optimum pool depth, shading and buffer plants, and runoff reuse.

g. The Best Management Practices (BMPs) listed below shall be utilized with all NWP's when applicable.

i. The filling of, and discharge of dredged material into, Category 3 wetlands is prohibited under this permit;

ii. Only suitable material, free of toxic contaminants in other than trace quantities, shall be used as fill material;

iii. The use of asphalt and rubber tires as fill is prohibited under this permit;

iv. All hydric topsoil removed from a trench shall be separated and saved for later placement as the topmost backfill layer when the trench is refilled;

v. The stockpiling of side-cast dredged material in wetlands in excess of three (3) months is prohibited;

vi. The applicant will comply with all requirements for final stabilization of the site contained in applicable NPDES construction stormwater permits for the site;

vii. Vegetated buffer strips extending to the top of both stream banks and beyond as stipulated by the Corps or Ohio EPA, using native tree and shrub species with rapid growth characteristics, shall be planted as soon as practicable after impacting stream channel slopes;

viii. Impacts to surface water buffer vegetation shall be minimized to the maximum extent practicable;

ix. Excavating equipment shall not be placed below the Ordinary High Water Mark (OHWM) of any surface water, except when no other alternative is practicable. When no other alternative is practicable to placing excavating equipment below the OHWM, entry to surface waters shall be through a single point of access per stream bank whenever practicable to minimize disturbance to buffer vegetation;

x. In-stream activities shall not result in the permanent destabilization of the stream banks or stream bed so that degradation to aquatic habitat from turbidity, erosion or scouring is minimized;

xi. In-stream work shall be conducted during low-flow conditions whenever practicable in order to minimize adverse impacts to water quality away from the project site, except in cases of emergency situations which threaten human life or property;

xii. All dredged material placed at an upland site shall be controlled so that sediment runoff to remaining streams and wetlands is minimized to the maximum extent practicable; and

xiii. Disturbed areas shall be controlled so that sediment runoff to remaining streams and wetlands is minimized to the maximum extent practicable.

INFORMATION ON NATIONWIDE PERMIT VERIFICATION

Verification of the applicability of this Nationwide permit is valid for two years from the date of affirmation unless the Nationwide permit is modified, suspended or revoked. This verification will remain valid for two years if during this two year period the Nationwide permit is reissued without modification or your activity complies with any subsequent permit modification. Please note that if you commence or are under contract to commence this activity in reliance of your permit prior to the date this Nationwide permit is suspended or revoked, or is modified such that your activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of this permit, unless this permit has been subject to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the Nationwide Permit program. A public notice announcing any changes will be issued when they occur. Finally, note that if your activity is not undertaken within the two year period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

Possession of this permit does not obviate you of the need to contact all appropriate state and/or local governmental officials to insure that the project complies with their requirements.

NATIONWIDE PERMIT SPECIAL CONDITIONS

1. You must possess prior to placement all necessary Coast Guard authorizations for the buoys, and must abide by all conditions of those authorizations.
2. Your use of the permitted activity must not interfere with the public's right to free navigation.
3. The permittee shall provide a copy of the validated permit to the contractor(s) performing the work to ensure that the contractor(s) are familiar with the terms and conditions of the authorization.

4. You must avoid disturbance to any elements of shipwrecks during placement.