

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 AUTH. NAME AUTHOR AFFILIATION
 MANNO, S.F. Niagara Mohawk Power Corp.
 RECIP. NAME RECIPIENT AFFILIATION
 SCHWENCER, A. Licensing Branch 2

SUBJECT: Forwards revised detailed const plan, reflecting listed changes to 790628 submittal, per NRC 771205 request for addl info re revetment-ditch. Const scheduled to begin during Spring 1983. Approval of const plan requested by 821101.

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	REG FILE 04	1	1	RGN1	2 2
	RM/DDAMI/MIB	1	0		
EXTERNAL:	ACRS 41	6	6	BNL (AMDTS ONLY)	1 1
	DMB/DSS (AMDTS)	1	1	FEMA-REP DIV 39	1 1
	LPDR 03	1	1	NRC PDR 02	1 1
	NSIC 05	1	1	NTIS	1 1

THE UNITED STATES OF AMERICA
 DEPARTMENT OF THE ARMY
 OFFICE OF THE CHIEF OF STAFF
 WASHINGTON, D. C.

REPORT OF THE CHIEF OF STAFF
 ON THE STATE OF THE ARMY
 FOR THE YEAR 1964

THE ARMY IS A GREAT AND VALUABLE PART OF OUR NATIONAL DEFENSE. IT IS A FORCE OF GREAT COURAGE AND BRAVERY, AND IT IS A FORCE OF GREAT SKILL AND ABILITY.

Category	Item	Value	Unit	Notes
Personnel	Active Personnel	1,000,000	Personnel	Includes all active military personnel
	Reserve Personnel	500,000	Personnel	Includes all reserve military personnel
	Contract Personnel	100,000	Personnel	Includes all contract military personnel
	Retired Personnel	200,000	Personnel	Includes all retired military personnel
	Officer Personnel	100,000	Personnel	Includes all active and reserve officer personnel
	Enlisted Personnel	900,000	Personnel	Includes all active and reserve enlisted personnel
	Female Personnel	50,000	Personnel	Includes all active and reserve female personnel
	Male Personnel	950,000	Personnel	Includes all active and reserve male personnel
	White Personnel	850,000	Personnel	Includes all active and reserve white personnel
	Black Personnel	100,000	Personnel	Includes all active and reserve black personnel
Equipment	Small Arms	1,000,000	Equipment	Includes all small arms and accessories
	Infantry Weapons	500,000	Equipment	Includes all infantry weapons and accessories
	Artillery Weapons	200,000	Equipment	Includes all artillery weapons and accessories
	Armor Weapons	100,000	Equipment	Includes all armor weapons and accessories
	Aviation Weapons	50,000	Equipment	Includes all aviation weapons and accessories
	Special Forces Weapons	20,000	Equipment	Includes all special forces weapons and accessories
	Engineering Equipment	100,000	Equipment	Includes all engineering equipment and accessories
	Medical Equipment	50,000	Equipment	Includes all medical equipment and accessories
	Transportation Equipment	50,000	Equipment	Includes all transportation equipment and accessories
	Communication Equipment	50,000	Equipment	Includes all communication equipment and accessories
Budget	Total Budget	100,000,000,000	Budget	Total budget for the Army
	Personnel Budget	50,000,000,000	Budget	Budget for personnel
	Equipment Budget	30,000,000,000	Budget	Budget for equipment
	Construction Budget	10,000,000,000	Budget	Budget for construction
	Research and Development Budget	5,000,000,000	Budget	Budget for research and development
	Medical Budget	2,000,000,000	Budget	Budget for medical services
	Transportation Budget	2,000,000,000	Budget	Budget for transportation services
	Communication Budget	1,000,000,000	Budget	Budget for communication services
	Other Budget	1,000,000,000	Budget	Other budget items
	Actual Budget	95,000,000,000	Budget	Actual budget for the Army

SAMUEL F. MANNO
VICE PRESIDENT
NUCLEAR CONSTRUCTION

September 21, 1982

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 2
Docket NO. 50-410

Dear Mr. Schwencer:

In a letter dated December 5, 1977, the Nuclear Regulatory Commission's Mr. S. Varga requested information regarding construction of the revetment-ditch system at the Nine Mile Point Unit 2 site. As a result of this request, Niagara Mohawk submitted a detailed construction plan to your office in a letter dated June 28, 1979. Since that date, additional engineering review has yielded certain minor changes to the detailed plan previously submitted. These changes are as follows:

1. Reinforced concrete armor units will constitute the cover layer. Previously, this was identified as a construction option.
2. A granular filter will replace the filter cloth used to separate the third underlayer from any in situ material.


The granular filter will function in an identical manner to the filter cloth. The granular filter is superior to the filter cloth from a constructability standpoint.

A revision to the detailed construction plan which reflects the above changes is attached. Changes are denoted by vertical markings in the right hand margin.

Construction is scheduled to begin in the Spring of 1983. Since your letter indicated that these items must be reviewed and approved prior to the initiation of construction, your approval of our detailed construction plan is requested by November 1, 1982.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION


Samuel F. Manno

Vice President Nuclear Construction

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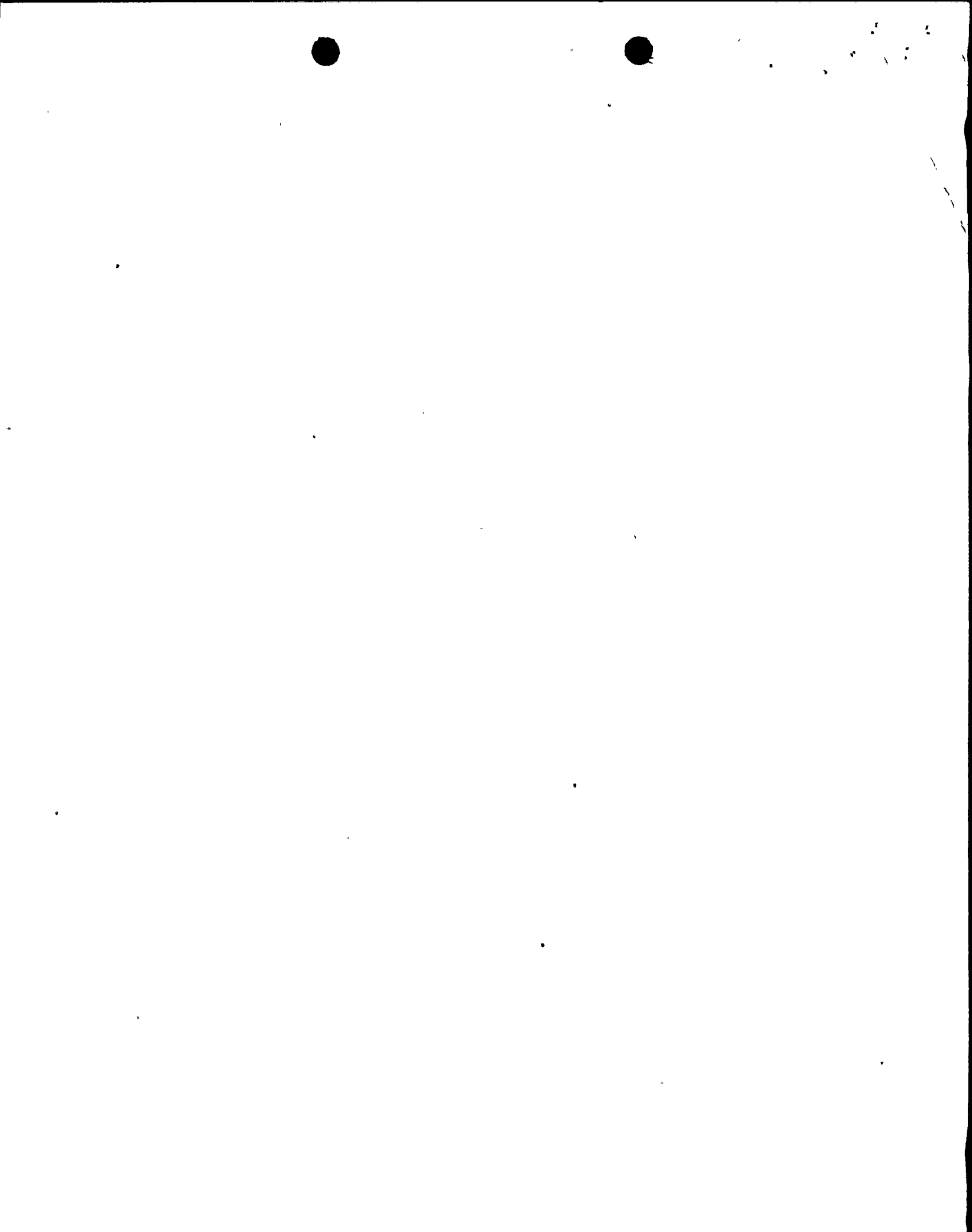
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RESPONSES TO NRC REQUESTS
FOR ADDITIONAL INFORMATION
REGARDING THE REVETMENT-DITCH
DATED DECEMBER 5, 1977
REVISED AUGUST 1982

DOCKET NO. 50-410

NINE MILE POINT UNIT 2
NIAGARA MOHAWK POWER CORPORATION



REQUEST 1

We will require a detailed plan regarding the construction of the revetment-ditch at the Nine Mile Point Unit 2 site which shall include, as a minimum, the following items:

- (a) Construction and placing methods with documentation to verify that the prototype reproduces the model tested.
- (b) Information regarding the construction specialist who will be responsible for the actual construction of the prototype, including his qualifications, education, and job experience.
- (c) In-place testing of particular sections to verify the placement of the armor units and underlayers.

RESPONSE 1a

Section 8.3, Construction Considerations, of the "Design and Analysis Method for Revetment-Ditch System, final report contained some construction specification requirements which will be included in the prototype revetment-ditch system construction specification in order that the prototype reproduces the model tested. Additional specification requirements are provided below.

The existing overburden beneath the armor units and underlayers will be excavated to bedrock, and existing overburden at the proposed ditch area will be excavated to specified lines and grades. Any soft, loose, or deleterious soils, which are encountered and which are not suitable as foundation materials, will be excavated and backfilled to specified grades with controlled granular material. The area will be graded and sloped to route runoff away from the work area without erosion or ponding.

Placement of a granular filter and stone will follow the grading operations as soon as practicable. Damaged subgrades will be repaired prior to placement of the granular filter and underlayers.

The lateral drainage ditch will be constructed with a minimum slope of 0.5 percent, from a high point located about midway between outlets to the lake.



The size and specific gravity requirements of the armor units and underlayers are contained in Section 8.3 of the aforementioned final report. The backslope rock armor units and the rock in the underlayers will be angular to subangular. These requirements assure that the rock used in the prototype will reproduce that used in the model. The prototype underlayer rock will be randomly placed by clamshell bucket, sling, or other approved mechanical method, then graded with minimum segregation of sizes permitted. The placement will start at the toe and proceed up to the slope to the required lines and grades which will be determined by surveying.

The backslope rock armor units in the model were individually and randomly placed by hand to the specified placing densities. The backslope rock armor units in the prototype will be individually placed by approved mechanical methods to the same density as used in the model.

Rock units will not be dropped or cast, but will be placed in such a manner that they will be properly interlocked with the underlayers or adjacent rock units to resist displacement by wave action and form a uniform and compact section.

The concrete armor units used in the model were individually and randomly placed by hand, except for those of the first rank at the toe. These units were placed with their inner flukes lying horizontal, with the horizontal flukes of adjoining pieces touching or almost touching. The remainder of the armor units were randomly placed separately in two layers in sections of identical area and identical numbers. The concrete armor units in the prototype will be individually placed by sling or other approved means to the same density as used in the model, and each armor unit will rest on the embankment before being released.



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RESPONSE 1b

As stated in Section 8.3.6 of the aforementioned report, the contractor selected to construct the revetment-ditch system will be required to engage a revetment construction specialist to advise him on construction methods and procedures. This construction specialist will be the contractor's supervisor for construction of the revetment-ditch system and will be present for the duration of the construction period. He, or any individual who replaces him, will meet the following requirements:

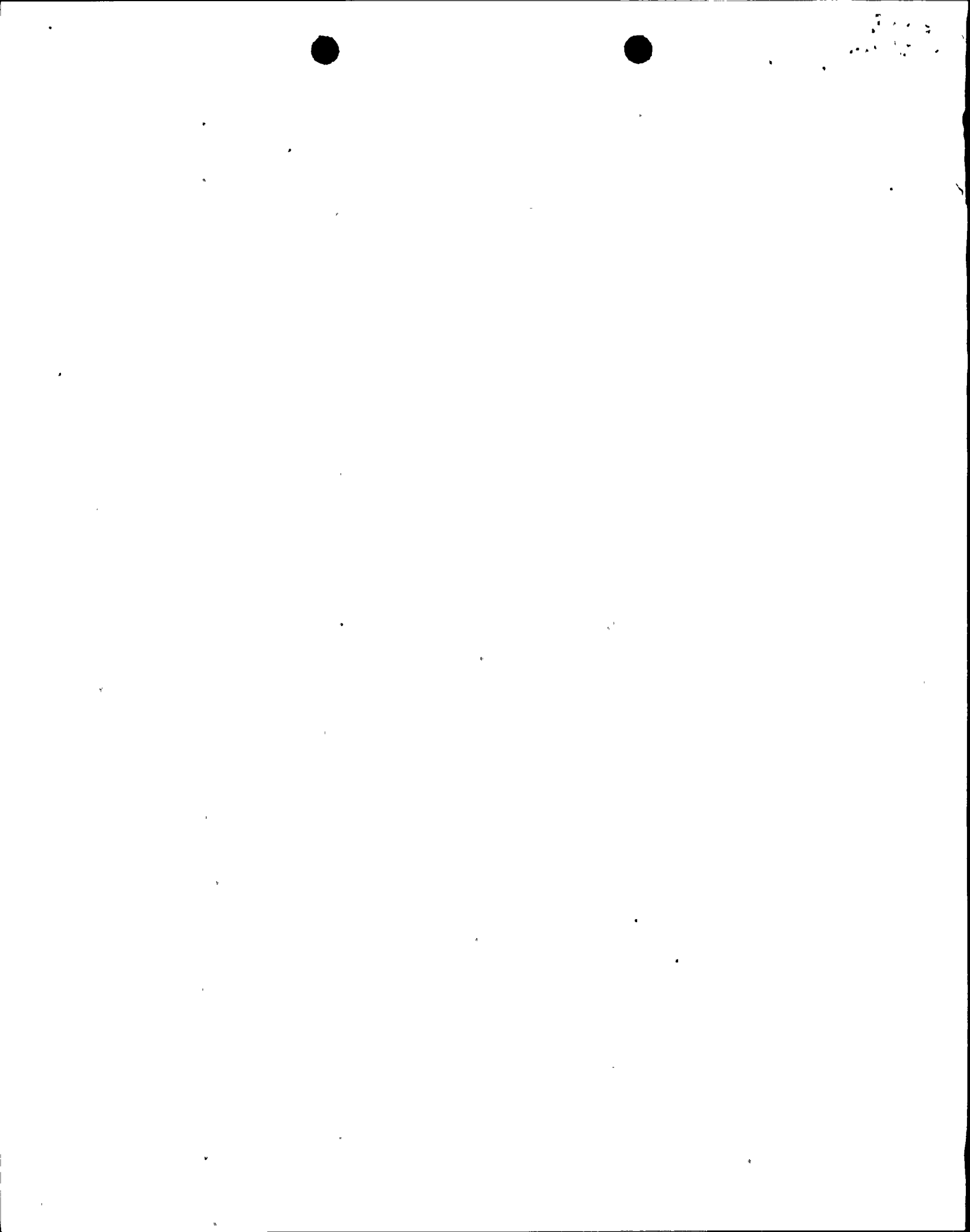
- (1) High school education
- (2) Ten years experience in revetment, jetty, or breakwater construction
- (3) Five years experience as a supervisor of revetment, jetty, or breakwater construction.

RESPONSE 1c

The testing of the revetment-ditch system to verify the compliance of the armor units and underlayers will be as follows:

- (1) The contractor will be required to provide the available service records and the following quality test program for the acceptance of proposed rock sources.
 - (a) Petrographic examination in accordance with ASTM C295.
 - (b) Bulk specific gravity and absorption in accordance with ASTM C127.
 - (c) Abrasion test in accordance with ASTM C535.
 - (d) Freeze and thawing tests in accordance with ASTM D560.
 - (e) Wetting and drying tests in accordance with ASTM D559.
 - (f) Soundness test in accordance with ASTM C88.

If the contractor proposes to furnish rock material from an undeveloped source, or a source opened by minor quarrying or prospecting, the contractor will be required to take core borings at the proposed source or conduct a trial drilling, blasting, and quarrying program to confirm the suitability of rock from the proposed quarry.



- (2) The contractor will be required to provide two sets of samples, meeting specified gradations, of the armor units and the underlayers. One set of samples will be available at the project site, the other at the quarry. These samples will be used as a reference for inspection and approval of the gradations of rock materials supplied. The gradations of the armor stone and underlayers will be tested on a regular basis to ensure that the composition of materials furnished conforms to requirements.
- (3) The thickness lines and grades of each of the various revetment-ditch layers will be surveyed during construction to ensure that both the external and internal configurations of the revetment-ditch and each of its layers matches the model. This will be done by means of surveyed profiles taken at regular stations along the revetment-ditch after placement of each of the layers.

- (4) For the production of reinforced concrete armor units, the contractor will be required to follow the standards specified below to assure that the armor units will be properly constructed and will have a 28-day concrete strength of 4,500 psi. The concrete armor units may be reinforced as necessary.



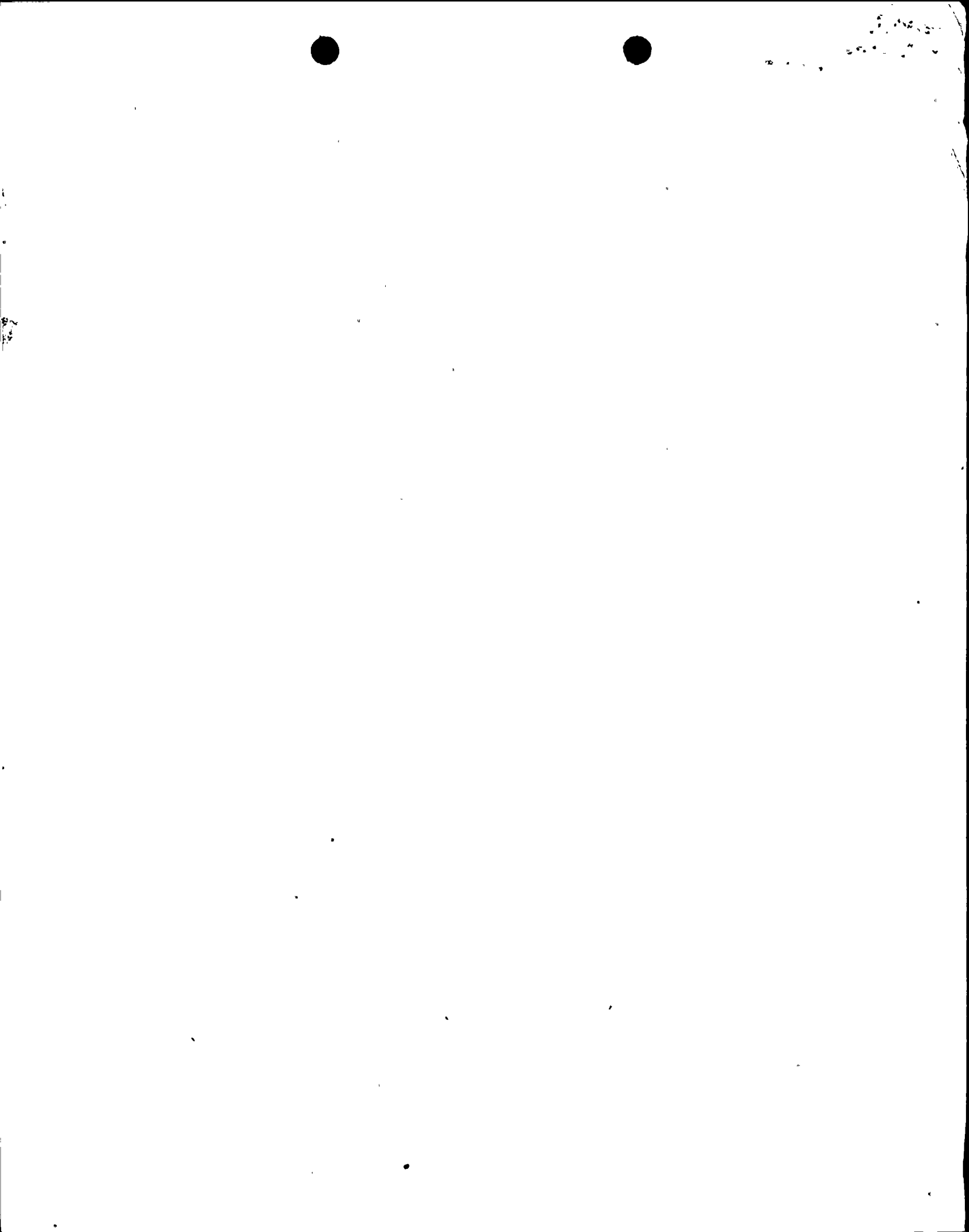
- (a) Aggregates will meet ASTM C33
 - (b) Cement will meet ASTM C150, Type II
 - (c) Mixing water will meet ACI 318
 - (d) Air-entraining agent will meet ASTM C260
 - (e) Water-cement ratio and durability will meet the requirements of ACI 318
 - (f) Any reinforcing steel will meet ASTM A615 for deformed and plain bullet-steel bars or A706 for low-alloy steel deformed bars.
- (5) The placing density of the reinforced concrete armor layer will be checked on a regular basis during construction to verify that the number of armor units per unit area placed is similar to the model tests. All materials used for the construction of concrete armor units will be tested and inspected during construction to assure compliance with standards and specifications.

REQUEST 2

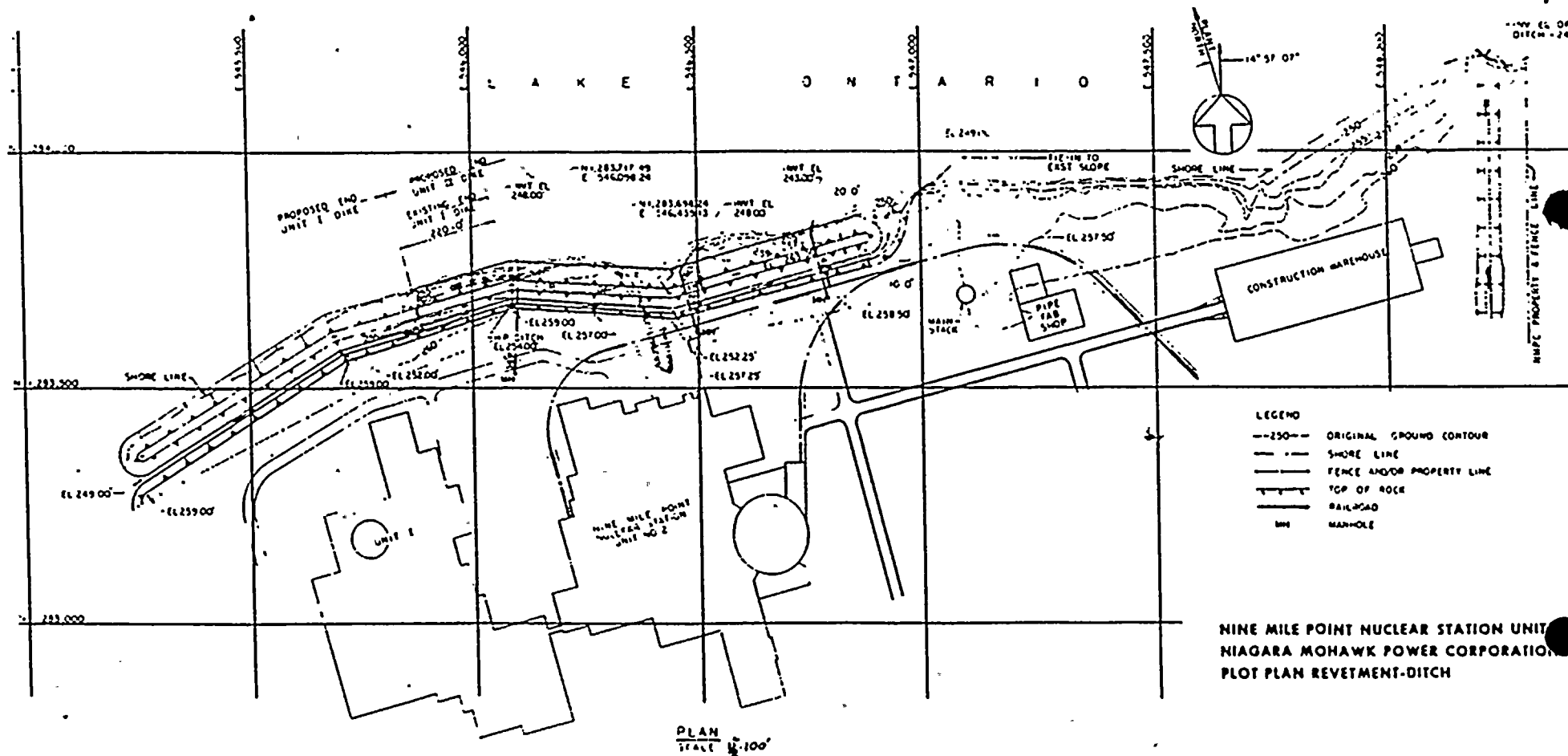
The plan view showing the overall length and alignment of the revetment-ditch with respect to the lake and the principal structures of NMP-2 and adjacent units as appropriate.

RESPONSE 2

Enclosed is a drawing entitled, Plot Plan Revetment Ditch, which shows the overall length and alignment of the revetment-ditch with respect to the lake and the principal structures of Nine Mile Point Unit 2 and adjacent units as appropriate. The revetment-ditch is approximately 1300 feet in length extending from coordinates (based on New York State 500' Coordinate System) N 1, 283, 656; E 545, 870 on the west to N 1, 283, 824; E546, 876 on the east.



L A K E O N T A R I O



- LEGEND
- 250--- ORIGINAL GROUND CONTOUR
 - - - SHORE LINE
 - ===== FENCE AND/OR PROPERTY LINE
 - ==== TOP OF ROCK
 - ==== RAILROAD
 - MM MANHOLE

NINE MILE POINT NUCLEAR STATION UNIT I
 NIAGARA MOHAWK POWER CORPORATION
 PLOT PLAN REVETMENT-DITCH

PLAN
 SCALE 1/4" = 100'

