

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:7904120252 DOC.DATE: 79/04/06 NOTARIZED: NO DOCKET #  
 FACIL:50-315 DONALD C. COOK NUCLEAR POWER PLANT, UNIT 1, INDIANA & 05000315  
 50-316 DONALD C. COOK NUCLEAR POWER PLANT, UNIT 2, INDIANA & 05000316  
 AUTH.NAME AUTHOR AFFILIATION  
 DOLAN,J.E. INDIANA & MICHIGAN POWER CO.  
 RECIP.NAME RECIPIENT AFFILIATION  
 DENTON,H.R. OFFICE OF NUCLEAR REACTOR REGULATION

SUBJECT: REQUESTS SCHEDULE CHANGE IN TWO-UNIT THERMAL PLUME MAPPINGS  
 TO JUNE 1979.ALSO INFORMS NRC OF PROPOSED MOD TO DISCHARGE  
 STRUCTURE SCOUR BED TO ALLEVIATE EROSION PROBLEMS.TWO  
 OVERSIZED STRUCIURAL DRAWINGS ENCL.

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 TITLE: CHANGE REQUESTS FOR ENVIRON. TECH SPECS (APPEND B).

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# INDIANA & MICHIGAN POWER COMPANY

P. O. BOX 18  
BOWLING GREEN STATION  
NEW YORK, N. Y. 10004

April 6, 1979  
AEP:NRC:00170

Donald C. Cook Nuclear Plant Units 1 and 2  
Docket Nos. 50-315 and 50-316  
License Nos. DPR-58 and DPR-74  
Appendix B Technical Specifications

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Denton:

By this letter we would like (1) to request a schedule change in the two-unit thermal plume mappings for the Donald C. Cook Nuclear Plant and (2) to inform the Commission of a proposed modification to the discharge structure scour bed.

Specification 4.1.1.2 of the Environmental Technical Specifications for the Donald C. Cook Nuclear Plant specified four periods for two-unit thermal plume studies. The last of such studies was to be completed by May 15, 1979, with the final monitoring period running from April 15 to May 15, 1979. However, with Unit 1 coming down for refueling on April 6, 1979 and not returning to 75 percent power until after June 1, 1979, the original schedule cannot be adhered to for the last study.

In order to complete the plume mapping studies during 1979, we would like to extend the April 15 - May 15 monitoring period on into June, 1979. As proposed, the final plume mappings would be performed as soon as practical after Unit 1 startup following refueling. We request your approval of the proposed revised schedule.

We wish to inform you now about a modification to the Unit 1 discharge structure scour bed. This modification will be initiated and completed during the forthcoming refueling outage of the Unit. The same modification will be initiated to the Unit 2 discharge structure at a later date, if required.

The discharge structure is located 1198 ft. from the screen house, approximately 900 feet offshore at a depth of about 18 feet. The existing scour bed is made up of riprap ranging in size from 5 to 500 pounds. The region directly in front of the nozzles and within the limits of the iceguards is grouted. These iceguards extend about the total periphery of the discharge structure.

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*w/attach  
41400.00  
Cook  
3/0  
Drawings  
Files*

The problem encountered is twofold and stems from the need to have a high velocity for mixing the outflow with the ambient water. The approximate average exit velocity is 13 feet per second at the nozzles. The first aspect of the problem is that as the water exits the structure it entrains the surrounding water and sets it into motion. This motion can cause movement among the neighboring stones. Secondly, as the water exits the structure, it is affected by the presence of wave action. As a zone of local high pressure passes over the nozzles, it deflects the jet downwards to form a trench in the scour bed. The riprap then piles up and deflects the jet upwards to the surface of the lake where disturbance of the surface water is visible. The plan and section of the present conditions are shown on Drawing No. 12-3721-6, attached.

As a temporary measure, the existing riprap was regraded and levelled to its original design elevation. Nevertheless, the erosion problems continued. A permanent solution was sought and a concrete scour bed was chosen. The plan and section of the proposed scour bed are shown on Drawing No. 12-3722, also attached.

The following procedure will be used to place the concrete scour bed. First, the existing riprap will be graded to approximate elevation of 558 feet. This will halt the undermining problem. The second step is to create a mattress with 1½"-5" stones placed to an elevation of 559'-2". This mattress stone is much easier to level than the original riprap due to the smaller dimensions of the stones used. This solid scour bed would prevent entrainment of water under the structure. The next step would be to pour 2 feet of concrete over the mattress stone. Concrete will also be placed within the confines of the iceguards which extend 6 feet out from the structure. This area includes the sections in front of the nozzles as well as the sections on the sides for a total length of 129'-2-5/8". Any unused riprap will be used to alleviate any discontinuities of elevation between the concrete scour bed and the original riprapped scour bed elevation.

We expect that these repairs will alleviate the erosion problems that are presently occurring in the scour bed and directly affecting the operation of the discharge structure.

As per the guidelines furnished in 10 CFR 170, we classify this submittal as a Class III Amendment. Check No. 199681 in the amount of \$4,400 is enclosed to cover the processing fee.

JED: em

Very truly yours,

*John E. Dolan*  
John E. Dolan  
Vice President

Sworn and subscribed to before me  
this 6<sup>th</sup> day of April, 1979 in  
New York County, New York

*Kathleen Barry*  
Notary Public

KATHLEEN BARRY  
NOTARY PUBLIC, State of New York  
No. 41-4656792  
Qualified in New York County  
Certificate No. 41-4656792  
Commission Expires March 20, 1981

Mr. Harold R. Denton

-3-

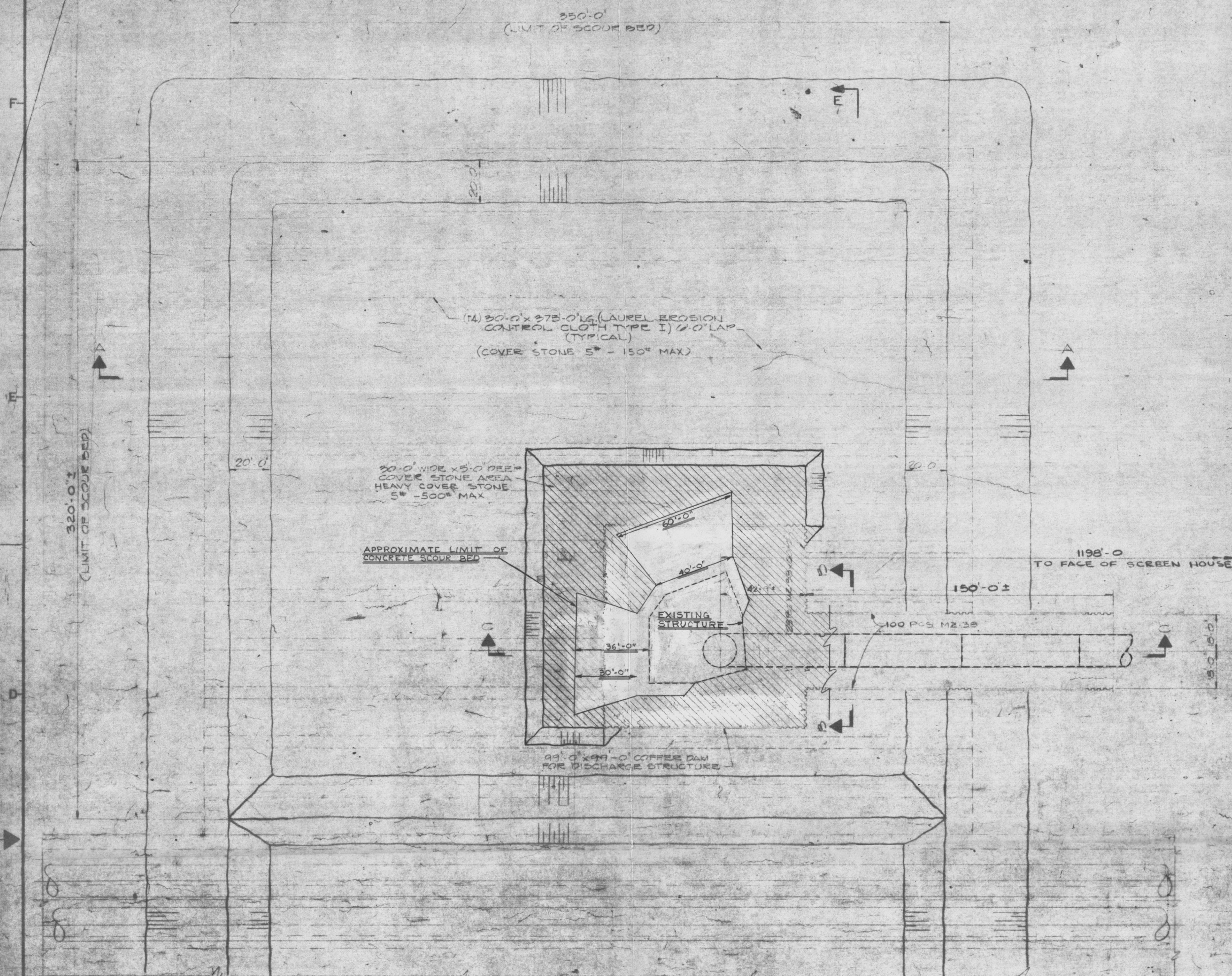
AEP:NRC:00170

cc: R. C. Callen  
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P. W. Steketee  
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R. Walsh  
D. V. Shaller - Bridgman  
R. W. Jurgensen



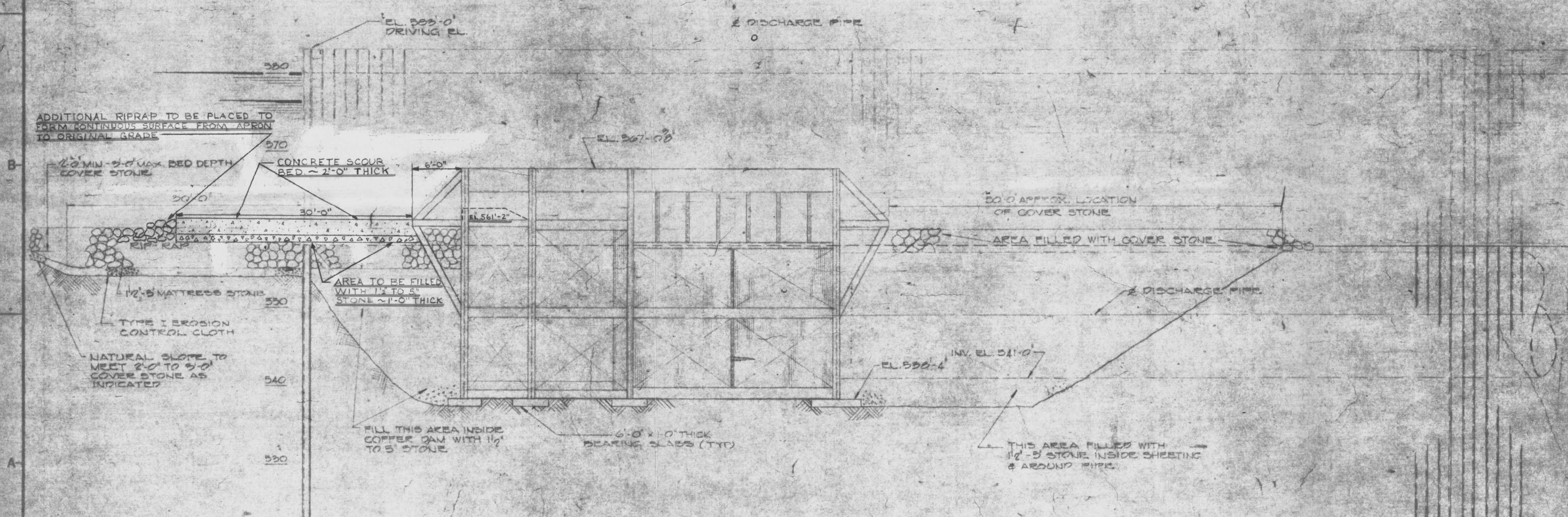






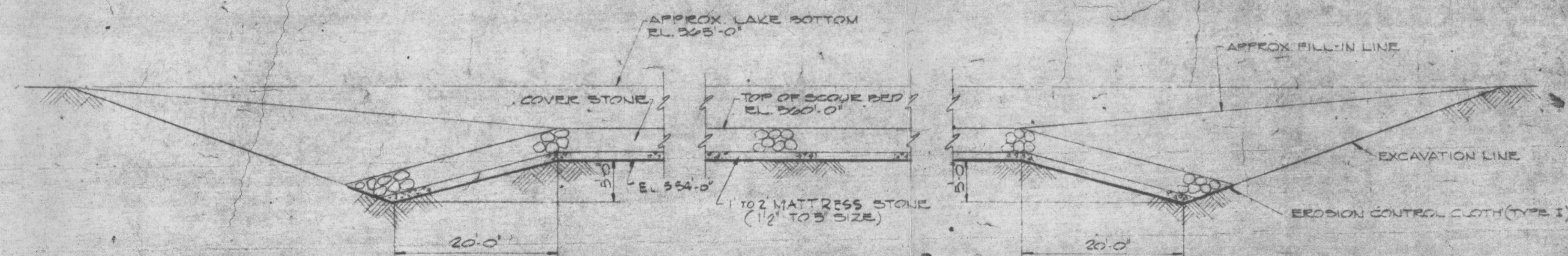
FOR UNIT NO 2 SOUTH DISCHARGE SCOUR BED  
SEE PWG 12-3720

PLAN  
SCALE: 1"=30'-0"



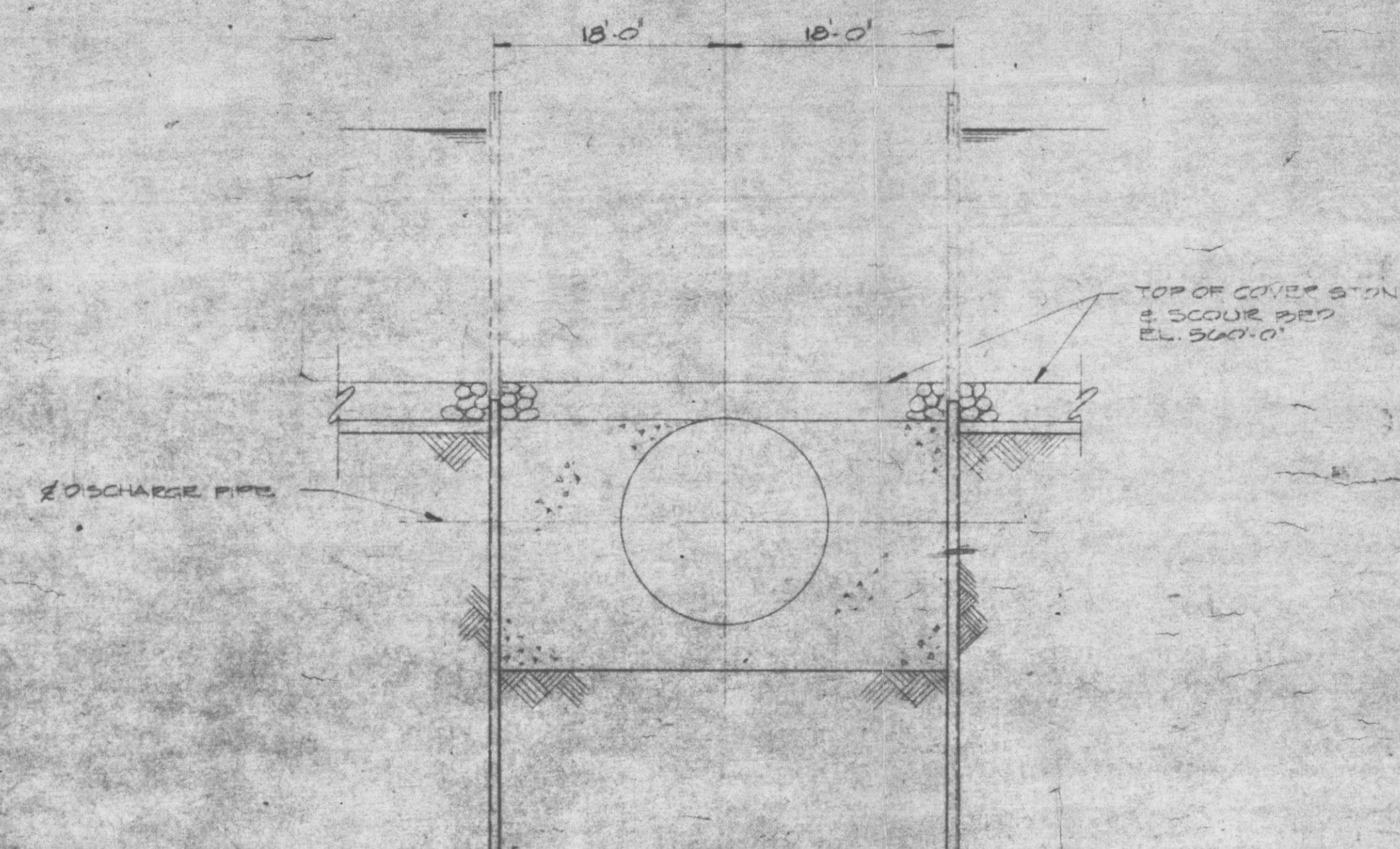
SECTION C-C

(SHOWING STONE IN PLACE AFTER STRUCTURE IS INSTALLED)  
SCALE: 1/4" = 1'-0"



SECTION A-A  
SCALE: 1" = 10'-0"

DISCHARGE PIPE  
6'-0" DIA.



NOTE  
FOR ADD'L INFORMATION  
SEE PGCT'S A-A-C-C

SECTION B-3  
SCALE 1"=10'-0"

## NOTES

REFERENCE DRAWINGS

12-3730	UNIT 2 DISCHARGE STRUCTURE SITE DEVELOPMENT PLAN & SECTIONS
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BULTEMA DOCK & DREDGE CO DWGS  
A72-031 COFFER DAM SHEETING FOR UNIT 1 DISCHARGE  
& BARGE LOCATION  
A72-037 SCOUR BED LAYOUT UNIT 1

7904120252-01

JAN 31 1974



UNIT NO.1 DISCHARGE STRUCTURE  
SITE DEVELOPMENT PLAN & SECTIONS  
DONALD C. COOK NUCLEAR PLANT  
INDIANA & MICHIGAN ELECTRIC CO.  
BRIDGMAN, MICHIGAN

SCALE AS NOTED

DRAWN CARPENTER 3-1-72

CHECKED *S. J. [Signature]* 9-13-7

RECEIVED: *P. L. L.* 1-19-7

APPROVED

R. Berg 1-22-71

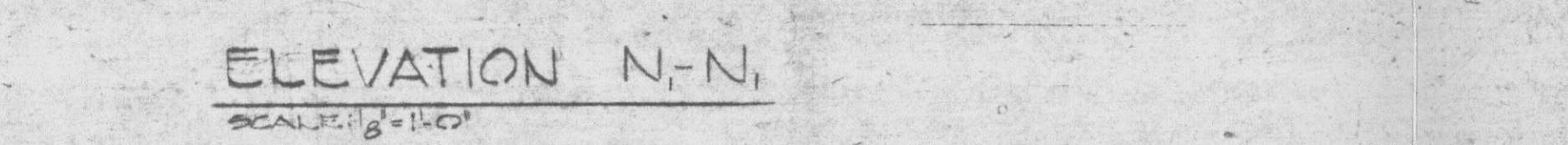
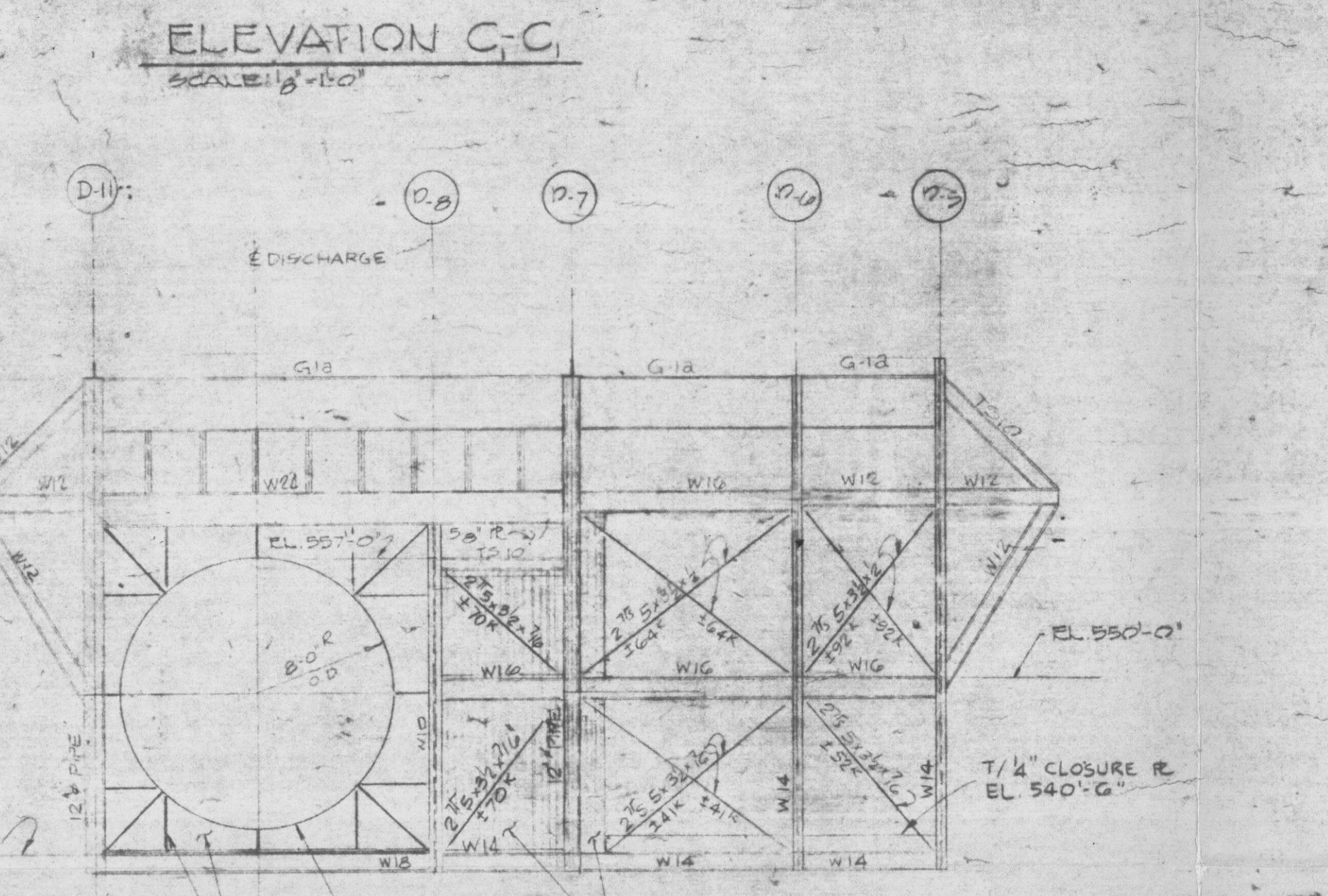
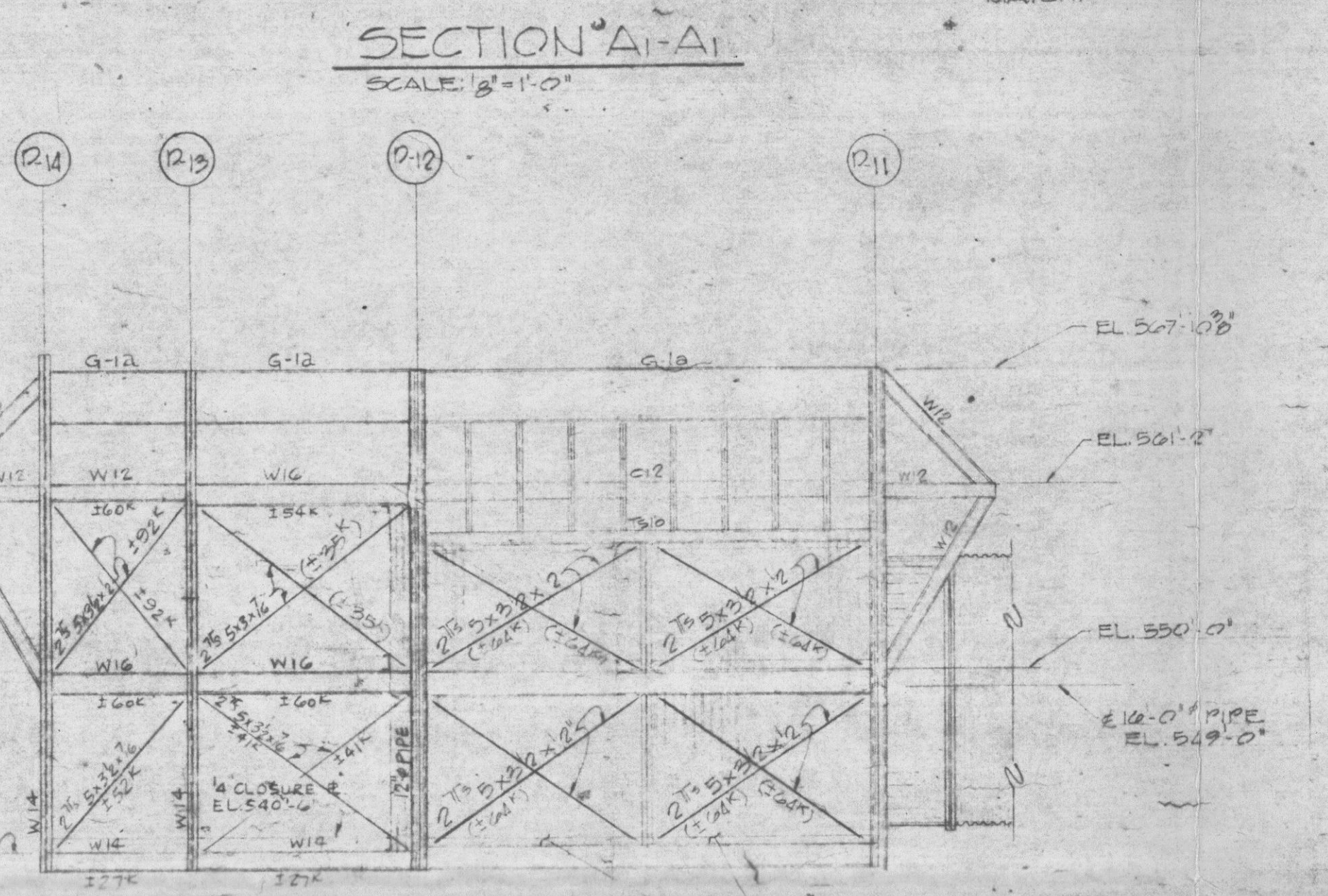
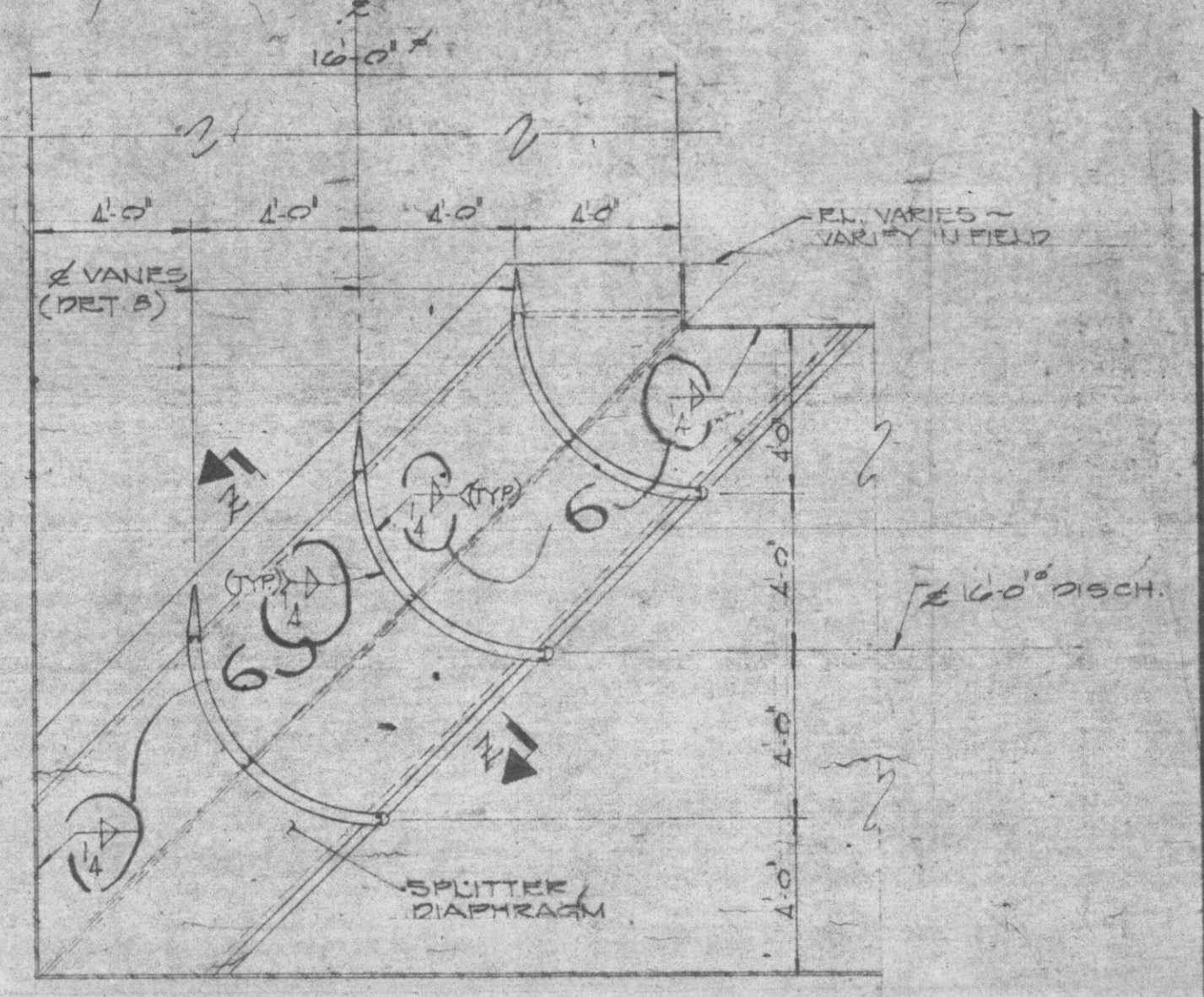
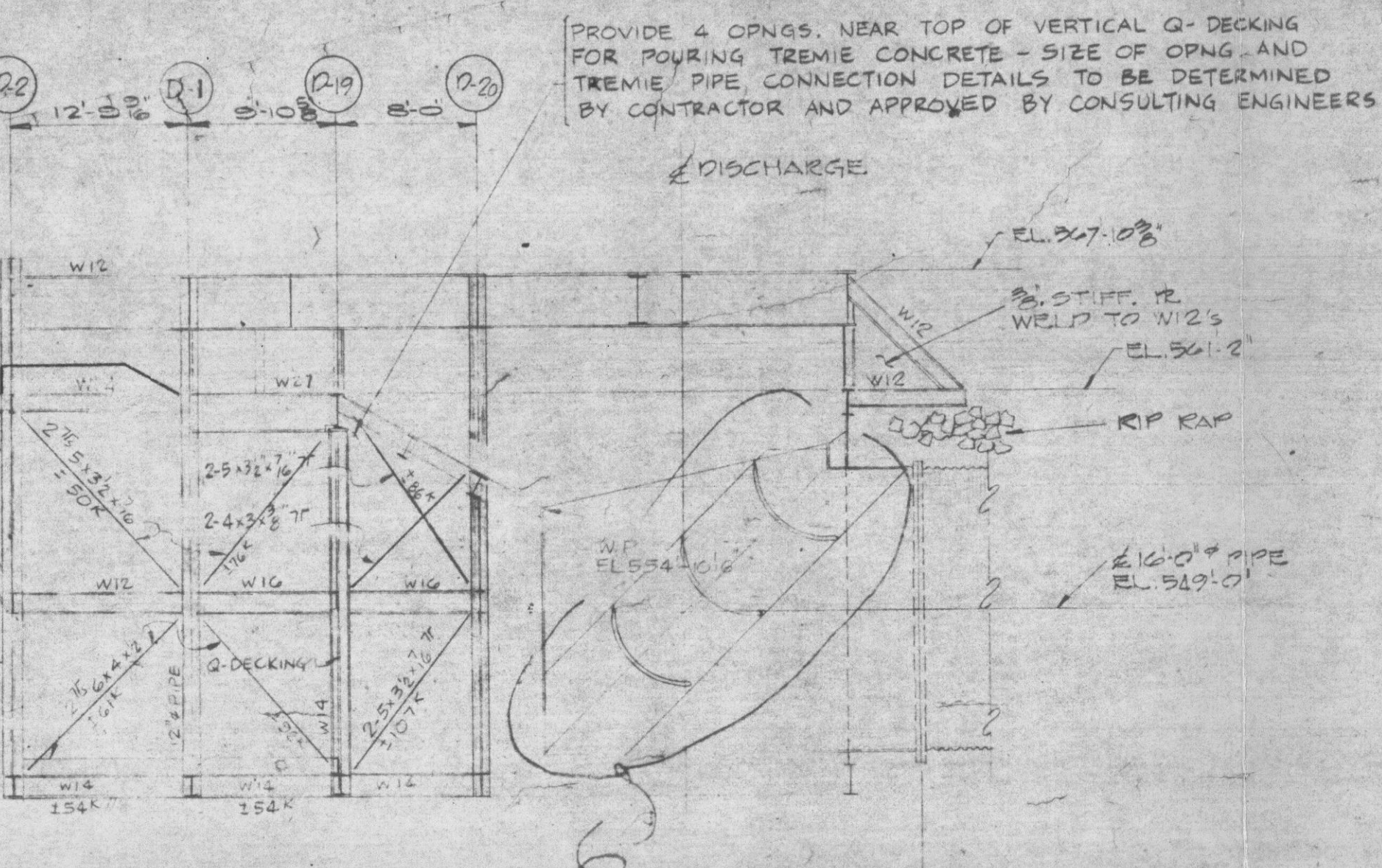
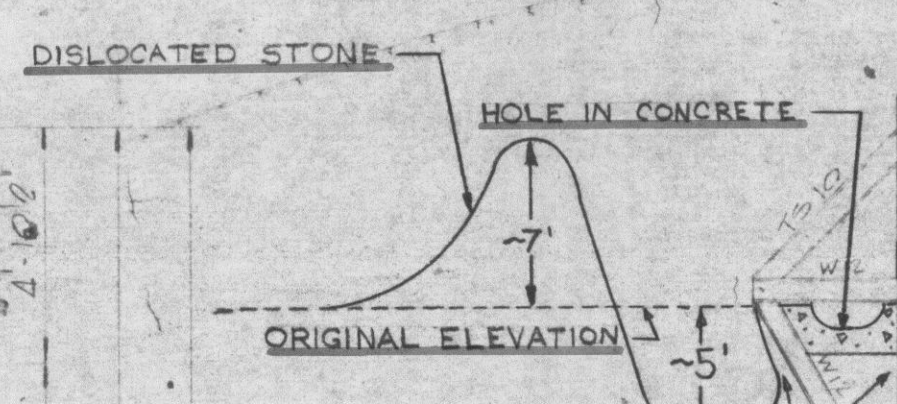
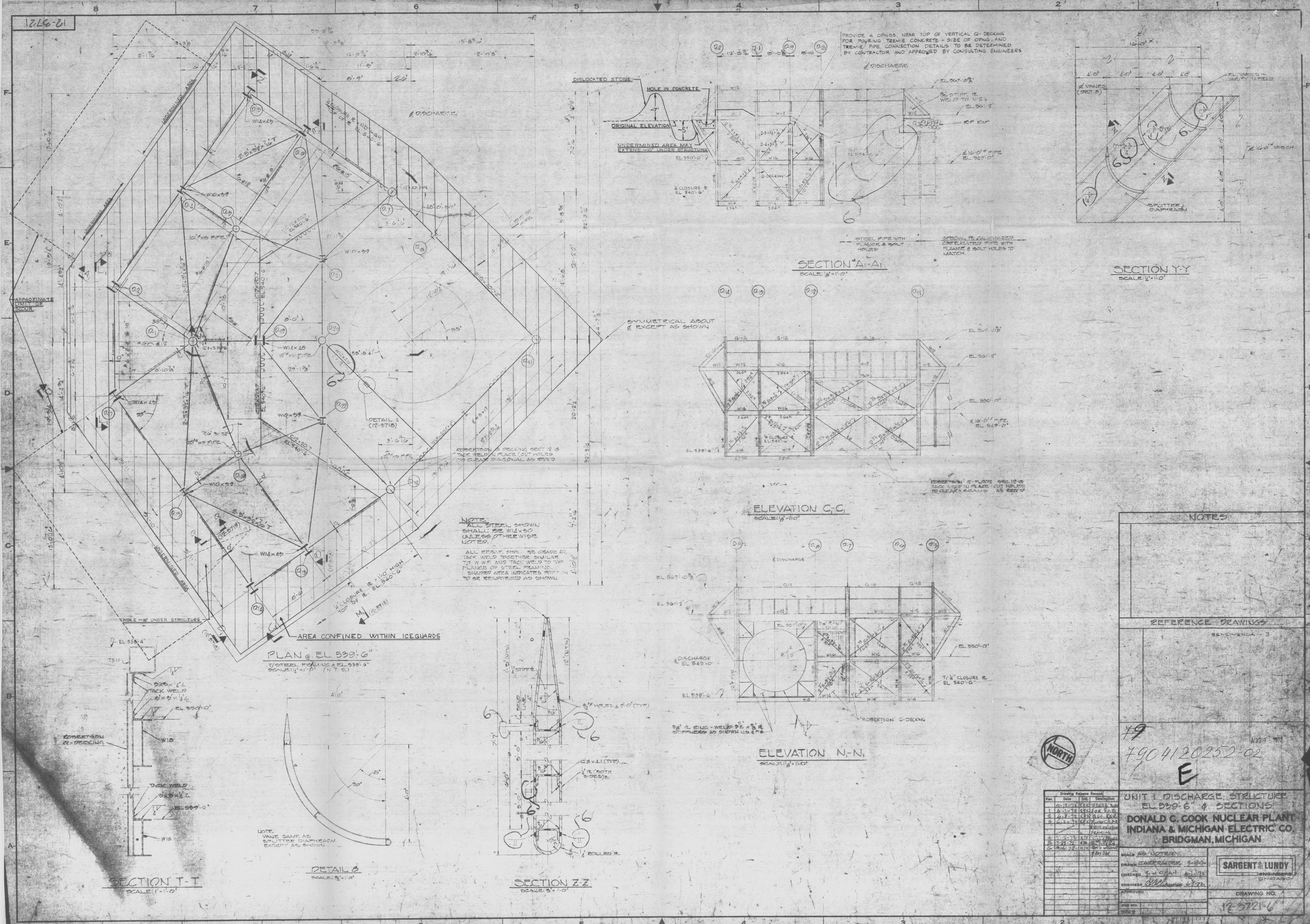
**SARGENT & LUNDY**  
ENGINEERS  
CHICAGO

DRAWING NO.

12-3722



12-5721-21



SECTION Y-Y  
SCALE: 1/4"=1'-0"

ELEVATION C-C  
SCALE: 1/8"=1'-0"

ELEVATION N-N  
SCALE: 1/8"=1'-0"

NOTES

REFERENCE DRAWINGS

REFERENCE - 3

7904120252-02

E

UNIT 1 DISCHARGE STRUCTURE

EL 539'-6" & SECTIONS

DONALD C. COOK NUCLEAR PLANT

INDIANA & MICHIGAN ELECTRIC CO.

BRIDGMAN, MICHIGAN

SCALE: AS NOTED

DRAWN: GARDNER

CHECKED: T.W. CHAN

ENGINEER: SARGENT & LUNDY

APPROVED:

DRAWING NO.

12-5721-6

Rev.	Date	Desc.
1	6-1-78	REVISED
2	6-2-78	REVISED
3	6-3-78	REVISED
4	6-4-78	REVISED
5	6-5-78	REVISED
6	6-6-78	REVISED

SARGENT & LUNDY  
ENGINEERS  
CHICAGO