SAFETY ANALYSIS REPORT

FOR

TRANSPORT OF MILLSTONE UNIT 2 STEAM GENERATOR SUB-ASSEMBLIES

SUBMITTED BY:

NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE STATION
WATERFORD, CONNECTICUT 06385

Revision 3

September, 1992

Prepared By:

Chem-Nuclear Systems, Inc.
140 Stoneridge Drive
Columbia, S.C. 29210

and

Structural Mechanics Associates
3 Drover Road
Brookfield, CT 06805

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7.3 Loading the SGSAs at Millstone

Each SGSA will be loaded onto a trailer specifically designed for transporting heavy loads. Only one SGSA will be loaded per trailer.

In order to load the SGSA onto the trailer, the trailer will be backed beneath the SGSA while the SGSA is being supported in a horizontal position by pedestals in the preparation facility at Millstone Station. The SGSA will then be mounted on a trailer by using the trailer hydraulics, and transported to a transfer area near the barge landing on the Millstone Station site. The SGSA will then be lifted from this trailer and transferred to a wider trailer with greater capacity. This wider trailer will be used to transport the SGSA the remainder of the trip. The SGSA will not be lifted from the trailer during transport, and will always remain in the horizontal orientation.

Once mounted on the trailer, the SGSA will be tied down to the trailer. The tiedown arrangement is generally described in Section 2.

The trailer-mounted SGSA will be driven from the landing onto the barge across a transition ramp specifically designed for this purpose. The transition ramp is designed to support the load of the SGSA and trailer, including a sufficient factor of safety.

7.4 Barge Transport

The barge used for transport of the SGSAs is generally described in Section 2. Only one trailer-mounted SGSA will be transported on a barge.

The trailer and SGSA will be tied down to the barge. The tiedown arrangement is generally described in Section 2.

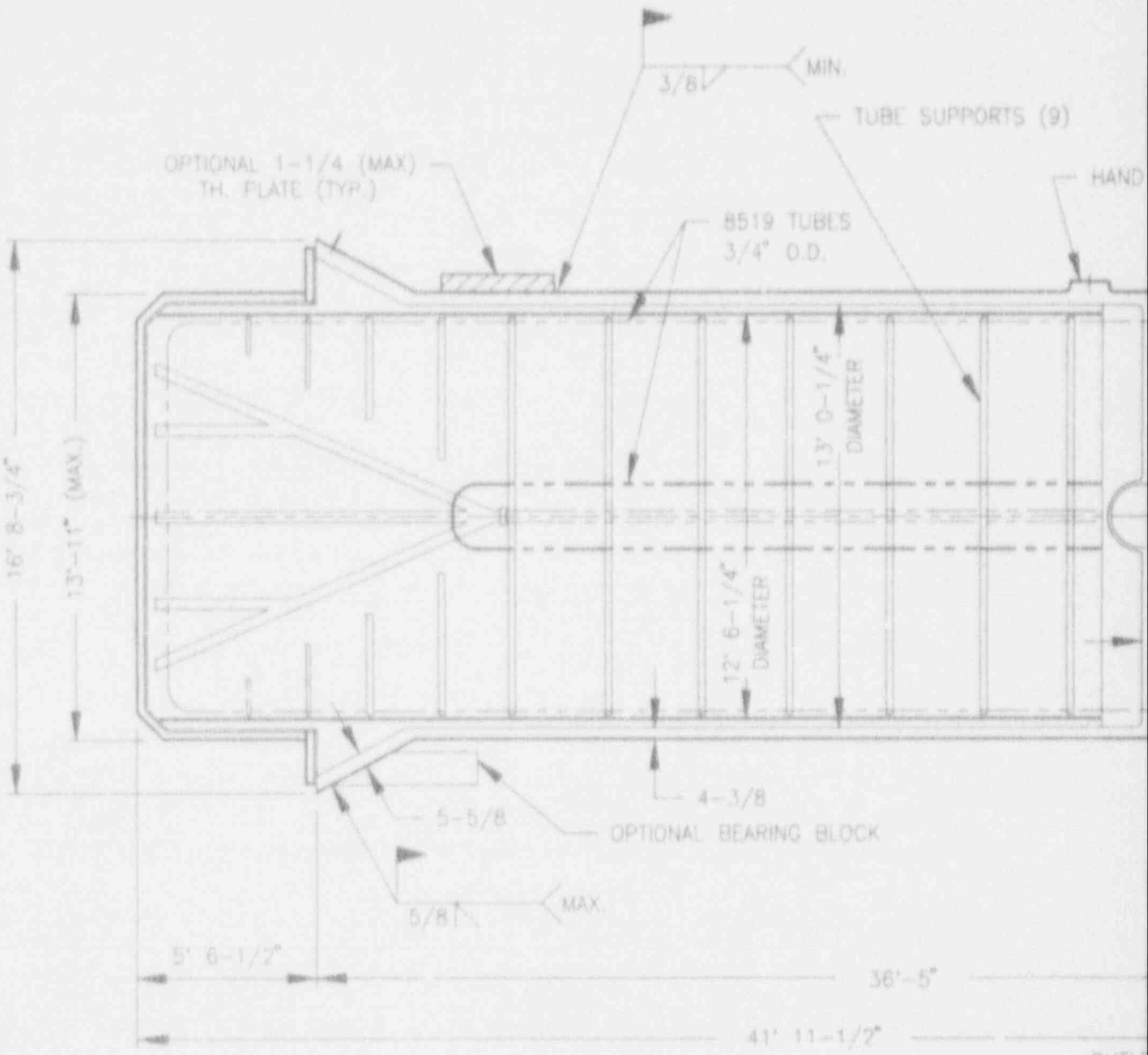
Before the barge departs the Millstone Station for transport, the following will be verified:

1. An escort tug accompanies the primary tug.

2. A means of communication and a backup is available between the tug and a base station. (The escort tug can provide the backup.) The base station will monitor progress of the transport. Communication must be established between the tug and the base station before the tug departs.

3. The tug used to pull the barge and the escort tug's fuel tanks are full.

4. There is no weather between Millstone and SRS that may threaten the safety of the barge.



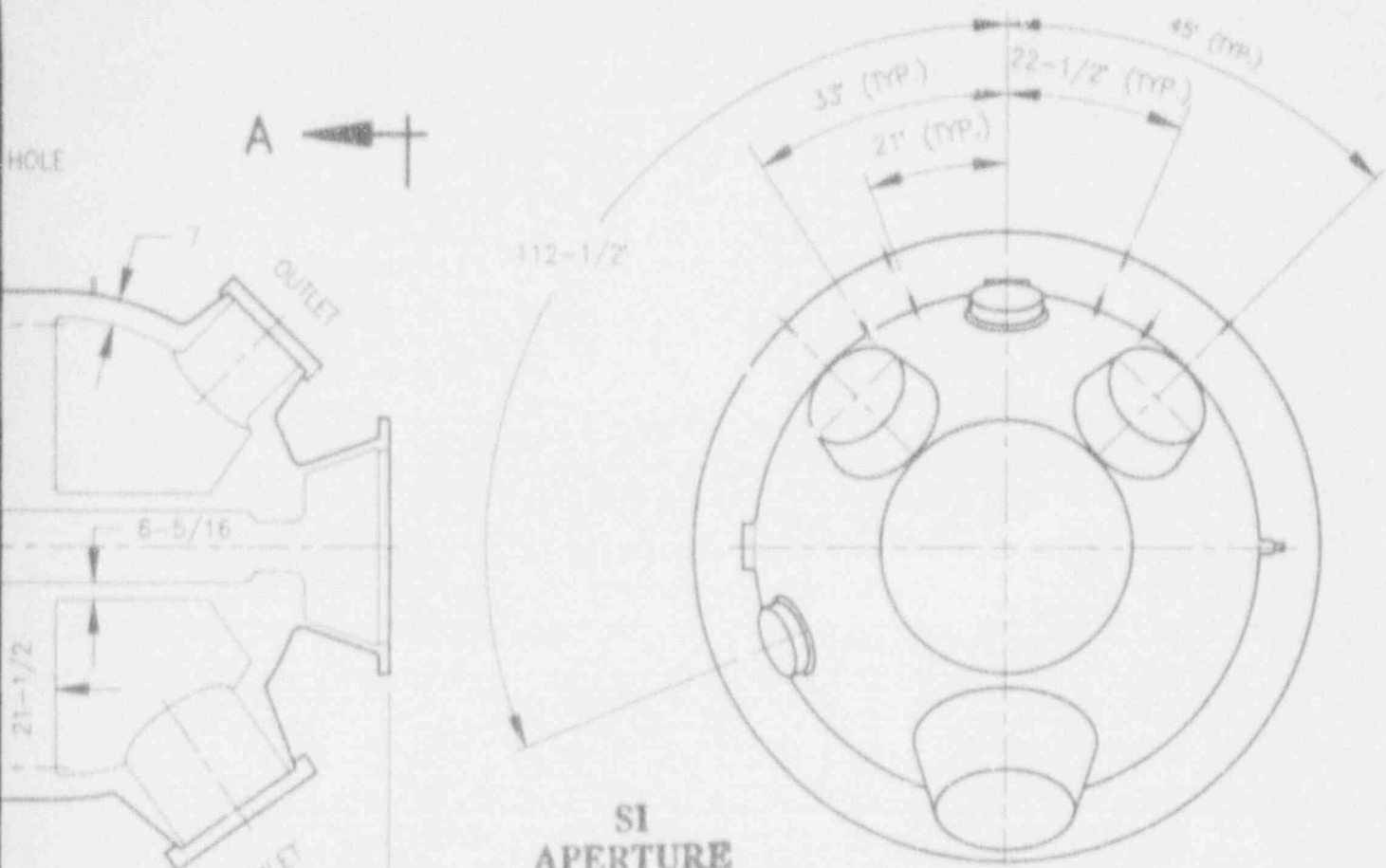
NOTES

1.) DIMENSIONS ARE FOR REFERENCE.

2.) FILL INTERNAL VOLUME, BOTH PRIMARY AND SECONDARY, WITH LOW DENSITY CONCRETE. (MINIMUM 21 LB./ CU. FT. DENSITY)

3.) COAT EXTERIOR SURFACES AS REQUIRED TO FIX SMEARABLE CONTAMINATION.

4.) VIEW A-A IS TO SHOW ORIENTATION OF CHANNEL HEAD PENETRATIONS. SEE DWG. C-110-B-43211-4 FOR CAP AND WELDING DETAILS.



VIEW A-A

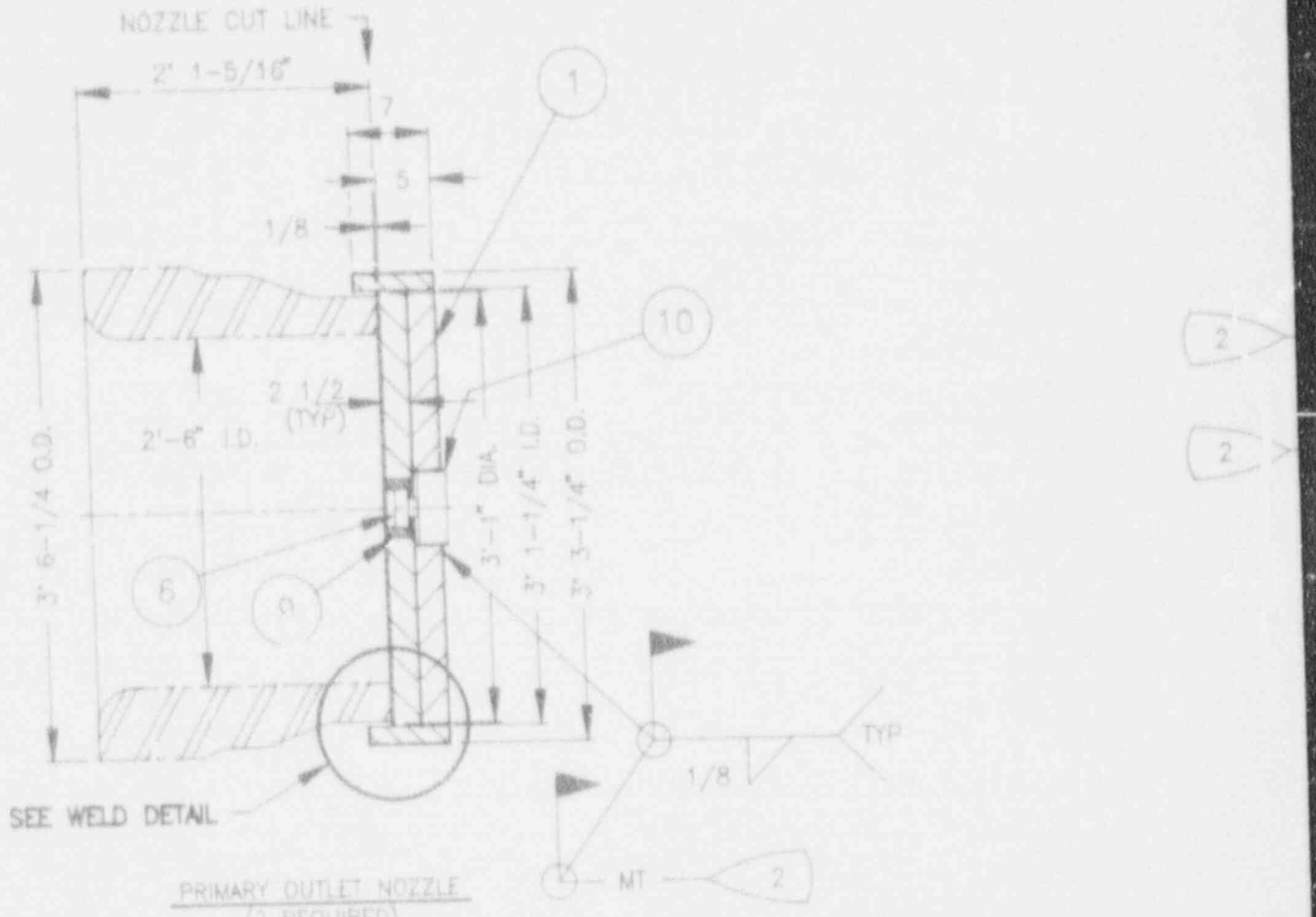
FOR INFORMATION ONLY

	PROPRIETARY
X	NON-PROPRIETARY

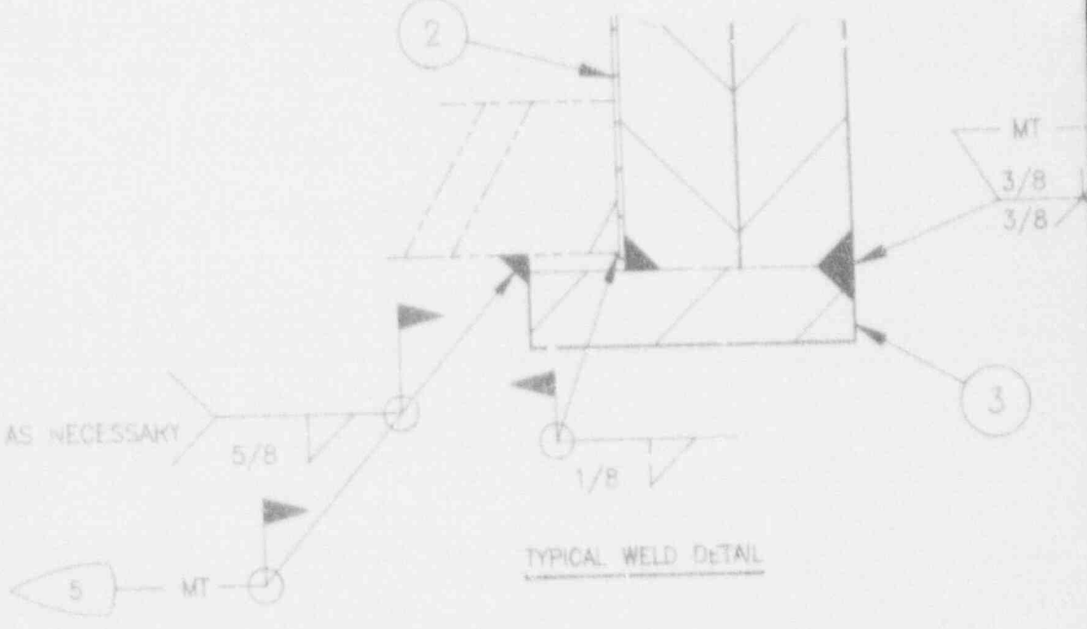
9210010064-01

DIMENSIONS ARE IN INCHES UNLESS NOTED
DO NOT SCALE PRINT

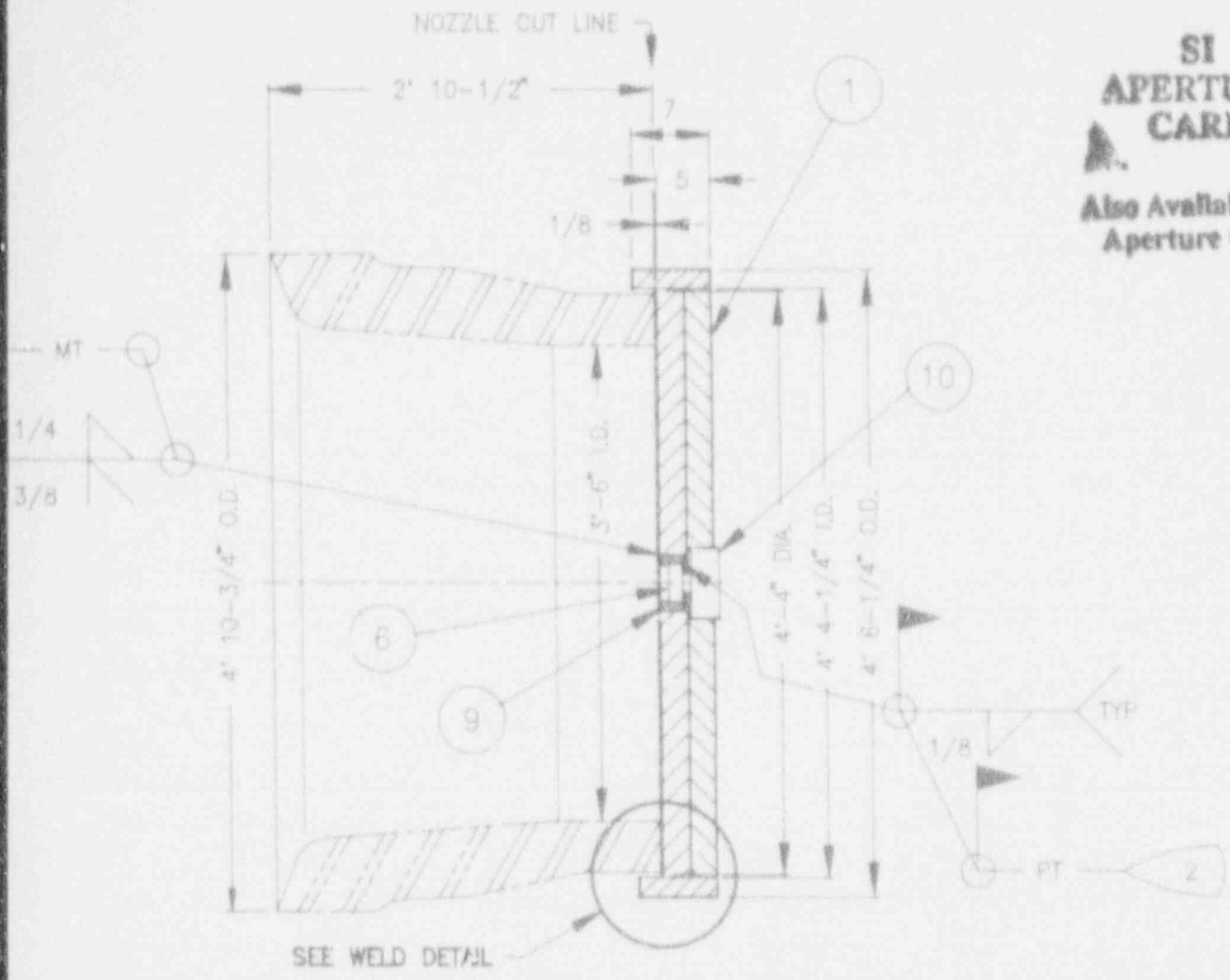
PROJECT NO. 43211 / FILE I.D. MSG-QA	FSCM NUMBER 54643	CHEM-NUCLEAR SYSTEMS, INC.	
DRAWN BY [illegible]	9/4/92	ASSEMBLY MILLSTONE STEAM GENERATOR	
CHECKED BY [illegible]	9/4/92		
APPROVED [illegible]	9/4/92		
QUALITY ASSURANCE [illegible]	9/4/92	SIZE B	DRAWING NUMBER C-110-B-43211-1 REV 2
APPROVED R.T. Dickerson	9/4/92	SCALE X WT. N/A	SHEET 1 OF 1



PRIMARY OUTLET NOZZLE
(2 REQUIRED)



TYPICAL WELD DETAIL



PRIMARY INLET NOZZLE
(1 REQUIRED)

FOR INFORMATION ONLY

2

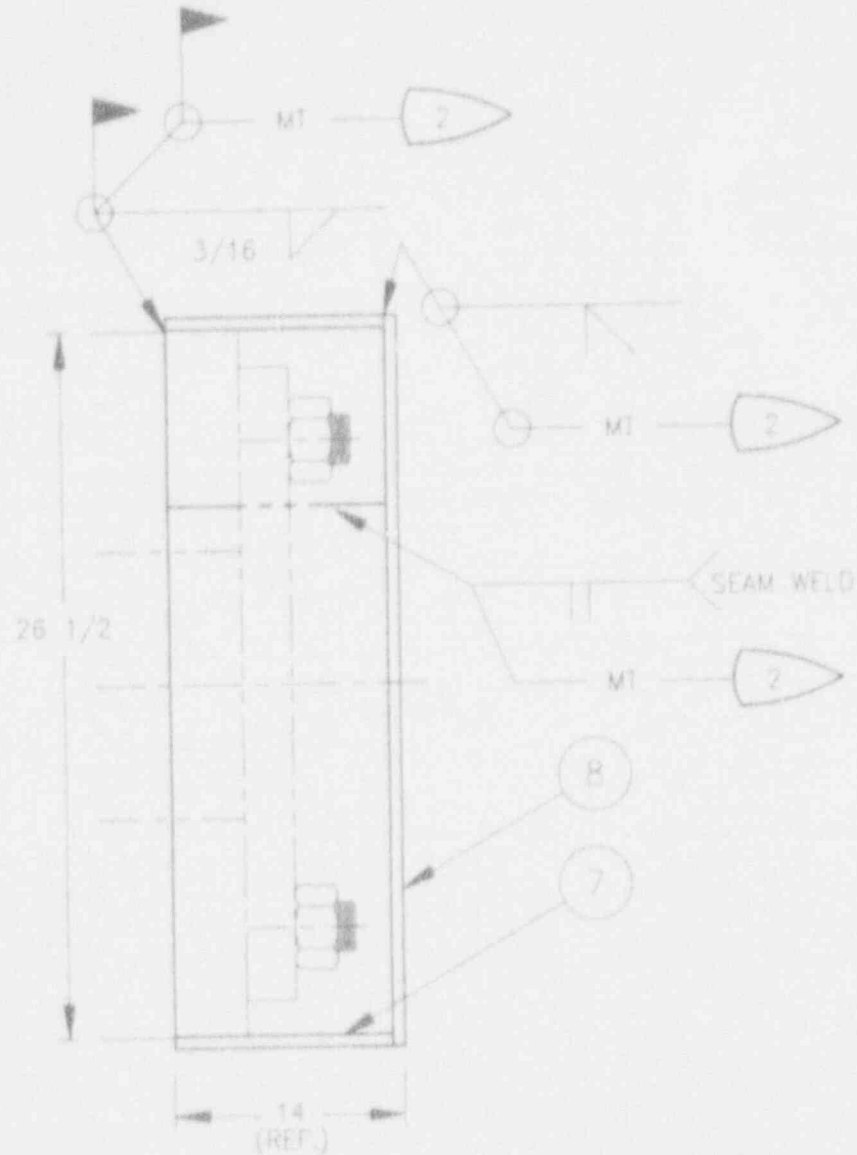
9210010064-02

PROPRIETARY

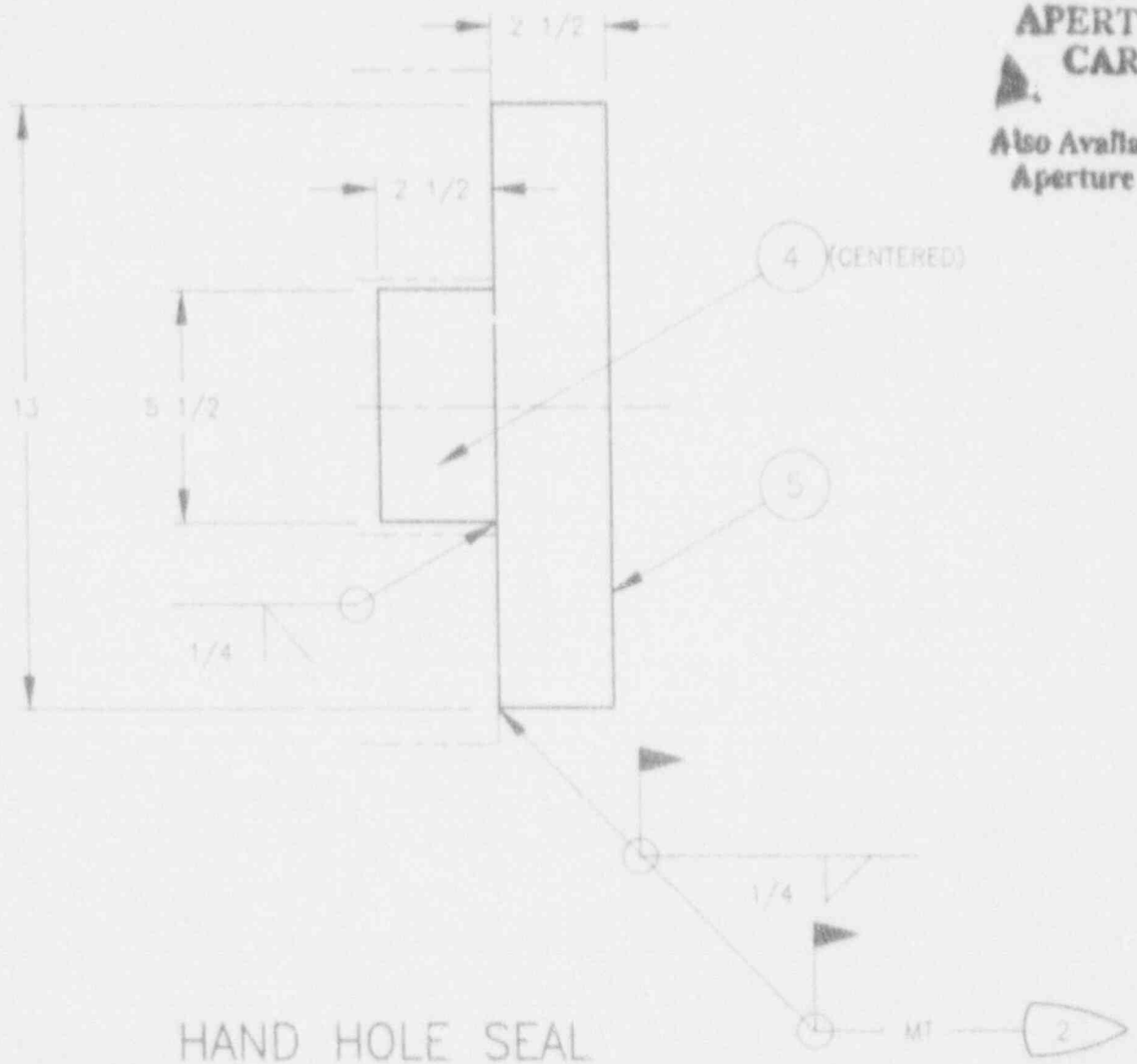
X NON-PROPRIETARY

PROJECT No. 43211 FILE I.D. MSG-DET1	FSCM NUMBER 54643	CHEM-NUCLEAR SYSTEMS, INC.	
DRAWN BY		SEAL AND CAP DETAILS MILLSTONE STEAM GENERATOR NOZZLES	
CHECKED BY Carl Wright	3/16/92		
ENGINEER	3/16/92		
QUALITY ASSURANCE	3/16/92	SIZE B	DRAWING NUMBER C-110-B-43211-4 REV. 3
APPROVAL		SCALE N/A	WT. N/A SHEET 1 OF 3

DIMENSIONS ARE IN INCHES UNLESS NOTED
DO NOT SCALE PRINT



MANWAY SEAL



HAND HOLE SEAL

92100100064-03

DIMENSIONS ARE IN INCHES UNLESS NOTED DO NOT SCALE PRINT	PROJECT No. 43211 FILE I.D. MSG-GET2	FSCM NUMBER 54643	CHEM-NUCLEAR SYSTEMS, INC.
	DRAWN BY [illegible]		SEAL AND CAP DETAILS MILLSTONE STEAM GENERATOR NOZZLES
	CHECKED BY [illegible]		
	ENGINEER [illegible]	5/16/92	
	QUALITY ASSURANCE [illegible]	5/16/92	SIZE B / DRAWING NUMBER C-110-B-43211-4 / REV. 3
	APPROVAL [illegible]	5/16/92	SCALE N/A WT N/A SHEET 2 OF 2

NOTES

1.) FOR GENERAL NOTES SEE DWG. C-110-A-43211-2.

2 SEE GENERAL NOTE-1, DWG. C-110-A-43211-2.

3 MAY BE FORMED BY LAMINATING TWO 2-1/2 PLATES.

4 WEIGHT OF INLET NOZZLE CAP = 3450 lbs. EACH
WEIGHT OF OUTLET NOZZLE CAP = 1830 lbs. EACH

9210010064-04

ITEM	QTY	DESCRIPTION	SPEC. AND / OR PART No.
14	1	PLUG, 13/16 DIA, C.S. A-36	
13	4	PIPE PLUG, 3/4" , 3000 LB., C.S. ASTM A-105	
12	1	PIPE CAP, 2", 3000 LB., C.S. ASTM A-105	
11	4	PIPE CAP, 1", 3000 LB., C.S. ASTM A-105	
10	3	PLATE, 2-1/2 X 6 DIA.,ASTM A-516	
9	3	HALF COUPLING, 3" 6000 LB, C.S. ASTM A-105	
8	2	SHEET, 3/16 X 26 7/8 ø, ASTM A-516 GR.70	
7	2	SHEET, 3/16 X 14 X 84, ASTM A-516 GR.70	
6	3	PIPE PLUG, 3" SQ. HD., 6000 LB., THREADED C.S. ASTM A-105	
5	2	PLATE, 2-1/2 x X 13 DIA., ASTM A-516 GR. 70, NORMALIZED, MADE TO FINE GRAIN PRACTICE	
4	2	PLATE, 2-1/2 x X 5-1/2 DIA., ASTM A-516 GR. 70, NORMALIZED, MADE TO FINE GRAIN PRACTICE	
3	3	PLATE, 1 x 8 1/2 x (LENGTH AS REQUIRED), ROLL AS REQUIRED ASTM A-516 GR. 70, NORMALIZED, MADE TO FINE GRAIN PRACTICE	
2	3	SHEET, 1/8 x (DIAMETER AS REQUIRED), ASTM A-607 or EQUIVALENT	
1	3	PLATE, 5 x (DIAMETER AS REQUIRED), ASTM A-516 GR. 70, NORMALIZED, MADE TO FINE GRAIN PRACTICE	

BILL OF MATERIALS

DIMENSIONS ARE IN INCHES UNLESS NOTED
DO NOT SCALE PRINT

PROJECT No. 43211
FILE I.D. WSG-DET3

FSCM NUMBER 54643

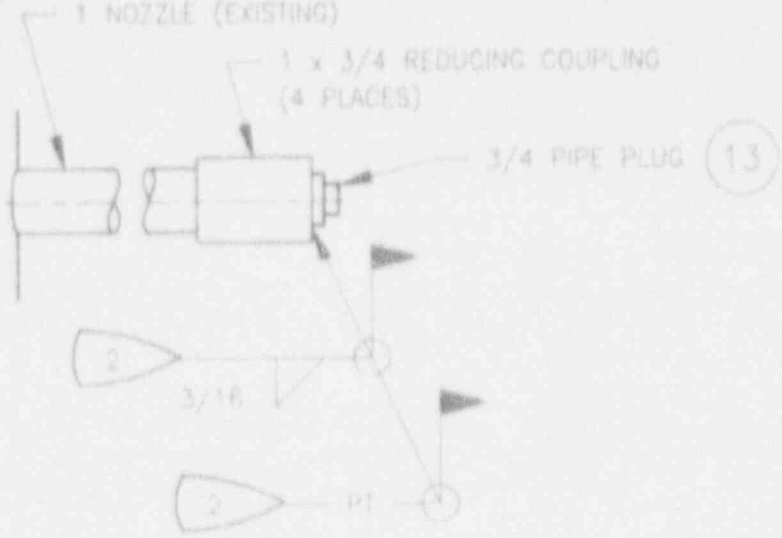
CHEM-NUCLEAR SYSTEMS, INC.

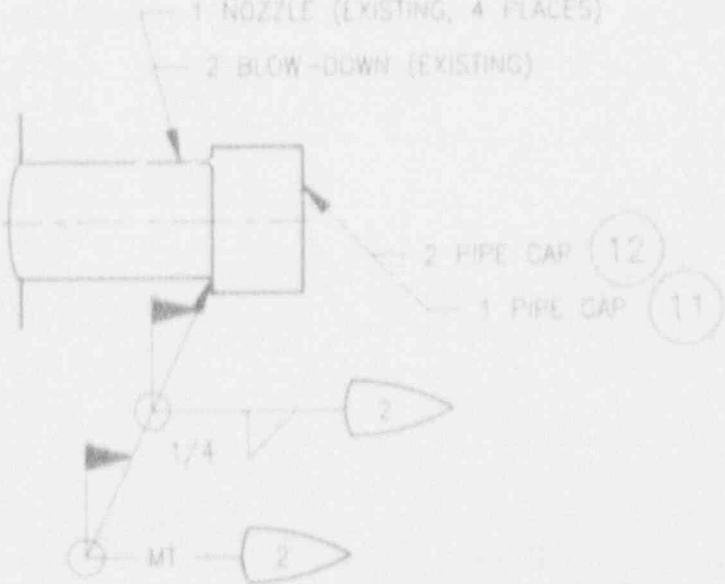
DRAWN BY		9/16/92
CHECKED BY		9/16/92
ENGINEER		9/16/92
QUALITY ASSURANCE		9/16/92
APPROVAL		9/16/92

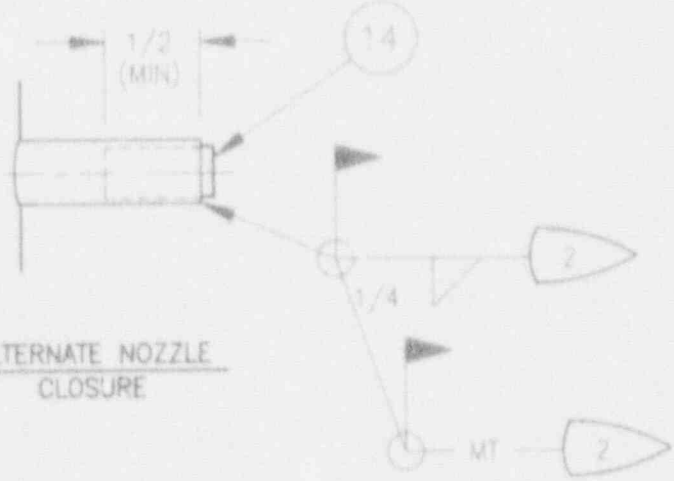
SEAL AND CAP DETAILS
MILLSTONE STEAM GENERATOR
NOZZLES

SIZE	DRAWING NUMBER	REV.
B	C-110-B-43211-4	3

SCALE N/A WT. N/A SHEET 3 OF







ALTERNATE NOZZLE
CLOSURE

3 2 1

NOTES

1.) FOR GENERAL NOTES SEE DWG. C-110-A-43211-2.

2 SEE GENERAL NOTE-1, DWG. C-110-A-43211-2.

3 MAY BE FORMED BY LAMINATING TWO 2-1/2 PLATES.

4 WEIGHT OF INLET NOZZLE CAP = 3450 lbs. EACH
WEIGHT OF OUTLET NOZZLE CAP = 1830 lbs. EACH

D

9210010064-04

ITEM	QTY	DESCRIPTION	SPEC. AND / OR PART No.
14	1	PLUG, 13/16 DIA, C.S. A-36	
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9	3	HALF COUPLING, 3" 6000 LB, C.S. ASTM A-105	
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7	2	SHEET, 3/16 X 14 X 84, ASTM A-516 GR.70	
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3	3	PLATE, 1 x 8 1/2 x (LENGTH AS REQUIRED), ROLL AS REQUIRED ASTM A-516 GR. 70, NORMALIZED, MADE TO FINE GRAIN PRACTICE	
2	3	SHEET, 1/8 x (DIAMETER AS REQUIRED), ASTM A-607 or EQUIVALENT	
1	3	PLATE, 5 x (DIAMETER AS REQUIRED), ASTM A-516 GR. 70, NORMALIZED, MADE TO FINE GRAIN PRACTICE	

BILL OF MATERIALS

C

B

A

DIMENSIONS ARE IN INCHES UNLESS NOTED
DO NOT SCALE PRINT

PROJECT No. 43211
FILE I.D. MSG-DET3

FSCM NUMBER 54643

CHEM-NUCLEAR SYSTEMS, INC.

DRAWN BY [signature] 9/16/92

CHECKED BY [signature] 9/16/92

ENGINEER [signature] 9/16/92

QUALITY ASSURANCE [signature] 9/16/92

APPROVAL [signature] 9/16/92

SEAL AND CAP DETAILS
MILLSTONE STEAM GENERATOR
NOZZLES

SIZE B | DRAWING NUMBER C-110-B-43211-4 | REV. 3

SCALE N/A | WT. N/A | SHEET 3 OF 3