



March 8, 1990

File: WO# 3230
Ref: L-10539

Mr. Charles E. MacDonald, Chief
Transportation Branch
Division of Safeguards and Transportation
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

SUBJECT: General Arrangement Drawing Clarifications for the NuPac
Model PAS-2 Shipping Package, Docket No. 71-9181

Dear Mr. MacDonald:

Enclosed please find ten (10) sets of NuPac Drawing X-20-220SNP, Revision C, Sheets 1, 2, 3, and 4 of 4. These drawings replace the drawings found in Appendix 1.3 of the NuPac Model PAS-2 Shipping Package Consolidated Safety Analysis Report (CSAR) for both the non-proprietary (NuPac Drawing X-20-220SNP) and proprietary (NuPac Drawing X-20-220SP) versions. The proprietary version of the NuPac PAS-2 CSAR General Arrangement Drawings, NuPac Drawing X-20-220SP, has been eliminated to reduce confusion. Specifically, the PAS-2 Package General Arrangement Drawings now reference both the non-proprietary and proprietary versions of the Outer Overpack Drawings (NuPac Drawings X-107-500SNP and X-107-500SP, respectively) found at Location B-5 on Sheet 1 of 4, NuPac Drawing X-20-220SNP.

Please call either myself or Chuck Temus if there are any questions regarding this letter.

Sincerely,

NUCLEAR PACKAGING, INC.

A handwritten signature in cursive script, reading "Steven A. Porter".

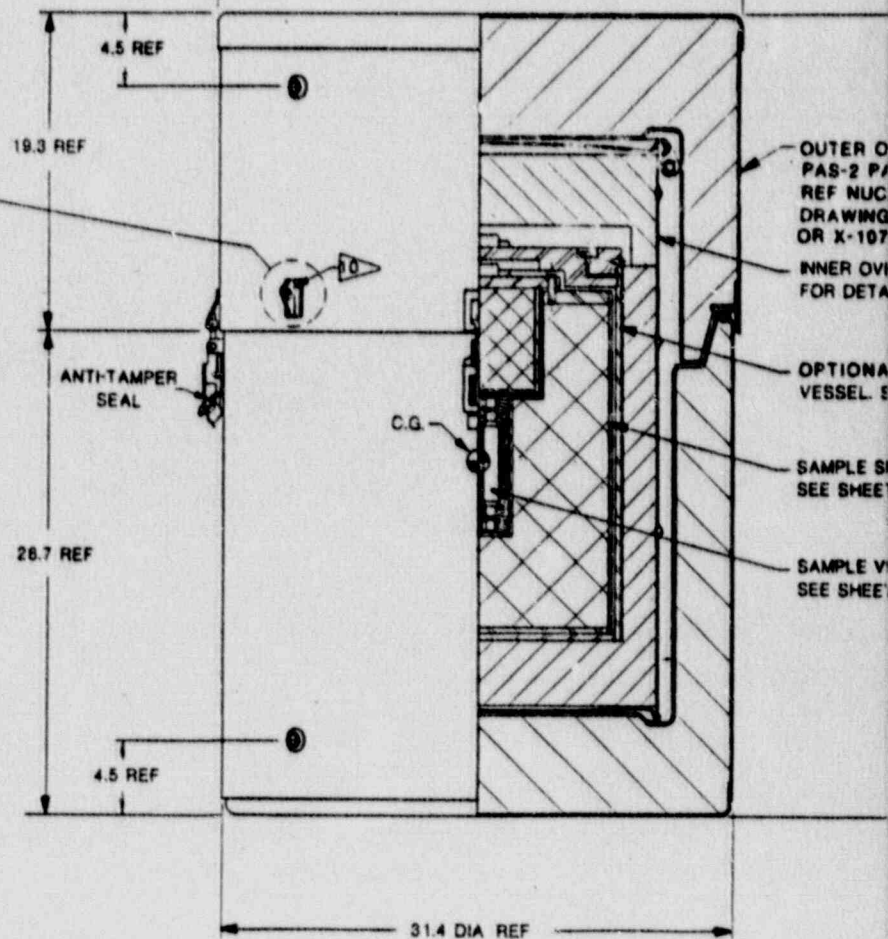
Steven A. Porter
Manager of Analysis

ENC: As stated

9003120737 900308
PDR ADOCK 07109181
C PDC

1/10
NT01

BOLT, NUT &
FENDER WASHERS
OVERPACK LIFT LUG



 NUPAC PAS-2 PACKAGE

REVISIONS		
LT#	DESCRIPTION	DATE
C	SEE DCN	NO. 10

SI APERTURE CARD

Also Available On
Aperture Card

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL WELDING PROCEDURES AND PERSONNEL SHALL BE QUALIFIED IN ACCORDANCE WITH ASME CODE, SECTION IX.
2. ALL WELDS SHALL BE VISUALLY INSPECTED PER AWS D1.1, PARA 8.15.1 AND ANSI B 31.1, SECTION 136.4.2.

3. LEAD, PER FEDERAL SPECIFICATION QQ-L-171a, GR A OR C.

4. FINISH: PAINT ALL EXPOSED, UNPAINTED CARBON STEEL SURFACES WITH ONE COAT (3-5 MILS DFT) HIGH QUALITY EPOXY PRIMER & ONE COAT (3-5 MILS DFT) HIGH QUALITY EPOXY PAINT. APPLY IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. EXCEPTIONS SHALL BE: ALL O-RING GLANDS & ADJACENT SEALING SURFACES; SAMPLE SHIELD CAVITY AND OUTER OVERPACK SHELL (GALVANIZED STEEL). COAT O-RING GLANDS & ADJACENT SURFACES WITH HIGH QUALITY VACUUM GREASE PRIOR TO FINAL ASSEMBLY.

5. CAVITY VOID SHALL BE FILLED WITH A BLEND OF LEAD SHOT (NO. 8-8) & VERMICULITE ABSORBENT, (FINE ENOUGH TO PASS THRU A 12 STRAND/ INCH WIRE MESH). VERMICULITE SHALL BE OF SUFFICIENT QUANTITY TO ABSORB A MINIMUM OF 100 C.C. OF LIQUID, (APPROX 350-375cc).

6. TORQUE SPECIFICATIONS:

- A) SAMPLE SHIELD CLOSURE BOLTS, 1/2-13UNC-2A: 75 FT/LBS.
- B) HOST RING CAP SCREWS, 3/8-16UNC-2A: 30FT/LBS.
- C) PRIMARY CONTAINMENT CLOSURE BOLTS, 5/16-18UNC-2A: 18FT/LBS.

7. THE SAMPLE VIAL (SH 4 OF 4) SHALL BE HYDROSTATICALLY PRESSURE TESTED @ 375 PSI FOR 5 MINUTES PER NUPAC PROCEDURE LT-10. NO VISIBLE EVIDENCE OF PERMANENT DEFORMATION SHALL APPEAR.

8. THE SAMPLE VIAL & OPTIONAL CONTAINMENT VESSEL (IF USED) SHALL BE LEAK TESTED ANNUALLY TO 1×10^{-7} STANDARD CUBIC CENTIMETERS/SECOND PER NUPAC PROCEDURE LT-12.

9. PACKAGE WEIGHT:

- SAMPLE SHIELD: 1800 LBS.
- PRIMARY CONTAINER: 295 LBS.
- INNER OVERPACK: 125 LBS.
- OUTER OVERPACK: 180 LBS.

2400 LBS. TOTAL

10. PRIOR TO TRANSIT, THESE OUTER OVERPACK LIFTING LUGS SHALL BE PLUGGED WITH A BOLT & FENDER WASHERS TO PREVENT ATTEMPTED USE AS LIFTING OR TIE DOWN STATIONS FOR THE ENTIRE PACKAGE.

11. SAMPLE SHIELD SHALL BE GAMMA SCANNED PER NUPAC PROCEDURE QS-001.

12. FOAM, PER NUCLEAR PACKAGING, INC. SPECIFICATION NPLF11, 10 PCF DENSITY.

13. REMOVED

14. THE SAMPLE SHIELD SHALL BE LEAK TESTED ANNUALLY TO 1×10^{-5} STANDARD CUBIC CENTIMETERS/SECOND PER NUPAC PROCEDURE LT-16 IF THE OPTIONAL PRIMARY CONTAINMENT VESSEL IS USED, OR 1×10^{-7} STANDARD CUBIC CENTIMETERS/SECOND PER NUPAC PROCEDURE LT-12 IF THE OPTIONAL PRIMARY CONTAINMENT VESSEL IS NOT USED.

15. SHIM AS REQUIRED TO REDUCE SAMPLE SHIELD MOVEMENT DURING TRANSIT.

16. EXACT O-RING GLAND AND TEST PORT DUCT CONFIGURATION IS OPTIONAL.

OVERPACK
CKAGE
LEAR PACKAGING, INC
NO. X-107-500SNP
600SP
RPACK - SEE SHEET 2
LS

CONTAINMENT
SEE SHEET 2 FOR DETAILS.

WELD (PRIMARY CONTAINER).
3 FOR DETAILS.

AL (SECONDARY CONTAINER).
4 FOR DETAILS.

48.0 REF

ITEM	PART NO	DESCRIPTION
ASSEMBLY & QUANTITY		
REL. SHIELD	1/10/74	
APPO		
APPO		
APPO		
APPO	2-17-83	
APPO	2-17-83	
APPO	2-17-83	
APPO	2-17-83	
QA	2-17-83	
CHECK	2-17-83	
IT	QTY	TEST ASSY
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES.		
TOLERANCES: 3 PLACE DECIMALS ± M.I.A.		
FRACTIONS ± M.I.A.		
ANGLES ± M.I.A.		
3		
2		
1		



**NUCLEAR
PACKAGING**
A FINE LINE COMPANY
FEDERAL WAY, WA.

NUPAC PAS-2 PACKAGE

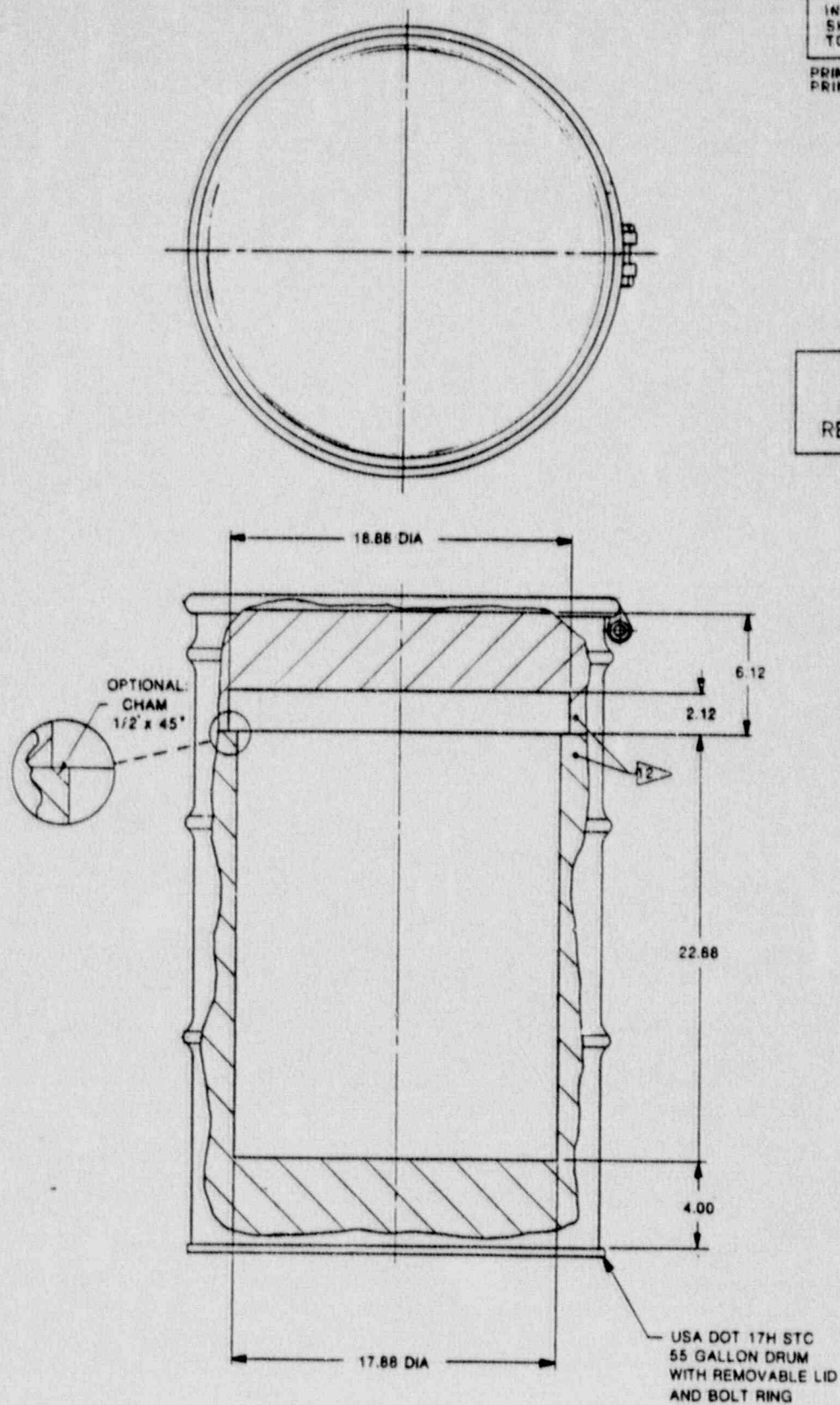
SCALE	WT.
REV C	SHEET 1 OF 4
DWG NO. X-20-220 SNP	

9003120737-01

INSTALLATION
SHOULD BE PERFORMED
TO AVOID DAMAGE

PRINTED ON .003
PRINT COLOR = BLACK

PERIMETER
REMOVED FROM



INNER OVERPACK
DETAIL 15

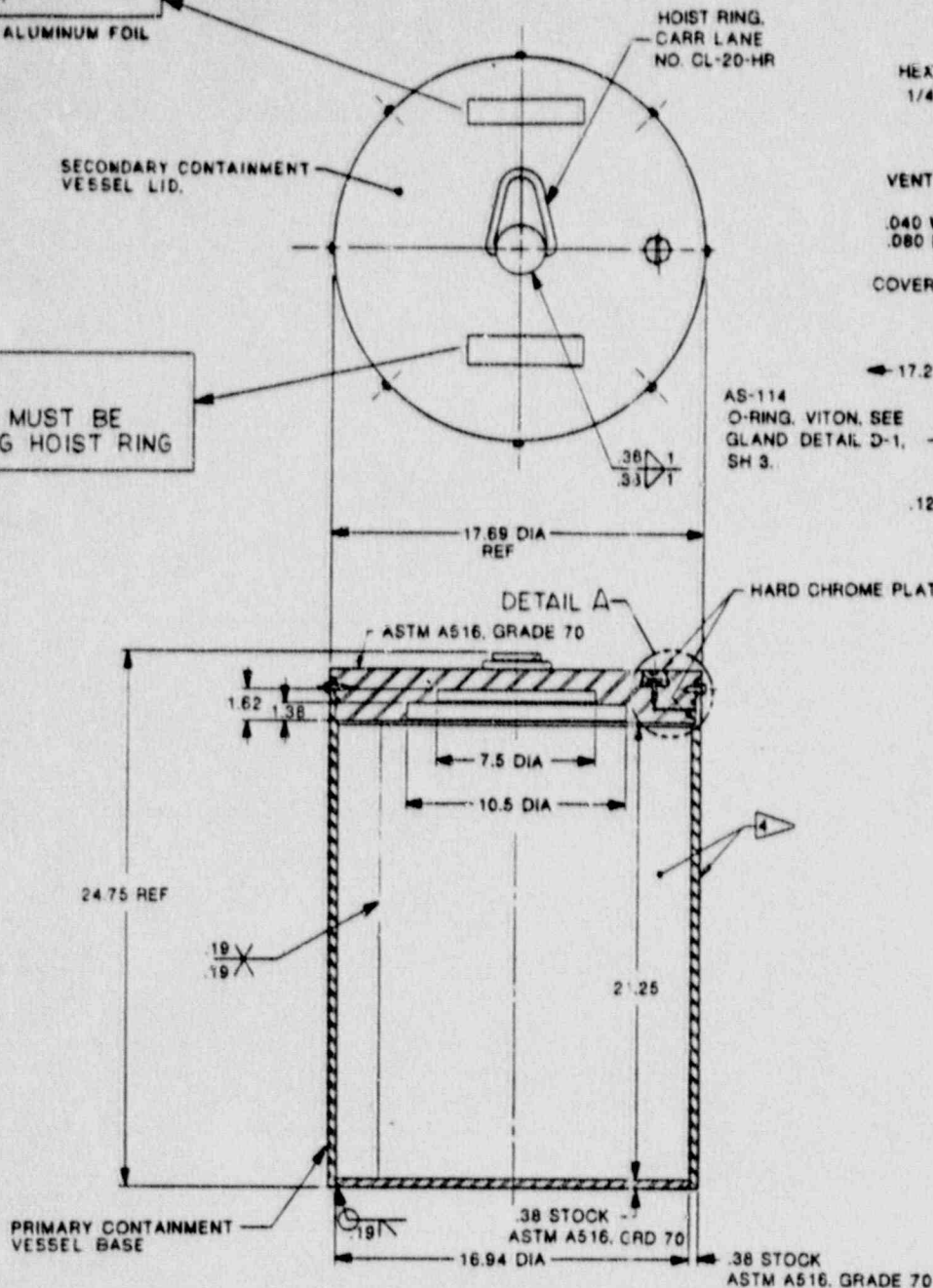
CAUTION

OR REMOVAL OF VESSEL LID
FORMED WITH TEST PORT OPEN
ING THE SEALS.

SELF ADHESIVE ALUMINUM FOIL
LACK.

CAUTION

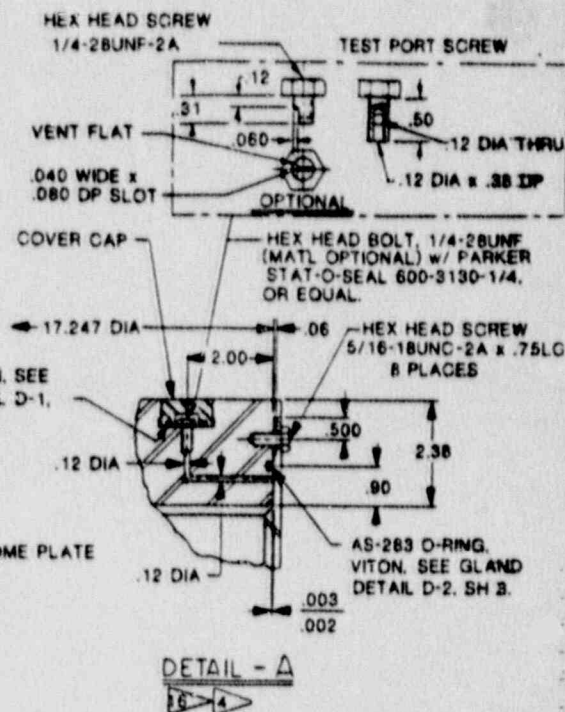
R LID BOLTS MUST BE
PRIOR TO USING HOIST RING



OPTIONAL CONTAINMENT VESSEL DETAIL

NOTE: AS AN OPTION, VESSEL
MAY BE FABRICATED IN ITS
ENTIRETY FROM 304 SST
PER ASTM A240

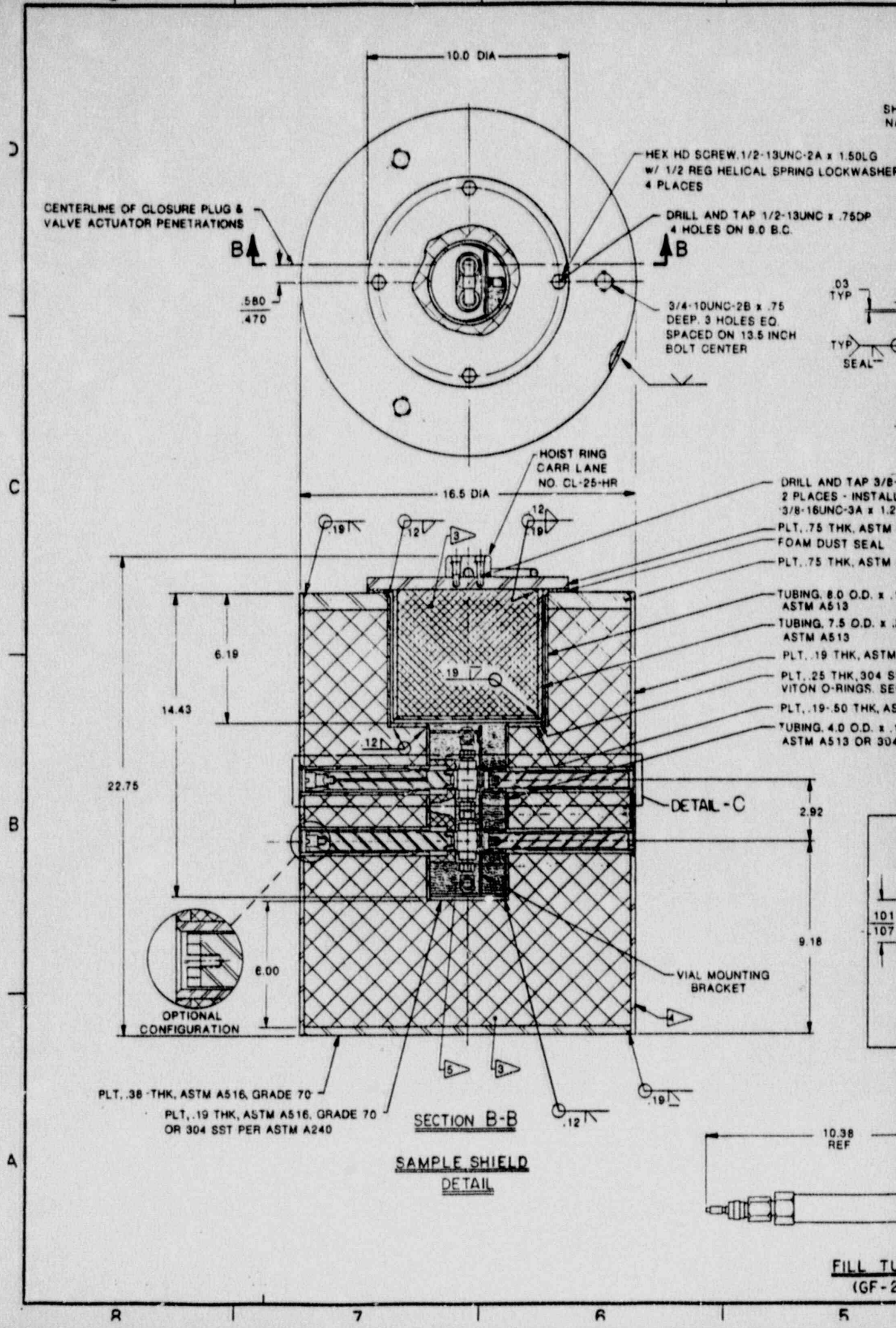
REVISIONS			
LTB	DESCRIPTION	DATE	APPROVED
C	SEE DCN	1-80	10/10



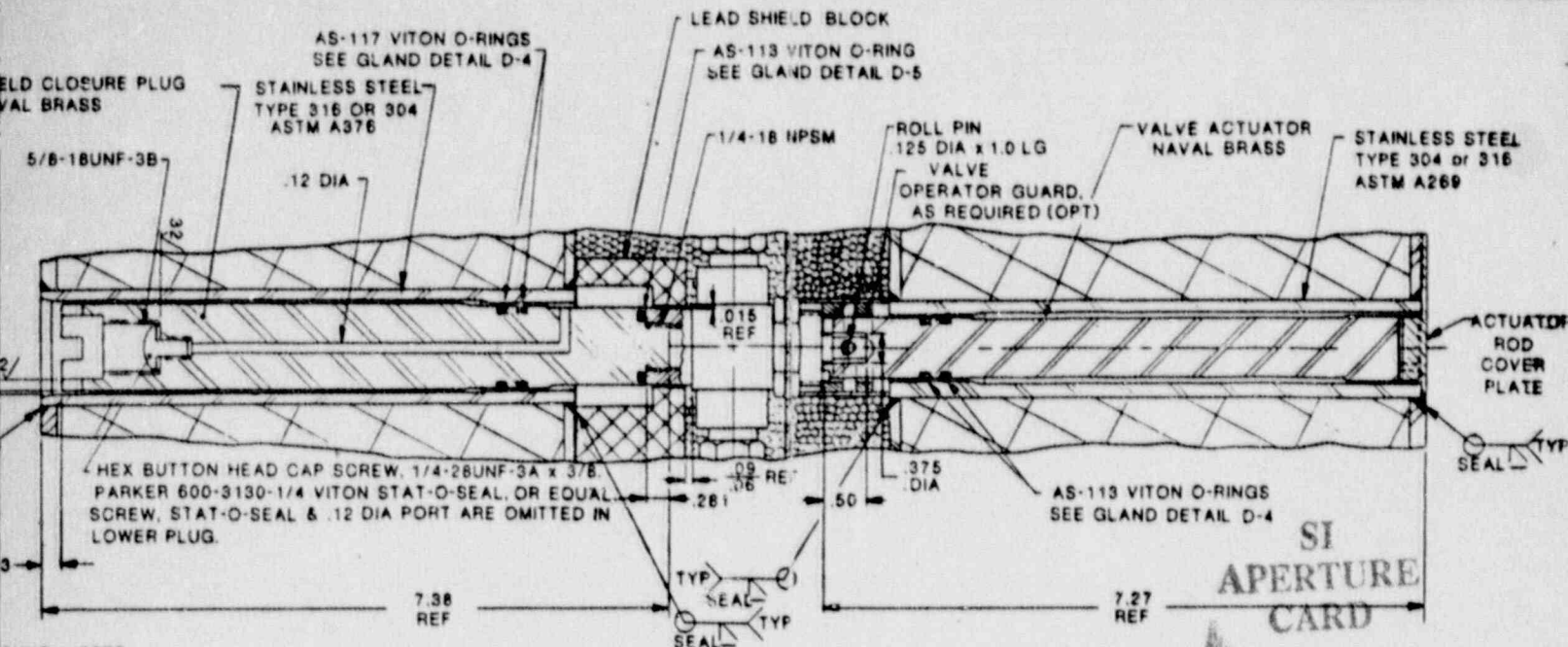
SI APERTURE CARD

Also Available On
Aperture Card

			ITEM		PART NO.		DESCRIPTION	
			ASSEMBLY - QUANTITY				LIST OF MATERIAL	
			REL/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100/101/102/103/104/105/106/107/108/109/110/111/112/113/114/115/116/117/118/119/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/135/136/137/138/139/140/141/142/143/144/145/146/147/148/149/150/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200/201/202/203/204/205/206/207/208/209/210/211/212/213/214/215/216/217/218/219/220/221/222/223/224/225/226/227/228/229/230/231/232/233/234/235/236/237/238/239/240/241/242/243/244/245/246/247/248/249/250/251/252/253/254/255/256/257/258/259/260/261/262/263/264/265/266/267/268/269/270/271/272/273/274/275/276/277/278/279/280/281/282/283/284/285/286/287/288/289/290/291/292/293/294/295/296/297/298/299/300/301/302/303/304/305/306/307/308/309/310/311/312/313/314/315/316/317/318/319/320/321/322/323/324/325/326/327/328/329/330/331/332/333/334/335/336/337/338/339/340/341/342/343/344/345/346/347/348/349/350/351/352/353/354/355/356/357/358/359/360/361/362/363/364/365/366/367/368/369/370/371/372/373/374/375/376/377/378/379/380/381/382/383/384/385/386/387/388/389/390/391/392/393/394/395/396/397/398/399/400/401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000/1001/1002/1003/1004/1005/1006/1007/1008/1009/1010/1011/1012/1013/1014/1015/1016/1017/1018/1019/1020/1021/1022/1023/1024/1025/1026/1027/1028/1029/1030/1031/1032/1033/1034/1035/1036/1037/1038/1039/1040/1041/1042/1043/1044/1045/1046/1047/1048/1049/1050/1051/1052/1053/1054/1055/1056/1057/1058/1059/1060/1061/1062/1063/1064/1065/1066/1067/1068/1069/1070/1071/1072/1073/1074/1075/1076/1077/1078/1079/1080/1081/1082/1083/1084/1085/1086/1087/1088/1089/1090/1091/1092/1093/1094/1095/1096/1097/1098/1099/1100/1101/1102/1103/1104/1105/1106/1107/1108/1109/1110/1111/1112/1113/1114/1115/1116/1117/1118/1119/1120/1121/1122/1123/1124/1125/1126/1127/1128/1129/1130/1131/1132/1133/1134/1135/1136/1137/1138/1139/1140/1141/1142/1143/1144/1145/1146/1147/1148/1149/1150/1151/1152/1153/1154/1155/1156/1157/1158/1159/1160/1161/1162/1163/1164/1165/1166/1167/1168/1169/1170/1171/1172/1173/1174/1175/1176/1177/1178/1179/1180/1181/1182/1183/1184/1185/1186/1187/1188/1189/1190/1191/1192/1193/1194/1195/1196/1197/1198/1199/1200/1201/1202/1203/1204/1205/1206/1207/1208/1209/1210/1211/1212/1213/1214/1215/1216/1217/1218/1219/1220/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REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
C	SEE DCM		



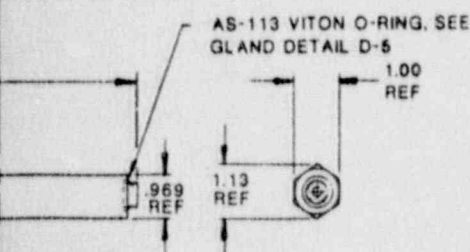
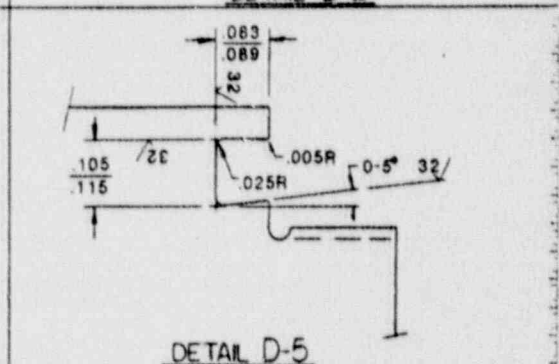
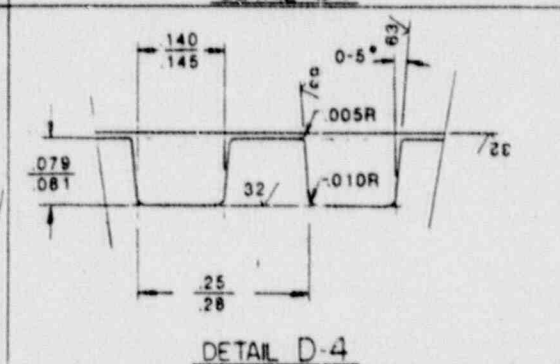
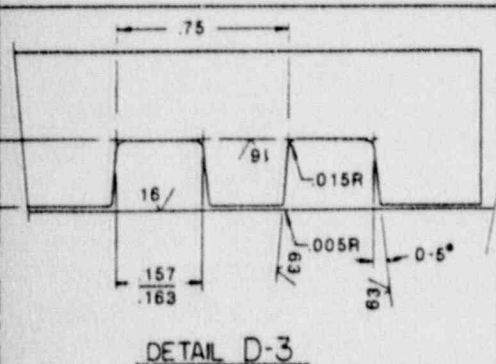
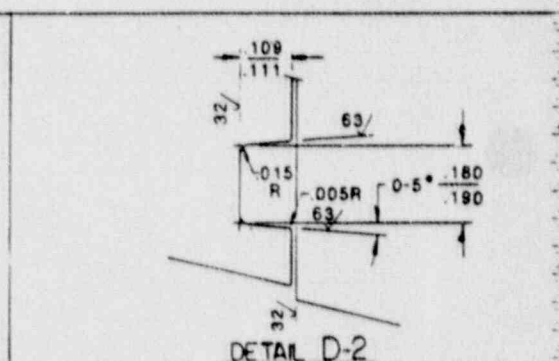
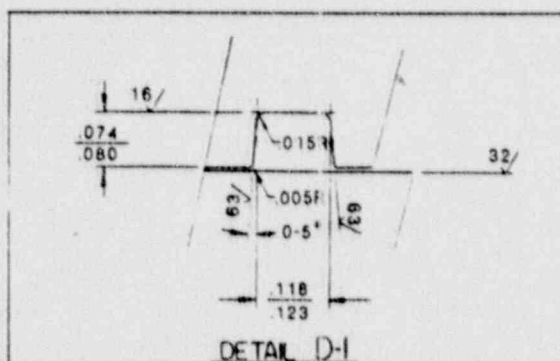
DETAIL - C

(TYPICAL 2 PLACES PLCS, EXCEPT AS NOTED)

Also Available On Aperture Card

6UNC x .75DP
HEX 50C HD CAP SCREW
LG. 2 PLACES
516, GRADE 70
516, GRADE 70

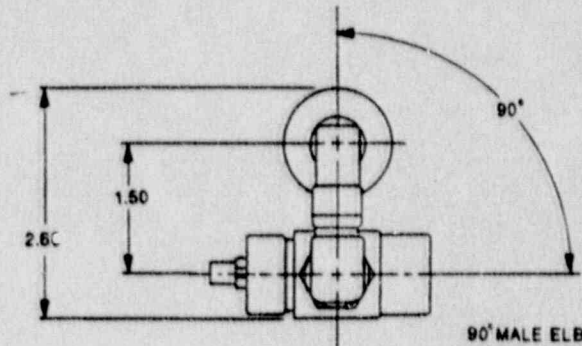
5 WALL
50 WALL
516, GRADE 70
PER ASTM A240, AS-250 AND AS-256
GLAND DETAIL D-3.
M 516, GR 70, OR 304 SST PER ASTM A240
5 WALL
SST PER ASTM A269.



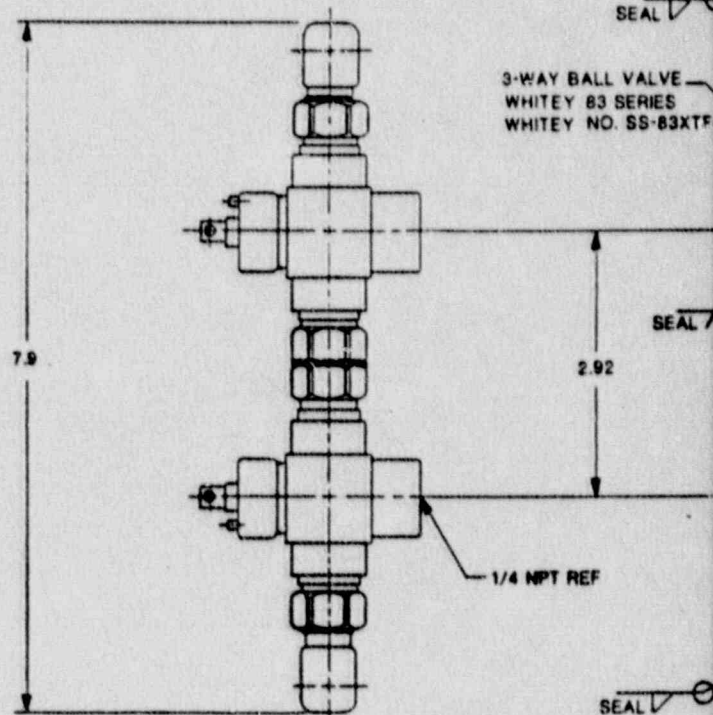
BE ASSEMBLY
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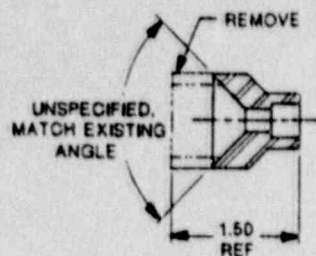
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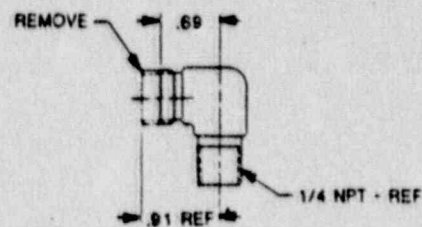
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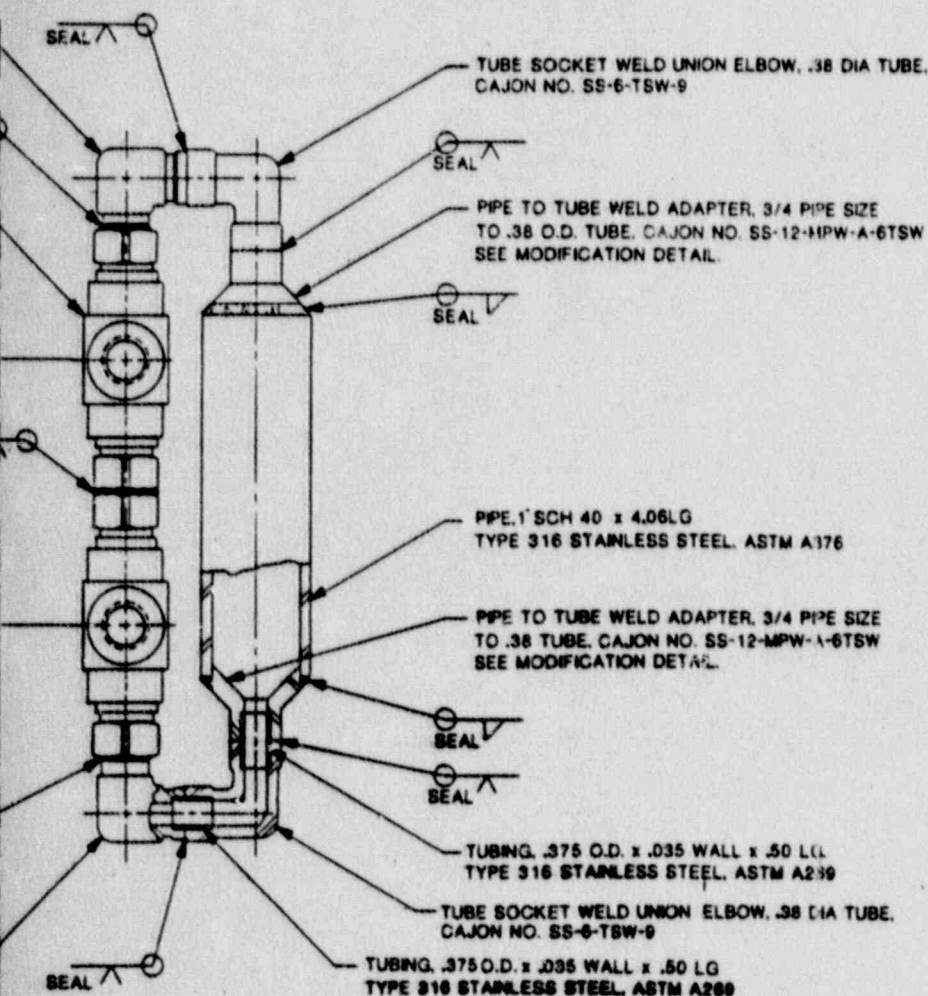
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