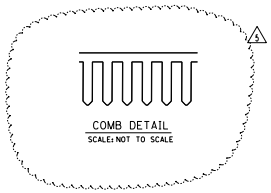
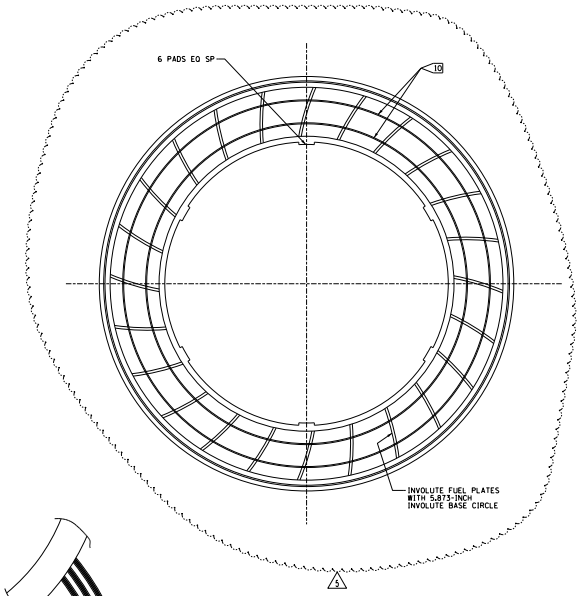
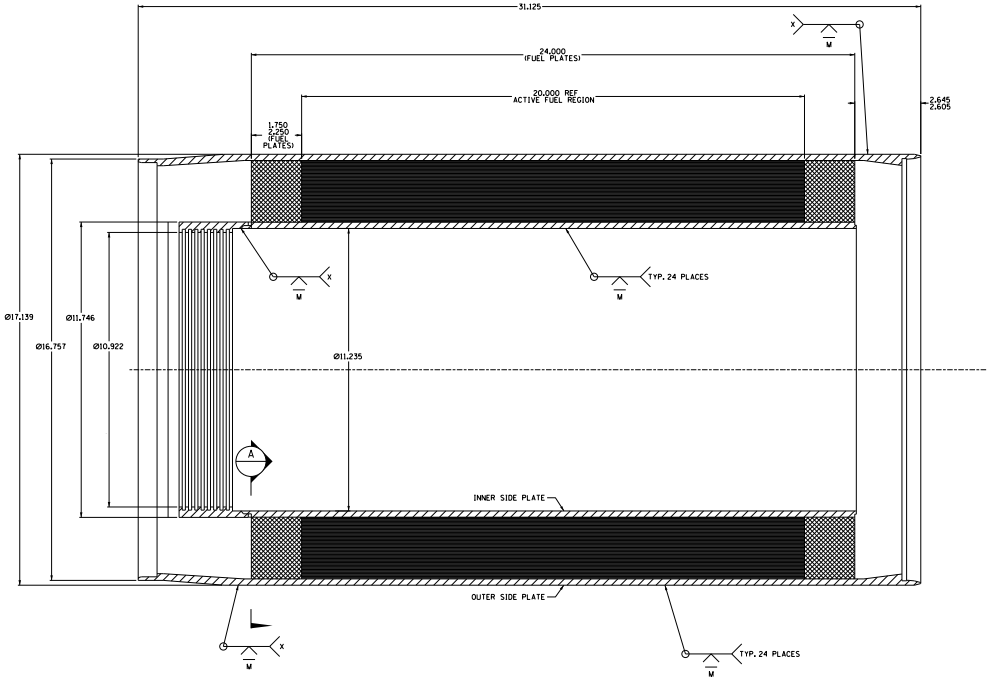
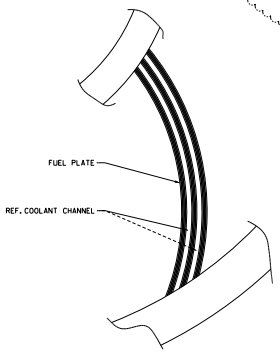


GENERAL NOTES:

1. FUEL ELEMENT NOMINAL WEIGHT IS 205 Lb.
2. FUEL ELEMENT U-235 CONTENT IS 6738g. MIN./6871g. MAX.
3. ALL DIMENSIONS ARE ±.005 UNLESS OTHERWISE NOTED.
4. MATERIAL OF CONSTRUCTION:
   INNER AND OUTER SIDE PLATES - AL 6061
   FUEL PLATE
   CORE: U_3O_8 (ENRICHMENT 92-94%) + AL POWDER (CERMET)
   5 CLADDING: AL. 6061
   COMBS: AL. 6061
5. MINIMUM FINISHED MACHINED SIDE PLATE THICKNESS IS:
   INNER SIDE PLATE - 0.108 INCHES
   OUTER SIDE PLATE - 0.128 INCHES
6. COOLANT CHANNEL THICKNESS (DISTANCE BETWEEN FUEL PLATES) IS 0.050 ± 0.010 INCHES
7. BOTH THE FUEL PLATES ATTACHMENT WELDS AND ADAPTOR WELDS ARE FULL PENETRATION JOINTS COMPLETED BY AUTOMATED GAS METAL ARC WELDING PROCESS. WELDS ARE SUBSEQUENTLY MACHINED ALONG WITH ELEMENT TO OBTAIN FEATURES NOTED ON THIS DRAWING.
8. ADAPTOR WELDS ARE INSPECTED BEFORE FINAL MACHINING BY RADIOGRAPHY. BOTH FUEL PLATE ATTACHMENT WELDS AND ADAPTOR WELDS ARE VISUALLY INSPECTED AFTER FINAL MACHINING.
9. THE MINIMUM AVERAGE CLADDING THICKNESS IS 0.010-INCHES.
10. FUEL ELEMENT COMBS INSTALLED AT THE DISCRETION OF HFIR SYSTEM ENGINEERING. COMBS ARE APPROX .063" WIDE X .250" TALL WITH .200 EMBEDMENT.







SECTION A-A

NOT FOR FABRICATION

LICENSING RESTRICTIONS APPLY

REVISION CERTIFIED FOR CONSTRUCTION
JAN 7, 2022

NO.	REVISIONS	DESIGNER	REVIEWER	Q.A.	APPROVED	DFG MGR
		TASK LDR	SAFETY	C.C. MGR	MANUF MGR	DATE
5	5 SEE DCN 13941	TAJ/SEH	WBK	DLS	WBK	BEF
		DLP	WBK	MAG	GLC	1-7-22
4	4 SEE DCN 13590	CED/TJ	CPK	N/A	N/A	N/A
		DLP	WBK	HDN	N/A	8-26-20
0	0 SEE DCN 13433					

DESIGNER	DATE	SAFETY ANALYST	DATE
T.W. Evans/TAJ	2-28-20	N/A	-
TASK LEADER	DATE	Q.A. SPECIALIST	DATE
D. L. Pinkston	2-28-20	N/A	-
DESIGN REVIEWER	DATE	DFG CONTROL MGR	DATE
C. P. Kilgore	2-28-20	K. B. Napier	3-2-2020

APPROVED	DATE
N/A	-
MANF MGR	DATE
N/A	-
OPERATIONS MGR	DATE
N/A	-

GENERAL SPECIFICATIONS
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
REMOVE BURRS/BREAK EDGES
FRACTIONS ± N/A
.xx DECIMALS ± N/A
.xxx DECIMALS ± N/A
ANGLES ± N/A
FILLETS N/A MAX.
MACHINE FINISH N/A MAX.
SCALE: NONE

CAUTION NUCLEAR EQUIPMENT:
ANY PROCESS OR MATERIAL (INCLUDING PACKAGING AND SHIPPING MATERIALS) THAT HAS THE POSSIBILITY OF CAUSING A PROBLEM CONCERNING ANY OF THE VARIOUS ELEMENTS (PRESENTLY, U-235, BORON, AND ZIRCONIUM) METALLIC ELEMENTS AND ALLOYS, OXIDES, AND COMPOUNDS, AND ALL OTHER NUCLEAR MATERIALS CONTACTED OR CHANGED IN THE SURFACE OF ANY HFIR COMPONENT AFTER FINAL CLEANING SHALL NOT BE USED WITHOUT OF ANY FORM SHALL BE SPECIFICALLY REVIEWED AND APPROVED BY THE HFIR PROJECT MANAGER. ALL MATERIALS AND IN ALL PROCESSING AND MANUFACTURING OPERATIONS.
No representation or warranty, expressed or implied, is made as to the accuracy, completeness or usefulness of the information or assistance contained in these drawings, or that the use or disclosure of any information, apparatus, method or process disclosed will not infringe privately owned rights, and no liability is assumed with respect to the use of, or for damages resulting from the use of any information, apparatus, method, or process disclosed. These drawings are the property of the Oak Ridge National Laboratory, are not to be used for other purposes and are to be returned upon request of the forwarding contractor.

HFIR OUTER FUEL ELEMENT ASSEMBLY	E-42126
HFIR FUEL UNIRRADIATED INNER ELEMENT CERTIFICATION DRAWING	M-11524-OH-106
SHIPPING CONTAINER FOR UNIRRADIATED OUTER HFIR ELEMENT ASSEMBLY	M-20978-EL-002
REFERENCE DRAWINGS	NUMBER

OAK RIDGE National Laboratory | HIGH FLUX ISOTOPE REACTOR
Managed by UT-Battelle for the US Department of Energy
RESEARCH REACTORS DIVISION

FACILITY H.F.I.R. BLDG. NO. 7900

HFIR FUEL UNIRRADIATED OUTER ELEMENT CERTIFICATION DRAWING

M-11524-OH-107 | E | REV. 5

AS DESIGNED

MICROSTATION DRAWING