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# The RHIC 56 MHz SRF Cavity/Helium Vessel Fabrication Procedures

C. Pai

Collider-Accelerator Department

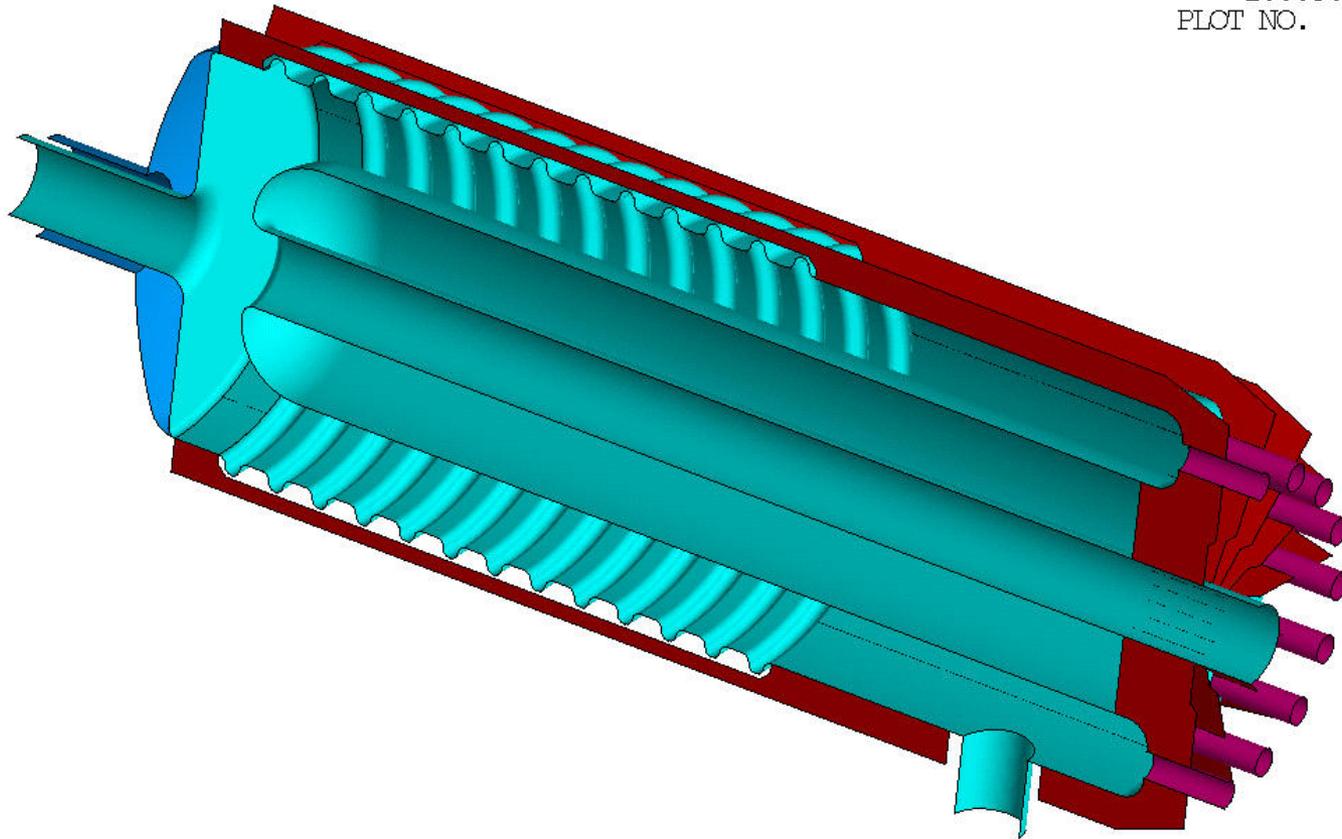
# SRF Cavity Vessel

1

ELEMENTS  
TYPE NUM

ANSYS

DEC 2 2008  
10:05:05  
PLOT NO. 1

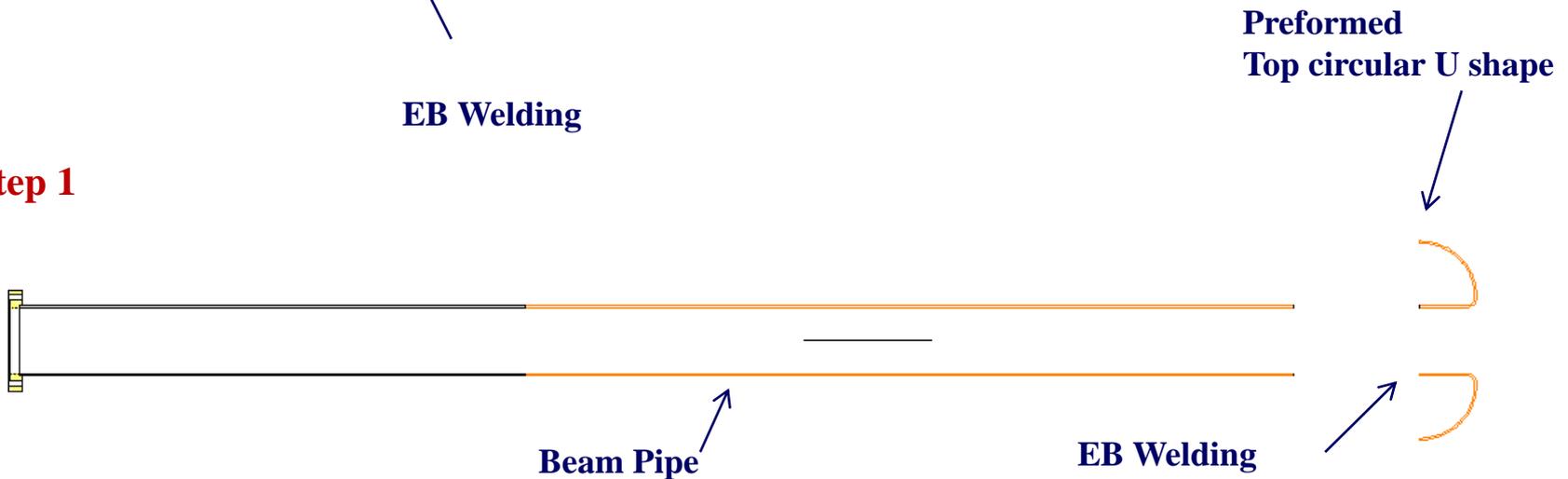


# SRF cavity/Helium Vessel Fabrication Sequences

**Step 2**

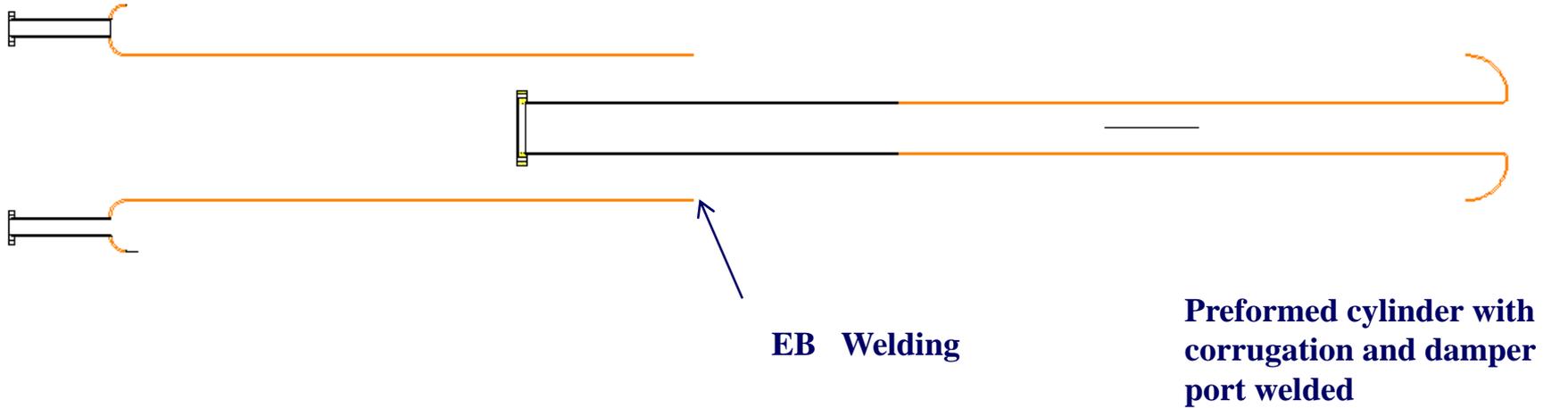


**Step 1**

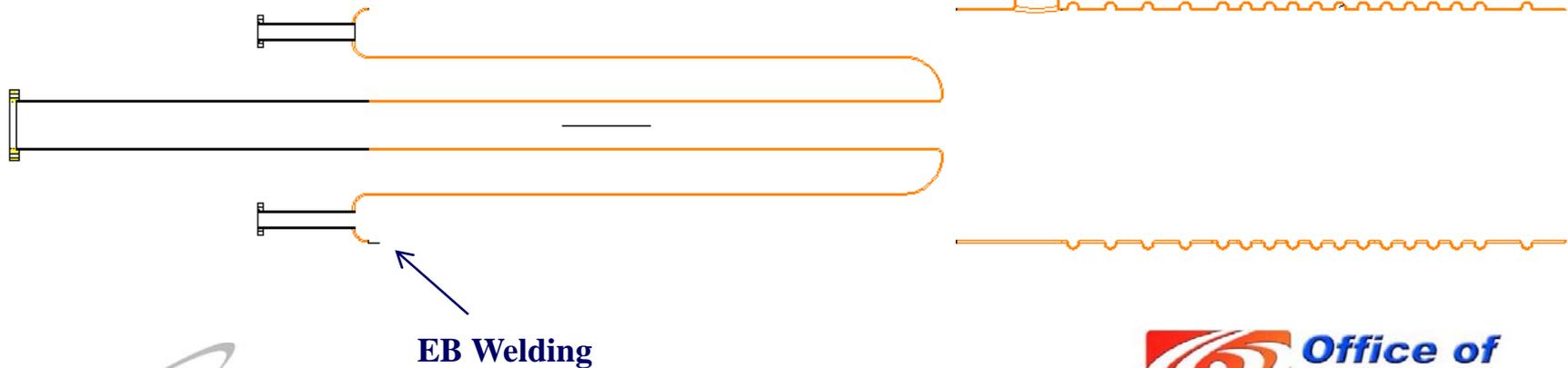


# SRF cavity/Helium Vessel Fabrication Sequences

## Step 3



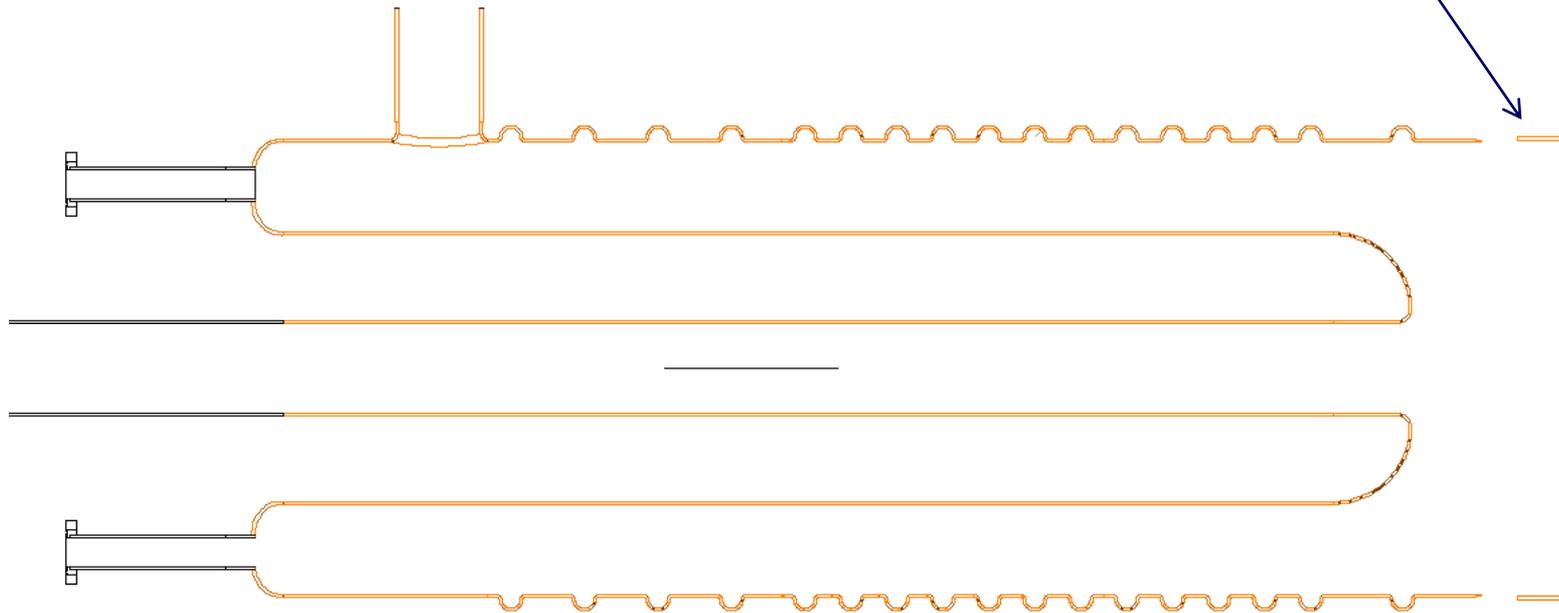
## Step 4



# SRF cavity/Helium Vessel Fabrication Sequences

## Step 5

Reinforce and  
interface ring

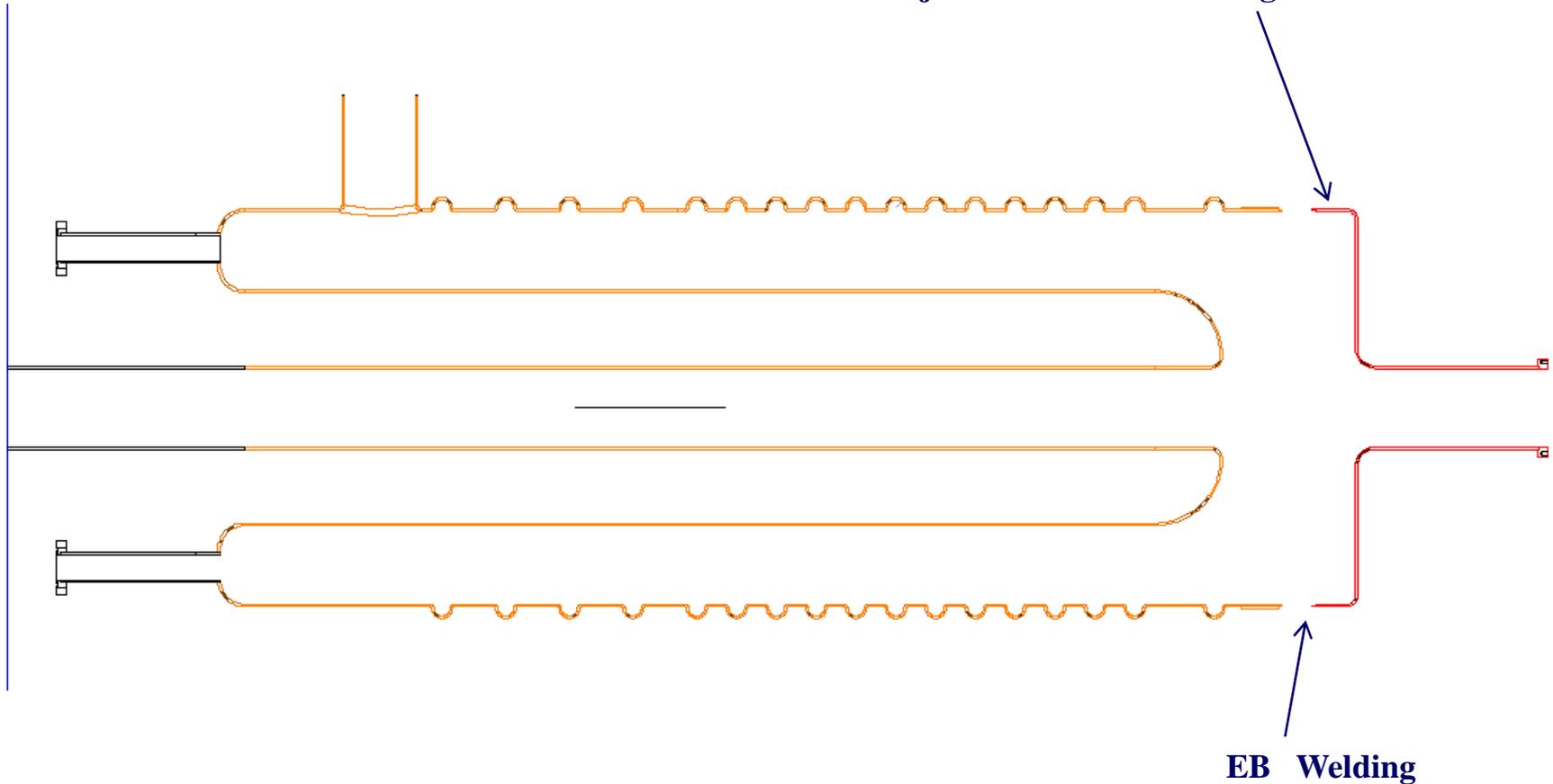


EB Welding

# SRF cavity/Helium Vessel Fabrication Sequences

## Step 6

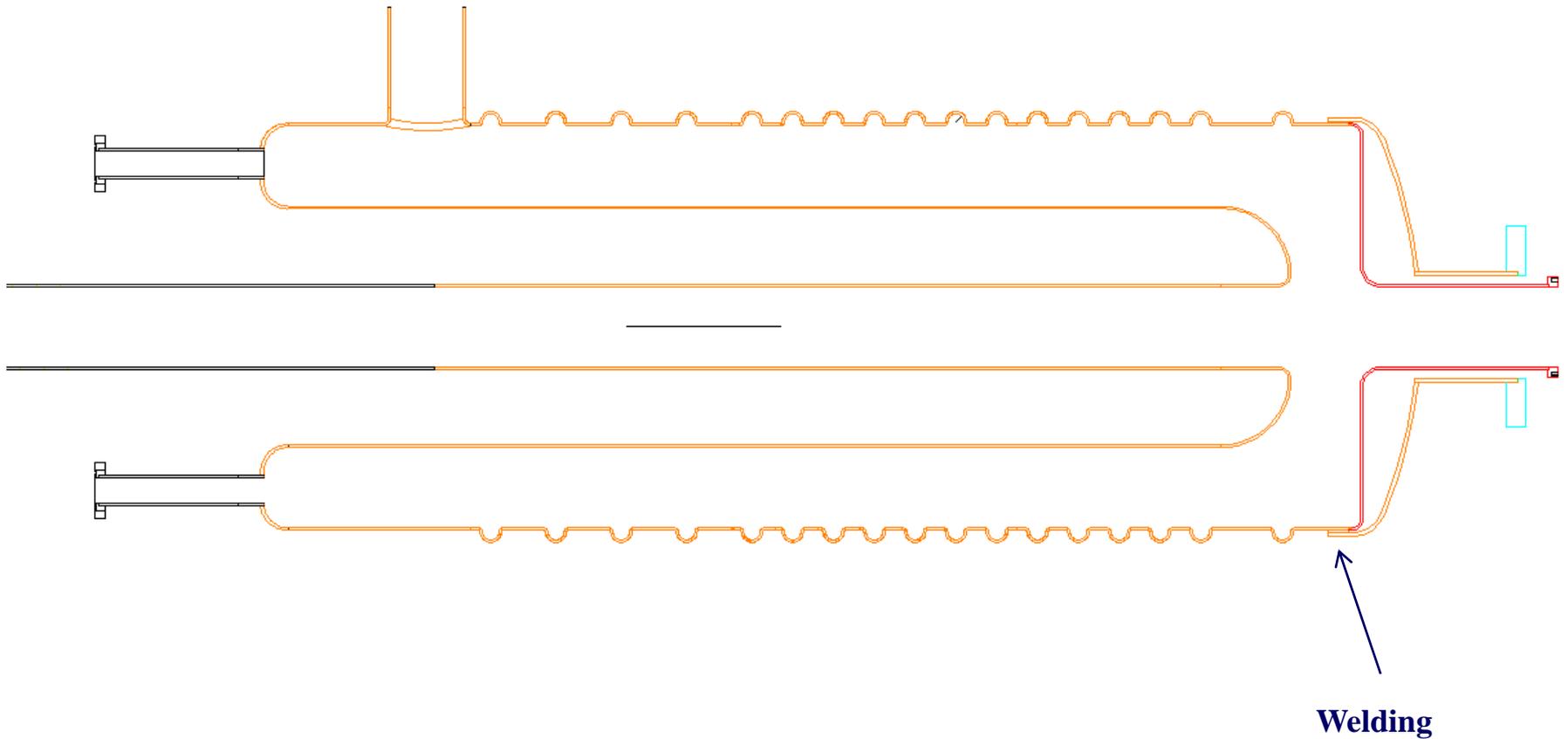
Preformed Tuner plate with extra length in the shoulder can be trimmed for frequency adjustment before Welding





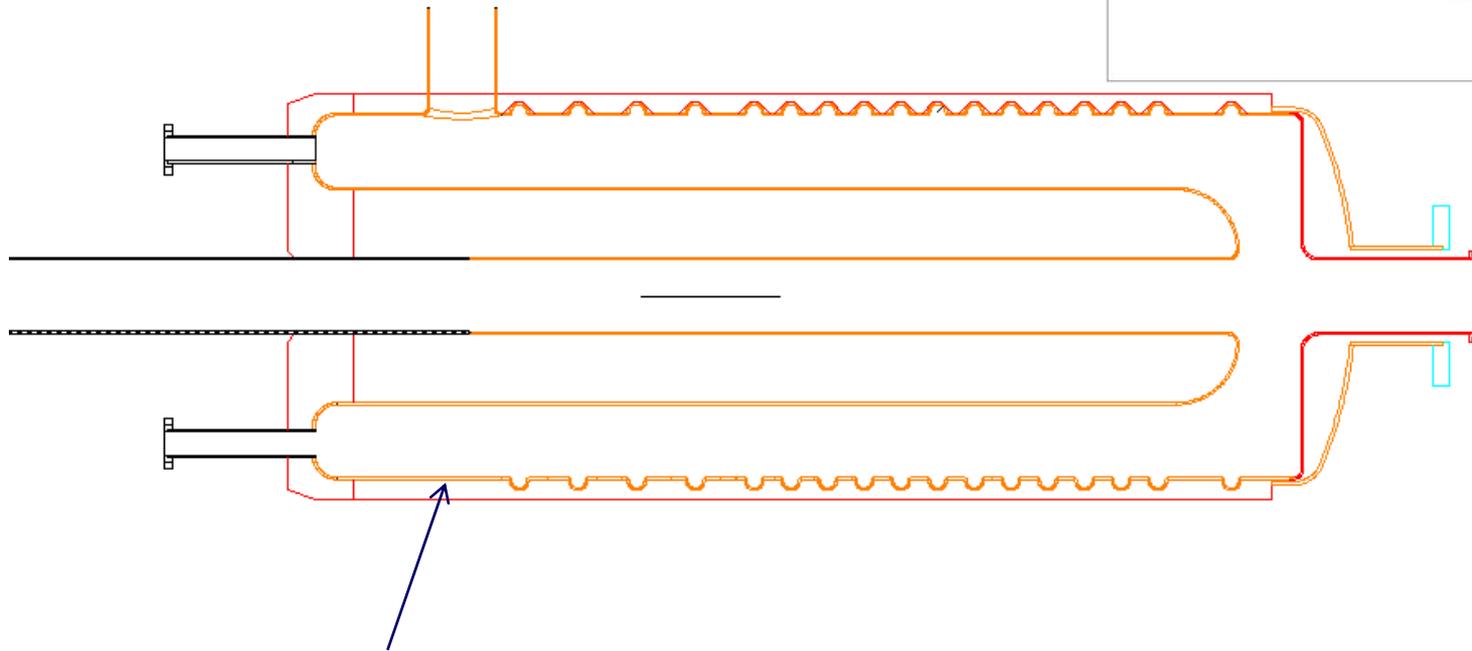
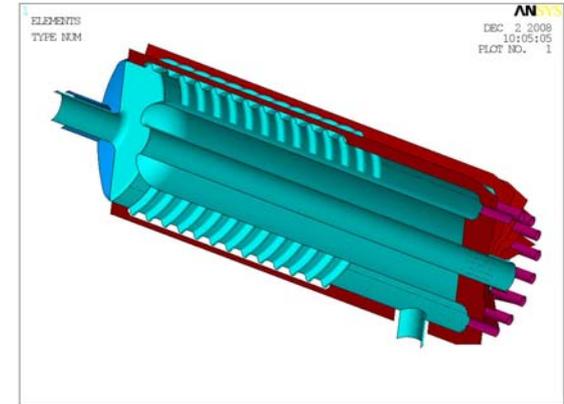
# SRF cavity/Helium Vessel Fabrication Sequences

## Step 8



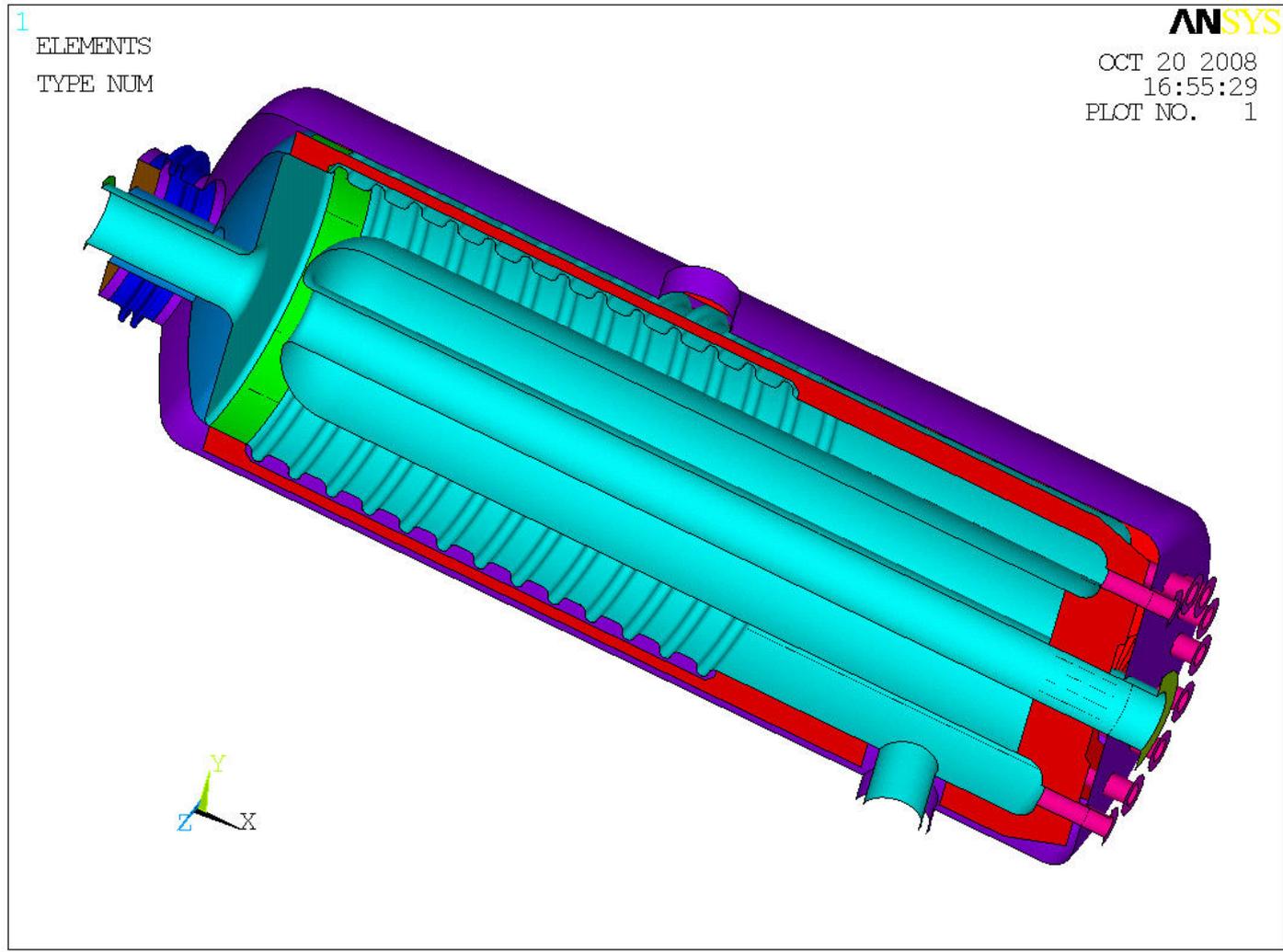
# SRF cavity/Helium Vessel Fabrication Sequences

## Step 9



16 stiffeners Stitch Welding  
Complete the RF cavity vessel

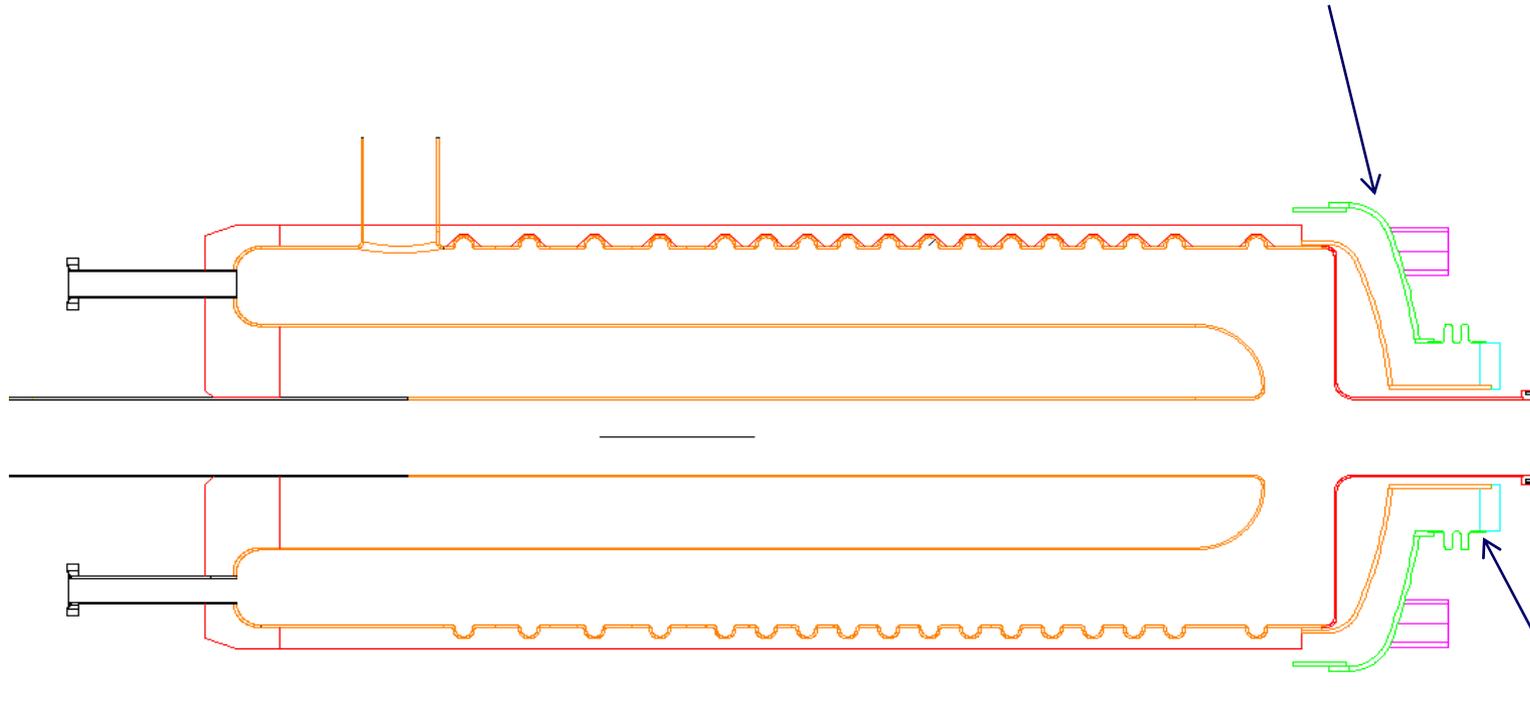
# SRF Helium Vessel



# SRF cavity/Helium Vessel Fabrication Sequences

## Step 10

Preformed helium vessel head  
with bellow welded

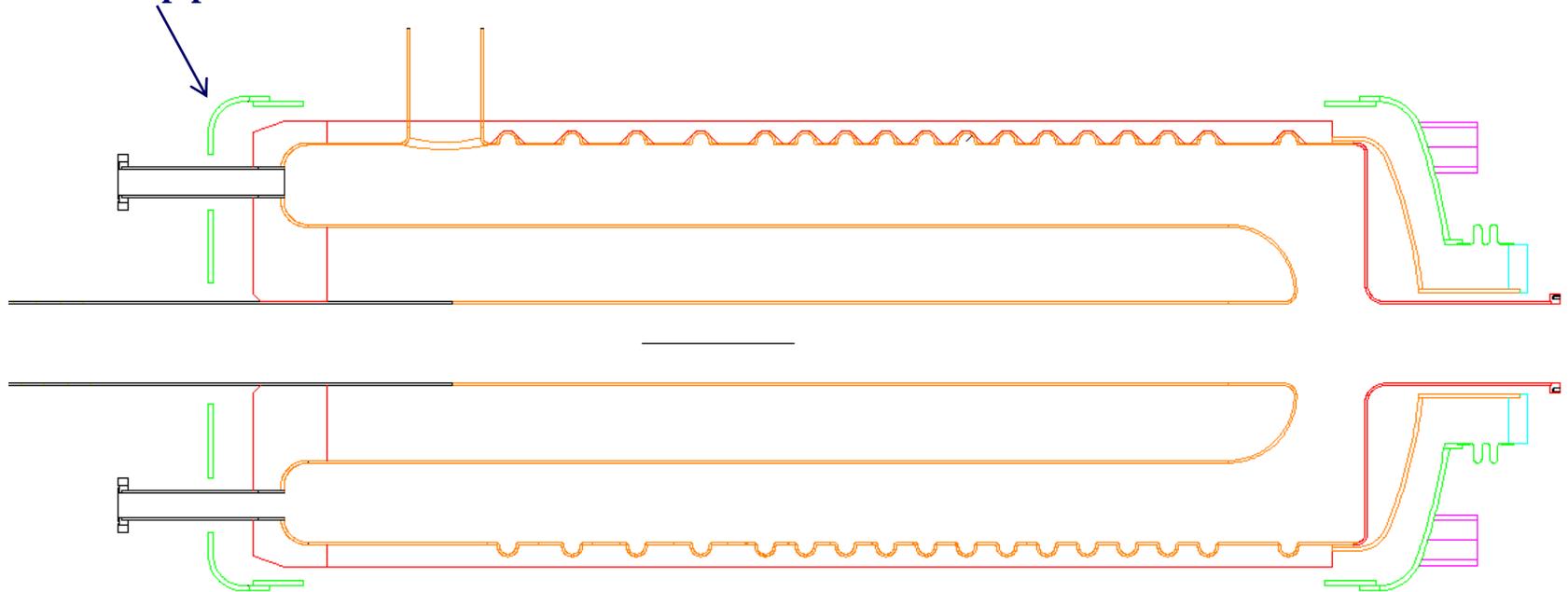


Bellow end slide  
through the flange  
then welded

# SRF cavity/Helium Vessel Fabrication Sequences

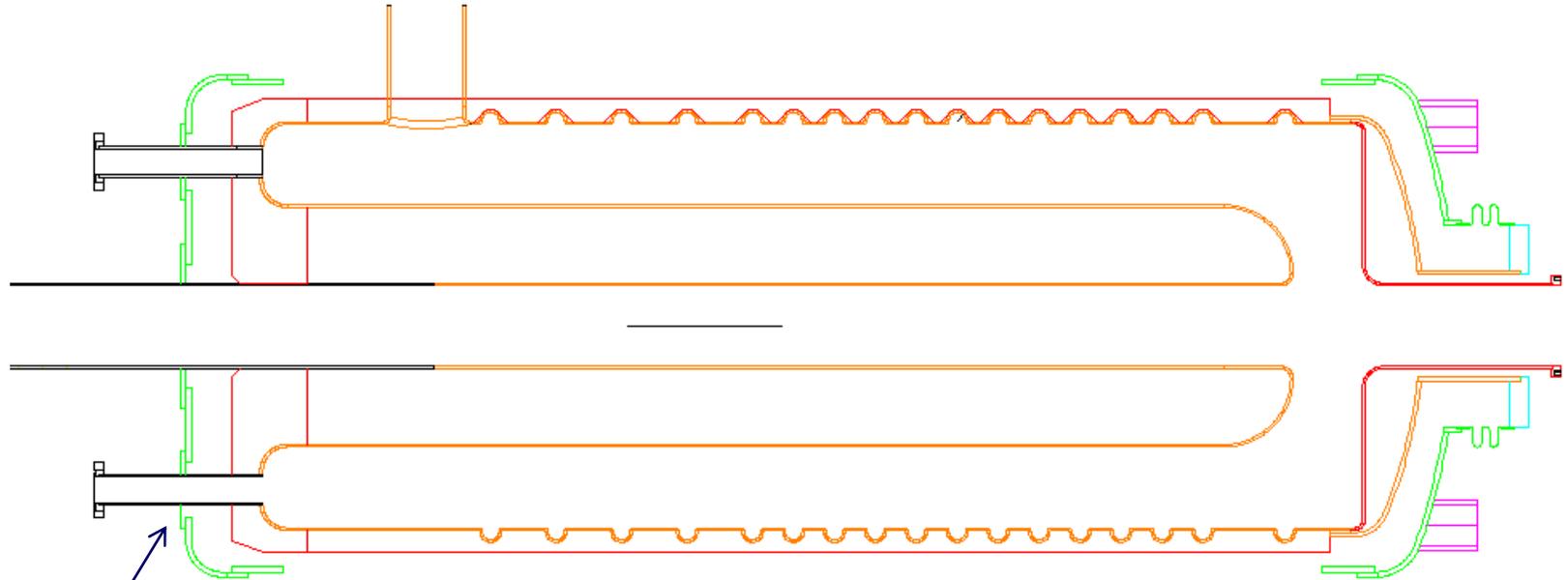
## Step 11

Preformed end plate with over size holes slides through the 16 ports and center pipe



# SRF cavity/Helium Vessel Fabrication Sequences

## Step 12

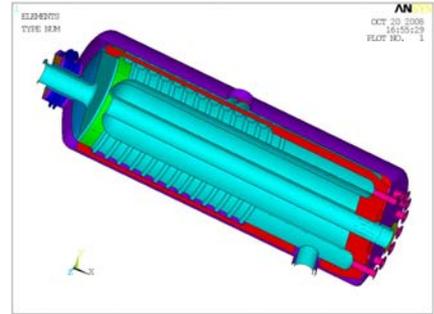


Opening holes closed by welding two half circular plates and join the 16 ports.

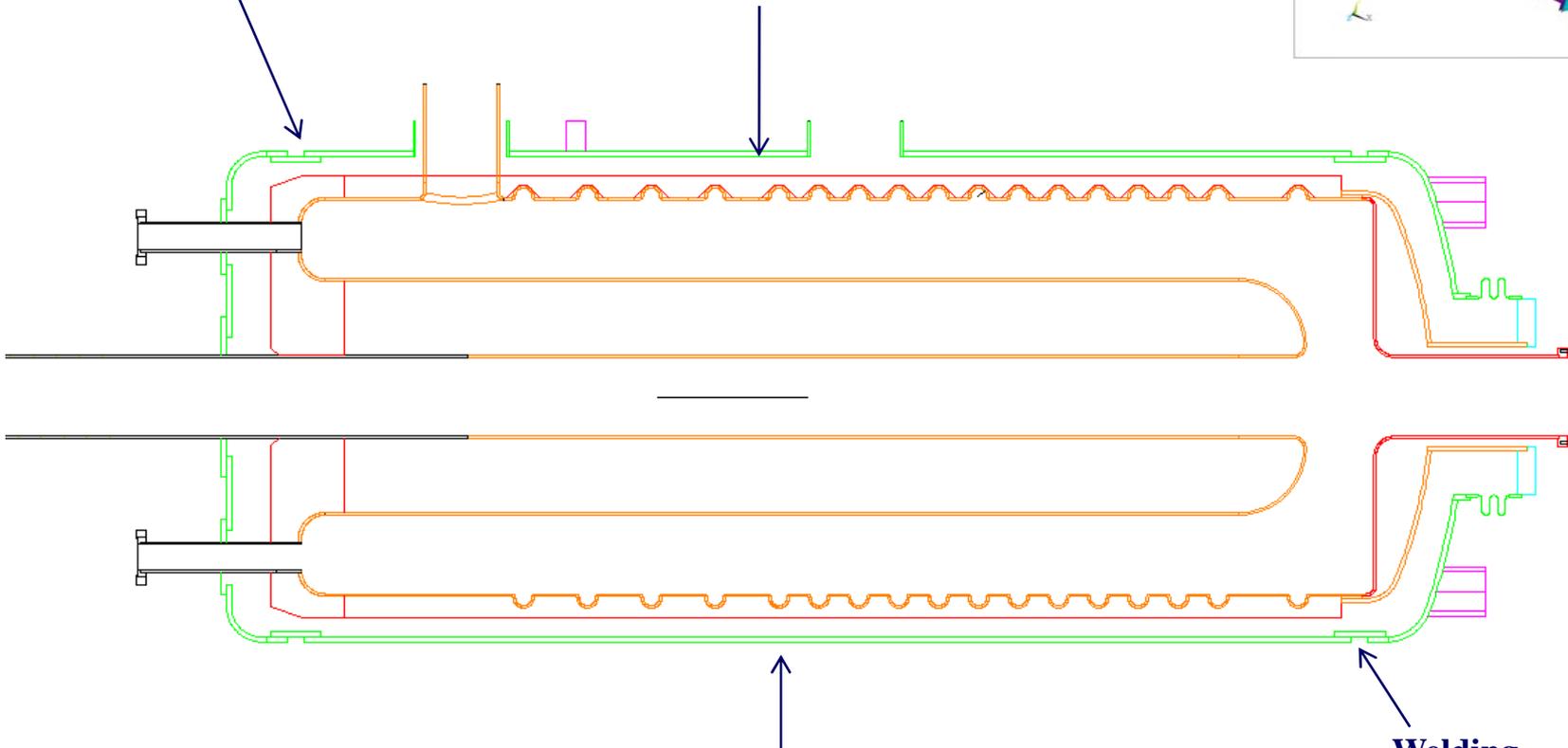
# SRF cavity/Helium Vessel Fabrication Sequences

## Final Step

Preformed Helium vessel in two half cylinders.  
By longitudinal welding to form a cylinder



Welding



Preformed Helium vessel in two half cylinders.  
By longitudinal welding to form a cylinder