

# Status of the Polarized Target Vacuum Can

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- Design of OVC for **SANE**, **Semi-SANE**,  
and **Real Compton** experiment

## Current Status

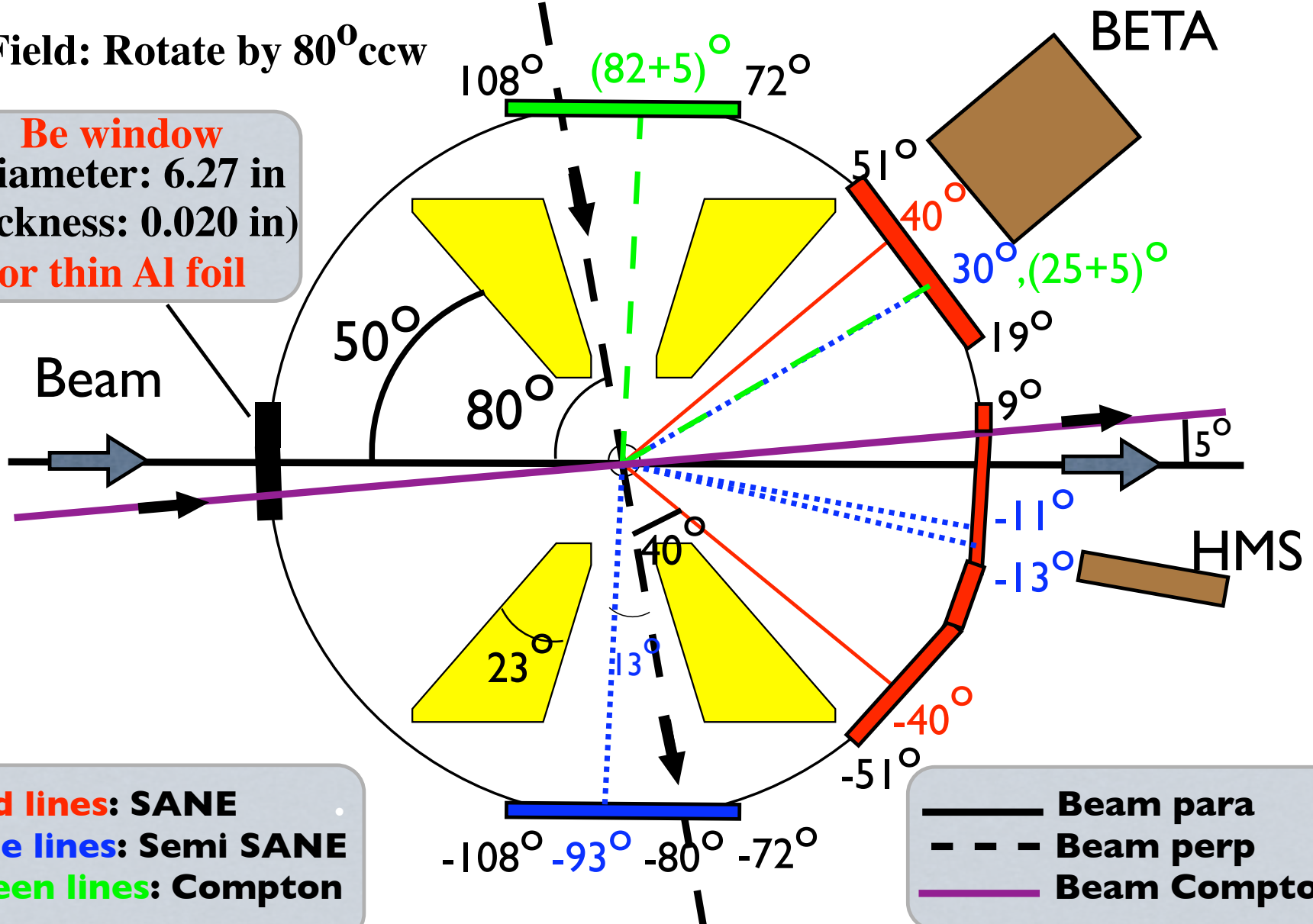
- OVC and Nitrogen shield designs were re-submitted in May 2006.
- JLab Engineers have been working on the design work. They plan to finish in early September.
- Need to decide on a few details of the can (Be window, nitrogen shield frame, etc).

# OVC Windows (Submitted in May '06)

R=45.6cm

⊥ Field: Rotate by 80° ccw

**Be window**  
(diameter: 6.27 in  
thickness: 0.020 in)  
or thin Al foil



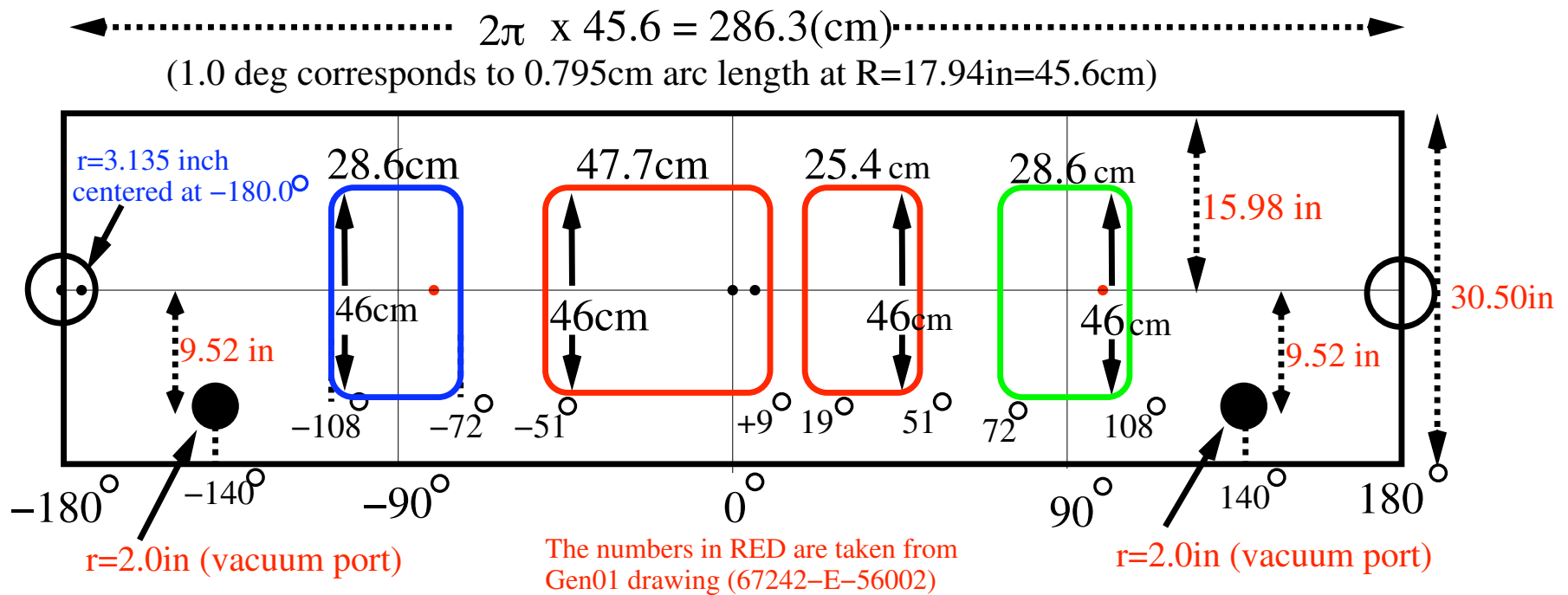
**Red lines: SANE**  
**Blue lines: Semi SANE**  
**Green lines: Compton**

**— Beam para**  
**- - - Beam perp**  
**— Beam Compton**

# OVC Window locations and dimensions

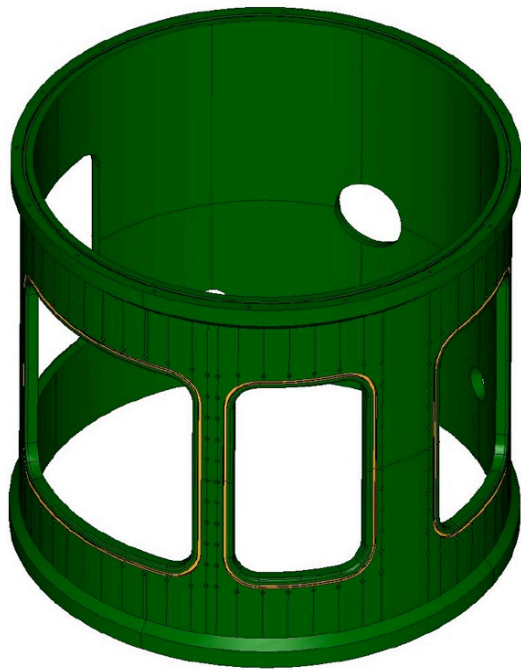
(submitted in May '06)

- Roll-out view of the OVC with the inner radius of 45.6 cm.
- Corners of square windows are rounded ( $r = 5\text{cm}$ )

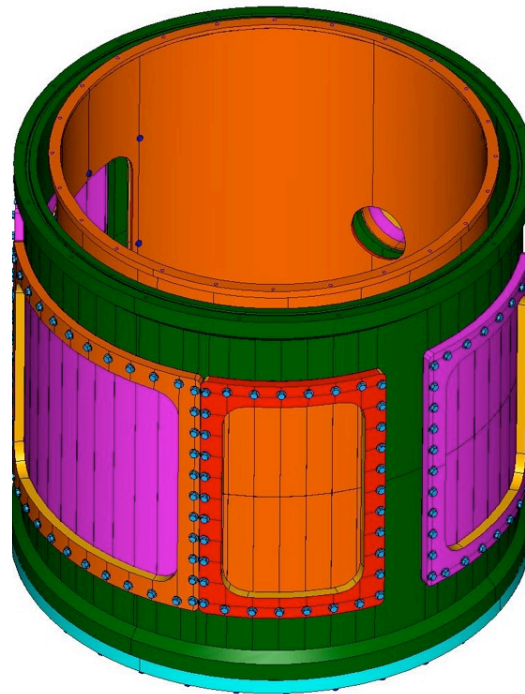


# Outer vacuum can

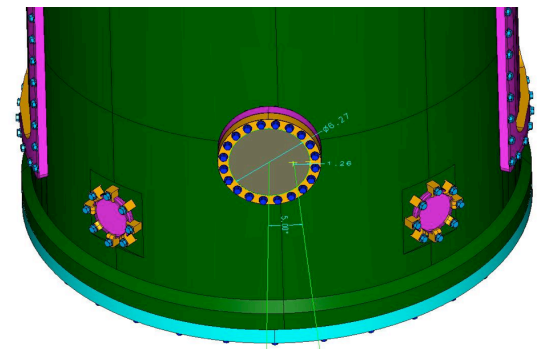
- Pictures made by Bert Metzger



OVC



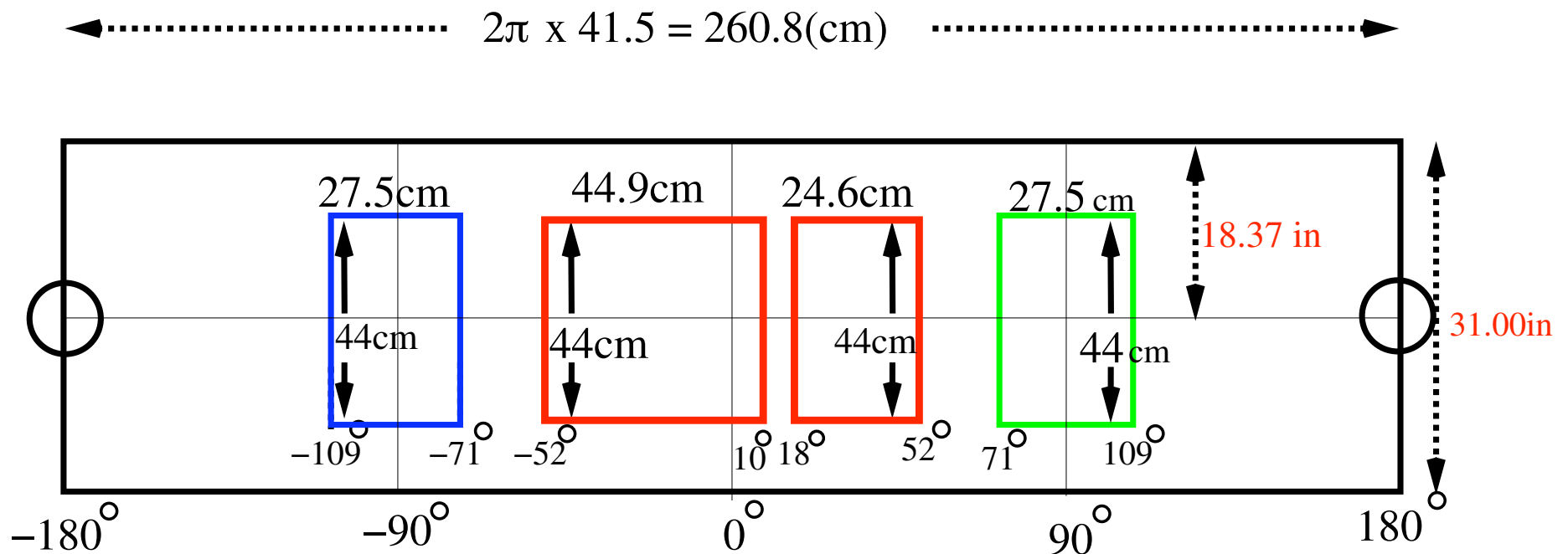
OVC with windows  
and nitrogen shield



6.27in Be window  
and vacuum ports

# Nitrogen Shield Window locations and dimensions (updated in Aug, 2006)

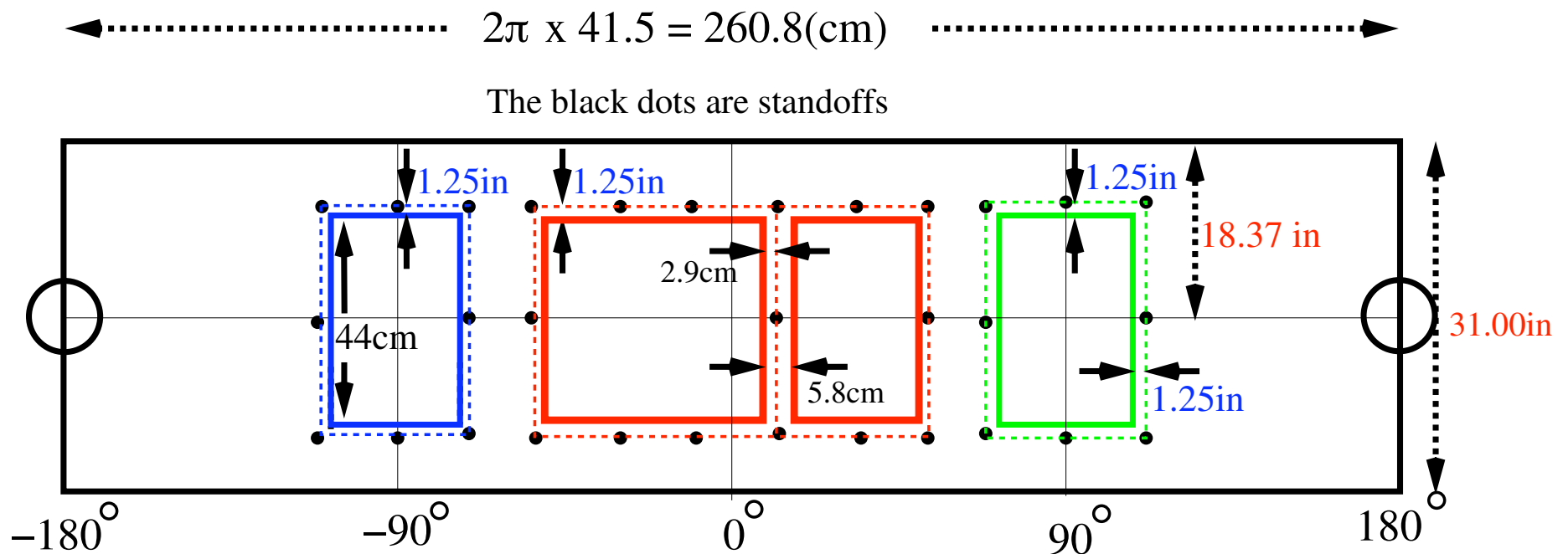
- Roll-out view of the Nitrogen Shield can with the inner radius of 41.5 cm



The numbers in RED are taken from Gen01 drawing (67242-E-56024)

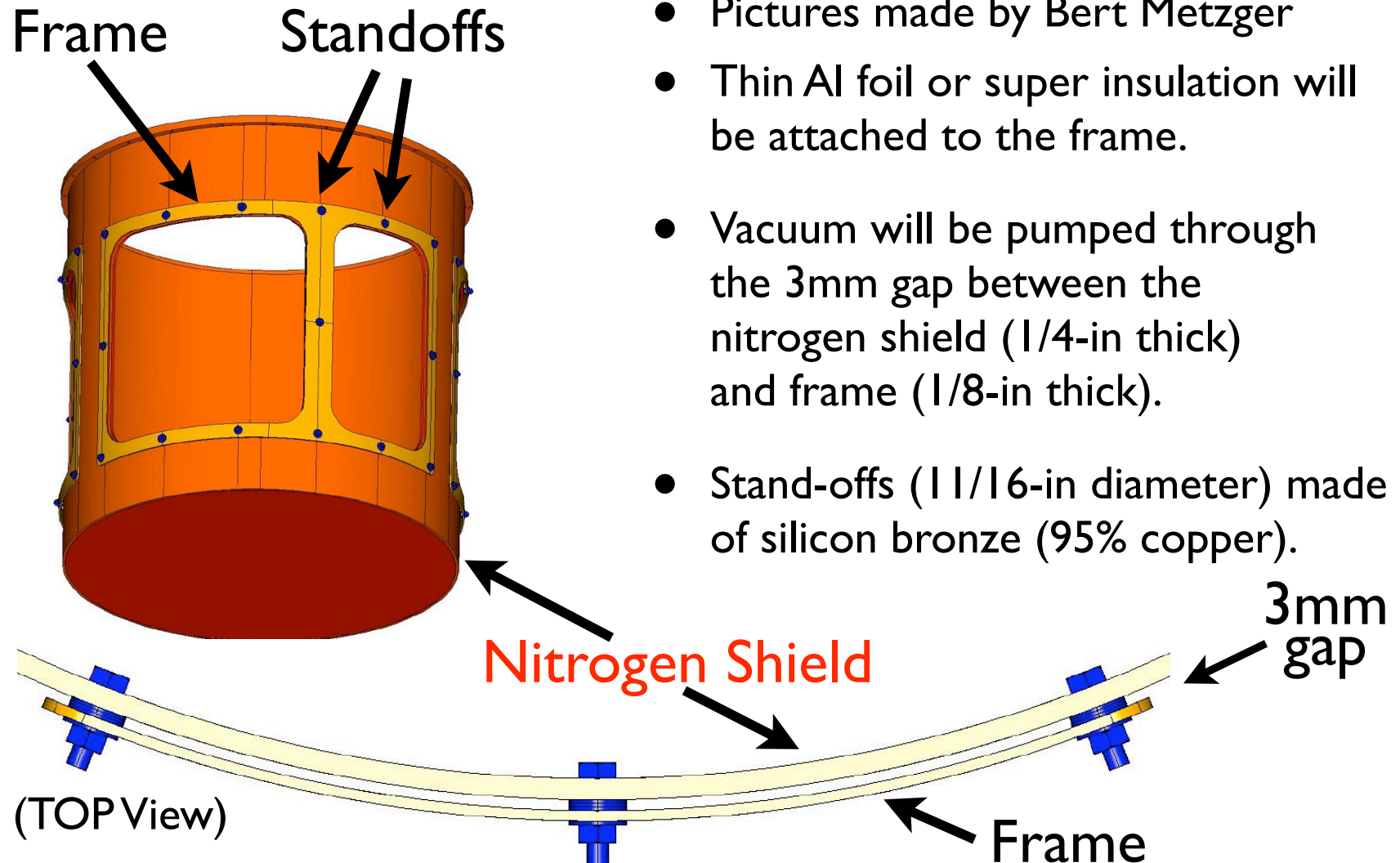
# Nitrogen Shield: Frame locations and dimensions (updated in Aug, 2006)

- A frame (dashed line) for Al foil or super insulation is mounted at each large window on the nitrogen shield. It will be located at 3mm outside of the shield. (Solid lines are the windows)



The numbers in RED are taken from Gen01 drawing (67242-E-56024)

# Nitrogen Shield



- Pictures made by Bert Metzger
- Thin Al foil or super insulation will be attached to the frame.
- Vacuum will be pumped through the 3mm gap between the nitrogen shield (1/4-in thick) and frame (1/8-in thick).
- Stand-offs (11/16-in diameter) made of silicon bronze (95% copper).



## Summary / Timeline

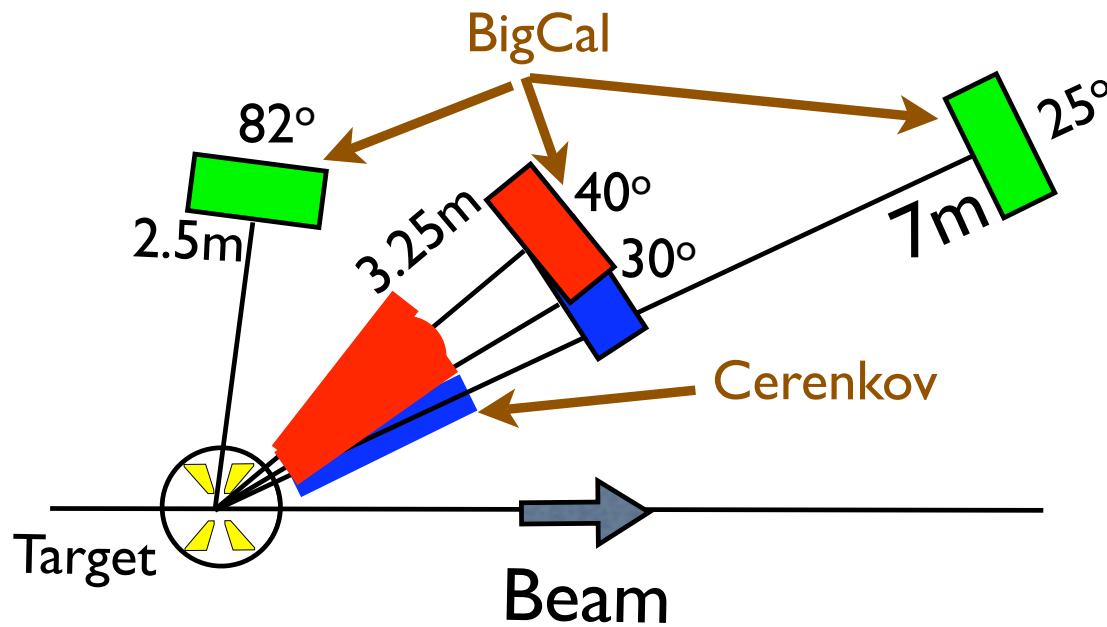
- JLab engineers will finish the design work in early September.
- The drawings will be reviewed by P. Brindza, M. Fowler, etc for approval. But we will be very close to the end of the fiscal year!
- Rolf said that we would buy the can the next fiscal year.
- Manufacturing of OVC in October (takes 4 months including bidding period)
- Testing the OVC in 2007 (M.Seely)

# Status of the Target / Detector Platform Design (by JLab Engineers)

- BETA Detector Platform Design meeting was held on 6/15 at JLab
- Basic design parameters (dimensions, angles) were identified, and JLab engineers have been informed of them.
- They are working on the design.

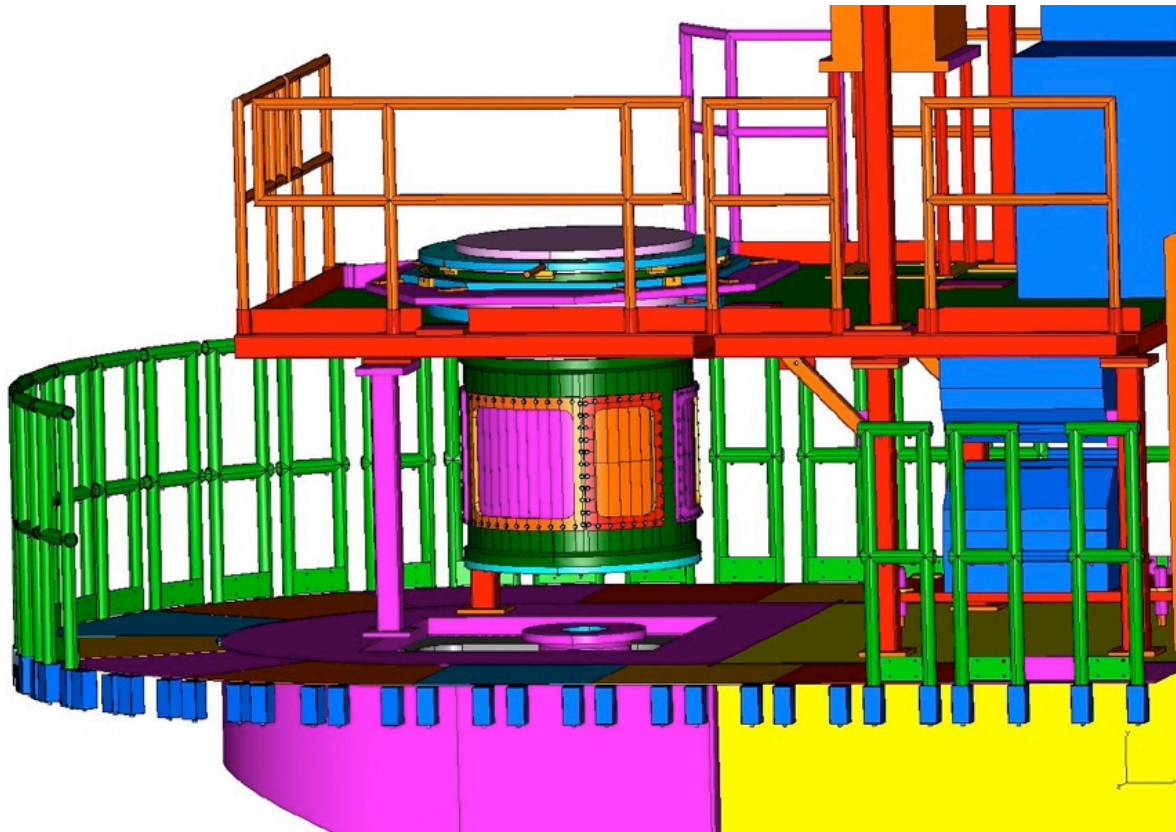
# Cerenkov and BigCal Locations

- **SANE**, **Semi-SANE**, and **Compton**
- Details are posted at <http://www.jlab.org/~rondon/sane/mtg10/Beta%20detector%20platform%20design.txt>
- HMS angles are from  $11^\circ$  to  $48^\circ$



# Target Platform Design (Preliminary)

- Drawing made by Bert Metzger



# Detector Platform Design (preliminary)

- Drawing made by Mike Fowler
- Platform is too small !

