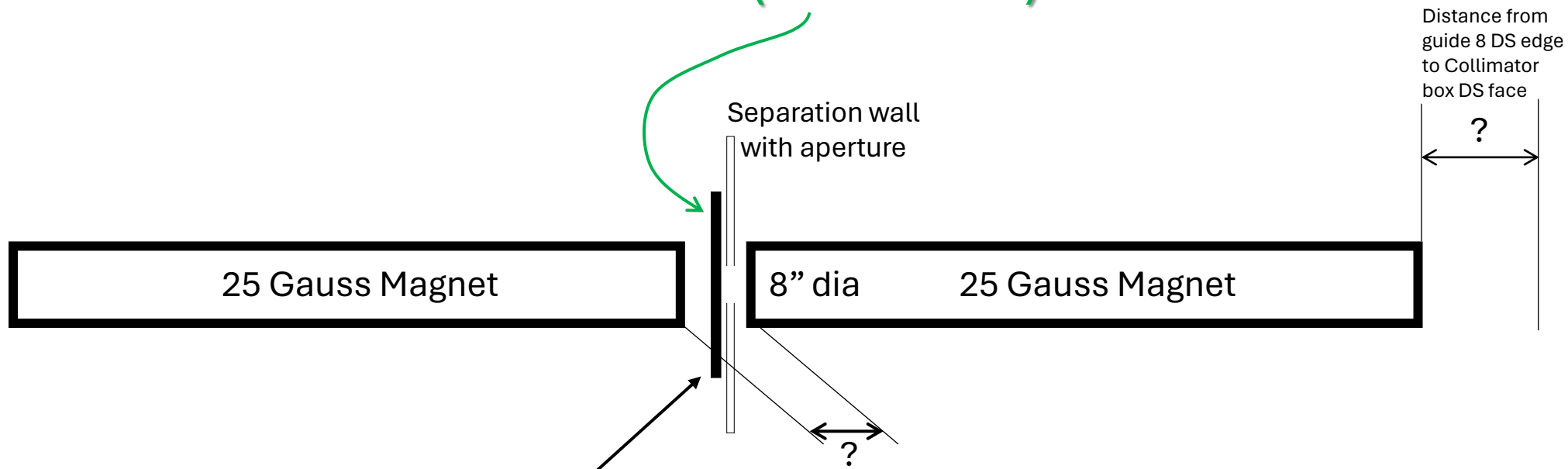


# ”Middle Beam Catcher” (absorber) for nTMM



- Material
- Required purity
- Size (check available space)
- Vertical stand/support
- Safety

- **Material:** Fermi-potential is not essential since in  $n$ TMM model  $\Delta m \ll |\mu B| = 0.15 \text{ neV}$
- **Cd** – 24” x 24” x 1/8” plates available (~ \$400), soft, toxic, needs protection plating or Al envelope  
 Superpure Chemetals: <https://www.surepure.com/Cadmium/a/13?o=20#results>  
 Cadmium Plating: [AOTCO Metal Finishing Co.](https://www.aotco.com/)  
 Density 8.65 g/cm<sup>3</sup>
- **PBN** – Pyrolytic Boron Nitride, rigid, easily machined, non-toxic  
 AdValue Technology: <https://www.advaluetech.com/>  
 Density 2.0 – 2.2 g/cm<sup>3</sup>
- **B4C** – Pyrolytic Boron Nitride, rigid, difficult to machine, non-toxic  
 Advanced Ceramic Materials: <https://www.preciseceramic.com/products/boron-carbide-b4c.html>  
 Density 2.50-2.52 g/cm<sup>3</sup>
- **Required purity:** >99% available, what purity required, what element impurities are OK/be avoided?
- **Size:** thickness: Cd – 1/8” is OK, PBN or B4C – 1/4” ? (need to be re-checked)  
 transversal area : 12” x 12” ? (need to re-check for fit to the guide box)
- **Vertical stand/support:** (to be designed)
- **Safety:** PBN or B4C more advantageous from safety aspects (Cd is toxic)

Gate-valve +  
Vacuum extension +  
Flange with  
defining aperture



Possible new extension from  
Gate Valve to Silicon Window  
since this space will not be  
used in nTMM measurement