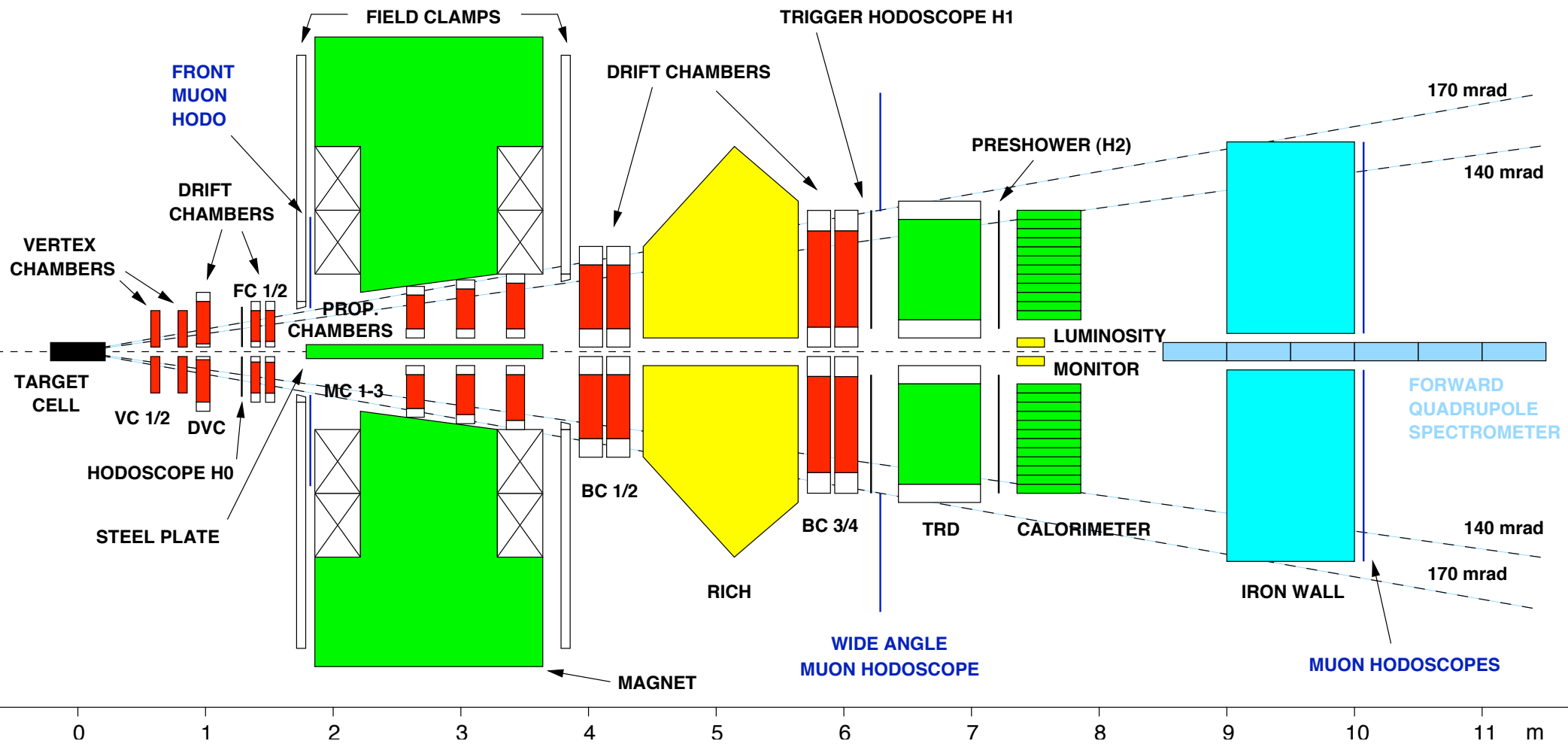
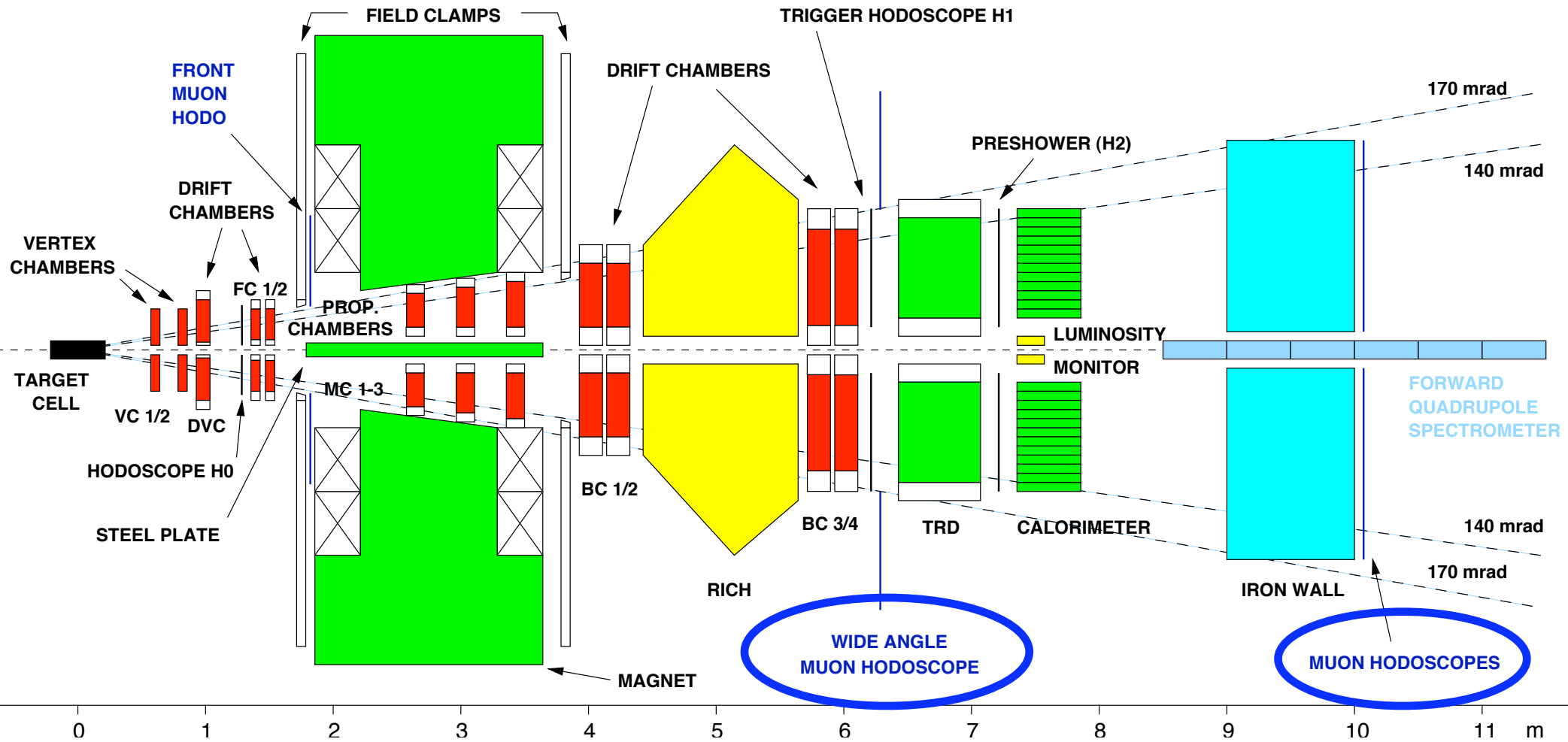
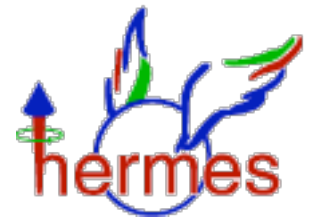


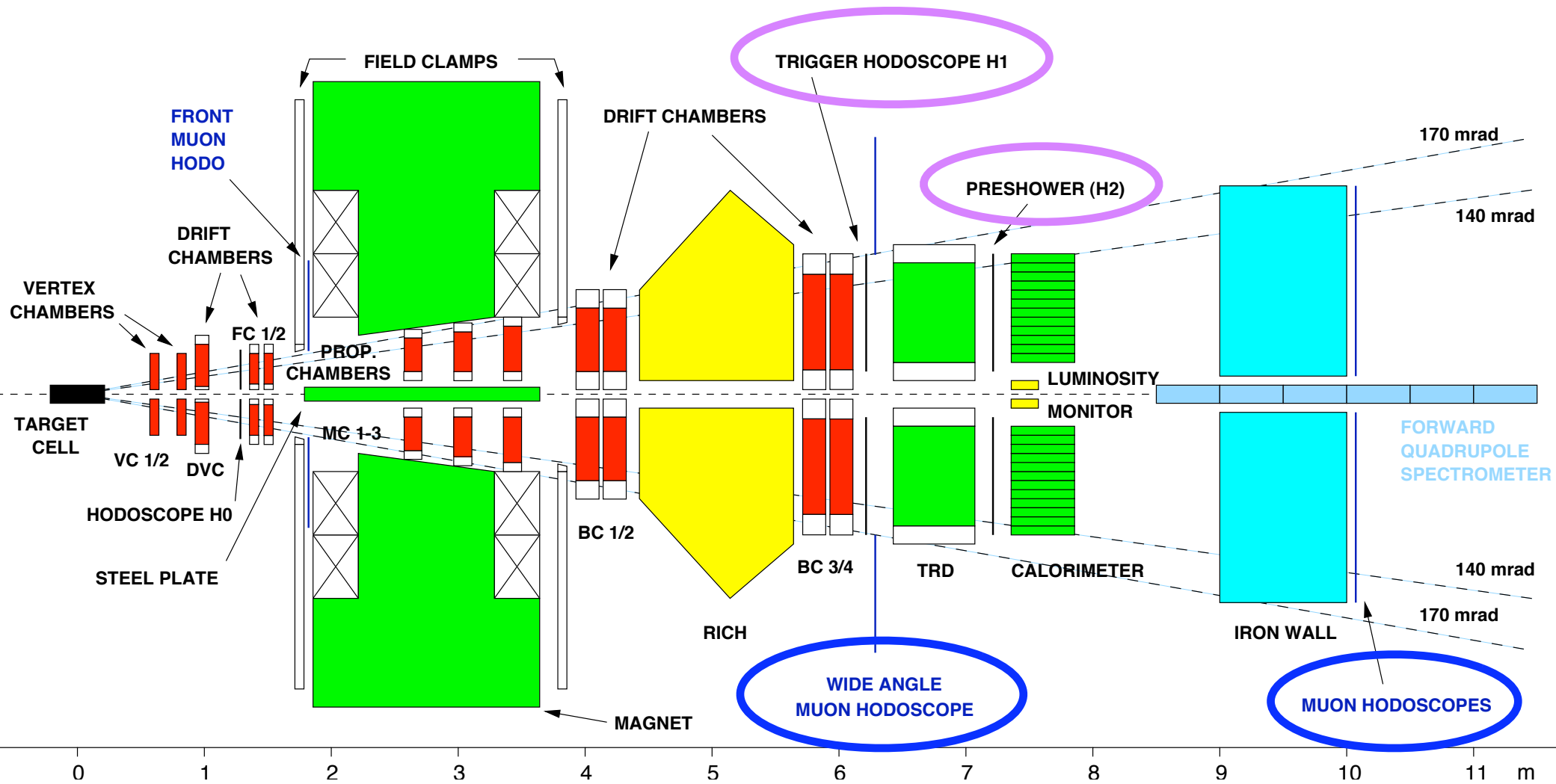
HERMES Muon Hodoscopes

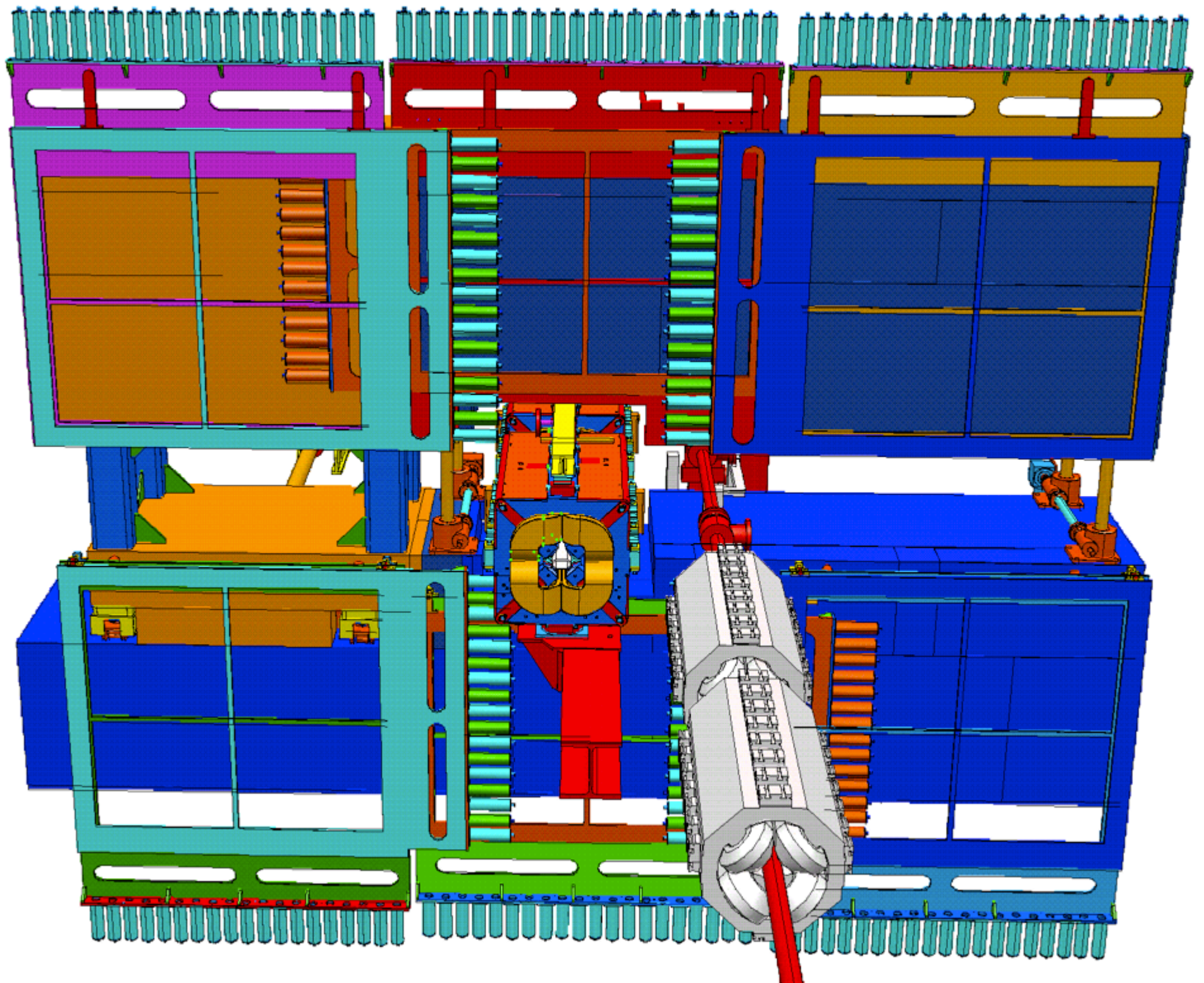


HERMES Muon Hodoscopes

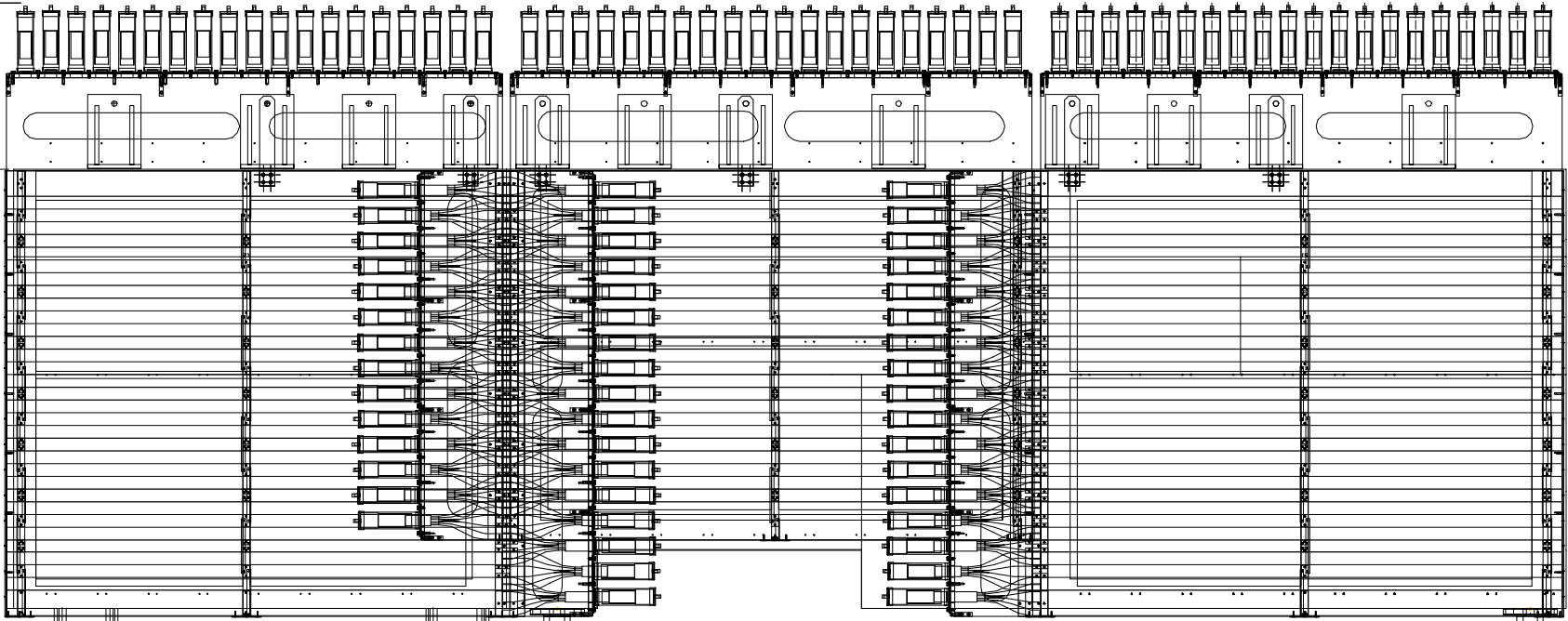


HERMES Muon Hodoscopes

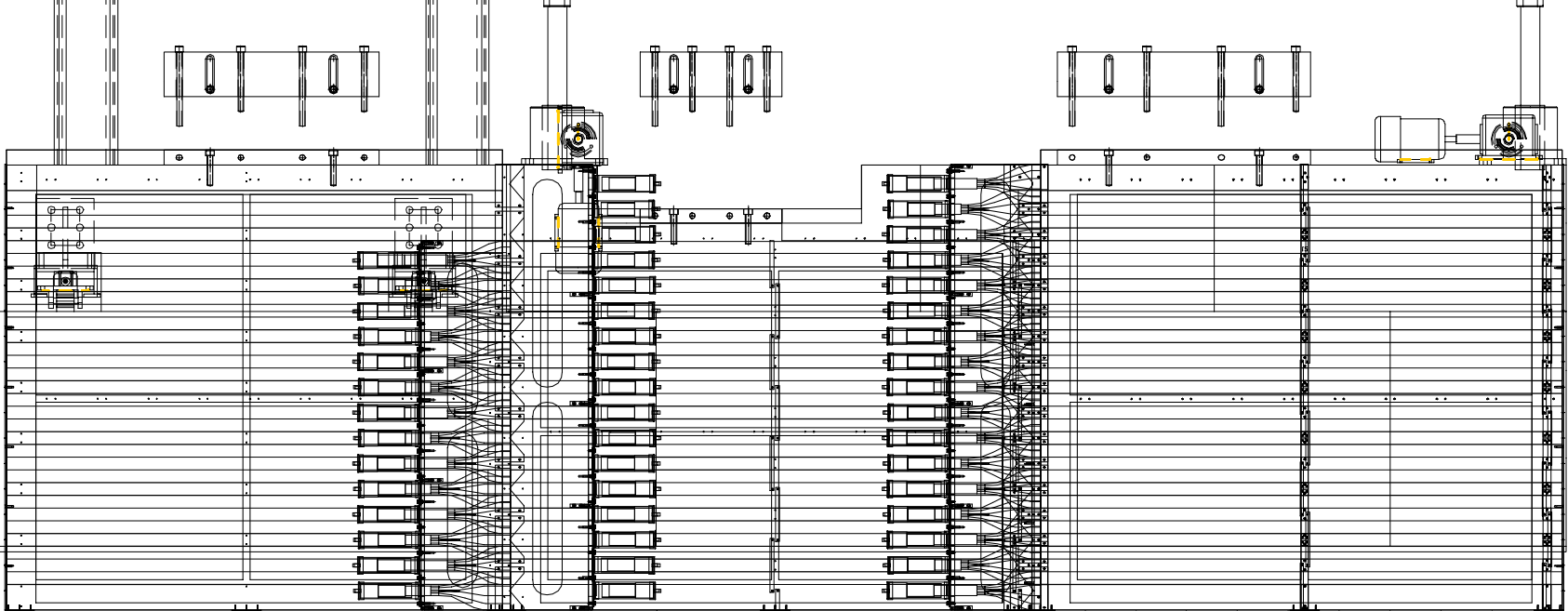




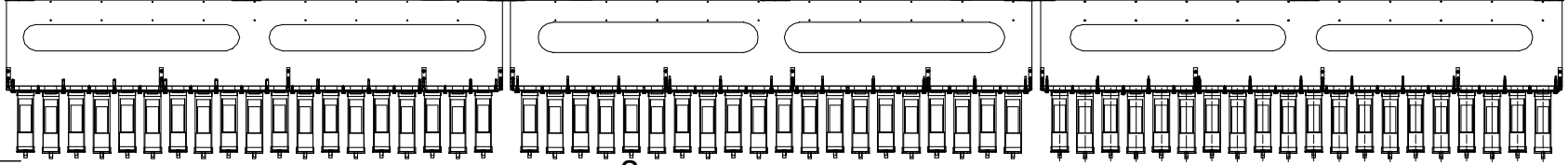
22.28 [57 CM.]

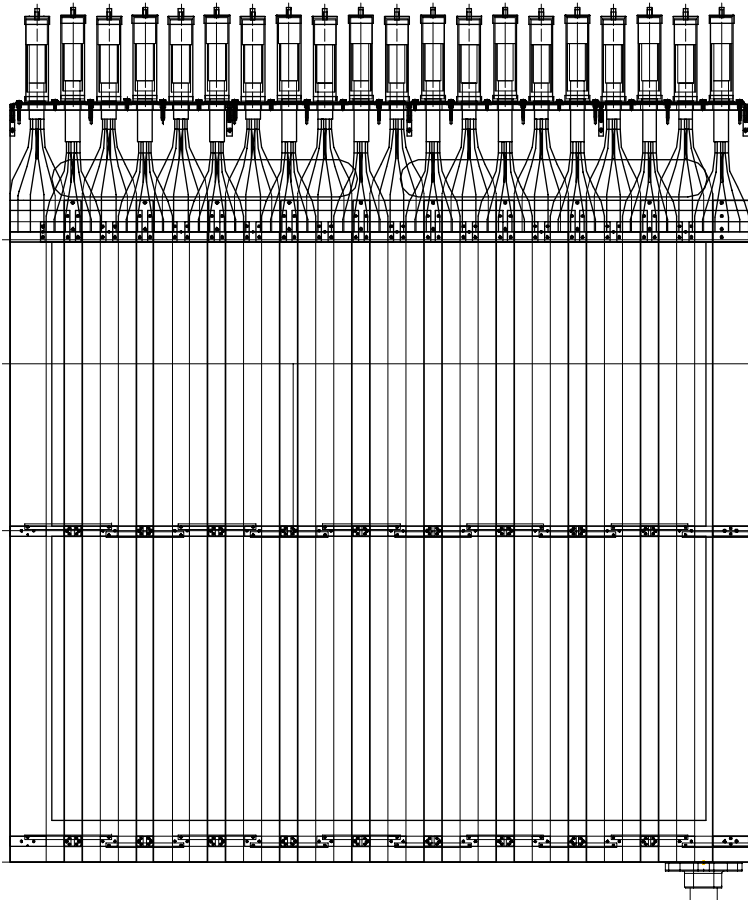


186.29 [473 CM.]



29.37 [75 CM.]



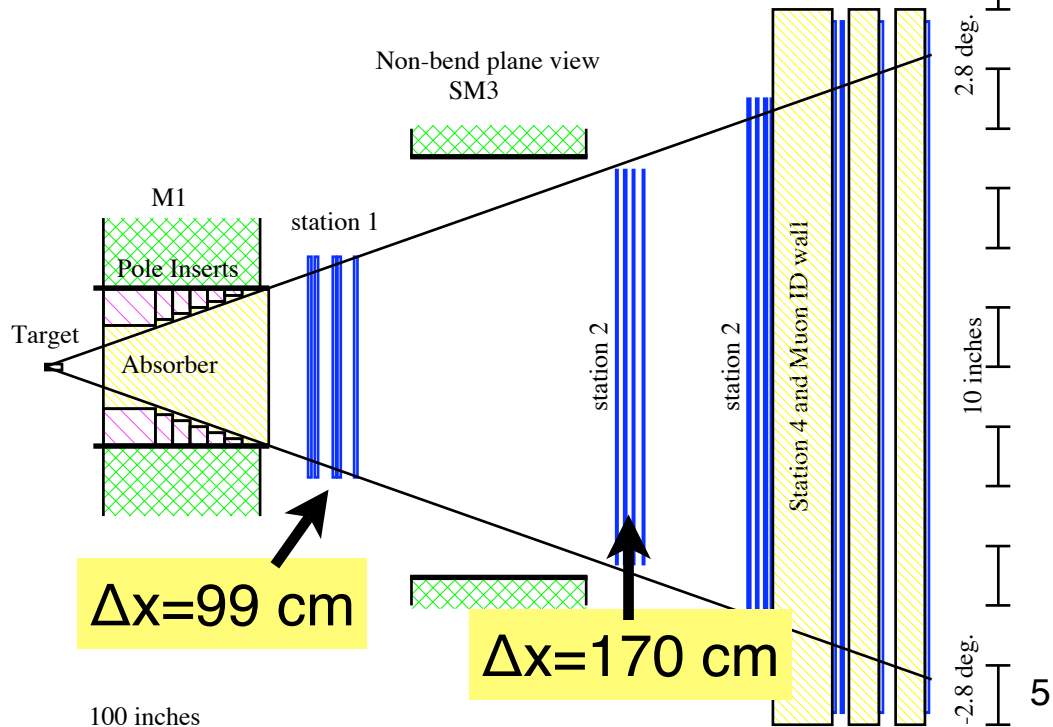
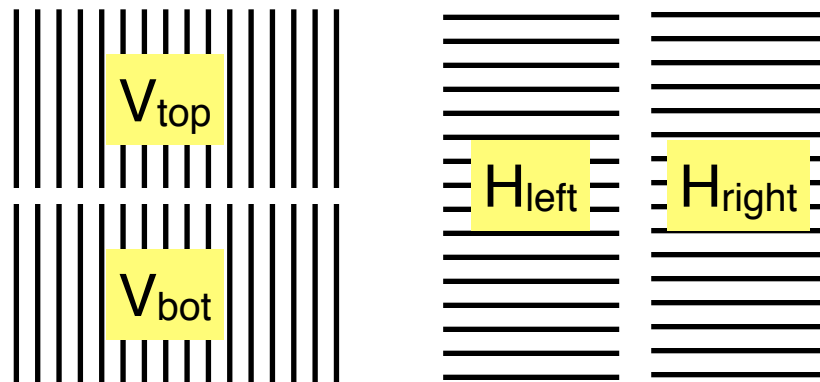
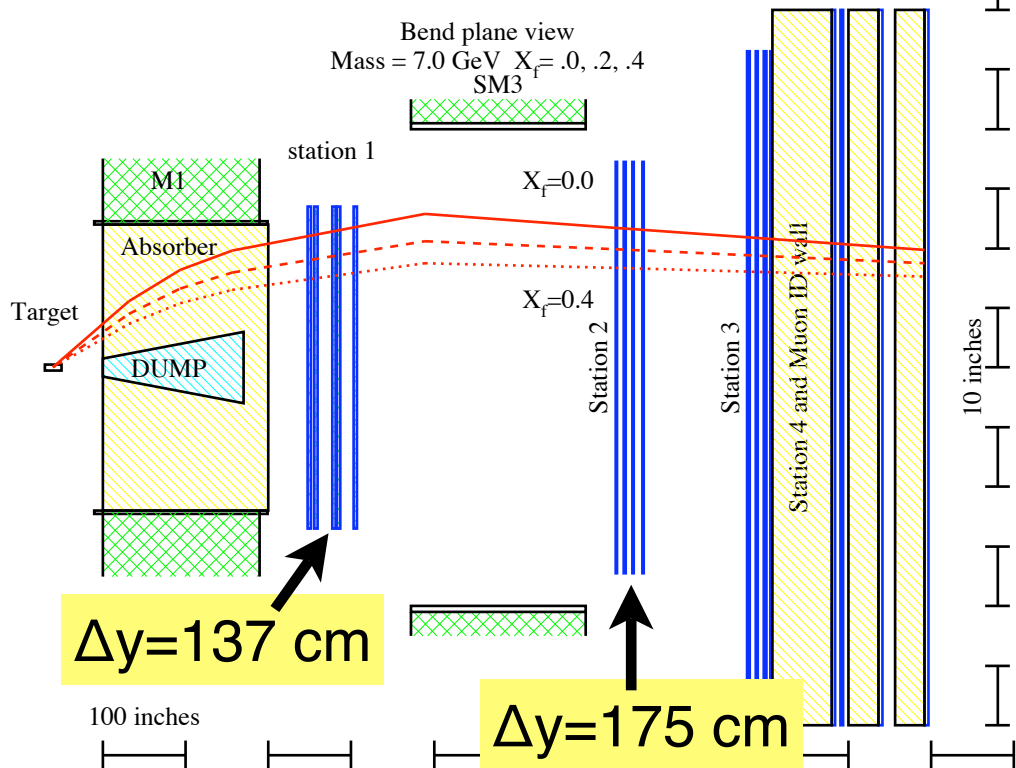


	scint length (cm)	array width (cm)	#PMTs
1V	152	169	19
1H	169	152	17
2V	132	178	20
2H	178	126	14
3V	152	178	20
3H	178	152	17
4V	90	394	45

- **2 copies** of each array (HERMES top/bot)
- scintillator bars all **13 cm wide**, staggered with **1/3 overlap** → **4.3 cm** granularity

- scintillators **1/4" thick**, x 13 cm width = area-match to PMTs' **1.25" diameter** cathodes
- PMTs from ARGUS (free! 😊), old but w μ -metal & iron shields
- 4V arrays = wide-angle hodos, located at wide angle between spectrom dipole & iron wall

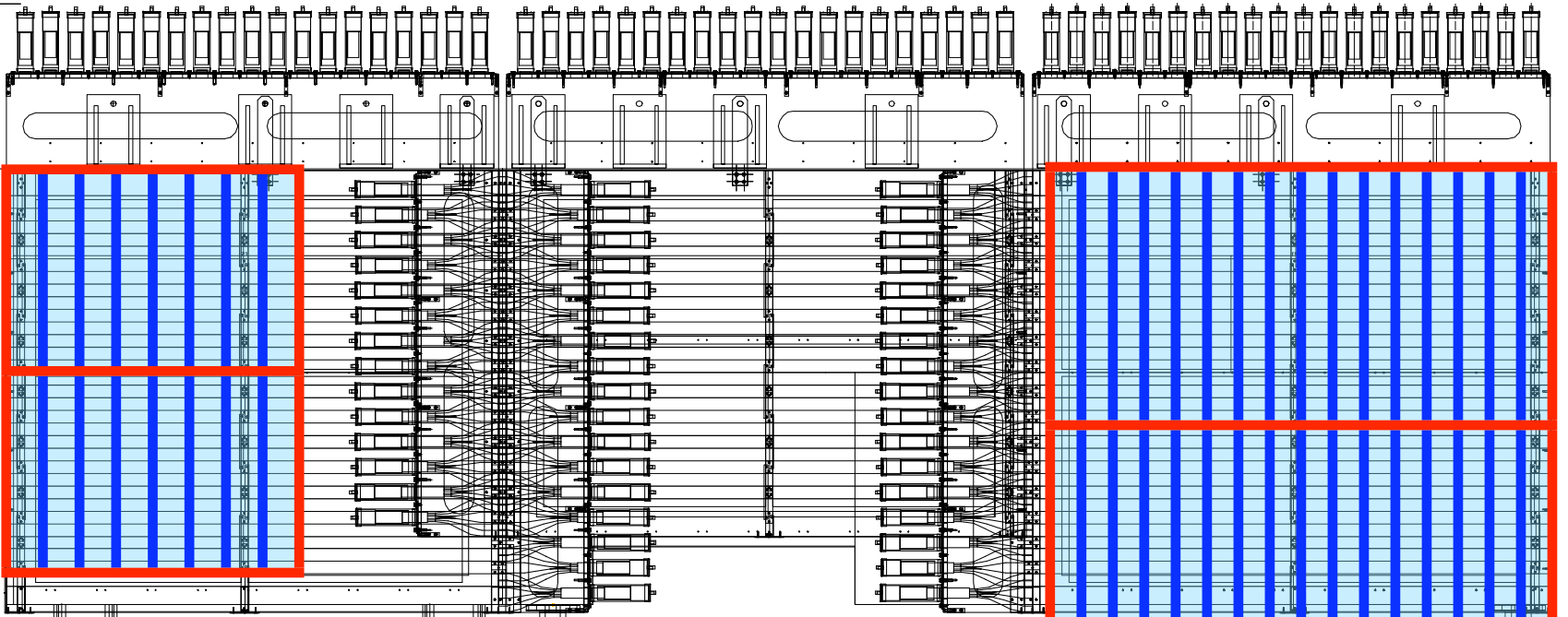
Hodoscope concept from proposal for Stations 1 & 2



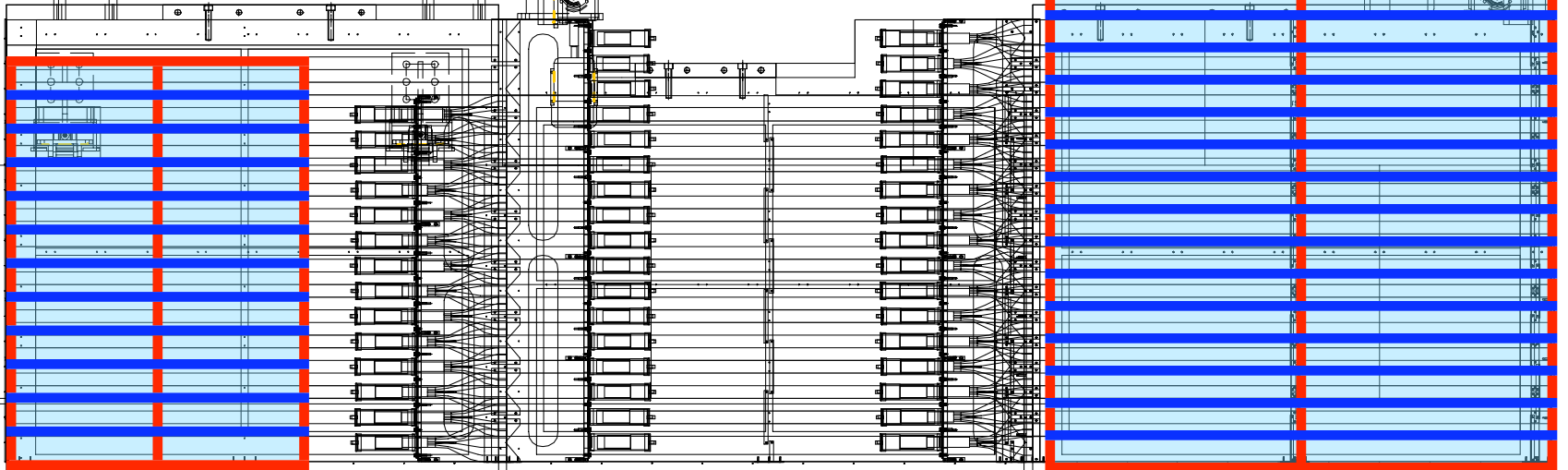
	scint length (cm)	array width (cm)	#PMTs	array width /16 (cm)
1V	69	99	16	6.2
1H	50	137	16	8.6
2V	88	170	16	10.6
2H	85	175	16	10.9

*what s driving paddle width?
rates or resolution?*

22.28 [57 CM.]



← 1 meter →

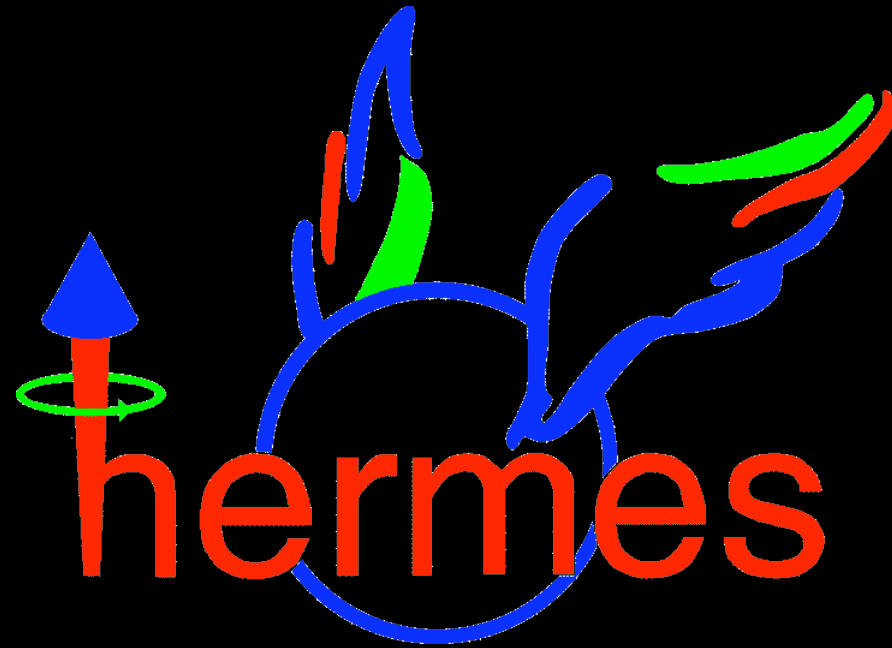


186.29 [473 CM.]

29.37 [75 CM.]

Questions

- We have tons of **scintillator**, issues with using it:
 - **paddle width**: does 13 cm have to be cut down?
with 1/3 overlap, 4.3 cm resolution is enough,
but 13 cm maybe too wide if **rates** are the primary issue
 - **scintillator thickness**: 1/4" x 13 cm matches
1.25" diameter of old ARGUS tubes ... pulse height ok at 1/4"
if 1/4" x 13 cm ok, can use existing lightguides & basic frames
 - **radiation damage**: much of scintillator was far out of harm's
way, maybe damage to some paddles from p-beam background
- **PMTs**: coming from ZEUS ... elsewhere? expected **diameter**?
- **Illinois manpower**
 - **technician** for hodoscope resizing/polishing, new lightguide
fabrication if needed, construction/modif of support frames
 - **1 grad student** full-time (yet to be identified)



E906

Insert urgently-
needed logo



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