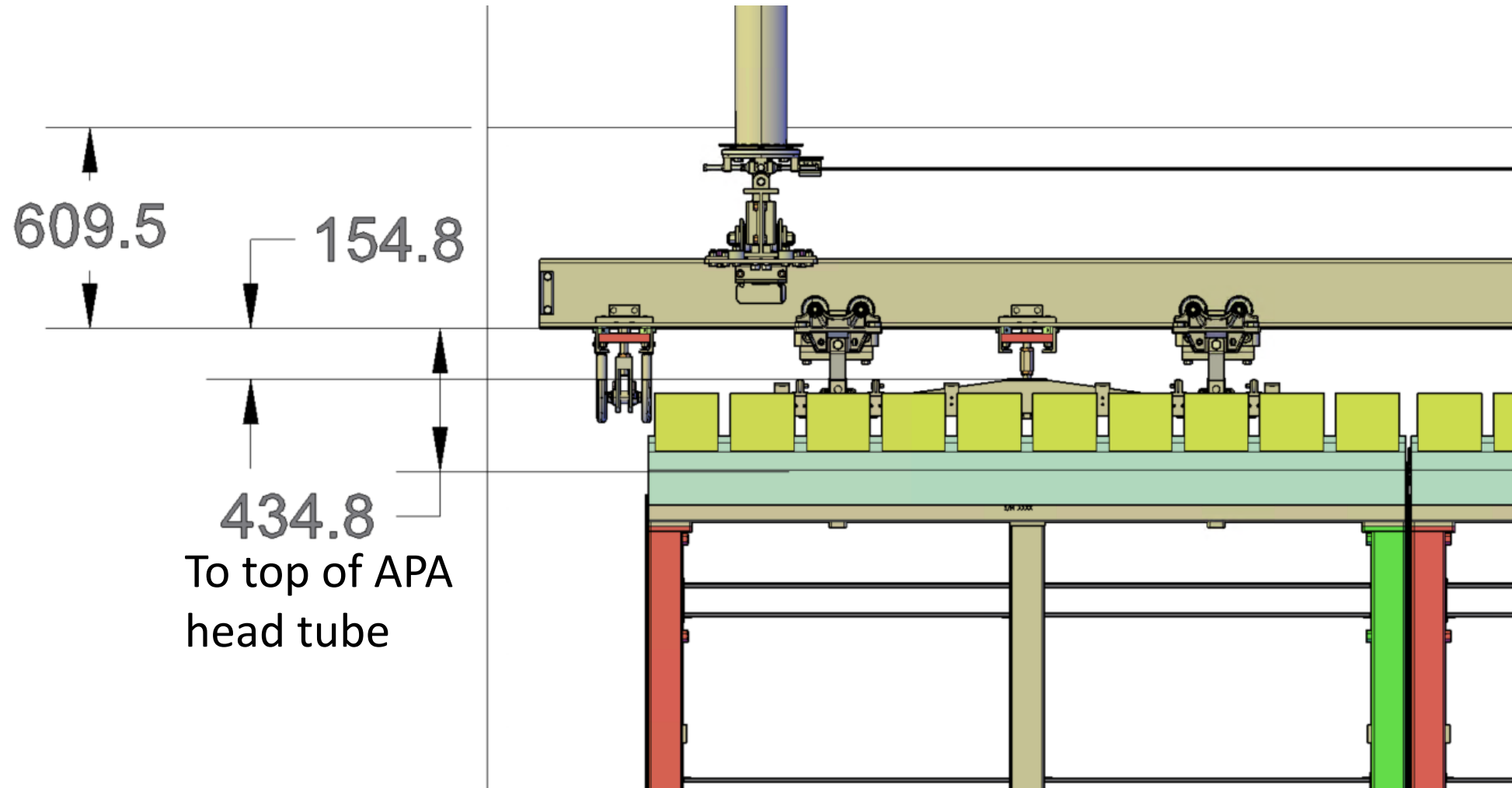


protoDUNE II Detector, Lower APA Elevations

Dan Wenman & Kyle Zeug

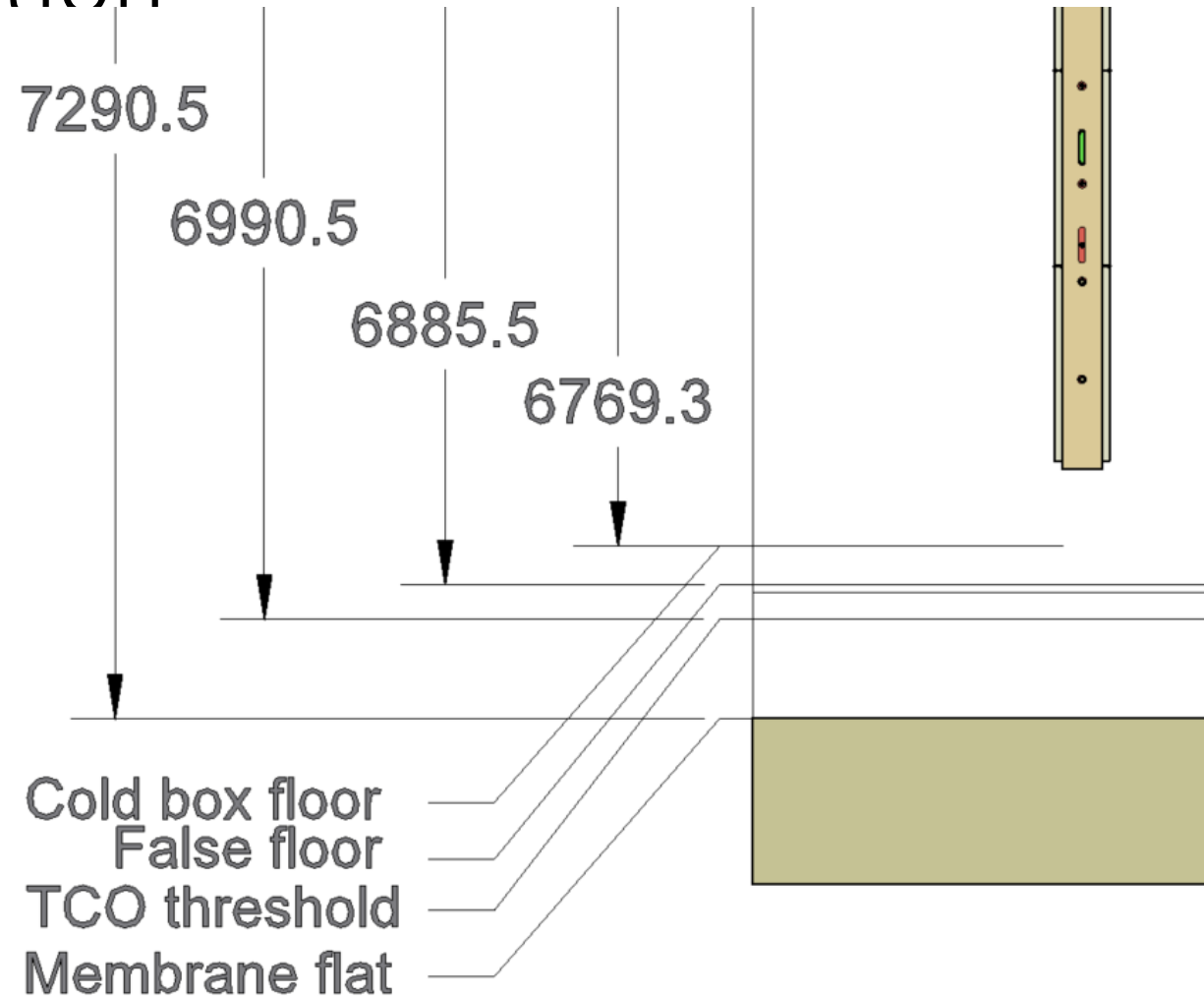
April 22, 2020

Vertical dimensions from protoDUNE APA head end



Vertical dimensions from protoDUNE APA foot end – configuration in cold box and during installation

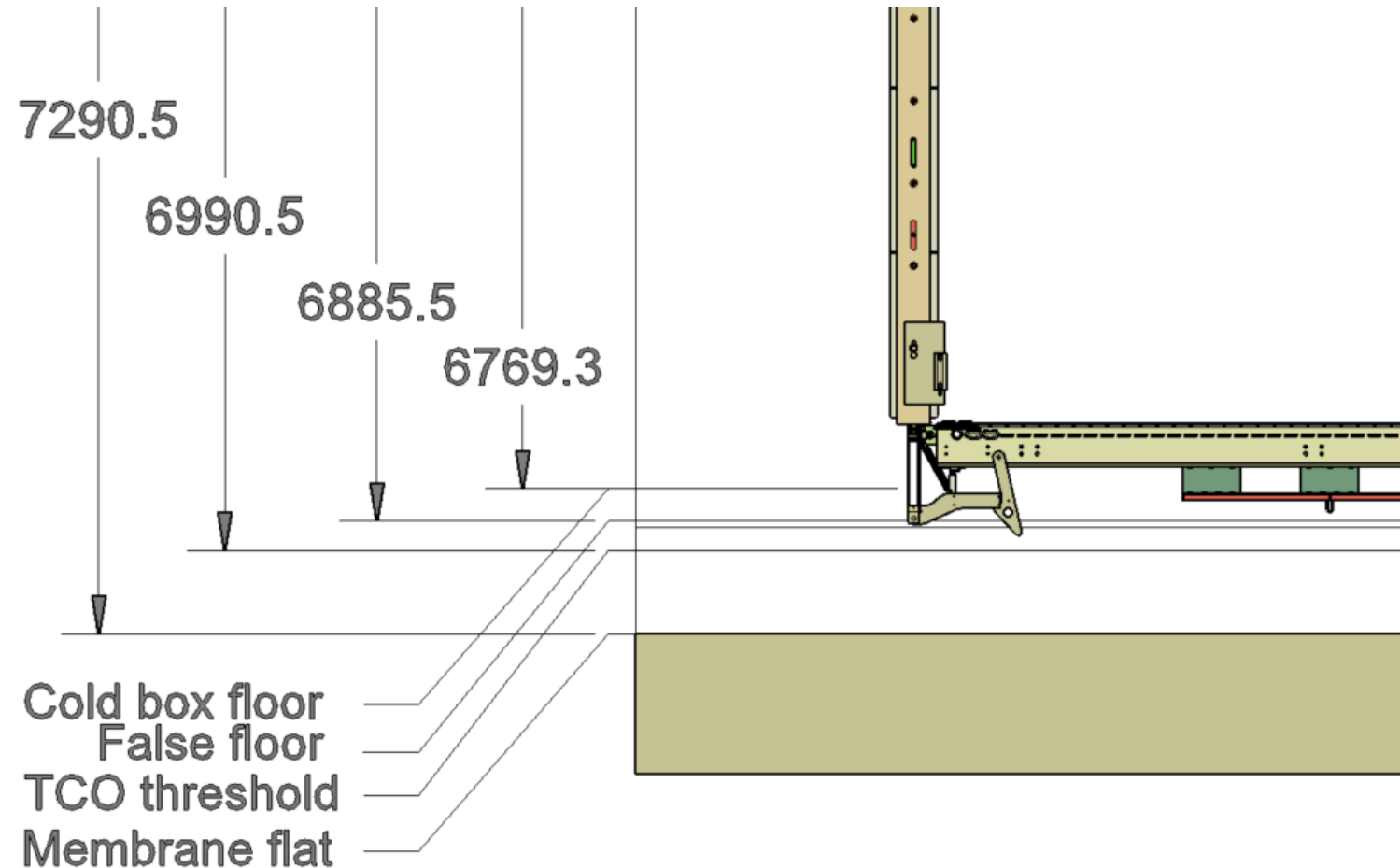
All Dimensions
from the
bottom of the
DSS beam



Cold box floor
False floor
TCO threshold
Membrane flat

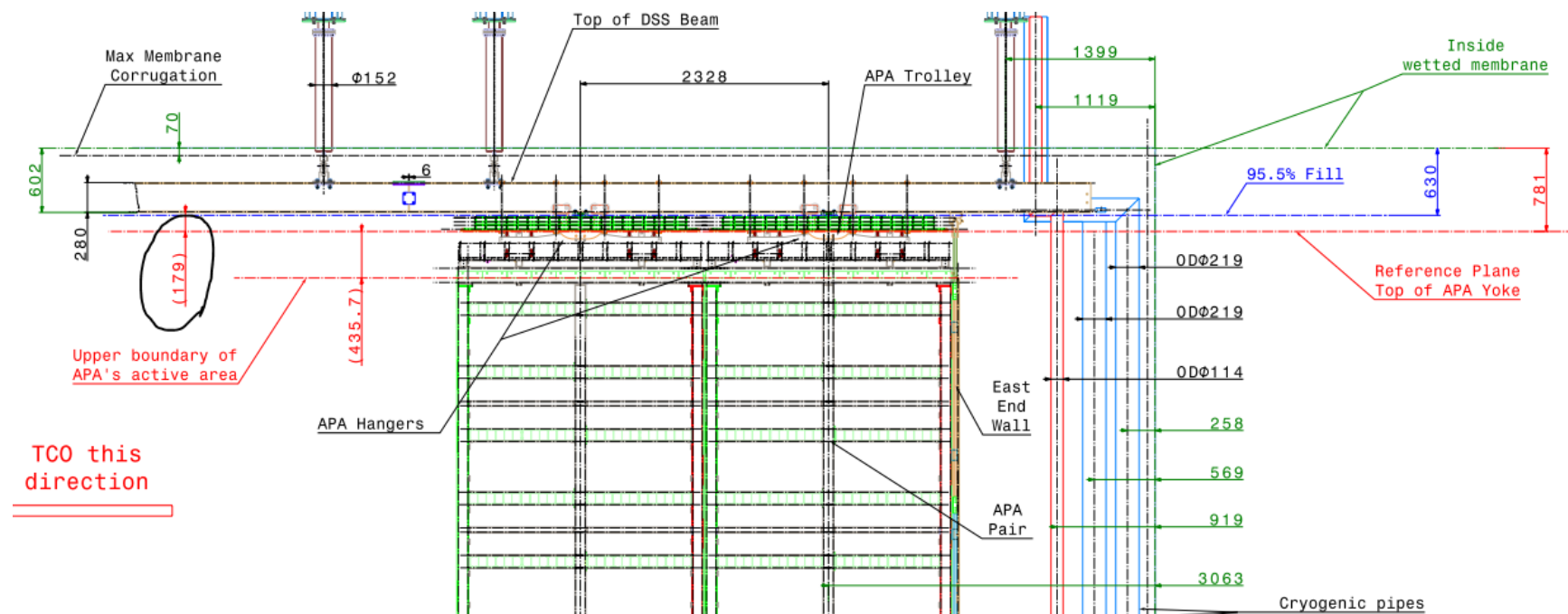
Vertical dimensions from protoDUNE APA foot end - installed

All dimensions
from bottom of
the DSS beam

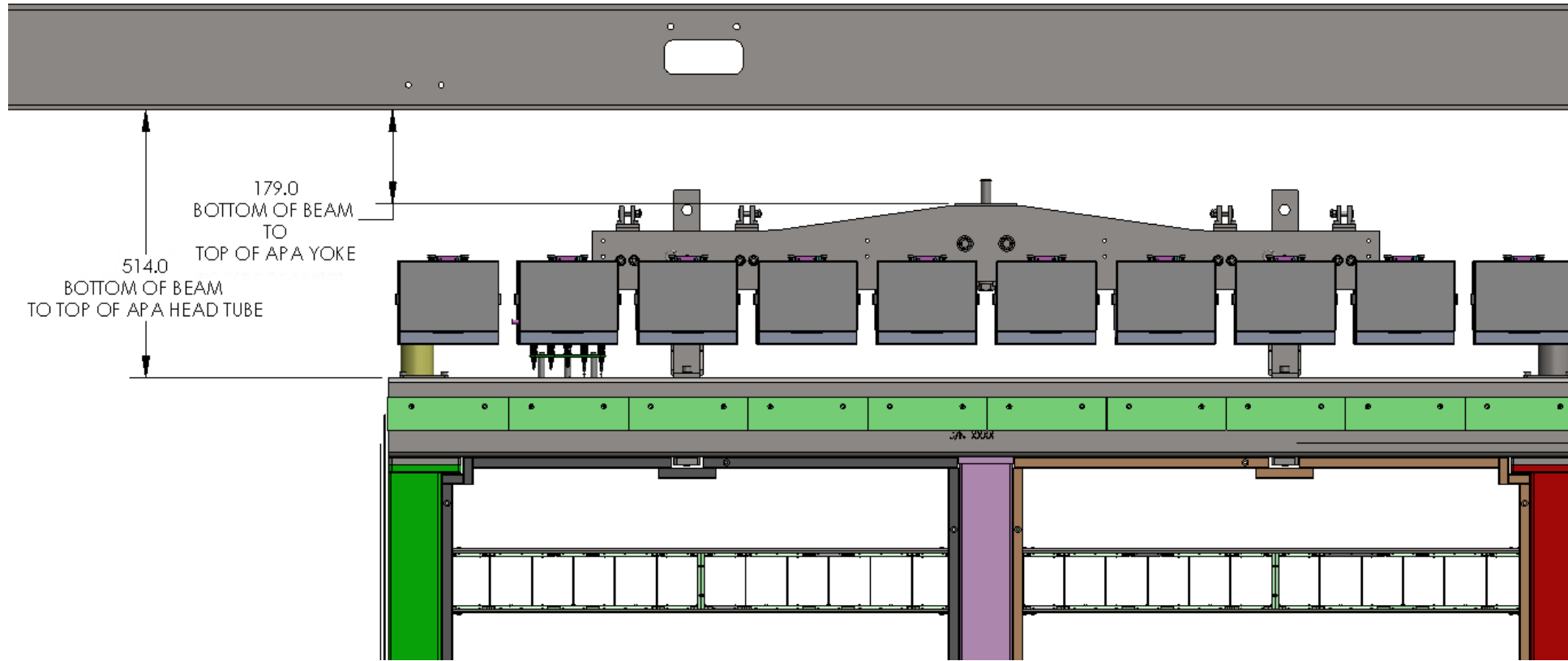


Elevations

- Locate the Upper APA in elevation, [EDMS 2337938](#)
 - Far detector distance from the top of the APA yoke to the bottom of the DSS beam above it = 179mm
- Locate the protoDUNE DSS in elevation
 - Lowest surface of beam is 7290.5mm above the lowest point in the protoDUNE cryostat

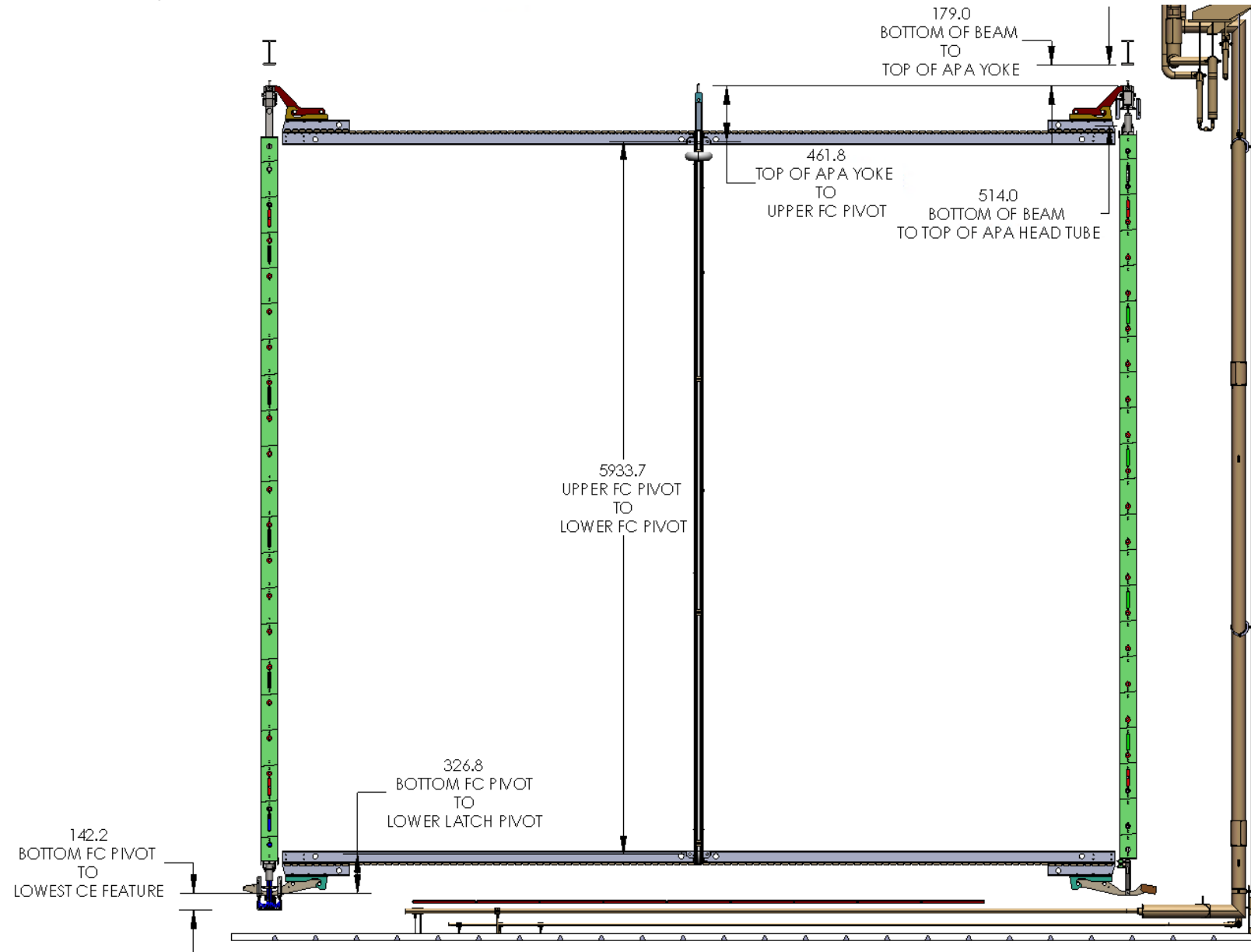


Vertical Dimensions, DUNE FD – Installed



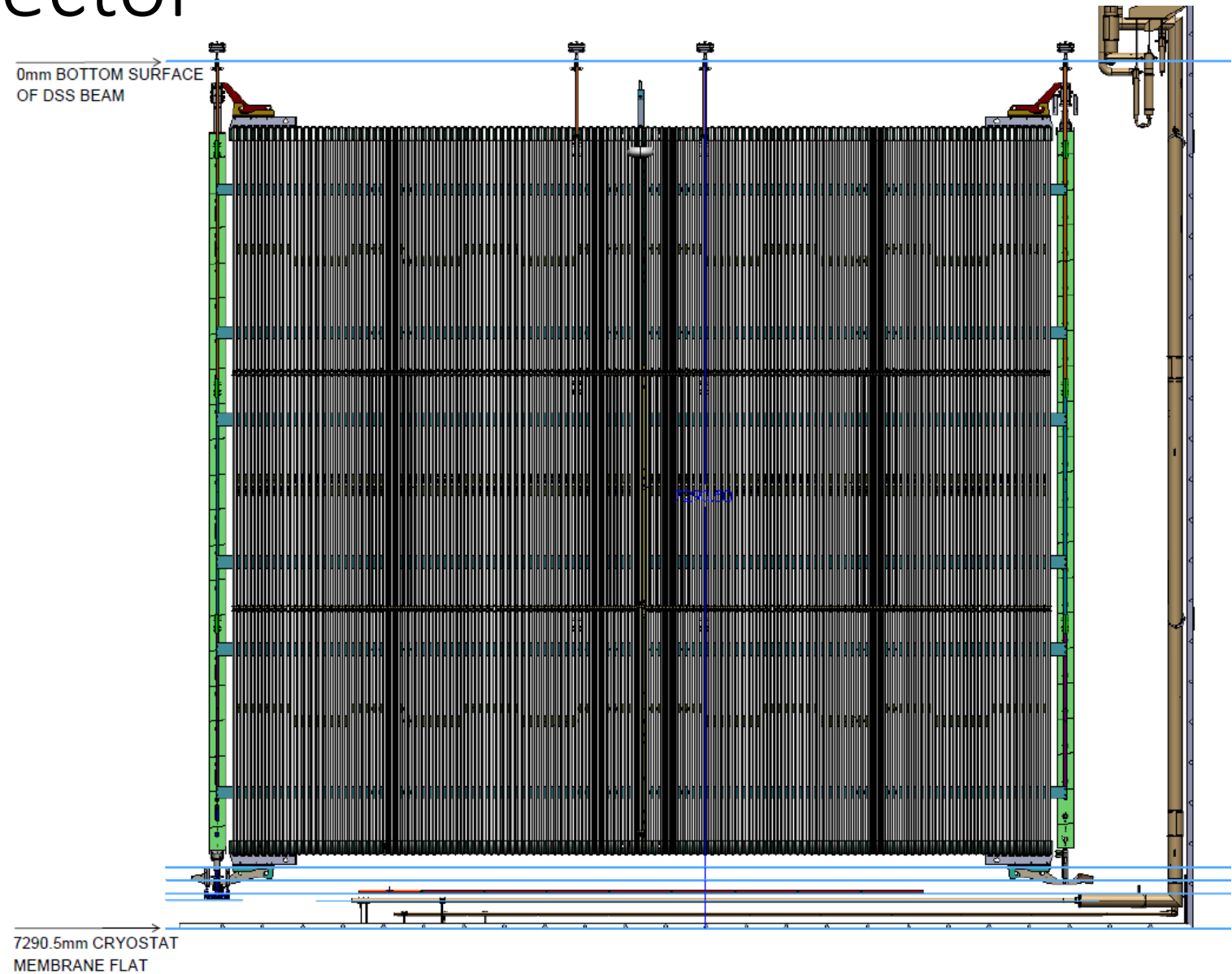
Vertical Dimensions, DUNE FD Installed + protoDUNE

- Maintain the DUNE FD connection where the field cage meets a head tube
- Maintain the DUNE FD distance between the top of the APA yoke and bottom of DSS beam
- Maintain the protoDUNE CPA and the respective FC pivot

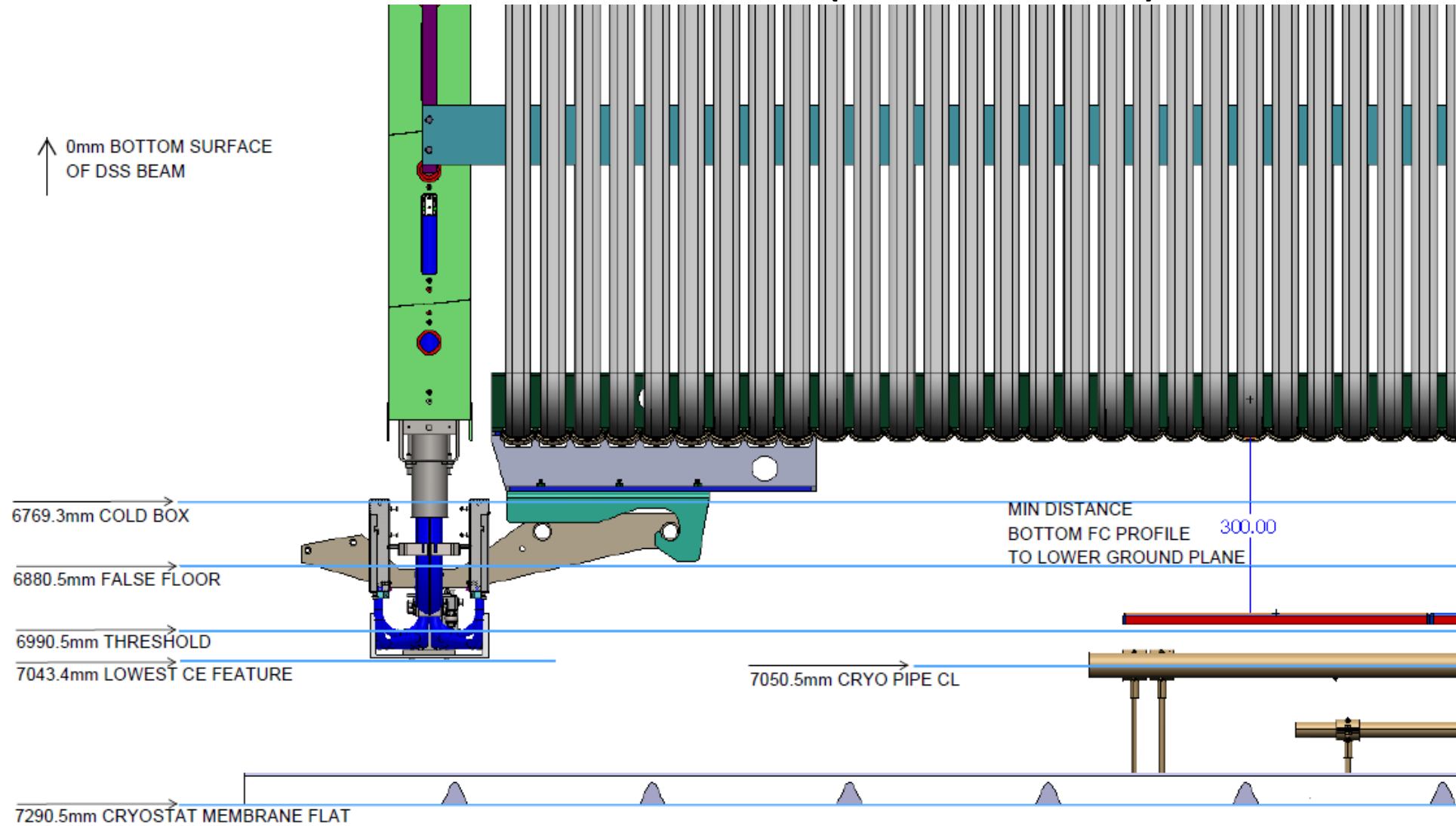


protoDUNE II Detector

- Beam Left: Upper APA
- Beam Right: Lower APA
- DUNE Drift Length: 3.574m
- HV model received



protoDUNE II Lower APA (Inverted)

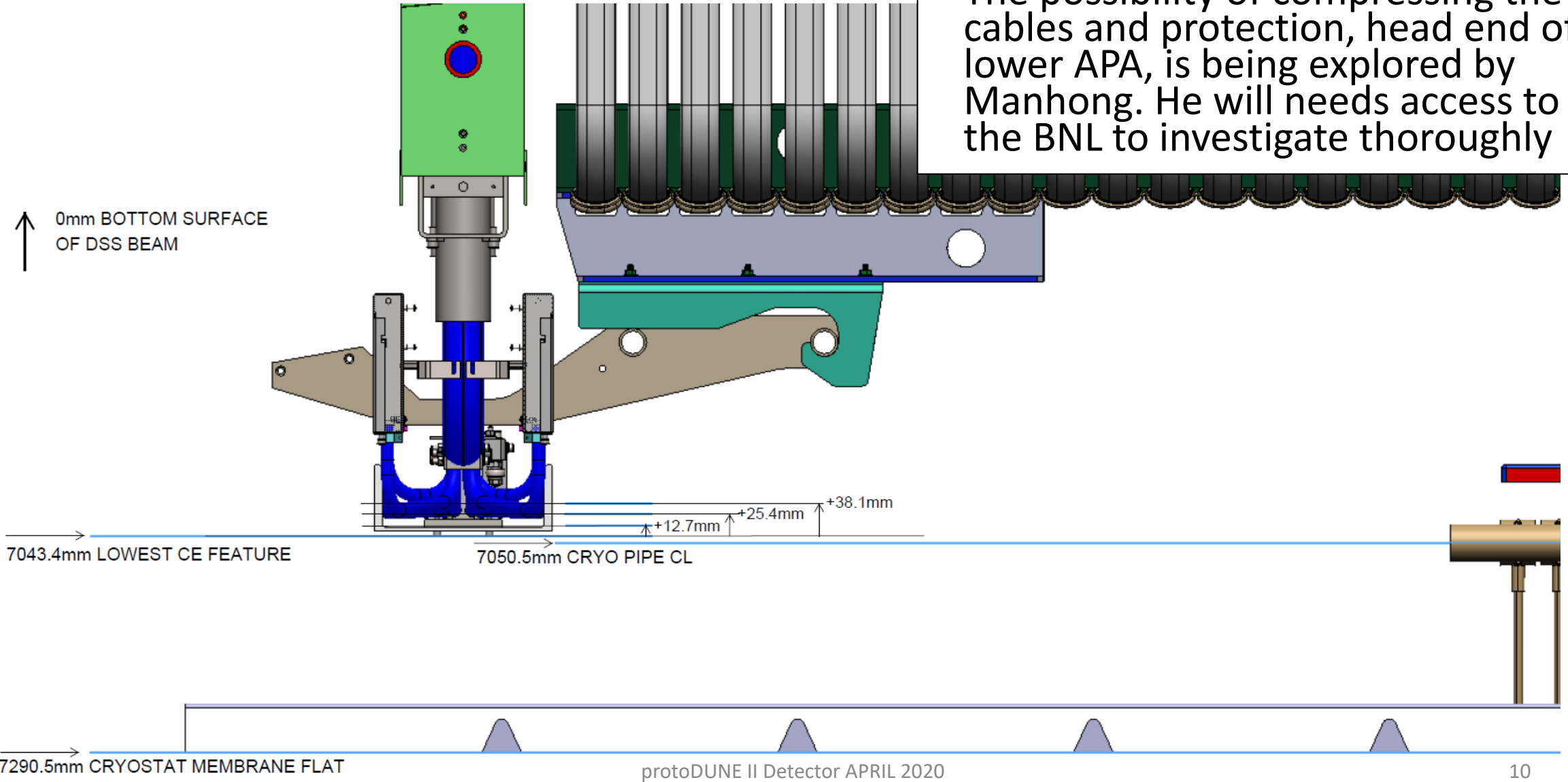


BEAM OUT OF PAGE

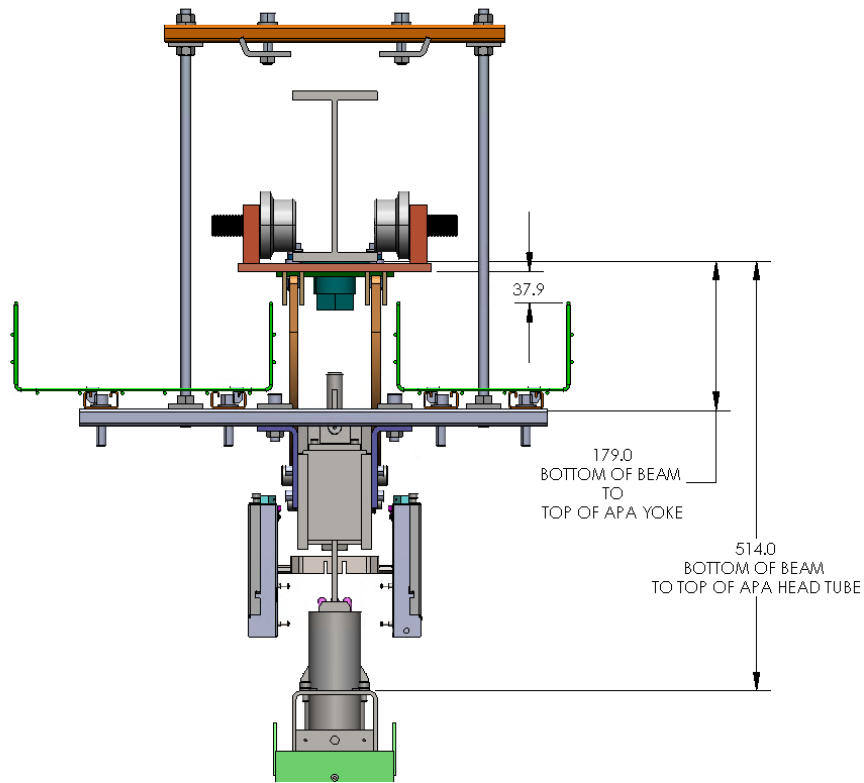
protoDUNE II Detector APRIL 2020

Compress Elevation to Gain Clearance, Head End of Lower APA

• The possibility of compressing the CE cables and protection, head end of lower APA, is being explored by Manhong. He will needs access to the BNL to investigate thoroughly



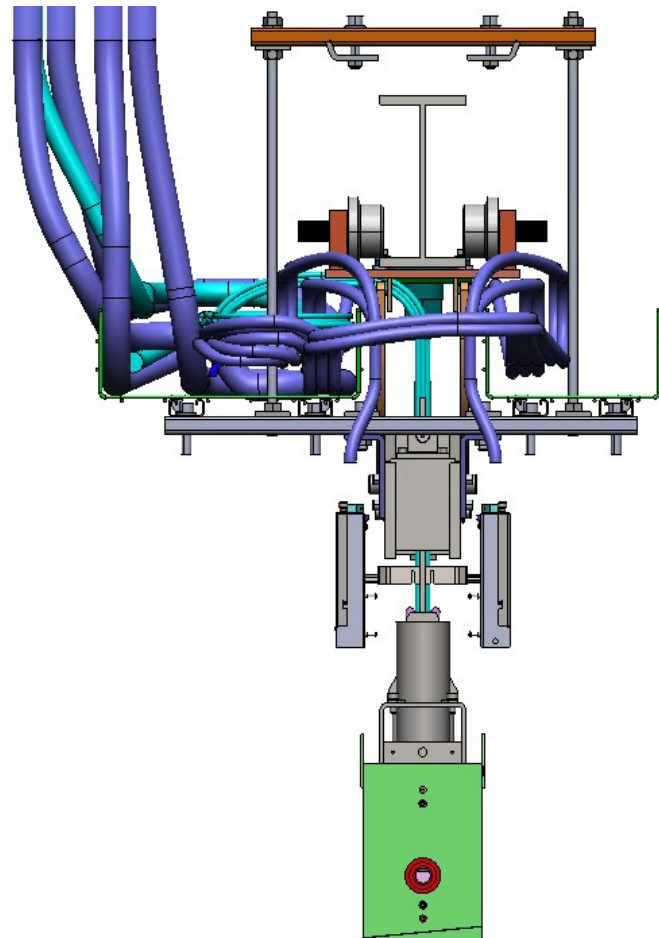
DUNE FD Cables, per APA



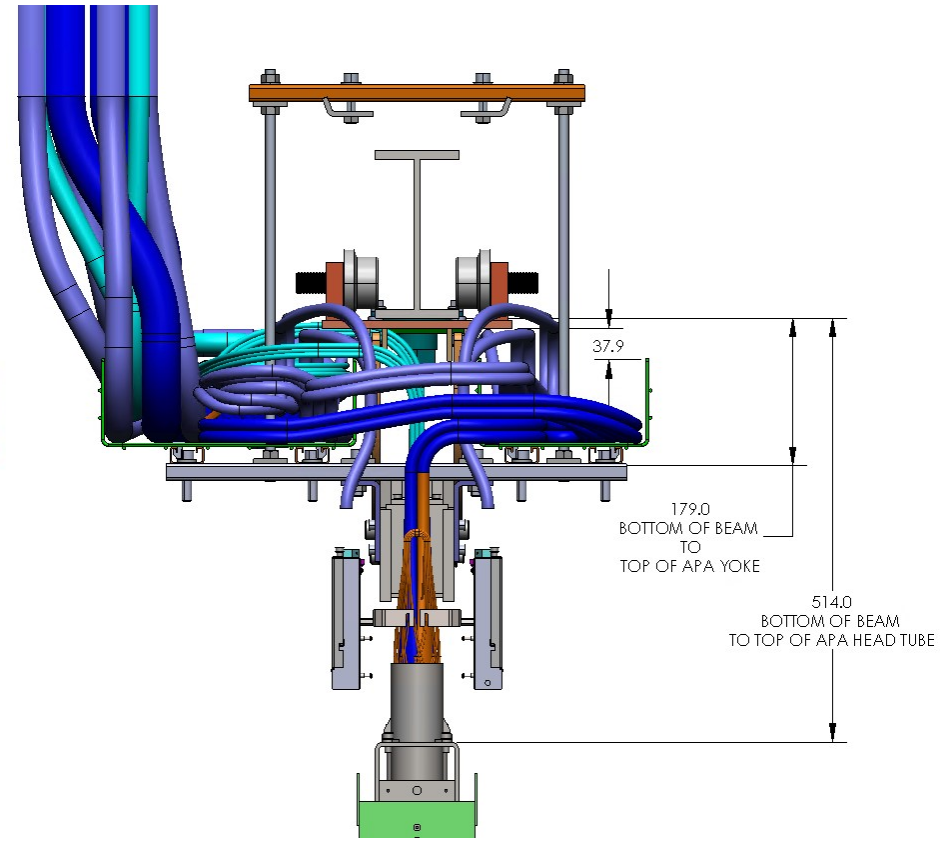
•Note minimal clearance between cable tray and trolley to access trolley and single support hardware

- protoDUNE Beam
- DUNE Trolley
- DUNE Elevation

- DUNE Cable tray
- DUNE Cables, None

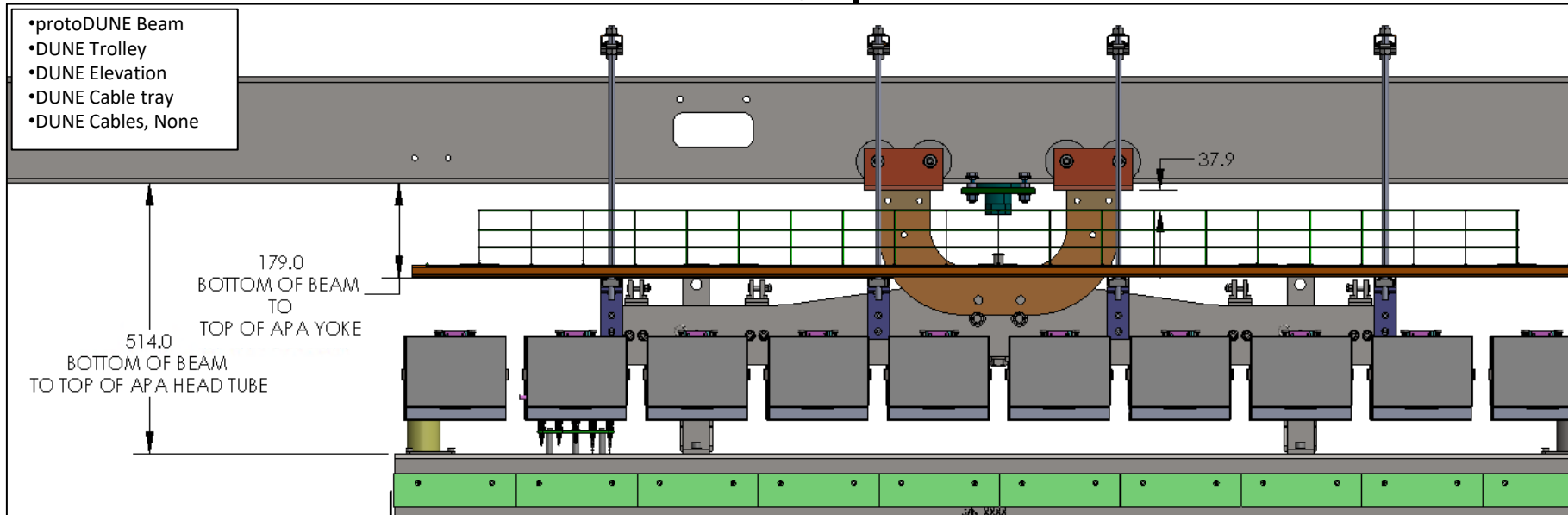


- protoDUNE Beam
- DUNE Cable tray
- DUNE Trolley
- DUNE Cables, Upper APA
- DUNE Elevation

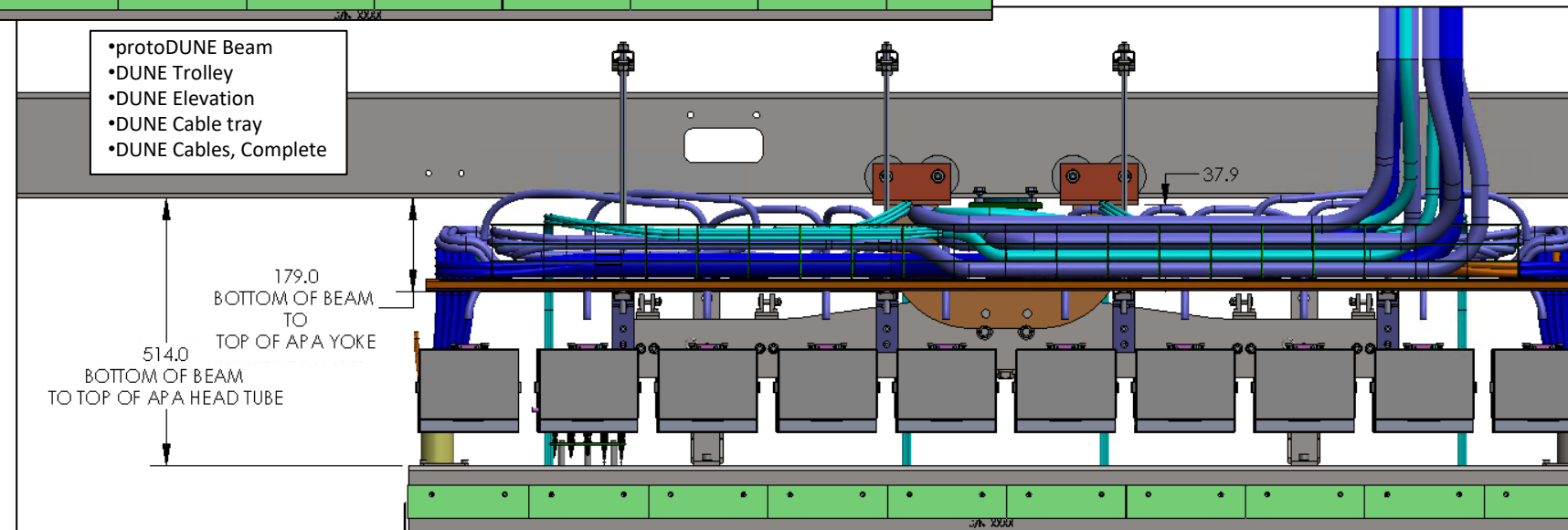


- protoDUNE Beam
- DUNE Cable tray
- DUNE Trolley
- DUNE Cables, Complete
- DUNE Elevation

DUNE FD Cables, per APA



•Note minimal clearance between cable tray and trolley to access trolley and single support hardware



New Hardware, APA

