Work is in progress to further reduce maximum transverse size of QD0 cryostat.

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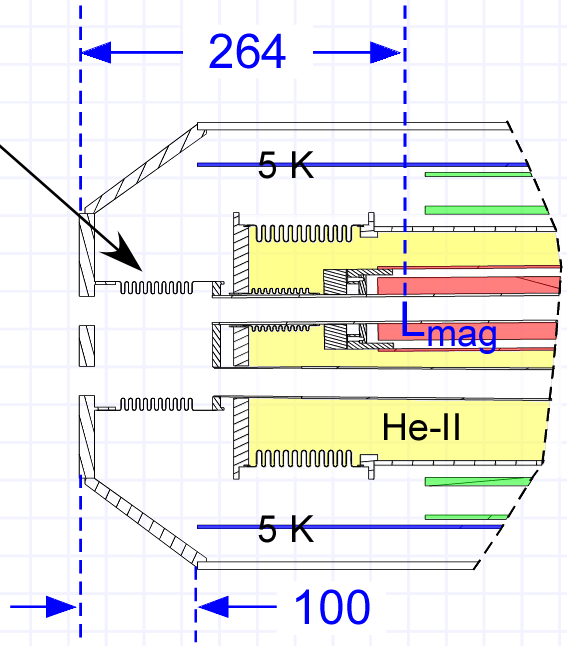
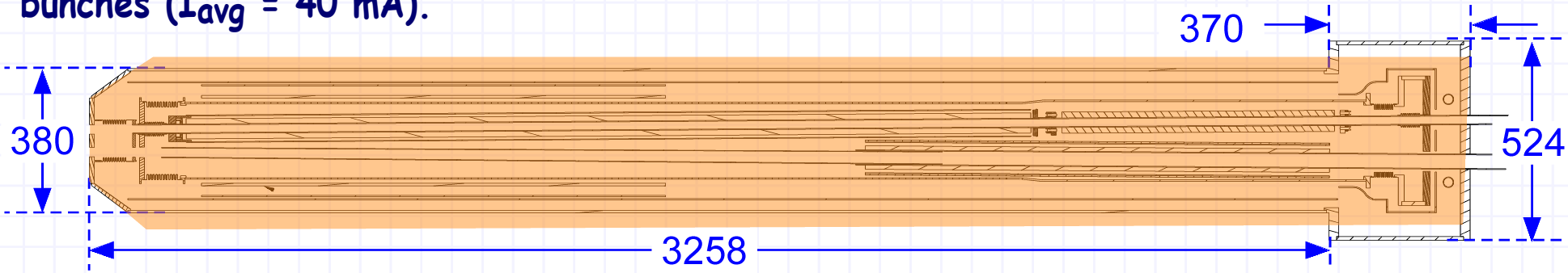
Warm-to-Cold Transition

Do we need to shield these bellows? Remember that even a few watts of extra heat load (say due to wake fields) is quite significant at 2 K. Trade off between extra heat load via material in RF shield vs. a risk of heating due to broadband (and narrow band resonances) and sudden transitions with short bunches (I_{avg} = 40 mA).



Assuming frequent push-pull exchanges and with QD0/QF1 being the only cold surfaces around, will there be a significant buildup of on the cold beam tube?



Work is in progress to integrate anti-solenoid & reduce step.

Minimum cryostat diameter depends upon L*; worst case scenario, 4.5m is shown.

Prohibit any line of sight penetrations through pacman to beam line.

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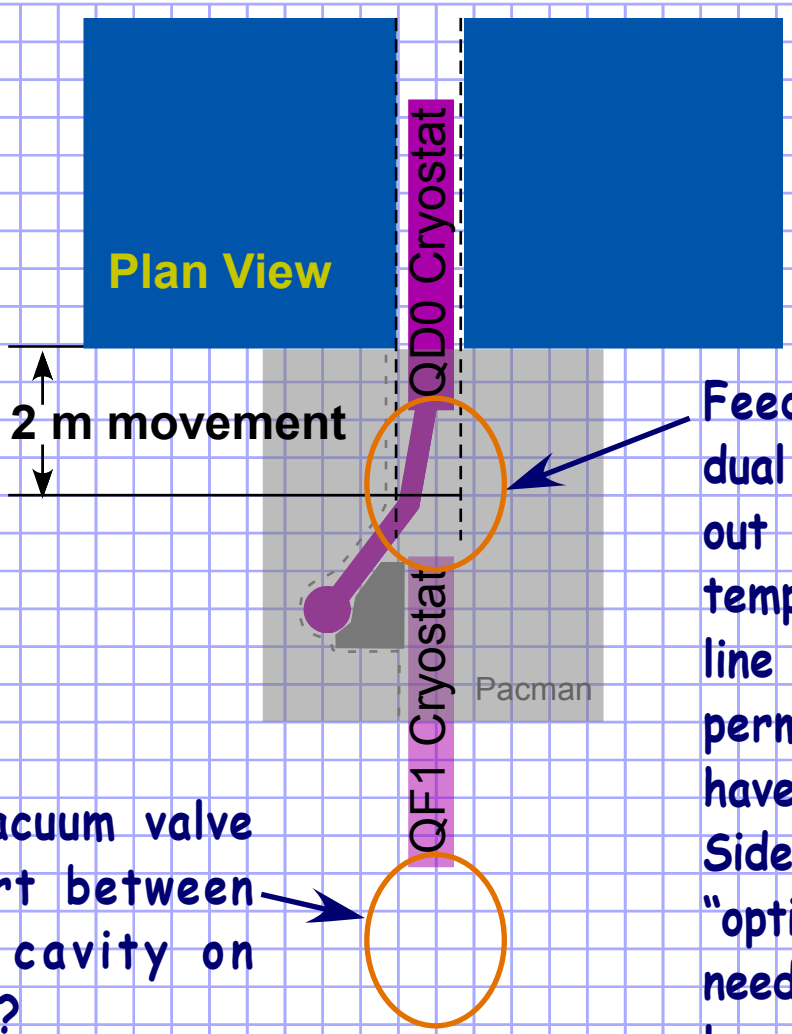

Feedback kicker, BPMs, two sets of dual beamline vacuum valves and pump out ports must fit in this space. Is a temporary roughing pump out vacuum line connection enough or do we need permanently attached lines that also have to penetrate the pacman shielding.
Side comment: what about discussion of "optical anchor" where there may be a need for some optical penetrations for laser beams?

Probably want vacuum valve and pumpout port between QF1 and crab cavity on incoming beam line?

QD0-Service Cryostat connection line has to permit 2 m opening by door but vertical section must not point directly to incoming/outgoing beamlines.

Space constraints continued....

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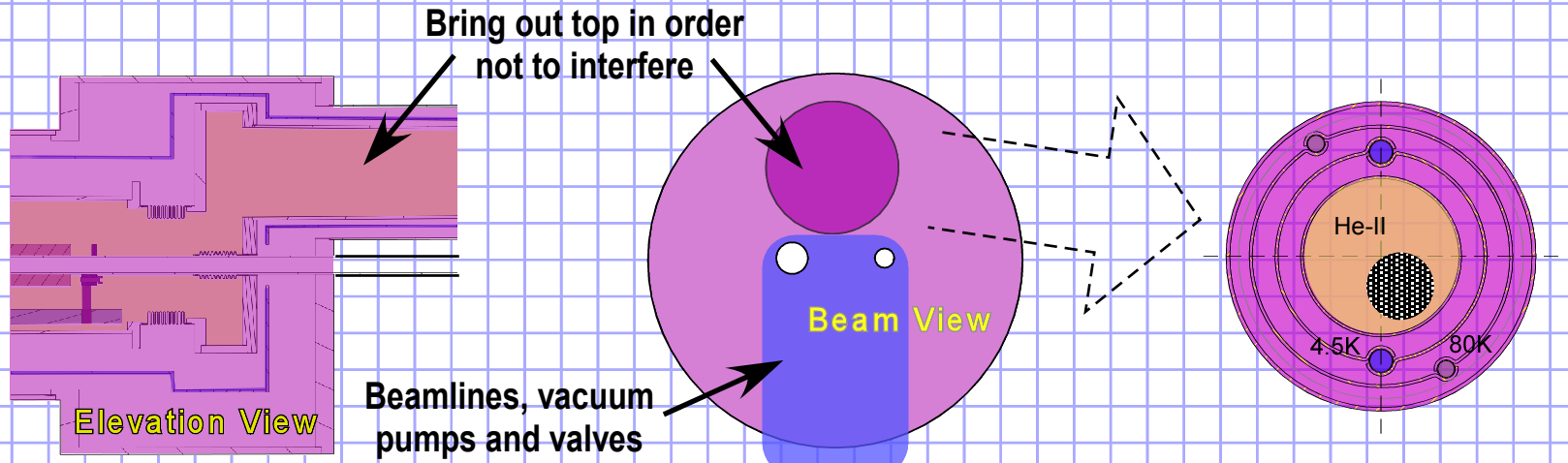
Work is in progress reducing the size of cryogenic lines.



What is our budget for the space taken up by vacuum pumpout lines and the beam isolation valves? Must define relationship between cryogenic connection to QD0 cryostat and other such equipment in this area.

Placement of vacuum pump lines and isolation valves also have to permit 2 m opening by door.