

Super-B EMC

Status of Transfer of Babar EMC Barrel To SuperB

Kevin Flood

California Institute of Technology



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Efforts at SLAC Relevant to SuperB

- Starting ~4 weeks ago, SLAC includes ~daily discussion of work relevant to SuperB in the daily work meeting
 - Forum: Babar Detector Operations
 - Subject: Work Planning Meeting (Date)
 - Regular participants relevant to Super-B: Bill Wisniewski (WJW), Stuart Metcalfe (SM), Shawn Osier (SO), plus other technical staff who work under direction
- SO has been ~100% FTE on Babar D&D activities related to SuperB for past several months
 - Re-doing 3d models of EMC Barrel, Barrel detector integration/construction tooling
 - Managing relocation of EMC tooling to IR-12, and has refurbished one item (loader worm screw) at SLAC
 - Developing fully detailed de-integration scenario(s)
 - So far, SO contributions accounted as D&D work ...

Request for Spare Endcap Modules at SLAC

- Request was made by KF on 26 May 2012 to WJW for two spare Endcap modules currently stored at SLAC
 - Module 21: a reserve module in perfect condition, but without crystals + preamp package
 - Module 23: a damaged module, with several crystal cells compromised by a missing corner of the carbon fiber honeycomb
- If request is approved, KF will go 2-3 July to SLAC to personally pick up and transport modules to Caltech
- At Caltech, transport containers will be fabricated based on drawings (provided by SJM) of the original UK-to-SLAC transport
- Ric will arrange Caltech-to-Italy shipping, as well as reimbursement to Caltech for containers costs (shop time, materials)
- Will be useful to add **accelerometers** to packages

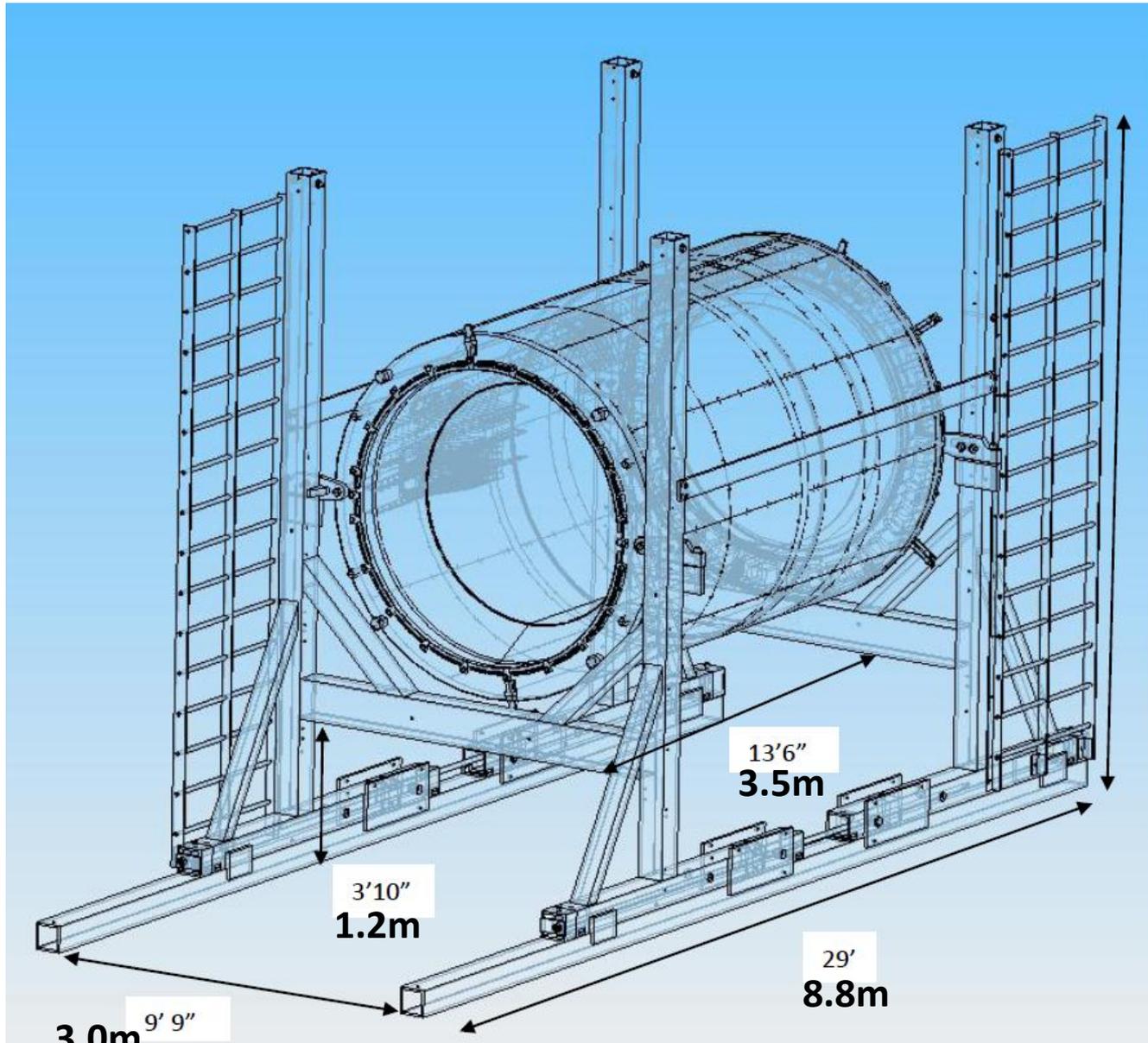


Barrel 3d Model

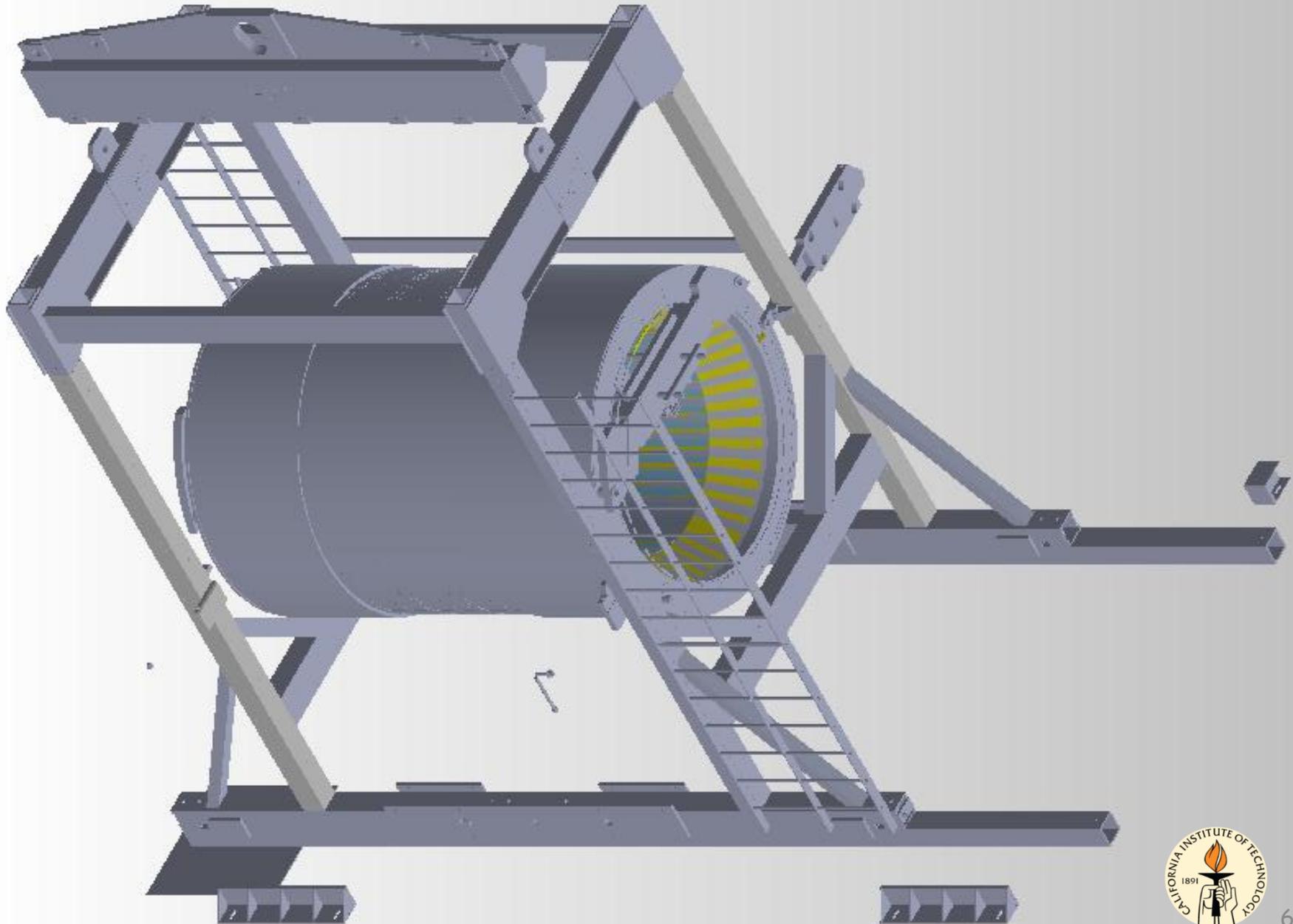
- Original EMC construction phase ProE model (done by Eric Doyle, now retired) is being completely re-implemented by Shawn Osier in SolidEdge (SLAC site licensed software)
- ED was responsible for utilities, so his model was complete in that respect
- Other components, although present, may not have been executed with the same care
- SO is going through the ED model piece-by-piece, matching all pre-existing pieces to drawings, and refining/replacing existing pieces where applicable, and creating new pieces where there are gaps
- Have verified that model opens correctly in SolidWorks (Caltech site licensed software)
 - Is there a different preferred CAD package?
- Much of tooling has also been rendered in 3d



Barrel + Construction Frame Schematic

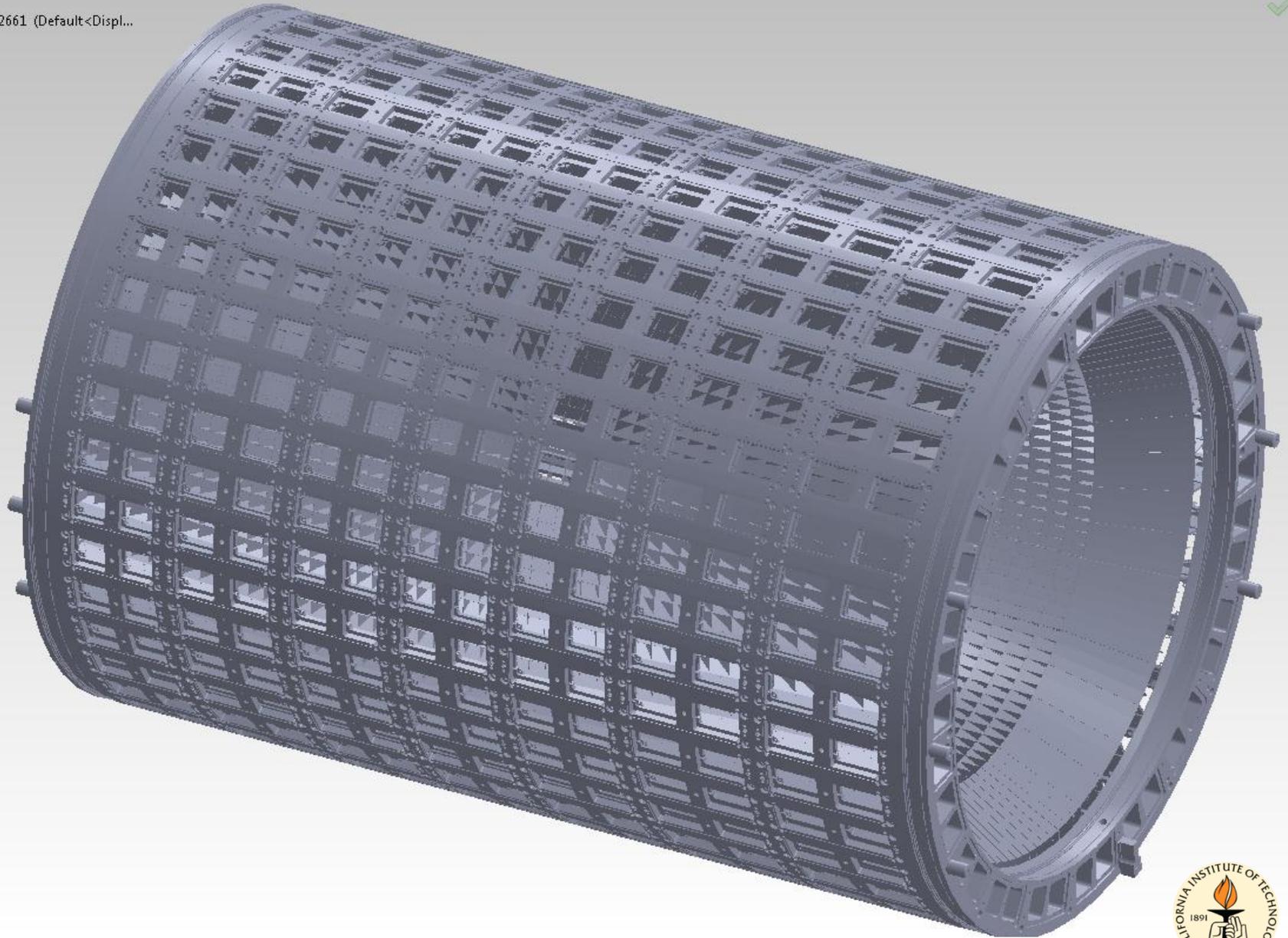


Barrel + Construction Frame 3d Model

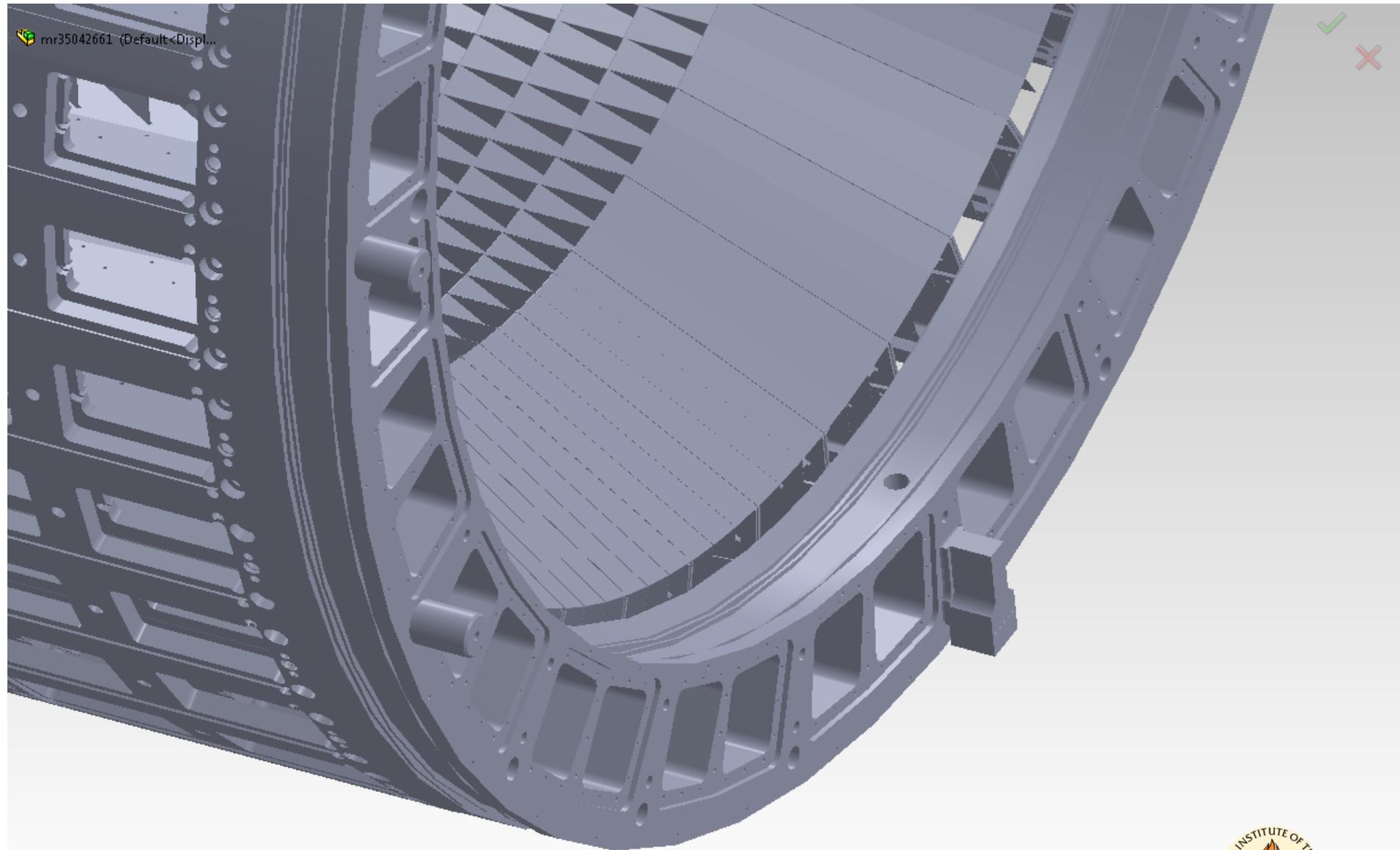


Barrel 3d Model

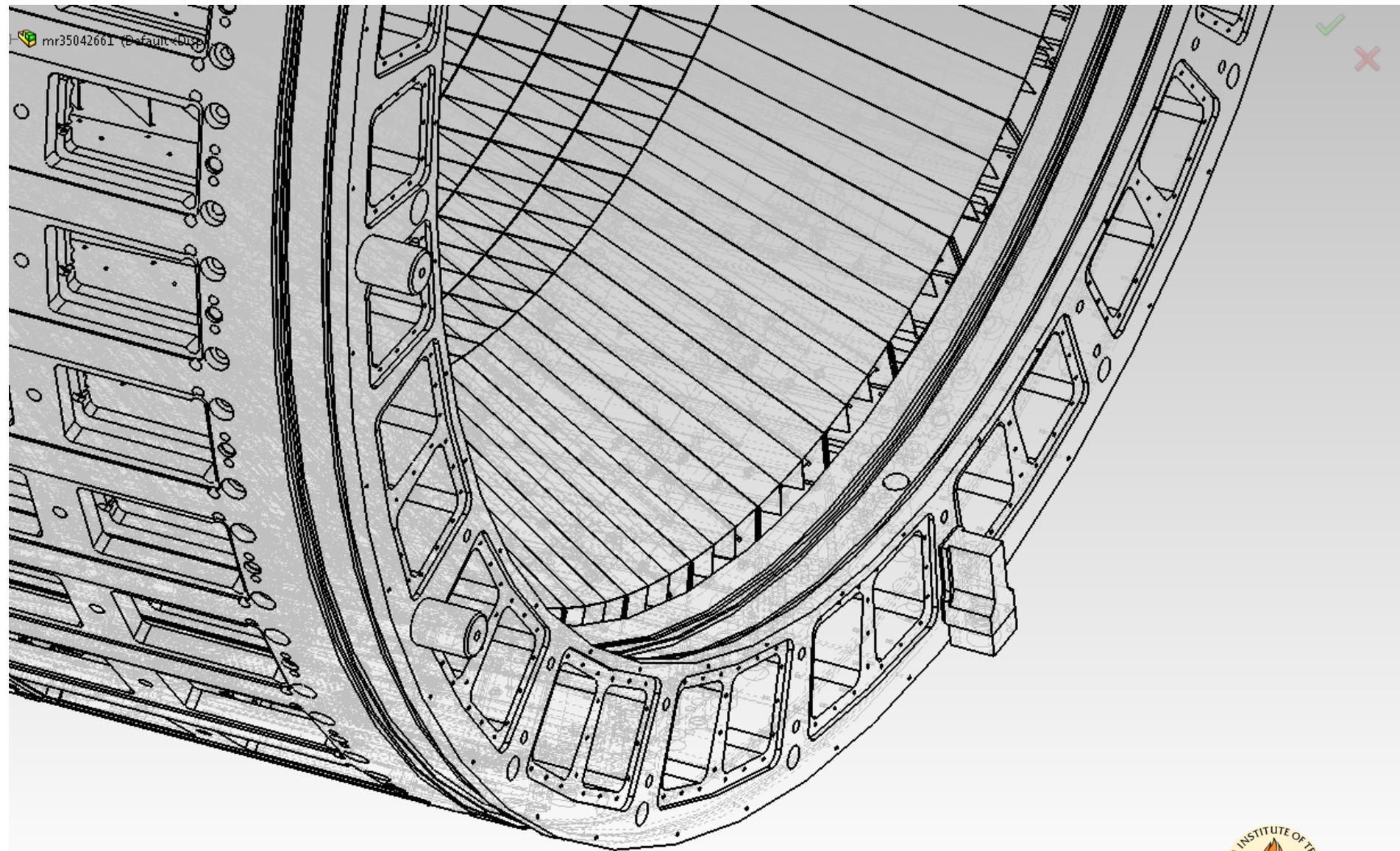
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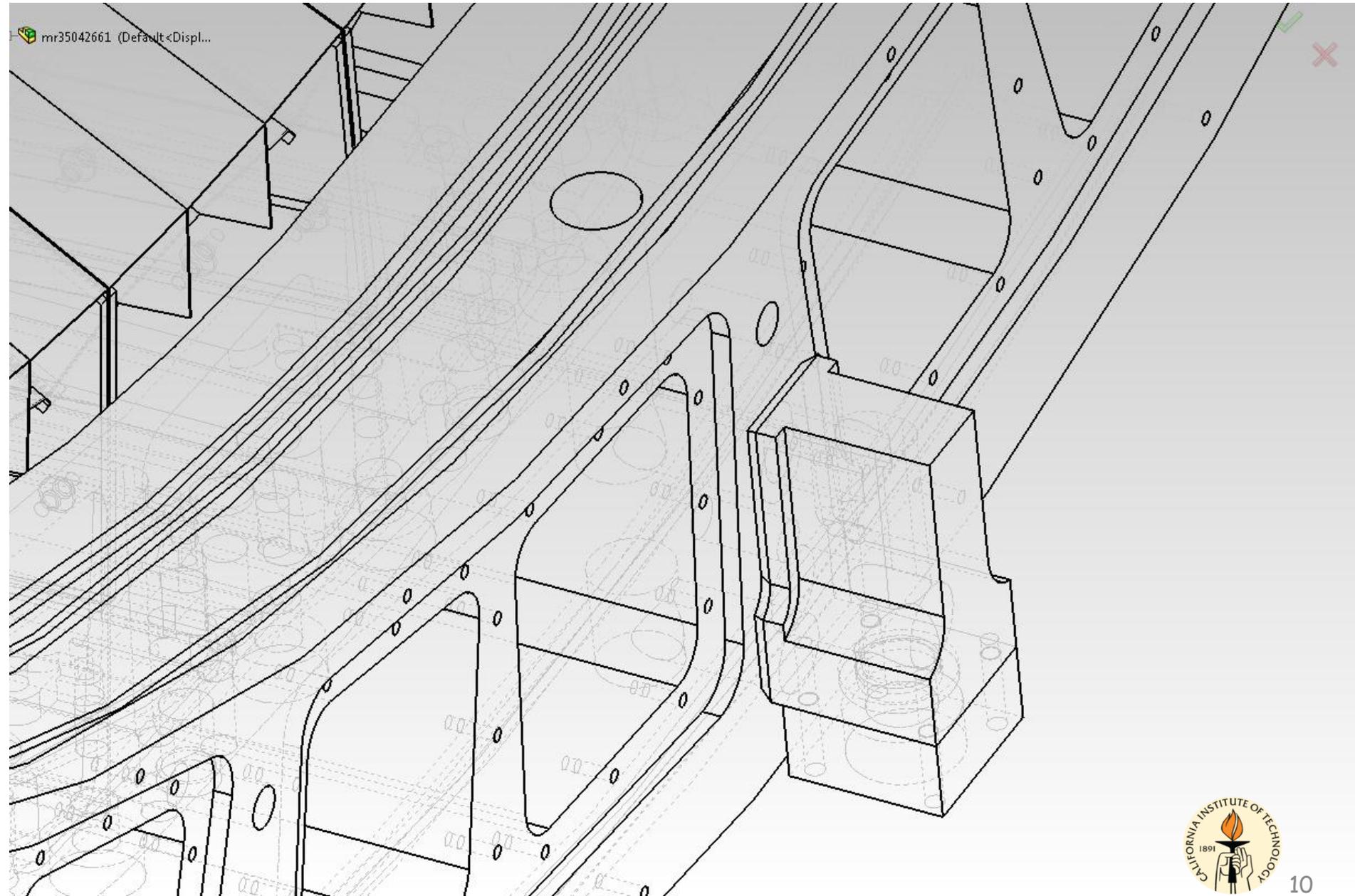
Lower FWD Barrel Detail



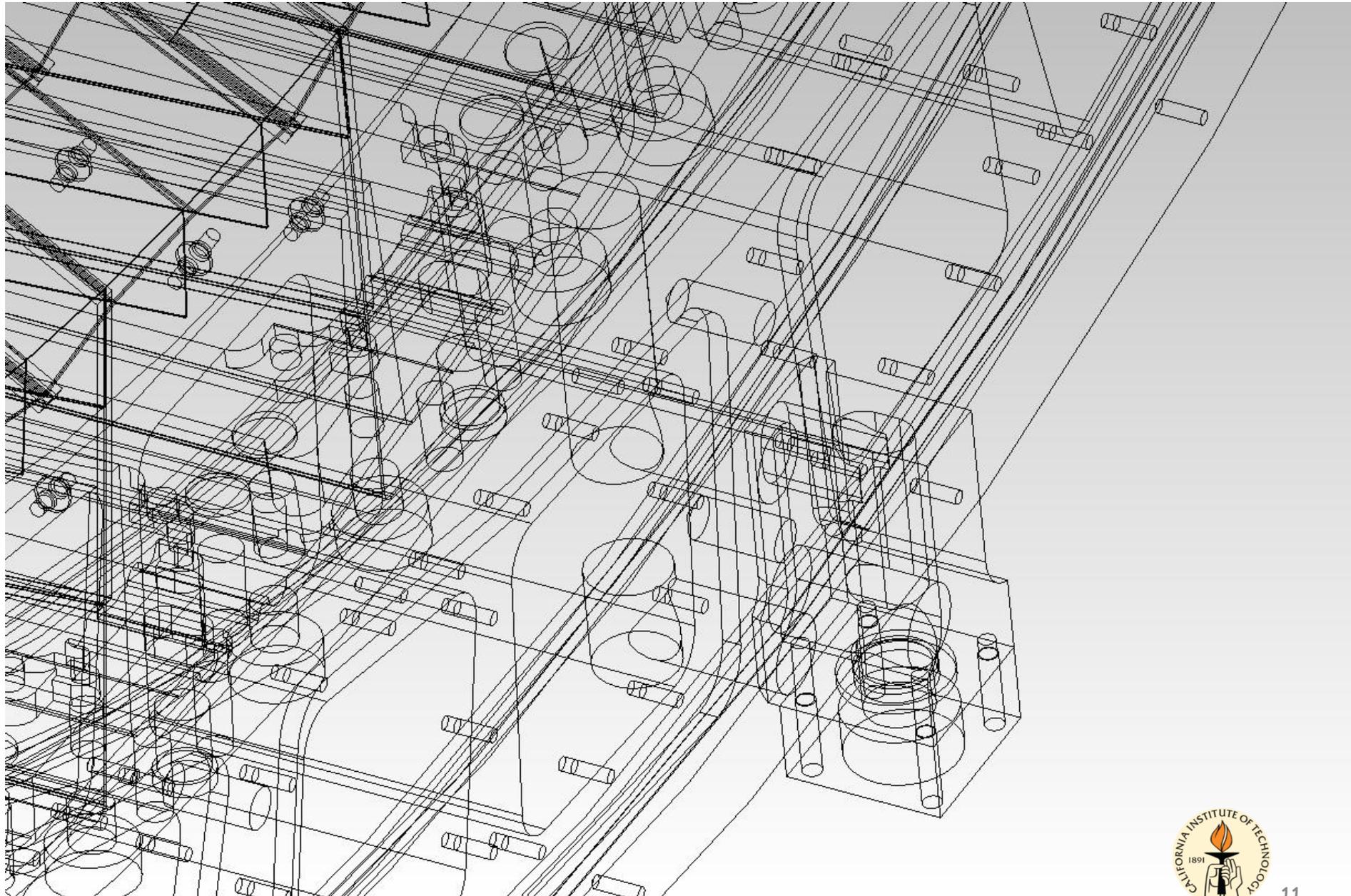
Lower FWD Barrel Sketch w/Hidden Wire Frame



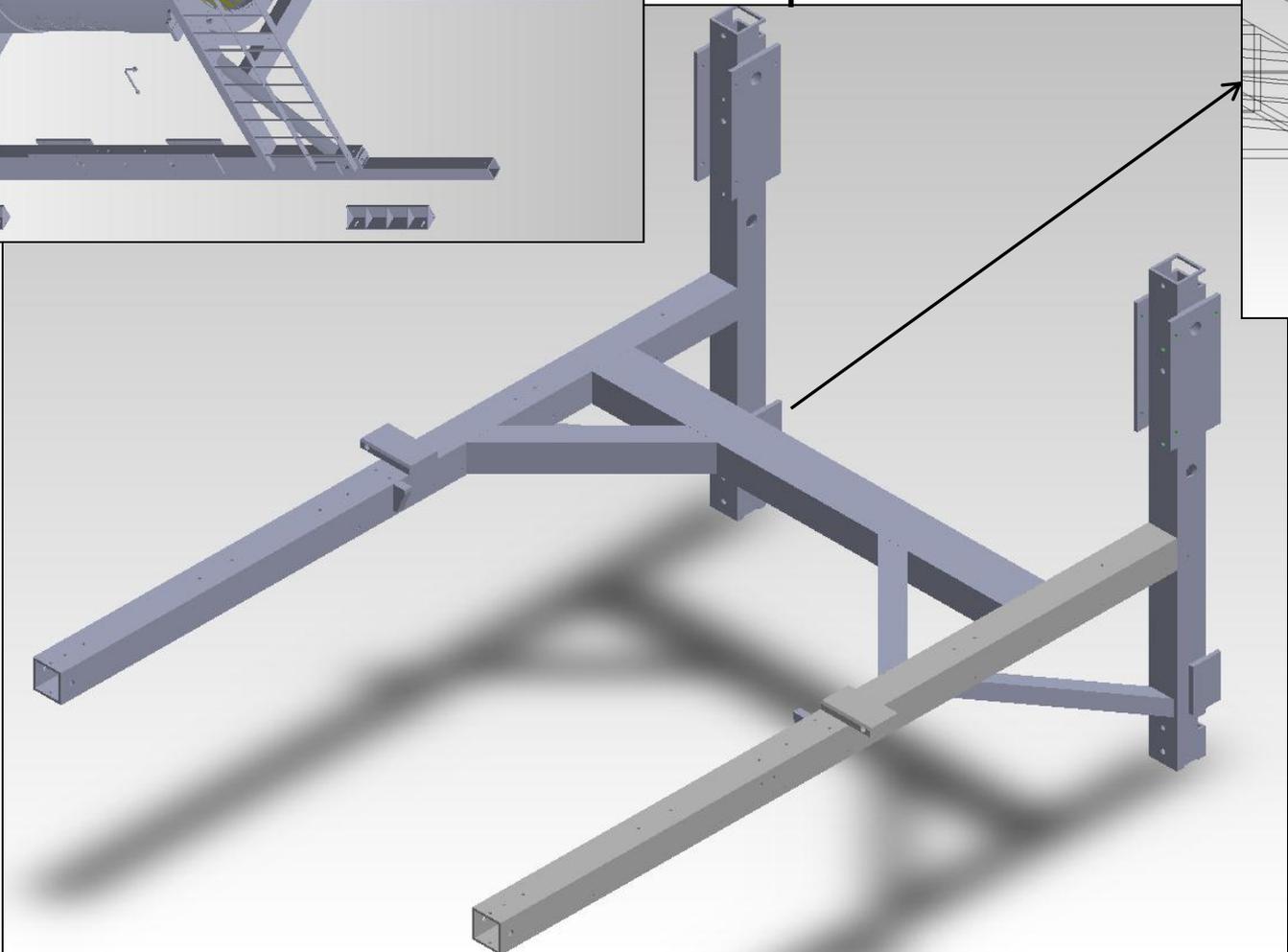
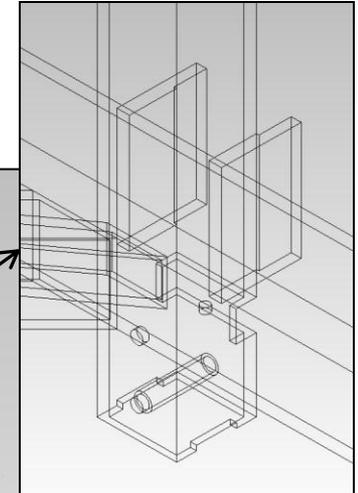
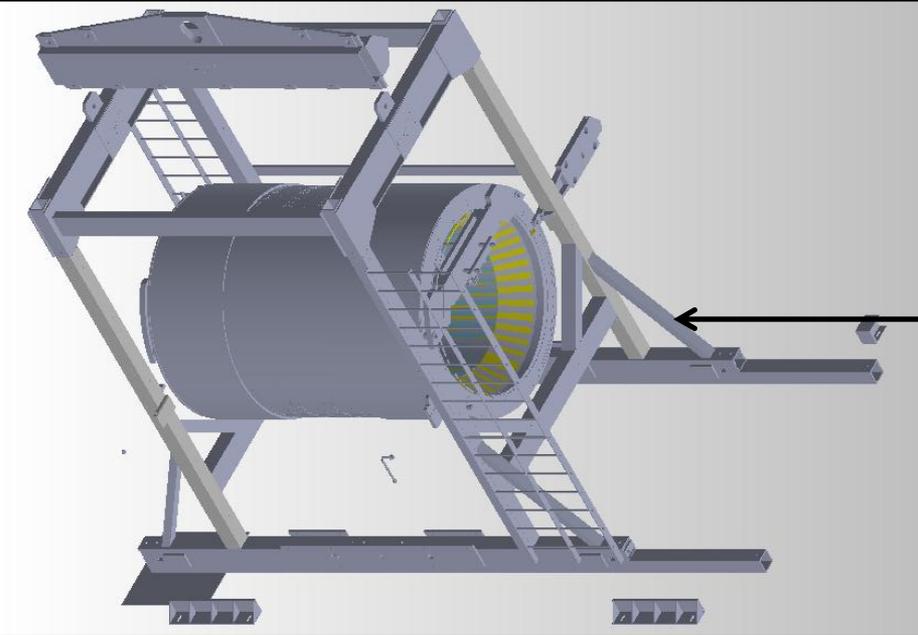
Zoom In w/Hidden Wire Frame



Zoom In w/Full Wire Frame

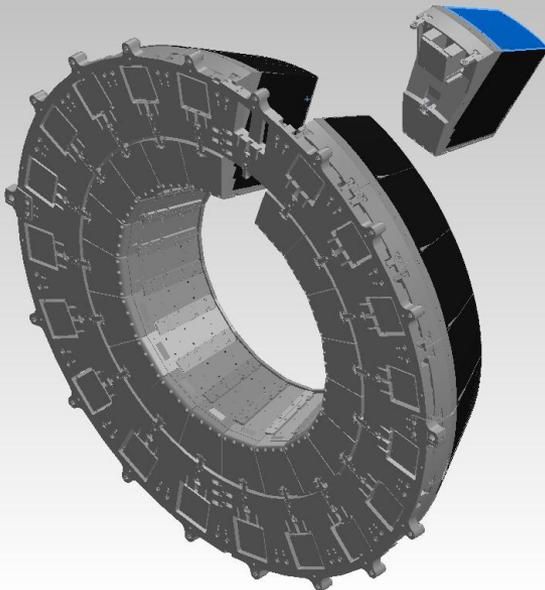
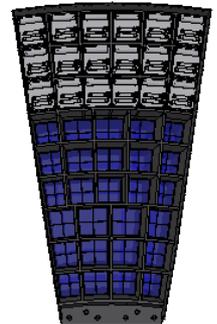
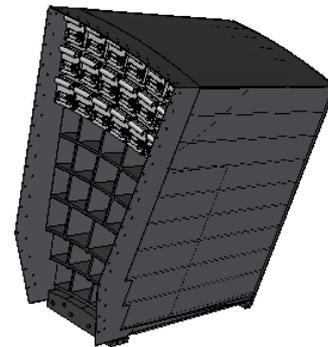
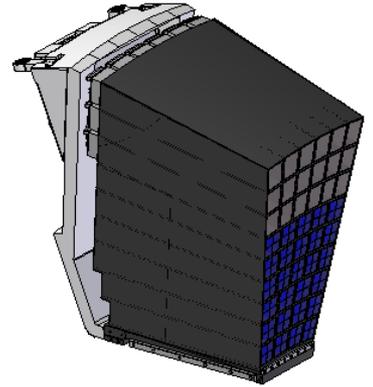
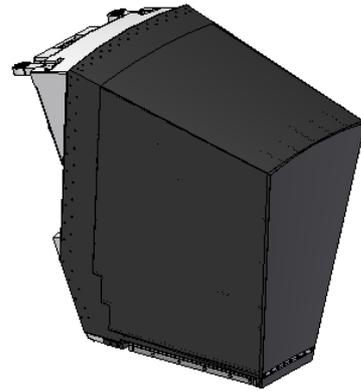


FWD Barrel Construction Frame



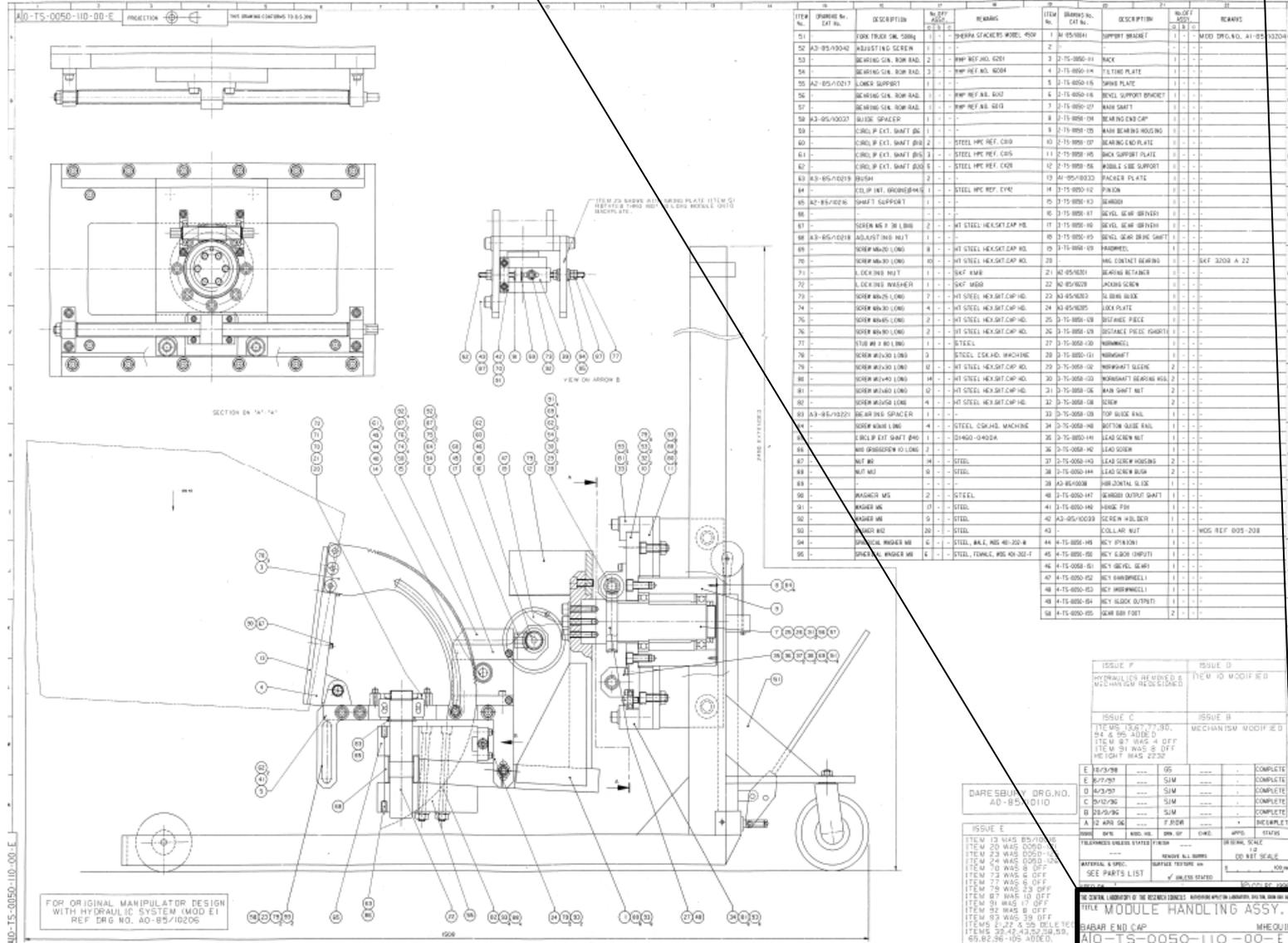
Endcap 3d Model

- Endcap 3d model is also available
- This model, also originally by ED, seems complete but has not been systematically matched item-by-item to the drawings
 - Spot checks reveal no anomalies
- SO has recently added carbon fiber honeycomb structures
- Sent to Roma1 team several weeks ago



EMC_EC_module_manipulator:
0085-0010110-00001-0a-01.pdf

THE CENTRAL LABORATORY OF THE RESEARCH COUNCILS RUTHERFORD APPLETON LABORATORY, CHILTON, OXON OX11 0QX.
TITLE MODULE HANDLING ASSY.
BABAR END CAP MHEQUIP
A10-TS-0050-110-00-E



Additions to Barrel Scenario from Frascati Collab Meeting

- Barrel was removed from Babar detector and placed backwards on the construction frame
 - Must be reversed in order to match FWD/BWD Barrel split to the splitting of the frame
 - About two weeks estimated for the work
 - Will require development of procedures, lift plans, etc.
- Mechanism to draw the two halves of the Barrel together during construction cannot be used to separate the FWD and BWD barrel
- Will need to develop a barcode/scanning/database solution for keeping track of disassembled parts and correlations in anticipation of re-assembly
- One piece of tooling (worm screw to draw halves together) has actually undergone refurbishment at SLAC, other pieces may be done opportunistically



Future Plans

- Last major part of Barrel TDR section needed is the detailed plan for the Barrel de-integration
 - Also need a brief description of the alternative scenario of moving the whole Barrel
- KF is currently providing close liaison with SLAC
 - SO will continue to provide strong support for the Barrel de-integration and modules transfer
 - SO (and SJM) will also participate in issues related to Endcap, but Endcap already has a strong team in place so lesser SLAC effort here
 - Plan is to institute bi-weekly meetings with SO and others (maybe including WJW, SM) and regularly communicate documents, findings, etc. either to Roma1 EMC docs repository or to the EMC SuperB mailing list
- KF will be withdrawing from the SuperB project after the 2-3 July trip to SLAC
 - An outline of plan for Barrel de-integration will be committed to the TDR repository, but other contributors will need to supplement and finish text
 - Given that it has been more efficient to have a single SuperB contact with SLAC, a new liaison person should be found