

New FC Endwall Trial Assembly

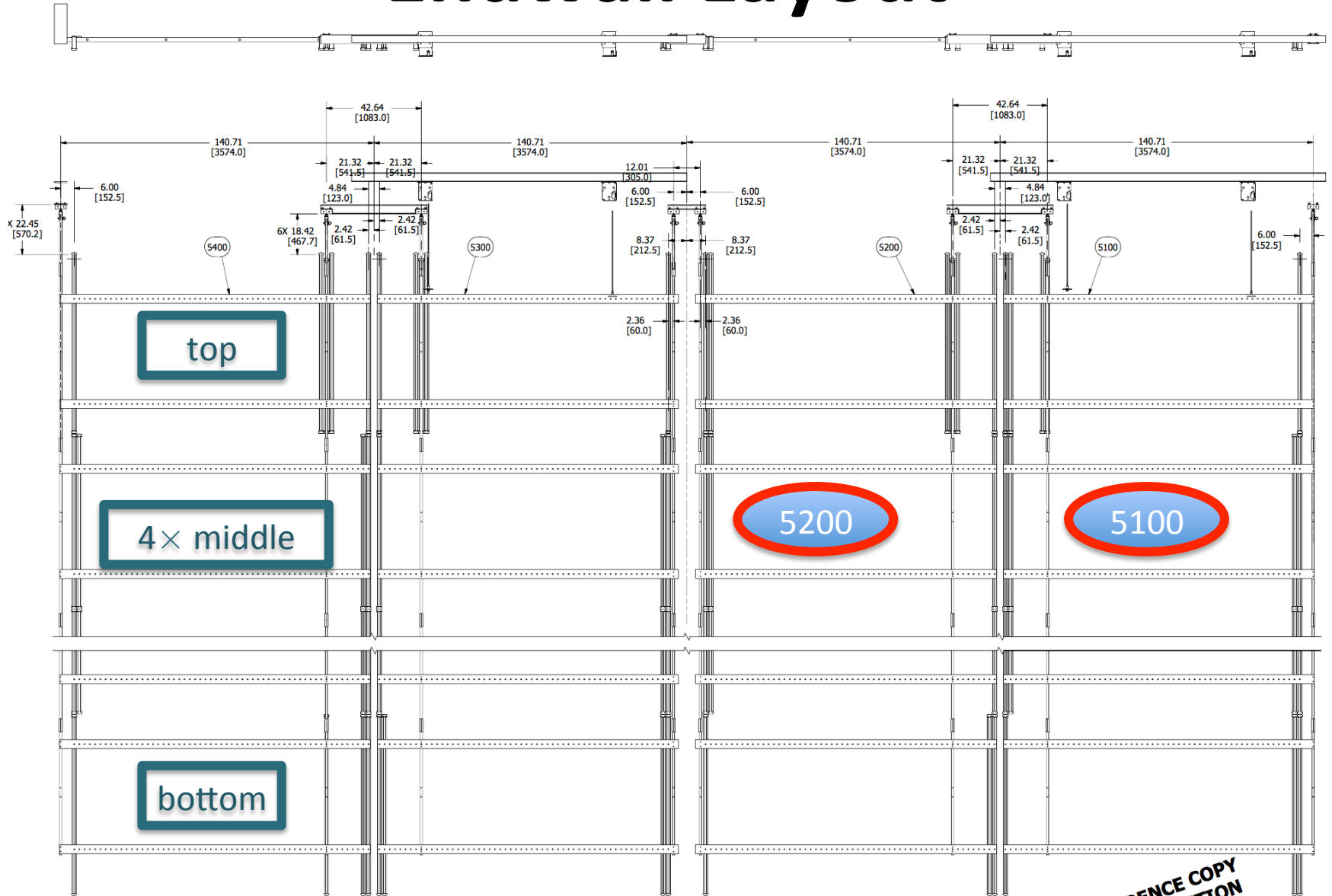
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Overview

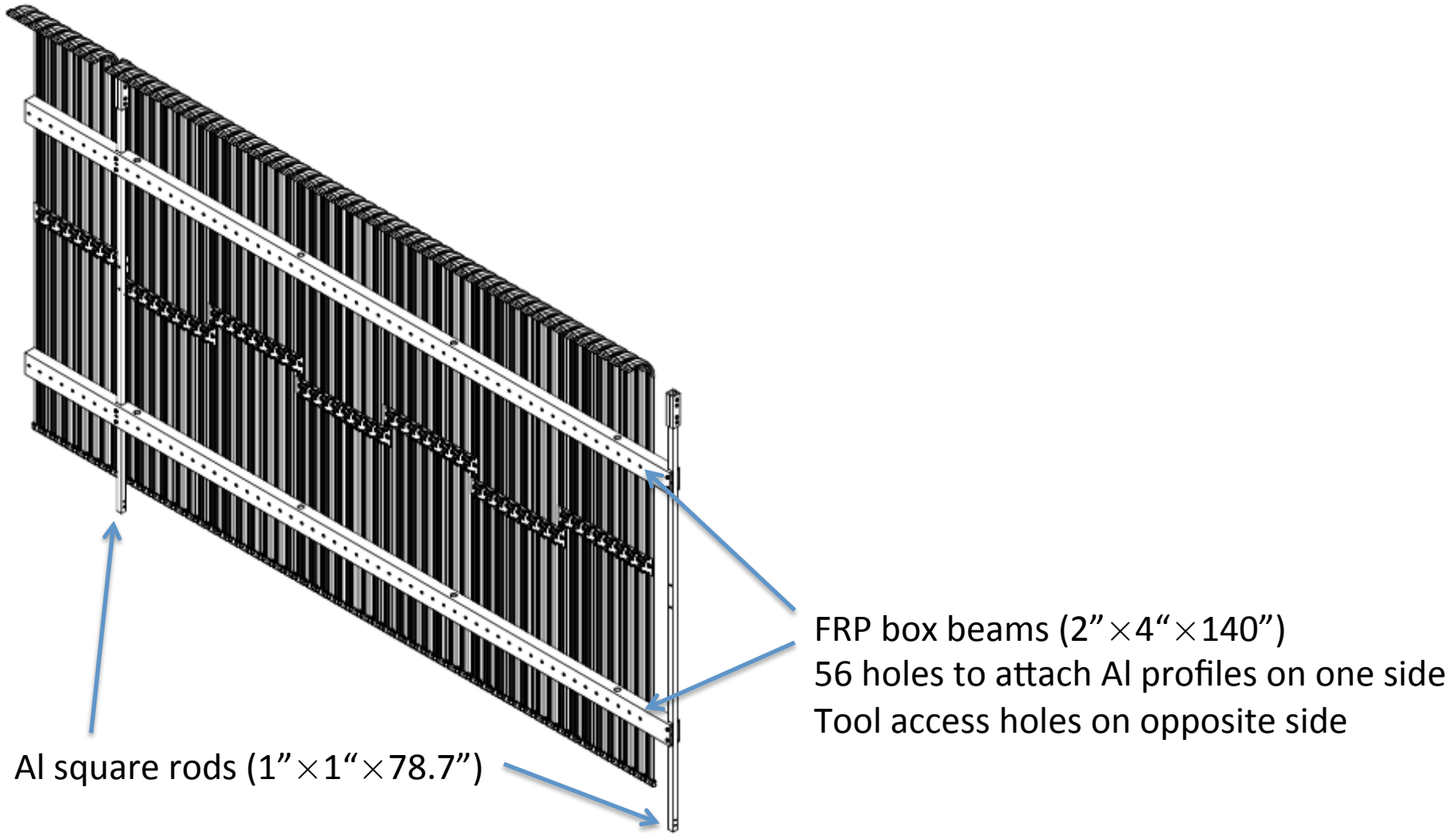
- Endwalls
- Comments/feedback on assembly
- QA/QC

Endwall Layout



REFERENCE COPY
PRODUCTION

5100 top panel



Assembly



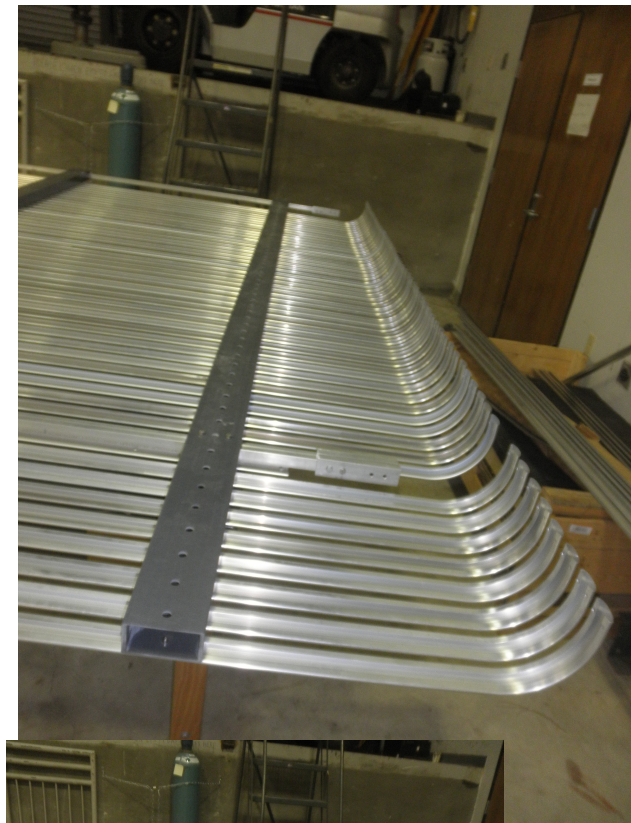
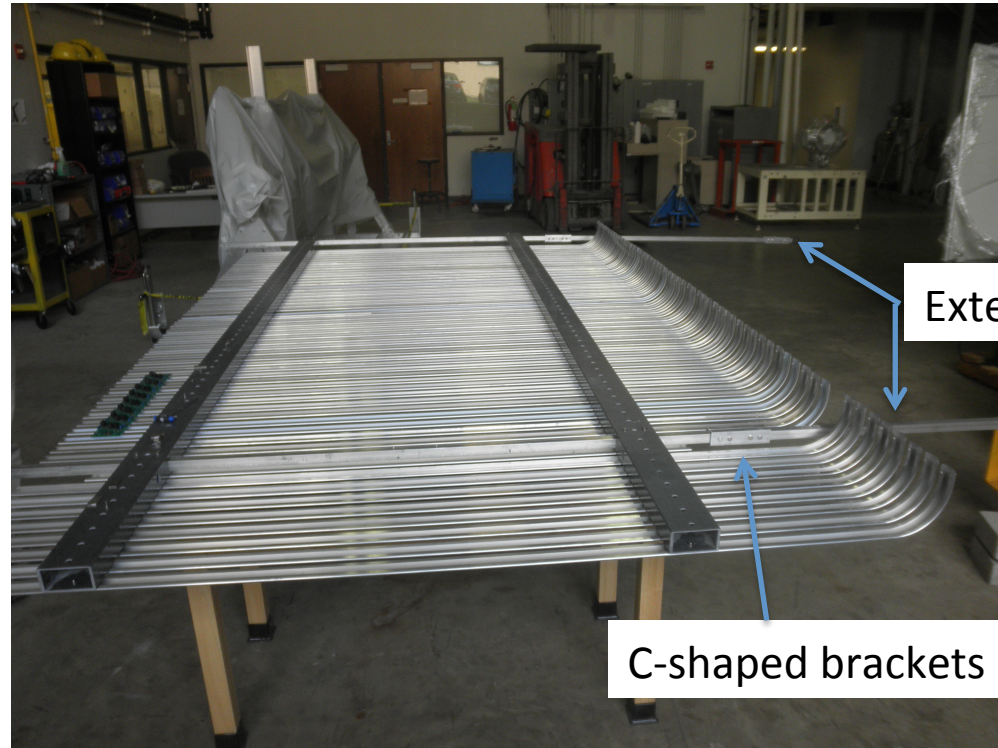
Assembly sequence:

1. FRP box beam + Al rod frame
2. Slip nuts and Al profile (one at a time)
Alignment of profiles not yet fine tuned → manufacture/use dedicated tools

Observations:

- Frame is straight forward to assemble, sturdy and easy to handle/turn with 2 people
- Some profiles catch edge of slip nut and don't install easily
→ refine installation method and reduce slip nut size

Assembly



Observations:

- Fully assembled panel requires 3 - 4 people to handle/turn

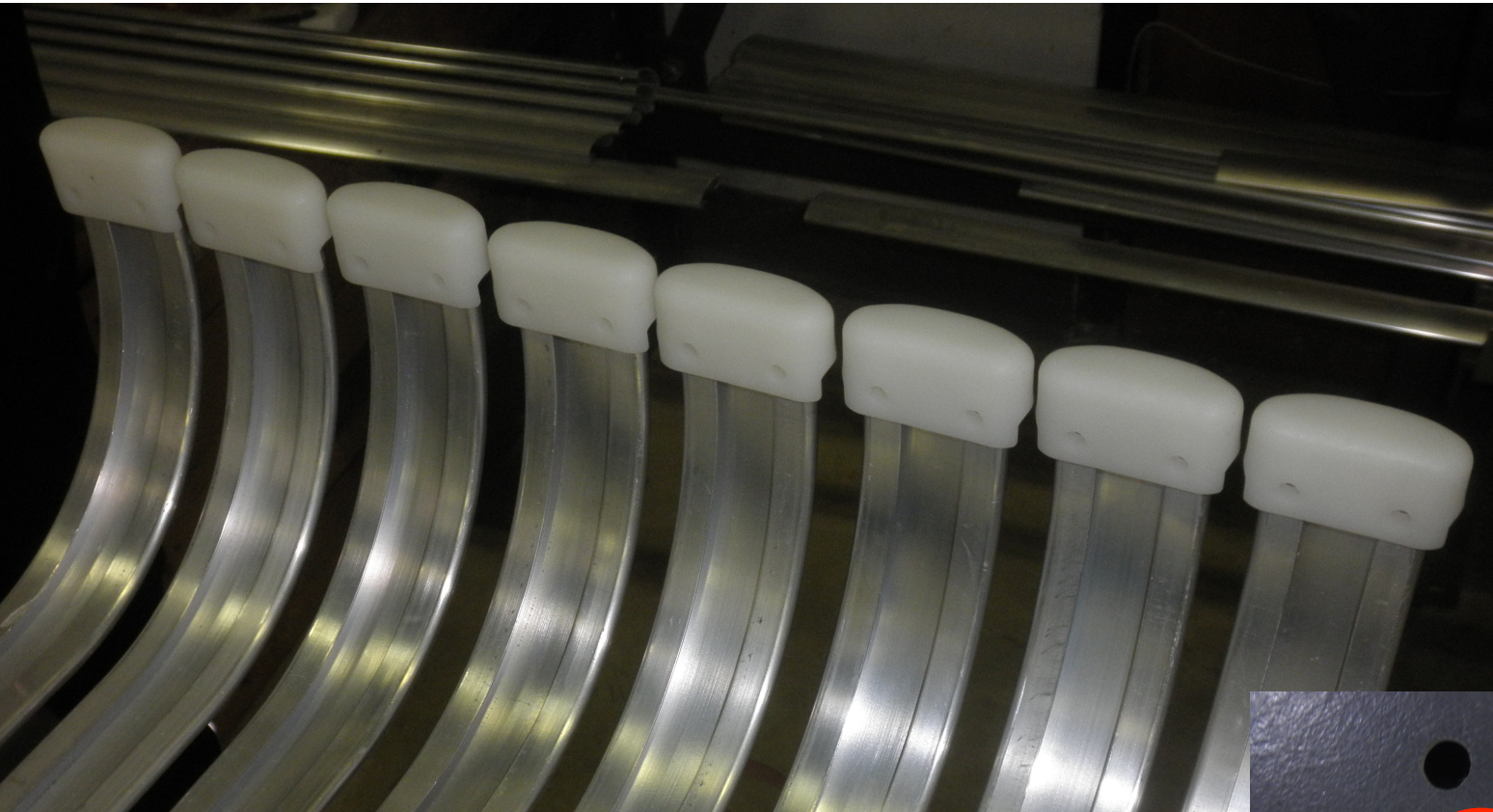
Hanging of Panel



Hanging of Panel



Mounting of Endcaps



Observations:

- Mounting of endcaps on bend profile end significantly harder (due to slight widening of profile during bending process)
 - possibly widen inner endcap opening by 1mm ?
 - Mount endcaps before profile assembly to frame



QA/QC

Pre-assembly:

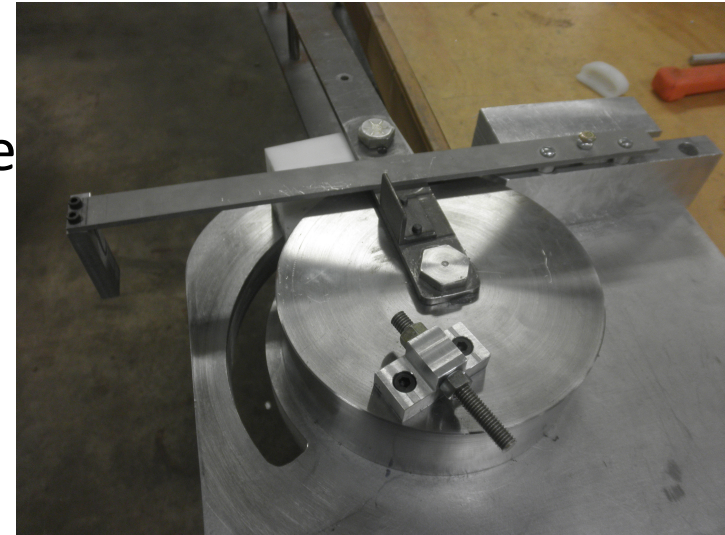
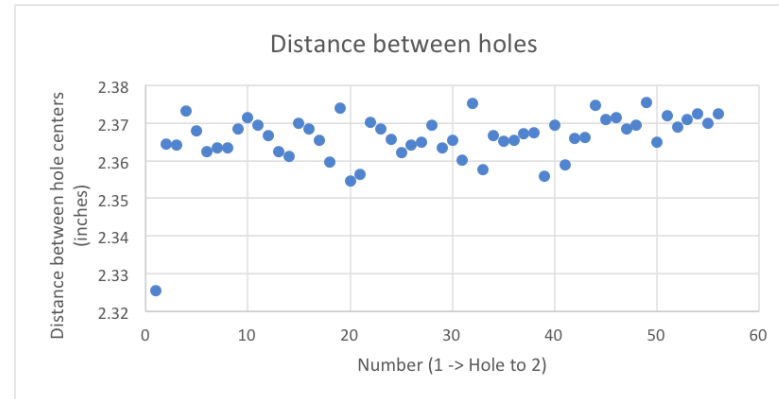
- Box beam hole measurements
- Bend profile length and bend position

Mid-assembly:

- Measure frame diagonals, check right angle
- Profile alignment bar
- Profile positioning comb

Post-assembly:

- ...



→ Presently working on manufacturing dedicated QC tools

Summary + Next Steps

- Overall new FC endwall design assembled nicely
- Design appears to be light weight and sturdy
- Identified minor issues and learned valuable lessons to improve assembly procedure
- Simplify QA/QC with specific tools
- Start preparing to manufacture 12 far detector FC endwall panels