



Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

HWR Handling in CMTF

C. Baffes

HWR Transportation Review

24 July 2018

Outline

- Truck pulls into dock
- Handoff from truck to crane
- Crane to staging position, downstream end of PIP2IT cave
- Post-transport reassembly as specified by ANL team
- Crane to final position in PIP2IT cave
- Handoff to stand

Outline

- Truck pulls into dock
- Handoff from truck to crane
- Crane to staging position, downstream end of PIP2IT cave
- Post-transport reassembly as specified by ANL team
- Crane to final position in PIP2IT cave
- Handoff to stand

Truck Pulls Into Dock

- Plan – just back in
- Constraints
 - Roll-up door is 16' wide
 - Usable area of dock is ~12' X 58'
 - Tail end of trailer must be unobstructed - if we use a roll-tite trailer, it must roll towards the cab
 - If significant on-trailer work is needed, we may want a short trailer so that the roll-up door can be closed if weather is bad



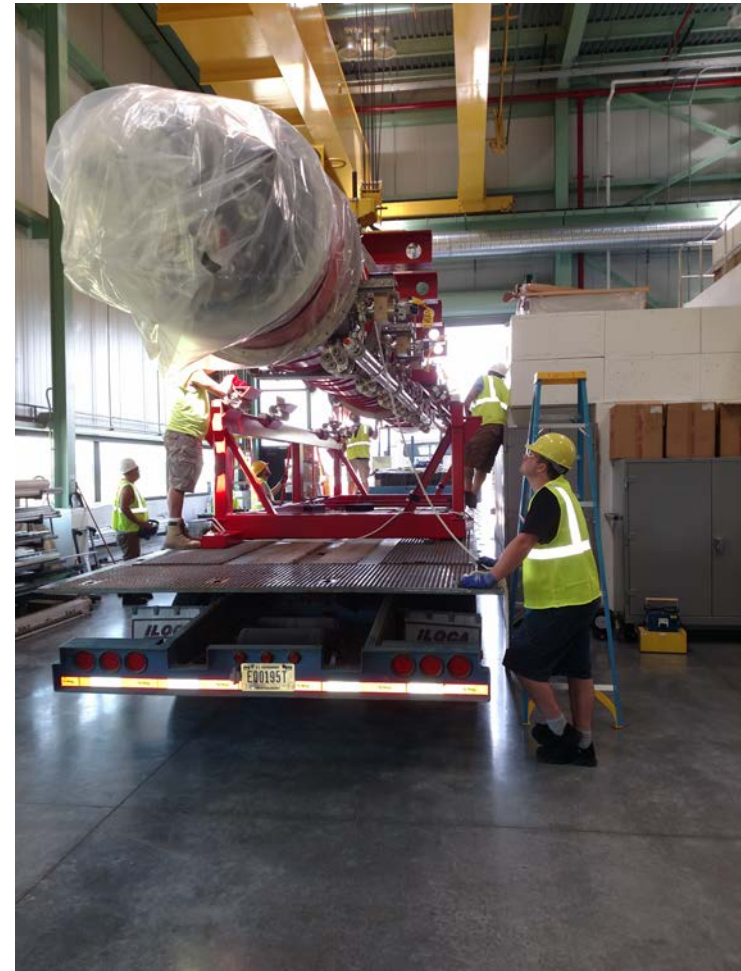
*CMTF dock
Crane bridge fully south*

Outline

- Truck pulls into dock
- **Handoff from truck to crane**
- Crane to staging position, downstream end of PIP2IT cave
- Post-transport reassembly as specified by ANL team
- Crane to final position in PIP2IT cave
- Handoff to stand

Handoff from Truck to Crane

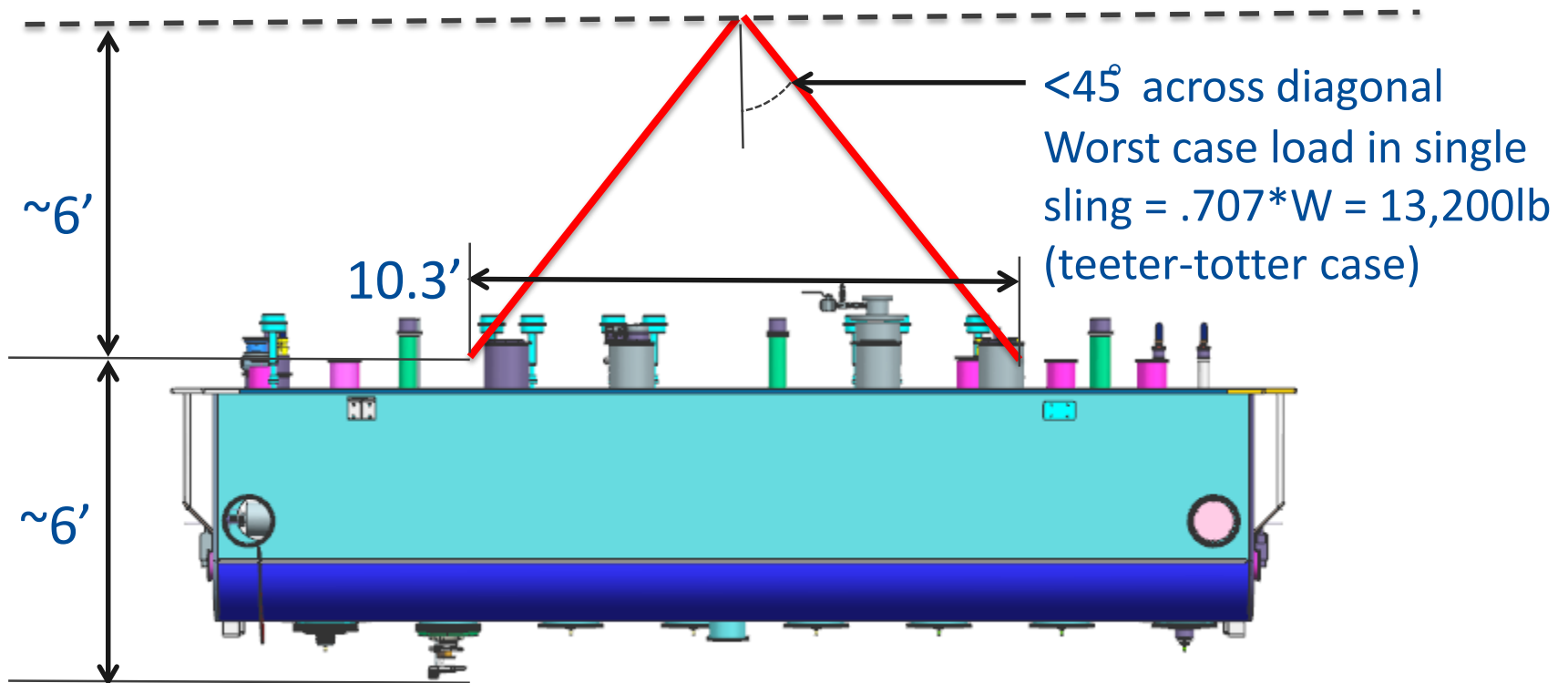
- Plan
 - Rig HWR under crane
 - Take slack out of slings
 - Free HWR from trailer
 - Lift
- Constraints
 - Structure to be cleared on trailer cannot exceed 10.5' cave height
 - Not much room to work around the trailer
 - 20T crane capacity



LCLS2 pCM @ CMTF dock

Rigging layout

- Hoist points on HWR lid
- Simple 4-sling rigging arrangement
- Same rigging to be used at ANL



Alternate Rigging layout

- Compatible spreader bar is available
- Trade-off: Spreader bar offers better geometry (lower profile, lower sling angles), but requires handling over HWR



Outline

- Truck pulls into dock
- Handoff from truck to crane
- Crane to staging position, downstream end of PIP2IT cave
- Post-transport reassembly as specified by ANL team
- Crane to final position in PIP2IT cave
- Handoff to stand

Crane into staging position

- Plan
 - Crane over south cave wall
 - Tag lines to control rotation
 - Land on blocks in PIP2IT cave, downstream of final position
 - Idea is to provide good access all the way around the module
- Constraints
 - 10.5' south cave wall height

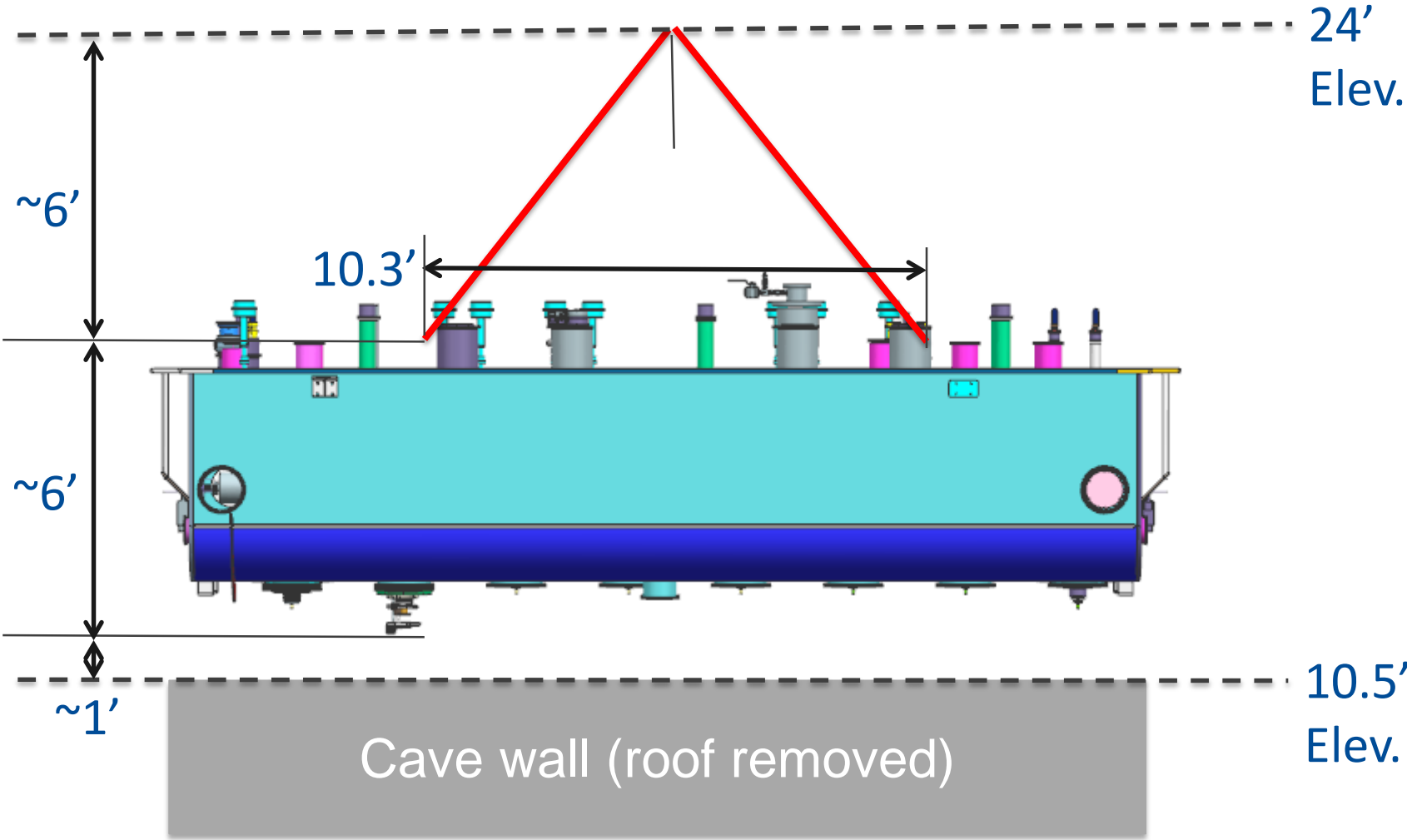
These two blocks get removed



Staging area

Cave south wall

Rigging Layout – strong constraint on height



Crane into staging position

Comparable operation at CMTS

13.5' elevation,
3' higher than
PIP2IT



Outline

- Truck pulls into dock
- Handoff from truck to crane
- Crane to staging position, downstream end of PIP2IT cave
- **Post-transport reassembly as specified by ANL team**
- Crane to final position in PIP2IT cave
- Handoff to stand

Post-transport Reassembly

- Plan
 - Work specified by ANL, not covered in this presentation
- Constraints
 - May not have continuous crane coverage due to schedule interactions with CMTS1 work (LCLS2)

Outline

- Truck pulls into dock
- Handoff from truck to crane
- Crane to staging position, downstream end of PIP2IT cave
- Post-transport reassembly as specified by ANL team
- **Crane to final position in PIP2IT cave**
- Handoff to stand

Crane into final position

- Plan
 - Lift and translate upstream in PIP2IT cave
 - Land on cribbing within 25mm of nominal position
- Constraints
 - Less stringent vertical constraints than other craning operations
 - Typically, we are able to set with ~10mm accuracy at CMTS



Outline

- Truck pulls into dock
- Handoff from truck to crane
- Crane to staging position, downstream end of PIP2IT cave
- Post-transport reassembly as specified by ANL team
- Crane to final position in PIP2IT cave
- Handoff to stand

Handoff to stand

- Plan
 - With HWR sitting rigidly on cribbing, interface adjustment struts
 - Use adjustment struts to transfer load
 - Remove cribbing
 - Rough align HWR
- Constraints – cribbing needs to avoid couplers



End

- Questions/Discussion