

TOF Tray Assembly

w.j. llope

☆ *TOF Review, UT-Austin*

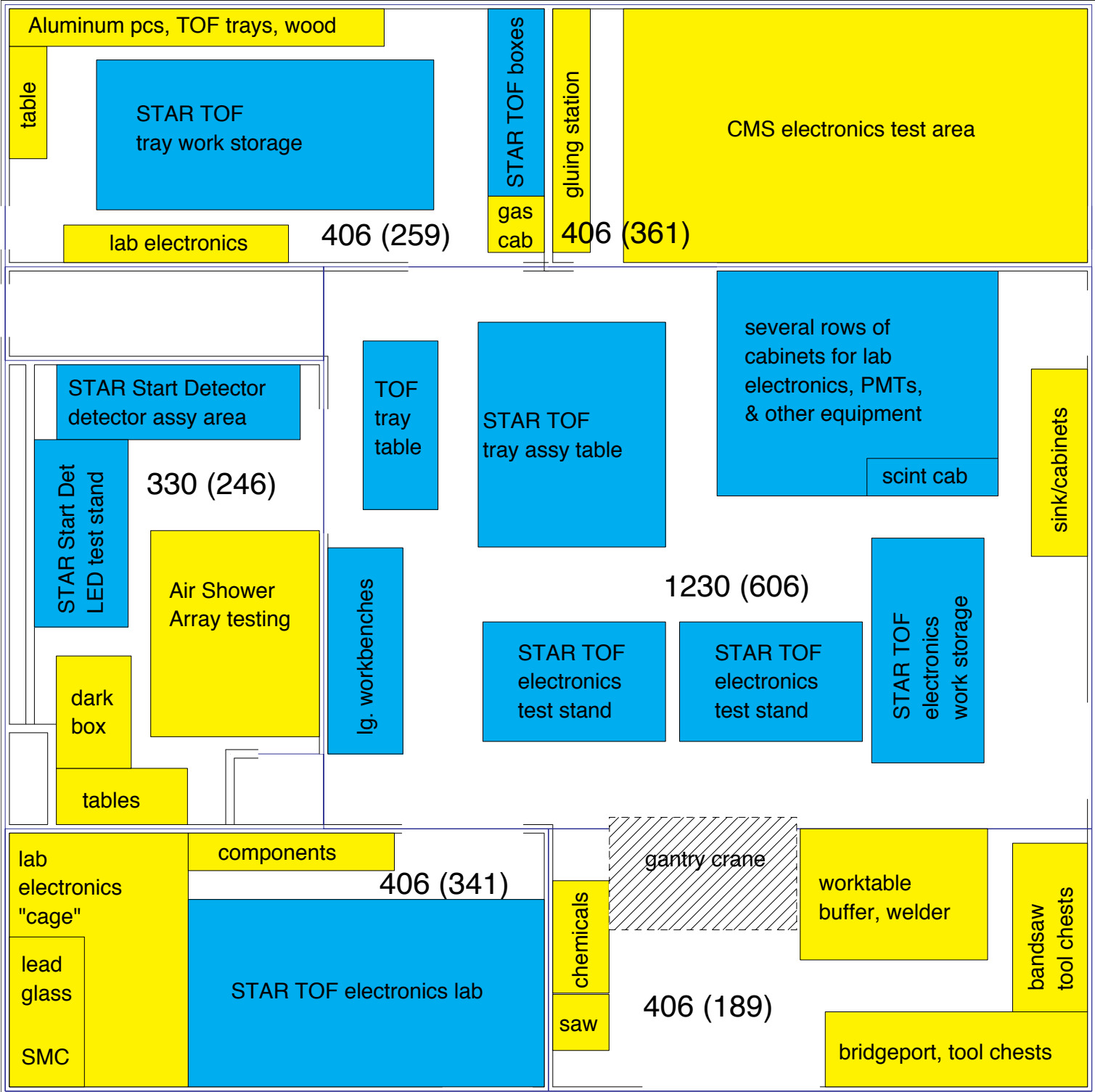
April 24, 2006

Outline:

- Workspaces
- Fixtures
- Procedure project
 - Procedure graphically

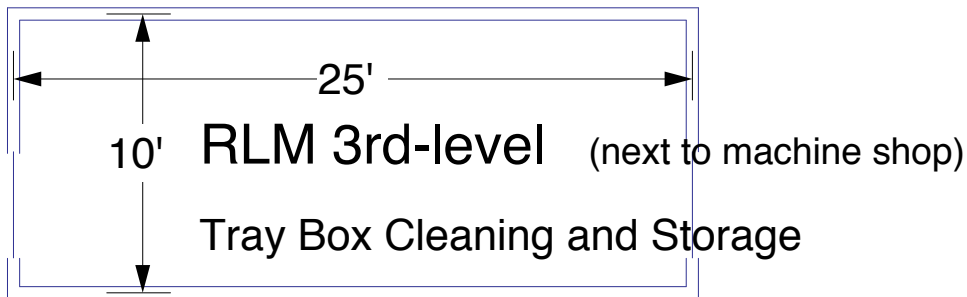
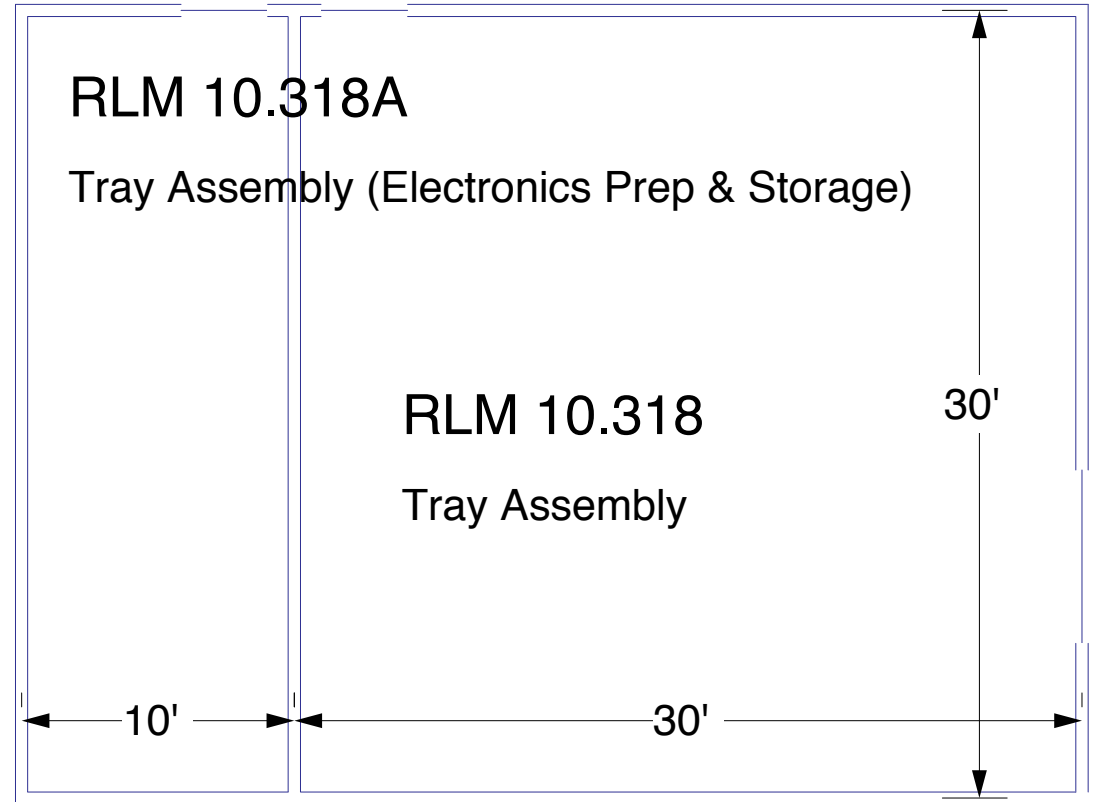
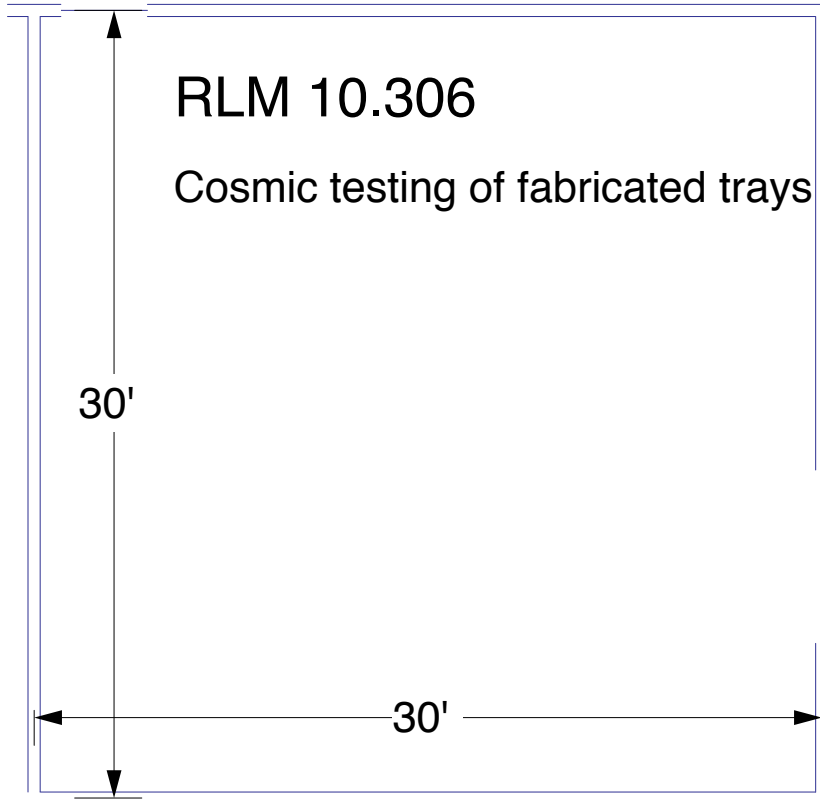
Space @ Rice

tray inspection



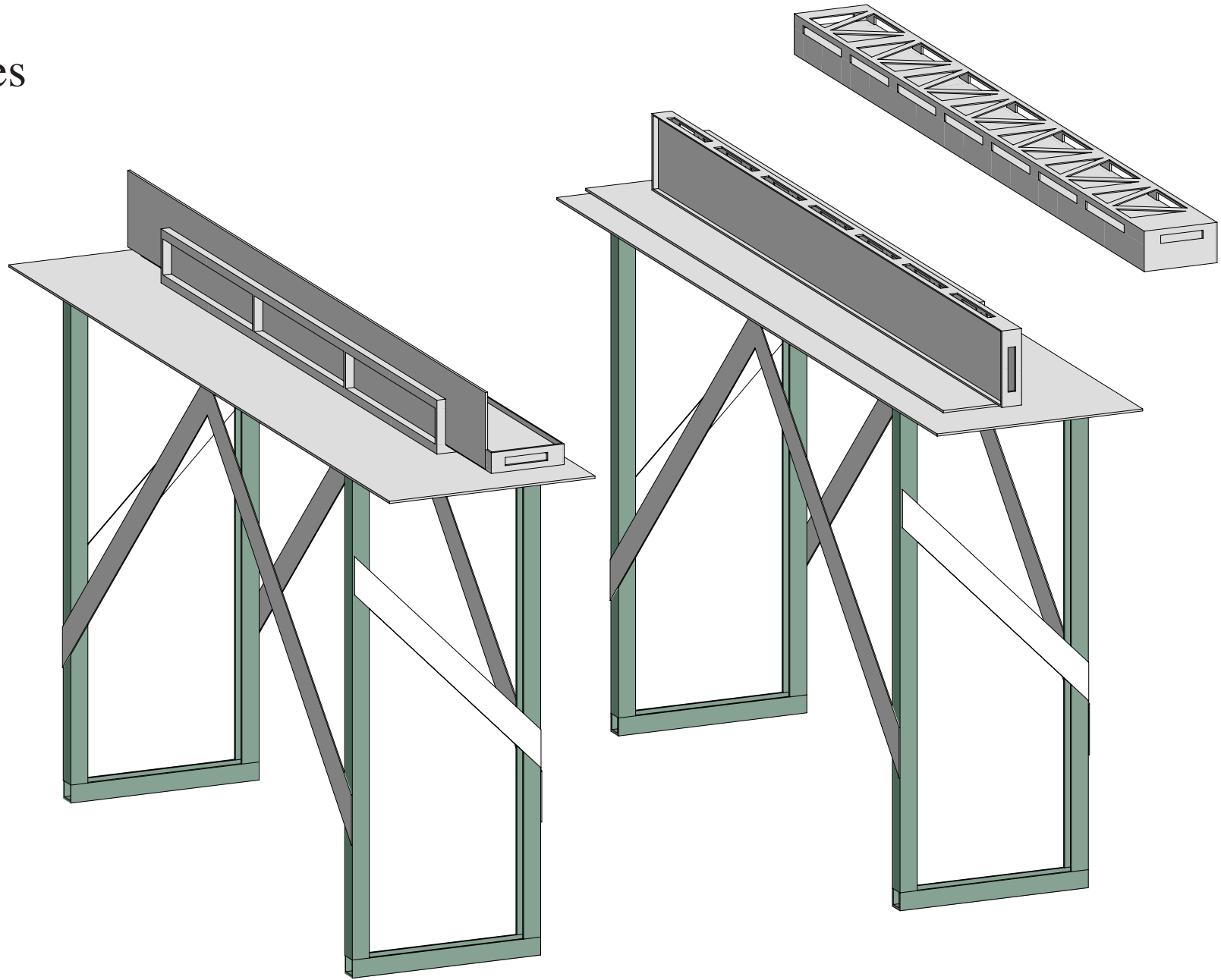
Space @ UT

tray assembly and testing



Fabricated Tray Storage and Shipping:
arbitrarily large space in
HE Physics Laboratory, ENS Bldg
(next to RLM)

Fixtures

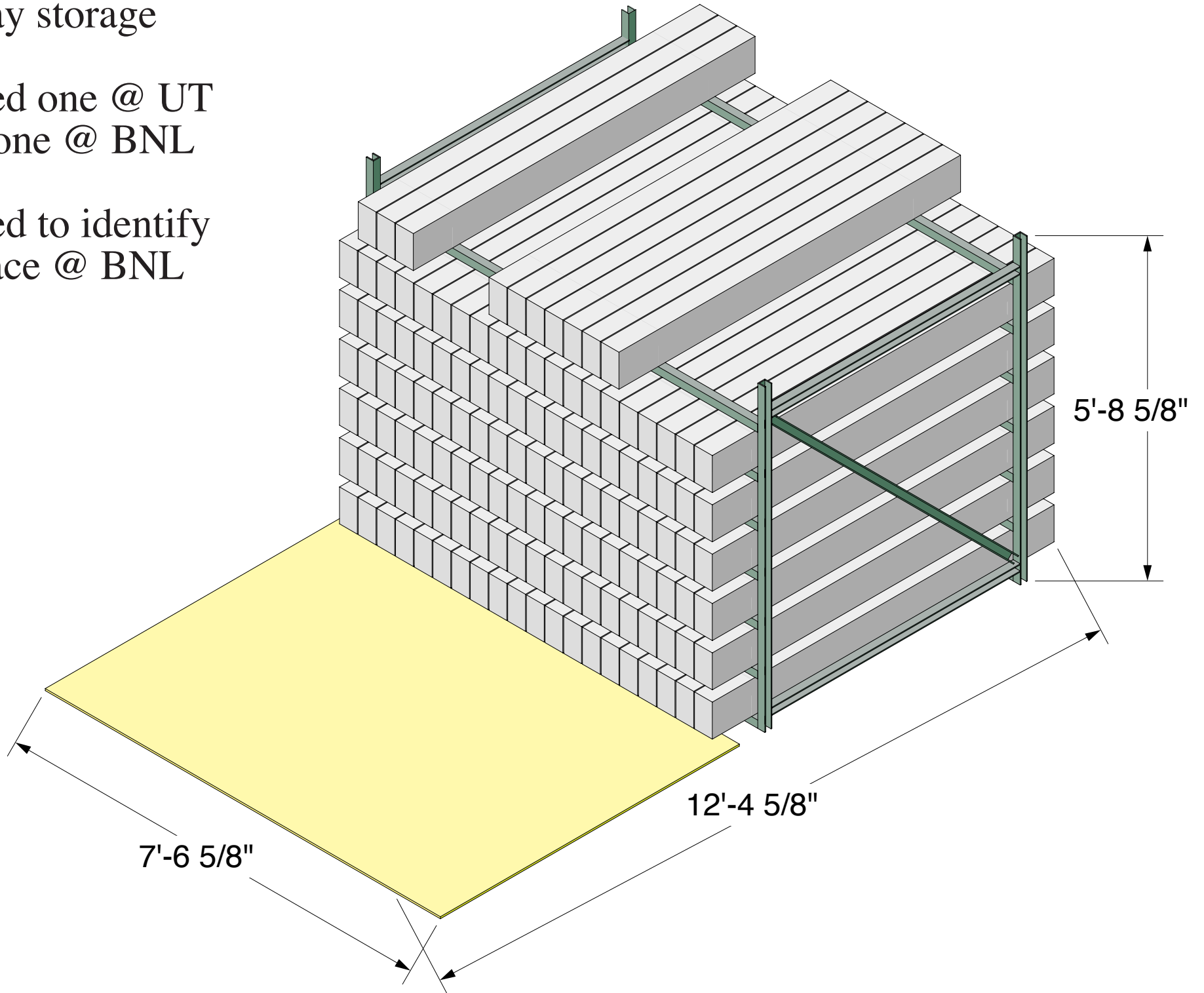


suggest just One (1) pivot table, plus Two (2) plain tables
need to design and fabricate immediately (mtg tomorrow)

Tray storage

need one @ UT
& one @ BNL

need to identify
space @ BNL



The procedure is generally
a series of several “few minute” operations per tray
punctuated by several ~24 hrs periods of waiting per tray (sealant curing, gas flow, etc...)

Fabrication model:

at the end of each week

two trays emerge from the **tray prep area**

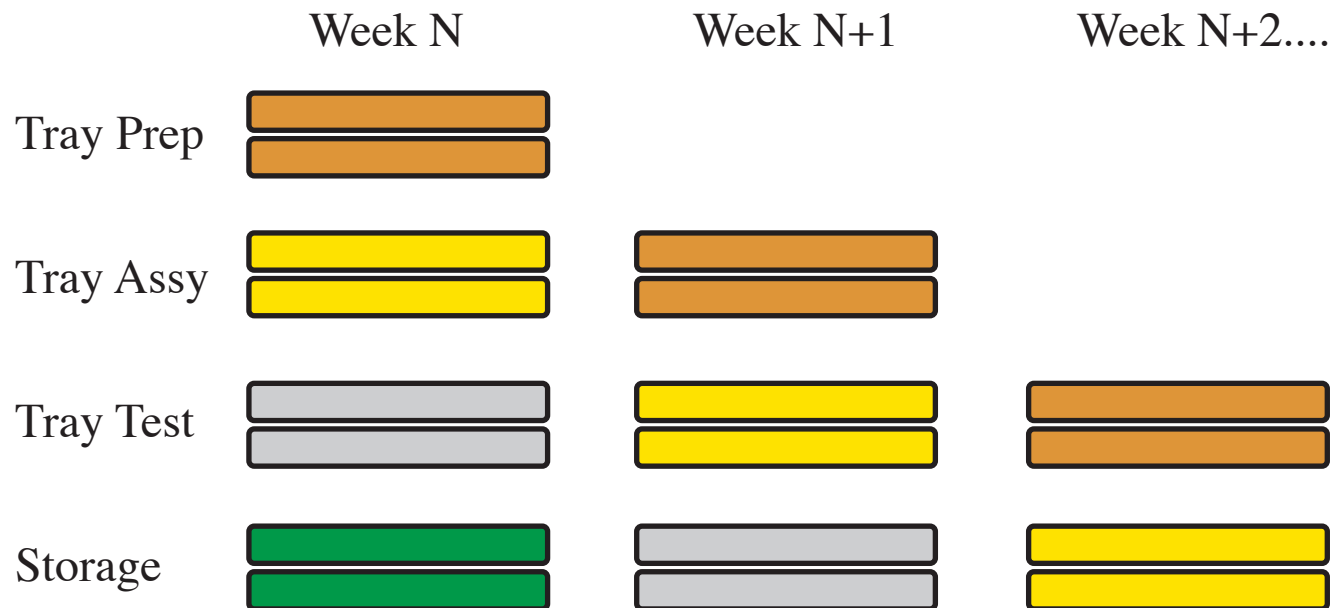
next week these will be in the **tray assembly area**

& two trays emerge from the **tray assembly area**

next week these will be in the **tray testing area** (gas flow, INL, noise rates, HV draw, etc)

Assumed manpower (1 FTE Tech + 2 FTE UG) and floor space sufficient

Gives some headroom in fabrication/testing schedule w.r.t. MRPC and FEE production



tray prep

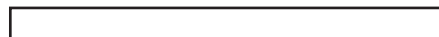
clean aluminum
seal corners



MRPC&FEE prep

assembly

test



pivot table



plain table

storage, ship prep

tray prep



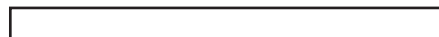
MRPC&FEE prep

seal TINO to top assy
install gas & HV F/Ts



assembly

test



pivot table



plain table

storage, ship prep

tray prep



MRPC&FEE prep

install upper brackets & cover



assembly

test



pivot table



plain table

storage, ship prep

tray prep



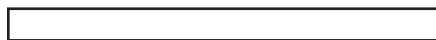
MRPC&FEE prep

assembly

install lower brackets
& one inner side



pivot table



plain table

test

storage, ship prep

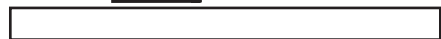
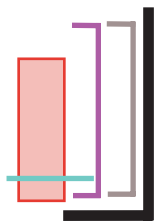
tray prep



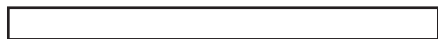
MRPC&FEE prep

assembly

rotate & install MRPCs
connect signal pigtails
install air core transformers



pivot table



plain table

test

storage, ship prep

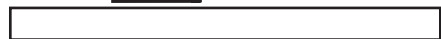
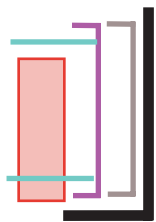
tray prep



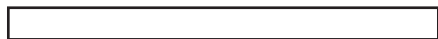
MRPC&FEE prep

assembly

install other inner side



pivot table



plain table

test

storage, ship prep

tray prep

MRPC&FEE prep



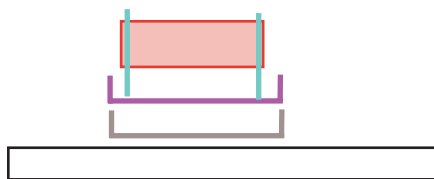
assembly

test

rotate back and move



pivot table



plain table

storage, ship prep

tray prep

MRPC&FEE prep



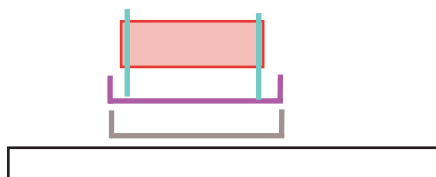
assembly

test

install HV bus & gas tube



pivot table



plain table

storage, ship prep

tray prep

MRPC&FEE prep

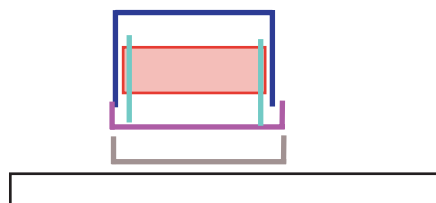
assembly

test

install bottom assy



pivot table



plain table

storage, ship prep

tray prep



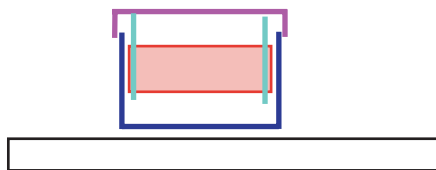
MRPC&FEE prep

assembly

rotate, remove cover
temporary LV setup + scope
RF test, fix bad channels!



pivot table



plain table

test

storage, ship prep

tray prep

MRPC&FEE prep

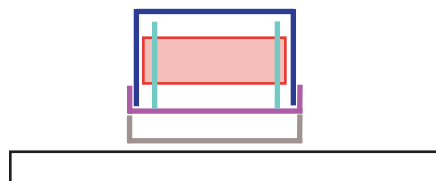
reinstall cover
rotate
seal bottom assy to top

assembly

test



pivot table



plain table

storage, ship prep

tray prep

MRPC&FEE prep



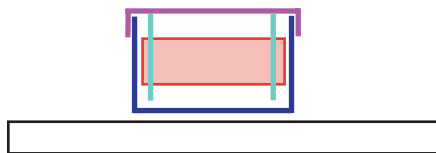
assembly

test

rotate
remove cover



pivot table



plain table

storage, ship prep

tray prep



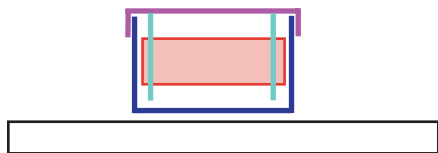
MRPC&FEE prep

assembly

install cooling loop, LV bus,
TDIGs, TCPU, & pigtails



pivot table



plain table

test

storage, ship prep

tray prep

MRPC&FEE prep

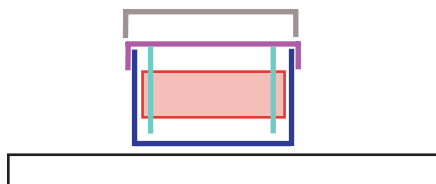
assembly

test

reinstall cover
assy complete!



pivot table



plain table

storage, ship prep

tray prep

MRPC&FEE prep

assembly

test

firmware check
noise rate tests



storage, ship prep



pivot table



plain table

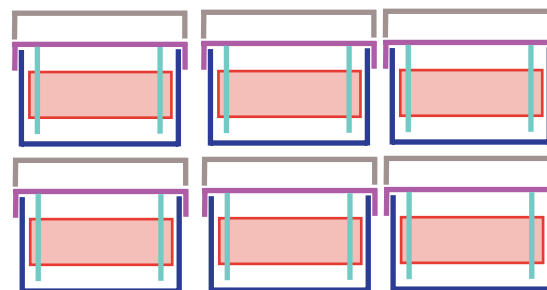
tray prep

MRPC&FEE prep

assembly

test

cosmics testing



pivot table



plain table

storage, ship prep

tray prep

MRPC&FEE prep

assembly

test



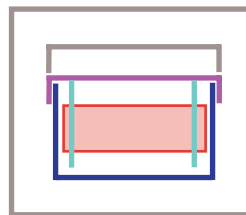
pivot table



plain table

packaging

storage, ship prep



tray prep

MRPC&FEE prep

assembly

test



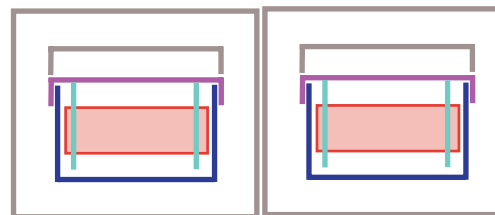
pivot table



plain table

storage

storage, ship prep



tray prep

MRPC&FEE prep

assembly

test



pivot table

plain table

storage, ship prep

ship to BNL