

The NEW Main Control Room; Scope of the Project



P. Ingrassia
RHIC Retreat 2010

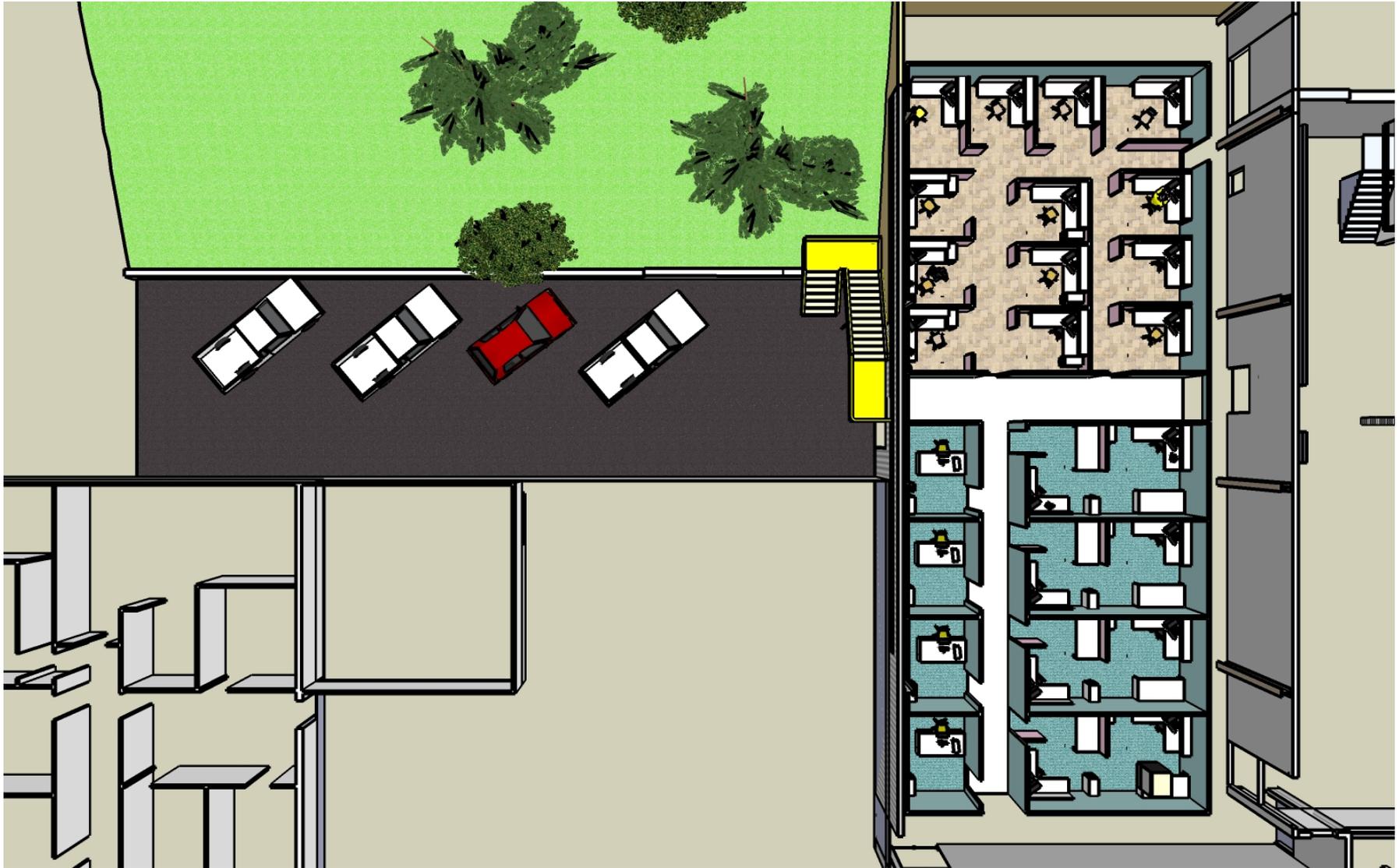
Features

- Integrates four Operations Groups;
 - CRYO, CAS, MMPS, MCR – (HP?)
- 17 positions for simultaneous operation of RHIC, p⁺ commissioning, NSRL, “operations”, p⁺ Jet, polarimeters.
- 8 positions for CRYO, CAS, Siemens operator
 - Present 10 positions is overcrowded
 - More “elbow room (60 in. vs 42 in.)
- Room area 2x old MCR (excluding conference room, closet, & entry)
- GOAL “All” Digital
- High Bandwidth Network

Features

- New Scope Trigger System (new hardware)
- Remote Oscilloscopes
- New Video Management system
- New Multiplexer for hardwired AGS/Booster signals
- Adjustable HVAC
- Conference Room
- Windows

Building in a Building (1)



Building in a Building (2)

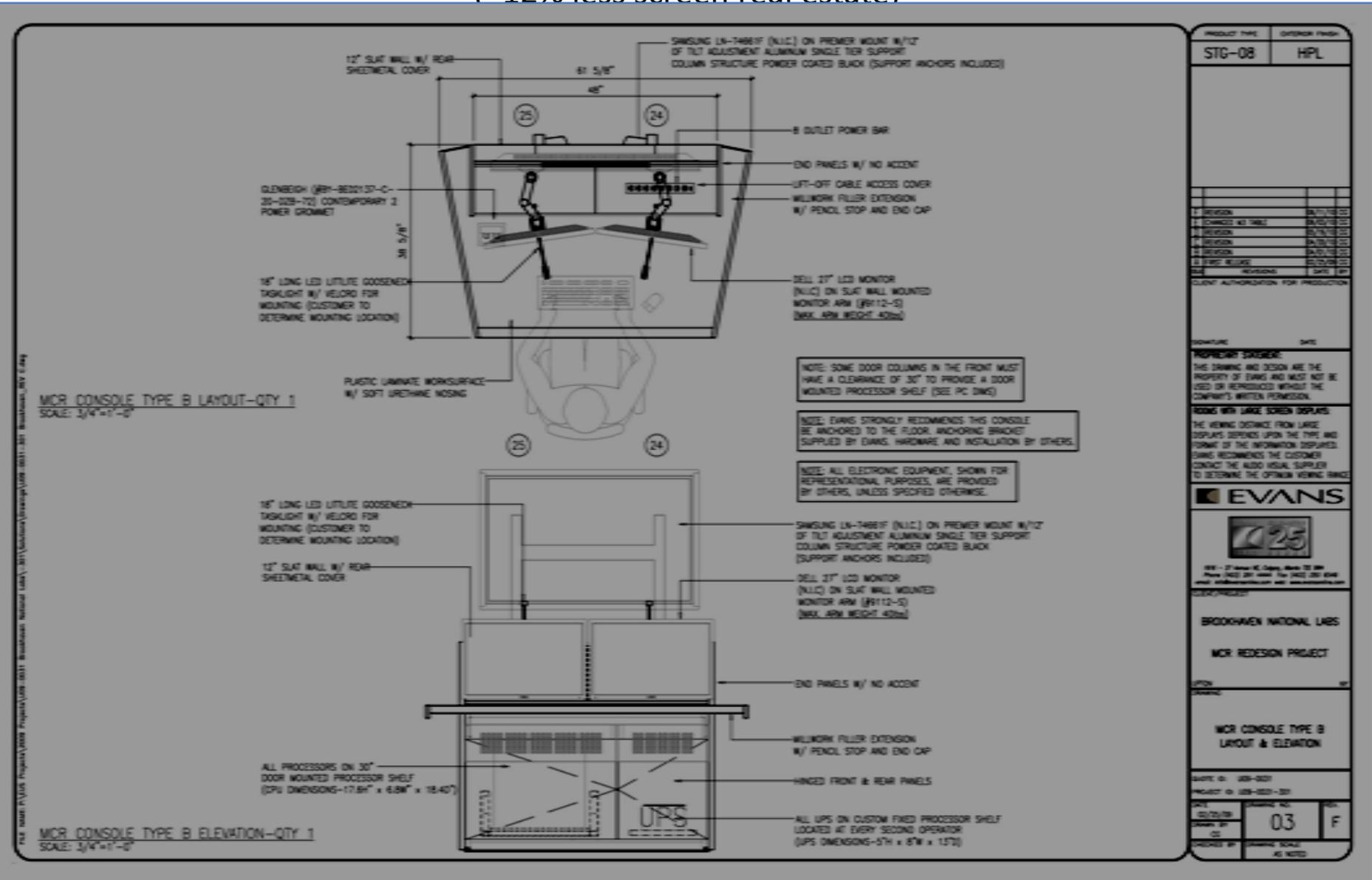


Panoramic View – R. Bowman



Console – open design – adjustable screens

(~12% less screen real estate)



PRODUCT TYPE	OUTDOOR FINISH																																																																																										
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<p>EVANS</p> <p>125</p> <p>851 - 27 Avenue K, Oshawa, Ontario L1G 3M1 Phone (416) 281-4848 Fax (416) 281-6948 www.evansinc.com</p>																																																																																											
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Console elements

STRATEGY™ PRESTIGE COLLECTION

CONSOLE FINISH SCHEDULE

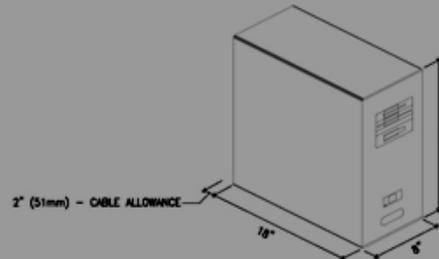
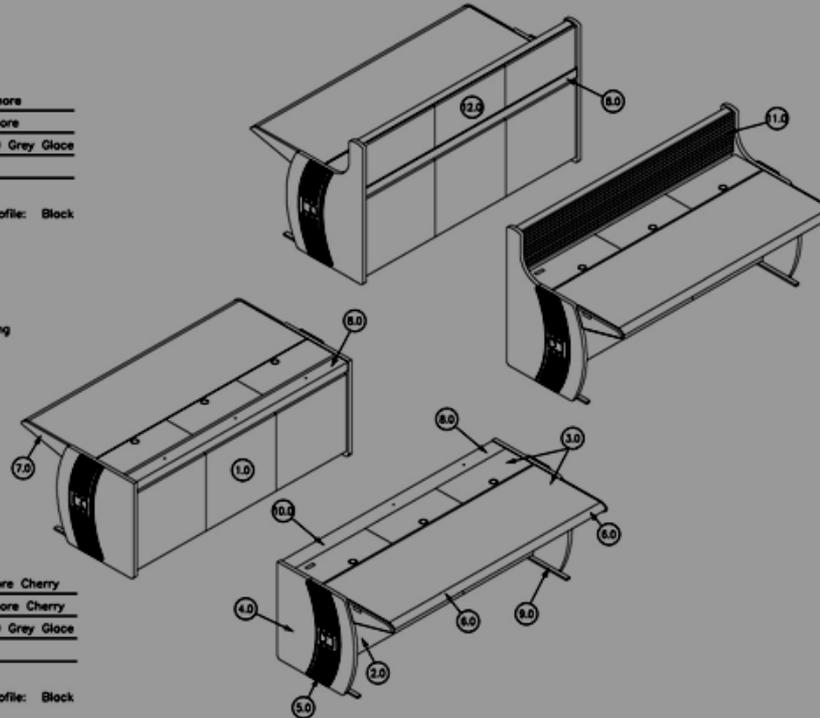
- 1.0 Rear Enclosure Panels - P.Lam.: Wilsonart 7924K-07 Biltmore Cherry
- 2.0 Front Enclosure Panels - P.Lam.: Wilsonart 7924K-07 Biltmore Cherry
- 3.0 Worksurface & Raceway Cover - P.Lam.: Wilsonart 4142-60 Grey Glace
- 4.0 End Panels - P.Lam.: Wilsonart 7924K-07 Biltmore Cherry
- 5.0 End Panel Accent - MDF, Painted: Plastofix Black
- 6.0 Nosing - Injection Molded Rubber on Extruded Aluminum Profile: Black
- 7.0 Nosing End Caps - MDF, Painted: Plastofix Black
- 8.0 Rear Stringer - Powder Coated: Black
- 9.0 Steel Support Legs - Powder Coated: Black
- 10.0 Hole Plugs - Black Plastic
- 11.0 Slatwall - Extruded Aluminum Profile: Black Powder Coating
- 12.0 Rear Slatwall: Black Sheet Metal

* NOTE: ALL INTERIOR FACES OF PANELS ARE WILSONART BLACK
 ** TYPICAL CONSOLES ARE SHOWN ONLY **

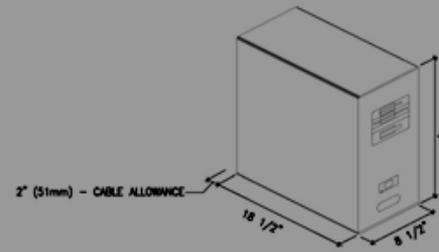
MILLWORK-PRESTIGE COLLECTION

MILLWORK FINISH SCHEDULE

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- 5.0 End Panel Accent - MDF, Painted: Plastofix Black
- 6.0 Nosing - Injection Molded Rubber on Extruded Aluminum Profile: Black



MAXIMUM TOWER PROCESSOR (FOR FIXED PROCESSOR SHELF)



MAXIMUM TOWER PROCESSOR (FOR DOOR MOUNTED PROCESSOR SHELF)
 30" MODULES

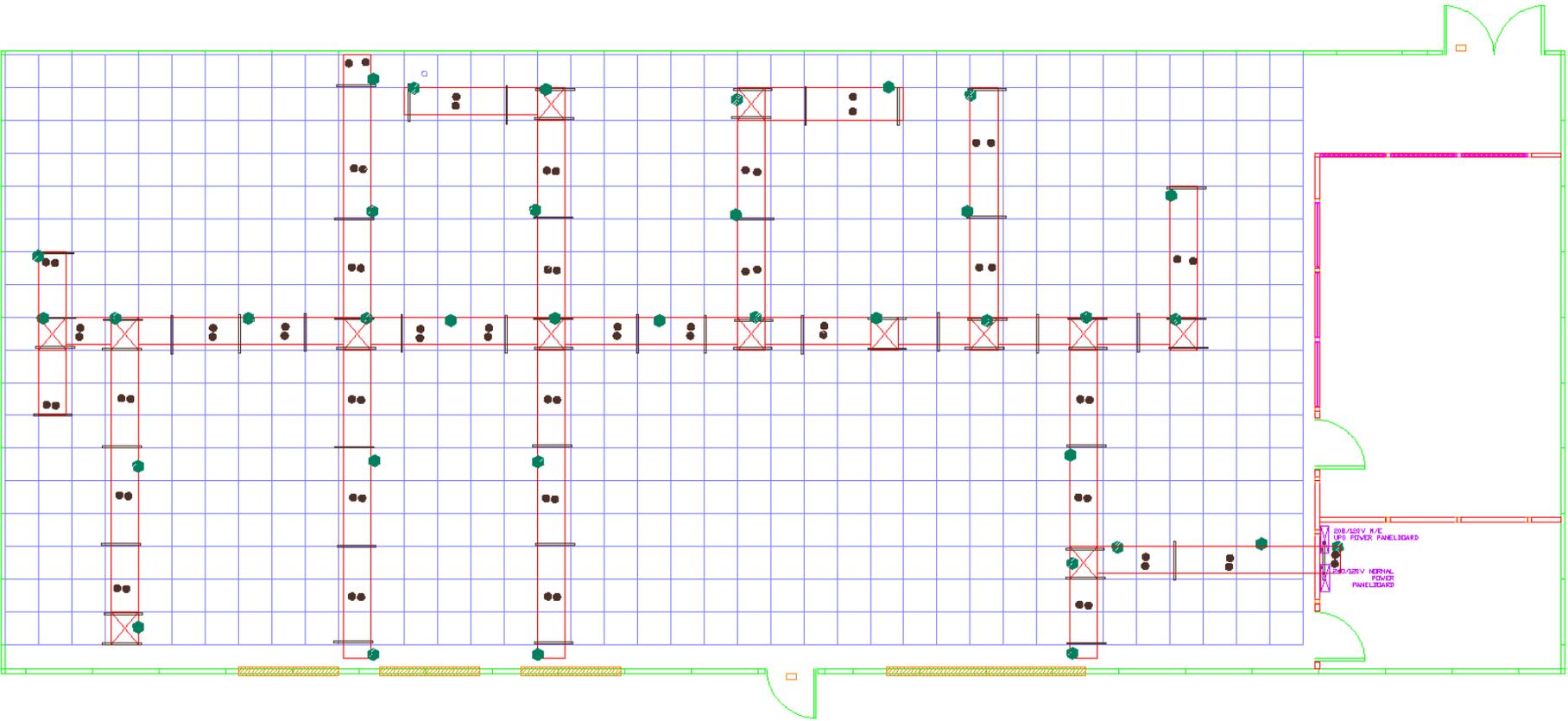
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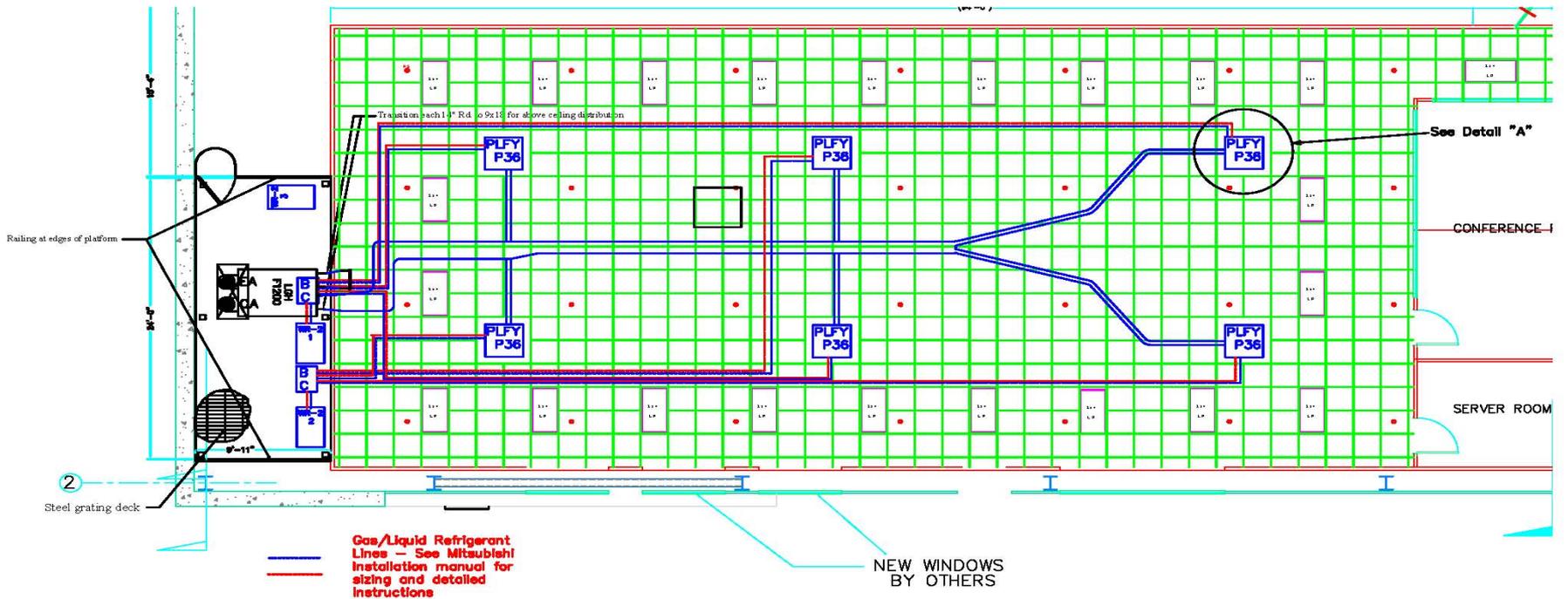
Feng – Tray design for distribution



HVAC

Folz – Platform at AGS S. Gate HVAC units



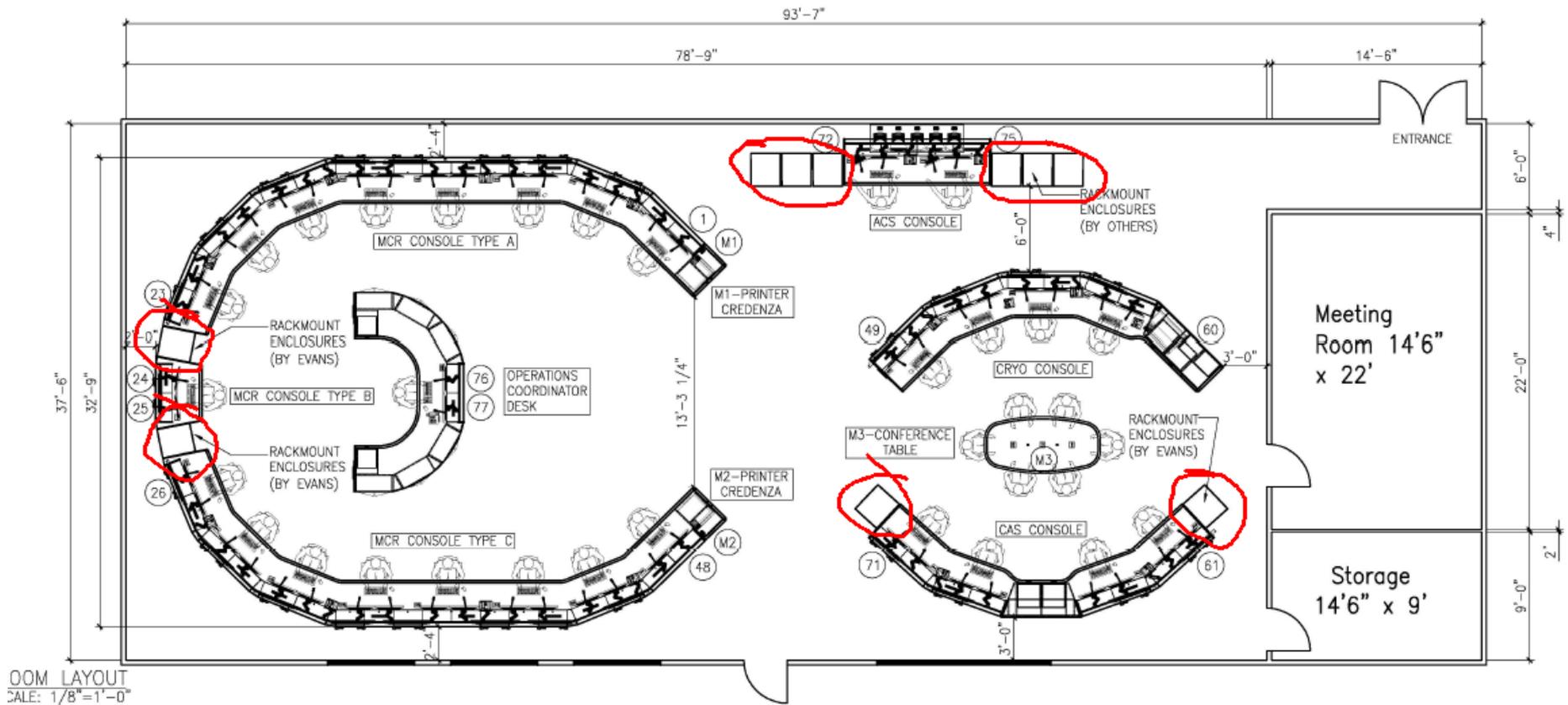


SECOND FLOOR HVAC PLAN

Note: Refrigerant line routing is schematic. Lines are to be routed in the field so as to provide most direct path achievable with given obstructions. Ceiling grid, tiles, fire control sprinklers and HSSD are already in place.

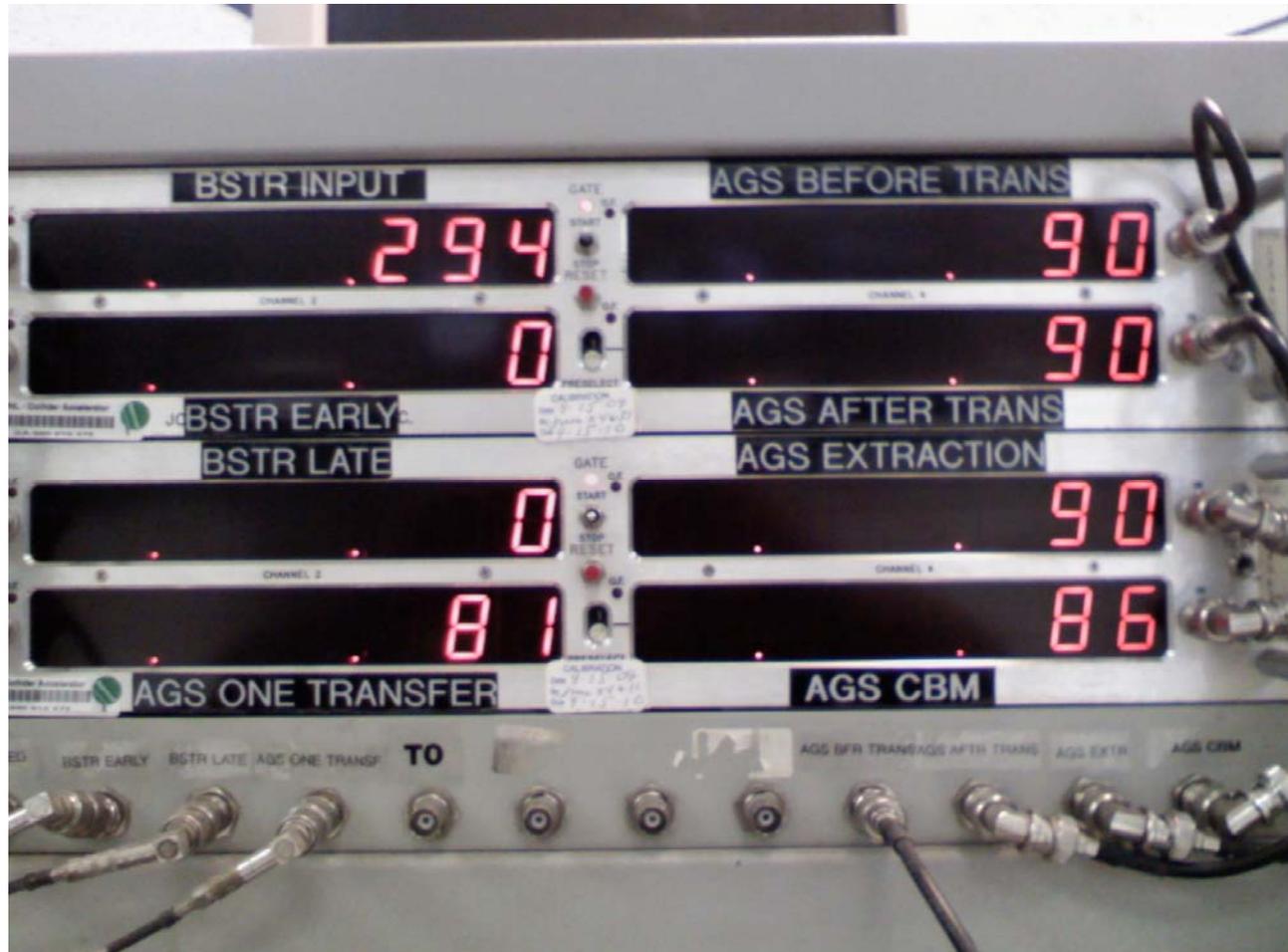
New Home for "old" Equipment

(all digital goal)



Injector Scalers (all digital goal)

Laster working on data update rate on same Supercycle
Displays on Workstation screen



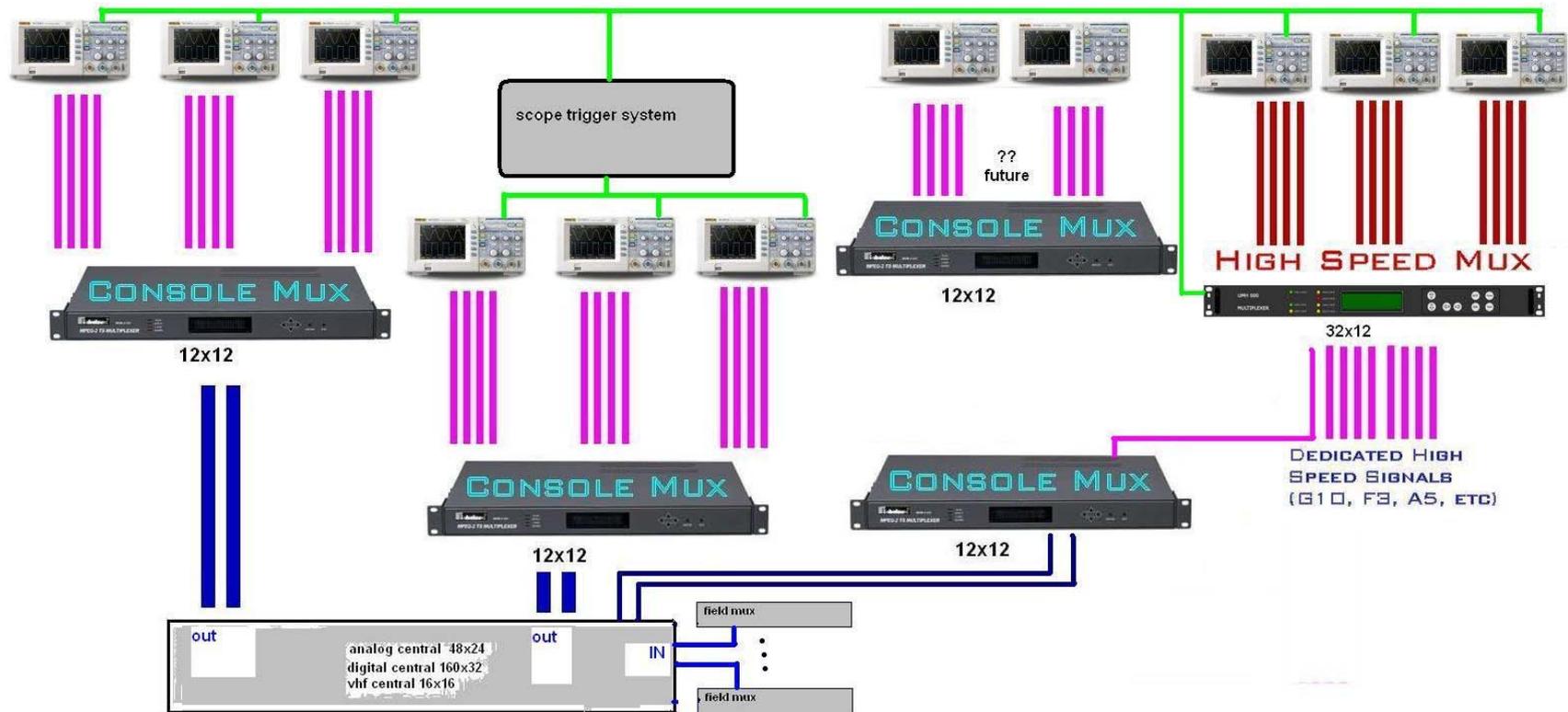
Injector Inhibit Buttons (all digital goal)

Oerter will implement in software with ppm control via soft buttons on a workstation



Analog Multiplexer – “old” + new

(all digital goal)



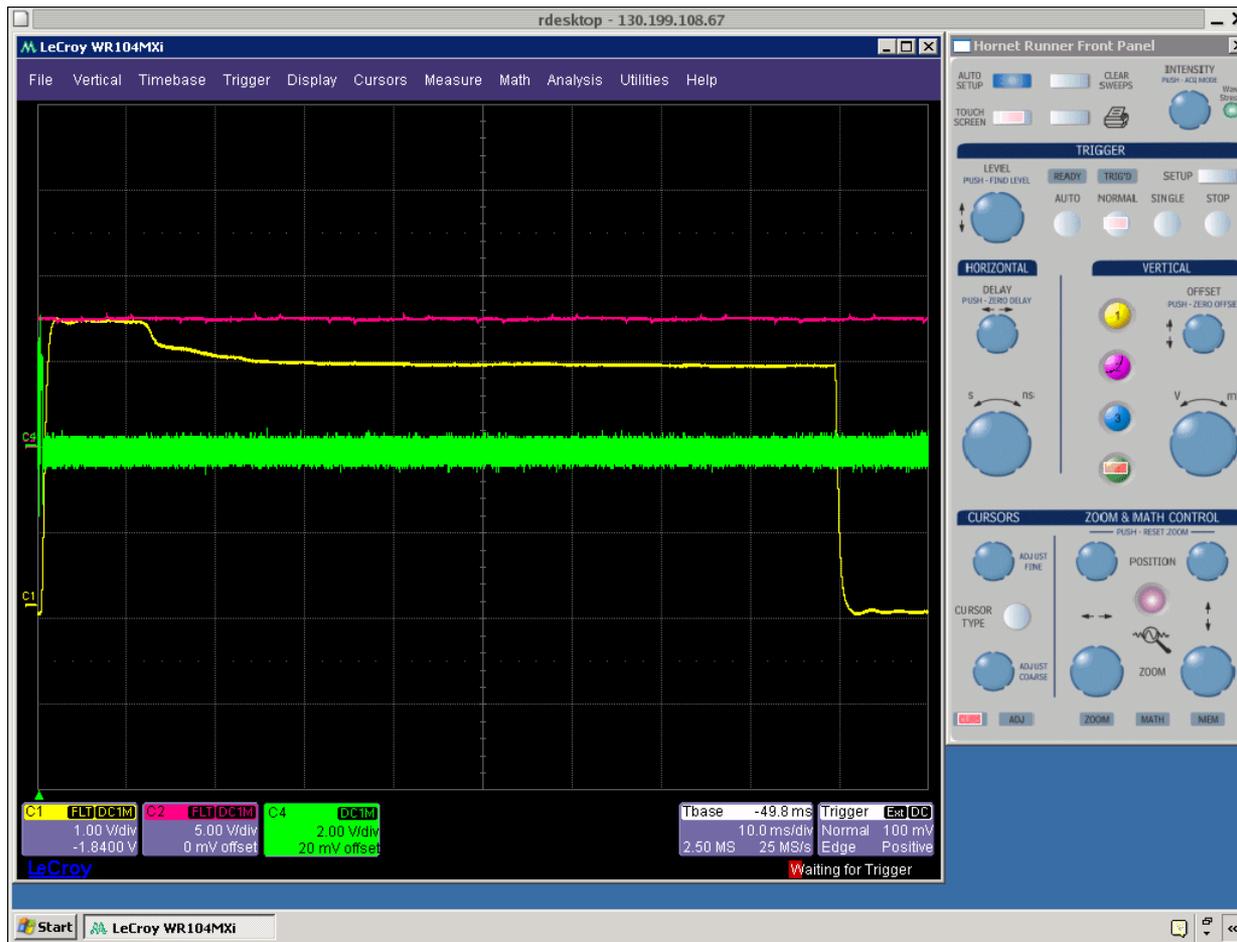
Oscilloscopes – Injectors (all digital goal)

NO Latency observed between “local scope” and “remote scope”

Scope viewed and controlled on a workstation

Scope signals selected using “existing” application

Future application will integrate scope control, signal selection, & viewing



Video System (commercial solution)

(all digital goal)

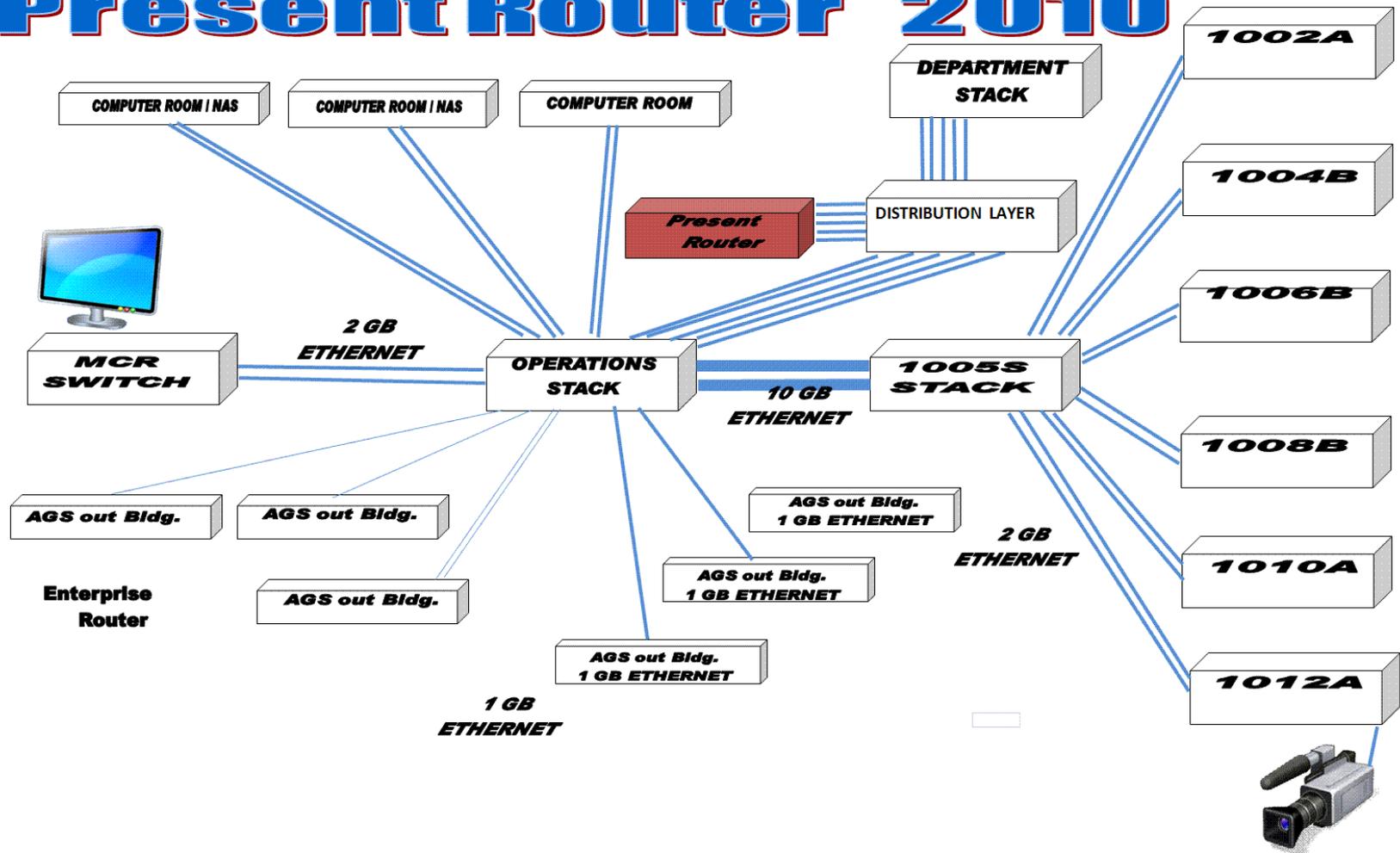
- ~100 Analog + Digital inputs (CRYO, MMPS, MCR + Access Controls)
- System includes
 - digitizers for NTSC video
 - Inputs for IP video
 - Web Server
 - Web Browser based means of selecting and viewing “video” inputs
 - Leaves existing CATV infrastructure intact

Remote Scope/Video issues

- Question whether the network has sufficient bandwidth for added data load (ip video + oscilloscope)
- Given measurements by Controls & Network group – the New network design will provide PLENTY of bandwidth.

Controls Network ca 2010

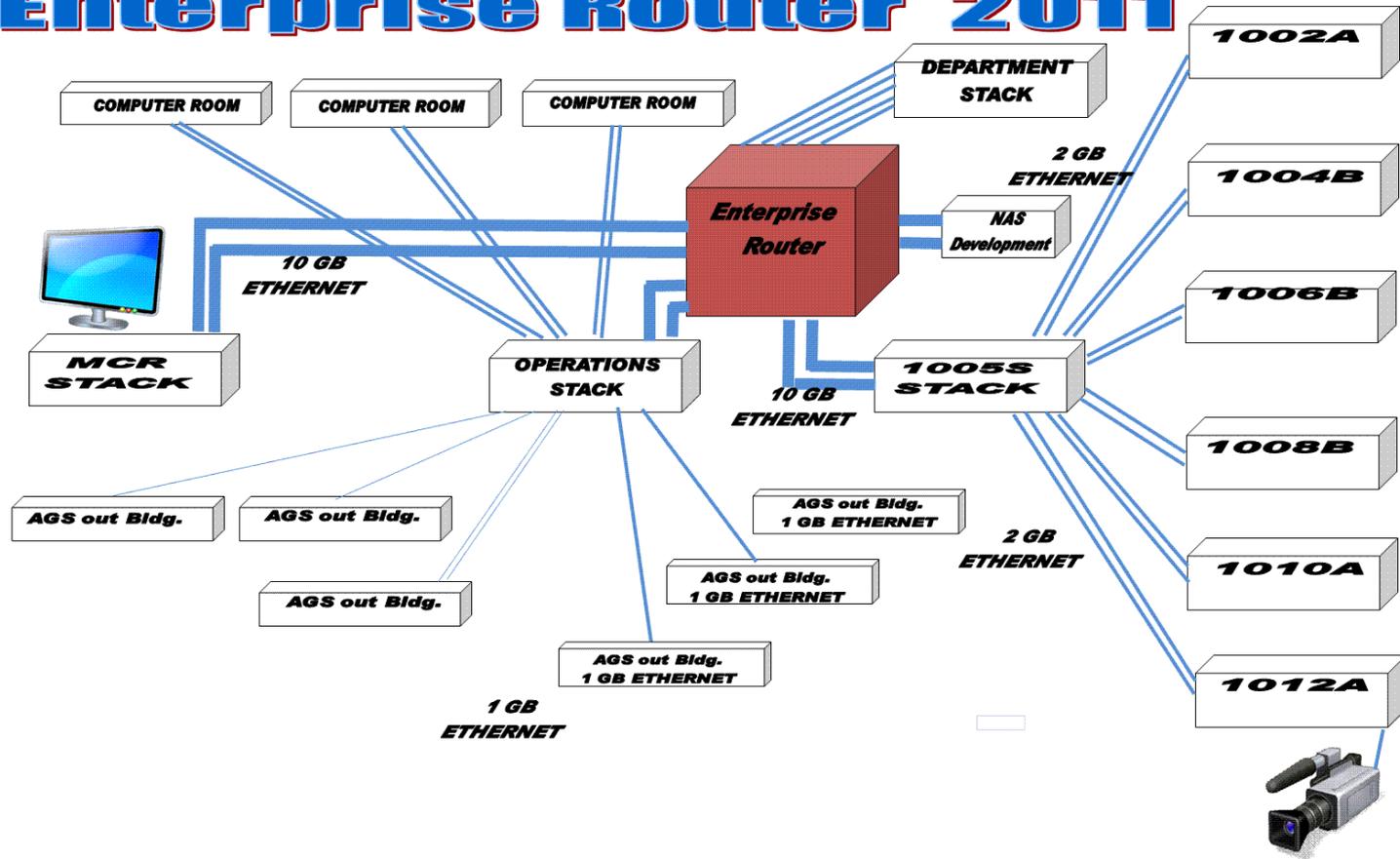
Present Router 2010



Controls Network ca 2011

(all digital goal)

Enterprise Router 2011



Controls Contributions

- Alarm Display Task – complete redesign
- Analog Crossbar interface – redesign
- Remote desktop – Oscilloscopes on workstation display
- Crossbar trigger system
- Mountain Range trigger module
- Video management Interface
 - Video hardware – Instrument Group
- New Workstation specification
- Injector Inhibit buttons
- Injector Scalers
- Remote PLCs physically
- “Services Summary” (ground faults, water systems, building temperatures etc.)

Time Scale

- Operational for Run 11
- Construction complete before end CY10
- Installation and check out goal February 2011
- Access Controls installation shutdown 2011
- Biggest impediment (my view) – inability to find outside contractors willing to bid given the regulatory environment.
 - Impacts budget and schedule



Birds eye view



Accelerator Control Positions + Operations Coordinator Position (1)



Accelerator Controls + Operations Coordinator Position (2)



ACS (L), CRYO (C), CAS (R)



ACS (L), CRYO (C), CAS (R) (2)

The “Players”(1)

- A. Pendzick – project engineer
- F. Pilat – project head
- W. Fischer, J. Tuozzolo – (Goldman Sachs)
- H. Biedenkapp – AIP account manager
- C. Folz, S. Pontieri – HVAC
- P.K. Feng, D. Donaldson – EE
- MCR Design – P. Ingrassia, L. Hammons, G. Marr, T. Shrey, N. Kling

The “Players” (2)

- Controls
 - J. Laster, L. Hoff, B. Oerter, A. Fernando, T. Dottavio, B. Eisele, R. Katz, J. Morris, C. Theisen, S. Kennell, S. Nemesure
- Network
 - P. Popken, N. Franco, J. Woods
- Instrumentation
 - D. Gassner, T. Curcio, J. Carlson
- Console Detailed Design
 - L. Hammons
- CRYO Console -- contributors
 - Y. Than, D. Lederle, A. Warkentien, T. Tallerico, P. Talty, L. Masi

The “Players” (3)

- CAS Console – contributors
 - F. Kobasiuk, J. Sanfilippo, C. Zarcone
- MMPS Console - contributors
 - J. Sandberg, I. Marneris, M. Bannon, G. Danowski
- ACS Console -- contributors
 - J. Reich, H. Hartmann, C. Theisen
- MCR relocation
 - P. Ingrassia, T. Shrey, G. Marr, R. Smith, C. Zimmer, K. Zeno
- Artwork/Photography /Renderings
 - R. Bowman
 - EVANS