

SAME PROBLEMS.
HIGHER STAKES.
BETTER SOLUTIONS.



NEHES

New England Healthcare Engineers' Society



**BETTER
THINKING**



**INNOVATIVE
PROGRESS**



**OPERATIONAL
RESILIENCE**



**PRACTICAL
SUSTAINABILITY**

PRACTICAL SUSTAINABILITY, POWERED BY INNOVATION

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One Front Door, No Margin for Error:

Delivering a High-Stakes Hospital Expansion Through Integrated Teamwork



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Panelists



Kristi Dowd
Principal

REDGATE®



Brendan Whalen
Executive Director

BOSTON
MEDICAL
CENTER



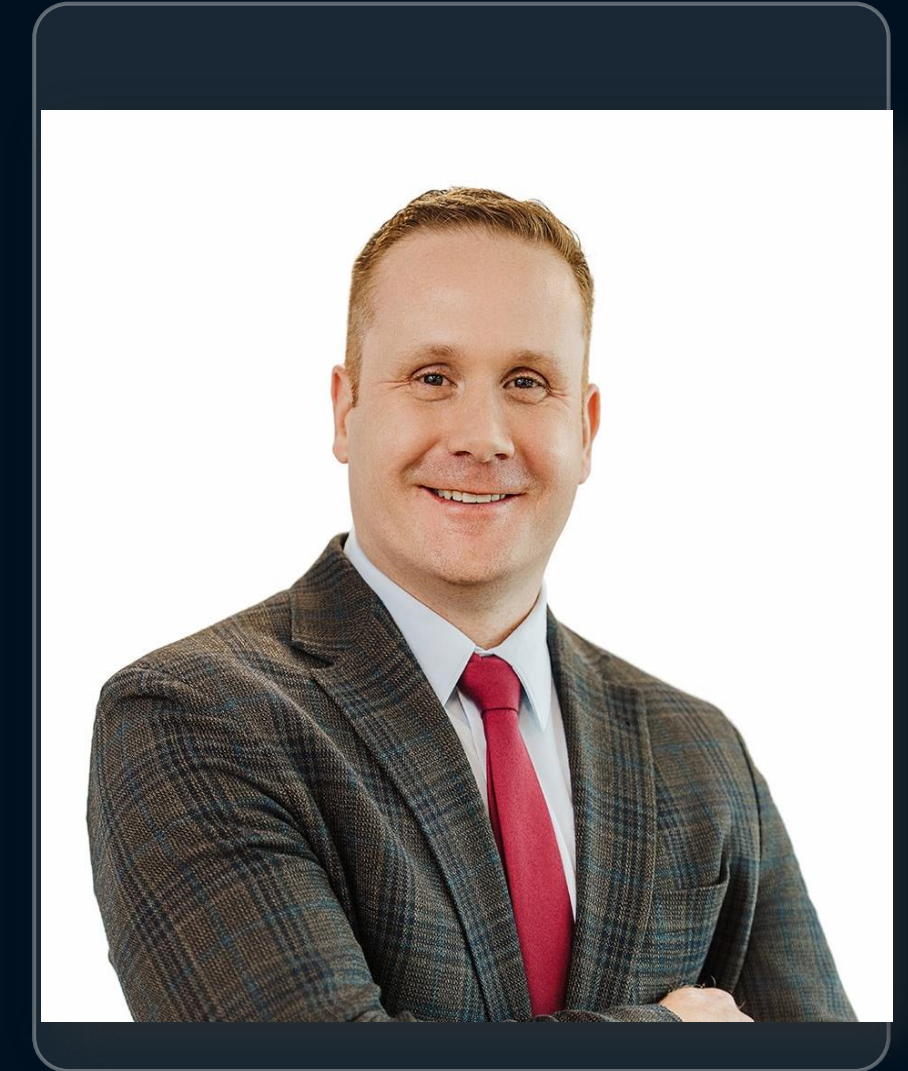
Jay Jacoby, RA, AIA
Senior Architect

DLRGROUP



Joshua Bilotta
Director of Preconstruction &
Operations

WALSH BROTHERS
Since 1901



Chris Lynch, P.E.
CEO, Sr. Principal

CODE RED
CONSULTANTS

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Why BMC Undertook the Project

Over the last decade, Boston Medical Center has transformed its campus. Following the 2014–2019 Clinical Campus Redesign, BMC evolved from:

- > A bifurcated campus
- > Dated inpatient and outpatient facilities in Menino and Yawkey
- > An undersized Emergency Department
- > Aging, costly infrastructure

Why the next phase was needed

- > Patient volume growth created the need for additional inpatient beds and emergency capacity
- > In 2021, BMC directed the team to program spaces that would support its integrated medical, behavioral and social care model
- > Goals included increasing capacity, improving code and clinical compliance, and making better use of owned and leased space
- > The project also needed to support staff, teaching, documentation and long-term rejuvenation of the campus



BMC campus transformation

Our Vision: Make Boston the healthiest urban population in the world.

Why BMC Chose IPD



“The reason we chose IPD is in its potential to deliver a better program, cost and schedule outcomes through a shared goal of project success defined at the beginning and reinforced throughout the project cycle.”

— *BMC Leadership*

Our Mission: Deliver facilities aligned with healthcare reform while removing project-delivery inefficiencies so we can better serve the Boston community.

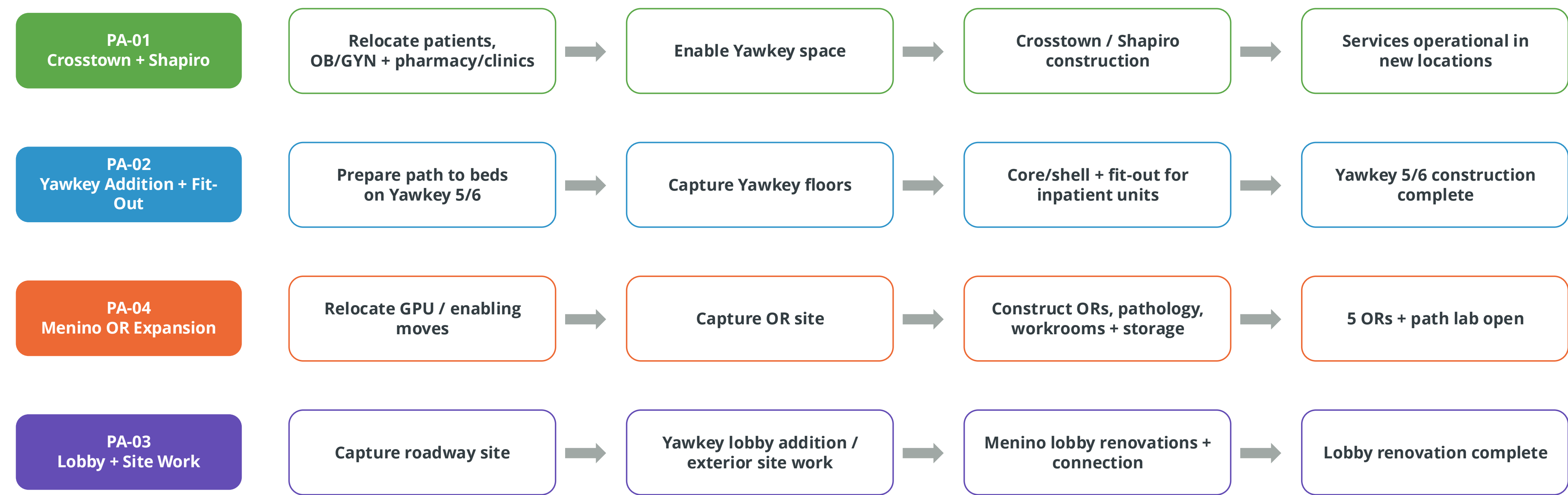
Interdependent Campus Moves



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Phasing Logic by Project Authorization

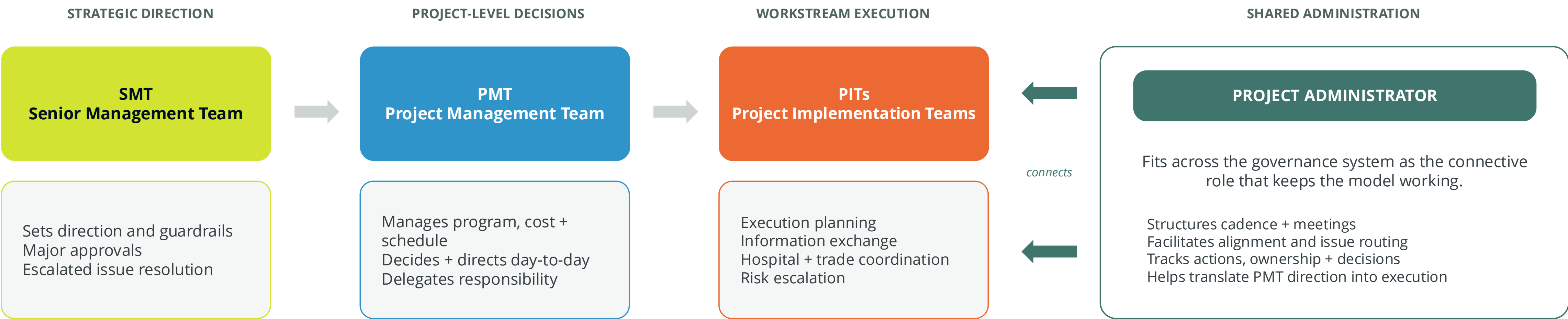
The work was not linear. Relocations, beds, ORs and the lobby moved as one connected sequence.



Phasing functioned as a decision framework — each move unlocked the next clinical, infrastructure or public-facing milestone.

IPD Governance at a Glance

How strategic direction, project-level decisions, workstream execution and shared support stayed connected under the IPD model.



SHARED PROJECT SUPPORT RESOURCES – plugged into workstreams as needed rather than living in silos



The governance system worked when structure, decision rights and project administration reinforced the same behaviors: direct communication, transparency, shared accountability and fast issue resolution.

The Integrated Project Team

IPD Signatory Partners (Risk/Reward)

 Boston Medical Center Health System Owner	 DLR Architect	 Walsh Brothers Construction Manager and Project Administrator	 CMTA MEP Engineer
 WSP Structural Engineer	 Sweeney Drywall Drywall, Doors and Hardware, and Firestopping	 McDonald Electric Electric, Fire Alarm, Low Voltage, and Security Systems	 EMCOR HVAC

Key Project Consultants

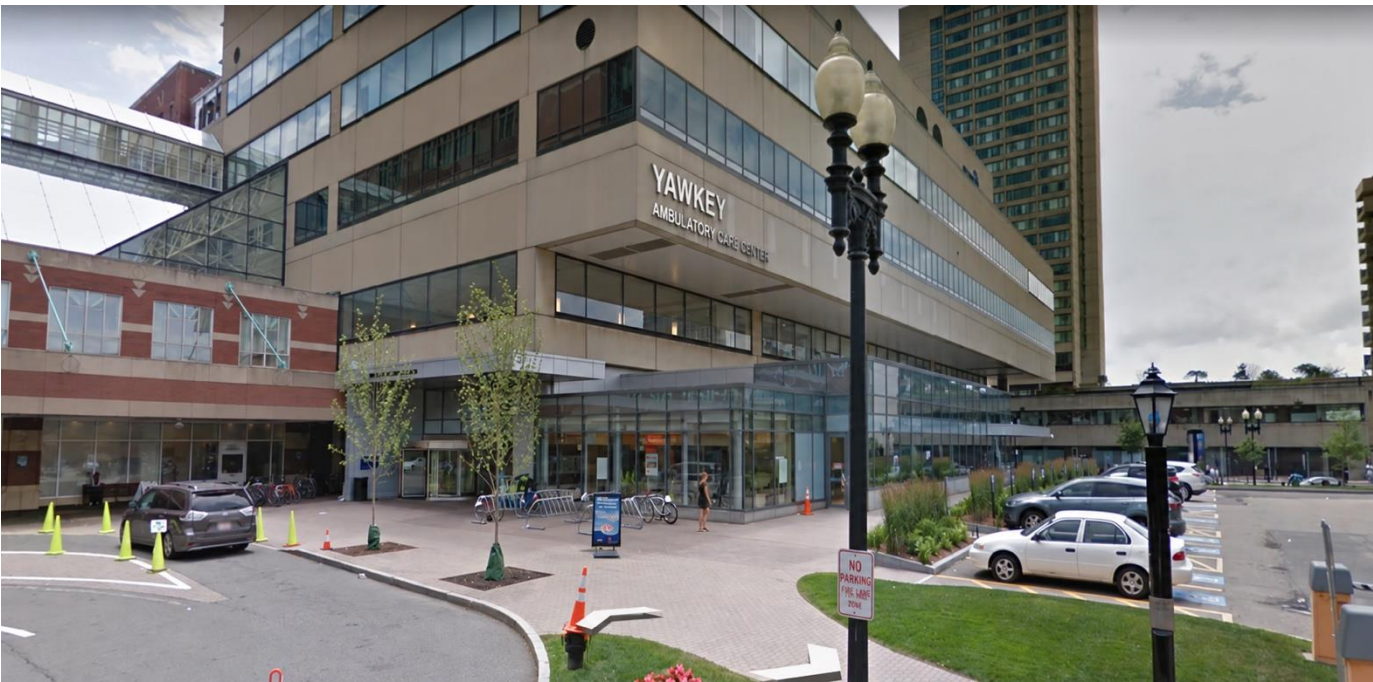
 Redgate Owner Project Management	 Code Red Code and Life Safety
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Selected Owner-Side Advisors

 Haley & Aldrich LEAN Facilitator	 Tocci Building Company Owner Project Controls	 Hanson Bridgett Legal (Contract)	 Verrill Dana Legal (Regulatory)
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New Main Entrance

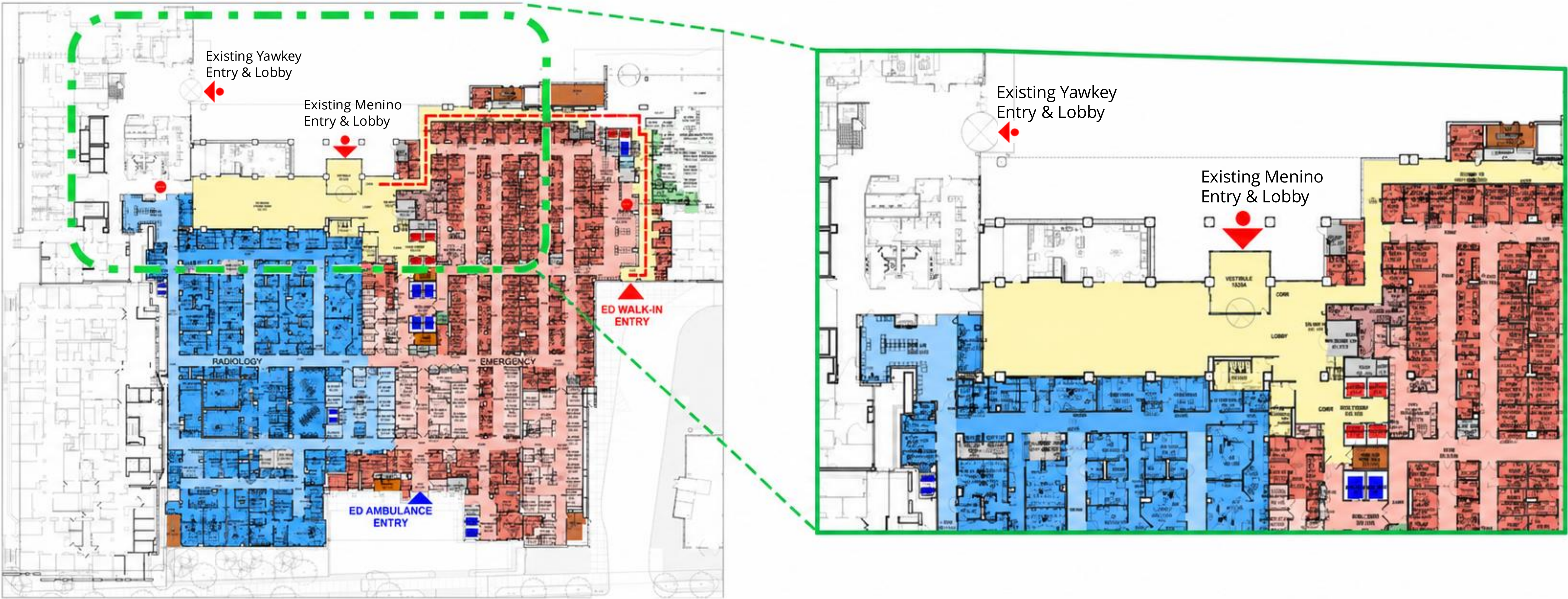
Existing Separate Entries – Menino & Yawkey Buildings



New Unified Hospital Entry and Drive Sequence



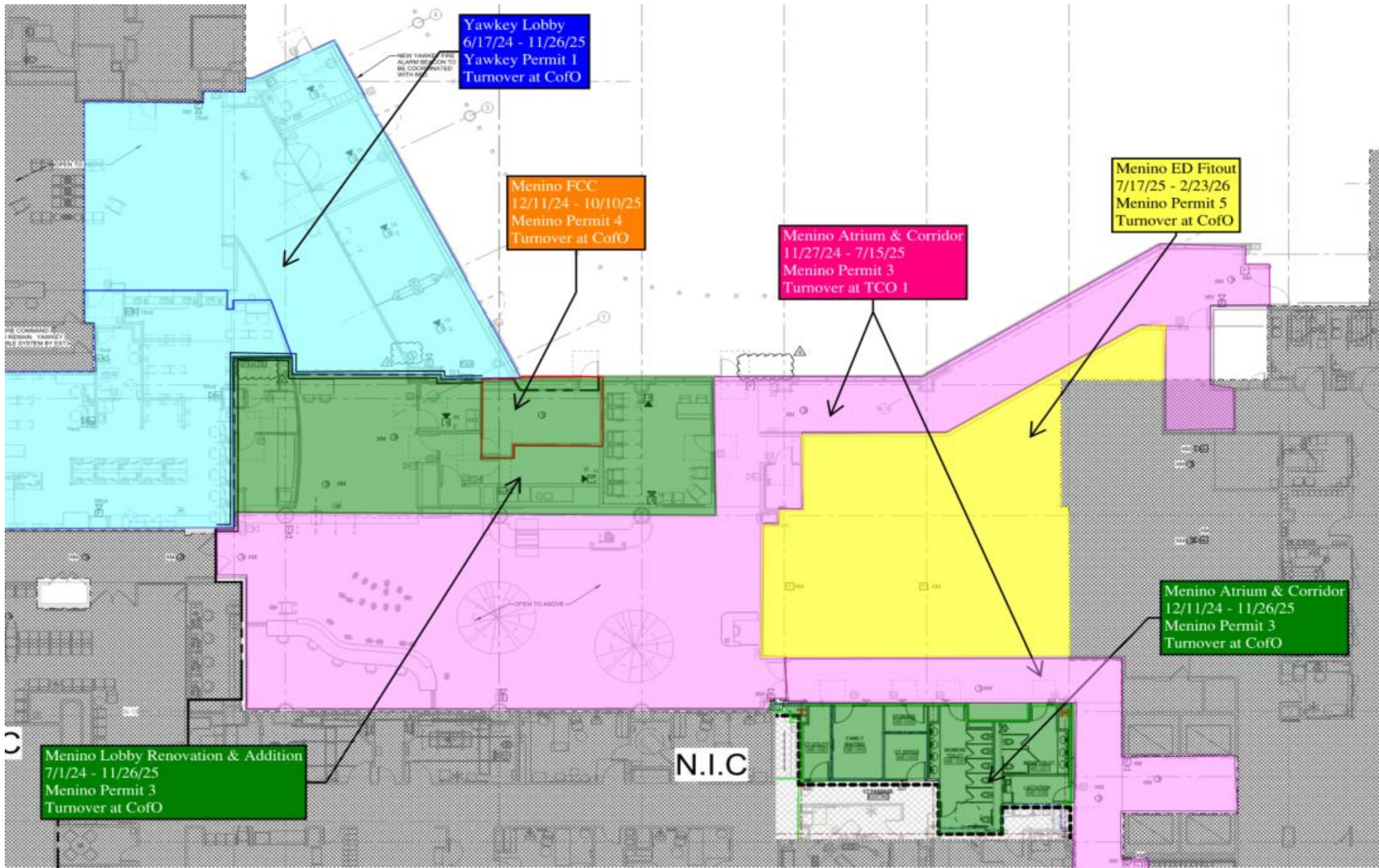
Existing Separated Menino and Yawkey Lobbies



Menino & Yawkey Lobby Expansion and Renovation



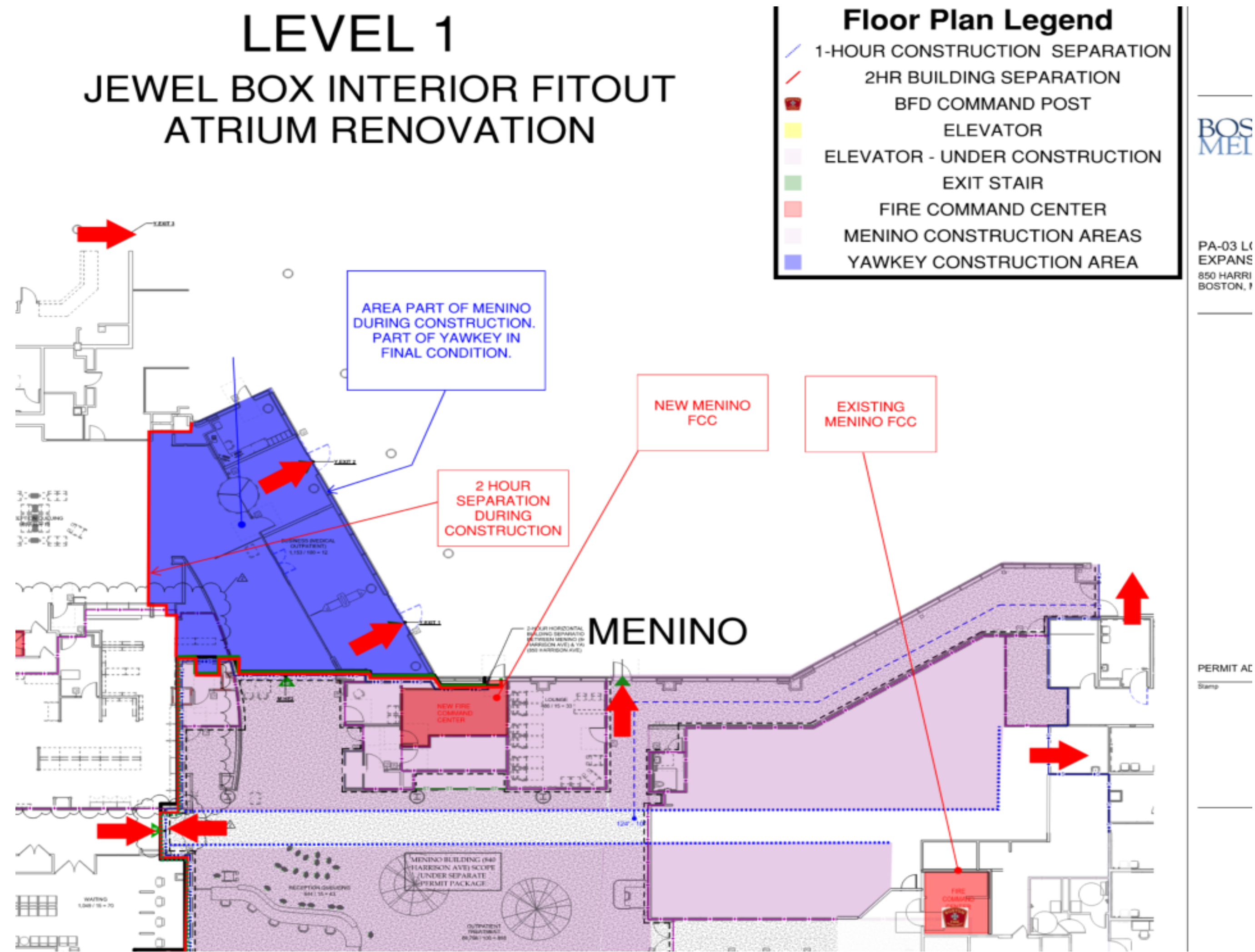
Communicating Phasing to AHJ



Communicating Phasing to AHJ

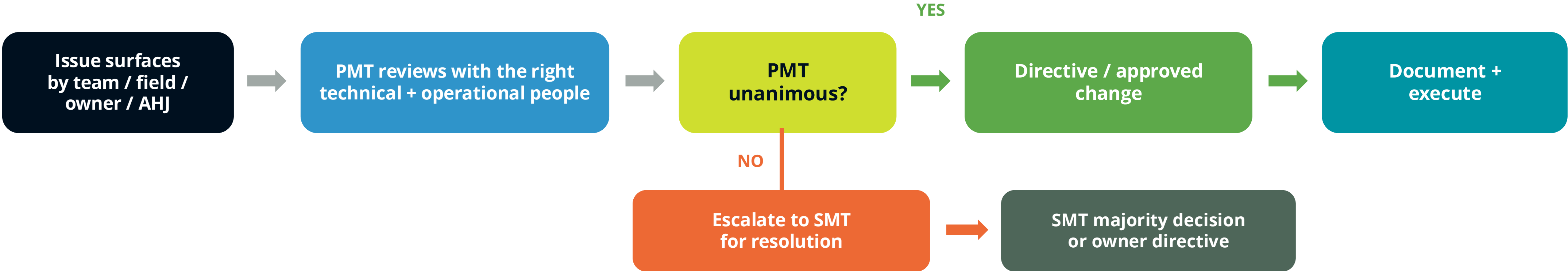
Permit	Area Completed	Sprinkler Impairments	Fire Alarm Impairments	Fire Department Access Impairments	Means of Egress Impairments	Construction Separation	
Menino Permit 3 - TCO 1 [ALT1581831] (A1652866)	Menino atrium, Menino-Moakley Corridor	Alterations with up-turn of sprinklers (< 10 hours)	Smoke detector Bagging (< 10 hours)	Temporary route to FCC maintained	Temporary exit with altered exit signs	Smoke-Tight	
Menino Permit 3 - CofO [ALT1581831] (A1652866)	First floor addition, Menino lobby renovation, fast-track ED shell space, Menino SW Bathroom & Support Spaces	Temporary Heat Detection until FP installed (at addition) Alterations with up-turn of sprinklers (< 10 hours) for balance	Smoke detector Bagging (< 10 hours)	Temporary route to FCC maintained	Temporary exit with altered exit signs	1-hour Fire Barrier (at addition) Smoke-Tight for balance	
Menino Permit 4 - [ALT1661411]	Fire Command Center	N/A	Cutover to new fire alarm system	N/A	N/A	Smoke-Tight	
Menino Permit 5	ED fitout	Temporary Heat Detection until FP installed (at addition)	Smoke detector Bagging (< 10 hours)	N/A	N/A	1-hour Fire Barrier (at ED space)	
Yawkey Permit 1 - CofO [ALT1581808] (A1652860)	Main lobby (addition) and cafeteria turnover	Temporary Heat Detection until FP installed (at addition) Alterations with up-turn of sprinklers (< 10 hours) for balance	Smoke detector Bagging (< 10 hours)	Temporary route to FCC maintained	Temporary exit with altered exit signs	1-hour Fire Barrier (at addition) Smoke-Tight for balance	
Yawkey Permit 1 - CofO [ALT1581808] (A1652860)	Pharmacy	Alterations with up-turn of sprinklers (< 10 hours)	Smoke detector Bagging (< 10 hours)	N/A	N/A	Smoke-Tight	

Relocation of Fire Command Center



Decision Flow: Speed with Accountability

Issues moved through PMT and SMT without losing documentation, decision rights or authority.



RULE OF THUMB

PMT decisions / directives require unanimity.
SMT decisions require majority.

WHEN SCOPE CHANGES

In-scope work → PMT directive.
Out-of-scope / major owner add → change event / POCO path.

The value was not fewer decisions. It was getting the right people to a clear decision quickly, then documenting and executing it.

Replacement of Fire Alarm System

Cutover Plan



"Our mission is to provide comprehensive life safety and security solutions with a commitment to quality, integrity, and professionalism." – TeamBBS

Fire Alarm Cutover Plan

Project: Boston Medical Center Menino Building Fire Alarm System Upgrade
Prepared By: BBS Tech LLC
Date: 2/10/2025

- 1. Purpose**

This document outlines the detailed cutover plan for replacing the existing EST3 fire alarm system with the EST4 system at Boston Medical Center’s Menino Building. The plan ensures uninterrupted life safety system functionality, compliance with NFPA standards, and efficient coordination among all stakeholders.
- 2. Scope of Work**

 - Replacement of EST3 control panels, transponders, and amplifiers with EST4 equipment,
 - Installation of new EST4 network cabling,
 - Comprehensive testing and programming of EST4 components,
 - Maintaining smoke control and fire department reporting connections during the transition,
 - A phased approach to ensure minimal disruption and incorporate contingencies,
 - Implementation of rollback plans for unforeseen issues,
- 3. Phase 1 - Preparation Steps**

 - 3.1 Testing and Documentation In House at BBS facility
 - Pre-Tested Inputs & Outputs will be tested on the modified program using demo field devices and monitor modules to trigger FACP functions. Testing guidelines based on Matrix in Submittal
 - Shorting cabling on a monitor module will activate the module and trigger I/O sequences.
 - LED indicators will be programmed to confirm relay activations for testing
 - Actual speaker strobes and initiating devices will be used to validate notification appliance circuits.
 - Conduct a comprehensive test of the existing EST3 system, documenting:
 - Device and circuit performance.
 - Integration points with building systems (elevator recall, HVAC, smoke control).
 - Identify and document existing deficiencies.
 - Assemble and pretest all EST4 components off-site.
 - Develop two BMC programs:
 - Simplified version for single-device rule testing per node.
 - Full program simulating all input/output activations. To be downloaded before panels leave lab.

Replacement of Fire Alarm System

Cutover Plan



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Existing Fire Command Center



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New Fire Command Center



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Finished Lobby Expansion and Renovation



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IPD Process Plus /Delta

Speaker	PLUS: If you started another occupied, high acuity hospital project tomorrow, what is the one thing from this team’s approach you would absolutely repeat?	DELTA: Knowing what we know today, what is the one thing you would change, establish earlier or manage differently?
Jay	Ensuring that everyone understood the difference in behaviors required for an IPD project versus a D/B/B project	Earlier transparency / greater interaction between the Owner, Designer, and Builder in establishing parameters for the program and how to provide pricing
Josh	Early involvement of trade partners to inform design details and phasing.	Even though we were an integrated team building the project each firm still had their own system for financials. Reporting was a struggle as everyone was used to something different. Find a system that worked for everyone.
Brendan	Change Management – because the project remained in the black throughout the project, PMT In-scope vs Out-of-Scope discussions. Direct costs as well as overhead are paid regardless of in-scope of out-of-scope (~95% of COR cost).	Better real time conceptual estimating during validation and design phases. Delays impacted PMT decision making.