

22<sup>ND</sup> ANNUAL



22<sup>ND</sup> LCI CONGRESS  
OCTOBER 19-23

# Built Better:

## A Case Study of the MRMC Vertical Expansion

Scott Simons, Mark Roan, Michael Knapp, CHC

THE ABC'S OF LEAN: TRANSFORMATION THROUGH ACTIONS, BEST PRACTICES AND COACHING

Friday October 23<sup>rd</sup>

10:50 AM

Session Code: F2C





**Michael Knapp,**  
**CHC, CM-LEAN**  
Senior Project Manager





## Scott Simons

Senior Project Manager  
Planning, Design and Construction





PERKINS  
+ WILL

**Mark Roan,**  
**AIA, LEED AP**  
Associate Principal, Health





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# WHY:

Why are we here today, telling you this story?
































**Be intentional with team selection –  
Not just about the bottom dollar**

**Have Lean Champions**

**Trust the Process**



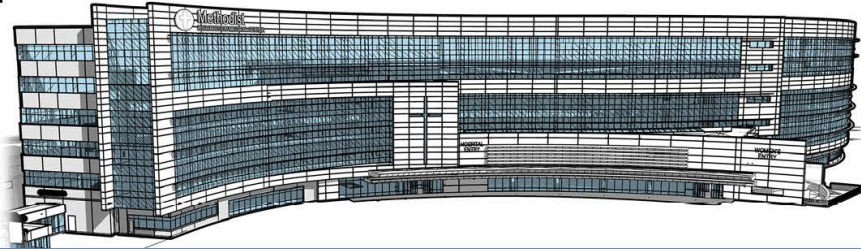


# Ingredient #1:

## Team Selection



# 1 | BACKGROUND



THE PURPOSE OF THIS A3 IS TO PROVIDE A REQUEST FOR QUALIFICATIONS FROM SELECT GENERAL CONTRACTORS TO ASSIST METHODIST HEALTH SYSTEM IN THE DESIGN AND CONSTRUCTION OF THE MASTER PLAN PHASE I EXPANSION AT METHODIST RICHARDSON MEDICAL CENTER.

# 2 | CURRENT CONDITIONS

Existing Bed Count: 219  
Existing Hospital SF: 308,603 SF  
Future Floors: YES  
Penthouse(s): YES  
Is construction to be phased? YES  
Date of original structure: 2014  
Existing as-built drawings available? YES  
Is building fully sprinklered? YES

# 3 | GOAL

The Scope of the Project includes a two floor vertical expansion of the existing bed tower, a new parking structure, and the finish out of a new operating room in the existing Shell space.

LINK TO FILES: [CLICK HERE](#)

Summary of Work Areas:

Bed Tower Expansion

Total New Construction= 103,750 BGSF

Parking Garage

Total New Construction= 242,550 BGSF

TOTAL SF= 346,300 BGSF

# 4 | ANALYSIS

Please address the following topics that are listed below in alphabetical order:

- Collaboration / Communication
- GMP (estimate with emphasis on General Conditions and Fee) → GENERAL CONDITIONS → TRAILER → JOBSITE
- Lean
- Minority and Women Owned Business Enterprises
- Preconstruction / Estimating Process
- Schedule
- Site Logistics / Construction Impacts
- Similar Projects (Vertical Expansion of an existing Hospital and Precast Garage)
- Team
- Technology

# 5 | RECOMMENDATION

Address and Prioritize items listed above in an effort to demonstrate the quality and expertise that can be brought to the project.

# 6 | PLAN

Submit a response to this RFQ via a link (Dropbox, etc) by noon on June 30th, 2017.

Submit link to Cathy Middleton at [CathyMiddleton@mhd.com](mailto:CathyMiddleton@mhd.com)

Limit RFQ response to 748 square inches and project team resumes.

Include 3 options for a Precast Concrete subcontractor for the Garage scope of work.

# 7 | FOLLOW UP

Interviews will be held on July 28th, 2017.





INTERVIEW	WEIGHT
Team Experience	12
Percent time involvement	2
Overall Team Chemistry	4
Collaboration & Communication	12
GMP	8
Pre-Construction	10
MWBE	4
Depth of Lean processes - A3, Pull Plan, etc.	8
Schedule	10
Firm's Similar Projects/Garages	10
Site Logistics/Const. Impact	6
Technology	4
<b>TRADE PARTNER SURVEY SCORE</b>	<b>5</b>
<b>PROPOSAL SCORE</b>	<b>n/a</b>





## MRMC EXPANSION TRADE PARTNER SURVEY

### Survey Questions

1. Communication- How effective is the contractor's communication with subcontractors?
2. Collaboration- Rate the contractor's team when it comes to collaboration. IS your voice / input truly valued?
3. Lean- Rate each contractor on their knowledge of and Implementation of Lean.
  - a. Lean Knowledge
  - b. Lean Implementation
4. Pre-Con/Estimating- Rate each contractor on their Pre-Con/Estimating abilities.
5. Schedule- Rate the effectiveness of the general contractor's scheduling process.
6. Technology- Rate the general contractor's technology.
7. Safety- Rate the general contractor's company as it relates to their safety culture.
8. Proactive/Reactive- Rate the contractor on their ability to be proactive.
9. Overall Experience- Rate the general contractor at having the projects best interest vs. self-interest.

Average Response by Question				
	Contr. A	Contr. B	Contr. C	Contr. D
Q1	8	9	6.2	8.2
Q2	6.5	8.8	5.8	8
Q3A	7.75	9.2	6.2	8.4
Q3B	6.75	8.8	5	8
Q4	8	9	6	7
Q5	8	8	5.4	7
Q6	8.25	9.2	7.6	7.6
Q7	8.5	8.8	6.6	7.2
Q8	7.25	8.2	5.6	7
Q9	7.75	8.8	6.8	7.2
	Contr. A	Contr. B	Contr. C	Contr. D
Summary	7.675	8.78	6.12	7.56

Respondent #1				
	Contr. A	Contr. B	Contr. C	Contr. D
Q1	9	9	5	7
Q2	9	9	5	7
Q3A	10	10	7	7
Q3B	9	9	5	7
Q4	10	10	5	7
Q5	8	8	5	5
Q6	10	10	8	7
Q7	10	10	7	7
Q8	8	8	5	5
Q9	10	10	7	6
Mean	9.3	9.3	5.9	6.5
Q10	Contr. A or B			

Respondent #2				
	Contr. A	Contr. B	Contr. C	Contr. D
Q1	9	9	7	9
Q2	7	9	7	8
Q3A	8	9	7	8
Q3B	7	9	5	8
Q4	8	8	7	7
Q5	7	8	6	7
Q6	9	9	9	9
Q7	9	9	7	7
Q8	8	8	7	7
Q9	8	8	7	8
Mean	8	8.6	6.9	7.8
Q10	Contr. B			

Respondent #3				
	Contr. A	Contr. B	Contr. C	Contr. D
Q1	N/A	9	6	9
Q2	N/A	9	7	9
Q3A	N/A	9	7	9
Q3B	N/A	9	7	9
Q4	N/A	9	7	9
Q5	N/A	9	6	8
Q6	N/A	9	7	8
Q7	N/A	9	7	8
Q8	N/A	9	6	9
Q9	N/A	9	7	8
Mean	0	9	6.7	8.6
Q10	Contr. B			

Respondent #4				
	Contr. A	Contr. B	Contr. C	Contr. D
Q1	6	10	7	8
Q2	2	9	3	9
Q3A	5	9	3	10
Q3B	3	8	2	9
Q4	5	9	4	5
Q5	8	6	4	6
Q6	5	9	7	6
Q7	6	7	5	6
Q8	4	7	3	6
Q9	5	9	5	6
Mean	4.9	8.3	4.3	7.1
Q10	Contr. B or D			

Respondent #5				
	Contr. A	Contr. B	Contr. C	Contr. D
Q1	8	8	6	8
Q2	8	8	7	7
Q3A	8	9	7	8
Q3B	8	9	6	7
Q4	9	9	7	7
Q5	9	9	6	9
Q6	9	9	7	8
Q7	9	9	7	8
Q8	9	9	7	8
Q9	8	8	8	8
Mean	8.5	8.7	6.8	7.8
Q10	Contr. A or B			



### **CATEGORY #1: Preconstruction Services**

What process will you use to establish roles & responsibilities with the engineer?

### **CATEGORY #2: Team**

Why do you think you're a good fit for this project?

### **CATEGORY #3: Firm**

Describe your firm's experience w/ healthcare work/overbuilds/working in occupied campuses.

### **CATEGORY #4: Lean Processes**

Describe what Lean means to you.  
What do you think the benefits are?

### **CATEGORY #5: M/WBE**

Are there any scopes of work that you will not consider for MWBE participation? If yes: why?

### **CATEGORY #6: Communication & Collaboration**

Describe how you deal with conflict resolution?

### **CATEGORY #7: Constructability**

What challenges/opportunities do you see for this project?

### **CATEGORY #8: Budget**

What are your thoughts on Methodist buying equipment direct?

### **CATEGORY #9: QA/QC**

How do you look out for the safety of others in occupied facilities?

### **CATEGORY #10: "WOW Factor"**





## Team Selection Takeaways:

- Be intentional with team selection. The individuals are more important than the company.
- The right team for the right project.
- During selection, give a vote to those who are involved in the project.
- Give everyone a voice. Listen to them, don't just hear what they are saying.





# Ingredient #2:

## Team Alignment











# TRUE NORTH PROVIDES THE VISION OF OUR IDEAL OUTCOME.

METHODIST RICHARDSON MEDICAL CENTER  
TOWER EXPANSION AND PARKING GARAGE

ON THIS PROJECT, OUR TEAM IS COMMITTED TO:

## SAFETY

- Creation of Site Safety Committee with monthly meetings
- Daily huddles for foreman
- Weekly trade partner-led safety huddles
- Weekly trade partner project inspections
- Bi-monthly 3rd party safety inspections
- Milestone safety stand down lunches
- Monthly survey gauging site cleanliness

## MORALE

- Monthly surveys to Core Team, Steering Committee, supply chain, IT, and hosp. administration
- Monthly check-in at OAC on survey results
- 100% survey participation goal
- Bi-monthly team bonding activity with 70% participation goal
- Monthly OAC RTTD Log update

## DELIVERY

- Bi-weekly Core Team review of Percent Plan Complete and Root Cause Analysis
- Quarterly review of pre-fab log
- Milestone pull plan sessions with "strong" participation
- Real-time schedule updates to PDC and Facilities

## COST

- All pay applications to be issued and paid on time
- Monthly Core Team review of change order log
- Monthly Core Team review of value add log

## QUALITY

- Monthly QA/QC walk with Facilities, GC, and design team
- Bi-weekly review of water infiltration log and Root Cause Analysis
- Building's aesthetic conveys it was built at one time
- Provide quality and timely O&M documentation

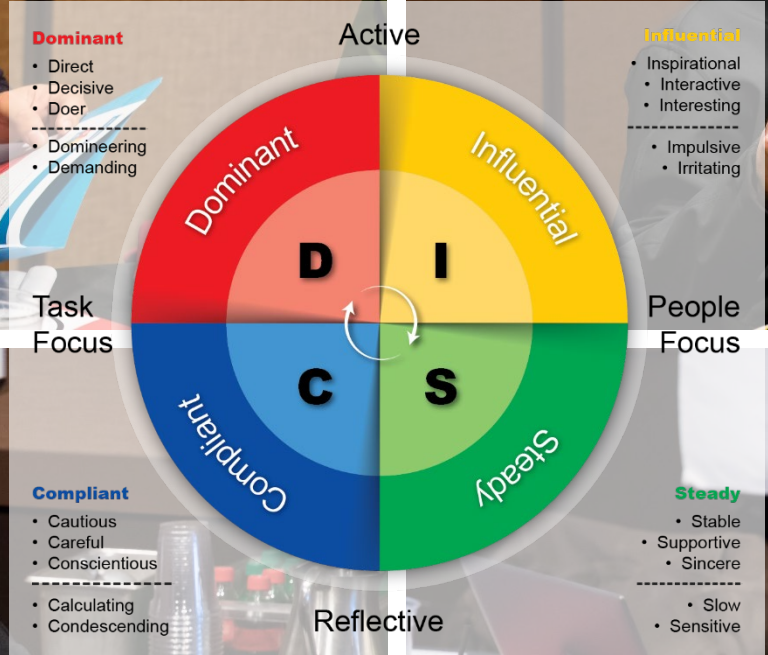
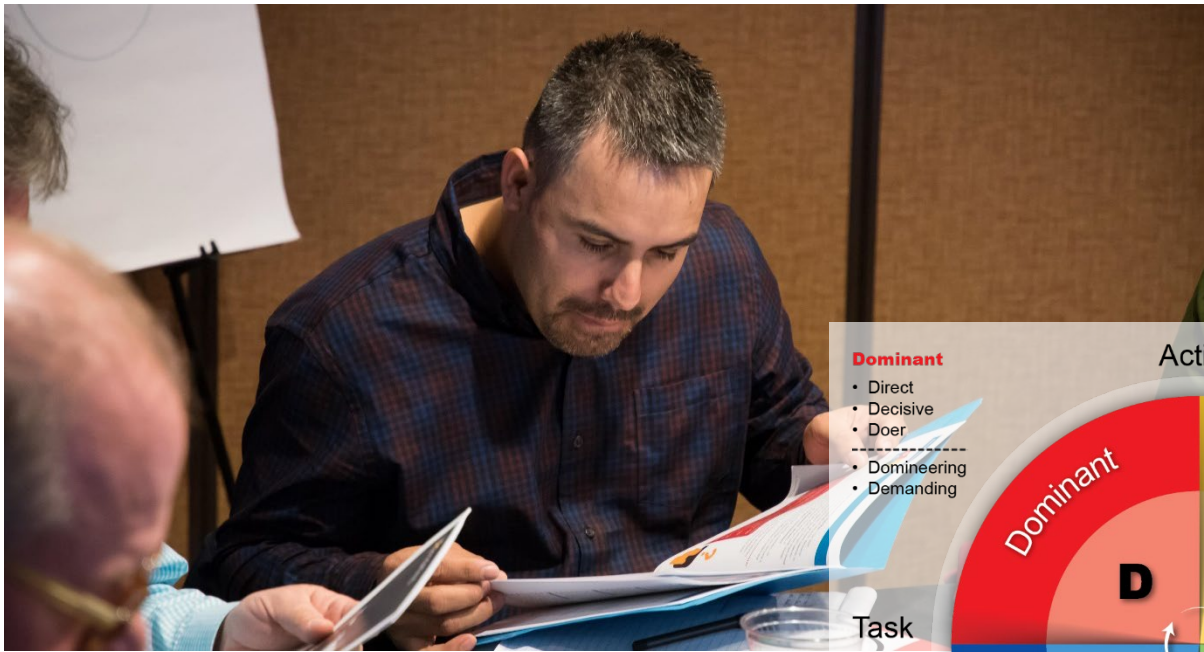
## ENVIRONMENT

- Monthly review of Core team HCAP comments
- Monthly update to volunteers on construction progress
- Monthly hospitality to hospital staff

CONSTRUCTION  
SIMPLIFIED













## Team Assessment Report

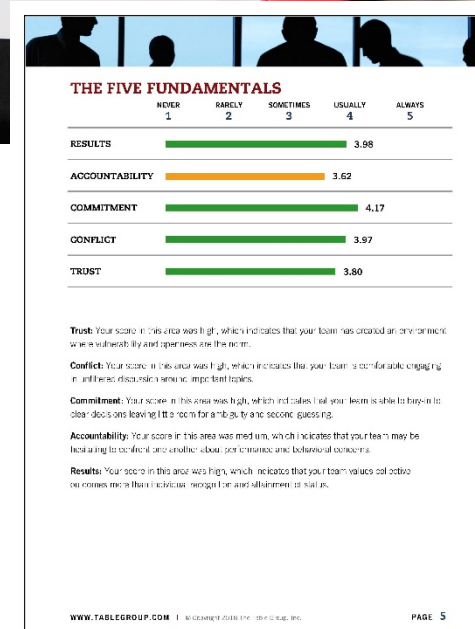
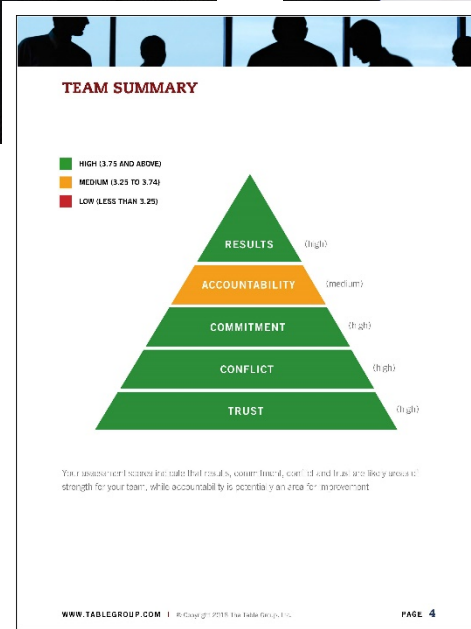
BASED ON THE MODEL IN THE BEST-SELLING BOOK,  
THE FIVE DYSFUNCTIONS OF A TEAM

MMMC GARAGE VERTICAL EXPANSION TEAM  
SKILES GROUP  
APRIL 17, 2018



 the table group  
a gaffney-saxton company

the source for organization development | see it all at [www.tablegroup.com](http://www.tablegroup.com)









## Team Alignment Takeaways:

- Remember that team alignment doesn't just happen; you must put in the effort.
- Host a True North session.
- Use personality assessments (like DISC) to improve communication amongst the team members.
- Prioritize team-building – spending time outside of the work environment (Bowling, Escape Room, Happy Hours, lunch, breakfast, golf)
- Celebrate success along the way.





# Ingredient #3:

## Enabling Collaboration





## CHOOSING BY ADVANTAGES (CBA)

Methodist Richardson Medical Center's 5 <sup>th</sup> and 6 <sup>th</sup> Floor Expansion Project 5 <sup>th</sup> Floor Finish-out Versus 6 <sup>th</sup> Floor				OPTION #1 5 <sup>th</sup> Floor		OPTION #2 6 <sup>th</sup> Floor			
#	POINTS								
1		<b>FACTOR:</b>	<b>Schedule</b>	<b>ATTRIBUTE:</b>	Removal of existing roof drives start date		Building dry in drives start date		
		CRITERIA:	Faster is better	ADVANTAGE:			Dry in is 6 weeks earlier than removal of existing roof	✓	
2		<b>FACTOR:</b>	<b>Tie-Ins</b>	<b>ATTRIBUTE:</b>	Must coordinate closures of each room below		Must coordinate closures of only vertical riser locations below		
		CRITERIA:	# of tie-ins - fewer is better	ADVANTAGE:			Tie-ins in fewer areas	✓	
3		<b>FACTOR:</b>	<b>Impacts to facility</b>	<b>ATTRIBUTE:</b>	Construction activity in each room		Construction activity at chase and riser locations		
		CRITERIA:	Less construction activity on 4 <sup>th</sup> floor is better	ADVANTAGE:			Limits construction areas on 4 <sup>th</sup> floor	✓	
4		<b>FACTOR:</b>	<b>Future impacts to facility</b>	<b>ATTRIBUTE:</b>	Only the 4 <sup>th</sup> floor is occupied now		The 6 <sup>th</sup> floor would be occupied at time the 5 <sup>th</sup> floor is built out		
		CRITERIA:	Less construction activity in occupied areas is better	ADVANTAGE:	Limits the impact to occupied areas	✓			
5		<b>FACTOR:</b>	<b>Man hours required from contractors</b>	<b>ATTRIBUTE:</b>	Infection control and off hours work required in MEP underfloor				
		CRITERIA:	Less man hours is better	ADVANTAGE:			All underfloor work can be performed in normal working hours	✓	
6									
7									
8									









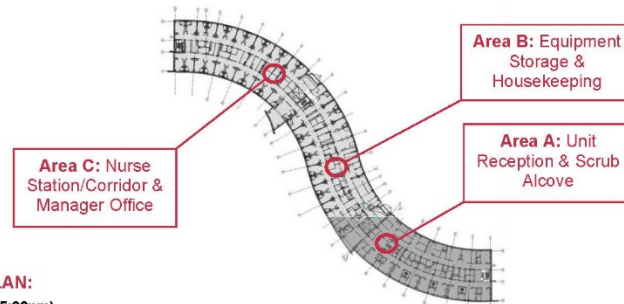






## MRMC Method of Procedure for 4th Floor AHU-7 Chilled Water & Steam Tie-Ins

### OVERALL MAP:



### DETAILED WORK PLAN:

#### Tuesday 2/19 (7:30am to 5:00pm)

Skiles Group – Area C - Install infection control measures comprised of temporary wall panels, snap seal doors, sticky mats, booties & plastic protection as needed.

#### Wed 2/20 (7:30am to 5:00pm)

Skiles Group – Area C: Removal ceiling tiles and opening of shaft in Manager Office. Remove drywall ceiling in Nurse Station area.

#### Thursday 2/21 (7:30am to 5:00pm)

Dynaten – Area C: Rough-in new chilled water and steam piping and valve off in preparation for shutdown tie-ins. Sheet metal and heating water piping will be relocated in the Manager Office to make space for the new CW and HPS piping.

#### Friday 2/22 (7:00am to 7:00pm)

Dynaten – Area C: Close AHU-7 chilled water supply and return valves and drain down to adjacent mop sink. Relocate existing control valve and circuit setter up to the roof. Remove piping above 90 going up through existing roof and replace with tee for new pipe and valve to shut off flow to existing AHU-7 after future demo. Pressure test piping to 60 psi and check for leaks, fill with water and re-verify, then insulate lines.

*Note: This 12-hour AHU-7 chilled water shutdown must take place during cool weather conditions.*

Skiles Group – Areas A & B: Install infection control measures for high-pressure steam tie-ins comprised of temporary wall panels, snap seal doors, sticky mats, booties and plastic protection as needed.

#### Saturday 2/23 (3pm to 9pm)

Dynaten – Area C, B & A: Shut off steam to entire facility for 3-4 hours. Bleed steam out of pipes and allow system to cool. Steam piping will be cut and a tee and valve will be inserted for the lines to the new AHUs. Area C piping will connect to newly installed piping in managers office. Area B and Area A piping will be routed from existing into concrete pan locations and up through the existing roof. Then pressure test and insulate.

*Note: This 3-4 hour high-pressure steam shutdown will be closely coordinated with MRMC so as not to impact surgeries.*

#### Sunday 2/24 and Monday 7/26 (7:30am to 5:00pm)

Skiles Group – Areas C, B & A: Patch/repair, finish and paint drywall ceiling and shaft wall locations and re-install ceiling tiles.

#### Tuesday 2/27 (7:30am to 5:00pm)

Skiles Group – Area C: Continue finishing and painting of the drywall ceilings in the Area C Nurses Station and Corridor.  
Skiles Group – Areas B & A: Remove infection control barriers and terminal clean (MRMC Facilities).

#### Wednesday 2/28 (7:30am to 5:00pm)

Skiles Group – Area C: Remove infection control barriers and terminal clean (MRMC Facilities).

**General Note: Skiles Group will ensure all personnel working on the floor are in compliance with MHS immunization requirements. All permitted workers will wear pink construction badges that will be controlled and regulated by Skiles Group daily.**

DATE: 2/13/2019	SUBMITTED BY: Skiles Group
MRMC ICRA PERMIT #: FY19-16	APPROVAL DATE: 2/13/2019

### RISK ASSESSMENT

YES	Interim Life Safety Measures Required?	ILSM required for corridor locations being blocked and/or encroached upon. MRMC will conduct additional fire drills and perform daily inspections of the construction areas.
YES	Infection Control Risk Assessment Completed?	MHS to issue by Tuesday, 2/19/19
YES	Utility Interruptions or Impacts?	Shutdown of AHU-7 chilled water (CW) for 12 hours and high-pressure steam (HPS) to the entire facility for 3-4 hours. See DETAILED WORK PLAN for additional information.
YES	Noise or Vibrations During Work Activity?	Minimal noise or vibrations from pipe cutting, core drilling and power tools. A set daily time frame for noisy activities will be coordinated with MRMC.
YES	Environmental Services or Terminal Cleaning Needed?	Skiles Group construction cleaning will be with microfibre mops & Virex 256. Terminal cleaning of each area by MRMC prior to removal of infection control containment and after.
NO	Fire Alarm System on Test?	No, but covers will be temporarily installed on FA devices during dust generating work activity. Skiles Group will ensure they are removed anytime the work space is not occupied.
NO	Other Safety Risks?	N/A

### CONTACT INFORMATION FOR WORK

	Name & Organization	Phone Number & E-mail Address
1.	Jeremy Hersom, MRMC Facilities	(903) 328-8624, JeremyHersom@mhd.com
2.	Manny Aranda, Dynaten	(817) 688-9689, maranda@dynaten.com
3.	Buddy Brumley, Skiles Group	(469) 964-5372, bbrumley@skilesgroup.com
4.		
5.		
6.		
7.		

MRMC / Created By John Perrot - Skiles Group





## Enabling Collaboration Takeaways:

- Have the tools/environment available to make decisions (CBAs, A3s, Core Team, The Big Room).
- Maintain transparency with schedule (Last Planner System), budget, and capabilities.
- Be willing to push each other.  
Ask the “5 Whys”.





# Ingredient #4:

## Building Accountability







**HELLO**  
**I AM...**

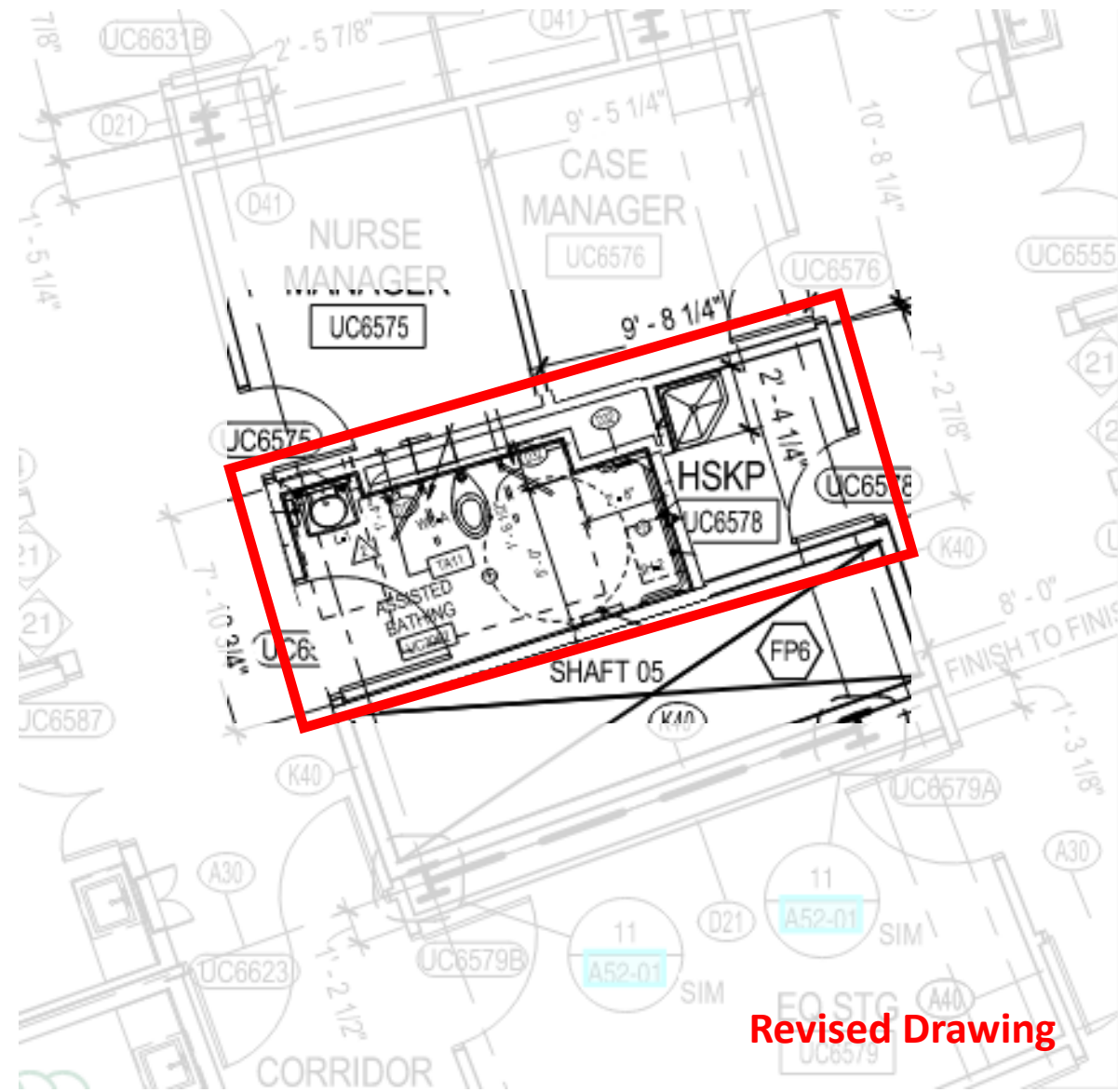
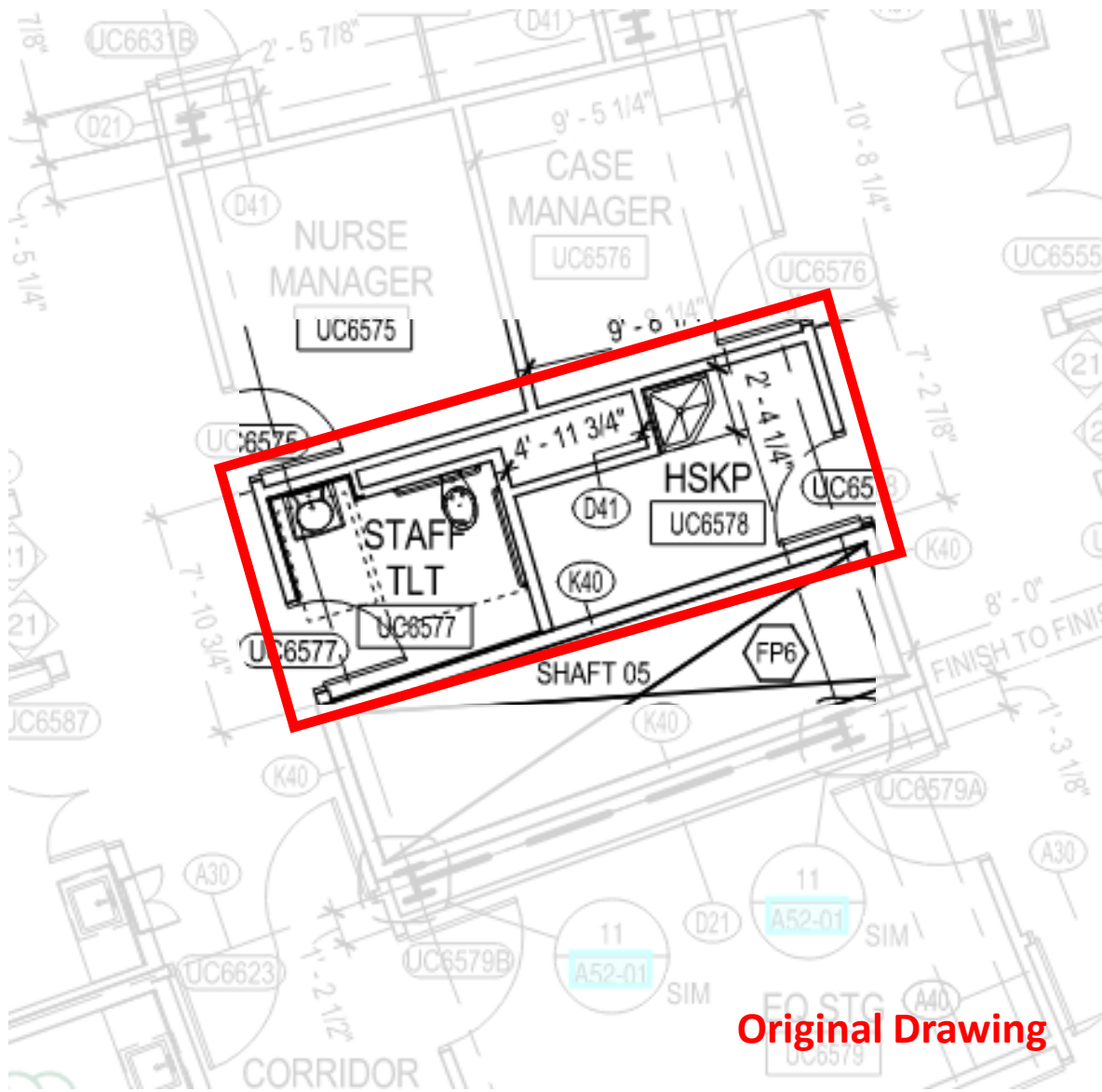
**ACCOUNTABLE**













## Building Accountability Takeaways:

- Create transparency amongst the team.
- Leverage technology with to-do lists and work registers accessible to everyone.
- Make it fun through team-building so people enjoy coming to work.





It's all about  
**CULTURE**







OUR "WHY" ...



We believe  
there's a  
better way  
to build

**BakerTriangle**  
acoustical | drywall | plaster | prefabrication



**Cummings**  
Electrical

**DYNATEN**

PERKINS  
+ WILL



PONCE-FUESS  
ENGINEERING









# Contact Us

**Scott Simons**

Methodist Health System

ScottSimons@mhd.com

**Mark Roan, AIA, LEED AP**

Perkins+Will

Mark.Roan@perkinswill.com

**Michael Knapp, CHC, CM-Lean**

Skiles Group

mknapp@skilesgroup.com







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**In the spirit of continuous improvement, we would like to remind you to complete this session's survey in the Congress app! We look forward to receiving your feedback. Highest rated presenters will be recognized.**





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**Thank you for attending this presentation. Enjoy the rest of the 22<sup>nd</sup> Annual LCI Congress!**