

26TH ANNUAL



26TH LCI CONGRESS
OCTOBER 22-25, 2024

5S - A Success Story!

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SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

October 23, 2024

Why are we Here Today?

- *A General Contractor's journey to operationalize 5S.*
- *A 5S success story: ft. Gaylord Pacific Resort & Convention Center.*
- *Trade partner's perspective - ft. KHS&S.*
- Q&A

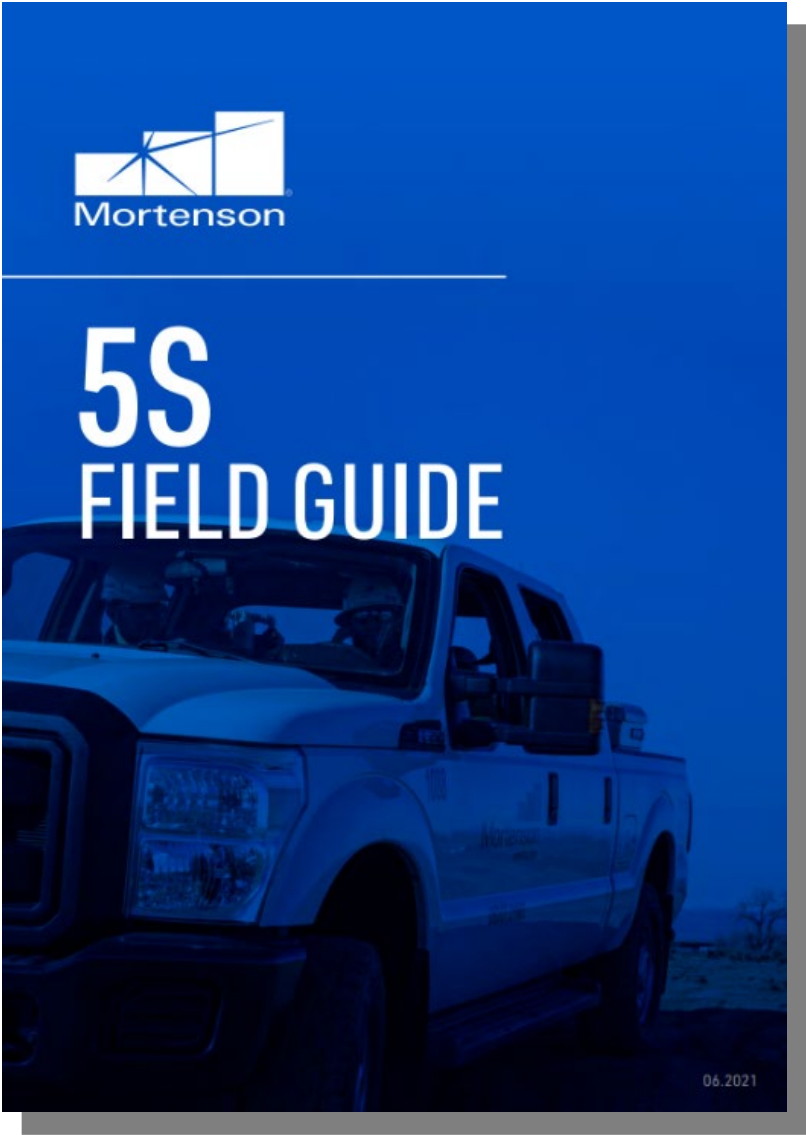
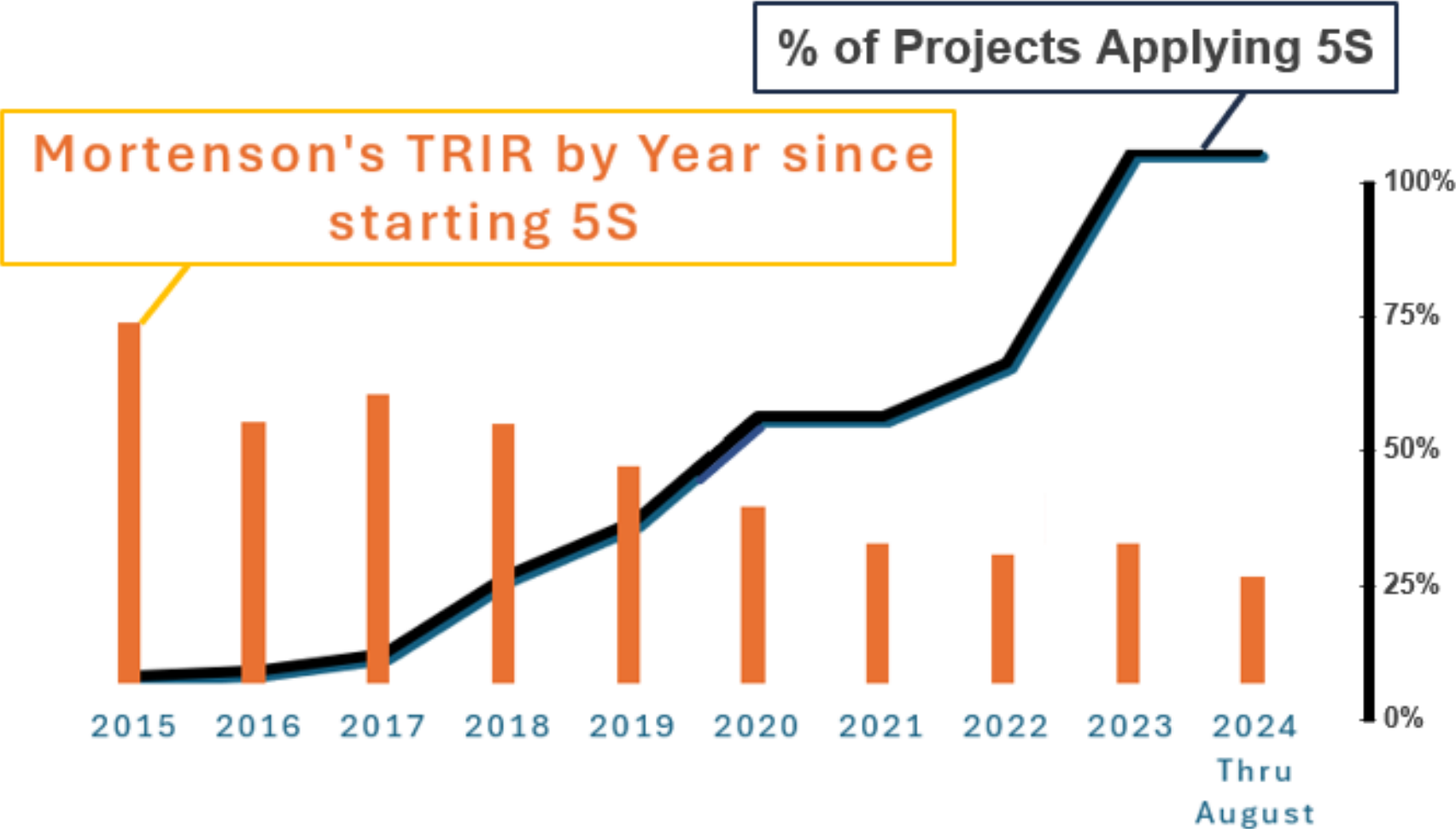
Don't believe us – hear from the workforce!



Mortenson McCarthy JV's 5S Journey...



5S Supports Better Safety Outcomes



Which Site Would You Rather Work On?









The Concepts of 5S





KEEP IT CLEAN KEEP IT SAFE

The following **ABSOLUTES** are foundational to the success of our journey in providing an exceptional experience for all workers and achieving world class safety performance.

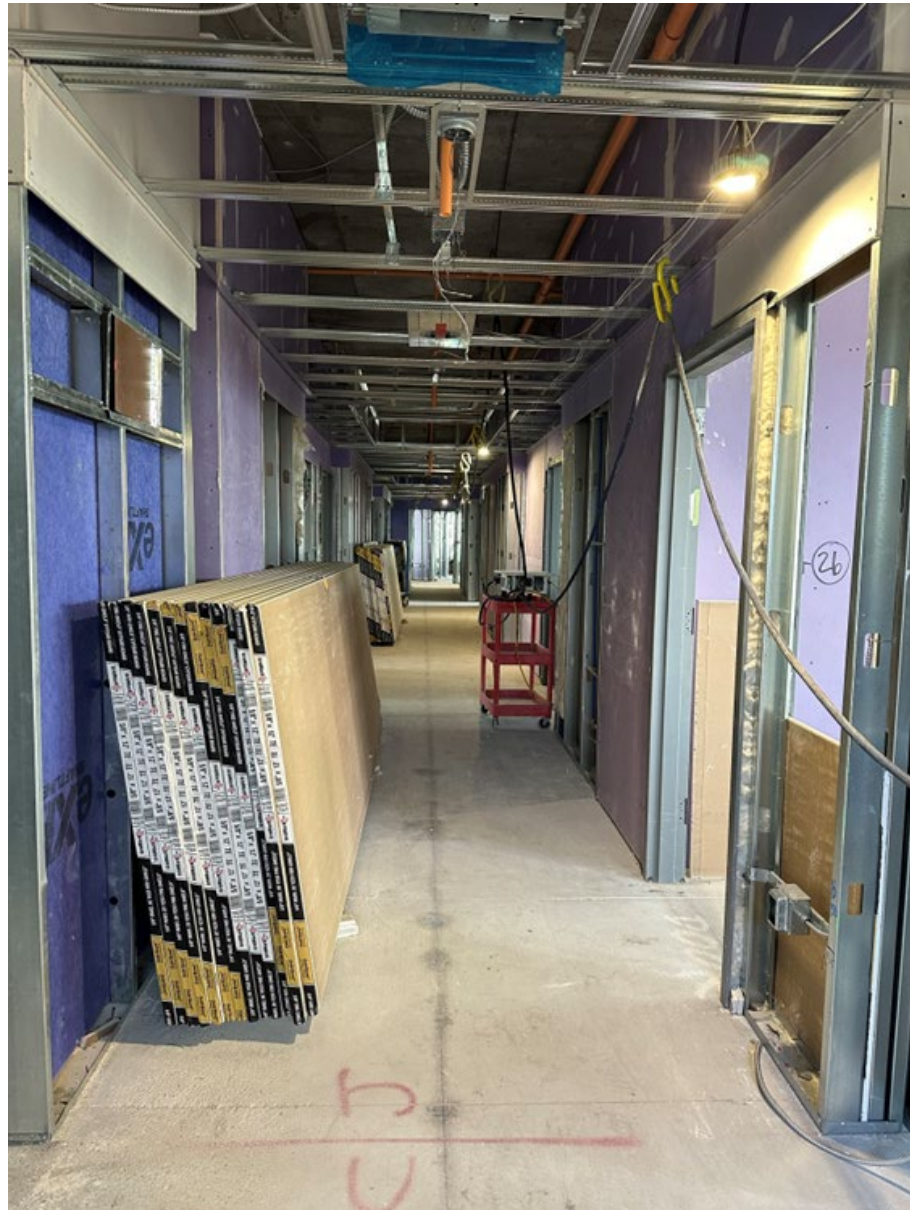
- NO TRASH HITS THE GROUND**
Trash cans available in work areas and emptied at end of shift if more than half full.
- JUST IN TIME DELIVERIES**
Materials and equipment are not to be stored for more than 5 days on site.
- EVERYTHING ON WHEELS, PALLETS OR DUNNAGE**
Hard surfaces = Everything on Wheels or Pallets
No hard surface = Everything on Dunnage or Pallets
- CORD MANAGEMENT**
Cordless tool utilization.
Cords are out of walkways and elevated off the ground.
- CLEAR WALKWAYS AND ACCESS**
All access/egress clearly identified.
Safe and unobstructed access to work areas.
- ORGANIZED WORKSPACES**
A place for everything, and everything in its place.
E.g. - Work areas, gang boxes, office spaces, laydown yards, vehicles
- DONE MEANS DONE**
Nothing left behind, broom swept.
Work areas are clean for next trades.
- EXPECTATIONS AND ACCOUNTABILITY**
Expectations are clear for all trades from the start.
All team members are held accountable for the absolutes listed above.

Mortenson | **McCARTHY.**

NO TRASH HITS THE GROUND



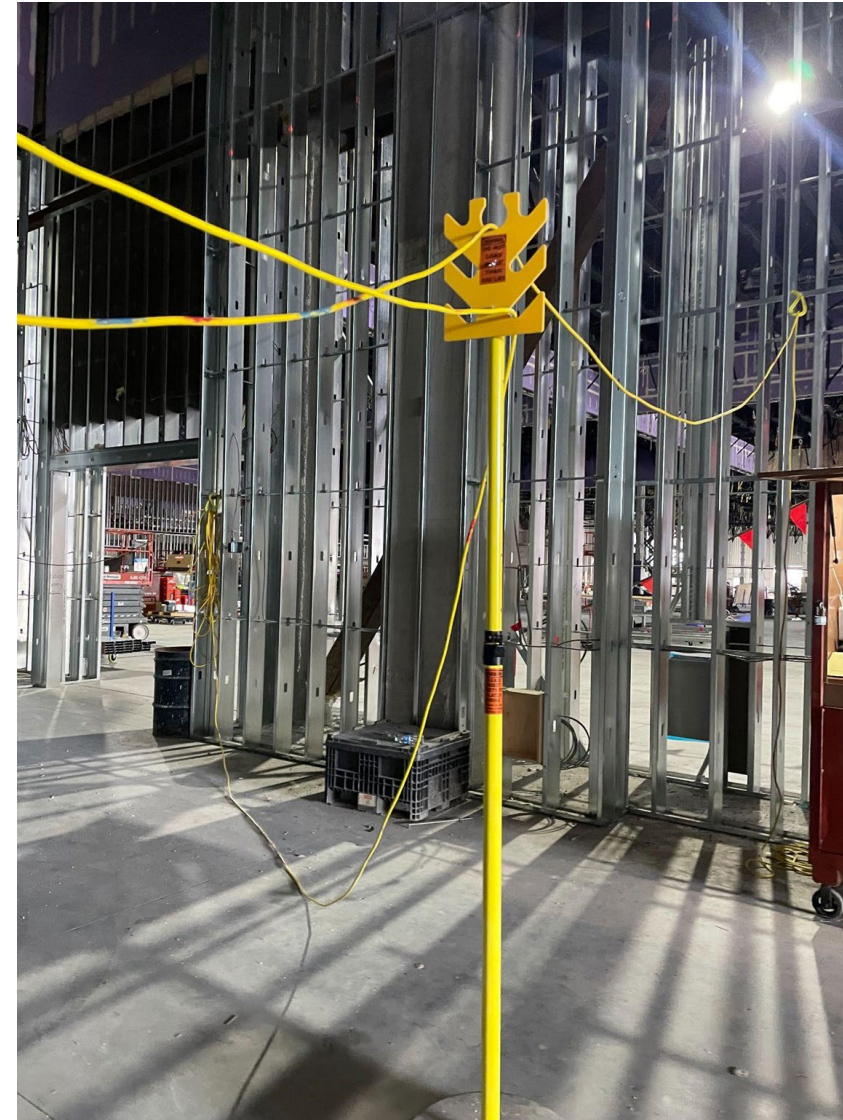
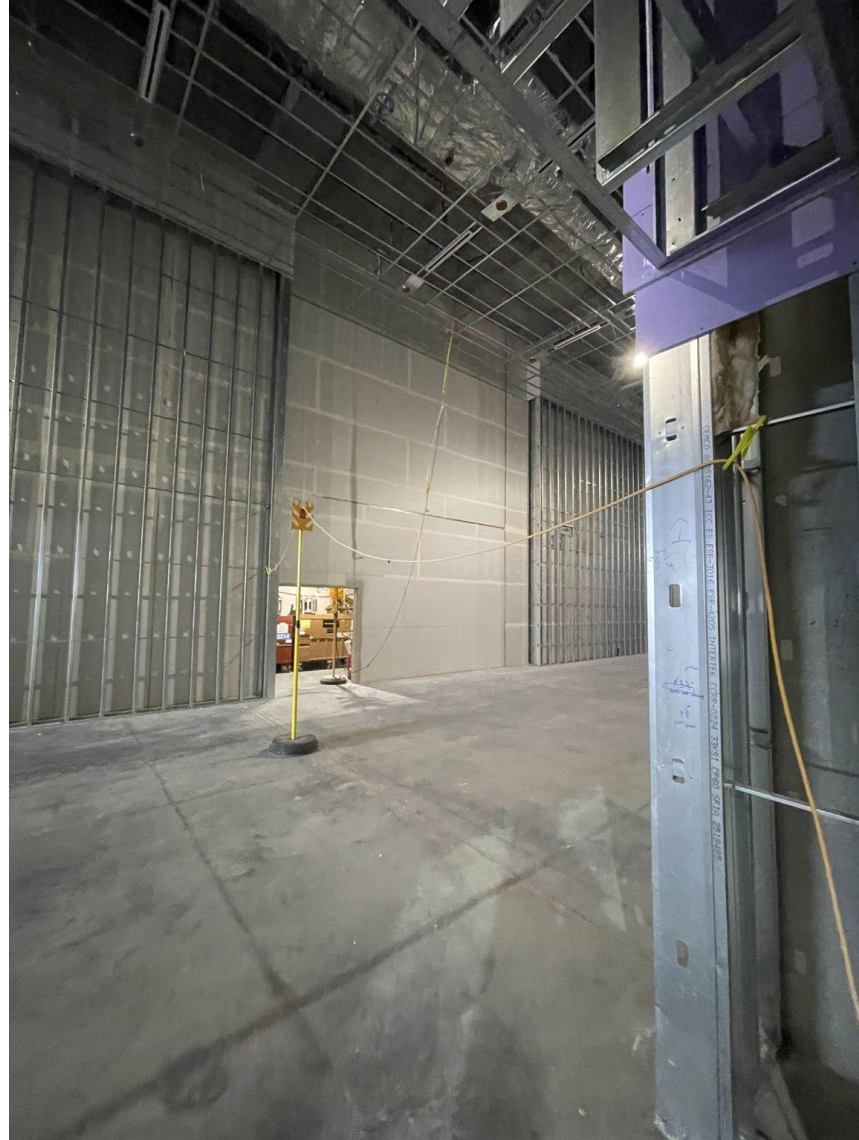
JUST IN TIME DELIVERIES



EVERYTHING ON WHEELS AND PALLETS



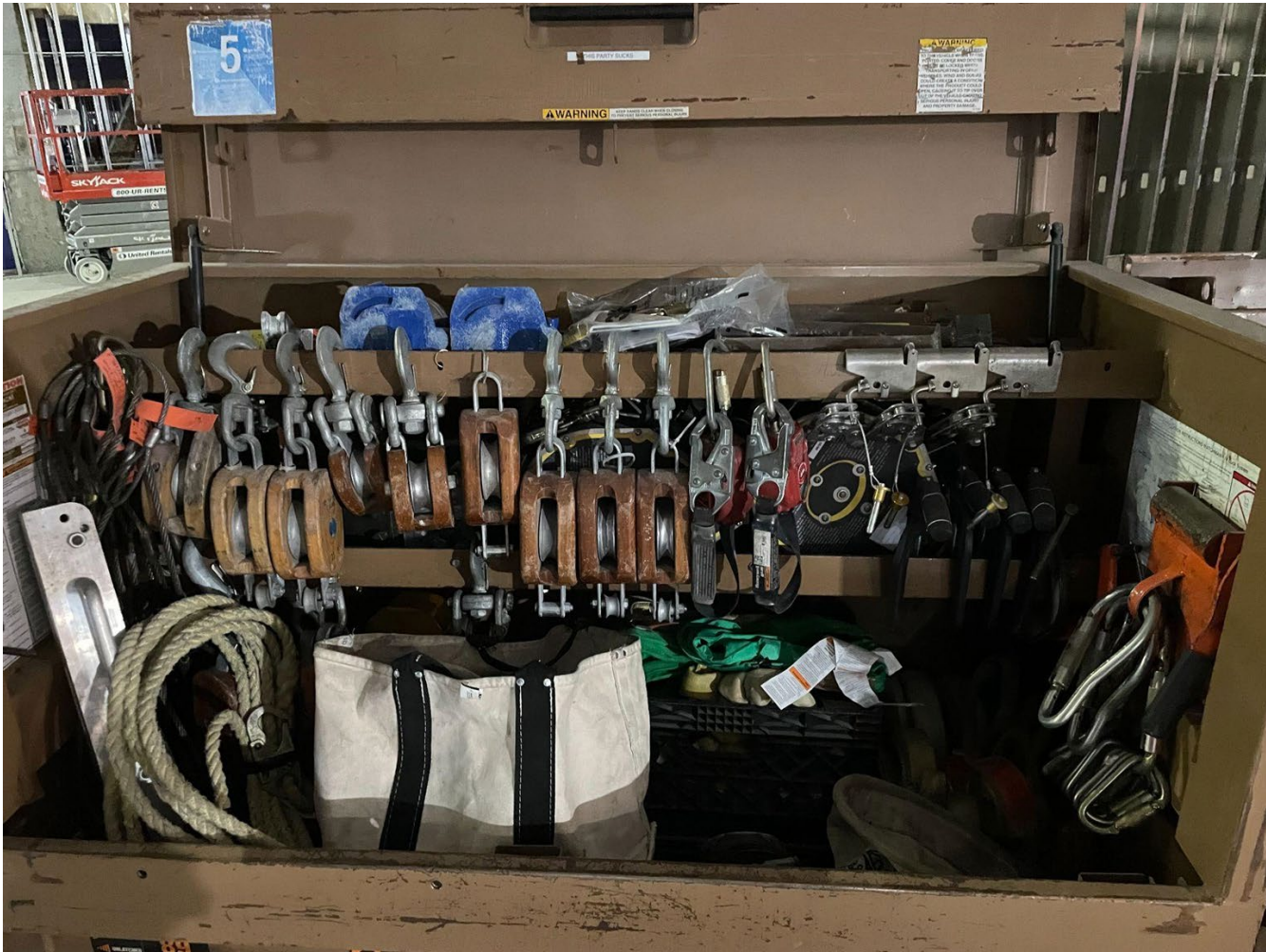
CORD MANAGEMENT



CLEAR WALKWAYS AND ACCESS



ORGANIZED WORKSPACES



DONE MEANS DONE



EXPECTATIONS AND ACCOUNTABILITY



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GAYLORD PACIFIC RESORT & CONVENTION CENTER
CHULA VISTA, CA
Mortenson/McCarthy PROJECT NO. 18060010

Exhibit K – Lean Innovation Requirements

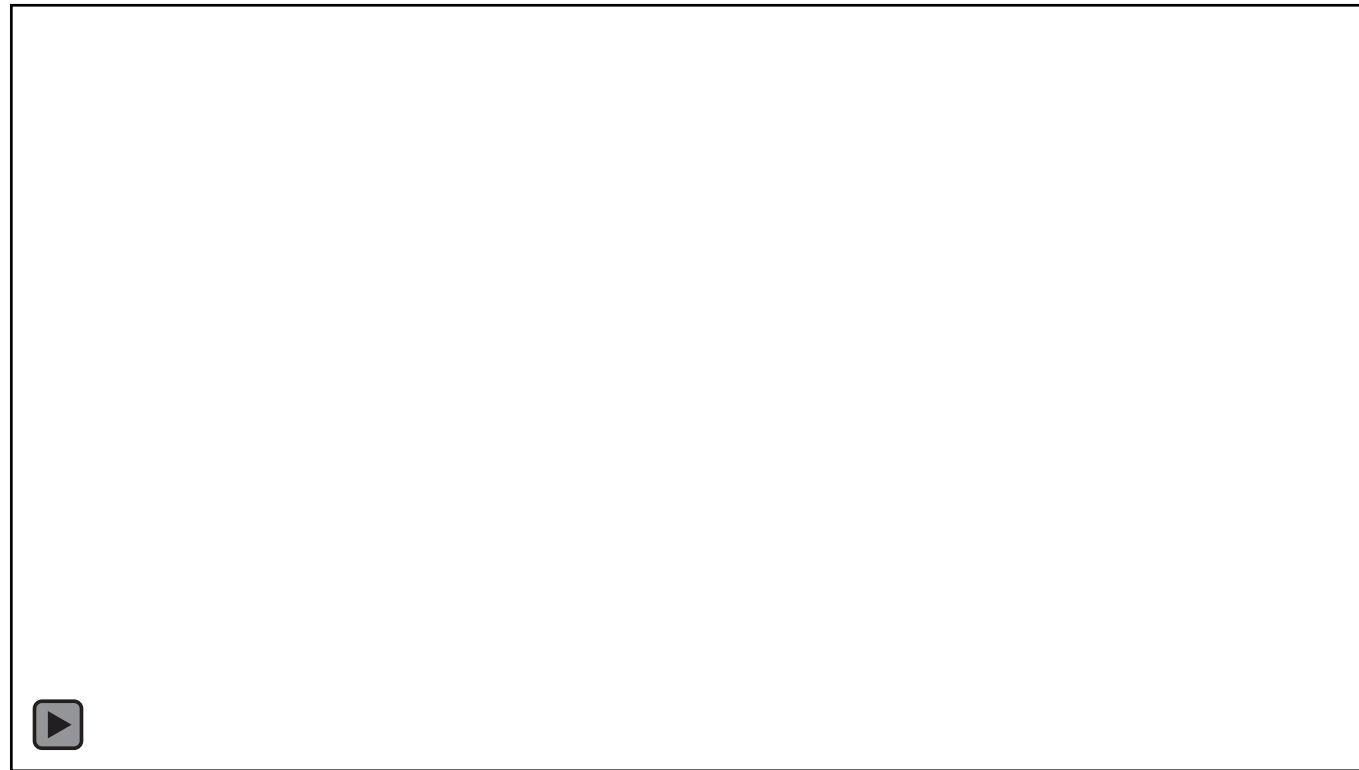
Attached to and forming a part of the Agreement between [Subcontractor] and MMJV, effective as of [Subcontract Date].

The Lean Innovation Requirements set forth in this Exhibit K are intended to improve the way we work every day. The use of the following tools will aid the team in our constant pursuit of flawless project delivery with zero injuries, zero defects, and zero waste.

- 1) The Last Planner® System (LPS) is a collaborative work planning process involving trade foremen (the last planners) that enables reliable workflow between the trades. The LPS components below will be implemented on this project:
- • •
- 2) The Project will utilize 5S techniques for housekeeping, material storage, and workplace organization that follow our project “Keep it Clean, Keep it Safe” Absolutes detailed below.

5S Champion: Bruce Bailey Contact: Ben Tamp	Control Air – Piping 5S Plan			
Company Name: Control Air	Project Name: Gaylord Hotel and Convention Center	Supervisor Name: Ben Tamp Phone #: 858-361-7194	MMJV Follow Up Inspection Frequency: Weekly	
Standard Lean Procedures List the materials and equipment that will be required on site to complete the scope of work. <i>*The items listed in this column are to stay constant*</i>	Activities List the activities that will require this organizational tool.	Equipment and Material Equipment and material required to successfully implement this procedure.	What Good Looks Like (Previous Project Examples) Provide photos from previous projects showing how this has been executed previously.	
Cut Stations – No Trash Hits The Ground	- Installing Process Piping	- Saw Horses - Trash Bins - clamshells - C-Clamps - Protection - Welding Shields/Curtain - Grinders		
Material Handling – Just in Time Delivery	- Material Storage - Moving Material - Gas Bottles - Prefabrication from CAE Shop	- All material will be stored on dunnage and pallets - Material Handling Equipment - Piping V-Carts - Rolling V Stands - Trash Bins - Welding Carts - Tall Gang boxes will be stocked with smaller material (Fittings, Valves, Gauges, etc.) stored in plastic bins.		
Cord Management Plan	- Utilize Battery Operated Tools When Available - Battery Charging Stations - Lift Charging - Welding	- S-Hooks - Cord Trees - Cord Ground Covers - Grinders - Grooving Machine		

EXPECTATIONS AND ACCOUNTABILITY – BOOT CAMP



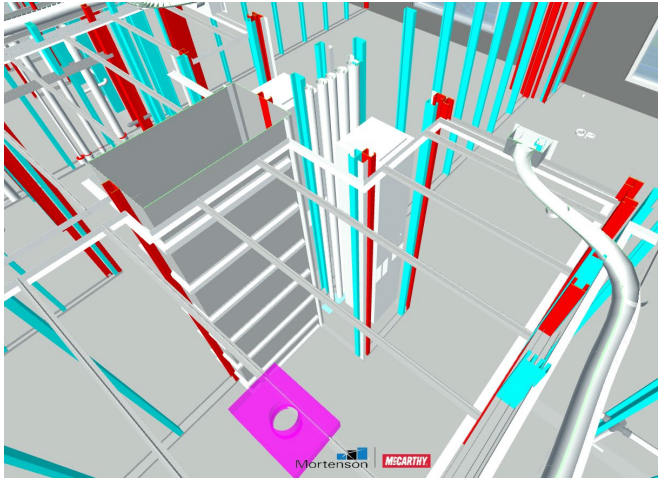
FLOWCHART

LEAN Team

Trade Partner

Project

5S Champion: Bruce Bailey Contact: Gabe Casas			
Control Air – Sheet Metal 5S Plan			
Company Name: Control Air		Project Name: Gaylord Hotel and Convention Center	Supervisor Name: Gabe Casas Phone #: 619-633-4346
Standard Lean Procedures List the materials and equipment that will be required on site to complete the scope of work. *The items listed in this column are to stay on-site*		Activities List the activities that will require this organizational tool.	Equipment and Material Equipment and material required to successfully implement this procedure.
Material Handling		<ul style="list-style-type: none">- Material Storage- Moving Material- Duct Deliveries to Laydown Yard- Duct Deliveries to Site	<ul style="list-style-type: none">- Material Handling Equipment- Piping Carts- Rest Area Tools/Equip- Trash Bins- Custom cages on wheels hold all misc. fittings stacked inside cage.- Duct labeled from shop will be put onto carts and wheeled into areas.
Just in Time Delivery		<ul style="list-style-type: none">- Equipment to be Pre-Purchased and Stored Off-Site- Equipment to be Delivered Week of Install- Material to be moved onto site as needed.	<ul style="list-style-type: none">- Utilize Off-Site Storage Containers- Equipment Stored at CAE Facility or Manufacturers Facility- Custom cages on wheels hold all misc. fittings stacked inside cage.- Duct labeled from shop will be put onto carts and wheeled into areas.



5S Audit

Mark Section as NA

1.1 No trash hits the ground?



1.2 Just in time deliveries?



1.3 Everything on wheels, pallets and dunnage?



1.4 Cord management?



1.5 Clear walkways and access?



Let's hear from our key Trade Partner -
KHS&S



Objectives

- Review Lean House
- 5S Principle
 - What is 5S?
 - Benefits of 5S
 - What are the 5Ss?
 - Sort
 - Set-In-Order
 - Shine
 - Standardize
 - Sustain
- How to Implement 5S?
- Challenges
- Questions



5S Examples – Work Area



5S Examples - Inventory



5S Examples



5S Examples – Office Area



Cameron's Garage !



Final Thoughts!



Any Questions?





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In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.

Contact Us

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Thank you for attending this presentation. Enjoy the rest of the 26th Annual LCI Congress!