

26<sup>TH</sup> ANNUAL



26<sup>TH</sup> LCI CONGRESS  
OCTOBER 22-25, 2024

# How to Build a Lean Culture from the Ground Up for Specialty Trade Contractors

Rob Walter – COO

Jeff Cleary - General Superintendent

Blake Tormey - Director, Process and Controls

**SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION**

October 22<sup>nd</sup>, 2024





26<sup>TH</sup> LCI CONGRESS  
OCTOBER 22-25, 2024



# DO YOU HAVE THE LCI APP?

## Feedback is a gift!

# How to Build a Lean Culture from the Ground Up



Specialty Trade – Framing, Drywall, Plaster, Themed Construction

50%+ labor cost - \$125,000,000/year

Rob Walter – Background in design, project management & organizational management

Jeff Cleary – Background in field trades & leadership

Blake Tormey – Background in project analytics & operational controls

## Congress Tracks:

**Navigating the Flow for Excellence: Field Execution**

**Cultivating Waves of Change: Scaling Continuous Improvement**

# Objective

- Learn what you need to do to build a Lean Culture in a specialty trade from scratch.
- Challenge = Culture Change
- 13 years since initial exposure to Lean
- Lessons learned from multiple approaches
  - Firehose
  - Discipline
  - Process and Tools will enable and build the Culture

# Overview

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1. Education Program
2. Certification & Recognition Programs
3. Enabling Tools
4. Coaching Program

# Interaction Around Participant LPS Stages



Live interaction app for questions and responses

- What is your role/position within your organization?
- What kind of company do you work for?
- What portion of LPS could you utilize the most?

# Poll Everywhere Instructions:



What is your role/position within your organization?

 0

Nobody has responded yet.

Hang tight! Responses are coming in.

Start the presentation to see live content. For screen share software, share the entire screen. Get help at [pollev.com/app](https://pollev.com/app)



🌐 When poll is active, respond at **pollev.com/blaketormey896**

📱 Text **BLAKETORMEY896** to **22333** once to join

## What kind of company do you work for?

Owner

Designer

Subcontractor

General Contractor

Student

Other

## What portion of LPS could you utilize the most?

Milestones **A**

Phase Plan **B**

Pull Plan **C**

Weekly Work Plan **D**

Learning **E**

What is LPS?? **F**

Start the presentation to see live content. For screen share software, share the entire screen. Get help at [pollev.com/app](https://pollev.com/app)

# Basic Training for Lean and LPS / WWP

FOR FIELD LEADERS AND PROJECT MANAGEMENT

## 18-Hour Training Class Curriculum

6 Class Course, 3hr. Classes Once a Week

- Teach the Why
- Teach the Application
- Take Them Out of the Game (Field)

Start of Each Class

1. Review & discuss topics from last class (15 min)
2. Quiz (30 min)

End of Each Class

1. Plus / Delta
2. Questions / Review



# Basic Training for Lean and LPS / WWP

## EDGE Method

Explain

Demonstrate

Guide

Enable

“Tell me and I forget,  
teach me and I may remember,  
involve me and I learn.”

- Ben Franklin

# Education Program - KHS&S Lean Basic Training for Field Operations Personnel (Bronze Training)







# KHS&S Lean Basic Training for Field Operations Personnel

## (Bronze Training) Curriculum

Class #1 – Lean House & Last Planner System

Class #2 – Stand Up Board, WWP, Teaching vs. Telling

Class #3 – 5-S Training & Visual Management Training

Class #4 – Weekly Improvement Meeting & Effective Meetings

Class #5 – Waste & Material Control

Class #6 – Full Dress Rehearsal – WWP, Teaching, & Daily Stand-Up Meeting



# Program Overview Handout



**Bronze Level Training  
for  
Operations Support & Field Personnel  
(6-Class Course)**

**OBJECTIVE:** To train Field, Project Management (Project Managers, Project Engineers, Project Coordinators, and Site Administrators), Warehouse Managers, and Safety personnel in Last Planner System basics and basics of Lean Construction through a practical and hands-on approach aimed at immediate real world/project application.

**AUDIENCE:** Field, Project Management, Warehouse Managers, and Safety Personnel - Those who will lead daily and weekly Lean processes at the project level (Lead Craftsmen, Foreman, Superintendents, General Superintendents, Field Engineers, Project Engineers and Project Managers)

**Lesson Plan: Lean House, Culture, Lean Stand Up Board, Budget, Weekly Work Plan**

**Class 1: Instructor Led (2 hours 30 minutes)**

- A. Introduction to training and curriculum review (10 min)
- B. Lean House PowerPoint Slides (45 min)
  - 1. Overview Lean Values and Lean Principles
  - 2. Review the definition of Lean
  - 3. Explain the different levels of Lean Certification
  - 4. 9 Lean Value-Added Foundation
- C. Culture PowerPoint Slides (45 min)
  - 1. Core Purpose
  - 2. Core Values
  - 3. Lean Values
- D. Safety/Risk Resource and Class Offerings (15 min)
- E. Demonstrate reading an FSP, the basics of Last Planner System and Weekly Work Plan (WWP) for superintendents and foremen (30 min)
  - 1. Show the basics of reading each category of a budget.
  - 2. Review the superintendent WWP and how it is generated.
  - 3. Explain each category on the Weekly Work Plan sheet and the meaning behind each category.
- F. Wrap-up and Homework (5 min)
  - 1. Oh-no Circles
  - 2. Stop, Start, Continue

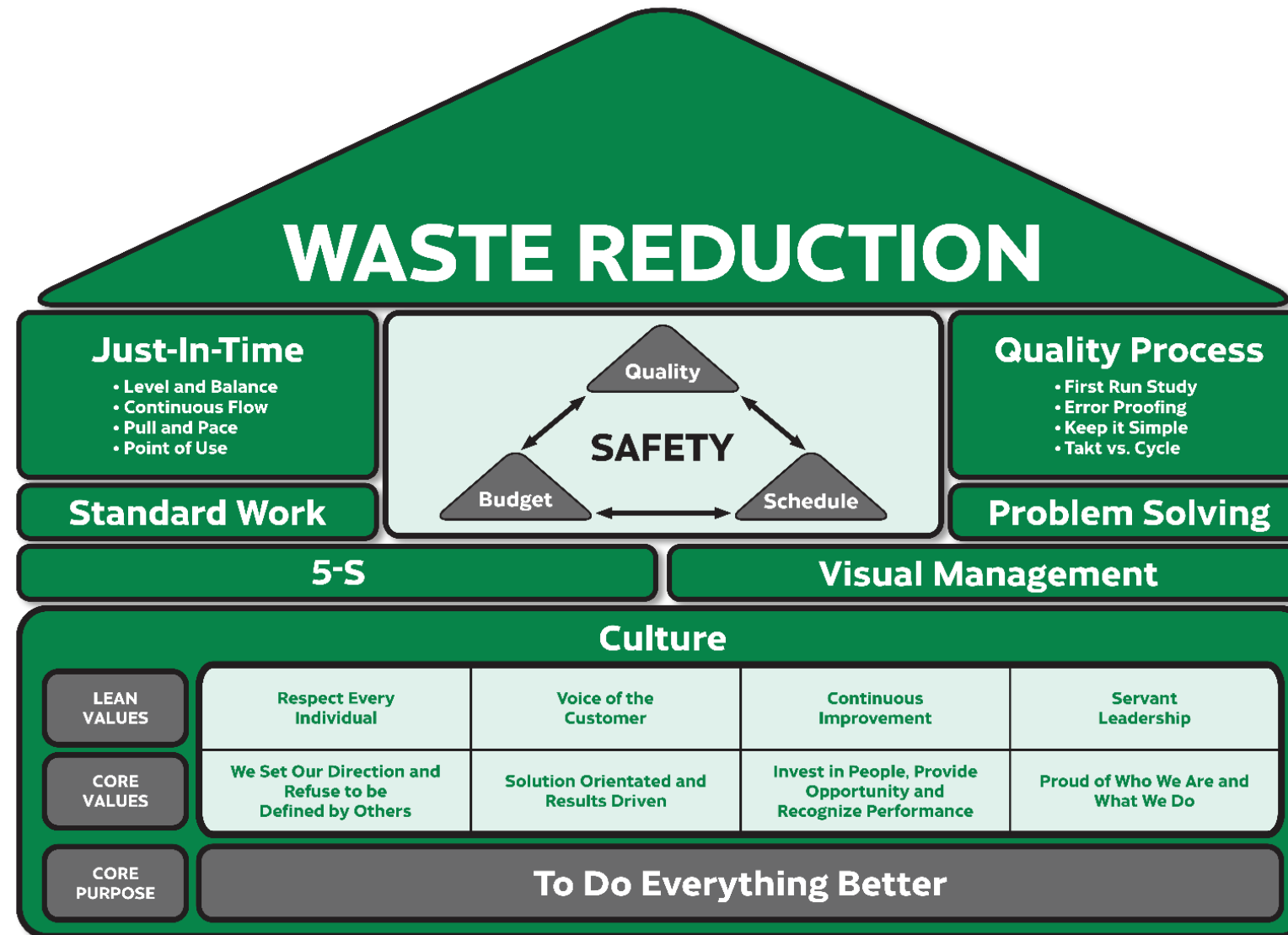
Authors: Greg Stedman, Rob Walter, & Blake Tormey KHS&S Contractors





# Lean House

- Culture
- Core Purpose
- Core Values
- Lean Values





# Last Planner System

- System Overview
- The Basics of a Weekly Work Plan (WWP)
  - Show the basics of reading each category of a budget.
  - Demonstrate how to calculate goals for the WWP.
  - Review the superintendent WWP and how it is generated.
  - Explain each category on the Weekly Work Plan sheet and the meaning behind each category.
  - Explain basics of Percent Plan Complete (PPC) chart and Tasks Made Ready (TMR) chart.
- Hands-On Learning Exercise



## Exercise

# Kim's Game #1

- Table Groups
- Each table to have report out person





## Exercise

# Kim's Game #1

- Rules:
  - You can get close, move around in anyway way, etc. But cannot touch or move the object .
  - No Talking.
  - For two minutes, write down what you see. Describe it in anyway but don't say what the object actually is.
  - After time, stop writing and each person will share how they described the object.

## Exercise

CLASS

1



# Kim's Game #1

- GAME TIME! (2 Minutes)

Welcome! Select a time and click Start

[\[Info\]](#) [\[Reveal\]](#)

0 hr ▾ 2 min ▾ 0 sec ▾

**00:02:00**

☐ Play sound when timer ends

Start Timer Light Theme ▾



## Exercise

# Kim's Game #1

- Report Out



# Exercise

## Kim's Game – Paper Clip

1. Shiny, metallic cylinder
2. Appears to be made from galvanized steel wire
3. Approximately  $1/64$ " in diameter
4. Approximately  $1 \frac{7}{8}$ " tall while bent
5. Has 3 radii
6. The larger radii are approx.  $3/8$ ",
7. Smaller radii are  $1/4$ "
8. Two on one end and one on the other
9. Smallest radius is approximately half an inch below the other
10. Smallest radius is nested inside the other two curves
11. Outer leg is slightly longer than inner leg
12. Outer leg is  $1 \frac{3}{8}$ " long, Inner leg is approx. 1"

## Exercise

CLASS

1



# Kim's Game #2

Welcome! Select a time and click [Start](#) [\[Info\]](#) [\[Reveal!\]](#)

0 hr ▾ 1 min ▾ 0 sec ▾

**00:01:00**

☐ Play sound when timer ends

Start Timer Light Theme ▾





## Exercise

# Kim's Game - Reflection



# Exercise

Examples of other hands-on games to include in your training.

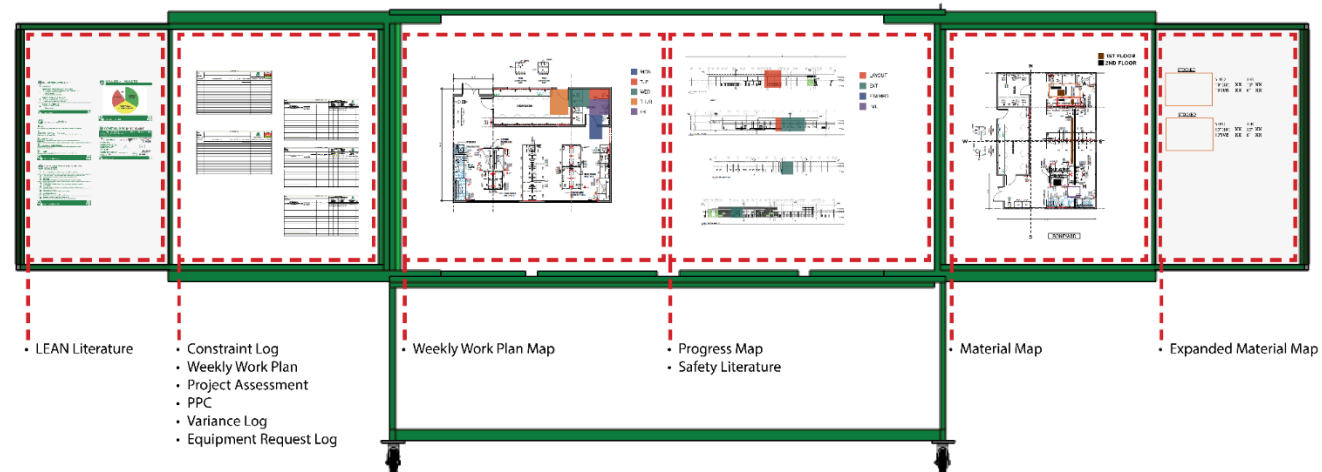
1. Parade of trades
2. 5-S numbers game
3. Lego building
4. House of cards
5. Peanut butter sandwich assembly
6. Marshmallow challenge

What are your favorite hands-on games?



# Stand Up Board

- Setting up a Lean Stand Up Board:
  - Placement of each component on the Stand-Up Board.
  - Component and the intended information of each component.
  - Components tie together and are used in conjunction with each other.
  - Location of the Stand-Up Board on a jobsite.





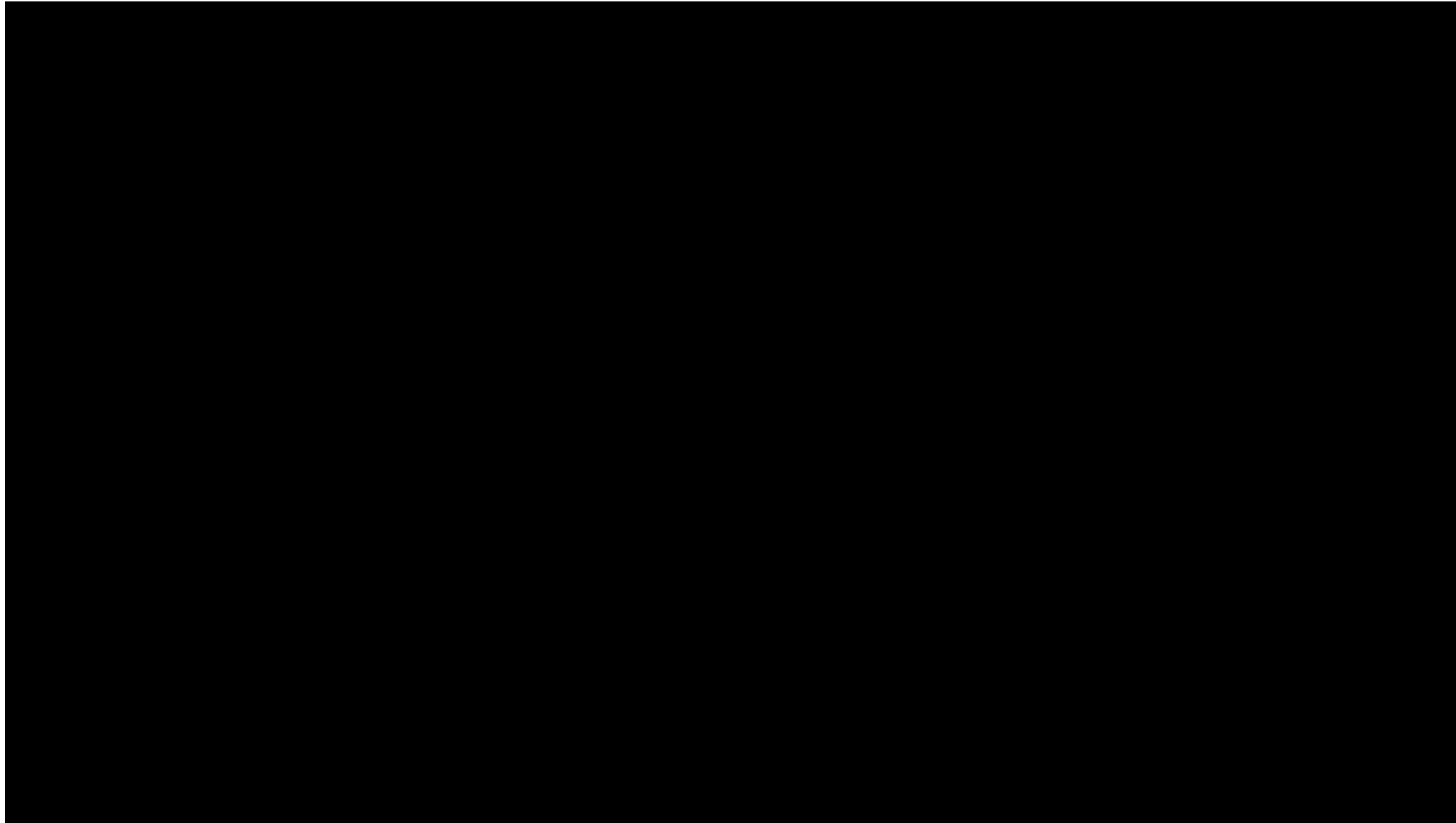
# Stand Up Board



# Stand Up Board & WWP

CLASS

2







- First hands-on use of WWP to gain familiarity and greater understanding



Write a mock Weekly Work Plan: Complete a blank Weekly Work Plan from the budget and superintendent's WWP and utilize Last Planner System (LPS) to generate Percent Plan Complete (PPC), Tasks Made Ready (TMR) and Variance Chart.



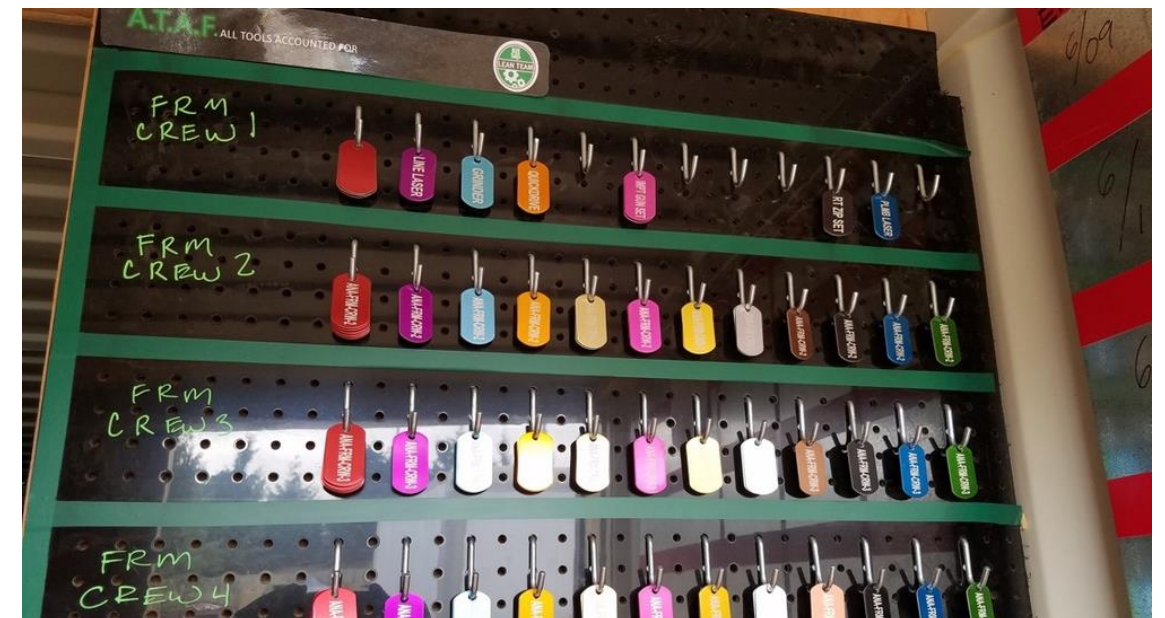
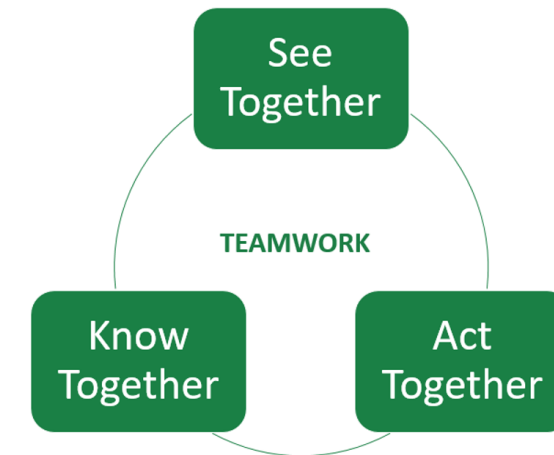
WEEKLY WORK PLAN - FOREMAN ( WWP )																					
Customer Name:		Foreman Name/Team #		Week Ending:						CATEGORIES OF VARIANCE											
Project Name:										1	UNSAFE CONDITION		5	EQUIP/HOISTING		9	STRUCTURAL		13	PLUMBING	
Project Number:										2	WEATHER		6	RFI/SUBM/SHOP		10	CONCRETE		14	INSP/PERMIT	
Project Location:										3	LABOR		7	INTEREF - KHS&S		11	MECHANICAL		15	SCAFFOLD	
Foreman Name:										4	MATERIALS		8	CO/HOLD/STOP		12	ELECTRICAL		16		
ASSIGNMENT DESCRIPTION Criteria for release of assignments Safe - Defined - Sound - Proper Sequence - Right Size - Able to Learn      Example: Location (Floor 4) / Task (Framing, Drywall) / Specific Location (gridline or Room #)		Daily Goal (Team)	Completed	Team Names	Material (type and quantity) needed for task	Ordered?	Delivered?	In Place?	Actual Cost Code	Week Ending: Hours Used		Point of use?		DONE?		REASONS FOR VARIANCE		Category	On Track for Goal		
										Planned	Actual	YES	NO	YES	NO				Yes	No	



# 5-S Training & Visual Management Training

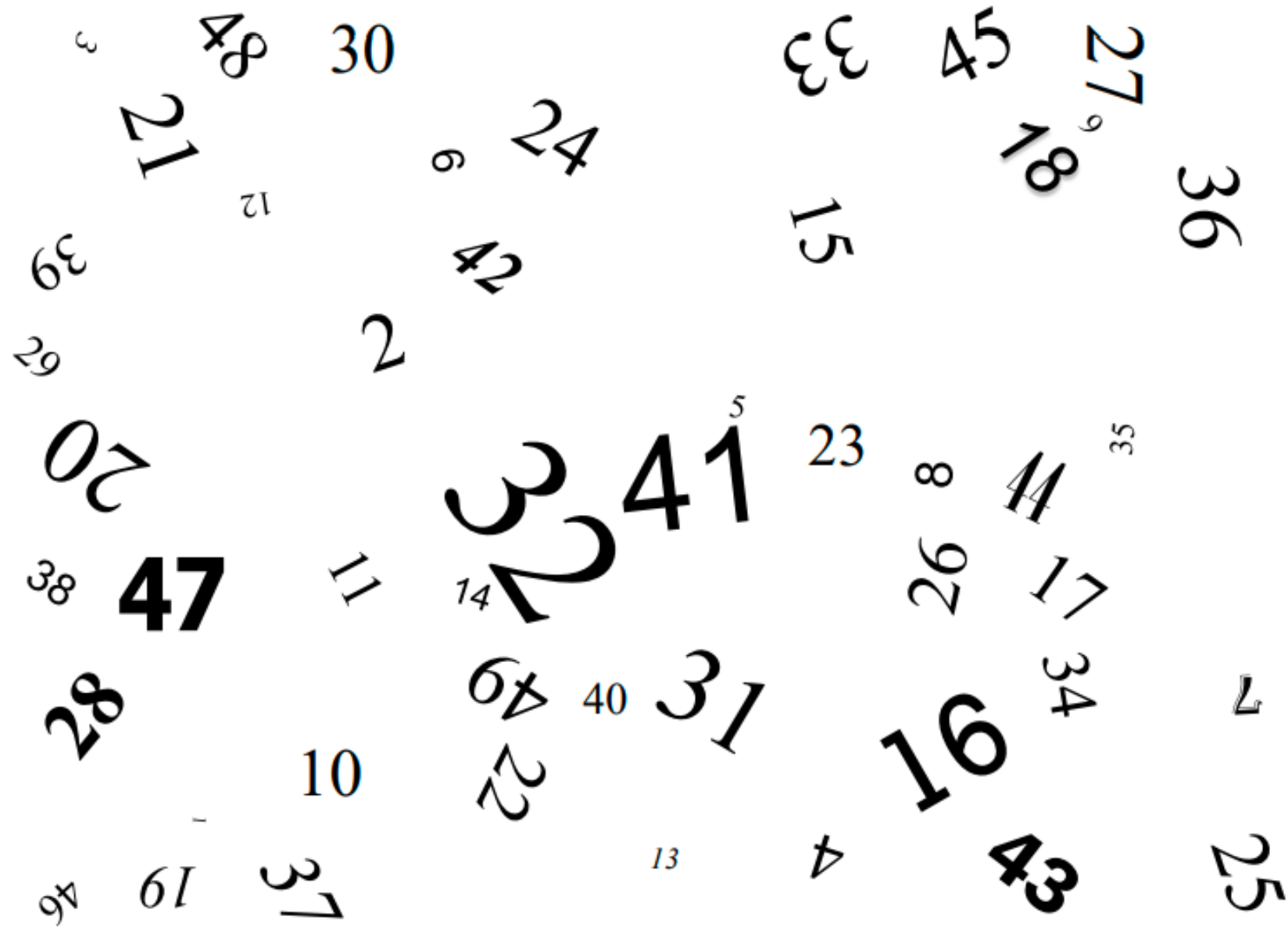
- 5-S - What, why, how, and applications
  - Sort
  - Set-In-Order
  - Shine
  - Standardize
  - Sustain
- Gang Box
- Visual Management - What, why, how, and applications
  - See Together, Know Together, Act Together
  - Inventory control cards
  - Tool control cards
  - Visual management of a material ordering tracking system
- Management of Constraint Log

## Visual Management Triangle





# 5-S Activity



# BREAK

*[Info]**Welcome! Select a time and click Start.**[Reveal]*

0 hr ▾

15 min ▾

0 sec ▾

00:15:00

☐ Play sound when timer ends

Start Timer

Light Theme ▾

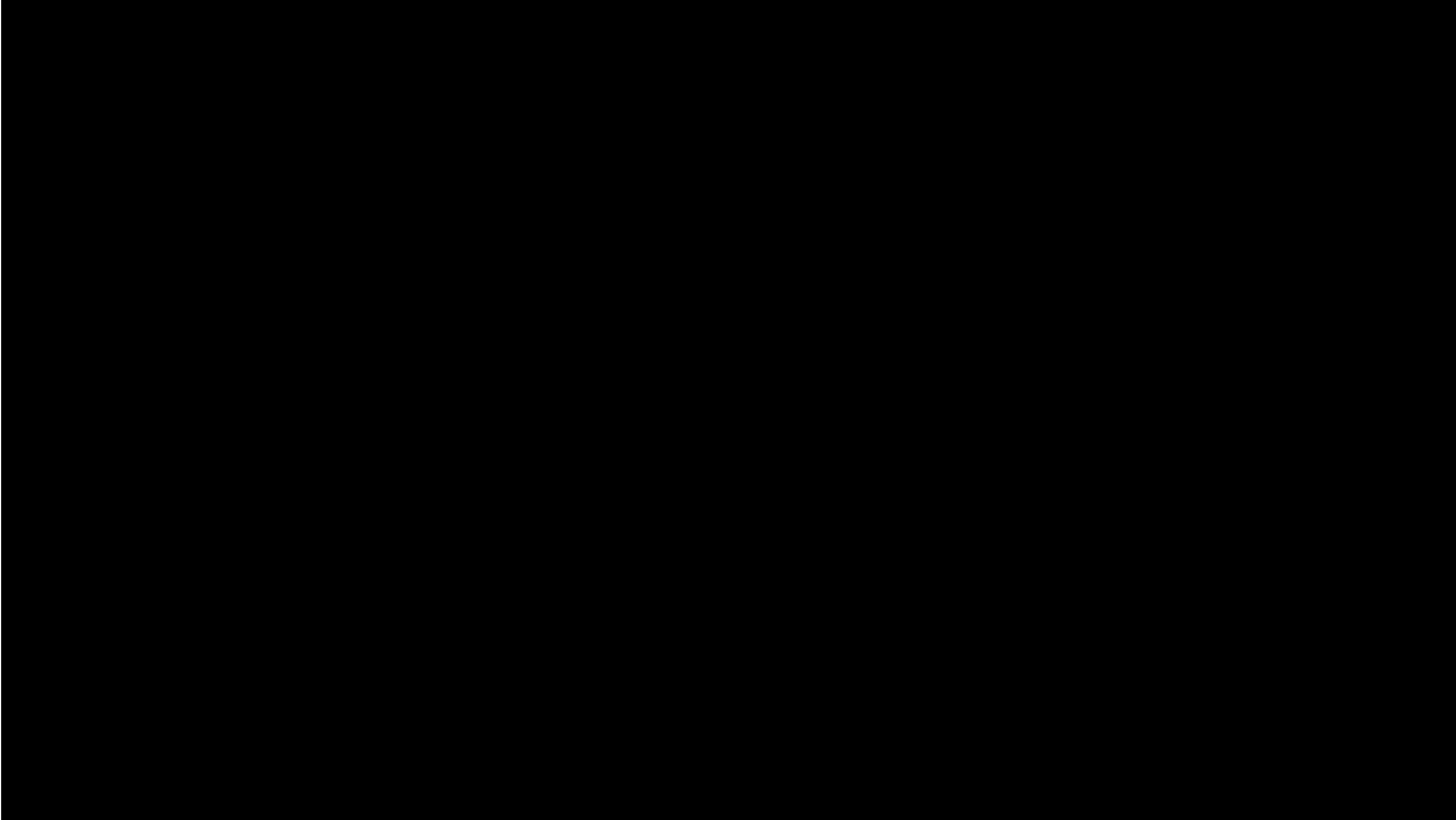


# Weekly Improvement Meeting & Effective Meetings

- Weekly Meeting – What, Why, and How
- How to Hold Effective Meetings
  - Elements of a good action meeting
  - Purpose of action meetings
  - Purpose of superintendent improvement meetings
  - Review Improvement Meeting Assessment Form
- Speaking opportunity
  - Practice and get comfortable with public speaking and delivering Lean learning



# Bad Meeting







# Waste & Material Control

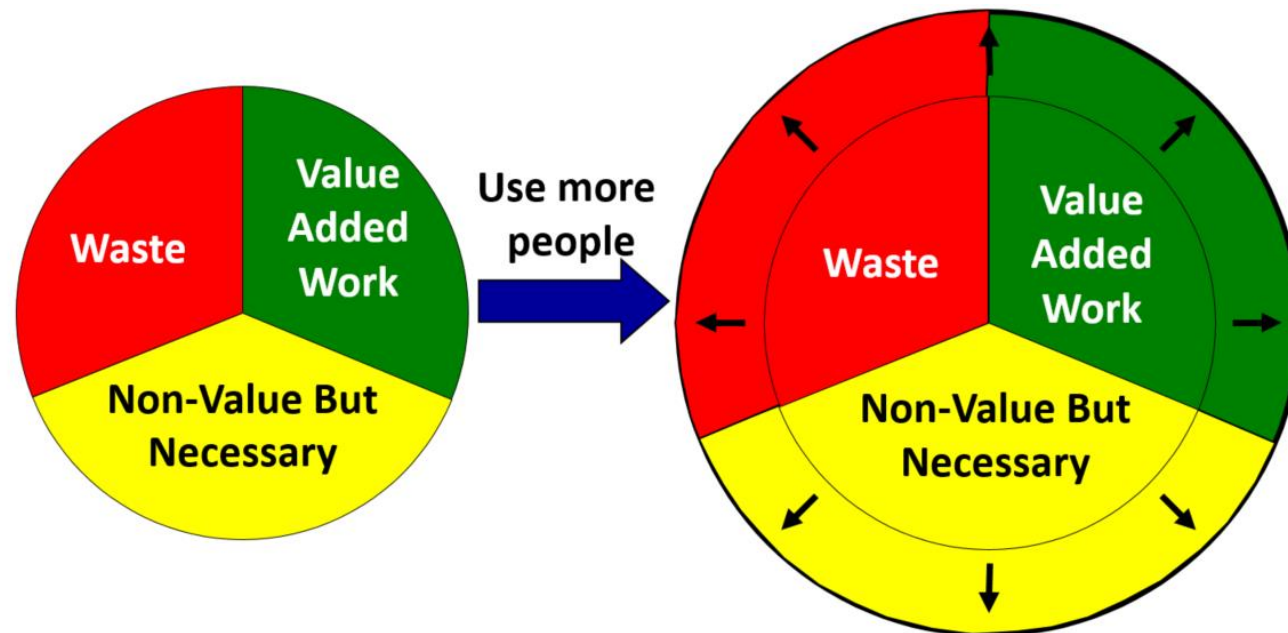
- 8 Types of waste



- How to get your work force engaged on eliminating waste.
- How to explain kinds of waste to your crew.

- Waste Walks

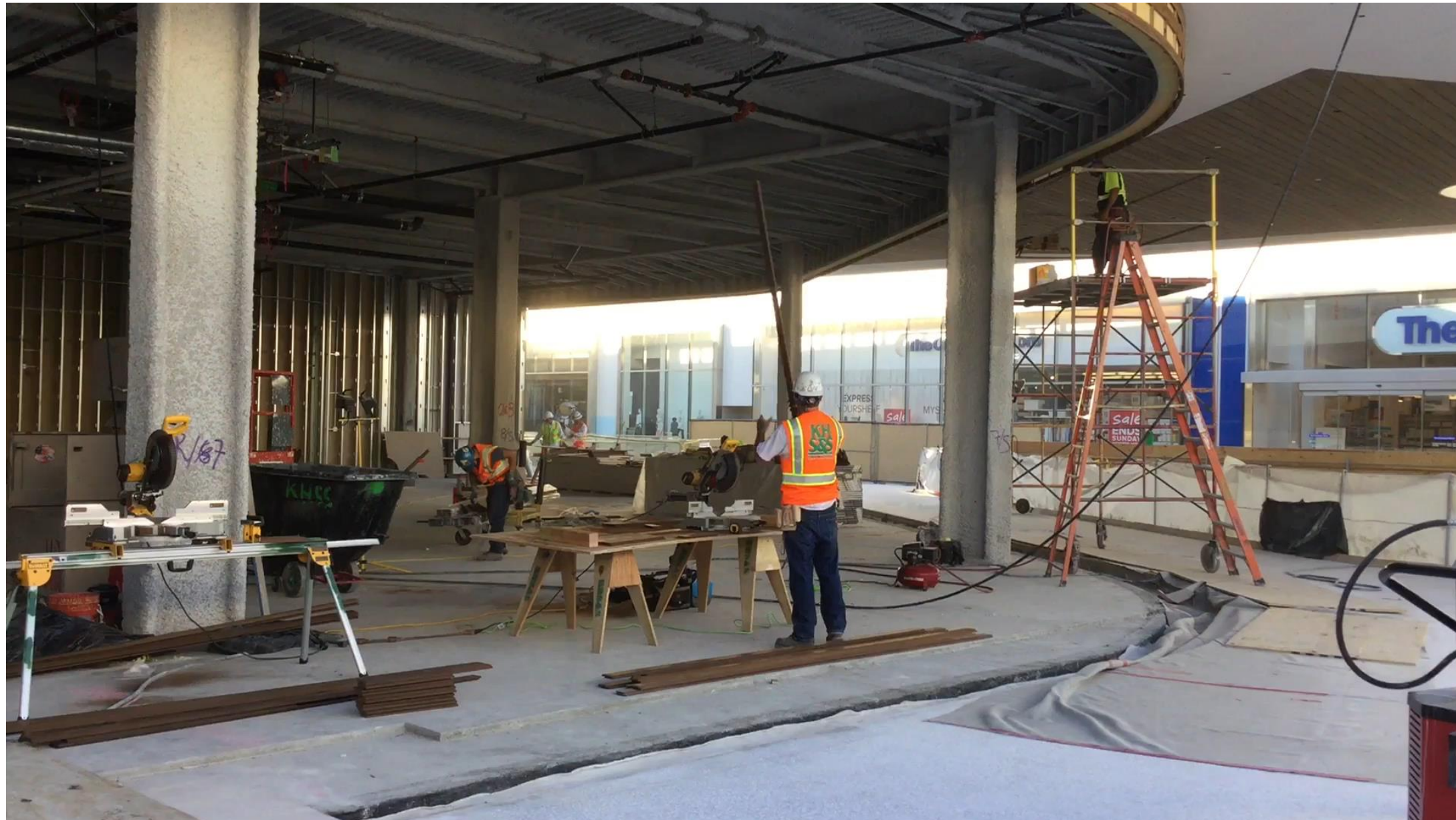
- Waste Walk Form & Waste Walk Summary



- 1. TRANSPORTATION** - Unnecessary movement of material and/or information based on the minimum required
- 2. INVENTORY** - Excess product, stock, materials, supplies, equipment or space greater than what is required by the system
- 3. MOTION** - Unnecessary movement of people or equipment that does not add value to the process
- 4. WAITING** - Idle time such as waiting for congestion / material to arrive / waiting for a meeting to start
- 5. OVER-PROCESSING** - Doing more work than necessary to meet customer requirements
- 6. OVER-PRODUCTION** - Producing more than is required or using excessive resources to meet actual customer demand
- 7. DEFECTS** - To work over again, to revise or to repeat a process usually in order to correct an error
- 8. UNUSED EMPLOYEE CREATIVITY** - Untapped potential and creativity of the people



# Waste & Material Control







# Waste & Material Control





# Table Discussion



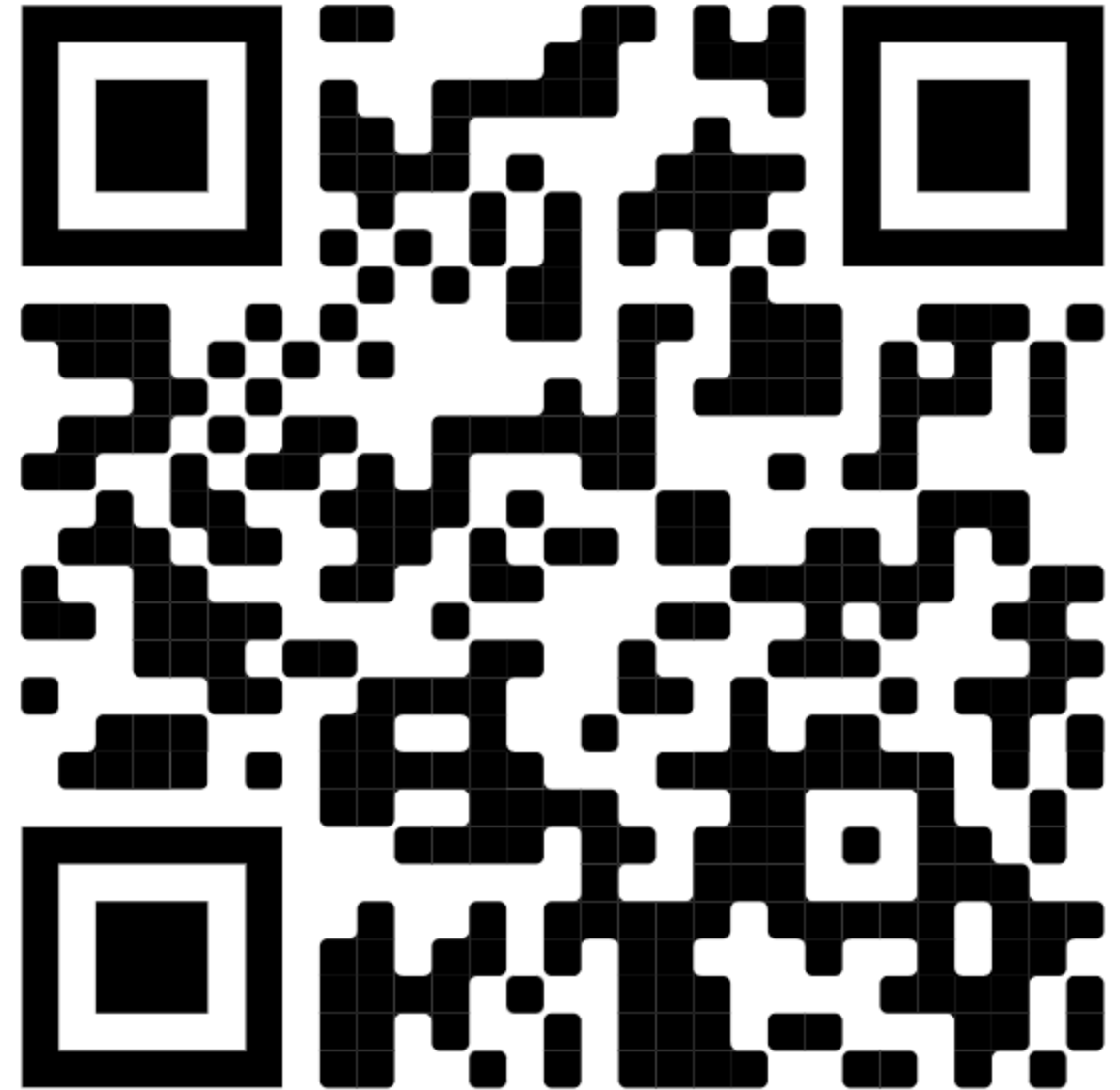
What kind of waste do you see on your jobsite / in your work?





# Waste Factor – Per Day

Place your guess! Enter in a number of minutes.



🌐 When poll is active, respond at **pollev.com/blaketormey896**

📱 Text **BLAKETORMEY896** to **22333** once to join

## Waste Factor - Per Day

5-10 Mins

15-30 Mins

35-60 Mins

60-120 Mins

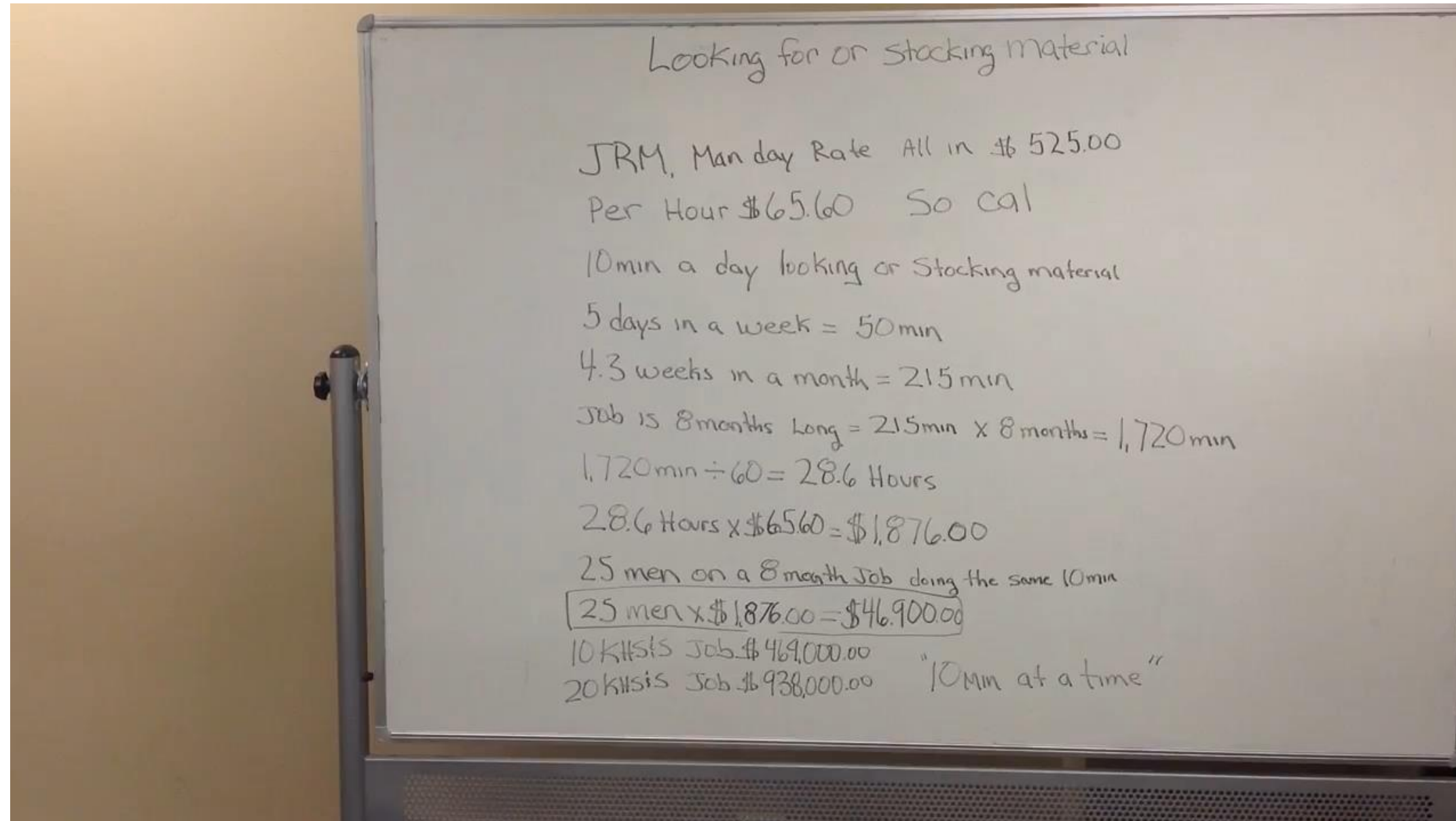
120+ Mins

Start the presentation to see live content. For screen share software, share the entire screen. Get help at [pollev.com/app](https://pollev.com/app)





# Waste Factor Video







# Waste Factor – Per Day

Man day rate all in **\$525.00**

Per hour **\$65.60** So Cal

10 Min a day looking / stocking material

5 days a week (5x10) = 50 mins

4.3 in a month (4.3x50) = 215 mins

Job is 8 months long = 215min x 8 months = 1,720 minutes

1,720 mins /60 = 28.6 hours

28.6 hours x 65.60 = **\$1,876.00**

25 Men on a 8 month job

25 x \$1,876 = **\$46,900**



# Full Dress Rehearsal - WWP & Daily Stand Up Meeting

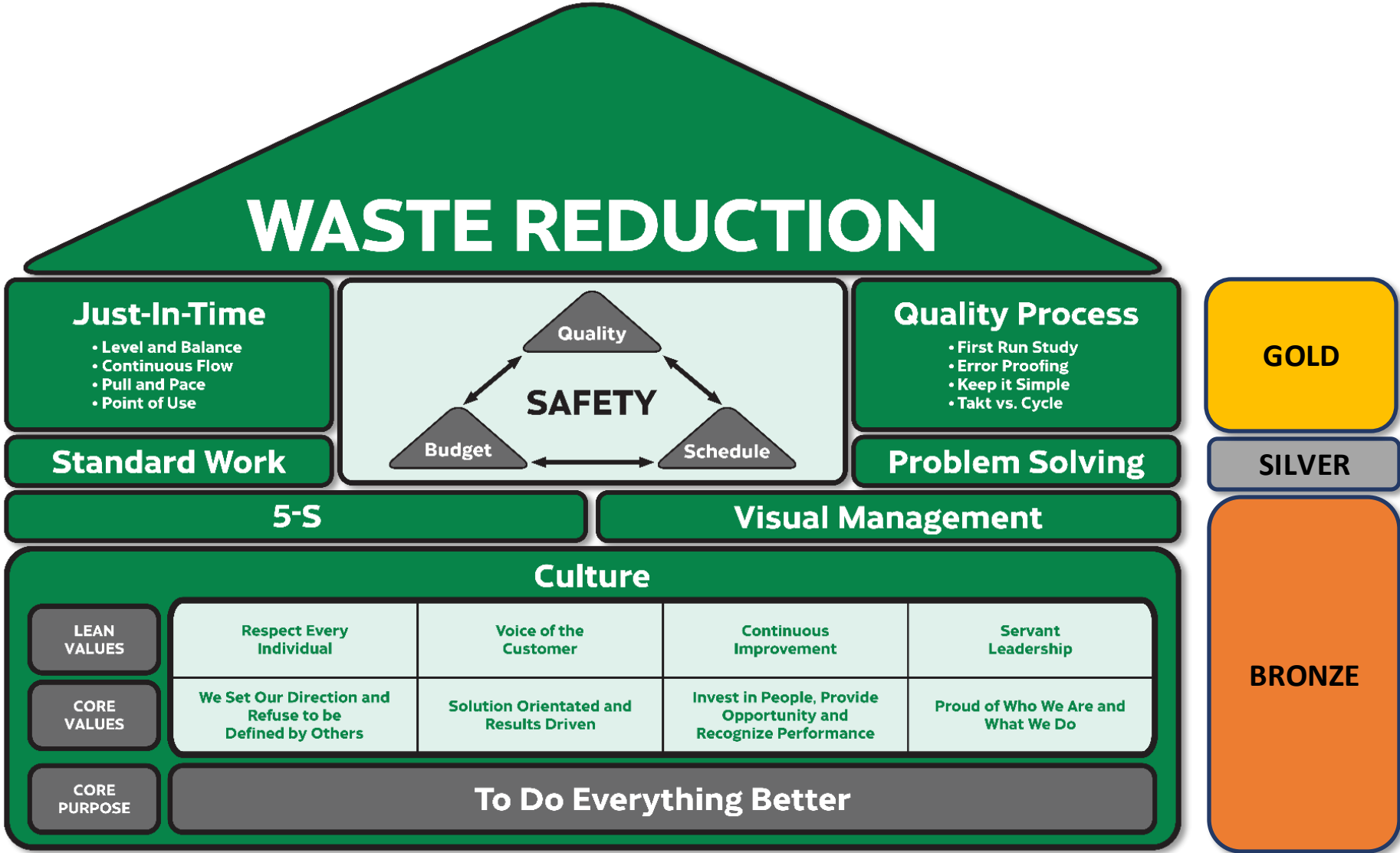
- Lean Assessment Process
- Stand-up meeting & board assessments
- WWP & Stand Up
  - Write a plan and run a daily stand up meeting
  - Conduct actual assessments of each stand-up meeting.



# Certification & Recognition Programs



# Bronze Continuous Improvement Program (CIP)




# Bronze Continuous Improvement Program (CIP) Handout

Theme:

1) Bronze Continuous Improvement Plan (Anaheim)

2) Introduction to Lean - Awareness Basics

3) Coaches Greg Stedman and Blake Tormey



Name:

Position: Foreman

	# of actions	# complete	% complete	Status
LEAN TRAINING:	23	0	0%	Incomplete
LEAN APPLICATION	17	0	0%	Incomplete
SELF LEAN EDUCATION:	6	0	0%	Incomplete
Totals	46	0	0%	Incomplete

Start Date:

Expected Completion:

Bronze Certified By:

Date:

LEAN TRAINING:

ID	Action Item	Due Date	Status	Notes
1	Lean Basic Training (Course 1)			
2	Lean House Overview			
3	8 Types of Waste			
4	Culture Training			
5	Core Purpose			
6	Core Values			
7	Lean Values			
8	5-S Training			
9	Visual Management Training			
10	Last Planner System (LPS)			
11	Waste Walk Sheets			
12	Standard Work for Leaders			
13	Lean Stand Up Board			
14	Weekly Work Plan			
15	WWP Map			
16	Progress Map			
17	Material Map			
18	Variance Chart			
19	Constraint Log			
20	Lean Assessment Process			
21	Servant Leadership Video			
22	Kim's Game			
23	Bronze Certification			

LEAN APPLICATION

ID	Action Item	Due Date	Status	Notes
1	Achieve 75% or higher for 3 consecutive months on Lean Assessments			
2	Create complete WWP with no coaching			
3	Display Variance on board and describe what they mean			
4	Conduct stand up meeting with no coaching			
5	Recorded daily use of Foreman Walk Check-In			
6	Create SWFL and walk a coach through it			
7	5-S all gang boxes (Everything has a place and everything in its place)			
8	3 month sustainment			
9	Inventory control systems in place and sustained			
10	Tool control systems in place and sustained			
11	Effective visual management			
12	Able to coach 5-S to teams			
13	Able to coach 8 wastes to teams			
14	Able to coach Lean House to the teams (expert in Culture, 5-S and VM)			
15	Can conduct Kim's and 5-S game with team			
16	Utilizes +/-Δ			
17	Any innovative improvement that can be shared			

SELF LEAN EDUCATION:

ID	Action Item	Date	Status	Notes
1	Book Review			
2	Everything I Know About Lean I Learned in First Grade			
3	5-S for Operators			
4	Lean Research:			
5	Any article on any lean value			
6	Examples of 5-S in other industries			

Bronze Follow Up:

Date	Coach	Issues	Notes

Discussion/Follow Up Points:





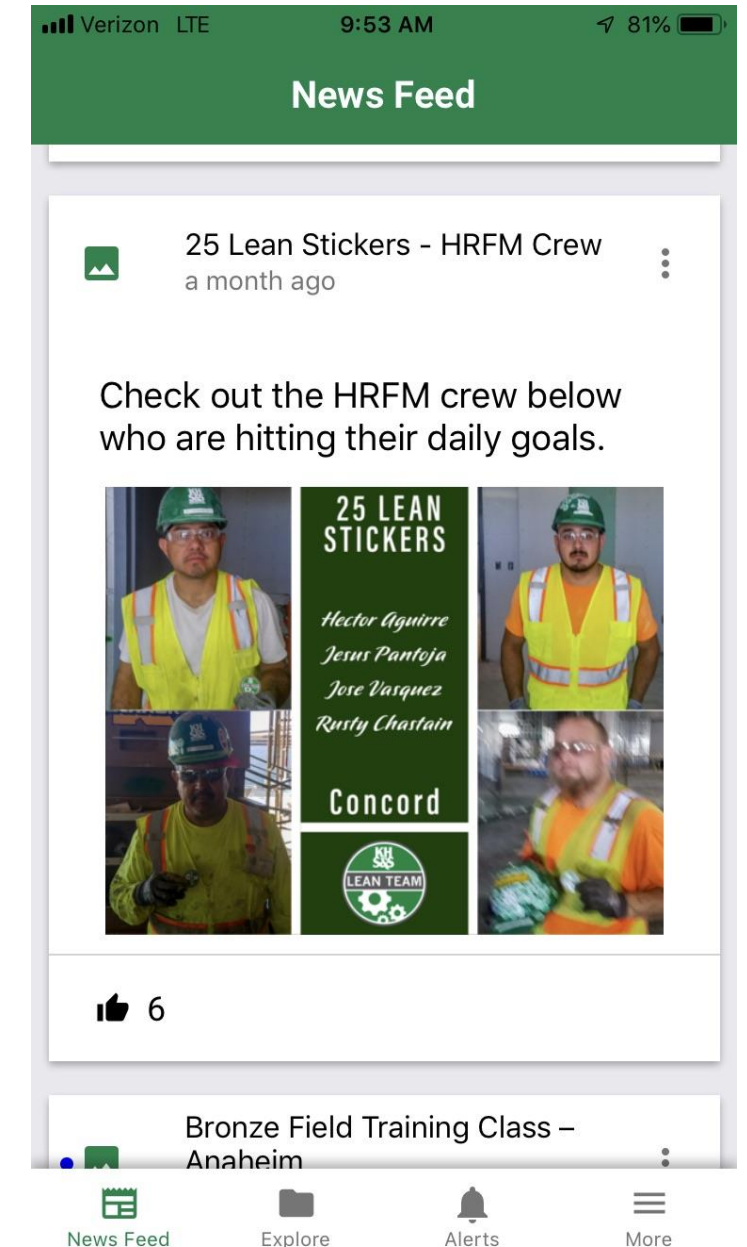
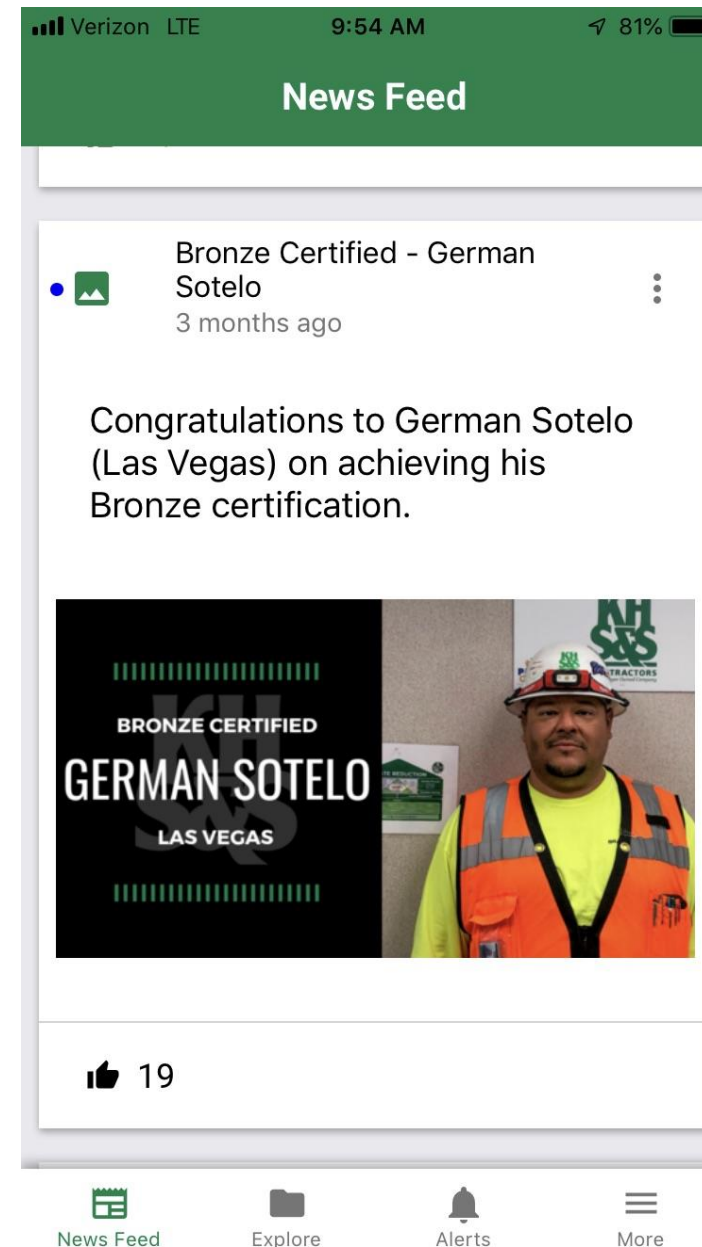
# Bronze Certification and Recognition

- Bronze Certification
- \$1/hr increase from completion
- Recognition program
  - Stickers
  - T-Shirts



# Bronze Certification and Recognition

- Recognition program
  - Vests
  - Social Media (Internal)





# Bronze Certification and Recognition

- Recognition program
  - Lean Champion of the Quarter
  - President's Award





# Group Discussion



What do you currently do for recognition?

How intentional are you about recognition?

# Table Discussion

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What challenges do you encounter in implementing or sustaining recognition programs?

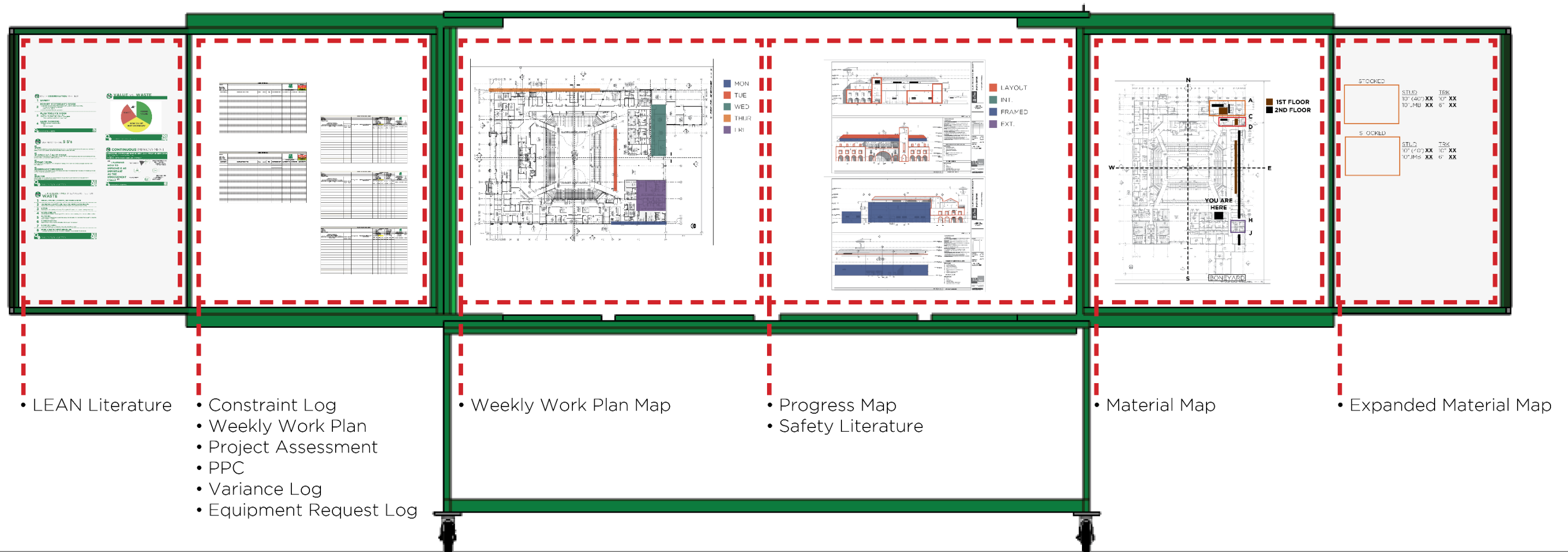
What are the best practices or successes around recognition programs?

# How to Set Up a Daily Stand-Up Board



# Stand Up Board

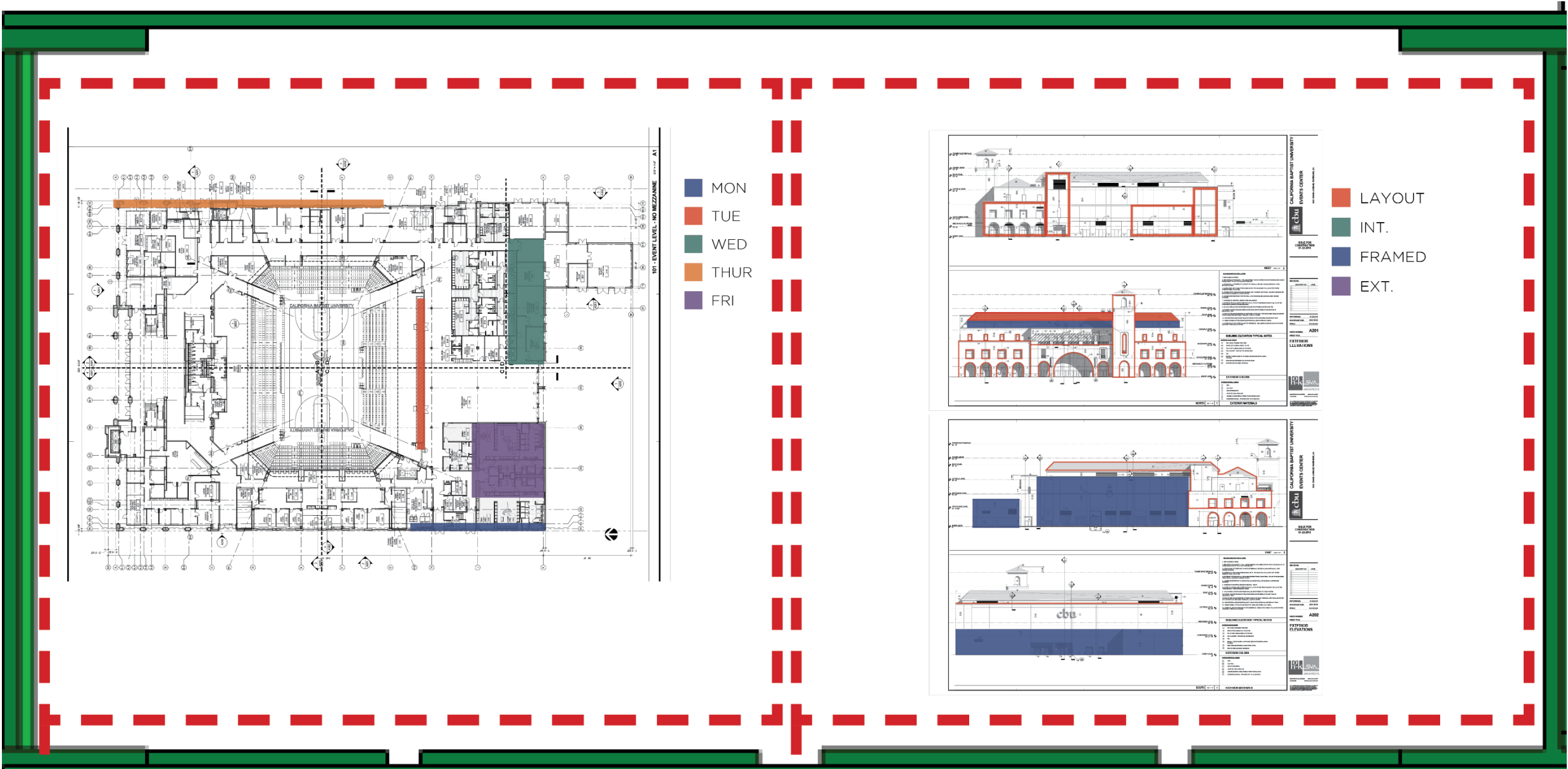
The board is the tool that enables the meetings and learnings that build the culture.



# Stand Up Board Zoom into three segments – Agenda Handouts

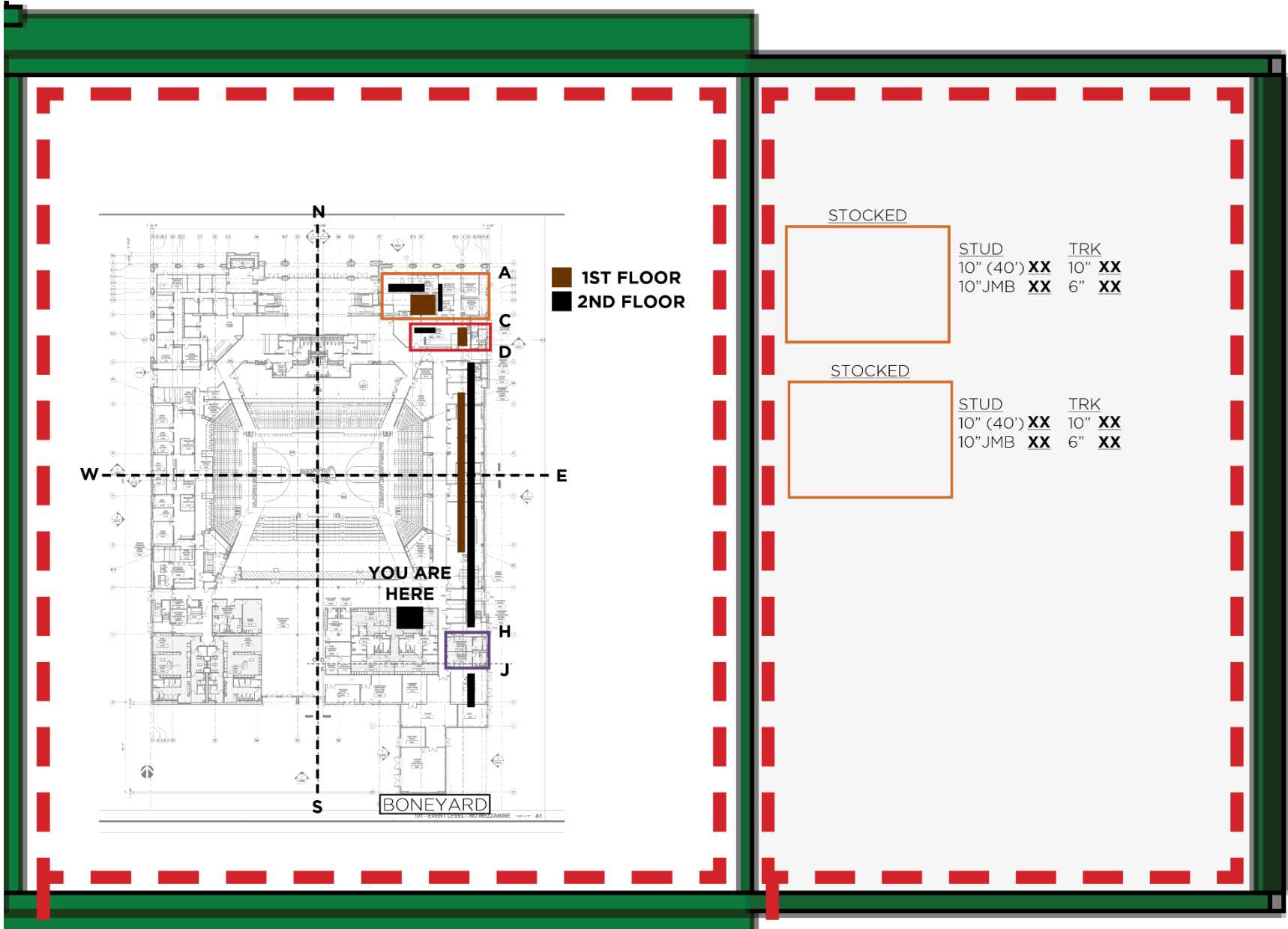
[illegible]

# Stand Up Board





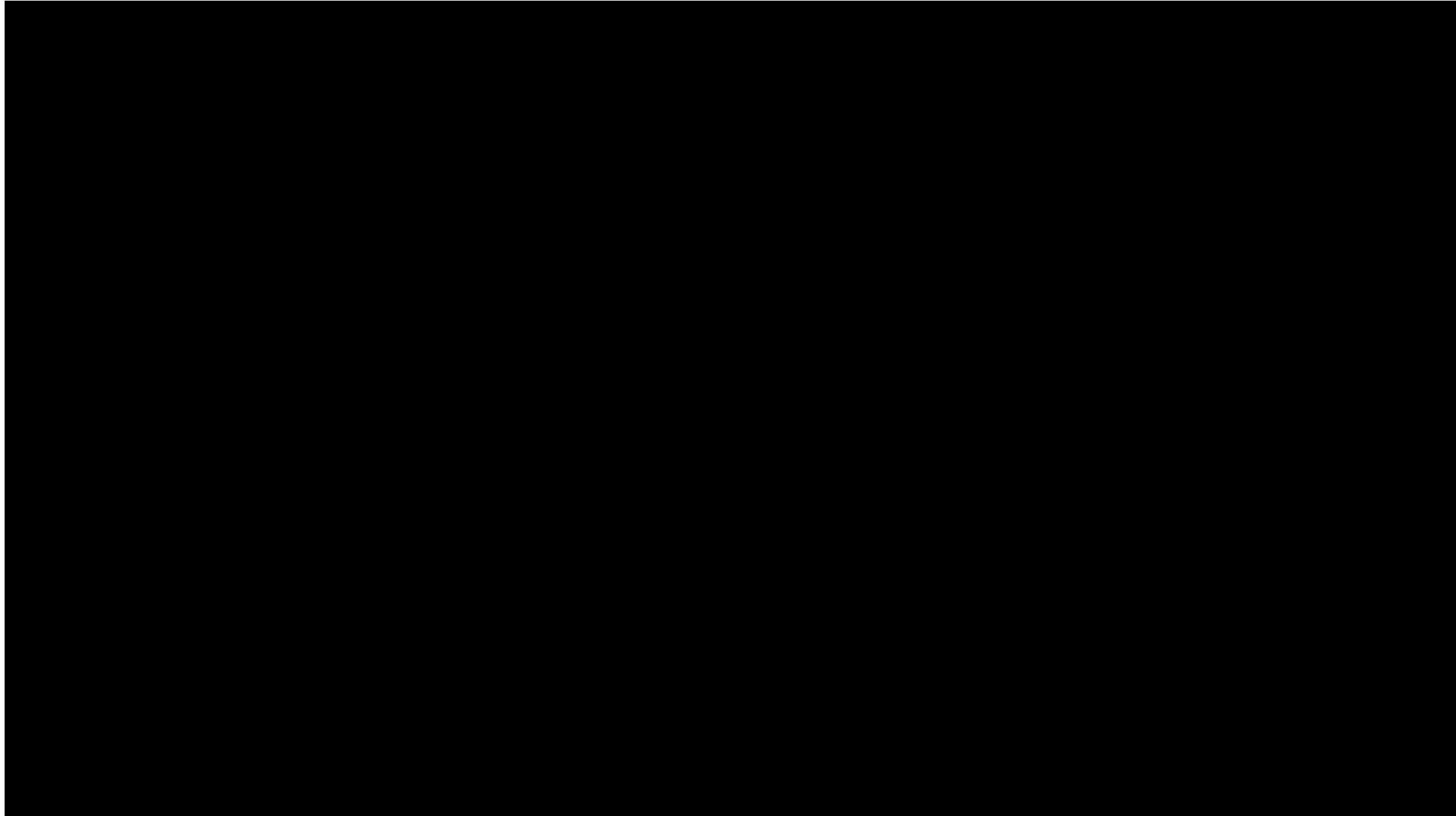
# Stand Up Board



# Lean Stand Up Meeting



# Lean Stand Up Meeting



# Assessment Program





# Assessment Program

- Assessment form



How to use the assessment information to coach



# Assessment Program Handout



## Lean Project Assessment Daily Coordination/Stand-Up

Supervisor: \_\_\_\_\_

Foreman: \_\_\_\_\_

Project: \_\_\_\_\_

Date: \_\_\_\_\_

Assessed By: \_\_\_\_\_

SCORE: 0.0% 0.0

Score of 100% - 90% Excellent, 89% - 80% Good, 79% - 70% Fair, 69% - 60% Lacking, 59% and below Poor				
Rating: 5 - Excellent, 4 - Good, 3 - Fair, 2 - Lacking, 1 - Poor, 0 - Fail, or N/A - Not Applicable				
1	Stand Up Board (Assess preparation for meeting)	Pts Avail.	Rating	Score
a	Organization of Stand Up Area (well lit, enough room for all teams, area clean, etc)	5		0.0
	Stand Up Board Complete - 14 items (WWP, Constraint Log, PPC Chart, Work Plan Map, Stand-Up Meeting Agenda, Value vs Waste, 8 Types of Waste, 5S's, 2 Second Improvement, Lean House, VM Triangle, Point of Use, Needs Board, +/- chart)	5		0.0
b	Stand Up Board Layout - Board organized? WWP & Constraints next to maps etc?	5		0.0
c	Weekly Work Plan - Tasks, Locations, Material, Goals, Cost Codes, Hours, mid-day?	20		0.0
d	Weekly Work Plan Map - Completed with Task Legend & Day Colors, match WWP?	20		0.0
e	Backlog Work Identified for all? Back log for all team members?	10		0.0
f	Plus/Delta Completed within past 2 weeks? Are deltas being addressed?	5		0.0
g	Needs Log being utilized and needs addressed within 7 days	5		0.0
h	2-Second Improvement Completed within past 2 weeks? Ideas being discussed?	5		0.0
i	Sign In Sheets - Are all employees signing in properly? Used to track timecards?	15		0.0
j	Material Management Foreman has good control of material in scope?	20		0.0
k	Constraint Log/Map Identification up to date (Red/Green dots Progress/WWP map)?	20		0.0
	SUBTOTAL	135	0.0%	0.0
2	Stand Up Meeting (Assess execution of meeting)	Pts Avail.	Rating	Score
a	Start On Time? 15 minutes before start time	5		0.0
b	Safety - Topic Covered? Stretch and Flex? Safety demonstration? Risk Mitigation?	10		0.0
c	Report Yesterday's Work - Did crew follow agenda and report Completed, Point of Use, Yes/No, variances, utilize WWP map?	20		0.0
d	WWP Completed Correctly - Did foreman ensure the WWP is filled out correctly? Completed? Hours? Yes/No? Variance? Is it legible?	20		0.0
e	Plan Today's Work - Did crew follow agenda and use WWP & Maps, commitment to plan, ID constraints, risk mitigation?	20		0.0
f	Analyze Tomorrow's Work - Did crew follow agenda and is looking ahead at future work and discussing needs such as material, tools, constraints, and information?	20		0.0
g	Lean Thinking - Teaching examples, waste, variances, improvements...	10		0.0
h	Finish On Time? 15 minutes maximum for meeting	15		0.0
i	Foremen Presentation Teach vs Tell? give energy? set example? Servant leader?	15		0.0
j	Field Participation Engaged? Talking about constraints? Getting a voice?	20		0.0
k	Loitering after meeting? Team members departed area right after end of meeting? (< 3 min = 5, < 5 min = 4, < 8 min = 3, < 10 min = 2, < 15 min = 1, > 15 min = 0)	15		0.0
	SUBTOTAL	170	0.0%	0.0
3	Job Walk (Go Look, Go See what is happening at start of day)	Pts Avail.	Rating	Score
a	Work areas clean and organized Trash getting dumped? Area swept?	20		0.0
b	Tools & Equipment - Correct for today's work? Enough? Working properly?	20		0.0
c	Consumables Inventory control over shots, pins, screws, gloves, etc	15		0.0
d	Foreman area organized Sort, Set in Order, Shine, Standardize, Sustain?	10		0.0
e	Gang boxes/Chop saw boxes organized Sort, Set in Order, Standardize, Sustain?	15		0.0
f	Material at Point of Use? Amount, type, location match WWP? 15-20 ft from work?	20		0.0
g	All Material organized on jobsite?	20		0.0
	SUBTOTAL	120	0.0%	0.0
	TOTALS	425	0.0%	0.0
Below: Key in observations/notes by numbers and letters of categories (such as 1e, 3c, etc.)				
4	Job Site Observation/ Notes:			



# Summary & How can you apply this tomorrow?

- Education
  - Customized to company core **purpose and values**
  - Create a training course **specific to your business**
  - Use training time for **hands-on learning** that will be **applied in the field immediately**
- Certification & Recognition
  - Create **support and accountability** mechanisms that carries the application and growth further
  - Provide an **incentive** to change culture - WIIFM
  - **Recognize** Lean growth & behaviors
- Enabling Tools
  - Create **tools to enable** culture change
- Coaching
  - Create **feedback** system for lean coaching and growth



# 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 26<sup>th</sup> Annual LCI Congress!