

# BUILDING the FUTURE TOGETHER



Please wear you mask  
during all session





IAN WARNER

CONSTRUCTION SOLUTIONS ARCHITECT - TRIMBLE






**JEFF PERRY**

BUSINESS DEVELOPMENT AND SALES – DUSTY



The background is a complex isometric illustration of an industrial or technological environment. It features a grid of lines and various geometric shapes, including cubes, cylinders, and pipes, creating a sense of depth and structure. The color scheme is a gradient from deep blue on the left to a vibrant red on the right, with the text centered in the middle.

# NEW INDUSTRY TECHNOLOGY



The background is a complex isometric architectural drawing, possibly of a building's internal structure or a large-scale construction project. It features numerous rectangular blocks, beams, and structural elements arranged in a grid-like fashion, creating a sense of depth and perspective. The drawing is rendered in a light blue color, which blends into the overall gradient of the image. The gradient itself transitions from a deep blue on the left to a vibrant red on the right, passing through a purple hue in the center. The word "TRIMBLE" is centered in the middle of the image, written in a clean, white, sans-serif font. The letters are bold and have a slight shadow, making them stand out against the busy background.

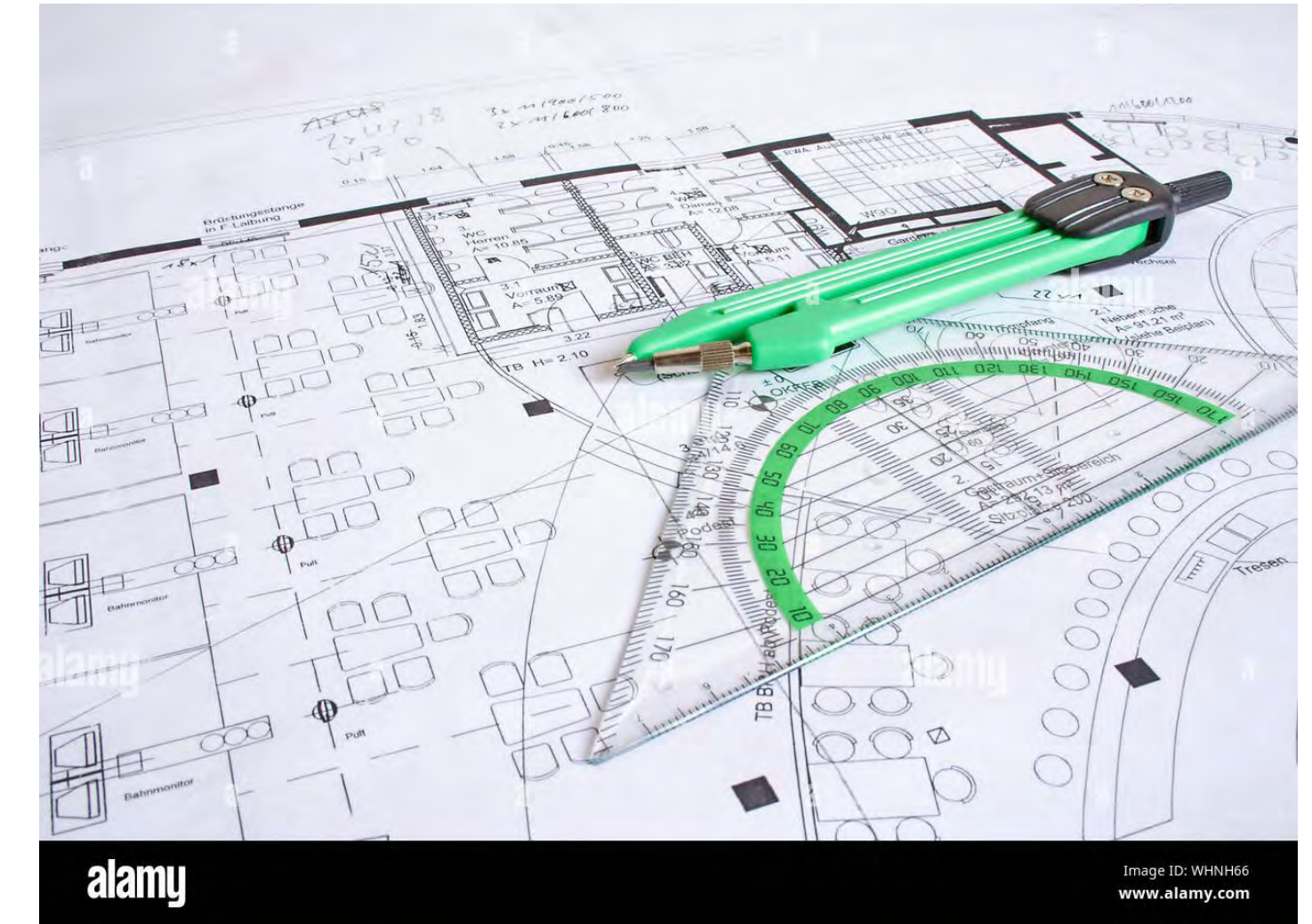
TRIMBLE



# START WITH THE BASICS

## Create a Foundation for Future Technology

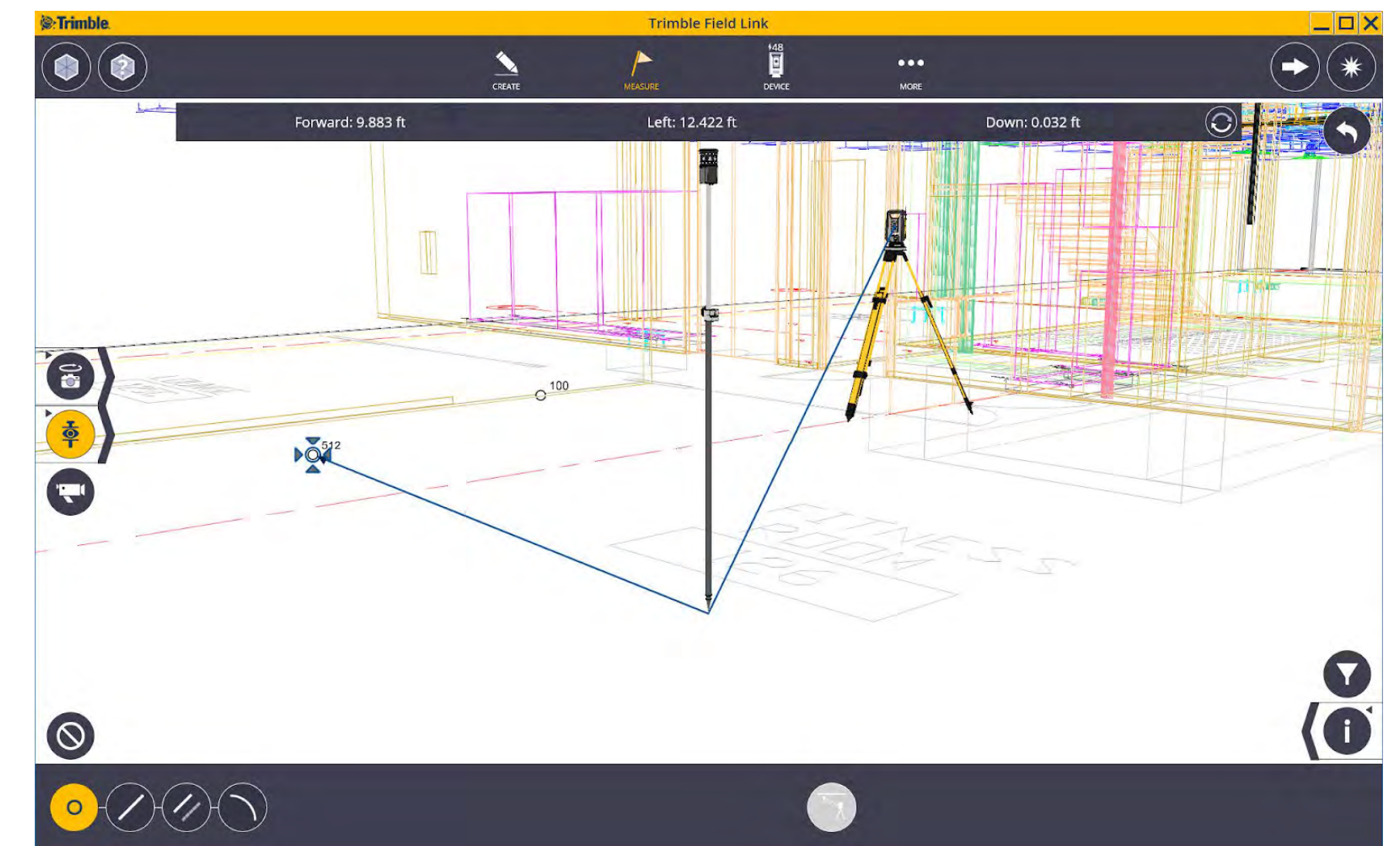
- Plan Reading & Tape Measures
- Trigonometry & Basic Math
- Plumb Bobs, Levels & String Lines
- Builders Levels and Theodolites
- Line & Rotating Lasers





# Robotic Total Stations and FieldLink Software

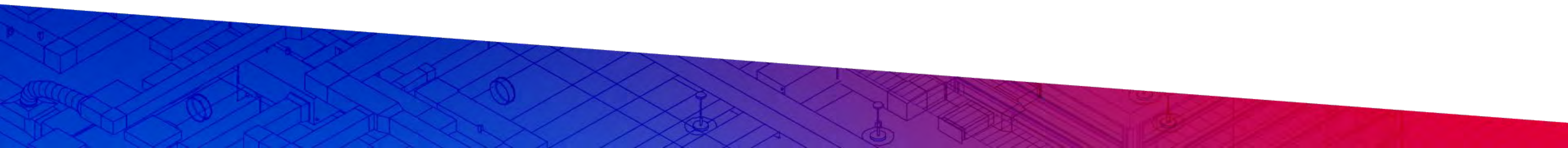
- 5 - 10X Faster than Traditional Layout
- Integrated Laser to Point to Ceiling Layout, Wall Penetrations, or Floors
- Visual Layout Allows Laser to Adjust to Pre-Pour Floor Elevations on Decking
- Switch to Prism to Layout Around Obstacles, in the Dirt or on Pan Decking
- Field Link Controller Software Imports PDF's, DWG, DXF, SKP, IFC & Navisworks Files
- Easy to Learn & Union Training Centers Already Implementing Into Curriculum





# LASER SCANNING

Trimble X7 &  
FieldLink





# BOSTON DYNAMICS - SPOT

Trimble X7 &  
FieldLink





# AUGMENTED REALITY

Connect AR for  
iPad, iPhone and  
Android

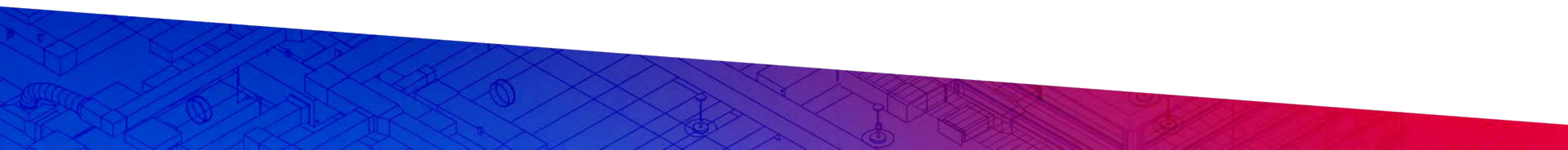
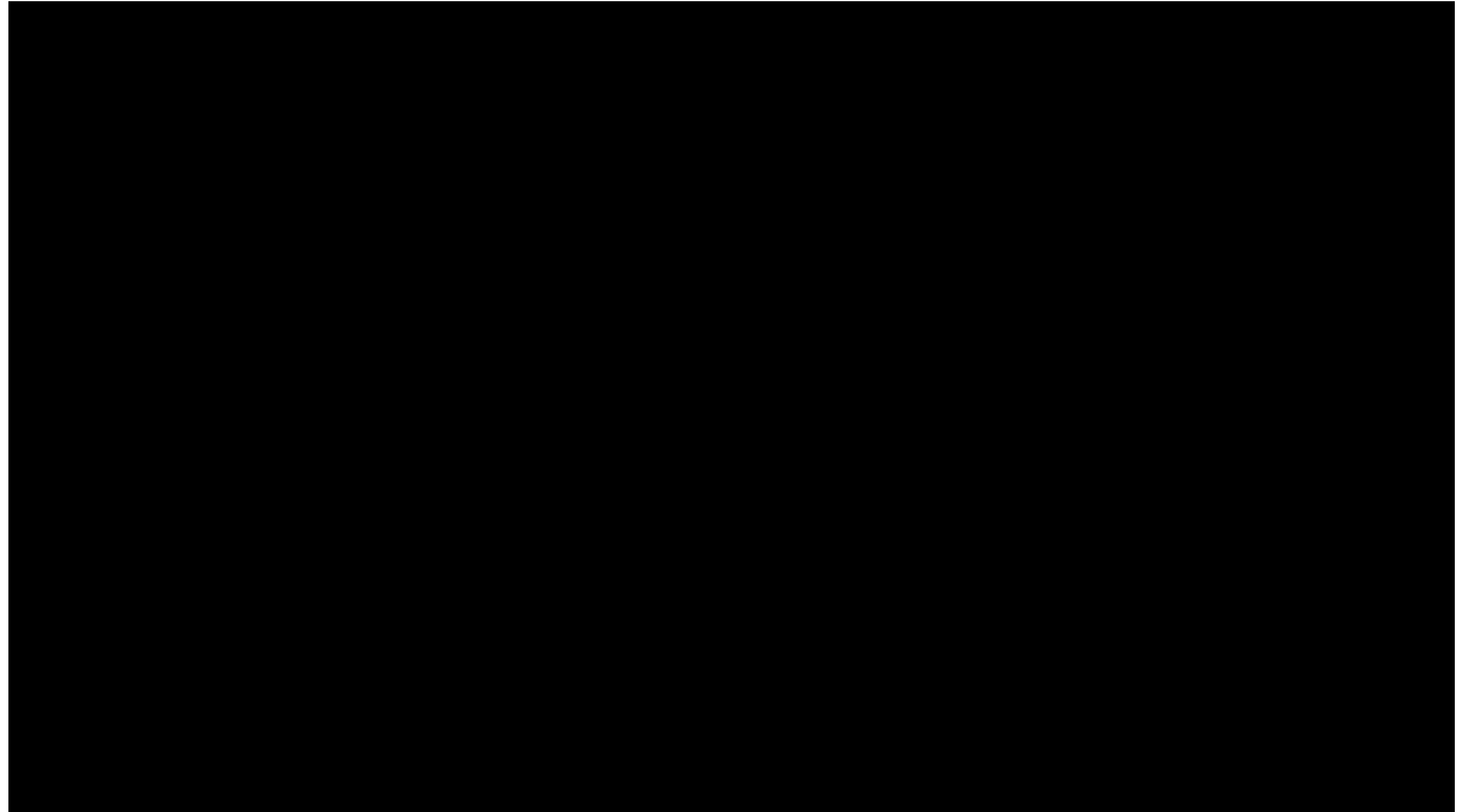
ProjectSight w  
Model & PDF  
Integration





# MIXED REALITY

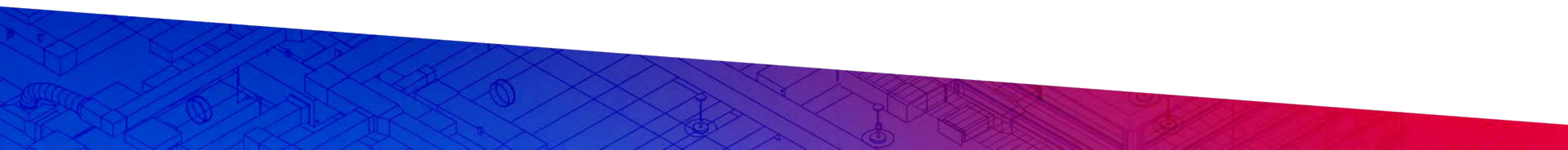
Trimble XR10  
with Connect  
for HoloLens





# MIXED REALITY LAYOUT

Trimble XR10  
with FieldLink





# DUSTY ROBOTICS





# DUSTY ROBOTICS

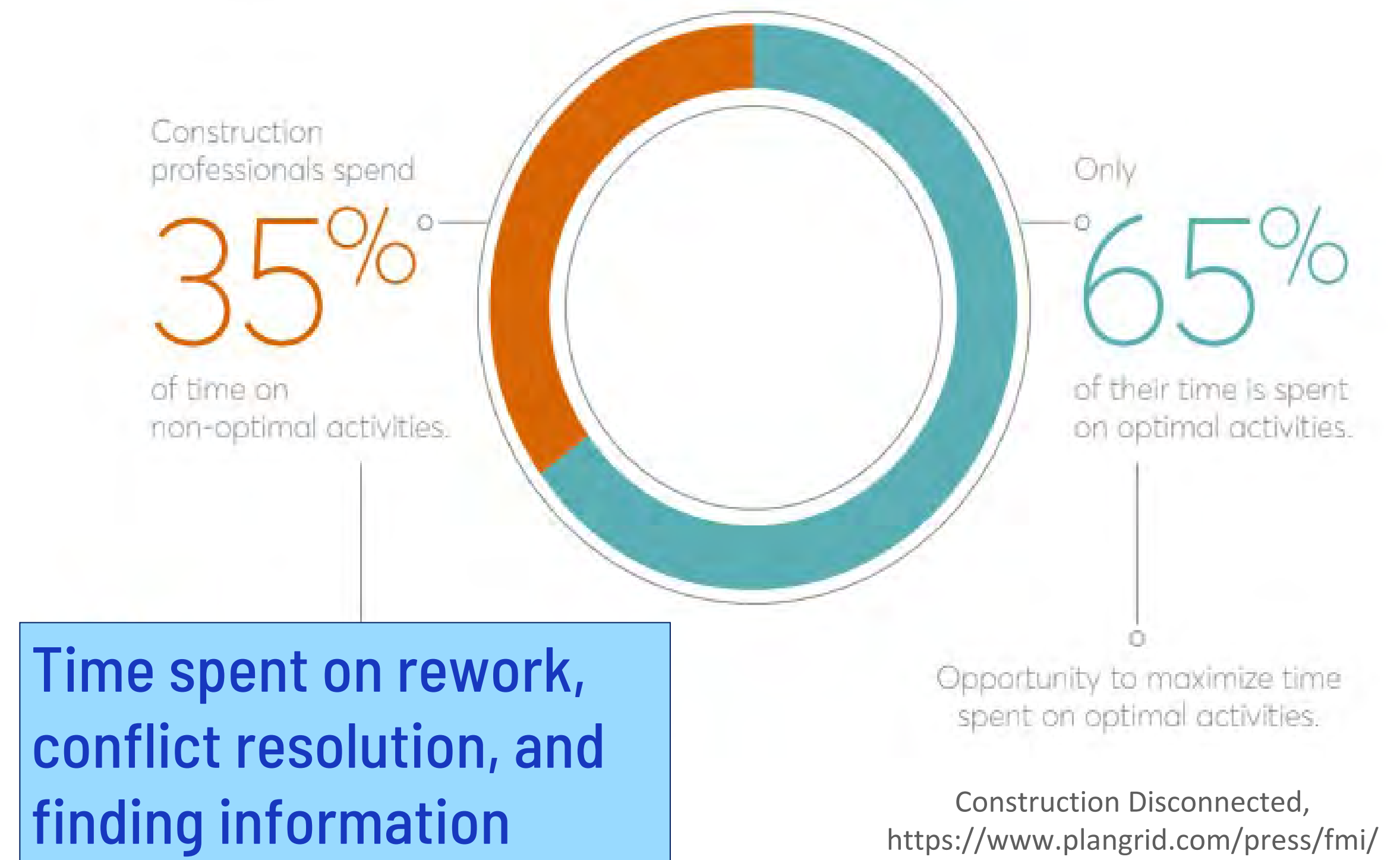
Automating  
construction's BIM-  
to-field workflows





# Skilled foreperson are one of your greatest assets

- Some of the highest-skilled, highest-paid people on the job site
- Responsible for coordinating all work done on site
- Yet a third of their time each week is spent on non-optimal activities





Labor shortages affect the entire industry

78% of construction companies say they are having a hard time filling positions

The average age of a construction worker is 42 and increasing over time



**America desperately needs 1 million more construction workers**

By Vanessa Yurkevich, CNN Business

Updated 6:36 PM ET, Sun July 11, 2021



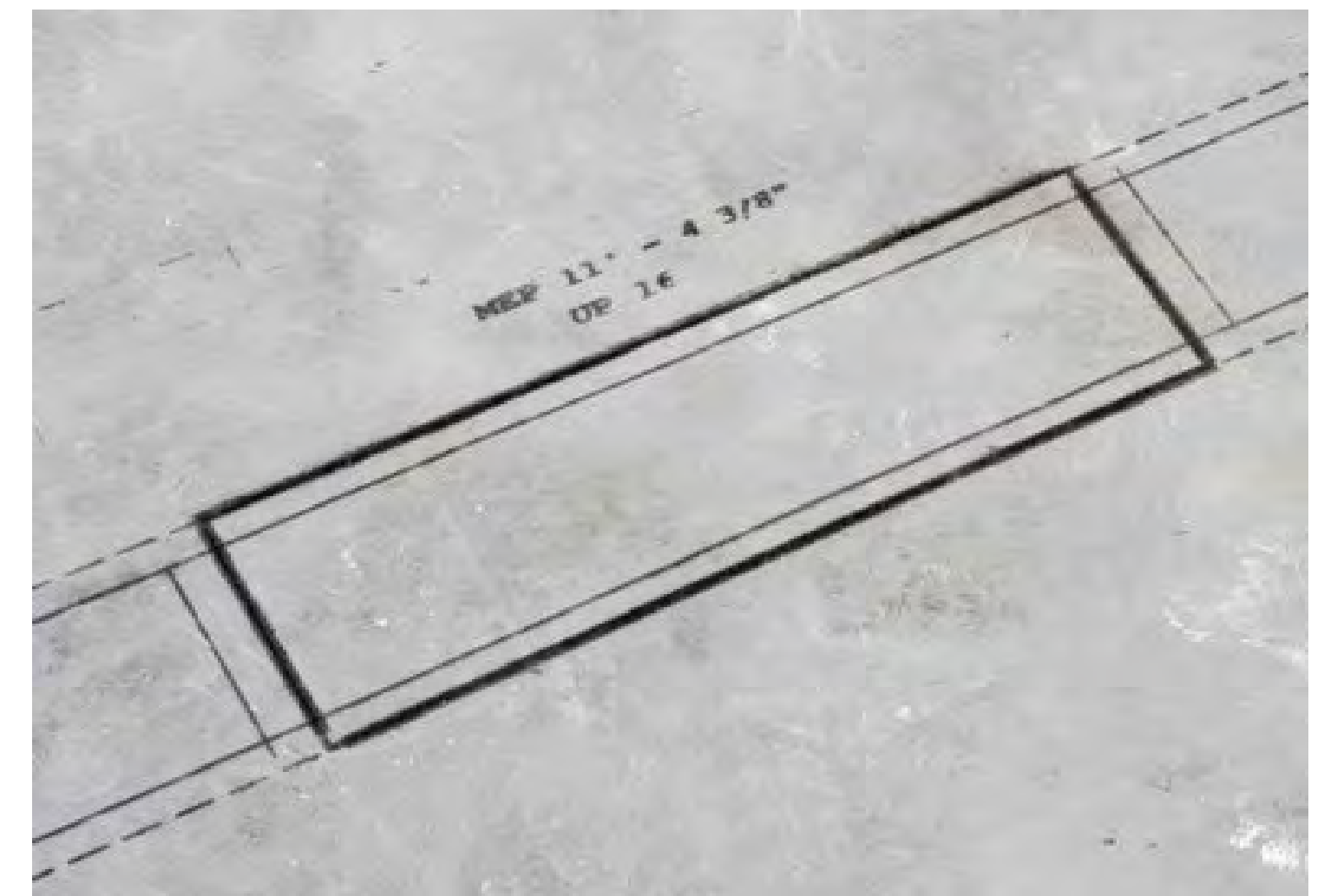
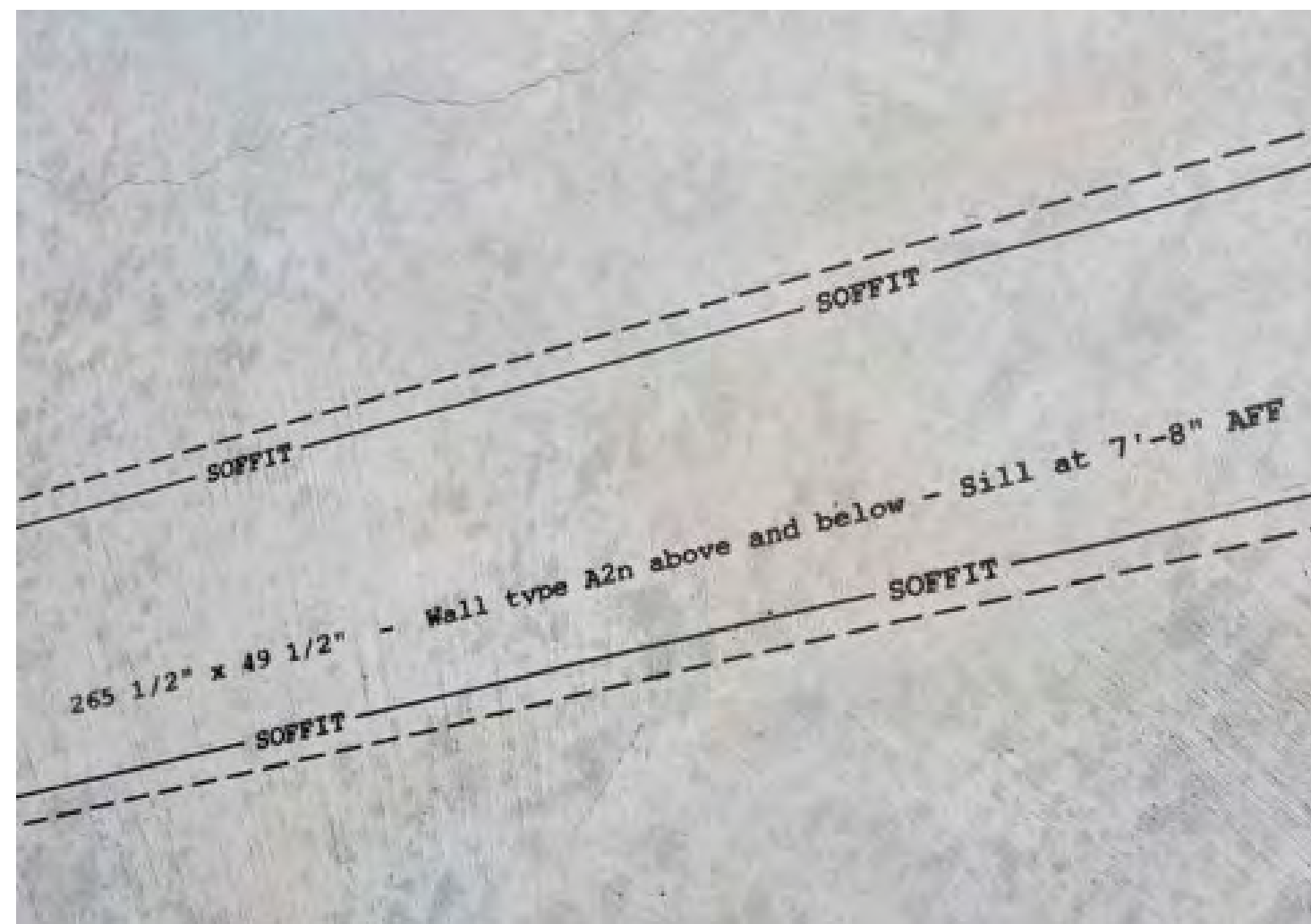
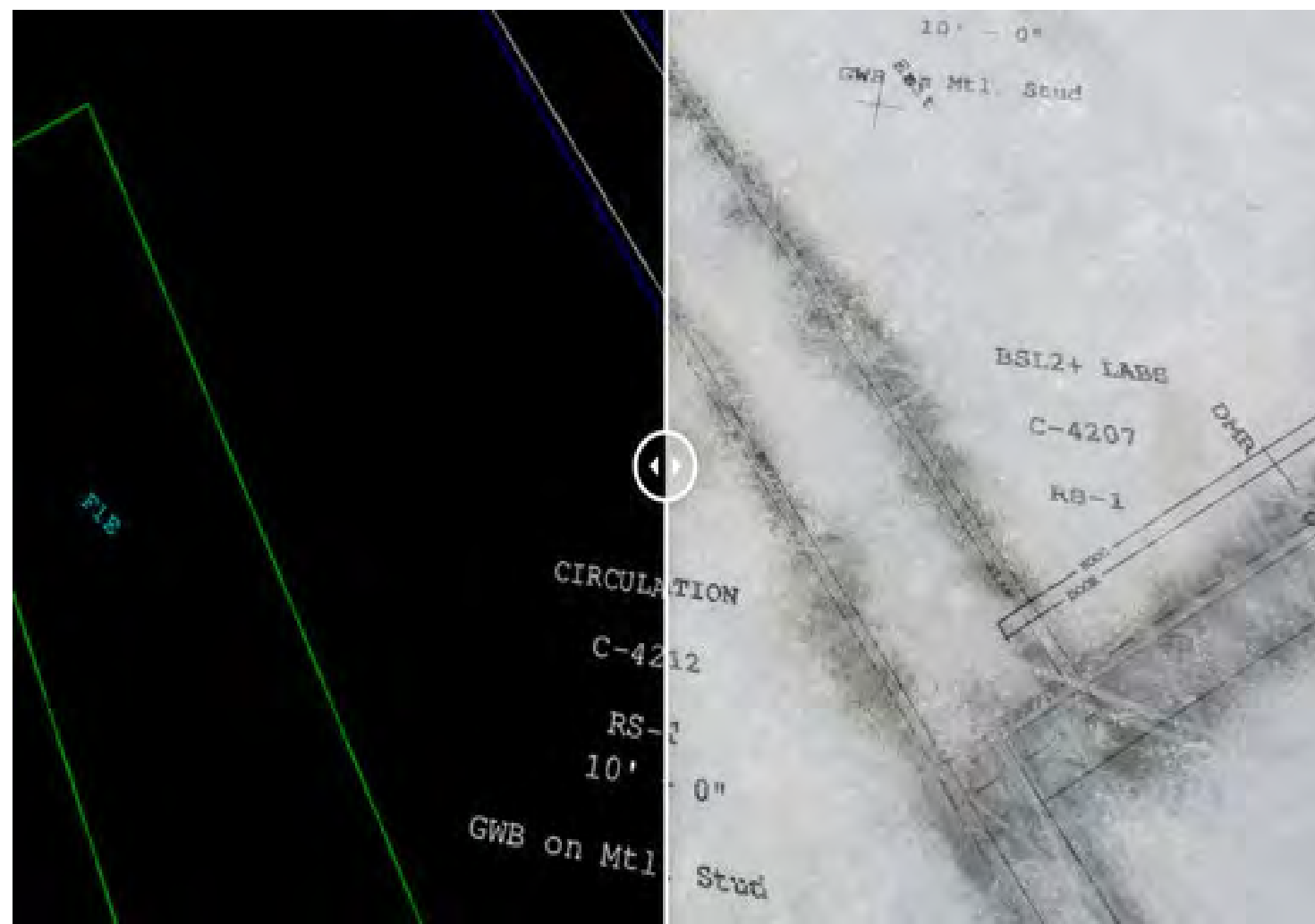
**AGC**  
THE CONSTRUCTION  
ASSOCIATION

Construction Workforce Shortages Reach Pre-pandemic Levels Even as Coronavirus Continues to Impact Projects & Disrupt Supply Chains



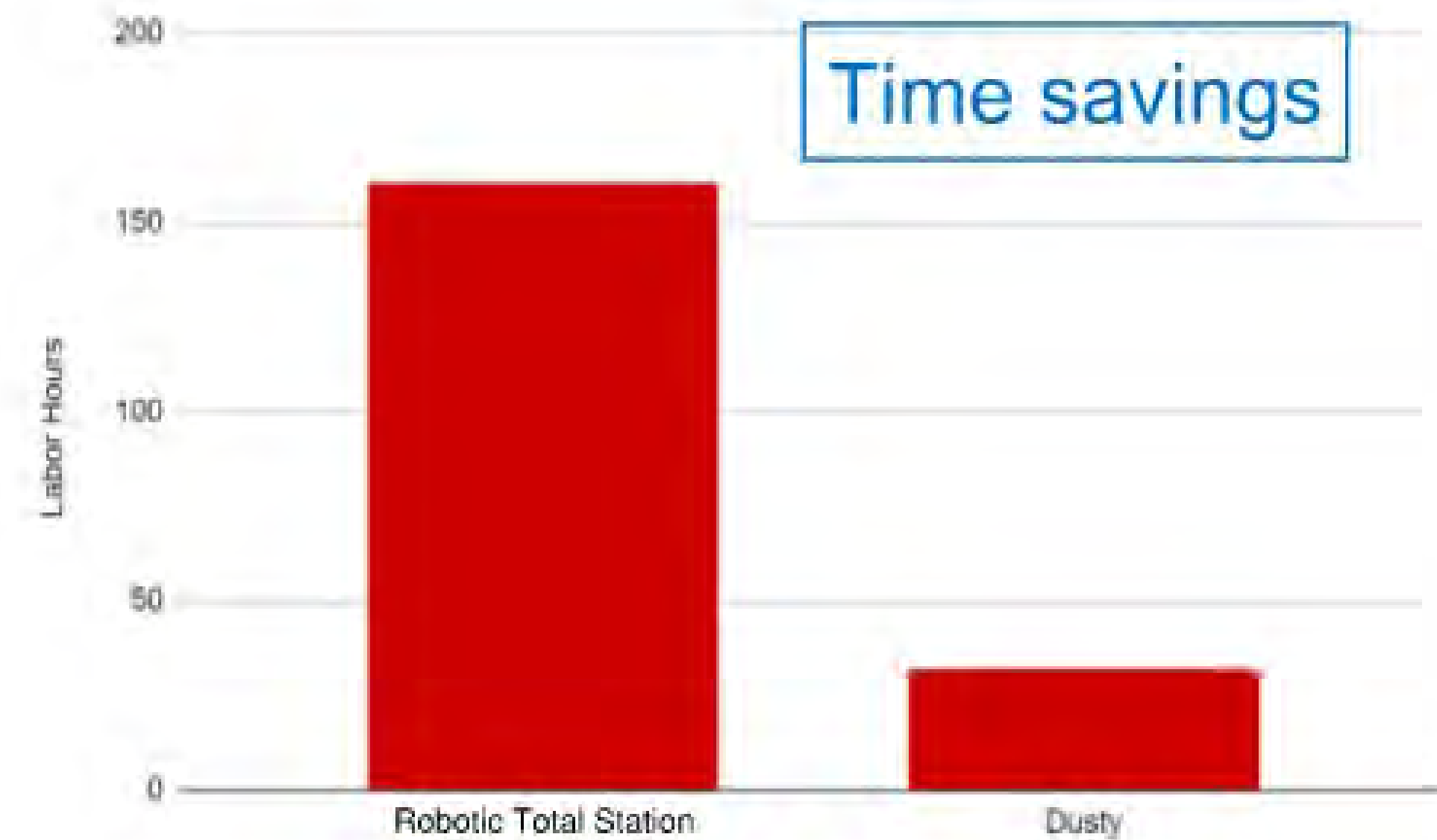
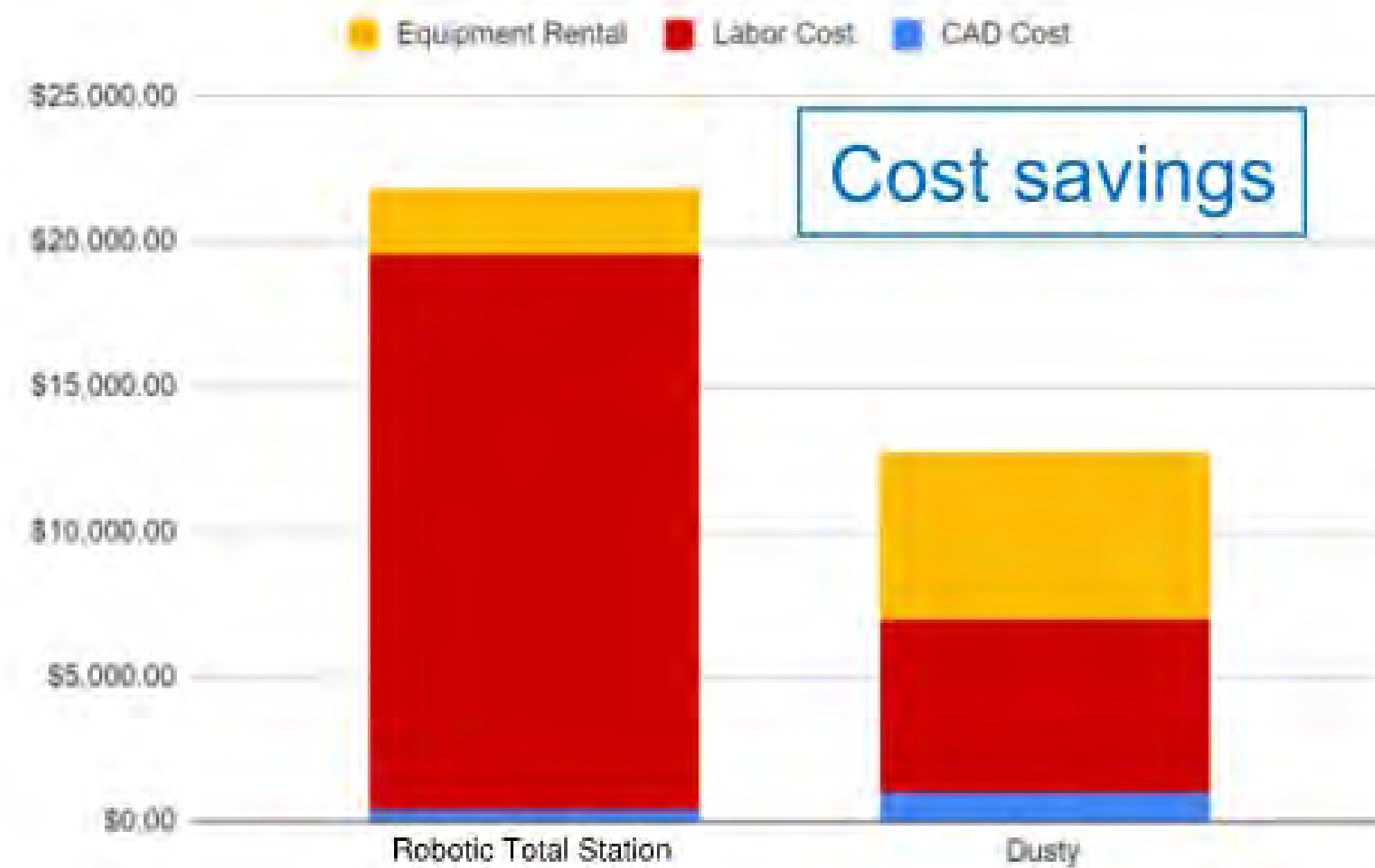
# Layout robots are foreperson-level tools for building from BIM

- Enables all trades to build from a single coordinated model
- Build better by adding useful information like room labels, work instructions or QR codes





# Robotic layout saves cost and time (MEP)



This MEP contractor saw a 50% reduction in layout cost and shaved several days off the schedule



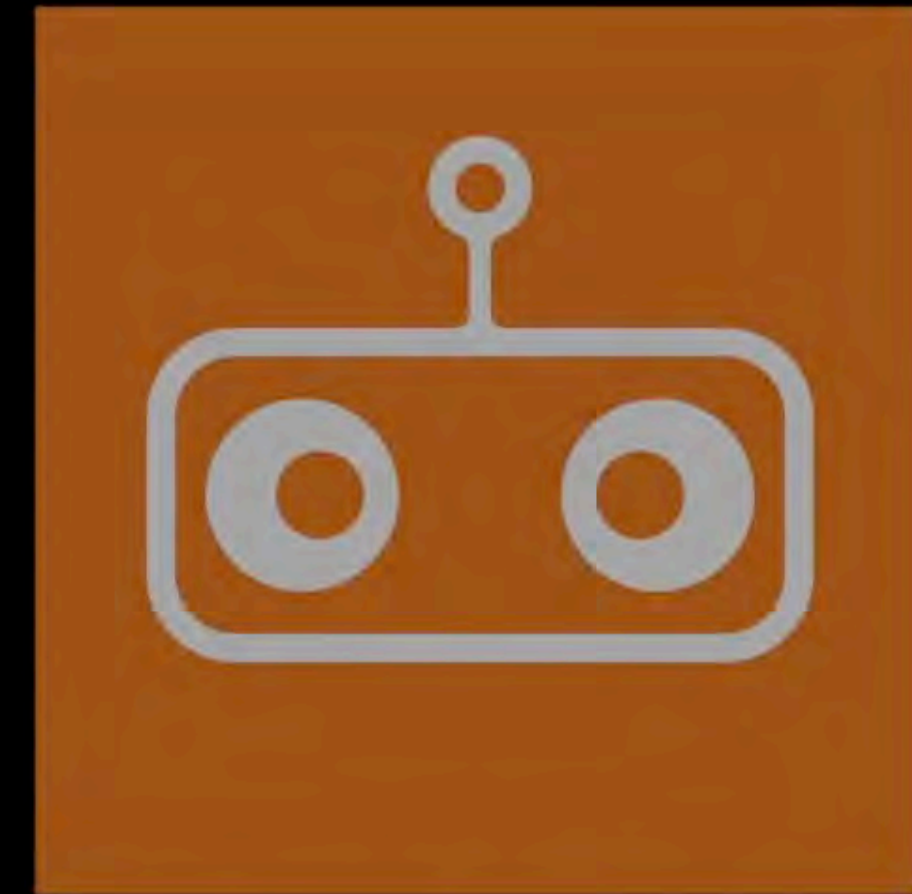
# HOW IT WORKS



# How it works

You need:

- 1) CAD or CSV
- 2) Control
- 3) Clear floor



DUSTY  
ROBOTICS

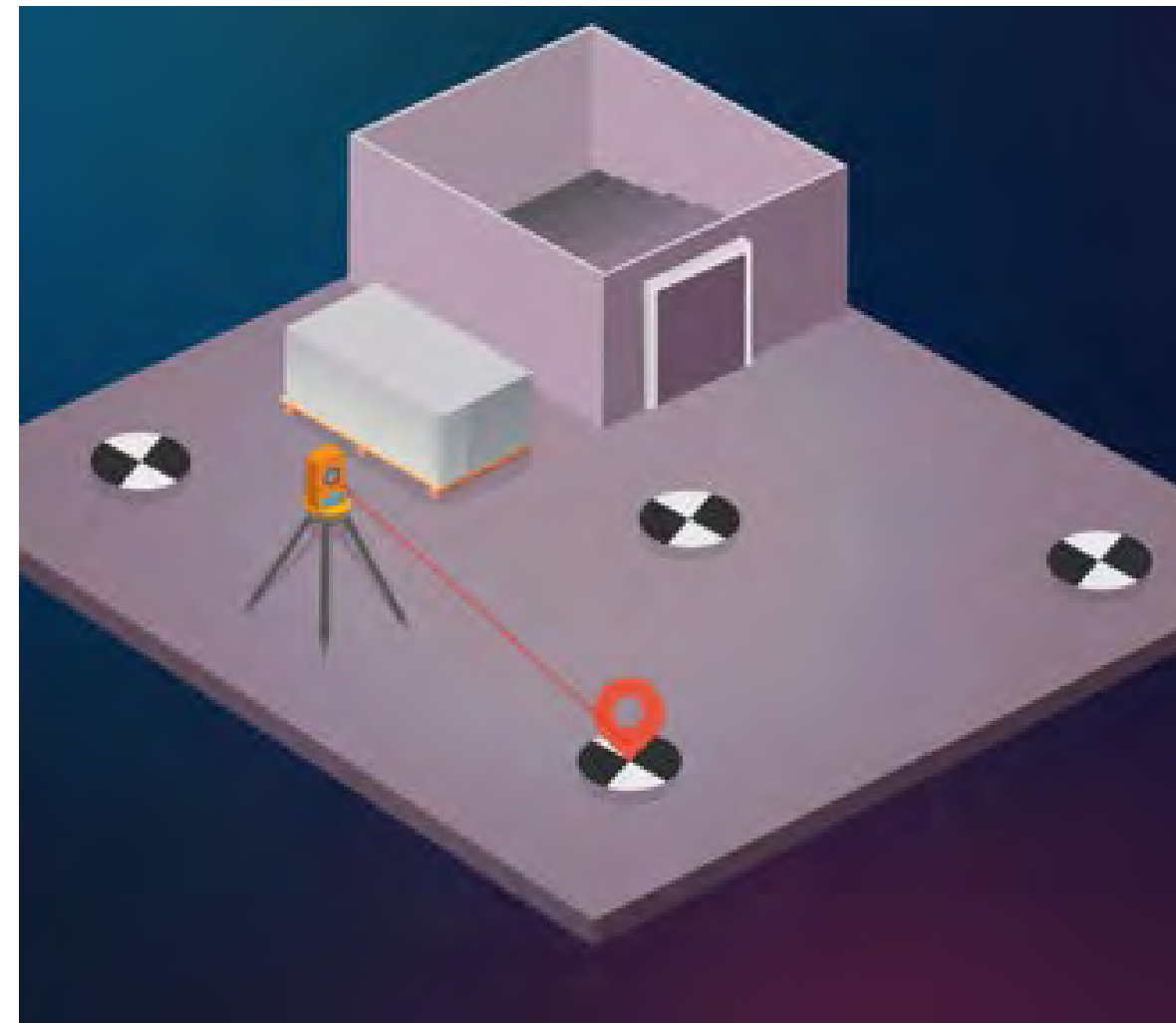


# Sets up with control points

We align the system using surveyor-marked control points or grid offsets

The prism on top of the robot is placed on the control point, capturing its location

Three or more points are needed to ensure accuracy





# Requires clean and clear site conditions

Optimal productivity requires much clearer floor than traditional layout:

- . Typically, one robot completes 10-20k sq. ft./day (depending on scope)
- . Minimal obstructions to keep line-of-sight clear

Ink must reach the concrete:

- . Floor should be broom-swept and dry or damp
- . No standing water, rain, or snow

Tested in temperatures from 20-110°F

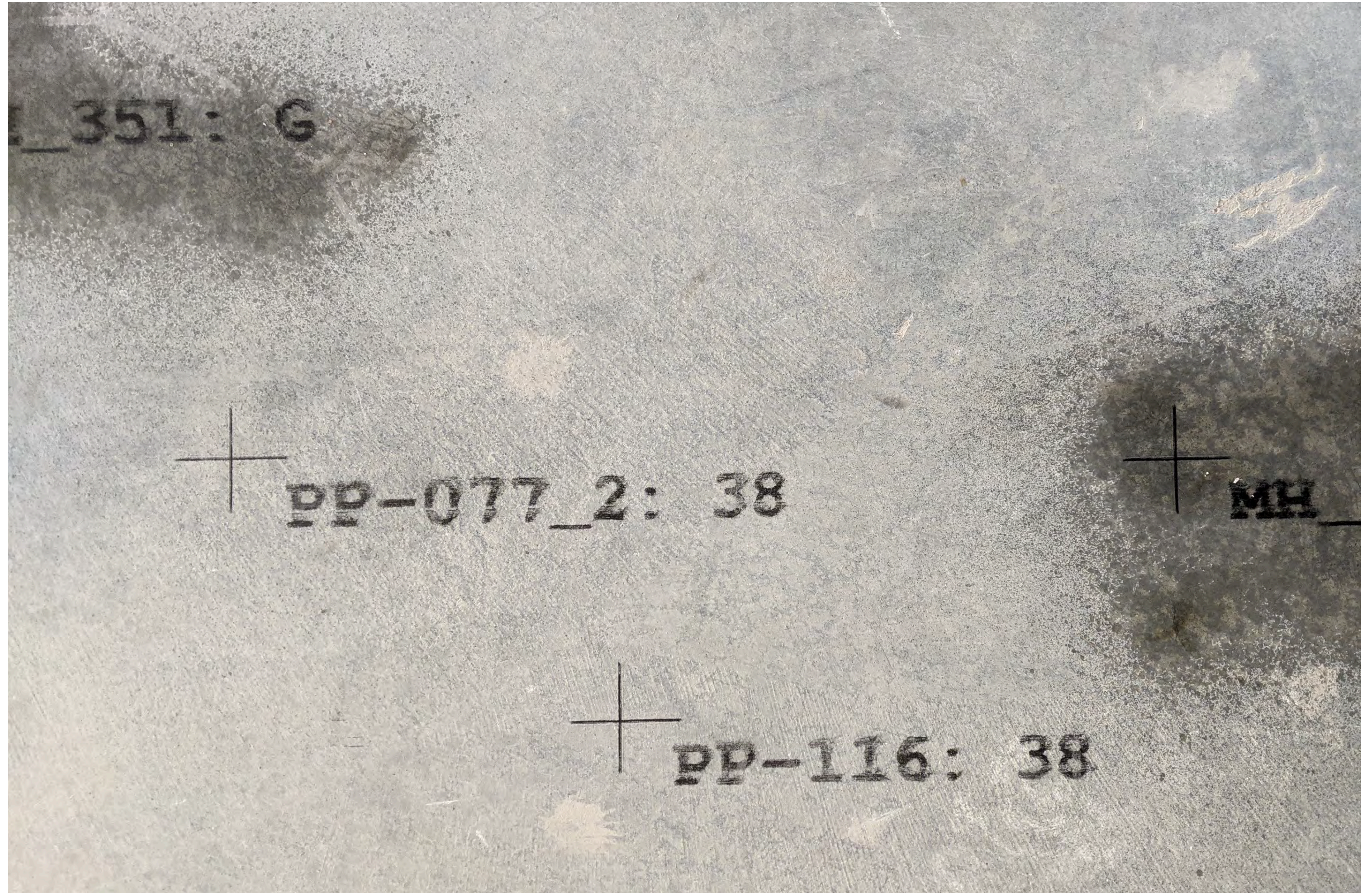




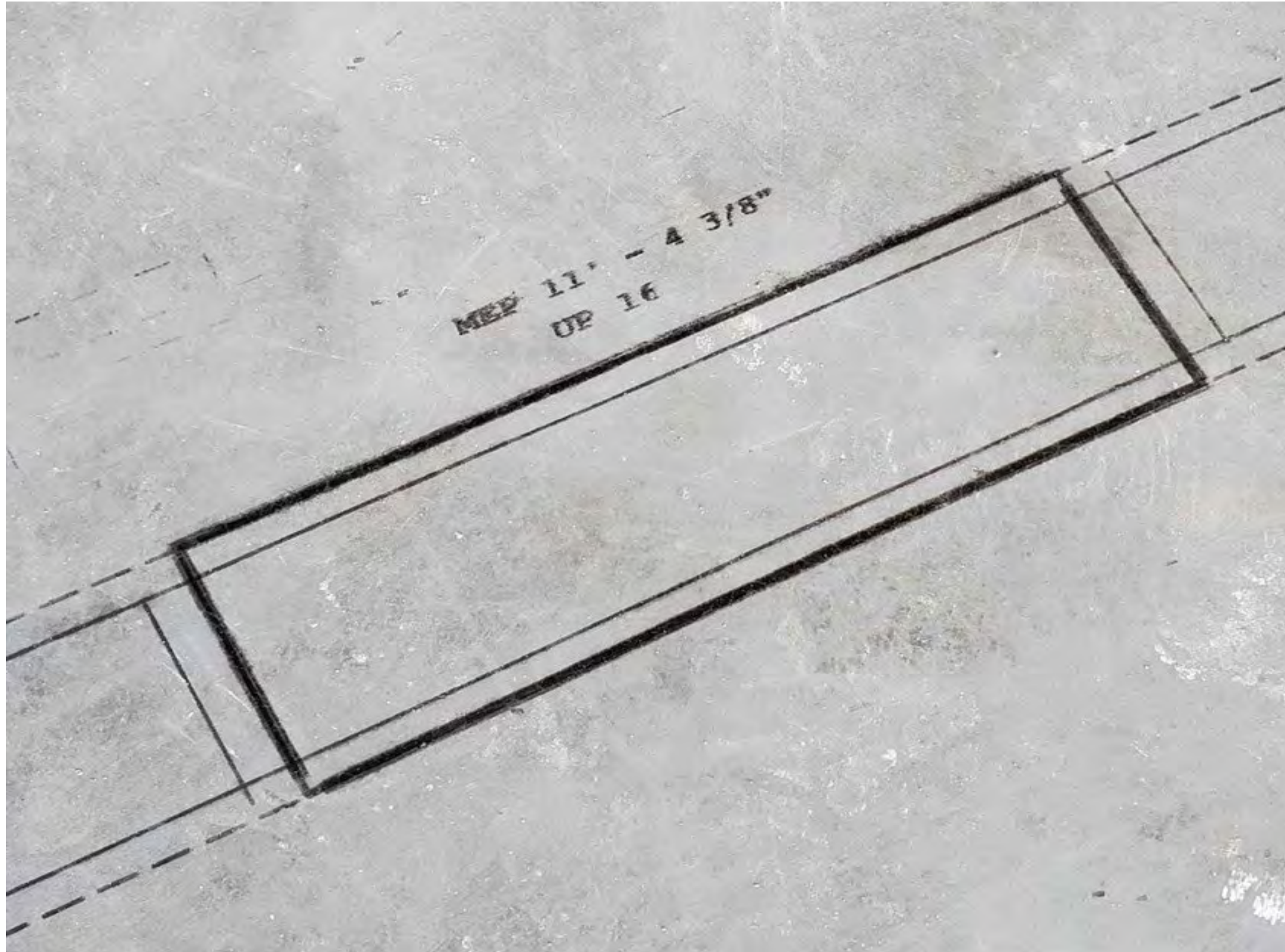
# MEP point layout

Print MEP points from  
CSV files (same as  
Trimble)

Digital QA report shows  
which points could not  
be printed







## Wall penetration layout

Print locations of MEP penetrations in the walls including:

- . Height
- . Dimensions
- . Stud locations

Improve trade coordination

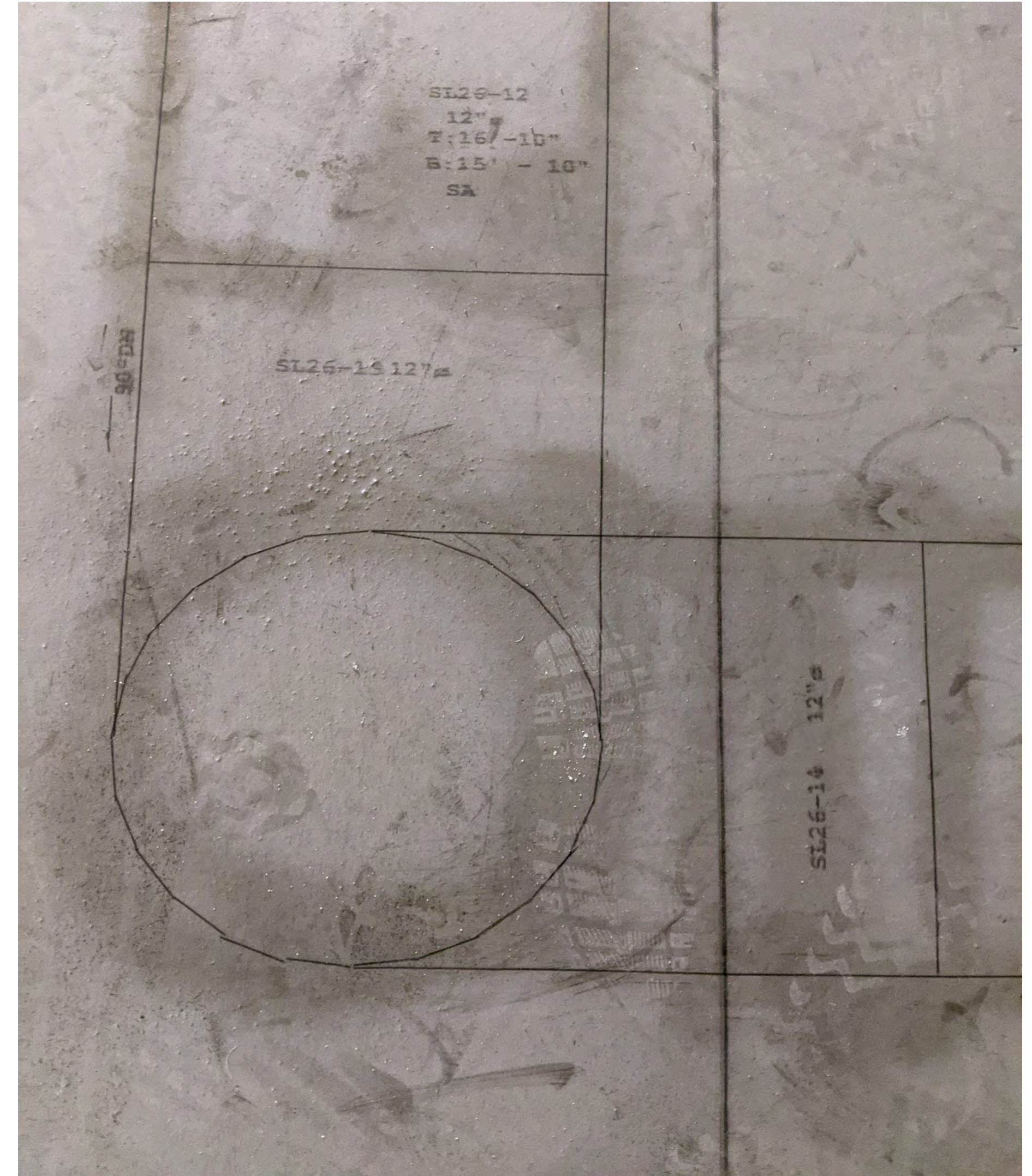


# Duct layout

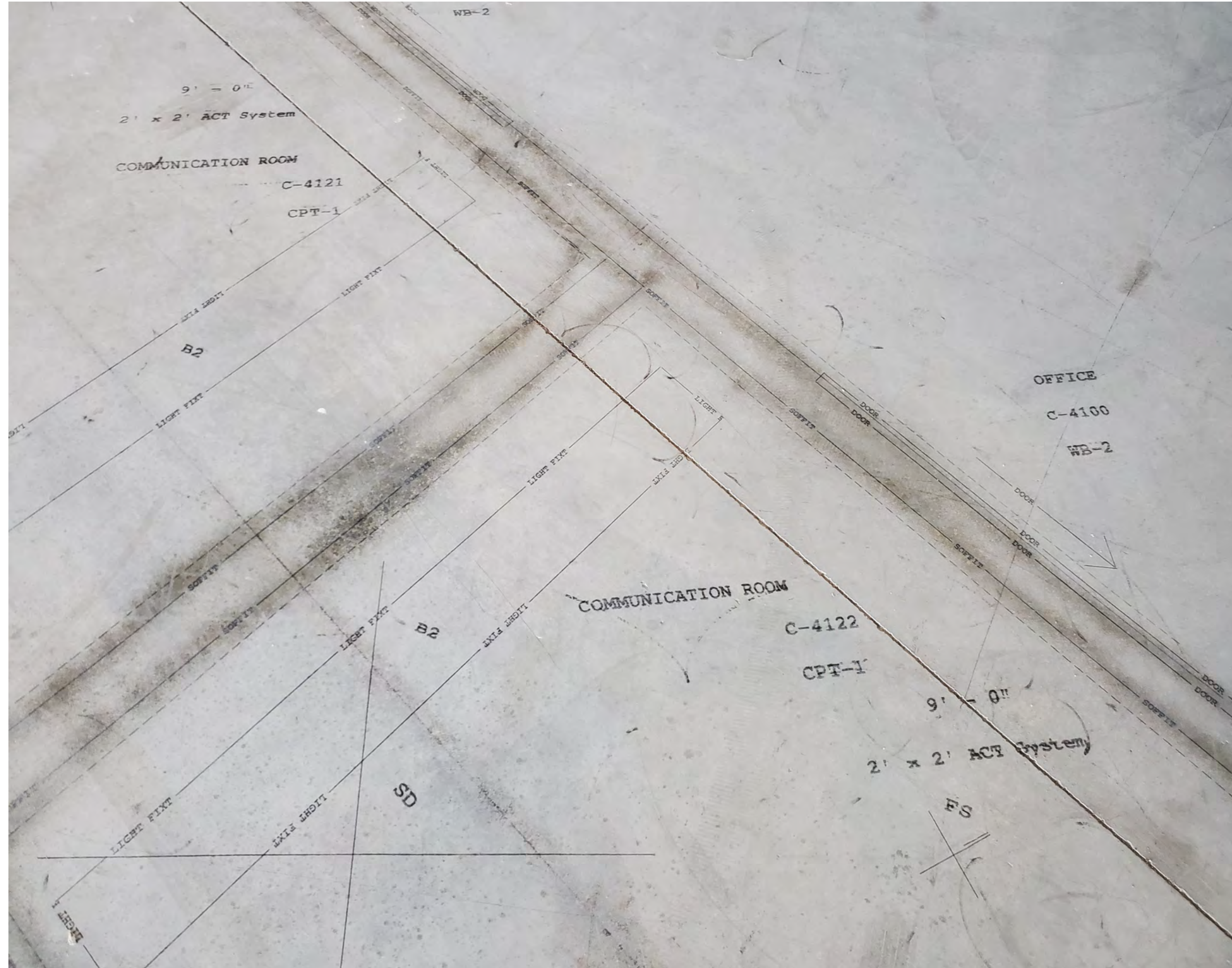
Print fully detailed shop drawings from DWG files

Include part numbers, elevations, dimensions

Eliminate paper on the jobsite







Enhanced layout

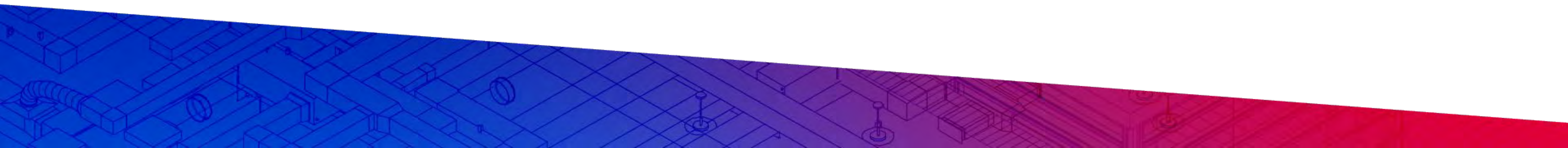
Print all trades' layout at the same time

Increase trade coordination

Eliminate conflicts by building straight from the BIM

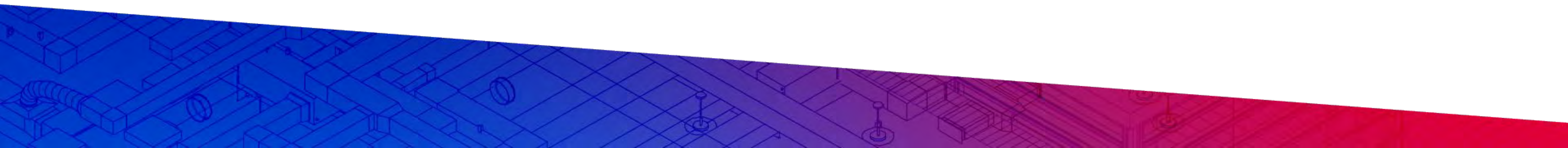


# Training Questions





# Q/A Sessions





# CONTACT INFORMATION

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303-907-6290

BuildingPoint Partner Network at:  
[Fieldtech.trimble.com/en/where-to-buy](http://Fieldtech.trimble.com/en/where-to-buy)

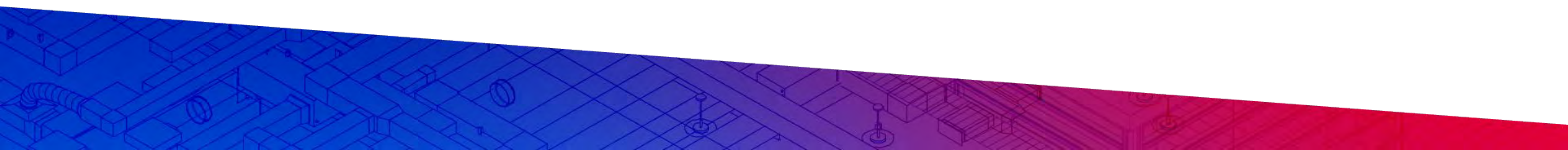
## Dusty Robotics

Jeff Perry

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The background features a complex isometric pattern of geometric shapes, lines, and technical drawing symbols like circles and rectangles. A color gradient transitions from a deep blue on the left to a vibrant red on the right, passing through purple in the middle. The text is centered and rendered in a bold, white, sans-serif typeface.

**PLEASE REMEMBER TO FILL OUT YOUR  
BREAKOUT SURVEY ON THE APP**



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