Creating a Sphere of Safety: Preventing Struck-By Hazards from Every Direction

November 4, 2026

Moderator: MK Fletcher, MSPH, Deputy Director, CPWR—The Center for Construction Research and Training

Panelists:

- **Marisa "Reese" Fortin,** District HS&E Manager, Sundt Construction
- **Travis Weber,** Senior Director EH&S, Haselden Construction; Stop the Drop Task Force Member
- **Travis Parsons, MS**, Director of Occupational Safety & Health, Laborers' Health and Safety Fund of North America (LHSFNA)
- **Jay W. Hocutt, CSP, SGE, CWD, STS**, UCOR Program Manager, Construction Heavy Equipment & Mobile & Portable Equipment

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Housekeeping

- Today's webinar will be recorded and automatically shared via follow-up email.
- The recording and slides will also be posted on cpwr.com/webinars.
- Attendees are automatically muted! Please submit panelist questions via the chat or Q&A box.
- Spanish audio is available via simultaneous interpretation

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Simultaneous Interpretation
Interpretación simultánea

WINDOWS - MAC (Navegador web/*Browser*)

1. En los controles del seminario web, haga clic en **Interpretación**
2. Haga clic en el idioma que desee escuchar.
3. (Opcional) Para escuchar solo el idioma interpretado, haga clic en **Silenciar audio original**.

Nota: Hay que unirse al audio del seminario web a través de audio o VoIP de la computadora. No podrá escuchar la interpretación de idiomas si utiliza las funciones de audio de teléfono llamada directa o recibir llamada.

1. *In your webinar controls, click **Interpretation***
2. *Click the language that you would like to hear.*
3. *(Optional) To hear the interpreted language only, click **Mute Original Audio**.*

***Note**: You must join the webinar audio through your computer audio/VoIP. You cannot listen to language interpretation if you use the dial-in or call me phone audio features.*

ANDROID - iOS (Aplicación móvil/*Mobile App*)

1. En los controles del seminario web, toque los puntos suspensivos •••
2. Toque **Interpretación de idiomas.**
3. Toque el idioma que desee escuchar.
4. (Opcional) Toque el botón de alternancia **Silenciar audio original**.
5. Haga clic en **Finalizado**.

Nota: No podrá escuchar la interpretación de idiomas si utiliza las funciones de audio de teléfono llamada directa o recibir llamada.

1. *In your webinar controls, tap the ellipses* •••
2. *Tap **Language Interpretation**.*
3. *Tap the language you want to hear.*
4. *(Optional) Tap the toggle to **Mute Original Audio**.*
5. *Click **Done**.*

Note: *You cannot listen to language interpretation if you use the dial-in or call me phone audio features.*

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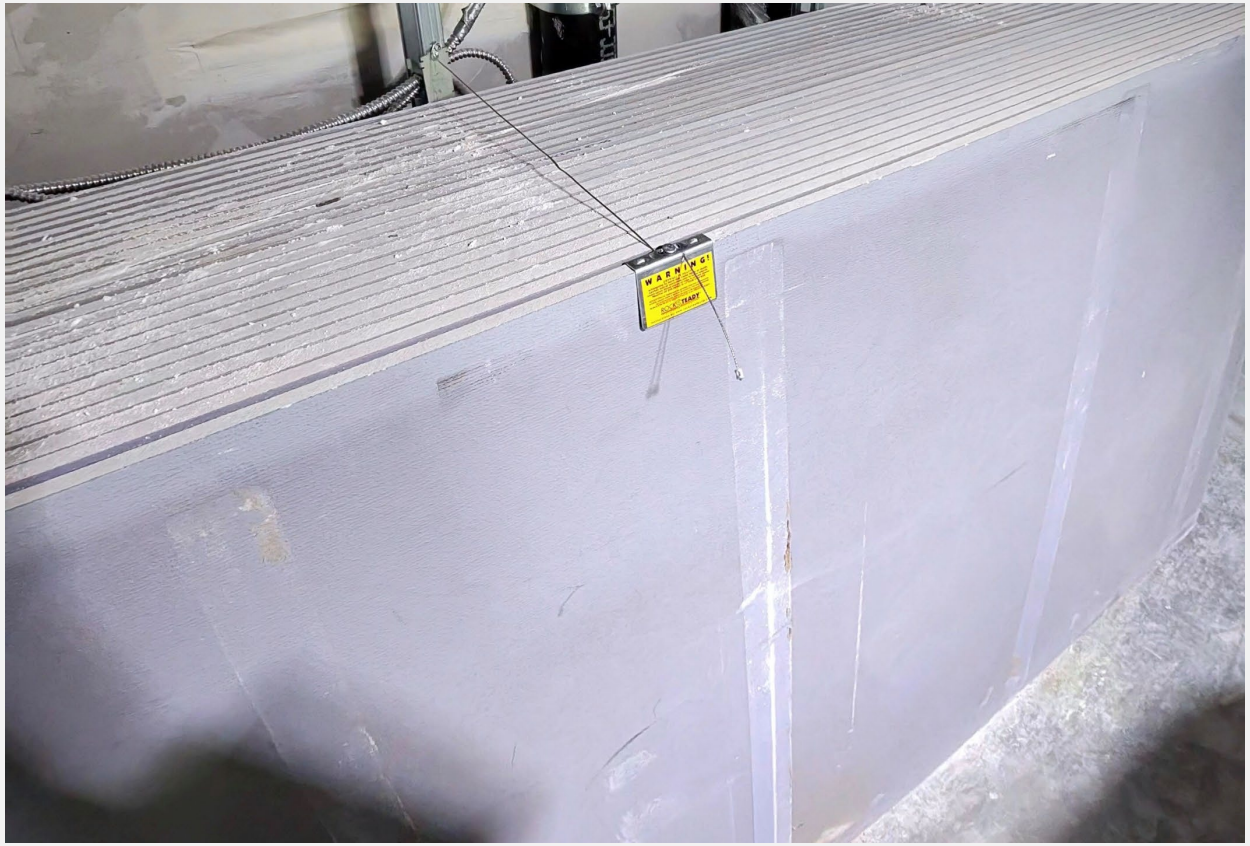
SUNDT

INNOVATIONS IN STRUCK-BY PREVENTION

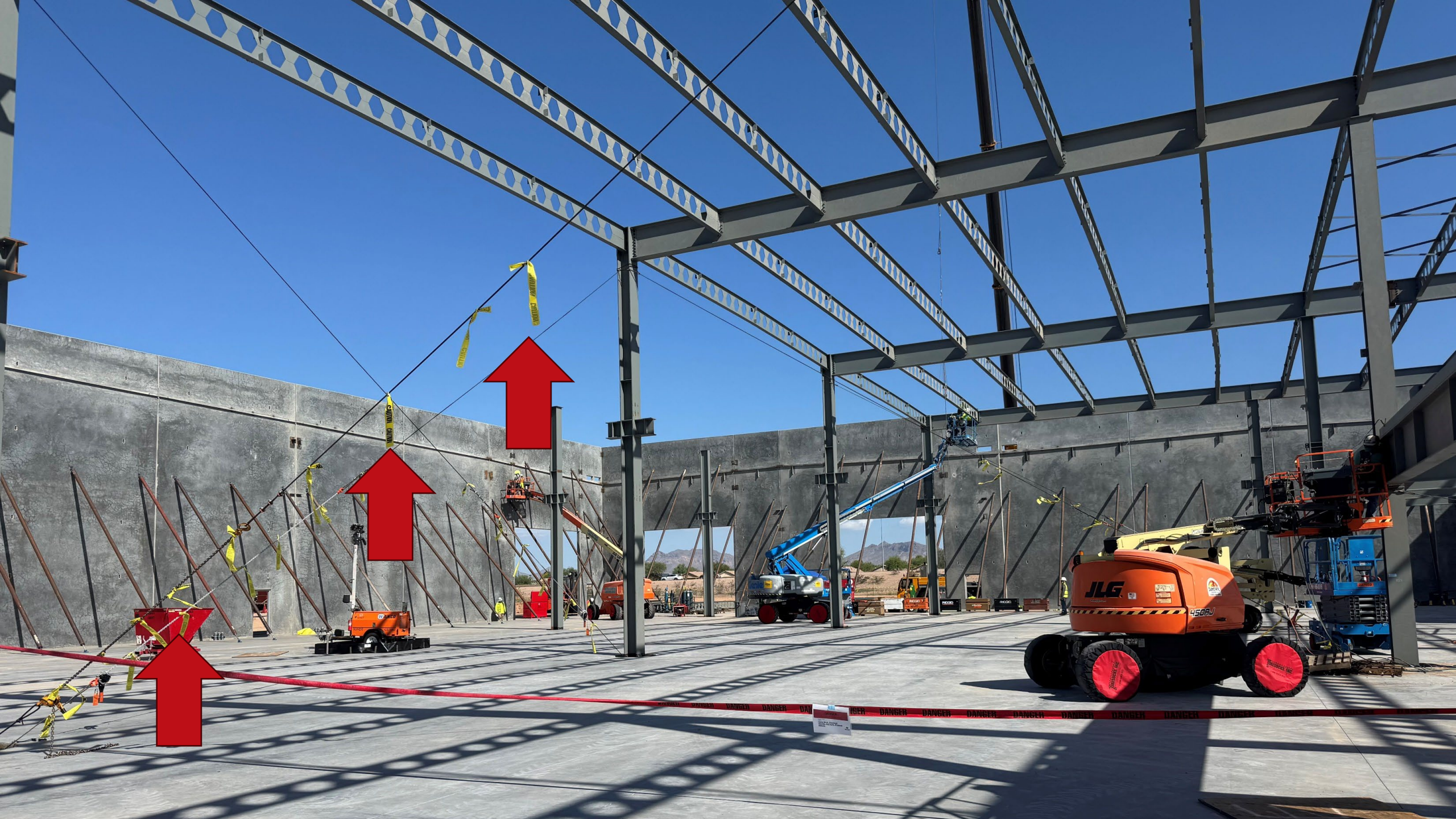
Reese Fortin

District HSE Manager

PREVENT STRUCK-BY DRYWALL






JLG
450AJ
DANGER


mec
UnitedRentals.com
HILTI


MUSTER POINT
#4



SUNDT + BEDROCK ROBOTICS

On-site collaboration

Bedrock-equipped excavators loaded human-operated articulated dump trucks within the existing excavation workflow

More than 65,000 cubic yards moved

BEDROCK ROBOTICS: STRUCK-BY PREVENTION

Foundational safety focus for Bedrock Robotics

Highly redundant system designed to eliminate struck-by accidents

360-Degree Detection

Failsafe Proximity Stopping



BUILT ROBOTICS + SUNDT RENEWABLES WORK

8-Layer Safety System

AI-Powered Smart Cameras & Collision Avoidance safely stops all autonomous operations immediately

Geofence Barriers

Proactive Remote Management

Emergency Stops



Stop The Drop

An alliance with OSHA, AGC of Colorado and Stop The Drop Taskforce

Travis Weber

Senior Director EH&S

HASELDEN CONSTRUCTION



The Impact

Struck By Incidents
2nd leading cause of fatalities

Struck By Hazards OSHA Fatal 4 since 1994

52,000 “Struck By Falling Objects” recordable injuries annually. BLS, 2022





Objective

To bring awareness to the industry

Inform the workforce that the largest percentage of struck by fatalities are due to dropped objects

Provide education to ensure struck by hazards are identified and effectively controlled

Four Principles to “Stop the Drop”

Tool Tethering





1 pound tape measure dislodges from worker's belt

Fell from the 50th Floor, struck a piece of equipment the ricocheted

Struck/killed 58-year-old Gary Anderson, drywall delivery driver, Struck in the head

Delivery driver was not wearing a hard hat

The New York Times

Falling Tape Measure Kills Man at Jersey City Construction Site

Share full article



A view on Monday of 70 Christopher Columbus Drive, a 50-story apartment building under construction in Jersey City. Ben Solomon for The New York Times

Four Principles to “Stop the Drop”

Barricading

- Guardrail system
- Opening protection
- Overhead protection
- Fencing
- Barricade-Danger Tape
- Debris netting
- Spotters









Four Principles to “Stop the Drop”

Material Securement

- Comply with OSHA standards
- Avoid storing by floor and wall openings
- Stable and secured
- Secured from wind uplift

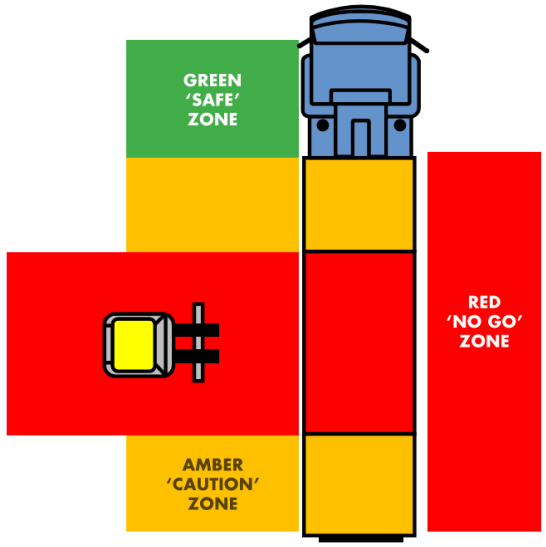




Four Principles to “Stop the Drop”

Safe Cargo

- Only qualified riggers/signal person hoisting with cranes
- Equipment lifted per manufacturer
- Protect rigging from sharp edges
- Control back side of trailer being offloaded









Impact Force

5 lb. 7 oz. Sledgehammer



(1 ounce = 0.0625 pounds)

1) Potential Energy = Weight X Distance

5.43 lbs. X 32 ft = 173.76 ft lbs. of potential energy

2) Impact Force = Potential Energy / SD (0.01ft)

(0.12 of an inch – Worst case with no deceleration)

173.76 ft lbs. / 0.01=

17,376 pounds of force

Resources

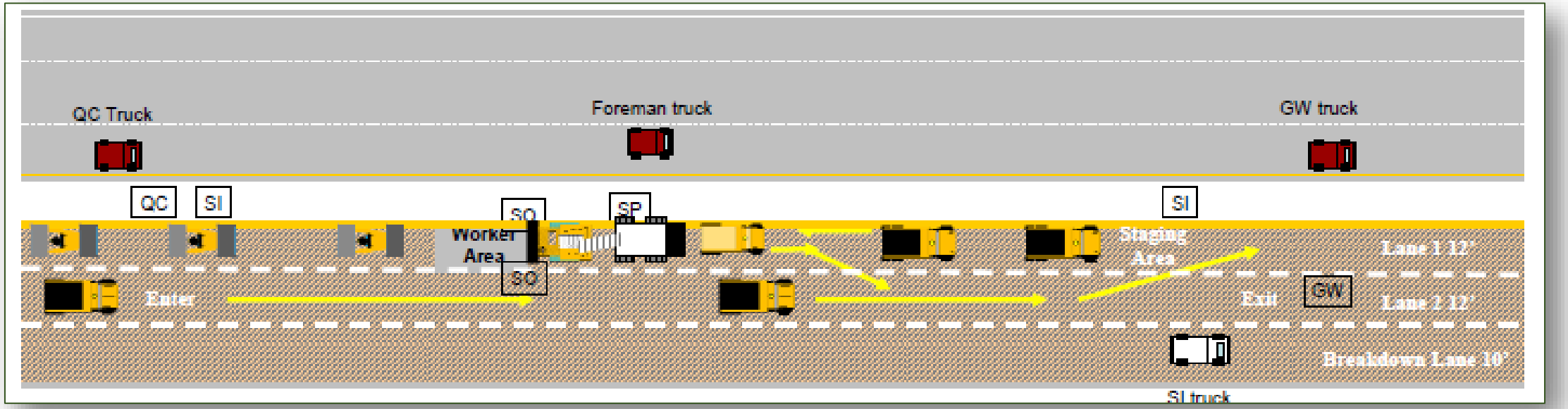
Resources Available

https://www.agccolorado.org/stop-the-drop

Toolbox Topics

- English
- Spanish

Dropped Object Forces Hand Out
Stop The Drop Tool Zone Video
More to come !



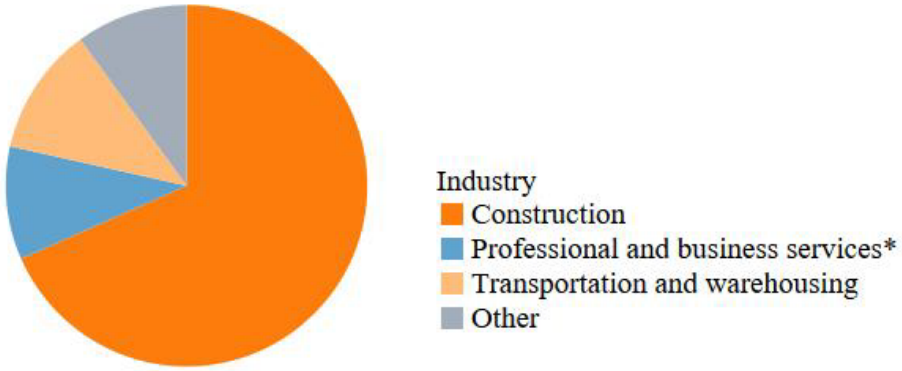
Internal Traffic Control Plans (ITCPs)

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History & Background

- Safety Gap Identified (Late 1990s/Early 2000s)
- Concept Development Followed
- Model Plans & Guidelines (2010s)
- Industry Adoption (2015–Present)

Fatal Occupational Injuries at Road Construction Sites by Industry, 2011 to 2022



*Averaged fatalities in 2019 and 2021, to produce an estimate for 2020 due to missing data.
Source: U.S. Bureau of Labor Statistics, 2011-2022 Census of Fatal Occupational Injuries. https://www.bls.gov/iif/data.htm.
Calculations by the CPWR Data Center.

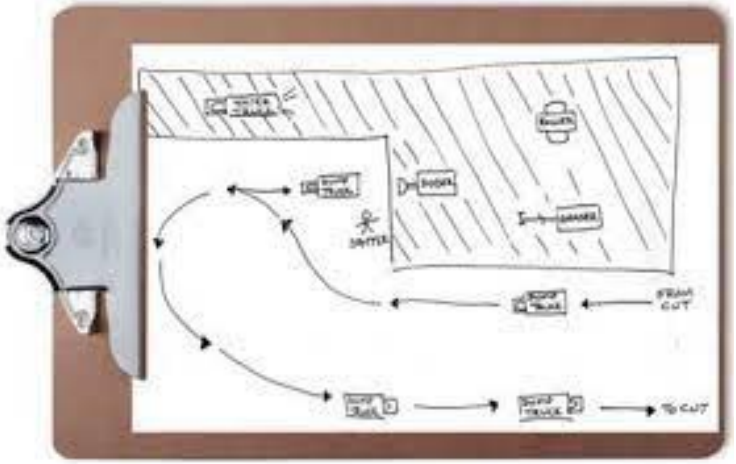
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What is an ITCP?

- A protocol to inform all parties operating within the workspace about the location of others

- Create “zones” designed to minimize interaction between workers on foot & construction vehicles

  - ✓ Provide clear direction to drivers and operators
  - ✓ Separates moving vehicles from workers on foot
  - ✓ Designates safe areas for workers on foot
  - ✓ Use temporary traffic control devices to mark traffic paths
  - ✓ Maintain smooth traffic flow

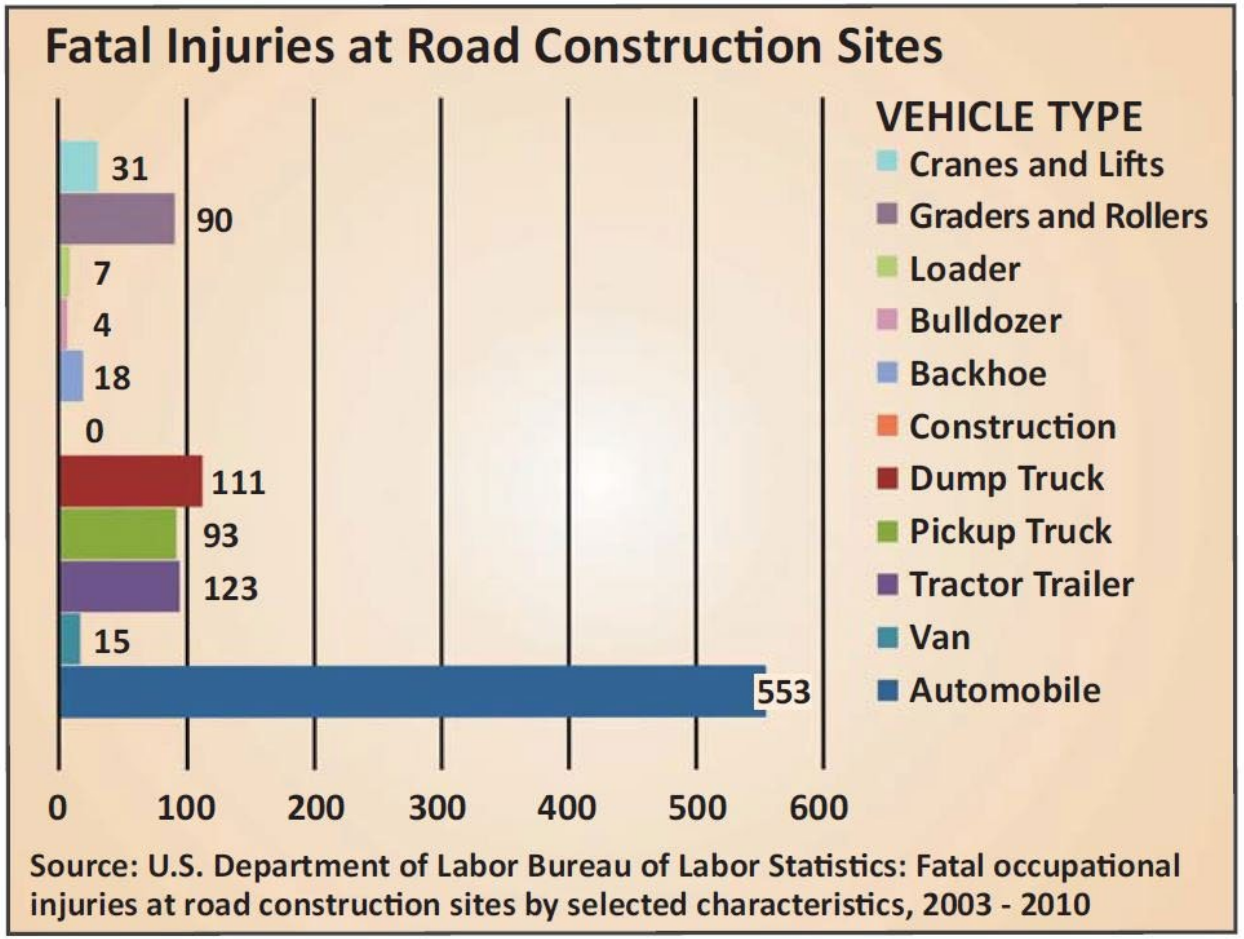




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Why use ITCPs?

- Look at the data
- Moving vehicles/equipment are the greatest hazard
- Separate workers on foot from vehicles and heavy equipment
- Provide proper access/egress points
- Increase worker visibility
- Increase productivity



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Steps in Developing ITCPs

1. Identify scope of work
2. Determine construction sequence
3. Draw work area layout (vehicles, workers, equipment) - Diagrams
4. Determine vehicle and equipment movements
5. Determine safe movements for workers
6. Assess and resolve potential conflicts
7. Develop the ITCP plan



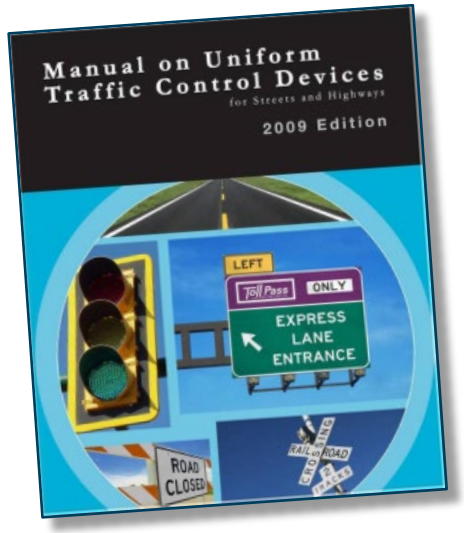
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TTCP vs. ITCPs

Temporary Traffic Control Plans

- Prescribed in U.S. Federal Highway Administration *Manual on Uniform Traffic Control Devices* (MUTCD)

✓ Move traffic safely through work zone



Internal Traffic Control Plan

- Industry recommended best practice not prescribed by law or regulation

✓ Prevent workers on foot being struck within activity area



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TTCP vs. ITCPs



Comparing Traffic Control Plans and ITCPs

MUTCD Traffic Control Plan		Internal Traffic Control Plan
Motor Vehicles	→	Construction Equipment
MUTCD	→	NIOSH Development Guide
Typicals	→	ITC Diagrams
Typical Application Notes	→	Internal Traffic Control Notes
Traffic Safety Engineer	→	Supervisor/Site Superintendent



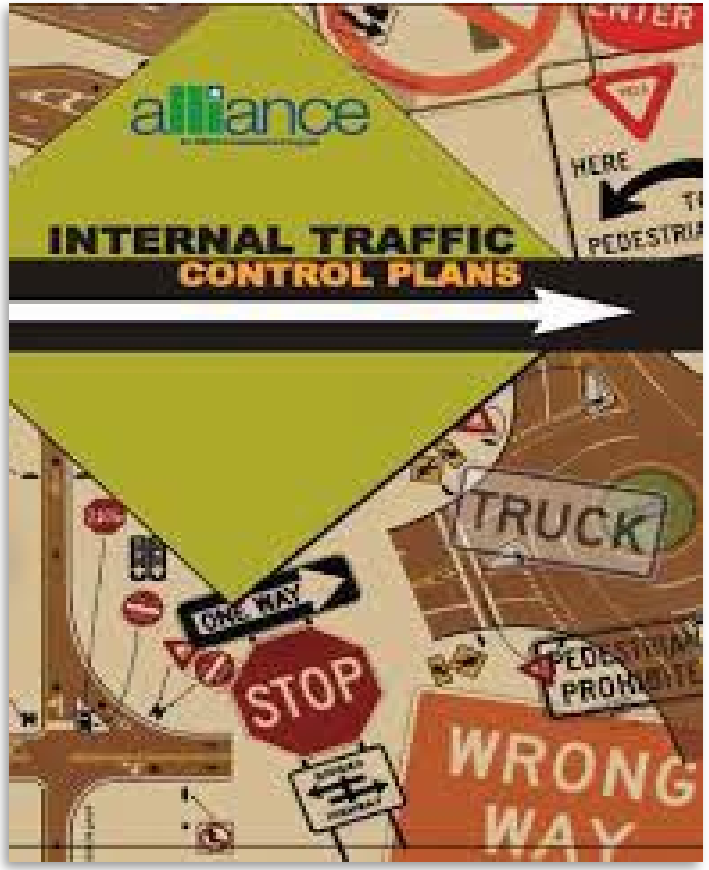
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What Do ITCPs & TTCPs Have in Common?

Common Themes
✓ Providing clear direction to drivers
✓ Separating moving vehicles from workers on foot
✓ Using temporary traffic control devices to mark traffic paths
✓ Maintaining a smooth traffic flow

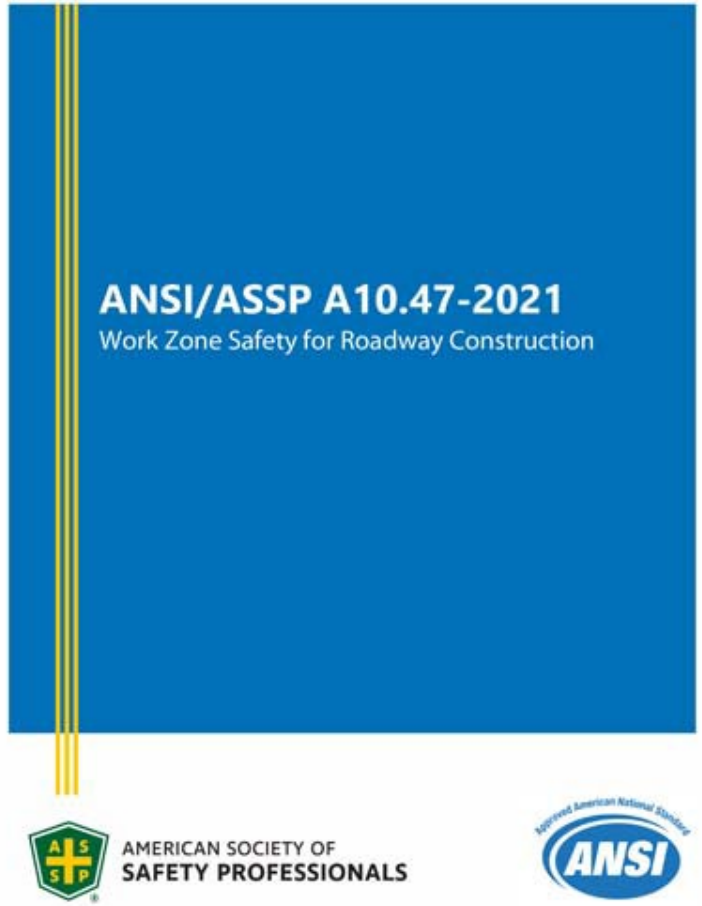
Policy Actions

- We're seeing increased recognition and use of ITCPs
- Creates "zones" designed to minimize interaction between workers on foot and construction vehicles
- Benefits:
  - ✓ Increased worker safety because of better worker-equipment interactions
  - ✓ Provides clear direction to drivers, workers and operators
  - ✓ Separates moving vehicles from workers on foot
  - ✓ Designates safe areas for workers on foot
  - ✓ Maintains smooth traffic flow
  - ✓ Increases production through improved work organization
- OSHA, MUTCD, OSHA Subpart G, OSHA's General Duty Clause, FHWA 23 CFR 630, & ANSI/ASSP A10.47



ANSI/ASSP A10.47

- **National consensus standard**
  - **<u>Section 6.5</u> (ITCP):** *Employers shall develop traffic control plans for inside their work zones to minimize backing and other conflicts between workers and work vehicles…*
- **ITCP Core Components:**
  1. Diagram Showing Travel Routes
  2. Signage in the Activity Area
  3. Safety Notes & Ground Rules
  4. Plan for Communicating Changes



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Questions???

Travis M. Parsons, MS
Director, Occupational Safety & Health

tparsons@lhsfna.org
202-383-2828
202-365-5849 mobile



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Vehicle/Construction Equipment Spotter

JAY HOCUTT, CSP, STS, SGE

PROGRAM MANAGER FOR CONSTRUCTION AND HEAVY EQUIPMENT

Why is a spotter program necessary

Struck by is one of the OSHA Fatal Four

Establishes guidelines and helps maintain a safety culture

Provides tools to the worker to recognize hazards and implement established controls

Vehicle/Construction Equipment Spotter







- A Spotter is a person who has been trained in the safe practices of vehicle/construction equipment movement in accordance with company policy and procedure
- A designated Spotter is **Authorized and Required** to take immediate action(s) necessary to keep personnel, equipment and property safe from injury or damage
- A Spotters primary job is to provide ***directional movement*** to vehicle/construction equipment that allows work to be performed safely

Define Roles and Responsibilities

Operators and Spotters **SHALL:**

- Discuss travel path and potential hazards
- Identify the equipment's blind spots
- Determine methods of communication
- Always maintain positive communication
- Pause work if positive communication is lost
- Pause work if unauthorized personnel enter the work zone

Spotter Hazard Assessment Tool

- Walk down work area with Operator
- Add controls where hazards exist
- Discuss hazards, communication methods, and blind spots with Operator
- Both Operator & Spotter sign

Location:		Equipment:		Work Package #:	
NOTE:	**IF any of the following cannot be resolved, THEN, stop and notify your supervisor.**				
			Yes	**No**	**Control/Comment**
1.	Perform walk down of work area and/or travel path, check and discuss the following:				
	a.	Are Overhead Hazards present? (Form-3090 needed?)	☐	☐	
	b.	Are both sides of the load or equipment/vehicle visible? **IF** no, **THEN** more than 1 spotter is needed.	☐	☐	
	c.	Is there enough room to perform the task?	☐	☐	
	d.	Is anything different than expected?	☐	☐	
	e.	Does traffic need to be controlled?	☐	☐	
	f.	Are Work Zone Barriers needed?	☐	☐	
	g.	What other potential hazards are there in the area? **IF** present, how will other hazards be addressed?			
2.	Are the Operator and Spotter training current?		☐		
3.	Are the ground conditions acceptable for the task?		☐		
4.	How will ground communication occur with the operator/driver?		☐		
5.	Discuss Blind Spots of equipment/vehicle with operator/driver.		☐		
6.	What are signs to pause/stop work?				
NOTE:	**If 1a is answered yes, and vehicle is in transit, then the VCES will visually confirm that the equipment will not strike hazard before allowing the equipment/vehicle to move under the hazard. Equipment must travel in the stowed or lowest configuration possible.**				

When do I know I need a spotter?

- Evaluating the need for spotters should be part of every job plan, pre-job brief, and when conditions change.
- Look for and discuss potential struck by scenarios
  - Close or tight quarters
  - Loading and unloading equipment and material
  - Overhead hazards (especially electrical)
  - When the driver or operator has an obstructed view

Developing the culture

- Listen to feedback from the field
- Safety and Supervisors must have a field presence
- Develop a strong and supported STOP work program that encourage personnel to stop when they identify a hazard
- Reward and recognize personnel that identify or act on potential struck by conditions
- Develop a safety observation program that personnel can report unsafe conditions or good safety behavior
- Communicate the message all the time
- Create Local Safety Improvement Teams

Making Safety Fun

- Another set of eyes
- Parking Lot Rodeo