



# Design and Construction Surveying for ADA Projects

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*Your Destination...Our Priority*



# Key Messages

- ▶ We need total station accuracy for design surveys.
- ▶ Different levels of survey detail necessitated by intersection complexity.
- ▶ Why should we stake the flow line rather than back of curb for curb ramps?
- ▶ Coming soon: Sidewalk profiles in your plans.



# ADA Survey Accuracy: 1/4"

Methodology	Inherent Accuracy
Total Station	0.02
LIDAR	0.08
VRS	0.10
Mapping	0.50

*Total station equipment is the only acceptable survey method.*

A 6 ft length ramp designed at 7.5% could very well be non-compliant using LIDAR, VRS, or mapping.



# Levels of Detail

## Level 1

- Curb ramps line up with in-place sidewalks
- Contractor builds according to standard plans with a tabulation
- Surveys not required

## Level 2

- When ramp layouts differ from standard plans and for all signalized intersections
- 20-scale detail provided in plan
- Ramp slope ranges and working points provided

## Level 3

- When slopes are non-compliant or there's a tie-in point (such as a doorway)
- 20-scale detail provided in plan
- Specific ramp slopes and working points provided



# Level 1 (Standard Plan) Ramps



# Level 2 Ramps



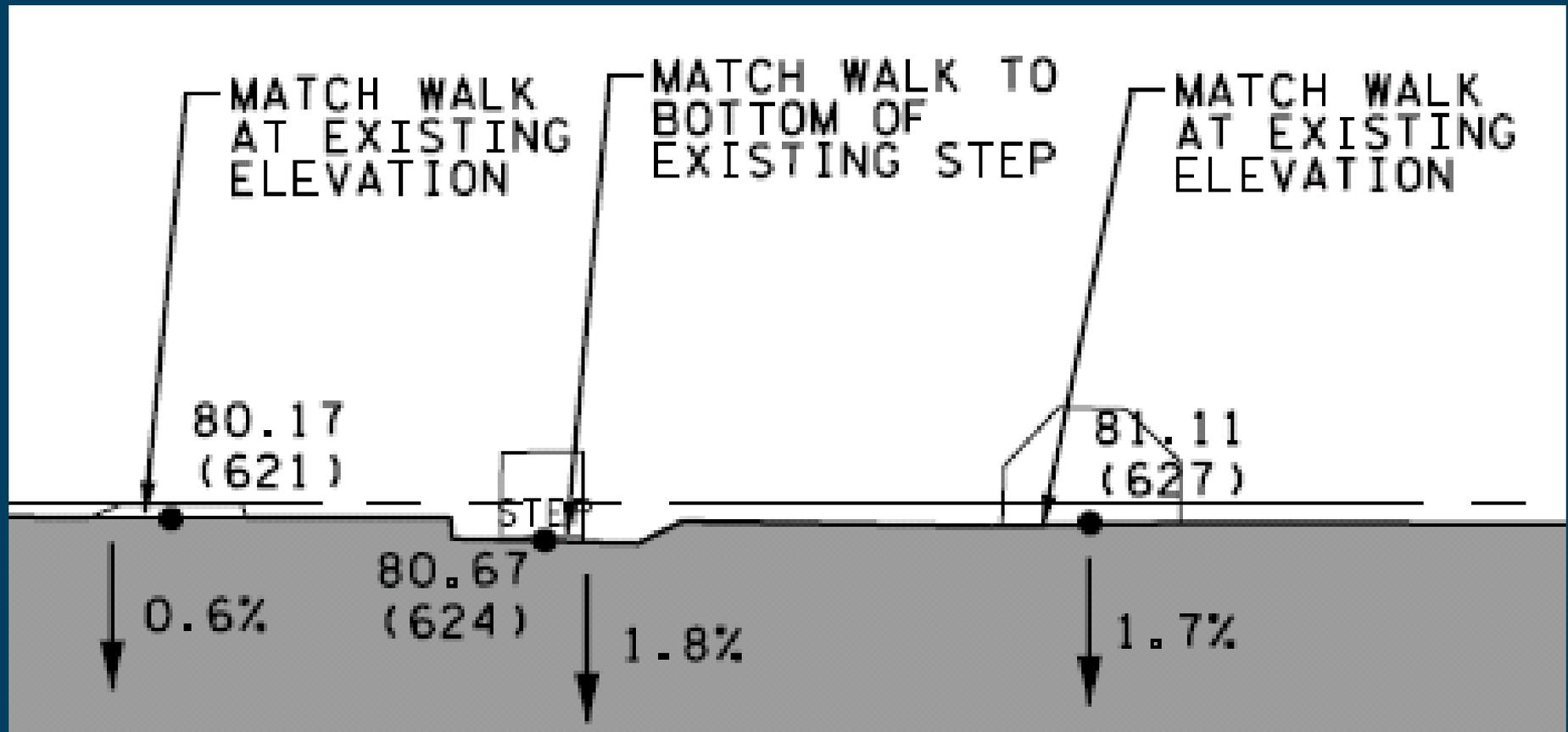
# Level 3 Ramps



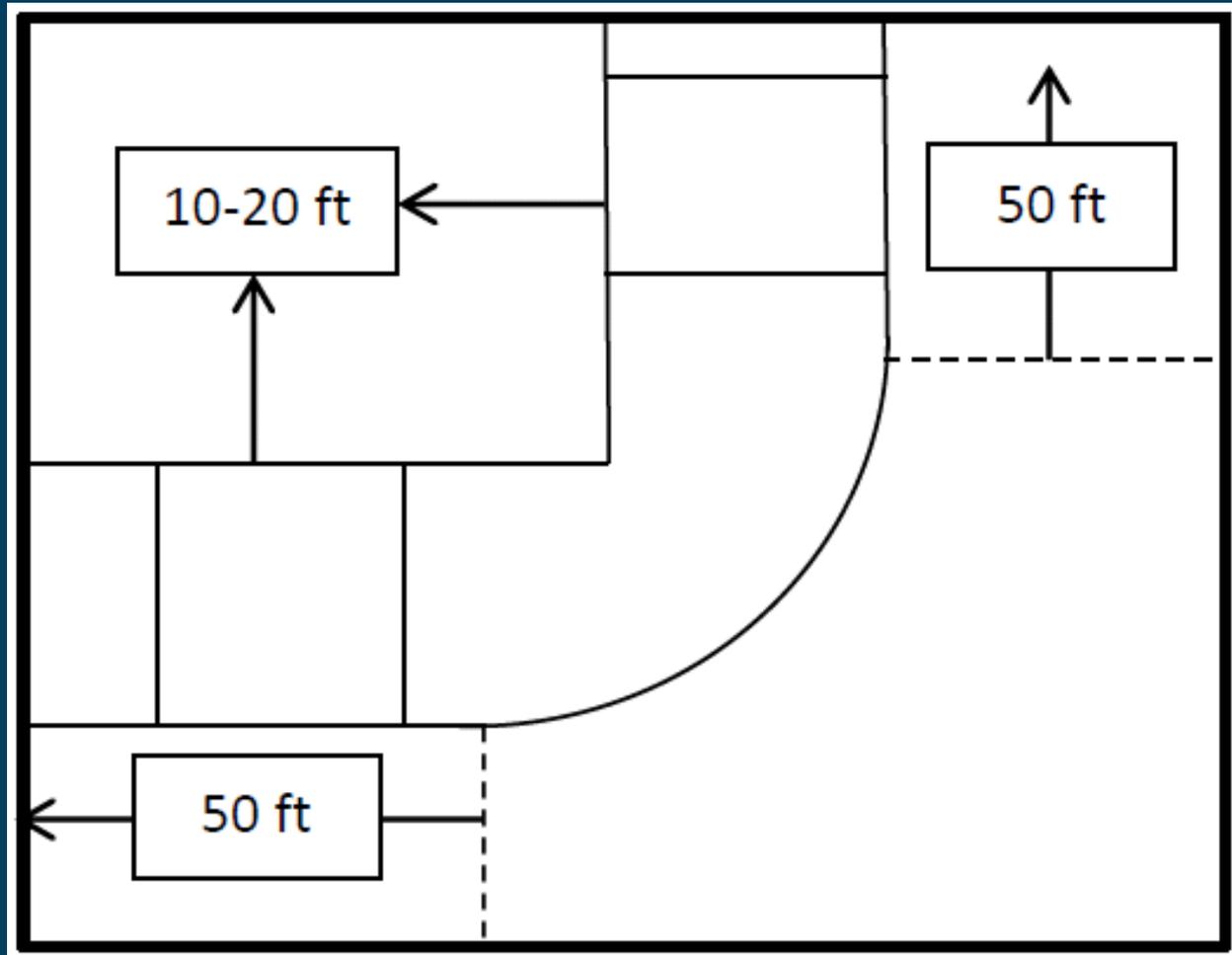
[Report a problem](#) Image Date: July 2009



# 20-Scale Detail: Doorways



# ADA Topos: Vicinity



# ADA Topos: Utilities

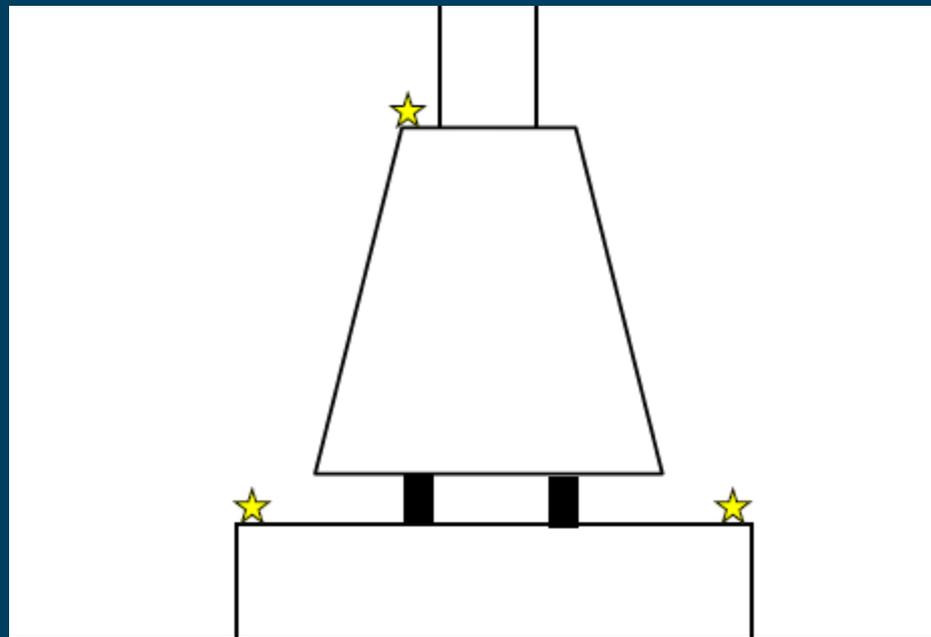
- ▶ Use methods such as multiple shot or single shot w/diameter when locating the center of signal poles, light bases and similar structures with obstructions. Always shoot the center of unobstructed structures such as hand holes and the corners on structures such as cabinets, cabinet bases and vaults.

▶ *Accuracy is key!*



# ADA Topos: Signal Bases

- ▶ Additional signal base shots needed to determine if push button can be installed on the signal pole



# ADA Topos: Doorways

★ Tie-in elevations at entrance



★ Height and tread width of bottom step



# Matching Stoops/Doorways



# Matching Steps Example



# ADA Topos: Curb Line Changes



# Importance of Accurate Road Topos



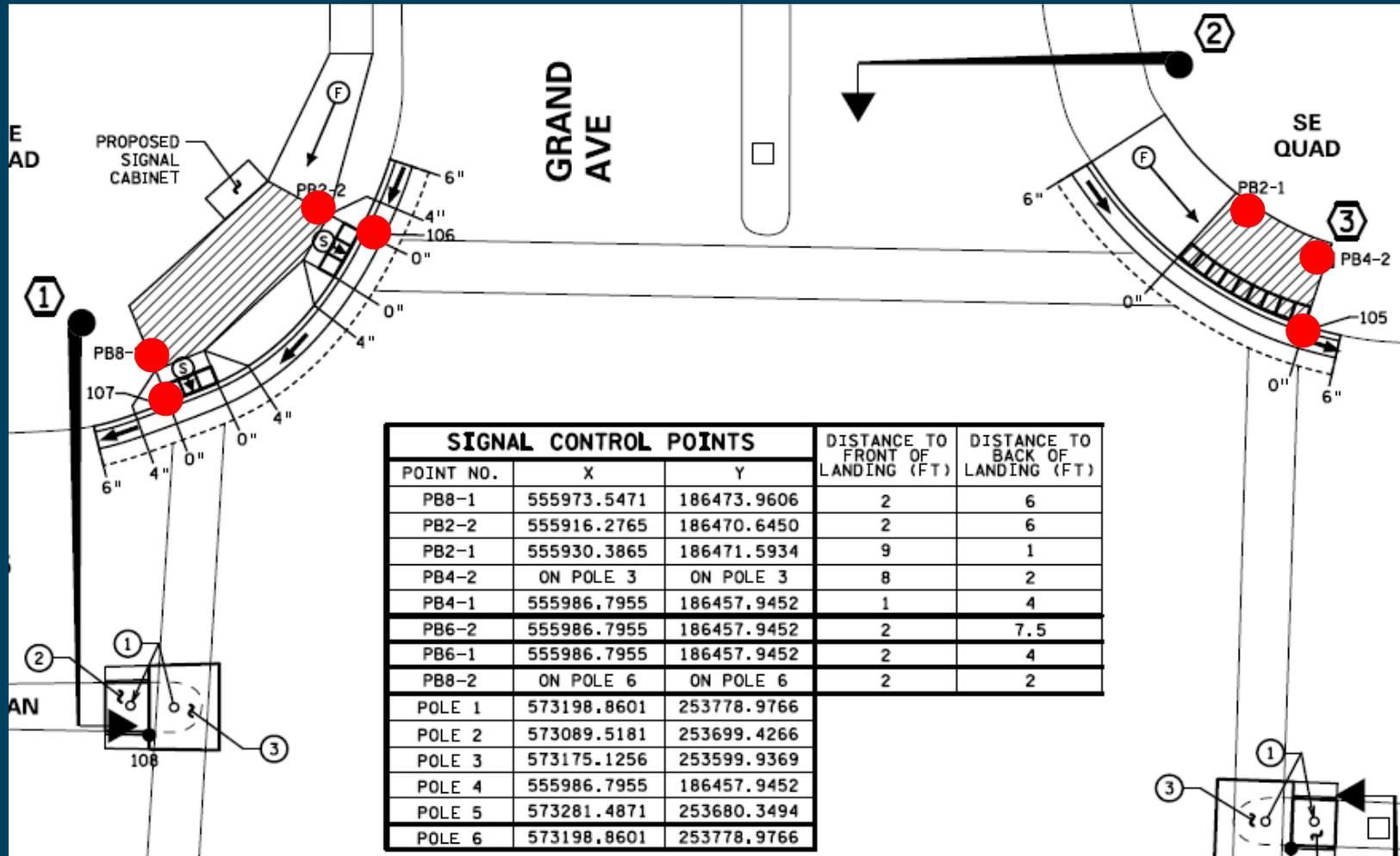
# Importance of Accurate Road Topos



# Discussion: How long would a typical intersection take?



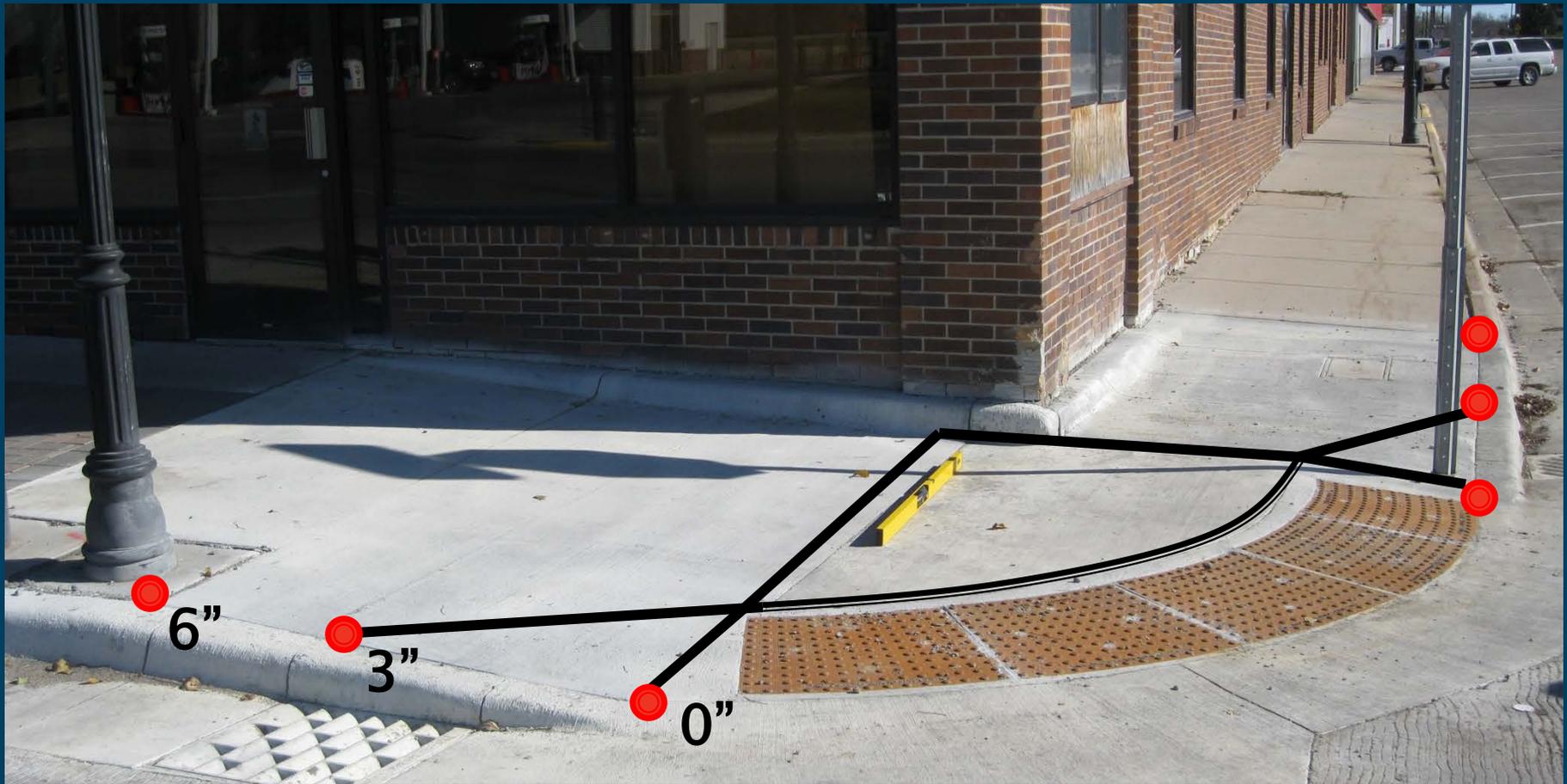
# 20-Scale Detail: Working Points



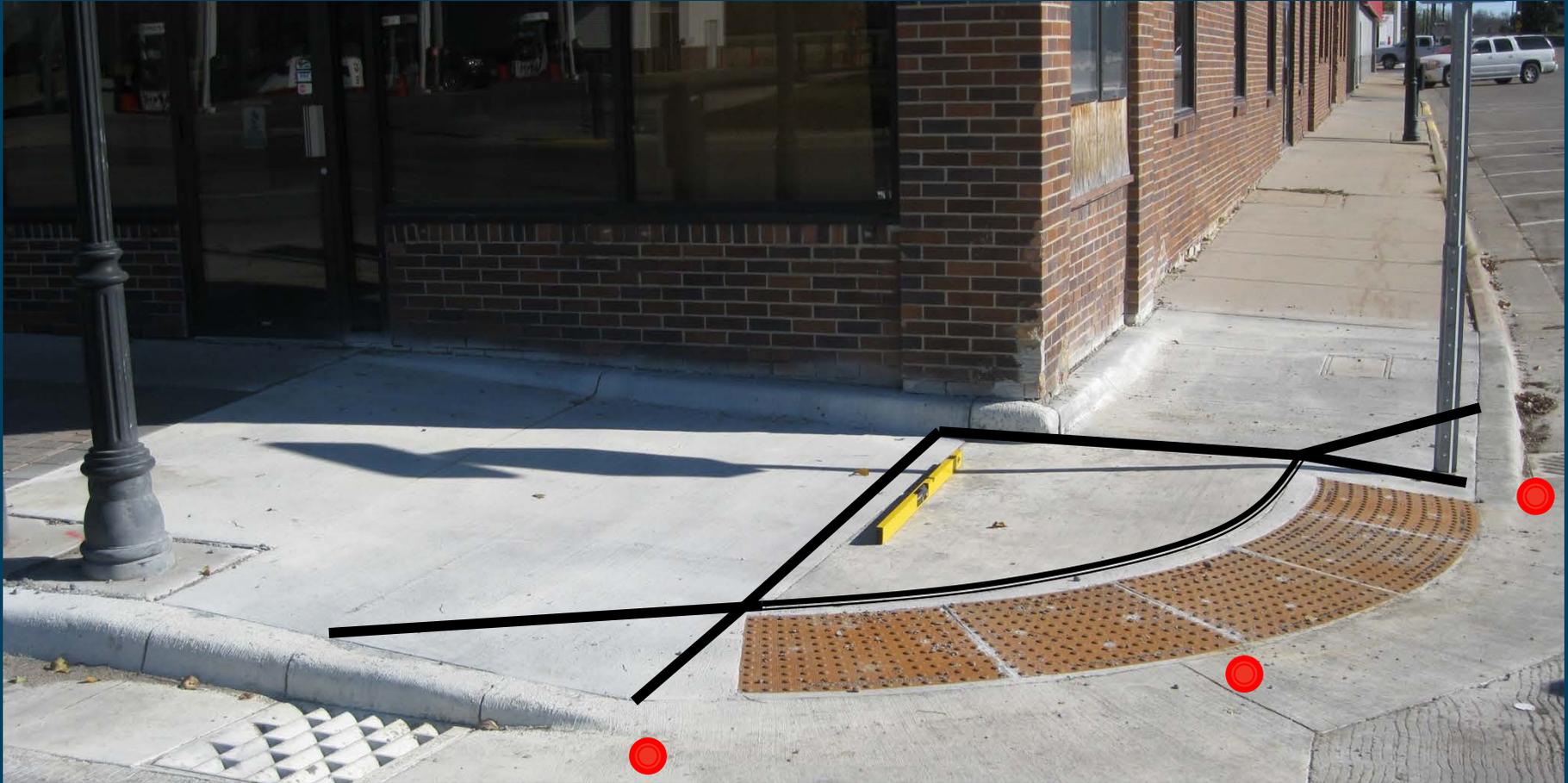
# Construction Staking: Working Points



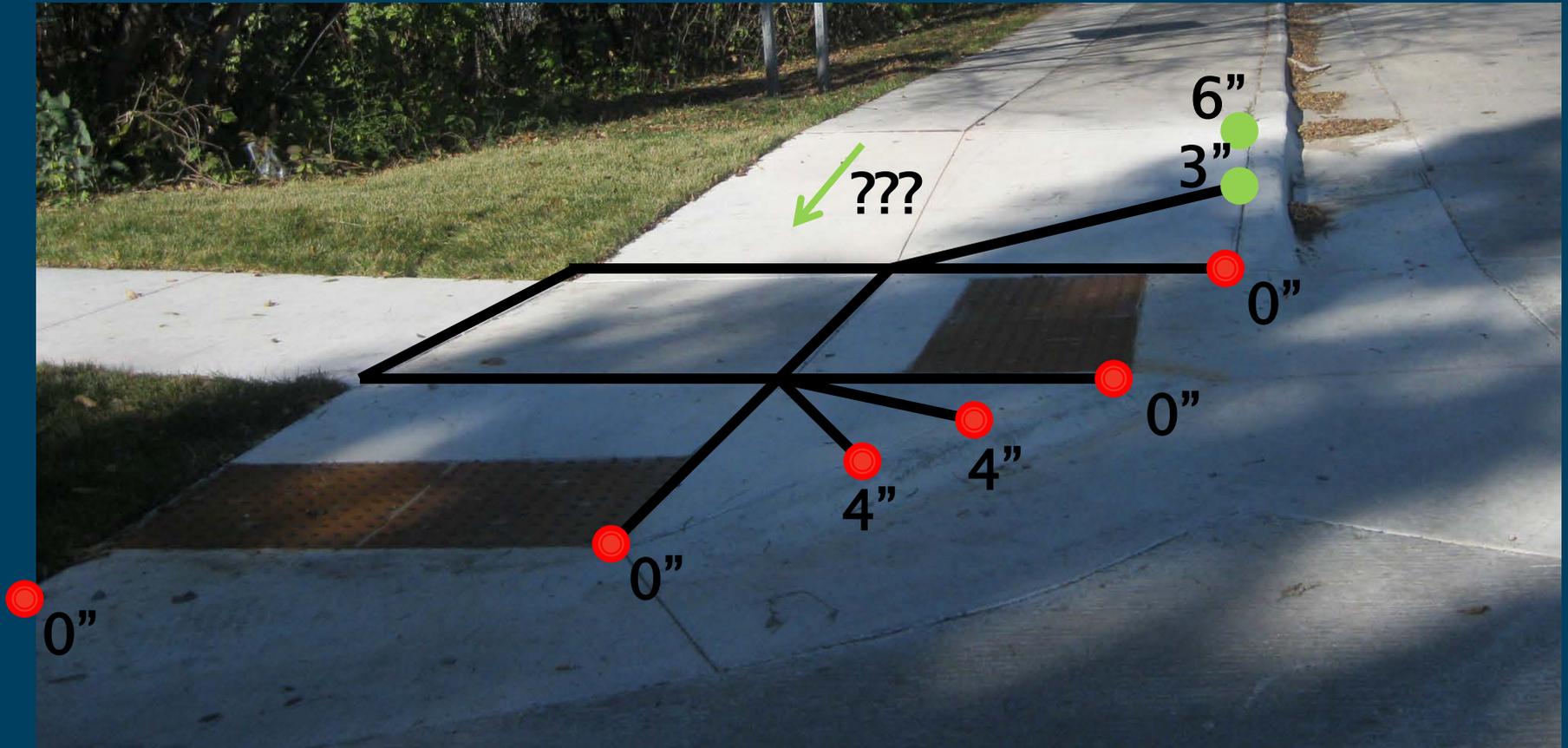
# Construction Staking: Back of Curb



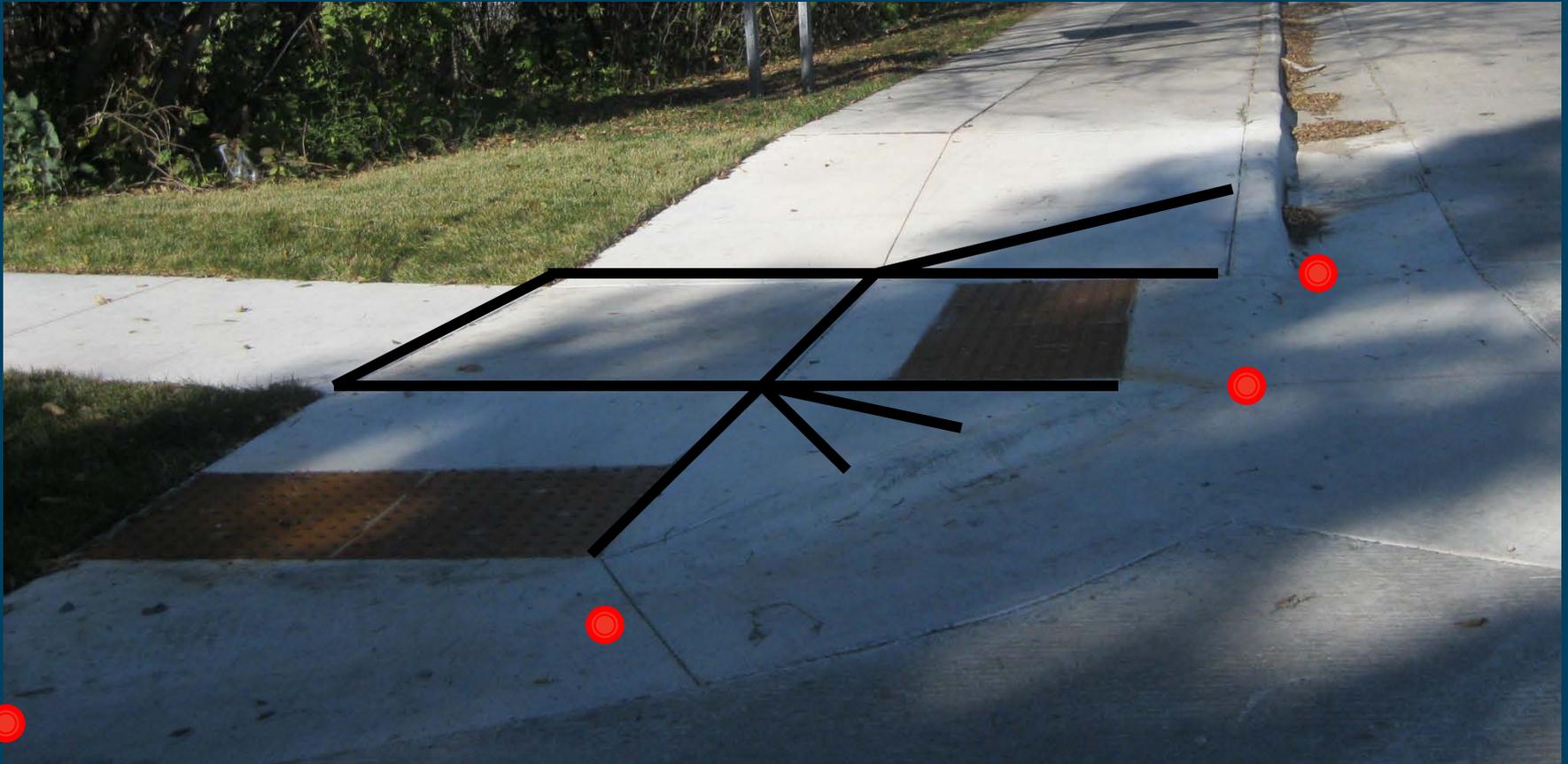
# Construction Staking: Flow Line



# Construction Staking: Back of Curb



# Construction Staking: Flow Line



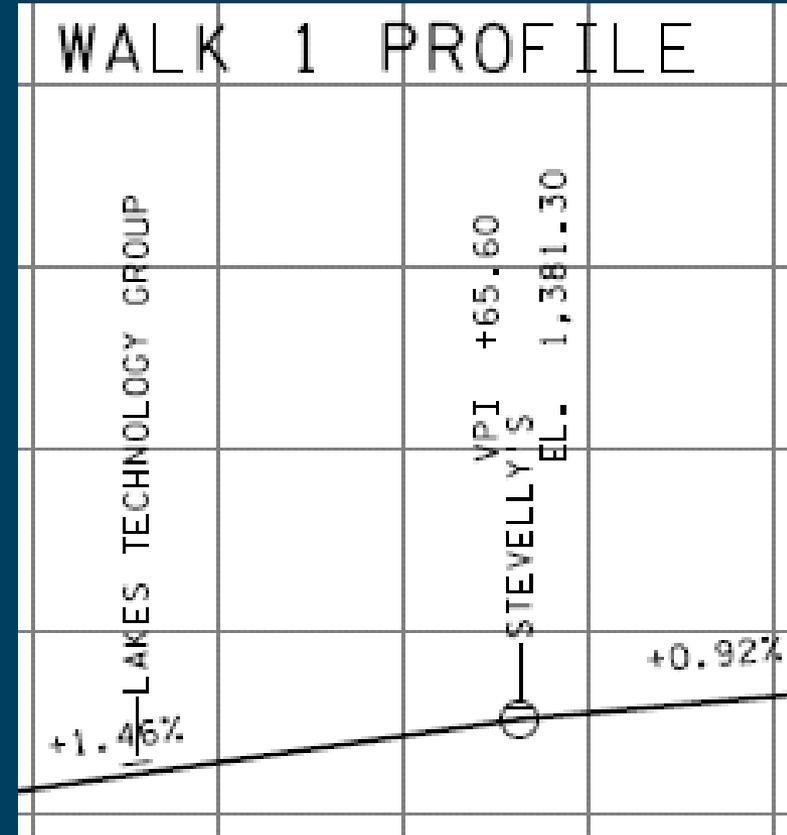
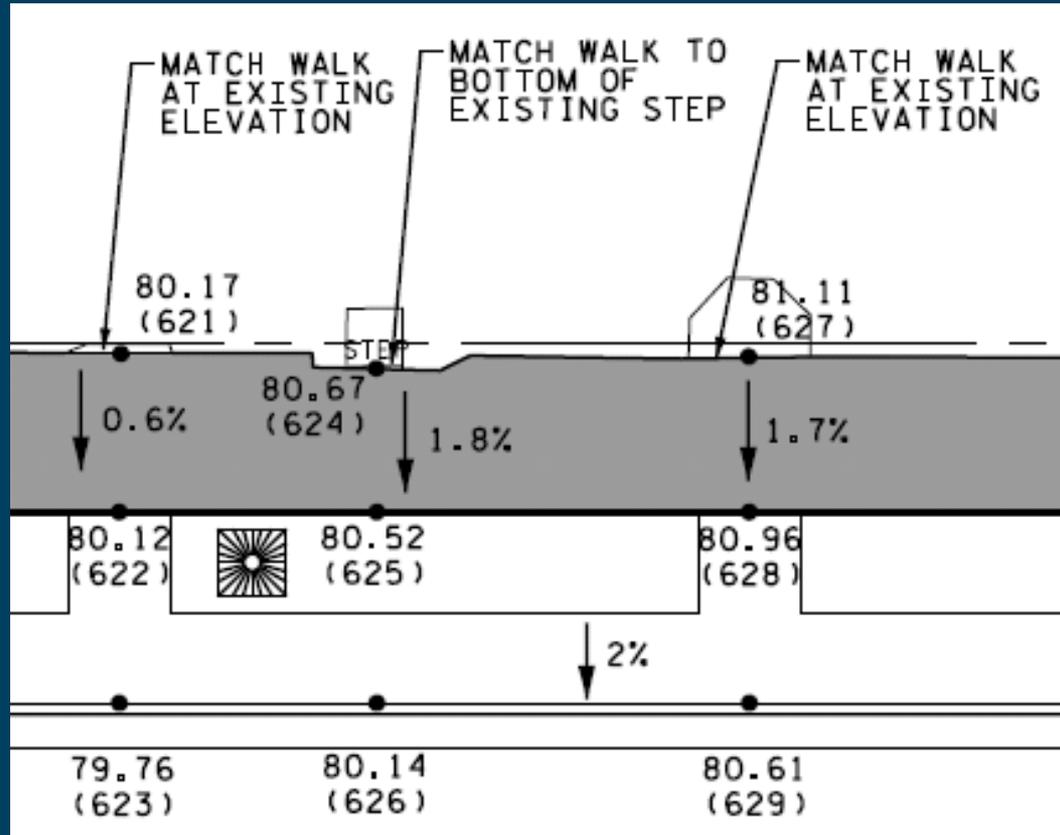
# Construction Staking: PAR



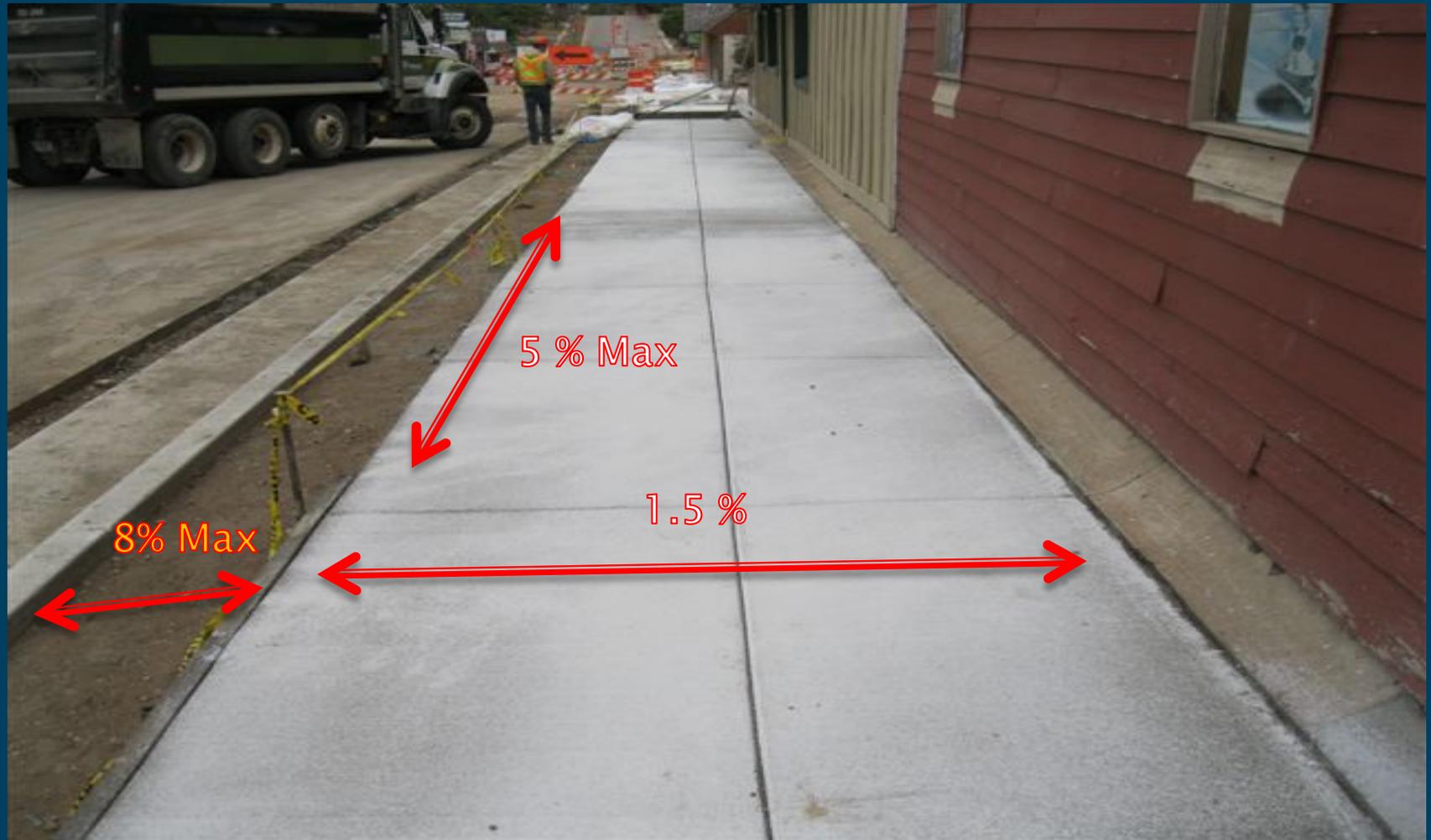
# Construction Staking: PAR



# Sidewalk Profiles



# Sidewalk Profiles



# Entrance Tie-ins

