

3D MILLING

TOTAL
(station)
CONTROL

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What is 3D Milling?

3D Design Model + Machine Control + Total Station(s)

Automatically adjust elevation and slope based on 3D model and position of machine.



WHY?

- Cross slope correction or alignment shift =
LEVELING MIX, X" to 0"

ISSUES:

Poor Compaction = poor durability and high permeability (moisture damage)

Staging Issues = Resetting paver, cool down time between lifts, traffic on leveling

As Built Records = Where was leveling placed and how thick?

Grade Constraints = How to correct if grade cannot be increased?



**CHECK WITH PAVEMENT
DESIGNER FOR ADEQUATE
EXISTING STRUCTURE**



3D MODEL

- Earthwork system
 - Surface
- Paving system
 - Virtual Stringline
- Separate surface/model for milling operation
- Operator can enter manual offset from design surface



TOTAL STATIONS



PRISM

CONTROLLER



Approx. 300 ft. max
range from TS to
machine

ACCURACY:

Horizontal \approx 0.01 ft.

Vertical \approx 0.003 ft.

CALIBRATION

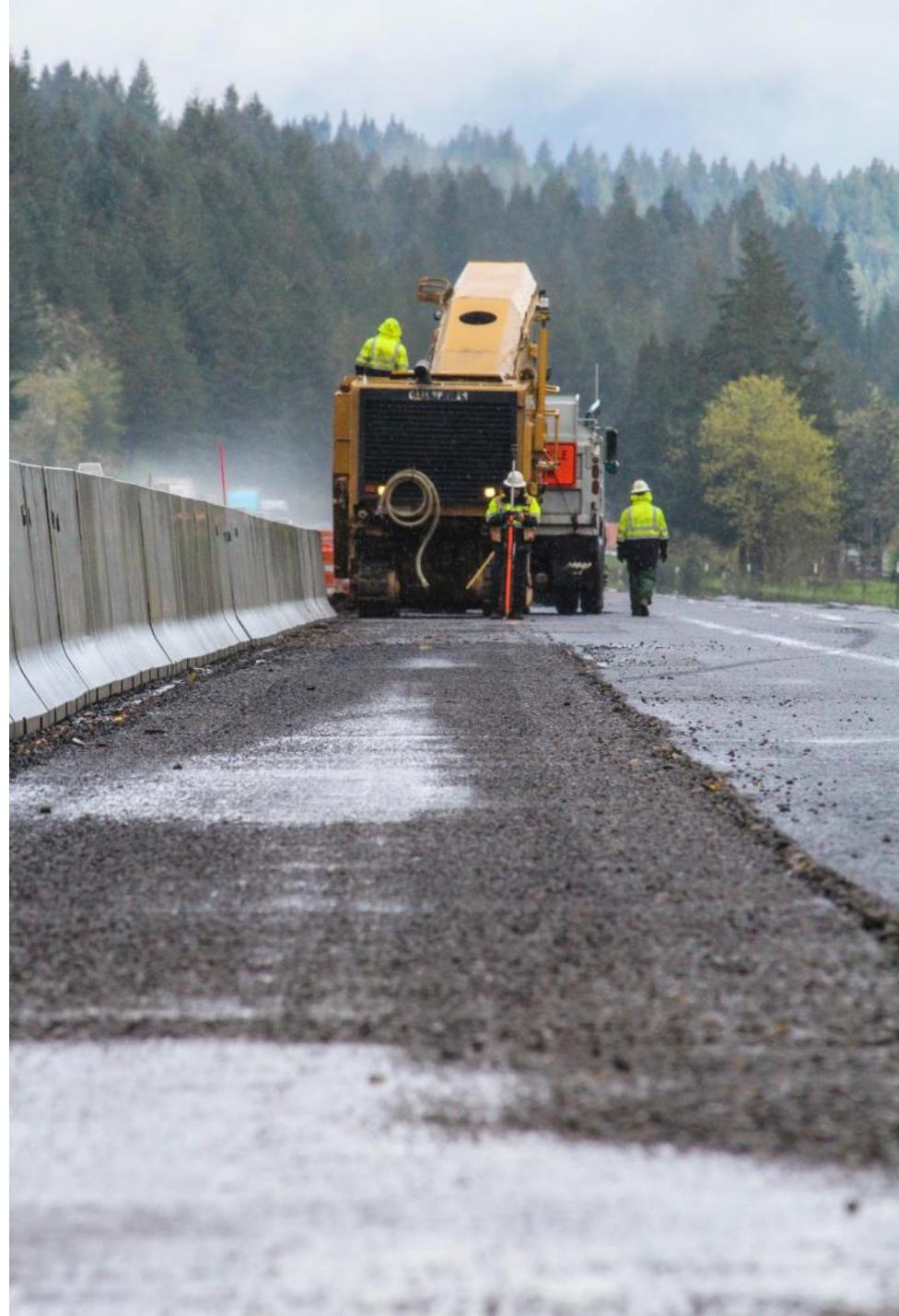


GRADE CHECK



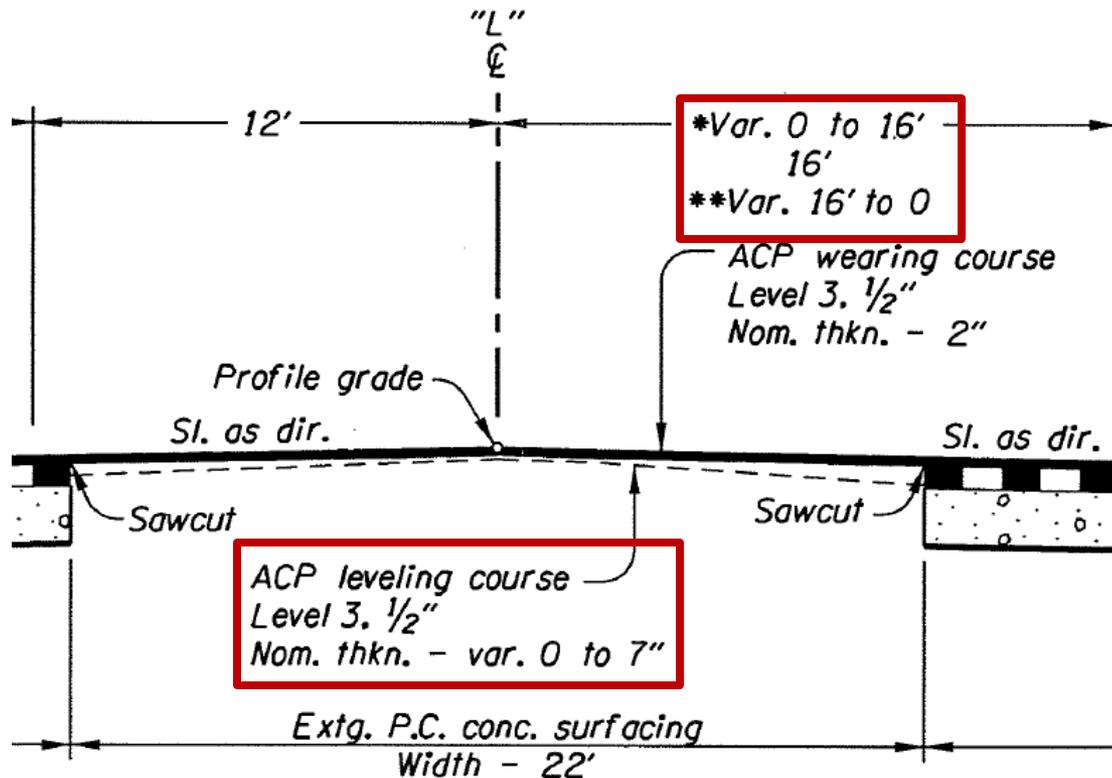
Benefits

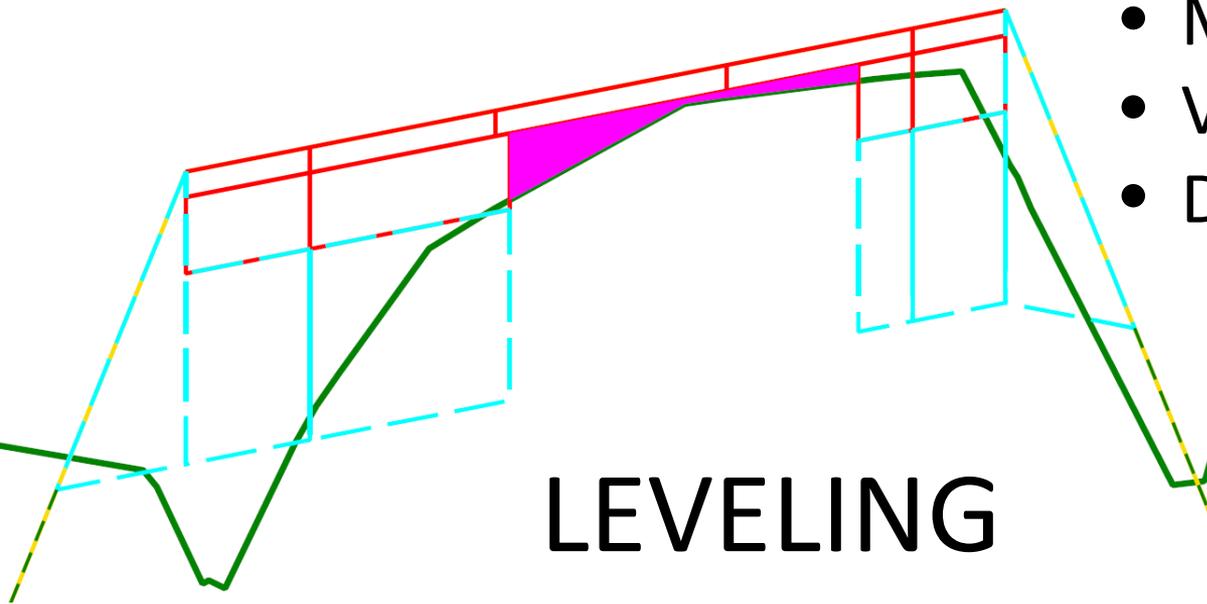
- Accuracy
 - Correct depth and slope at correct location
 - With a positioning tool, contractor and inspector can check grade quickly at any location
- Remove need for asphalt leveling/wedge
- Control quantity on PCC inlay projects



Projects

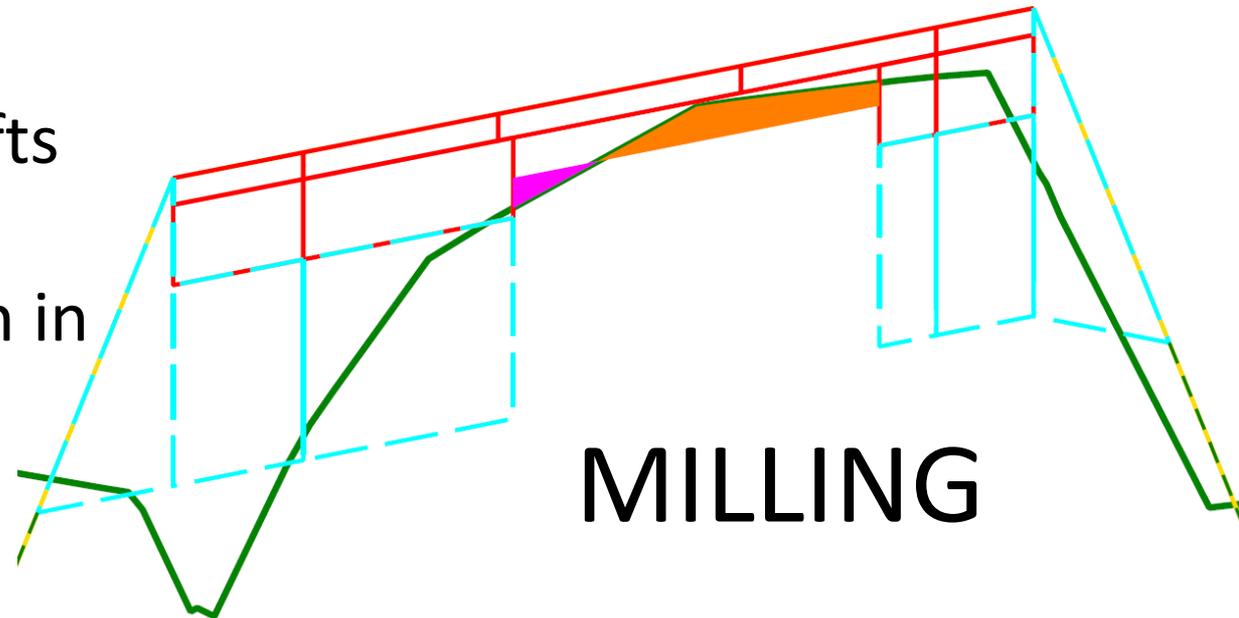
- Short (<1 centerline mile) pilot project
- Cross slope correction or shift in alignment





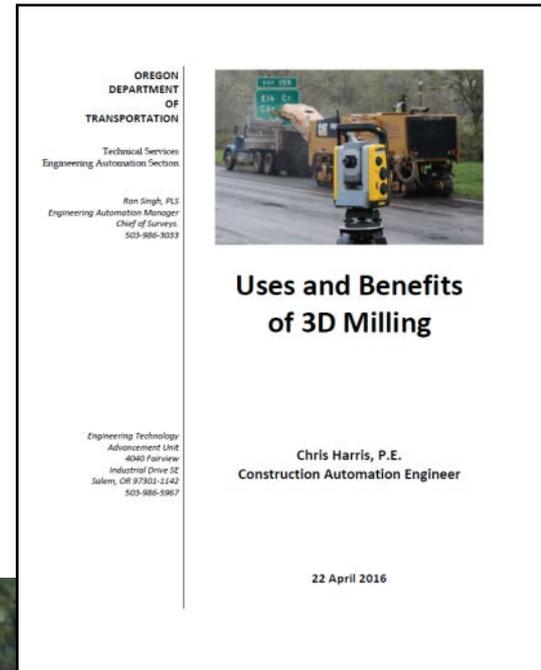
- Multiple passes of paver
- Variable depth ACP
- Differential compaction

- Single leveling pass
- At least 2 uniform lifts above leveling mix
- Uniform compaction in critical zone (top 4")



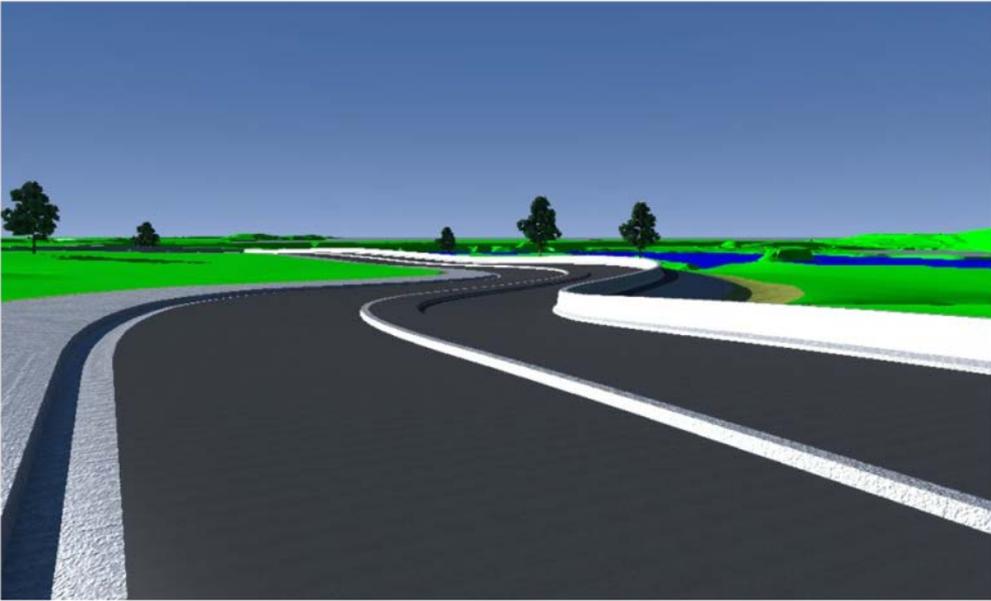
Implementation

- White paper – Uses and Benefits of 3D Milling
- Already being used by contractors
- ODOT + Industry working group
- Select short projects with cross slope adjustment for pilot
- Modify specifications



Thank You!

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