3D MODEL INTEGRATION
FROM DESIGN TO INSPECTION AND CONSTRUCTION

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INTRODUCTION

• Creation and use of 3D modeling in transportation design and construction continues to evolve.
  – Contractors have been using GPS and Machine Control for 20 years
  – FHWA
  – Driven the adoption of Automated Machine Guidance (AMG)
    • Create improved operational efficiencies, quality, and higher accuracy in grading and paving tolerances
    • Quantitative project lifecycle reconciliation
    • Reducing cost
    • Increased productivity by up to 50%
DIFFERENT MODELS

- Designer’s Surface
- Resident engineer’s 3D model
- Contractor’s constructible model

CURRENT DESIGNER / OWNER OUTPUT

- Not sufficient for 3D AMG
- Dirt Models
- String-less Pavement Models
- For Construction Models
SUMMARY

• Current Practices
  – Phase 3 inspection – rovers in the resident engineers hands
  – Re-building / Re-modeling of designer’s information by contractors and RE’s
  – Used to calculate and confirm pay quantities

• Solutions
  – ODC: Owner/Designer/Contractor  \textit{PPP}
  – Designer’s involvement throughout the project life cycle tied to construction performance?
  – Design in 3D for Construction
QUESTIONS?