

CI11140-L - It's a Balancing Act: BIM Workflow for Site Design

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@rasmusmi

An aerial rendering of a city skyline featuring a large stadium, a multi-lane bridge crossing a river, and surrounding green spaces with trees and walkways. The scene is set during the day under a clear blue sky.

Lab Assistants:

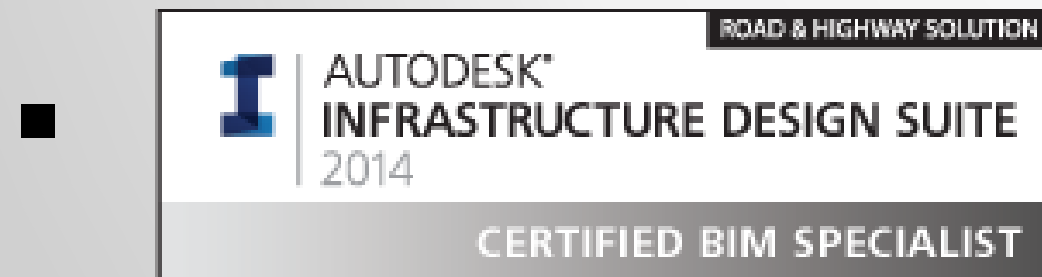
Jen Chavez

Joe Hedrick

Matt Anderson

About Me

- Used AutoCAD® since release 9
- Teaching since 2000
- Writing courseware since 2007
- Books are sold in 67 different countries



Class summary

Helping the community visualize a project's impact before construction is complete can be very difficult unless you use the right tools for the job. This class explores conceptual site-design options using InfraWorks 360 software to visualize realistic proposed sites. Starting with Model Builder and Revit software models, you will learn how to create realistic and accurate models that support a more informative and productive public-communication model. After clearly demonstrating the conceptual and preliminary design to stakeholders, we take the design into AutoCAD Civil 3D software to run quantity takeoffs and finish the detailed design. The design is then taken back into InfraWorks 360 software to create high-impact visuals to better support public participation and communication. We will perform various types of analysis along the way to validate the design and ensure design parameters are being met.



Key learning objectives

At the end of this class, you will be able to:

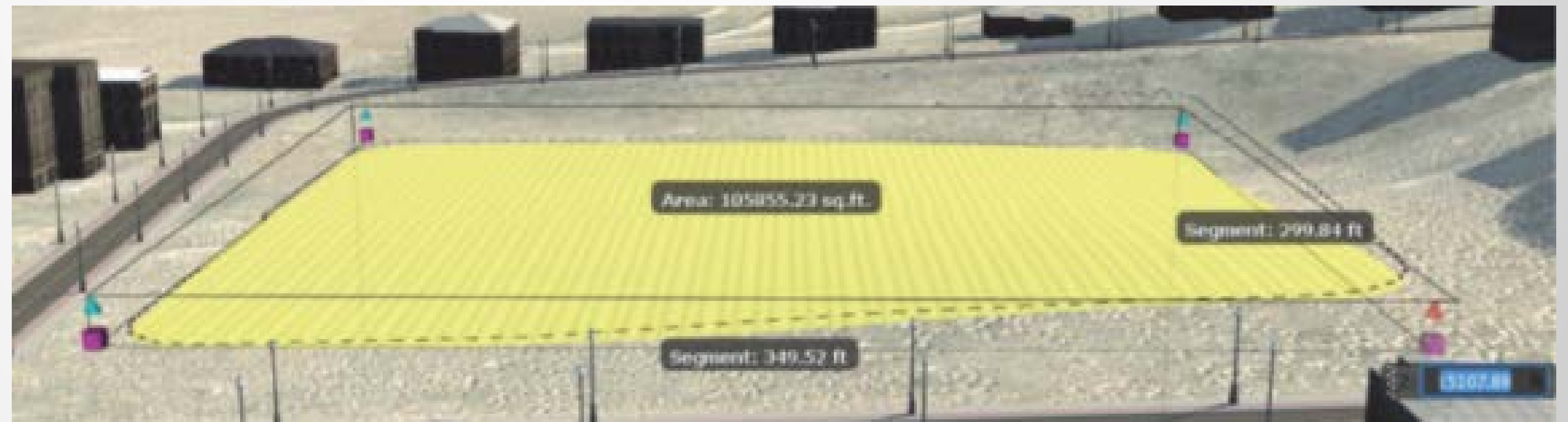
- Create conceptual grading plans and parking lots inside InfraWorks 360.
- Transfer the design to AutoCAD Civil 3D to create the detailed design.
- Compute quantity takeoffs for the earthworks and material volumes.
- Communicate the design visually with InfraWorks 360.

An aerial perspective of a city skyline featuring a large bridge crossing a wide river. The bridge has a rainbow-colored line along its edge. In the foreground, there are green spaces with trees and a small landscaped area. The background shows a dense urban area with various skyscrapers under a clear blue sky.

Create conceptual grading plans and parking lots inside InfraWorks 360

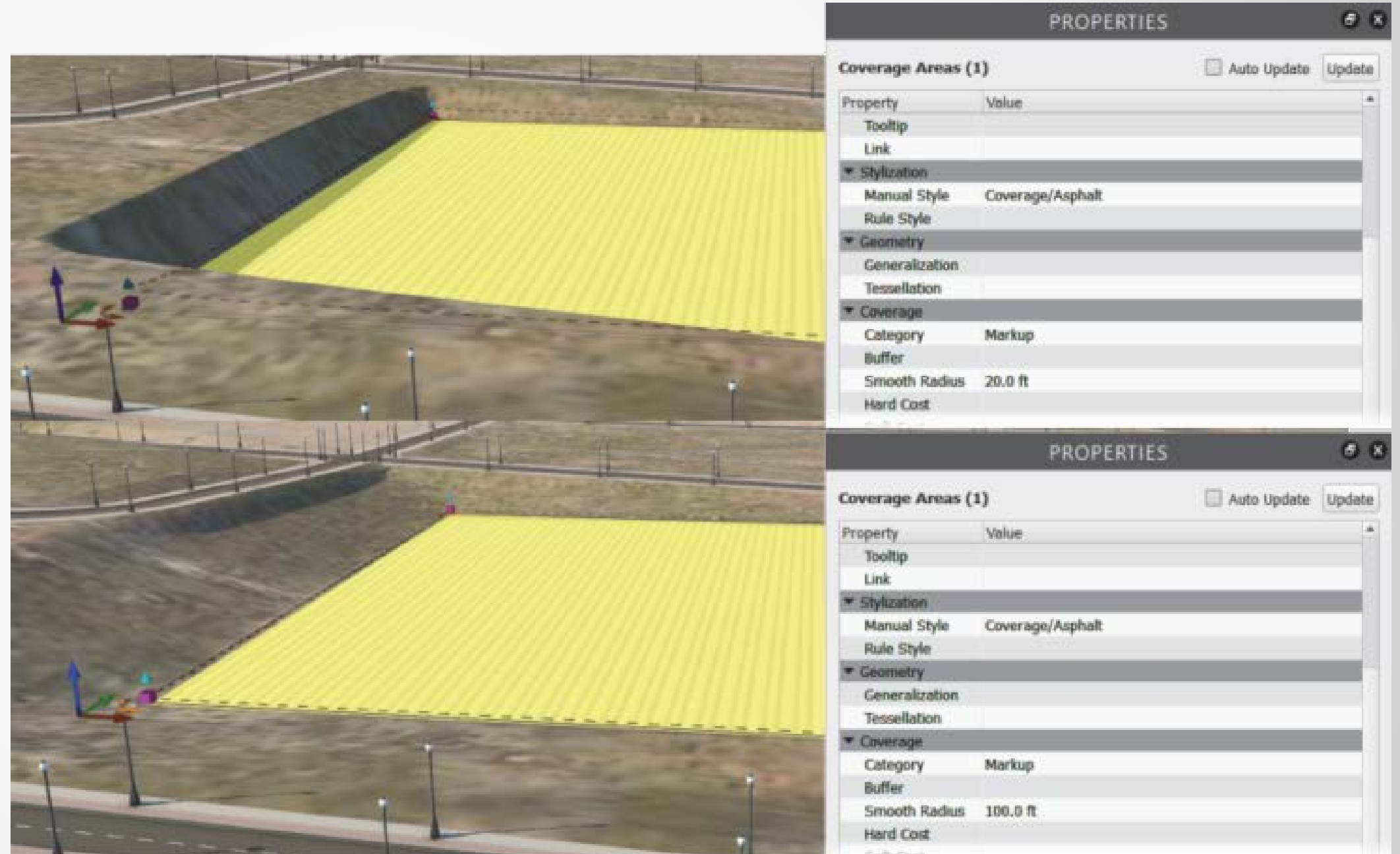
Create Coverages

- Surface Display
 - Asphalt
 - Grass
- Surface Shape
 - Building Pad
 - Terrain Hole



Edit Coverages

- Gizmos
- Shape Terrain
- Properties
 - Smooth Radius

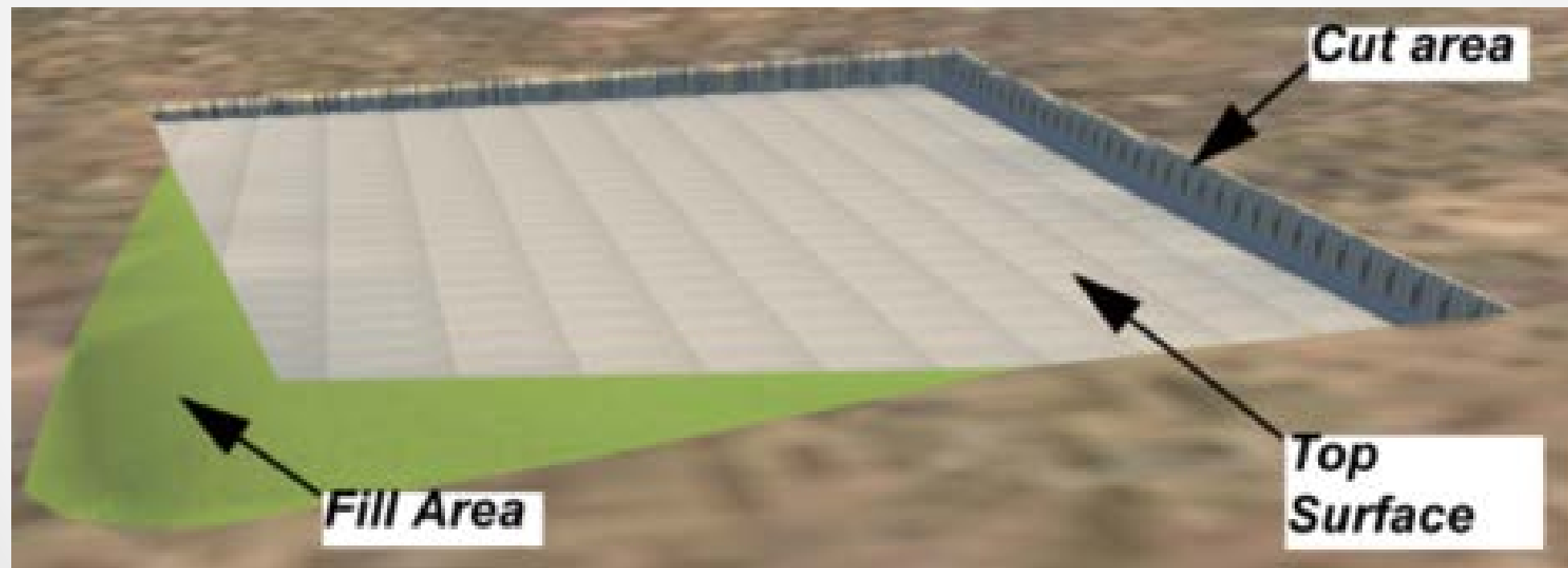


Let's Try It

- Pages 3-4 of your handouts

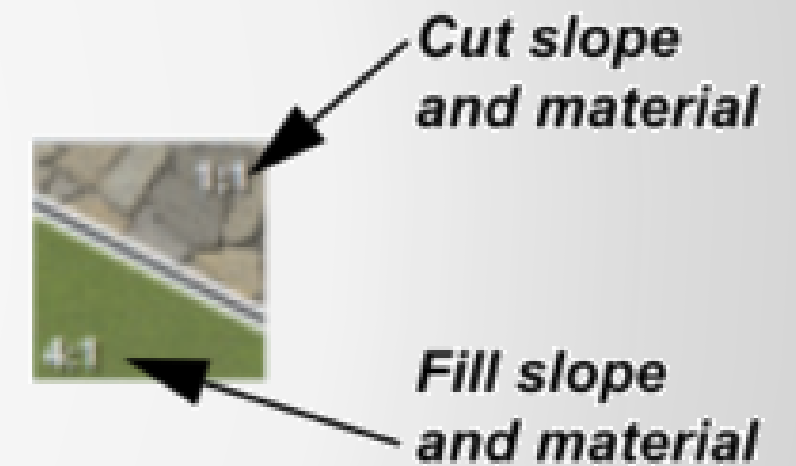
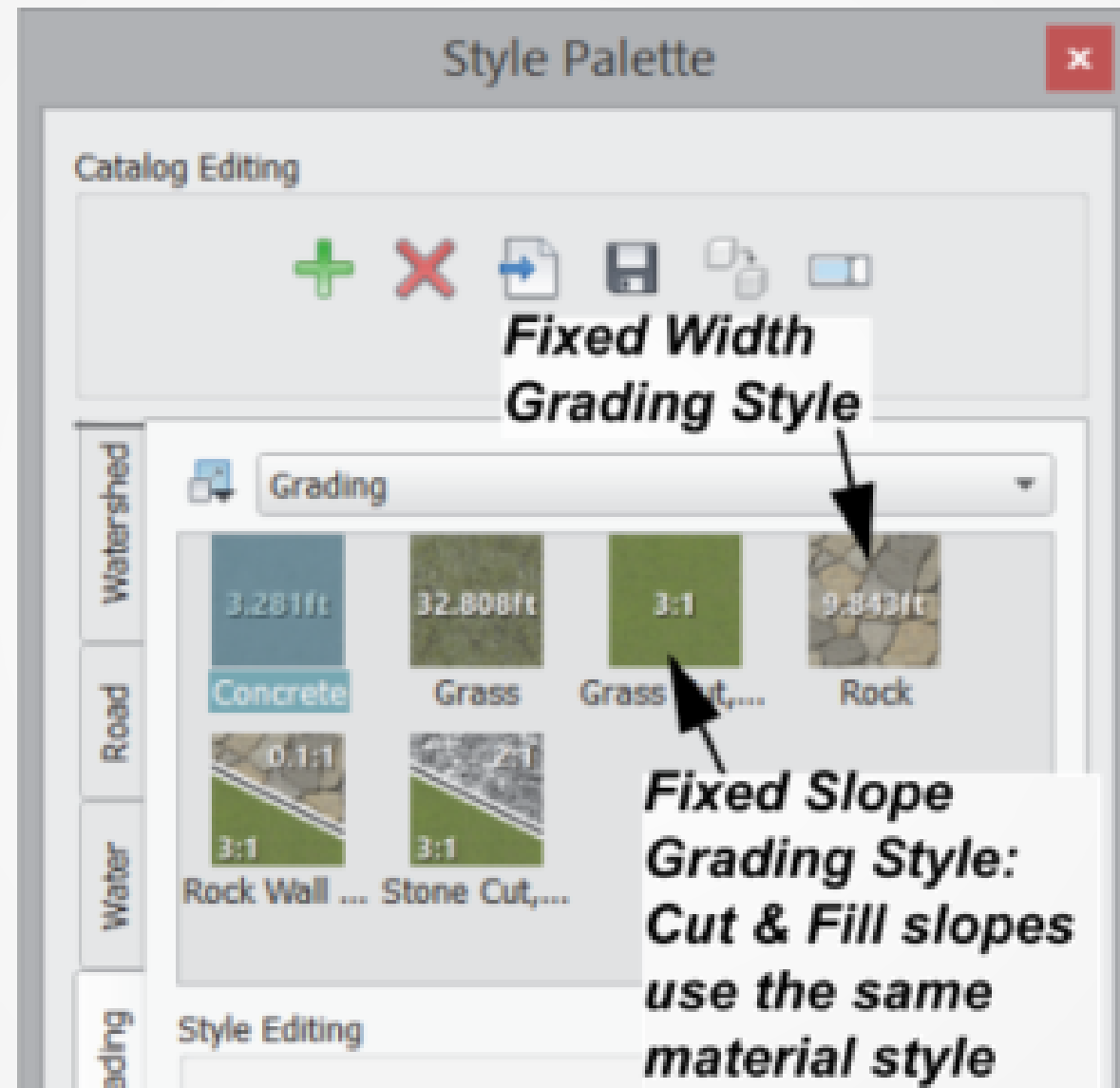
Create Land Areas

- Flat Top
- Control Top, Cut, and Fill Materials Separately.



Grading Styles

- Fixed Width
- Fixed Slope



Fixed Slope Grading Style:
Cut & Fill slopes use
different material styles

Let's Try It

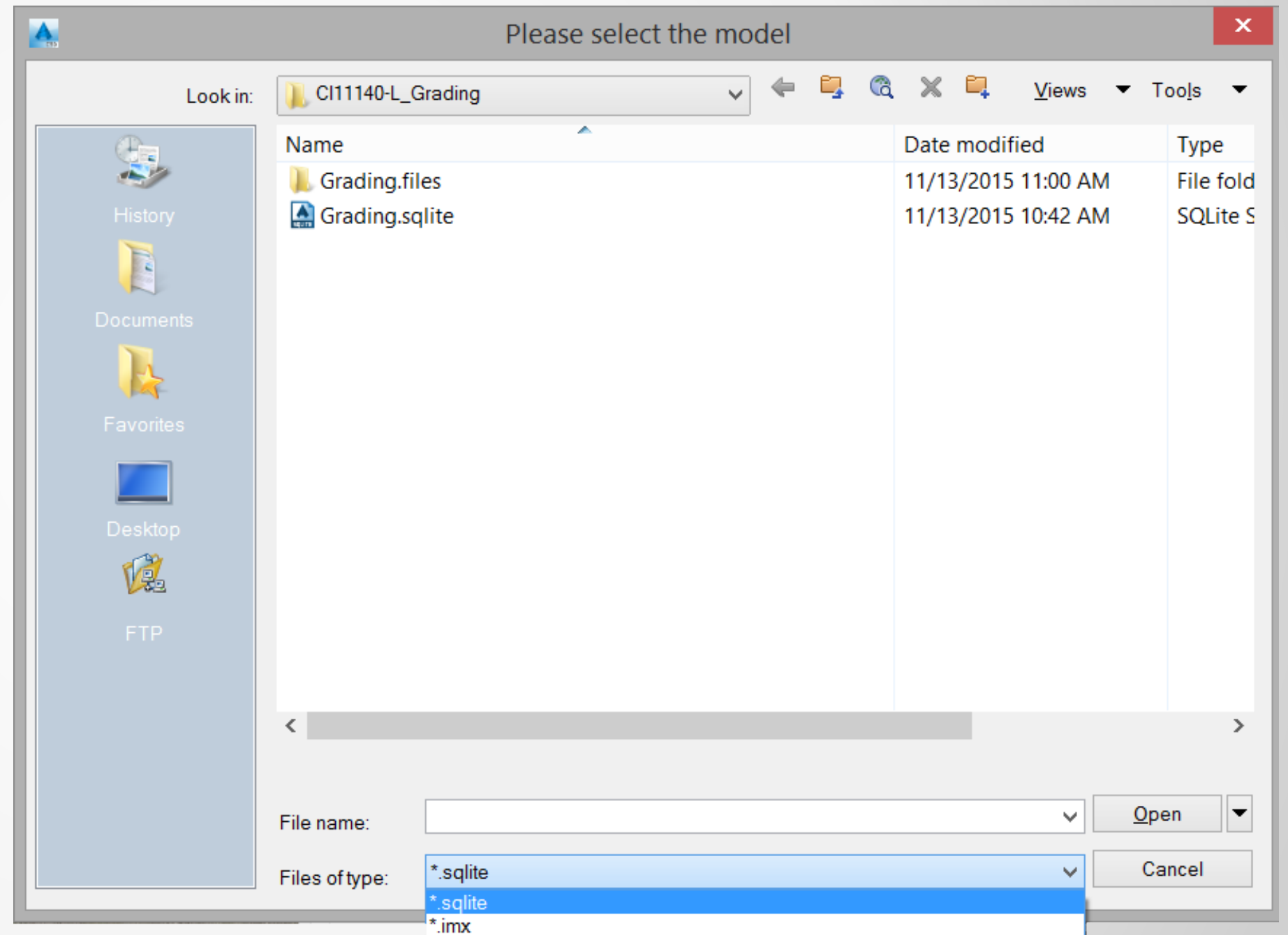
- Pages 6-8 of your handouts

A 3D architectural rendering of a city skyline. In the foreground, a multi-lane bridge with a rainbow-colored line along its edge spans a river. A red car is driving on the bridge. The riverbank is landscaped with green grass, trees, and a small garden bed. In the background, a dense city skyline with various skyscrapers is visible under a clear blue sky.

Transfer the design to AutoCAD Civil 3D to create the detailed design

Open or Import

- Open .sqlite
- Import .imx



Let's Try It

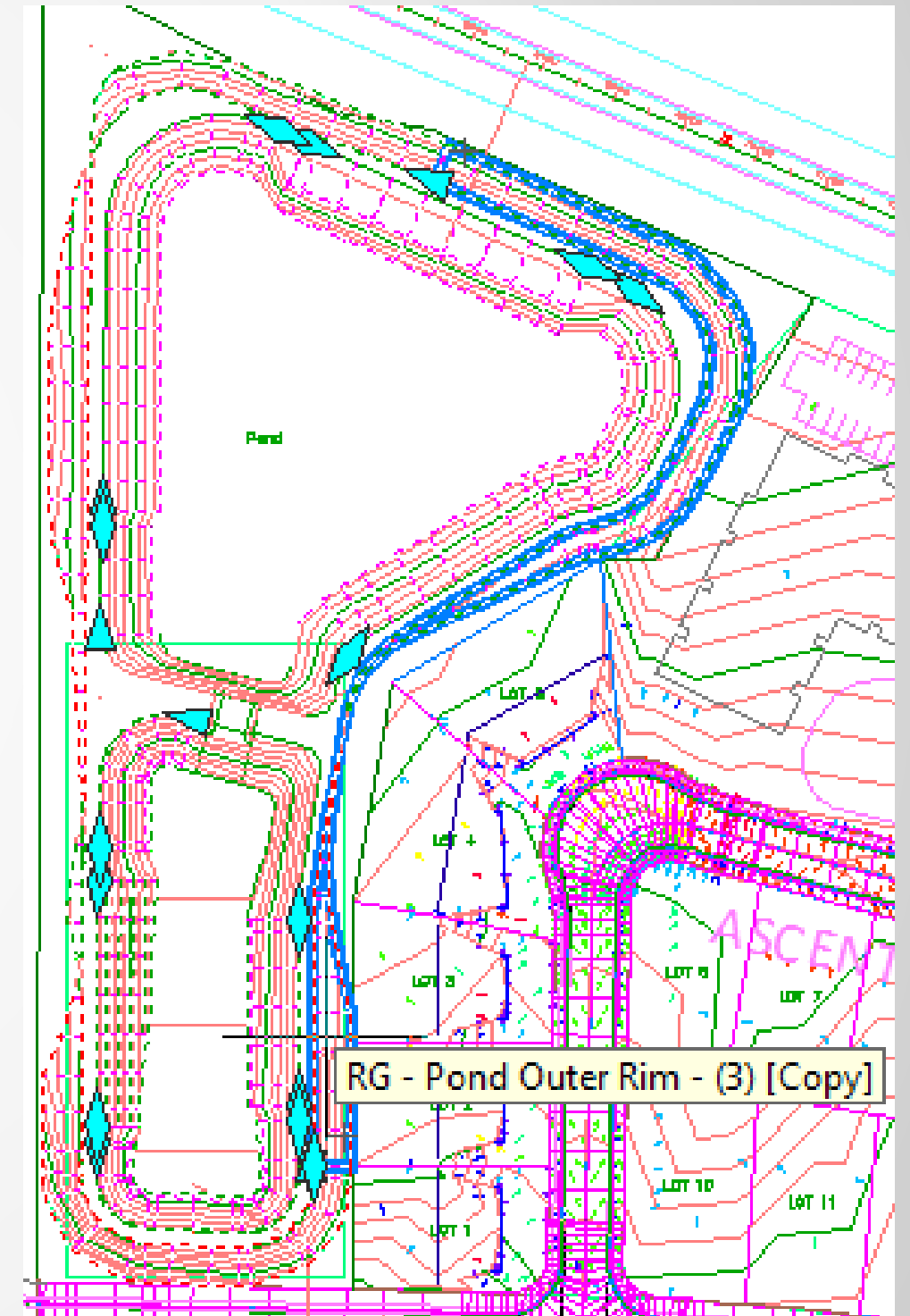
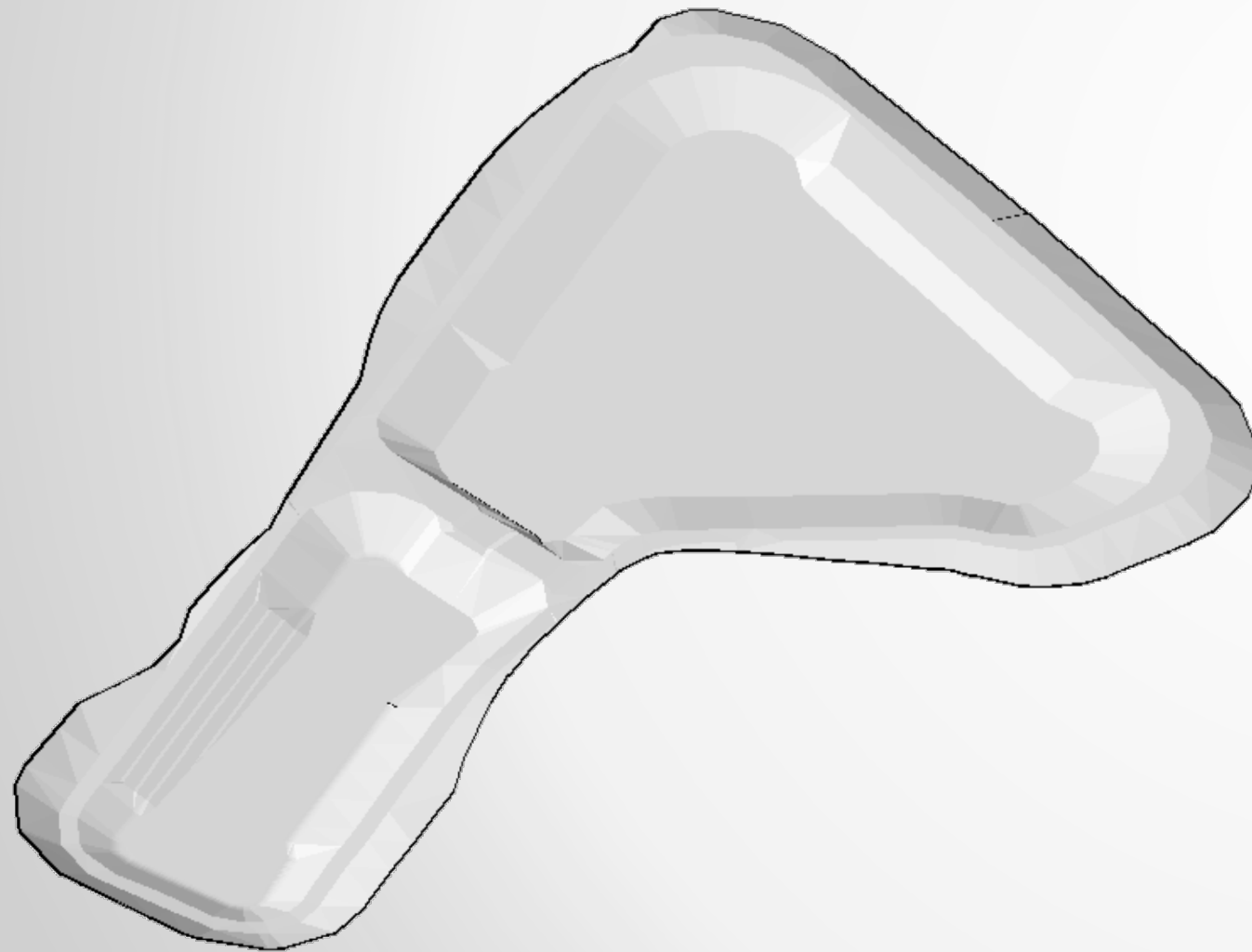
- Pages 9-10 of your handouts

An aerial view of a city skyline with a bridge and a river. The bridge is a multi-lane highway with a rainbow-colored line running along its length. The river is a large body of water. The city skyline is in the background with various skyscrapers. The text "Compute quantity takeoffs for the earthworks and material volumes" is overlaid on the image in a large, blue, sans-serif font.

Compute quantity takeoffs for the earthworks and material volumes

Compute Quantity Takeoffs

- Create a volume surface
- Create sections



Let's Try It

- Page 11 of your handouts

An aerial perspective of a city skyline featuring a large bridge spanning a river. The bridge has a rainbow-colored line along its edge. In the foreground, there is a green park area with trees and a small pond. The background shows a dense urban area with various skyscrapers under a clear blue sky.

Communicate the Design Visually With InfraWorks 360

Storyboard Interface

Caption

Storyboard Name

Timeline

Student Dropoff Lane

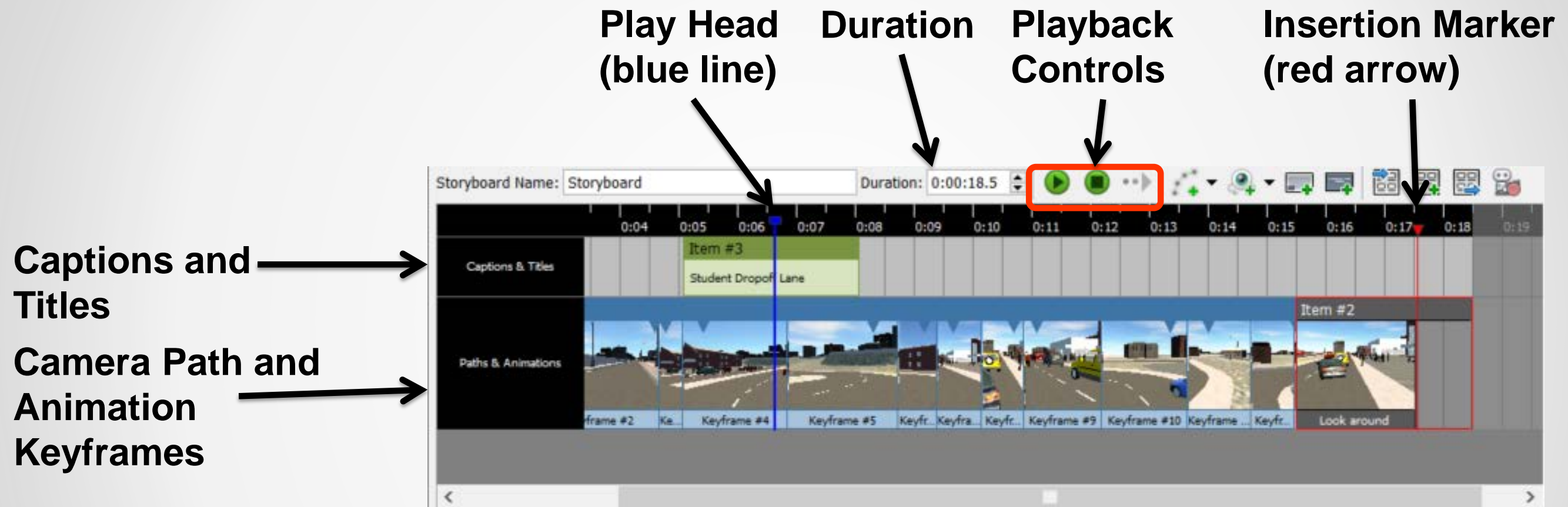
Storyboard Tools

Current Model View

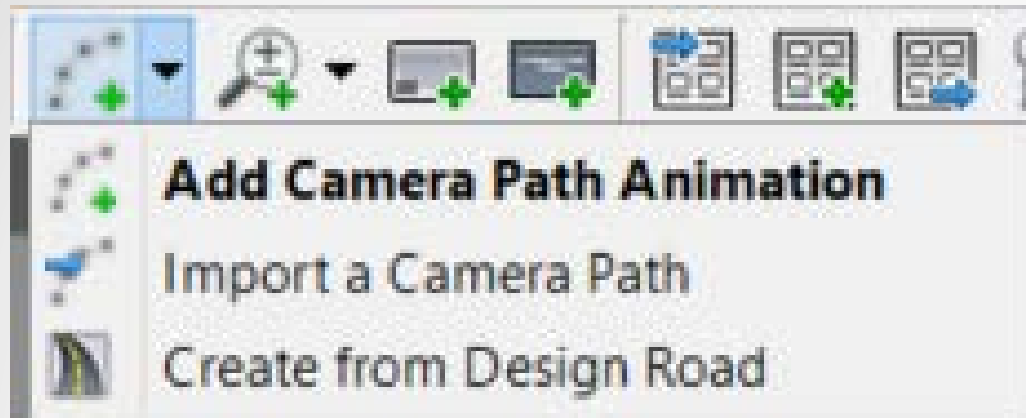
Keyframe Settings



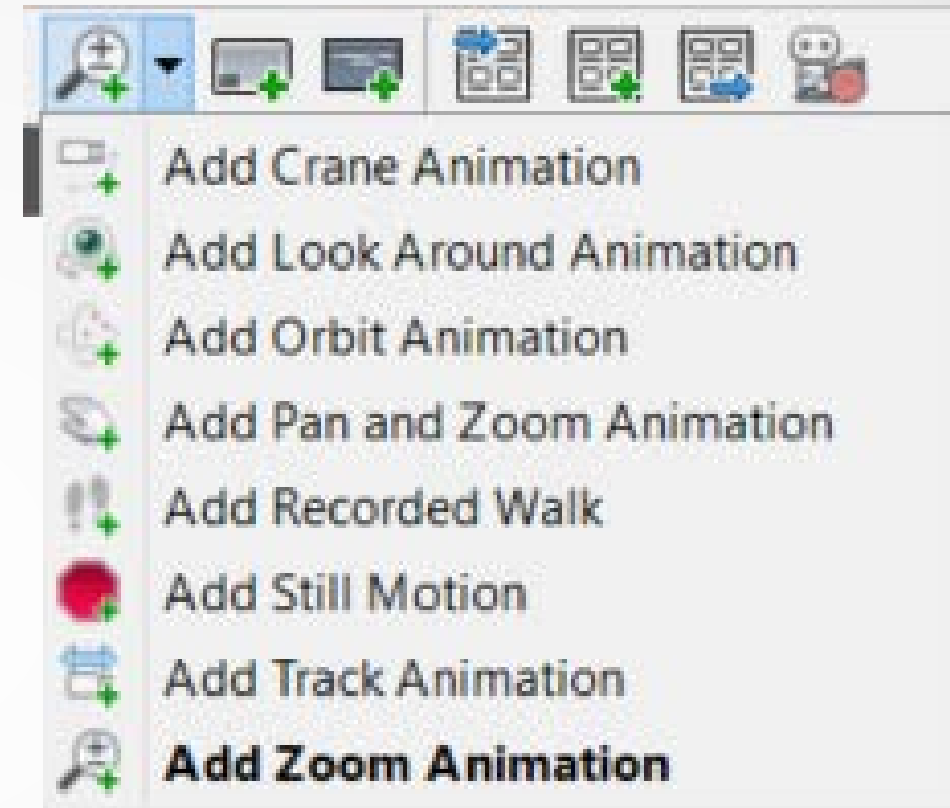
Working with the Timeline



Adding Keyframes



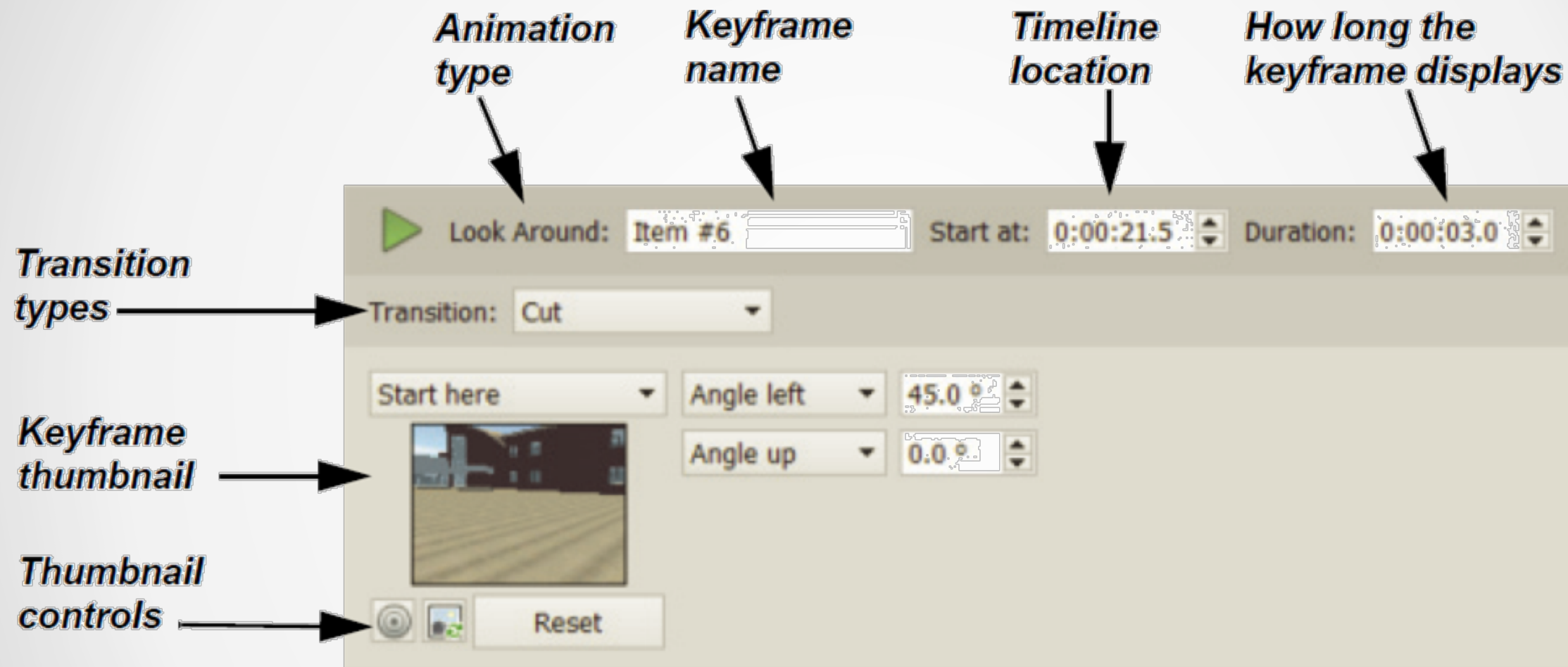
Path Animations





Camera Animations

- Note: The **Create from Design Road** path animation type is only available using the Roadway Design Module of the software.

Keyframe Settings



- Thumbnail controls
 -  (Go To Location)
 -  (Refresh Thumbnail)

Let's Try It

- Pages 14-16 of your handouts

Bonus Material

- Working with IMX files

Thank You

- Please fill out the survey and let me know how I did.

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