

# How to Build Effective Assemblies

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# About the Speaker

## Russ Nicloy

Russ Nicloy has been in the civil/infrastructure industry for over 23 years. In a consulting role he has worked with municipalities, utilities, site designers, environmental engineering firms, and the Wisconsin DOT on transportation projects, helping firms implement and train their staff for their specific use of their software. His company, MACER Technologies, Inc., provides drafting services to the civil/infrastructure industry, in the Autodesk Infrastructure Collection of products.

# AGENDA

## WHY CONNECTING SUBASSEMBLIES IS CRITICAL

You can't just get close when adding subassemblies to an assembly. You have to be deliberate!

## REUSE DESIGN, REDUCE WORK

Don't recreate the wheel. Use what you can and tweak what needs changing.

## TECHNIQUES FOR TRACKING ASSEMBLIES THROUGH THE PROJECT

Some simple steps can help you find design needs or find problems in the file.

## CONDITIONAL SUBASSEMBLIES: STRENGTHS AND WEAKNESS

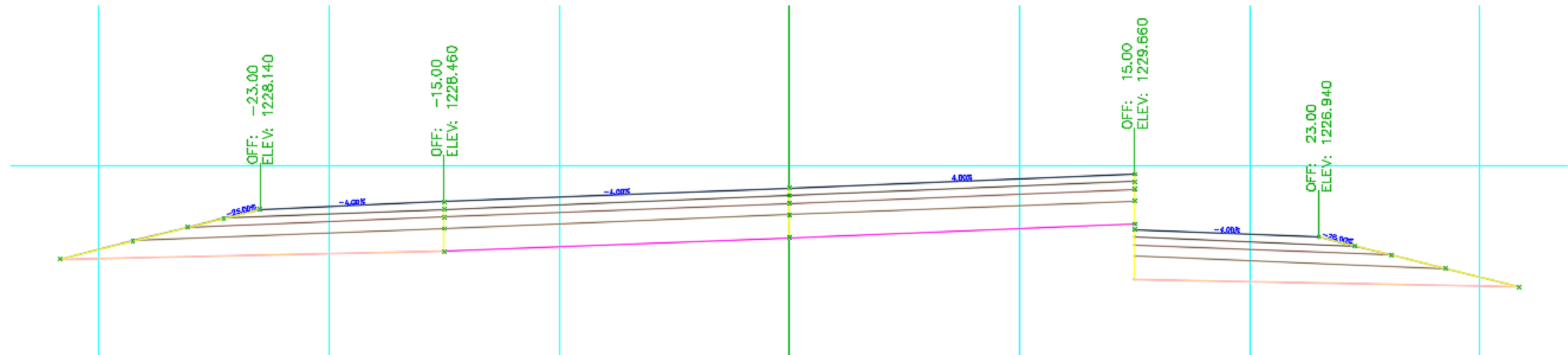
Making one assembly do the work of many. When used properly the tools can strengthen your design process.



# Why Connecting Subassemblies is Critical



When the superelevation transitioned the lane,  
the shoulder got left behind.



# Why Connecting Subassemblies is Critical

Data doesn't flow if it isn't connected.

- If the subassembly is not properly placed on the previous point code, there really isn't a connection.
  - Cannot use OSNAPS, or use AutoCAD COPY/MOVE/MIRROR.
    - There are alternatives for each of these..
- Tough to troubleshoot. Manifests itself in different ways.
  - Assembly properties Construction may not have two sides.
  - Subassembly acts against expectations.



# Reuse Design, Reduce Work



# Reuse Design, Reduce Work

Use the power of the tools to prevent calculating things multiple times.

- Copy to/Move to/Mirror through multiple assemblies.
  - Specialized tools that work with the coding of assemblies
    - Mirror copies the subassembly and turns the “Side” parameter to the opposite
- Copy assemblies and rename by stationing,
  - and make copies for each region.
- Placing lanes (or other targeting subs) with 0 width, so they can transition into the design.
  - Ramp-type designs in particular.



# Techniques for Tracking Assemblies Through the Project



# Techniques for Tracking Assemblies Through the Project

In a typical project there will be a lot of data related to the assemblies. It could easily become lost or misinterpreted. You need a plan to find and utilize that data quickly.

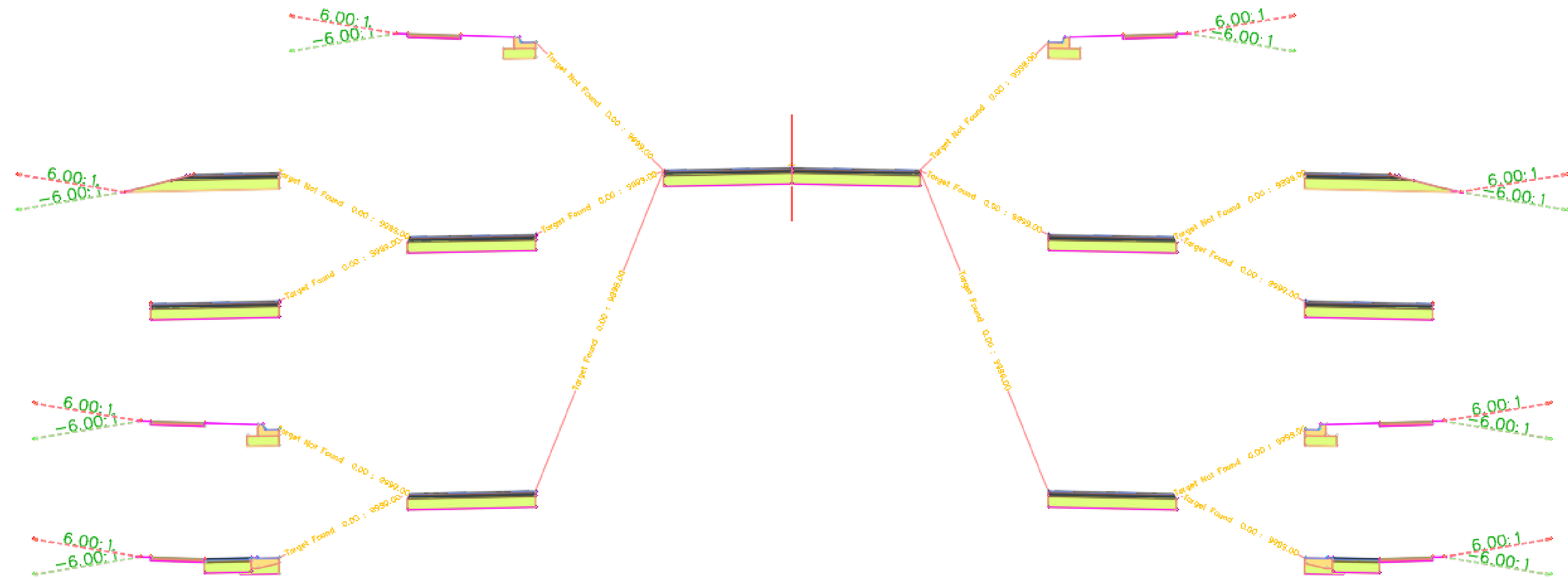
- Use the Prospector Assemblies area to “Zoom To” assemblies in the drawing.
  - Even if you pick the wrong one you may at least be closer.
    - BTW: Use “Zoom To” for other objects in the Prospector
- Name the assemblies AND subassemblies as you create them. No time like the present.
  - Unique names
  - Will help with targeting later
  - Will help with troubleshooting, or new users on the project



# Conditional Subassemblies: Strengths and Weakness



# Overuse of Conditional Subassemblies, or “Too much of a good thing...”





# Conditional Subassemblies: Strengths and Weakness

While they are great tools, you need to be aware of the positive AND the negatives before you use them.

- Strength: One set of conditional subassemblies can replace multiple assemblies/regions.
- Strength: You can have more than one “found” condition at a location in an assembly.
- Weakness: The more conditionals you have, the more complex and the more assignments you need to maintain.
- Weakness: You need to target the “found” AND “not found” conditions.
- Strength/Weakness: Conditional targets are triggers NOT geographic targets. It takes two assignments for both to occur.

# Thank you!

## Questions?

Follow-up questions:



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