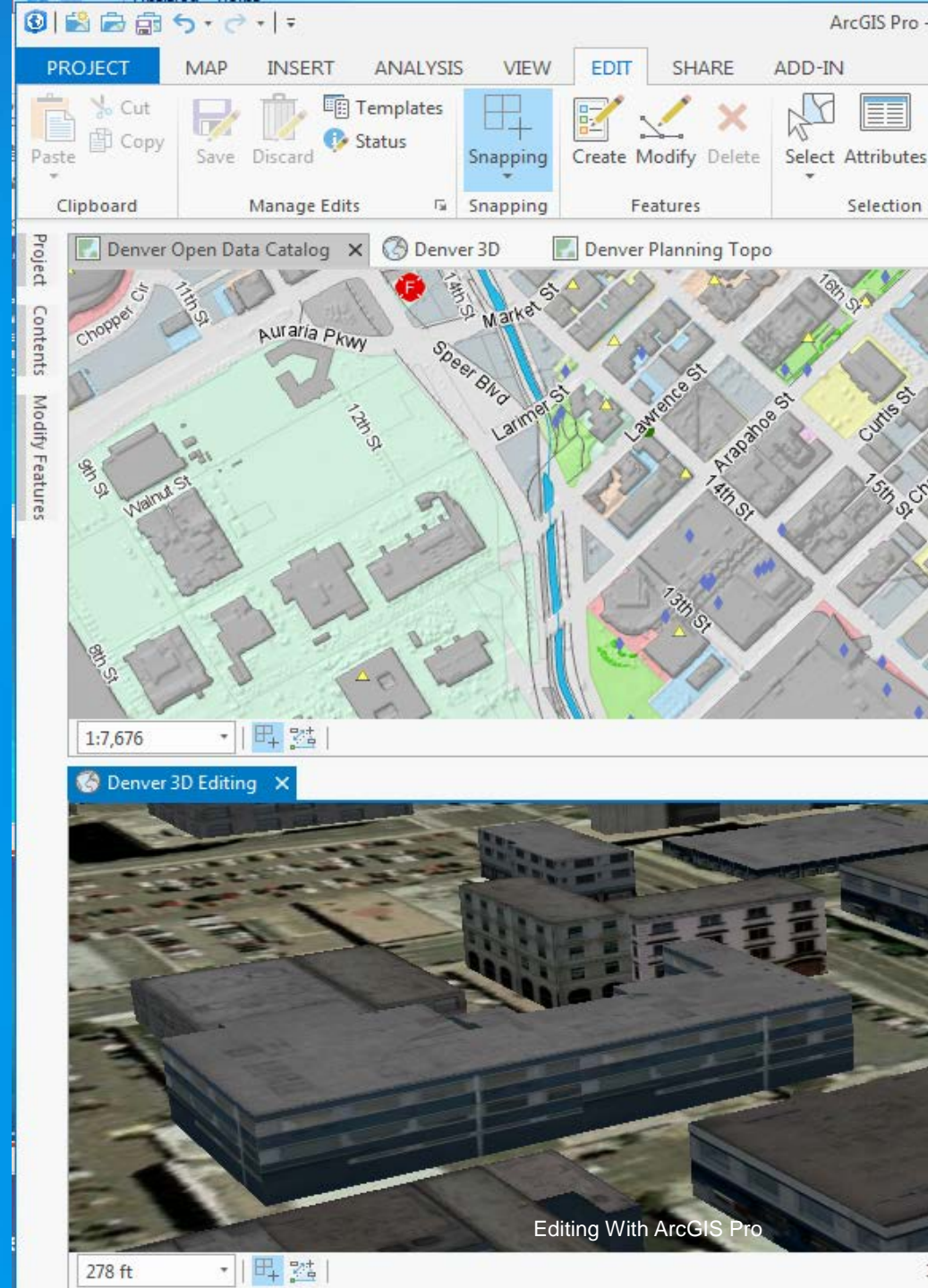




# Editing With ArcGIS Pro

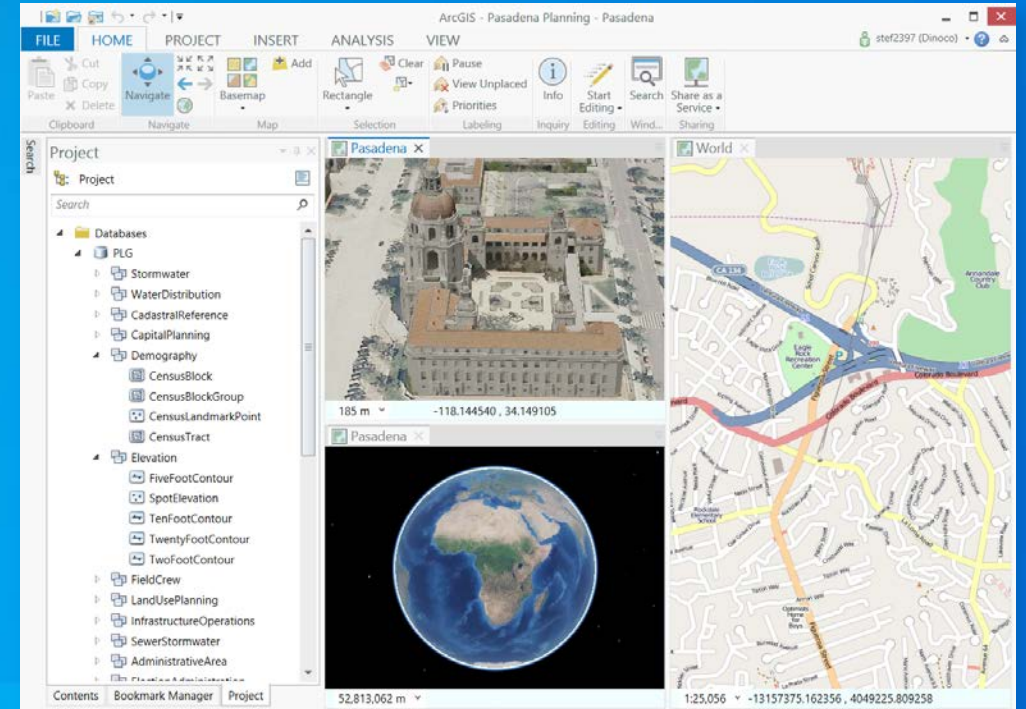
Jennifer Cadkin, Phil Sanchez, Larry Young

# ArcGIS Pro Overview



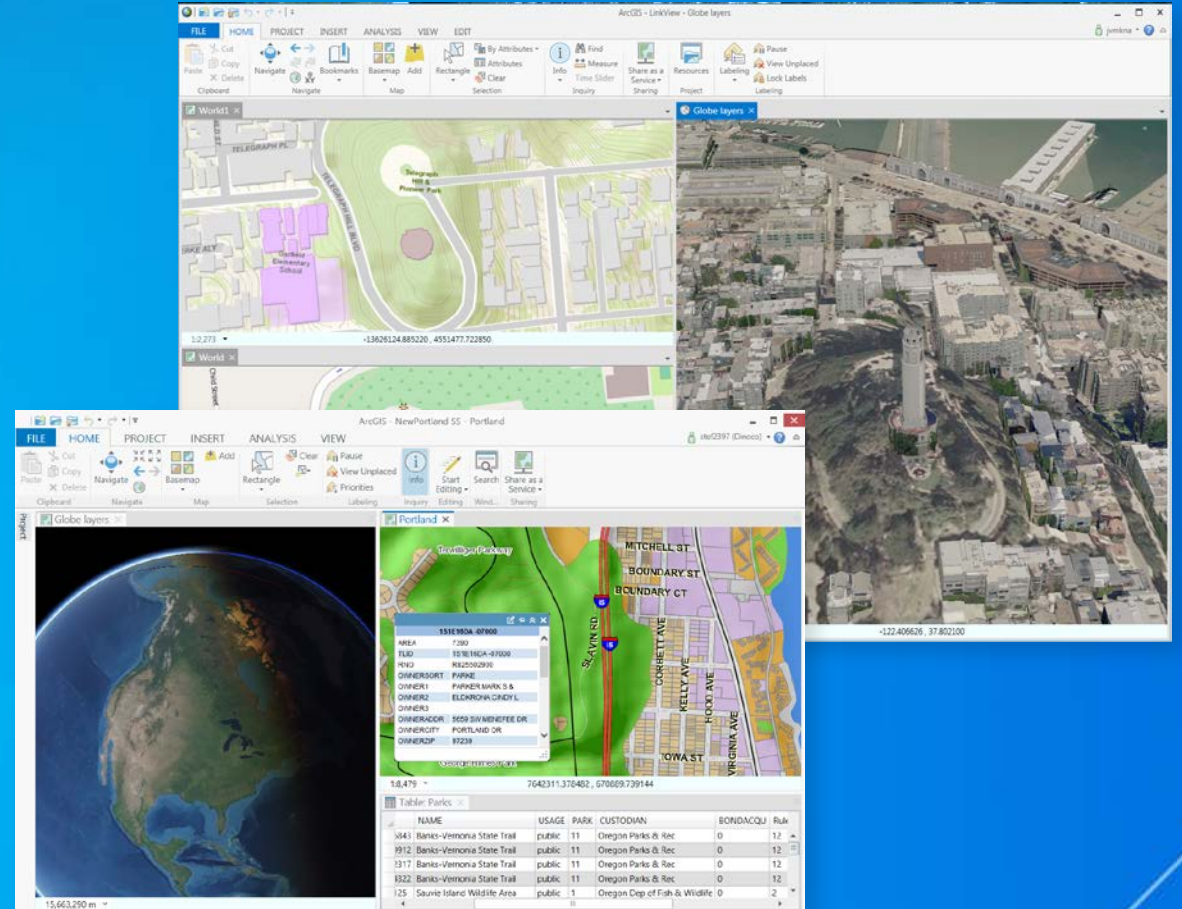
# ArcGIS Pro Highlights

- 2D and 3D in One Application
- New Fast Display
- Improved User Experience
- Cloud Ready
- Modern and Sustainable Architecture
- 64 Bit, Multi-threaded, Responsive

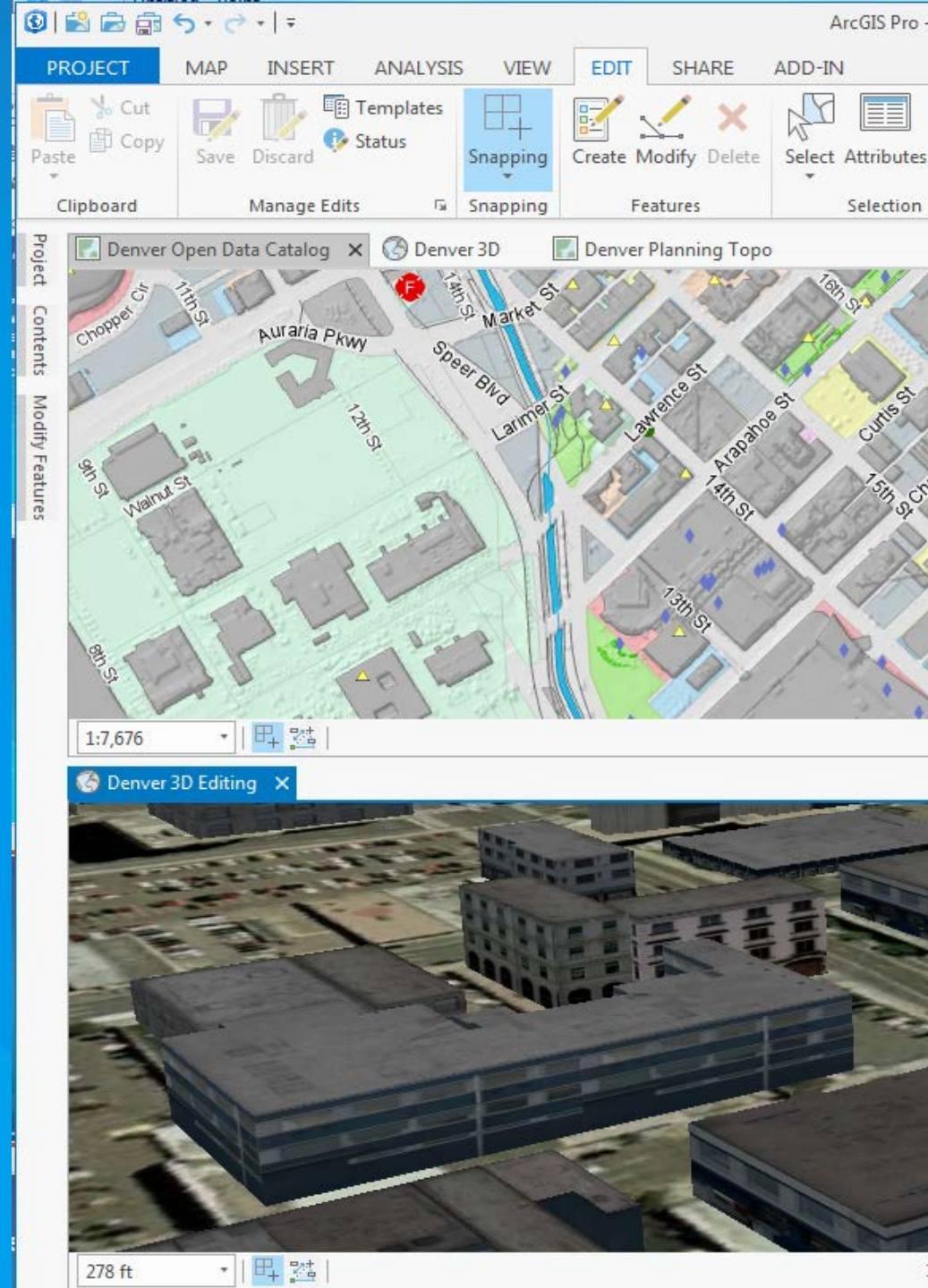


# ArcGIS Pro Highlights

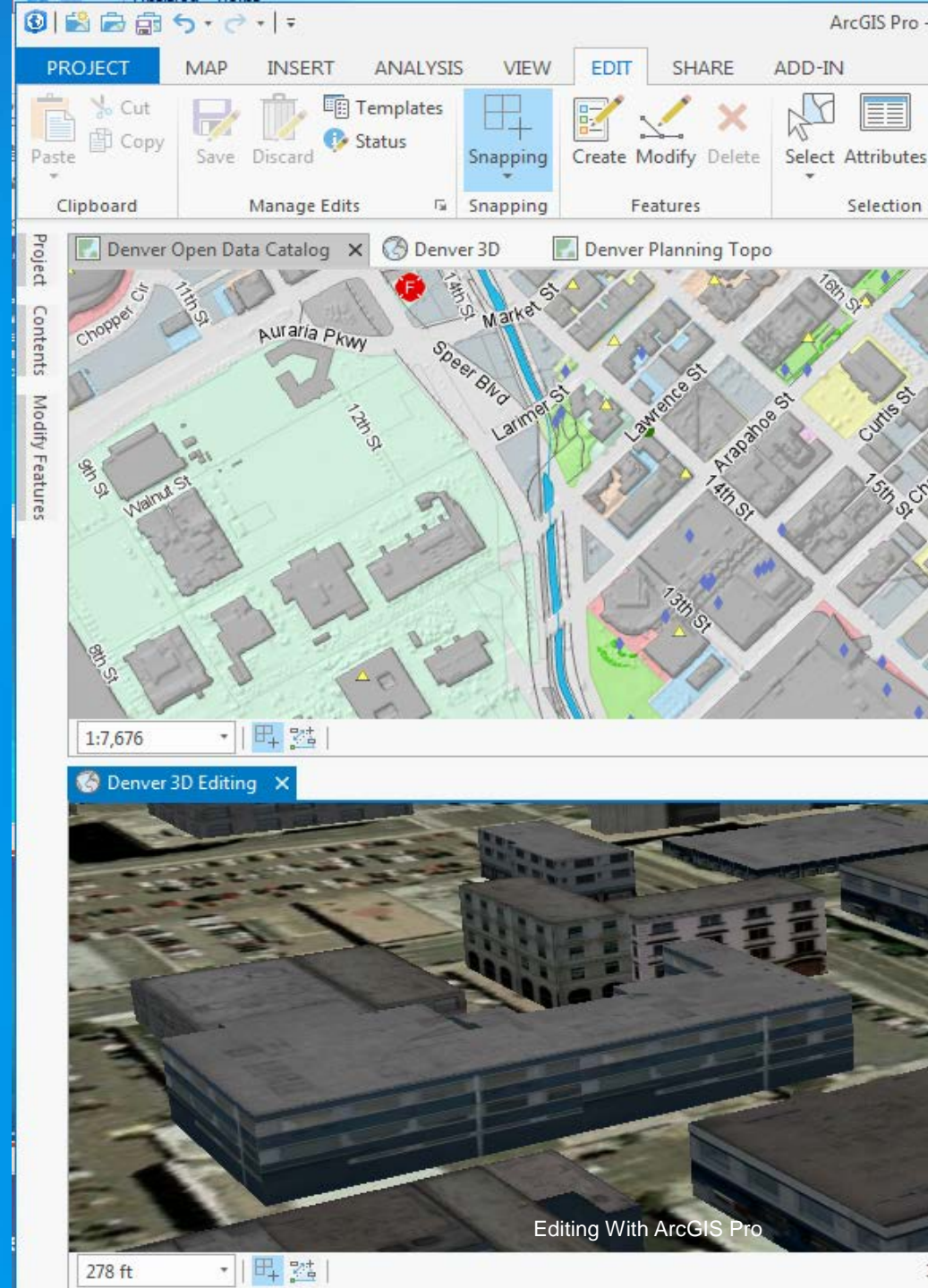
- Project Centric Workflows
- Multi-view and Multi-layout
- Editing in 2D and 3D
- Simple Search and Query
- Customization
  - Task
  - Python
  - .NET API



# Demo – Editing with ArcGIS Pro

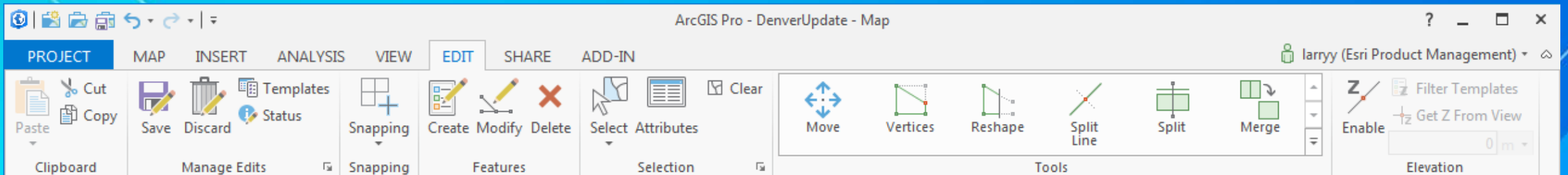


# User Experience and Workspace Management



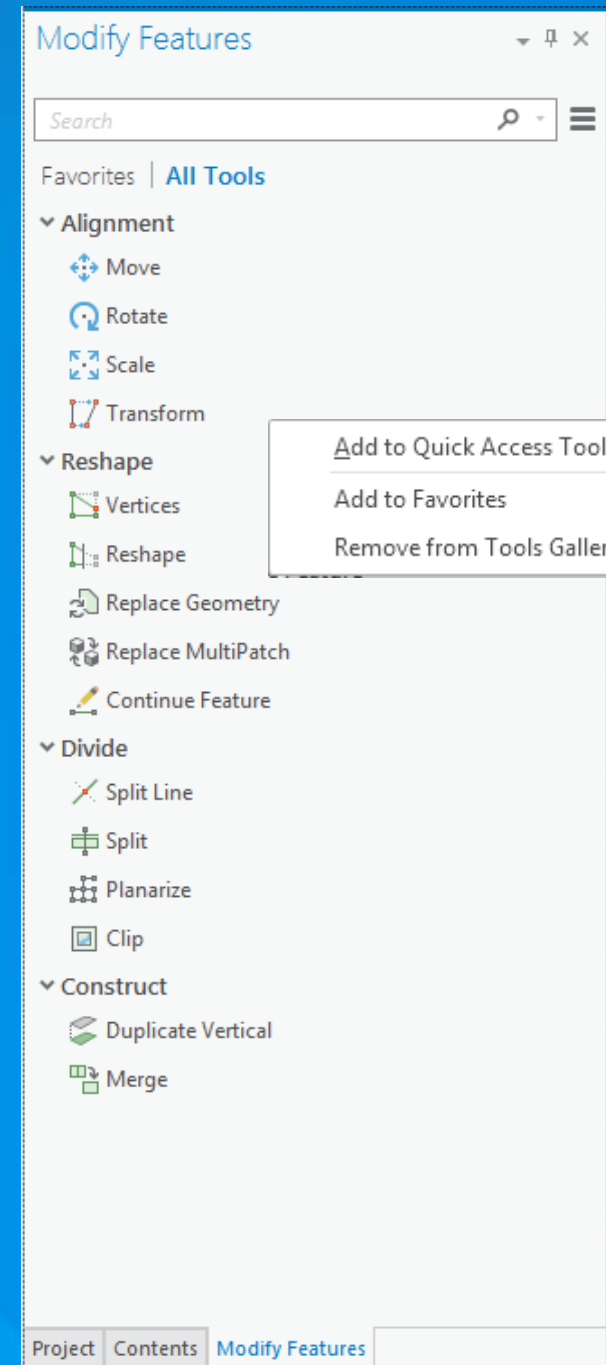
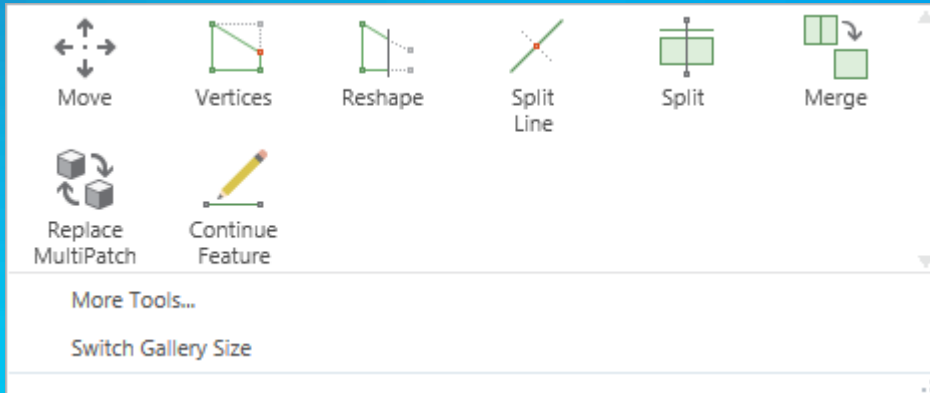
# Editing Basics

- Always editing all layers you have permissions for
  - Multiple workspaces edited at same time
  - Contents pane can be used to disable individual layers
- Tools available in multiple places (toolbar, modify pane, context menu)
  - Different users require different ways to access tools
- Tools always enabled
  - User prompted to make or update a selection if required



# Accessing Tools

- Tools Gallery and Modify Pane can be updated





# Editing Options

**Options**

Project

- Current Settings
- Units

**Application**

- General
- Map and Scene
- Navigation
- Selection
- Editing**
- Geoprocessing
- Raster and Imagery
- Display
- CAD
- Metadata
- Indexing
- Language
- Customize the Ribbon

**Set options for editing and versioning**

▼ **General**

- Show dynamic constraints in the map
- Default direction constraint:
  - Deflection  Absolute
- Default constraint for input mode:
  - Direction  Distance
- Enable double-click as a shortcut for the Finish button
- Touch screen input for new features
- Show the editing toolbar on the map
  - Position  Left  Bottom  Right
  - Size  Small  Medium  Large
  - Magnify Toolbar

▼ **Session**

- Automatically save edits
  - Time interval (minutes)
  - Number of operations
- Save edits when saving project
- Show dialog to confirm save edits
- Show dialog to confirm discard edits
- Deactivate an active editing tool when saving or discarding
- Make newly added layers editable by default

... . . .

[Learn more about options for saving edits](#)

▼ **Versioning**

How do you want conflicts to be resolved?

- In favor of the edit version
- In favor of the target version

How do you want to define conflicts?

- By attribute (by column)
- By object (by row)

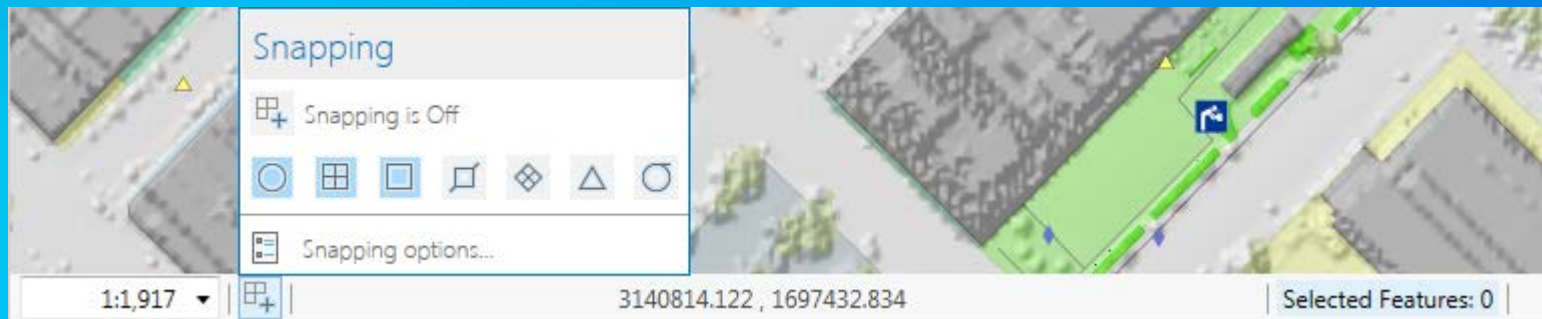
When saving edits, review conflicts that result from multiple users editing the same version?

- Yes (show conflict manager)
- No (do not show conflict manager and automatically save edits)

OK Cancel

# Snapping

- Snapping is at the map level
- Options always accessible in status bar
- All layers can be snapped to by default
  - Use List by Snapping to turn individual layers on and off for snapping



# Supported workspaces:

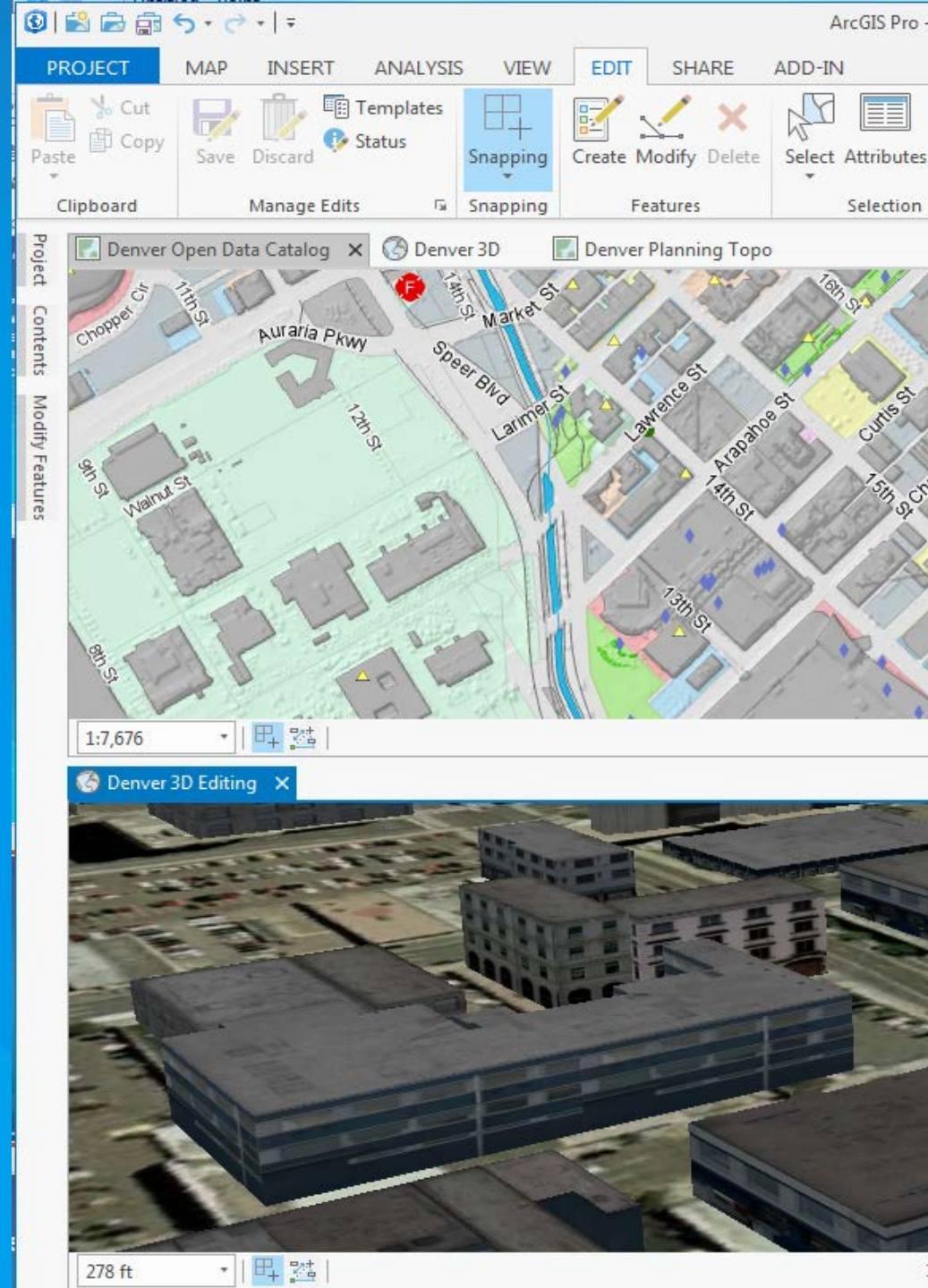
- **File geodatabases**
- **Enterprise**
  - Versioned and non-versioned
- **Shapefiles**
- **Feature Services (no undo/redo)**
  - Direct editing
  
- **What can't I edit:**
  - Personal geodatabases
  - Geometric networks
  - Topologies
  - Annotation
  - Dimensions

# Task Management

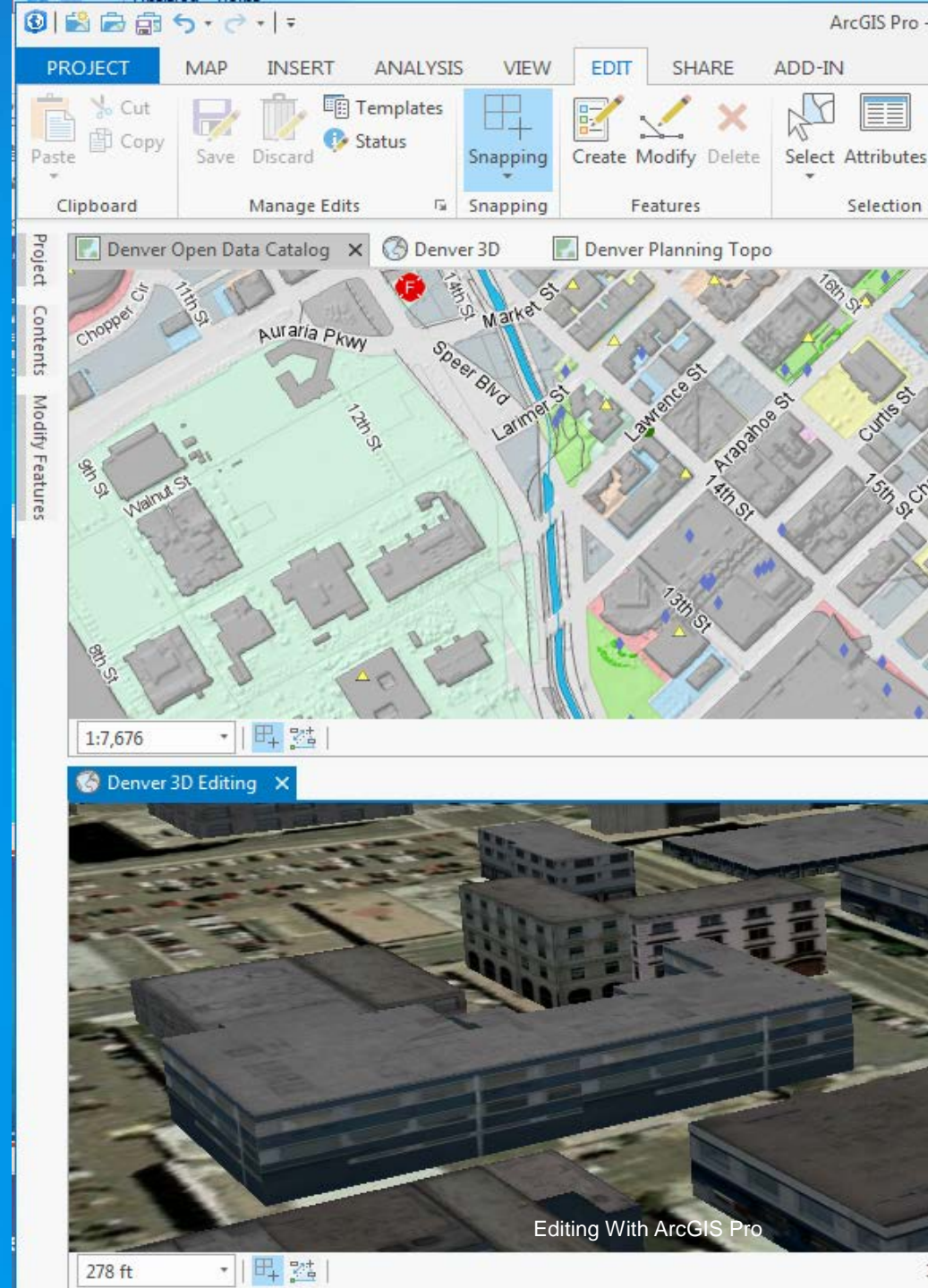
- Streamline workflows for efficiency
- Implement best practices
- Create interactive tutorial steps
- Create workflows with:
  - Designer
  - Recording option

The image displays two screenshots of a task management interface. The left screenshot shows a task list for "Rooftop GeoDesign" with sub-tasks like "Add facilities" and "Update facilities". The right screenshot shows a detailed view of the "Update Benches" task with a numbered list of steps: 1. Clear Selection, 2. Highlight Benches layer in TOC, 3. Select all benches, 4. Activate Move Tool. It also includes a "Run" button, a "Next Step" button, and a progress bar showing 1/4 completion.

# Demo – User Experience and Workspace Management



# Feature Templates






# Feature Templates

- Create new features with Feature Templates
- Use Properties dialog to define your templates:
  - Name
  - Description
  - Tags
  - Tools to use
  - Default attribute values
  - Attributes to prompt for
- Enter temporary overrides with Active Template pane

Create Features ▾ ⌵ ✕

← Active Template ☰

⚠ ▲ Assisted Living Residencies 2013

Enter attributes for features you are about to create.

|               |        |
|---------------|--------|
| FAC_NAME      | <Null> |
| FAC_TYPE      | <Null> |
| FAC_SUBTYPE   | <Null> |
| ADDRESS       | <Null> |
| CITY          | <Null> |
| STATE         | <Null> |
| ZIP           | <Null> |
| COUNTY        | <Null> |
| PHONE         | <Null> |
| FAX           | <Null> |
| LIC_BEDS      | <Null> |
| LAYER         | <Null> |
| DATE_GEOCODED | <Null> |
| LONGITUDE     | <Null> |
| LATITUDE      | <Null> |
| ACCURACY      | <Null> |

# Group Templates

- Create multiple features with a single sketch
- Examples:
  - Pole at every vertex of electrical line
  - Address point at center of building
- Options depend on primary template
  - Polygon – add other polygons, lines, and points
  - Line – add other lines and points
  - Point – add other points (can use line sketch)

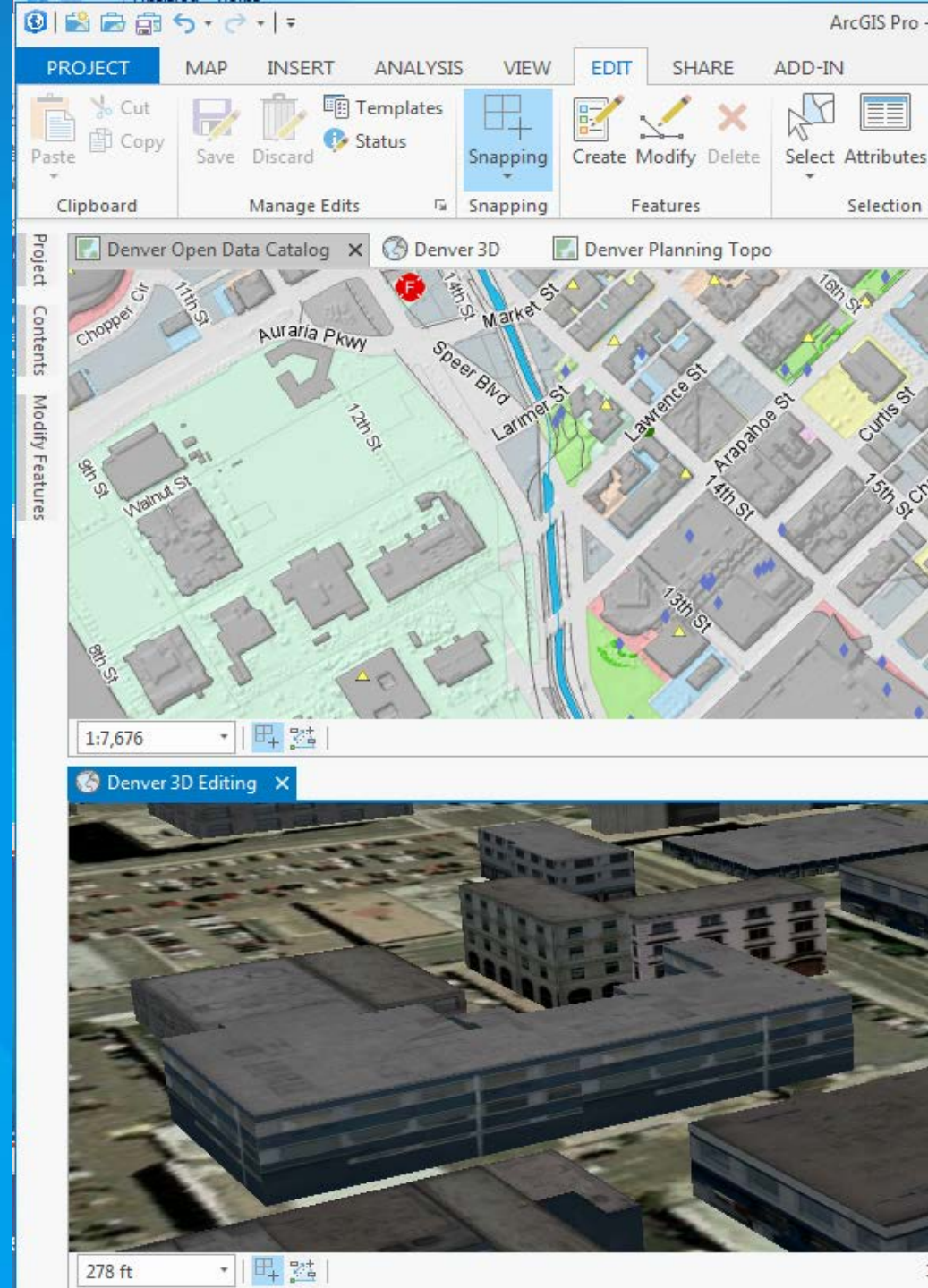
Main - Plastic w/valve, regulator, end cap

Line Tool

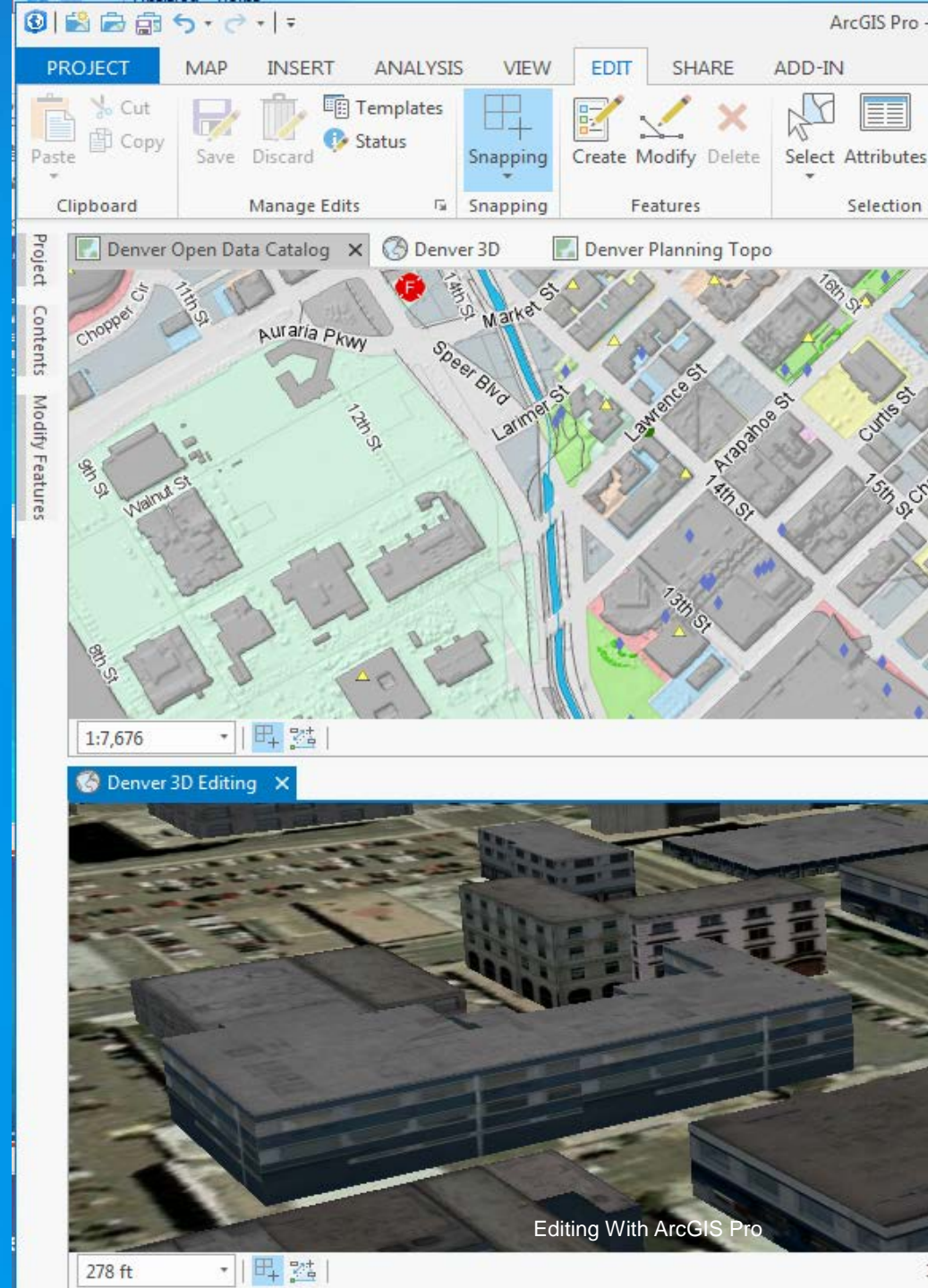
- Main - Plastic: multiple single-part lines (Side = Left) (Primary)
- ⊗ Gas Valve: : point at beginning of line (Distance Along = 40)
- ▢ Regulator Station: : point at beginning of line (Distance Along = 27)
- Non-Controllable Fitting - End Cap: : point at end of line



# Demo – Feature Templates



# Map and Layer Authoring

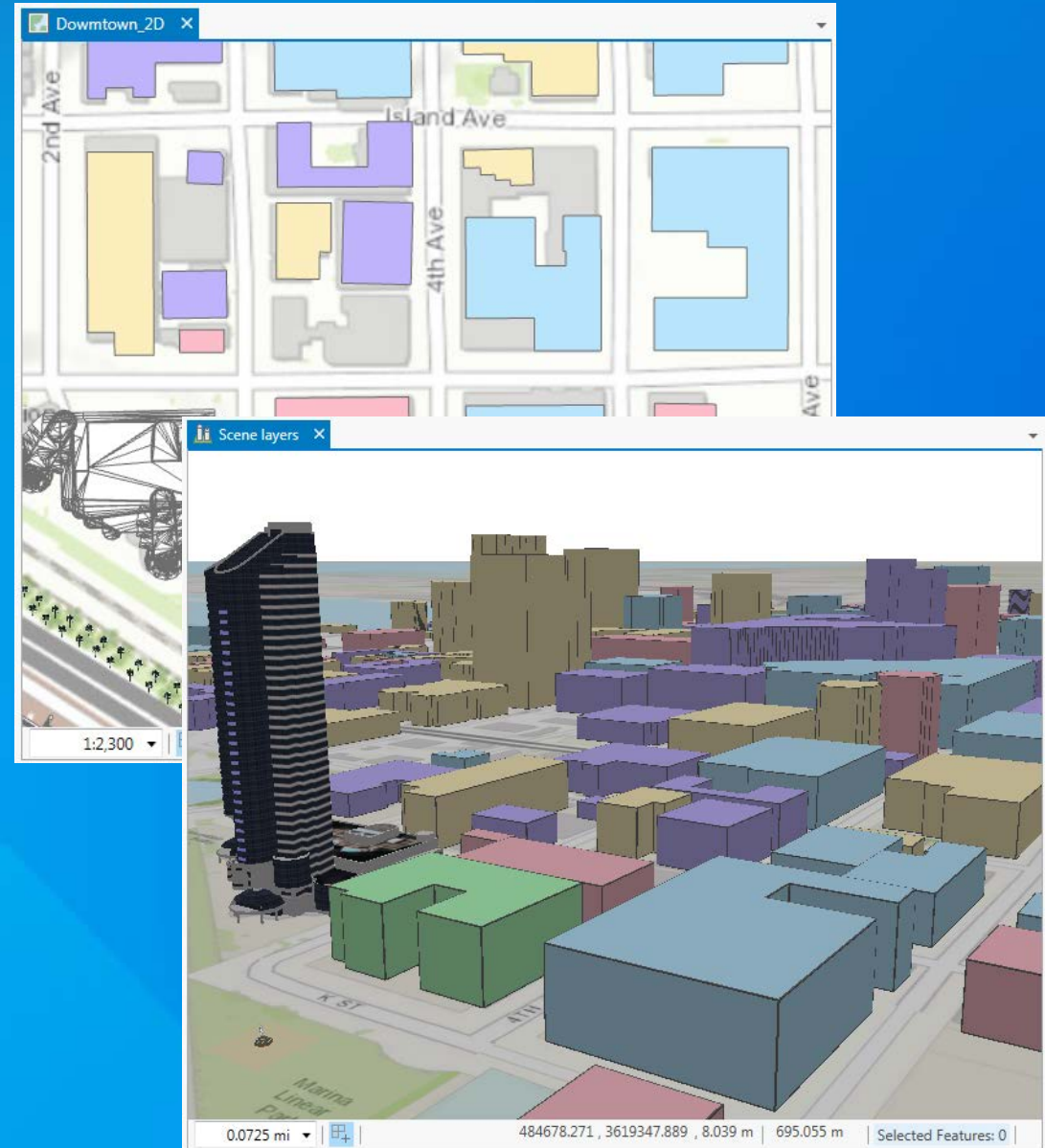


# Authoring Maps & Layers

- **Author maps and layers for use across your organization**
  - Consistency for all editors
  - Lessen learning curves
- **Important aspects for editing**
  - Feature templates and group templates
  - Symbology
  - Snapping
- **Author additional parameters for 3D editing**
  - Elevation
  - Extrusion

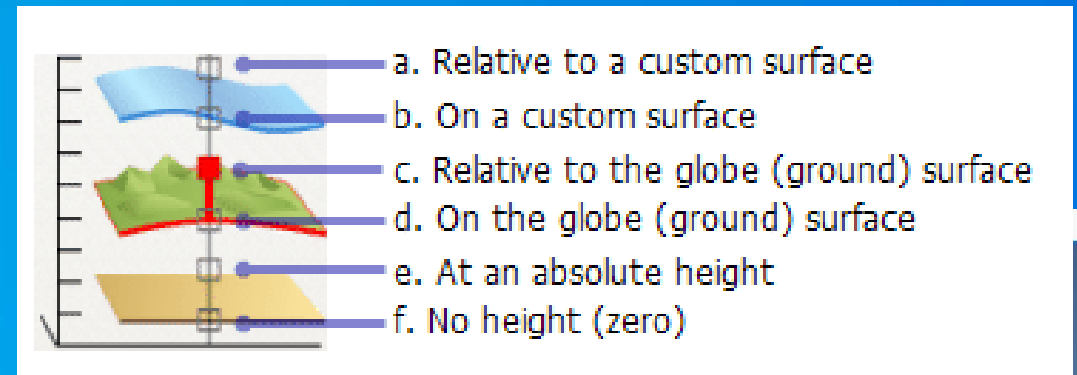
# Z Aware Layers

- Layers can be defined to support Z (elevation)
  - Create new feature class that are Z aware
  - Convert existing 2D feature classes to 3D feature classes
  - Import 3D vector data from other formats (e.g., CAD, KML, etc)
- 2D layers can still participate in 3D scenes
  - Draped on the ground or surface
  - Visualized with height using extrusion



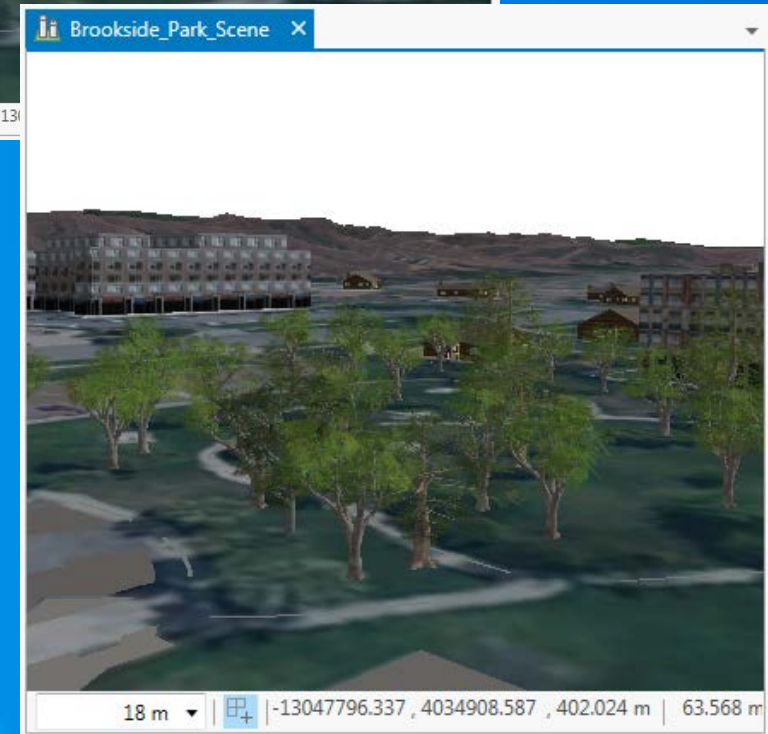
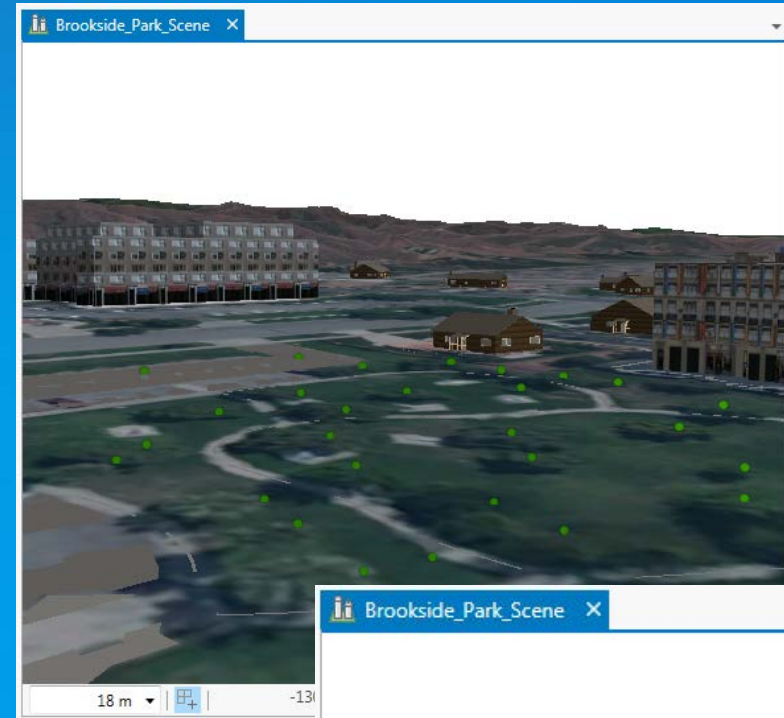
# Layer Elevation & Scene Surfaces

- 3D layers display at different elevations each with unique behavior/capabilities:
  - On the ground
  - Relative to the ground
  - At an absolute height
- Elevation surfaces enable you to view layers on, above, or below them
- 2D layers can only be set to the 'on the ground'

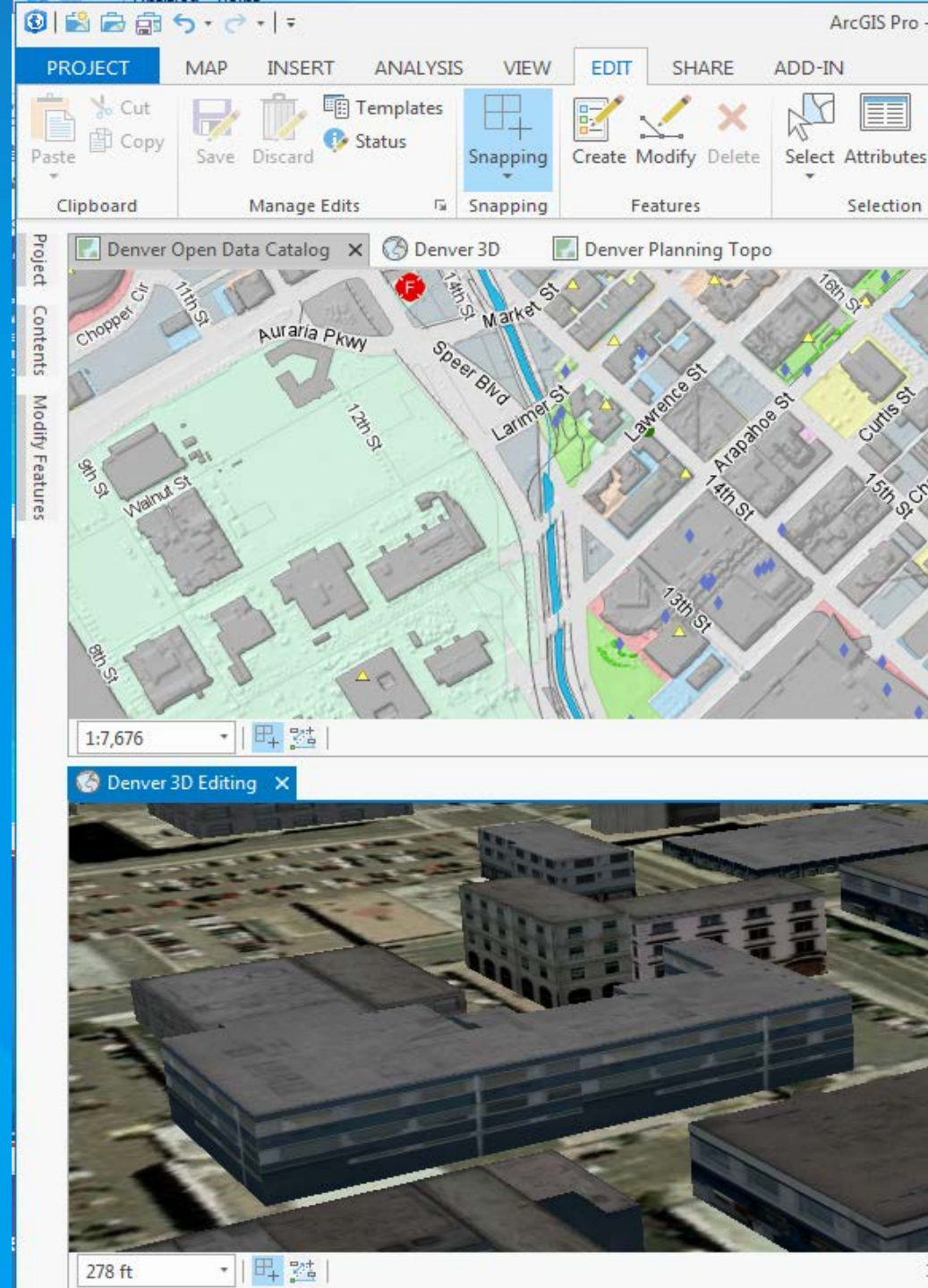


# 3D Symbols

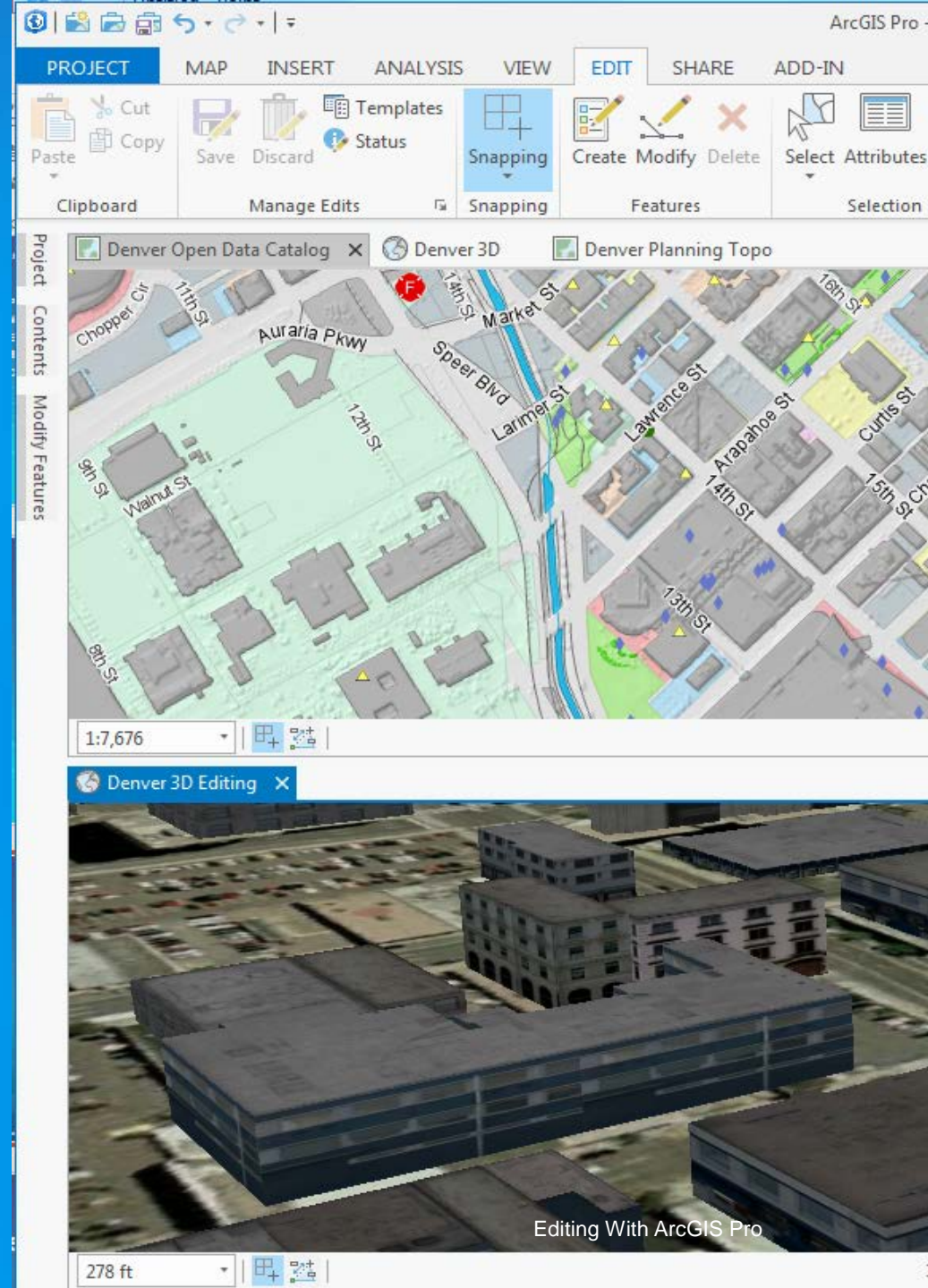
- All point features can be symbolized with 3D models
  - Browse and choose in gallery
  - Use your own 3D models
- Change size through attribute edits
- Preset layers provide out of the box 3D symbols for key layer types:
  - Trees
  - Ground
  - More to come...



# Demo – Map and Layer Authoring



# Data Management

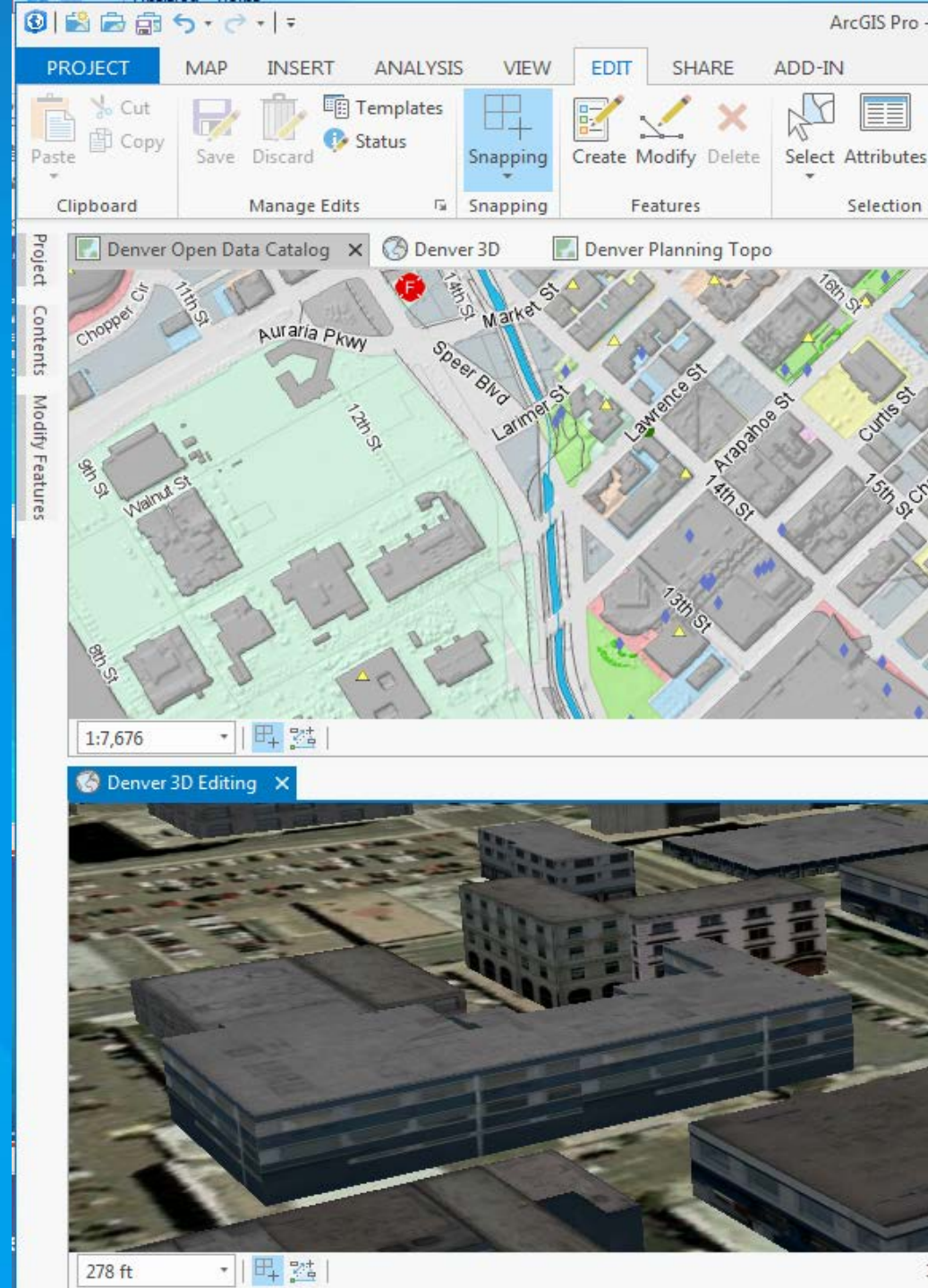




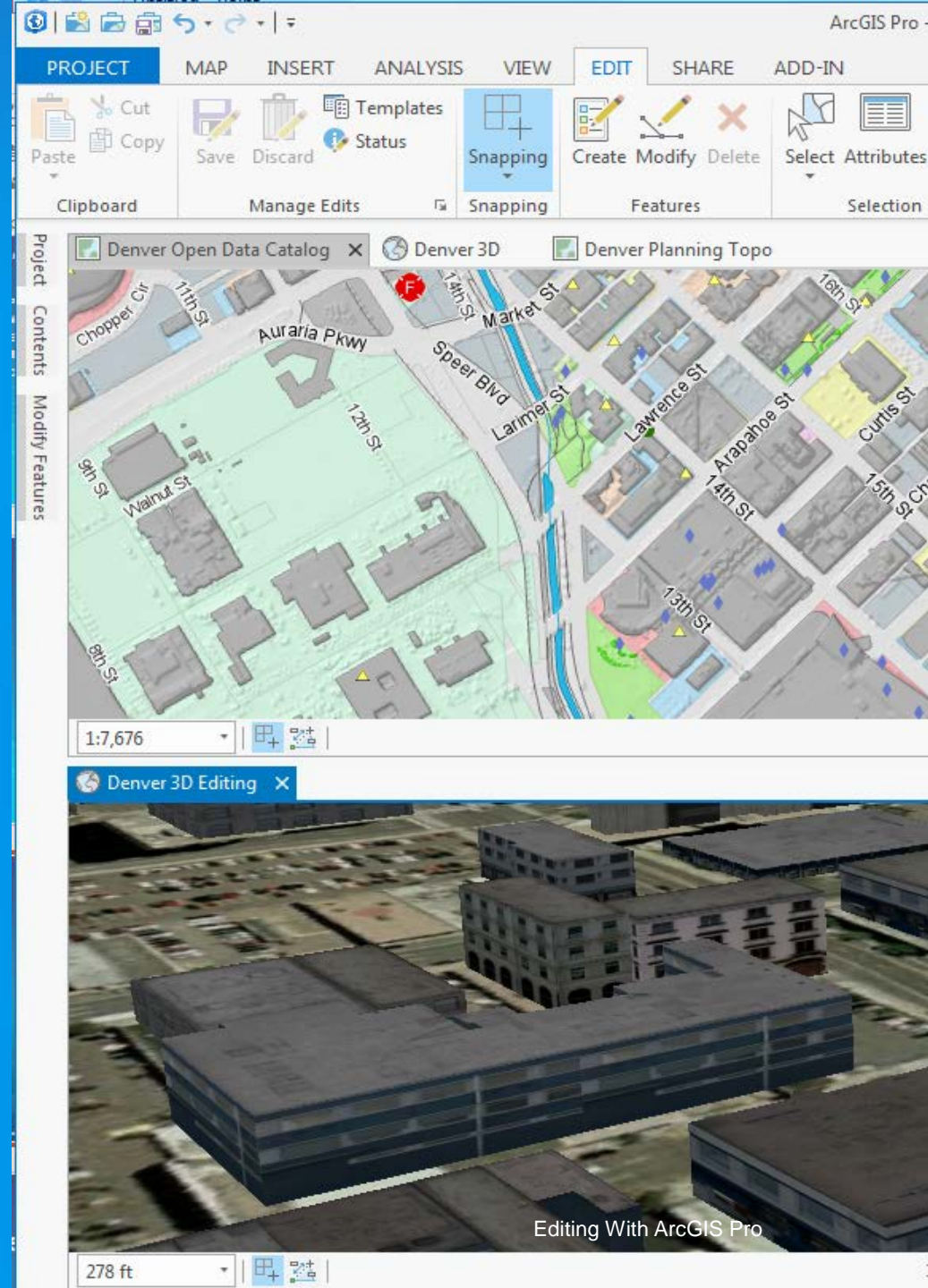
# Data Management

- **Design Views for Data Modeling**
  - **Fields**
  - **Domains**
  - **Subtypes**
- **Tabular arrangement**
  - **Familiar, spreadsheet-like experience**
  - **Display all relevant info all at once**
  - **Copy/paste within the view and between views**

# Demo – Data Management



# Editor SDK



# Editor SDK

- **Extend the Editor with the Pro Add-in framework**
  - **Commands, Map and Sketch Tools, Events, Dock panes**
- **Simplified API with course grained objects**
- **SDK documentation**
  - **Concepts, Samples and Snippets**
- **Examples**
  - **Use the EditOperation class to perform edits**

```
//Create a new feature using a template and a geometry  
var op = new EditOperation();  
op.Name = "Create my feature";  
op.Create(myTemplate, myGeometry);  
op.Execute();
```

# Editor SDK

- Use the Inspector class to work with attributes
  - Take advantage of multithreading and run on the Pro background thread

```
//Get and set attributes on features
QueuedTask.Run(() =>
{
    var insp = new Inspector();
    insp.Load(featLayer, oid);
    //get the shape of the feature
    var myGeometry = insp.Shape;
    //set an attribute value by name
    insp["Parcel_no"] = 42;

    //perform the edit
    var op = new EditOperation();
    op.Name = "Update parcel";
    op.Modify(insp);
    op.Execute();
});
```

# ArcGIS Pro 1.1 Release

- **SDK**
- **On screen constraints**
- **Template messaging**
- **Bug fixes**

# ArcGIS Pro 1.2 Release

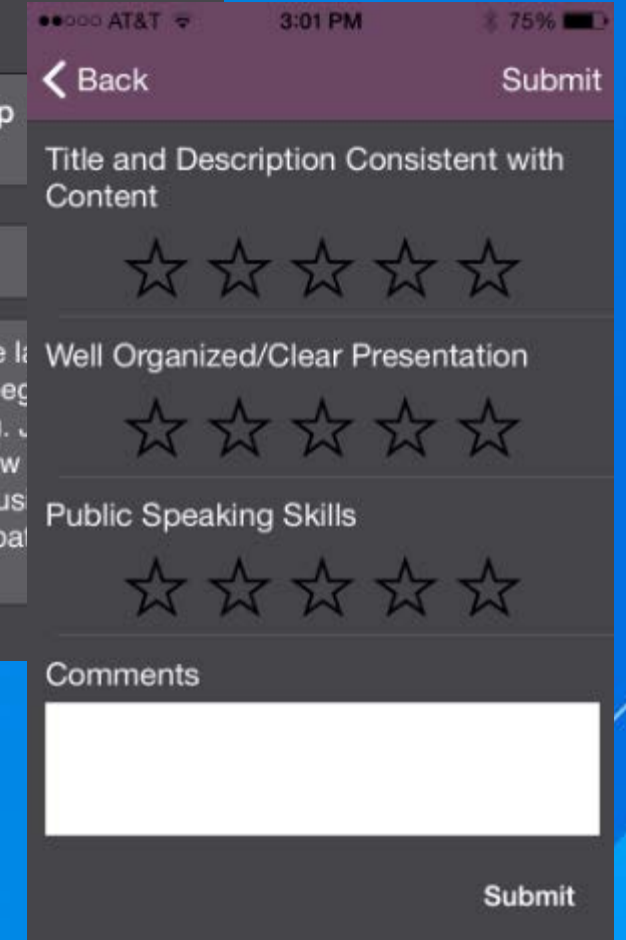
- **Continue basic 2D and 3D editing support**
  - Snap to symbol
  - Elevation from a surface
  - Traverse (COGO)
- **Topologies**
  - Shared edge editing – similar capabilities to map topologies in ArcMap
  - Align to shape
- **Templates**
  - Stamp/Composite templates – create a template from a selected set of features
  - Generic group template – specify specific templates to use during execution
  - Support for related records
- **Constraints and Guides**
  - Inference and drawing guides
  - Reference grid for snapping and feature placement

Thank you ...

- **Please fill out the session survey:**
  - Surveys available in Esri Events UC mobile app
  - Click on session title in the agenda, then click Survey link

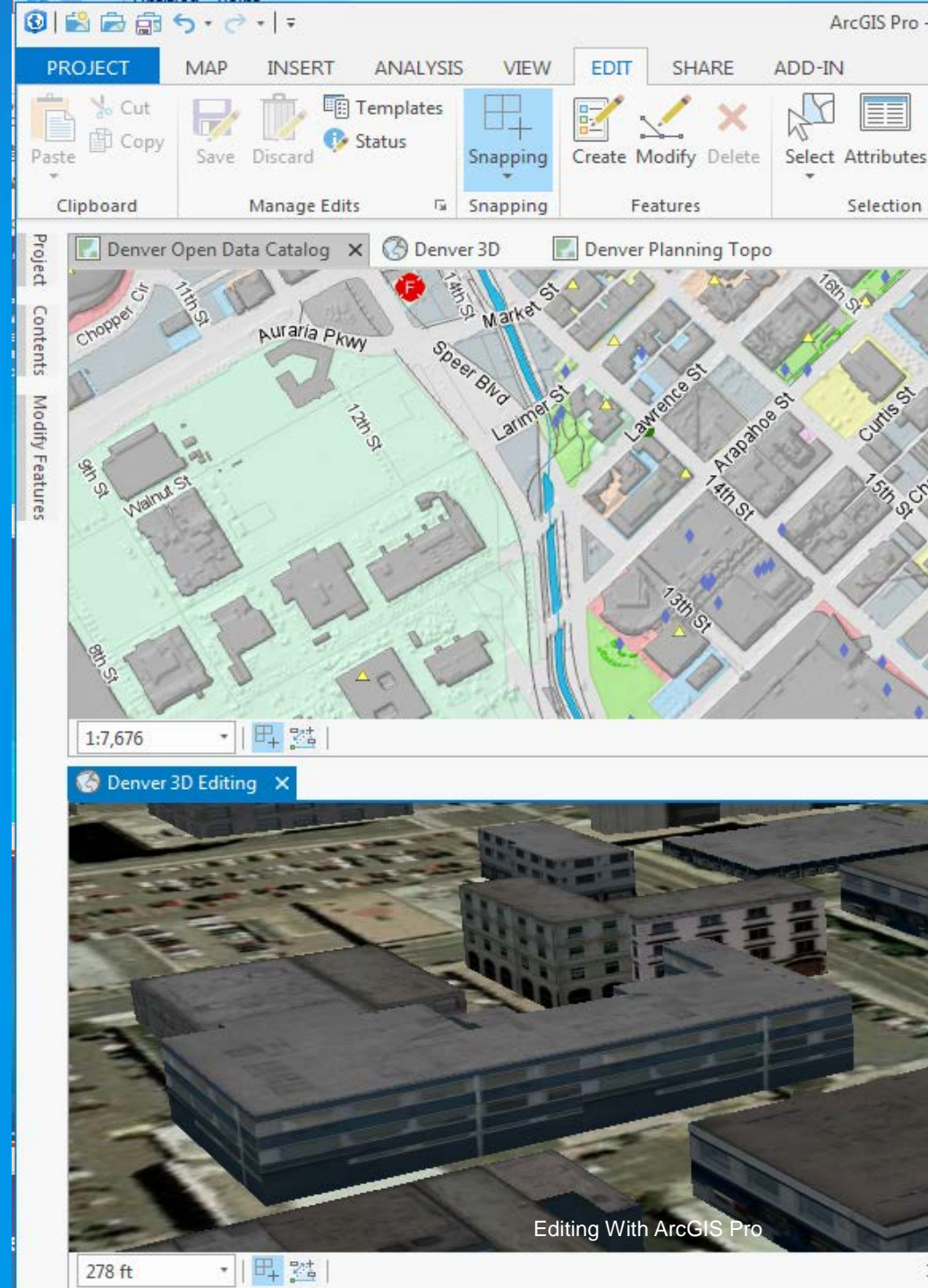
**Paper – pick up and put in drop box**

- Some paper surveys available for those without devices





# Questions?





Understanding our world.







