PLS-CADD: Optimum Spotting

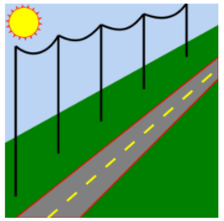
Travis Bailey & Tim Knor
June 10, 2026

POWER LINE SYSTEMS
Part of Bentley Systems

Agenda

- Licensing
- PLS GRID Project Template File
- Creating Available Structures
- Generate Allowable Span File
- Live Demo
- Additional Resources

Licensing



PLS-CADD

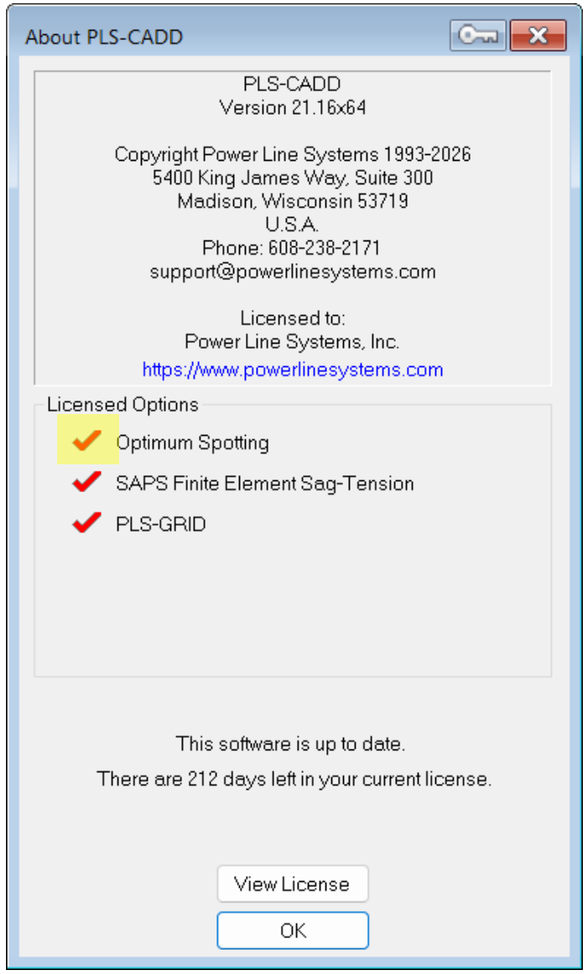
The standard edition of PLS-CADD is a line design program that includes all the terrain, sag-tension, loads, clearances and drafting functions necessary for the design of an entire power line. Also includes **PLS-CADD/LITE** and **PLS-CADD/ULTRALITE**, but not any of the other items listed below (**compare editions**).

Optimum Spotting Option: Enables automatic selection of structure locations and types for the least cost design of a line.

SAPS Option: Finite element sag-tension option: provides a superior alternative to the built-in ruling span sag-tension.

Optimum Spotting Option unlocks these capabilities:

- Optimum Spotting
- Optimum Body and Leg Extension Selection
- Fit Pole Lengths to TIN
- Automatic Pole Selection
- AMBER



PLS GRID Project Template File

- **Creating a PLS-CADD Project from Project Template File**
  - ***File/New/From Template…***

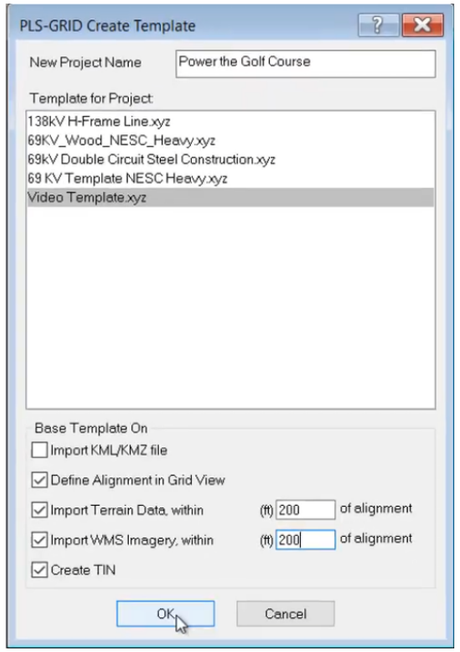
- **Load Standard Reference Files to Project Template**
  - Feature Code Data (.fea)
  - Criteria (.cri)
  - Available Structures, Wire Files, and other Reference Files

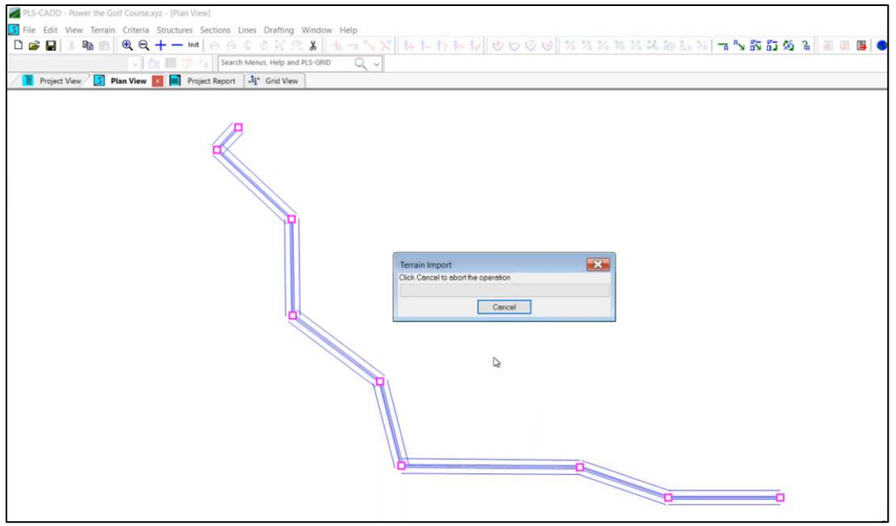
- **Defining an Alignment**
  - Import using KML/KMZ file
  - Define Alignment in using GRID View Map
  - Manually define Alignment using .LAZ, ASCII (TEXT), .CSV, or any other source supported by PLS-CADD

- **Download Survey Data & WMS Imagery**

- **Create Ground TIN Model**

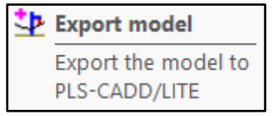
- **Video Demonstration on our YouTube Channel**-PLS GRID Project Templates





General Optimum Spotting Process

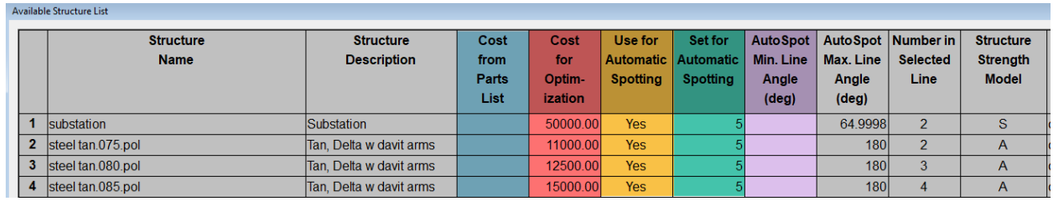
- **Create Available Structures**
  - Method 1 (Basic Allowable Span)
  - Method 2 (Allowable Span Interaction Diagram)
  - Assign Cost to use for optimization
  - Select structures to consider for Automatic Spotting
  - Assign set number for conductor attachments
  - Minimum Line Angle



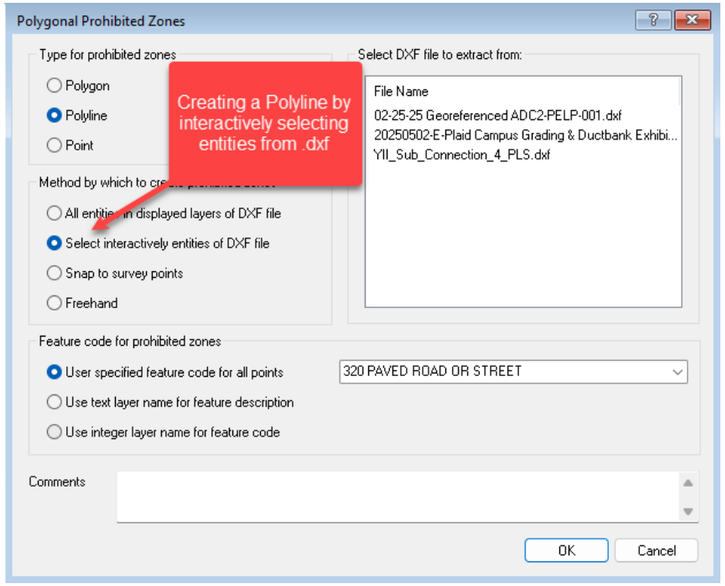
- **Specifying Spotting Constraints**
  - Structures/Automatic Spotting/Spotting Constraints....
  - Add Graphical or Edit(Table Based)
  - Prohibited and Extra Cost Zones

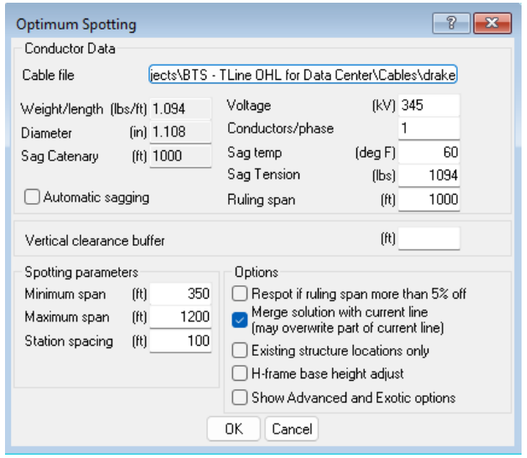
- **Optimum Spotting Parameters**
  - Choose Cable File
  - Automatic Sagging, Minimum Span, Station Spacing, Existing Structures, Respot if Ruling Span more than 5%
  - Foundation Footprint

- **Automatic Stringing or Graphical Stringing**



	Structure Name	Structure Description	Cost from Parts List	Cost for Optim-ization	Use for Automatic Spotting	Set for Automatic Spotting	AutoSpot Min. Line Angle (deg)	AutoSpot Max. Line Angle (deg)	Number in Selected Line	Structure Strength Model
1	substation	Substation		50000.00	Yes	5		64.9998	2	S
2	steel tan.075.pol	Tan, Delta w davit arms		11000.00	Yes	5		180	2	A
3	steel tan.080.pol	Tan, Delta w davit arms		12500.00	Yes	5		180	3	A
4	steel tan.085.pol	Tan, Delta w davit arms		15000.00	Yes	5		180	4	A



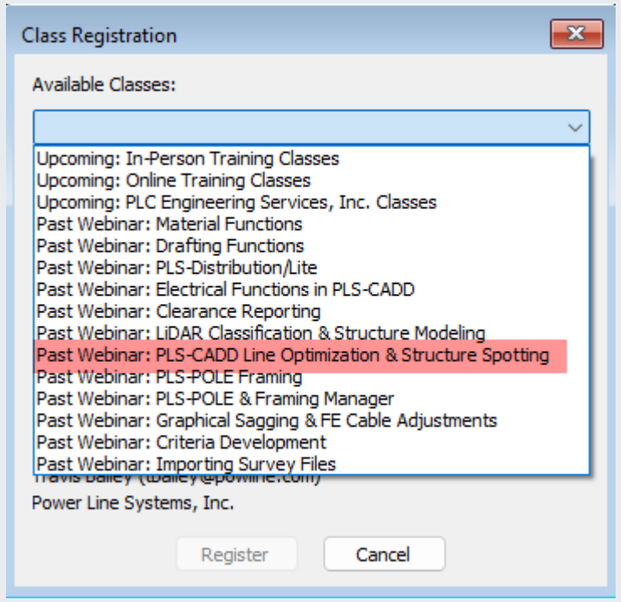


Live Demo

Additional resources

Webinars

Help/Register for Training Classes...



Technotes

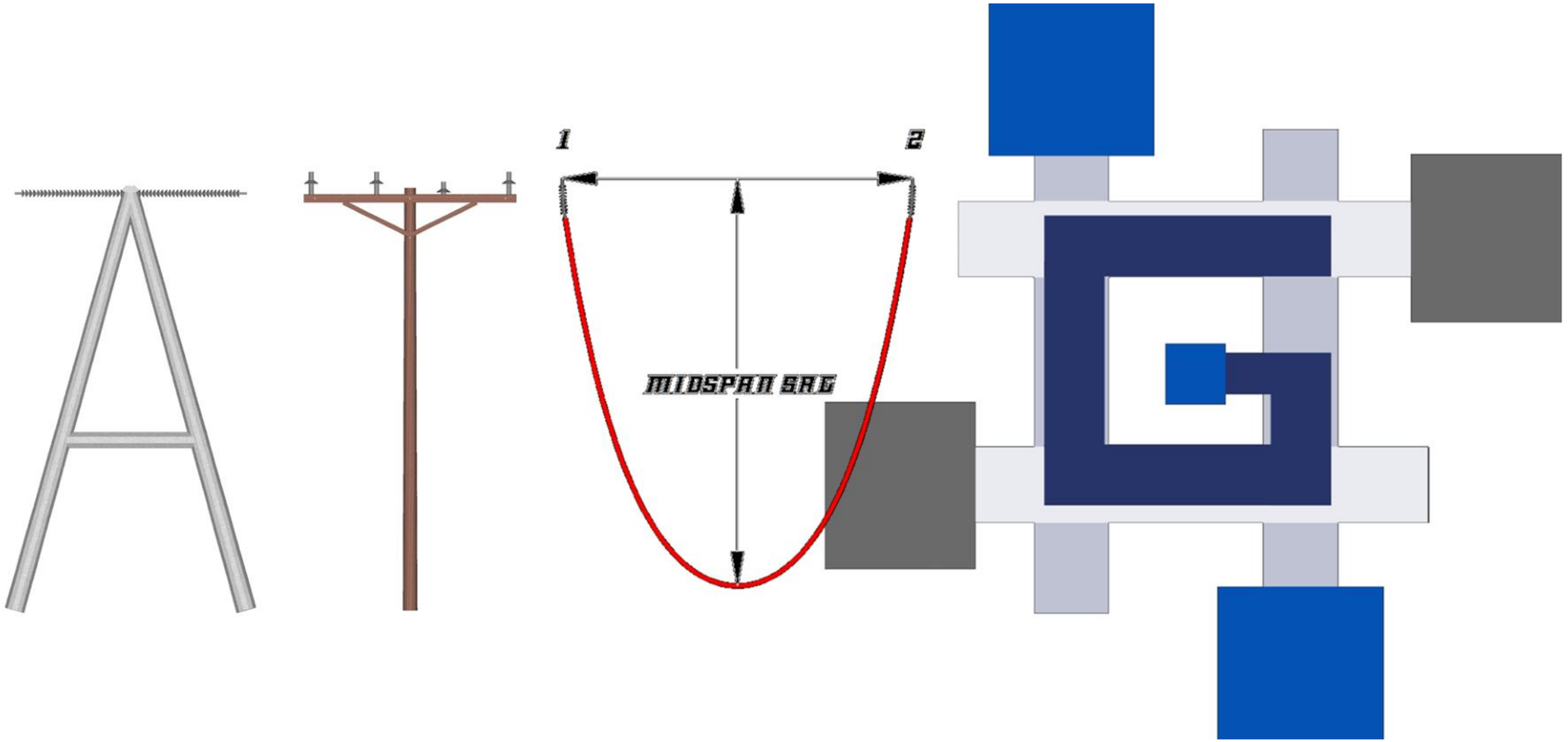
[Technical Notes — Power Line Systems]

- Line Optimization
- Allowable Wind and Weight Span Technical Note
- Using the Automatic Pole Selector in PLS-CADD
- Understanding the Use of Weight Spans

Videos

[Power Line Systems - YouTube]

- PLS GRID Project Templates
- AMBER
- Optimum Body and Leg Extension Selection
- Fit Pole Lengths to TIN



For Questions: Email- support@powline.com

POWER LINE® SYSTEMS
Part of Bentley Systems

Bentley®