

Mapping the Klystron Gallery: Comprehensive AutoCAD Modeling of Subsystem Sectors

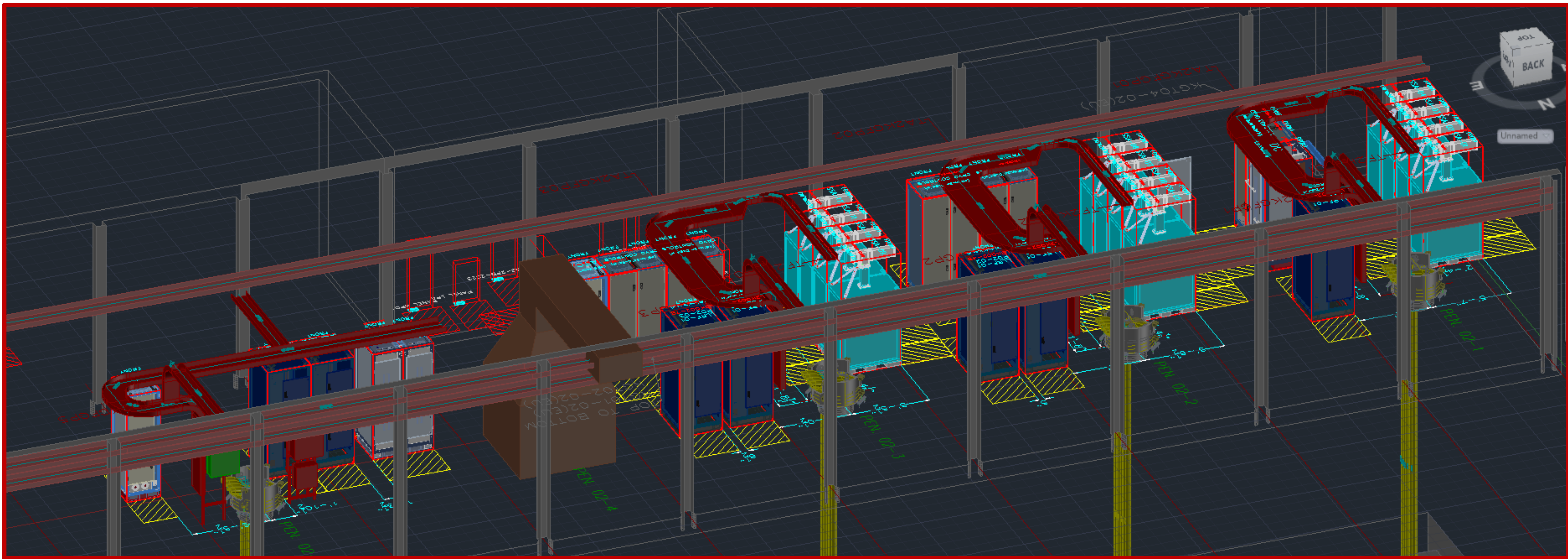
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BACKGROUND

The Klystron Gallery at SLAC is a two-mile-long facility housing infrastructure critical for the accelerator. Because multiple engineering teams continuously manage and upgrade equipment in this space, avoiding spatial conflicts during new installations requires accurate, shared documentation. Additionally, the Electrical Engineering Division (EED) relies on precise spatial layouts to route and manage the thousands of physical cables running through the facility.



GOALS

- Spatial & Asset Mapping:** Produce detailed AutoCAD sector drawings with exact physical placements of racks, panels, cable trays, and structural boundaries.
- Metadata Inventory:** Create Excel databases tracking identification tags, names, and technical parameters for every facility component.
- Cross-Division & EED Integration:** Combine visual CAD layers with accurate asset tracking to support clear spatial planning for future upgrades and enable EED cable routing tools.

RESULTS

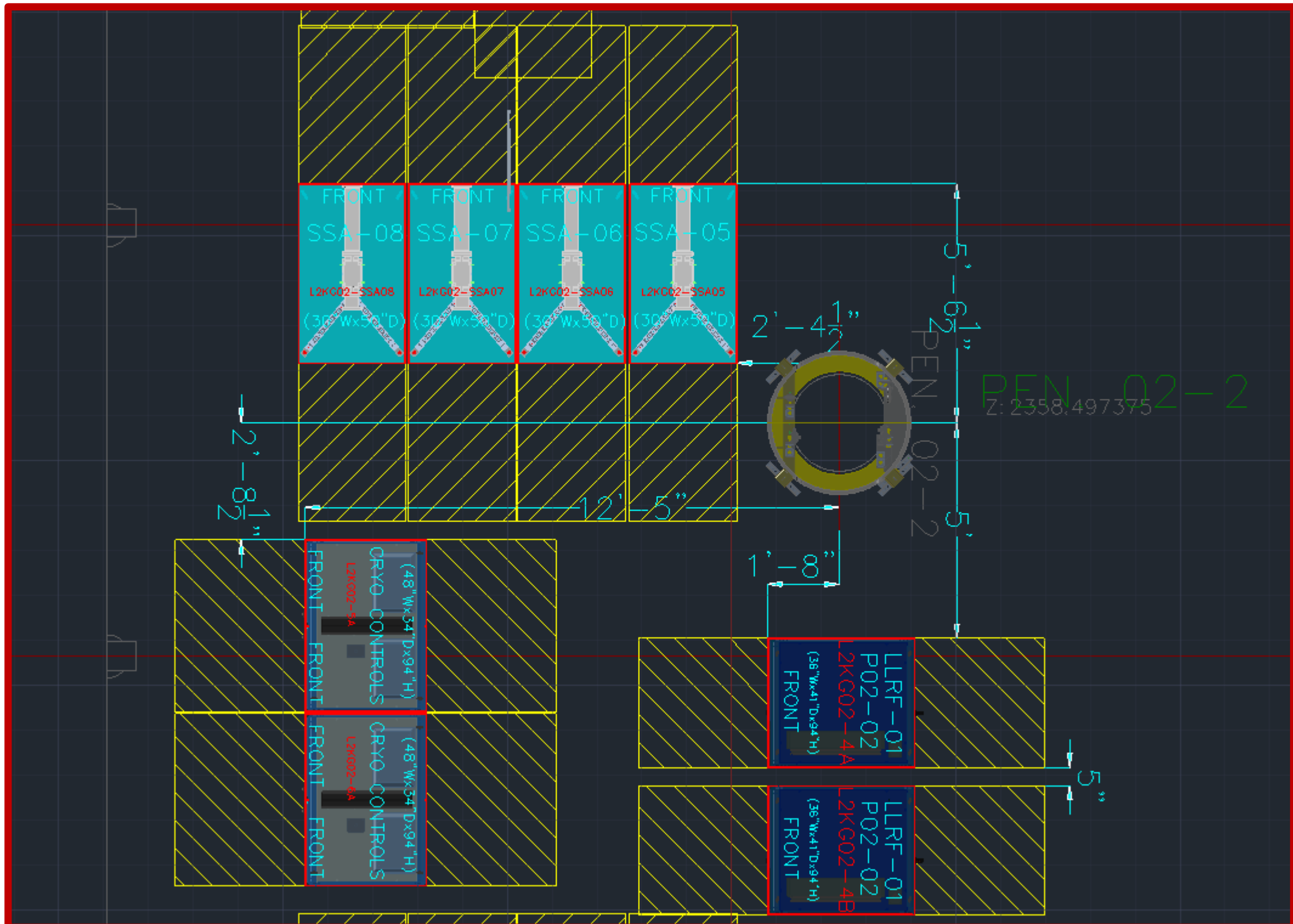
- Completed Sectors:** Fully mapped, verified, and drafted Klystron Gallery sectors 2-6 in AutoCAD.
- Cataloged Assets:** Documented all individual electrical racks, panels, and cable trays from sectors 2-6 into the Excel database.
- Error Resolution:** Identified and resolved numerous spatial discrepancies between physical field conditions and drawing data.

WORKFLOW

- On-Site Field Surveys:** Measure sector boundaries, walls, and alcoves in the Klystron Gallery while logging equipment names, asset tags, and parameters into Excel.
- AutoCAD Layout Drafting:** Create accurate 2D sector drawings using field measurements, placing electrical racks, panels, and cable trays into assigned layers.
- Metadata Mapping:** Logged and labeled every component in the drawings with its respective data and information.
- Finalization:** Flagged spatial discrepancies, re-checked problem areas on-site, and organized CAD layers for EED software integration.

NEXT STEPS/FUTURE WORK

Continue mapping unmapped Klystron Gallery sectors in AutoCAD and update the Excel database as facility equipment changes. Finalized CAD layers will then be delivered to support the EED team's work.



ACKNOWLEDGEMENTS

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