Blended LiDAR Surveys

Jonathan Rowsell

ABNA **Engineering**

Introduction

Jonathan Rowsell LSIT

Introduction

- ABNA Engineering
  - Full service Civil Engineering company
  - 23 years of experience in the surveying and transportation industry
  - Project experience ranging from streetscapes to 40+ mile corridor surveys
  - Offices in Chicago and St Louis

Surveying

- All survey projects are unique
- Safety is first and foremost to all we do
- Pioneering emerging technologies

Surveying

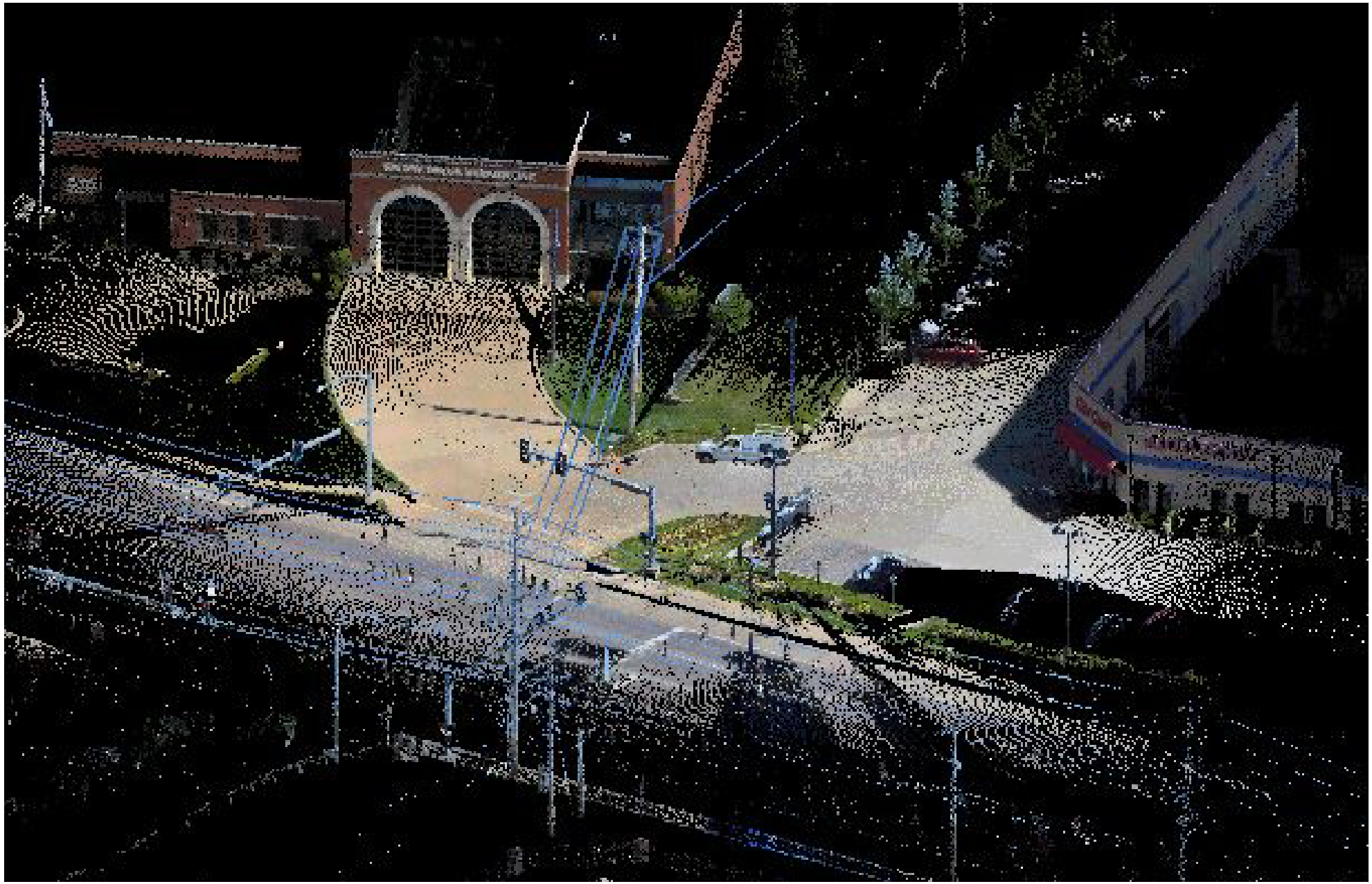
- All survey projects are unique
- Safety is first and foremost to all we do
- Pioneering emerging technologies

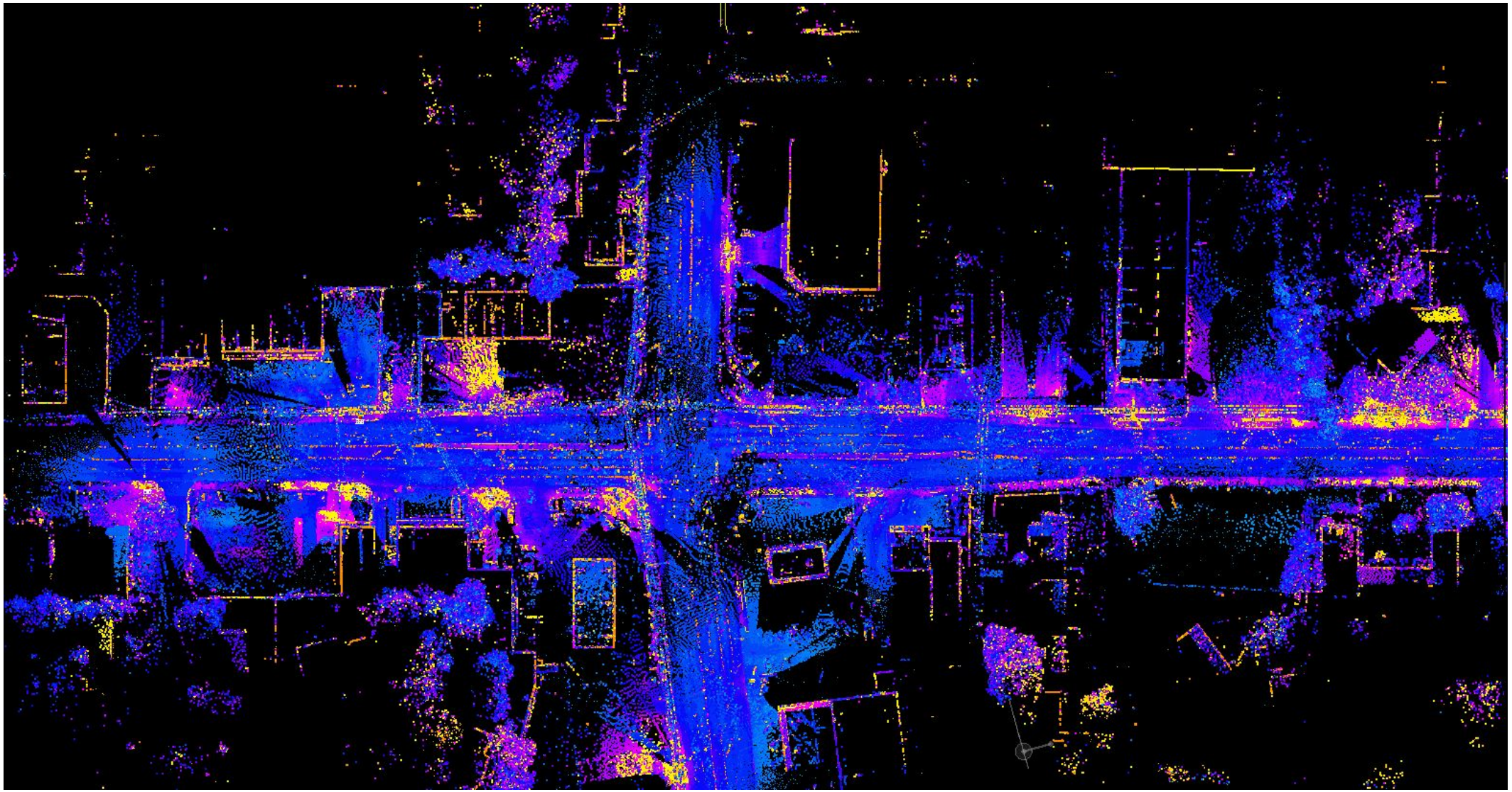
Innovation

- Increase safety on ALL our projects
- Seek new ways to delight and serve our clients
- Create new workflows and methodologies to go above and beyond the needs and requirements of our clients

LiDAR Surveys

- LiDAR – Light Detection and Ranging
- 3D scanning – creates a 3D model of remote or inaccessible areas





LiDAR Surveys

- LiDAR – Light Detection and Ranging
- 3D scanning – creates a 3D model of remote or inaccessible areas
- Minimizes time in the field
- Allows more detail and attributes to be picked up that can be referenced at a later date

Blended LiDAR Surveys

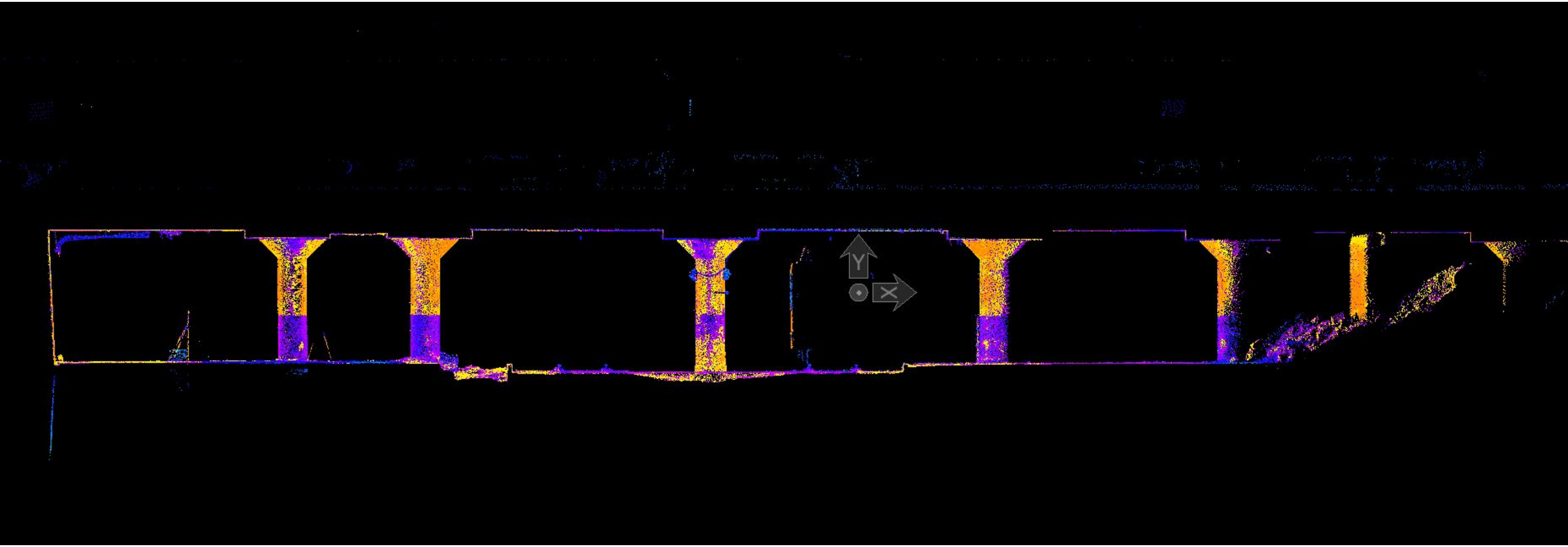
- Multiple sources of Survey Data
- Enables us to respond creatively to practical, time, and budgetary constraints
- Respond to different risk elements of project conditions
- This can involve aerial LiDAR, mobile LiDAR, terrestrial/static LiDAR, and conventional survey methods

Blended LiDAR Surveys

- Allows us to cherry pick the best solutions to multiple different survey scenarios - cost permitting
- Create custom scenarios that can prioritize certain sections based upon need and client request

Examples of Applications

- 40 miles of Smart Highway Design
- 6 ½ miles of Streetscape Work
- Underground Tunnel Replacements
- Interstate interchange redesign
- Park upgrades and redesign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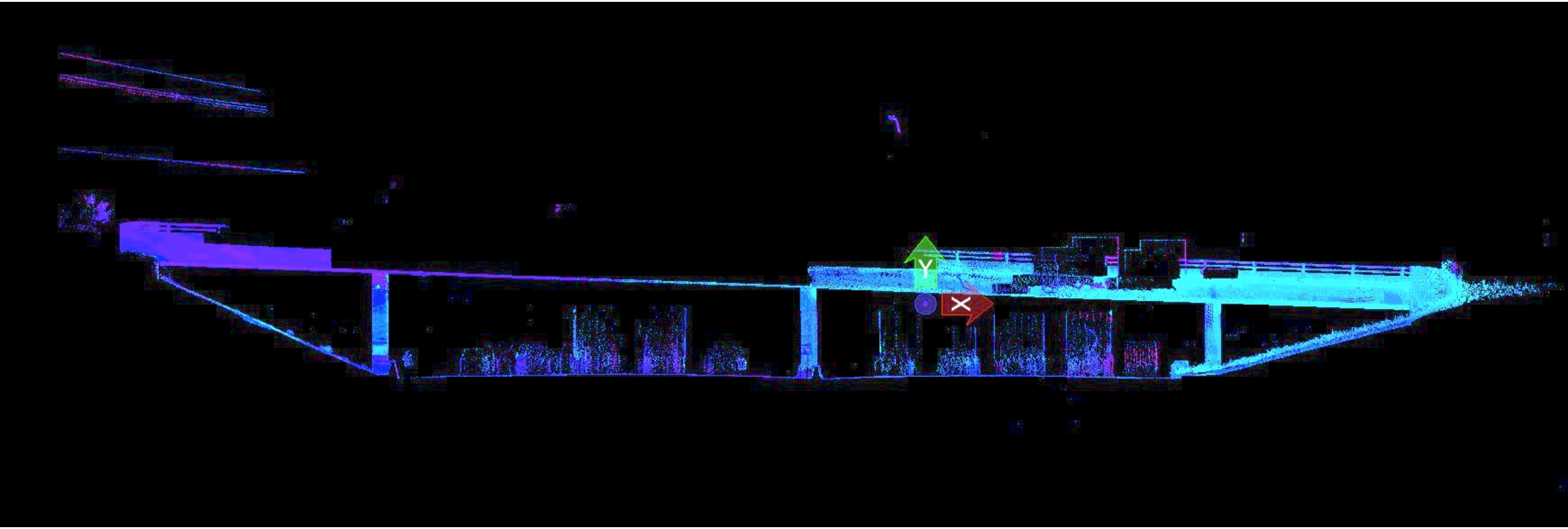
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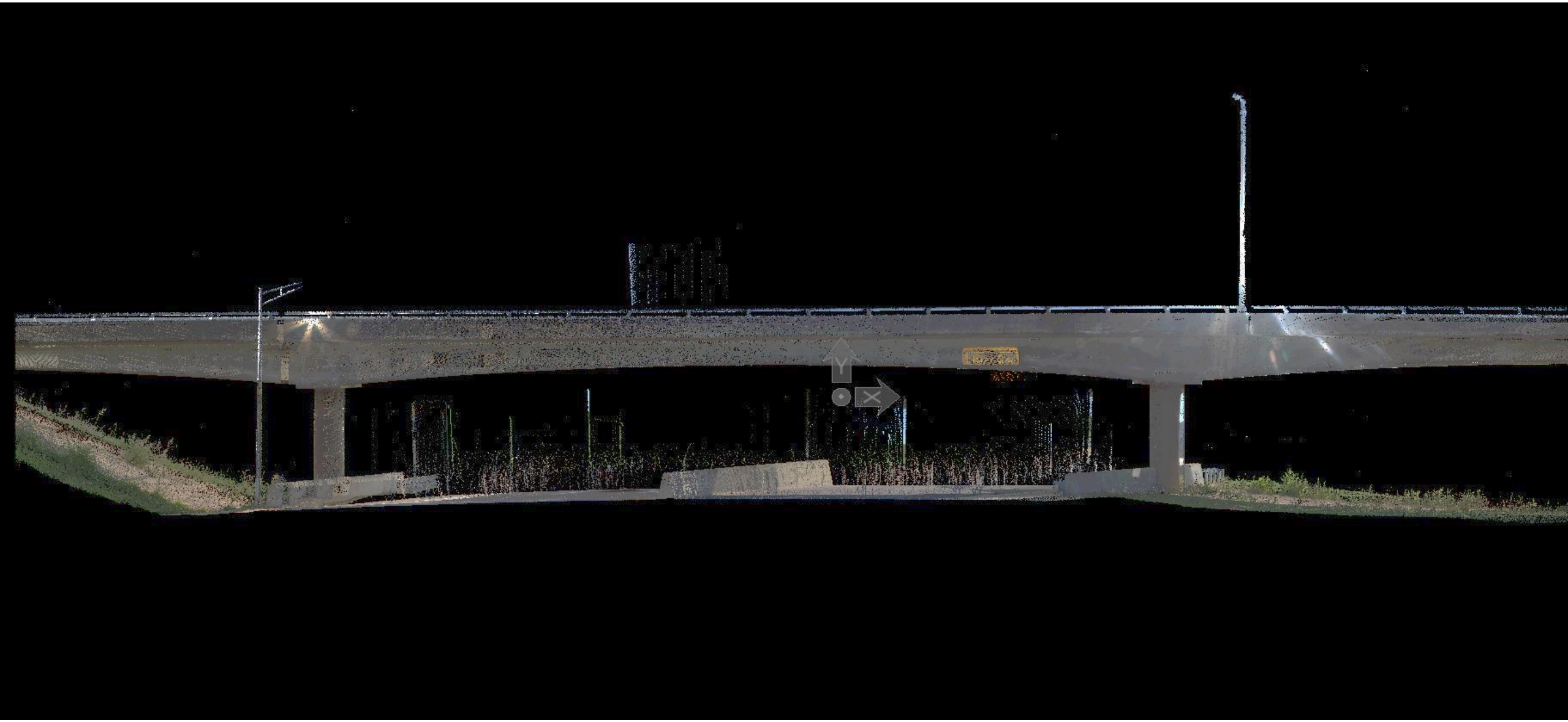

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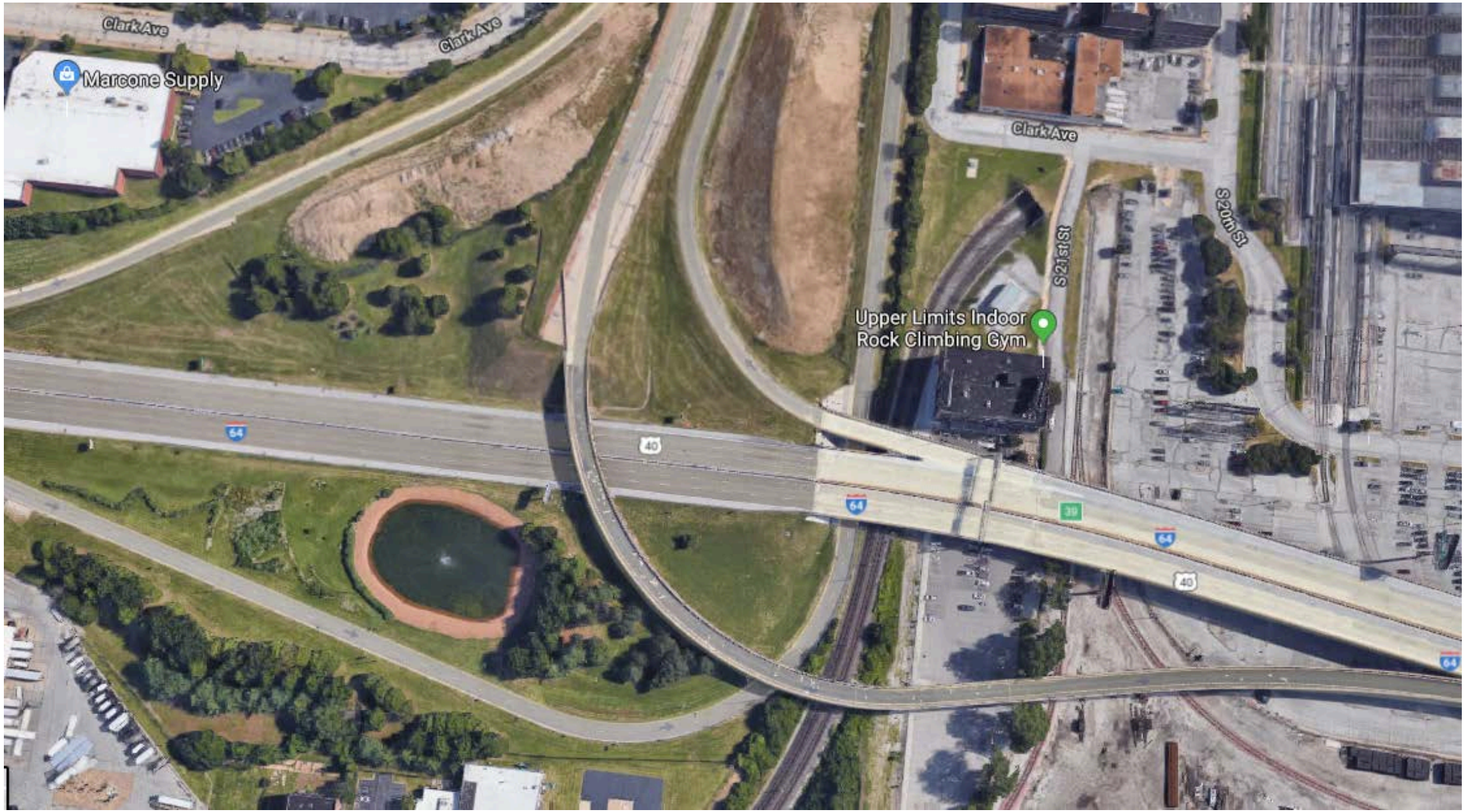
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Marcone Supply
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Upper Limits Indoor
Rock Climbing Gym
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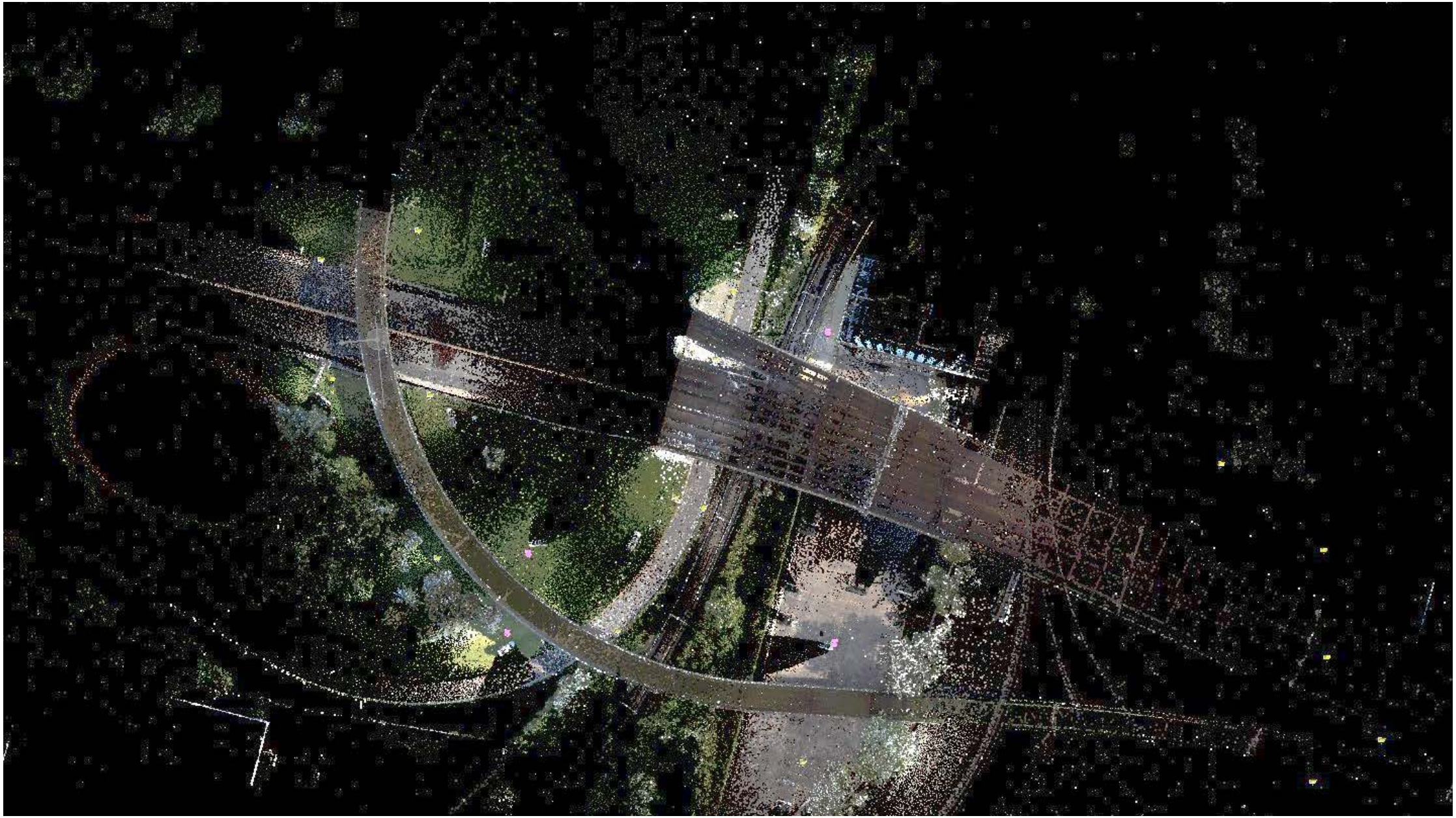

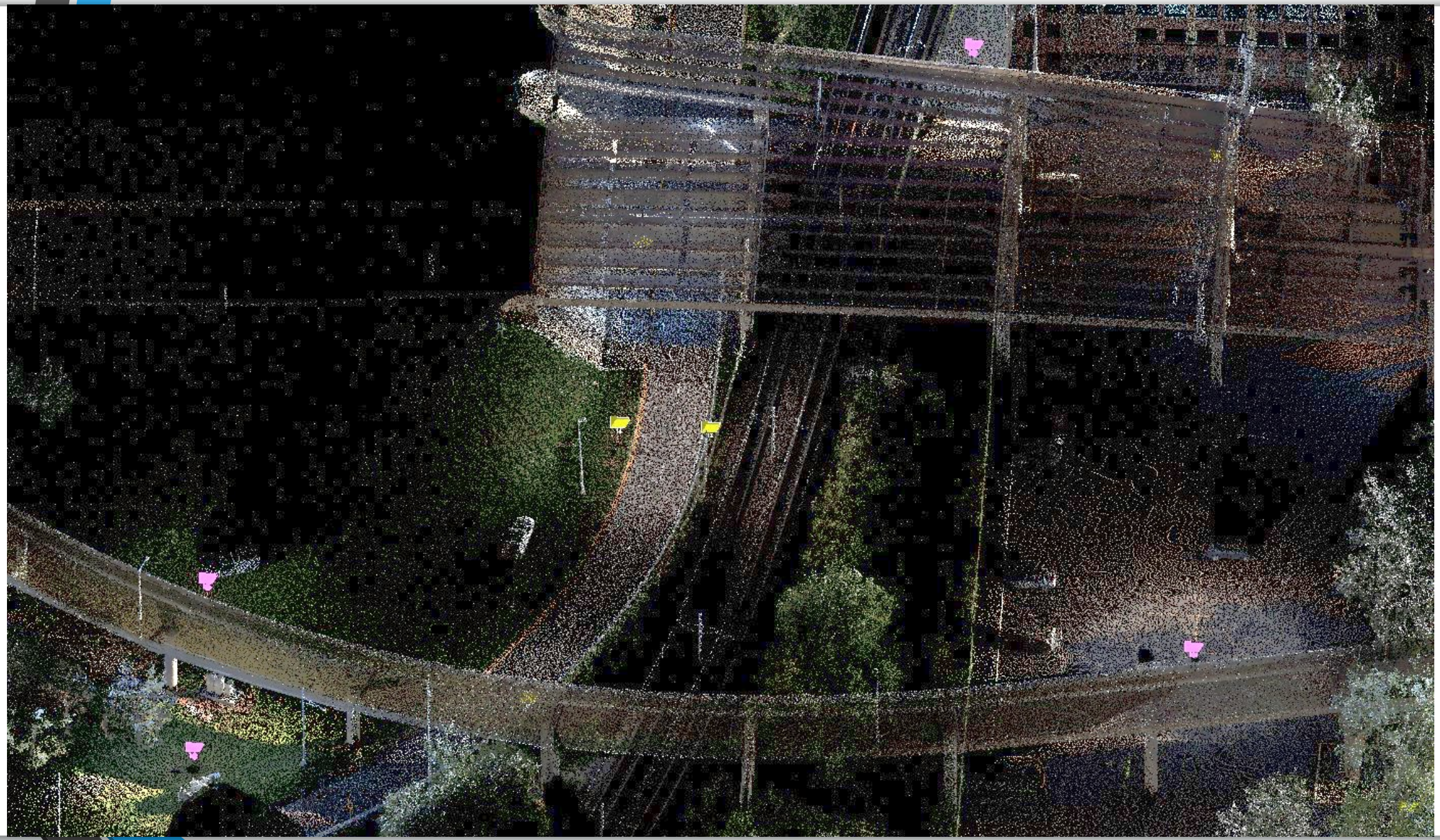

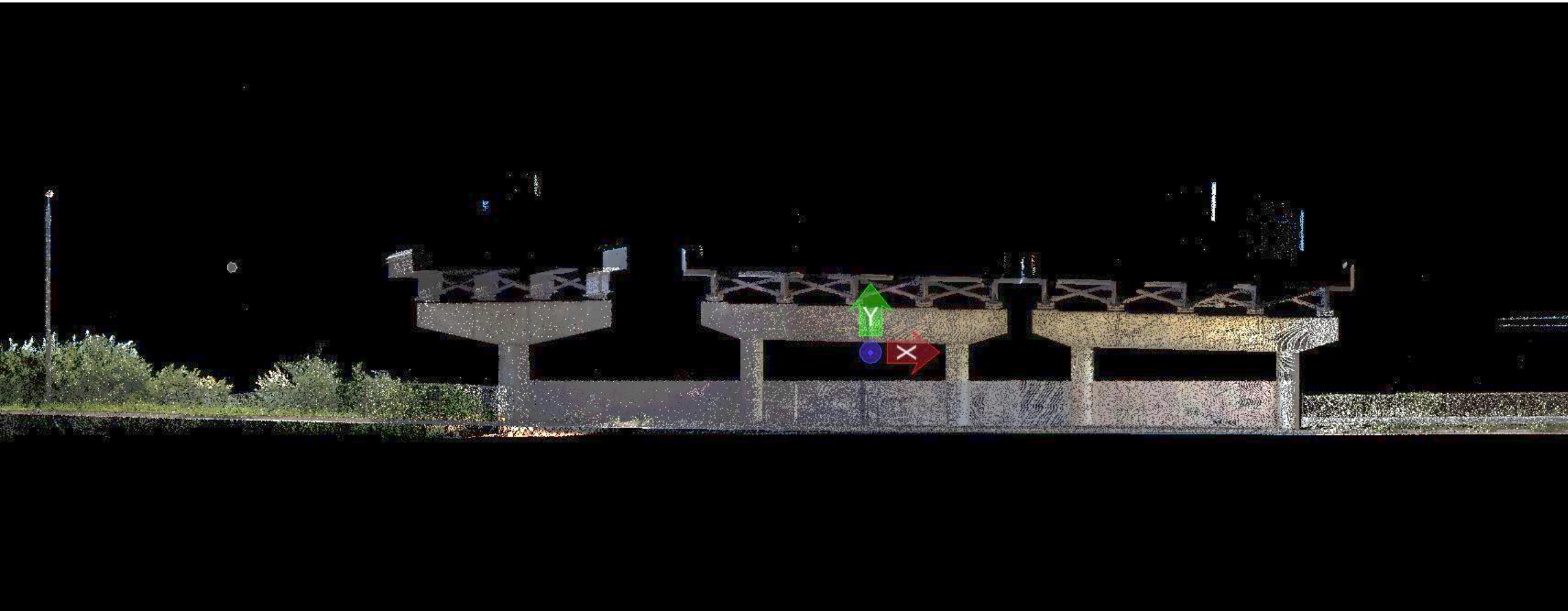
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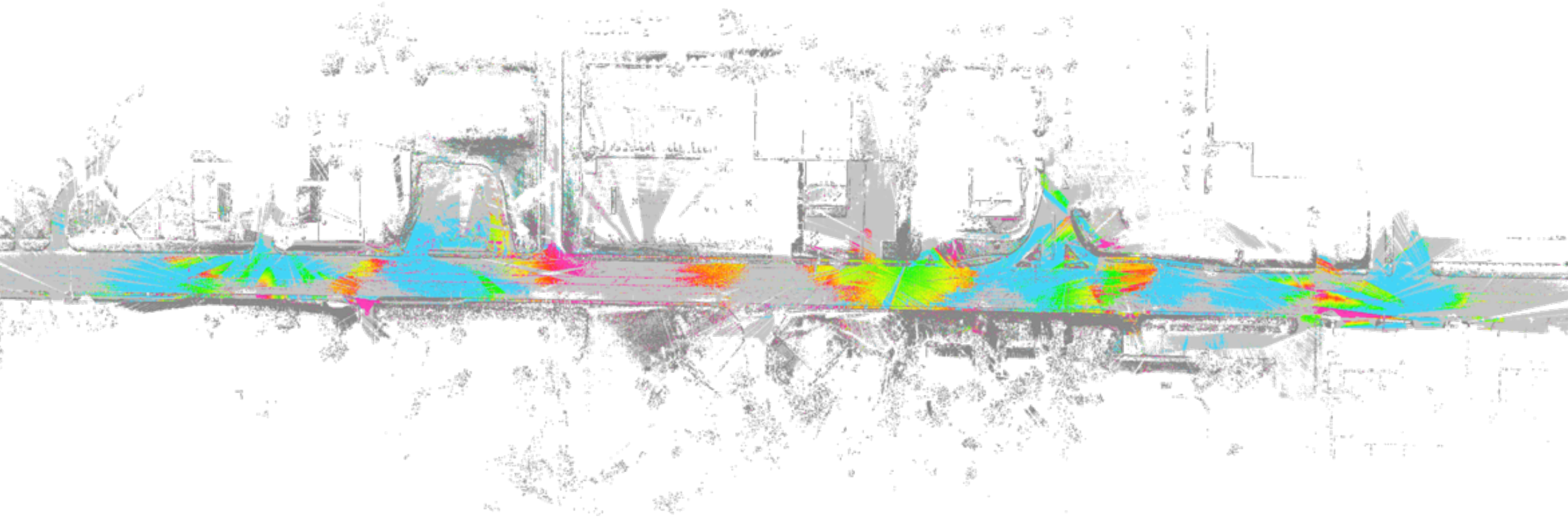
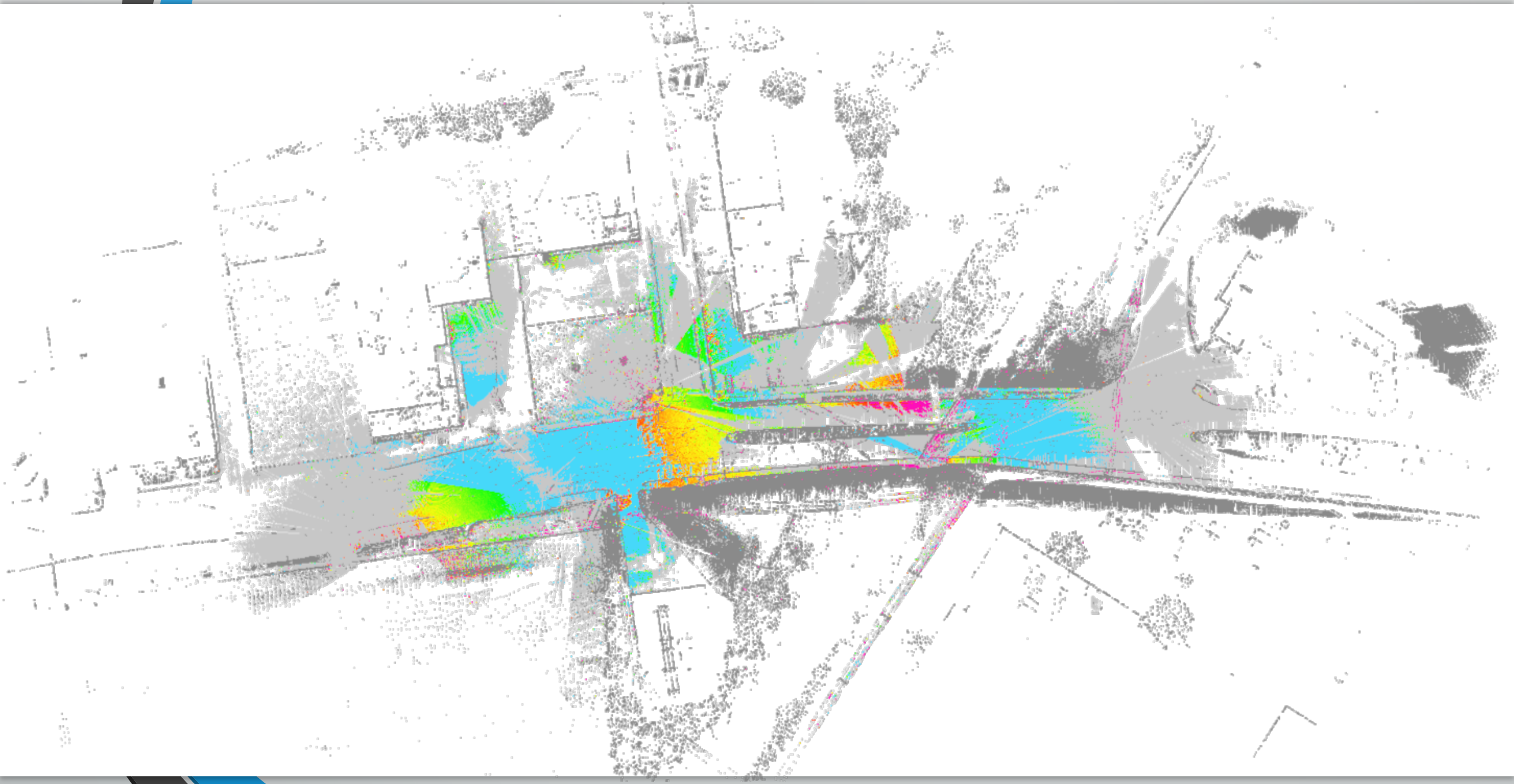
How?

- Either at the point cloud or the csv point file level
- Combining multiple sources using programs like Microstation and Trimble Business Center/RealWorks

Additional Benefits

- Confirm multiple sources are all accurate
- Increased measure of QA/QC





Additional Benefits

- Confirm multiple sources are all accurate
- Increased measure of QA/QC
- All data sources are checked against each other as combining takes place
- Multiple views of same data
- Optimize resources
- Safety is paramount!

Conclusion

- Very effective way of capturing survey data in different scenarios
- Added level of QC and data accuracy
- Can save on future field mobilizations
- Cost and time effective
- Adds additional safety measures to all our field work

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