

Santaquin City Trail Corridor and Right of Way Design



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Project Description

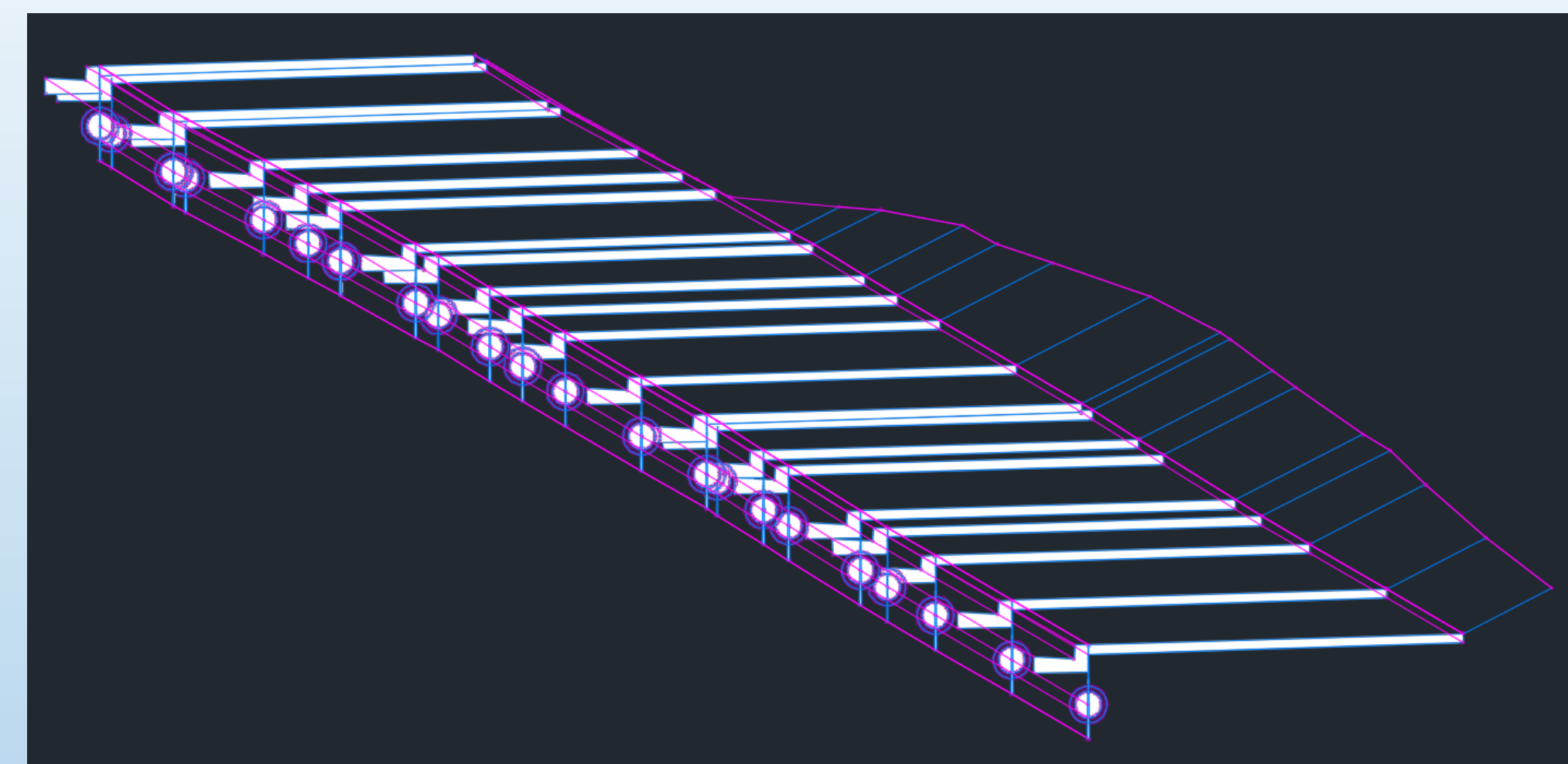
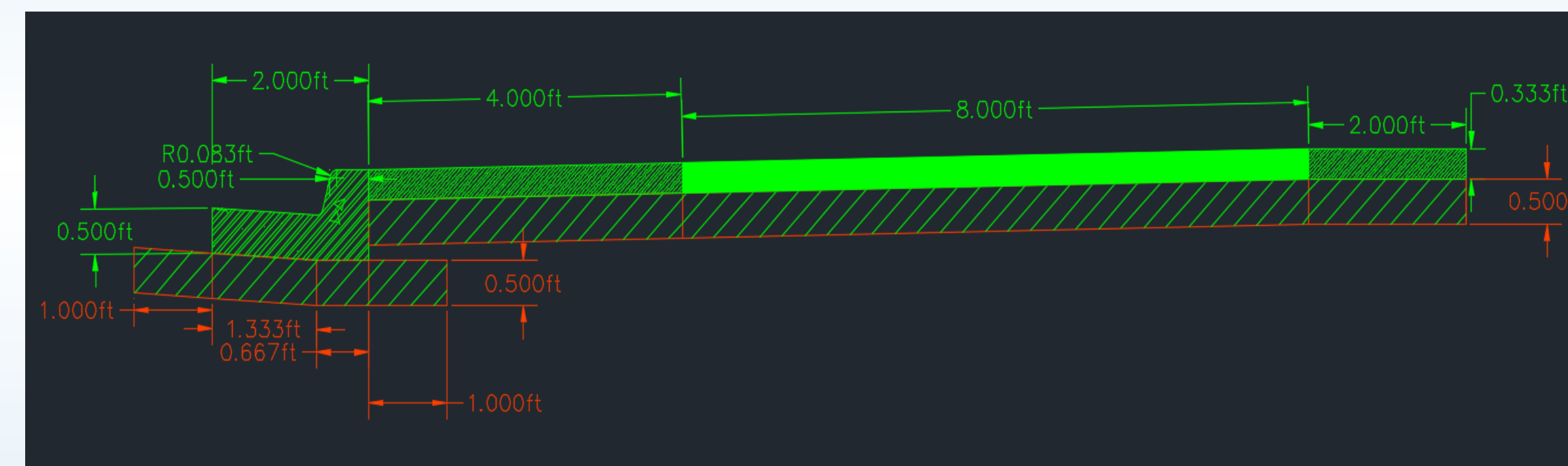
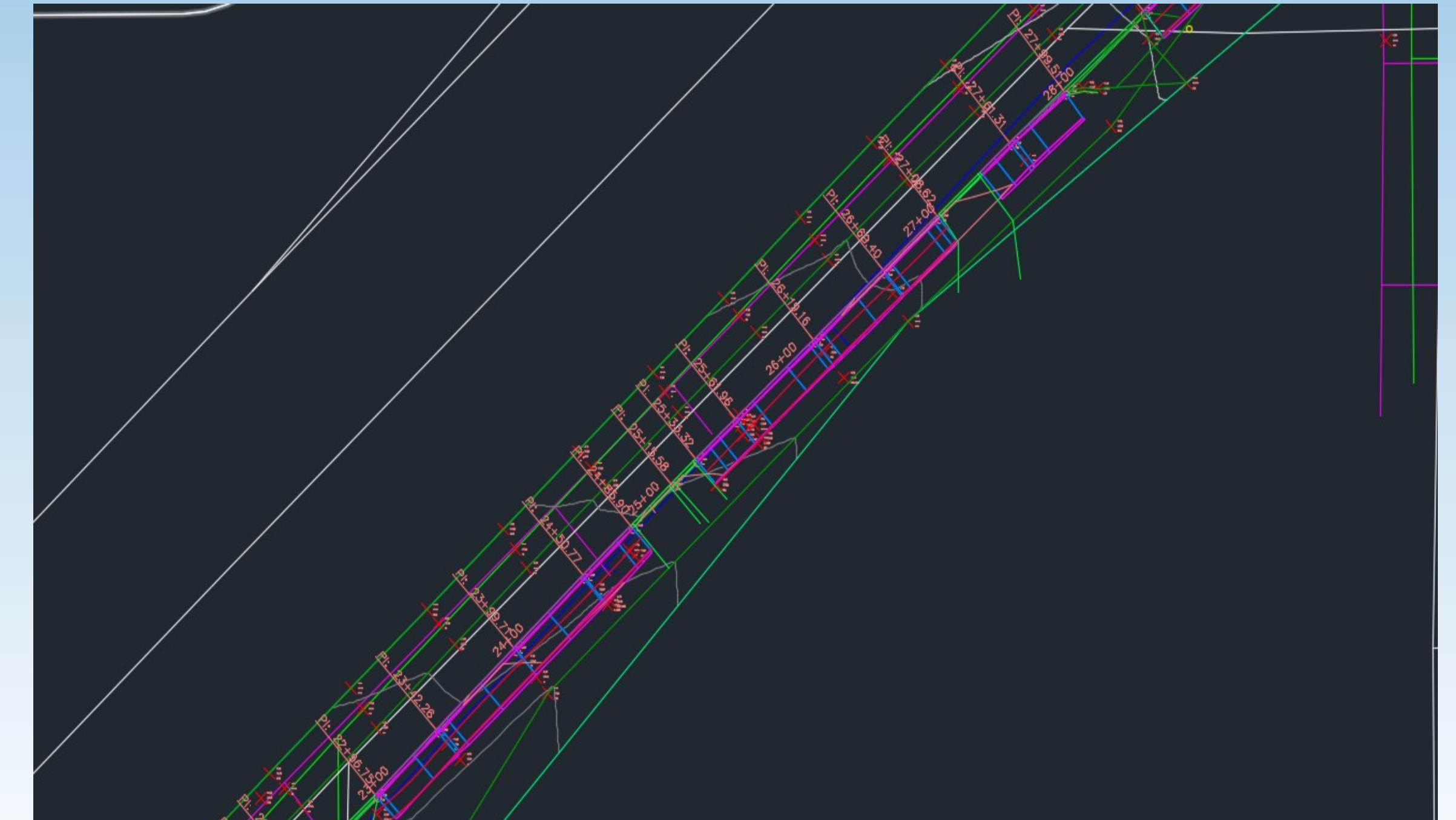
The city of Santaquin, Utah requested the full design of a trail corridor to run along the east side of Highland Drive. The trail will serve as a safe pedestrian route for children attending Orchard Hills Elementary school, as a recreational resource for local residents, and as a city showpiece visible from I-15.

The following elements were requested as part of the design:

- . Cut and fill design
- . 8-ft-wide, meandering trail design
- . Curb and gutter design
- . Runoff and drainage analysis and storm drain design
- . Property acquisition for all right-of-way improvements
- . Driveway rerouting/relocation
- . Landscaping design
- . Financial analysis

Procedure and Deliverables

Mainly using AutoCAD Civil 3D, our team first created an existing surface to base the trail design off of. Using an assembly and alignment, we created the trail corridor. This allowed us to determine cut and fill quantities, elevations points of the trail, slope of storm drain facilities associated with the trail, and land acquisition values for the City of Santaquin. A few of the key deliverables are seen below



Results

- . Full corridor design:
 - 8-ft-wide meandering trail completing sine wave every 150 ft
 - Assembly with curb and gutter, trail, and landscaping according to city standards
 - Road-trail junctions with ADA ramps
- . Total cut/fill amounts:
 - Cut: 255.56 cubic yards
 - Fill: 578.20 cubic yards
 - Net Fill: 322.64 cubic yards
- . Maximum necessary land acquisition of 3000 square feet
- . Drainage analysis
 - 25 year storm peak flow estimated at 140 cfs
 - 32 in uniform drainage pipe along corridor
- . Brake point on trail between 300 s and 400 s
 - Large bench
 - Trash can
 - Bike maintenance station
- . Additional street lights added according to city standards
- . Total estimated project cost of \$528,789.41