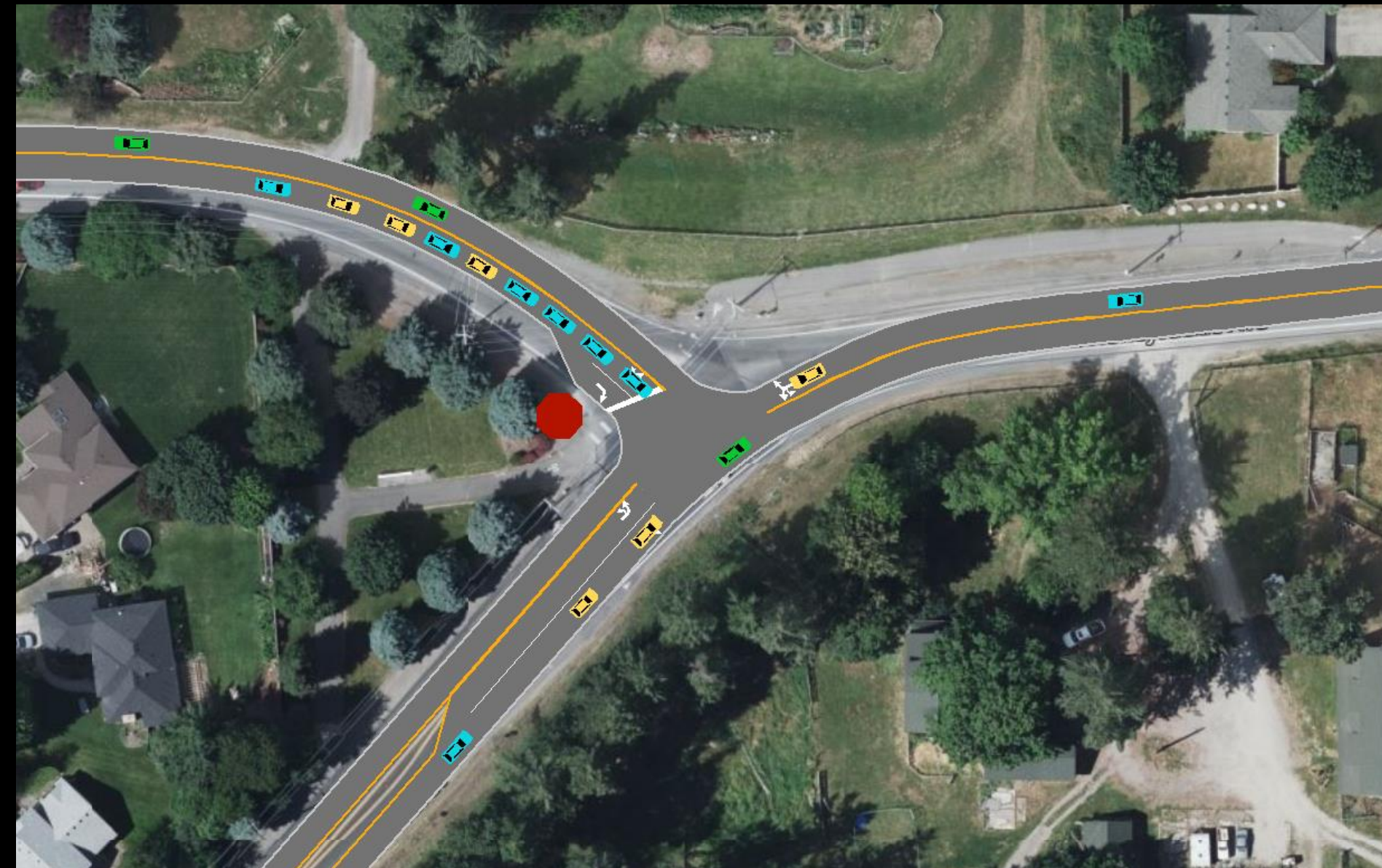


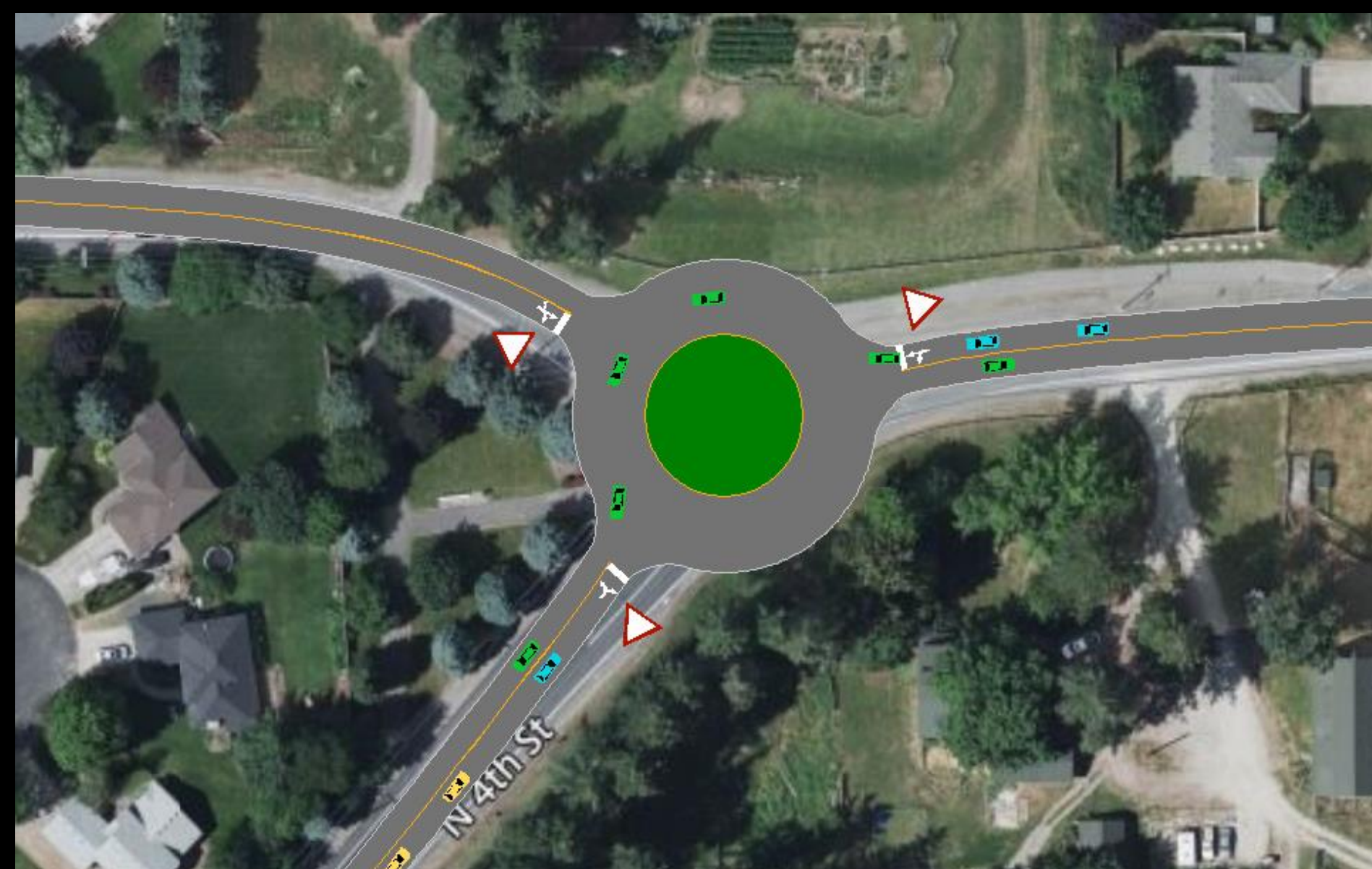
Sponsors:
Welch-Comer & Associates, Inc.
Melissa Cleveland, P.E. and Adam Dorsey, P.E.



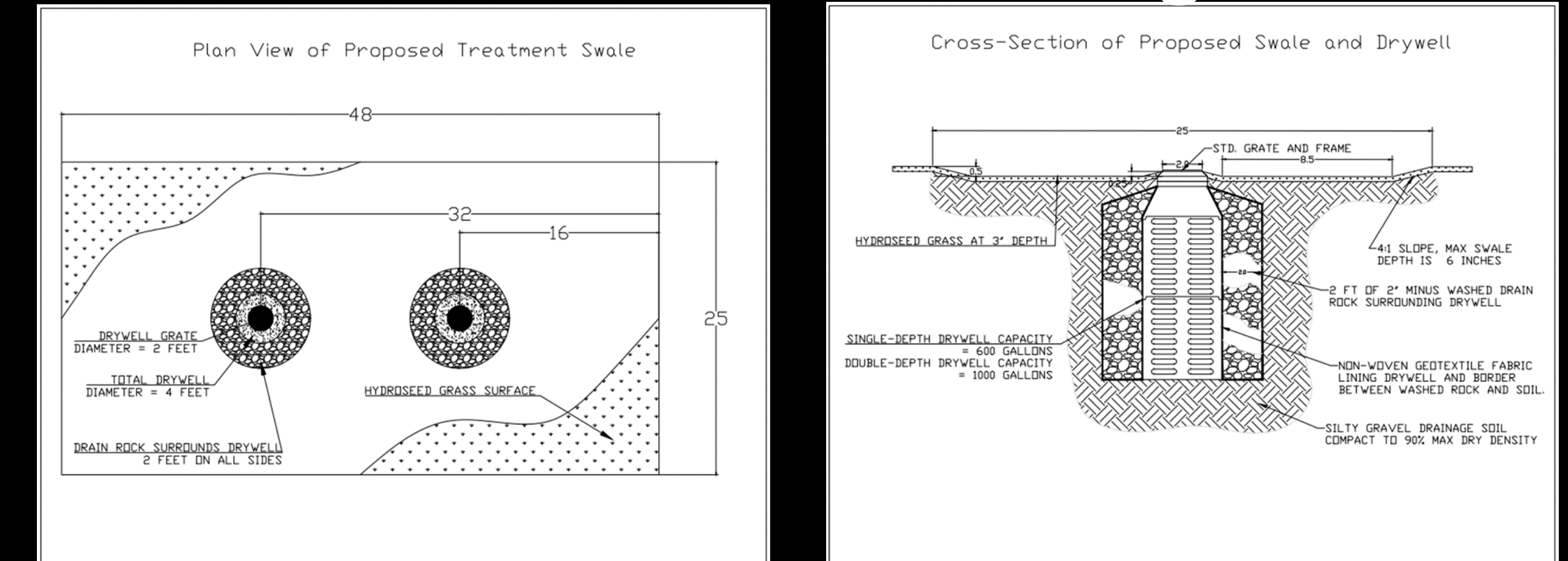
Overview



The intersection of N 4th St. and E Honeysuckle Ave. is a busy intersection involving roads that provide access to the popular Honeysuckle beach. One leg of the intersection has a sharp curve that limits sight distance. This has led to crashes in the past. There are also long backups and delays at the one stop sign in the intersection. Replacing this intersection with a single-lane roundabout would solve both these problems by slowing traffic as it enters the intersection, while allowing smoother travel through.

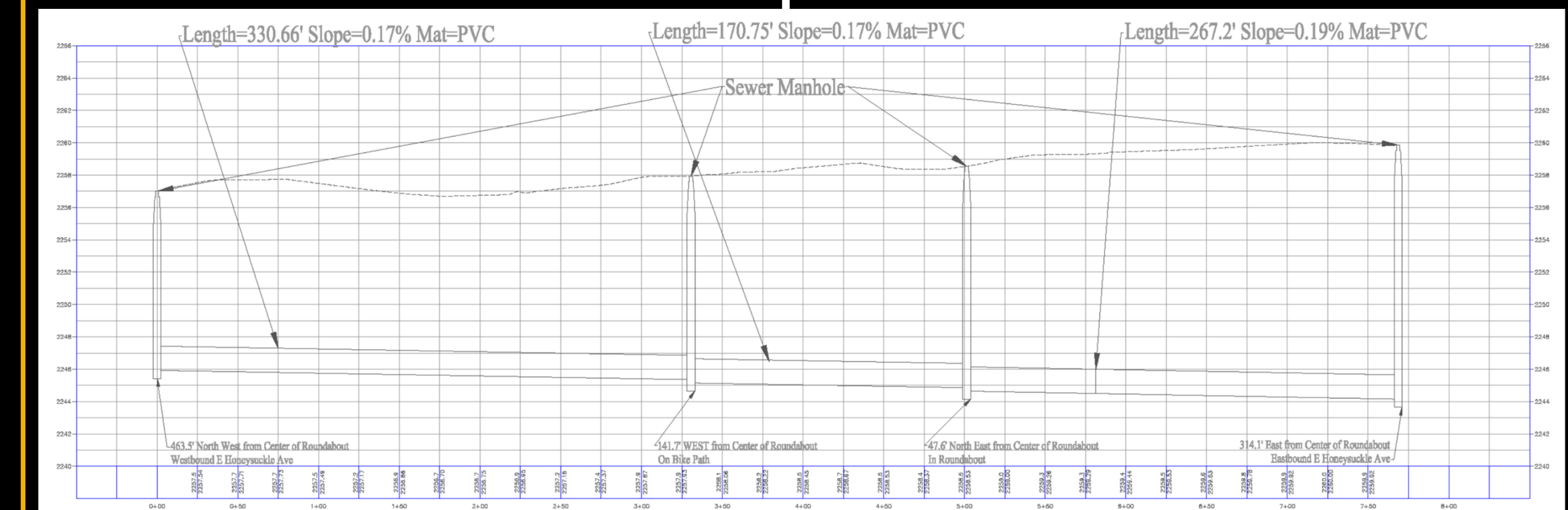


Stormwater Drainage



- Designed According to City of Hayden Standard Plans
- Swales sized to treat runoff resulting from 0.1 in/hr off surfaces exposed to pollutants
- Dry well sized to Infiltrate stormwater at peak flow

Sewer Replacement

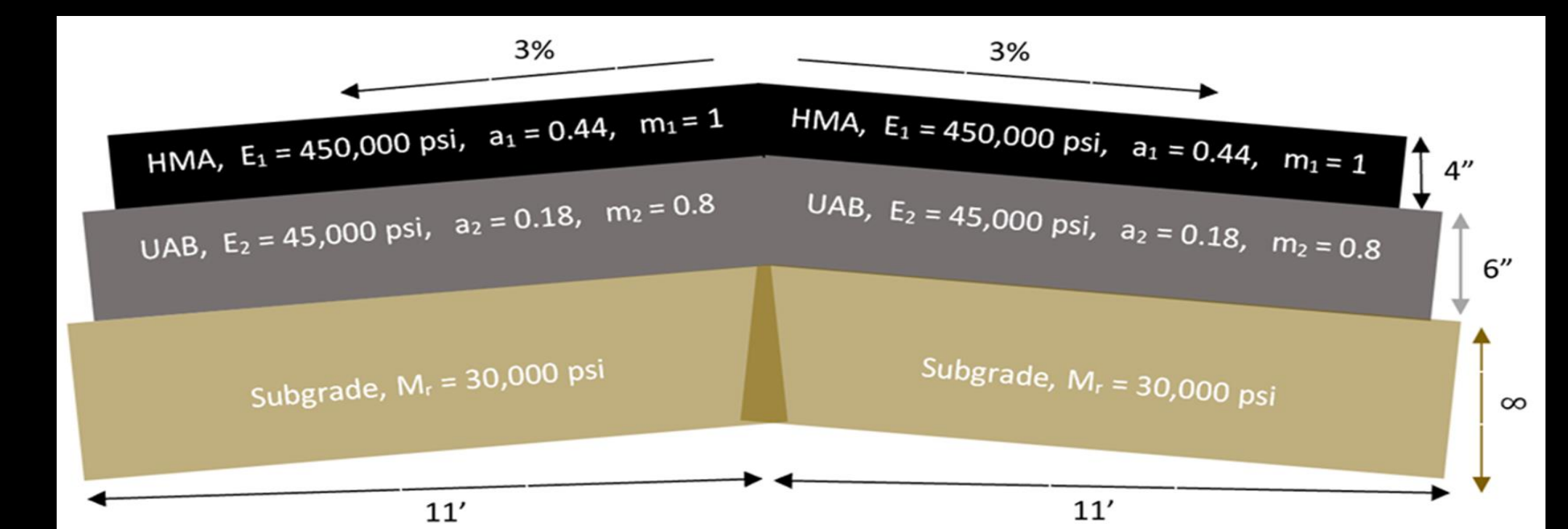


Gravity Sewer Profile View (Ensure Flow Direction is East)

- Installing 15" PVC for the Gravity Sewer
- Installing 18" HDPE for the Pressure Sewer
- Replacing along E Honeysuckle Ave
- Replacing south line with no flow

Pavement Design

- The roadway pavement in this project was designed according to the AASHTO 1993 method
- The flexible pavement will be able to accommodate 807,000 equivalent single axle loads
- The cost estimation for having this design layers for a length of 1450 feet is \$121,000



Cross-sectional pavement layers thickness, slope, and width

Intersection Performance

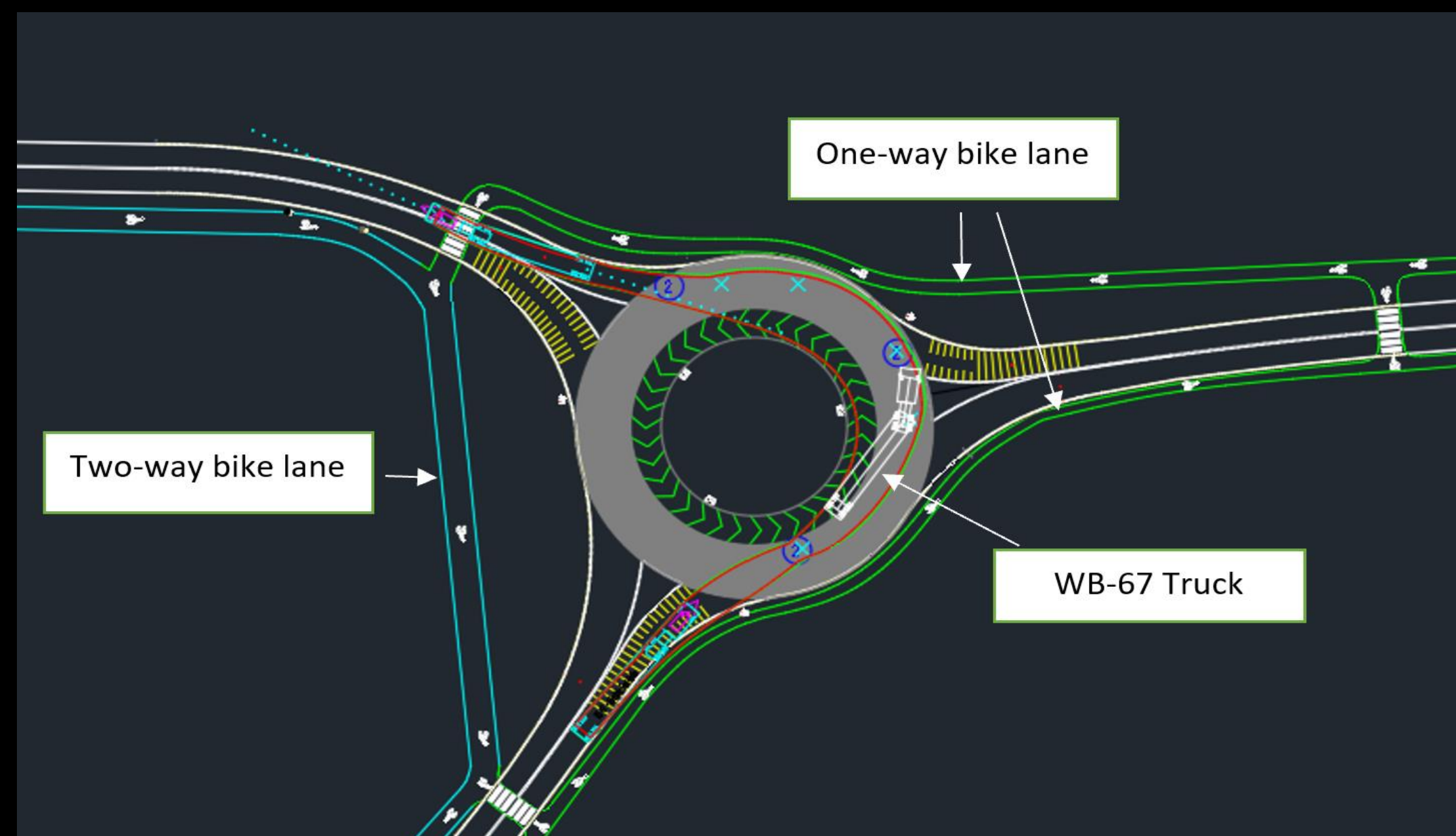
Stop-Controlled

- HCM 2010 Level of Service B, 13.3 sec/veh
- Maximum Queue Length – 266 ft

Roundabout

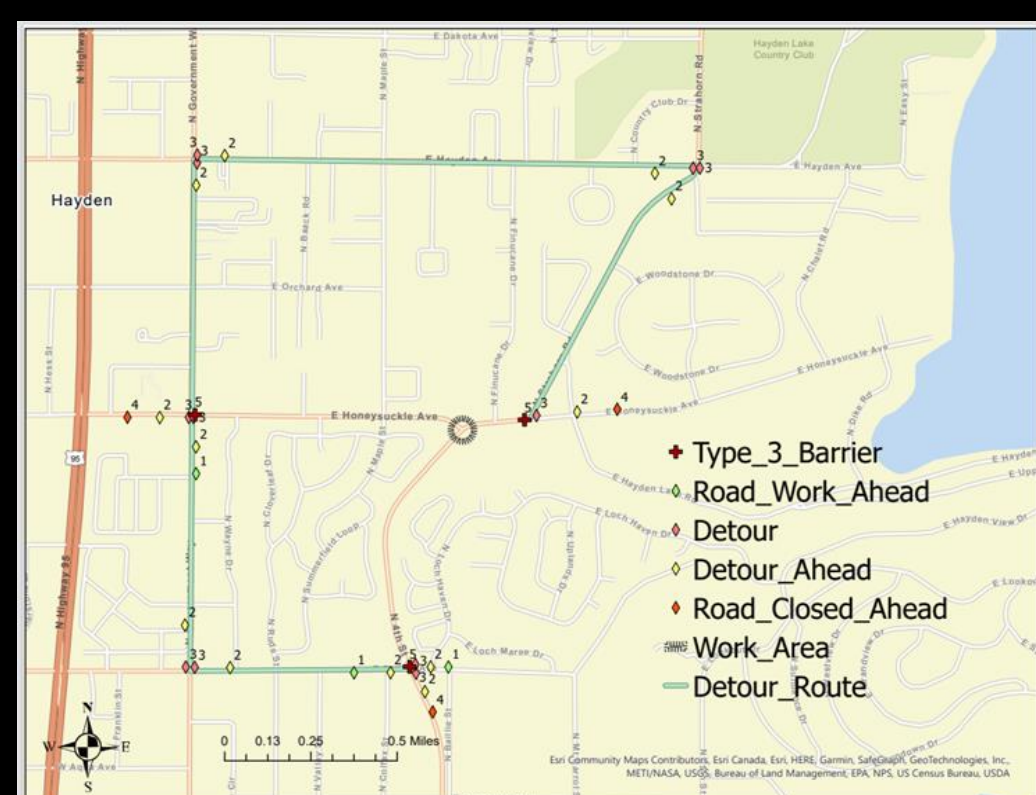
- HCM 2010 Level of Service A, 6.2 sec/veh
- Maximum Queue Length – 122 ft

Geometric Design



- 150-foot total diameter
- 13- foot truck apron
- 22- foot inscribed lane width
- Allow a WB-67 truck and trailer
- Single Lane
- 25 MPH design speed
- 6-foot-wide one-way bike lane (green)
- 10-foot-wide shared bike lane (blue)

Traffic Control Plan



Phase I



Phase II

- Intersection fully closed
- Detouring Completely Circumvents Intersection
- Presents Severe Inconvenience for Traffic
- Used Only During Pipe Replacement and Excavation
- Intersection Retains Limited Functionality
- Some Turning Movements Require Detours
- Adequate Space for Construction
- Used After All Trenches are Filled In

Cost Estimation

Demolition and Site Preparation	\$	66,000
Concrete and Asphalt	\$	288,000
Excavation, Aggregate, Fill	\$	246,000
Sewer Pipe and Drywells	\$	158,000
Traffic Control	\$	62,000
General Requirements, Mobilization, and Tax	\$	203,000
Total:	\$	1,023,000