Abstract: The Alaska Department of Transportation and Public Facilities (AK DOT&PF) has proposed an intersection improvement project at Vine Rd. and Hollywood Rd. in the Mat-Su Valley. Vine Rd. is a two lane minor arterial and Hollywood Rd. is a two lane minor collector. Vehicle and pedestrian traffic is generated at the intersection from the two schools located on Hollywood Rd. just west of Vine Rd., as well as from the surrounding residential and commercial buildings in the area. The intersection is stop controlled along Hollywood Rd. but not along Vine Rd. This intersection experiences crashes at approximately three times the statewide average. The problem was solved by developing a roundabout at the center of the current intersection location.

35% Design of Preferred Alternative:

Design Criteria and Considerations: Our firm, BHKPT Engineering, proposed three roundabout design alternatives. The first alternative was to place the center of roundabout at current location of intersection, the second was to move the center of roundabout to the north, and the third was to raise the elevation at the current location of intersection. The preferred alternative was to place the roundabout center at the current location of intersection. This design was approved by the client and it was taken to 35% design. With this design, the existing roads do not need to be realigned, there is minimal earthwork needed, and minimal impacts to utilities were seen.

Design criteria were based on the Federal Highway Administration (FHWA 2010) Rural Single Lane Roundabout.
- Design vehicle: WB-67
- Circulatory lane width: 27 ft
- Diameter of inscribed circle: 130 ft

Impacts to Utilities:
- Electric (MEA)
- Gas (ENSTAR)
- Communication (MTA/GCI)

Conclusion: The ultimate motive of this project is to provide public safety by reducing vehicle crashes, increasing pedestrian safety, and accommodating future traffic flow. This roundabout design will fulfill this motive by slowing vehicles down, increasing allowable traffic capacity, and creating a safer route for pedestrians.

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