April 26, 2017

Chuck Gillette
Ivins City Engineer
55 North Main Street
Ivins, UT 84738

Re: Traffic Letter for Alignment of Main Street with Old Highway 91

Chuck:

Hoskins Engineering & Development has analyzed the master planned connection of Main Street where it intersects with Old Highway 91. Ivins City Transportation Master Plan shows that Main Street divides the property adjacent to Old Highway 91 known as The Crossings at Red Desert Estates in order to get Main Street to connect at a 90-degree angle. The city and developer have had many discussions regarding the development and the best location for Main Street. Splitting the property in two is not an ideal situation for the developer. The location of the intersection of Main Street with Old Highway 91 is critical to traffic flow for that arterial roadway. This letter summarizes the results of the analysis regarding the location of the proposed intersection and the development of The Crossings at Red Desert Estates.

The Crossings at Red Desert Estates is a proposed 41 lot single family residential subdivision that is situated at the bottom of Main Street adjacent to Old Highway 91. The developer would like to keep the parcel intact and is proposing that Main Street keep its original alignment until it gets close to Old Highway 91 and then make a curve at the end to connect at 90 degrees to the highway. This configuration would place the intersection of Main Street at Old Highway 91 closer to the Western Corridor and Old Highway 91 intersection. The transportation master plan calls for spacing of intersections along Old Highway 91 to be ¼ mile or 1,320 feet. This is to allow proper progression of traffic along this corridor and provide enough stacking distance between intersections. Main Street is not master planned to extend through Old Highway 91 to the south and the terrain to the south limits the amount of possible development on the south side. The Old Highway 91 & Main Street intersection will likely remain as a T-intersection.

A traffic model was prepared in Synchro and simulated using SimTraffic based on volumes provided by Ivins City from the travel demand model for the Year 2040. The purpose of the model was to isolate the area around the Main Street & Western Corridor intersections on Old Highway 91 and see if there are any noticeable impacts of moving the Main Street intersection closer to the Western Corridor intersection. The model was simulated for both a roundabout scenario and a signalized intersection scenario. The geometry of the intersections included 5-lane sections for

Old Highway 91 and the Western Corridor and a 3-lane section for Main Street. The simulation showed that there is not a queuing problem between intersections if the Main Street intersection is moved closer to the Western Corridor intersection. The spacing of the intersections was modeled at approximately 850 feet apart and seemed to operate efficiently. The southbound left turns on Main Street trying to turn onto Old Highway 91 was problematic due to the high amount of traffic on Old Highway 91 and an insufficient number of gaps to make the turn. In the future when the traffic gets this bad, these vehicles will find an alternative route to get to Old Highway 91 and will most likely head east to the signal at the Western Corridor to make the left turn onto Old Highway 91. With the Main Street intersection only being a 3-legged intersection and not master planned for signalization, the amount of conflicting traffic at this intersection is less and provides more flexibility for its location.

Being able to place the Main Street intersection on Old Highway 91 at a closer distance to the Western Corridor intersection will keep the development intact and not split it in two. Being able to adjust the location of the intersection will also provide a continuous route on Main Street to get to Old Highway 91 and not have to meander through the subdivision as was proposed in an alternative layout. The centerline radius that connects Main Street to Old Highway 91 is being proposed by the developer at 200 feet, as stated in city design standards. The city would like to see a centerline radius of 400-500 feet. The radius does not need to be that big because this intersection will always be stop controlled for the southbound direction on Main Street. Therefore, those vehicles making this movement will always have to stop before proceeding onto Old Highway 91. A bigger radius on the other hand provides a much smoother transition from one roadway to another and improves sight distance and maneuvering of vehicles. The development should make the radius as big as feasibly possible without leaving too much undevelopable land on the other side of the alignment. This will have to be worked out with the city as to what benefits all parties involved.

If you have any questions or concerns about this letter or the information contained herein, feel free to contact my office at 435-668-9882 or email me at tylerhoskins69@gmail.com.

Respectfully,

Hoskins Engineering & Development

Tyler Hoskins

Tyler Hoskins, P.E.
President