

Roundabouts — Construction Zone Traffic Control

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INTRODUCTION: Roundabout construction presents significantly more construction headaches than your typical intersection improvement. These problems are exacerbated by multiple roundabouts and/or constructing these roundabouts in environmentally/politically sensitive areas. Here is a behind the “K-rail” look at the construction staging and traffic handling for three very different roundabout construction sites.

COORDINATING EVENT TRAFFIC AND MAINTAINING EMERGENCY ACCESS

17 Mile Drive/Holman Highway 68/Highway 1 – Monterey, CA

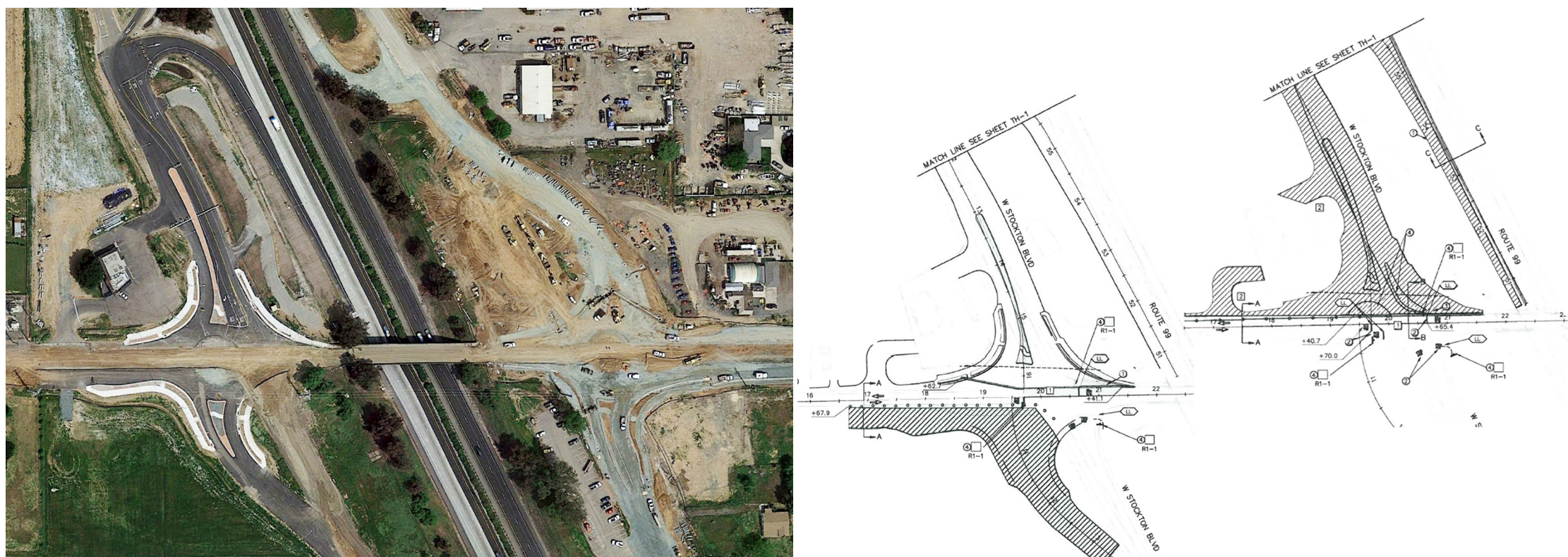
The project is composed of two closely spaced roundabouts one a multi-lane the other a tear drop. The centerline spacing between the two is ±350 ft. This multi-lane lies at the intersection of the Holman Highway (State Route 68) and the US Highway 1 southbound ramps and provides primary access to the Cities of Monterey and Pacific Grove and direct access to the community of Pebble Beach and the famous “17 Mile Drive”. Construction access and traffic handling is further complicated by the need to maintain access 24/7 for the sole Community Hospital, whose only access is about one quarter mile west of the construction site. The absence of alternative routes and the need to accommodate truck traffic and special event traffic such as the heavily attended Pebble Beach AT&T Pro-AM and Concours de Elegance required a complicated staging plan supported by a robust public outreach campaign.



MAINTAINING TRAFFIC WITH LIMITED CLOSURES

SR 99/SR 104 (Twin Cities Road) – Galt, CA

This roundabout interchange project is located on State Route (SR) 99 and SR 104 (Twin Cities Road) in City of Galt in an urbanizing location. The roundabout interchange concept provides for the maintenance of the existing SR 99 overcrossing structure in place. The construction trick was to build two roundabouts across from one another along a two lane overcrossing structure. Twin Cities Road provides direct access to a growing commercial area, and each intersection location has direct access issues due to a Tractor Sales/Maintenance Facility on one side and a large “Park ‘n Ride” on the other. The City and Caltrans required that access to SR 99 be maintained, as well as local access throughout construction. In addition, a Walmart was under construction just 1300 ft. east of the eastern roundabout and their construction equipment needed continuous access through our construction site.



ACCOMMODATING HEAVY TRUCK TRAFFIC

Jaye Street/Montgomery Avenue – Porterville, CA

This roundabout is located at the intersection of Jaye Street and Montgomery Avenue and is the single access point to the Walmart Distribution Center located in Porterville. The distribution center is the primary transport for goods to each of the Walmart and Sam’s Club stores in Southern California. The roundabout was designed to accommodate 18% 5-axle trucks, which equates to over 400 trucks entering and/or leaving each and every day. The construction was staged to accommodate truck access 24 hours a day, 7 days a week. The roundabout was constructed with minimal delays to the distribution center traffic.



Roundabout Construction Traffic Control TAKE AWAYS

- 1 Once traffic control switches from the existing control to yield/roundabout control, it is strongly recommended to maintain roundabout control for the duration.
- 2 If “temporary” roundabouts are used during staging it is recommended to use standard roundabout pavement delineation, consistent with the final striping plan, and standard roundabout signing.
- 3 Staging should be considered early in the design process to identify geometric opportunities and design details that will facilitate efficient construction, e.g. grind and overlay of existing pavement, temporary pavement locations, curb type (doweled vs. post), etc.
- 4 Flaggers, once in roundabout control, should be used cautiously and only to facilitate construction operations that impede normal traffic flow.
- 5 Special consideration should be given for planting and other operations within the central islands once roundabout control is achieved as work within this area which requires coning-off the truck apron prohibits movements of large vehicles.

CONCLUSIONS: Like roundabout design, the construction of every roundabout is unique and each location has different priorities and operational requirements. Traffic control during construction should follow general guidelines and principles based on local and/or national traffic control requirements while adhering to roundabout operational principals tailored to meet the need of the project and location. At this time, it is not recommended to prepare or adopt standards or guidelines for roundabout construction zone traffic control, but rather assemble a manual of case studies and lessons learned.