



May 23, 2018

Ms. Casey McDonald
Adobe Associates, Inc.
1220 North Dutton Avenue
Santa Rosa, CA 95401

Updated Focused Traffic Analysis for the Forestville Town Park Project

Dear Ms. McDonald;

As requested, W-Trans has prepared a focused traffic analysis for proposed improvements to the Forestville Town Park located at 6708 Highway 116 in the County of Sonoma. The purpose of this letter is to address comments as contained in a letter dated June 1, 2017, to Ms. Hannah Spencer of the County of Sonoma from Ms. Patricia Maurice of Caltrans regarding the proposed project's site access and subsequent comments from Caltrans relative to the draft version of this letter dated March 22 and May 11, 2018.

Existing Conditions

The study area consists of Front Street (State Route (SR) 116) along the frontage of the site. In the study area, SR 116 runs east-west and is about 40 feet wide with two travel lanes and parking on both sides. To the west of the project site, there are planned improvements at the intersection Mirabel Road/Front Street (SR 116) to install a roundabout and add the south leg of the intersection. The most recent improvement plans available on-line are enclosed for reference. The planned improvements would divert regional traffic around downtown Forestville. Turning movement counts at the intersection of Mirabel Road/ Front Street (SR 116) were collected August 24, 2017 in conjunction with SR 116 segment counts provided by Caltrans. Based on these Caltrans counts, the roadway experiences its peak volume on weekdays during the evening peak hour.

Project Description

The proposed project would develop and add facilities to an existing County park located at 6708 Highway 116. The 7.79-acre site currently has trails and picnic tables with a gravel parking lot and can be accessed along most of the site's Front Street frontage except about 100 feet where concrete parking stoppers have been lined up to create a barrier. As proposed, the park would have one vehicular access point on Front Street along the easterly edge of the site about 20 feet west of the Second Street/Front Street intersection. The existing bus stop would be relocated about 175 feet to the west and a bus pullout would be installed. As proposed the project would provide an assembly structure, public restrooms, parking area, gathering area, amphitheater, picnic areas, trailhead, bike staging area, and more.

Trip Generation

To determine what improvements are needed to achieve acceptable access at the driveway, the average trips generated by the site were estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for "Public Park" (ITE LU #441). While the fitted curve equation was used for the daily and p.m. peak hour estimate, there is not an equation for the a.m. peak hour trip estimates so the average rate was applied. Based on these rates, the park without and with the project is expected to generate 93 daily trips, none of which would occur during the morning peak hour, but including 23 trips during the evening peak hour. Table 1 summarizes the average trips generated by the site.

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Public Park	7.79 ac	12.00*	93	0.02	0	0	0	2.96*	23	13	10

Note: ac= acres; * = rate based on the fitted curve equation

Access Analysis

The proposed single access to the site would be along the easterly edge of the site about 20 feet west of the Seconds Street/Front Street intersection. As proposed, the driveway would be full access. In response to a comment from Caltrans the planned improvements at the Mirabel Road/Front Street (SR 116) intersection and those for the proposed park were compared for continuity. Based on the most recent set of plans available for the roundabout at Mirabel Road/Front Street, there would be delineating median striping at the proposed park driveway. The striped median would result in right-turn only access. Based on the potential repercussions resulting from either beginning the striped median west of the driveway or moving the median east to allow for a break, which would interfere with the nearby intersection, retention of the Caltrans striping as designed is recommended. To achieve conformance with this design it is recommended that the proposed project include installation of a right-turn only sign visible to outbound park visitors to reinforce the restrictions imposed by the striped median.

The AutoTURN application of AutoCAD was used to evaluate the adequacy of the proposed driveway for the largest vehicle expected to access the site, which is a single-unit commercial truck. This category would include food catering trucks and "U-Haul" trucks. Based on the review performed, it appears that trucks of this size could turn right into and out of the project driveway. While both movements would require the driver to maneuver the vehicle into the opposing driveway lane, as discussed below in further detail, there would be sufficient sight distance for a vehicle to see, and yield to, a truck entering or exiting the driveway. The truck turning movement exhibit is enclosed.

Sight Distance

Sight distances along Front Street (SR 116) at the project driveway were evaluated based on criteria contained in the Caltrans *Highway Design Manual*. At driveways a substantially clear line of sight should be maintained between the driver of a vehicle waiting on the driveway and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Set-back for the driver on the crossroad is 15 feet, measured from the edge of the traveled way.

Available sight distance at the proposed driveway was field measured as well as reviewed using available aerials and the project site plan. Based on a design speed of 25 mph, the minimum stopping sight distance needed is 150 feet. Sight distance to the west was clear and unobstructed at the time of the site visit, but if vehicles parked near the driveway, the line of sight would be obstructed. Based on the park's site plan parking needs to be prohibited for a distance of at least 60 feet west of the driveway. However, given the location of the proposed bus pullout, it is recommended that parking be restricted for the full distance between the project driveway and the bus pullout. Though sight distance to the east is partially obstructed by on-street parking, it should be noted that with the driveway restricted to right-turn only, this direction would not be a factor in the sight distance review as drivers would only be looking to the west to turn right. However, parking should be prohibited between the project driveway and the east side of the Second Street/Front Street intersection to improve the line of sight between pedestrians at the crosswalk on the east leg and eastbound vehicles.

Consideration was also given to the adequacy of sight lines for a driver following a vehicle that slows or stops prior to turning into the site. Given that SR 116 is straight and flat in the project vicinity, drivers have a clear and unobstructed line of sight that exceeds the 150 feet of stopping sight distance needed.

Potential Driveway Conflicts at the Second Street Intersection

The proposed project would be located about 20 feet east of the Second Street/Front Street (SR 116) intersection. It is understood that relocating the proposed driveway closer to the intersection would conflict with a drainage inlet. Though the driveway is close to the intersection, drivers of any southbound vehicles from Second Street and northbound from the proposed park would be able to see each other. However, it is recommended that the tree on the northwest corner of Second Street/Front Street be removed or at least trimmed up to a minimum of seven feet about the street level to improve not only sight lines between drivers on Second Street and at the proposed driveway, but also to open sight lines from Second Street to the west.

Proportional Share at Mirabel Road/Front Street

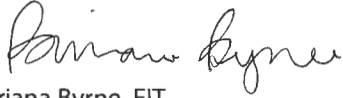
The County is currently in the process of designing a roundabout to be installed at the intersection of Mirabel Road/Front Street. Although this future improvement would benefit the proposed project, the County does not have a mechanism in place to allow payment of a proportional share fee, so one is not recommended.

Conclusions and Recommendations

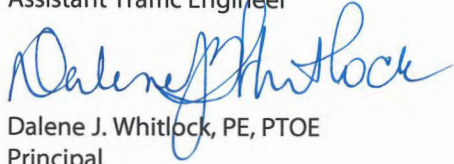
- The plans for access to the proposed park and the Caltrans plans for the Mirabel Road/Front Street roundabout are in conflict, with the Caltrans design limiting access at the project driveway to right turns in and out.
- Single-unit trucks can negotiate the turn into or out of the driveway, though the movement would require use of both lanes; because of the adequacy of sight lines, this is expected to result in acceptable operation.
- Sight distance to the west of the project driveway would be obscured by on-street parking.
- It is recommended that the proposed project be consistent with the Caltrans plan for right-turn access only; a right-turn only sign should be installed at the project driveway, visible to outbound vehicles to reinforce that left turns are prohibited.
- It is recommended that parking to the west be restricted for the full distance between the bus pullout and the project driveway
- It is recommended that parking be prohibited to the east of the project driveway to the adjacent driveway for the shopping center to improve the line of sight between vehicles approaching the Second Street/ Front Street intersection and pedestrians entering the crosswalk.
- It is recommended that the tree on the northwest corner of the Second Street/Front Street intersection be removed or trimmed to improve sight lines between the project driveway and Second Street as well as from Second Street to the west.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,



Briana Byrne, EIT
Assistant Traffic Engineer



Dalene J. Whitlock, PE, PTOE
Principal

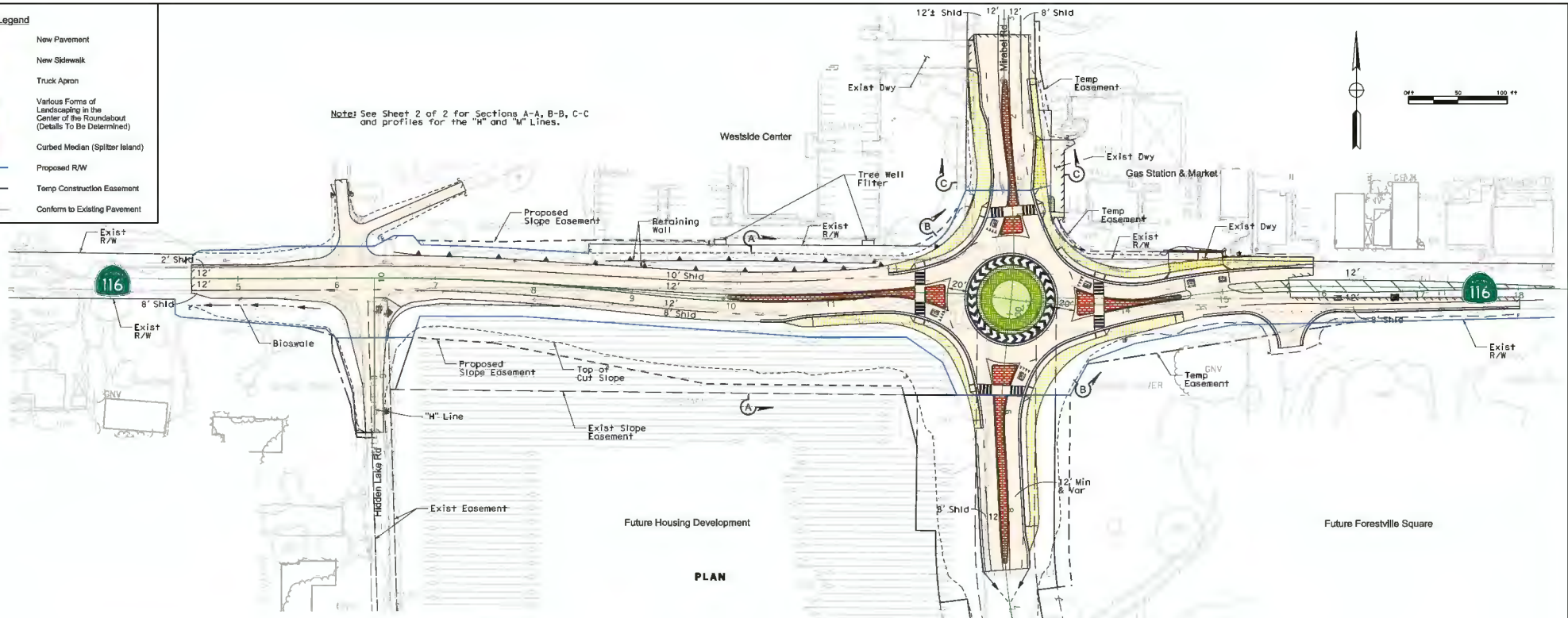
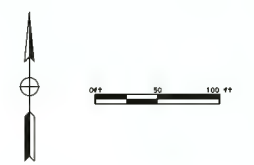


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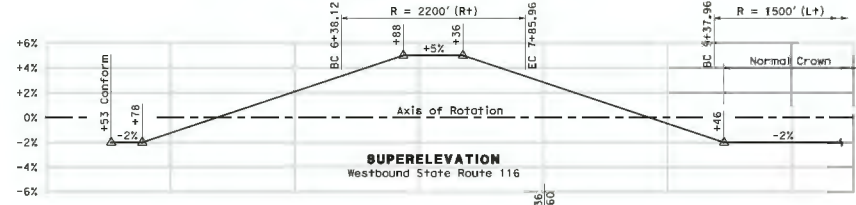
Enclosures: Mirabel Road/Front Street Roundabout Improvement Plan
Truck Turning Movement Exhibit

- Legend**
- New Pavement
 - New Sidewalk
 - Truck Apron
 - Various Forms of Landscaping in the Center of the Roundabout (Details To Be Determined)
 - Curbed Median (Splitter Island)
 - Proposed R/W
 - Temp Construction Easement
 - Conform to Existing Pavement

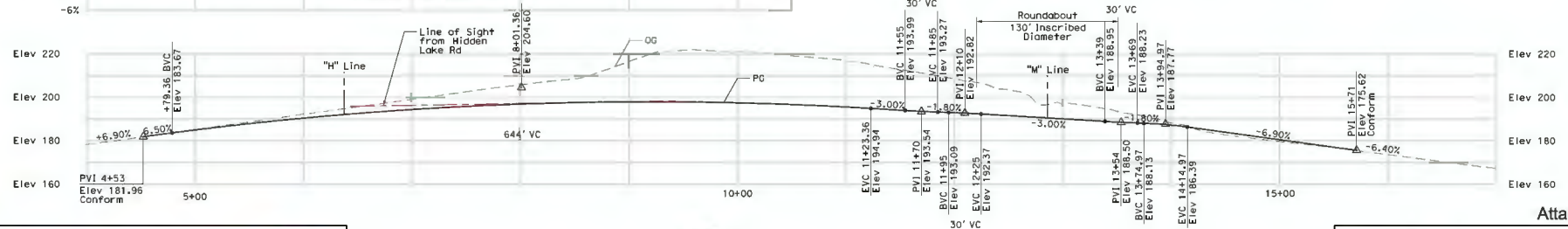
Note: See Sheet 2 of 2 for Sections A-A, B-B, C-C and profiles for the "H" and "M" Lines.



PLAN



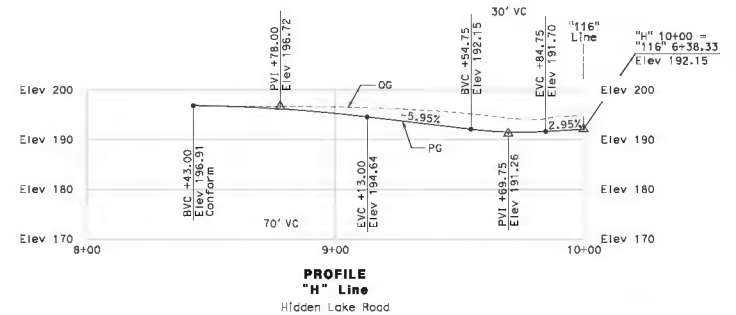
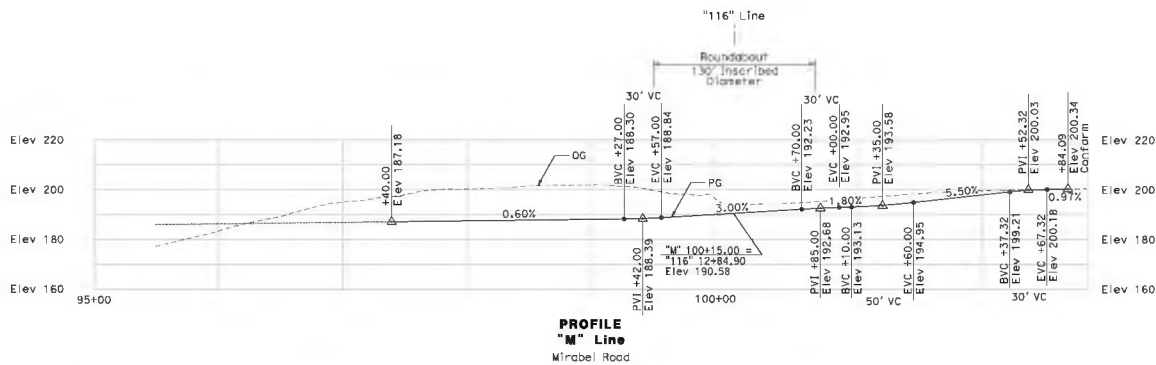
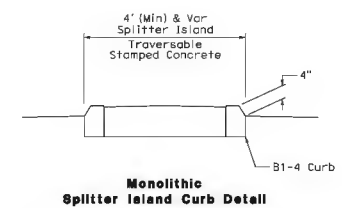
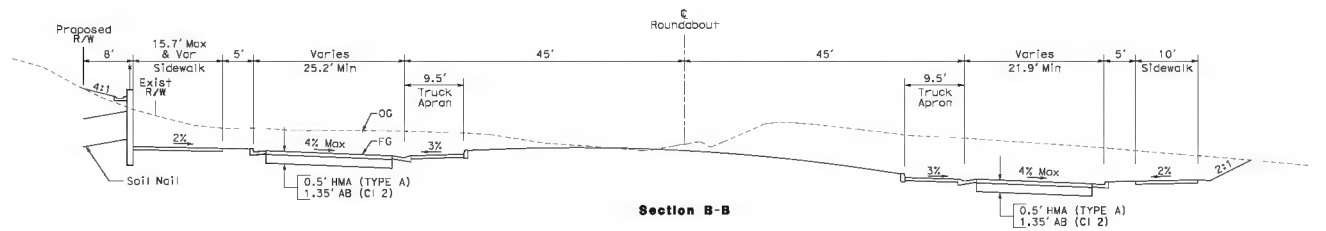
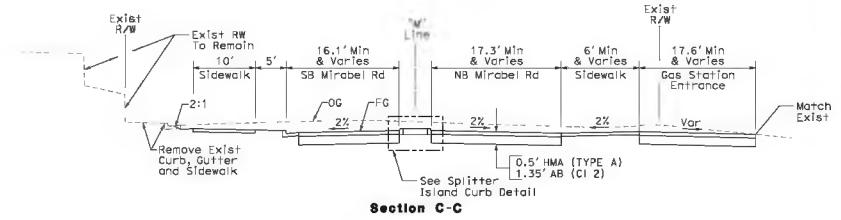
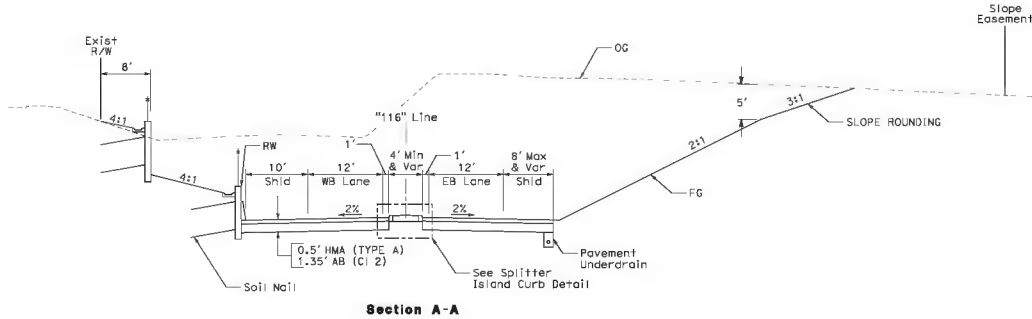
SUPERELEVATION
Westbound State Route 116

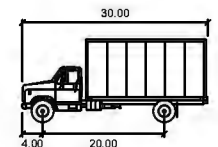
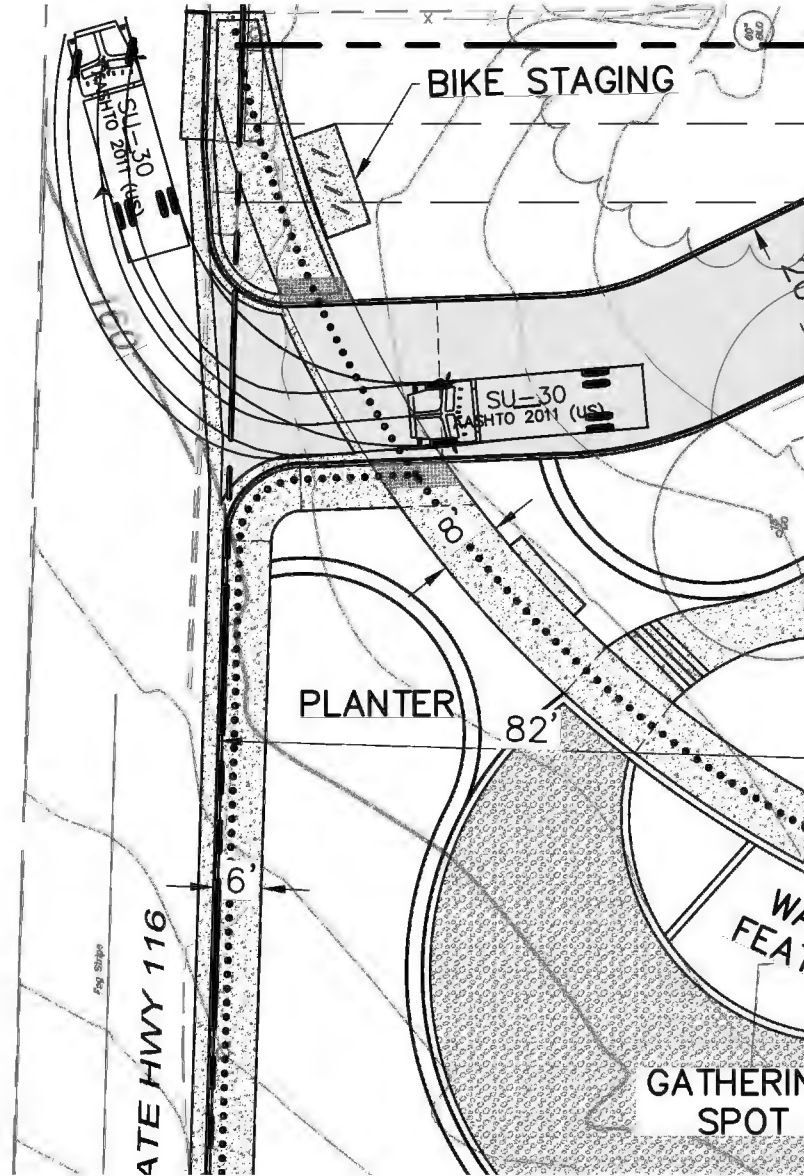
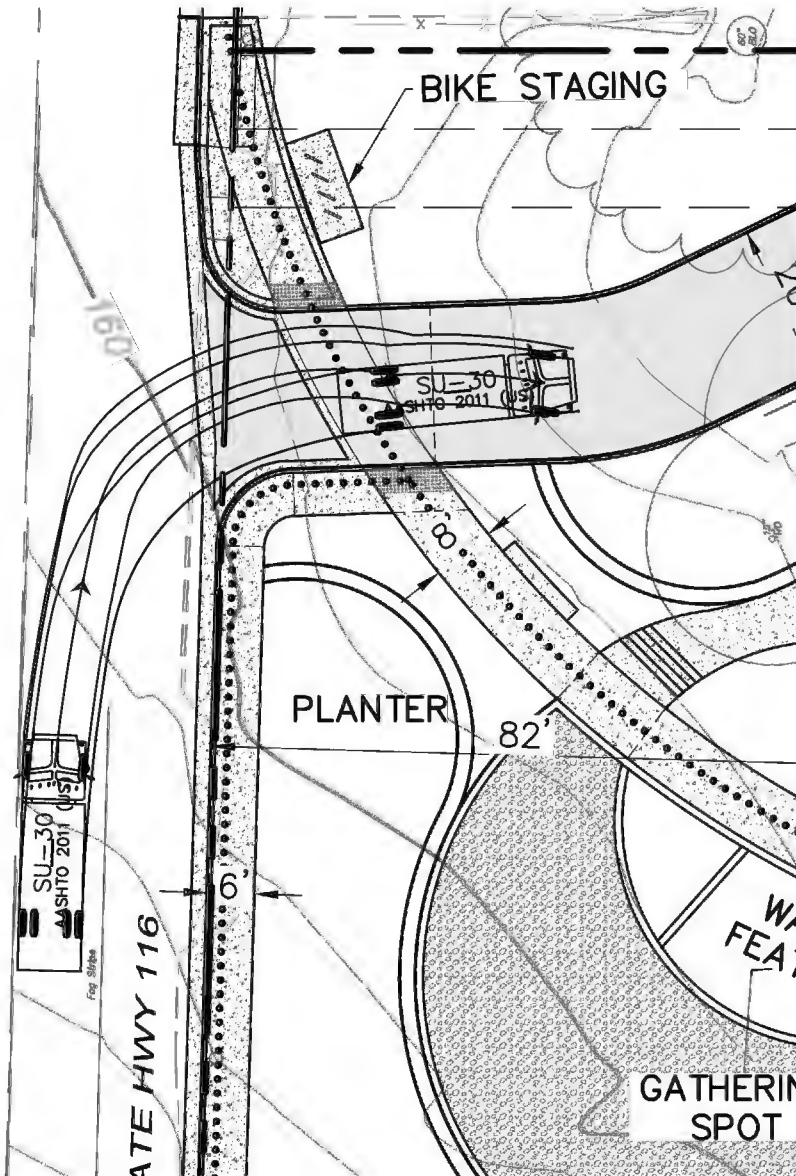


PROFILE
"116" Line
State Route 116



Attachment A1
Roundabout Alternative
Plan, Profiles & Cross Sections
Sheet 1 of 2
September 2012





SU-30

	feet
Width	8.00
Track	8.00
Lock to Lock Time	6.0
Steering Angle	31.8

