California Environmental Quality Act
Initial Study

(As required by Sec. 15063 of the Public Resources Code)

Prepared: July 2017

Revised August 2018

1. PROJECT TITLE: 19410 Sonoma Highway 12 Unit/2 Live/work Unit Development

2. PROJECT LOCATION: **Address:** 19410 Sonoma Highway
APN(s): 018-442-005

3. PROJECT SPONSOR'S NAME AND ADDRESS: Ken Taub, Architect
50 Arnold Drive
Novato, CA 95949

4. GENERAL PLAN DESIGNATION: Commercial

5. ZONING: **Base:** Commercial (C)
Overlay: None

***6. PROPERTY DESCRIPTION*:**

The subject property is 0.68-acre (29,590-square foot) rectangular parcel located on the east side of Sonoma Highway (State Highway 12) half a block north of its intersection with West Napa Street. The eastern portion of the property is currently developed with a primary home, secondary residence, and detached garage, with access by a circular driveway. There are several trees located on the site and the Sonoma Highway frontage is unimproved, lacking curb, gutter and sidewalk. The property has a General Plan land use designation and zoning of "Commercial." Surrounding land uses include a hotel to the south, auto parts store and B&B to the west (across Sonoma Highway), fabric outlet and warehouse to the north, and the rear yard of a residential duplex property to the east.

7. DESCRIPTION OF PROJECT:

The proposal involves redeveloping the 0.68-acre site with a mixed use project that includes 12 apartments, 2 live-work units, and associated 28-stall parking lot. The live-work unit building, a two-story structure intended for residential and retail use would be located toward the frontage, setback 15 from the front property line with a five-foot setback on the south. The apartments would be contained in two buildings (both two-stories in height), including a six-unit building on the south side of the site setback five feet from the south property line, and a six-unit building at the rear of the property, setback five foot from the north, south, and east property lines. The parking lot, which contains 28 spaces (including 14 covered carport spaces), is aligned along the north side of the property, and separated from the frontage by a 20-foot buffer area. A trash/recycling enclosure is proposed at the back of the parking lot. Access would be provided by a single driveway situated in the northern part of the property frontage giving limited sight lines to the south due to the transitional curve of West Napa Street/Sonoma Highway.

Three floor plans are proposed for the apartments. The two "C" units at the front of the site would have a 418 square foot work studio and 859 square feet of living area, with 1 bedroom and 1 bath. The six "A"

units comprising the central building would each have 850 square feet of living area, with 1 bedroom and 1 bath. The six "B" units comprising the rear building would each have 1,056 square feet of living area, with 2 bedrooms and 1 bath. Open space for the apartments and live/work units consists of front yard areas and balconies/patios facing the parking lot, courtyard, and recreation area, which is provided directly behind the live/work building. The apartment buildings would have a maximum height of ±25 feet while the live/work building would have a maximum height of ±21.5 feet. Elevation concepts have been provided; however, the architectural style and exterior building treatments are flexible at this early stage. The existing residential structures would be removed to accommodate the development.

8. SURROUNDING LAND USES AND SETTING:

North: Fabric outlet and warehouse.
South: A hotel.
East: The rear yard of a residential duplex property.
West: An auto parts store and Bed & Breakfast, across Sonoma Highway.

9. LEAD AGENCY NAME AND ADDRESS:

City of Sonoma
No. 1 The Plaza
Sonoma, CA 95476

10. CONTACT PERSON & PHONE NUMBER:

Wendy Atkins, Associate Planner
(707) 938-3681

11. OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED:

Sonoma County Water Agency
Sonoma Valley Sanitation District
State Water Resources Control Board
Caltrans

(Note: the entitlement process may identify other required permits or approvals not anticipated by the preceding list.)

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Topics indicated with an asterisk (*) would result in at least one "Potentially Significant Impact" which would be "Less-Than-Significant" with incorporation of mitigation that the project applicant has agreed to implement.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Population and Housing
☐ Agricultural Resources	☐ Hazards & Hazardous Materials	☐ Public Services
☐ Air Quality*	☐ Hydrology/Water Quality	☐ Recreation
☐ Biological Resources*	☐ Land Use and Planning	☐ Transportation/Traffic*
☐ Cultural Resources*	☐ Mineral Resources	☐ Utilities/Service Systems*
☐ Geology/Soils	☐ Noise*	☐ Mandatory Findings of Significance*

DETERMINATION: *(To be completed by the Planning Director.) On the basis of this initial evaluation:*

☐ We find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ We find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ We find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ We find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ We find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: July 5, 2017

Signature: _____ **Date:** _____
David Goodison, Planning Director, City of Sonoma

PROJECT SPONSOR'S INCORPORATION OF MITIGATION MEASURES

Acting on behalf of the project sponsor or the authorized agent of the project sponsor, I (undersigned) have reviewed the Initial Study for the Project and have particularly reviewed the mitigation measures identified herein. I accept the findings of the Initial Study, including the recommended mitigation measures, and hereby agree to modify the proposed project applications now on file with the City of Sonoma to include and incorporate all mitigation measures set out in this Initial Study.

Signature: _____ **Date:** _____

Project Sponsor or Representative

ENVIRONMENTAL IMPACTS:

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
1. AESTHETICS *Would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion:

a) Have a substantial adverse effect on a scenic vista?

The Development Code defines "scenic vistas" as a public view, benefiting the community at large, of significant features, including hillside terrain, ridgelines, canyons, geologic features, and community amenities (e.g., parks, landmarks, permanent open space).[1] This would include public views from road corridors of the hillsides around Sonoma Valley. The project calls for the site to be developed with twelve two-story apartments and two two-story live/work units. Because the unit heights comply with the Development Code limits and are consistent with those of other multi-family development in the area and in light of the presence of existing urban development, trees, and landscaping around the project site and along West Spain Street, public views of the hillsides would not be affected by the project. As a result, the project would be considered to have a ***less-than-significant*** impact on scenic vistas.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

The project site is not located along a state scenic highway. Therefore, there would be ***no impact*** to scenic resources within a state scenic highway.

1 *City of Sonoma Development Code* §19.40.130.C.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Approximately nine percent of the site is developed with existing residential complexes (i.e. dwellings, accessory buildings, and a circular driveway). The remainder of the property is dominated by a lawn area in the circle of the driveway interspersed with a variety of trees. The project would result in twelve apartment units and two live-work units on the property, which would alter the existing visual character of the project site and its surroundings. However, the project site is located within an urban setting with commercial uses to the north, south, and west, including medium density development to the east. For this reason, the project would have a ***less-than-significant*** impact on the visual quality of the site and its surroundings.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Exterior lighting would be necessary for the development, including exterior building lighting and parking lot lighting for safety and security. However, this lighting would be typical of residential development throughout the City. In addition, all proposed exterior lighting would require review and approval by the City's Design Review and Historic Preservation Commission (DRHPC) and would be subject to the exterior lighting standards of the City's Development Code,[2] which specifies that exterior light fixtures must be shielded to reduce or eliminate light spillage off-site. For these reasons, the project will not create a new source of substantial light or glare that would adversely affect views in the area. This would be a ***less-than-significant*** impact.

2 *City of Sonoma Development Code* §19.40.030

	Potentially Significant Impact	*Less-Than-Significant With Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*
2. AGRICULTURAL RESOURCES *Would the project:*				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural use?	☐	☐	☐	☒

Discussion:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The project site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation. The project site is identified as "Urban and Built-up Lands" on the Important Farmland Map maintained by the Department of Conservation[3]. ***No impact*** would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The project site is not zoned for agricultural use and is not subject to a Williamson Act contract. ***No impact*** would occur.

c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland, to non-agricultural use?

The project site is not currently used for agricultural purposes. ***No impact*** would occur.

[3] ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/son14.pdf

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
3. AIR QUALITY *Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for the project region, leading to nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☐
e) Create objectionable odors and/or airborne dust affecting a substantial number of people?	☐	☒	☐	☐

Discussion:

Discussion:

a) Conflict with or obstruct implementation of the applicable air quality plan?

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality agency for the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Accordingly, the City is subject to the rules and regulations imposed by the BAAQMD, as well as the California ambient air quality standards adopted by the California Air Resources Board (CARB), and national ambient air quality standards adopted by the United States Environmental Protection Agency (USEPA). As stated in the BAAQMD Guidelines, the thresholds are intended to provide a "… *conservative indication of whether the proposed project could result in potentially significant air quality impacts. If all of the screening criteria are met by a proposed project, then the lead agency or applicant would not need to perform a detailed air quality assessment of their project's air pollutant emissions. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration."* A comparison of the operational thresholds suggested by BAAQMD for project-specific analysis with respect to air pollutants to the proposed project is as follows:

Operational Air Quality Thresholds		
Evaluation Category	**BAAQMD Screening Threshold**	**Project Element**
Apartments	451 dwelling unit reactive organic gases	14 dwelling units

If a project does not exceed either of these thresholds, it is typically assumed to have a less-than significant impact on air quality. As shown in the table above, the use elements of the project are well below the BAAQMD thresholds. With regard to trip generation, based on the Transportation Impact Study prepared for the project (Attachment 2), the project would be expected to generate approximately 92 trips on a typical work day, which translates to area source emission estimates significantly below the threshold established by the BAAQMD. The net number of vehicle trips generated by the project would actually be lower, as this estimate does not subtract the trip generation associated with existing buildings and uses on the site, which would be removed as a result of the project. The construction and operational related thresholds suggested by BAAQMD for project-specific analysis with respect to air pollutants are as follows:

Table D-2 – Air Quality CEQA Thresholds of Significance[4]			
Pollutant	**Construction-Related**		**Operational-Related**
Project-Level			
Criteria Air Pollutants and Precursors (Regional)	**Average Daily Emissions (lb/day)**	**Average Daily Emissions (lb/day)**	**Maximum Annual Emissions (tpy)**
ROG	54	54	10
NOX	54	54	10
PM10	82 (exhaust only)	82	15
PM2.5	54 (exhaust only)	54	10
PM10/PM2.5 (fugitive dust)	Best Management Practices		None
Local CO	None		9.0 ppm (8-hour average), 20.0 ppm (1-hour average)
GHGs Projects other than Stationary Sources	None		Compliance with Qualified Greenhouse Gas Reduction Strategy OR 1,100 MT of CO2e/yr OR 4.6 MT CO2e/SP/yr (residents +

[4] Air Quality CEQA Thresholds of Significance, Table D-2 (from Bay Area Air Quality Management District Page | D-7 CEQA Guidelines Updated May 2017)

		employees)
GHGs **Stationary Sources**	None	10,000 MT/yr
Risks and Hazards – New Source (All Areas) **(Individual Project)** **Staff Proposal**	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM2.5 increase: > 0.3 µg/m3 annual average Zone of Influence: 1,000-foot radius from fence line of source or receptor

Project area source and operational emission estimates are as follows (see Attachment 7**)**:

Area source Emission Estimates							
	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Totals (lbs/day, unmitigated)	1.00	0.19	0.69	0.00	0.00	0.00	234.94
Operational (Vehicle Emission Estimates)							
	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Totals (lbs/day, unmitigated)	0.47	0.51	5.05	0.01	1.35	0.26	789.79

As indicated in the table above, the project area source and operational emission estimates would be below the Air Quality CEQA Thresholds of Significance. For these reasons, the proposed Project would have a ***less-than-significant impact*** with respect to air quality or any air quality plans.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
Sonoma is part of a region-wide nonattainment area, in which levels of ground-level ozone and inhalable particulate matter exceed respective State or Federal air quality standards. Ozone and particulate matter are the pollutants of primary concern when evaluating projects. Since these air pollutants are not directly emitted to the atmosphere, the significance of a project's impact is evaluated through comparison of overall project emissions to thresholds of significance established by the BAAQMD. According to the Transportation Impact Study prepared for the project (Attachment 2), the proposed development is expected to generate an average of 72 net new vehicle trips per day when considering the two existing housing units located on the property. The sum of area source and operation emission estimates based on

the projected VMT or vehicle trip increase is less than or equal to the Air Quality CEQA Thresholds of Significance, Table D-2 (from Bay Area Air Quality Management District Page | D-7 CEQA Guidelines Updated May 2017), and as a result, emissions of ground-level ozone precursor pollutants and particulate matter are not expected to violate any air quality standards or contribute substantially to an existing or projected air quality violation. As a result, this would be considered a ***less-than-significant*** impact.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)

See response 3.a, above.

d) Expose sensitive receptors to substantial pollutant concentrations?

See response 3.a, above.

e) Create objectionable odors and/or airborne dust affecting a substantial number of people?

Construction activities associated with new development, including grading and other earthmoving activities, may generate airborne dust that could adversely affect residents in the vicinity of the project site. With regard to construction impacts, BAAQMD's CEQA Guidelines identifies the following screening thresholds for the uses associated with the project:

Construction Air Quality Thresholds		
Evaluation Category	**BAAQMD Screening Threshold**	**Project Element**
Apartments	240 dwelling unit reactive organic gases	14 dwelling units

The level of development called for in the proposed project fall well below BAAQMD screening thresholds. However, to fully assure that this issue is addressed, mitigation measure 3.e, below, has been included requiring dust control measures during the construction phase of the project. Implementation of the specified measures would ensure that potential impacts from airborne dust are less-than-significant.

Mitigation Measure 3.e: The following dust control measures shall be implemented as necessary during the construction phase of the project:

1. All exposed soil areas (i.e. building sites, unpaved access roads, parking or staging areas) shall be watered at least twice daily or as required by the City's construction inspector.

2. Exposed soil stockpiles shall be enclosed, covered, or watered twice daily.

3. The portions of Sonoma Highway providing construction vehicle access to the project shall be swept daily, if visible soil material is deposited onto the road.

With this requirement, potential impacts in this area would be reduced to a ***less-than-significant level with mitigation incorporated.***

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
4. BIOLOGICAL RESOURCES *Would the project:*				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetland, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion:

a) Have a substantial adverse effect on any candidate, sensitive, or special status species?

The project site is bordered by urban development on all sides with no connectivity to undeveloped open space. In addition, approximately nine percent of the project site is currently developed with a single-family residence, associated accessory buildings, and circular driveway. The remainder of the site is undeveloped with a lawn area. There are also numerous trees located on the property. According to the California Natural Diversity Database (CNDDB) there are eight Federally/State listed endangered or threatened species for the USGS quadrangle that covers the project site: California Red-legged Frog (Rana draytonii), California freshwater shrimp (Syncaris pacifica), Delta Smelt (Hypomesus transpacificus), Steelhead (Oncorhynchus mykiss), Sonoma Sunshine (Blennosperma bakeri), Salt Marsh Harvest Mouse (Reithrodontomys raviventris), San Bruno Elfin Butterfly (Callophrys mossil bayensis), and Northern Spotted Owl (Strix occidentialis caurina). The first six species are either aquatic or wetland dependent. The San Bruno Elfin Butterfly inhabits rocky outcrops and cliffs, which are not present on the site. The Northern Spotted Owl requires nesting habitat in large trees and a mitigation measure has been included addressing the timing of tree removal. Since there is no surface water, wetlands or riparian habitat on the site, these species would not be affected by the project. Other species of special concern that have been documented to occur in the Sonoma quadrangle would likely not be present on-site given the lack of suitable habitat in conjunction with existing conditions on and around the project site, including the single-family residence noted above, which has diminished the value of the site for wildlife. However, given the possibility for nesting birds on the property, a mitigation measure has been included addressing the timing of tree removal, consistent with the recommendation of the City's Tree Committee. With implementation of Measure 4.a below potential impacts to nesting birds and special status species would be ***less-than-significant with mitigation incorporated***.

Mitigation Measure 4.a: The following measures shall be implemented as necessary during the construction phase of the project for the protection of nesting birds:

- Grading or removal of nesting trees and habitat should be conducted outside the nesting season, which occurs between approximately February 15 and August 15.

- If grading between August 15 and February 15 is infeasible and groundbreaking must occur within the nesting season, a pre-construction nesting bird (both passerine and raptor) survey of the grassland and trees shall be performed by a qualified biologist within 7 days of ground breaking. If no nesting birds are observed no further action is required and grading shall occur within one week of the survey to prevent "take" of individual birds that could begin nesting after the survey.

- If active bird nests (either passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged, as determined by a qualified biologist.

- The radius of the required buffer zone can vary depending on the species, (i.e., 75-100 feet for passerines and 200-300 feet for raptors), with the dimensions of any required buffer zones to be determined by a qualified biologist in consultation with CDFG.

- To delineate the buffer zone around a nesting tree, orange construction fencing shall be placed at the specified radius from the base of the tree within which no machinery or workers shall intrude.

- After the fencing is in place there will be no restrictions on grading or construction activities outside the prescribed buffer zones. The buffer zone shall remain in place until after the young have fledged.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community?

There is no riparian habitat, wetlands, or other sensitive natural community types on the site. ***No impact*** would occur.

c) Have a substantial adverse effect on federally protected wetlands?

There are no wetlands on the site. ***No impact*** would occur.

d) Interfere substantially with the movement of any fish or wildlife species or on any wildlife corridor, or impede the use of native wildlife nursery sites?

The project site is bordered by urban development on all sides with no connectivity to undeveloped open space. In addition, the project site does not adjoin/encompass a stream or other waterway and the property is not used as a native wildlife nursery site. As a result, the project would not interfere with the movement of any fish or wildlife species or any wildlife corridors. ***No impact*** would occur.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposal would not conflict with any local policies or ordinances protecting biological resources, including the City's Tree Ordinance (Chapter 12.08 of the Sonoma Municipal Code). As required by Section 12.08.035 of the Tree Ordinance an arborist report was prepared for the project, which will be reviewed by the City's Tree Committee on July 20, 2017. The recommendations of the Tree Committee will be considered by the Planning Commission as part of their review of the proposed development. ***No impact*** would occur.

f) Conflict with the provisions of any adopted or approved local, regional, or state habitat conservation plan?

There are no adopted or approved local, regional, or state habitat conservation plans encompassing or addressing the project site and surrounding lands. As a result, ***no impact*** would occur.

	Potentially Significant Impact	*Less-Than-Significant With Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*
5. CULTURAL RESOURCES *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

The 0.68-acre site is currently developed with a primary home (constructed circa 1956-1957), secondary residence (constructed circa 1952-1953), and detached garage (constructed circa 1975). The project site is not located within the City's Historic Overlay Zone, and is not listed in the local Historic Resources Survey (1979, Sonoma League for Historic Preservation), or the State or National Registers. All existing structures located on the site would be demolished to accommodate the proposed development.

According to the State Office of Historic Preservation, structures over 50 years old *may* be historically significant, even if not listed on a local or State/National register. Pursuant to section §15064.5 of the California Environmental Quality Act (CEQA), a resource is considered "historically significant" if the resource is at least 50 years old, has integrity, and meets any one of the following criteria for listing on the California Register of Historical Resources (as set forth under Public Resource Code §5024.1):

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.

2. Is associated with the productive lives of individuals significant in local or regional history or the cultural heritage of California or the United States.

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Based on the criteria listed above, the Historical Resources Evaluation for 1940 Sonoma Highway, prepared by John W. Murphey, Architectural Historian, found that the property and structures do not meet any of the criteria for historical significance (see Attachment 3: *Historical Resources Evaluation 19410 Sonoma Highway, Sonoma, Sonoma County, California, March 19, 2017)*. The buildings do not appear to meet any of the four criteria required for listing on the California Register and they no longer retain three of the seven aspects of historic integrity. In addition, the buildings do not appear to meet the evaluation criteria for designation on the National Register of Historic Places. The finding is that neither individually nor collectively do the buildings meet the CEQA's definition of a historical resource. Therefore, demolition of the structures would have ***no impact*** on historical resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Archaeological Resource Service prepared a cultural resource evaluation of the property to determine the presence or absence of potentially significant cultural resources that could be affected by the proposed project (see Attachment 4, *A Cultural Resources Evaluation of 19410 Sonoma Highway, Sonoma, Sonoma County, California, April 8, 2017)*. The field survey did not identify prehistoric or historic-era archaeological resources within the project area. The evaluation notes that there is a slight potential for a subsurface prehistoric deposits to be present which could be damaged during land alteration activities. This would be a potentially significant impact. As a result, the report provides general recommendations in the event that any artifacts or cultural soil deposits are discovered within the project area during future grading or underground excavation. These recommendations have been included in Mitigation Measure 5.b-1 below. Mitigation Measure 5.b-2 below, which requires a Tribal Treatment Plan, has also been included based on the City's consultation with Buffy McQuillen, Federated Indians of Graton Rancheria, and the property's proximity to a known archaeological site. Tom Origer & Associates completed an Extended Phase I (XPI) investigation to determine the horizontal and vertical extent of prehistoric archaeological resource CA-SON-2688 within the Project Area Limits (PAL) for the project. Prior to the XPI, Tom Origer & Associates conducted a records search of the proposed project at the Northwest Information Center (NWIC) of the California Historical Resources Information System and completed a surface survey of the PAL. Records search results showed that CA-SON-2688 was recorded immediately adjacent to the PAL. No archaeological site indicators were found during the field survey of the PAL. However, due to the concern of the proximity of CA-SON-2688 to the PAL, an XPI proposal was prepared. To determine the horizontal and vertical extent of CA-SON-2688 within the PAL. A total of four auger holes and five mini units were excavated in accordance with the XPI Proposal as approved by Caltrans on April 25, 2018. The XPI investigation resulted in the finding of sixteen obsidian flakes and three obsidian tools in two of the units excavated with the Caltrans right-of-way (ROW). Within these same units and other excavated units was modern debris (n=164). No midden soils were found in any of the units. Based on this investigation the materials found within the PAL constitute displaces Native American archaeological items, and CA-SON-2688 does not extend into the PAL. It is Caltran's policy to avoid cultural resources whenever possible. If previously unidentified cultural materials were unearthed during construction, it is Caltran's policy that work would be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey would be needed if the project limits are extended beyond the present survey limits. Implementation of these mitigation measures would ensure that potentially significant impacts to archeological resources are reduced to a ***less-than-significant with mitigation incorporated*** level.

> *Mitigation Measure 5.b-1*: If historic or prehistoric artifacts or sites are observed during future grading or underground excavation, all work in the vicinity of the find shall stop until the discovery area can be evaluated by an archaeologist. Depending on the extent and cultural composition of the discovered materials, data recovery may be necessary and it may be advisable to have subsequent excavation monitored by an archaeologist who should be ready to record, recover, and/or protect

significant cultural materials from further damage. Artifacts that are typically found associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, firepits, or house floor depressions whereas typical mortuary features are represented by human skeletal remains. Historic resources potentially include all by-products of human land use greater than 50 years of age, including alignments of stone, foundation elements from previous structures, minor earthworks, and surface scatters and subsurface deposits of domestic type debris.

Mitigation Measure 5.b-2: A Tribal Treatment Plan shall be developed in consultation with the Federated Indians of Graton Rancheria (FIGR) and entered into by the FIGR, the City of Sonoma, the Project Applicant, and the Contractor prior to construction. The plan shall address monitoring of excavation and other earth-moving activities and shall formalize protocol and procedures for the protection and treatment of Native American cultural resources in the event that any are discovered in conjunction with the project's development.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources (fossils) are the remains or traces of prehistoric animals and plants. The National Resources Conservation Service has classified site soils as belonging to the Tuscan cobbly clay loam series. [5] Tuscan cobbly clay loam soils generally extend to a depth of 5 feet. Tuscan cobbly clay loam is a Holocene aged soil (10,000 to Present). Significant fossils are not typically found in Holocene-aged soils. The Tuscan cobbly clay loam is underlain by Pleistocene (10,000 to 1.5 million years old) Older Alluvium (Qa), which can contain fossils. Rancholabrean fossils, typically found in Pleistocene alluvium, may include mammoths, horses, mastodons, camels, ground sloths, and pronghorns. Sonoma Volcanics underlie the Older Alluvium at an unknown depth. Sonoma Volcanics do not usually contain fossils.

Since most of the construction activities will be within the Holocene-aged Tuscan cobbly clay loam, it is unlikely fossils will be encountered during construction activities. However, potential impacts to paleontological resources may occur during project ground-disturbing activities where such activities as grading or trenching would occur below the project area's soil layers (approximately 5 feet). Should a paleontological resource be encountered, the following will reduce impacts to a ***less-than-significant with mitigation incorporated*** level.

Mitigation Measure 5.c: If paleontological resources are identified during construction activities, all work in the immediate area will cease until a qualified paleontologist has evaluated the finds in accordance with the standard guidelines established by the Society of Vertebrate Paleontology. If the paleontological resources are considered to be significant, a data recovery program will be implemented in accordance with the guidelines established by the Society of Vertebrate Paleontology.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Although impacts to human remains are not anticipated, there is always the remote possibility that human remains are present below the ground surface and could be unearthed during ground disturbing activities. Implementation of Mitigation Measure 5.d would reduce this impact to a ***less-than-significant with mitigation incorporated*** level.

---

[5] *Soil Survey of Sonoma County, California,* National Resources Conservation Service, 1972.

Mitigation Measure 5.d: If human remains are encountered, all work shall stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist shall be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission shall be contacted by the Coroner so that a "Most Likely Descendant" can be designated and further recommendations regarding treatment of the remains is provided.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
6. GEOLOGY AND SOILS *Would the project:*				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal or wastewater?	☐	☐	☐	☒

Discussion:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

The project site would not be subject to surface fault rupture. In general, surface fault rupture occurs along active faults. While the project site is located in a seismically active region, the City of Sonoma, including the project site, is not affected by an Alquist-Priolo Earthquake Fault Zone pursuant to Division of Mines and Geology Special Publication 42. [6] Therefore, ***no impact*** would occur.

ii) Strong seismic ground shaking?

The City of Sonoma is located in the seismically active San Francisco Bay Area, in proximity to several mapped active or potentially active regional faults. The Rodgers Creek fault is nearest to the project site, located approximately five miles to the southwest on the western side of the Sonoma Mountains. As a result, the project could result in the exposure of people, structures, and/or property to seismic ground shaking. While hazards associated with potential ground shaking cannot be eliminated, potential impacts resulting from seismic ground shaking would be reduced to the greatest extent feasible through compliance with the City of Sonoma's building code requirements, which requires that new structures be designed and constructed in a manner to maximize seismic safety, in conformance with the 2016 California Building Code. This would be considered a ***less-than-significant*** impact.

iii) Seismic-related ground failure, including liquefaction?

Refer to Section 6.a.ii. and 6.c. ***No impact*** would occur.

iv) Landslides?

No potential for landslides exists, as the site is nearly flat. Therefore, ***no impact*** would occur.

b) Result in substantial soil erosion or the loss of topsoil?

The project site is almost flat ranging between 87 and 91 feet above mean sea level. Given this topography, the project is not expected to generate significant soil erosion and/or loss of topsoil. Nonetheless, grading and/or earthmoving activity associated with construction of the project could result in a substantial *temporary* increase in erosion or the loss of topsoil. However, erosion control measures to be implemented during construction would be identified in the erosion and sediment control plan (ECP) required for the project under the City's grading ordinance (Chapter 14.20 of the Sonoma Municipal Code) and included in the project Storm Water Pollution Prevention Plan (SWPPP) for construction. See response to Item 9.a and 9.c regarding construction-related erosion. With the implementation of ECP and Phase II NPDES requirements, construction-related impacts associated with erosion and/or siltation would be considered ***less-than-significant***.

---

6 *Fault-Rupture Hazard Zones in California*, Earl W. Hart and William A. Bryant, California Geological Survey, Special Publication 42, supplements 1 and 2 1999.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Existing development on and around the project site, constructed on similar soils and bedrock geology has not experienced landslides, lateral spreading, subsidence, liquefaction, or collapse. Based on this past experience, it is not anticipated that unstable geologic units or soil would affect the project. In addition, pursuant to Chapter 4 of the California Residential Code (CRC) and Chapter 18 of the California Building Code (CBC), a soils and geotechnical investigation (prepared by a licensed geotechnical engineer) is required for multi-family developments. As normally required, the recommendations identified in the soils and geotechnical investigation, such as appropriate foundation systems, soil stability measures, on-site soil preparation and compaction levels, must be incorporated into the permits and construction plans for the project (i.e., improvement plans, grading permit, and building permits), which are subject to review and approval by the City Engineer and Plans Examiner prior to the issuance of any building permits for grading or building construction. Incorporation of the recommendations into the plans and permits for the project would ensure that potential impacts relating to unstable geologic units or soils would be ***less-than-significant***.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Refer to Section 6.c. Impacts in this area would be ***less-than-significant***.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal or wastewater?

Not applicable. ***No impact*** would occur.

	Potentially Significant Impact	*Less-Than-Significant With Mitigation Incorporated*	*Less-Than-Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS *Would the project:*				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

In May, 2017, the Bay Area Air Quality Management District (BAAQMD) adopted new guidelines for analyzing air quality impacts under CEQA, including thresholds of significance for the analysis of greenhouse gas (GHG) impacts from development projects.[7] Under the BAAQMD guidelines, which were updated in May 2017, land use development projects that generate GHG emissions below 1,100 metric tons of carbon dioxide equivalent (MTC_2e) per year are considered to have a less than significant impact. As stated in the BAAQMD Guidelines the screening thresholds are generally representative of new development on greenfield sites that they not that *"For projects that are mixed use, infill, and/or proximate to transit service and local services, emissions would be less than the greenfield type project that these screening criteria are based on."* Based the project site is already developed and located in an infill area, it is not considered to be a greenfield site and, therefore, the GHG screening thresholds represent conservative assumptions with respect to the proposed project. A comparison of the GHG screening thresholds suggested by BAAQMD for project-specific analysis with respect to the various elements of the proposed project is as follows:

GHG Operational Emission Thresholds		
Evaluation Category	**BAAQMD Screening Threshold**	**Project Element**
Apartments	78 dwelling units	14 dwelling units

The proposed project would result in a net increase of 12 residential units on the site, which is well below the BAAQMD threshold. Accordingly, the project would be considered to have a ***less than significant impact*** with respect to GHG emissions.

[7] *California Environmental Quality Act Air Quality Guidelines*, Bay Area Air Quality Management District, June 2010.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed development would be consistent with the following State and local plans, policies, and requirements addressing GHG reduction:

State Regulations Addressing GHG Reduction:

California Building Code – Building and Energy Efficiency Standards: Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2017 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which went into effect on July 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (non-residential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards went into effect on January 1, 2017. Under the 2016 Standards, residential buildings are required to be 28 percent more energy efficient than the 2013 Standards while non-residential buildings are required to be 5 percent more energy efficient than the 2013 Standards. The project would be subject to these latest standards.

California Building Code – CALGreen: The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, were updated in 2013 and 2016, and became effective January 1, 2017. The project would be subject to CALGreen requirements.

2006 Appliance Efficiency Regulations: The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. Though these regulations are often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Local Plans, Policies, and Regulations addressing GHG Reduction:

City of Sonoma General Plan: The City of Sonoma 2020 General Plan sets forth policies promoting sustainable practices such as not using renewable resources faster than they can regenerate, not consuming non-renewable resources faster than renewable alternatives can be substituted for them, and ensuring that pollution and waste are not emitted faster or in greater volumes than natural systems can absorb, recycle, or render them harmless. As part of the implementation of these policies, the City adopted the State of California Green Building Code (see above), which raised the level of construction standards in the City in order to encourage water and resource conservation, reduce water generated by construction projects, increase energy efficiency in building, provide durable buildings that are efficient and economical to own and operate, and promote the health and productivity of residents, workers, and visitors to the City.

City of Sonoma Municipal Code: Beginning January 1, 2014, the 2013 California Green Building Standards Code (CALGreen) became effective for new buildings and certain addition or alteration projects throughout California. The City of Sonoma has adopted and amended CALGreen as part of the City's Municipal Code to require CALGreen+Tier 1 level of compliance for all new buildings (except the Tier 1 Energy Efficiency measures). The City of Sonoma requires that project applicants hire a third-party green building special inspector to verify compliance with CALGreen requirements as amended by the City of Sonoma. Revisions to CALGreen became effective on January 1, 2017.

2016 Climate Action Plan Measures: Beginning in May of 2013, the City began participating in the development of a County-wide Greenhouse Gas Reduction Implementation Program, subsequently renamed Climate Action 2020. Climate Action 2020 is a collaborative effort among all nine cities and the County of Sonoma to take coordinated action in reducing GHG emissions on a county-wide basis. Through the implementation of this program, participating jurisdictions would achieve compliance with Bay Area Air Quality Management District (BAAQMD) guidelines and other related policies that establish reduction targets for GHG emissions, including AB 32, CEQA, and local GHG reduction goals. The development of the draft Plan was led by the Regional Climate Protection Authority (RCPA), with the assistance of a Working Group comprised of planning staff from each of the 10 jurisdictions of Sonoma County, including the City of Sonoma.

On August 15, 2016, the City Council began its review of the draft Climate Action 2020 Plan (CAP). For Sonoma, a total of 22 Climate Action Measures were recommended for Council consideration. Although the County-wide adoption of Climate Action 2020 Plan was subsequently postponed as a result of litigation brought against the RCPA, the City Council decided to take separate action to begin implementation of the measures identified in the CAP planning process. On November 21, 2016, the City Council adopted Resolution 40-2016, adopting the local measures identified for Sonoma through the CAP planning process. The proposed project would incorporate implement measure 4-L3 (supporting land use measures), 7-L1 (electric vehicle charging stations) and measure 11-L2 (water conservation for new construction).

Because the proposed development would not conflict with applicable State and local plans, policies, and requirements addressing GHG reduction, it would have ***no impact*** in this area.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
8. HAZARDS AND HAZARDOUS MATERIALS *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials (including, but not limited to, oil, pesticides, chemicals, or radiation) into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The proposed residential development would not involve the routine transport, use, or disposal of hazardous materials and would not be expected to generate hazardous emissions. Thus, ***no impact*** would occur.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials (including, but not limited to, oil, pesticides, chemicals, or radiation) into the environment?

Refer to Section 8.a. ***No impact*** would occur.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

As noted above, the proposed residential development would not involve the routine transport, use, handling, or disposal of hazardous materials and would not result in hazardous emissions. Furthermore, there are no existing or proposed schools within one-quarter-mile of the site. Therefore, ***no impact*** would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The project site is not identified on the Hazardous Waste and Substances Site List (Cortese List) for Sonoma County. Therefore, the proposed development would not create a significant hazard to the public or environment due to site contamination, and ***no impact*** would occur.

e) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

The project site does not lie within an Airport Clear Zone or Accident Potential Zone. The nearest private airport, Sonoma Skypark, is over two miles away. Therefore, the project would not reasonably be expected to result in a safety hazard, and thus ***no impact*** would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would not interfere with any adopted emergency response or evacuation plan. Therefore, ***no impact*** would occur.

g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The project site is located in an urban environment, and is not adjacent to wildlands. Therefore, ***no impact*** would occur.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
9. HYDROLOGY AND WATER QUALITY *Would the project:*				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion:

a) Violate any water quality standards or waste discharge requirements?

The Clean Water Act (CWA) prohibits the discharge of pollutants from point sources to Waters of the U.S. except where those discharges are authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Stormwater runoff from the project site (a pollutant) will discharge to Sonoma Creek (a Water of the U.S.) via the City of Sonoma's Municipal Separate Storm Sewer System (MS4), which is a point source. All stormwater discharges from the project site are thereby prohibited except to the extent that they are authorized following implementation of applicable waste discharge requirements in the City of Sonoma's NPDES Permit (CAS000004).

The City's NPDES permit requires that all applicable projects prepare and submit an Erosion and Sediment Control Plan for review and approval by the City prior to issuance of a building or grading permit. The Erosion and Sediment Control Plan outlines Best Management Practices (BMPs) that, when implemented, reduce the quantity of construction-related pollutants in stormwater runoff discharging from a project site to the maximum extent practicable.

The City's NPDES permit also requires that all applicable projects prepare and submit a Stormwater Control Plan (SCP) for review and approval by the City prior to issuance of a building or grading permit. The SCP outlines BMPs that, when implemented, reduce the quantity of pollutants in stormwater runoff discharging from a project site to the maximum extent practicable. The SCP also outlines BMPs that, when implemented, reduce the total volume of stormwater runoff from the project site (retention) and attenuate peak flows (detention). In addition, the SCP will outline a mechanism for ensuring maintenance of the planned BMPs in perpetuity.

With the implementation of the above requirements, ***no impact*** to water quality standards and/or waste discharge requirements would occur.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The Department of Water Resources (DWR) defines groundwater basins based on geologic and hydrogeologic conditions. According to the DWR, the project site is located within the Sonoma Valley groundwater sub-basin. Natural recharge in the sub-basin predominantly occurs where stream channels cut into the alluvial fan deposits. Areas of low relief and sufficiently permeable soil also allow for some slow infiltration from precipitation.[8] The project would increase the amount of impervious surface on the site. However, the site does not include a stream channel, and site soils (Tuscan cobbly clay loam) are characterized as belonging to Hydrologic Soil Group D, meaning they have very low infiltration rates and thus would not allow for a significant amount of infiltration of runoff into the underlying groundwater basin.[9] Regardless, the required Preliminary Stormwater Control Plan (Preliminary Grading and Utility Plan) for the project (Attachment 5) includes three infiltration areas located along the west portion of the property.

In addition, the project would not involve the construction of new groundwater wells for project water supplies. Water for the proposed project would be supplied by the City of Sonoma. The City of Sonoma obtains its water from the Sonoma County Water Agency (SCWA) and City wells. The majority of water used in the City is supplied by SCWA. City wells are considered a secondary water source used only to supplement deliveries from SCWA during peak demands. As a result, the proposed project would not result in the substantial depletion of groundwater supplies. Project impacts on groundwater resources are considered ***less-than-significant***.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

The project site is level, is not subject to concentrated stormwater runon, and will not significantly increase stormwater runoff to a degree that may result in hydromodification or erosion in receiving waters. Potential impacts associated with erosion and/or siltation are primarily related to construction-related activities.

The project would involve clearing, grading, and trenching to prepare the site for the installation of required drainage, driveway, and utility improvements. Existing vegetative cover and structural improvements that currently stabilize site soils would be removed from most of the site, leaving bare soil areas vulnerable to the erosion. However, erosion and sediment control measures to be implemented during construction would be included in the erosion and sediment control plan (E&SC Plan) required by the City's grading ordinance (Chapter 14.20 of the Sonoma Municipal Code). See also responses to Items 6.b and 9.a regarding construction-related erosion. With the implementation of an E&SC Plan, construction-related impacts associated with erosion and/or siltation would be considered ***less-than-significant***.

---

8 *California's Groundwater: Bulletin 118. Groundwater Basin Descriptions: Napa-Sonoma Valley, Sonoma Valley Subbasin.* California Department of Water Resources (DWR), 2 May, 2002.

9 *Soil Survey of Sonoma County, California.* United States Department of Agriculture (USDA), May 1972.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

The project site is relatively flat, ranging between 87 and 91 feet above mean sea level. Although Sonoma Creek is located ± 260 feet from the site, it would not be significantly impacted by the project. The project would require installation of on-site drainage improvements that would locally alter the existing drainage pattern of the site to reduce nuisance flooding on site.

In addition, the proposed development would increase the amount of impervious surface on the site, which would increase the volume and peak rate of stormwater runoff from the site. The City's NPDES Permit requirements call for the implementation of post-construction Best Management Practices to prevent increases in storm water runoff from development and redevelopment. Consistent with the NPDES requirements, a Preliminary Stormwater Control Plan (Preliminary Grading and Utility Plan) has been developed by the applicant's engineer to demonstrate compliance with these standards (Attachment 5). As illustrated by the preliminary Stormwater Control Plan, stormwater treatment, retention, and infiltration would be accomplished by conveying the majority of surface runoff from the site to three infiltration areas located along the west portion of the property. The project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. As a result, this would be considered a ***less-than-significant*** impact**.**

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The proposed project would not result in flows that would exceed the capacity of the existing and planned stormwater drainage system. See response to Item 9.d.

Pollutant concentrations in stormwater runoff from the proposed project would likely be consistent with concentrations in comparable medium-density urban residential areas. Increases in the levels of oil and grease, petroleum hydrocarbons, metals, and possibly nutrients on the project site are likely. However, the City's NPDES Permit requires implementation of post-construction Best Management Practices to treat and filter storm water runoff prior to it leaving the site or entering the public storm drainage system. Consistent with the NPDES Permit requirements, a Preliminary Stormwater Control Plan (Preliminary Grading and Utility Plan) has been developed by the applicant's engineer to demonstrate feasible compliance with these standards (Attachment 5). As illustrated by the Stormwater Control Plan stormwater treatment would be accomplished by conveying the majority of surface runoff from the site to three infiltration areas located along the west portion of the property. Pursuant to the City's NPDES requirements, a Final Stormwater Control Plan would be required as part of the public improvement plans submittal, subject to review and approval by the City Engineer prior to issuance of a building or grading permit. Compliance with the City's NPDES requirements would ensure that potential adverse impacts to water quality are ***less-than-significant***.

f) Otherwise substantially degrade water quality?

No impact. See responses to Items 9.a, 9.c, and 9.e. The project would not otherwise substantially degrade water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

According to the applicable Flood Insurance Rate Map (Map Number 06097C0936E, Panel 936 of 1150), the project site is not located within a 100-year flood hazard area. The property is located within an area

designated as "Other Areas, Zone X," which are areas determined to be outside of the 0.2% annual chance floodplain. Housing would not be placed within a 100-year flood hazard area. ***No impact*** would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

The project would not place structures within a 100-year flood hazard area (refer to Section 9.g above). ***No impact*** would occur

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The project would not place people or structures within a 100-year flood hazard zone (refer to Section 9.g above). The project site is not located below a levee or dam. As a result, the project would not expose people or structures to a significant risk of loss, injury, or death involving flood hazards. ***No impact*** would occur.

j) Expose people or structures to inundation by seiche, tsunami, or mudflow?

The project site is not located in the vicinity of a large inland water body, along coastal waters, or in the path of a potential mudflow. ***No impact*** would occur.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
10. LAND USE AND PLANNING *Would the project:*				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

a) Physically divide an established community?

The project site is located within an urban setting and is surrounded by commercial and residential development. As a result, the proposed residential development would not physically divide the community. ***No impact*** would occur.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

General Plan Land Use Designation: The site has a General Plan land use designation of "Commercial," a designation intended to provide areas for retail, hotel, service, medical, and office development, in association with apartments and mixed-use development and necessary public improvements. The Commercial designation allows a density up to 20 residential units per acre and a residential component equal to 50% of the total proposed building area is normally required in new development, unless a reduction or an exemption is granted by the Planning Commission through the use permit review process. Multi-family dwellings and live/work facilities are identified as conditionally-allowed uses.

General Plan Policies: The proposed project is required to comply with the City of Sonoma 2020 General Plan 2035, City of Sonoma Development Code. The proposed project has been reviewed for consistency with these established regulations as evaluated in the attached table (Attachment 10).

In general, the proposal is consistent with General Plan policies and goals that promote infill development and housing opportunities; therefore, ***no impact*** would occur.

Zoning Use Allowances: The site is zoned Commercial (C). The C zone is intended to allow for higher density housing types, such as apartments and condominiums, in conjunction with commercial and office development, in order to increase housing opportunities, reduce dependence on the automobile, and provide a pedestrian presence in commercial areas. Multi-family dwellings and live/work facilities are allowed in the C zone, subject to review and approval of a Use Permit by the Planning Commission.

Consistency with Density Limitations: The Commercial General Plan land use designation allows a maximum density of 20 units per acre. Viewed as a whole, the site would have a residential density of 20 units per acre.

Basic Development Standards: Project consistency with the requirements of the Development Code regarding coverage, floor area ratio, building heights, is summarized in the table below.

Standard	Development Code Allowance	Project	Discussion
Building Coverage	70%	25%	Complies.
Floor Area Ratio	0.80	0.47	Complies.
Building Height, Residential	30 feet	25 feet	Complies.

Residential Component: A residential component is normally required for new development in the Commercial zone. As set forth in the Development Code, the expectation is that the residential component will equal at least 50% of the total proposed building area, although the Planning Commission may reduce or even waive this standard through the development review process. As proposed, the residential component constitutes 100% of the total proposed building area, exceeding the 50% expectation. ***No impact*** would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No habitat conservation plans or natural community conservation plans have been prepared addressing the site and surrounding lands. Therefore, ***no impact*** would occur.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
11. MINERAL RESOURCES *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion:

a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the state?

The project site is not identified as containing any valuable mineral resources. Bedrock geology in the vicinity of the project site is dominated by tuff and andesitic to basaltic lava flows of the Sonoma Volcanics. In the Sonoma Valley and at the project site, the Sonoma Volcanics are overlain by moderately to highly dissected alluvial fan deposits consisting of coarse to very coarse weathered gravels. The National Resources Conservation Service has classified site soils as belonging to the Tuscan cobbly clay loam (TuC) series (0 to 9 percent slopes).[10] As a result, the project would have ***no impact*** on mineral resources.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Refer to Section 11.a. ***No impact*** would occur.

[10] *Soil Survey of Sonoma County, California,* U.S.D.A. Soil Conservation Service, 1972.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
12. NOISE *Would the project result in:*				
a) Exposure of persons to, or generation of noise levels in excess of, standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to, or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

a) Exposure of persons to, or generation of noise levels in excess of, standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

According to the Noise Element of the General Plan, the primary source of noise locally is traffic on major streets. However, Figures NE-1 and NE-2 show that existing and projected outdoor noise levels from roadway traffic on Sonoma Highway would exceed the State and City general 60 dBA standard for units within the proposed development, including the exterior facades of the live-work units adjacent to Sonoma Highway. Therefore, these facades would require sound rated building elements to control traffic noise intrusion. In addition, six-foot high noise barriers are required at the perimeter of Outdoor use areas 1, 2, and 3, as shown in Figure 2 of the *Housing and Live/work unit Development, 19410 Sonoma Highway Environmental Noise Assessment***,** prepared by Fred Svinth, Illingworth & Rodkin, Inc (see Attachment 6). With these measures, road noise would not significantly affect residents of the proposed project. In addition, as a residential development the project would not be expected to generate or expose other residents in vicinity of the site to noise levels in excess of standards established within the Noise Element of the *City of Sonoma 2020 General Plan,* or the City's Noise Ordinance (Chapter 9.56 of the Sonoma Municipal Code). Thus, ***a less-than-significant with mitigation incorporated*** would occur. Refer to subsection d. below for a discussion of construction noise impacts.

Mitigation Measure 12.a: Six-foot high noise barriers shall be provided at the perimeter of Outdoor use areas 1, 2, and 3, as shown in Figure 2 of the Environmental Noise Assessment (see Attachment 6). These barriers shall be constructed of a solid material over the entire surface. Openings or gaps between barrier materials or the ground decrease the reduction provided by a noise barrier. Small, dispersed gaps in the base of the wall for landscape irrigation or drainage that do not compose more than 0.5% of the overall wall area are also acceptable. If gates are proposed in these noise barriers, the total area of any gaps at the base or the closing and opening faces of the gate should be maintained at 4% or less of the total gate area. The walls shall have a minimum surface weight of 2.5 lbs. per sq. ft. With closed standard thermal insulating windows and weather sealed doors, the exterior noise levels will be reduced within the residential interiors by between 26 to 29 dBA. When windows or doors are open the noise attenuation from exterior to interior is typically reduced by 10 to 12 dBA; therefore, exterior to interior noise reduction will be between 14 to 19 dBA with open windows and/or doors. Closed standard thermal insulating windows and weather sealed doors will be sufficient to allow interior noise levels to an L_{dn} of 45 dBA or less in all A-type and B-type units, but may be insufficient to meet this interior level within C-type units. While standard thermal insulating windows and weather sealed doors would be acceptable the A-unit and B-unit building, windows and exterior doors with STC ratings of between 32 and 34 may be needed on the facades of the C-unit building which face or are perpendicular to SR-12. In addition, given that the anticipated noise levels at the exterior of all residences will exceed 60 dBA L_{dn} some form of forced-air mechanical ventilation will be required at all residences to allow the windows to remain closed at the residents' option, as an interior noise level of 45 dBA L_{dn} will not be met with open windows. A central air-conditioning and heating system, or a central heating system equipped with a "summer switch" which allows the fan to circulate air without the heater on will meet this requirement. Project-specific acoustical analyses are required by the state of California to ensure that interior noise levels can be reduced to 45 dBA L_{dn} or lower. Once building plans and elevations are available for these buildings, they shall be reviewed by a qualified acoustical professional to determine compliance with the State Building Code.

b) Exposure of persons to, or generation of excessive groundborne vibration or groundborne noise levels?

The proposed residential development would not expose persons to or generate excessive groundborne vibration or groundborne noise levels. This would be considered a ***less-than-significant*** impact.

c) A substantial permanent increase in ambient noise levels in the project vicinity?

Due to the residential nature of the development, any permanent increase in ambient noise levels resulting from the project will be minimal and ***less-than-significant*** with respect to existing ambient noise levels in the area.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity?

Construction activities typically associated with new development, including grading, excavation, paving, material deliveries, and building construction, would result in a substantial temporary increase in ambient noise levels in the project vicinity. Although this impact is temporary in nature, increased noise levels throughout the construction period, may adversely affect residents in the area. However, compliance with the City's Noise Ordinance (Chapter 9.56 of the Sonoma Municipal Code) as normally required, would ensure that potential impacts from construction noise are reduced to a ***less-than-significant*** level. Pursuant to the City's Noise Ordinance, construction activities and material deliveries are restricted to the hours between 8 a.m. and 6 p.m. Monday through Friday, between 9 a.m. and 6:00 p.m. on Saturday, and between 10 a.m. and 6 p.m. on Sundays and holidays; however, the noise level associated with construction activities shall not exceed (70) dBA measured 50 feet from the noise source. In addition, the City's Noise

Ordinance requires sign postings at all site entrances upon commencement of construction to inform contractors and subcontractors, their employees, agents, and materialmen of the allowable construction hours.

e) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not in the vicinity of a private airstrip. Sonoma Skypark is over two miles away and its mapped noise contours do not extend anywhere near the project site. Therefore, ***no impacts*** associated with a private airstrip would occur.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
13. POPULATION AND HOUSING *Would the project:*				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing stock, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Discussion:

a) Induce substantial population growth in an area, either directly or indirectly?

The proposed development would result in a net increase of twelve residential units on the project site. The project complies with the City of Sonoma Growth Management Ordinance (GMO), which was adopted to control the pace of residential development within the City. Under the GMO, no more than 65 development allocations are distributed per year (one development allocation is equivalent to one residential unit). In accordance with the process established by the GMO, it should be noted that small projects shall be exempt from the planning approval allocation process, but the number of small projects approved in any one development year shall be deducted from the 65-unit allocation of the following year, as described in SMC 19.94.040(C). Therefore, the project would not be considered to induce substantial population growth in the area. This would be a ***less-than-significant*** impact.

b) Displace substantial numbers of existing housing stock?

The existing residence and accessory dwelling unit currently located on the site would be demolished to accommodate the project. However, the proposed residential development would ultimately result in a net increase of twelve dwelling units on the property. As a result, this would be a ***less-than-significant*** impact

c) Displace substantial numbers of people?

There are currently two housing units located on the property, which would be demolished to accommodate the project. The existing residence is currently occupied with two tenants. Based on this factor, the project would have a ***less-than-significant*** in terms of displacing a substantial number of people.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
14. PUBLIC SERVICES *Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:*				
a) Fire protection?	☐	☐	☐	☒
b) Police protection?	☐	☐	☐	☒
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☐	☒

Discussion:

a) Fire protection?
Fire protection services are provided by Sonoma Valley Fire & Rescue Authority (SVFRA). According to the Fire Marshall, the project would not require new or physically altered fire department facilities, nor will it induce growth and demand for services in excess of what is allowed through the Growth Management Ordinance or anticipated in the General Plan as a whole. ***No impact*** would occur.

b) Police protection?
The Sonoma County Sheriff's Department currently provides police services for the City. According to Police Department staff, the project would not require new or physically altered police department facilities, nor will it induce growth and demand for services in excess of what is allowed through the Growth Management Ordinance or anticipated in the General Plan as a whole. ***No impact*** would occur.

c) Schools?

The project site is located within the Sonoma Valley Unified School District (SVUSD), which operates five elementary schools, two middle schools, and one comprehensive high school. As normally required, the applicant/developer would have to pay school impact fees to offset potential impacts to the SVUSD. According to California Government Code Section 65995, the payment of development fees mitigates any impact to school districts, and no additional mitigation beyond the payment of these fees is permitted. This would be a ***less-than-significant*** impact.

d) Parks?

A sufficient number of parks and recreational facilities exist within the city and region to serve residents of the proposed development. The proposal would not require the provision or construction of new public parks (refer to Section 15. Recreation). This would be a ***less-than-significant*** impact

e) Other Public Facilities?

The proposed residential development would not require the provision or construction of other public facilities. ***No impact*** would occur.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
15. RECREATION				
a) Would the project increase the use of existing neighborhood or regional parks, or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion:

a) Would the project increase the use of existing neighborhood or regional parks, or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

In combination with State and County parks that are maintained within and adjacent to the city limits, the City of Sonoma has roughly 250 acres of parkland and other recreational facilities. The project site is close to several of these facilities, including the Montini Open Space Preserve, Maxwell Farms Regional Park, Olsen Park, Eraldi Park, Vallejo Home State Park, and the Sonoma City Trail Class I bicycle/pedestrian path. The project would also include a ±9,037-square foot common court yard and recreation open space area to provide for some recreational needs of residents. The project, which would result in fourteen apartment units on-site, does not represent a significant demand for recreational facilities and there are currently a sufficient number of parks and recreational facilities within the city and region to serve residents of the proposed development. Therefore, the project would not result in a substantial deterioration of local/regional recreational facilities. This would be a ***less-than-significant*** impact.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project includes a common open space area (±9,037 square feet in area) for use by residents. Construction of this ancillary feature is evaluated as part of the larger development proposal and would not have an adverse physical effect on the environment. This would be considered a ***less-than-significant*** impact.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
16. TRANSPORTATION/TRAFFIC *Would the project:*				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the City for designated roads or highways?	☐	☐	☒	☐
c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐
e) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

The site is located on the east side of Sonoma Highway, mid-block between West Spain Street and West Napa Street, with frontage limited to Sonoma Highway. In May, 2017, CHS Consulting Group completed a Transportation Impact Study (TIS) to analyze the potential traffic and circulation impacts associated with the proposed development (Attachment 2). The study area consists of two intersections, one located at Sonoma Highway/West Napa Street-Riverside Drive and the other at Sonoma Highway/West Spain Street.

According to the TIS, the proposed project is expected to generate an average of 92 vehicle trips per day, which includes 6 trips during the a.m. peak hour and 8 trips during the p.m. peak hour. However, after deducting trips generated by the two existing housing units on the site that would be demolished, the *net* increase in traffic associated with the project is expected to average 72 trips per day, with 6 of these during the morning peak hour and 8 during the evening peak hour. The results of the analysis, including potential impacts and recommended mitigation measure, are discussed in greater detail under sections 16.c, below.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the City for designated roads or highways?

The City of Sonoma considers Level of Service (LOS) D to be the poorest acceptable level of service operation at both signalized and unsignalized intersections. The Traffic Impact Study (TIS) concludes that both the study intersections (Sonoma Highway/West Napa Street-Riverside Drive and Sonoma Highway/West Spain) are currently operating acceptably at LOS B and with the proposed project would continue to operate acceptably at LOS B. This would be considered a ***less-than-significant*** impact.

c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Traffic Impact Study (TIS) evaluates site access and the sight distance at the driveway. Although there is adequate sight distance at the Project driveway for both directions of Sonoma Highway based on field observations and a posted 30 mph speed limit, it should be noted that there is approximately 250 feet of clear sign distance to the driveway, as measured from the merge point of the westbound free right turn from West Napa Street onto northbound Sonoma Highway. To address this issue, the Project proposes to construct the driveway so that outbound Project left turns are prohibited onto southbound Sonoma Highway. This recommendation has been included as Mitigation Measure 16.c below to ensure that the project has a ***less-than-significant with mitigation incorporated*** impact with respect to hazardous design features.

> *Mitigation Measure 16.c:* The driveway shall be constructed so that outbound Project left turns are prohibited onto southbound Sonoma Highway.

d) Result in inadequate emergency access?

The development would be accessed by a two-way, 27-foot wide private driveway. According to Fire Marshal Alan Jones of the Sonoma Valley Fire & Rescue Authority (SVFRA), the minimum unobstructed width for a fire department access road is 20 feet. Therefore, a Sonoma Fire Truck is able to navigate right turns in and out of the driveway; therefore, the project would have a ***less-than-significant*** impact in terms of emergency access.

e) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

The *City of Sonoma Development Code* requires new multi-family residential development to provide bicycle parking, the amount and location of which is determined on a case-by-case basis by the review authority.[11] As a discretionary project, the location and details of bicycle parking would be subject to review by the Design Review and Historic Preservation Commission subsequent to consideration of the

---

11 *City of Sonoma Development Code,* Section 19.48.110 – Bicycle Parking Requirements.

project by the Planning Commission.[12] Alternative modes of transportation are also evaluated in the Traffic Impact Study, which concludes that transit, pedestrian, and bicycle facilities serving the project site are expected to be adequate. Accordingly, the project would not conflict with policies, plans and programs supporting alternative transportation. ***No impact*** would occur.

12 *City of Sonoma Development Code*, Section 19.54.080.D – Review Responsibility.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
17. UTILITIES AND SERVICE SYSTEMS *Would the project:*				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the Sonoma Valley County Sanitation District that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☒	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The proposed Project is within the Sonoma Valley County Sanitation District (SVCSD). The SVCSD's service area extends from the unincorporated community of Glen Ellen in the north to Schellville in the south. The wastewater collection system consists of approximately 188 miles of pipeline and two lift stations. The collection system conveys wastewater to the District's treatment facility located in the

southern portion of the Sonoma Valley. The treatment facility currently provides tertiary level treatment of wastewater. The SCVSD treatment plant operates under a National Pollutant Discharge Elimination System (NPDES) permit, which was granted by the San Francisco Regional Water Quality Control Board. While the estimated maximum capacity of the treatment plant is 20 MGD, the NPDES permit limits the permitted average dry weather flow (ADWF) of the treatment plant to 3.0 million gallons per day (MGD). According to the most recent inspection report prepared by the RWQCB, the average dry weather flow through the facility in 2016 amounted to 1.78 MGD[13].

Each ESD in the existing service area is assigned a sewer flow of 200 gallons per day to calculate the average dry weather flow. The proposed Project would generate 11 ESDs or 2,240 gallons per day. Because this level of increased treatment would not exceed the permitted treatment capacity of the plant, ***no impact*** would occur.

b) Require or result in the construction of new or expanded water or wastewater treatment facilities?

See response to 17.a. ***No impact*** would occur.

c) Require or result in the construction of new or expanded storm water drainage facilities, the construction of which could cause significant environmental effects?

The project site is already developed with buildings and impervious surfaces. As normally required, the project would entail installation of on-site drainage improvements that would alter the existing drainage pattern of the site to some degree. A new drainage system would be installed on the property that connects to an existing underground storm drain in Sonoma Highway. The project would increase the amount of impervious surface on the property, which in turn would result in a minor increase in the peak discharge of surface runoff from the site. However, the City's NPDES Permit requirements call for the implementation of post-construction Best Management Practices to prevent increases in storm water runoff from development and redevelopment. Consistent with the NPDES requirements, a Preliminary Stormwater Control Plan (Preliminary Grading and Utility Plan) has been developed by the applicant's engineer to demonstrate compliance with these standards (Attachment 5). As illustrated by the preliminary Stormwater Control Plan, stormwater treatment, retention, and infiltration would be accomplished by conveying the majority of surface runoff from the site to three infiltration areas located along the west portion of the property. The project would not substantially increase the rate or amount of surface runoff in a manner that would require or result in the construction of new or expanded storm water drainage facilities. As a result, this would be considered a less-than-significant impact. Also, see response to Items 9.a and 9.c regarding construction-related erosion. ***No impact*** would occur.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources?

The city of Sonoma supplies potable water to a population of approximately 10,800 people and approximately 300 businesses. The City's potable water supply is primarily water purchased from the Sonoma County Water Agency (SCWA) and water pumped from six groundwater wells owned and operated by the City. The SCWA water supply is delivered to the City through the SCWA aqueduct system and is supplied with water from the natural flow of the Russian River. The City is one of eight water contractors under contract with the SCWA, known as the Restructured Agreement for Water Supply. Under the Restructured Agreement, the SCWA is obligated to deliver up to 6.3 million gallons of water per day

[13] Sonoma Valley County Sanitation District Wastewater Treatment Plant (NPDES No. CA0037800) Compliance Evaluation Inspection Report, December 2, 2016.

(mgd) during any month and 3,000 acre-feet of water during a fiscal year. The term of the agreement is through 2037 and can be extended by amendment.

The City's water service area encompasses the city limits, as well as portions of Sonoma County to the east of the city limits, as well as pocket areas that have outside service area agreements with the City along Thornsberry Road, Lovall Valley Road, East Napa Road, East MacArthur Street, and Denmark Street. The City's service area is approximately 2.5 square miles. The City's water distribution system contains three pressure zones that are each served by one or more storage tanks. The principal water mains in the distribution system range in size from 6 to 16 inches. Most of the distribution grid piping in the older sections of the City range in size from 1 ½ to 4 inches, while the newer areas are served by pipes 6 to 8 inches in diameter.

In compliance with the SBX7-7 and the Urban Water Management Planning Act (UWMP), the City of Sonoma has a water management plan that evaluates water demands over a 25-year planning horizon. This analysis addresses a variety of scenarios, including years with normal water conditions, single-dry years, and multiple dry year conditions. Additionally, the UWMP attempts to accomplish the following:

- Identify measures to be implemented or projects to be undertaken to reduce water demands and address water supply shortfalls;
- Identify stages of action to address up to 50 percent reduction in water supplies during dry water years;
- Identify actions to be implemented in the event of a catastrophic interruption in water supplies;
- Access the reliability of the sources during normal, single-dry, and multiple-dry water years; and
- Identify when, how, and what measures the City could undertake in order to meet the State Legislature's call for a 20 percent per capita reduction in urban water use statewide by 2020.

Overall, the City's UWMP, which was updated in 2015[14], determined that the City's combined projected water suppliers are sufficient to meet projected demands during normal and multiple-year dry year conditions. During a severe drought condition, under the single-dry year condition, the City would not have adequate supplies and would need to impose mandatory water conservation. However, the City's water customers have been successful in reducing its water demands during water shortages, such as what occurred in 2009 when the City's water deliveries were reduced by 18 percent of normal. Moreover, in compliance with State mandates to reduce water usage, the city of Sonoma has reduced its water use by 29 percent from July 2015 through November 2016, when compared to the same period in 2013. In addition, the City can produce more groundwater on a short-germ basis during peak summer months to supplement the SCWA supply.

Because the re-development of the parcel with apartments is consistent with the water demand projections of the City's UWMP, the project would have a ***less-than-significant impact*** respect to water supply.

[14] 2015 Urban Water Management Plan Water Demand Analysis and Water Conservation Measures Update, City of Sonoma, July 1, 2015.

e) Result in a determination by the wastewater treatment provider that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less-than-significant. See 17.a (above).

f) Be served by a landfill with sufficient permitted capacity to accommodate the project?

The County of Sonoma owns the Central Disposal Site and four other transfer stations located throughout Sonoma County. The Central Disposal Site landfill, located at 500 Mecham Road in Petaluma, California, accommodates solid waste from the City of Sonoma. The Central Disposal Site has a permitted capacity of 19.59 million tons (32.65 million cubic yards), and Landfill 2, which has a permitted capacity of 4.98 million tons (7.0 million cubic yards). Landfill 1 currently contains approximately 12.83 million tons (21.38 million cubic yards) of solid waste, and Landfill 2 currently has 1.12 million tons (1.87 million cubic yards) of solid water. Therefore, remaining capacity at Landfill 1 is 5.44 million tons (4.27 million cubic yards), and remaining capacity of Landfill 2 is 3.86 million tons (5.13 million cubic yards). Further, permitted daily tonnage at the Central Disposal Site is 2,500 tons; however, average daily tonnage is 1,250 tons. Therefore, the landfill is currently receiving less than its permitted daily tonnage of solid water.

> *Mitigation Measure 17.f:* The project applicant shall be required to prepare and implement a recycling plan for both the deconstruction of existing structures and new construction detailed in the project description. The recycling plan shall address the major materials generated through deconstruction of existing structures and construction of new buildings, and shall identify the means to divert these materials away from landfill disposal. Typical materials included in such a plan are soil, brush and other vegetative growth, sheetrock, dimensional lumber, metal scraps, cardboard packaging, and plastic wrap.

With implementation of Mitigation Measure 17.f above, the solid waste generated by the project would have a ***less-than-significant with mitigation incorporated*** impact on landfills that serve the City of Sonoma.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

In order for Sonoma County to help meet the diversion requirements of the California Integrated Waste Management Act of 1989 (AB939), Chapter 22 of the Sonoma County Code (Section 2207A) explicitly bans the disposal at County disposal sites of yard debris, recyclable wood waste, scrap metal and corrugated cardboard. The project would be subject to these limitations. All applicable federal, state, and local regulations related to solid waste would be complied with as part of the project. As a result, ***no impact*** would occur.

	Potentially Significant Impact	***Less-Than-Significant With Mitigation Incorporated***	***Less-Than-Significant Impact***	***No Impact***
18. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The implementation of measures identified in this Initial Study Environmental Checklist would reduce the severity of potential impacts on biological and cultural resources to ***less-than-significant with mitigation incorporated*** levels. No further mitigation beyond Mitigation Measures 4.a, 5.b-1, 5.b-2, 5.c, and 5.d would be required.

b) Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The proposed development would not result in cumulative impacts deemed considerable. Impacts on air quality, biological, cultural resources, hydrology and water quality, traffic, and utilities could contribute incrementally, but the combined effect would not be significant. As described in this Initial Study Environmental Checklist, implementation of Mitigation Measures 3.e, 4.a, 5.b-1, 5.b-2, 5.c, 5.d, 12.a, 16.c, and 17.f would reduce the magnitude of these cumulative impacts to a ***less-than-significant*** level.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The project could have temporary short-term air quality effects on people in vicinity of the site during construction which, with implementation of Mitigation Measures 3.e would be ***less-than-significant.*** With implementation of standard practices required of all projects approved in the City (compliance with the Uniform Building Code, etc.), the project would not pose a hazard to future residents through exposure to geologic hazards.

Attachments:

1. Project Information/Application Submittal (Attachment 1)
2. Transportation Impact Study (Attachment 2)
3. Historical Resources Evaluation (Attachment 3)
4. Cultural Resource Evaluation (Attachment 4)
5. Preliminary Grading and Utility Plan (Attachment 5)
6. Environmental Noise Assessment (Attachment 6)
7. Summary Report for Summer Emissions (Attachment 7)
8. Vicinity Map (Attachment 8)
9. Arborist Report (Attachment 9)
10. Review of General Plan Consistency (Attachment 10)

Attachment 1

19410 SONOMA HIGHWAY, SONOMA, CA

A 12 unit Housing/2 Live/work unit Development

In the Heart of the Sonoma Commercial District

Summary

This multifamily housing development is located in the heart of the Sonoma commercial and multi-family district. Located at the confluence of Sonoma Highway and W. Spain Street, this Sonoma neighborhood is experiencing very strong rental and investment demand.

The redeveloping West Sonoma area is experiencing strong growth in demand as shown by the lack of good quality apartments. This project is located at 19410 Sonoma Highway between W. Napa Street and W. Spain Street, just 0.9 miles from Sonoma City Hall and the iconic Plaza. The very tight Bay Area housing market has out-priced many in its workforce seeking more affordable housing choices at a commuter distance. The SMART Train will start transit service between Sonoma Airport and San Rafael in 2017, thus creating an even stronger

market in this location. Bus service less than 2,000 feet from the site will provide another form of public transit to its residents.

Key amenities offered by this location are proximity to the Sonoma Plaza convenient to bikers and pedestrians alike, the organic Sonoma Plaza Farmer's Market held every Tuesday May through October and the cluster of award winning restaurants and entertainment venues. This very walkable location is rated 70 by Walk Score and is a biker's paradise. The Lucky/Rite Aid anchored Maxwell Shopping Center is located less than 1/2 mile from the site, an easy 10 minute walk.

The proposed project will feature amenities and architecture that have features found in only in the most upscale projects.

- Secure indoor bike storage for each unit; outdoor "living room" with barbeque grill, seating
- High quality "wood plank" in the living/dining areas, kitchens and hallways
- surface mounted ceiling LED fixtures; electrical outlets with USB ports
- Stainless steel dishwashers, ovens and cooktops with microwave oven vent hoods
- Granite counter tops with opaque glass back splash; stainless sink with pull out spray kitchen faucet
- Washer/dryer appliances
- Meets new Title 24 energy saving mechanical, electrical and plumbing specifications and architectural design
- Effect heat pumps and air conditioning
- Two EV stations
- Covered private balconies and patios

SYMBOLS

1 — WINDOW INDICATION
SEE WINDOW SCHEDULE

3 / A6 — DETAIL NUMBER
SHEET NUMBER

1 — DOOR INDICATION-SEE

3 / A6 — BUILDING SECTION
SHEET NUMBER

F1 | 14' — FINISH SCHEDULE INDICATION
SEE FINISH SCHEDULE
CEILING HEIGHT

VICINITY MAPS

APN 018-442-05
19410 HIGHWAY 12
SONOMA,CA

SCOPE OF WORK

CONSTRUCT AND COMPLETE 12 UNIT APARTMENTS CONSISTING OF 2 BUILDINGS .PROJECT ALSO INCLUDES 2 LIVE/WORK UNITS.

PROJECT DIRECTORY

OWNER
STEVE CAVALLI
435 DENTON WAY
SANTA ROSA,CA 95401

ARCHITECT
TAUB DESIGNS
KEN TAUB, ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415)858-8872
email: kentaub1@gmail.com
web TaubDesigns.com

STRUCTURAL ENGINEER
LLOYD GOSSEN
P.O BOX 2246
ORINDO,CA 94563
(925)254-2534

CIVIL ENGINEER
BEAR FLAG ENGINEERING,INC.
P.O.BOX 2193
SONOMA,CA 95476
(707)481-9472

SOILS ENGINEER
SALEM & HOWES ASSOCIATES
1202 GRANT AVE.
NOVATO,CA
(415) 892-8528

TITLE 24 AND RADIANT HEATING
MONTEREY ENERGY GROUP
227 FOREST AVENUE,SUITE 5
PACIFIC GROVE, CA 93950
(831)372-8328
FAX (831)372-4613

GENERAL CONTRACTOR
TAUB DESIGNS
1001 BRIDGEWAY,147
SAUSALITO,CA 94965
(415) 858-8872

HISTORICAL CONSULTANT
FIRST LIGHT CONSULTING
111 STANFORD STREET
SANTA ROSA,CA 95404
(707)583-7819

TRAFFIC ENGINEER
CHS CONSULTING GROUP
131 STONY CIRCLE
SANTA ROSA,CA 95401
(707)595-3561

ARCHAEOLOGIST
ARCHAEOLOGICAL RESOURSE SERVICES
613 MARTIN AVENUE ,SUITE 101
ROHNERT PARK,CA 94928
(707)586-2577

PROJECT DATA

OWNERS STEVE CAVALLI
ADDRESS 435 DENTON WAY
SANTA ROSA,CA 95401

ZONING C
PARCEL NUMBER APN #018-442-05
PROPERTY ADDRESS: 19410 HIGHWAY 12,SONOMA,CA 95476

SITE AREA 29 ,700 S SQ FT
.70 AC

20 UNITS PER AC

AREA
RESIDENTAL
A UNITS 6 1BR @ 850 /SQ FT 5100 SQ FT
B UNITS 6 2BR @ 1056/SQ FT 6338 SQ FT
C UNITS 2 LIVE/WORK @ 1277 SQ FT 2554 SQ FT
14
TOTAL 13,990 SQ FT

RESIDENTILAL PARKING
14 UNITS @ 1.5 CARS/UNIT =21

GUEST PARKING@25% = 5

TOTAL PARKING REQUIRED = 26

TOTAL PROVIDED =29

EV STATIONS REQUIRED 2
EV STATIONS PROVIDED 2

TOTAL BUILDING AREA 13,990 SQ FT
FAR 47%

TOTAL BUILDING FOOTPRINTS AREA- 7,365 SQ SF
COVERAGE 25%

PARKING AREA 6,200 SQ FT
PARKING LANDSCAPE AREA 1,212 SQ FT
PERCENT OF PARKING 19 %

OPEN SPACE
A. PATIOS 1,164 SQ FT
B. OPEN SPACE 9,037 SQ FT
TOTAL OPEN AREA 10,201 SQ FT
OPEN SPACE PER UNIT 728 SQ FT

EXTERIOR MATERIALS AND COLORS

WINDOWS	MILGUARD WINDOWS CLAD COLOR TO BE WHITE
ROOF PLASTER	COMPOSITION-GAF "LA HABRA"
GUTTER AND DOWNSPOUTS	GI -PAINT TO MATCH FACIA GI- PAINT TO MATCH
WALL AT STREET	"LA HABRA"

BUILDING COMPLIANCE

OCCUPANCY TYPE FOR RESIDENTIAL R2
CONSTRUCTION TYPE VB

AUTOMATIC FIRE SPRINKLER SYSTEM IS
TO BE INSTALLED .SYSTEM MUST BE IN COMPLIANCE
WITH 13R LOCAL AND STATE CODES

ALL CONSTRUCTION SHALL COMPLY WITH 2016 CBC,2016 CRC,
2016 CEC,2016 CMC,2016 CPC , 2016 CALIFORNIA GREEN BUILDING
STANDARDS CODE(CGBCSC), 2016 CALIFORNIA ENERY CODE ,STATE CODES,
LOCAL CODES

DEFERRED SUBMITTALS

AUTOMATIC FIRE SPRINKLER PLANS CRC R313

SPECIAL INSPECTIONS

ALL SPECIAL INSPECTION LIST ARE FOUND ON SHEET UNDER GENERAL NOTES

DRAWING INDEX

ARCHITECTURAL DRAWINGS BY TAUB DESIGNS

CIVILDRAWINGS BY BEAR FLAG ENGINEERING,INC

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25548 STATE OF CALIFORNIA

KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

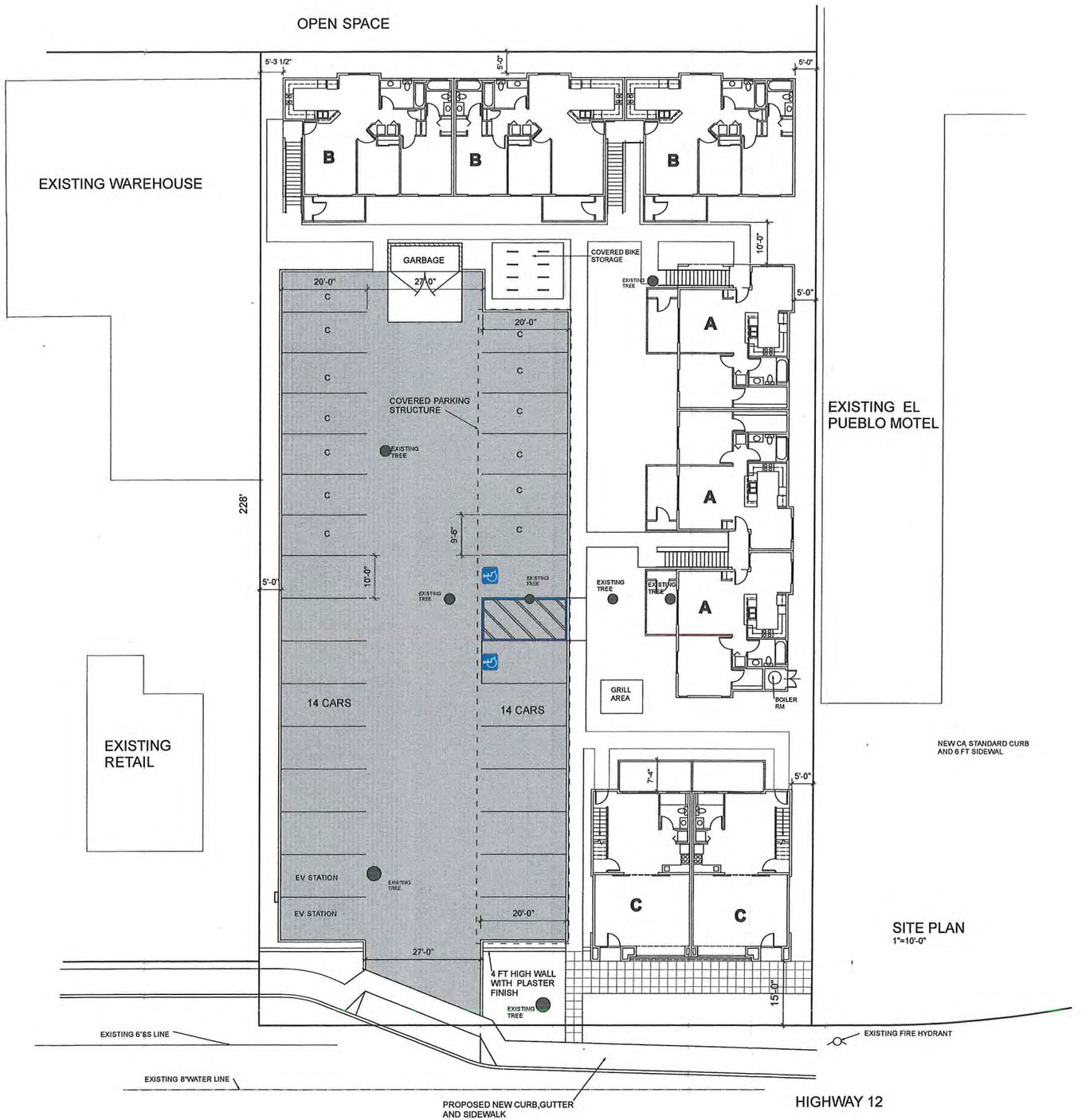
APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

COVER SHEET

SHEET 001

MAY 0 4 2017



SITE PLAN
1"=10'-0"

N

SITE AREA 29 ,700 S SQ FT
.70 AC

20 UNITS PER AC

AREA
RESIDENTAL

"A" 6 1BR @ 850 /SQ FT	5100 SQ FT
"B" 6 2BR @ 1056/SQ FT	6336 SQ FT
"C" 2 LIVE/WORK @ 1277 SQ FT	2554 SQ FT
14	
TOTAL	13,990 SQ FT

RESIDENTILAL PARKING
14 UNITS @ 1.5 CARS/UNIT =21

GUEST PARKING@25% = 5

TOTAL PARKING REQUIRED = 26

TOTAL PROVIDED =28

EV STATIONS REQUIRED	2
EV STATIONS PROVIDED	2

TOTAL BUILDING AREA	13,990 SQ FT
FAR	47%

TOTAL BUILDING FOOTPRINTS AREA- 7,365 SQ SF
COVERAGE 25%

PARKING AREA	6,200 SQ FT
PARKING LANDSCAPE AREA	1,212 SQ FT
PERCENT OF PARKING	19 %

OPEN SPACE

A. PATIOS	1,164 SQ FT
B. OPEN SPACE	9,037 SQ FT
TOTAL OPEN AREA	10,201 SQ FT
OPEN SPACE PER UNIT	728 SQ FT

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 STATE OF CALIFORNIA

KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

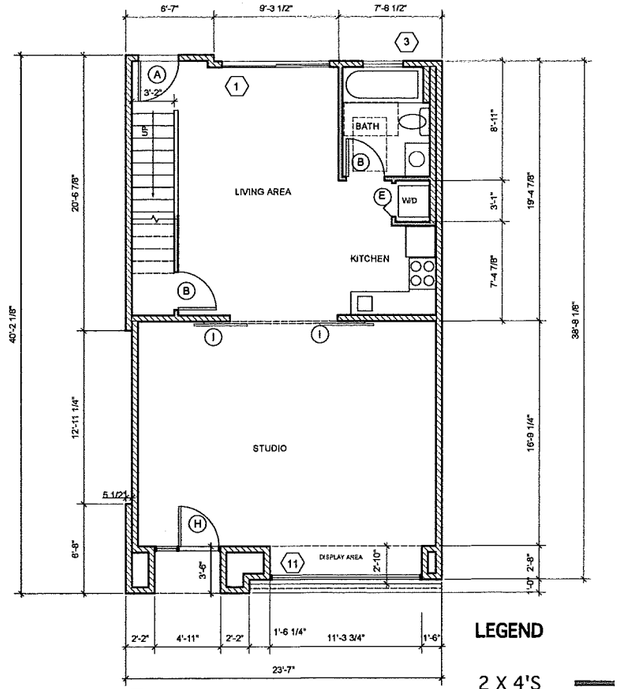
APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

SITE PLAN

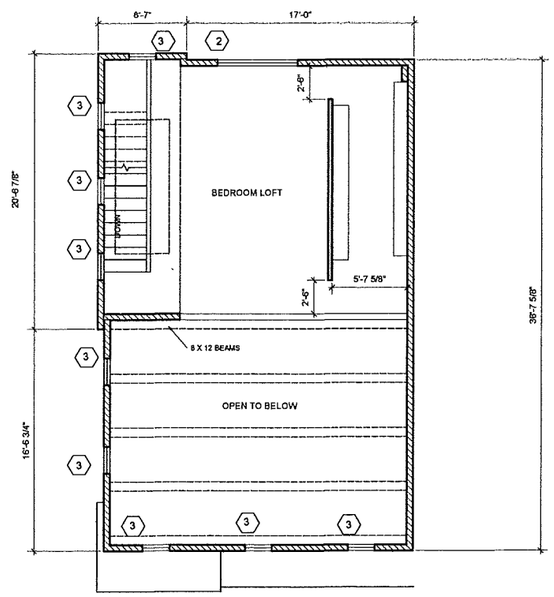
SHEET
002

A1



"C" FLOOR PLAN

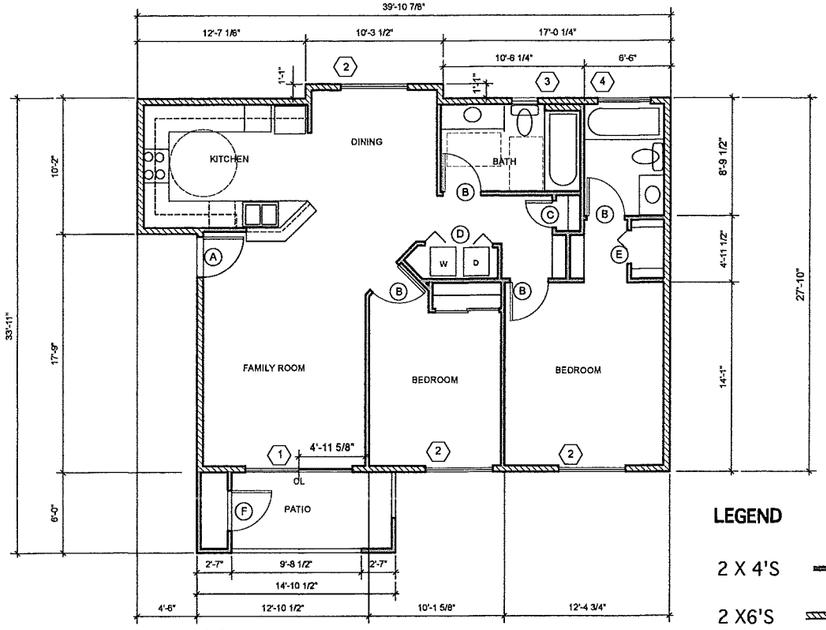
1/4"=1'-0"



LEGEND

2 X 4'S

2 X6'S



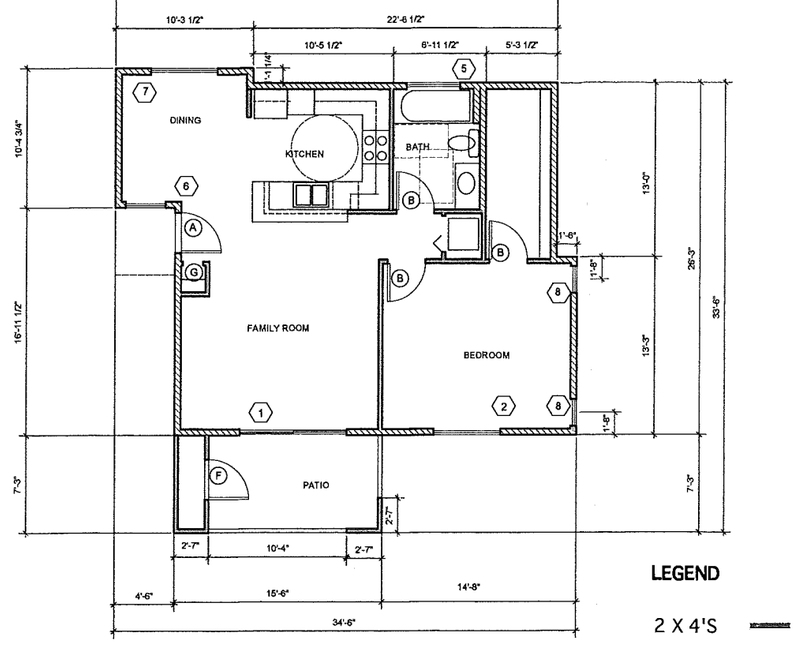
"B" FLOOR PLAN

1/4"=1'-0"

LEGEND

2 X 4'S

2 X6'S



"A" FLOOR PLAN

1/4"=1'-0"

LEGEND

2 X 4'S

2 X6'S

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

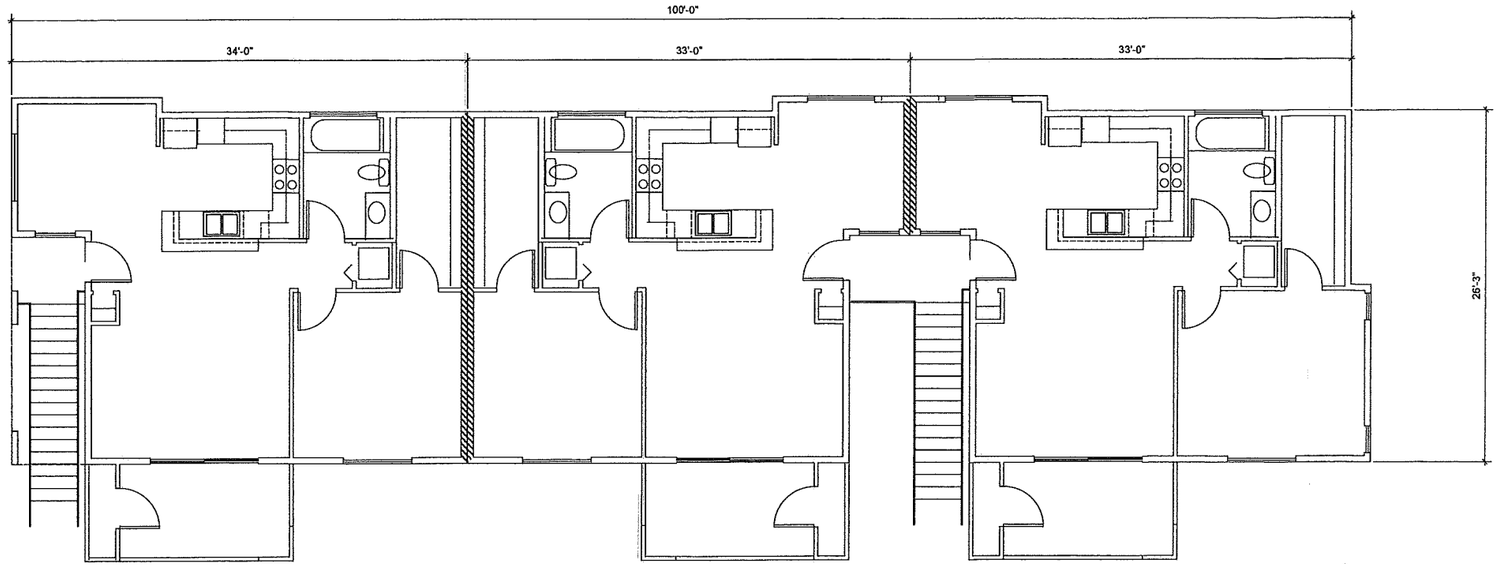
KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

APN 018-442-05

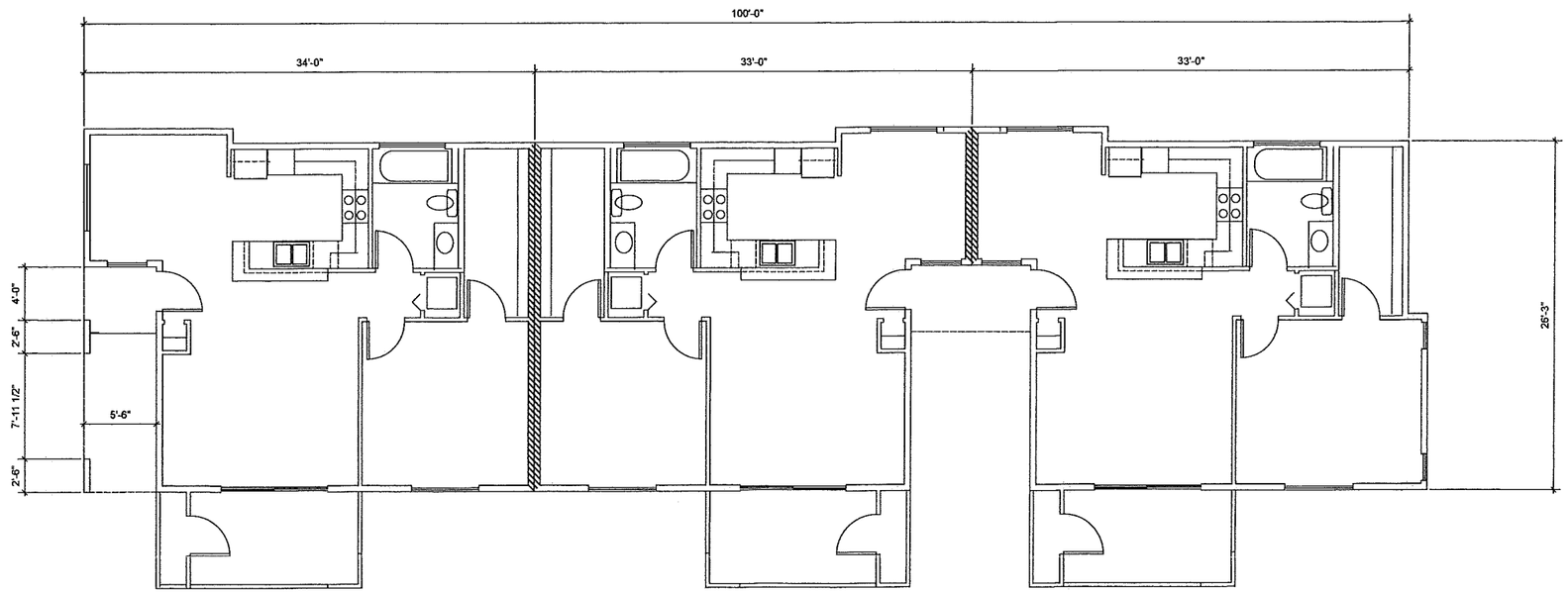
19410 SONOMA HIGHWAY
SONOMA,CA

FLOOR PLANS

SHEET
003
A2



SECOND FLOOR BUILDING PLAN
Scale: 1/4" = 1'-0"



FIRST FLOOR BUILDING PLAN
Scale: 1/4" = 1'-0"

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 STATE OF CALIFORNIA

KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415) 868-8872
www.TaubDesigns.com

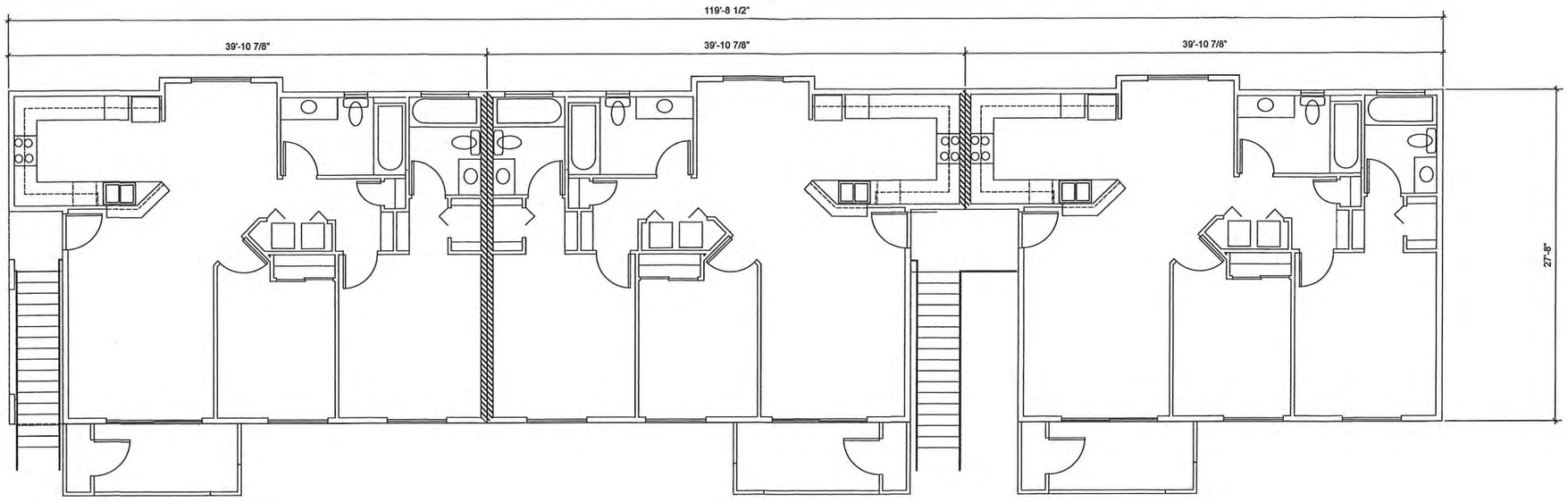
APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

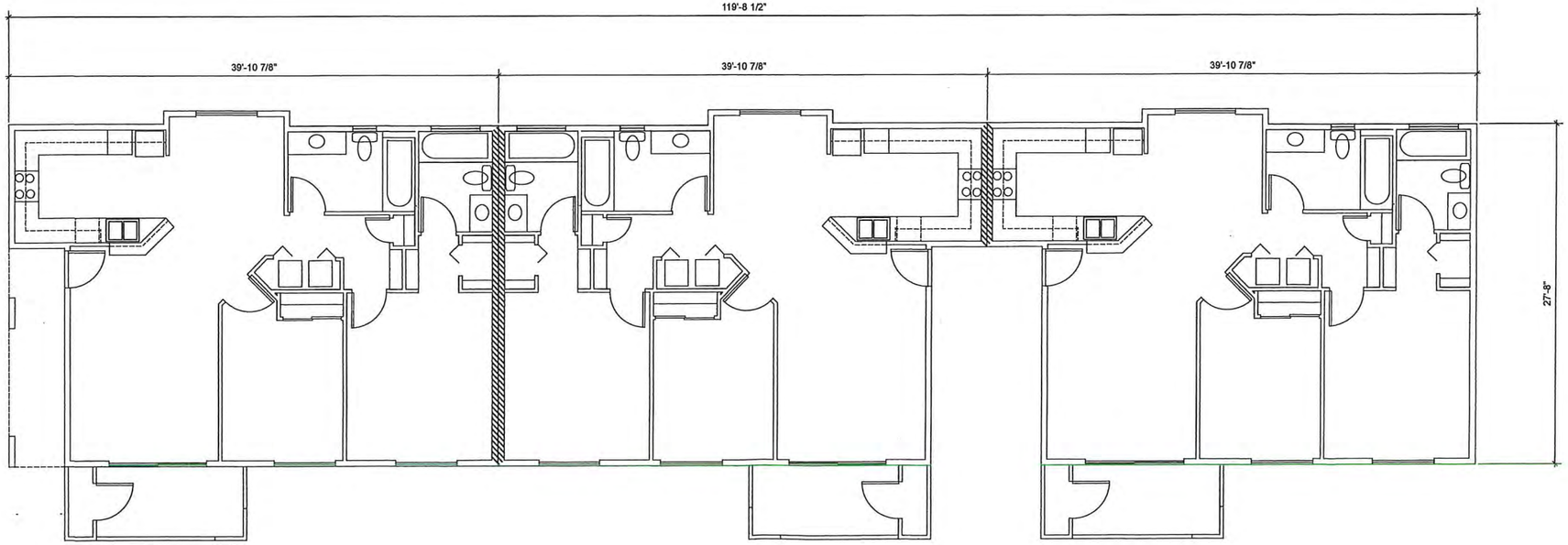
BUILDING PLANS-"A" UNITS

SHEET 004

A3



SECOND FLOOR BUILDING PLAN
Scale: 1/4" = 1'-0"



FIRST FLOOR BUILDING PLAN
Scale: 1/4" = 1'-0"

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25548 RENEWAL 2019 STATE OF CALIFORNIA

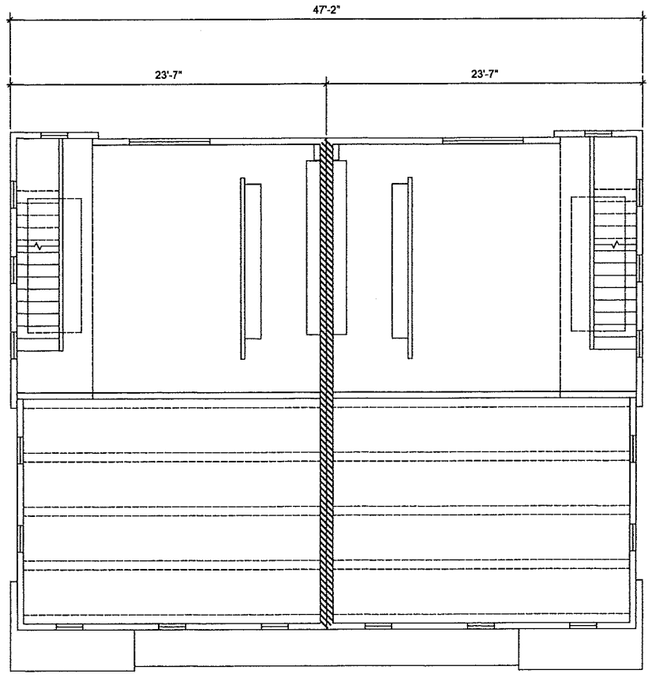
KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

APN 018-442-05

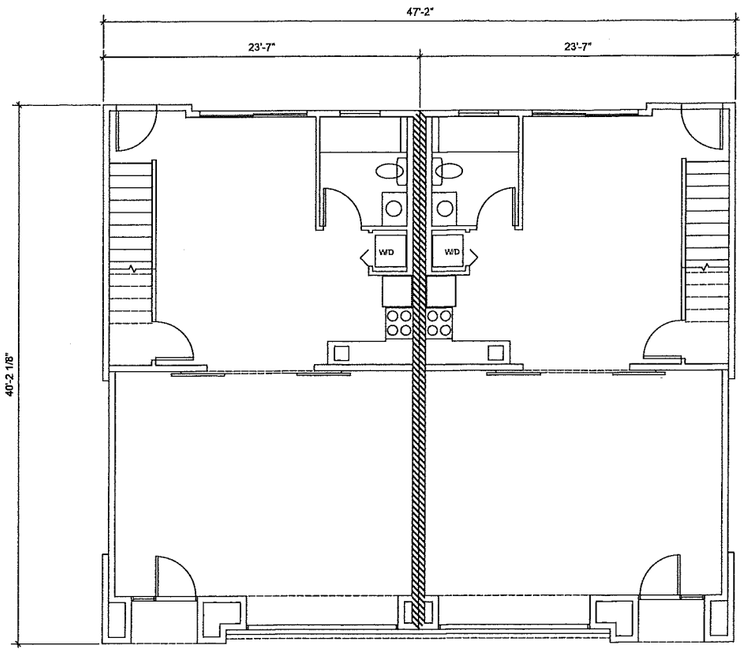
19410 SONOMA HIGHWAY
SONOMA,CA

BUILDING PLANS-"B" UNITS

SHEET
005
A3.1



SECOND FLOOR BUILDING PLAN
Scale: 1/4" = 1'-0"



FIRST FLOOR BUILDING PLAN
Scale: 1/4" = 1'-0"

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 RENEWAL 2019 STATE OF CALIFORNIA

KEN TAUB , ARCHITECT
1001 BRIDGHWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

BUILDING PLAN-"C" UNITS

SHEET
006

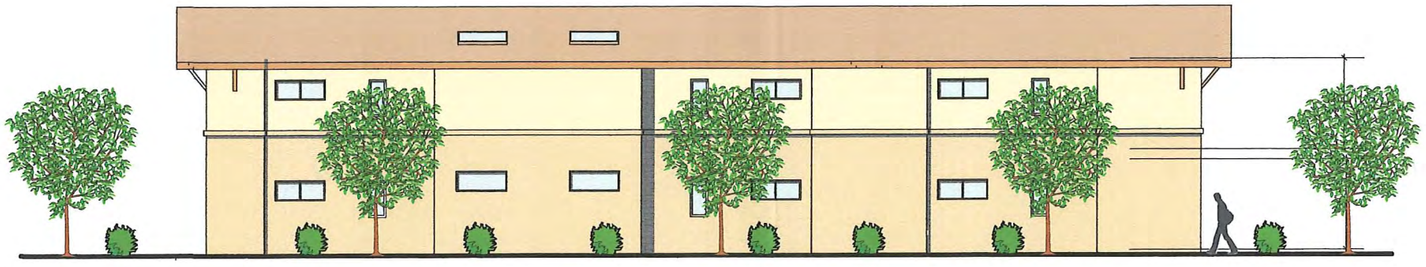
A3.2

WEST ELEVATION -A UNIT BUILDING

3/16" = 1'-0"

EAST ELEVATION -A UNIT BUILDING

3/16" = 1'-0"



SOUTH ELEVATION -A UNIT BUILDING

3/16" = 1'-0"

NORTH ELEVATION -A UNIT BUILDING

3/16" = 1'-0"

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 RENEWAL 08/31 STATE OF CALIFORNIA

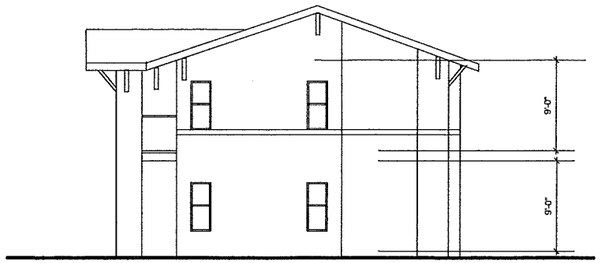
KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

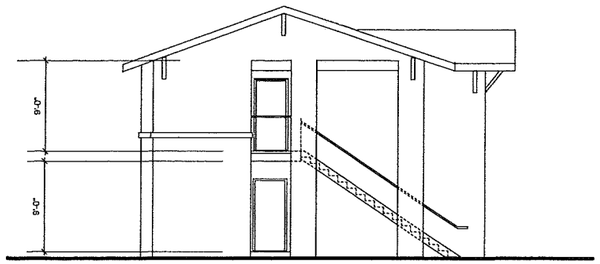
ELEVATION
BUILDING "A" UNITS

SHEET
007
A4



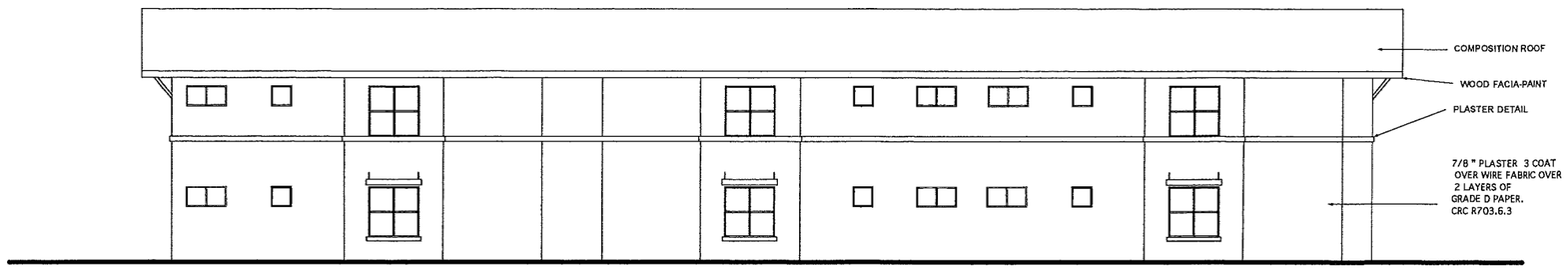
SOUTH ELEVATION -B UNIT BUILDING

3/16" = 1'-0"



NORTH ELEVATION -B UNIT BUILDING

3/16" = 1'-0"



EAST ELEVATION -B UNIT BUILDING

3/16" = 1'-0"

WEST ELEVATION -B UNIT BUILDING

3/16" = 1'-0"

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 STATE OF CALIFORNIA

KEN TAUB , ARCHITECT
1001 BRIDGEWAY,#147
SAUSALITO,CA 94966
(415) 858-8872
www.TaubDesigns.com

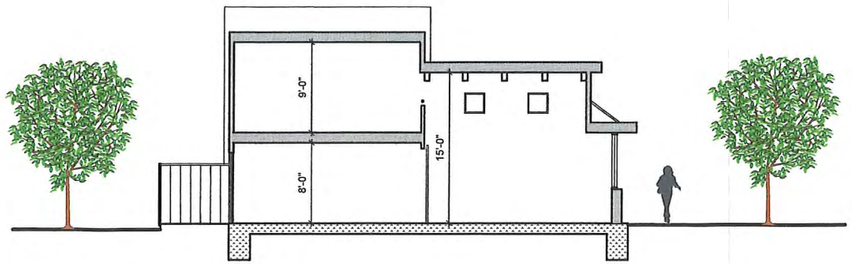
APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

ELEVATION
BUILDING "B" UNITS

SHEET
008

A4.1



SECTION THRU BLDG

EAST ELEVATION OF LIVE/WORK

NORTH ELEVATION OF LIVE/WORK

WEST ELEVATION OF LIVE/WORK

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 RENEWAL 08/31/18 STATE OF CALIFORNIA

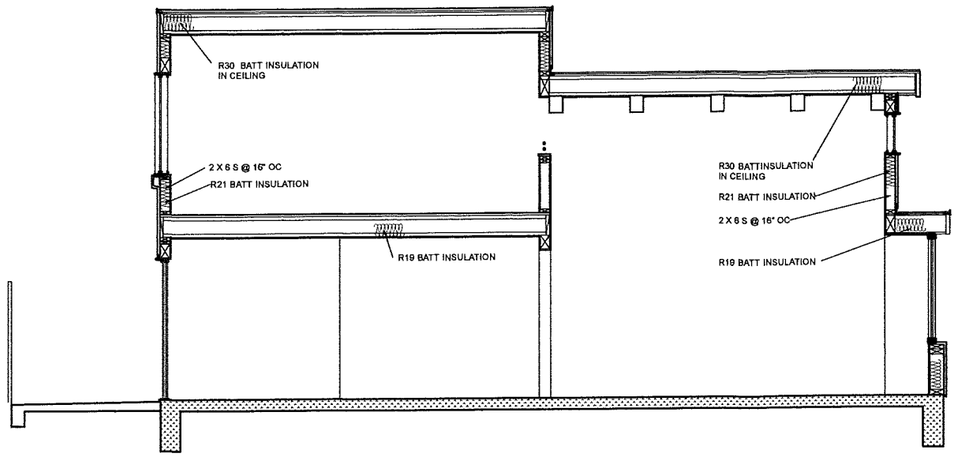
KEN TAUB , ARCHITECT
1001 BRIDGHWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

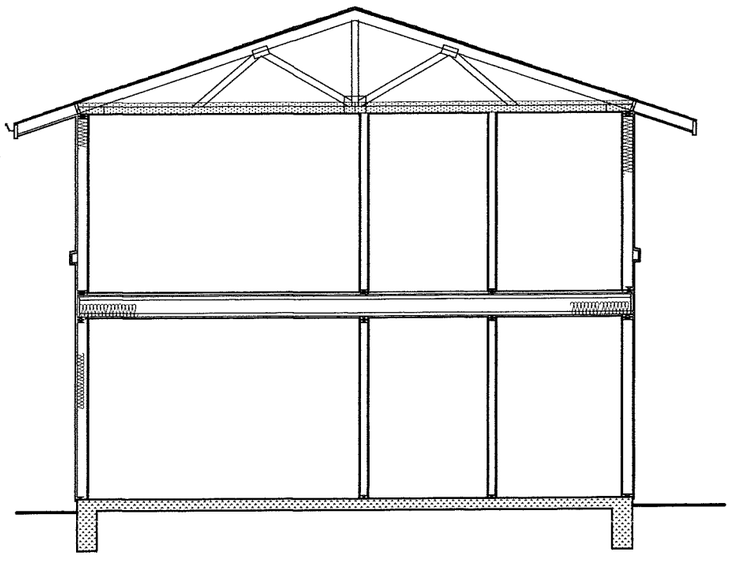
LIVE /WORK ELEVATIONS

SHEET
009
A4.2



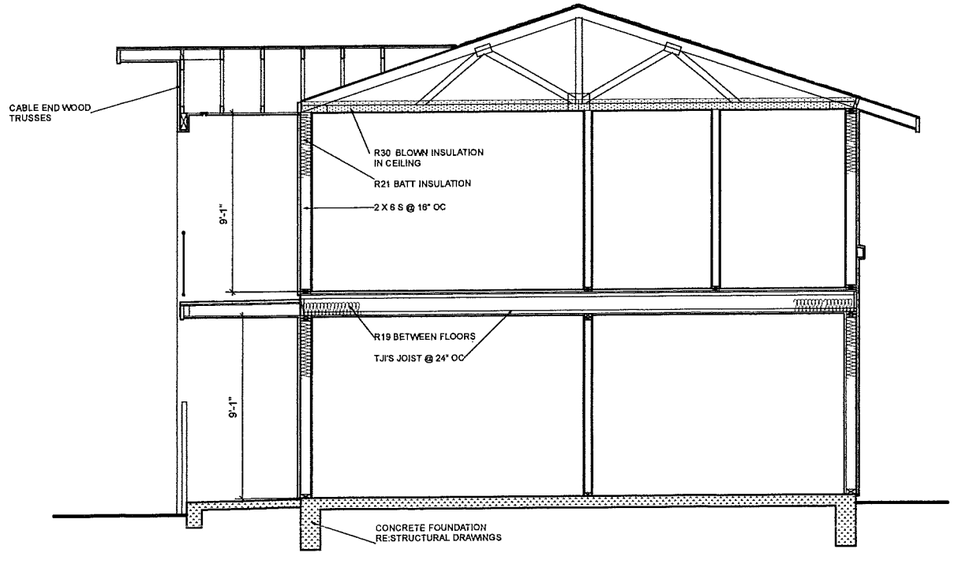
SECTION THRU "C" UNITS

SCALE 3/8" = 1'-0"



SECTION THRU " A" & "B" UNITS

SCALE 3/8" = 1'-0"



SECTION THRU " A" & "B" UNITS

SCALE 3/8" = 1'-0"

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25648 RENEWAL STATE OF CALIFORNIA

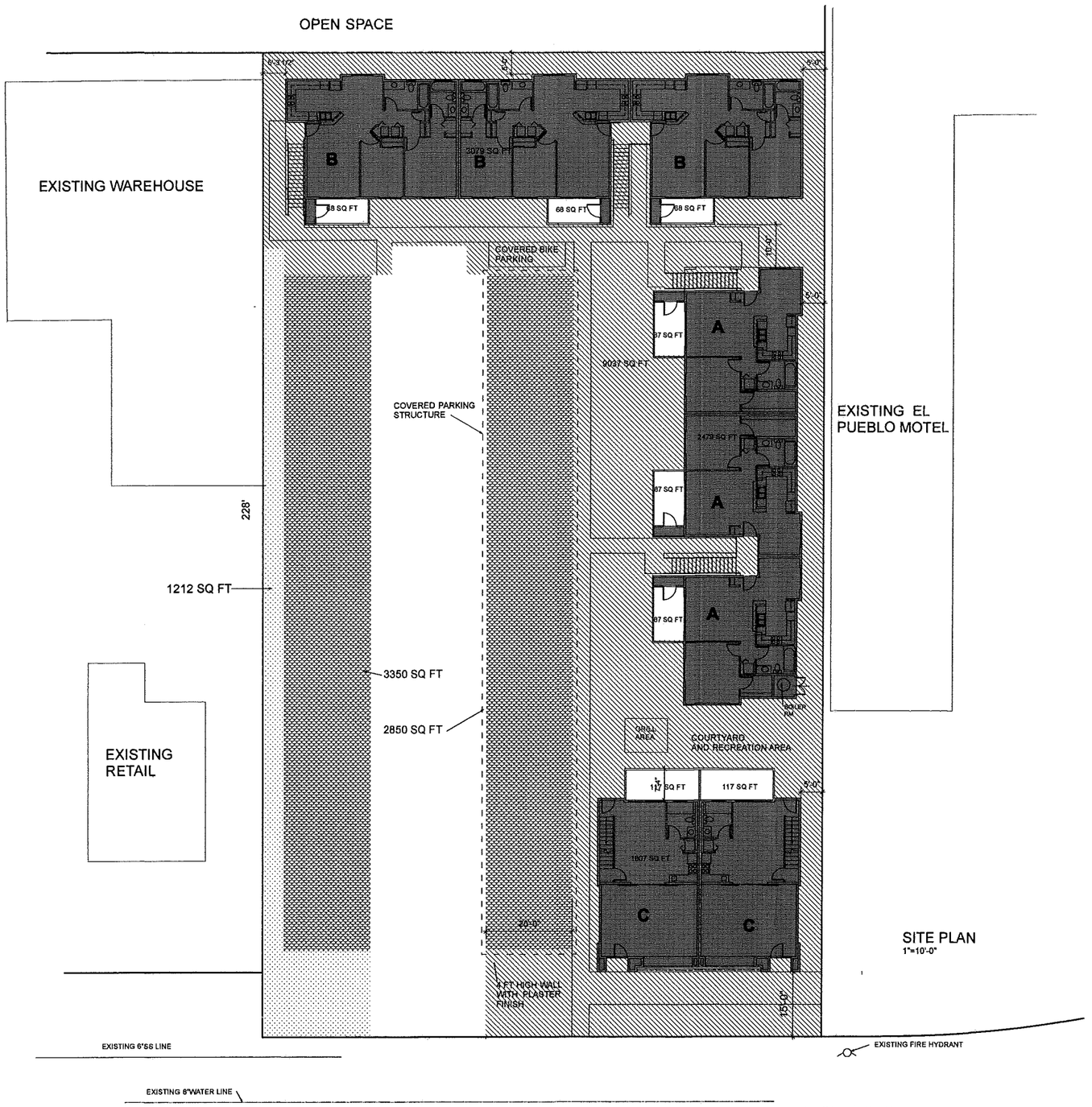
KEN TAUB , ARCHITECT
1001 BRIDGHWAY,#147
SAUSALITO,CA 94965
(415) 858-8872
www.TaubDesigns.com

APN 018-442-05

19410 SONOMA HIGHWAY
SONOMA,CA

BUILDING SECTIONS-A,B AND
C UNITS

SHEET
010
A5



SITE PLAN
1"=10'-0"

N

SITE AREA 29 ,700 S SQ FT
.70 AC

20 UNITS PER AC

AREA
RESIDENTAL

"A" 6 1BR @ 850 /SQ FT	5100 SQ FT
"B" 6 2BR @ 1056/SQ FT	6336 SQ FT
"C" 2 LIVE/WORK @ 1277 SQ FT	2554 SQ FT
14	
TOTAL	13,990 SQ FT

RESIDENTILAL PARKING
14 UNITS @ 1.5 CARS/UNIT =21

GUEST PARKING@25% = 5

TOTAL PARKING REQUIRED = 26

TOTAL PROVIDED =29

EV STATIONS REQUIRED	2
EV STATIONS PROVIDED	2

TOTAL BUILDING AREA	13,990 SQ FT
FAR	47%

TOTAL BUILDING FOOTPRINTS AREA- 7,365 SQ SF
COVERAGE 25%

PARKING AREA	6,200 SQ FT
PARKING LANDSCAPE AREA	1,212 SQ FT
PERCENT OF PARKING	19 %

OPEN SPACE

A. PATIOS	1,164 SQ FT
B. OPEN SPACE	9,037 SQ FT
TOTAL OPEN AREA	10,201 SQ FT
OPEN SPACE PER UNIT	728 SQ FT

LEGEND

- OPEN SPACE
- PARKING AREA
- BUILDING FOOTPRINT

NO.	DATE	REVISIONS
	JAN 1,2017	COMMISSION STUDY SESSION
	MAY 1,2017	FORMAL SUBMITTAL

LICENSED ARCHITECT KEN TAUB C-25548 RENEWAL 08/31/2019 STATE OF CALIFORNIA

KEN TAUB , ARCHITECT
1001 BRIDGHWAY,#147
SAUSALITO,CA 94965
(415) 868-8872
www.TaubDesigns.com

APN 018-442-05

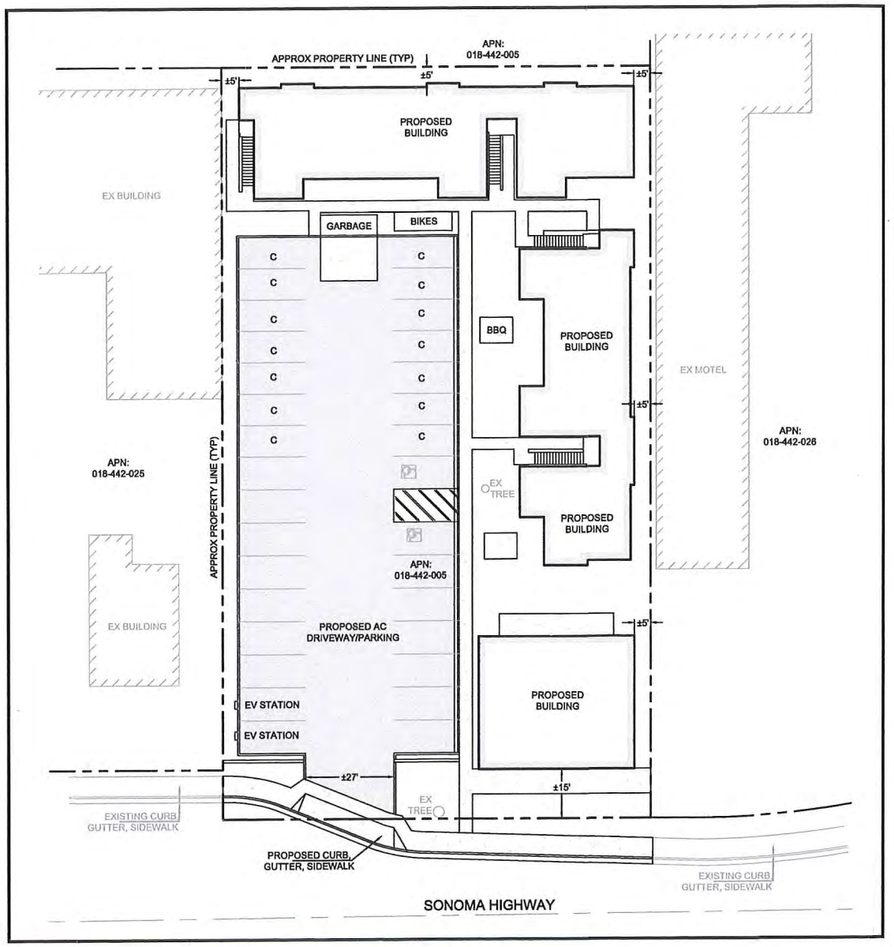
19410 SONOMA HIGHWAY
SONOMA,CA

AREAS CALCULATIONS

SHEET
012
A6

IMPROVEMENT PLANS
FOR THE
19410 SONOMA HIGHWAY APARTMENTS

19410 SONOMA HIGHWAY, SONOMA, CA 95476
APN: 018-442-005



PROPOSED SITE PLAN

0 10 20 40 80
SCALE: 1"=20'

VICINITY MAP
NOT TO SCALE

SHEET INDEX

CONTACT INFORMATION

APPLICANT: BEAR FLAG ENGINEERING, INC
PO BOX 2193, SONOMA CA 95476
(707) 481-9472

OWNER: KEN TAUB
1001 BRIDGEWAY STE 147
SAUSALITO, CA 94965
(415) 858-6827

EARTHWORK CALCULATIONS

CUT: 180 CUBIC YARD (CY)
FILL: 180 CY
NET: 0 CY (IMPORT)*

*CONTRACTOR SHALL BE REQUIRED TO PERFORM THEIR OWN EARTHWORK VOLUME CALCULATIONS. THESE CALCULATIONS ARE AN ESTIMATE AND DO NOT INCLUDE:
- EXPANSION OR CONTRACTION (SEE SOILS REPORT),
- FOUNDATION OR UTILITY TRENCH SPOILS
- CLEAR AND GRUB

AREA OF DISTURBANCE: 0.63 ACRES

ABBREVIATIONS

2:1	2 UNITS HORIZ TO 1 UNIT VERT
AB	AGGREGATE BASE
AC	ASPHALT
AD	AREA DRAIN
APN	ASSESSOR'S PARCEL NUMBER
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
CL	CLASS
CONC	CONCRETE
CY	CUBIC YARDS
DS	DOWNSPOUT
DWY	DRIVEWAY
ELEV	ELEVATION
EX	EXISTING
FG	FINISH GRADE
FL	FLOW LINE
FS	FINISH SURFACE
FT	FEET
GALV	GALVANIZED
GB	GRADE BREAK
GR	GRATE
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HIGH POINT
IG	INVERT GRADE
LF	LINEAL FEET
LS	LANDSCAPE
MIN	MINIMUM
NTS	NOT TO SCALE
OC	ON CENTER
PERF	PERFORATED
PL	PROPERTY LINE
PRMD	PERMIT AND RESOURCE MANAGEMENT DEPARTMENT
PT	PRESSURE TREATED
RCP	REINFORCED CONCRETE PIPE
S	SLOPE
SC	SONOMA COUNTY
SD	STORM DRAIN
TD	TRENCH DRAIN
TYP	TYPICAL
TW	TOP OF WALL
VERT	VERTICAL
w/	WITH

LEGEND

1%	SLOPE AND FLOW DIRECTION
N89°54'29"W 260.37'	BEARING AND DISTANCE
	PROPERTY LINE
	PROPERTY LINE - ADJACENT
	BUILDING ENVELOPE
x	EX FENCE
	MAJOR CONTOUR (EX)
	MINOR CONTOUR (EX)
	TRENCH DRAIN
	STORM DRAIN
	PERF SUB-DRAIN
	AREA DRAIN
	RIP-RAP OUTLET
A/C6 A/C6	SECTION A-A', SHEET C6

BEAR FLAG ENGINEERING INC
CIVIL ENGINEERING
LAND DEVELOPMENT
SEPTIC SYSTEM DESIGN
PROJECT MANAGEMENT
SURVEYING
BUILDING DESIGN
PO BOX 2193, SONOMA, CA 95476
PHONE: (707) 481-9472
OFFICE@BEARFLAGCIVIL.COM

REGISTERED PROFESSIONAL ENGINEER
CHAD S. HOLL
No. C 79721
Exp. 9/30/18
CIVIL
STATE OF CALIFORNIA

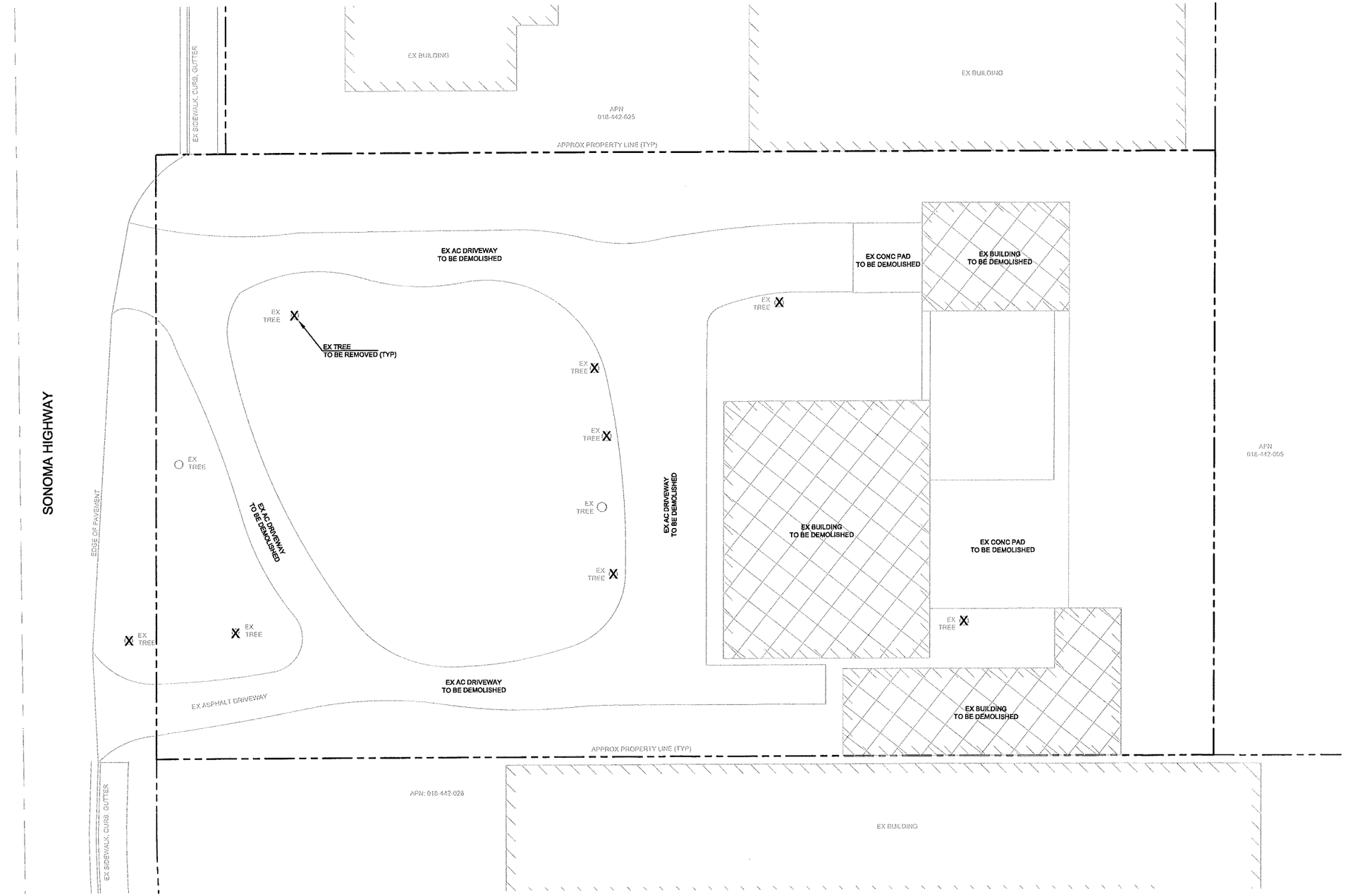
CHAD S. HOLL RCE 79721 — DATE

COVER SHEET + SITE PLAN
19410 SONOMA HIGHWAY
19410 SONOMA HIGHWAY, SONOMA, CA 95476
APN: 018-442-005

REV	DATE	DESCRIPTION

DATE:	2/6/2017
DESIGN:	CSM
PROJECT:	17002

SHEET C1 OF 4 SHEETS



EXISTING SITE PLAN

0 5 10 20 40

SCALE: 1"=10'

BEAR FLAG ENGINEERING INC

CIVIL ENGINEERING
LAND DEVELOPMENT
SEPTIC SYSTEM DESIGN
PROJECT MANAGEMENT
SURVEYING
BUILDING DESIGN

PO BOX 2153, SONOMA, CA 95476
PHONE: (707) 681-3472
OFFICE@BEARFLAGCIVIL.COM

REGISTERED PROFESSIONAL ENGINEER
CHAD S. NOLL
No. C 79721
Exp. 9/30/18
CIVIL
STATE OF CALIFORNIA

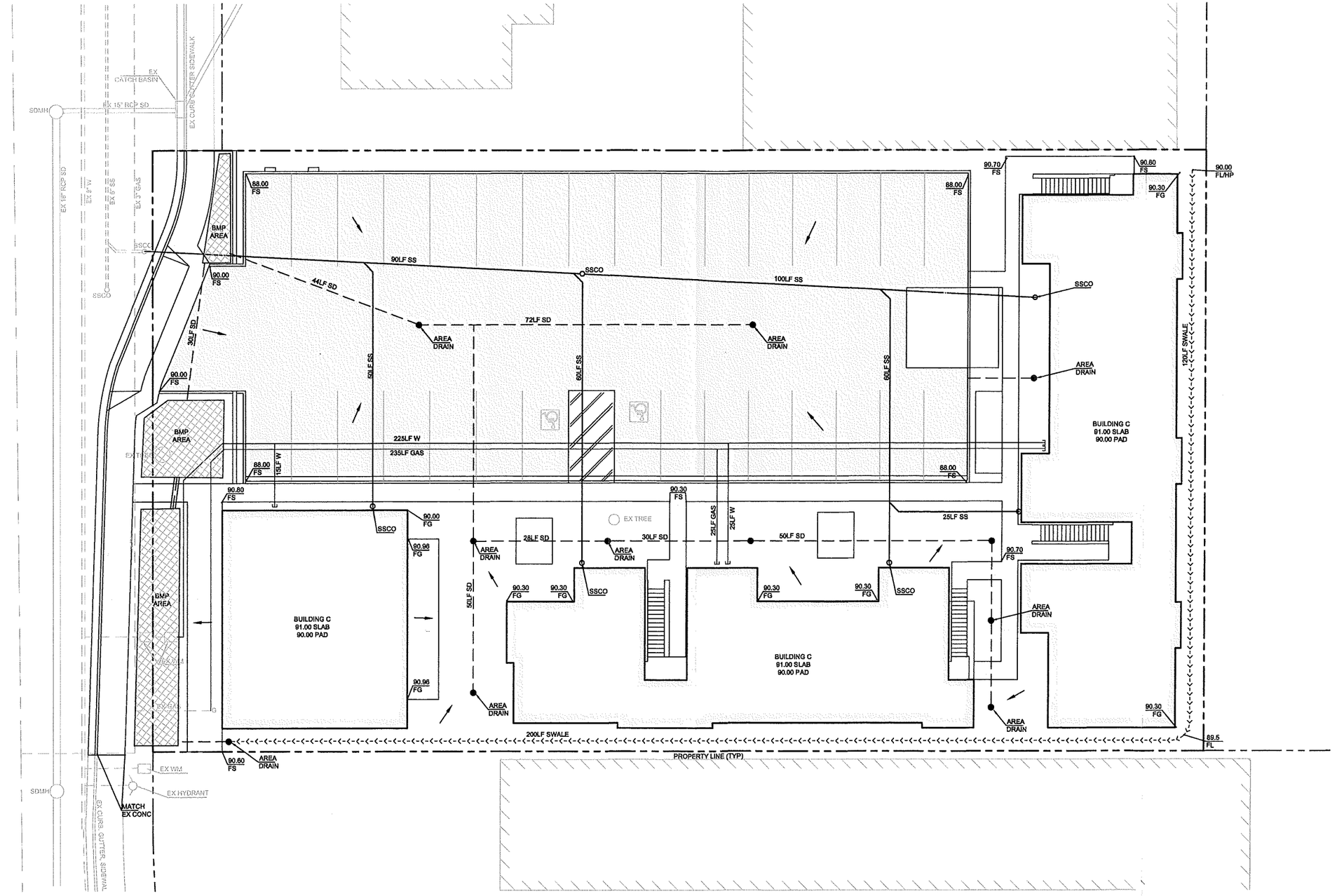
CHAD S. NOLL RCE 79721 — DATE

EXISTING SITE PLAN
19410 SONOMA HIGHWAY
19410 SONOMA HIGHWAY, SONOMA, CA 95476
APN: 018-442-005

REV	DATE	DESCRIPTION

DATE:	2/6/2017
DESIGN:	CSM
PROJECT:	17002

SHEET
C1
OF 4 SHEETS



PRELIMINARY GRADING AND UTILITY PLAN

0 5 10 20 40

SCALE: 1" = 10'

BEAR FLAG ENGINEERING INC

CIVIL ENGINEERING
LAND DEVELOPMENT
SEPTIC SYSTEM DESIGN
PROJECT MANAGEMENT
SURVEYING
BUILDING DESIGN

PO BOX 2103, SONOMA, CA 95476
PHONE: (707) 481-9472
OFFICE@BEARFLAGCIVIL.COM

REGISTERED PROFESSIONAL ENGINEER
CHAD S. MOLL
No. C 79721
Exp. 9/30/18
CIVIL
STATE OF CALIFORNIA

CHAD S. MOLL RCE 79721 — DATE

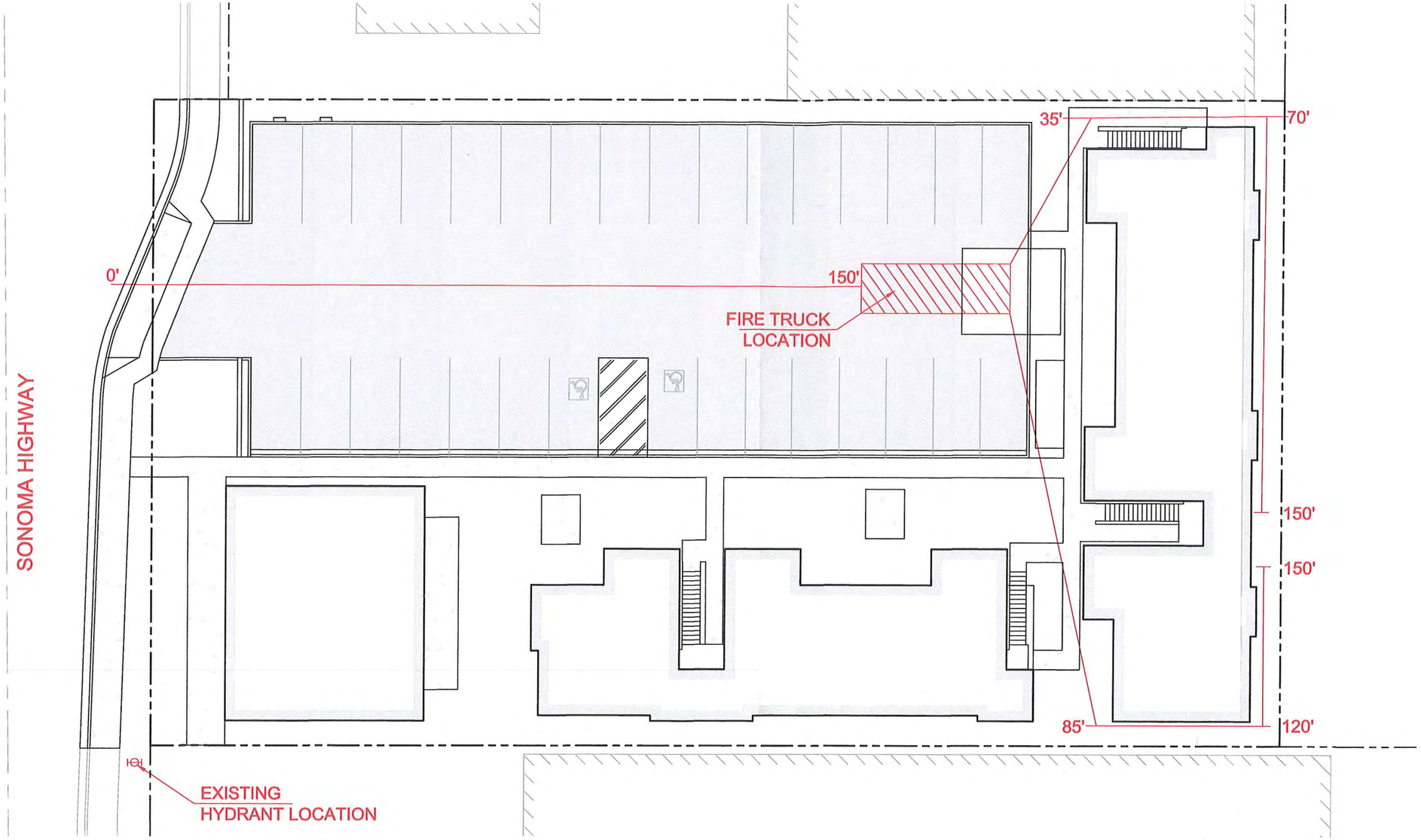
PRELIMINARY GRADING AND UTILITY PLAN

19410 SONOMA HIGHWAY, SONOMA, CA 95476
APN: 018-442-005

REV	DATE	DESCRIPTION

DATE: 2/6/2017
DESIGN: CSM
PROJECT: 17002

SHEET
C3
OF 4 SHEETS



FIRE ACCESS EXHIBIT

0 5 10 20 40

SCALE: 1"=10'

N

BEAR FLAG ENGINEERING INC

CIVIL ENGINEERING
LAND DEVELOPMENT
SEPTIC SYSTEM DESIGN
PROJECT MANAGEMENT
SURVEYING
BUILDING DESIGN

PO BOX 2133, SONOMA, CA 95476
PHONE: (707) 484-9472
OFFICE@BEARFLAGCIVIL.COM

REGISTERED PROFESSIONAL ENGINEER
CHAD S. MOLL
No. C 79721
Exp. 9/30/18
CIVIL
STATE OF CALIFORNIA

CHAD S. MOLL RCE 79721 DATE

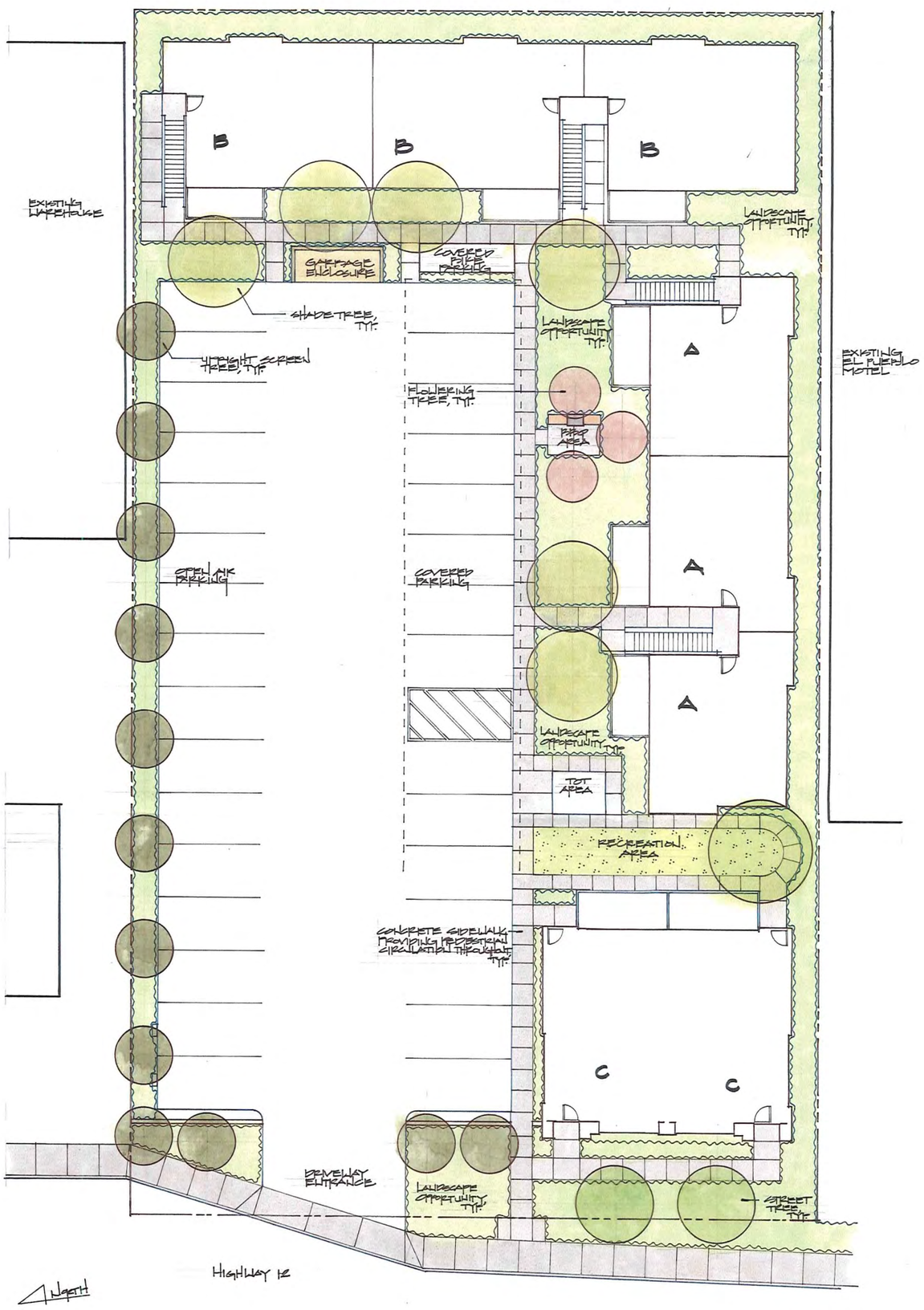
FIRE ACCESS EXHIBIT
19410 SONOMA HIGHWAY

19410 SONOMA HIGHWAY, SONOMA, CA 95476
APN: 018-442-005

REV	DATE	DESCRIPTION

DATE:	2/6/2017
DESIGN:	CSM
PROJECT:	17002

SHEET
C4
OF 4 SHEETS



SITE PLAN
1" = 10'-0"

2 MAY 2017

LANDSCAPE CONCEPT

19410 SONOMA HIGHWAY
SONOMA, CA

RON WELLANDER
LANDSCAPE ARCHITECT
License 2275

DESIGN

CONSTRUCTION MANAGEMENT

Attachment 2

19410 Sonoma Highway Residential / Live-Work Development Transportation Impact Study

Final Report

Prepared for:
City of Sonoma Planning Department

Prepared by:

May 2017

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 INTRODUCTION

This Transportation Impact Study (TIS) has been prepared as a resource document for the environmental evaluation of the 19410 Sonoma Highway Residential/Live-Work Development in the City of Sonoma (herein referred to as the "Project"). Transportation data were obtained from field observations and data collected by CHS Consulting Group (CHS) adjacent and in proximity to the Project. The purpose of the analysis presented in this study is to inform the environmental review of the Project.

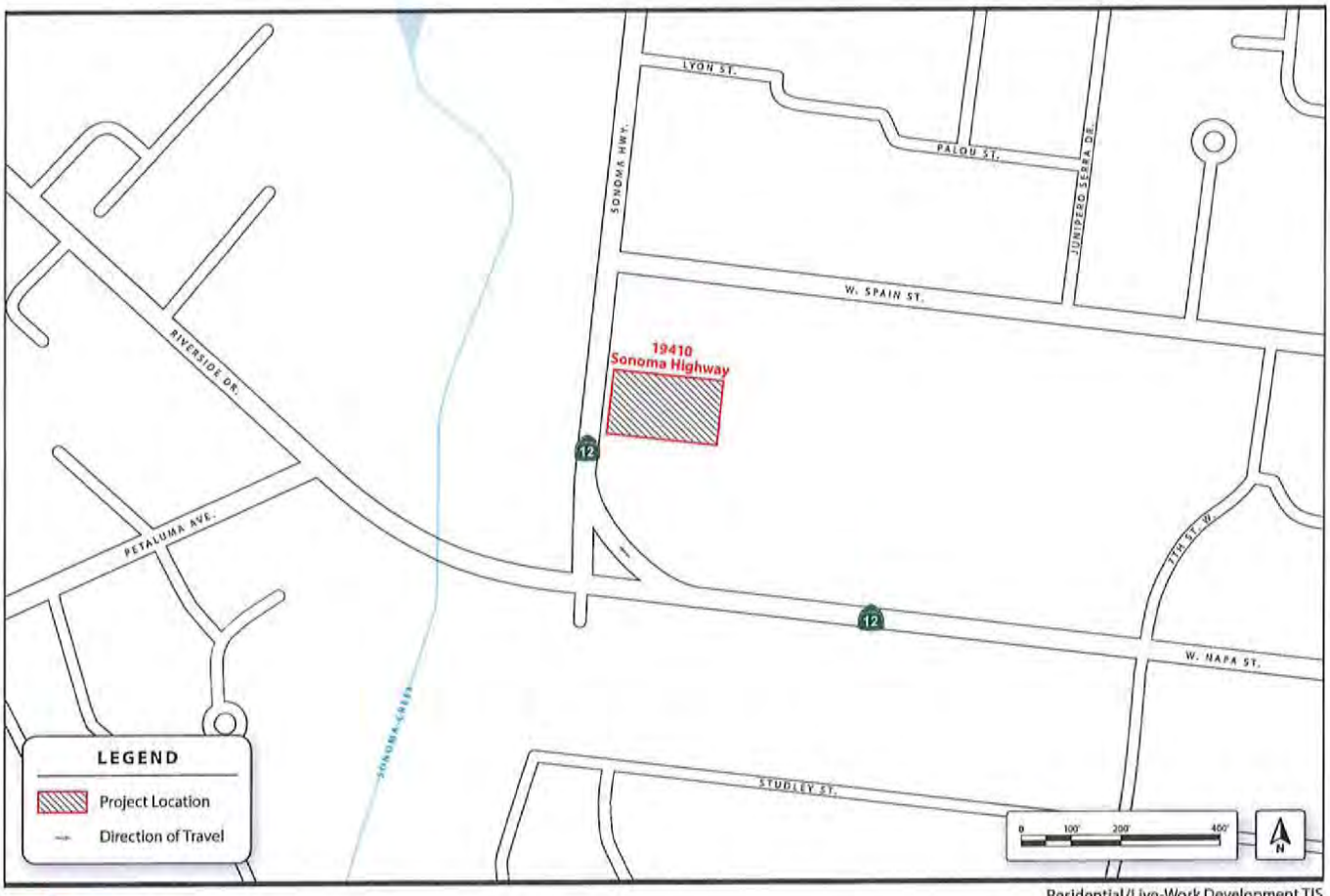
The following topics are addressed in this analysis:

- Existing Conditions - Traffic, Transit, Bicycle, and Pedestrian
- Existing plus Project Traffic Conditions
- Cumulative (2030) Traffic Conditions
- Cumulative (2030) plus Project Traffic Conditions

1.1 Project Location

The Project site is located at 19410 Sonoma Highway in the City of Sonoma, and consists of a single 38,603-square-foot (0.89-acre) lot. The project lot is approximately 300 feet north of the intersection of Sonoma Highway (SR 12), West Napa Street, and Riverside Drive in the City of Sonoma. The Project site is bounded by Sonoma Highway (SR 12) to the west and neighboring land uses to the north, east, and south. The Project site is located midblock on the east side of Sonoma Highway between West Spain Street and Riverside Drive/West Napa Street (see **Figure 1**).

The Project site is currently occupied by a single-family home, with circular driveway and no sidewalk along the Project frontage. Access by transit is available from Sonoma County Transit bus stops on Sonoma Highway. Land uses in the vicinity of the Project are primarily commercial use.



Residential/Live-Work Development TIS

Consulting Group

Figure 1
Project Location

1.2 Project Description

The Project would demolish the existing one-story residential unit and construct six 2-story buildings and a surface parking lot. The buildings would consist of 12 residential units comprising 6 one-bedroom units, 6 two-bedroom units, and two live/work units. The Project would provide a total of 21 off-street parking spaces including 2 handicap spaces and 2 EV station parking spots, all within a surface lot. In addition, Class II bicycle parking would be provided at the east end of the surface lot. Vehicular access to and from the Project would be provided via an approximately 27-foot-wide driveway access along Sonoma Highway on the west side of the Project site. Additionally, Project walking access would be from the east side of Sonoma Highway from existing and proposed sidewalks. **Figure 2** presents the site plan for the Project. Detailed floor plans for the Project are included in **Appendix A**.

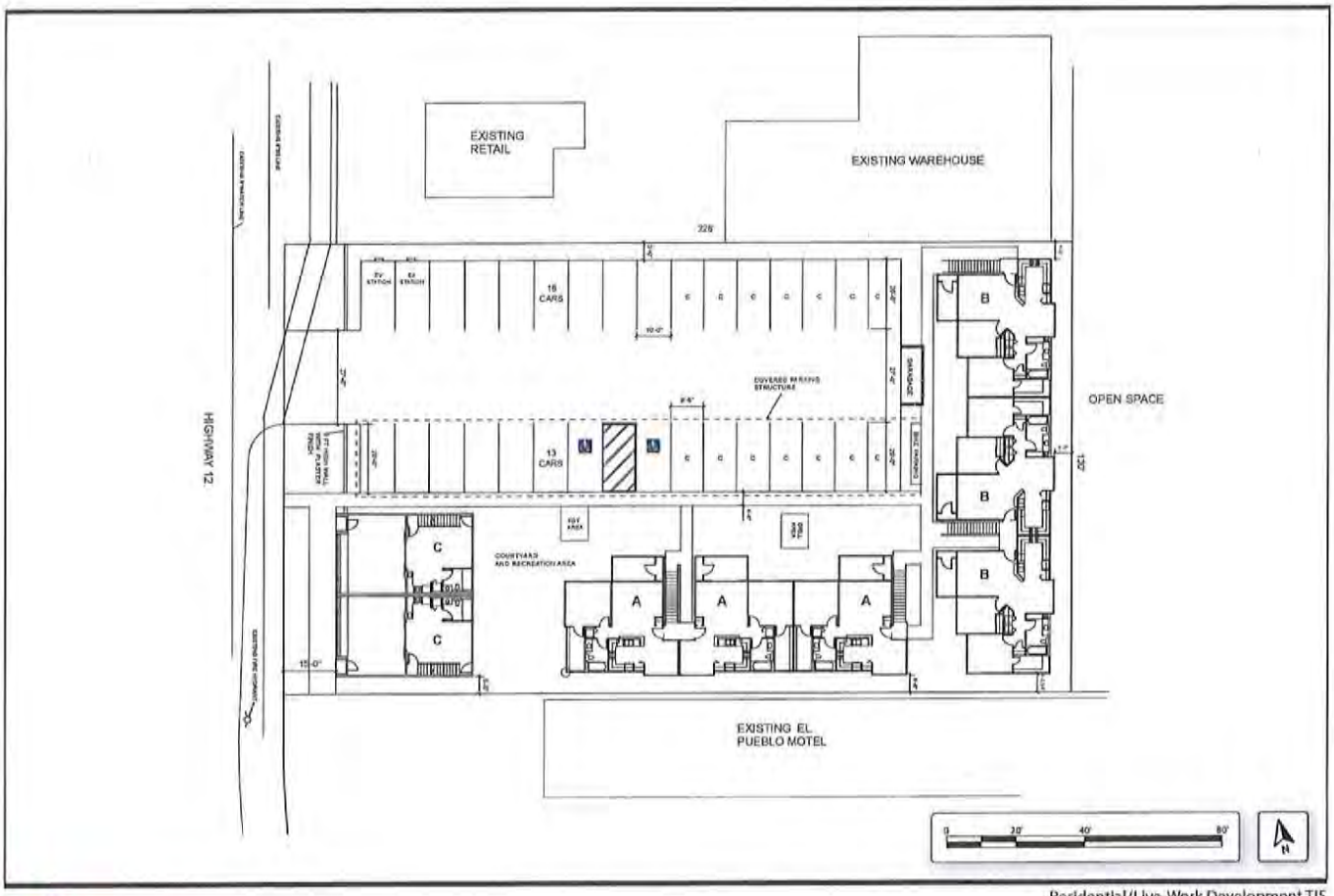
1.3 Study Scope and Approach

The purpose of the Transportation Impact Study (TIS) is to provide a comprehensive evaluation of the Project and to examine the extent to which the proposed development would affect the surrounding transportation network. The scope of work for this transportation study includes analysis of transportation impacts under Existing Conditions, Existing plus Project Conditions (LOS), Cumulative 2030 No Project Conditions, and Cumulative 2030 plus Project Conditions.

For purposes of assessing traffic conditions within the project environs, two study intersections that could be impacted by the Project were analyzed during the weekday morning, weekday evening, and weekend (Saturday) midday periods. Existing weekday AM, weekday PM, weekend (Saturday midday) peak period intersection vehicle, bicycle, and pedestrian turning movement counts for two study intersections were collected by CHS Consulting Group (CHS) on Wednesday, March 8th, 2017 between 7:00 a.m. and 9:00 a.m., between 4:00 p.m. and 6:00 p.m., and Saturday March 11, 2017 between 11:00 a.m. and 1:00 p.m. The study intersections are:

1. Sonoma Highway (SR 12)/West Napa Street (SR-12) – Riverside Drive
2. Sonoma Highway (SR 12)/West Spain Street

Public transit service is provided within a quarter-mile (or approximately 720-foot) walking distance to the Project site. This service is noted in terms of routes and stops in the study area, and impacts are discussed. Additionally, bicycle and pedestrian activity in the vicinity of the Project and their impacts are described qualitatively in the report.



Residential/Live-Work Development TIS

Consulting Group

Figure 2
Project Site Plan

2.0 SETTING

This section describes the existing transportation conditions in the study area for the Project, which is generally bounded by West Spain Street to the north, Sonoma Highway to the west, Riverside Drive/West Napa Street to the south, and 7th Street West to the east, as shown in **Figure 1**. The existing setting includes descriptions of the roadways and documentation of existing vehicular traffic, transit service, pedestrian, and bicycle conditions.[1]

2.1 Roadway Network

The following includes a discussion of existing roadway systems in the vicinity of the Project, including roadway designations, number of lanes, and traffic flow directions.

2.1.1 Regional Access

Regional access to the Project site is provided by Sonoma Highway (California State Route 12 or SR 12) and is described below.

Sonoma Highway (SR 12) is the portion of SR 12 that goes through the City of Sonoma. It runs north-south and provides access to the Project site in the northwest part of the city. Sonoma Highway is designated as a mixed use and commercial corridor and a Caltrans Touring Route in the City of Sonoma 2020 General Plan.[2] In the vicinity of the Project site, it has two 11-foot travel lanes in each direction and a two way left-turn lane, with no on-street parking on either side of the street. The annual average daily traffic volume on Sonoma Highway is approximately 20,600 vehicles based on the City of Sonoma Circulation Element Update Background Report.

2.1.2 Local Access

Within the project area, streets that run in the northwest/southeast direction (e.g. Sonoma Highway) are generally considered north-south streets, whereas streets that runs in the west/east direction (i.e., West Spain St., West Napa St., and Riverside Drive) are generally considered east-west streets. Vehicle, bicycle, and pedestrian access to the Project site would be to and from Sonoma Highway. Descriptions of local roadways in proximity to the Project site are presented below.

West Napa Street is a west-east arterial street designated as SR 12 that extends from Sonoma Highway (SR 12) to 1st Street West. In the vicinity of the Project site, it has one travel lane in each direction and on-street parking on both sides of street (approximately 215 feet east of intersection).

---

[1] Existing transportation conditions are assumed to represent existing conditions "on the ground" at the commencement of this study; no adjustments were made to account for changes to the transportation network or land use in the vicinity of the project site that may be completed, either partially or in whole, before the completion of the Proposed Project.

[2] Chapter 4, "Circulation Element," October 2006, *City of Sonoma 2020 General Plan; (Amendment to the Circulation of the General Plan)*, August 2014

Riverside Drive is a northwest-southeast arterial street that extends from Grove Street and ends at the intersection of Sonoma Highway and West Napa Street. It has one travel lane in each direction and on-street parking on both sides of the street.

West Spain Street is an east-west collector roadway that runs from the intersection of Riverside Drive and Sonoma Highway to 1st Street West. Silva Avenue has one travel lane in each direction, left turn middle lane, and on-street parking on both sides of the street.

2.2 Intersection Levels of Service

A total of two intersections were selected for analysis due to their close proximity to the Project site and the estimated number of project trips passing through these intersections. It is anticipated that all vehicles traveling to and from the Project site would pass through these intersections, and these intersections capture the largest effect from project-related traffic. It is further noted that project-generated vehicles would also travel through other intersections. However, project-related vehicles would tend to disperse among the available streets as they travel away from the site, thus the impact is also dispersed further away from the site. Study intersections include:

1. Sonoma Highway/West Napa Street –Riverside Drive
2. Sonoma Highway/West Spain Street

Intersection level of service (LOS) for each study intersection was analyzed for a 60-minute period when the highest traffic volume was recorded at each intersection during the peak period. Existing AM, PM, and weekend vehicle, bicycle, and pedestrian counts were collected by CHS in March 2017. Intersection turning movement count data is provided in **Appendix A**.

Traffic operating characteristics of intersections are described by the concept of LOS. LOS is a qualitative description of an intersection's performance based on the average delay per vehicle. Intersection LOS range from A, which indicates free flow or excellent conditions with short delays, to F, which indicates congested or overloaded conditions with extremely long delays. In the City of Sonoma, a minimum acceptable operating level of service for signalized and unsignalized intersections in all areas of the City is LOS D.

The intersections were evaluated using the *2010 Highway Capacity Manual* operations methodology. This method determines the capacity for each lane group approaching the intersection. LOS is then based on the average stopped delay per vehicle (seconds per vehicle) for the various movements within the intersection. **Table 1** presents the LOS and delay data for the study intersections under the existing conditions. Intersection LOS calculations are provided in **Appendix B.** As shown in **Table 1**, all study intersections currently operate at LOS D or better, at or above the adopted LOS standard, during the AM and PM peak hours under existing conditions. **Figure 3** presents the lane configurations and **Figure 4** presents the weekday AM and PM peak-hour turning movements for the study intersections under

Existing Conditions. Both the Sonoma Highway/West Spain Street and Sonoma Highway/Riverside Drive intersections operate at LOS B under all three peak hours, which is within acceptable City LOS standards.

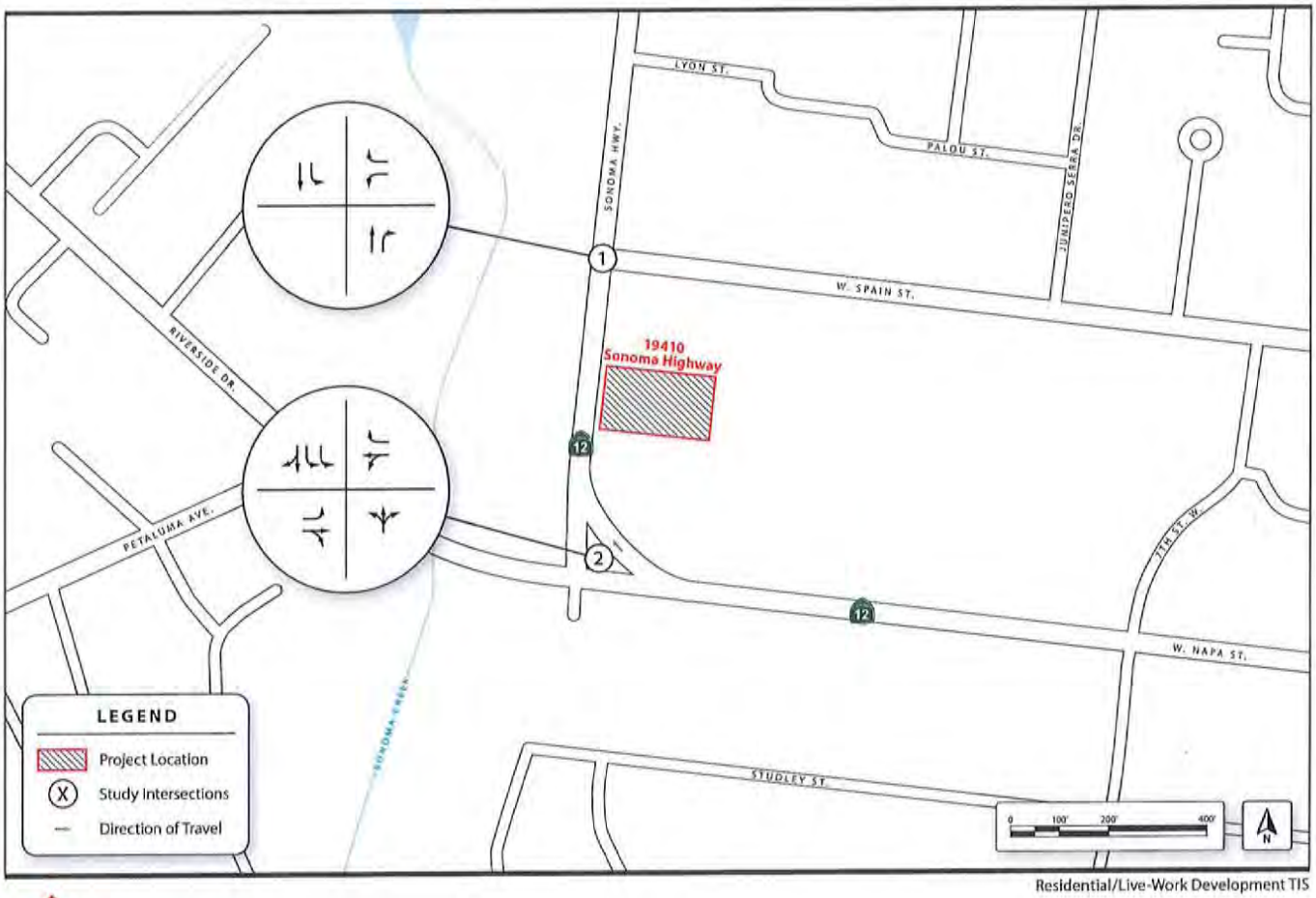
Table 1 – Intersection Level of Service: Existing Weekday AM & PM Peak Hour

Intersection	Control[1]	AM Peak Hour		PM Peak Hour		SAT Peak Hour	
		Delay[2]	LOS	Delay[2]	LOS	Delay	LOS
1. Sonoma Highway/ W. Spain Street	Signal	11.3	B	14.2	B	13.4	B
2. Sonoma Highway/ Riverside Drive	Signal	12.2	B	14.1	B	13.4	B

Source: CHS Consulting Group, 2017.

Notes:

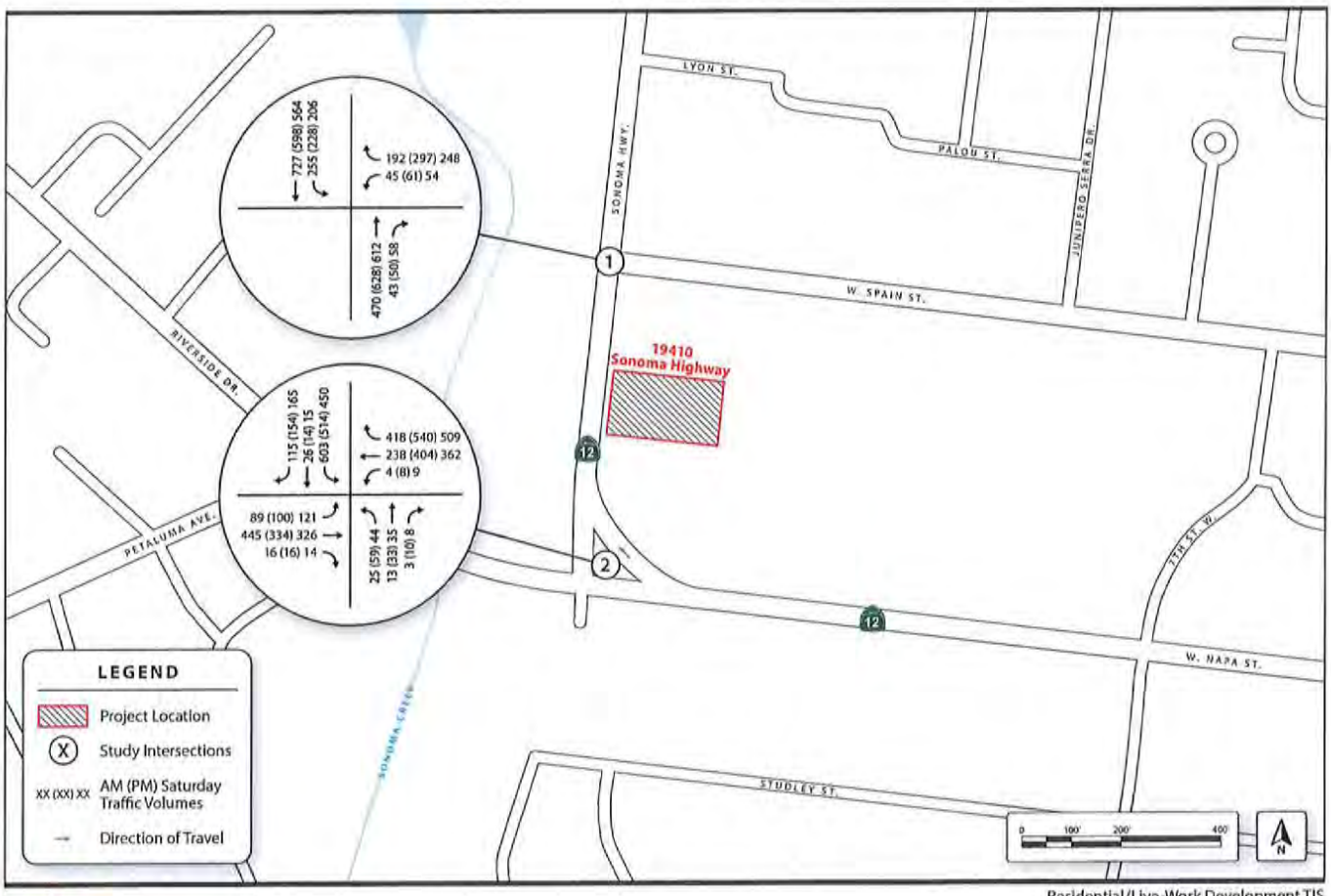
1. Delay reported as seconds per vehicle. For signalized intersections, a weighted average delay is reported. For unsignalized intersection, delay in the worst approach is reported.
2. LOS = Level of Service. City of Sonoma LOS standard is LOS D.



Residential/Live-Work Development TIS

Consulting Group

Figure 3
Existing Lane Configurations



Residential/Live-Work Development TIS

Consulting Group

Figure 4
Existing Traffic Volumes (AM, PM and Saturday)

2.3 Transit Network

The transit study area generally covers a two-block radius in each direction from the Project site (West Spain Street to the north, 7th Street West to the west, Riverside Drive and West Napa Street to the south, and Sonoma Highway to the east). The Project site is served by five bus routes provided by Sonoma County Transit (SCT). Regional service is primarily provided by SCT located about 0.4 miles southeast of the Project site and Valley Intercity Neighborhood Express (VINE Transit) located about 1.5 miles east of the Project site. **Figure 5** presents the transit lines in the vicinity of the Project site.

Sonoma County Transit is the primary local and regional public transportation provider in Sonoma County. Sonoma County Transit operates five routes (30/30x, 32, 34, and 38) in the vicinity of the Project site. Service headways, hours of operation, and related service information for weekdays are shown in **Table 2** and for weekends are shown in **Table 3.**

Table 2 – Local Sonoma County Transit Routes (Weekday)

Route	Direction	Weekday Headways		Hours of Operation	Nearest Stop Location	Distance to Project Site (feet)[2]	Cities Served by Route
		AM	PM				
30 - Santa Rosa/ Sonoma Valley	IB (east)	156	42	5:20 AM – 9:20 PM	Riverside Dr. & Petaluma Ave.	1,386	Santa Rosa, Kenwood/Glen Ellen, Sonoma
	OB (west)	74	106	5:50 AM – 8:35 PM	Highway 12 & 7th St. West	1,161	
30X – Santa Rosa/ Sonoma Valley	IB (east)	None	None	5:15 PM – 6:28 PM	Highway 12. & West Spain St.	756	Santa Rosa, Kenwood/Glen Ellen, Sonoma
	OB (west)	None	None	6:35 AM - 7:41 AM	Highway 12. & West Spain St.	160	
32 – Sonoma Valley	IB (south)	105	45	7:45 AM – 4:25 PM	Highway 12. & West Spain St.	756	Sonoma
	OB (north)	45	53	8:10 AM – 4:51 PM	Highway 12. & West Spain St.	160	
34 – Santa Rosa/ Sonoma	IB (east)	None	None	6:45 AM – 7:53AM	Highway 12. & West Spain St.	756	Santa Rosa, Kenwood/Glen Ellen, Sonoma
	OB (west)	None	None	4:35 PM – 5:45 PM	Highway 12. & West Spain St.	160	
38 – Sonoma/ San Rafael	IB (south)	None	None	5:45 AM – 7:07 AM	Riverside Dr. & Petaluma Ave.	1,386	Kenwood/Glen Ellen, Sonoma Valley/Sonoma, San Rafael
	OB (north)	None	None	6:26 PM – 7:48 PM	Highway 12 & 7th St. West	1,161	

Source: Sonoma County Transit (2017).

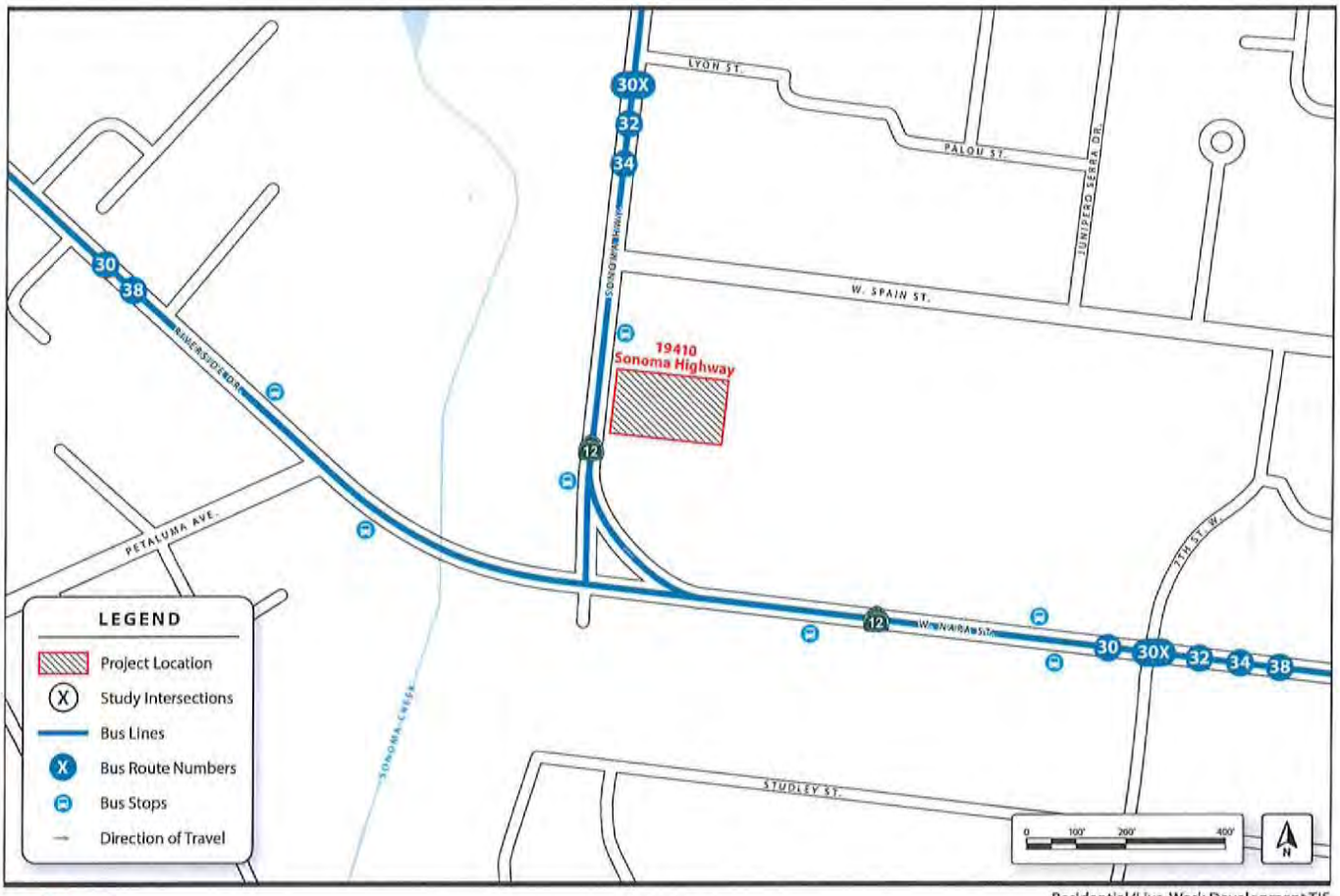
Table 3 – Local Sonoma County Transit Routes (Weekend)

Route	Direction	Weekend Headways		Hours of Operation	Nearest Stop Location	Distance to Project Site (feet)[2]	Cities Served by Route
		AM	PM				
30 - Santa Rosa/ Sonoma Valley	IB (east)	None	195	7:25 AM – 7:11 PM	Riverside Dr. & Petaluma Ave.	1,386	Santa Rosa, Kenwood/Glen Ellen, Sonoma
	OB (west)	None	191	9:05 AM – 8:12 PM	Highway 12 & 7th St. West	1,161	
32 – Sonoma Valley	IB (south)	75	75	9:00 AM – 2:40 PM	Highway 12. & West Spain St.	756	Sonoma
	OB (north)	75	75	9:45 AM – 2:14 PM	Highway 12. & West Spain St.	160	

Source: Sonoma County Transit (2017).

VINE Transit (Valley Intercity Neighborhood Express) operates bus service in Napa County; including service in Sonoma. VINE Transit operates one route (25) in the vicinity of the project. Route 25 is an east and westbound bus line that provides regional transit service between Sonoma Valley and Napa. The route operates from 7:10 a.m. to 7:11 p.m. on weekdays only with a.m. headway of 50 minutes and p.m. headway of 110 minutes during the peak commute and midday periods. The closest stop to the Project site is located on the west side of Sonoma Plaza, approximately one mile east of the project area.

Volunteer Wheels is a door-to-door paratransit service run by Sonoma County Transit. Rides are provided in Sonoma Valley, Guerneville and the Monte Rio area by making a schedule reservation between 8:00 a.m. and 5:00 p.m. Monday – Friday (9:00 a.m. on weekends).



Residential/Live-Work Development TIS

Consulting Group

Figure 5
Existing Transit Network

2.4 Pedestrian Conditions

Pedestrian amenities generally include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape and landscape amenities (benches, tree-lined buffers, planters, bulb-outs, street lighting, etc.). The Project site is located within a general commercial area, and sidewalks are generally provided along the east side of Sonoma Highway in the immediate Project vicinity, with the exception of the Project frontage, a gap that the Project sponsor proposes to address.

Based on collected counts, there are approximately 30 pedestrian crossings at the Sonoma Highway and West Spain Street intersection, totaled over the three 2-hour peak periods. AM peak period pedestrian crossings across the south leg total 6 pedestrians and across the east leg total 4 pedestrians. The PM peak period pedestrian crossings total 4 pedestrians across the south leg and 6 pedestrians across the east leg. The Saturday midday peak period crossings total 9 pedestrians across the east leg, with none across the south leg.

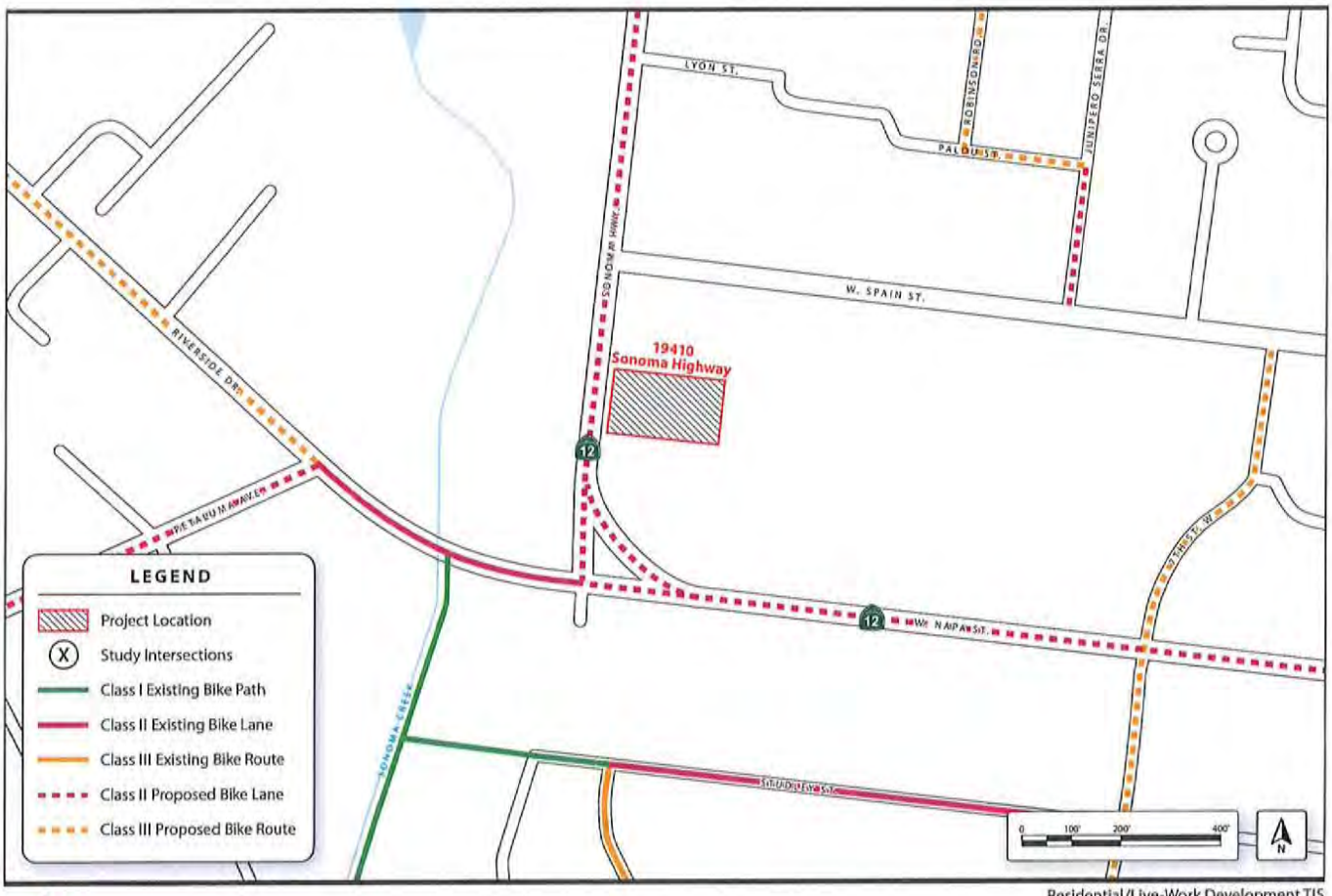
Similarly at the West Napa St/Riverside Drive intersection, the AM peak period pedestrian crossings total 6 pedestrians across the west leg and one pedestrian across the south leg. PM peak period pedestrian crossings total 13 pedestrians across the west leg and 12 pedestrians across the south leg. Saturday midday peak period pedestrian crossings total 17 across the west leg and 13 across the south leg.

2.5 Bicycle Conditions

In the Project vicinity, there is a Class I bicycle path (separated right-of-way path for bicycle and pedestrians) that runs along Sonoma Creek for half a mile located approximately 380 feet south of the Project Area. Additionally there is a short (450 feet) Class II bicycle lane on Riverside Drive between Petaluma Avenue and ending near the intersection of Sonoma Highway and Riverside Drive/West Napa Street. There are no bikeway facilities currently on SR 12 (Sonoma Highway and West Napa Street) in the City of Sonoma and near the Project site. Also, there are no bikeway facilities currently on West Spain Street.

According to the Circulation Element Update, a Class II bike lane is proposed along Sonoma Highway and West Napa Street to Broadway (near Sonoma Plaza). **Figure 6** illustrates the location of the proposed and existing bikeways near the Project site.

Based upon the bicycle counts collected at the Sonoma Highway and West Spain Street intersection in March 2017, there are approximately 3 total bicyclists traveling in both directions in the AM peak hour along Sonoma Highway adjacent to the Project site. Similarly, there are 7 total bicyclists in the PM peak hour and 14 total bicyclists during the Saturday midday peak hour traveling adjacent to the Project site.



Residential/Live-Work Development TIS

Consulting Group

Figure 6
Existing and Proposed Bicycle Network

3.0 PROJECT TRAVEL DEMAND

This section estimates the travel demand to be generated by the Project. Travel demand refers to the new vehicle, transit, bicycle, and pedestrian trips generated by the Project.

3.1 Trip Generation

Vehicle trip generation for the Project was calculated based on the proposed number of residential dwelling units. Vehicle trip generation estimation was based on the rates provided in the *ITE Trip Generation Manual 9th Edition.*[3] **Table 4** presents the Project trip generation using the ITE rate for Low-Rise Apartment (Land Use 221). It is noted that while the Project would include 2 live/work units, for conservative (worst-case) trip estimation purposes, these units were analyzed as residential units. As a result, the Project would generate approximately 92 vehicle trips on a typical weekday, of which approximately 6 trips would occur during the AM peak hour and 8 trips would occur during the PM peak hour. Approximately 8 trips would occur during the Saturday peak hour.

Table 4 – Project Vehicle Trip Generation

Land Use	ITE Code	Daily	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
Residential (14 units)	221	92	1	5	6	5	3	8	4	4	8

Source: ITE *Trip Generation Manual (9th Edition).*

3.2 Trip Distribution

CHS estimated Project vehicle trip distribution based on collected traffic counts and prior knowledge of the study area. In general, approximately 30 percent of vehicles would travel to and from north of the Project site via Sonoma Highway, 20 percent would travel to and from west of the Project site via Riverside Drive, and the remaining 50 percent would travel to and from east of the Project site via West Napa Street. **Table 5** summarizes the extent to which study intersections would experience an increase in vehicle trips due to the Project. The intersection of Sonoma Highway and West Spain Street immediately north of the Project site would experience the highest increase in vehicle trips with approximately 5, 4, and 4 project trips added during the AM, PM, and Saturday peak hours, respectively. These trips would likely spread to east and north directions along Sonoma Highway and West Spain

[3] It is noted that the *ITE Trip Generation Manual* provides guidance on estimating traffic generation for various land use development based on observations conducted across the United States. While transportation conditions likely vary among these locations, residences and retail uses in the *ITE Manual* were primarily located outside of central business districts in suburban areas. Thus, these national rates used in generating project trips represent a conservative estimate for only vehicle trips and do not account for trips by other modes of transportation (i.e., transit, bike, and walk).

Street, and the Sonoma Highway and Riverside/West Napa study intersections would experience slightly less project trips during the AM peak hour, but experience similar trips for PM and Saturday peak hours.

Table 5 – Added Project Vehicle Trips to Study Intersections

Intersection	Control	Project Trips		
		AM Peak	PM Peak	Saturday Peak
1. Sonoma Highway/W. Spain Street	Signal	5	4	5
2. Sonoma Highway/Riverside Drive	Signal	1	4	4

Source: CHS Consulting Group, April 2017

3.3 Left-turn Channelization, Access and Circulation

The need for a left-turn channelization on Sonoma Highway (SR 12) at the Project access was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as a more recent update of the methodology developed by the Washington State Department of Transportation. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected traffic volumes in order to determine the need for a left-turn pocket based on safety issues. Based on discussions with Caltrans staff, this methodology is consistent with the "Guidelines for Reconstruction of Intersections," August 1985, which is referenced in Section 405.2, Left-turn Channelization, of the *Caltrans Highway Design Manual*. The Project is expected to generate a maximum of 1 left-turning vehicle during the weekday PM peak hour accessing the Project site. A review of AM and PM peak hour volumes under Existing Conditions, and PM under Cumulative Conditions, with the addition project traffic volumes was reviewed to determine the need for a left-turn lane under each scenario. The findings of the left-turn channelization review are provided in each impact analysis section.

In addition to the need for left-turn channelization, stopping sight distance for left-turning vehicles at the project driveway was evaluated. As provided in the *Highway Design Manual* (2016), Index 405.1, Stopping Distance (SSD) would be the controlling factor for the safety of vehicles access the project driveway from Sonoma Highway. For the posted speed limit of 30 mph, the SSD would be 200 feet. For vehicles approaching the Project driveway from southbound Sonoma Highway, there is in excess of 250 feet of clear sight distance to the advancing northbound traffic. It should be noted that while the adjacent intersection of Sonoma Highway and Napa Street is approximately 400 feet south of the Project driveway, the westbound to northbound movement is free, with a stop controlled northbound movement. The 250 feet of clear sight distance is from the convergence of the free right and stop controlled movements. Speed data were collected along the free right-turn movement to verify acceptable sight distance for the conditions, and the 85th percentile, or critical speed of this movement is 30 mph.

4.0 TRANSPORTATION IMPACT ANALYSIS

This chapter presents the assessment of transportation impacts due to travel demand generated by the Project.

4.1 Significance Criteria

The *City of Sonoma General Plan* Circulation Element outlines various goals, policies and programs relevant to transportation and traffic. The policies relevant to the Project are described below.

- Goal CE-1: Provide a safe walking environment throughout Sonoma.
  - Policies 1 through 4 aim to guide pedestrians to routes away from major streets, provide safe sidewalks and crosswalks, and establish a system of hiking trails

- GOAL CE-2: Establish Sonoma as a place where bicycling is safe and convenient.
  - Policies 1 through 5 support bicycling as an alternative mode of transportation with plans to extend the bike facility network in the City, increase bike storage, and address conflicts between bicycles, vehicles, and pedestrians.

- GOAL CE-3: Minimize vehicle trips while ensuring safe and convenient access to activity centers and maintaining Sonoma's small-town character.
  - Policy 1 aims to promote safety while policies 2 through 4 encourage mixed use development, public transit, and shared parking. Policies 5 through 9 focus on the road geometrics in favor of slower speeds and more alternative mode use, and policy 10 promises to preserve the small-town character of the downtown area.

4.2 Existing plus Project Conditions

4.2.1 Traffic Impacts

Intersection Conditions

The Project would generate approximately 92 new vehicle-trips during the weekday AM peak hour (1 inbound and 5 outbound), 8 new vehicle-trips during the weekday PM peak hour (5 inbound and 3 outbound), and Saturday midday peak hour (4 inbound and 4 outbound). The Existing plus Project traffic volumes for the AM, PM, and Saturday (midday) peak hours resulting from distribution of these Project trips are presented in **Figure 7**. **Table 6** presents the resulting LOS and delay data for study intersections under the Existing and Existing plus Project conditions. The Project would result in no change to the average delay per vehicle at study intersections during all three peak hours. Both study intersections would continue to operate at acceptable conditions (LOS B) with implementation of the

Project under Existing plus Project Conditions. Therefore, the Project impacts related to traffic would be considered ***less than significant***. Intersection LOS calculations are provided in **Appendix B**.

Table 6 – Intersection Level of Service:
Existing plus Project AM, PM, Saturday (Midday) Peak Hours

Intersection	Control	AM Peak Hour		PM Peak Hour		SAT Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1. Sonoma Highway/ W. Spain Street	Signal	11.3	B	14.2	B	13.4	B
2. Sonoma Highway/ Riverside Drive	Signal	12.2	B	14.1	B	13.4	B

Source: CHS Consulting Group, 2017.
Notes:
1. Delay reported as seconds per vehicle. For signalized intersections, a weighted average delay is reported. For unsignalized intersection, delay in the worst approach is reported.

4.2.2 Transit Impacts

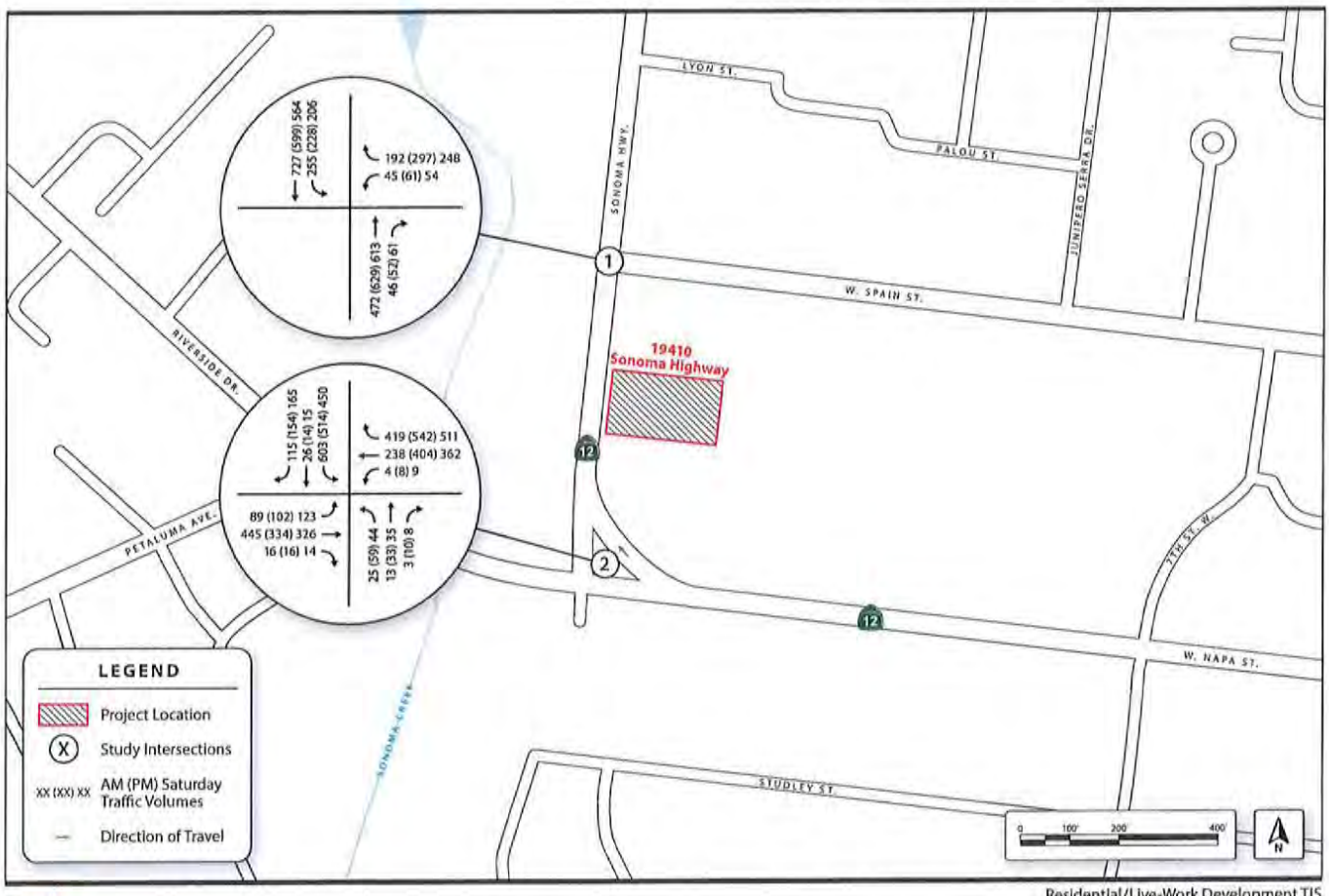
The Project would generate minimal transit trips during the weekday AM, PM, and Saturday peak hours. In general, local and regional transit lines in the study area have ample capacity that would be able to absorb any additional transit trips generated by the Project without affecting overall transit capacity. As a result, no impacts to existing transit service due to the Project are expected.

4.2.3 Bicycle and Pedestrian Impacts

The Project would generate minimal bicycle and pedestrian trips during the weekday AM, PM, and Saturday peak hours. As a result, no impacts are expected to local bicycle and pedestrian facilities within the study area. However, as part of the Project, the Project sponsor proposes an improvement to install sidewalk along the Project frontage that would result in continuous sidewalk along the east side of Sonoma Highway between West Napa Street and West Spain Street.

4.2.4 Turn Lane Warrant Analysis – Existing plus Project Conditions

Under Existing plus Project conditions, the Project would be expected to generate just one left-turning vehicle during the p.m. peak hour and no left-turns during either the a.m. or weekend peak hours. Advancing, left-turn, and opposing volumes were considered in evaluation of the left-turn channelization. As provided in the attached analysis for the PM peak period, left-turn channelization on Sonoma Highway into the Project driveway is therefore not warranted.



Residential/Live-Work Development TIS

Consulting Group

Figure 7
Existing Plus Project Traffic Volumes (AM, PM and Saturday)

4.3 Cumulative (2030) Conditions

4.3.1 Cumulative (2030) Traffic Impacts

Future (cumulative year 2030) traffic volumes at the study intersections were developed using future cumulative traffic volumes developed and presented in the City of Sonoma Circulation Element Update. Given that the highest traffic volumes at the study intersections occurred during the PM peak hour consistent with the Circulation Element Update, only the PM peak hour was analyzed to assess impacts. Additionally, although the Project is generally consistent with the City's current General Plan, for conservative (worst-case) analysis purposes, the Cumulative volumes are assumed to not include Project trips.

The resulting Cumulative (2030) Conditions intersection traffic volumes for the weekday PM peak hour are presented in **Figure 8. Table 7** summarizes the intersection LOS and delay at study intersections under Cumulative (2030) Conditions without the Project. Intersection LOS calculations are provided in **Appendix B**. Both intersections are expected to operate at LOS D or better during the PM peak hour, which remains within acceptable City LOS standards.

Table 7 – Intersection Level of Service:
2030 Cumulative Weekday PM Peak Hour

Intersection	Control[1]	PM Peak Hour	
		Delay[2]	LOS
1. Sonoma Highway/W. Spain Street	Signal	36.0	D
2. Sonoma Highway/Riverside Drive	Signal	14.3	B

Source: CHS Consulting Group, 2017.
Notes:
1. Cumulative 2030 scenario assumes signal optimization throughout the roadway network.
2. Delay reported as seconds per vehicle. For signalized intersections, a weighted average delay is reported. For unsignalized intersection, delay in the worst approach is reported.
BOLD indicates unacceptable LOS conditions.

4.3.2 Cumulative (2030) plus Project Traffic Impacts

The Cumulative (2030) plus Project analysis scenario is similar to the Cumulative Conditions, but with the addition of vehicle trips generated by the Project at the study intersections. **Figure 9** shows traffic volumes at the study intersections under Cumulative (2030) plus Project Conditions resulting from the addition of Project vehicle trips. **Table 8** summarizes the intersection LOS and delay at study intersections under Cumulative (2030) plus Project Conditions. Intersection LOS calculations are provided in **Appendix B**. Both study intersections would continue to operate at acceptable conditions during the PM peak hour (LOS D or better) with implementation of the Project under Cumulative (2030) plus Project Conditions. Therefore, the Project impacts related to traffic would be considered ***less than significant*** in the Cumulative (2030) year.

Table 8 – Intersection Level of Service:
2030 Cumulative plus Project Weekday PM Peak Hour

Intersection	Control[1]	PM Peak Hour	
		Delay[2]	LOS
1. Sonoma Highway/ W. Spain Street	Signal	35.3	D
2. Sonoma Highway/ Riverside Drive	Signal	14.3	B

Source: CHS Consulting Group, 2017.

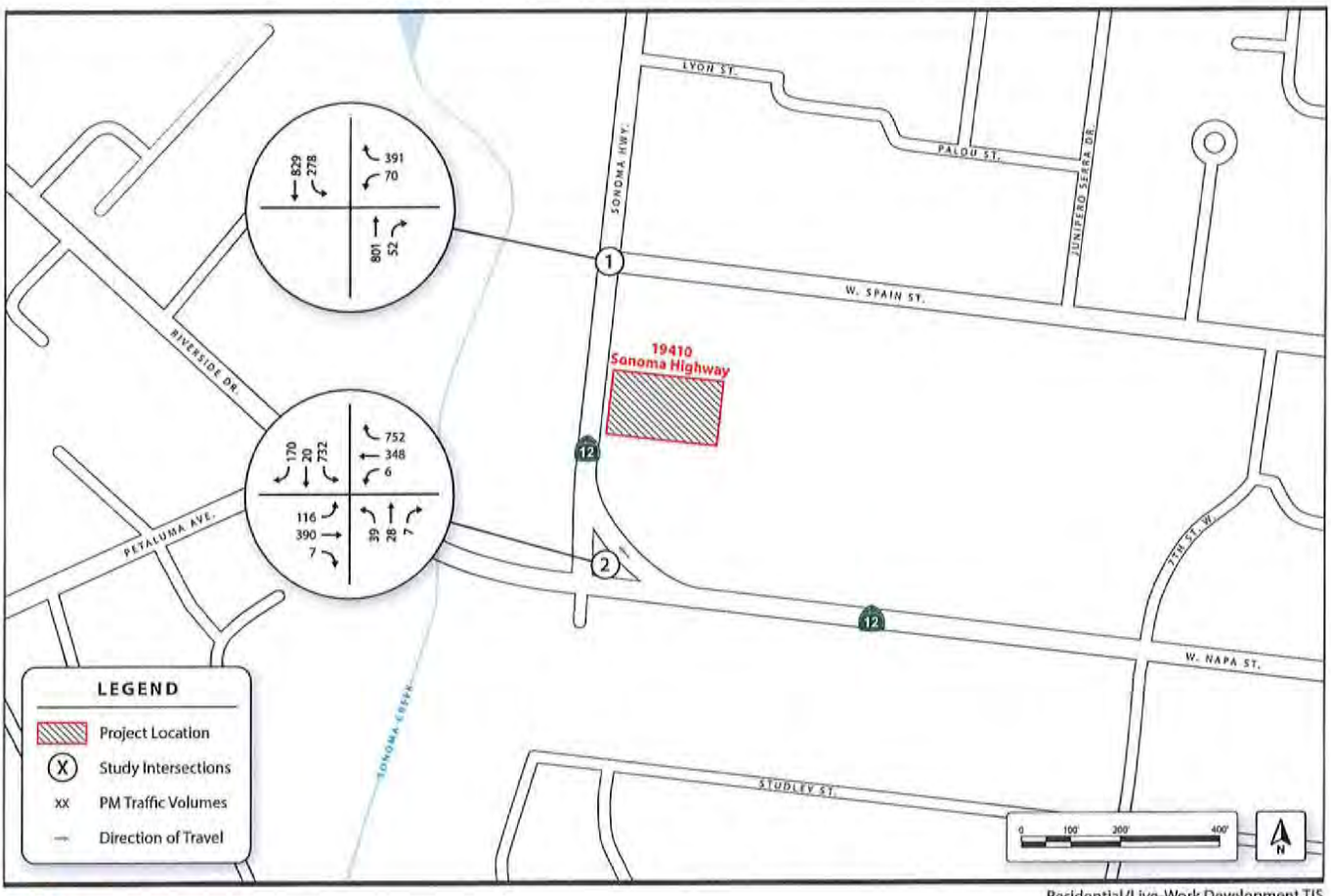
Notes:

1. Cumulative 2030 scenario assumes signal optimization throughout the roadway network.
2. Delay reported as seconds per vehicle. For signalized intersections, a weighted average delay is reported. For unsignalized intersection, delay in the worst approach is reported.

BOLD indicates unacceptable LOS conditions.

4.3.3 Turn Lane Warrant Analysis – Cumulative plus Project Conditions

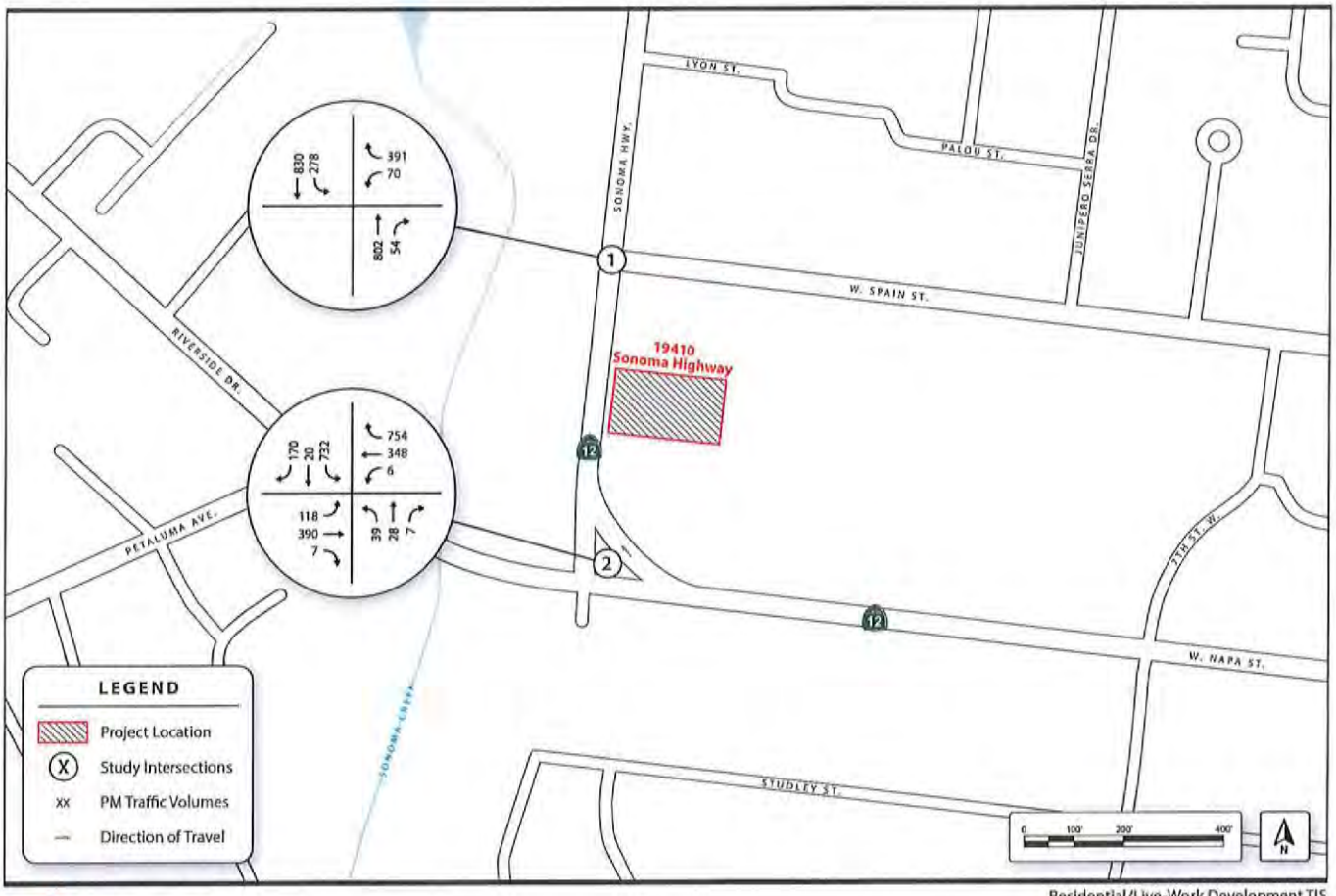
Under Cumulative plus Project conditions, the Project would be expected to generate just one left-turning vehicle during the p.m. peak hour and no left-turns during either the a.m. or weekend peak hours. Advancing, left-turn, and opposing volumes were considered in evaluation of the left-turn channelization. As provided in the attached analysis for the p.m. peak period, left-turn channelization on Sonoma Highway into the Project driveway is therefore not warranted.



Residential/Live-Work Development TIS

Consulting Group

Figure 8
2030 Cumulative PM Traffic Volumes



Residential/Live-Work Development TIS

Consulting Group

Figure 9
2030 Cumulative PM Plus Project Traffic Volumes

5.0 CONCLUSION & RECOMMENDATIONS

The following conclusions and recommendations have been reached for the Project:

- The Project would generate approximately 92 vehicle trips on a typical weekday, of which approximately 6 trips would occur during the AM peak hour and 8 trips would occur during the PM peak hour. Approximately 8 trips would occur during the Saturday peak hour.

- Under Existing Conditions, both the Sonoma Highway/West Spain Street and Sonoma Highway/Riverside Drive intersections operate at LOS B under all three peak hours, which is within acceptable City LOS standards.

- Both study intersections would continue to operate at acceptable conditions (LOS B) with implementation of the Project under Existing plus Project Conditions. Therefore, the project impacts related to traffic would be considered ***less than significant***.

- Under Cumulative Conditions without the Project, both intersections are expected to operate at LOS D or better during the PM peak hour, which remains within acceptable City LOS standards.

- Under Cumulative plus Project Conditions, both study intersections would continue to operate at acceptable conditions during the PM peak hour (LOS D or better) with implementation of the Project under Cumulative (2030) plus Project Conditions. Therefore, the Project impacts related to traffic would be considered ***less than significant*** in the Cumulative (2030) year.

- Under both Existing plus Project and Cumulative plus Project Conditions, the Project would be expected to generate just one left-turning vehicle during the p.m. peak hour and no left-turns during either the a.m. or Saturday weekend peak hours. Based on low traffic volume levels, left-turn channelization on Sonoma Highway into the Project driveway is therefore not warranted.

- Although there is adequate sight distance at the Project driveway for both directions of Sonoma Highway based on field observations and a posted 30 mph speed limit, it should be noted that there is approximately 250 feet of clear sight distance to the driveway, as measured from the merge point of the westbound free right turn from West Napa Street onto northbound Sonoma Highway. To address this issue, the Project proposes to construct the driveway so that outbound Project left turns are prohibited onto southbound Sonoma Highway.

- To enhance local pedestrian circulation and access to/from the Project, the Project sponsor would close the existing sidewalk gap on the east side of Sonoma Highway by constructing new sidewalk along the Project frontage.

Consulting Group

Appendices

Appendix A Intersection Turning Movement Counts

Appendix B Intersection LOS Calculations

Appendix C Left-Turn Warrant Analysis Sheets

APPENDIX A – INTERSECTION TURNING MOVEMENTS COUNTS

Counts Unlimited, Inc
PO Box 1178
Corona, CA 92878
Phone: 951-268-6268
email: counts@countsunlimited.com

City of Sonoma
Free Flow Right Turn from
Napa Street to Sonoma Highway
24 Hour Directional Volume Count

SNM001
Site Code: 220-17108

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/08/17	0	0	1	16	11	2	0	0	0	0	0	0	0	0	30
01:00	0	0	3	4	2	2	0	0	0	0	0	0	0	0	11
02:00	0	0	1	9	4	1	0	0	0	0	0	0	0	0	15
03:00	0	0	1	5	1	0	0	0	0	0	0	0	0	0	7
04:00	0	0	3	12	14	3	1	0	0	0	0	0	0	0	33
05:00	0	0	8	44	35	1	2	0	0	0	0	0	0	0	90
06:00	0	1	22	86	62	5	0	0	0	0	0	0	0	0	176
07:00	0	3	39	214	124	5	0	0	0	0	0	0	0	0	385
08:00	0	4	64	256	91	6	0	0	0	0	0	0	0	0	421
09:00	1	3	58	241	70	0	0	0	0	0	0	0	0	0	373
10:00	6	5	98	272	59	3	0	0	0	0	0	0	0	0	443
11:00	18	5	81	269	52	1	0	0	0	0	0	0	0	0	426
12 PM	29	17	106	280	51	0	0	0	0	0	0	0	0	0	483
13:00	16	1	110	291	56	3	0	0	0	0	0	0	0	0	477
14:00	34	23	129	310	50	0	0	0	0	0	0	0	0	0	546
15:00	16	10	118	320	56	1	0	0	0	0	0	0	0	0	521
16:00	27	8	134	303	76	2	0	0	0	0	0	0	0	0	550
17:00	68	28	159	251	40	4	0	0	0	0	0	0	0	0	550
18:00	6	12	120	280	47	1	0	0	0	0	0	0	0	0	466
19:00	1	10	82	237	33	2	0	0	0	0	0	0	0	0	365
20:00	0	4	56	181	31	1	0	0	0	0	0	0	0	0	273
21:00	0	1	39	142	38	3	0	0	0	0	0	0	0	0	223
22:00	0	0	18	68	28	7	0	0	0	0	0	0	0	0	121
23:00	0	2	9	24	15	0	0	0	0	0	0	0	0	0	50
Total	222	137	1459	4115	1046	53	3	0	0	0	0	0	0	0	7035

Daily

15th Percentile :	22 MPH
50th Percentile :	27 MPH
85th Percentile :	30 MPH
95th Percentile :	33 MPH

Statistics

Mean Speed(Average) :	27 MPH
10 MPH Pace Speed :	21-30 MPH
Number in Pace :	5574
Percent in Pace :	79.2%
Number of Vehicles > 55 MPH :	0
Percent of Vehicles > 55 MPH :	0.0%

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Passenger Vehicles

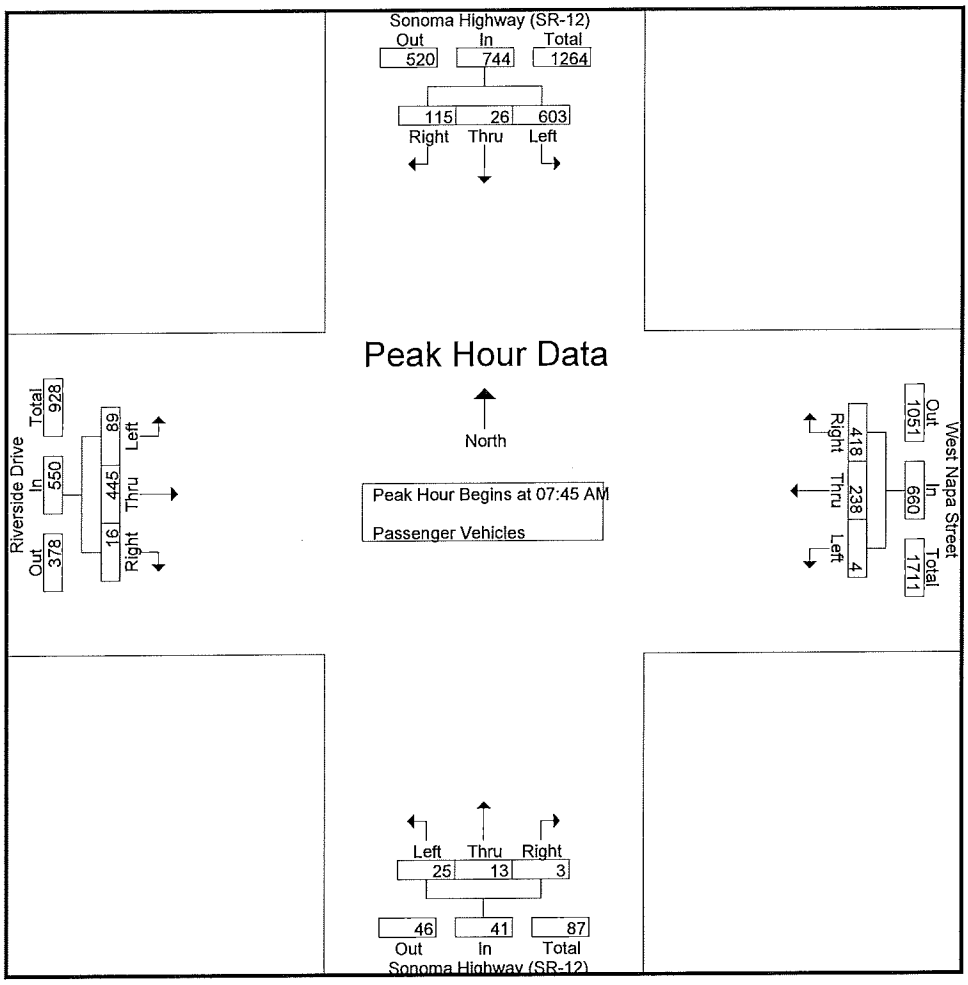
	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	192	1	31	224	0	28	75	103	2	3	0	5	12	72	1	85	417
07:15 AM	145	2	29	176	0	49	106	155	4	3	0	7	7	70	0	77	415
07:30 AM	188	0	29	217	0	28	106	134	5	3	1	9	18	74	2	94	454
07:45 AM	184	3	30	217	0	57	97	154	3	1	0	4	30	115	5	150	525
Total	709	6	119	834	0	162	384	546	14	10	1	25	67	331	8	406	1811
08:00 AM	154	11	19	184	1	42	105	148	6	0	0	6	18	101	8	127	465
08:15 AM	135	5	32	172	3	86	118	207	12	8	0	20	22	128	1	151	550
08:30 AM	130	7	34	171	0	53	98	151	4	4	3	11	19	101	2	122	455
08:45 AM	140	1	19	160	3	51	97	151	2	11	0	13	27	118	0	145	469
Total	559	24	104	687	7	232	418	657	24	23	3	50	86	448	11	545	1939
Grand Total	1268	30	223	1521	7	394	802	1203	38	33	4	75	153	779	19	951	3750
Apprch %	83.4	2	14.7		0.6	32.8	66.7		50.7	44	5.3		16.1	81.9	2		
Total %	33.8	0.8	5.9	40.6	0.2	10.5	21.4	32.1	1	0.9	0.1	2	4.1	20.8	0.5	25.4	

	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**184**	3	30	**217**	0	57	97	154	3	1	0	4	**30**	115	5	150	525
08:00 AM	154	**11**	19	184	1	42	105	148	6	0	0	6	18	101	**8**	127	465
08:15 AM	135	5	32	172	**3**	**86**	**118**	**207**	**12**	**8**	0	**20**	22	**128**	1	**151**	**550**
08:30 AM	130	7	**34**	171	0	53	98	151	4	4	**3**	11	19	101	2	122	455
Total Volume	603	26	115	744	4	238	418	660	25	13	3	41	89	445	16	550	1995
% App. Total	81	3.5	15.5		0.6	36.1	63.3		61	31.7	7.3		16.2	80.9	2.9		
PHF	.819	.591	.846	.857	.333	.692	.886	.797	.521	.406	.250	.513	.742	.869	.500	.911	.907

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:45 AM				08:00 AM				07:45 AM			
+0 mins.	**192**	1	**31**	**224**	0	57	97	154	6	0	0	6	**30**	115	5	150
+15 mins.	145	2	29	176	1	42	105	148	**12**	8	0	**20**	18	101	**8**	127
+30 mins.	188	0	29	217	**3**	**86**	**118**	**207**	4	4	**3**	11	22	**128**	1	**151**
+45 mins.	184	**3**	30	217	0	53	98	151	2	**11**	0	13	19	101	2	122
Total Volume	709	6	119	834	4	238	418	660	24	23	3	50	89	445	16	550
% App. Total	85	0.7	14.3		0.6	36.1	63.3		48	46	6		16.2	80.9	2.9	
PHF	.923	.500	.960	.931	.333	.692	.886	.797	.500	.523	.250	.625	.742	.869	.500	.911

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Bicycles

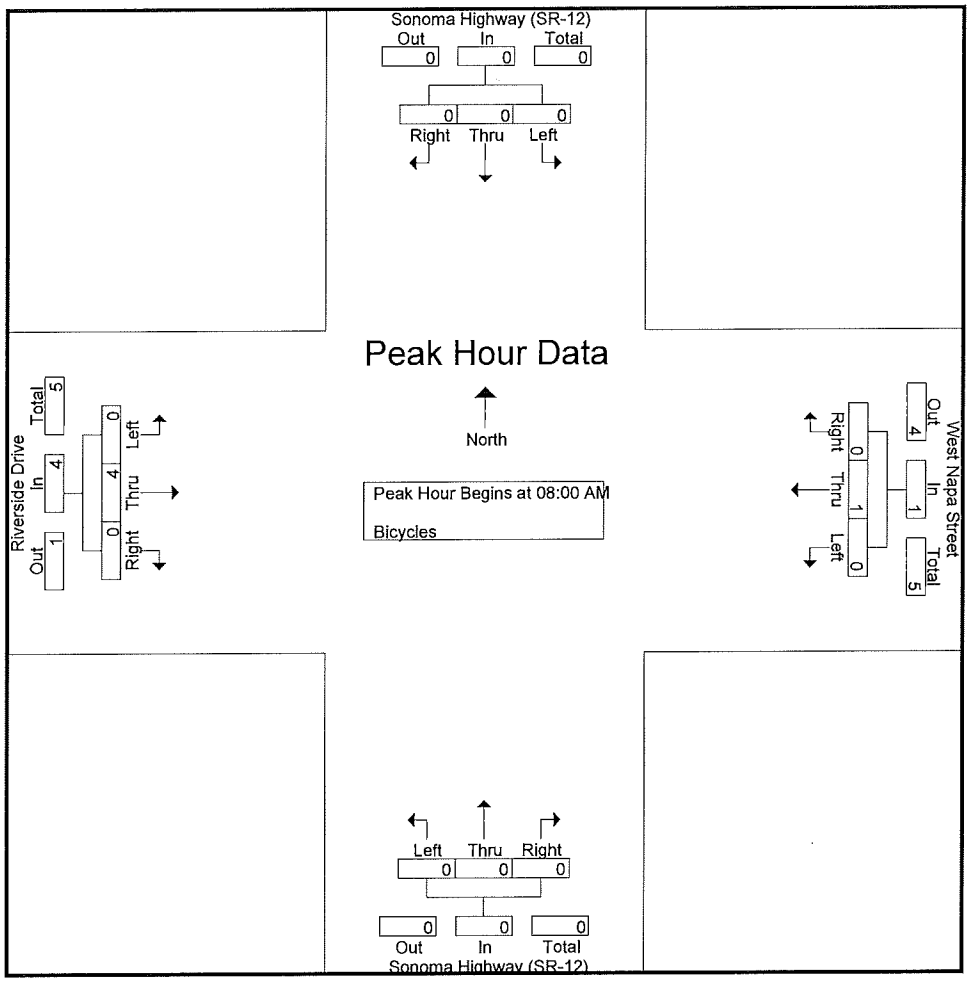
	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
Grand Total	1	0	0	1	0	1	0	1	0	1	0	1	0	4	0	4	7
Apprch %	100	0	0		0	100	0		0	100	0		0	100	0		
Total %	14.3	0	0	14.3	0	14.3	0	14.3	0	14.3	0	14.3	0	57.1	0	57.1	

	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**	**2**
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	1	0	1	2
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:00 AM				08:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	**1**	0	0	**1**	0	0	0	0	0	**1**	0	**1**	0	**2**	0	**2**
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	1	0	1
Total Volume	1	0	0	1	0	1	0	1	0	1	0	1	0	4	0	4
% App. Total	100	0	0		0	100	0		0	100	0		0	100	0	
PHF	.250	.000	.000	.250	.000	.250	.000	.250	.000	.250	.000	.250	.000	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Passenger Vehicles

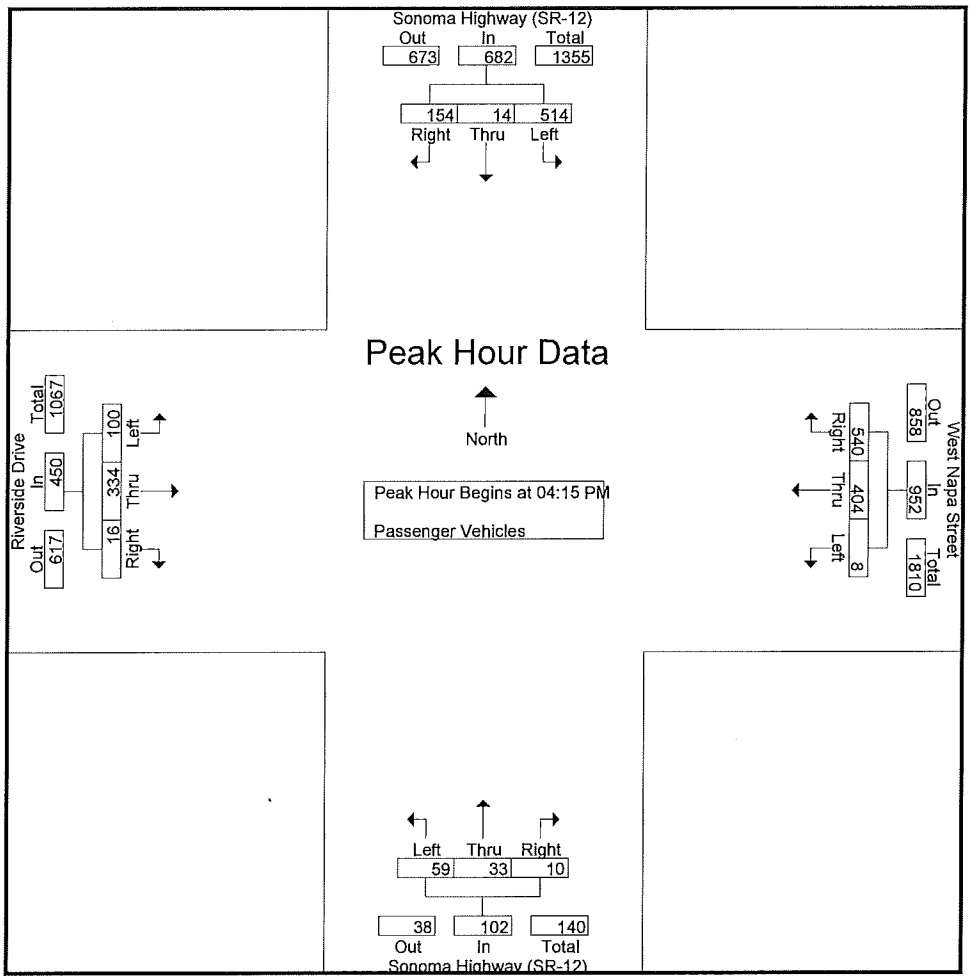
	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	139	2	39	180	1	101	159	261	9	5	2	16	25	87	5	117	574
04:15 PM	112	3	32	147	1	97	135	233	13	8	3	24	17	77	4	98	502
04:30 PM	152	5	50	207	2	120	137	259	17	8	1	26	32	82	3	117	609
04:45 PM	113	4	27	144	3	73	119	195	10	4	1	15	21	78	3	102	456
Total	516	14	148	678	7	391	550	948	49	25	7	81	95	324	15	434	2141
05:00 PM	137	2	45	184	2	114	149	265	19	13	5	37	30	97	6	133	619
05:15 PM	108	5	36	149	2	74	122	198	10	7	1	18	21	73	0	94	459
05:30 PM	116	2	51	169	4	98	144	246	7	5	2	14	35	77	5	117	546
05:45 PM	109	6	36	151	0	74	125	199	7	7	1	15	27	71	1	99	464
Total	470	15	168	653	8	360	540	908	43	32	9	84	113	318	12	443	2088
Grand Total	986	29	316	1331	15	751	1090	1856	92	57	16	165	208	642	27	877	4229
Apprch %	74.1	2.2	23.7		0.8	40.5	58.7		55.8	34.5	9.7		23.7	73.2	3.1		
Total %	23.3	0.7	7.5	31.5	0.4	17.8	25.8	43.9	2.2	1.3	0.4	3.9	4.9	15.2	0.6	20.7	

	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	112	3	32	147	1	97	135	233	13	8	3	24	17	77	4	98	502
04:30 PM	**152**	**5**	**50**	**207**	2	**120**	137	259	17	8	1	26	**32**	82	3	117	609
04:45 PM	113	4	27	144	**3**	73	119	195	10	4	1	15	21	78	3	102	456
05:00 PM	137	2	45	184	2	114	**149**	**265**	**19**	**13**	**5**	**37**	30	**97**	**6**	**133**	**619**
Total Volume	514	14	154	682	8	404	540	952	59	33	10	102	100	334	16	450	2186
% App. Total	75.4	2.1	22.6		0.8	42.4	56.7		57.8	32.4	9.8		22.2	74.2	3.6		
PHF	.845	.700	.770	.824	.667	.842	.906	.898	.776	.635	.500	.689	.781	.861	.667	.846	.883

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:15 PM				04:15 PM				04:15 PM			
+0 mins.	**152**	**5**	**50**	**207**	1	97	135	233	13	8	3	24	17	77	4	98
+15 mins.	113	4	27	144	2	**120**	137	259	17	8	1	26	**32**	82	3	117
+30 mins.	137	2	45	184	**3**	73	119	195	10	4	1	15	21	78	3	102
+45 mins.	108	5	36	149	2	114	**149**	**265**	**19**	**13**	**5**	**37**	30	**97**	**6**	**133**
Total Volume	510	16	158	684	8	404	540	952	59	33	10	102	100	334	16	450
% App. Total	74.6	2.3	23.1		0.8	42.4	56.7		57.8	32.4	9.8		22.2	74.2	3.6	
PHF	.839	.800	.790	.826	.667	.842	.906	.898	.776	.635	.500	.689	.781	.861	.667	.846

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Bicycles

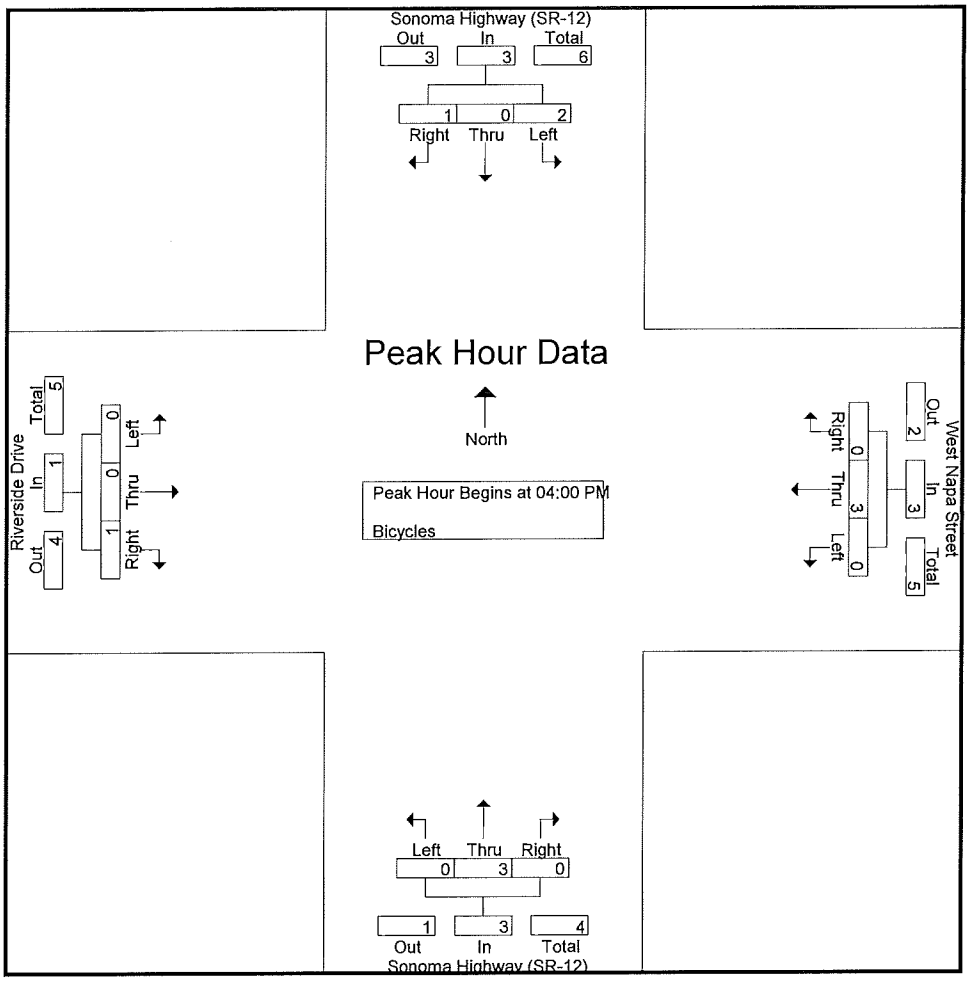
	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	0	0	1	0	1	0	1	0	2	0	2	0	0	1	1	5
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
Total	2	0	1	3	0	3	0	3	0	3	0	3	0	0	1	1	10
05:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	1	0	1	1	0	0	1	3
Grand Total	2	0	1	3	0	4	0	4	0	4	0	4	1	0	1	2	13
Apprch %	66.7	0	33.3		0	100	0		0	100	0		50	0	50		
Total %	15.4	0	7.7	23.1	0	30.8	0	30.8	0	30.8	0	30.8	7.7	0	7.7	15.4	

	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**1**	0	0	**1**	0	1	0	1	0	**2**	0	**2**	0	0	**1**	**1**	**5**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45 PM	0	0	**1**	1	0	**2**	0	**2**	0	0	0	0	0	0	0	0	3
Total Volume	2	0	1	3	0	3	0	3	0	3	0	3	0	0	1	1	10
% App. Total	66.7	0	33.3		0	100	0		0	100	0		0	0	100		
PHF	.500	.000	.250	.750	.000	.375	.000	.375	.000	.375	.000	.375	.000	.000	.250	.250	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORIPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**1**	0	0	**1**	0	1	0	1	0	**2**	0	**2**	0	0	**1**	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	**1**	1	0	**2**	0	**2**	0	0	0	0	0	0	0	0
Total Volume	2	0	1	3	0	3	0	3	0	3	0	3	0	0	1	1
% App. Total	66.7	0	33.3		0	100	0		0	100	0		0	0	100	
PHF	.500	.000	.250	.750	.000	.375	.000	.375	.000	.375	.000	.375	.000	.000	.250	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORISAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 1

Groups Printed- Passenger Vehicles

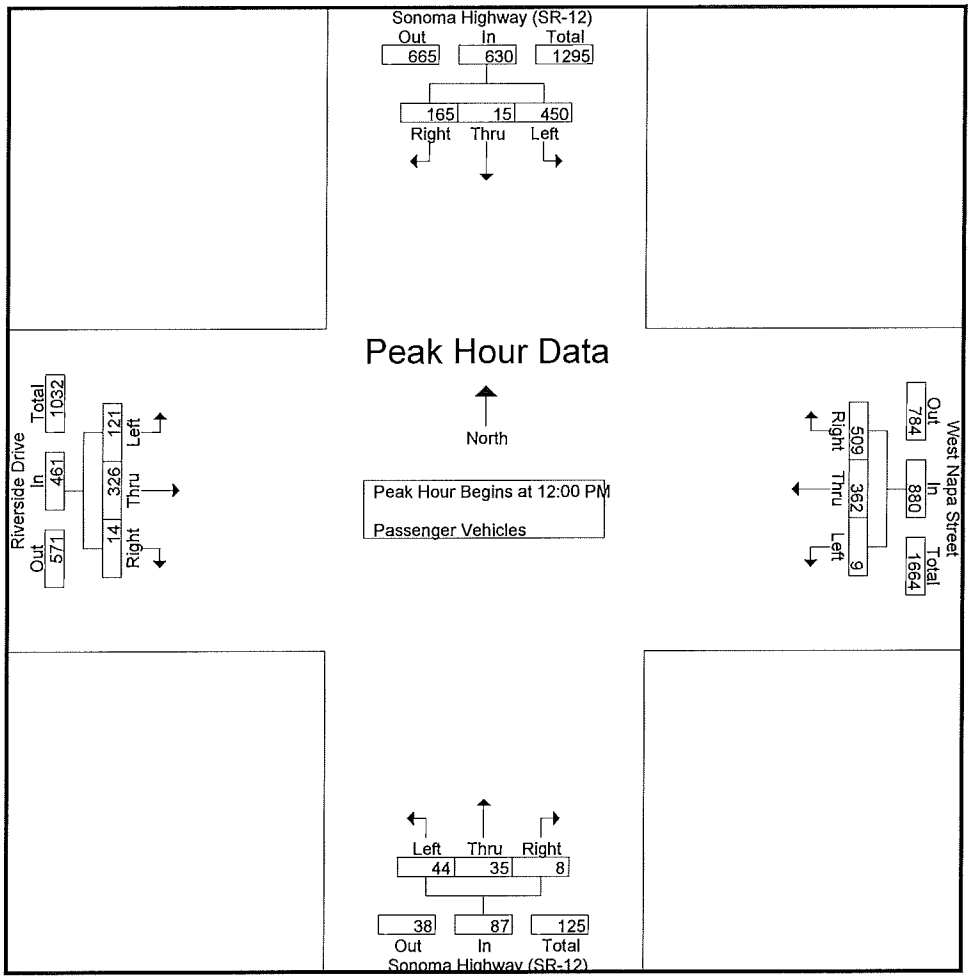
	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	109	1	26	136	0	68	107	175	5	6	1	12	19	67	2	88	411
11:15 AM	111	2	31	144	2	74	132	208	8	8	1	17	23	62	2	87	456
11:30 AM	117	2	24	143	2	81	119	202	8	5	0	13	19	81	3	103	461
11:45 AM	105	5	25	135	1	79	121	201	11	9	2	22	25	96	5	126	484
Total	442	10	106	558	5	302	479	786	32	28	4	64	86	306	12	404	1812
12:00 PM	103	3	41	147	3	86	118	207	12	9	3	24	31	88	2	121	499
12:15 PM	117	8	32	157	2	105	122	229	9	11	2	22	28	75	4	107	515
12:30 PM	125	2	37	164	1	92	147	240	10	7	1	18	33	95	5	133	555
12:45 PM	105	2	55	162	3	79	122	204	13	8	2	23	29	68	3	100	489
Total	450	15	165	630	9	362	509	880	44	35	8	87	121	326	14	461	2058
Grand Total	892	25	271	1188	14	664	988	1666	76	63	12	151	207	632	26	865	3870
Apprch %	75.1	2.1	22.8		0.8	39.9	59.3		50.3	41.7	7.9		23.9	73.1	3		
Total %	23	0.6	7	30.7	0.4	17.2	25.5	43	2	1.6	0.3	3.9	5.3	16.3	0.7	22.4	

	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	103	3	41	147	**3**	86	118	207	12	9	**3**	**24**	31	88	2	121	499
12:15 PM	117	**8**	32	157	2	**105**	122	229	9	11	2	22	28	75	4	107	515
12:30 PM	**125**	2	37	**164**	1	92	**147**	**240**	10	7	1	18	**33**	**95**	**5**	**133**	**555**
12:45 PM	105	2	**55**	162	3	79	122	204	**13**	8	2	23	29	68	3	100	489
Total Volume	450	15	165	630	9	362	509	880	**44**	35	8	87	121	326	14	461	2058
% App. Total	71.4	2.4	26.2		1	41.1	57.8		50.6	40.2	9.2		26.2	70.7	3		
PHF	.900	.469	.750	.960	.750	.862	.866	.917	.846	.795	.667	.906	.917	.858	.700	.867	.927

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORISAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				11:45 AM			
+0 mins.	103	3	41	147	**3**	86	118	207	12	9	**3**	**24**	25	**96**	**5**	126
+15 mins.	117	**8**	32	157	2	**105**	122	229	9	**11**	2	22	31	88	2	121
+30 mins.	**125**	2	37	**164**	1	92	**147**	**240**	10	7	1	18	28	75	4	107
+45 mins.	105	2	**55**	162	3	79	122	204	**13**	8	2	23	**33**	95	5	**133**
Total Volume	450	15	165	630	9	362	509	880	44	35	8	87	117	354	16	487
% App. Total	71.4	2.4	26.2		1	41.1	57.8		50.6	40.2	9.2		24	72.7	3.3	
PHF	.900	.469	.750	.960	.750	.862	.866	.917	.846	.795	.667	.906	.886	.922	.800	.915

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORISAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 1

Groups Printed- Bicycles

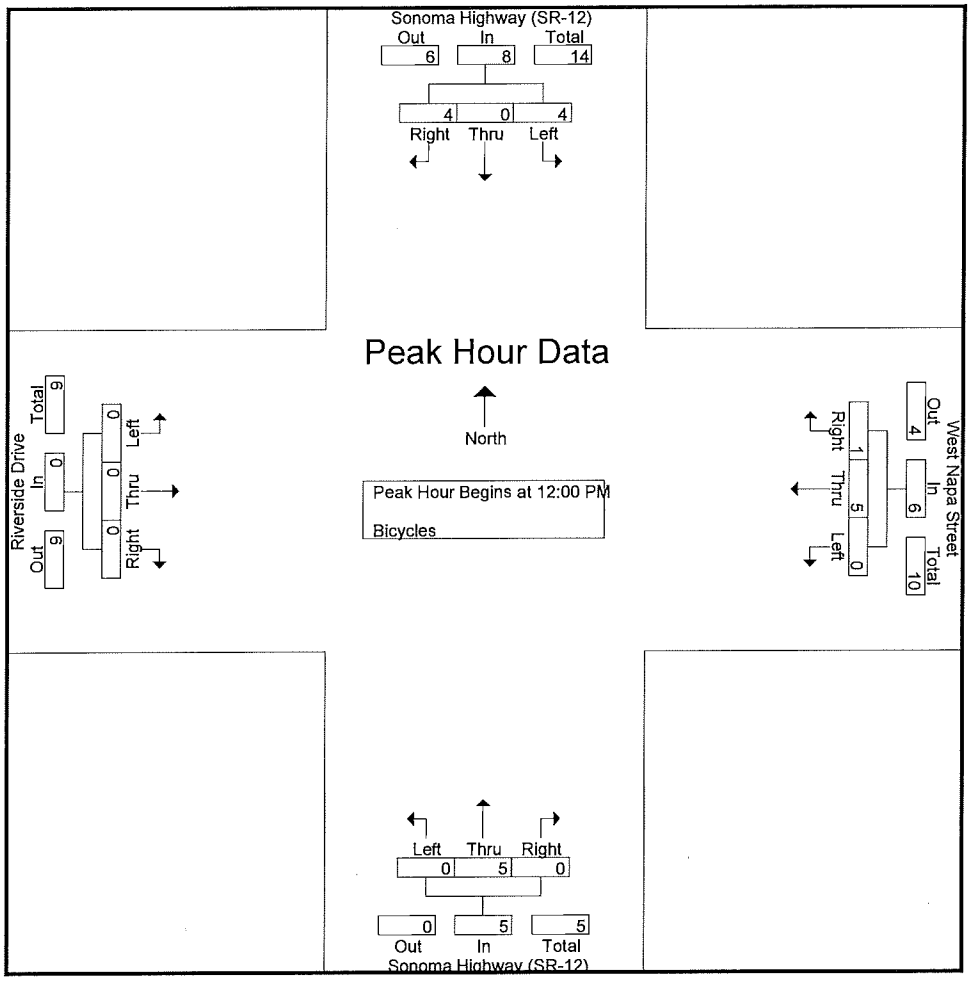
	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
11:30 AM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
11:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total	1	0	2	3	0	1	1	2	0	1	0	1	0	0	0	0	6
12:00 PM	2	0	1	3	0	1	0	1	0	1	0	1	0	0	0	0	5
12:15 PM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
12:30 PM	1	0	3	4	0	0	0	0	0	1	0	1	0	0	0	0	5
12:45 PM	1	0	0	1	0	2	0	2	0	3	0	3	0	0	0	0	6
Total	4	0	4	8	0	5	1	6	0	5	0	5	0	0	0	0	19
Grand Total	5	0	6	11	0	6	2	8	0	6	0	6	0	0	0	0	25
Apprch %	45.5	0	54.5		0	75	25		0	100	0		0	0	0		
Total %	20	0	24	44	0	24	8	32	0	24	0	24	0	0	0	0	

	Sonoma Highway (SR-12) Southbound				West Napa Street Westbound				Sonoma Highway (SR-12) Northbound				Riverside Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	**2**	0	1	3	0	1	0	1	0	1	0	1	0	0	0	0	5
12:15 PM	0	0	0	0	0	**2**	1	**3**	0	0	0	0	0	0	0	0	3
12:30 PM	1	0	**3**	4	0	0	0	0	0	1	0	1	0	0	0	0	5
12:45 PM	1	0	0	1	0	2	0	2	0	**3**	0	**3**	0	0	0	0	**6**
Total Volume	4	0	4	8	0	5	1	6	0	5	0	5	0	0	0	0	19
% App. Total	50	0	50		0	83.3	16.7		0	100	0		0	0	0		
PHF	.500	.000	.333	.500	.000	.625	.250	.500	.000	.417	.000	.417	.000	.000	.000	.000	.792

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Napa Street / Riverside Drive
Weather: Clear

File Name : SNMSORISAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				11:00 AM			
+0 mins.	**2**	0	1	3	0	1	0	1	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	**2**	**1**	**3**	0	0	0	0	0	0	0	0
+30 mins.	1	0	**3**	**4**	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	1	0	0	1	0	2	0	2	0	**3**	0	**3**	0	0	0	0
Total Volume	4	0	4	8	0	5	1	6	0	5	0	5	0	0	0	0
% App. Total	50	0	50		0	83.3	16.7		0	100	0		0	0	0	
PHF	.500	.000	.333	.500	.000	.625	.250	.500	.000	.417	.000	.417	.000	.000	.000	.000

Location: Sonoma
N/S: Sonoma Hwy (SR-12)
E/W: West Napa St / Riverside Dr

Date: 3/8/2017
Weather: Clear

WEEKDAY

	North Leg Sonoma Hwy (SR-12) Pedestrians	East Leg West Napa St / Riverside Dr Pedestrians	South Leg Sonoma Hwy (SR-12) Pedestrians	West Leg West Napa St / Riverside Dr Pedestrians	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	0	0	1	1
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	2	2
8:30 AM	0	0	0	0	0
8:45 AM	1	0	1	1	3
TOTAL VOLUMES:	1	0	1	6	8

	North Leg Sonoma Hwy (SR-12) Pedestrians	East Leg West Napa St / Riverside Dr Pedestrians	South Leg Sonoma Hwy (SR-12) Pedestrians	West Leg West Napa St / Riverside Dr Pedestrians	TOTAL
4:00 PM	0	0	2	3	5
4:15 PM	0	0	0	0	0
4:30 PM	0	0	1	4	5
4:45 PM	0	0	2	1	3
5:00 PM	0	0	1	0	1
5:15 PM	0	0	3	1	4
5:30 PM	0	0	1	0	1
5:45 PM	0	0	2	4	6
TOTAL VOLUMES:	0	0	12	13	25

SATURDAY

Date: 3/11/2017

	North Leg Sonoma Hwy (SR-12) Pedestrians	East Leg West Napa St / Riverside Dr Pedestrians	South Leg Sonoma Hwy (SR-12) Pedestrians	West Leg West Napa St / Riverside Dr Pedestrians	TOTAL
11:00 AM	0	0	1	4	5
11:15 AM	0	0	1	2	3
11:30 AM	0	0	0	2	2
11:45 AM	0	0	2	0	2
12:00 PM	0	0	2	2	4
12:15 PM	1	0	1	1	3
12:30 PM	0	0	4	3	7
12:45 PM	0	0	2	3	5
TOTAL VOLUMES:	1	0	13	17	31

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Passenger Vehicles

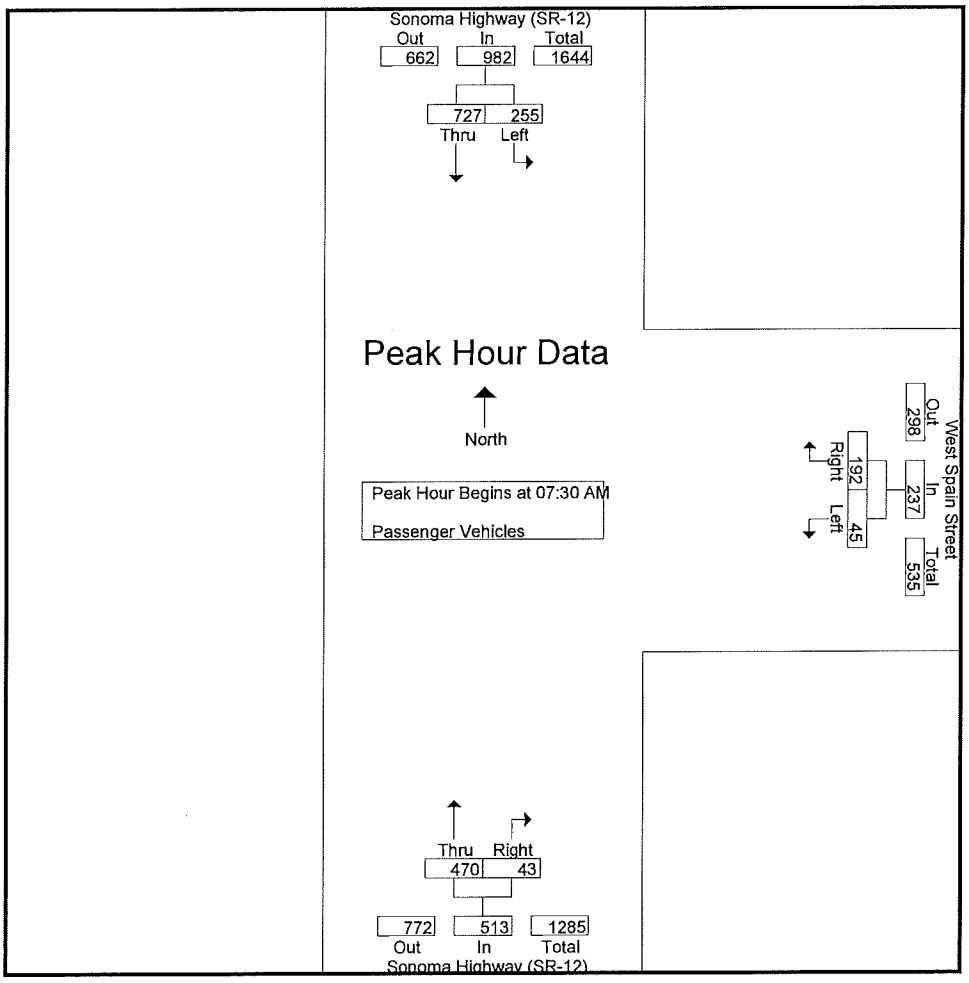
	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	31	204	235	9	23	32	82	3	85	352
07:15 AM	51	197	248	22	18	40	120	2	122	410
07:30 AM	36	194	230	9	36	45	115	5	120	395
07:45 AM	79	189	268	10	45	55	114	14	128	451
Total	197	784	981	50	122	172	431	24	455	1608
08:00 AM	64	193	257	11	62	73	111	13	124	454
08:15 AM	76	151	227	15	49	64	130	11	141	432
08:30 AM	47	154	201	19	48	67	116	11	127	395
08:45 AM	54	152	206	7	51	58	115	10	125	389
Total	241	650	891	52	210	262	472	45	517	1670
Grand Total	438	1434	1872	102	332	434	903	69	972	3278
Apprch %	23.4	76.6		23.5	76.5		92.9	7.1		
Total %	13.4	43.7	57.1	3.1	10.1	13.2	27.5	2.1	29.7	

	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	36	**194**	230	9	36	45	115	5	120	395
07:45 AM	**79**	189	**268**	10	45	55	114	**14**	128	451
08:00 AM	64	193	257	11	**62**	**73**	111	13	124	**454**
08:15 AM	76	151	227	**15**	49	64	**130**	11	**141**	432
Total Volume	255	727	982	45	192	237	470	43	513	1732
% App. Total	26	74		19	81		91.6	8.4		
PHF	.807	.937	.916	.750	.774	.812	.904	.768	.910	.954

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			08:00 AM			07:45 AM		
+0 mins.	51	**197**	248	11	**62**	**73**	114	**14**	128
+15 mins.	36	194	230	15	49	64	111	13	124
+30 mins.	**79**	189	**268**	**19**	48	67	**130**	11	**141**
+45 mins.	64	193	257	7	51	58	116	11	127
Total Volume	230	773	1003	52	210	262	471	49	520
% App. Total	22.9	77.1		19.8	80.2		90.6	9.4	
PHF	.728	.981	.936	.684	.847	.897	.906	.875	.922

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Bicycles

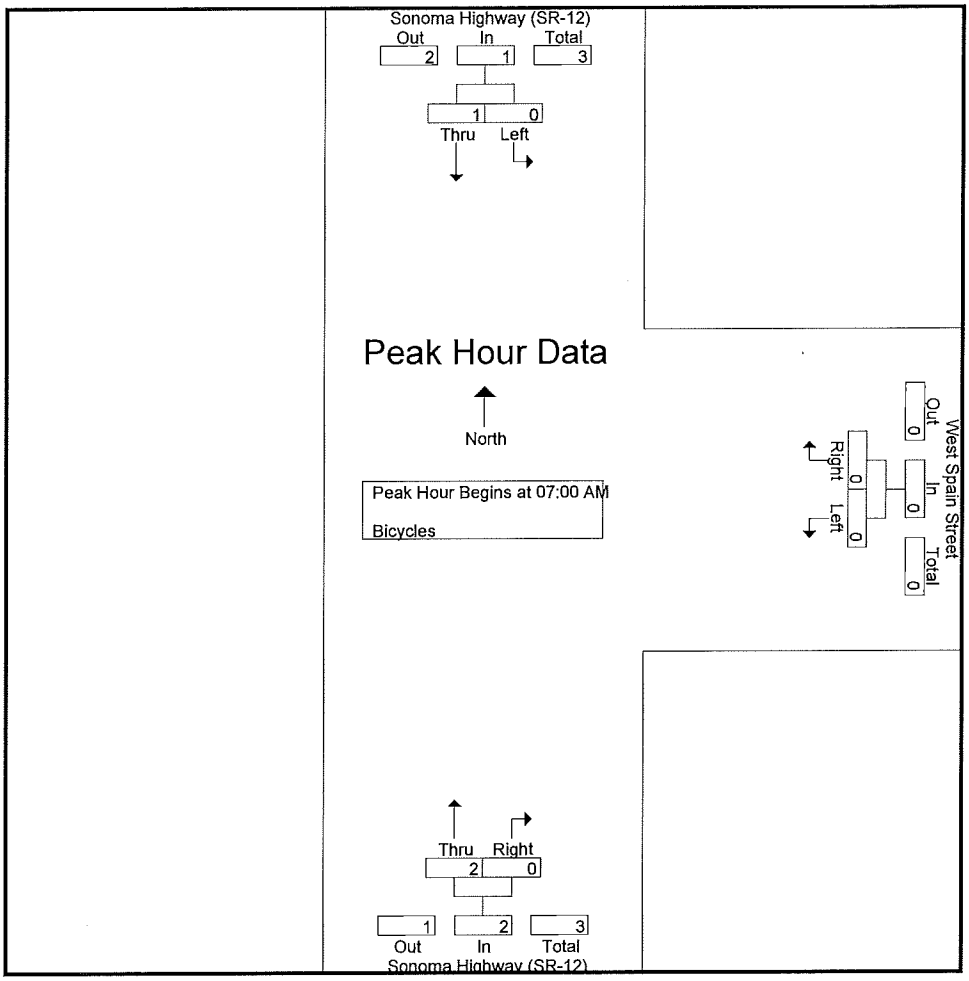
	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	1	0	1	2
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total	0	1	1	0	0	0	2	0	2	3
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	1	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	0	1	1	0	1	1	2	0	2	4
Apprch %	0	100		0	100		100	0		
Total %	0	25	25	0	25	25	50	0	50	

	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	**1**	**1**	0	0	0	**1**	0	**1**	**2**
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	1	0	1	1
Total Volume	0	1	1	0	0	0	2	0	2	3
% App. Total	0	100		0	0		100	0		
PHF	.000	.250	.250	.000	.000	.000	.500	.000	.500	.375

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPAM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:30 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	**1**	**1**	0	0	0	**1**	0	**1**
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	**1**	1	0	1
Total Volume	0	1	1	0	1	1	2	0	2
% App. Total	0	100		0	100		100	0	
PHF	.000	.250	.250	.000	.250	.250	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Passenger Vehicles

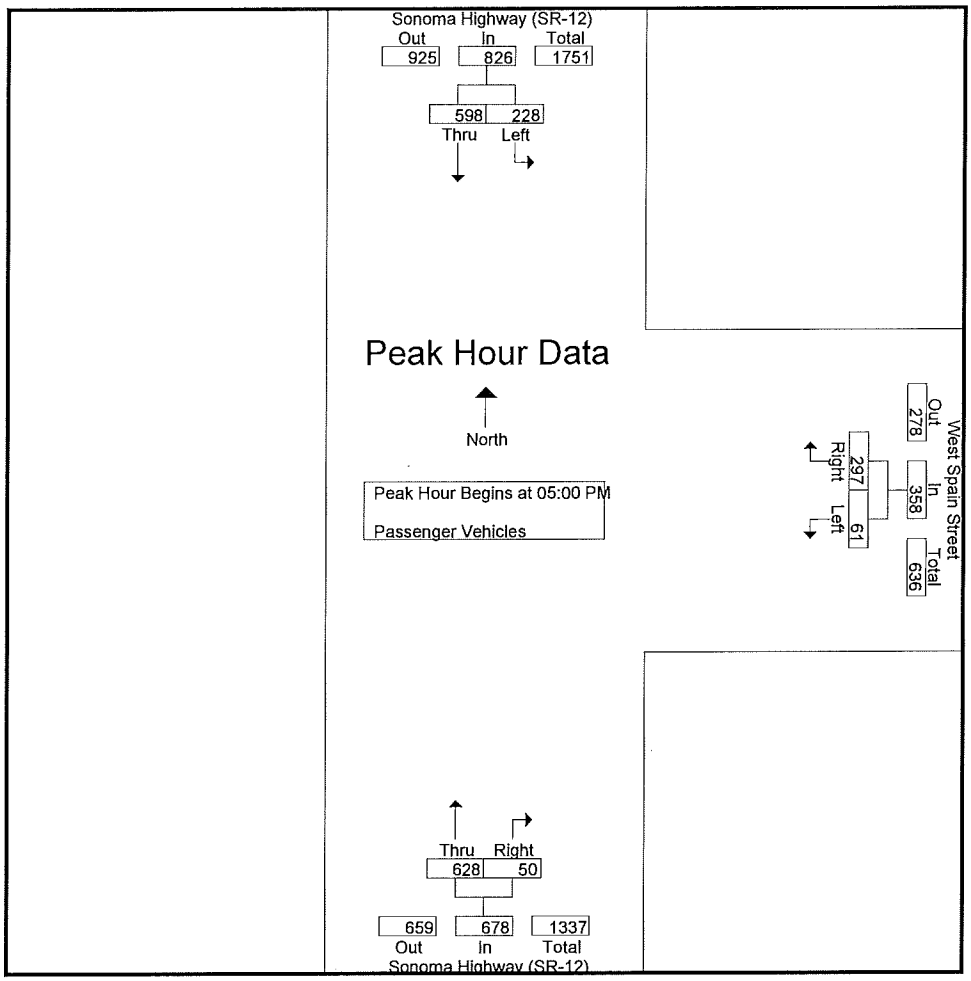
	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	49	154	203	16	78	94	181	10	191	488
04:15 PM	51	136	187	16	74	90	144	15	159	436
04:30 PM	57	142	199	17	74	91	163	7	170	460
04:45 PM	41	161	202	11	81	92	134	10	144	438
Total	198	593	791	60	307	367	622	42	664	1822
05:00 PM	66	167	233	10	72	82	169	15	184	499
05:15 PM	61	141	202	15	89	104	141	11	152	458
05:30 PM	45	137	182	14	81	95	176	12	188	465
05:45 PM	56	153	209	22	55	77	142	12	154	440
Total	228	598	826	61	297	358	628	50	678	1862
Grand Total	426	1191	1617	121	604	725	1250	92	1342	3684
Apprch %	26.3	73.7		16.7	83.3		93.1	6.9		
Total %	11.6	32.3	43.9	3.3	16.4	19.7	33.9	2.5	36.4	

	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**66**	**167**	**233**	10	72	82	169	**15**	184	**499**
05:15 PM	61	141	202	15	**89**	**104**	141	11	152	458
05:30 PM	45	137	182	14	81	95	**176**	12	**188**	465
05:45 PM	56	153	209	**22**	55	77	142	12	154	440
Total Volume	228	598	826	61	297	358	628	50	678	1862
% App. Total	27.6	72.4		17	83		92.6	7.4		
PHF	.864	.895	.886	.693	.834	.861	.892	.833	.902	.933

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			05:00 PM		
+0 mins.	57	142	199	11	81	92	169	**15**	184
+15 mins.	41	161	202	10	72	82	141	11	152
+30 mins.	**66**	**167**	**233**	**15**	**89**	**104**	**176**	12	**188**
+45 mins.	61	141	202	14	81	95	142	12	154
Total Volume	225	611	836	50	323	373	628	50	678
% App. Total	26.9	73.1		13.4	86.6		92.6	7.4	
PHF	.852	.915	.897	.833	.907	.897	.892	.833	.902

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 1

Groups Printed- Bicycles

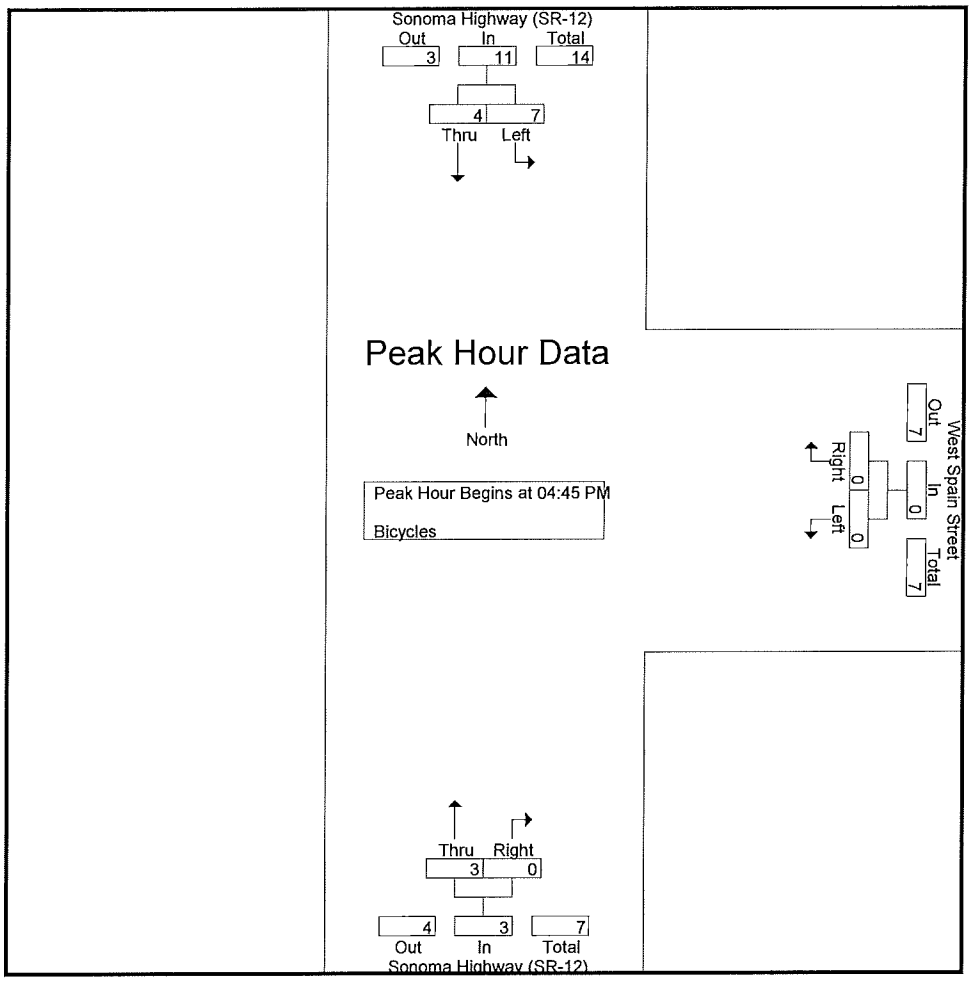
	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	1	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	1	1	0	1	0	0	0	2
04:45 PM	0	2	2	0	0	0	0	0	0	2
Total	0	4	4	1	0	1	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	1	0	0	0	2	0	2	3
05:30 PM	7	1	8	0	0	0	1	0	1	9
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	7	2	9	0	0	0	4	0	4	13
Grand Total	7	6	13	1	0	1	4	0	4	18
Apprch %	53.8	46.2		100	0		100	0		
Total %	38.9	33.3	72.2	5.6	0	5.6	22.2	0	22.2	

	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	**2**	2	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	1	0	0	0	**2**	0	**2**	3
05:30 PM	**7**	1	**8**	0	0	0	1	0	1	**9**
Total Volume	7	4	11	0	0	0	3	0	3	14
% App. Total	63.6	36.4		0	0		100	0		
PHF	.250	.500	.344	.000	.000	.000	.375	.000	.375	.389

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPPM
Site Code : 22017108
Start Date : 3/8/2017
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			05:00 PM		
+0 mins.	0	**2**	2	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	**2**	0	**2**
+30 mins.	0	1	1	**1**	0	**1**	1	0	1
+45 mins.	**7**	1	**8**	0	0	0	1	0	1
Total Volume	7	4	11	1	0	1	4	0	4
% App. Total	63.6	36.4		100	0		100	0	
PHF	.250	.500	.344	.250	.000	.250	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPSAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 1

Groups Printed- Passenger Vehicles

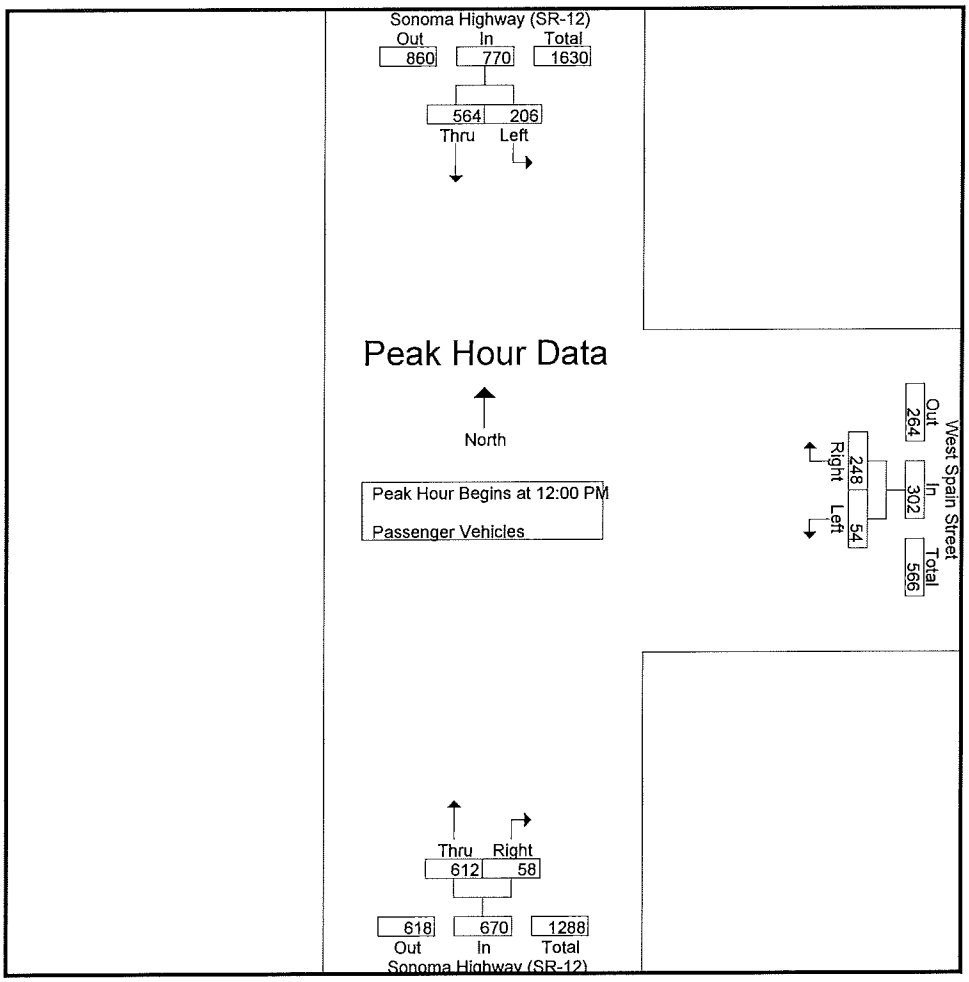
	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
11:00 AM	44	129	173	9	55	64	128	8	136	373
11:15 AM	41	133	174	8	49	57	155	13	168	399
11:30 AM	48	145	193	13	52	65	133	11	144	402
11:45 AM	52	114	166	11	66	77	144	9	153	396
Total	185	521	706	41	222	263	560	41	601	1570
12:00 PM	55	128	183	10	59	69	140	14	154	406
12:15 PM	53	147	200	14	64	78	167	12	179	457
12:30 PM	47	151	198	17	73	90	158	17	175	463
12:45 PM	51	138	189	13	52	65	147	15	162	416
Total	206	564	770	54	248	302	612	58	670	1742
Grand Total	391	1085	1476	95	470	565	1172	99	1271	3312
Apprch %	26.5	73.5		16.8	83.2		92.2	7.8		
Total %	11.8	32.8	44.6	2.9	14.2	17.1	35.4	3	38.4	

	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	**55**	128	183	10	59	69	140	14	154	406
12:15 PM	53	147	**200**	14	64	78	**167**	12	**179**	457
12:30 PM	47	**151**	198	**17**	**73**	**90**	158	**17**	175	**463**
12:45 PM	51	138	189	13	52	65	147	15	162	416
Total Volume	206	564	770	54	248	302	612	58	670	1742
% App. Total	26.8	73.2		17.9	82.1		91.3	8.7		
PHF	.936	.934	.963	.794	.849	.839	.916	.853	.936	.941

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPSAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM			11:45 AM			12:00 PM		
+0 mins.	**55**	128	183	11	66	77	140	14	154
+15 mins.	53	147	**200**	10	59	69	**167**	12	**179**
+30 mins.	47	**151**	198	14	64	78	158	**17**	175
+45 mins.	51	138	189	**17**	**73**	**90**	147	15	162
Total Volume	206	564	770	52	262	314	612	58	670
% App. Total	26.8	73.2		16.6	83.4		91.3	8.7	
PHF	.936	.934	.963	.765	.897	.872	.916	.853	.936

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPSAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 1

Groups Printed- Bicycles

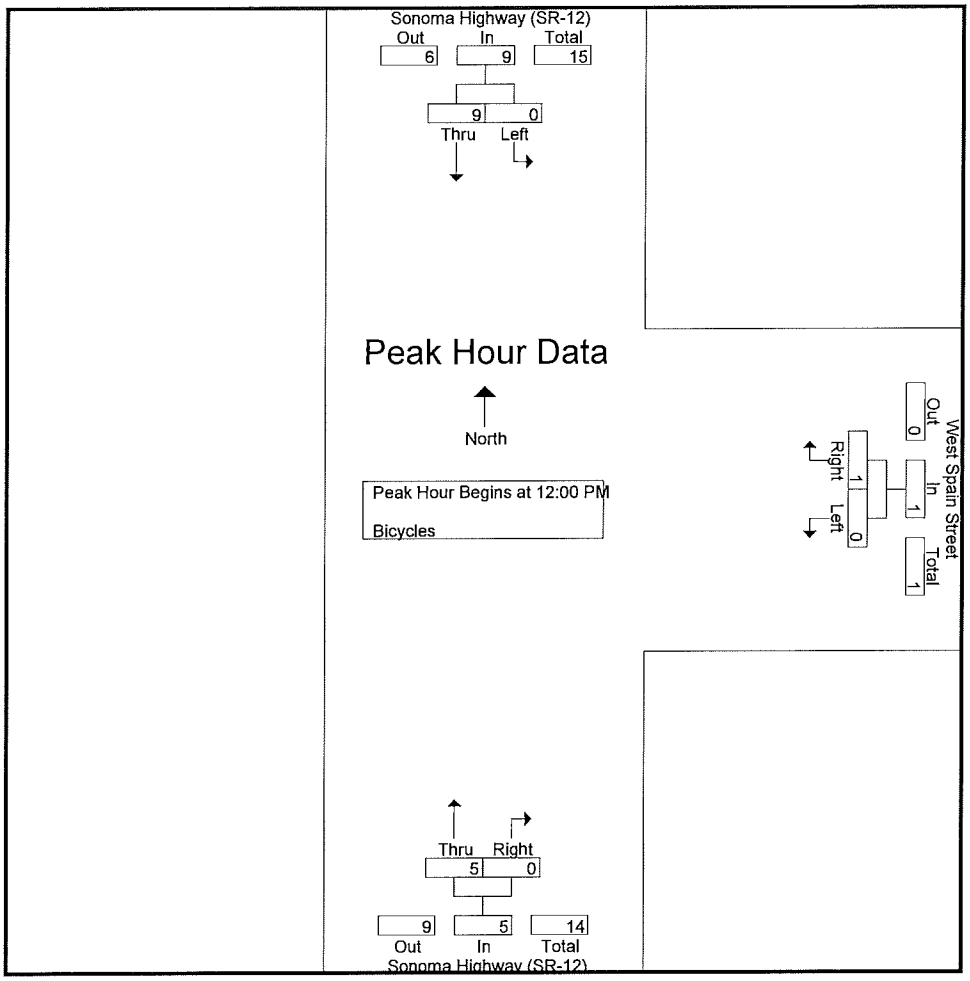
	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
11:00 AM	0	2	2	0	0	0	0	0	0	2
11:15 AM	0	0	0	0	1	1	0	0	0	1
11:30 AM	0	2	2	0	0	0	1	0	1	3
11:45 AM	0	1	1	0	0	0	1	0	1	2
Total	0	5	5	0	1	1	2	0	2	8
12:00 PM	0	3	3	0	0	0	0	0	0	3
12:15 PM	0	0	0	0	1	1	1	0	1	2
12:30 PM	0	5	5	0	0	0	2	0	2	7
12:45 PM	0	1	1	0	0	0	2	0	2	3
Total	0	9	9	0	1	1	5	0	5	15
Grand Total	0	14	14	0	2	2	7	0	7	23
Apprch %	0	100		0	100		100	0		
Total %	0	60.9	60.9	0	8.7	8.7	30.4	0	30.4	

	Sonoma Highway (SR-12) Southbound			West Spain Street Westbound			Sonoma Highway (SR-12) Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	0	3	3	0	0	0	0	0	0	3
12:15 PM	0	0	0	0	**1**	**1**	1	0	1	2
12:30 PM	0	**5**	**5**	0	0	0	**2**	0	**2**	**7**
12:45 PM	0	1	1	0	0	0	2	0	2	3
Total Volume	0	9	9	0	1	1	5	0	5	15
% App. Total	0	100		0	100		100	0		
PHF	.000	.450	.450	.000	.250	.250	.625	.000	.625	.536

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Sonoma
N/S: Sonoma Highway (SR-12)
E/W: West Spain Street
Weather: Clear

File Name : SNMSOSPSAT
Site Code : 22017108
Start Date : 3/11/2017
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:45 AM			11:00 AM			12:00 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	3	3	0	**1**	**1**	1	0	1
+30 mins.	0	0	0	0	0	0	**2**	0	**2**
+45 mins.	0	**5**	**5**	0	0	0	2	0	2
Total Volume	0	9	9	0	1	1	5	0	5
% App. Total	0	100		0	100		100	0	
PHF	.000	.450	.450	.000	.250	.250	.625	.000	.625

Location: Sonoma
N/S: Sonoma Hwy (SR-12)
E/W: West Spain Street

Date: 3/8/2017
Weather: Clear

WEEKDAY

	North Leg Sonoma Hwy (SR-12) Pedestrians	East Leg West Spain Street Pedestrians	South Leg Sonoma Hwy (SR-12) Pedestrians	West Leg West Spain Street Pedestrians	TOTAL
7:00 AM	0	0	0		0
7:15 AM	0	0	0		0
7:30 AM	0	0	0		0
7:45 AM	0	0	0		0
8:00 AM	0	2	1		3
8:15 AM	0	1	3		4
8:30 AM	0	0	0		0
8:45 AM	0	1	2		3
TOTAL VOLUMES:	0	4	6	0	10

	North Leg Sonoma Hwy (SR-12) Pedestrians	East Leg West Spain Street Pedestrians	South Leg Sonoma Hwy (SR-12) Pedestrians	West Leg West Spain Street Pedestrians	TOTAL
4:00 PM	0	1	2		3
4:15 PM	0	1	0		1
4:30 PM	0	0	0		0
4:45 PM	0	0	0		0
5:00 PM	0	0	0		0
5:15 PM	0	2	2		4
5:30 PM	1	1	0		2
5:45 PM	0	1	0		1
TOTAL VOLUMES:	1	6	4	0	11

SATURDAY

Date: 3/11/2017

	North Leg Sonoma Hwy (SR-12) Pedestrians	East Leg West Spain Street Pedestrians	South Leg Sonoma Hwy (SR-12) Pedestrians	West Leg West Spain Street Pedestrians	TOTAL
11:00 AM	0	0	0		0
11:15 AM	0	1	0		1
11:30 AM	0	0	0		0
11:45 AM	0	0	0		0
12:00 PM	0	2	0		2
12:15 PM	0	1	0		1
12:30 PM	0	2	0		2
12:45 PM	0	3	0		3
TOTAL VOLUMES:	0	9	0	0	9

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

APPENDIX B – INTERSECTION LOS CALCULATIONS

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	192	470	43	255	727
Future Volume (veh/h)	45	192	470	43	255	727
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	48	58	505	46	274	782
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	292	260	613	507	381	1206
Arrive On Green	0.16	0.16	0.32	0.32	0.21	0.63
Sat Flow, veh/h	1810	1615	1900	1572	1810	1900
Grp Volume(v), veh/h	48	58	505	46	274	782
Grp Sat Flow(s),veh/h/ln	1810	1615	1900	1572	1810	1900
Q Serve(g_s), s	1.1	1.4	11.3	0.9	6.5	11.8
Cycle Q Clear(g_c), s	1.1	1.4	11.3	0.9	6.5	11.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	292	260	613	507	381	1206
V/C Ratio(X)	0.16	0.22	0.82	0.09	0.72	0.65
Avail Cap(c_a), veh/h	903	806	1855	1534	628	2708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	16.8	14.4	10.9	16.9	5.2
Incr Delay (d2), s/veh	0.1	0.2	1.1	0.0	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	6.1	0.4	3.3	6.2
LnGrp Delay(d),s/veh	16.8	17.0	15.5	10.9	17.9	5.4
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	106		551			1056
Approach Delay, s/veh	16.9		15.1			8.7
Approach LOS	B		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.4	19.6				34.0		12.1
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	8.5	13.3				13.8		3.4
Green Ext Time (p_c), s	0.0	1.5				1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	445	16	4	238	418	25	13	3	603	26	115
Future Volume (veh/h)	89	445	16	4	238	418	25	13	3	603	26	115
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	454	16	4	243	0	26	13	3	615	27	43
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	628	631	22	91	653	0	122	61	14	1021	192	305
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.00	0.11	0.11	0.11	0.29	0.29	0.29
Sat Flow, veh/h	1155	1823	64	8	1884	0	1127	563	130	3510	659	1049
Grp Volume(v), veh/h	91	0	470	247	0	0	42	0	0	615	0	70
Grp Sat Flow(s),veh/h/ln	1155	0	1887	1892	0	0	1820	0	0	1755	0	1708
Q Serve(g_s), s	0.0	0.0	8.9	0.0	0.0	0.0	0.9	0.0	0.0	6.2	0.0	1.2
Cycle Q Clear(g_c), s	1.5	0.0	8.9	4.0	0.0	0.0	0.9	0.0	0.0	6.2	0.0	1.2
Prop In Lane	1.00		0.03	0.02		0.00	0.62		0.07	1.00		0.61
Lane Grp Cap(c), veh/h	628	0	654	744	0	0	197	0	0	1021	0	497
V/C Ratio(X)	0.14	0.00	0.72	0.33	0.00	0.00	0.21	0.00	0.00	0.60	0.00	0.14
Avail Cap(c_a), veh/h	1768	0	2516	2589	0	0	1125	0	0	2171	0	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	11.7	10.1	0.0	0.0	16.8	0.0	0.0	12.6	0.0	10.8
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.1	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.7	2.1	0.0	0.0	0.5	0.0	0.0	3.1	0.0	0.6
LnGrp Delay(d),s/veh	9.3	0.0	12.3	10.2	0.0	0.0	17.3	0.0	0.0	13.1	0.0	10.9
LnGrp LOS	A		B	B			B			B		B
Approach Vol, veh/h		561			247			42			685	
Approach Delay, s/veh		11.8			10.2			17.3			12.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.8		15.5		17.8		8.0
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		10.9		8.2		6.0		2.9
Green Ext Time (p_c), s		3.3		2.6		3.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	61	297	628	50	228	598
Future Volume (veh/h)	61	297	628	50	228	598
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	66	171	675	54	245	643
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	317	283	752	621	318	1246
Arrive On Green	0.18	0.18	0.40	0.40	0.18	0.66
Sat Flow, veh/h	1810	1615	1900	1570	1810	1900
Grp Volume(v), veh/h	66	171	675	54	245	643
Grp Sat Flow(s),veh/h/ln	1810	1615	1900	1570	1810	1900
Q Serve(g_s), s	1.7	5.4	18.5	1.2	7.2	9.8
Cycle Q Clear(g_c), s	1.7	5.4	18.5	1.2	7.2	9.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	317	283	752	621	318	1246
V/C Ratio(X)	0.21	0.60	0.90	0.09	0.77	0.52
Avail Cap(c_a), veh/h	748	668	1537	1270	520	2244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	21.2	15.8	10.5	21.9	5.0
Incr Delay (d2), s/veh	0.1	0.8	1.6	0.0	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.5	9.9	0.5	3.7	5.0
LnGrp Delay(d),s/veh	19.8	21.9	17.4	10.5	23.4	5.1
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	237		729			888
Approach Delay, s/veh	21.3		16.9			10.1
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.5	26.7				41.2		14.4
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	9.2	20.5				11.8		7.4
Green Ext Time (p_c), s	0.0	1.5				1.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	334	16	8	404	540	59	33	10	514	14	154
Future Volume (veh/h)	100	334	16	8	404	540	59	33	10	514	14	154
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	102	341	16	8	412	0	60	34	10	524	14	83
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	437	577	27	84	602	0	193	109	32	927	62	370
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.00	0.18	0.18	0.18	0.26	0.26	0.26
Sat Flow, veh/h	987	1800	84	11	1879	0	1046	593	174	3510	236	1401
Grp Volume(v), veh/h	102	0	357	420	0	0	104	0	0	524	0	97
Grp Sat Flow(s),veh/h/ln	987	0	1884	1890	0	0	1813	0	0	1755	0	1637
Q Serve(g_s), s	0.0	0.0	7.2	0.0	0.0	0.0	2.3	0.0	0.0	5.9	0.0	2.1
Cycle Q Clear(g_c), s	4.6	0.0	7.2	8.8	0.0	0.0	2.3	0.0	0.0	5.9	0.0	2.1
Prop In Lane	1.00		0.04	0.02		0.00	0.58		0.10	1.00		0.86
Lane Grp Cap(c), veh/h	437	0	604	686	0	0	335	0	0	927	0	432
V/C Ratio(X)	0.23	0.00	0.59	0.61	0.00	0.00	0.31	0.00	0.00	0.57	0.00	0.22
Avail Cap(c_a), veh/h	1315	0	2281	2351	0	0	1017	0	0	1970	0	919
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	12.9	13.5	0.0	0.0	16.0	0.0	0.0	14.5	0.0	13.1
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	3.7	4.6	0.0	0.0	1.2	0.0	0.0	2.9	0.0	1.0
LnGrp Delay(d),s/veh	12.2	0.0	13.3	13.8	0.0	0.0	16.6	0.0	0.0	15.0	0.0	13.3
LnGrp LOS	B		B	B			B			B		B
Approach Vol, veh/h		459			420			104			621	
Approach Delay, s/veh		13.0			13.8			16.6			14.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.1		15.5		18.1		11.9
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		9.2		7.9		10.8		4.3
Green Ext Time (p_c), s		3.8		2.4		3.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	248	612	58	206	564
Future Volume (veh/h)	54	248	612	58	206	564
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	119	658	62	222	606
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	312	278	737	604	323	1242
Arrive On Green	0.17	0.17	0.39	0.39	0.18	0.65
Sat Flow, veh/h	1810	1615	1900	1559	1810	1900
Grp Volume(v), veh/h	58	119	658	62	222	606
Grp Sat Flow(s),veh/h/ln	1810	1615	1900	1559	1810	1900
Q Serve(g_s), s	1.5	3.6	17.5	1.4	6.2	8.8
Cycle Q Clear(g_c), s	1.5	3.6	17.5	1.4	6.2	8.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	312	278	737	604	323	1242
V/C Ratio(X)	0.19	0.43	0.89	0.10	0.69	0.49
Avail Cap(c_a), veh/h	771	688	1585	1300	537	2314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	20.0	15.5	10.5	20.7	4.8
Incr Delay (d2), s/veh	0.1	0.4	1.6	0.0	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.6	9.5	0.6	3.2	4.4
LnGrp Delay(d),s/veh	19.2	20.3	17.1	10.6	21.7	4.9
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	177		720			828
Approach Delay, s/veh	20.0		16.5			9.4
Approach LOS	B		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.3	25.6				40.0		14.0
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	8.2	19.5				10.8		5.6
Green Ext Time (p_c), s	0.0	1.4				1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	326	14	9	362	509	44	35	8	450	15	165
Future Volume (veh/h)	121	326	14	9	362	509	44	35	8	450	15	165
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	123	333	14	9	369	0	45	36	8	459	15	94
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	455	545	23	89	564	0	167	133	30	968	62	387
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.00	0.18	0.18	0.18	0.28	0.28	0.28
Sat Flow, veh/h	1023	1809	76	15	1872	0	920	736	164	3510	224	1402
Grp Volume(v), veh/h	123	0	347	378	0	0	89	0	0	459	0	109
Grp Sat Flow(s),veh/h/ln	1023	0	1885	1887	0	0	1820	0	0	1755	0	1625
Q Serve(g_s), s	0.0	0.0	6.8	0.0	0.0	0.0	1.8	0.0	0.0	4.7	0.0	2.3
Cycle Q Clear(g_c), s	4.7	0.0	6.8	7.5	0.0	0.0	1.8	0.0	0.0	4.7	0.0	2.3
Prop In Lane	1.00		0.04	0.02		0.00	0.51		0.09	1.00		0.86
Lane Grp Cap(c), veh/h	455	0	568	653	0	0	330	0	0	968	0	448
V/C Ratio(X)	0.27	0.00	0.61	0.58	0.00	0.00	0.27	0.00	0.00	0.47	0.00	0.24
Avail Cap(c_a), veh/h	1441	0	2386	2451	0	0	1068	0	0	2060	0	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.3	0.0	13.0	13.2	0.0	0.0	15.3	0.0	0.0	13.1	0.0	12.2
Incr Delay (d2), s/veh	0.1	0.0	0.4	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.6	3.9	0.0	0.0	1.0	0.0	0.0	2.3	0.0	1.0
LnGrp Delay(d),s/veh	12.4	0.0	13.4	13.5	0.0	0.0	15.7	0.0	0.0	13.5	0.0	12.5
LnGrp LOS	B		B	B			B			B		B
Approach Vol, veh/h		470			378			89			568	
Approach Delay, s/veh		13.1			13.5			15.7			13.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		16.6		15.5		16.6		11.4
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		8.8		6.7		9.5		3.8
Green Ext Time (p_c), s		3.5		2.3		3.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	192	472	46	255	727
Future Volume (veh/h)	45	192	472	46	255	727
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	48	58	508	49	274	782
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	291	260	615	509	380	1208
Arrive On Green	0.16	0.16	0.32	0.32	0.21	0.64
Sat Flow, veh/h	1810	1615	1900	1572	1810	1900
Grp Volume(v), veh/h	48	58	508	49	274	782
Grp Sat Flow(s),veh/h/ln	1810	1615	1900	1572	1810	1900
Q Serve(g_s), s	1.1	1.4	11.4	1.0	6.5	11.8
Cycle Q Clear(g_c), s	1.1	1.4	11.4	1.0	6.5	11.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	291	260	615	509	380	1208
V/C Ratio(X)	0.16	0.22	0.83	0.10	0.72	0.65
Avail Cap(c_a), veh/h	901	804	1851	1531	627	2702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	16.9	14.4	10.9	17.0	5.2
Incr Delay (d2), s/veh	0.1	0.2	1.1	0.0	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	6.1	0.4	3.3	6.2
LnGrp Delay(d),s/veh	16.8	17.0	15.5	10.9	18.0	5.4
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	106		557			1056
Approach Delay, s/veh	16.9		15.1			8.7
Approach LOS	B		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.4	19.7				34.1		12.1
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	8.5	13.4				13.8		3.4
Green Ext Time (p_c), s	0.0	1.5				1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	445	16	4	238	419	25	13	3	603	26	115
Future Volume (veh/h)	89	445	16	4	238	419	25	13	3	603	26	115
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	91	454	16	4	243	0	26	13	3	615	27	43
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	628	631	22	91	653	0	122	61	14	1021	192	305
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.00	0.11	0.11	0.11	0.29	0.29	0.29
Sat Flow, veh/h	1155	1823	64	8	1884	0	1127	563	130	3510	659	1049
Grp Volume(v), veh/h	91	0	470	247	0	0	42	0	0	615	0	70
Grp Sat Flow(s),veh/h/ln	1155	0	1887	1892	0	0	1820	0	0	1755	0	1708
Q Serve(g_s), s	0.0	0.0	8.9	0.0	0.0	0.0	0.9	0.0	0.0	6.2	0.0	1.2
Cycle Q Clear(g_c), s	1.5	0.0	8.9	4.0	0.0	0.0	0.9	0.0	0.0	6.2	0.0	1.2
Prop In Lane	1.00		0.03	0.02		0.00	0.62		0.07	1.00		0.61
Lane Grp Cap(c), veh/h	628	0	654	744	0	0	197	0	0	1021	0	497
V/C Ratio(X)	0.14	0.00	0.72	0.33	0.00	0.00	0.21	0.00	0.00	0.60	0.00	0.14
Avail Cap(c_a), veh/h	1768	0	2516	2589	0	0	1125	0	0	2171	0	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	11.7	10.1	0.0	0.0	16.8	0.0	0.0	12.6	0.0	10.8
Incr Delay (d2), s/veh	0.0	0.0	0.6	0.1	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.7	2.1	0.0	0.0	0.5	0.0	0.0	3.1	0.0	0.6
LnGrp Delay(d),s/veh	9.3	0.0	12.3	10.2	0.0	0.0	17.3	0.0	0.0	13.1	0.0	10.9
LnGrp LOS	A		B	B			B			B		B
Approach Vol, veh/h		561			247			42			685	
Approach Delay, s/veh		11.8			10.2			17.3			12.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.8		15.5		17.8		8.0
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		10.9		8.2		6.0		2.9
Green Ext Time (p_c), s		3.3		2.6		3.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	61	297	629	52	228	599
Future Volume (veh/h)	61	297	629	52	228	599
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	66	171	676	56	245	644
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	317	283	753	622	318	1247
Arrive On Green	0.17	0.17	0.40	0.40	0.18	0.66
Sat Flow, veh/h	1810	1615	1900	1570	1810	1900
Grp Volume(v), veh/h	66	171	676	56	245	644
Grp Sat Flow(s),veh/h/ln	1810	1615	1900	1570	1810	1900
Q Serve(g_s), s	1.7	5.4	18.6	1.2	7.2	9.8
Cycle Q Clear(g_c), s	1.7	5.4	18.6	1.2	7.2	9.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	317	283	753	622	318	1247
V/C Ratio(X)	0.21	0.61	0.90	0.09	0.77	0.52
Avail Cap(c_a), veh/h	747	667	1535	1269	520	2242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	21.2	15.8	10.5	21.9	5.0
Incr Delay (d2), s/veh	0.1	0.8	1.6	0.0	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.5	9.9	0.5	3.7	5.1
LnGrp Delay(d),s/veh	19.8	22.0	17.4	10.5	23.4	5.1
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	237		732			889
Approach Delay, s/veh	21.4		16.9			10.1
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.5	26.8				41.2		14.4
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	9.2	20.6				11.8		7.4
Green Ext Time (p_c), s	0.0	1.5				1.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	334	16	8	404	542	59	33	10	514	14	154
Future Volume (veh/h)	102	334	16	8	404	542	59	33	10	514	14	154
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	104	341	16	8	412	0	60	34	10	524	14	83
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	437	577	27	84	602	0	193	109	32	927	62	370
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.00	0.18	0.18	0.18	0.26	0.26	0.26
Sat Flow, veh/h	987	1800	84	11	1879	0	1046	593	174	3510	236	1401
Grp Volume(v), veh/h	104	0	357	420	0	0	104	0	0	524	0	97
Grp Sat Flow(s),veh/h/ln	987	0	1884	1890	0	0	1813	0	0	1755	0	1637
Q Serve(g_s), s	0.0	0.0	7.2	0.0	0.0	0.0	2.3	0.0	0.0	5.9	0.0	2.1
Cycle Q Clear(g_c), s	4.7	0.0	7.2	8.8	0.0	0.0	2.3	0.0	0.0	5.9	0.0	2.1
Prop In Lane	1.00		0.04	0.02		0.00	0.58		0.10	1.00		0.86
Lane Grp Cap(c), veh/h	437	0	604	687	0	0	335	0	0	927	0	432
V/C Ratio(X)	0.24	0.00	0.59	0.61	0.00	0.00	0.31	0.00	0.00	0.57	0.00	0.22
Avail Cap(c_a), veh/h	1315	0	2280	2351	0	0	1017	0	0	1970	0	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	12.9	13.5	0.0	0.0	16.0	0.0	0.0	14.5	0.0	13.1
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	3.7	4.6	0.0	0.0	1.2	0.0	0.0	2.9	0.0	1.0
LnGrp Delay(d),s/veh	12.2	0.0	13.3	13.8	0.0	0.0	16.6	0.0	0.0	15.0	0.0	13.3
LnGrp LOS	B		B	B			B			B		B
Approach Vol, veh/h		461			420			104			621	
Approach Delay, s/veh		13.0			13.8			16.6			14.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.1		15.5		18.1		11.9
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		9.2		7.9		10.8		4.3
Green Ext Time (p_c), s		3.8		2.4		3.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	248	613	61	206	564
Future Volume (veh/h)	54	248	613	61	206	564
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	119	659	66	222	606
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	312	278	738	605	323	1242
Arrive On Green	0.17	0.17	0.39	0.39	0.18	0.65
Sat Flow, veh/h	1810	1615	1900	1559	1810	1900
Grp Volume(v), veh/h	58	119	659	66	222	606
Grp Sat Flow(s),veh/h/ln	1810	1615	1900	1559	1810	1900
Q Serve(g_s), s	1.5	3.6	17.5	1.5	6.2	8.8
Cycle Q Clear(g_c), s	1.5	3.6	17.5	1.5	6.2	8.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	312	278	738	605	323	1242
V/C Ratio(X)	0.19	0.43	0.89	0.11	0.69	0.49
Avail Cap(c_a), veh/h	771	688	1583	1299	536	2312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	20.0	15.5	10.6	20.8	4.8
Incr Delay (d2), s/veh	0.1	0.4	1.6	0.0	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.6	9.5	0.6	3.2	4.4
LnGrp Delay(d),s/veh	19.2	20.4	17.1	10.6	21.7	4.9
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	177		725			828
Approach Delay, s/veh	20.0		16.5			9.4
Approach LOS	B		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.3	25.7				40.0		14.0
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	8.2	19.5				10.8		5.6
Green Ext Time (p_c), s	0.0	1.4				1.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	326	14	9	362	511	44	35	8	450	15	165
Future Volume (veh/h)	123	326	14	9	362	511	44	35	8	450	15	165
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	126	333	14	9	369	0	45	36	8	459	15	94
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	455	545	23	89	564	0	167	133	30	968	62	387
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.00	0.18	0.18	0.18	0.28	0.28	0.28
Sat Flow, veh/h	1023	1809	76	15	1872	0	920	736	164	3510	224	1402
Grp Volume(v), veh/h	126	0	347	378	0	0	89	0	0	459	0	109
Grp Sat Flow(s),veh/h/ln	1023	0	1885	1887	0	0	1820	0	0	1755	0	1625
Q Serve(g_s), s	0.0	0.0	6.8	0.0	0.0	0.0	1.8	0.0	0.0	4.7	0.0	2.3
Cycle Q Clear(g_c), s	4.9	0.0	6.8	7.5	0.0	0.0	1.8	0.0	0.0	4.7	0.0	2.3
Prop In Lane	1.00		0.04	0.02		0.00	0.51		0.09	1.00		0.86
Lane Grp Cap(c), veh/h	455	0	568	654	0	0	330	0	0	968	0	448
V/C Ratio(X)	0.28	0.00	0.61	0.58	0.00	0.00	0.27	0.00	0.00	0.47	0.00	0.24
Avail Cap(c_a), veh/h	1441	0	2386	2450	0	0	1068	0	0	2060	0	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.3	0.0	13.0	13.2	0.0	0.0	15.3	0.0	0.0	13.1	0.0	12.2
Incr Delay (d2), s/veh	0.1	0.0	0.4	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.6	3.9	0.0	0.0	1.0	0.0	0.0	2.3	0.0	1.0
LnGrp Delay(d),s/veh	12.4	0.0	13.4	13.5	0.0	0.0	15.8	0.0	0.0	13.5	0.0	12.5
LnGrp LOS	B		B	B			B			B		B
Approach Vol, veh/h		473			378			89			568	
Approach Delay, s/veh		13.1			13.5			15.8			13.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		16.6		15.5		16.6		11.4
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		8.8		6.7		9.5		3.8
Green Ext Time (p_c), s		3.6		2.3		3.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	391	801	52	278	829
Future Volume (veh/h)	70	391	801	52	278	829
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1863	1863	1827
Adj Flow Rate, veh/h	74	277	843	43	293	873
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	4	2	2	4
Cap, veh/h	343	306	875	740	313	1290
Arrive On Green	0.19	0.19	0.48	0.48	0.18	0.71
Sat Flow, veh/h	1774	1583	1827	1544	1774	1827
Grp Volume(v), veh/h	74	277	843	43	293	873
Grp Sat Flow(s),veh/h/ln	1774	1583	1827	1544	1774	1827
Q Serve(g_s), s	3.3	15.9	41.5	1.4	15.2	25.1
Cycle Q Clear(g_c), s	3.3	15.9	41.5	1.4	15.2	25.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	343	306	875	740	313	1290
V/C Ratio(X)	0.22	0.91	0.96	0.06	0.94	0.68
Avail Cap(c_a), veh/h	438	391	875	740	313	1290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	36.7	23.4	13.0	37.8	7.7
Incr Delay (d2), s/veh	0.1	18.3	21.7	0.0	34.4	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.5	26.1	0.6	10.4	13.4
LnGrp Delay(d),s/veh	31.7	55.0	45.1	13.0	72.2	10.6
LnGrp LOS	C	E	D	B	E	B
Approach Vol, veh/h	351		886			1166
Approach Delay, s/veh	50.1		43.5			26.1
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	21.1	49.3				70.4		22.7
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 66		23.0
Max Q Clear Time (g_c+I1), s	17.2	43.5				27.1		17.9
Green Ext Time (p_c), s	0.0	0.5				2.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	390	7	6	348	752	39	28	7	732	20	170
Future Volume (veh/h)	116	390	7	6	348	752	39	28	7	732	20	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1827	1863	1900
Adj Flow Rate, veh/h	118	398	7	6	355	0	40	29	4	747	20	100
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	458	576	10	82	583	0	143	103	14	1049	83	413
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.00	0.14	0.14	0.14	0.31	0.31	0.31
Sat Flow, veh/h	1022	1824	32	9	1846	0	984	714	98	3375	266	1329
Grp Volume(v), veh/h	118	0	405	361	0	0	73	0	0	747	0	120
Grp Sat Flow(s),veh/h/ln	1022	0	1856	1855	0	0	1796	0	0	1688	0	1594
Q Serve(g_s), s	0.0	0.0	8.8	0.0	0.0	0.0	1.7	0.0	0.0	9.0	0.0	2.6
Cycle Q Clear(g_c), s	4.8	0.0	8.8	7.6	0.0	0.0	1.7	0.0	0.0	9.0	0.0	2.6
Prop In Lane	1.00		0.02	0.02		0.00	0.55		0.05	1.00		0.83
Lane Grp Cap(c), veh/h	458	0	587	666	0	0	260	0	0	1049	0	496
V/C Ratio(X)	0.26	0.00	0.69	0.54	0.00	0.00	0.28	0.00	0.00	0.71	0.00	0.24
Avail Cap(c_a), veh/h	1356	0	2218	2278	0	0	995	0	0	1870	0	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	13.8	13.4	0.0	0.0	17.5	0.0	0.0	14.0	0.0	11.8
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.0	0.6	0.0	0.0	0.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	4.6	3.9	0.0	0.0	0.9	0.0	0.0	4.3	0.0	1.2
LnGrp Delay(d),s/veh	12.5	0.0	14.3	13.6	0.0	0.0	18.1	0.0	0.0	14.9	0.0	12.1
LnGrp LOS	B		B	B			B			B		B
Approach Vol, veh/h		523			361			73			867	
Approach Delay, s/veh		13.9			13.6			18.1			14.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.0		17.8		18.0		10.2
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		10.8		11.0		9.6		3.7
Green Ext Time (p_c), s		3.8		3.3		3.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	391	802	54	278	830
Future Volume (veh/h)	70	391	802	54	278	830
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1863	1863	1827
Adj Flow Rate, veh/h	74	277	844	45	293	874
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	4	2	2	4
Cap, veh/h	343	306	870	735	311	1285
Arrive On Green	0.19	0.19	0.48	0.48	0.18	0.70
Sat Flow, veh/h	1774	1583	1827	1544	1774	1827
Grp Volume(v), veh/h	74	277	844	45	293	874
Grp Sat Flow(s),veh/h/ln	1774	1583	1827	1544	1774	1827
Q Serve(g_s), s	3.2	15.6	41.0	1.4	14.9	24.8
Cycle Q Clear(g_c), s	3.2	15.6	41.0	1.4	14.9	24.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	343	306	870	735	311	1285
V/C Ratio(X)	0.22	0.90	0.97	0.06	0.94	0.68
Avail Cap(c_a), veh/h	448	400	902	762	311	1285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	35.9	23.2	12.9	37.1	7.7
Incr Delay (d2), s/veh	0.1	17.2	22.3	0.0	35.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.3	25.8	0.6	10.3	12.8
LnGrp Delay(d),s/veh	31.0	53.1	45.5	12.9	72.3	8.9
LnGrp LOS	C	D	D	B	E	A
Approach Vol, veh/h	351		889			1167
Approach Delay, s/veh	48.5		43.9			24.8
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.7	48.1				68.8		22.3
Change Period (Y+Rc), s	* 4.7	* 4.7				* 4.7		4.7
Max Green Setting (Gmax), s	* 16	* 45				* 45		23.0
Max Q Clear Time (g_c+I1), s	16.9	43.0				26.8		17.6
Green Ext Time (p_c), s	0.0	0.4				2.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	390	7	6	348	754	39	28	7	732	20	170
Future Volume (veh/h)	118	390	7	6	348	754	39	28	7	732	20	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1900	1863	1900	1827	1863	1900
Adj Flow Rate, veh/h	120	398	7	6	355	0	40	29	4	747	20	100
Adj No. of Lanes	1	1	0	0	1	0	0	1	0	2	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	458	577	10	82	583	0	143	103	14	1049	83	413
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.00	0.14	0.14	0.14	0.31	0.31	0.31
Sat Flow, veh/h	1022	1824	32	9	1846	0	984	714	98	3375	266	1329
Grp Volume(v), veh/h	120	0	405	361	0	0	73	0	0	747	0	120
Grp Sat Flow(s),veh/h/ln	1022	0	1856	1855	0	0	1796	0	0	1688	0	1594
Q Serve(g_s), s	0.0	0.0	8.8	0.0	0.0	0.0	1.7	0.0	0.0	9.0	0.0	2.6
Cycle Q Clear(g_c), s	4.9	0.0	8.8	7.6	0.0	0.0	1.7	0.0	0.0	9.0	0.0	2.6
Prop In Lane	1.00		0.02	0.02		0.00	0.55		0.05	1.00		0.83
Lane Grp Cap(c), veh/h	458	0	587	666	0	0	260	0	0	1049	0	496
V/C Ratio(X)	0.26	0.00	0.69	0.54	0.00	0.00	0.28	0.00	0.00	0.71	0.00	0.24
Avail Cap(c_a), veh/h	1356	0	2217	2277	0	0	995	0	0	1869	0	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	13.8	13.4	0.0	0.0	17.5	0.0	0.0	14.0	0.0	11.8
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.3	0.0	0.0	0.6	0.0	0.0	0.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	4.6	3.9	0.0	0.0	0.9	0.0	0.0	4.3	0.0	1.2
LnGrp Delay(d),s/veh	12.6	0.0	14.3	13.6	0.0	0.0	18.1	0.0	0.0	15.0	0.0	12.1
LnGrp LOS	B		B	B			B			B		B
Approach Vol, veh/h		525			361			73			867	
Approach Delay, s/veh		13.9			13.6			18.1			14.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.1		17.8		18.1		10.2
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		55.0		25.5		55.0		25.5
Max Q Clear Time (g_c+I1), s		10.8		11.0		9.6		3.7
Green Ext Time (p_c), s		3.8		3.3		3.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

APPENDIX C – LEFT-TURN WARRANT ANALYSIS SHEETS

LEFT TURN LANE
WARRANT ANALYSIS

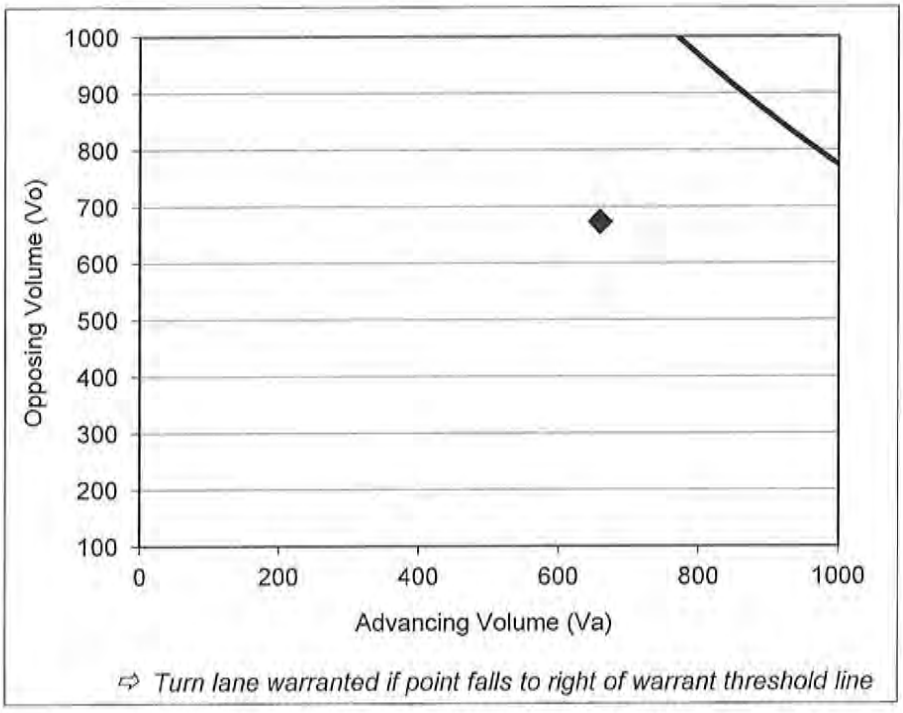
Study Intersection Sonoma Highway/Project Driveway

Study Scenario Existing + Project

INPUT		
Advancing Volume	Va	660
Opposing Volume	Vo	673
Left Turn Volume	Vl	1
Speed	SP	30 MPH
Two-Lane Undivided Highway		

Percentage Left Turns	%lt	0.2 %
Advancing Volume Threshold	AV	1122

If AV>Va then warrant is met



Warrant Threshold for 0.2% left turns and speed of 30

◆ Study Intersection

Left Turn Lane Warranted	NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997. The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

LEFT TURN LANE WARRANT ANALYSIS

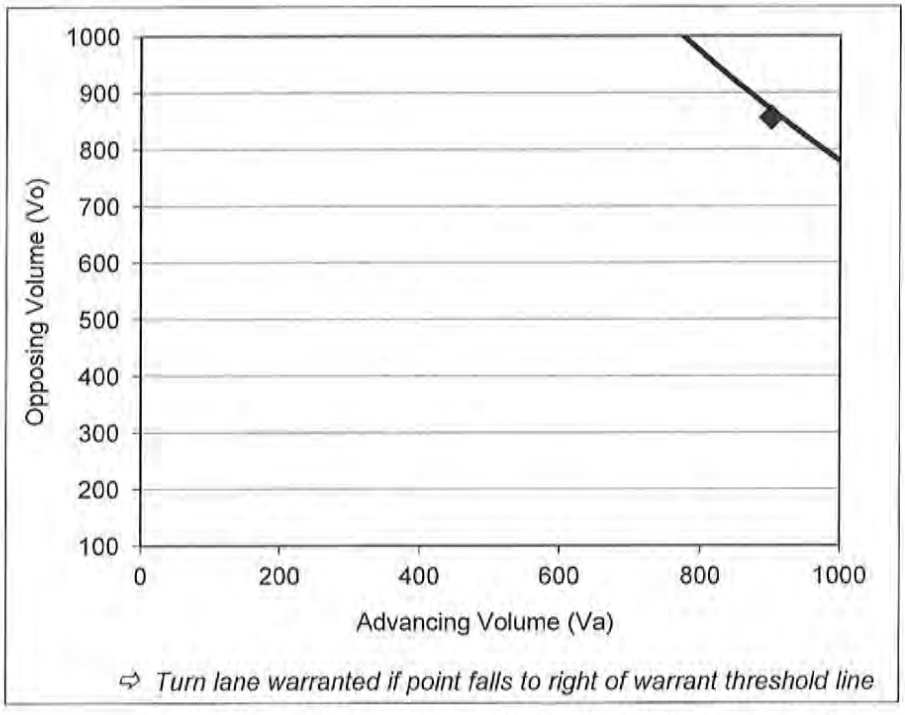
Study Intersection Sonoma Highway/Project Driveway

Study Scenario Cumulative + Project

INPUT		
Advancing Volume	Va	901
Opposing Volume	Vo	856
Left Turn Volume	Vl	1
Speed	SP	30 MPH
Two-Lane Undivided Highway		

Percentage Left Turns	%lt	0.1 %
Advancing Volume Threshold	AV	915

If AV>Va then warrant is met



Left Turn Lane Warranted	NO

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997. The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Attachment 3

Historical Resources Evaluation

19410 Sonoma Highway
Sonoma, Sonoma County, California
Cavalli Property
Assessor Parcel Number # 018-442-005

Prepared for Ken Taub, Architect
Prepared by John W. Murphey, Architectural Historian
111 Stanford Street, Santa Rosa, California 95404
(707) 583-7819, firstlightconsulting@gmail.com

March 19, 2017

Table of Contents

John W. Murphey, Architectural Historian, meets the Code of Federal Regulations, 36 CFR Part 61 in the areas of Architectural History and History. Murphey is listed in the California Historical Resources Information System under the discipline of Architectural History and in the New Mexico State Historic Preservation Office Directory of approved consultants in the areas of Architectural History and History.

I. Summary of Findings

This Historical Resources Evaluation was prepared at the request of Ken Taub of Taub Designs, in advance of potential alterations to three buildings at 19410 Sonoma Highway in Sonoma, Sonoma County, California (APN 018-442-005).

The report was prepared to satisfy requirements regarding the evaluation of cultural resources set forth in the California Environmental Quality Act (CEQA) and guidelines developed by the City of Sonoma for the treatment of historic properties (Title 14, CCR § 15064.5). The CEQA requires that cultural resources be considered during the environmental review process. This is accomplished through an inventory and evaluation of identified resources within the proposed project area.

The property at 19410 Sonoma Highway holds three buildings: a main residence and two accessory structures, built between the early 1950s and mid-1970s, under the ownership of Frank and Gerd Cavalli. Two of the buildings, the Main House (c.1956-57) and the Secondary Dwelling (c.1950-54), are over 50 years old.

None of the buildings are listed on the National Register of Historic Places or the California Register of Historical Resources, or have been assigned a California Historical Resources Status Code. The buildings have not been designated or recognized on a local registry.

After performing an intensive level survey, archival investigations and an evaluation of historical significance per CEQA guidelines, the conclusion is that the three buildings do not meet the criteria for designation on the California Register of Historical Resources and, therefore, do not meet CEQA's definition of a historical resource. As a result, a project to demolish the buildings at 19410 Sonoma Highway will not affect a historical resource or result in a significant impact.

II. Project Location

Figure 1: ParcelQuest aerial photograph showing location of 19410 Sonoma Highway.

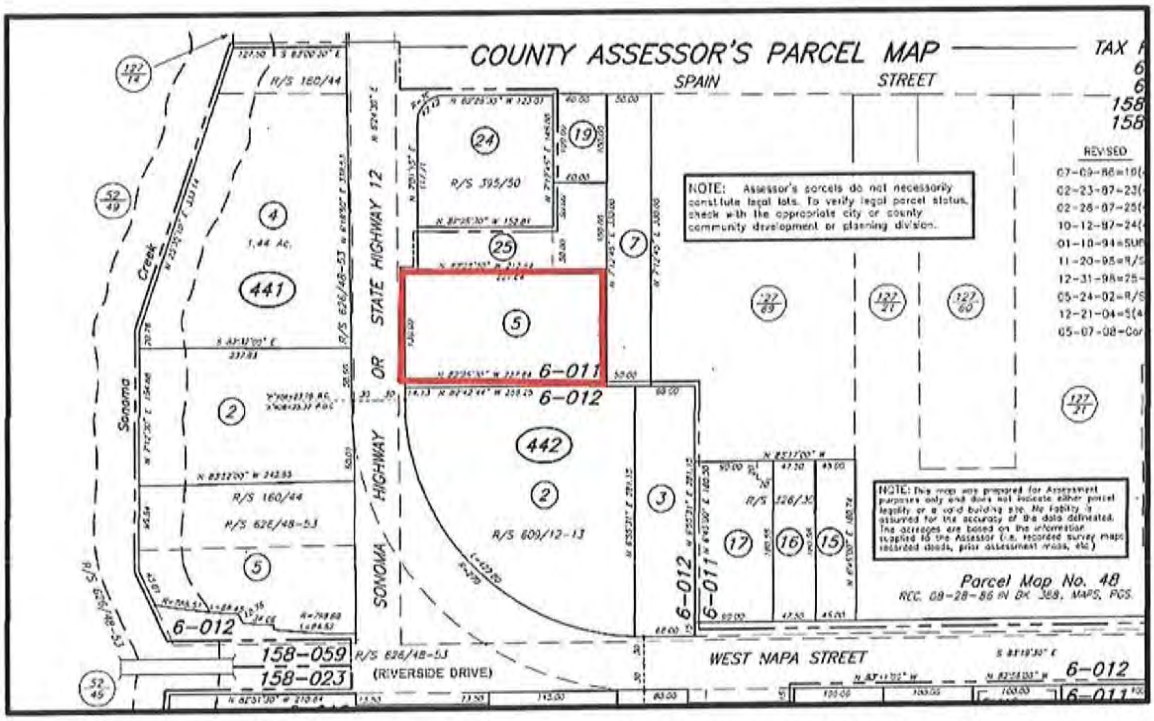


Figure 2: Portion of Assessor's Parcel Map showing location of 19410 Sonoma Highway.

III. Project Description

Conducted in March 2017, the project consisted of an intensive level survey and attendant research and evaluation of three buildings located at 19410 Sonoma Highway, Sonoma, Sonoma County. The purpose of the survey was to locate, identify and document all buildings, sites, structures and objects within on the property, to determine if any qualified as a historical resource, as defined by the CEQA.

The subject property is proposed for a mixed-use project that as proposed in the concept phase will include a two-story building with apartments and retail space. The project would likely result in the demolition of three existing buildings on the property.

The approximately 0.68-acre parcel is outside of the Historic Overlay Zone. It is subject locally to the zoning requirements of the City of Sonoma's West Napa/Sonoma Corridor planning area.

IV. Research Methods

Prior to starting fieldwork, the project historian reviewed the California Office of Historic Preservation's Historic Property Data File for properties listed and/or evaluated within the project area. This included a review of listings on the National Register of Historic Places, California Register of Historical Resources, California Inventory of Historic Places, as well as local registries maintained by the Sonoma Landmarks Commission and the Sonoma League for Historic Preservation. The records search included previous CEQA evaluations and studies conducted near the subject property. A separate archival research phase consisted of a review of primary and secondary sources held at various area repositories, including the Sonoma County Assessor's Office, Sonoma County History and Genealogy Library, Sonoma County Clerk-Recorder's Office, Sonoma Valley Historical Society, and various online history and genealogical resources.

V. Field Methods

John W. Murphey, Architectural Historian, conducted a site survey on March 2, 2017. This consisted of an intensive level survey of the entire 0.64-acre parcel. The survey recorded with Department of Parks and Recreation forms (DPR 523) the three buildings on the lot. Additional notes were taken on observed above-ground small-scale structures and objects. These forms are attached to this report.

VI. Historical Overview

The parcel holding the Cavalli property was historically located beyond Sonoma city limits, and for decades remained part of lightly populated outlands surrounding the original pueblo grant. Only in the late 19th century, following the issue of a federal land patent in 1880, did the outer areas begin to experience development. This accelerated in the early 20the century, with a rapid subdivision of the so-called outlots into smaller residential tracts.

In June 1835, worried about potential Russian predations, Governor José Figueroa ordered Mariano Guadalupe Vallejo — then head of colonization for the northern Mexican frontier — to plan a pueblo around the mission at San Francisco Solano de Sonoma to act as a military buffer. Vallejo roughed out a design featuring a typical plaza settlement and sent the plan to Governor Figueroa. In a letter dated June 24, 1835, the governor approved the design, and further instructed the young lieutenant to not only develop lots around the plaza for houses and gardens, but also to include larger parcels further out. These parcels, taken from "common land of the corporation," were to be used for "other kinds of culture, subject to the laws and regulations respecting the matter, so that in all times the municipality may have the legitimate right, &c."(Rodolfo Larios 1984).[1]

Mexican laws relating to land grants encouraged the allotting of larger parcels outside of the municipality to promote agriculture and ranching. The laws included a minimum acreage (square varas) that depended on their intended use (Avina 1973).[2] Starting in the 1860s, after U.S. occupation, the larger lots at the edge of the pueblo would be granted to private individuals and formally designated "outlouts."

With Governor Figueroa's approval, Vallejo created a grant for the *Pueblo de Sonoma*, a four-league-square municipality (Ogden 1862).[3] Soon after, Vallejo, with the assistance of William A. Richardson, an Englishman who would build the first substantial home in Yerba Buena and later have a section of the San Francisco Bay named after him, laid out a rectilinear grid (Scott 1985; McKittrick 1944).[4] Typical of Spanish and Mexican colonial towns, the design consisted of a central plaza surround by eight-acre square lots, each divided into four two-acre parcels called houselots. Beyond was a short grid of streets leading to anticipated farms. A wider street led to a planned embarcadero.

---

[1] Letter from Governor José Figueroa to Don M. G. Vallejo, June 24, 1835. Letter is reprinted in Rodolfo Larios, "El Presidio de Sonoma, 1835-1844," 1984, 11.

[2] Rose Hollenbaugh Avina, *Spanish and Mexican Land Grants in California*, 1973, 31.

[3] Ogden Hoffman, *Report of Land Cases Determined in the United States District Court for the Northern District of California*, 1862, 33.

[4] Mel Scott, *The San Francisco Bay Area: A Metropolis in Perspective*, 1985, 19; Myrtle M. McKittrick, *Vallejo: Son of California*, 1944, 77.

Sonoma's grant and land titles came under scrutiny after U.S occupation in 1846. Prior to official adjudication of Mexican and Spanish land grants, which began in 1851, General Stephen W. Kearny ordered Lilburn W. Boggs, then Sonoma's *Alcalde*, to resurvey the pueblo land grant. Boggs, a former Missouri governor who arrived in California in 1846 via the overland trail, would grant hundreds of acres of Sonoma to newly arrived Anglo-Americans during his term as mayor. With some urgency, he contracted with Jasper O'Farrell in March 1848 to do the work.

Irish-born O'Farrell, a trained civil engineer, made his mark in the immediate pre-occupation period surveying over 20 Mexican *rancho* land grants (Perez 1996).[5] His surveys, many commissioned by the Mexican government, were prized for their accuracy and their clean and mathematically-correct delineations of land parcels. Prior to being approached by Boggs, O'Farrell had surveyed and platted Benicia and had corrected and extended San Francisco's original plat with a re-survey covering nearly 800 acres (Scott 1985).[6] It can be assumed that *Alcalde* Boggs, sought the same type of outcome.

Boggs directed O'Farrell to expand the original pueblo plat and correct a survey executed by William Ide, which had extended Vallejo's plat with a new grid of streets meeting the original streets at awkward angles (Mawn 1970).[7] Supervised by O'Farrell, James Hudspeth (who would map Napa the same year) resurveyed a nearly 20-square-mile area. From Hudspeth's notes, O'Farrell produced a comprehensive map of Sonoma's land divisions, formalizing the boundaries of over 500 lots. O'Farrell's map for Sonoma resembled in many ways the gridiron matrix he created for San Francisco a year earlier.

For the first time, O'Farrell's completed 1848 plat map for Sonoma visually identified both the town lots and outer areas with numbers (Parmelee 1972).[8] This included Outlot 508, holding the subject property. With the resurveyed grant, the pueblo incorporated on April 4, 1850, as the City of Sonoma, the seat of the recently organized County of Sonoma. The city's boundary initially encompassed all of O'Farrell's survey, including the exterior areas (Murphy 1937).[9]

Outlot 508

A. W. Bowers, a mapmaker, revised O'Farrell's original survey and published handsome maps of Sonoma in 1866 and 1867, showing all of the town's lots and identifying them by their owners. Outlot 509, bordering 508 to the east, is indicated on the Bowers maps as under the ownership of George L. Wratten. Ten years later, Outlot 508 is shown on Robert A. Thompson's descriptive atlas of Sonoma County to be also under Wratten ownership (Thompson 1877).

Born in c.1829 in England, George Lemmon Wratten migrated to the United States as a child. He was trained as a lawyer in New York, and rushed to California in 1850 to pan gold (Dawson,

---

[5] Crisostomo N. Perez, *Land Grants in Alta California*, 1996, 28-30.
[6] Mel Scott, 1985, 24.
[7] Geoffrey P. Mawn, "Jasper O'Farrell: Surveyor, Farmer, and Politico," 1970, 86.
[8] Robert D. Parmelee, *Pioneer Sonoma*, 1972, 93.
[9] Celeste G. Murphy, *The People of the Pueblo or the Story of Sonoma*, 1937, 169.

2013).[10] Wratten most likely reached Sonoma in the mid-1850s, and is documented in the 1860 federal census for Sonoma as a 32-year-old lawyer. He served as the town's attorney from 1857-1858 and 1859-1860, in addition to acting as General Vallejo's personal lawyer, working with him on legislation to revoke the town's charter in 1862 in order to preserve the original land titles (Munro-Frasier 1973; Murphy 1937).[11]

Wratten owned the roughly 31-acre joint parcels until he moved with his family to Florence, Arizona in 1879 (Evans 2013).[12] He later relocated to Albuquerque, New Mexico, where he worked as a lawyer. He died at his desk of a heart attack on October 18, 1887.[13]

Emile and Sarah Stevenot (1890 to c.1900)

At some point prior to 1897, Outlots 508 and 509 passed to Sarah E. Stevenot, the widow of Emile Knoepffler Stevenot, a French immigrant who made his fortune in mining. Born in 1846 in Alsace-Lorraine, Emile was educated at the Université de Strasbourg, where he graduated in 1863 (Lewis Publishing Co. 1892).[14] Stevenot immigrated to the United States in 1863, following his father Gabriel, who set off for the goldfields in late 1849, eventually forming the town of Elizaville in Sierra County.

In California, the younger Stevenot attended Santa Clara University in 1864, but soon left to assist his father who was then president of the Melon Mining Company, a Denver, Colorado mining concern operating in Calaveras County. He worked at this mine until 1870, after which time he relocated to San Francisco, establishing a borax and metallurgical refinery on the corner of Powell and Chestnut streets (Lewis Publishing Co. 1892).[15] At the refinery, described at the time as one of the largest of its kind in the United States, Stevenot discovered a new method of refining borax which greatly expanded his business until cheaper concentrated borax lessened the demand for the refined product. In 1872, Stevenot married Sarah Stephens, a native of Ohio.

Selling his borax business in 1879, Stevenot returned to the Sierra foothills, bringing with him Sarah and their three young children. In Calaveras County, Stevenot established several mines near Carson Hill, including the successful Calaveras Consolidated Gold Mining Company, which he sold to an English concern in 1888. In 1890, he moved the family to Sonoma, where they purchased a 31-acre ranch (Outlots 508 and 509), planted with fruit trees and grape vines.[16]

---

[10] Arthur Dawson, "840 Napa Street, Sonoma, California," Department of Parks and Recreation Primary and Building Record forms, July 2013, 5.

[11] J.P. Munro-Frasier, *History of Sonoma County: Including its Geology, Topography, Mountains, Valleys and, Streams*, 1973, 451; Murphy, *1937*, 171.

[12] Sally Evans, "845 W. Spain Street, Sonoma," Department of Parks and Recreation Primary and Building Record forms, 2013, 9.

[13] *Los Angeles Times*, October 19, 1887, 4.

[14] Lewis Publishing Company, *The Bay of San Francisco: The Metropolis of the Pacific Coast and its Suburban Cities*, 1892, 536.

[15] Ibid.

[16] Ibid.

According to a brief biographical entry from 1892, he erected a mining assay laboratory there. At the same time the couple maintained a house on Pine Street in San Francisco.

Stevenot continued to work in the Gold Country, where he still owned a large mine and served as a consulting engineer for the Persian Mine near Mariposa, and to maintain an office in San Francisco. It is unclear how much time Stevenot or the family spent on the property in Sonoma. The couple had divested of some of the land, selling a three-acre section of Outlot 508 in 1895 (Petaluma Daily Morning Courier 1895).[17] The 1900 census finds the entire family of eight living in San Francisco (1900 Census). Six years later, Emile K. Stevenot died in Maryland, and was buried there. Sarah died in San Francisco in 1928.

Michael D. Lonergan (c.1900s to 1927)

Before Emile's death, a good portion — if not the entirety — of Outlots 508 and 509, were under the ownership of Irish immigrant Michael D. Lonergan. A retired quarry worker and horse race enthusiast, Lonergan immigrated to the United States in 1865. Starting in c.1905, he began selling off portions of Outlot 509, and he continued to liquidate sections of Outlots 508 and 509 through 1907. Two of the sections of Outlot 508 were sold to Antonio Baccala, including one in direct relation to the subject parcel which was sold on September 6, 1905. Lonergan died in May 1919 at the age of 66, leaving an estate worth $8,200 which for a time went unclaimed. The estate included several of his prized horses (Petaluma Daily Morning Courier 1919).[18]

Antonio and Martina Baccala (1905 to 1927)

Born in Switzerland in c.1866 Antonio Baccala arrived in California in 1890 at age 24, becoming a naturalized citizen in Sonoma on July 29, 1890.[19] Like many Italian immigrants, he may have been drawn to the area to work in the basalt quarries. In 1894, he married Martina Anselmi, who had immigrated the year before from Switzerland.

Documented in early official records as a laborer, Baccala had opened a saloon by 1907 on what was described in a newspaper account as the "Sonoma Road" between town and El Verano (Petaluma Argus-Courier 1907).[20] Given this description, it is likely that Baccala's business sat on one of the two parcels he owned in Outlot 508. The 1910 census shows that Baccala and his wife, Martina, lived on Napa Street.

In 1922, with anticipated construction of a new state highway between Sonoma and Santa Rosa, Baccala deeded without compensation 0.40 acres from his holdings in Outlot 508 to the State of California for right-of-way (Sonoma County Assessor 1923).[21] The improved road was completed in 1924, and known then as the Napa-Sonoma-Santa Rosa Highway. It opened a new

---

[17] *Petaluma Daily Morning Courier*, December 14, 1895, 1.

[18] *Petaluma Argus-Courier*, June 2, 1919, 4

[19] California State Library, California History Section; *Great Registers, 1866-1898*; Collection Number: *4 - 2A*; CSL Roll Number: *132*; FHL Roll Number: *97858*.

[20] *Petaluma Argus-Courier*, January 9, 1907, 1.

[21] A. Baccala to State of California, March 21, 1923, Book 39, Page 46.

regional transportation corridor connecting the East Bay, via the Rodeo-Vallejo Auto Ferry, to Sonoma and the Redwood Empire.

Three years later, Antonio and Martina Baccala sold part of the frontage along the new concrete highway to Gottardo Cavalli, a San Francisco saloonkeeper. The deed created on March 21, 1927, covering 0.68 acres, represents the first delineation of the subject property (Sonoma County Assessor 1927).[22]

Antonio Baccala died in 1940. His wife deeded the remaining sections of their property to Matilda A. Merkelbach in 1943 (Sonoma County Assessor 1943).[23] Martina Anselmi Baccala died five years later.

The Cavalli Family (1927 to Present)

Like Antonio Baccala, Gottardo Cavalli was raised in Switzerland of Italian ancestry. Born ten years after Baccala, he immigrated to the United States in 1900, becoming a naturalized citizen in 1905 (1920 Census).[24] He settled with his wife Delfina, also of Italian heritage, in San Francisco, eventually purchasing a three-story Italianate house at 1818-20 Lombard Street. There they raised four sons and one daughter.

Edward, born in May 1919 with twin brother Frank, had severe developmental delays after being nearly strangled by his umbilical cord at birth (Cavalli 2017).[25] Having no other choice, the parents moved Edward to the Sonoma State Home in Glen Ellen in the 1920s. As recalled by Gottardo's grandson, Steven Cavalli, this was the initial reason to buy the property along the Sonoma-Santa Rosa Highway, as it allowed the family to visit Edward, who would later spend time at a home they constructed on the site in the 1950s.

In San Francisco, their three other sons — Frank, Mario and Julio — started a house painting company in the 1930s, later called the Cavalli Bros. Around 1953, Frank Cavalli and his wife Gerd moved their fledgling family to his father's property on Outlot 508. Their arrival paralleled a population boom in Sonoma County, particular affecting the City of Sonoma, which had grown 109% between 1940 and 1953 (Gallagher 1954).[26] Much of the growth consisted of suburbanization of areas outside of the original pueblo core, including subdivisions of the larger outlots into small tracts of homes.

The Cavallis initially lived in a large redwood-sided chicken house on the property that was added upon and stuccoed to form a small two-bedroom house (Cavalli 2017).[27] Most likely coinciding with his mother's deeding of the property to the couple in 1956, Frank constructed a significantly larger three bedroom ranch-style residence, north of the old chicken house

---

[22] Antonio and Martina Baccala to Gottardo Cavalli, March 25 1927, Book 165, Page 211.
[23] Martina Baccala to Matilda A. Merkelbach, April 27, 1943, Book 231, Page 209.
[24] *1920* Census Place: *San Francisco Assembly District 31, San Francisco, California*; Roll: *T625_136*; Page: *5A*; Enumeration District: *142*; Image: *311.*
[25] Steven Cavalli, telephone interview with John Murphey, February 27, 2017.
[26] Paul E. Gallagher, *California Blue Book, 1954*, 1954, 867.
[27] Steven Cavalli, 2017.

(Sonoma County Assessor 1956; Cavalli 2017).[28] There they raised their two children, Debbie and Steven. For a time Frank's brother Julio and his wife and child lived in the smaller dwelling. Frank expanded the brothers' painting business to Sonoma, though they still maintained their principal operation in San Francisco through the 1970s.

Over the years, Frank made small improvements to the property, installing landscaping, planting trees and constructing a concrete patio with a small pond and miniature bridge. The last major improvement was the freestanding two-car garage erected at the northeast corner of the property. The Cavallis shuttered their painting business in the mid-1980s. Gerd died in 2006, followed by Frank in 2010. Both are buried at the Sonoma Cemetery. The property, now rented out, is in held in a trust by their surviving children, Steven and Debbie Cavalli.

[28] Ibid.; Delfina Cavalli to Frank and Gerd Cavalli, September 24, 1956, Book 1476, Page 411.

VII. Description of Cultural Resources

Situated on the east side of Sonoma Highway near its intersection with West Napa Street, the subject property is an approximately 0.68-acre rectangular parcel containing three buildings. It is surrounded by commercial development, including a two-story motel immediately to the south and a large a warehouse structure to the north. A two-story condominium complex dominates the east view. The former Farrell Sonoma Mill & Complex sits immediately west, across the highway. The property is entered by a circular asphalt driveway. The front yard, acting as a buffer between the house and highway, is landscaped with a lawn in the circle of the driveway. An informal screen of privets and olive trees closes off the yard from the road. Specimen plantings of juniper, ash and pine and various fruit trees are scattered throughout. Set back nearly 145' from the road, the buildings are arranged in a roughly north-to-south axis along the back side of the lot.

Main House

Occupying the middle of the cluster is an approximately 1,239-square-foot, one-story, single-family residence. Constructed in c.1956-57, it is an L-form with a cross-gabled roof plan, showing several hipped extensions. The roof is covered with asphalt shingles; a 19" overhang and metal gutter carries across each elevation. The front (highway-facing façade) is characterized by several projections, with one holding a shed-roof porch. The porch shades a large three-light picture window, signaling the ranch-style aspiration of the dwelling. Secondary elevations are fenestrated standard one-over-one, double-hung wood windows of various sizes. Medium size units are placed near the corners of the bedroom wing. A massive chimney, constructed of concrete expressed in a Roman brick pattern, breaks through the eave on the north elevation. The stucco-over-frame building has a lightly textured finish painted in a taupe color. The house was constructed by Frank Cavalli, its owner, and contains three bedrooms.

Figure 3: Main House, west elevation, facing northeast.

Secondary Dwelling

Located approximately 10' southeast of the main residence is an older one-story dwelling, reportedly constructed partially out of a preexisting chicken house. Arranged on an east-west axis, it has a rectangular, side-gabled form, made of three distinct sections of pitched roof. The eaves extend approximately 19" over the rafters; the roof is covered with asphalt shingles. The west end is characterized by a narrow, gabled mass. To this is connected a second gabled section, slightly wider and taller, followed by a lower, shorter gabled section at the rear. The front two sections are clad with stucco; the rear section is sheathed with horizontal wood siding. The south elevation, fronting a motel, is faced with non-historic vertical wood siding. The house is fenestrated across its west and northeast elevations with standard steel casement windows. The living room, looking onto the yard, is daylighted by a large eight-light fixed window, flanked by four-light sash. A single opening holding an AC unit was observed on the south elevation.

The dwelling is entered on the north through a canted door leading into the middle section. In total, the house holds approximately 731 square feet, with all the rooms arranged in a linear "shotgun" fashion. According to the son of the builder, the dwelling started out as a chicken house, which his father stuccoed in the early 1950s, adding at least one addition and bringing it to its current footprint. Vernacular in construction, it displays no identifiable style.

Figure 4: Secondary Dwelling, partial north and east elevations, facing southeast.

Garage

A freestanding, two-car garage anchors the northeast corner of property. The roughly 665-square-foot building is a square, hipped-roof form. The eaves project 19" and are terminated with metal fascia. The roofing material is asphalt shingles. Its stucco-on-frame walls are erected over a raised concrete foundation. Its front (west) façade is dominated by a sectional wood door with a row of opaque lights. The south (yard-facing) elevation is fenestrated with a solid pedestrian door and aluminum sliding windows. Similar windows are found on the north elevation. An aluminum sliding patio door penetrates the east elevation. The walls are finished with lightly textured stucco painted in a taupe color. According to his son, Frank Cavalli constructed the garage in the 1970s.

Figure 5: Garage, west elevation, facing east.

VIII. Evaluation of Resource Significance

The CEQA requires that historical resources to be considered during the environmental review process. To determine the significance of a potential historical resource, the resource is evaluated according to established guidelines.

The CEQA uses the California Register of Historical Resources (California Register) Criteria for Evaluation as the standard to be applied to both the identification and evaluation of historical resources.

The California Register, the State of California's official list of historically significant resources, recognizes important architectural, historical, archeological and cultural sites. The criteria informing the California Register closely align with the evaluation criteria established in the federal National Register of Historic Places.

In order for a property to meet eligibility for listing in the California Register, a resource must be found significant under one or more of these criteria:

- Criterion 1 (Events): Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.

- Criterion 2 (Persons): Associated with the lives of persons important to local, California or national history.

- Criterion 3 (Design/Construction): Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.

- Criterion 4 (Information Potential): Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The following section evaluates the three buildings at 19410 Sonoma Highway against these criteria.

Criterion 1

The underlying history of the property is associated with the long process of bringing Sonoma's exterior outlots into formal city jurisdiction. The particular outlot, Outlot 508, appears to have been part of a pattern of land speculation characterized by short-term ownership and division

of property into smaller lots. The parcel itself appears to have been first improved in the 1950s, starting with the second-to-last owner, who reportedly converted a chicken house into a dwelling and later built a larger residence and freestanding garage. In this regard, the occupation and improvement of the property by the Cavalli Family roughly coincides with a population boom in Sonoma in the post-war period and associated suburban development. However, as a single residential lot, surrounded by mostly commercial development, it does not communicate this historical pattern.

For these reasons, the buildings do not appear to be eligible under California Register Criterion 1.

Criterion 2

The underlying property, of which the subject parcel is only a small fraction, appears to be associated with persons significant to Sonoma's history. These include George L. Wratten, an early town attorney, personal of lawyer of General Mariano G. Vallejo, and land speculator. Sarah E. Stevenot, the widow of Emile K. Stevenot, a successful mining era businessman, is directly connected to the property, as part of her ownership of Outlot 508. Like Wratten, her impress on the specific subject property is questionable. Other later owners of Outlot 508 seemed to use the land as investment, successively selling off tracts to private individuals. The only known improvement to the property, represented by the three standing buildings, was at the hands of Frank Cavalli. Based on archival research, Cavalli does not appear to be significant to local or California history.

For these reasons, the buildings do not appear to be eligible under California Register Criterion 2.

Criterion 3

The three buildings standing on the property were constructed roughly between the early 1950s and the mid-1970s, and represent modest architecture constructed by the owner, Frank Cavalli. The building with the strongest architectural presence is the Main House, which falls roughly within the ranch house idiom, representing a homemade interpretation of the style. While solidly constructed, it shows homemade characteristics, including awkward junctures of gabled and hipped roof elements and an artful arrangement of sash windows. The house is not a good example of the style or representative of tract and/or merchant-built ranch houses of the same period. The Secondary Dwelling is more characteristic of vernacular architecture, and reflects no identifiable style, while the Garage is simply a well-built utilitarian structure.

For these reasons, the buildings do not appear to be eligible under California Register Criterion 3.

Criterion 4

The property was not evaluated for its potential to yield information significant in prehistory and history. An evaluation of potential archaeological resources on the property was prepared separately by another consultant. Therefore, the property's eligibility under California Register Criterion 4 is not addressed in this report.

Integrity

Beyond meeting one of the four criteria, to be considered eligible for listing on the California Register the resource must also retain a high level of historic integrity. Guiding the evaluation of integrity are seven qualities used for National of Historic Places designation. These include:

- Aspect 1: Location
- Aspect 2: Design
- Aspect 3: Setting
- Aspect 4: Materials
- Aspect 5: Workmanship
- Aspect 6: Feeling
- Aspect 7: Association

As stated by the National Park Service, to convey historical significance a resource "will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance" (National Park Service 1995).

Based on the survey, the three buildings have retained their integrity of Location, Design, Materials and Workmanship. The setting of the immediate area has changed since the construction of the two residences. The somewhat rural and open feeling of the area, when the Cavallis built their homes in 1950s, has been gradually altered with infill of open lots and the introduction of commercial and larger residential complexes. Currently the property is surrounded by two-story buildings along its north, east and south edges. In this regard, the property and the three buildings no longer retain their historic Setting, Feeling and Association.

IX. Findings and Conclusions

Constructed roughly between the early 1950s and mid-1970s, the three buildings occupying the site of 19410 Sonoma Highway were built by Frank Cavalli for residential purposes.

The buildings do not appear to meet any of the four criteria required for listing on the California Register. In addition, they no longer retain three of the seven aspects of historic integrity. Equally, the buildings do not appear to meet the evaluation criteria for designation on the National Register of Historic Places.

The finding, therefore, is that neither individually nor collectively do the buildings meet the CEQA's definition of a historical resource. Therefore, a project to demolish the buildings at 19410 Sonoma Highway will not affect a historical resource or result in a significant impact.

X. Bibliography

Avina, Rose Hollenbaugh. *Spanish and Mexican Land Grants in California*. San Francisco: R and E Research Associates, 1973 (reprint of 1932 thesis, University of California.).

Bennyhoff, James A. and Albert B. Elsasser. *Sonoma Mission: An Historical and Archaeological Study of Primary Constructions, 1823-1913.* Berkeley, Calif.: University of California, 1954.

Bowers, A. B. "Map of Sonoma County, California." A. B. Bowers, 1866 and 1867 revision.

Cavalli, Steve, telephone interview with John W. Murphey, February 27, 2017.

Dawson, Arthur. "840 Napa Street, Sonoma, California," Department of Parks and Recreation Primary and Building Record forms, July 2013, 5.

Evans, Sally. "845 W. Spain Street, Sonoma, California." Department of Parks and Recreation Primary and Building Record forms. February 2, 2013.

Gallagher, Paul E. *California Blue Book, 1954*. Sacramento, Calif.: State Printer, c.1954.

Hoffman, Ogden. *Report of Land Cases Determined in the United States District Court for the Northern District of California, June Term, 1853 to June Term, 1858, Inclusive, Volume I.* San Francisco, Numa Hubert Publisher, 1862.

Hutchinson, C. Alan. *Frontier Settlement in Mexican California: The Híjar-Padrés Colony and Its Origin, 1769-1835*. New Haven: Yale University Press, 1969.

Levick, M. B. *Sonoma County, California*. San Francisco: Sunset Magazine Homeseekers' Bureau (published for the Sonoma County Development Association), 1912.

Larios, Rodolfo. "El Presidio de Sonoma, 1835-1844." Facsimile printing, 1984.

Lewis Publishing Company. *The Bay of San Francisco: The Metropolis of the Pacific Coast and its Suburban Cities, Volume 1*. Chicago: The Lewis Publishing Company, 1892.

Lynch, Robert M. *The Sonoma Valley Story: Pages through the Ages*. Sonoma, Calif.: Sonoma Index-Tribune, Inc., 1997.

Mawn, Geoffrey P. "Jasper O'Farrell: Surveyor, Farmer, and Politico." MA thesis, University of San Francisco, 1970.

McKittrick, Myrtle M. *Vallejo: Son of California*. Portland, Ore.: Binfords & Mort, Publishers, 1944.

Miller, Vernon C. *Soil Survey, Sonoma County, California*. Washington, D.C.: United States Department of Agriculture, Forest Service and Soil Conservation Service, in cooperation with the University of California, 1972.

Munro-Fraser, J. P. *History of Sonoma County: Including its Geology, Topography, Mountains, Valleys and, Streams*. Petaluma, Calif.: Charmaine Burdell Veronda, 1973 facsimile of 1880 publication.

Murphy, Celeste G. *The People of the Pueblo or the Story of Sonoma*. Sonoma, Calif.: W. L. and C. G. Murphy, 1937.

Pacific Telephone and Telegraph Company. *Telephone Directory of Sonoma, Lake, and Mendocino Counties*. Various years: 1948, 1952, 1953, 1955, 1958, 1959, 1960, 1964, 1974, 1978, 1982, 1983, and 1985.

Parmelee, Robert D. *Pioneer Sonoma*. Sonoma, Calif.: Sonoma Index-Tribune, 1972.

Perez, Crisostomo N. *Land Grants in Alta California: A compilation of Spanish and Mexican private land claims in the State of California*. Rancho Cordova, Calif.: Landmark Enterprises, 1996.

Petaluma Argus-Courier (newspaper). Various issues: 1905-1926.

Petaluma Daily Morning Courier newspaper). Various issues: 1895-.

Press Democrat. *Press Democrat's 1913 Directory of Santa Rosa, Petaluma and Sonoma County*. Santa Rosa, Calif: The Press Democrat Publishing Company, c.1913.

R. L. & Polk Company. *Polk's Santa Rosa, Petaluma and Sonoma County Directory, 1929-1930*. San Francisco: R. L. & Polk Co., of California, c.1930.

Reps, John W. *The Forgotten Frontier: Urban Planning in the American West Before 1890*. Columbia, Mo., University of Missouri Press, 1981.

Reynolds & Proctor, compiler. *Illustrated Atlas of Sonoma County California*. Santa Rosa, Calif.: Reynolds & Proctor, 1897.

Ricksecker, L. E. *Official map of Sonoma County, California*. Sonoma County, Calif., W.B. Walkup & Co. Britton & Rey, 1900.

Sanborn Fire Insurance Map Company. *Sonoma* (map). October 1923; October 1941.

Scott, Mel. *The San Francisco Bay Area: A Metropolis in Perspective*. Berkeley, Calif.: University of California Press, 1985.

Smilie, Robert S. *The Sonoma Mission, San Francisco Solano de Sonoma: The Sonoma Mission, San Francisco Solano de Sonoma: the founding, ruin and restoration of California's 21st mission*. Fresno, Calif: Valley Publishers, 1975.

Sonoma County Assessor. Various Deeds and Official Records:

Michael Lonergan to Marie Weber [Webber], April 6, 1905, Book 218, Page 21.
Michael Lonergan to A. Baccala, September 6, 1905, Book 218, Page 177.
Michael Lonergan to A. Baccala, August 20, 1906, Book 231, Page 209.
A. Baccala to State of California, March 1, 1923, Book 39, Page 46.
Antonio and Martina Baccala to Gottardo Cavalli, March 25, 1927, Book 165, Page 211.
A. and Martina Baccala to Cino Pardini, May 6, 1930, Book 261, Page 175.
A. and Martina Baccala to Anna Frances Weindorf, May 25, 1935, Book 387, Page 77.
Martina Baccala to Matilda A. Merkelbach, April 27, 1943 Book 231, Page 209.
Delfina Cavalli to Frank and Gerd Cavalli, September 24, 1956, Book 1476, Page 411.
Frank and Gerd Cavalli to Anglo Safe Trustor Safe Deposit Company, June 28, 1958, Book 1607, Page 285.
Frank and Gerd Cavalli, Quiet Claim of Trust, January 24, 1985.

Sonoma County Recorder. "Residential Building Record," (Parcel #018-442-005).c.1950-54.

Thompson, Robert A. *Historical and Descriptive Sketch of Sonoma County, California.* Philadelphia: L. H. Everts & Company, 1877.

U.S. Department of Interior, Geological Survey. *Sonoma, Calif.* (1:24000 map). 1951, photorevised, 1968.

._____ National Park Service. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*. Washington, D.C.: National Park Service, 1995.

XI. Maps and Illustrations

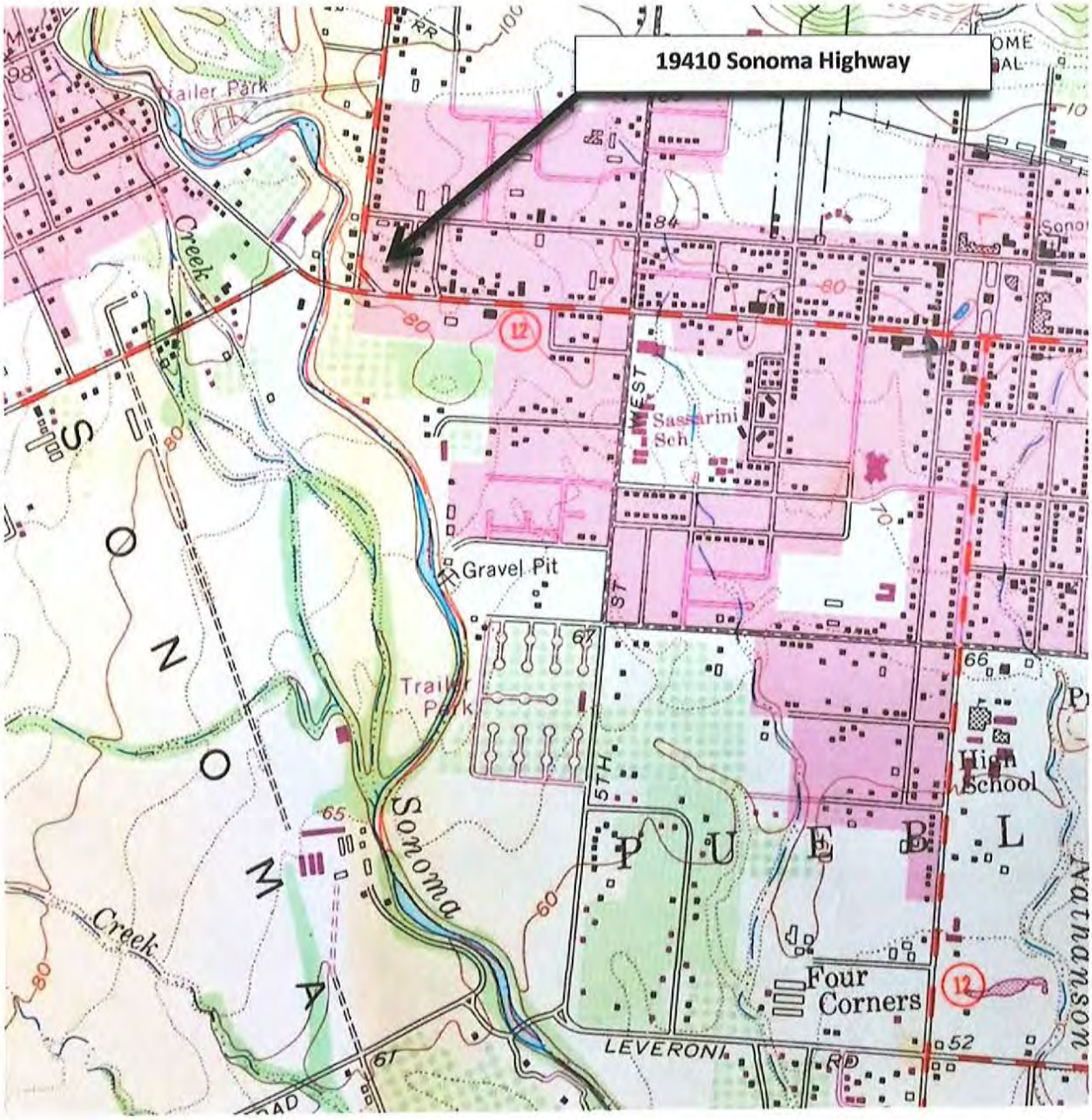


Figure 6: Portion of *Sonoma, Calif.* (1:24000 map) 1951, photorevised, 1968, USGS quad map.

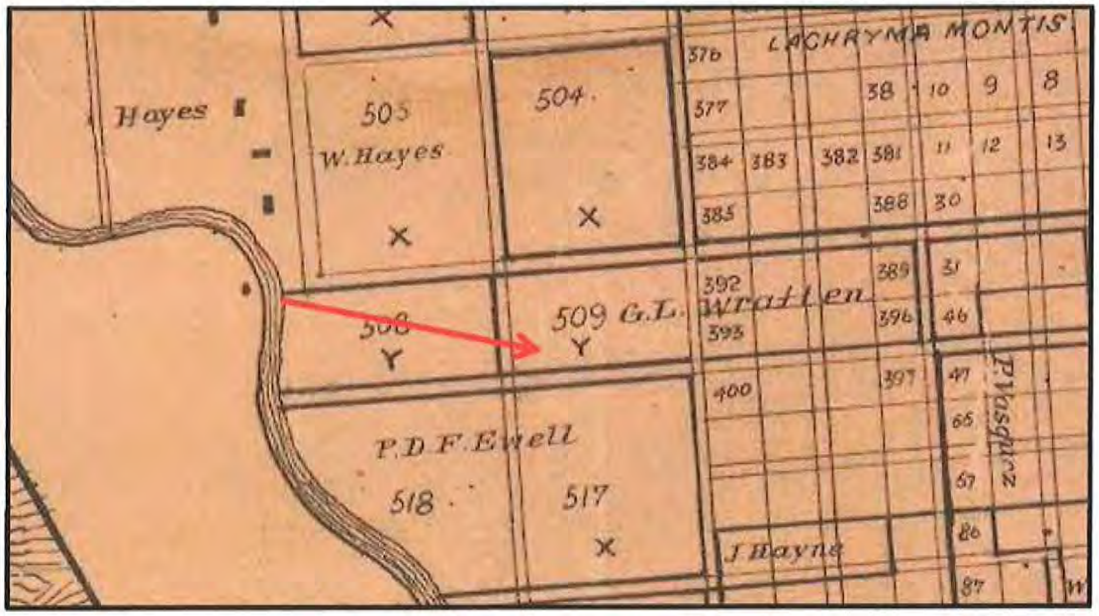


Figure 7: Portion of 1866 A. W. Bowers "Map of Sonoma County, California," showing Outlot 509 under George L. Wratten's ownership.

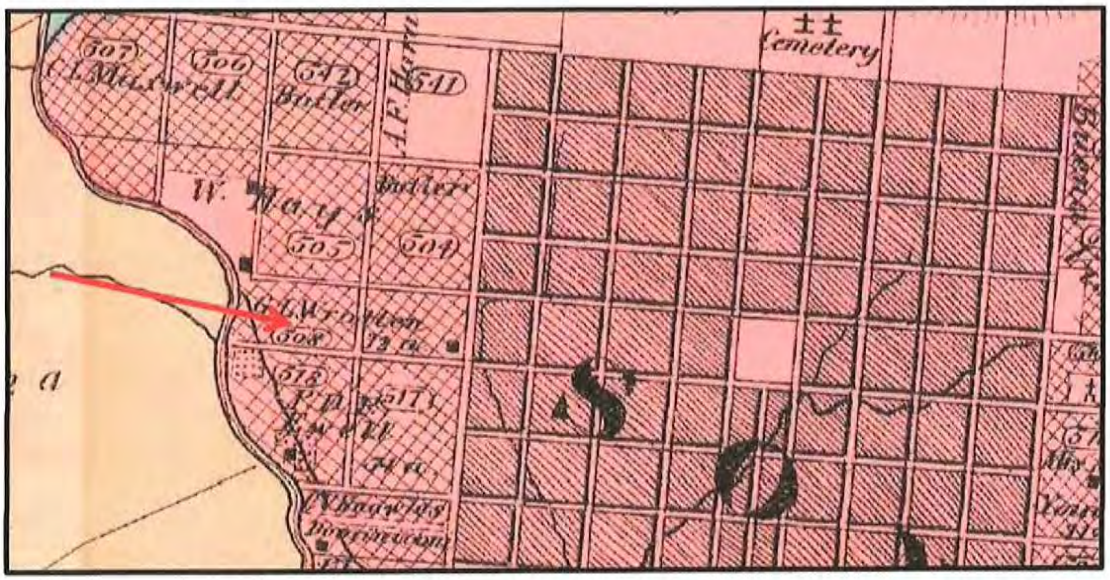


Figure 8: Potion of Robert A. Thompson 1877 map showing Outlots 508 and 509 under George L. Wratten's ownership.

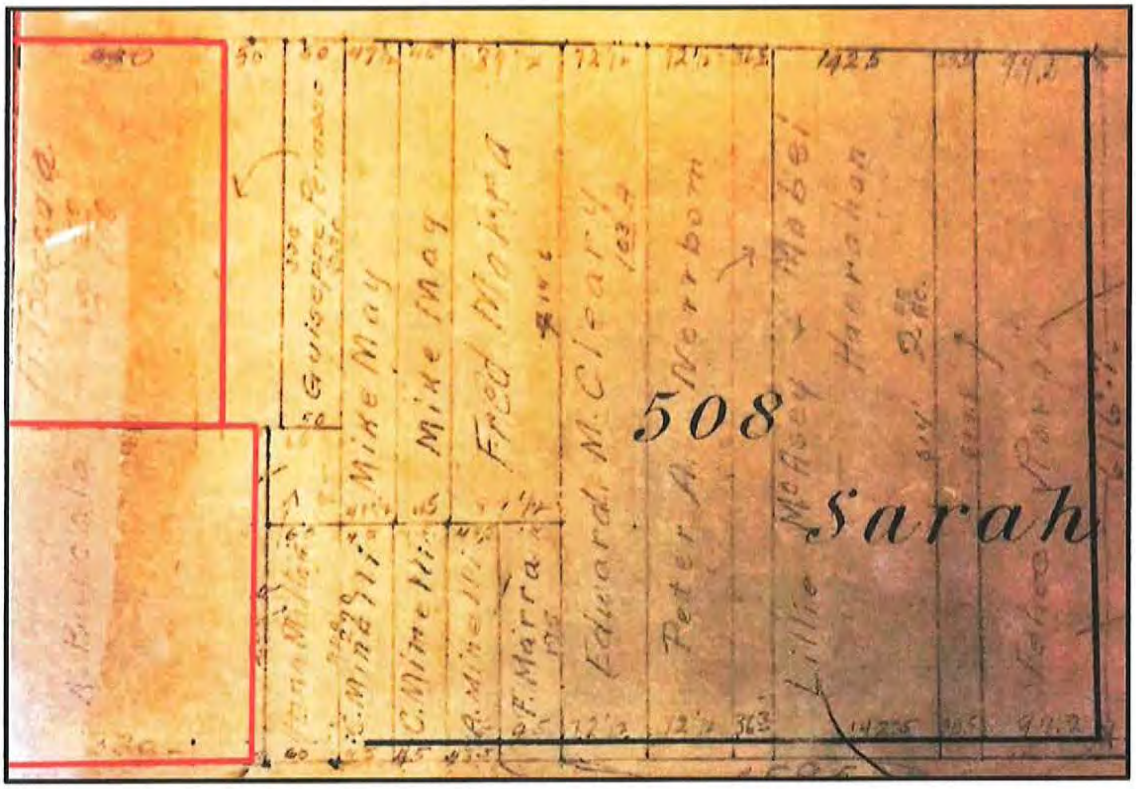


Figure 9: Portion of Sonoma County "breadmap" map showing c.1920s land ownership of Outlot 508. Red lines indicate parcels owned by Antonio Baccala ("Sonoma SW Map 90, Volume 61").

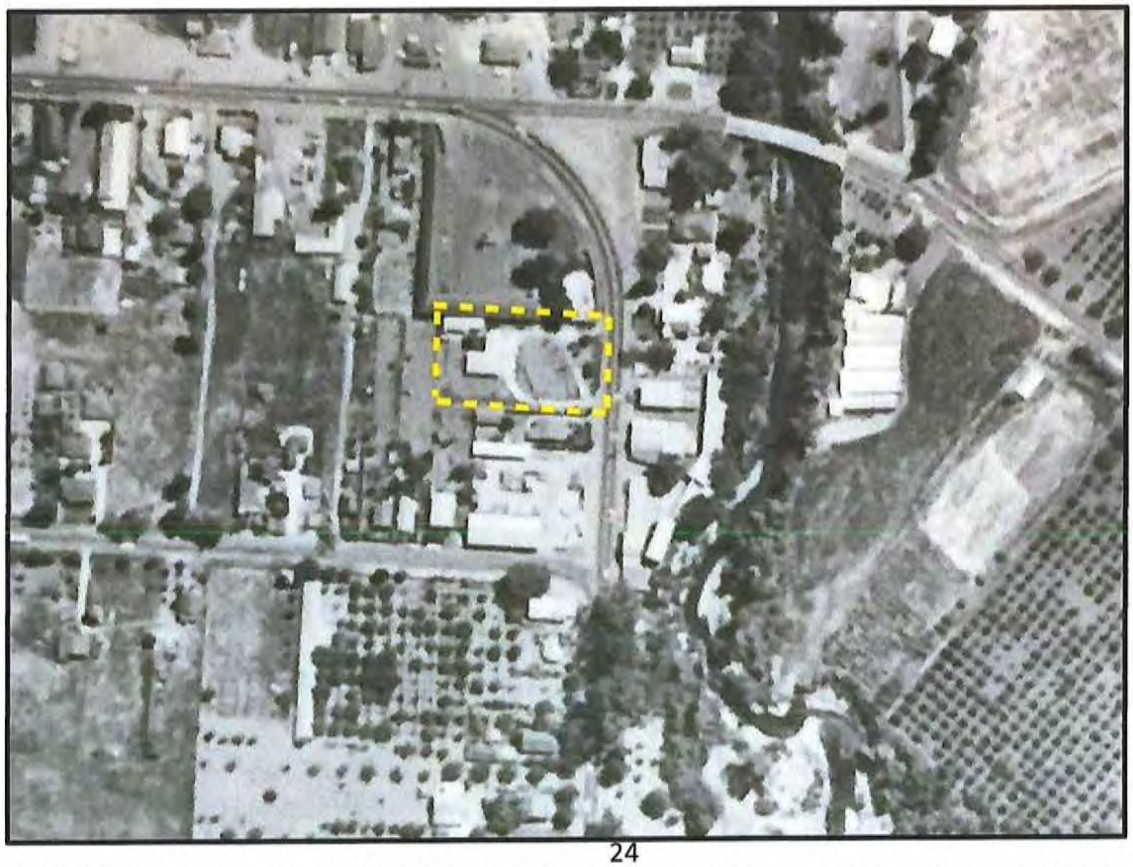


Figure 10: Poriton of 1961 aerial phortograph showing 19410 Sonoma Highway. Garage at northeast corner is not present at this time.

XII. DPR 523 Forms

See attached forms

State of California ▯ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI #
Trinomial
NRHP Status Code

Other Review Code | Reviewer | Date | Listings

 ***Resource Name or #: 19410 Sonoma Highway**

P1. Other Identifier: Cavalli Property

***P2. Location:** ☐ **Not for Publication** x **Unrestricted**

a. **County** Sonoma **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
b. **USGS 7.5' Quad** Sonoma, Calif. **Date** 1951,photorevised 1968, **T**7 N; **R** 6W (38°17'40.7"N 122°28'30.7"W)**B.M.** Mount Diablo
c. **Address** 19410 Sonoma Highway (CA 12) City Sonoma Zip 95476
d. **UTM:** Zone 10,N: 545892.2 mE / 4238635.8 mN
e. **Other Locational Data:** Sonoma County Parcel # 018-442-005

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Situated on the east side of Sonoma Highway near its intersection with West Napa Street, the subject property is an approximately 0.68-acre rectangular parcel containing three buildings. It is surrounded by commercial development, including a two-story motel immediately to the south and a large a warehouse structure to the north. A two-story condominium complex dominates the east view. The former Farrell Sonoma Mill & Complex sits immediately west, across the highway. The property is entered by a circular asphalt driveway. The front yard, acting as a buffer between the house and highway, is landscaped with a lawn in the circle of the driveway. An informal screen of privets and olive trees closes off the yard from the road. Specimen plantings of juniper, ash and pine and various fruit trees are scattered throughout. Set back nearly 145' from the road, the buildings are arranged in a roughly north-to-south axis along the back side of the lot. **See Continuation Sheet 2.**

***P3b. Resource Attributes:** (List attributes and codes) HP2 – Single Family Property; HP4 – Ancillary Building

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Main House, north and west elevations, facing southeast, March 2, 2017

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both
c.1956-57, Main House
c. 1952-53,Secondary Dwelling
c. mid-1970s, Garage

***P7. Owner and Address:**
Steven G. Cavalli and Debbie L. Cavalli Revocable Trust,435 Denton Way, Santa Rosa, CA 95401

***P8. Recorded by:** (Name, affiliation, and
John W. Murphey
FirstLight Consulting
111 Stanford Street
Santa Rosa, CA 95404

***P9. Date Recorded:**
March 2, 2017

***P10. Survey Type:** (Describe)
Intensive Level for Historical Resources Evaluation

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
None

***Attachments:** ☐NONE ☒Location Map ☒ Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List): N/A

P3a. Description, Continued:

Main House

Occupying the middle of the cluster is an approximately 1,239-square-foot, one-story, single-family residence. Constructed in c.1956-57, it is an L-form with a cross-gabled roof plan, showing several hipped extensions. The roof is covered with asphalt shingles; a 19" overhang and metal gutter carries across each elevation. The front (highway-facing façade) is characterized by several projections, with one holding a shed-roof porch. The porch shades a large three-light picture window, signaling the ranch-style aspiration of the dwelling. Secondary elevations are fenestrated standard one-over-one, double-hung wood windows of various sizes. Medium size units are placed near the corners of the bedroom wing. A massive chimney, constructed of concrete expressed in a Roman brick pattern, breaks through the eave on the north elevation. The stucco-over-frame building has a lightly textured finish painted in a taupe color. The house was constructed by Frank Cavalli, its owner, and contains three bedrooms.

Secondary Dwelling

Located approximately 10' southeast of the main residence is an older one-story dwelling, reportedly constructed partially out of a preexisting chicken house. Arranged on an east-west axis, it has a rectangular, side-gabled form, made of three distinct sections of pitched roof. The eaves extend approximately 19" over the rafters; the roof is covered with asphalt shingles. The west end is characterized by a narrow, gabled mass. To this is connected a second gabled section, slightly wider and taller, followed by a lower, shorter gabled section at the rear. The front two sections are clad with stucco; the rear section is sheathed with horizontal wood siding. The south elevation, fronting a motel, is faced with non-historic vertical wood siding. The house is fenestrated across its west and northeast elevations with standard steel casement windows. The living room, looking onto the yard, is daylighted by a large eight-light fixed window, flanked by four-light sash. A single opening holding an AC unit was observed on the south elevation. The dwelling is entered on the north through a canted door leading into the middle section. In total, the house holds approximately 731 square feet, with all the rooms arranged in a linear "shotgun" fashion. According to the son of the builder, the dwelling started out as a chicken house, which his father stuccoed in the early 1950s, adding at least one addition and bringing it to its current footprint. Vernacular in construction, it displays no identifiable style.

Garage

A freestanding, two-car garage anchors the northeast corner of property. The roughly 665-square-foot building is a square, hipped-roof form. The eaves project 19" and are terminated with metal fascia. The roofing material is asphalt shingles. Its stucco-on-frame walls are erected over a raised concrete foundation. Its front (west) façade is dominated by a sectional wood door with a row of opaque lights. The south (yard-facing) elevation is fenestrated with a solid pedestrian door and aluminum sliding windows. Similar windows are found on the north elevation. An aluminum sliding patio door penetrates the east elevation. The walls are finished with lightly textured stucco painted in a taupe color. According to his son, Frank Cavalli constructed the garage in the 1970s.

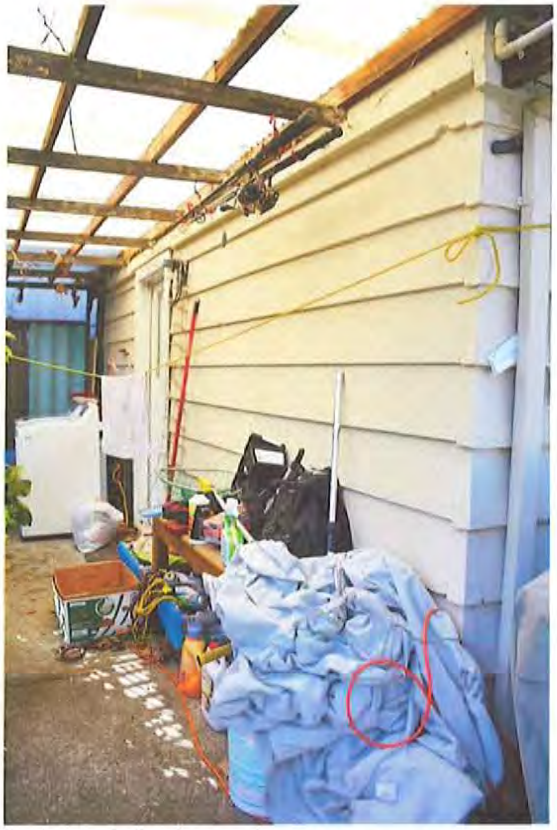
Main House, west and partial south elevations, facing northeast.

Main House, north elevation, facing south.

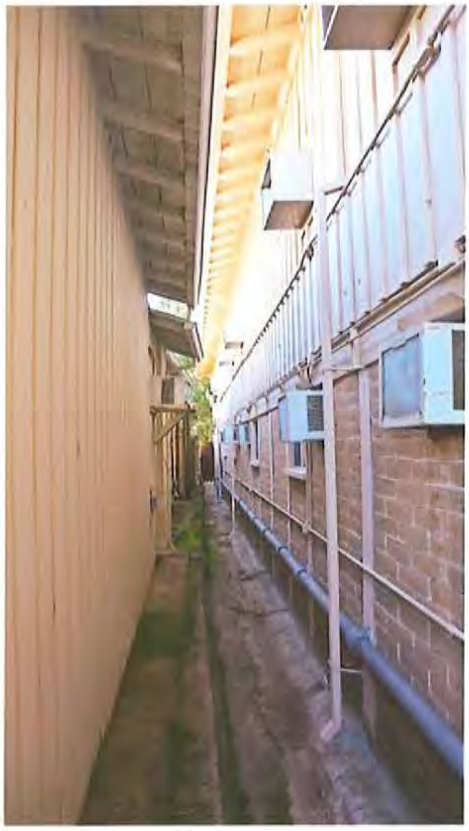
Main House, east elevation, facing west.

Secondary Dwelling, partial north and west elevations, facing southeast.

Secondary Dwelling, north elevation, facing southwest.



Secondary Dwelling, east elevation, facing southwest.



Secondary Dwelling, south elevation (left), facing east.

Garage, west elevation, facing east.

Garage, south elevation, facing north.

Garage, south and east elevations, facing northwest.

B1. Historic Name: Frank and Gerd Cavalli house
B2. Common Name: N/A
B3. Original Use: Residential
B4. Present Use: Residential
***B5. Architectural Style:** Ranch; Vernacular
***B6. Construction History:** (Construction date, alterations, and date of alterations)

Main House: c. 1956-57; Secondary Dwelling (originally chicken house, c. 1940, with reconstruction 1952-53); Garage, mid-1970s. No major alterations were observed during survey.

***B7. Moved?** ☒ **No** ☐**Yes** ☐**Unknown** N/A **Date: Original Location:** N/A
***B8. Related Features:** Ancillary buildings: Secondary Dwelling and Garage, as described.
B9a. Architect: N/A b. Builder: Frank Cavalli
***B10. Significance: Theme** Community Planning and Development **Area** City of Sonoma
Period of Significance 1950-1967
Property Type Single-Family Residence **Applicable Criteria** N/A

The parcel holding the Cavalli property was historically located beyond Sonoma city limits, and for decades remained part of lightly populated outlands surrounding the original pueblo grant. Only in the late 19th century, following the issue of a federal land patent in 1880, did the outer areas begin to experience development. This accelerated in the early 20the century, with a rapid subdivision of the so-called outlots into smaller residential tracts. **See Continuation Sheets 9-11.**

B11: Additional Resource Attributes: HP2-Single Family Property; HP4-Ancillary Building
***B12. References: See Sheet Continuation Sheets 12-13.**
B13: Remarks N/A
***B14. Evaluator:** John W. Murphey, FirstLight Consulting, 111 Stanford Street, Stanford Street, CA 95404
Date of Evaluation: March 19, 2017

B10. Significance, Continued:

In June 1835, worried about potential Russian predations, Governor José Figueroa ordered Mariano Guadalupe Vallejo — then head of colonization for the northern Mexican frontier — to plan a pueblo around the mission at San Francisco Solano de Sonoma to act as a military buffer. Vallejo roughed out a design featuring a typical plaza settlement and sent the plan to Governor Figueroa. In a letter dated June 24, 1835, the governor approved the design, and further instructed the young lieutenant to not only develop lots around the plaza for houses and gardens, but also to include larger parcels further out. These parcels, taken from "common land of the corporation," were to be used for "other kinds of culture, subject to the laws and regulations respecting the matter, so that in all times the municipality may have the legitimate right, &c."(Rodolfo Larios 1984).

Mexican laws relating to land grants encouraged the allotting of larger parcels outside of the municipality to promote agriculture and ranching. The laws included a minimum acreage (square varas) that depended on their intended use (Avina 1973). Starting in the 1860s, after U.S. occupation, the larger lots at the edge of the pueblo would be granted to private individuals and formally designated "outlouts."

With Governor Figueroa's approval, Vallejo created a grant for the *Pueblo de Sonoma*, a four-league-square municipality (Ogden 1862). Soon after, Vallejo, with the assistance of William A. Richardson, an Englishman who would build the first substantial home in Yerba Buena and later have a section of the San Francisco Bay named after him, laid out a rectilinear grid (Scott 1985; McKittrick 1944). Typical of Spanish and Mexican colonial towns, the design consisted of a central plaza surround by eight-acre square lots, each divided into four two-acre parcels called houselots. Beyond was a short grid of streets leading to anticipated farms. A wider street led to a planned embarcadero.

Sonoma's grant and land titles came under scrutiny after U.S occupation in 1846. Prior to official adjudication of Mexican and Spanish land grants, which began in 1851, General Stephen W. Kearny ordered Lilburn W. Boggs, then Sonoma's *Alcalde*, to resurvey the pueblo land grant. Boggs, a former Missouri governor who arrived in California in 1846 via the overland trail, would grant hundreds of acres of Sonoma to newly arrived Anglo-Americans during his term as mayor. With some urgency, he contracted with Jasper O'Farrell in March 1848 to do the work.

Irish-born O'Farrell, a trained civil engineer, made his mark in the immediate pre-occupation period surveying over 20 Mexican *rancho* land grants (Perez 1996). His surveys, many commissioned by the Mexican government, were prized for their accuracy and their clean and mathematically-correct delineations of land parcels. Prior to being approached by Boggs, O'Farrell had surveyed and platted Benicia and had corrected and extended San Francisco's original plat with a re-survey covering nearly 800 acres (Scott 1985). It can be assumed that *Alcalde* Boggs, sought the same type of outcome.

Boggs directed O'Farrell to expand the original pueblo plat and correct a survey executed by William Ide, which had extended Vallejo's plat with a new grid of streets meeting the original streets at awkward angles (Mawn 1970). Supervised by O'Farrell, James Hudspeth (who would map Napa the same year) resurveyed a nearly 20-square-mile area. From Hudspeth's notes, O'Farrell produced a comprehensive map of Sonoma's land divisions, formalizing the boundaries of over 500 lots. O'Farrell's map for Sonoma resembled in many ways the gridiron matrix he created for San Francisco a year earlier.

For the first time, O'Farrell's completed 1848 plat map for Sonoma visually identified both the town lots and outer areas with numbers (Parmelee 1972). This included Outlot 508, holding the subject property. With the resurveyed grant, the pueblo incorporated on April 4, 1850, as the City of Sonoma, the seat of the recently organized County of Sonoma. The city's boundary initially encompassed all of O'Farrell's survey, including the exterior areas (Murphy 1937).

Outlot 508

A. W. Bowers, a mapmaker, revised O'Farrell's original survey and published handsome maps of Sonoma in 1866 and 1867, showing all of the town's lots and identifying them by their owners. Outlot 509, bordering 508 to the east, is indicated on the Bowers maps as under the ownership of George L. Wratten. Ten years later, Outlot 508 is shown on Robert A. Thompson's descriptive atlas of Sonoma County to be also under Wratten ownership (Thompson 1877).

Born in c.1829 in England, George Lemmon Wratten migrated to the United States as a child. He was trained as a lawyer in New York, and rushed to California in 1850 to pan gold (Dawson, 2013). Wratten most likely reached Sonoma in the mid-1850s, and is documented in the 1860 federal census for Sonoma as a 32-year-old lawyer. He served as the town's attorney from 1857-1858 and 1859-1860, in addition to acting as General Vallejo's personal lawyer, working with him on legislation to revoke the town's charter in 1862 in order to preserve the original land titles (Munro-Frasier 1973; Murphy 1937).

Wratten owned the roughly 31-acre joint parcels until he moved with his family to Florence, Arizona in 1879 (Evans 2013). He later relocated to Albuquerque, New Mexico, where he worked as a lawyer. He died at his desk of a heart attack on October 18, 1887.

Emile and Sarah Stevenot (1890 to c.1900)

At some point prior to 1897, Outlots 508 and 509 passed to Sarah E. Stevenot, the widow of Emile Knoepffler Stevenot, a French immigrant who made his fortune in mining. Born in 1846 in Alsace-Lorraine, Emile was educated at the Université de Strasbourg, where he graduated in 1863 (Lewis Publishing Co. 1892). Stevenot immigrated to the United States in 1863, following his father Gabriel, who set off for the goldfields in late 1849, eventually forming the town of Elizaville in Sierra County.

In California, the younger Stevenot attended Santa Clara University in 1864, but soon left to assist his father who was then president of the Melon Mining Company, a Denver, Colorado mining concern operating in Calaveras County. He worked at this mine until 1870, after which time he relocated to San Francisco, establishing a borax and metallurgical refinery on the corner of Powell and Chestnut streets (Lewis Publishing Co. 1892). At the refinery, described at the time as one of the largest of its kind in the United States, Stevenot discovered a new method of refining borax which greatly expanded his business until cheaper concentrated borax lessened the demand for the refined product. In 1872, Stevenot married Sarah Stephens, a native of Ohio.

Selling his borax business in 1879, Stevenot returned to the Sierra foothills, bringing with him Sarah and their three young children. In Calaveras County, Stevenot established several mines near Carson Hill, including the successful Calaveras Consolidated Gold Mining Company, which he sold to an English concern in 1888. In 1890, he moved the family to Sonoma, where they purchased a 31-acre ranch (Outlots 508 and 509), planted with fruit trees and grape vines. According to a brief biographical entry from 1892, he erected a mining assay laboratory there. At the same time the couple maintained a house on Pine Street in San Francisco. Stevenot continued to work in the Gold Country, where he still owned a large mine and served as a consulting engineer for the Persian Mine near Mariposa, and to maintain an office in San Francisco. It is unclear how much time Stevenot or the family spent on the property in Sonoma. The couple had divested of some of the land, selling a three-acre section of Outlot 508 in 1895 (Petaluma Daily Morning Courier 1895). The 1900 census finds the entire family of eight living in San Francisco (1900 Census). Six years later, Emile K. Stevenot died in Maryland, and was buried there. Sarah died in San Francisco in 1928.

Michael D. Lonergan (c.1900s to 1927)

Before Emile's death, a good portion — if not the entirety — of Outlots 508 and 509, were under the ownership of Irish immigrant Michael D. Lonergan. A retired quarry worker and horse race enthusiast, Lonergan immigrated to the United States in 1865. Starting in c.1905, he began selling off portions of Outlot 509, and he continued to liquidate sections of Outlots 508 and 509 through 1907. Two of the sections of Outlot 508 were sold to Antonio Baccala, including one in direct relation to the subject parcel which was sold on September 6, 1905. Lonergan died in May 1919 at the age of 66, leaving an estate worth $8,200 which for a time went unclaimed. The estate included several of his prized horses (Petaluma Daily Morning Courier 1919).

Antonio and Martina Baccala (1905 to 1927)

Born in Switzerland in c.1866 Antonio Baccala arrived in California in 1890 at age 24, becoming a naturalized citizen in Sonoma on July 29, 1890. Like many Italian immigrants, he may have been drawn to the area to work in the basalt quarries. In 1894, he married Martina Anselmi, who had immigrated the year before from Switzerland.
Documented in early official records as a laborer, Baccala had opened a saloon by 1907 on what was described in a newspaper account as the "Sonoma Road" between town and El Verano (Petaluma Argus-Courier 1907). Given this description, it is likely that Baccala's business sat on one of the two parcels he owned in Outlot 508. The 1910 census shows that Baccala and his wife, Martina, lived on Napa Street.

In 1922, with anticipated construction of a new state highway between Sonoma and Santa Rosa, Baccala deeded without compensation 0.40 acres from his holdings in Outlot 508 to the State of California for right-of-way (Sonoma County Assessor 1923). The improved road was completed in 1924, and known then as the Napa-Sonoma-Santa Rosa Highway. It opened a new regional transportation corridor connecting the East Bay, via the Rodeo-Vallejo Auto Ferry, to Sonoma and the Redwood Empire.
Three years later, Antonio and Martina Baccala sold part of the frontage along the new concrete highway to Gottardo Cavalli, a San Francisco saloonkeeper. The deed created on March 21, 1927, covering 0.68 acres, represents the first delineation of the subject property (Sonoma County Assessor 1927).

Antonio Baccala died in 1940. His wife deeded the remaining sections of their property to Matilda A. Merkelbach in 1943 (Sonoma County Assessor 1943). Martina Anselmi Baccala died five years later.

The Cavalli Family (1927 to Present)

Like Antonio Baccala, Gottardo Cavalli was raised in Switzerland of Italian ancestry. Born ten years after Baccala, he immigrated to the United States in 1900, becoming a naturalized citizen in 1905 (1920 Census). He settled with his wife Delfina, also of Italian heritage, in San Francisco, eventually purchasing a three-story Italianate house at 1818-20 Lombard Street. There they raised four sons and one daughter.

Edward, born in May 1919 with twin brother Frank, had severe developmental delays after being nearly strangled by his umbilical cord at birth (Cavalli 2017). Having no other choice, the parents moved Edward to the Sonoma State Home in Glen Ellen in the 1920s. As recalled by Gottardo's grandson, Steven Cavalli, this was the initial reason to buy the property along the Sonoma-Santa Rosa Highway, as it allowed the family to visit Edward, who would later spend time at a home they constructed on the site in the 1950s. In San Francisco, their three other sons — Frank, Mario and Julio — started a house painting company in the 1930s, later called the Cavalli Bros. Around 1953, Frank Cavalli and his wife Gerd moved their fledgling family to his father's property on Outlot 508. Their arrival paralleled a population boom in Sonoma County, particular affecting the City of Sonoma, which had grown 109% between 1940 and 1953 (Gallagher 1954). Much of the growth consisted of suburbanization of areas outside of the original pueblo core, including subdivisions of the larger outlots into small tracts of homes.

The Cavallis initially lived in a large redwood-sided chicken house on the property that was added upon and stuccoed to form a small two-bedroom house (Cavalli 2017). Most likely coinciding with his mother's deeding of the property to the couple in 1956, Frank constructed a significantly larger three bedroom ranch-style residence, north of the old chicken house (Sonoma County Assessor 1956; Cavalli 2017). There they raised their two children, Debbie and Steven. For a time Frank's brother Julio and his wife and child lived in the smaller dwelling. Frank expanded the brothers' painting business to Sonoma, though they still maintained their principal operation in San Francisco through the 1970s.

Over the years, Frank made small improvements to the property, installing landscaping, planting trees and constructing a concrete patio with a small pond and miniature bridge. The last major improvement was the freestanding two-car garage erected at the northeast corner of the property. The Cavallis shuttered their painting business in the mid-1980s. Gerd died in 2006, followed by Frank in 2010. Both are buried at the Sonoma Cemetery. The property, now rented out, is in held in a trust by their surviving children, Steven and Debbie Cavalli.

P12 References

Avina, Rose Hollenbaugh. *Spanish and Mexican Land Grants in California.* San Francisco: R and E Research Associates, 1973 (reprint of 1932 thesis, University of California.).

Bennyhoff, James A. and Albert B. Elsasser. *Sonoma Mission: An Historical and Archaeological Study of Primary Constructions, 1823-1913.* Berkeley, Calif.: University of California, 1954.

Bowers, A. B. "Map of Sonoma County, California." A. B. Bowers, 1866 and 1867 revision.

Cavalli, Steve, telephone interview with John W. Murphey, February 27, 2017.

Dawson, Arthur. "840 Napa Street, Sonoma, California," Department of Parks and Recreation Primary and Building Record forms, July 2013, 5.

Evans, Sally. "845 W. Spain Street, Sonoma, California." Department of Parks and Recreation Primary and Building Record forms. February 2, 2013.

Gallagher, Paul E. *California Blue Book, 1954.* Sacramento, Calif.: State Printer, c.1954.

Hoffman, Ogden. *Report of Land Cases Determined in the United States District Court for the Northern District of California, June Term, 1853 to June Term, 1858, Inclusive, Volume I.* San Francisco, Numa Hubert Publisher, 1862.

Hutchinson, C. Alan. *Frontier Settlement in Mexican California: The Hijar-Padrés Colony and Its Origin, 1769-1835.* New Haven: Yale University Press, 1969.

Levick, M. B. *Sonoma County, California.* San Francisco: Sunset Magazine Homeseekers' Bureau (published for the Sonoma County Development Association), 1912.

Larios, Rodolfo. "El Presidio de Sonoma, 1835-1844." Facsimile printing, 1984.

Lewis Publishing Company. *The Bay of San Francisco: The Metropolis of the Pacific Coast and its Suburban Cities, Volume 1.* Chicago: The Lewis Publishing Company, 1892.

Lynch, Robert M. *The Sonoma Valley Story: Pages through the Ages.* Sonoma, Calif.: Sonoma Index-Tribune, Inc., 1997.

Mawn, Geoffrey P. "Jasper O'Farrell: Surveyor, Farmer, and Politico." MA thesis, University of San Francisco, 1970.

McKittrick, Myrtle M. *Vallejo: Son of California.* Portland, Ore.: Binfords & Mort, Publishers, 1944.

Miller, Vernon C. *Soil Survey, Sonoma County, California.* Washington, D.C.: United States Department of Agriculture, Forest Service and Soil Conservation Service, in cooperation with the University of California, 1972.

Munro-Fraser, J. P. *History of Sonoma County: Including its Geology, Topography, Mountains, Valleys and, Streams.* Petaluma, Calif.: Charmaine Burdell Veronda, 1973 facsimile of 1880 publication.

Murphy, Celeste G. *The People of the Pueblo or the Story of Sonoma.* Sonoma, Calif.: W. L. and C. G. Murphy, 1937.

Pacific Telephone and Telegraph Company. *Telephone Directory of Sonoma, Lake, and Mendocino Counties.* Various years: 1948, 1952, 1953, 1955, 1958, 1959, 1960, 1964, 1974, 1978, 1982, 1983, and 1985.

Parmelee, Robert D. *Pioneer Sonoma.* Sonoma, Calif.: Sonoma Index-Tribune, 1972.

Perez, Crisostomo N. *Land Grants in Alta California: A compilation of Spanish and Mexican private land claims in the State of California.* Rancho Cordova, Calif.: Landmark Enterprises, 1996.

Petaluma Argus-Courier (newspaper). Various issues: 1905-1926.

Petaluma Daily Morning Courier newspaper). Various issues: 1895-.

Press Democrat. *Press Democrat's 1913 Directory of Santa Rosa, Petaluma and Sonoma County.* Santa Rosa, Calif: The Press Democrat Publishing Company, c.1913.

R. L. & Polk Company. *Polk's Santa Rosa, Petaluma and Sonoma County Directory, 1929-1930.* San Francisco: R. L. & Polk Co., of California, c.1930.

Reps, John W. *The Forgotten Frontier: Urban Planning in the American West Before 1890.* Columbia, Mo., University of Missouri Press, 1981.

Reynolds & Proctor, compiler. *Illustrated Atlas of Sonoma County California.* Santa Rosa, Calif.: Reynolds & Proctor, 1897.

Ricksecker, L. E. *Official map of Sonoma County, California.* Sonoma County, Calif., W.B. Walkup & Co. Britton & Rey, 1900.

Sanborn Fire Insurance Map Company. *Sonoma* (map). October 1923; October 1941.

Scott, Mel. *The San Francisco Bay Area: A Metropolis in Perspective.* Berkeley, Calif.: University of California Press, 1985.

Smilie, Robert S. *The Sonoma Mission, San Francisco Solano de Sonoma: The Sonoma Mission, San Francisco Solano de Sonoma: the founding, ruin and restoration of California's 21st mission.* Fresno, Calif: Valley Publishers, 1975.

Sonoma County Assessor. Various Deeds and Official Records:

Michael Lonergan to Marie Weber [Webber], April 6, 1905, Book 218, Page 21.
Michael Lonergan to A. Baccala, September 6, 1905, Book 218, Page 177.
Michael Lonergan to A. Baccala, August 20, 1906, Book 231, Page 209.
A. Baccala to State of California, March 1, 1923, Book 39, Page 46.
Antonio and Martina Baccala to Gottardo Cavalli, March 25, 1927, Book 165, Page 211.
A. and Martina Baccala to Cino Pardini, May 6, 1930, Book 261, Page 175.
A. and Martina Baccala to Anna Frances Weindorf, May 25, 1935, Book 387, Page 77.
Martina Baccala to Matilda A. Merkelbach, April 27, 1943 Book 231, Page 209.
Delfina Cavalli to Frank and Gerd Cavalli, September 24, 1956, Book 1476, Page 411.
Frank and Gerd Cavalli to Anglo Safe Trustor Safe Deposit Company, June 28, 1958, Book 1607, Page 285.
Frank and Gerd Cavalli, Quiet Claim of Trust, January 24, 1985.

Sonoma County Recorder. "Residential Building Record," (Parcel #018-442-005).c.1950-54.

Thompson, Robert A. *Historical and Descriptive Sketch of Sonoma County, California.* Philadelphia: L. H. Everts & Company, 1877.

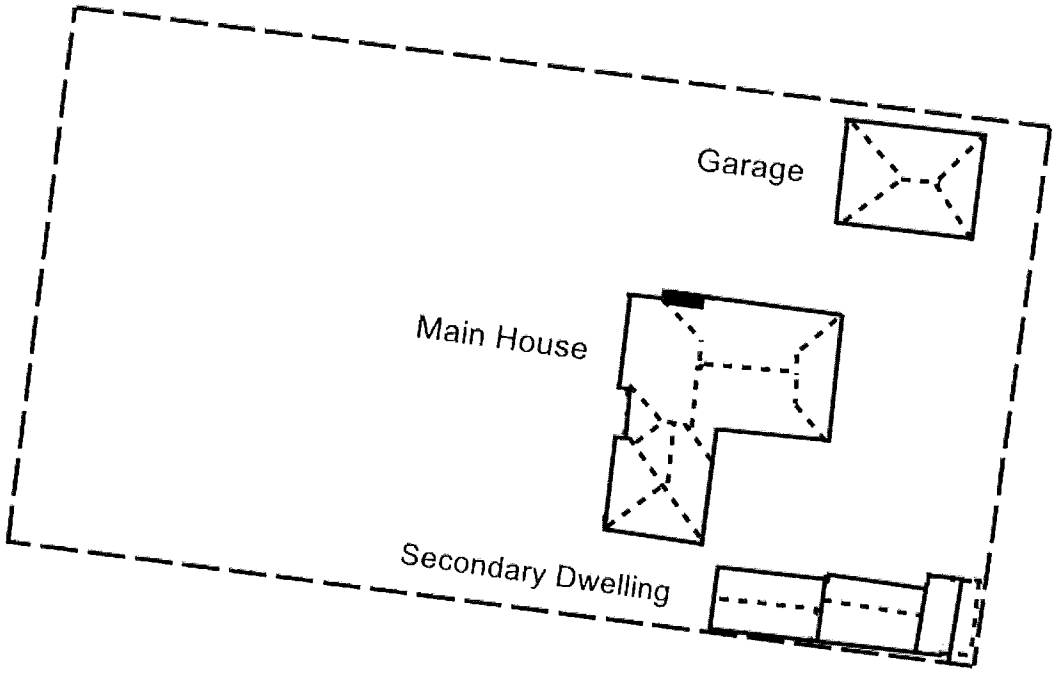
U.S. Department of Interior, Geological Survey. *Sonoma, Calif.* (1:24000 map). 1951, photorevised, 1968.

_____ National Park Service. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* Washington, D.C.: National Park Service, 1995.

SKETCH MAP

Property Name: 19410 Sonoma Highway
Recorded by: John W. Murphey

Date: March 2, 2017

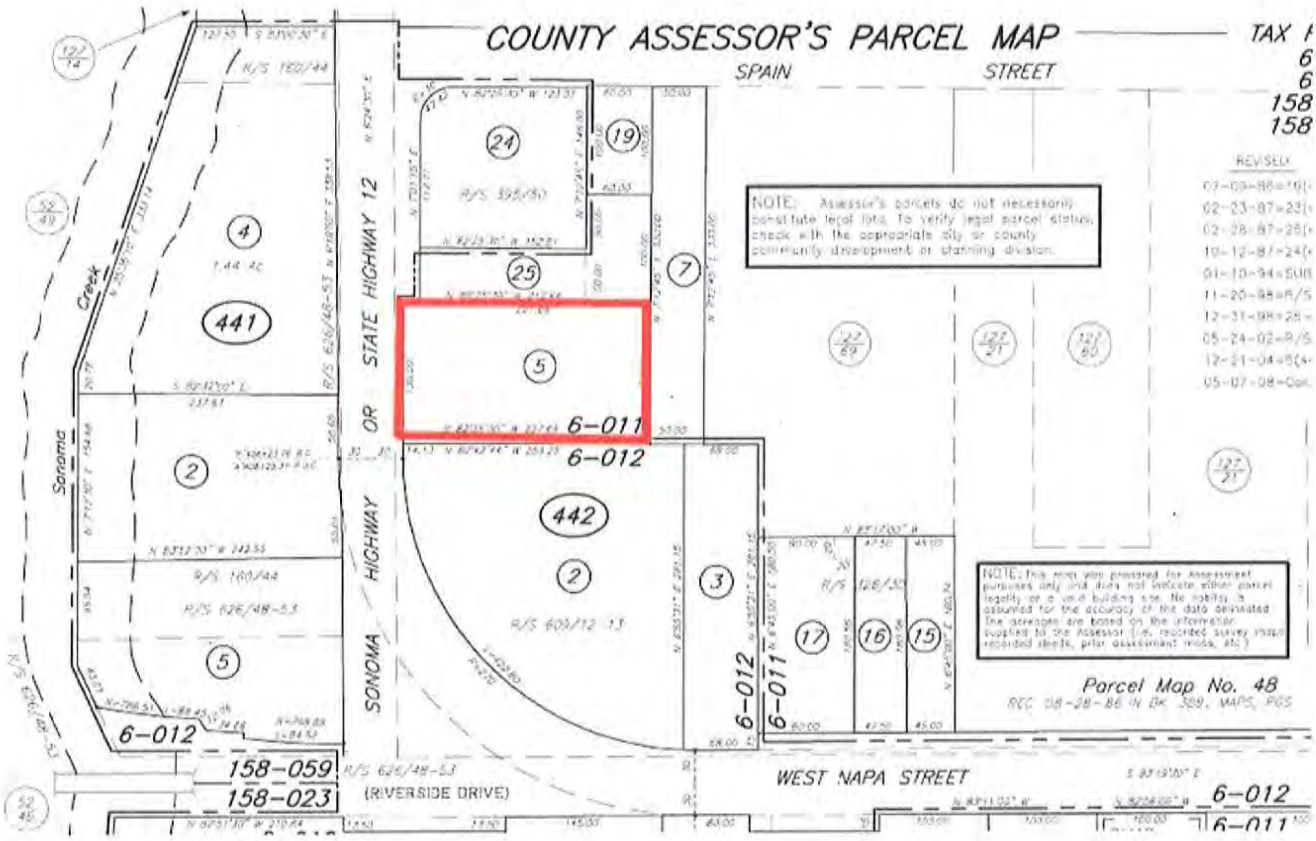


Rough Field Sketch Plan. Scale: 1" = 20'. Drawn by author.

LOCATION MAP

Property Name: 19410 Sonoma Highway
Recorded by: John W. Murphey

Date: March 2, 2017



Portion of Assessor's Parcel Map, Bk. 018, Pg. 144, Sonoma County, Calif. (2004).
Subject property outlined in red by author.
Source: Sonoma County Assessor.

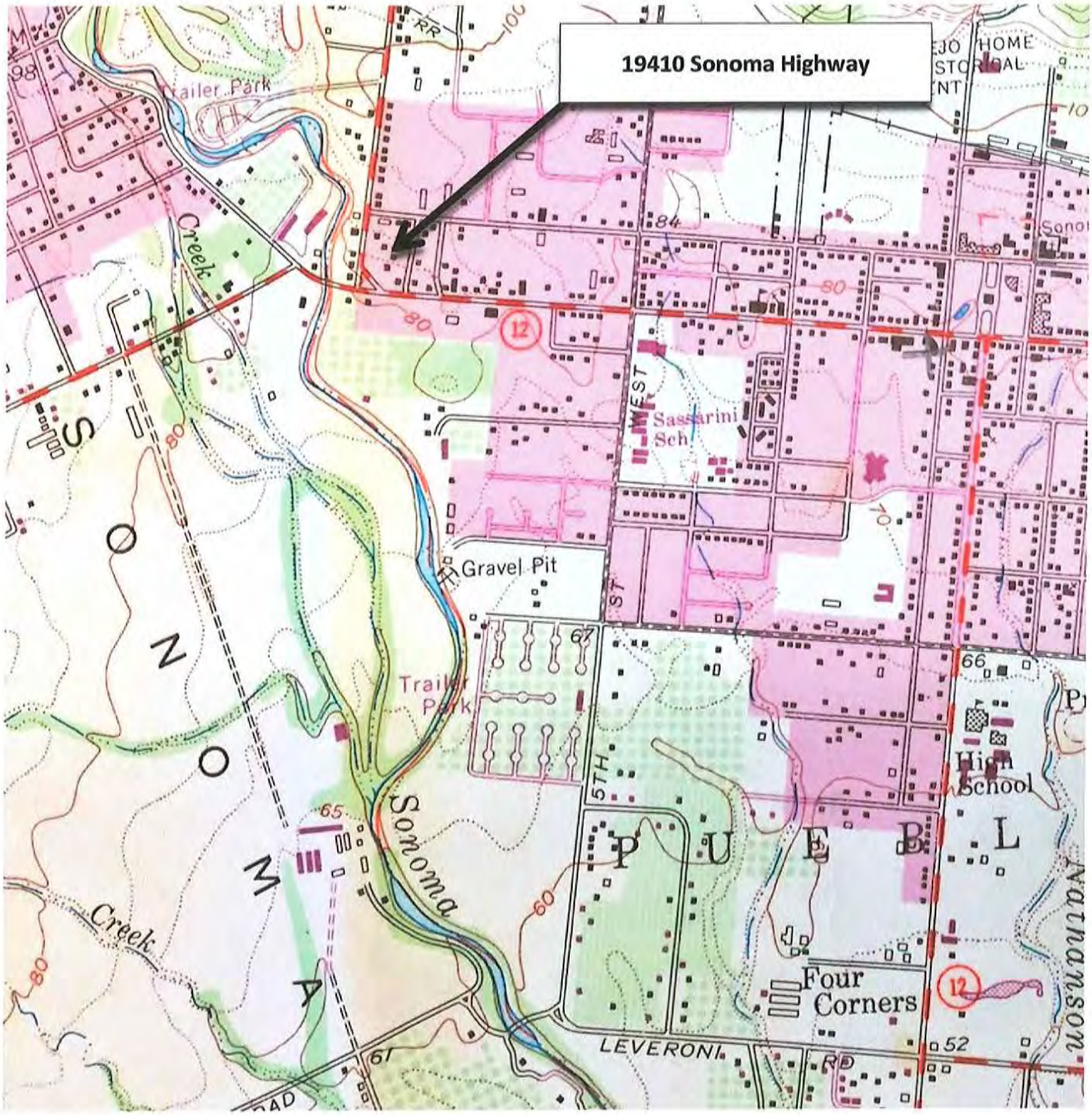
State of California ▯ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary#
HRI #
Trinomial

LOCATION MAP

Property Name: 19410 Sonoma Highway
Recorded by: John W. Murphey

Date: March 2, 2017



Portion of *Sonoma, Calif.* (1:24000 map) 1951, photorevised, 1968, USGS quad map.

Attachment 4

A CULTURAL RESOURCES EVALUATION OF 19410 SONOMA HIGHWAY, SONOMA, SONOMA COUNTY, CALIFORNIA

SUBMITTED BY

William Roop, M.A., RPA, ARCHAEOLOGICAL RESOURCE SERVICE

SUBMITTED FOR

Ken Taub, Owner

April 8, 2017 **A.R.S. Project 17-009**

INTRODUCTION

As requested and authorized, Archaeological Resource Service has conducted an archaeological evaluation of the parcel described below. The following basic tasks are to be accomplished as part of this project:

1. A check of the information on file with our office and the Regional Office of the California Historical Resources Information System, to determine the presence or absence of previously recorded historic or prehistoric cultural resources,
2. A check of appropriate historic references to determine the potential for historic era archaeological deposits, and;
3. Contact with the Native American Heritage Commission to determine the presence or absence of listed Sacred Lands within the project area;
4. Contact with all appropriate Native American organizations or individuals designated by the Native American Heritage Commission as interested parties for the project area;
5. A surface reconnaissance of all accessible parts of the project area to locate any visible signs of potentially significant historic or prehistoric cultural deposits.
6. Preparation of a report describing the work accomplished, the results of the research, and making appropriate recommendations for further action, if warranted.

PROJECT DESCRIPTION

The proposed project would redevelop the existing property by removing the existing buildings and replacing them. The new project will be a 14 unit apartment building.

PROJECT LOCATION

The project area is located at 19410 Sonoma Highway, Sonoma, Sonoma County, California. The parcel consists of about 30,000 sq. ft., less than one acre of relatively open urban land land bounded by similar properties.

The project area lies in the Mexican era land grant of Los Guilicos within unsectioned land of Township 5 North, Range 6 West, Mt. Diablo Base and Meridian. The Universal Transverse Mercator Grid coordinates to the approximate center of the project area, as determined by measurement from the USGS 7.5' Sonoma, California Quadrangle Map (1951 (photorevised 1968)) are:

4238710 Meters North, 545845 Meters East, Zone 10

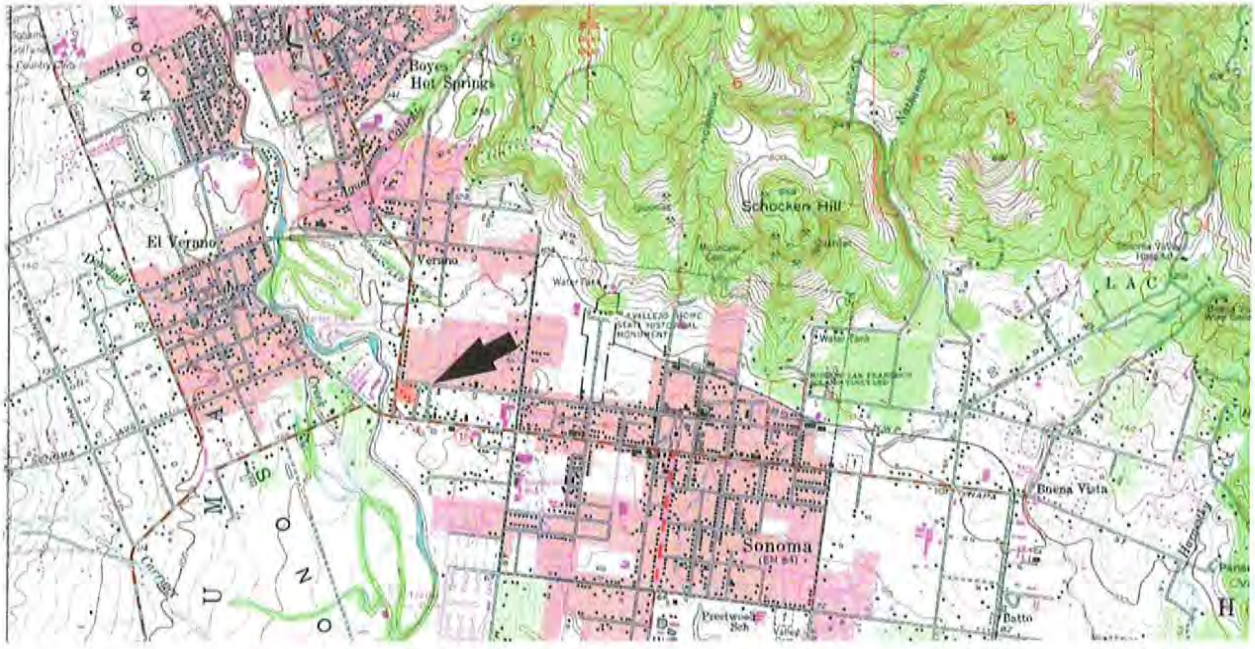


FIGURE 1 -- PROJECT LOCATION

The project location is shown on the USGS Sonoma Quadrangle Map.

REGULATORY SETTING

There are no previously recorded prehistoric or historic resources located within the project area. Archaeological resources, once identified, are evaluated using criteria established in the California Environmental Quality Act (CEQA) (14 CCR 15064.5 and PRC 21084.1). Significant historical resources need to be addressed before environmental mitigation guidelines are developed and approved. A "significant historical resource" (including both a prehistoric and historic resource) is one that is found eligible for listing in the California Register of Historical Resources. As per Title 14, California Code of Regulations Section 15064.5, historical resources are those that are:

- Listed in, or eligible for listing in, the California Register of Historic Resources (Public Resources Code 5024.1, Title 14 CCR, Section 4850 et. seq.);
- Listed in, or eligible for listing in, the National Register of Historic Places (CRHR);
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resource Code; or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be listed in the California Register, if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with California Register criteria adopted by the commission (pursuant to Section 5024.1(e) of the PRC).

A resource may be listed as an historical resource in the California Register if it has integrity and meets any of the following National Register of Historic Places criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of our history; or
2) Is associated with the lives of persons important in our past; or
3) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

FIGURE 2 -- THE PROJECT LOCATION ON GOOGLE EARTH

The project area is the small red rectangle toward the center of the photograph.

CEQA (PRC 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as above, and "unique archaeological resources." A "unique archaeological resource" has been defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstratable public interest in that information,

2) Has a special and particular quality such as being the oldest of its type or the best available example of its type, or
3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A resource has integrity if it retains the characteristics that were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

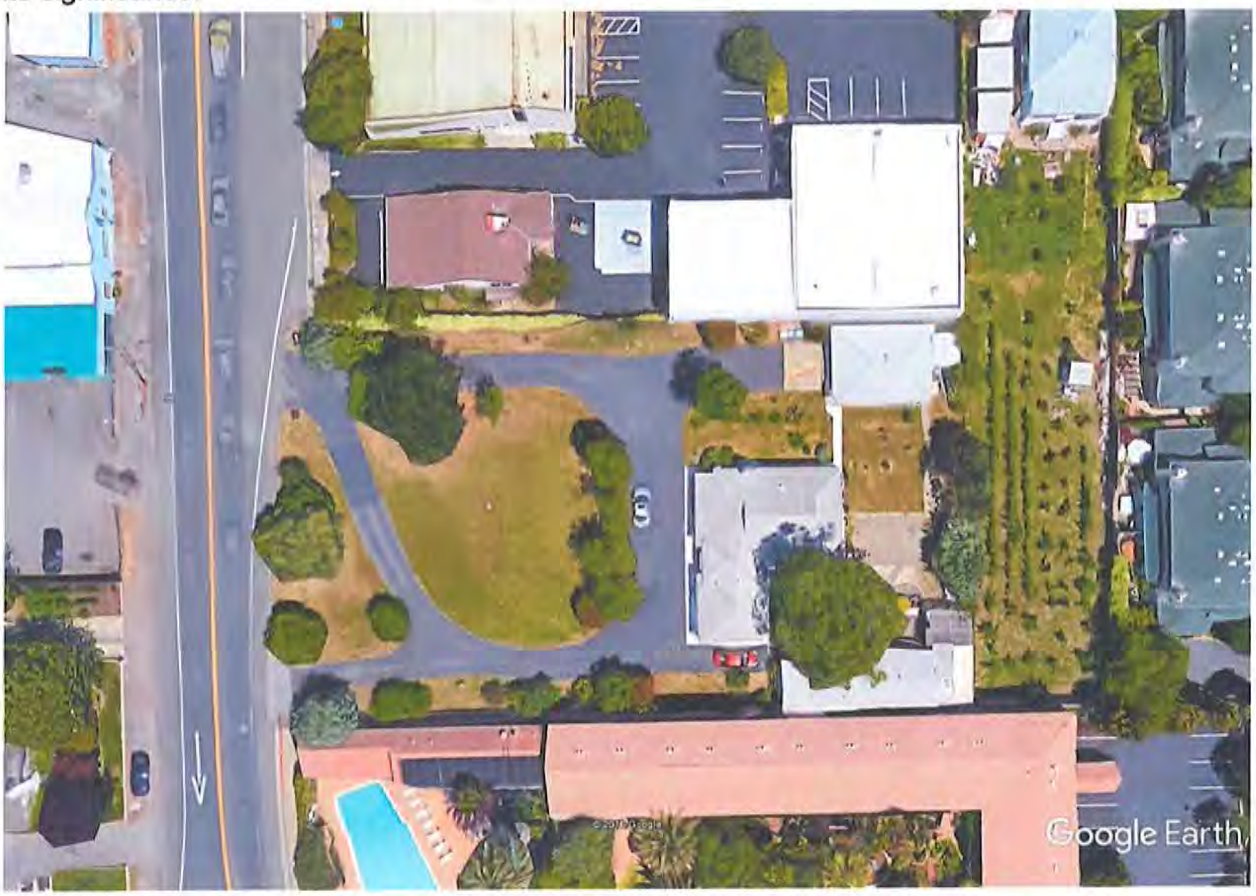


FIGURE 3 -- THE PROJECT AREA

The project area is mostly covered by a lawn with a circular drive and three buildings. Sonoma Highway is to the left (west).

As of July 2015, two new classes of resources have been defined. Tribal cultural resources and Tribal cultural landscapes can be any of a variety of cultural sites as defined by the individual tribe. These resources, once identified, are treated as significant resources under CEQA.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, or included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resources as defined in PRC sections 5020.1(j) or 5024.1.

SACRED LANDS INVENTORY / NATIVE AMERICAN CONSULTATION

The California Native American Heritage Commission (NAHC) works to identify, catalogue, and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given the Commission in Public Resources Code 5097.9. A check with the NAHC was done to determine if there are sites listed in the Sacred Lands file located within or near to the current project area.

No response has yet been received from the NAHC. In the Sonoma area the NAHC is highly likely to recommend consultation with the Federated Indians of Graton Rancheria. The City of Sonoma should initiate consultation with FIGR under the terms of AB 52.

RESULTS OF LITERATURE CHECK

Prior to performing the fieldwork, the author conducted a literature search to assess the archaeological sensitivity of the project area. vThe literature search was conducted using information on file at the California Historical Resources Inventory Systems office located in Rohnert Park, CA and in the library at Archaeological Resource Service. This record search included checking ethnographic documents, survey reports and base maps pertaining to Sonoma and the surrounding areas.

ETHNOGRAPHIC BACKGROUND

Native American habitation sites throughout most of Sonoma and Marin Counties are marked by the presence of midden soil deposits, a result of the buildup of organic debris. Marine shells and animal bone are located within the middens as a result of their being cooked at the habitation sites. The manufacturing of chipped stone tools has left behind scatters of "flakes" of the chipped material. Other types of prehistoric activity areas include bedrock milling features (mortar depressions) or boulders containing petroglyphs (rock art). Isolate artifacts are found along trails or from hunting losses.

FIGURE 4 -- COAST MIWOK TERRITORY ACCORDING TO KROEBER 1925

The current study area is located on the eastern edge of what is considered ethnographically as Coast Miwok territory. Pomo territory was in close proximity to the north and Wappo territory to the east. S.A. Barrett studied the Pomo peoples and the neighboring groups in 1903, 1904 and 1906. From his notes and fieldwork he wrote The Ethno-geography of the Pomo and Neighboring Indians and created an accompanying map (1908). The map is called Map of the Territory of the Pomo Linguistic Stock area. The map is sectioned according to the settlements

of language groups at the time of Barrett's consultation with knowledgeable informants. According to this map, the closest ethnographic sites to the current project area were known as *Tuli'* and *Te'mblek*. *Tuli'* was described as "in the hills west of Sonoma Creek and at a point probably about three miles west of the town of Sonoma (Barrett 1909:313-314). *Te'mblek* was described as "at a point about a mile and a half west of the town of Sonoma" (Barrett 1909:313). According to a map by Isabel Kelly of Coast Miwok territory and Villages, the village of *Huchi* was located near downtown Sonoma (Kelly 1979). These ethnographic villages are distant enough that they will not be affected by the current project.

While the subject property lies in the ethnographic territory of the Coast Miwok, the Pomo and Wappo groups have inhabited Sonoma County for a longer period of time. The Wappo have been in the region longer than any other Native people now resident in Sonoma and Napa counties. The Wappo language is of Yukian derivation, the oldest established linguistic affiliation in California. It is believed that the Wappo have been present in the region for at least 11,000 to 12,000 years. It is believed that the Pomo expanded into southern Sonoma County from the north, perhaps from the general area of Clear Lake. Locally, the people that became the Coast Miwok came into the region after the Pomo and settled into the wetland areas bordering San Francisco Bay. The wetland economy appears to be more efficient than exploitation of upland resources. This produced more resources per capita in the Coast Miwok territory than in those surrounding them. Over the last few millennia, the Coast Miwok grew faster than other groups, gradually pushing back the boundary of their territory. In the historic period, the Coast Miwok appear to have expanded into the shrinking Wappo territory from the west, as the Patwin were coming from the east. The Coast Miwok in turn may have been pushed west by the Patwin expansion (Barrett 1908; Kroeber 1925, 1953).

Miwok is of the Penutian language family. Miwok refers to the entire language family, which includes Coast, Lake, Valley and Sierra Miwok groups. The Coast Miwok territory included Marin County and parts of Sonoma County north to Duncans Point and Cotati and east beyond Petaluma.

Wappo, Pomo, Wintun and Coast Miwok had similar material cultures, house types and villages. Large settlements were close to major watercourses, but above the floodplain. Campsites were situated wherever a seasonal food or crop was located. Fish were not caught with hooks; instead spears, nets, traps and bare hands were used (Beardsley 1954). Smaller settlements typically consisted of a cluster of houses, each which held one or more families, a dance house and a sweat house (Beardsley 1954). Every group used obsidian points for hunting and processed plant material with milling stones, mortars and pestles. Shell and bone ornaments were worn and charmstones are found in all three areas.

Their territory however has been recorded with slight differences according to different ethnographers. Kroeber wrote, "*There is much doubt about Sonoma Valley...The Wappo held it's head; but it's bulk, according to some accounts, was Wintun; according to others, Coast Miwok*" (Kroeber 1925: 353).

HISTORIC BACKGROUND

The earliest historic records for the vicinity of the project area show that Ben Mitchell built an adobe in the area around 1850. The exact size of Mitchell's land claim is unknown. By 1877 the street layout of the town of Sonoma and the route of Sonoma Highway from Sonoma north was more or less established. The route of Sonoma Highway separated parcels on the east and west sides, and in 1877 the project area under study was a portion of approximately 30 acres belonging to a Mr. Butler. The property across the street with the adobe structure and that later became the Sonoma Grove Resort belonged to William Hayes.

By 1897 the property under study was a portion of approximately thirty acres belonging to Robert J Corbett. George Maxwell, with no acreage noted, owned property across the street (now highway). His lot appears to have been approximately 30 acres in size. These properties were on the far western side of Sonoma City in an unincorporated area.

PREVIOUSLY CONDUCTED SURVEYS IN THE VICINITY

Archival review discovered that several archaeological studies have been conducted within a half-mile radius of the project area. Many of these studies did not encounter any evidence of historic or prehistoric sites (Chavez 1987; Cole 1980; Davis 1981; Fernandez et al 2004; Flynn 1986b, 1989; Jablonowski 1989; King 1975; Origer 1989; Porter 1985; Rumph 1978; Slater 1978; Stewart 1988; Wilbur 1986). One of these studys passed alog the western boundary of the current project area (Desgrandchamp 1978). Other surface evaluations observed only isolated artifacts such as scattered stone tools or manufacturing debris. However, some archaeological sites are located within a mile of the current project, consisting of deposits of habitation debris, or midden, in well-developed mounds indicative of permanently occupied villages. The majority of archaeological sites in the vicinity are located very near to Sonoma Creek or along seasonal creeks that formerly flowed across the alluvial terrace west of Sonoma Creek.

FIGURE 5 -- LOOKING SOUTH ACROSS THE FRONT YARD

Historic and Archaeological sites are assigned different numerical designations depending on the type of records they have been documented upon. Archaeological sites and historic sites including buildings are often given P#s such as P-49-0003229. This is a chronological number discerning which county and a sequential numeral for the order in which it was recorded. Archaeological sites are sometimes given a trinomial such as CA-Son-131, meaning an archaeological site record was prepared for the resource. Resources may also have both a P number and a trinomial. C#s such as C-685 are rumored sites, meaning that they have been reported to the regional office of the California Historical Resources Inventory System, where they have noted the resource's presence, but have not formally recorded the resource. Historic structures are often recorded on Historic Resource Inventory forms and given HRI#s such as HRI 5249-1212-0035. Many of these resources also have P#s.

The closest recorded sites to the project area are CA-Son-131 and CA-Son-222, both located near to the banks of Sonoma Creek and at distance of a quarter mile from the current project. The next closest archaeological site to the current project area is CA-Son-374 at two thirds of a mile distance.

CA-Son-131 was encountered by Jesse Peters in the 1920s. Jesse Peters, an avocational archaeologist who spent a considerable amount of time surveying across Sonoma County for

archaeological sites. Peters kept a map where he plotted the site locations, and upon which he occasionally made notes about the sites. While Peters never compiled specific site records, his information was later provided to the University of California at Berkeley Archaeological Research Facility. Berkeley transcribed the site's general locations onto their base maps and integrated the site numbers into their system. CA-Son-131 is one of these Peters numbers. While CA-Son-131 has not been relocated by later archaeologists, it is tentatively plotted on the east side of Sonoma Creek approximately a quarter mile from the current project area.

Nels C. Nelson, a student from Berkeley who inventoried Indian village sites in the first decade of the last century, recorded the archaeological site CA-Son-222. He described the site as an,

> *earth-and-shellheap. A very similar occurrence to CA-Son-221 located about 2 mi. up the creek with a house upon it. Simply vouched for by several individuals and not personally inspected. Said to contain skeletons (Nelson 1907b).*

CA-Son-221, which is located several miles away, was described as "mostly black earth and rock with some traces of shell" (Nelson 1907a). The site Son-222 was again encountered in an evaluation of a parcel located 1/3 of a mile away, across Dowdal Creek and noted "considerable artifactual evidence is scattered throughout the northwestern boundary of this property" consisting of obsidian flakes and tools (King and Rauschkolb 1973). This deposit was determined to be CA-Son-222. In 1986, Katherine Flynn evaluated a proposed apartment complex on the same parcel, and reencountered CA-Son-222. At that time "midden with chipped and ground stone implements" was observed (Flynn 1986a).

FIGURE 6 -- THE BACK YARD AND GRAPES ON THE NEIGHBORING PROPERTY

CA-Son-374 was originally recorded in 1952 and described as a "large oval mound in middle of hayfield." The site was noted to contain clayish midden soil, one chert chopper and miscellaneous porcelain sherds (Bennyhoff 1952).

P-49-003531 is a prehistoric site located just under a quarter of a mile distance to the south. The site consists of a well developed midden site with small pieces of shellfish and pieces of obsidian (Origer 2006; Origer and Associates 2006). Two other historic structures are recorded at just under a quarter of a mile distance. These are the Riverside Bridge built in 1941 and assigned the numerical designation of P-49-004144 (Beard 2000a, 2000c), and a house built in 1907 assigned the numerical designation of P-49-004143 (Beard 2000a, 2000b).

Other recorded sites located between ¼ of a mile and a ½ mile distance from the current project area include C-681, C-685, C-733, C-741, C-795, P-49-003229, P-49-003283, P-49-003531, and CA-Son-1068H. The closest noted site is C-733, an historic tank house (Whatford 1990c). C-685 consists of 4 tank houses (Whatford 1990a) and C-681 and C-741 are single tank houses (Whatford 1990b, Whatford 1990d). Whatford notes that the presence of tank houses, with or without windmills, mark the presence of pre-1930s homesteads (Whatford 1990a, 1990b). C-

795 is an historic complex with a Victorian style cottage (Davis 1990). P-49-003229 is a Queen Anne style house (Chattan 2005b). P-49-003283 consists of a drilled well from the early part of the twentieth century (Beard 2005, Origer and Associates 2005). CA-Son-1068H consists of the foundations of the old Maxwell home with outbuildings and a trash deposit. The house for which only the foundation remained may have been built in 1848 (Stillinger and Fredrickson 1977).This site is located ¼ mile to the northwest.

A few studies within a ½ mile distance of the current project area have encountered isolated artifacts. In 1975 Thomas Origer evaluated a 2.66-acre parcel located one half of a mile to the west, and an isolated pestle was recovered, indicating Native American use of the general area (Origer 1975). In a study along Fifth Street an isolated quartz tool was encountered (Gerike 1982).

Some studies encountered historic debris such as glass and ceramic fragments (Hayes 1983; Praetzellis 1987; Whatford 1993) but not in enough concentration to record as a historic site. Historic Structures and historic debris have been recorded on the Vallejo State Home Historical Monument property and a nearby property with an 1878 house that belonged to General Vallejo's daughter Natalia. These properties are between one quarter and one half of a mile to the east (Whatford 1993; Fernandez et al 2004).

The above previously discovered sites and artifacts are all at a significant distance from the current project and will not be negatively impacted by activities on the subject property.

FIGURE 7 -- ANOTHER VIEW OF THE FRONT YARD

Three recorded historic structures are relatively close to the project area.

- 19360 Sonoma Highway is located on a property to the south. This property was documented as a 1939 bungalow style house. It was noted that the house is "one of three or four houses built in the 1930's in this area...It is a good example of a later period of bungalow in Sonoma" (Sweet and DePatris 1978).
- 19343 Sonoma Highway is located across the road to the west from the current project area. This structure is a single story adobe house built in the 1850's. When the structure was recorded in 1978 it had only two rooms and no electricity and was deteriorating. It has been restored in recent years and...It has been called "an extremely valuable historic resource" because it is one of the few adobe structures left in the valley (Patri 1979).
- 19340 is located on a nearby property. This house is a single story bungalow built in 1913. It was recorded by the Sonoma League for historic preservation in 1978 (as were both the above structures) and they stated that this "is a good support to the area developed in the 1910-1915s" (DePetris 1978). However, the house has been significantly remodeled since that recording.

RESULTS OF SURFACE EXAMINATION

The cultural resource evaluation has resulted in a negative finding. A negative result indicates that no artifacts or potentially significant cultural features were observed.

The entire project area was examined in a series of pedestrian transects spaced about 10 feet apart. Surface vegetation slightly impeded the evaluation, but this was overcome by using a hand trowel to sample the soil every few feet. Soils throughout the property are uniformly light brown in color and show no signs of cultural modification. No potentially significant artifacts or features of either the historic or prehistoric eras were observed at any location in the project area.

CONCLUSIONS

No prehistoric artifacts, sites, or features were observed in the project area. The structures on the property are not considered historic resources. While there are nearby historic structures, improvements to this property will not pose a negative impact to any nearby cultural resources. While there is an adobe structure located across Sonoma Highway to the southwest, the neighborhood has already lost its historical character for the period in which the structure was built. No further recommendations are warranted at this time.

FIGURE 8 -- TYPICAL SOILS

Soils observed in the project site are not culturally modified and retain the natural characteristics of the area.

General recommendations have been provided in the event that any artifacts or cultural soil deposits are unexpectedly discovered during future grading or underground excavation. Archaeological Resource Service recommends that all work in the vicinity of the find be stopped until the discovery area can be evaluated by an archaeologist. Depending on the extent and cultural composition of the discovered materials, it may be advisable to have subsequent excavation monitored by an archaeologist who should be ready to record, recover, and/or protect significant cultural materials from further damage.

Artifacts that are typically found associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, firepits, or house floor depressions whereas typical mortuary features are represented by human skeletal remains. Historic artifacts potentially include all by-products of human land use greater than 50 years of age.

Although highly unlikely, if human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be

Native American and prehistoric, the Native American Heritage Commission must be contacted by the Coroner so that a "Most Likely Descendant" can be designated.

REFERENCES CONSULTED

Alexander, James, B.
1986 Sonoma Valley Legacy. Sonoma: Sonoma Valley Historical Society.

Baker, Sue and Audrey B. Forrest
1994 Secrets of El Verano, In the Valley of the Moon. Chicken Express Publishing Company, El Verano.

Bancroft, Hubert Howe
1886, The Works of Hubert Howe Bancroft Volume XIX, History of California Vol. II 1801-1824. Wallace Hebberd, Santa Barbara, reprint 1966.

Barrett, S.A
1908 The Ethnogeography of the Pomo and Neighboring Indians. University of California Publications in American Archaeology and Ethnology 6(1): 1-332. Berkeley.

Beard, Vicki
2000 Historic Property Survey Report for the Riverside Drive Bridge Replacement Project Riverside Drive at Sonoma Creek Sonoma County, California, 04-Son-0-CR, P. M. 10.6 (Bridge 20C-0009). On file at the (Northwest Information Center of the California Historical Resources System)NWIC, HRIS as S-24788.

Bennyhoff
1952 Site Record for CA-Son-374. On file at the NWIC, HRIS.

Chattan, Cassandra
2005a A Cultural Resources Evaluation of the Minor Subdivision of the Plowman Property, 600 Solano Ave., El Verano, Sonoma County, California (APN 052-416-003). ARS 05-005.

2005b ARS 05-005-01, P-49-0003229. On file at the NWIC, HRIS.

Chavez, David
1987 Cultural Resources Evaluations for the Infiltration and Inflow Relief Sewer Project for the Riverside Drive Area, Sonoma Valley County Sanitation District, Sonoma, California. On file at the NWIC, HRIS as S-09089.

Cole, William
1980 An Archaeological Survey of a proposed Underground Storm Drain in Sonoma, Sonoma County, California. On file at the NWIC, HRIS as S-02390.

Davis, Daren
19981 A reported historic complex. On file at the NWIC, HRIS as C-795.

Davis, Karen
1981 An Archaeological Investigation of the Planned Lot Split in El Verano, Sonoma County, California. On file at the NWIC, HRIS as S-02549.

De Patris, C. (Sonoma League for Historic Preservation)
1978 Historic Resources Inventory for Remezzano, Fred and Jennie house at 19340 Sonoma Hwy. Resource number 49-5476-99. On file with the Office of Historic Preservation.

Desgrandchamp, Cindy
1978 Archaeological Survey Report, 04-Son-12 P.M. 36.1-36.504352 - 402131, Proposed Widening of Route 12 near Sonoma, Sonoma County (Caltrans). On file at the NWIC, HRIS as S-01309.

Earth Dance Circle
2009 Earth Dance Circle, Center for the Healing Arts. Website available at <http://www.earth-dance-circle.com/index.php?option=com_content&task=view&id=15&Itemid=37>

Fernandez, Trish, Kevin Bartoy and John Holson
2004 Revised Draft Cultural Resources Inventory and CEQA Impacts Assessment for the Proposed Montini Subdivision City of Sonoma Sonoma County, California. On file at the NWIC, HRIS as S-29576.

Flynn, Katherine
1986b Archaeological survey of 19409 Riverside Dr., Sonoma, Sonoma County, UP/DRC 86-311 (letter report) ARS Number 86-52. Unpublished document on File at the CHRIS as S-08712

1989 Archaeological evaluation, Yarnell lot line adjustment, APN 52-396-12, El Verano, Sonoma County (letter report) ARS Number 89-54. Unpublished document on File at the CHRIS as S-11513.

Gerike, Christian
1982 An Archaeological Study for the Verano Avenue and Fifth Street West Reconstruction Project (56017), Sonoma County, California. On file at the NWIC, HRIS as S-04987.

Hayes, John
1983 An Archaeological Investigation of the Hamilton Property, 560 Petaluma Avenue, Sonoma, California. On file at NWIC, HRIS as S-05875.

Kelly, Isabel
1978 Coast Miwok *in* William Sturtevant (editor), Handbook of North American Indians, Volume 8, California, Robert F. Heizer (volume editor), pp. 414-425. Smithsonian Institution, Washington D.C.

Kroeber, Alfred
1925 Handbook of the Indians of California. Bureau of American Enthmnology Bulletin 78. Smithsonian Institution, Washington D.C.

Jablonowski, Michael
1989 An Archaeological Study of the Bernard/Hunter Property Located at 311 Solano Avenue, Sonoma, Sonoma County, California. On file at the NWIC, HRIS as S-11169.

King, Ronald F.
1975 Archaeological Impact Evaluation of the Proposed Sabel Engineering Corporation Manufacturing Plant. Unpublished document on File at the NWIC, HRIS as S-00218

Menefee, C.A.
1873 Historical and Descriptive Sketchbook of Napa, Sonoma, Lake and Mendocino. Reporter Publishing House, Napa. Reprinted James D. Stevenson, Ph.D., Fairfield 1993.

Miller, Vernon
1972 **Soil Survey of Sonoma County**. United States Department of Agriculture Forest Service and Soil Conservation Service In cooperation with University of California Agricultural Experiment Station.

Munro-Fraser, J. P.
1880 History of Sonoma County, California including its Geography, Geology, Topography and climatography. Alley, Bowen & Co., Washington D.C. Republished 1972 by Charmaine Burdell Veronda. Petaluma.

Nelson, Nels C.
1909 The Shellmounds of the San Francisco Bay Region. The University of California Publications in American Archaeology and Ethnology 7:309-356. Berkeley.

Origer, Tom
1975 An Archaeological Survey of a Parcel of Land off of Solano Avenue in El Verano, California. Unpublished document on File at the CHRIS as S-00164.

1989 An Archaeological Survey of the Helen Brown Property, Sonoma, Sonoma County, California. On file at the NWIC, HRIS as S-10491.

2006 Letter Re: 19455 Sonoma Highway, Sonoma, Sonoma County, California. On file at the NWIC, HRIS as S-32186.

Origer and Associates
2000a Site record for P-49-004143. On file at the NWIC, HRIS.

2000b Site record for P-49-004144. On file at the NWIC, HRIS.

Parmelee, Robert D.
1972 Pioneer Sonoma. Sonoma; Sonoma Valley Historical Society.

Parkman, Breck
2006 An Unusual Redeposited Archaeological Site Near the Vallejo Home in Sonoma State Historic Park, Sonoma County, California. On file at the NWIC, HRIS as S-32058.

Patris, Johanna (Sonoma League for Historic Preservation)
1979 Historic Resources Inventory for 19343 Sonoma Hwy. Resource number 49-5476-46. On file with the Office of Historic Preservation.

Peninou, Ernest P.
1998 History of the Viticultural Districts of California; Volume One, History of the Sonoma Viticultural District. Nomis Press, Santa Rosa.

Praetzellis, Adrian
1987 Archaeological investigation at the proposed site of Maxwell Village shopping and recreation center, Sonoma, California (letter report). On file at the NWIC, HRIS as S-09434.

Porter, Cris
1985 Archaeological Investigation of Harman Management Corporation's parcel located at 19295 Sonoma Highway, Boyes Hot Springs, California. On file at the NWIC, HRIS as S-07066.

Reynolds and Proctor
1897 Illustrated Atlas of Sonoma County, California. Reynolds and Proctor, Santa Rosa.

Rumph, Leslie
1978 An Archaeological Survey of the Beatrice Investment Property, El Verano, California (County File Number MS 6405). Unpublished document on File at the NWIC, HRIS as S-00900.

Rumph, Leslie
1978 An Archaeological Survey of the Goin Property, A.P.52-491-34, in the Town of Sonoma, Sonoma County, California, (County File Number MS 6318). Unpublished document on File at the NWIC, HRIS as S-00904.

Rumph, Leslie
1978 An Archaeological Survey of the Sosnowski Property, 6.99 acres in the town of Sonoma, Sonoma County, California (County File 4011). Unpublished document on File at the NWIC, HRIS as S-01040.

Sanchez, Katy (Native American Heritage Commission)
2009 Letter from Native American Heritage Commission Re: ARS 09-039, Sonoma County. On file at ARS and at the NAHC.

Slater, Sarah E.
1978 Archaeological Survey Report for the Cogo Property, MS 6601, El Verano, California. ARS Number. Unpublished document on File at the NWIC, HRIS as S-01267.

Stewart, Suzanne B.
1988 An Archaeological Study for the Arnold Drive Reconstruction Project, Sonoma County, California ARS Number. Unpublished document on File at the NWIC, HRIS as S-10037.

Stillinger, Robert and David Fredrickson
1977 An Archaeological Reconnaissance of the Maxwell estate, Sonoma County, California. On file at the NWIC, HRIS as S-00695.

Sweet and De Patris, C. (Sonoma League for Historic Preservation)
1978 Historic Resources Inventory for Remessano, Fred house at 19360 Sonoma Hwy. Resource number 49-5476-100. On file with the Office of Historic Preservation.

Thompson, Thomas H.
1877 Historical Atlas Map of Sonoma County, California with Illustrations. Thomas H. Thompson, Oakland.

Weber, Lin
1998 Old Napa Valley, The History to 1900. Wine Ventures Publishing, St. Helena.

White, Gregory G. and Thomas F. King
2007 **The Archaeological Survey Manual**. Left Coast Press, Inc. Walnut Creek, CA.

Whatford, Charles
1990a A reported tank house locations. On file at the NWIC, HRIS as C-681.

1990b Four reported tank house locations. On file at the NWIC, HRIS as C-685.

1990c A reported tank house locations. On file at the NWIC, HRIS as C-733.

1993 An Archaeological Study of 400 West Spain Street, Sonoma, Sonoma County, California. On file at the NWIC, HRIS as S-15359.

Wilbur 1986;
1986 An Archaeological Investigation of the Senior Housing Project (Lot 2 - City of Sonoma) at the intersection of Seventh Street West and Oregon Street, Sonoma, California. On file at the NWIC, HRIS as S-08761.

APPENDIX 1— SIGNIFICANCE IN THE EVALUATION OF CULTURAL RESOURCES AS HISTORIC PROPERTIES

To be significant an archaeological site must qualify for registration as an "historic resource" the following criteria must be met for this listing:

> *An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR § 4850). CEQA provides somewhat conflicting direction regarding the evaluation and treatment of archeological sites. The most recent amendments to the CEQA Guidelines try to resolve this ambiguity by directing that lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California Register. If an archeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered, just as for any other historical resource (PRC § 21084.1 and 21083.2(l)). If an archeological site is not an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section.*

If an archaeological site does not qualify for listing, the directive is clear. The Public Resources Code states:

> *(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.*

APPENDIX 2 – PROFESSIONAL STANDARDS FOR CONSULTANTS

Secretary of the Interior's Standards

The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

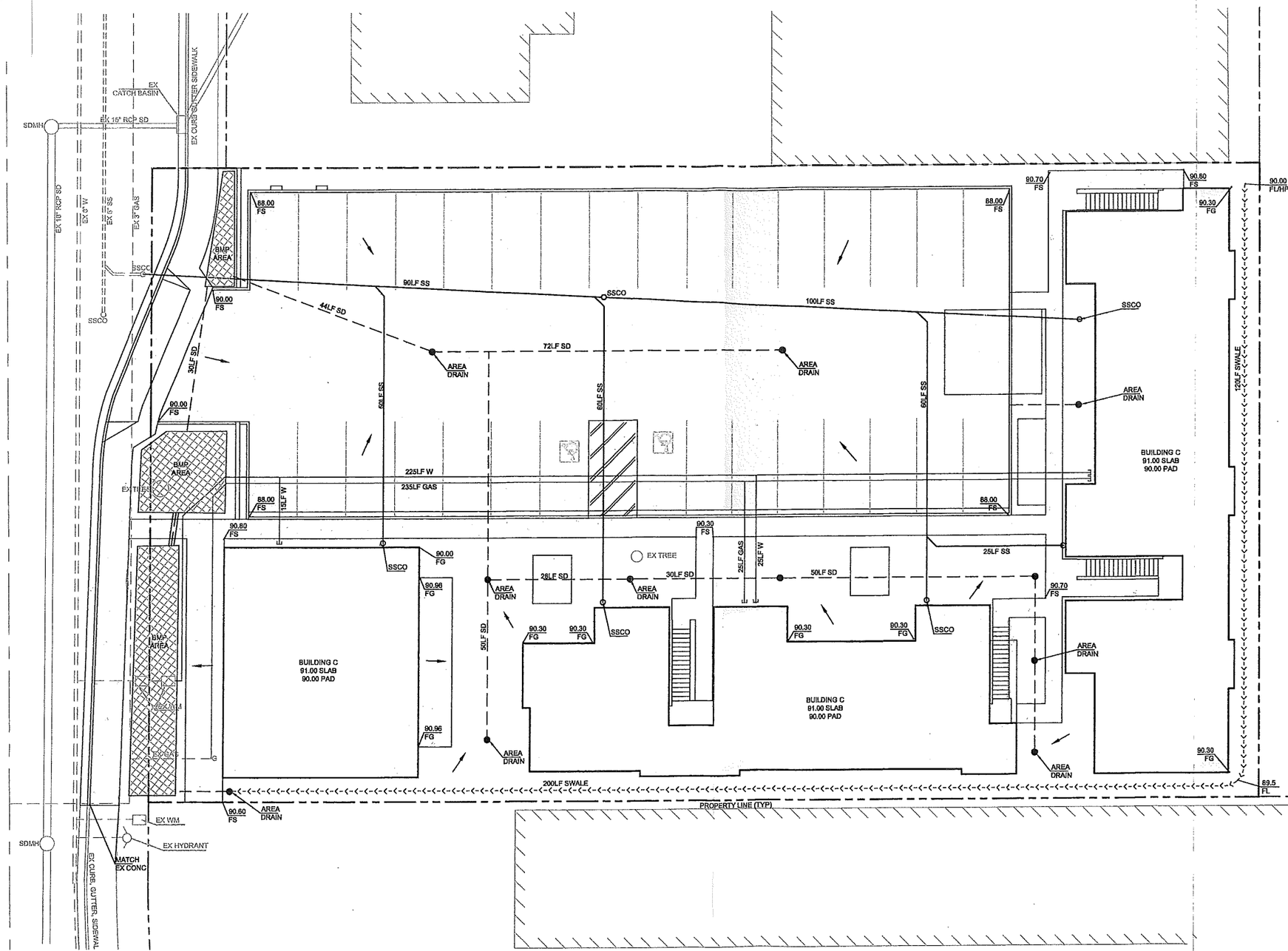
1. At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;

2. At least four months of supervised field and analytic experience in general North American archeology; and

3. Demonstrated ability to carry research to completion.

In addition to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

Attachment 5



PRELIMINARY GRADING AND UTILITY PLAN

0 5 10 20 40

SCALE: 1"=10'

N

BEAR FLAG ENGINEERING INC

CIVIL ENGINEERING
LAND DEVELOPMENT
SEPTIC SYSTEM DESIGN
PROJECT MANAGEMENT
SURVEYING
BUILDING DESIGN

PO BOX 2183, SONOMA, CA 95476
PHONE: (707) 481-9472
OFFICE@BEARFLAGCIVIL.COM

REGISTERED PROFESSIONAL ENGINEER
CHAD S. MOLL
No. C 79721
Exp. 6/30/18
CIVIL
STATE OF CALIFORNIA

CHAD S. MOLL RCE 79721 DATE

PRELIMINARY GRADING AND UTILITY PLAN

19410 SONOMA HIGHWAY

19410 SONOMA HIGHWAY, SONOMA, CA 95476
APN: 018-442-005

REV	DATE	DESCRIPTION

DATE:	2/6/2017
DESIGN:	CSM
PROJECT:	17002

SHEET
C3
OF 4 SHEETS

Attachment 6

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
1 Willowbrook Court, Suite 120
Petaluma, California 94954
Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

June 12, 2017

Mr. Wendy Atkins
City of Sonoma
No. 1 The Plaza
Sonoma, CA 95476
VIA E-MAIL: **Watkins@sonomacity.org**

SUBJECT: Housing and Live/work unit Development, 12410 Sonoma Hwy, Sonoma, CA
Environmental Noise Assessment

Dear Wendy:
This letter presents the results of the environmental noise assessment conducted for the proposed 12 unit Housing/2 unit Live/work development project at 12410 Sonoma Highway in Sonoma, California (see Figure 1). This analysis evaluates the noise and land use compatibility of the project with respect to the noise environment resulting from vehicular traffic on Sonoma Highway (SR12) and the adjacent commercial and lodging uses to the north and south. The noise assessment presents the regulatory criteria used in the assessment, the results of on-site noise monitoring, and our evaluation of the compatibility of the noise environment at the project site in relation to the project site plan. Preliminary noise reduction measures are presented to provide an acceptable interior and exterior noise environment per City of Sonoma Guidelines. Persons not familiar with environmental noise analysis are referred to Appendix A for additional discussion.

REGULATORY BACKGROUND
The City of Sonoma and State of California have established plans and policies designed to limit noise exposure at noise sensitive single residential land uses that are relevant to the proposed project. These plans and policies are contained in (1) the California Building Code, Title 24, Part 2, (2) the City of Sonoma Noise Ordinance, and (3) the City of Sonoma General Plan.

1. 2016 California Building Code, Title 24, Part 2. Section 1207.4 of the current (2016) California Building Code (CBC) states that interior noise levels attributable to exterior sources shall not exceed 45 dB(A) L_{dn} or CNEL (consistent with the noise element of the local general plan) in any habitable room. Though this section does to not explicitly apply this interior limit to multifamily residential buildings, in keeping with the requirements of prior editions of the CBC this limit is applied to any habitable room for new dwellings other than detached single-family dwellings.

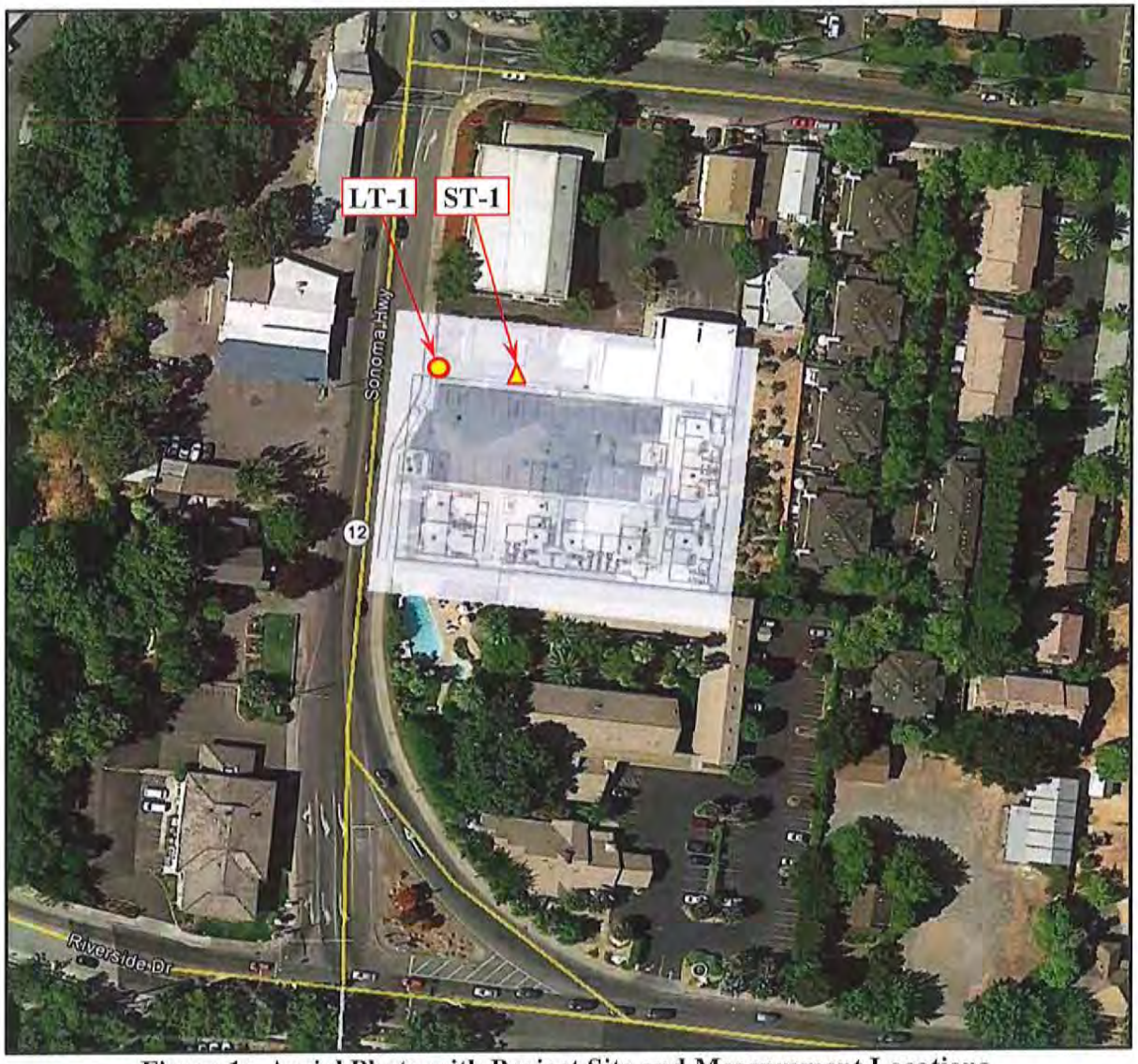


Figure 1: Aerial Photo with Project Site and Measurement Locations

2. City of Sonoma Noise Ordinance. The City's Noise Ordinance sets forth the general noise limits presented in Table 1, below, for residential properties within the City. With respect to these levels the Noise Ordinance states that;

1. No person shall produce, suffer or allow to be produced by any machine, animal or device, or by any other means, a noise level greater than the following levels (see Table 1), when measured on any residential property, and
2. For purposes of determining sound levels from any source of sound, a sound level measurement shall be made at any point on any receiving private or public property."

Table 1: Noise Ordinance Residential Property Noise Limits

Level	**Daytime** *(7 am to 10 pm)*	**Nighttime** *(10 pm to 7 am)*
Constant Level (Leq), dBA	**50**	**40**
Intermittent Level (Lmax), dBA	**60**	**50**

3. City of Sonoma General Plan. The Noise Element of the City of Sonoma's General Plan identifies policies that are intended to guide the development of new projects with regard to exposure to or generation of noise. These guidelines are used to assess the compatibility of a land use relative to the noise environment where the land use is proposed. The City considers residential land uses "normally acceptable" in noise environments characterized by an L_{dn} of 60 dBA or less, "conditionally acceptable" in noise environments characterized by an L_{dn} 60 to 65 dBA, "normally unacceptable" in noise environments characterized by an L_{dn} 65 to 70 dBA, and "clearly unacceptable" in noise environments characterized by an L_{dn} 70 dBA or more. The maximum allowable interior noise level, attributable to exterior noise sources, is 45 dBA L_{dn} for all residential land uses. Where the exterior or interior noise levels would exceed the normally acceptable level the General Plan Noise Element requires mitigation measures to achieve the normally acceptable noise limits.

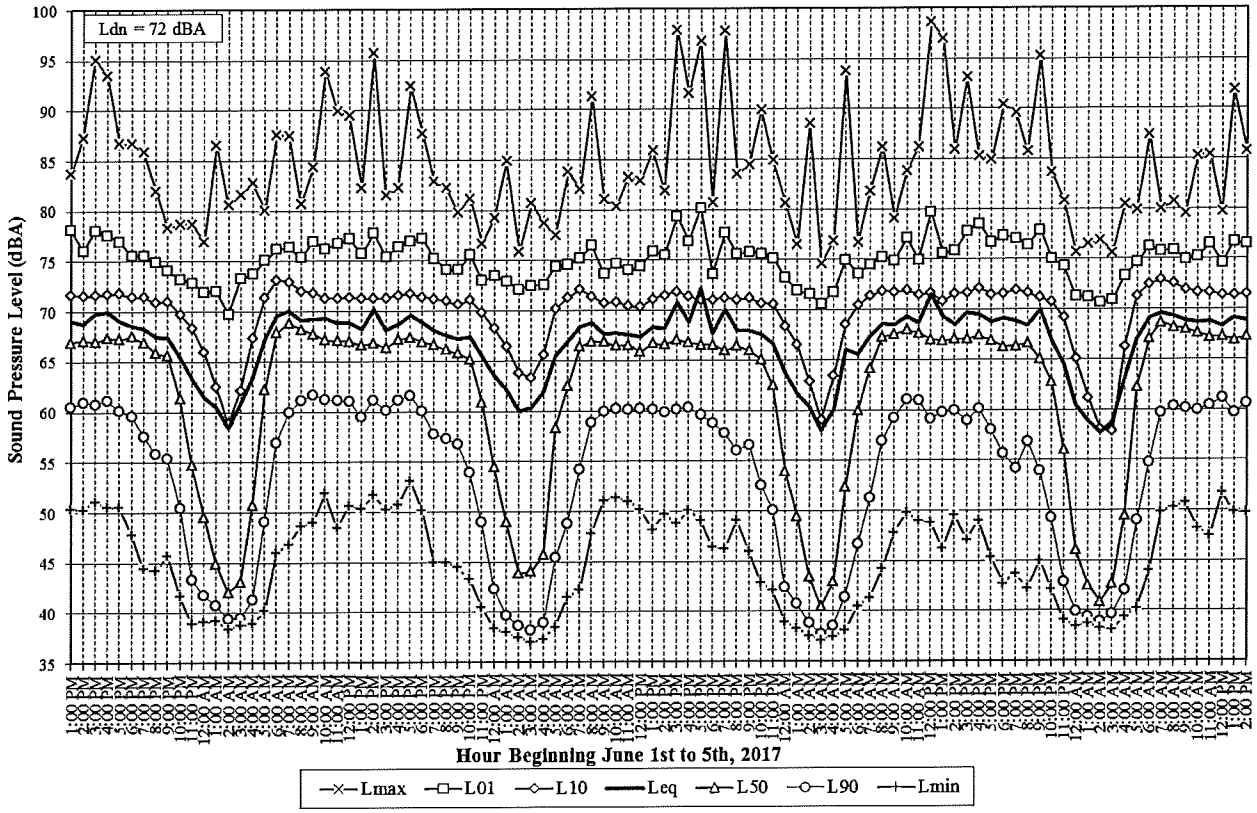
The Noise element further states that the allowable levels are to be raised to the ambient noise levels where ambient levels exceed the allowable levels and that where the ambient Leq is at least 10 dB lower than the allowable level, the allowable levels are to be reduced by 5 dB. To evaluate the intrusiveness of a noise source, the Noise Element of the General Plan also establishes that 15 minute integrated average noise level (L_{eq}) measurements be made at a location where potential impact may be significant, with and without (ambient conditions) the intrusive noise present. The measured L_{eq} with the intrusive noise is then to be corrected to, "account for special noise source characteristics and the prevailing attitude of Sonoma residents toward noise." If, after adjustments are made, the potentially intrusive noise source would cause exterior noise levels in the immediate or surrounding neighborhood to exceed the ambient level by more than 5 dBA (based on the L_{eq} over a 15-minute period), the standard states that "mitigation measures shall be developed to reduce the projected noise increase to less than 5 dBA above ambient levels".

EXISTING NOISE ENVIRONMENT

A noise monitoring survey was performed at the site between June 1st and June 5th, 2017 to document ambient noise conditions on the project site. The noise monitoring survey included one unattended long-term noise measurement and one 10 minute short term noise measurement. The noise measurement locations are shown on Figure 1. All noise measurements where conducted with Larson Davis Laboratories (LDL) Type I Model 820 Sound Level Meter fitted with a ½-inch pre-polarized condenser microphone and windscreen. The meters were calibrated with a Larson Davis Model CA250 precision acoustic calibrator prior to and following the measurement survey.

The long-term noise measurement (LT-1) was made on the northwestern edge of the site at about 45 feet from the centerline of SR 12 in a tree at about 8 feet above the existing grade. This measurement position is at the same approximate setback as the closest residential façade to SR12. The measured noise levels at site LT-1, including the energy equivalent noise level (L_{eq}), maximum (L_{max}), minimum (L_{min}), and the noise levels exceeded 10, 50 and 90 percent of the time (indicated as L_{10}, L_{50} and L_{90}) are shown on Chart 1. The L_{eq} noise level is typically considered the average noise level, while the L_1 is considered the intrusive level, the L_{50} is considered the median noise level and the L_{90} is considered the background or ambient noise level.

Chart 1: Measured Noise Levels at LT-1



A review of Chart 1 indicates that the noise levels at site LT-1 follow a diurnal pattern characteristic of traffic noise, with the average noise levels ranging from 66 to 72 dBA L_{eq} daytime and 58 to 70 dBA L_{eq} nighttime, with overall average hourly noise levels at 69 dBA L_{eq} daytime and 63 dBA L_{eq} nighttime. Hourly maximum noise levels at LT-1 ranged from 78 to 99 dBA L_{max} daytime and 75 to 94 dBA L_{max} nighttime, with recurring maximum L_{max30}[1] noise levels of 86 dBA daytime and 72 dBA nighttime. The Day/Night Average Noise Level (L_{dn}) over the 98-hour measurement period at LT-1 was calculated to be 72 dBA.

The short-term noise measurement (ST-1) was made on the northern edge of the site at about 100 feet from the centerline of SR 12 at about 5 feet above the existing grade. This measurement position is at the same approximate setback as the closest proposed outdoor use area to SR12. The results of the short-term measurements are summarized in Table 2.

Table 2: Summary of Short-Term Noise Measurement Results

Location	Measured Noise Levels (dBA)							Estimated L_{dn} (dBA)
	L_{max}	L_{01}	L_{10}	L_{eq}	L_{50}	L_{90}	L_{min}	
ST-2: 100 ft. to SR 12 centerline	76	75	65	64	60	53	51	65 dBA

[1] The L_{max30} is obtained by averaging the loudest 30-percent of maximum sound levels obtained by logarithmically averaging the loudest 30-percent of maximum sound levels for 1-hour intervals over the stated time period, and is used to establish a maximum level intrusive level for transportation noise sources.

NOISE AND LAND USE COMPATIBILITY ASSESSMENT

Future Noise Environment

Based on the results of the noise survey, the major noise sources affecting the project site was determined to be vehicle traffic on SR12 to the west. The General Plan Noise Element contains a projection traffic noise increases are not expected to exceed 2 dBA. With a 2 dBA increase noise levels, and considering the noise measurement results presented above, exterior noise levels at the proposed residential facades closest to SR 12 would be as high as 74 dBA L_{dn} under future conditions.

A review of the project's site and landscape plans indicates that an outdoor recreation and tot area will be located between the Western (C-Unit) and Central (A-Unit) buildings on the site (#1 in Figure 2) and positioned as close as 100 feet to the roadway centerline and would be exposed to an L_{dn} of 67 dBA with a 2 dBA increase noise levels under future conditions. A further review of the project plans indicates that other outdoor use areas (#2, 3, 4, and 5 in Figure 2) will be located 125, 150, 175 and 195 feet from the roadway centerline. Based on the results of the noise survey, these outdoor use areas would be exposed to respective L_{dn} levels of 66 dBA, 64 dBA, 63 dBA, and 62 dBA under future conditions without consideration of any noise shielding provided by project structures.

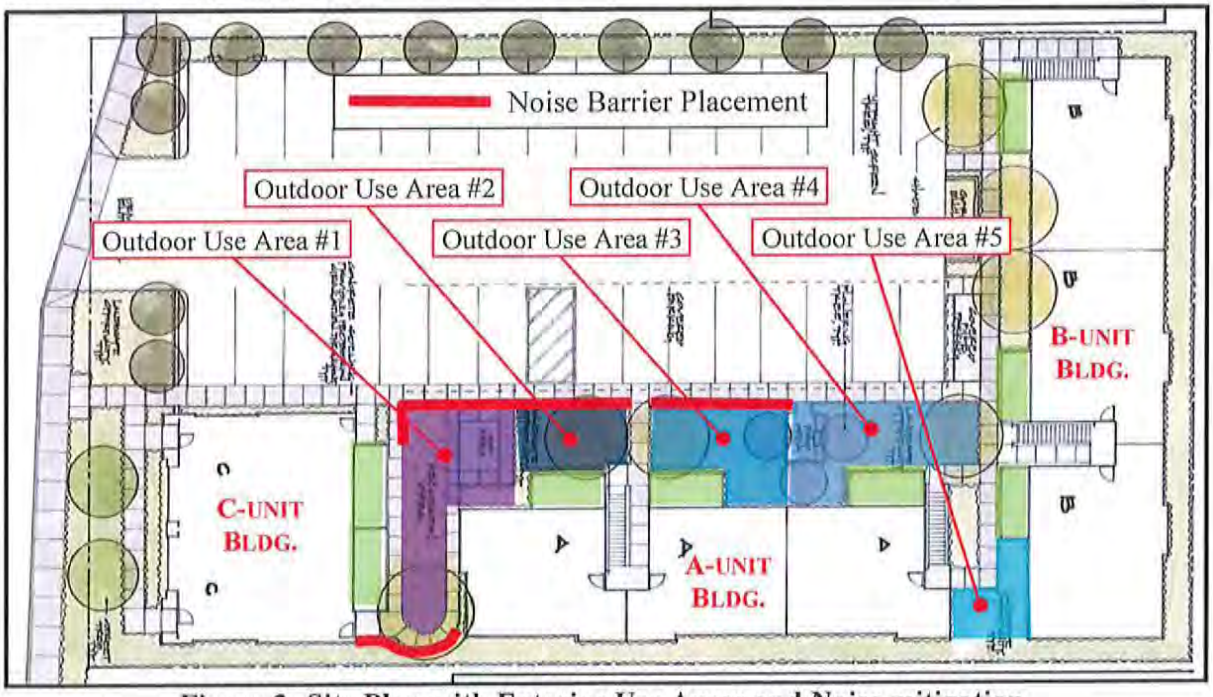


Figure 2: Site Plan with Exterior Use Areas and Noise mitigation

Exterior Noise Review

A review of the project's site and landscape plans indicates that the closest outdoor use area (#1 in Figure 2) will receive traffic noise shielding from intervening project structures of about a 3 dBA at the southern and northern edges and up to 10 dBA at the central portion of this area, and that the more distant outdoor use areas (#2, 3, 4, &5 in Figure 2) will receive traffic noise shielding from intervening project structures of about a 3 dBA.

Considering these noise shielding factors and the future levels at the unshielded outdoor use areas discussed above, the outdoor use areas on the project site will be exposed to traffic noise levels as shown in Table 3, below:

Table 3: Future Exterior noise levels at outdoor use areas

Outdoor Use Area	Distance to SR 12	Traffic noise levels with building shielding
#1. Between C-Unit and A-Unit buildings	100 feet	64 dBA at edges; 57 dBA at center
#2. Adjacent to Western unit of A-unit Building	125 feet	63 dBA at center
#3. Adjacent to Middle unit of A-unit Building	150 feet	61 dBA at center
#4. Adjacent to Eastern unit of A-unit Building	175 feet	60 dBA at center
#5. Between A-unit and B-unit Buildings	195 feet	58 dBA at center

Considering the findings shown in Table 3 and the results of preliminary traffic noise modeling six-foot high noise barriers as measured above the elevation of the outdoor use areas would be needed at the perimeter of Outdoor use areas 1, 2, and 3 as shown in Figure 2 to reduce noise levels in these outdoor use areas to "normally acceptable" levels.

To be effective in reducing traffic noise, these barriers should be constructed solidly over the entire surface and at the base of the barrier. Openings or gaps between barrier materials or the ground decrease the reduction provided by a noise barrier. Small, dispersed gaps in the base of the wall for landscape irrigation or drainage that do not compose more than 0.5% of the overall wall area are also acceptable. If gates are proposed in these noise barriers, the total area of any gaps at the base or the closing and opening faces of the gate should be maintained at 4% our less of the total gate area. The walls should have a minimum surface weight of 2.5 lbs. per sq. ft. Acceptable materials for such walls include a 2x4 wood framed wall with wood or stucco finishes, wood fence type walls, or visually clear acrylic (e.g. Plexiglas or Lexan) panels. For wood fencing walls to meet these requirements we recommend that a homogenous sheet material, such as 1/2" plywood, be used as a backing for typical 1" thick (nominal) wood fence slats. Using the plywood ensures the continued effectiveness of the barrier with age, since wood slats alone have a tendency to warp and separate with age, allowing gaps to form and the barrier effect of the wall diminish.

Interior Noise Review

The City of Sonoma and the State of California require that interior noise levels within new multifamily residential units be maintained at or below 45 dBA L_{dn}. Unshielded façades of the C-Building residential units proposed nearest SR12 would be exposed to future noise levels of up to 74 dBA L_{dn}, while the exterior facades of the A-unit Building with views of SR12 would be exposed to L_{dn} levels of between 67 and 70 dBA.

The proposed exterior siding types are not called out in the current drawings, but based on the project elevations, it appears that the exterior walls may be finished with stucco siding. Though the assemblies of the walls have not yet been determined, they are also expected to be wood stud framed walls and based on typical California construction techniques it is assumed that they will

also include cavity insulation and a single layer of gypsum board at the interior face. Based on this and that Hardie brand siding, or equal, will be used for the fiber cement siding, the sound isolation rating of the exterior wall assembly would be STC 46 for stucco sided walls.

Considering this exterior wall assembly and exterior door and window percentages of between 20% and 40% of the exterior wall area, with closed standard thermal insulating windows and weather sealed doors, the exterior noise levels will be reduced within the residential interiors by between 26 to 29 dBA. When windows or doors are open the noise attenuation from exterior to interior is typically reduced by 10 to 12 dBA, such that for this project we would expect exterior to interior noise reduction to be between 14 to 19 dBA with open windows and/or doors. Based on this consideration closed standard thermal insulating windows and weather sealed doors will be sufficient to allow interior noise levels to be an L_{dn} of 45 dBA or less in all A-type and B-type units, but may be insufficient to meet this interior level within C-type units. Thus, though standard thermal insulating windows and weather sealed doors would be acceptable in the A-unit and B-unit Buildings. However, preliminary calculations indicate that sound rated windows and exterior doors with STC ratings of between 32 and 34 may be needed on the facades of the C-unit Building which face or are perpendicular to SR-12.

Additionally, given that the anticipated noise levels at the exterior of all residences will exceed 60 dBA L_{dn}, some form of forced-air mechanical ventilation will be required at all residences to allow the windows to remain closed at the residents' option, as an interior noise level of 45 dBA L_{dn} will not be met with open windows. In our experience a central air-conditioning and heating system, or a central heating system equipped with a "summer switch" which allows the fan to circulate air without the heater on, which is designed to provide a habitable interior environment with the windows closed will meet this requirement. However, project-specific acoustical analyses are required by the State of California to ensure that interior noise levels can be reduced to 45 dBA L_{dn} or lower. Once building plans and elevations are available for these buildings, they should be reviewed by a qualified acoustical professional to determine compliance with the State Building Code.

This concludes the Illingworth & Rodkin's environmental noise assessment for the proposed 12 unit Housing/2 unit Live/work development project at 12410 Sonoma Highway in Sonoma, California. If you have any questions, or if we can be of further assistance, please do not hesitate to call.

Sincerely,

Fred M. Svinth, INCE, Assoc, AIA
Senior Consultant, Principal
Illingworth & Rodkin, Inc.

APPENDIX A:
FUNDAMENTALS OF ENVIRONMENTAL NOISE

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel* (*dB*) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table A1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level* (*dBA*). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table A2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level (CNEL)* is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level (DNL or L_{dn})* is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

TERM	DEFINITIONS
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Definitions of Acoustical Terms | **Table 1**

ILLINGWORTH & RODKIN, INC./Acoustical Engineers

At a Given Distance From Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
	140		
Civil Defense Siren (100')	130		Pain Threshold
Jet Takeoff (200')	120	Rock Music Concert	
	110		Very Loud
Diesel Pile Driver (100')	100	Boiler Room Printing Press Plant	
	90		
Freight Cars (50') Pneumatic Drill (50') Freeway (100')	80	In Kitchen With Garbage Disposal Running	Moderately Loud
Vacuum Cleaner (10')	70	Data Processing Center	
	60	Department Store	
Light Traffic (100') Large Transformer (200')	50	Private Business Office	Quiet
	40	Quiet Bedroom	
Soft Whisper (5')	30	Recording Studio	
	20		Threshold of Hearing
	10		
	0		

Typical Sound Levels Measured In The Environment And Industry — **Table 2**

ILLINGWORTH & RODKIN, INC./Acoustical Engineer

Effects of Noise

Sleep and Speech Interference: The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity; above 35 dBA, and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance: Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 55 dBA L_{dn}. At an L_{dn} of about 60 dBA, approximately 2 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 12 percent of the population. There is, therefore, an increase of about 1 percent per dBA between an L_{dn} of 60-70 dBA. Between an L_{dn} of 70-80 dBA, each decibel increase increases by about 2 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 10 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 2 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 3 percent increase in the percentage of the population highly annoyed.

5/24/2017 3:33:08 PM

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name:

Project Name: 19410 Sonoma Highway

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.00	0.19	0.69	0.00	0.00	0.00	224.94

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.47	0.51	5.05	0.01	1.35	0.26	789.79

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.47	0.70	5.74	0.01	1.35	0.26	1,014.73

Attachment 7

Attachment 8

Vicinity Map

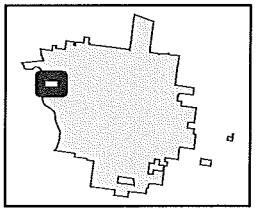
Project Summary	
Project Name:	Cavalli Live/Work Development
Property Addresses:	19410 Sonoma Highway
Applicant:	Ken Taub
Property Owner:	Debbie and Steven Cavalli
General Plan Land Use:	Commercial
Zoning - Base:	Commercial
Zoning - Overlay:	None
Summary:	Review of a draft Initial Study for a mixed use project that includes 12 apartments, 2 live-work units, and associated 28-stall parking lot.

0 100 200 400 Feet

1 inch = 200 feet

Zoning Designations

R-HS	Hillside Residential (1 D.U./10acres, maximum)
R-R	Rural Residential (2 D.U./acre, maximum)
R-L	Low Density Residential (2-5 D.U./acre)
R-S	Sonoma Residential (3-8 D.U./acre)
R-M	Medium Denisty Residential (6-10 D.U./acre)
R-H	High Density (9-12 D.U./acre)
R-O	Housing Opportunity (15-20 D.U./acre)
R-P	Mobile Home Park (7 D.U./acre, maximum)
MX	Mixed Use (12 D.U./acre, maximum)
C	Commercial (15 D.U./acre, maximum)
C-G	Commercial-Gateway (15 D.U./acre, maximum)
W	Wine Production
P	Public Facility
Pk	Park
A	Agriculture



N

Attachment 9

Sherby Sanborn Consulting Arborist

ISA Certified Arborist Number WE-0258A ISA Qualified Tree Risk Assessor

P.O. Box 447, Glen Ellen, CA 95442-0447 Phone/Fax 707.935.0892 ssanborn@sonic.net

http://www.sherbysanborn-arborist.com

May 17, 2017

Wendy Atkins
Associate Planner
No. 1 the Plaza
Sonoma, CA 95476

Re: Tree Protection Plan for 19410 Sonoma Hwy, Sonoma.

Summary

The site currently contains 32 trees and two vines, one of which is marked as a tree to be removed. Most of the trees are not very good candidates for being retained due to many factors including disease, decay, and many years of improper pruning. All of these factors have resulted in poor growth, structural deficiencies and risk of failure. I recommend all 32 trees be removed.

Introduction

This report has been prepared at the request of the City of Sonoma Planning Department. It includes an inventory of all the trees on the property which is proposed to be developed into a combination of apartments and live work apartments with parking for 24 cars. Two trees are proposed for retention and the landscape plan proposes the planting of an additional 19 trees.

Scope of Work

All trees at the site were identified on a map, numbered, and their trunk and crown radius recorded. This tree evaluation will include a cursory evaluation of the general health and structure of trees growing within or near the limits of the proposed new subdivision. This evaluation is based upon VTA, Visual Tree Assessment (Mattheck 2007). The evaluation will describe the current status of the trees and an assessment of construction impacts of the proposed project on each tree. Recommendations for the disposition of each tree and protection measures for protected trees will be included, as well as, recommendations for further tree condition diagnostic procedures or other appropriate arboricultural procedures.

Limitation of Observations

Construction impacts such as soil compaction, root cutting, mechanical damage and improper pruning, to name just a few human activities, can affect tree health and safety. Therefore, my evaluations are based on the condition of these trees on May 12, 2017. I cannot be held responsible for activities or impacts that occur after the above date. As an arborist, I make recommendations based upon on-site observation and information regarding the trees and the sit provided to me by the client. Such information, if inaccurate or incomplete, will affect the accuracy of these recommendations. In addition, property boundaries should be verified by client before treatments are applied. Failure to do so can lead to trespass and legal damages.

Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to structural failure of a tree or anticipate extreme weather events that could contribute to failure. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the Arborists services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Observations

Currently the property consists of three building at the east end of the property with a large lawn areas and circular driveway taking up much of the parcel. There are many more trees on the lot than are indicated on the "Existing Site Plan." This includes a number of larger trees along the east property boundary, numerous fruit trees and other smaller trees. A complete list of trees is presented in the table beginning on page 4 and the map on page 7 shows their approximate locations. Although tree # 2 is somewhat tree shaped, both trees # 2 and 34 are trumpet vines and therefore don't count as trees.

The majority of trees present are in poor condition for issues related to both health and structure. For example, one of seven ash trees has been identified for retention yet all of them have leaf anthracnose (a leaf fungus), several have sap-rot fungi on both branches and trunks and trunk and branch decay and cavities are present. Additionally, these trees have been topped in the past resulting in new growth forming smaller crowns with new branches being misshaped with attachments to old decayed branch stubs. Other trees such as the Arizona cypress have interior crowns congested by clumps of dead branches.

Terms and Definition

Tree Rating: Trees are rated based their health and structure. There are four rating categories: very-good, good, fair, and poor. Trees rated in *good* to *very-good condition* are in good health and structurally sound with only a few minor, correctable defects. Trees in *fair condition* have defect, disease, or health conditions which can indicate a higher risk of failure reducing their landscape value. For trees in *fair condition* it may be possible to improve their rating to good by reducing defects, treating insect or disease problems, and by improving growing conditions. Trees in *poor condition* show poor vigor, possess significant diseases and/or structural defects and may represent a high risk of failure. Defects in such trees are usually not correctable. Trees in *poor condition* have a very low landscape value.

Acute angles of attachment: Also known as a "V-crotch" describes a narrow angle of attachment between a branch and its parent (branch of origin), the trunk, or codominant stems (see below). The branch bark ridge is usually not visible in branches with acute angles and often result in imbedded bark (see below). For examples refer to Appendix C figures 8 and 9.

Branch Structure: This refers to the distribution of branches along the trunk and scaffold branches i.e. are branches evenly distributed within the upper two-thirds of the tree. In addition, are branches well spaced and free of interference or conflicts (crossing or lay upon one anther)?

Codominant: Either stems (trunks) or scaffold branches of equal size and relative importance, usually arising from a parent branch or trunk at the same level.

Crown: The leaves and branches of a tree measured from the lowest branch on the trunk to the top of the tree.

Crown Radius: is the maximum crown radius (the distance from the trunk center to the outer edge of the longest branch). Tree crowns are usually not symmetrical. In addition the crown may not be centered over the tree's root collar (the area at the base of the tree where the trunk and roots merge).

Defects: Cracks, splits, imbedded bark, cavities, dead or exfoliating bark, decay, insects, or disease.

Health: Represents how well the tree is growing and its general vigor. These somewhat subjective factors include crown density, branch distribution, amount of dead branches, leaf color, number of leaves, the existence of viable buds, and last season's growth.

Imbedded Bark: Bark that has developed between the union of two trunks, branches, or the trunk and a branch. Imbedded bark weakens the union increasing the likelihood that the union will fail and either the trunk or branch will tear out. Refer to Appendix C, figure 9 for an example.

Repair Structures: Generally, these include bulges, swellings, and other abnormalities where the tree has responded to cracks, splits, injuries, and decay by adding wood to strengthen the affected area.

Root Collar: The area at the base of the tree where the trunk and roots merge.

Scaffold Branches: The large branches that form the main structure of the crown. These branches arise from the trunk or trunks and they are the parent branches for the smaller branches in the crown.

Structure: This is the evaluation of overall branch distribution, size ratio of branches to their parent branch or the trunk, acute angles of attachment, imbedded bark, trunk and root collar damage, trunk lean, bulges, cracks, and other factors.

Tree Protection Zone: The area encompassed by the outer edge of the crown or dripline. For trees with an irregular crown, this zone should be determined by using crown radius forming a circle when measured from the center of the trunk. The tree protection zone is usually the minimum area to be excluded from construction activities. Depending on the species tolerance to root disturbance, this area can be larger or smaller.

Trunk diameter: is measured at 4.5 feet above median soil grade also known as DBH (diameter breast height). Trees that have more than one trunk or stems joined at or just above ground level are defined as multi-trunk. Each of the trunks of multitrunk trees is measured at DBH. Trees with branches arising at or below 4.5 feet are measured at the narrowest point between the lowest branch and the ground.

Tree Evaluations

Location: ***19410 Sonoma Hwy, Sonoma***

Tree Number	Common Name	Species	Number of Trunks	DBH inches	Crown Radius ft.	Health	Structure	Mitigation Measures	Comments
1	Glossy Privet	*Ligustrum lucidum*	10	2 to 10	6.0	Good	Fair	Remove	Multi-trunk
2	Trumpet Vine	*Campsis sp.*	1	16.0	12.0	Good	Good	Remove	This is a vine not a tree.
3	Glossy Privet	*Ligustrum lucidum*	5	15.0	16.0	Good	Fair	Remove	Multi-trunk.
4	Olive	*Olea europaea*	1	22.0	15.0	Good	Fair	Proposed for retention.	Dead bark and branches, poorly pruned.
5	Linden	*Tilia sp.*	30	48" clump	9.0	Poor	Poor	Remove	Stump with sprouts.
6	Olive	*Olea europaea*	clump	14.0	4.0	Poor	Poor	Remove	Poorly pruned with dead branches.
7	Arizona Cypress	*Cupressus glabra*	1	10.0	13.0	Fair	Good	Remove	Lots of deadwood pitching on bark.
8	Pear	*Pyrus sp.*	1	9.2	9.0	Good	Good	Remove	
9	Pear	*Pyrus sp.*	1	7.3	7.0	Fair	Good	Remove	Poor foliage and sunburned bark.
10	Ash	*Fraxinus velutina*	1	12.2	12.5	Poor	Poor	Remove	Trunk decay, anthracnose
11	Monterey pine	*Pinus radiata*	1	22.3	23.0	Fair	Fair	Remove	Branch structural defects.
12	Modesto Ash	*Fraxinus velutina*	1	12.0	7.0	Poor	Poor	Remove	Conks on trunk and anthracnose.
13	Modesto Ash	*Fraxinus velutina*	1	13.0	10.5	Fair	Poor	Remove	Conks on trunk and anthracnose.
14	Modesto Ash	*Fraxinus velutina*	1	10.7	9.0	Fair	Poor	Remove	Sale rot Gigi, anthracnose.

15	Modesto Ash	*Fraxinus velutina*	1	12.4	12.0	Fair	Poor	Proposed for retention.	Poorly pruned anthracnose.
16	Modesto Ash	*Fraxinus velutina*	1	12.2	12.0	Good	Fair	Remove	Poorly pruned anthracnose.
17	Modesto Ash	*Fraxinus velutina*	1	17.5	14.0	Poor	Poor	Remove	Trunk decay, anthracnose
18	Peach	*Prunus persica*	1	3.0	6.0	Poor	Poor	Remove	Gumosis leaf curl sunburned bark
19	Crape myrtle	*Lagerstroemia sp.*	10	2 foot clump	6.5	Very good	Very good	Remove	
20	Peach	*Prunus persica*	1	2.5	2.0	Far	Good	Remove	Peach leaf curl.
21	Plum	*Prunus sp.*	1	3.0	4.0	Good	Good	Remove	
22	Monterey pine	*Pinus radiata*	1	11.8	5.0	Good	Good	Remove	
23	Monterey pine	*Pinus radiata*	1	14.8	6.0	Poor	Poor	Remove	Smash crown poor sparse foliage.
24	Monterey pine	*Pinus radiata*	1	11.8	6.5	Poor	Poor	Remove	Smash crown poor sparse foliage.
25	Arizona Cypress	*Cupressus globra*	1	7.0	6.5	Good	Fair	Remove	Needs pruning and dead wood removal.
26	Arizona Cypress	*Cupressus globra*	1	7.5	9.0	Good	Fair	Remove	Needs pruning and dead wood removal.
27	Arizona Cypress	*Cupressus globra*	1	13.0	11.0	Good	Fair	Remove	Needs pruning and dead wood removal.
28	Arizona Cypress	*Cupressus globra*	1	7.0	11.0	Good	Fair	Remove	Needs pruning and dead wood removal.
29	Western Sycamore	*Platanus racemosa*	1	22.4	22.0	Very good	Good	Remove	Some anthracnose.
30	Fig	*Ficus carica*	1	13.0	6.0	Good	Good	Remove	Old but productive, could be transplanted.

31	Pear	*Pyrus sp.*	1	6.0	9.0	Good	Good	Remove	Full of fruit
32	Fig	*Ficus carica*	1	1.5	2.0	Very good	Very good	Remove	Young, good candidate for transplanting.
33	Apple	*Malus pumila*	5	1.5, 1.5, 2, 1.5 and 3	7.0	Very good	Very good	Remove	
34	Trumpet Vine	*Campsis sp.*	2	3, 5.5	9.0	Very good	Very good	Remove	Vine

Adjacent Trees

There are no adjacent trees that will be impacted by this development.

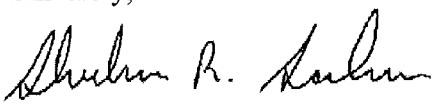
Recommendations

Due to the nature of this development, most of the existing trees are located in such a way that they cannot be retained and must be removed. With only a few exceptions most of trees have characteristics of both health and structure that make them undesirable for retention. Two trees on the existing site plan have been designated for retention. However, I believe that their condition is such that they should also be removed. Olive # 4 is one of the trees identified for retention. It is a marginal tree that could be retained provided it is not in a frequently irrigated setting. Olive trees are drought tolerant and grow best where drainage is good and irrigation is infrequent. At the time of my visit, this olive had an abundant crop of flowers. In some landscape setting, olive fruit production can become a problem

Replacement Trees

I've calculated the number of 15-gallon replacement trees at 55 if all trees are removed and 51 if olive # 4 is retained. Larger size nursery stock such as 24, 36 or 48 inch box trees can be planted and will be credited at 2, 3, and 4 15-gallon trees provided the tree committee agrees with that ratio.

Sincerely,

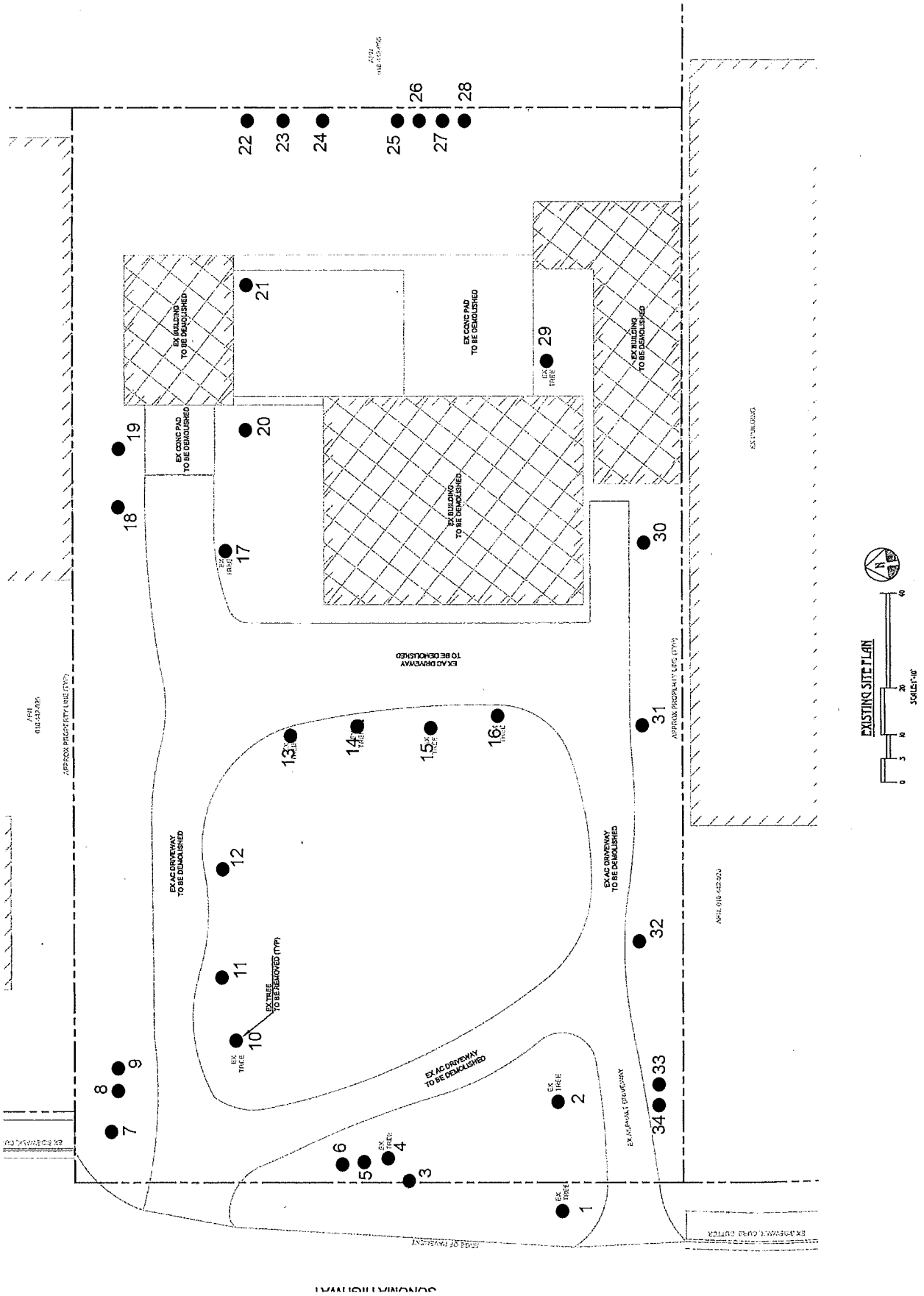


Sherburn R. Sanborn
ISA Certified Arborist WE-0258A
Member the American Society of Consulting Arborists

SRS: ss

References:

Mattheck, Claus, 2007. *Updated Field Guide for Visual Tree Assessment.* Forshungszentrum Karisruhe GmbH. 170 pages.


EX BUILDING TO BE DEMOLISHED
EX CONC PAD TO BE DEMOLISHED
EX AC DRIVEWAY TO BE DEMOLISHED
EX TREE TO BE REMOVED (TYP)
EX TREE
EX ASPHALT DRIVEWAY
SONOMA HIGHWAY
EXISTING SITE PLAN
SCALE: 1"=10'

Appendix A

Tree Protection Measures

Protective Fencing:

All trees to be preserved should be protected by fencing the area under the dripline. Ideally the fence should be secured so that it can't be moved.

Fences should be erected before any, grading or construction begin and remain in place until the final project inspection.

No construction equipment or materials should be stored within the root protection zone. In addition, no dumping of toxic materials shall take place either within or near the tree protection zone. This includes gasoline, other petroleum products, broken drywall, and concrete spoils to name just a few materials potentially toxic to trees and tree roots.

A prominently displayed warning sign can alert workers to the sensitivity of the fenced tree protection zone. The sign should clearly state: "WARNING – *Tree Protection Zone* – This fence shall not be removed contact project arborist for additional information."

The following table is based on The City of Sonoma Tree Ordinance and should be followed when establishing Tree Protection Zones (TPZ's)

Trunk Diameter (in inches)	Protected Distance (radius in feet)
2	4
4	6
6	10
12	12
18	16
24	18
30	20
36	24
42	28
> 48	32

Protective Mulch:

Applying mulch within the tree protection zone can greatly benefit protected trees. Always use composted coarse wood chip mulch that will not compact. Raw wood chips direct from a chipper, composted chips or Arbor Mulch are all beneficial for trees. Keep mulch away from root collar—large trees require 1 foot of clearance. Mulch should be no more than 2-3 inches deep. Protective mulch used to reduce soil compaction from vehicle traffic should be 6-8 inches deep. Mulch this deep should be temporary and must be removed to a final depth of 2-3 inches when construction is completed. It may also be necessary to reduce mulch depth during the winter months to prevent souring (mold build up).

Irrigation:

All trees, including native oaks can benefit from irrigation prior to and during construction, particularly during our hot summer months. Irrigate the outer two thirds of the crown radius using soaker hoses or a drip irrigation system. For native oaks, it is critically important that irrigation be kept away from the trunk and root collar. When irrigating large oaks, keep water at least eight feet from the trees root collar and trunk. Never allow water to splash on the trunk and root collar. Irrigate to a depth of six inches and allow soil to dry completely before the next irrigation. It may take many hours to moisten the soil to a depth of six inches. The easiest way to test the penetration depth is to dig several small holes within the irrigated area using a garden trowel or similar tool. If the soil isn't moist continue watering. Oaks should be irrigated once every six weeks while other trees can be irrigated more frequently.

Soil Grade Changes:

No soil grade changes should occur within the tree protection zone. Grade changes should be minimized immediately outside the tree protection zone and should not direct water into root collar area of trees.

Trenching and Root Pruning:

Trenches should be dug using an air-spade or by hand—no power tools or mechanical trenching devices. The air-spade uses compressed air to remove soil around roots without damaging them. Digging should be done in a manner that avoids damaging roots larger than 1 inch. All roots should be cut at right angles and when possible, preferably back to a lateral. Any roots cut during trenching operations should be cleanly cut, at right angles, to sound wood using either pruning shears, loppers, pruning saws or chainsaw. **Why not mechanical trenching?** Most mechanized trenching devices, such as a ditch-witch, don't cut roots cleanly. The root is grabbed, pulled, and torn leaving a ragged, broken surface. Because roots are elastic, when grabbed by a trencher the root stretches before it breaks then snaps back. This action can cause splits and other types of damage to occur between the break and the tree trunk. Such injuries cause roots to die back and provide avenues for soil borne fungi to attack them.

Landscaping Under Native Oaks:

To insure the longevity of native oaks, landscaping underneath their crown should be kept as natural as possible. Irrigation systems should only be installed outside the dripline (the width of the crown, as measured by the lateral extent of the foliage). For more information regarding landscaping under native oaks, see the publication: *Compatible Plants Under and Around Oaks,* California Oak Foundation, http://www.californiaoaks.org/

Attachment 10

Review of General Plan Consistency	
General Plan Policy	**Project Response**
Community Development Element	
Goal CD-4: Encourage quality, variety, and innovation in new development.	
Require pedestrian and bicycle access and amenities in all development (CDE 4.4).	The project features an internal sidewalk along the south side of the private drive and sidewalks will be installed along Sonoma Highway. Covered bicycle parking will be provided north of the parking lot adjacent to the driveway.
Goal CDE-5: Reinforce the historic, small-town characteristics that give Sonoma its unique sense of place.	
Protect important scenic vistas and natural resources, and incorporate significant views and natural features into project designs (CDE 5.3).	The project would not significantly impact public views scenic vistas. Although a number of trees would be removed to accommodate the project; at least 32 onsite trees will require removal. Onsite replacement trees would include a minimum of 15-inch box size or as recommended by the Tree Committee.
Promote higher density, infill development, while ensuring that building mass, scale, and form are compatible with neighborhood and town character (CDE 5.5).	The project density is proposed at the higher range allowed for in the Commercial designation Driveway location and building orientation/types have been improved for better compatibility with adjacent planned development and condominium complexes.
Local Economy Element	
Goal LE-1: Support and enhance the local economy in a manner consistent with Sonoma's character and in furtherance of its quality of life.	
Encourage mixed use development that includes small-scale, local-serving commercial uses, provided it will be compatible with surrounding development (LE 1.2).	Two of units are proposed as live-work units
Environmental Resources Element	
Goal ER-1: Acquire and protect important open space in and around Sonoma.	
Require new development to provide adequate private and, where appropriate, public open space (ERE 1.4).	The project design provides private patios for each apartment plus a small common open space area as an amenity for residents.
Goal ER-2: Identify, preserve, and enhance important habitat areas and significant environmental resources.	
Protect Sonoma Valley watershed resources, including surface and groundwater supplies and quality (ERE 2.4).	Stormwater treatment, retention and infiltration would be accomplished by conveying the majority of surface runoff from the site to a linear trench below the gutter of the driveway.
Preserve existing trees and plant trees (ERE 2.6)	At least 32 onsite trees will require removal. Onsite replacement trees would include a minimum of 15-inch box size or as recommended by the Tree Committee.
Goal ER-3: Conserve natural resourced to ensure their long-term sustainability.	
Encourage construction, building maintenance, landscaping, and transportation practices that promote energy and water conservation and reduce GHG emissions (ERE 3.2)	The proposed development is an infill project near public transportation and commercial services to reduce vehicle trips. In addition, the project would be subject to the CA Green Building Code and the City's WELO ordinance, which requires low-water use landscaping and irrigation systems.
Circulation Element	
Goal CE-3: Minimize vehicle trips while ensuring safe and convenient access to activity centers and maintaining Sonoma's small-town character.	

Encourage a mixture of uses and higher densities where appropriate to improve the viability of transit and pedestrian and bicycle travel (CE 3.2).	The proposed development is an infill project with a density at the high range allowed for in the Commercial designation. In addition, the project site is located along an arterial street near commercial services, jobs, and public transportation.
Improve city streets as necessary to preserve safety and expand opportunities for alternative means of transportation (CE 3.6).	A traffic impact study was prepared for the project that proposes to construct the driveway so that outbound project left turns are prohibited onto southbound Sonoma Highway.
Public Safety Element	
Goal PS.1: Minimize risks to life and property associated with seismic and other geologic hazards, fire, hazardous materials, and flooding.	
Ensure that all development projects provide adequate fire protection (PSE 1.3).	The 27-foot wide private drive has been designed as a fire lane in conformance with SVFRA access standards. In addition, fire sprinklers would be required in all units.
Noise Element	
Goal NE.1: Achieve noise compatibility between existing and new development to preserve the quiet atmosphere of Sonoma and quality of life.	
Apply the following standards for maximum Ldn levels to citywide development (NE 1.1): 45 Ldn: For indoor environments in all residential units. 60 Ldn: For outdoor environments around all residential developments and outdoor public facilities (e.g. parks). 65 Ldn: For outdoor environments around commercial and public buildings (libraries and churches). 70 Ldn: For outdoor environments around industrial buildings.	An environmental noise assessment was prepared for the project that recommends that The façades of apartment buildings adjacent to Sonoma Highway would require sound rated building elements to control traffic noise intrusion in addition to providing six-foot high noise barriers at the perimeter of Outdoor use areas 1, 2, and 3.
Housing Element	
Goal HE-1: To provide a mix of housing types affordable to all income levels, allowing those who work in Sonoma to also live in the community.	
Encourage diversity in the type, size, price and tenure of residential development in Sonoma, while maintaining quality of life (HE-1.1).	In general, the project would contribute to the diversity of the City's housing stock by providing modest-sized, attached apartments in the Commercial land use designations.
Encourage the sustainable use of land and promote affordability by encouraging development at the higher end of the density range within the Medium Density, High Density, Housing Opportunity, and Mixed Use land use designations (HE-1.4).	The Commercial land use designation of the site allows for residential densities of up to 20 units per acre. The proposed project has a Commercial density of 20 units per acre.
Continue to provide opportunities for the integration of housing in commercial districts and the adaptive reuse of non-residential structures (HE-1.5).	The project is located in a commercial district.
Goal HE-3: Maintain the condition and affordability of existing housing and ensuring development is consistent with Sonoma's town and neighborhood context.	
Maintain sustainable neighborhoods with quality housing, infrastructure and open space that fosters neighborhood character and the health of residents (HE-3.1).	The project intends to provide quality family housing and includes a small private common open space as an amenity for residents.
Goal HE-6: Ensuring Sonoma grows in a responsible manner, in line with resource limitations, such as water availability.	

Promote the use of sustainable construction techniques and environmentally sensitive design for all housing, to include best practices in water conservation, low-impact drainage, and greenhouse gas reduction (HE-6.3).	The proposed development is an infill project near public transportation and commercial services to reduce vehicle trips. In addition, the project would be subject to the CA Green Building Code and the City's WELO ordinance, which requires low-water use landscaping and irrigation systems. Stormwater treatment, retention and infiltration would be accomplished by conveying the majority of surface runoff from the site to three infiltration areas located along the west portion of the property.

ATTACHMENT 11

CEQA Comment Evaluation

Project:	19410 Sonoma Highway 12 Unit/2 Live/work Unit Development
Lead Agency:	City of Sonoma
Department:	Planning
Review Period:	July 10, 2017 – August 8, 2017
State Clearinghouse No:	2017072015
Date Prepared:	August 24, 2018

INTRODUCTION

Planning prepared an Initial Study and Proposed Mitigated Negative Declaration for the 19410 Sonoma Highway 12 Unit/2 Live/work Unit Development in accordance with the provisions of the California Environmental Quality Act (CEQA). The public review period was July 10, 2017, through August 8, 2017. Planning posted the document on the City website, made a copy available at the Planning office, sent notification letters to adjacent property owners, and published a Notice of Intent in the Sonoma Index Tribune. The State Clearinghouse distributed the document to state agencies.

COMMENTS

One comment letter (dated August 3, 2017) by Patricia Maurice, Department of Transportation, District 4, District Branch Chief, Local Development – Intergovernmental Review (P.O. Box 23660, Oakland, CA 94623-0660) was received. Responses prepared by Planning for the comments are provided below.

RESPONSE TO COMMENTS

- **Comment No. 1:** Project Description. Please address the following:
  - Total number of structures
  - Timing and duration of project phasing, including specific project elements to be completed in each phase; and
  - Total number of employees during the construction phase

  Response to Comment No. 1. The project will contain four structures: two apartment buildings; one live/work building; and a carport. The intent of the applicant is to build the entire project at one time within a twelve-month period. The new curb and sidewalk is proposed to be constructed in the eleventh month of construction. Construction is

proposed to begin in April of 2019. The total number of employees during the construction phase of the project is 218.

Comment No. 2: Lead Agency. As the Lead Agency, the City of Sonoma is responsible for all project mitigation, including any needed improvements to the STN. The project's financing, scheduling, implementation responsibilities and monitoring should be fully discussed for all proposed mitigation measures, prior to the submittal of an encroachment permit.

Response to Comment No. 2: The project's financing, scheduling, implementation responsibilities and monitoring will be fully discussed for all proposed mitigation measures, prior to the submittal of an encroachment.

Comment No. 3: Access Operations. Any improvement of access to SR 12 or changes in its operations shall be coordinated with Caltrans. Lane or shoulder closure charts for any work which interferes with operations of SR 12 shall be submitted to Caltrans for review and approval. Please provide plans for the proposed improvement of access to the site from SR 12. Detail design comments will be provided during the Encroachment Permit Review Stage. Please see the Encroachment Permit section below for more details. The City of Sonoma/applicant can schedule an encroachment pre-application meeting with Arun Guduguntla at arun.guduguntla@dot.ca.gov.

Response to Comment No. 3: The applicant shall schedule an encroachment pre-application meeting with Arun Guduguntla.

Comment No. 4: Cultural Resources. Section 5(b) of the MND presents incorrect information regarding the archaeological sensitivity of the project area. There is a prehistoric archaeological site within and adjacent to the project area that is a state-owned cultural resource as it extends into the Caltrans right-of-way (ROW). The site has been recommended eligible to the National Register of Historic Places, and that determination of eligibility is in the process of being concurred upon by the State Historic Preservation Officer (SHPO). We recommend that the City of Sonoma revise the Initial Study to incorporate potential impacts to the archaeological site and appropriate mitigation measures.

As a Caltrans encroachment permit is required (as listed on Page 2 of the Initial Study), in compliance with Public Resource Code (PRC) 5024, the City of Sonoma will need to conduct and produce cultural resource technical studies in accordance with the Caltrans-SHPO PRC 5024 MOW (http://www.dot.ca.gov/ser/vol2/5024mou_15.pdf) and the Caltrans Standard Environmental Reference (SER) Chapter 2 (http://www.dot.ca.gov/ser/vol2/vol2.htm). All cultural resource technical studies must be reviewed and approved by the Caltrans District 4 Office of Cultural Resource Studies (OCRS). Both the Historical Resources Evaluation and the Cultural Resources Evaluation need to be submitted to OCRS for review and approval. An encroachment permit will not be issued until Caltrans is fully satisfied that the City of Sonoma is

in compliance with California Environmental Quality Act (CEQA) and PRC 5024. We highly recommend early coordination before the submittal of an encroachment permit application, and we are available for a meeting to further discuss Caltran's requirements.

Response to Comment No. 4: Tom Origer & Associates completed an Extended Phase I (XPI) investigation to determine the horizontal and vertical extent of prehistoric archaeological resource CA-SON-2688 within the Project Area Limits (PAL) for the project. Prior to the XPI, Tom Origer & Associates conducted a records search of the proposed project at the Northwest Information Center (NWIC) of the California Historical Resources Information System and completed a surface survey of the PAL. Records search results showed that CA-SON-2688 was recorded immediately adjacent to the PAL. No archaeological site indicators were found during the field survey of the PAL. However, due to the concern of the proximity of CA-SON-2688 to the PAL, an XPI proposal was prepared. To determine the horizontal and vertical extent of CA-SON-2688 within the PAL. A total of four auger holes and five mini units were excavated in accordance with the XPI Proposal as approved by Caltrans on April 25, 2018. The XPI investigation resulted in the finding of sixteen obsidian flakes and three obsidian tools in two of the units excavated with the Caltrans right-of-way (ROW). Within these same units and other excavated units was modern debris (n=164). No midden soils were found in any of the units. Based on this investigation the materials found within the PAL constitute displaced Native American archaeological items, and CA-SON-2688 does not extend into the PAL. It is Caltran's policy to avoid cultural resources whenever possible. If previously unidentified cultural materials were unearthed during construction, it is Caltrans' policy that would be halted in that area until a qualified archaeologist can assess the significance of the find. Since the site was not identified within the PAL, the studies do not need to be reviewed and approved by Caltrans HQ or the SHPO. Caltrans will prepare a Historical Resources Compliance Report (HRCR) which serves as a cover document for Caltrans' files. The Initial Study was revised to reflect this information.

Comment No. 5: Vehicle Trip Reduction. With the enactment of Senate Bill (SB) 743, Caltrans is focusing on transportation infrastructure that supports smart growth and efficient development. Recently approved guidance for incorporating SB 743 (*Local Development-Intergovernmental Review Program Interim Guidance, November 2016*) intends to ensure that development projects align with State policies through the use of efficient development patterns, innovative travel demand reduction strategies, and necessary multimodal roadway improvements.

In Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*, this project falls under **Place 4 Suburban Communities – Neighborhoods**, which includes areas with a low level of integration of housing with jobs, retail service, poorly connected street networks, low levels of transit service, a large amount of surface parking, and inadequate walkability, residential subdivisions and complexes including housing, public facilities and low-serving commercial uses typically separated by corridors, Given this Place Type and intensification of use, with typically leads o hight levels of VMT and corresponding low levels of active transportation, we encourage

the City to establish a Transportation Management Associate (TMA) in partnership with other developments in the area to pursue aggressive trip reduction targets with lead Agency monitoring and enforcement. In addition, the Transportation Demand Management (TDM) elements described below should be included in the program to promote smart mobility and reduce regional VMT and traffic impacts to the STN:

- Project design to encourage walking, bicycling, and convenient transit access;
- Ten percent vehicle parking reduction;
- Transit and trip planning resources;
- Transit fare incentives for residents, visitors, and employees on an ongoing basis;
- Enhanced bus stops including bus shelters;
- Secured bicycle storage facilities;
- Electric vehicle (EV) charging stations and designated parking spaces for EVs and clean fuel vehicles;
- Fix-it bicycle repair station(s);
- Bicycle route mapping resources and bicycle parking incentives; and
- Decrease headway times and improve way-fining on bus routes 30, 30X, 32, 34, and 38 by working with Sonoma County Transit to provide a better connection between the project, nearby transit stations and regional destinations.

For additional TDM options, please refer to Chapter 8 of Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference*, regarding TDM at the local planning level. The reference is available online at: http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf.
The project design shall ensure sufficient width to accommodate the proposed Class II bike lane of DR12 (Sonoma Highway).

For information about parking ratios, please see MTC's report, Reforming Parking Policies to Support Smart Growth, or visit the MTC parking webpage: http:/www.mtc.ca.gov/planning/smart_growth/parking.

Response to Comment No. 5: The project provides secure indoor and outdoor bicycle parking and two EV charging stations.

Comment No. 6: Multimodal Transportation. The project should be conditioned to ensure connections to planned and existing bike lanes and multi-use trails to facilitate walking and biking to the project sit. Specifically, the project should provide connections to the existing Class II bike lanes on SR 12 (Sonoma Highway), per the 2010 *Sonoma County Bicycle and Pedestrian Plan*. The project design should ensure sufficient width to accommodate the proposed Class II bike lanes on SR-12 (Sonoma Highway) along the projects frontage. Providing these connections with streets configured for alternative transportation modes will reduce VMT by creating multi-

modal links to nearby transit centers, Sonoma County Transit bus routes 30, 30X, 32, 34, and 38, and the Petaluma Downtown Sonoma-Marin Are Rail Transit Station.

The project design shall ensure sufficient width to accommodate the proposed Class II bike lane of DR12 (Sonoma Highway).

Comment No. 7: Transportation Management Plan. Please identify whether any construction staging adjacent to SR 12 is anticipated. If it is determined that traffic restrictions and detours are needed on or near SR 12, a Transportation Management Plan (TMP) will be required from the developer for approval by Caltrans prior to construction. TMPs must be prepared in accordance with the California *Manual on Uniform Traffic Control Devices.* Further information is available for download at the following web address: http:/www.dot.ca.gov/hq/traffops/engineering/muted/pd/camuted2014/Part6.pdf. Please endure that such plans are also prepared in accordance with the TMP requirements of the City of Sonoma. For further TMP assistance, please contact the Office of Operations Strategies at 510-286-4579.

Response to Comment No. 7: Staging adjacent to SR12 is anticipated on the project site. Any traffic restrictions and detours as needed on or near SR 12 shall be identified in a Transportation Management Plan (TMP) submitted by the developer for approval by Caltrans prior to construction.

Comment No. 8: Transportation Permit. Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin o destination must be submitted to: Caltrans Transportation Permits Office, 1823 14th Street, Sacramento, CA 95811-7199. See the following website for more information: htpp://www.dot.ca.gov/hq/traffops/permits.

Response to Comment No. 8: Project work that requires movement of oversized or excessive load vehicles on State roadways shall require a transportation permit issued by Caltrans.

Comment No. 9: Encroachment Permit. An encroachment permit is needed for the proposed driveway on SR 12 (Sonoma Highway). The applicant will be required to apply for and obtain an encroachment permit for any work within Caltrans ROW prior to construction. As part of the encroachment permit process, the applicant must provide appropriate CEQA environmental approval, where applicable, for potential environmental impacts within the ROW. The applicant is responsible for quantifying the environmental impacts of the improvements within Caltrans ROW (project-level analysis) and completing appropriate avoidance, minimization and mitigation measures. Any improvements/mitigation measure affecting the operations of SR 12 requires Caltrans review and approval.

To apply for an encroachment permit, please complete an encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State ROW, and submit to the following address: David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0600. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the website linked below for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits.

Response to Comment No. 9: The applicant shall submit an encroachment permit subject to Caltrans review and approval.

CONCLUSION AND STAFF RECOMMENDATION

After reviewing the comments on the Initial Study and proposed mitigated Negative Declaration, the Planning Department believes that the environmental document has sufficiently addressed the potential environmental impacts of the proposed Project under CEQA. The Planning Department recommends that the Planning Commission adopt the Mitigated Declaration for this Project and direct staff to post a Notice of Determination with the Sonoma County Clerk/Recorder.