Vine Trail Study

Yountville (Madison Street) to St Helena (Sulphur Springs Avenue)

Prepared by

TrailPeople
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Prepared for

VINE TRAIL
NAPA VALLEY

Vine Trail Alignment Study: Yountville to St. Helena

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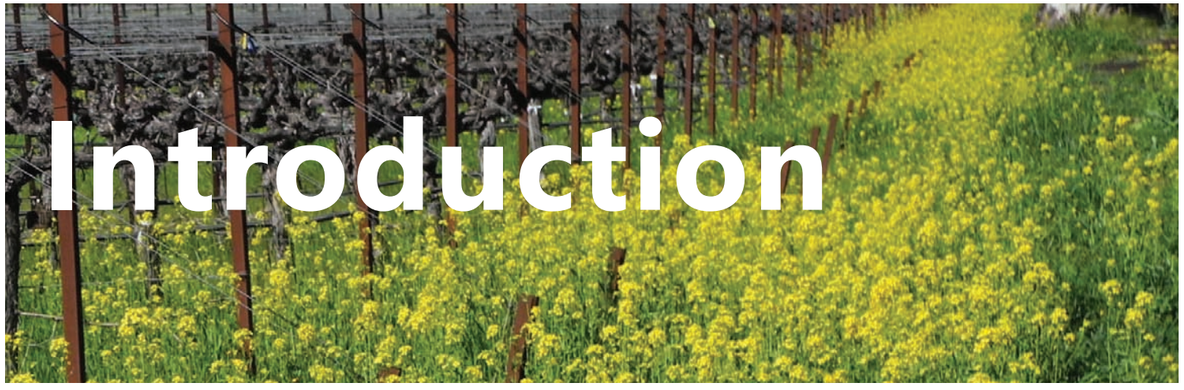


Introduction

Objectives

This study addresses a planned Class I trail connection from Madison Street in Yountville north to Sulphur Springs Avenue in Saint Helena, a distance of 8.05 miles along the southwest side of Highway 29.

The objective of the study is to document the conditions, highlight the significant opportunities and constraints, and define alternative and preferred alignments along the route.

Current Vine Trail Studies

The following Overview Map (Figure 1) shows the three sections of the Vine Trail that have been studied from Yountville to central St. Helena. This report includes a review of two of the Sections A and B.

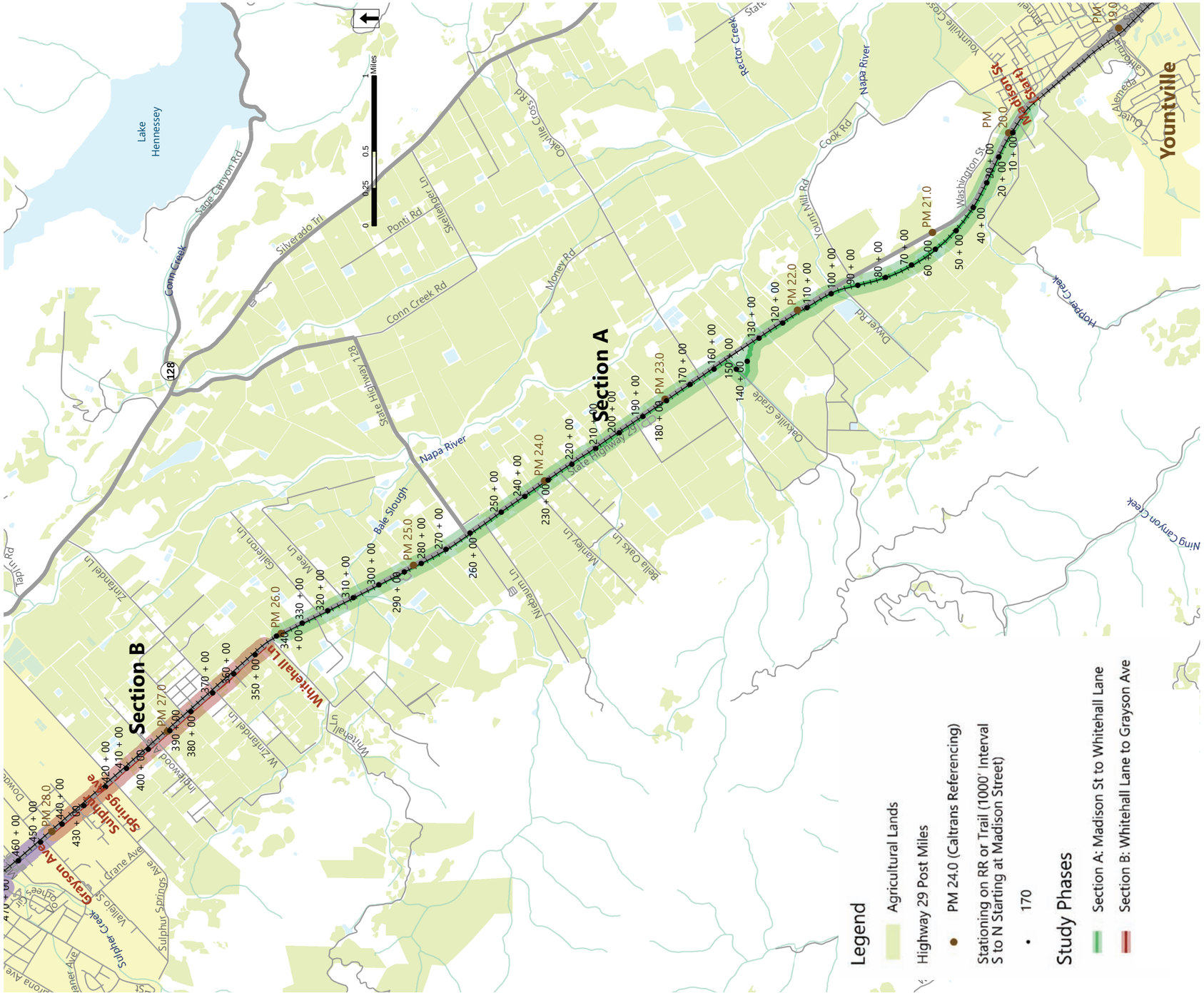
Section A. Madison Street to Whitehall Lane

This report includes original analysis of the route from Madison Street to Whitehall Lane. It consists of recom-mended trail alignments, opportunities and constrants, typical cross-sections, detailed route maps, and a cost estimate.

Section B. Whitehall Lane to Sulphur Springs Avenue

This previously completed study provided site analysis, route recommendations and cross sections for the Vine Trails from Grayson Avenue in St. Helena to Sulphur Springs Avenue.

Figure 1: Study Overview Map



Background and Setting

City of St. Helena

St. Helena has a population of approximately 6,000 residents, and from its inception, St. Helena has served as a rural agricultural center. Over the years, with the growth and development of the wine industry, the city has become an important business center for the viticulture industry. St. Helena also serves as a commercial and business center for surrounding towns and unincorporated areas, including Angwin, Deer Park, Rutherford and the unincorporated area south of the city. St. Helena is predominantly residential, except for the commercial areas immediately adjacent to SR 128/29, including a small industrial/office park at the southeast end of the city. Agricultural uses are also a predominant land use in St. Helena.

St. Helena's compact land use pattern, grid network of streets with relatively low traffic volumes except for Highway 29, and developed sidewalk network, coupled with its relatively small land area and mostly flat geography create many opportunities for residents and visitors to walk and bicycle throughout the community.

Town of Yountville

Taken from Napa County Bicycle Plan (2019):

The Town of Yountville is home to 3,000 people (approximately 1,200 residents live at the Veterans Home of California in western Yountville), and is located five miles north of Napa off SR 29. It has a series of low-volume, low-speed streets connecting its residential areas to the commercial core along Washington Street. Most of Yountville's bike facilities are shared use paths. The Vine Trail is located along the western edge of the town and has one connection to downtown and residential neighborhoods, in addition to the north and south end points in town. Other trails connect streets in residential areas but are fairly narrow.

Relevant State Studies

Highway 29 Specific Plan (2005)

The Highway 29 Specific Plan, funded by Caltrans and led by the City of St Helena, documents existing conditions along Highway 29 and outlines large scale changes to zoning in St. Helena. In the circulation element, the plan identifies the general goal of signalizing intersections in southern St. Helena and implementing necessary changes to improve the flow of traffic onto and off of Highway 29. Intersection improvements have occurred at Grayson Avenue, with the implementation of a signal and an additional crossing of the railroad. The current Vine Trail route study may relate to implementation of outstanding recommendations, such as the signalization of Dowdell Lane, and connection to surrounding active transportation routes, such as the envisioned Sulphur Creek multi-use trail.

(Highway/State Route 29 traffic data: ADT (average daily traffic) (2017) = 25,000; ADT (2037) = 34,000; DHV (design hourly volume) = 2,600; Speed limit = 55).

Relevant Regional & Local Studies

City of St. Helena Bicycle Plan (2019)

The 2019 Napa County Bicycle Plan outlines a comprehensive plan to improve bicycle facilities throughout the Napa Valley. Chapter 7 provides a comprehensive analysis of St. Helena's existing conditions and needs for bicyclists. The plan outlines the types of facilities and benefits of a low-stress connected bicycle network. It provides an overview of St. Helena's existing conditions and potential improvement projects. Notably, it includes the 2.93-mile Vine Trail project, from Deer Park Road to Chainx Lane, as a priority project. This plan recommends that a Class I path be implemented on the west side of Highway 29 throughout St. Helena

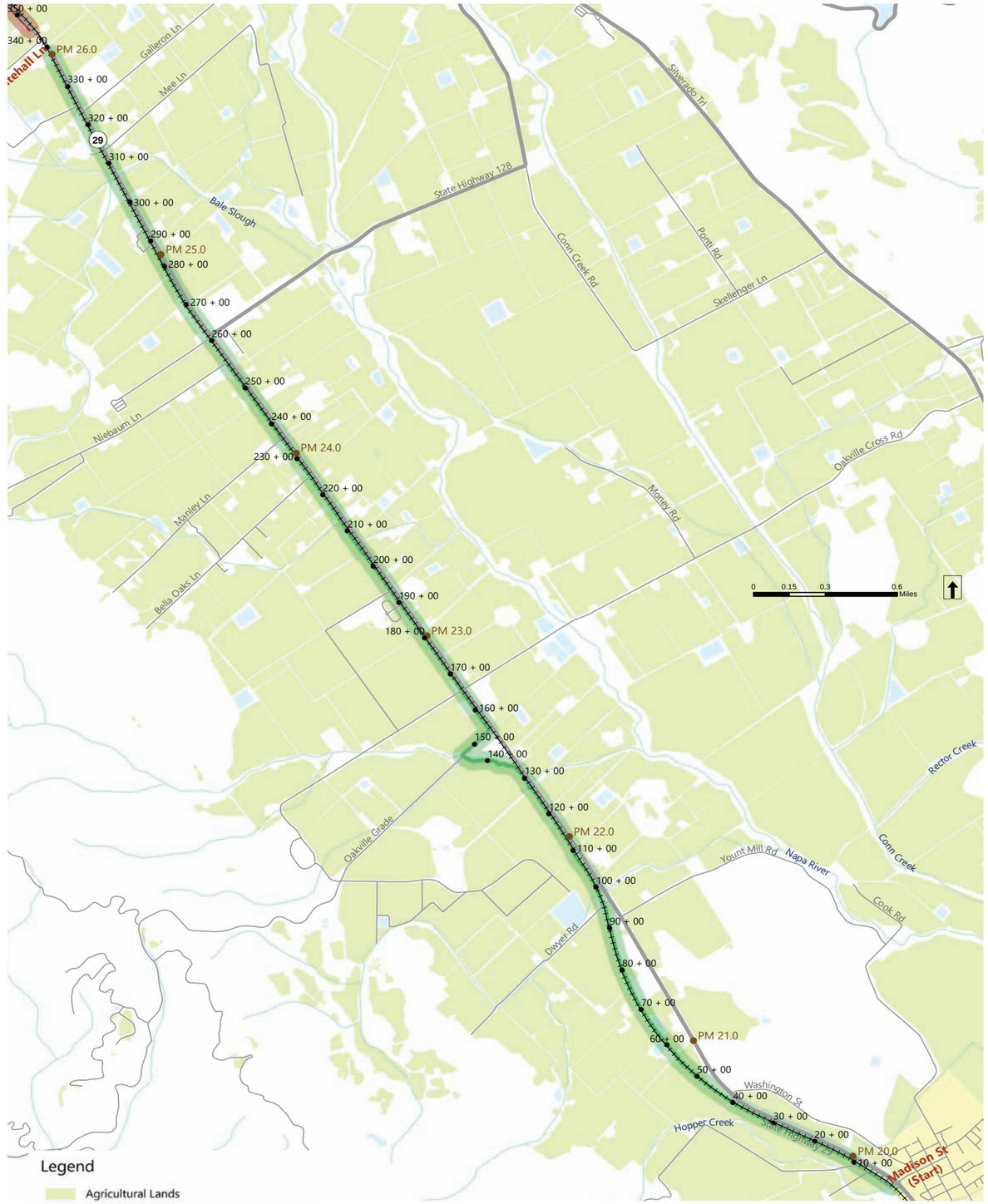
Section A Madison Street to Whitehall Lane

This Section A addresses a planned Class I trail connection from Madison Street in Yountville north to Whitehall Lane, a distance of 6.41 miles north towards St. Helena along the southwest side of Highway 29. The Vine Trail organization is negotiating for the use of an easement along the Wine Train rail line covering a distance of 81% of the 6.41 mile study area, though there are some obstructions and topographic or drainage constraints that will require the trail to detour out of the easement.

Based on survey data provided by Reichers & Spence Associates, the study documents conditions and features such as the rail line and corridor, other parcels including the state highway right-of-way (ROW), topography, apparent drainage patterns and facilities, cross streets, driveways, utilities, trees, fences and signs on the prospective route.

This section begins with an overview description of the route and major opportunities and constraints, including cross-sections of drainage challenges and potential solutions, and overview maps of rail line controlled and uncontrolled crossings, tree impacts/mitigations, and potential encroachment onto private properties. It then features detailed route description tables which highlight the constraints and opportunities and how they affect the trail design. with corresponding detailed route maps with stationing along the trail route.

Appendix A includes a planning-level cost estimate for Section A.



Corridor Setting

Highway 29 is a mostly flat state route that runs from Vallejo to Clear Lake in the northern San Francisco Bay Area. It runs through the center of Napa Valley and forms the main street for many towns, including St. Helena, although Yountville has its own separate main street (Washington Street). In the area of the study Highway 29 generally features two lanes of traffic, with a center turn lane and wide shoulders. It features sidewalks on the west side of the street through the northern portion, and wide shoulders on the southern portion.

The Napa Valley Wine Train rail line runs generally parallel to Highway 29 from Napa to Calistoga. For most of its route, the rail line runs along the southwest side of Highway 29, however it crosses Highway 29 at the intersection of Whitehall Lane and continues along Highway 29 on northeast side of the highway until its terminus in Calistoga.

Bicycle lanes currently exist on the shoulder of Highway 29 throughout this corridor with some signage. However, Highway 29 is not considered a bicycle route in the 2019 Napa County Bicycle Plan.

Opportunities and Constraints

There are numerous opportunities and constraints along the corridor which are described in detail below.

Agricultural Roads – Opportunities

Aligning the trail on top of ditches would be very challenging and expensive, so easements over private agricultural roads at the edges of the vineyards are a potential alternative. They are typically dirt or crushed stone, wide enough to accommodate passing vehicles (at least 14'), and structurally sound enough to accommodate heavy vehicles. Issues to consider include the frequency of vehicle use, surface material and crop spraying. Vehicle use occurs more frequently (and with less visibility) when rows of vines are perpendicular to the trail. This is due to vehicles needing to move from row to row of vines, making u-turns across the agricultural road. When vine rows are parallel to the trail alignment, vehicles typically use the agricultural road less often.

Crop spraying typically occurs a few times a year at night when the weather is coolest. On organic vineyards, less hazardous chemicals are used. Trails can be closed when spraying occurs, involving signage and barriers to notify trail users of the closed route and that spraying is occurring.

Another consideration is surface material. Most existing portions of the Vine Trail consist of a paved surface, comfortable for use by road bicycles. But pavement tends to be damaged by agricultural equipment. Agricultural roads shared by the Vine Trail could be surfaced with Park Tread – a proprietary crushed rock surface with binder that is less subject to damage by agricultural equipment than paving, and which has held up well on existing portions of the Vine Trail near Calistoga.

Example of an agricultural road

Local Access and Connections – Opportunities and Constraints

A successful trail is a well-connected trail providing safe access and use by people living and working along the corridor and for people traveling to and from other destinations. These typically include routes from origins (housing, hotels) to destinations (i.e. wineries, vineyards, retail, employment centers, schools, etc.) around the site and beyond.

The trail must also carefully address the design of public road and driveway crossings to make them safe and comfortable. There are 8 public road crossings and 22 private driveway crossings, of which 9 lead to wineries or commercial businesses, the rest being primarily residential access or agricultural road accesses.

The most significant constraints along the corridor include Highway 29, the rail line and creeks or drainage ditches. Highway 29 has no locations where pedestrians and bicyclists are able to safely cross within the study area creating a significant barrier. Most public and private rail crossings do not include safety measures such as signals and gates. Where the trail parallels a creek or drainage ditch, crossing can be difficult.

The development of the Vine Trail can enhance connectivity by recommending safety measures for pedestrians and bicy-

clists across Highway 29 (possibly including new crossings), and improved bike and pedestrian access along local connecting roads.

In collaboration with adjacent property owners, safe connections such as small bridges over drainage ditches can be built to enhance access for tourists and staff.

Drainage Ditches – Constraints

While the terrain along the route is relatively flat, the properties to the west generally drain toward the east. The rail line and Highway 29 are raised and drain to either side, creating a barrier for surface water flow. There are a series of ditches along the rail line and the highway, many of which occupy the trail's potential location in the rail corridor or highway right of way. These ditches vary in depth from less than a foot to over 5 feet. Some of the ditches flow directly to creeks, but many of them depend on water soaking gradually into the ground, and overflow during heavy rains.

As illustrated in Figure A.1 , it may be possible to relocate and narrow and shallow ditch (i.e. 1 – 2 feet) to make room for the trail but a deeper ditch (i.e. 3- 5 feet) could not be relocated within the rail corridor. Where the water drains into a nearby creek, the ditch could be replaced by a pipe draining into the creek with the trail placed atop the pipe (Figure A.2). Where the ditch collects water which permeates downwards, without a drainage outlet, adding a trail on top may be more complicated (Figure A.3). To locate the trail over a significant ditch would require installation of a large perforated pipe surrounded by permeable material to collect and store runoff and gradually let it absorb into the groundwater table. Excavation for the pipe should not take place close to the rail line, so the new pipe would need to be offset from the current ditch centerline.

These potential solutions to ditches conflicting with the trail alignment would be expensive to design, construct and maintain.

Creeks – Opportunities and Constraints

Creeks add to the aesthetic and natural experience of a trail, but where the Vine Trail must pass over significant creeks, costly bridges need to be built. These include 60 foot bridge at stationing 97+50, 30 foot bridge at 119+10, 50 foot bridge at stationing 133+00, 40 foot bridge at stationing 201+80, 90 foot bridge at stationing 295+00 (Figure A.4).

Trees – Opportunities and Constraints

Trees create shade for trail users and help to absorb stormwater, among their many other benefits. Large oak trees may have been in existence for centuries and are protected by County ordinance. Several locations along the potential route have clusters of large trees – mostly native oak trees, that constrain the trail alignment (Figure A.4). For these locations the survey data for tree location, size and species has been examined in detail to evaluate if the trail can be fitted around the trees or if trees may need to be removed.

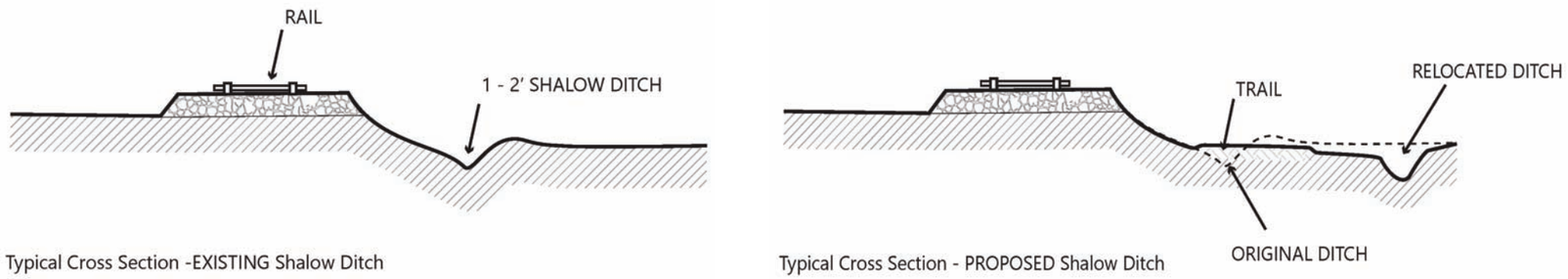


Figure A.1: Existing and Proposed Cross-Section showing how a shallow ditch might be relocated as part of the trail construction

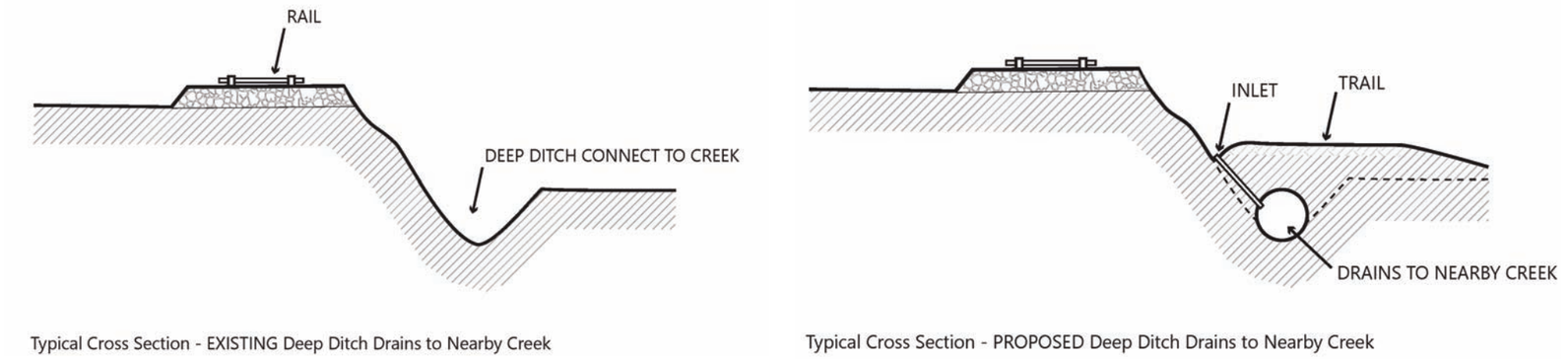


Figure A.2: Existing and Proposed Cross-Section showing how the trail might be built atop a deep ditch which connects to a creek

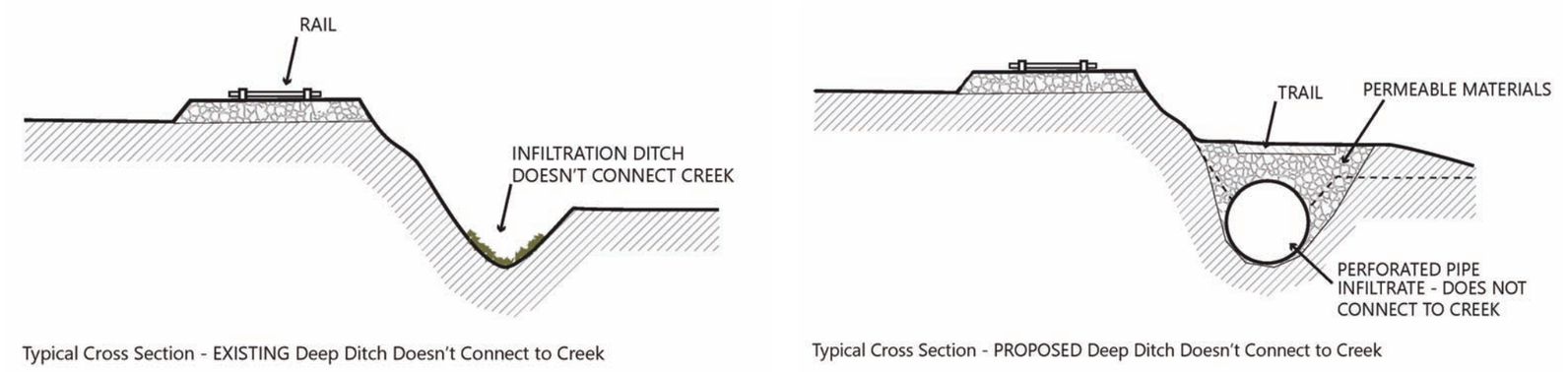


Figure A.3: Existing and Proposed Cross-Section showing how the trail might be built atop a deep ditch which does not connect to a creek

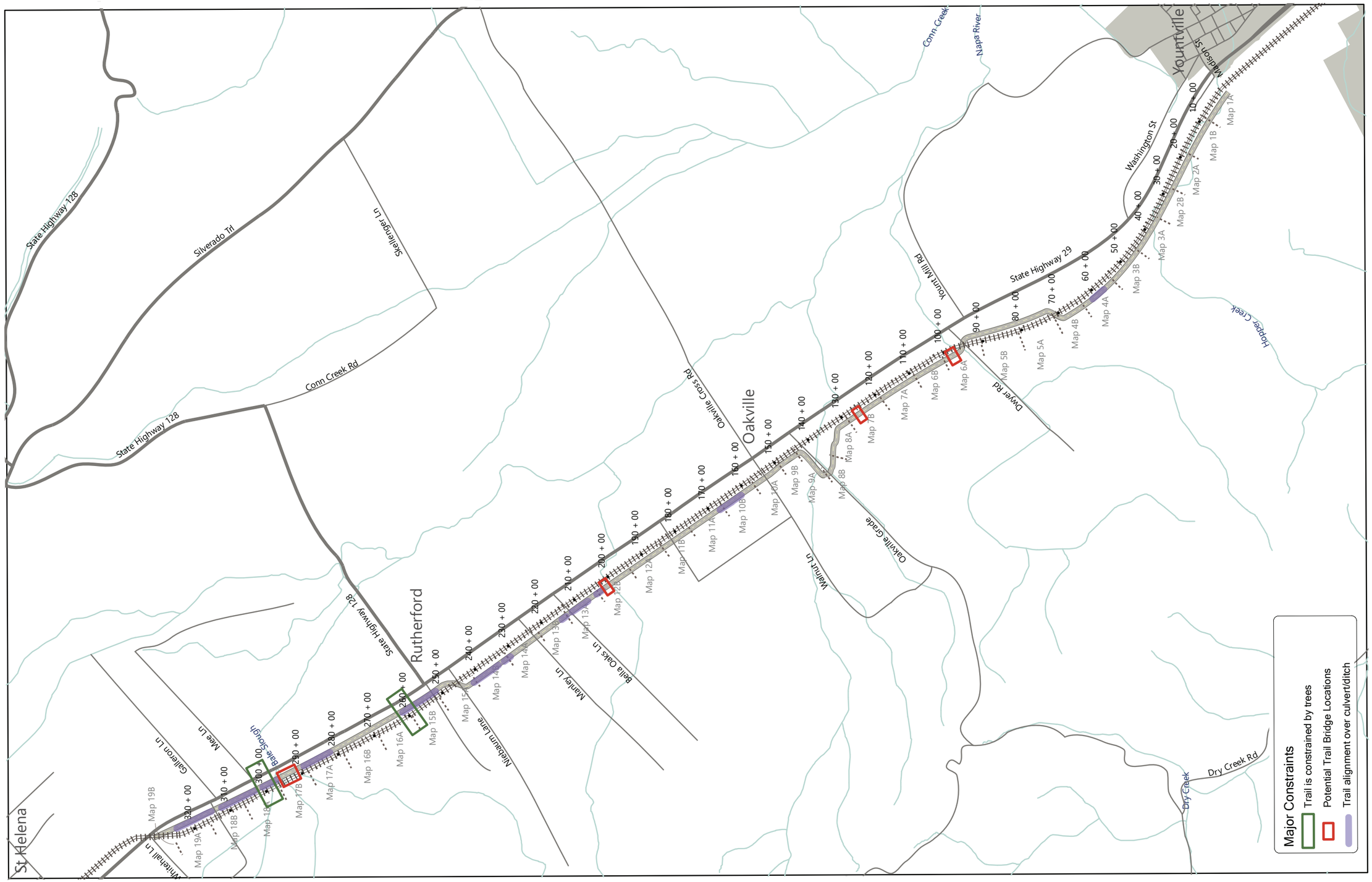


Figure A.4: Tree Constraints and Bridge Locations

Rail Crossings – Opportunities and Constraints

In some cases the southwest side of the rail corridor and the adjacent private property are so constrained that it would be more feasible to continue the trail on the northeast side of the rail corridor or in the highway right of way. Along the Vine Trail corridor, practical opportunities for the trail to cross the rail line are limited to the signalized, gated public crossings.

The rail corridor is crossed by numerous public and private roadways. Only seven of these crossings are public with signals and gates, which are on Madison/Napa Nook Road, Dwyer Road, Oakville Grade, Bella Oaks Lane, Manley Lane, Niebaum Lane and Whitehall Lane (Figure A.5).

In most cases, no safety measures (signals and gates) are in place. Designing the trail to cross the rail line at these unimproved crossings would require safety upgrades at significant cost.

Railroad crossings by any transportation facility (road or trail) are overseen by the California Public Utilities Commission (PUC). To reduce rail-related fatalities, the PUC has strict guidelines on new rail crossings. A bridge or tunnel is preferred. However, where at-grade crossings are allowed, significant safety measures must be included. These may consist of signals (flashing red lights, a crossbuck and bell attached to a mast) and a gate which is lowered when a train is passing. Requisite studies, permits, coordination and construction/installation are expensive (typically $1 million per crossing).

Highway 29 Right of Way – Opportunities and Constraints

The Highway right of way is an opportunity for alignment of the trail where there is sufficient space. The highway on the northern portion of the route is a conventional highway, rather than a limited access freeway, so bicycle and pedestrian facilities can be located adjacent to the shoulder. But noise, pollution, and the aesthetic experience of the trail would be reduced, so this is seen as a last resort.

Example of uncontrolled rail crossing

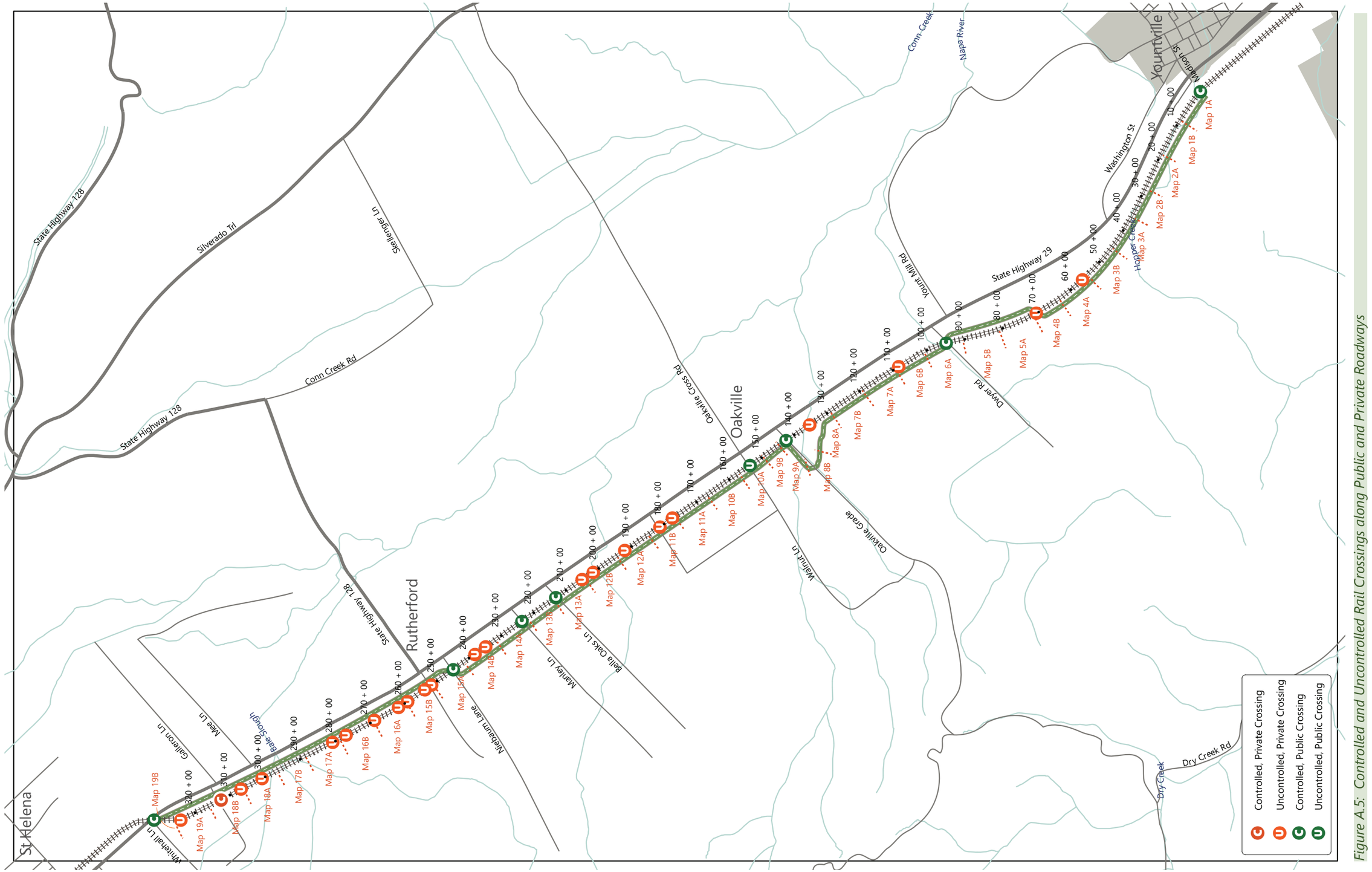


Figure A.5: Controlled and Uncontrolled Rail Crossings along Public and Private Roadways

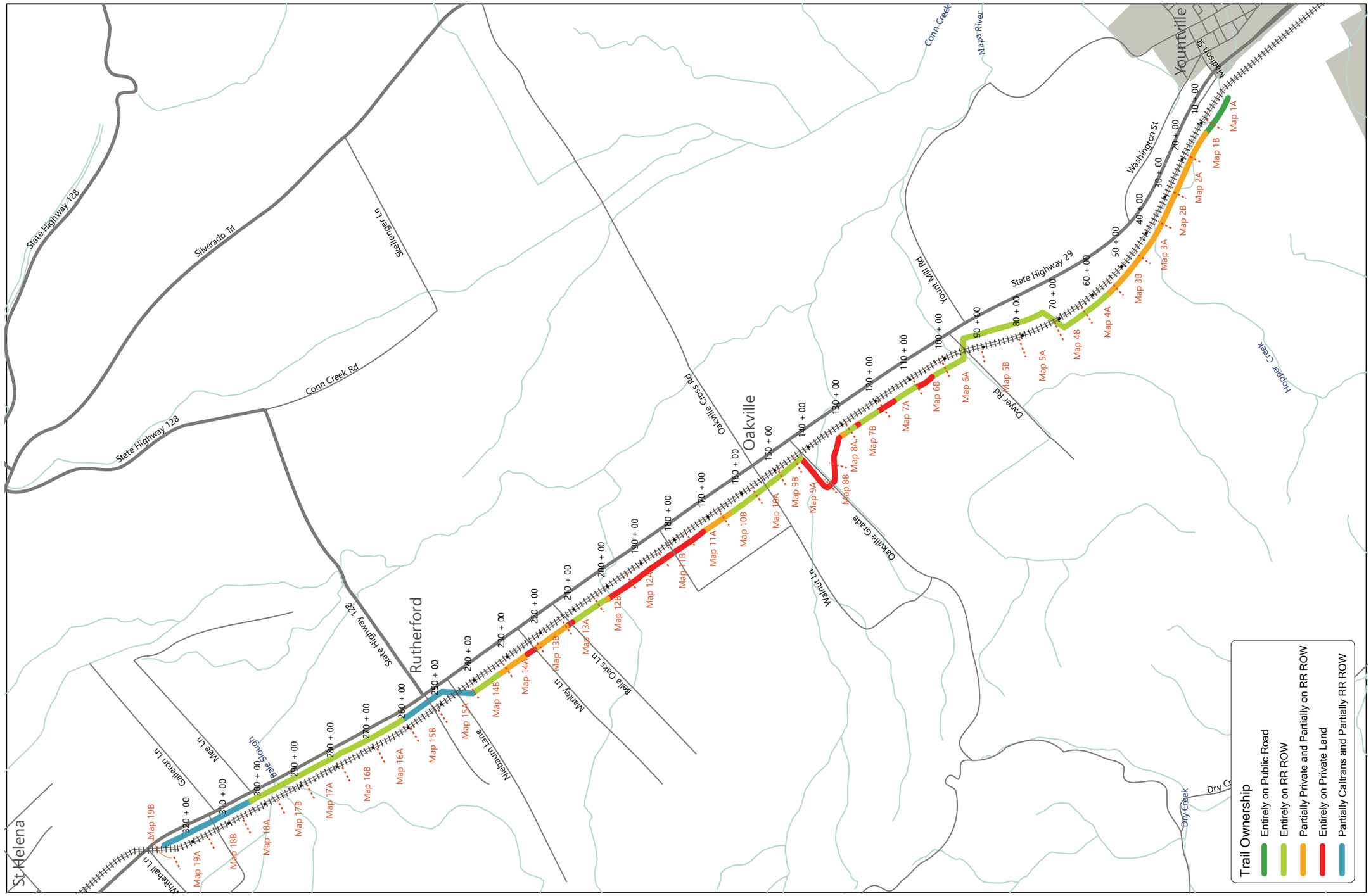


Figure A.6: Trail Encroachment Overview

Route Description and Maps

The trail alignment would be primarily located on the southwest side of the rail line. The Vine Trail organization is currently studying and negotiating to obtain a trail easement from the Napa Valley Wine Train. A minimum 10-foot offset from the track centerline would be required. The intention is to acquire a 12-foot-wide trail easement containing a 10-foot-wide trail, in some cases narrowing to 8 feet where there are constraints (the minimum width for a Caltrans Class I bike route/multi-use path). Additional temporary easements for grading and construction would be required.

The route is mapped and described in the route description table moving south to north. The route description table highlights the location of the trail relative to which side of the rail line it is on and where it needs to encroach on private property. The table highlights the constraints and opportunities and how they affect the alignment and design of the trail.

The corresponding detailed maps show parcels and ownerships, the Wine Trail rail corridor and line, ditches (classified as 1 – 2 feet, and 3 – 5 feet deep), trees, walls, rail crossings by type, and utilities. The rectangular utility symbols represent above ground cabinets and below ground vaults (the below ground vaults are called out where they intersect the trail). The round utility symbols represent mostly water and gas valves that would be at-grade, but they also include manholes, lights, and utility poles. The detailed survey data from Reichers and Spence detail the specific types of utilities.

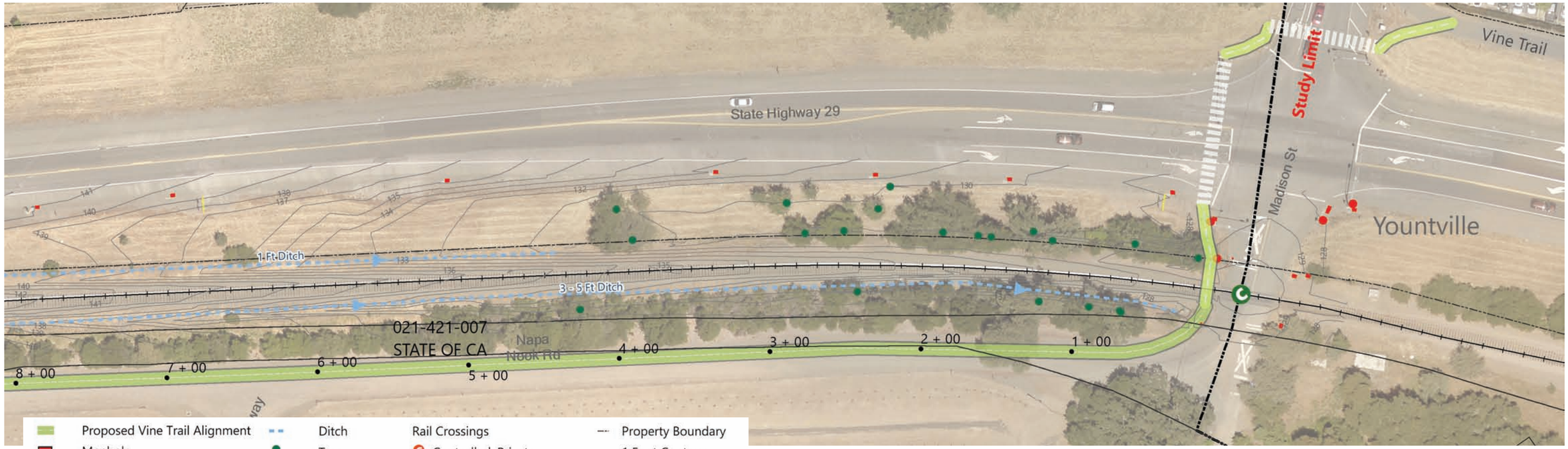
Section A.1

Map No.	Station	Proposed Trail Alignment Description	Constraints	Opportunities
1A	Connection across Hwy 29	The current Vine Trail ends on the northeast side of the highway south of Madison Street. The new trail needs to connect west across the Hwy 29/Madison Street intersection.	The intersection of Madison at Hwy 29 is signalized, but it lacks crosswalks and pedestrian signals, which will be needed for the connection to the southwest side.	The Wine Train rail line crossing west of Hwy 29 is a signalized gated public crossing, which will facilitate the connection to the southwest.
1A-1B	1+00 to 10+00	Napa Nook Road is used as a Class III route with signing and striping indicating the roadway is shared with bikes and pedestrians.	There is a deep (up to 5') drainage ditch and cluster of trees along the rail line.	The trail can use Napa Nook Road - a public road that experiences limited vehicular volumes.
1B-3A	10+00 to 40+50	The trail uses the Grgich agricultural road.	There is a deep (up to 5') drainage ditch along the rail line.	The vine rows are parallel to the road, limiting conflict with agricultural vehicles.
3A-4A	40+50 to 56+50	The trail is located within the rail right-of-way (10' from center line) on the southwest side.	At sta. 40+50, the trail could cross briefly onto the Markham Vineyards property to avoid utilities and, possibly, a well-head, before crossing into the railroad right-of-way.	There is no drainage ditch along this section.

Trail crossing across Highway 29 connecting to existing trail on right side of image


Deep ditch at Station 9+50


Grgich agricultural road at Station 10+0


State Highway 29
Vine Trail
Study Limit
Madison St
Yountville
1 Ft Ditch
3 - 5 Ft Ditch
021-421-007
STATE OF CA
Napa Nook Rd
8 + 00
7 + 00
6 + 00
5 + 00
4 + 00
3 + 00
2 + 00
1 + 00
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

1A


State Highway 29
1 Ft Ditch
3 - 5 Ft Ditch
18 + 00
17 + 00
16 + 00
15 + 00
14 + 00
13 + 00
12 + 00
11 + 00
10 + 00
9 + 00
8 + 00
Napa Nook Rd
Driveway
0 25 50 100
Feet

1B

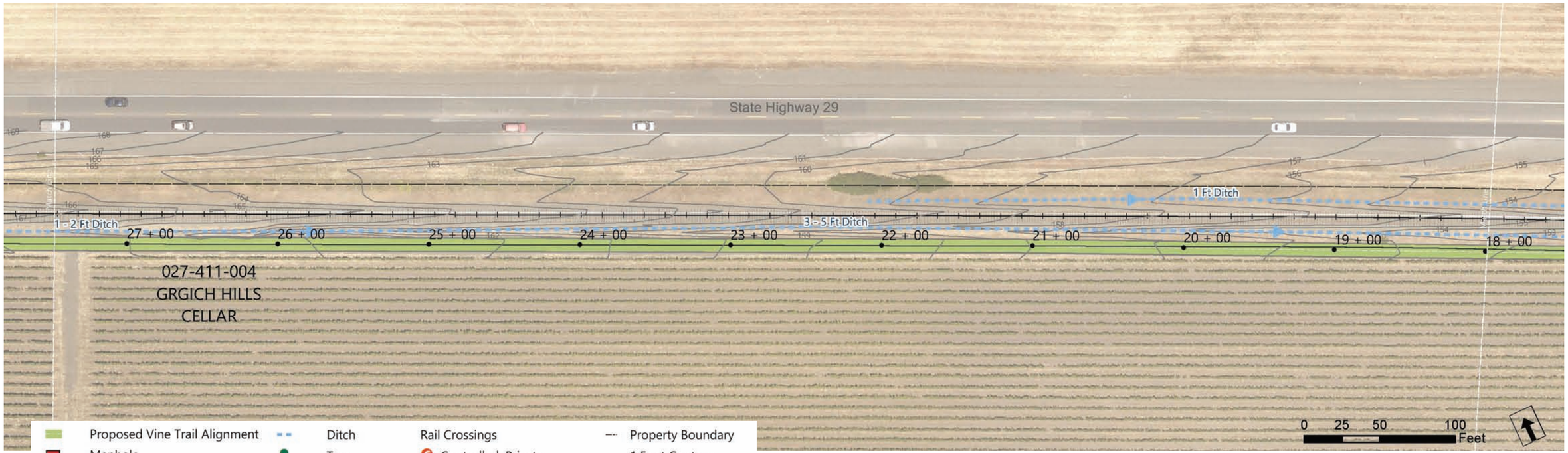
Connection to Existing Vine Trail

The existing Vine Trail ends at the north east corner of Madison Street and State Route 29 Intersection, while the proposed Vine Trail starts at the South west corner of this intersection. The current intersection features a traffic signal, with no pedestrian or bicyclists crosswalk. It is recommended that the full pedestrian activated signal with high-visibility crosswalk, along with ramps and sidewalk installed at this intersection to connect the existing Vine Trail with the porposed Vine Trail segment.

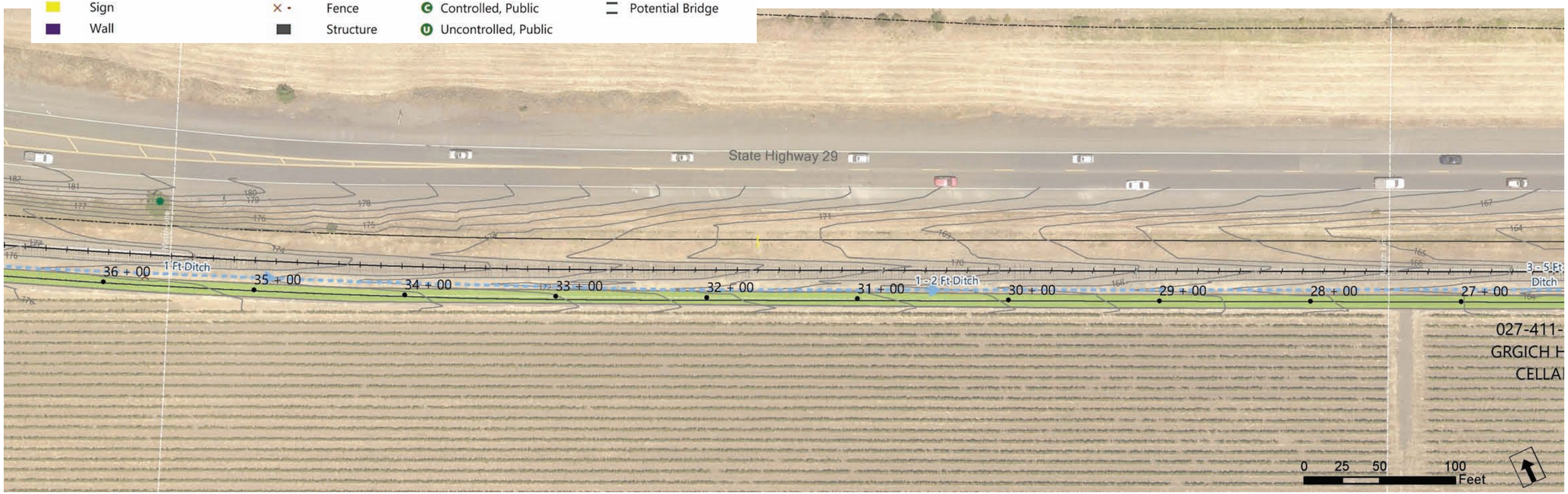
Below are plan views and illustrations that shows the proposed improvement of this intersection:

Proposed Improvements at the SR-29 and Madison St Intersection

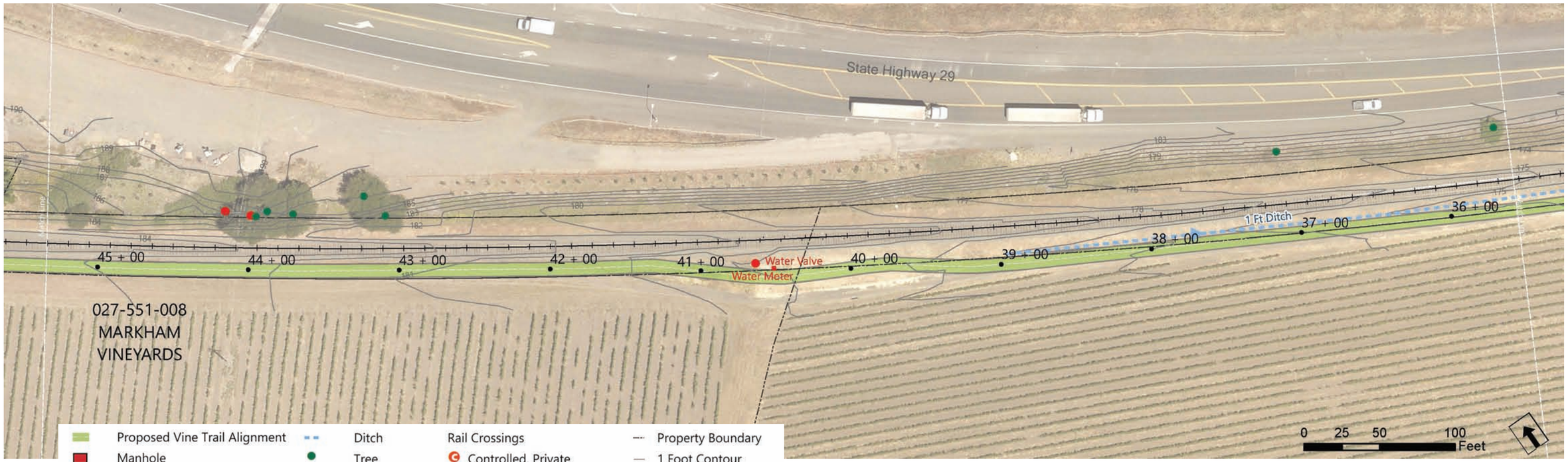
Proposed Improvements at the SR-29 and Madison St Intersection


State Highway 29
1 - 2 Ft Ditch
3 - 5 Ft Ditch
1 Ft Ditch
27 + 00
26 + 00
25 + 00
24 + 00
23 + 00
22 + 00
21 + 00
20 + 00
19 + 00
18 + 00
027-411-004
GRGICH HILLS
CELLAR
0 25 50 100 Feet
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

2A


State Highway 29
1 Ft Ditch
1 - 2 Ft Ditch
36 + 00
35 + 00
34 + 00
33 + 00
32 + 00
31 + 00
30 + 00
29 + 00
28 + 00
27 + 00
0 25 50 100 Feet

2B


State Highway 29
45 + 00
44 + 00
43 + 00
42 + 00
41 + 00
Water Valve
Water Meter
40 + 00
39 + 00
38 + 00
1 Ft Ditch
37 + 00
36 + 00
027-551-008
MARKHAM
VINEYARDS
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100 Feet

3A


55 + 00
54 + 00
53 + 00
52 + 00
51 + 00
50 + 00
49 + 00
48 + 00
47 + 00
46 + 00
027-500-002
BECKSTOFFER NATIONAL
TREASURES LLC
0 25 50 100 Feet

3B

Section A.2

Map No.	**Station**	**Proposed Trail Alignment Description**	**Constraints**	**Opportunities**
4A	56+50	The trail crosses the rail line at an uncontrolled crossing.	There is a significant cost to adding a rail crossing at a currently uncontrolled location.	Locating the trail to the northeast side avoids private properties and obstacles.
4A-6A	57+00 to 95+00	The trail is located within the rail right-of-way (10' from center line) on the northeast side.	There are a few trees and utilities around which the trail would be designed.	This alignment avoids most obstacles.
6A	95+50	The trail crosses the rail line to the southwest side at a controlled crossing at Dwyer Road.		The trail could use an existing controlled crossing.
6A	96+00 to 105+00	The trail continues within the rail right-of-way (10' from center line) on the southwest side.	There is a City of Napa water pump station, utilities, a creek and a cluster of trees in the vicinity.	
6A	98+20	The trail requires a bridge near the water pump station.	A bridge increases the trail cost.	
6B	105+00 to 110+00	The trail is routed southwest onto an agricultural road on private property to avoid constraints.	There are 4 large trees and a perpendicular drainage ditch. A parallel drainage ditch would require a culvert crossing.	The proposed alignment could use private RME, Inc. property. Although the vine rows are perpendicular to the trail, they are set back with enough space to accommodate the trail.

Trail proposed on northeast (left side) of rail line

Controlled crossing at Dwyer Road

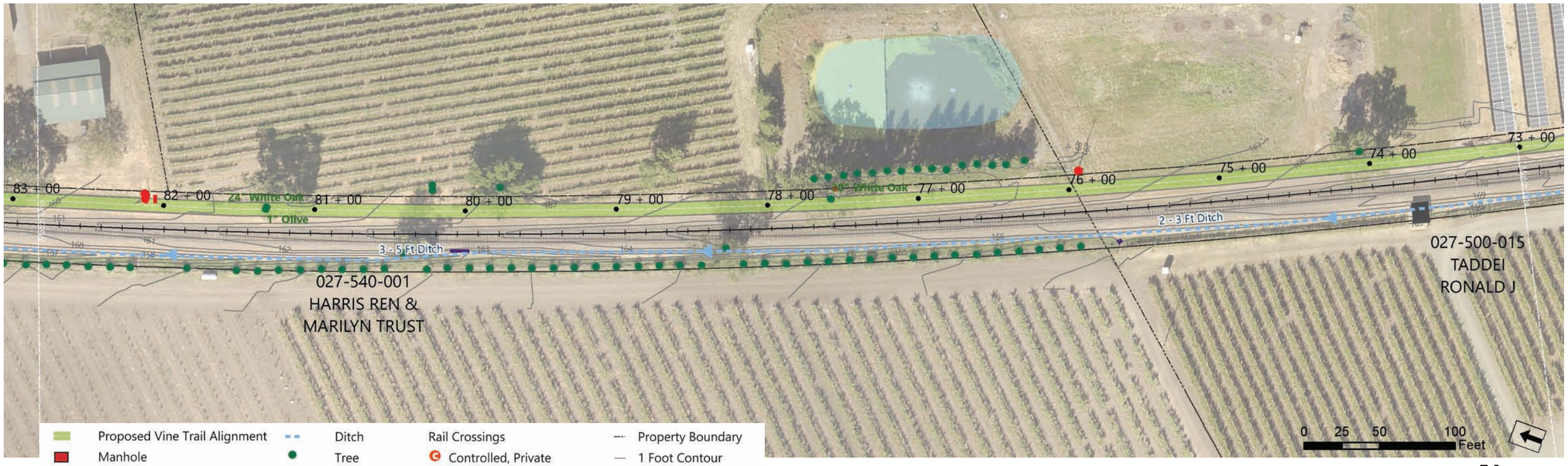
Waterway to be crossed near pump station

Trail continues on southwest (left side) of rail line


65 + 00
64 + 00
63 + 00
62 + 00
61 + 00
60 + 00
59 + 00
58 + 00
57 + 00
56 + 00
55 + 00
1 Ft Ditch
1 Ft Ditch (to be relocated) Ditch
027-500-033
BECKSTOFFER NATIONAL TREASURES LLC
Water Riser
Water Meter
Water Valve
Water Valve
Water Valve
Water Valve
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100 Feet
74 + 00
73 + 00
72 + 00
71 + 00
70 + 00
69 + 00
68 + 00
67 + 00
66 + 00
65 + 00
64 + 00
2 - 3 Ft Ditch
16" White Oak
Water Valve
Water Paddock (X3)
Water
A.T.C. Panel
VLT (X2)
Guy
Utility Pole
Wire
JP Inlet
1 Ft Ditch
027-500-015
TADDEI
RONALD J
027-500-018
AUTRES RIVAGES
VINEYARDS LLC
0 25 50 100 Feet

4A

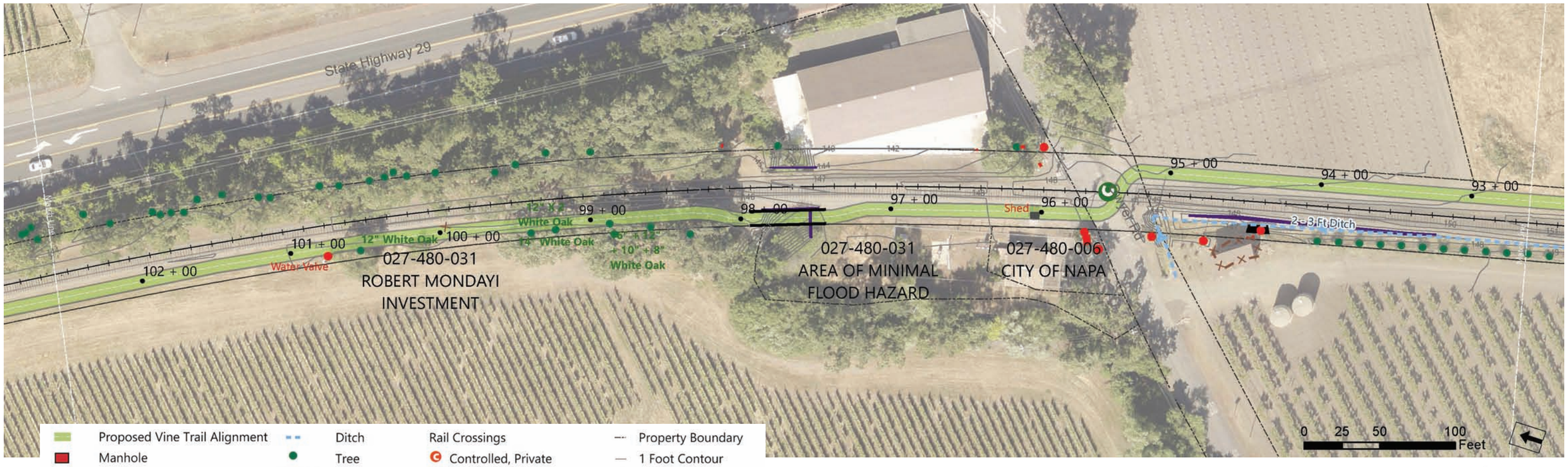
4B


83 + 00
82 + 00
24" White Oak
1" Olive
81 + 00
80 + 00
79 + 00
78 + 00
30" White Oak
77 + 00
76 + 00
75 + 00
74 + 00
73 + 00
3 - 5 Ft Ditch
2 - 3 Ft Ditch
027-540-001
HARRIS REN &
MARILYN TRUST
027-500-015
TADDEI
RONALD J
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100
Feet

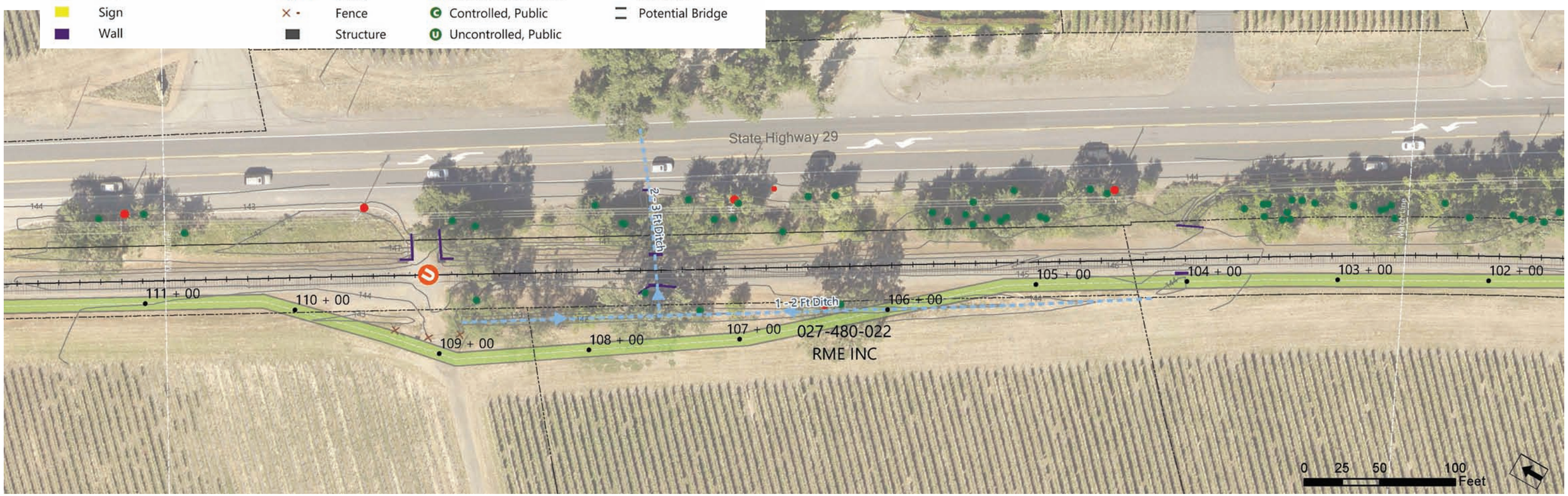
5A


92 + 00
91 + 00
90 + 00
89 + 00
58" White Oak
88 + 00
87 + 00
86 + 00
85 + 00
84 + 00
83 + 00
2 - 3 Ft Ditch
3 - 5 Ft Ditch
027-540-003
HARRIS REN &
MARILYN TRUST
0 25 50 100
Feet

5B


State Highway 29
101 + 00
12" White Oak
100 + 00
Water Valve
102 + 00
027-480-031
ROBERT MONDAYI
INVESTMENT
12" X 2
White Oak
99 + 00
14" White Oak
6" + 12"
+ 10" + 8"
White Oak
98 + 00
97 + 00
027-480-031
AREA OF MINIMAL
FLOOD HAZARD
Shed
96 + 00
027-480-006
CITY OF NAPA
95 + 00
94 + 00
93 + 00
2 - 3 Ft Ditch
0 25 50 100
Feet
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

6A

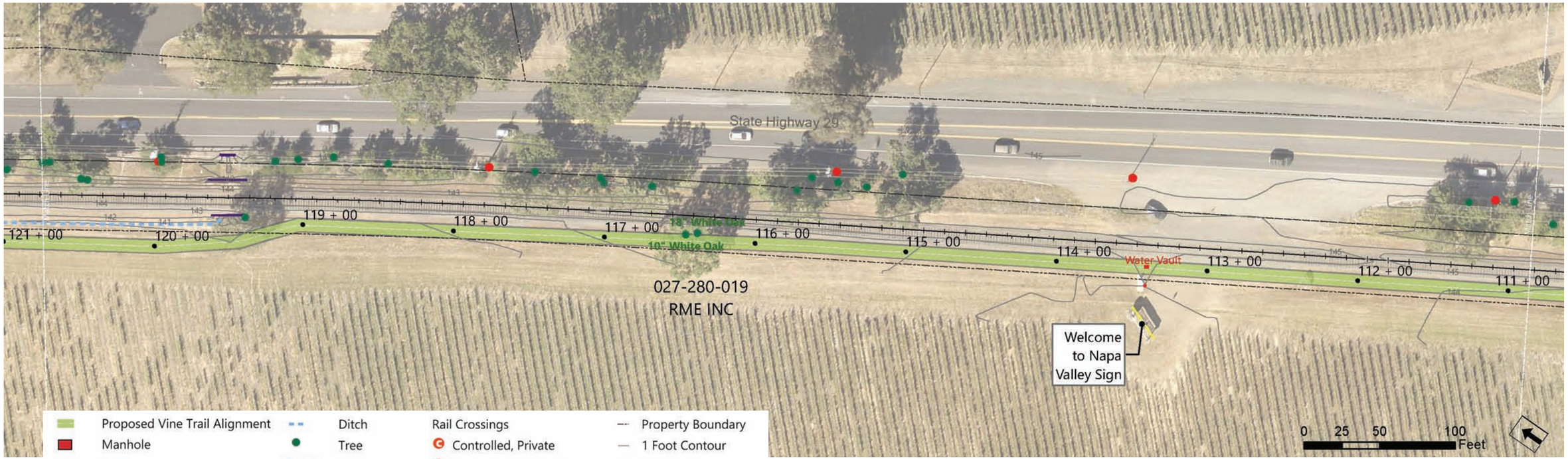

State Highway 29
2 - 3 Ft Ditch
111 + 00
110 + 00
109 + 00
108 + 00
107 + 00
1 - 2 Ft Ditch
106 + 00
105 + 00
104 + 00
103 + 00
102 + 00
027-480-022
RME INC
0 25 50 100
Feet

6B

Section A.3

Map No.	Station	Proposed Trail Alignment Description	Constraints	Opportunities
6B-7A	110+00 to 119+00	The trail continues within the rail right-of-way (10' from center line) on the south-west side.	There is a water vault and two trees.	The alignment is generally without obstructions. A staging area at the "Welcome to Napa" sign could be incorporated.
7A-7B	119+00 to 124+00	The trail is routed southwest onto private property to avoid a drainage ditch.	There is a drainage ditch within the rail right-of-way.	The proposed alignment could use private RME, Inc. property. Although the vine rows are perpendicular to the trail, they are set back with enough space to accommodate the trail.
7B	124+00 to 127+00	The trail continues within the rail right-of-way (10' from center line) on the south-west side.		There are no constraints along this section.
7B	127+00 to 128+50	The trail is routed southwest onto private property to cross a drainage ditch.	Crossing the drainage ditch would require a bridge and use of private property.	There are no other constraints along this section.
7B - 8A	128+50 to 131+50	The trail continues within the rail right-of-way (10' from center line) on the south-west side.		There are no constraints along this section.
8A-10A	131+50 to 170+00	The trail is routed southwest onto private property (RME) away from the rail line using agricultural roads.	The route requires a mid-block crossing of Oakville Grade.	The alignment uses existing agricultural roads and avoids placement near residential properties.
8B	145+50	The trail crosses a roadway (Oakville Grade) midblock.	The route requires a mid-block crossing of Oakville Grade.	

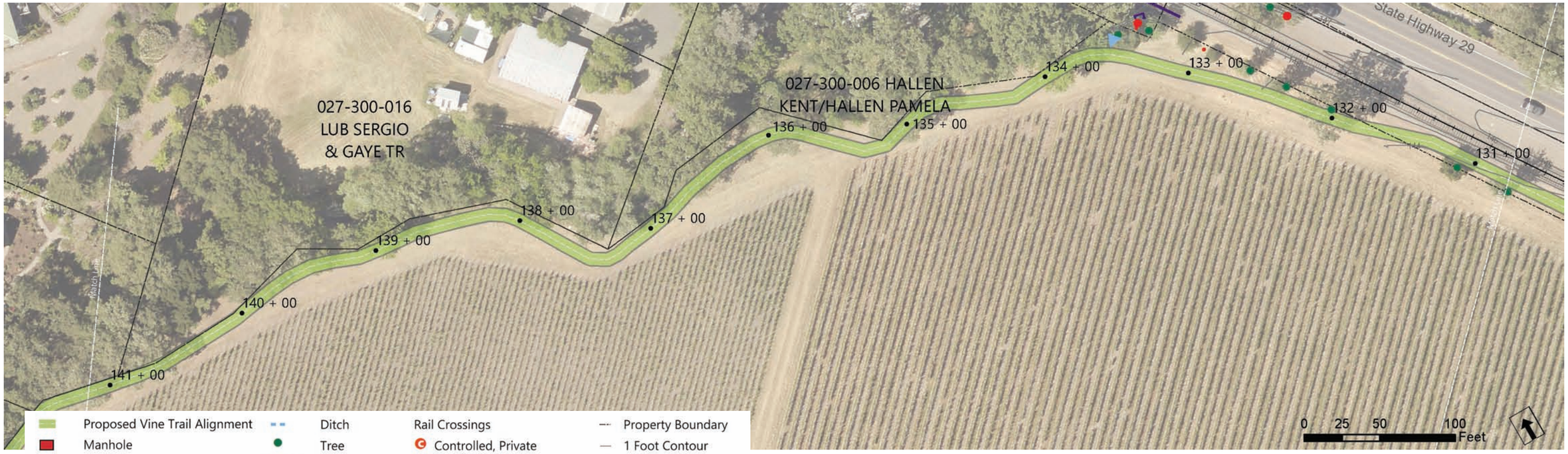
Approximate location of mid-block trail crossing of Oakville Grade


State Highway 29
121 + 00
120 + 00
119 + 00
118 + 00
117 + 00
116 + 00
115 + 00
114 + 00
113 + 00
112 + 00
111 + 00
18" White Oak
10" White Oak
Water Vault
027-280-019
RME INC
Welcome to Napa Valley Sign
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100 Feet

7A


State Highway 29
131 + 00
130 + 00
129 + 00
128 + 00
127 + 00
126 + 00
125 + 00
124 + 00
123 + 00
122 + 00
121 + 00
2-3 Ft Ditch
027-280-019
RME INC
0 25 50 100 Feet

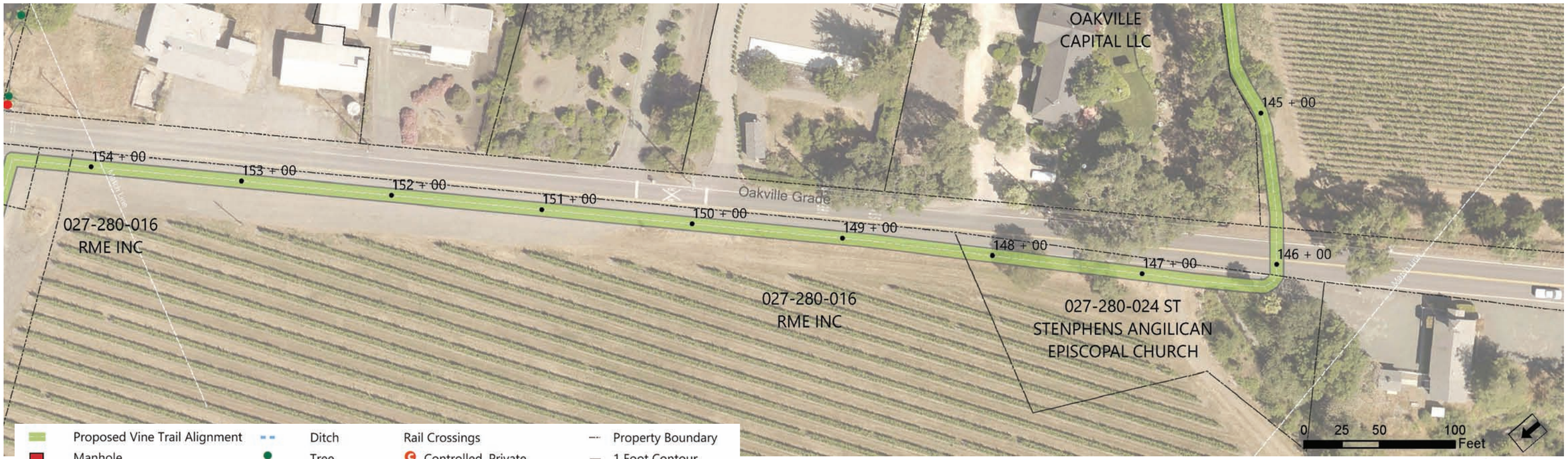
7B


027-300-016
LUB SERGIO
& GAYE TR
027-300-006 HALLEN
KENT/HALLEN PAMELA
State Highway 29
134 + 00
133 + 00
132 + 00
131 + 00
136 + 00
135 + 00
138 + 00
137 + 00
139 + 00
140 + 00
141 + 00
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100
Feet

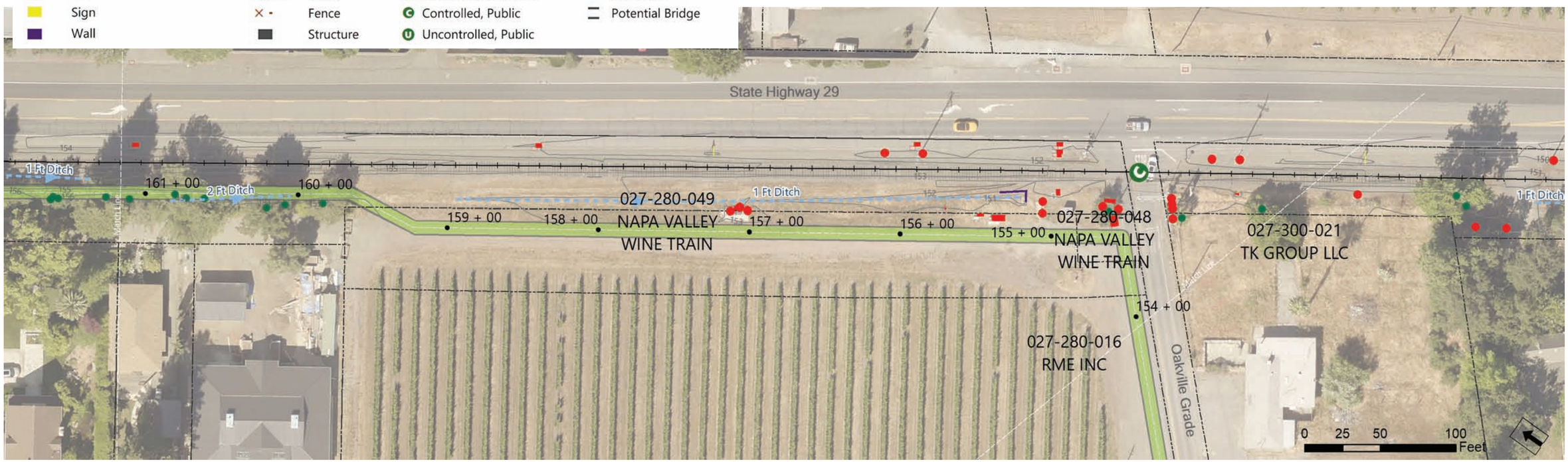
8A


027-280-024 ST
STENPHENS ANGILICAN
EPISCOPAL CHURCH
027-300-011
GUSDORFF SCOTT &
RHODES CHIMANE
027-300-002
OAKVILLE
CAPITAL LLC
027-280-019
RME INC
Oakville Grade
147 + 00
146 + 00
145 + 00
144 + 00
143 + 00
142 + 00
141 + 00
140 + 00
139 + 00
0 25 50 100
Feet

8B


OAKVILLE
CAPITAL LLC
145 + 00
154 + 00
153 + 00
152 + 00
151 + 00
150 + 00
149 + 00
148 + 00
147 + 00
146 + 00
Oakville Grade
027-280-016
RME INC
027-280-016
RME INC
027-280-024 ST
STENPHENS ANGILICAN
EPISCOPAL CHURCH
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100
Feet

9A


State Highway 29
1 Ft Ditch
161 + 00
2 Ft Ditch
160 + 00
159 + 00
158 + 00
027-280-049
NAPA VALLEY
WINE TRAIN
1 Ft Ditch
157 + 00
156 + 00
155 + 00
027-280-048
NAPA VALLEY
WINE TRAIN
027-300-021
TK GROUP LLC
1 Ft Ditch
154 + 00
027-280-016
RME INC
Oakville Grade
0 25 50 100
Feet

9B

Section A.4

Map No.	**Station**	**Proposed Trail Alignment Description**	**Constraints**	**Opportunities**
10A	165+50 to 168+50	The trail uses Wine Train property within the Oakville Pump Service area.	There is an existing building near the rail right-of-way.	The area will be redeveloped as the Napa Grape Growers Administration Offices allowing access by bicyclists and pedestrians and the trail to be de-signed as part of the development.
10A-11A	168+50 to 181+30	The trail continues within the rail right-of-way (10' from center line) on the southwest side.	There are trees near the alignment, an adjacent drainage ditch and the need to cross the drainage ditch at one location.	The alignment stays within the rail right-of-way which is wide in this location.
11A-12B	181+30 to 214+00	The trail is routed to the southwest on adjacent private agricultural roads.	The rail right-of-way is very narrow and ditches are located along the southwest side of the rail corridor requiring the trail to be shifted southwest onto private properties (RME and Realty Income Properties 2). Four private driveway crossings and a bridge crossing a perpendicular drainage ditch at sta. 197+30 would be required.	This section could use private property and existing agricultural roads.

View of front of the Oakville Pump Service

Walnut Lane behind the Oakville Pump Station

HAWK signal at Oakville Cross Road and Walnut to provide a cross walk for pedestrians and cyclists.

Proposed HAWK signal looking NSB SR29

Oakville Cross Rd looking west to Walnut Drive

Proposed HAWK signal looking NB SR29

Walnut Drive looking east to Oakville Cross Rd

Oakville Pump Service (to be redeveloped as Napa Grape Growers' Administration Offices)

027-280-020
NAPA VALLEY WINE TRAIN

027-280-016
RME INC

021-280-065
BECKSTOFFER VINEYARD

State Highway 29

Oakville Cross Rd

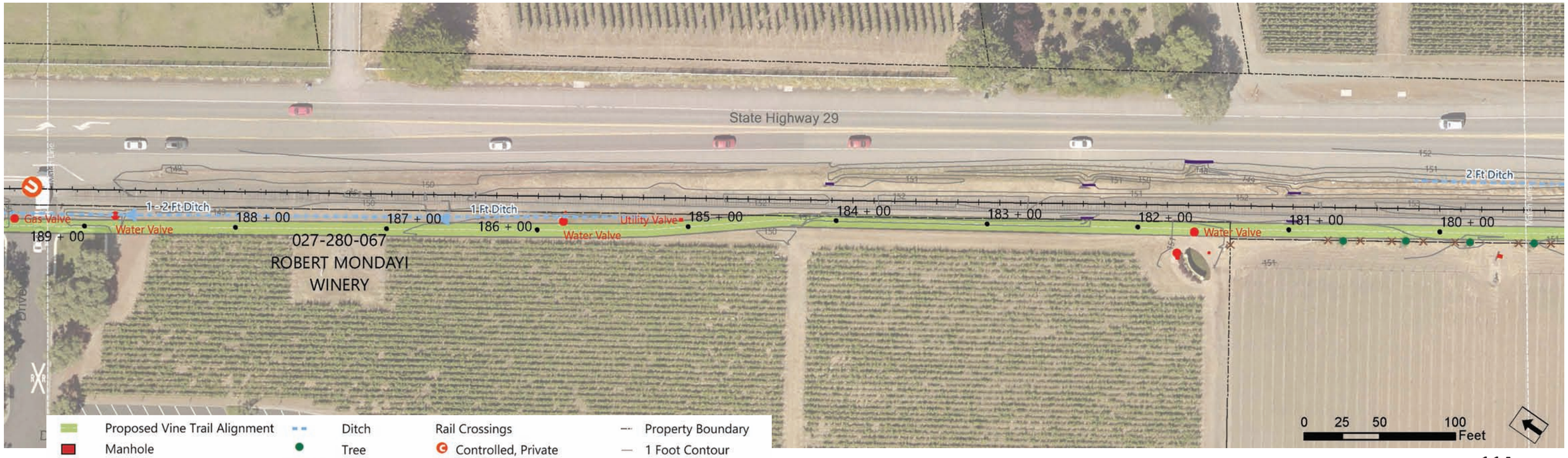
Walnut Dr

Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

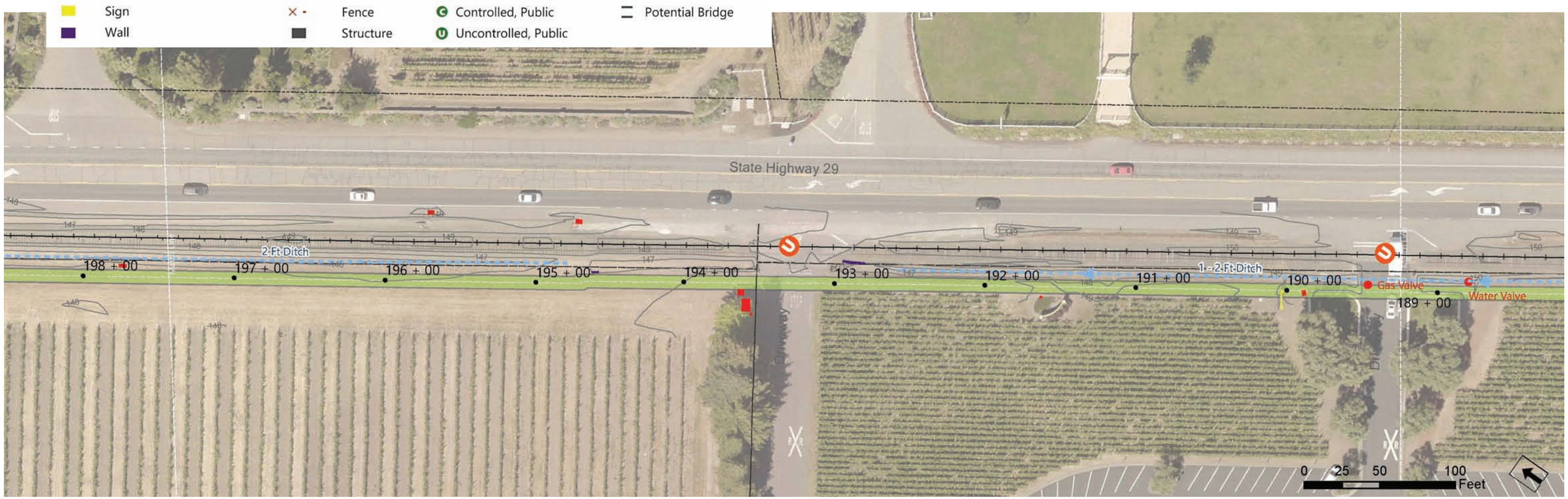
0 25 50 100 Feet

10A

10B


State Highway 29
027-280-067
ROBERT MONDAYI
WINERY
Gas Valve
Water Valve
Utility Valve
1 - 2 Ft Ditch
1 Ft Ditch
2 Ft Ditch
189 + 00
188 + 00
187 + 00
186 + 00
185 + 00
184 + 00
183 + 00
182 + 00
181 + 00
180 + 00
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100 Feet

11A


State Highway 29
Driveway
198 + 00
197 + 00
196 + 00
195 + 00
194 + 00
193 + 00
192 + 00
191 + 00
190 + 00
189 + 00
2 Ft Ditch
1 - 2 Ft Ditch
Gas Valve
Water Valve
0 25 50 100 Feet

11B

Section A.5

Map No.	Station	Proposed Trail Alignment Description	Constraints	Opportunities
12B-13A	214+00 to 225+00	The trail is located within the rail right-of-way (more than 10' from center line) on the southwest side in a wider corridor, but may need to shift to avoid constraints.	There is a driveway and a public road (Bella Oaks Lane) which would need safe crossings. Parts of the alignment are constrained by 1 - 2' drainage ditches which can potentially be realigned. A few large trees are located in the corridor - the trail could hopefully weave around them. There are some utilities and a structure in the route near Bella Oaks Road.	This section has a wider rail right-of-way which allows flexibility.
13A-14B	225+00 to 246+00	Due to a narrow rail right-of-way the trail is aligned partially within the rail right-of-way and partially on private property veering further onto private property at Manley Lane to avoided obstructions.	The alignment is constrained by a 1 - 2' drainage ditches, which can potentially be realigned; large trees, around which the trail can hopefully weave around; potential utility conflicts; and a roadway crossing at Manley Lane.	This section straddles the rail corridor line, encroaching onto private property (Asbill, Satuii, Neal, Chaix).
14B-15A	245+50 to 257+00	The trail is located within the rail right-of-way (10' from center line) on the southwest side, but may need to shift to avoid constraints. At station 257+00 the trail crosses the rail line at a controlled crossing and continues on the northeast side.	There is a drainage ditch (1-2' and 3 - 5' deep) and trees along the southwest side of the rail right-of-way. An infiltration pipe system may be required. Two driveway/agricultural road crossings are required.	The trail alignment is in the rail right-of-way and creates a connection to the St Helena Nursing School.
15A-15B	257+00 to 273+30	At Niebaum Lane, the trail crosses the tracks at a controlled public crossing and continues on the northeast side of the tracks adjacent to the Highway due to constraints ahead.	This section would be close to the highway (a guardrail may be needed) and conflicts with some utilities (mostly underground vaults and valves). Four driveway crossings would be required. The southwest side of the tracks through the Wine Train-owned Rutherford Station is constrained by existing facilities and proposed commercial plans.	The trail alignment is partially on rail right-of-way and partially on Caltrans right-of-way. There is an increasingly wide shoulder area separating the highway and the trail.
15B-17A	273+00 to 292+80	The trail alignment stays within the rail ROW on the northeast side between the rail line and the highway.	The trail would need to detour briefly to the northeast onto the Caltrans right-of-way at sta. 289+00 to avoid a culvert opening and two trees. Two driveway crossings would be required.	There is a significant buffer between the highway and the trail.

Existing public controlled crossing at Neibaum Lane

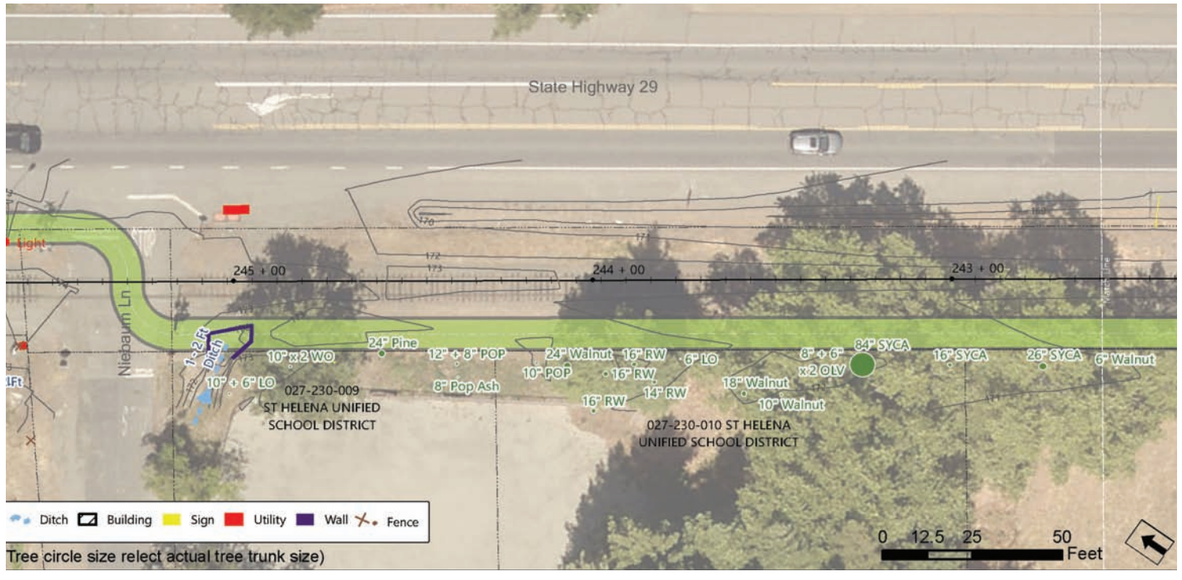
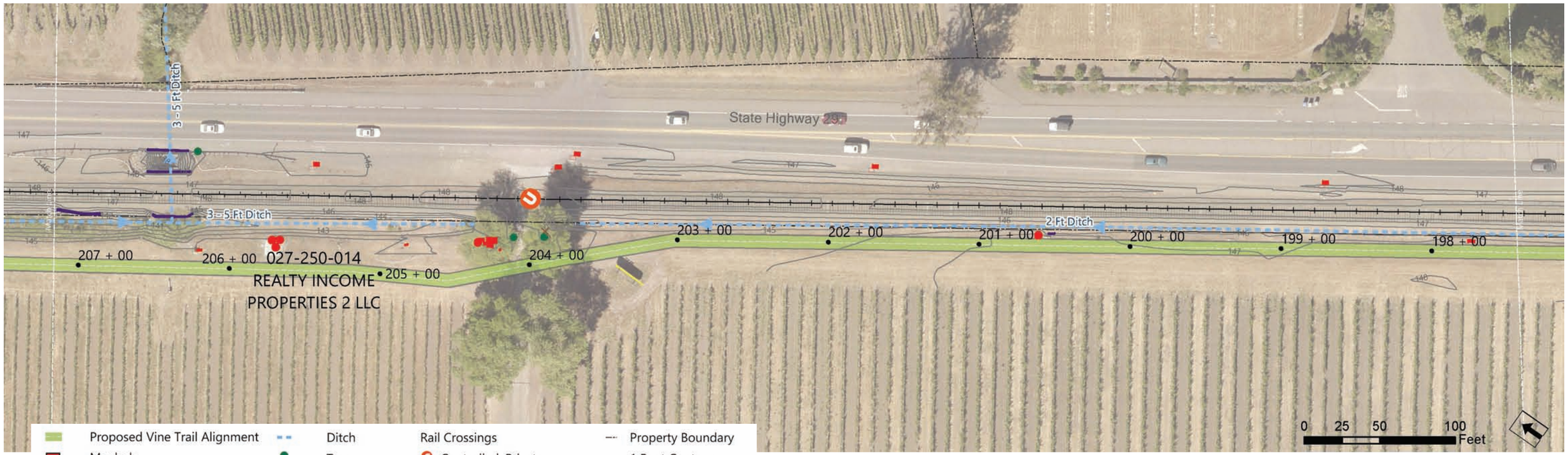
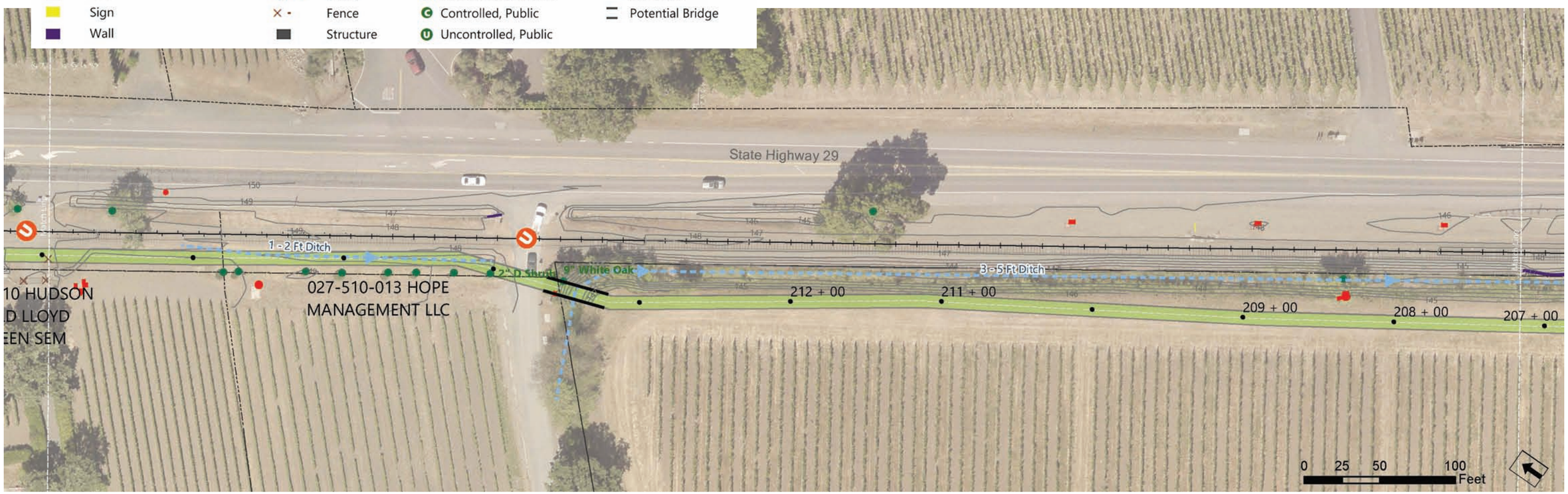


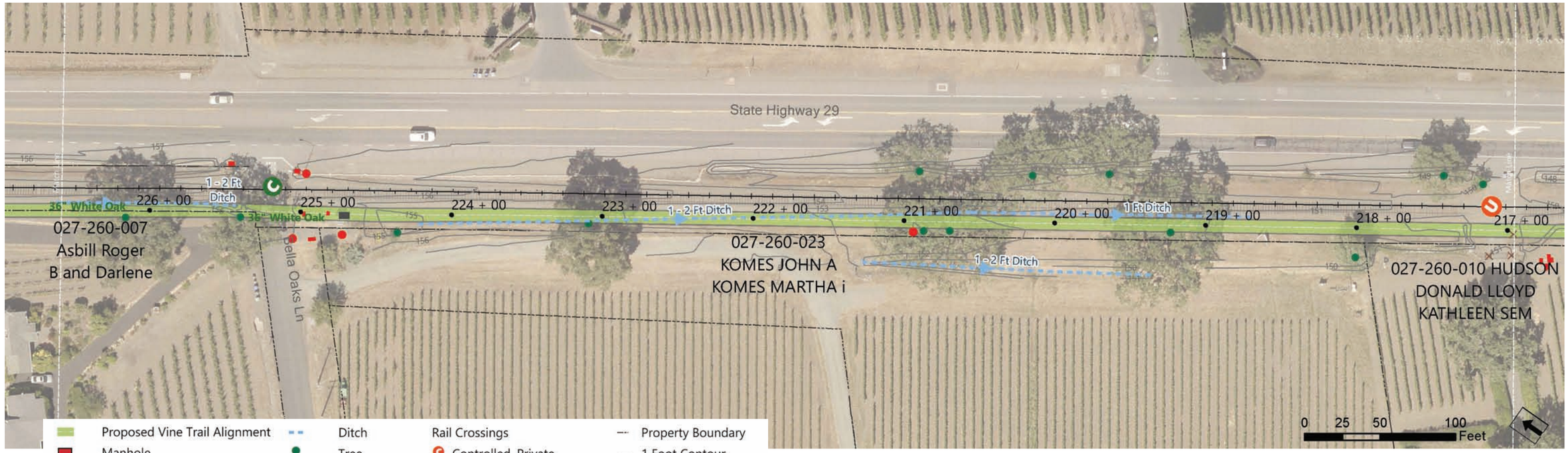
Figure A.7: Tree Map 1 (see map 15A)


3 - 5 Ft Ditch
State Highway 29
3 - 5 Ft Ditch
2 Ft Ditch
207 + 00
206 + 00
027-250-014
REALTY INCOME
PROPERTIES 2 LLC
205 + 00
204 + 00
203 + 00
202 + 00
201 + 00
200 + 00
199 + 00
198 + 00
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100 Feet

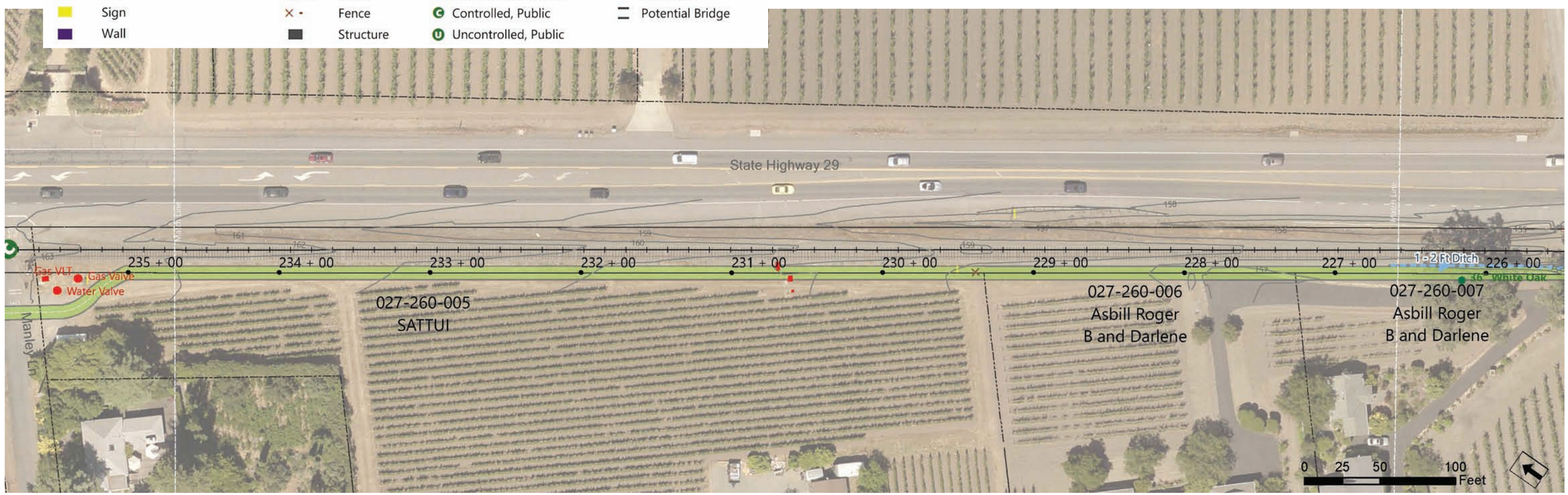
12A


State Highway 29
1 - 2 Ft Ditch
9" White Oak
3 - 5 Ft Ditch
10 HUDSON
D LLOYD
EEN SEM
027-510-013 HOPE
MANAGEMENT LLC
212 + 00
211 + 00
209 + 00
208 + 00
207 + 00
0 25 50 100 Feet

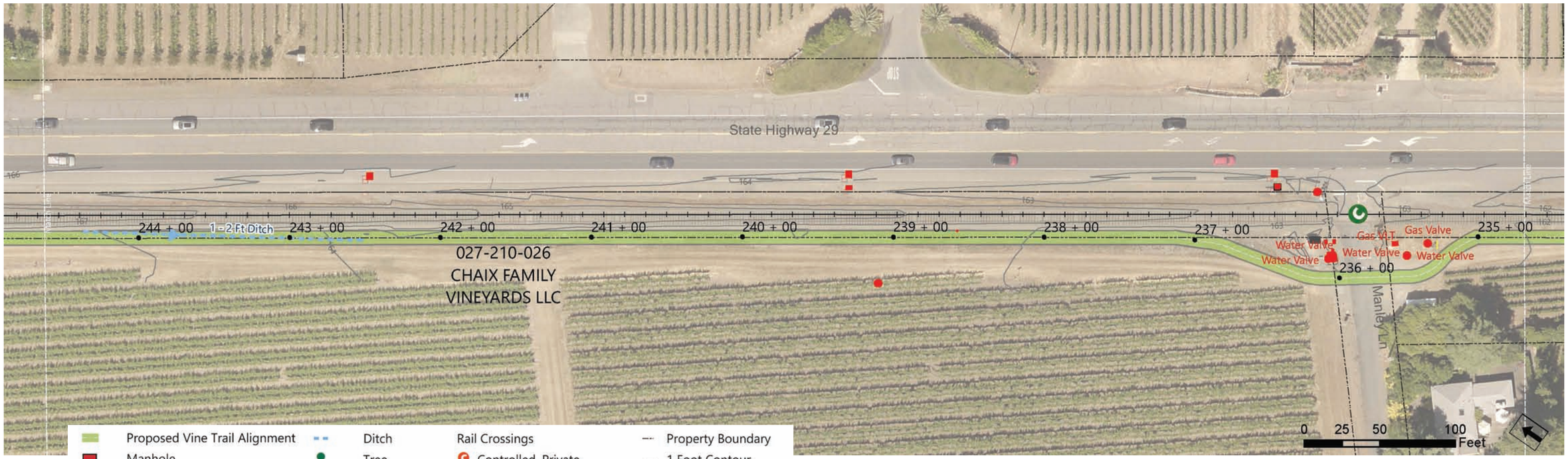
12B


State Highway 29
226 + 00
225 + 00
224 + 00
223 + 00
222 + 00
221 + 00
220 + 00
219 + 00
218 + 00
217 + 00
1 - 2 Ft Ditch
1 Ft Ditch
36" White Oak
027-260-007
Asbill Roger
B and Darlene
Bella Oaks Ln
027-260-023
KOMES JOHN A
KOMES MARTHA i
027-260-010 HUDSON
DONALD LLOYD
KATHLEEN SEM
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge
0 25 50 100 Feet

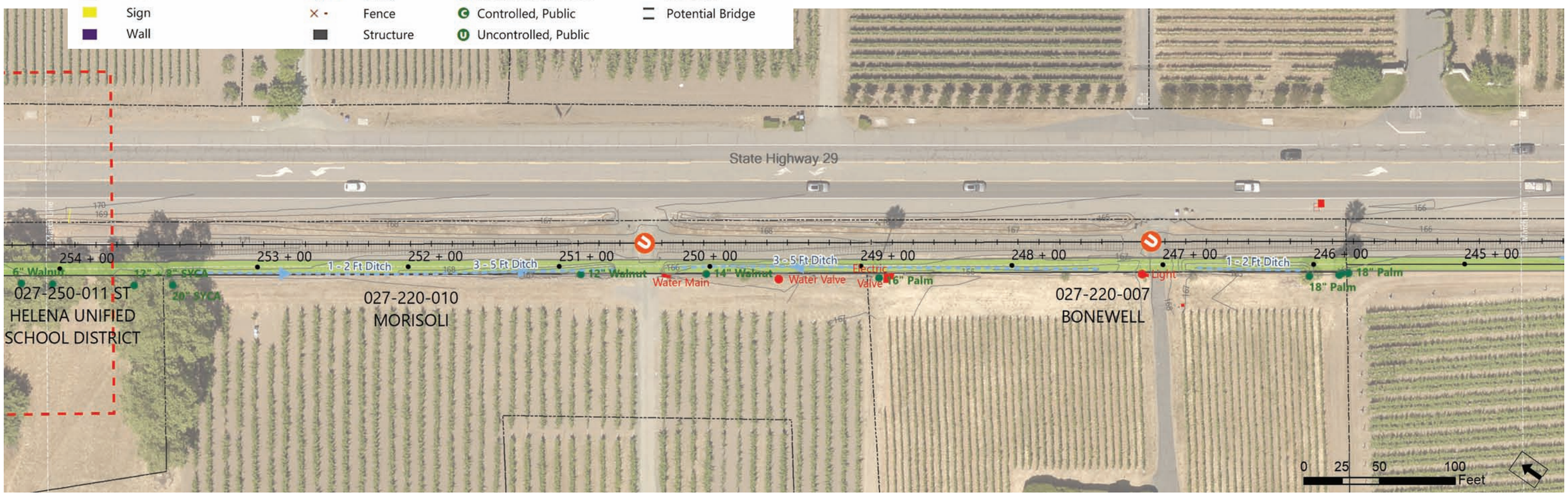
13A


State Highway 29
235 + 00
234 + 00
233 + 00
232 + 00
231 + 00
230 + 00
229 + 00
228 + 00
227 + 00
226 + 00
1 - 2 Ft Ditch
36" White Oak
Gas VLT
Gas Valve
Water Valve
Manley Ln
027-260-005
SATTUI
027-260-006
Asbill Roger
B and Darlene
027-260-007
Asbill Roger
B and Darlene
0 25 50 100 Feet

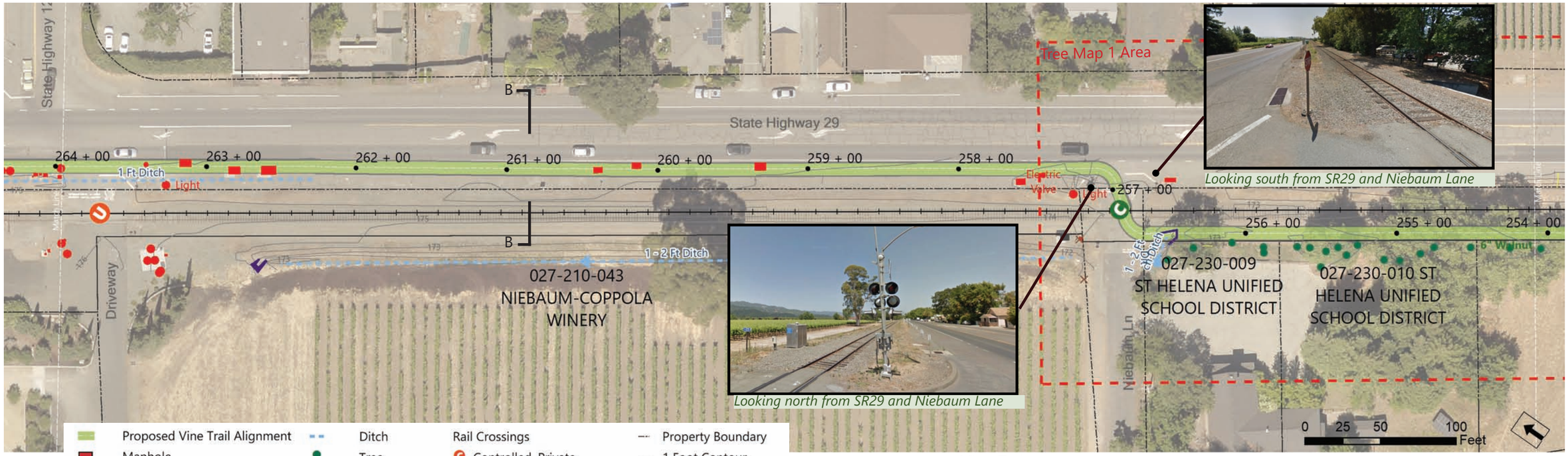
13B


State Highway 29
244 + 00
1 - 2 Ft Ditch
243 + 00
242 + 00
241 + 00
240 + 00
239 + 00
238 + 00
237 + 00
236 + 00
235 + 00
027-210-026
CHAIX FAMILY
VINEYARDS LLC
Gas Valve
Water Valve
Manley Ln
0 25 50 100 Feet
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

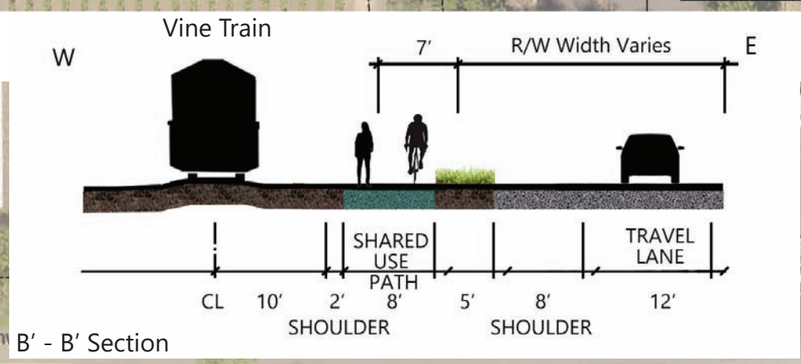
14A


State Highway 29
254 + 00
253 + 00
252 + 00
251 + 00
250 + 00
249 + 00
248 + 00
247 + 00
246 + 00
245 + 00
1 - 2 Ft Ditch
3 - 5 Ft Ditch
6" Walnut
12" - 8" SYCA
20" SYCA
12" Walnut
14" Walnut
Water Main
Water Valve
Electric
Valve
16" Palm
Light
18" Palm
027-250-011 ST
HELENA UNIFIED
SCHOOL DISTRICT
027-220-010
MORISOLI
027-220-007
BONEWELL
0 25 50 100 Feet

14B

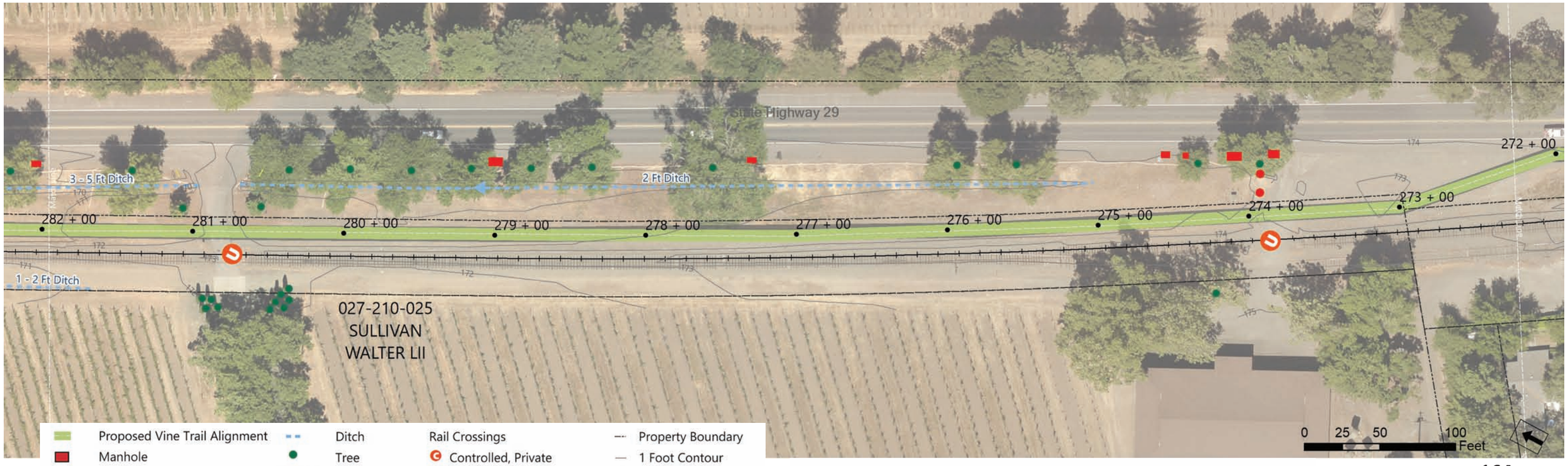


15A

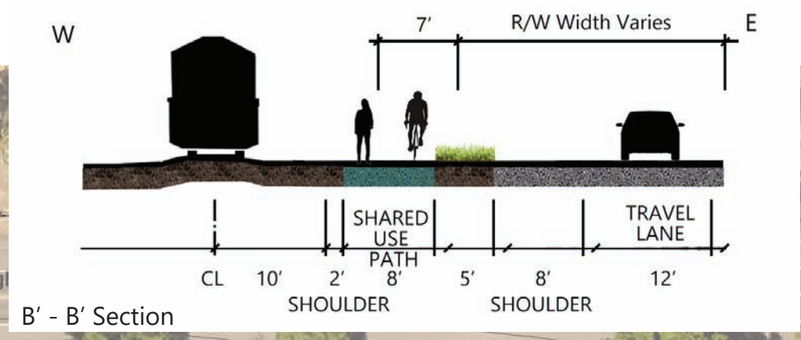


2' Encroachment into Caltrans R/W (unpaved shoulder) between 257+00 and 273+00 (see X section B'-B').

15B



16A



B' - B' Section

16B

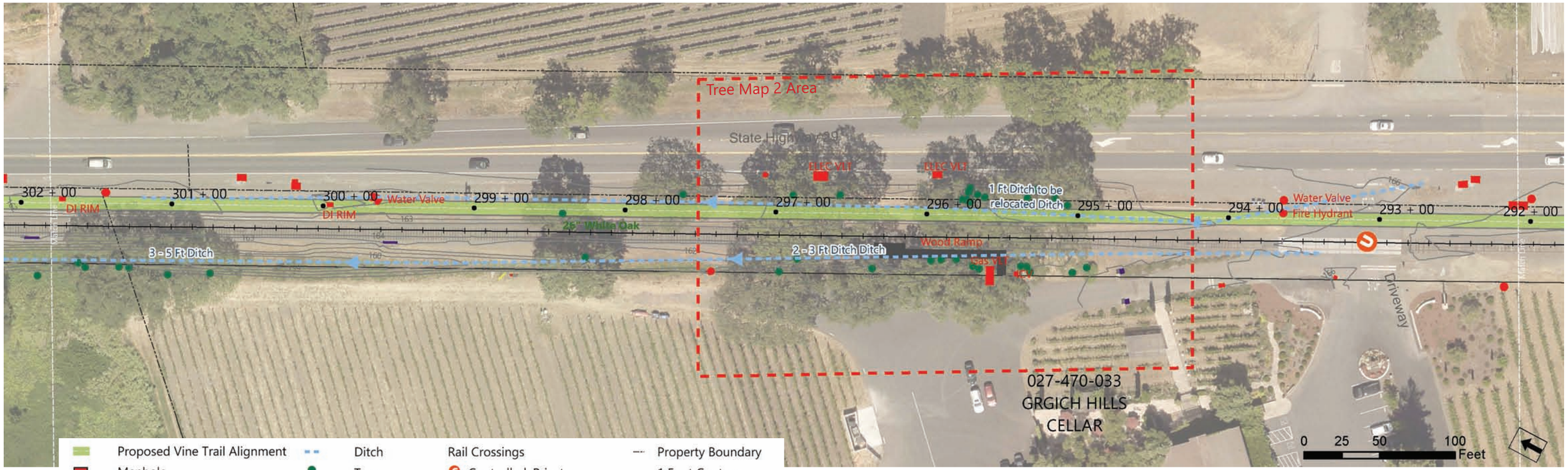
Section A.6

Map No.	Station	Proposed Trail Alignment Description	Constraints	Opportunities
17A-18A	293+00 to 314+30	The trail alignment stays within the rail right-of-way on the northeast side between the rail line and the highway.	There are numerous trees, utility conflicts (water valves and drain inlets), and drainage ditches up to 3-feet deep. A pipe would have to be installed in the ditch and the water conveyed south to Bale Slough, and the trail built over the pipe with inlets for drainage. At 307+00, the Bale Slough waterway would require a 90-foot bridge (or cantilevered trail off the existing rail bridge). Three driveways would be crossed including a large driveway at Grgich Winery which could be redesigned to enhance safety.	On the southwest side of the rail line, the Wine Train platform, improvements at Grgich Winery, and drainage ditches justify moving the trail to the northeast side.
17B	307+00	The trail includes a new bridge (or cantilevered trail off the existing rail bridge).		
17B-18A	314+30 to 336+50	The trail alignment continues on the northeast side partially on the rail and partially on Caltrans right-of-way.	There is a 1 - 2' deep ditch on or adjacent to the trail alignment. This would have to be relocated or put into an infiltration pipe system.	The trail is relatively close to the highway but there is a wide shoulder with large trees that help buffer and shade the trail.
19A-19B	336+50 to Whitehall Lane	The trail alignment uses the existing green bike lane and controlled rail crossing on the northeast side between the rail line and the highway.	The Napa County Bicycle Coalition and Caltrans may be concerned about converting the existing bike lane into a Class I path.	The green bike lane is 8' wide and could potentially be converted into a 2-way Class I path.

New bridge or cantilevered bridge location

Trail using existing green bike lane

Figure A 8: Tree Map 2 (see Map 17A)


Tree Map 2 Area
State Highway 29
302 + 00
DI RIM
301 + 00
300 + 00
DI RIM
Water Valve
299 + 00
298 + 00
26" White Oak
297 + 00
ELEC VLT
296 + 00
ELEC VLT
1 Ft Ditch to be relocated Ditch
295 + 00
294 + 00
Water Valve
Fire Hydrant
293 + 00
292 + 00
3 - 5 Ft Ditch
2 - 3 Ft Ditch Ditch
Wood Ramp
Gas VLT
Driveway
027-470-033
GRGICH HILLS
CELLAR
0 25 50 100 Feet
Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

17A


State Highway 29
311 + 00
3 - 5 Ft Ditch
310 + 00
309 + 00
308 + 00
307 + 00
Cantilever
306 + 00
305 + 00
304 + 00
303 + 00
302 + 00
1 Ft Ditch to be relocated Ditch
DI RIM
301 + 00
2 - 3 Ft Ditch
3 - 5 Ft Ditch
027-450-025
SPP NAPA
VINEYARDS LLC
0 25 50 100 Feet

17B

7' Encroachment into Caltrans R/W (unpaved shoulder) between 314+50 and 336+00 (see X section A'-A')

State Highway 29

Mee Ln

319 + 00 318 + 00 317 + 00 316 + 00 315 + 00 314 + 00 313 + 00 312 + 00 311 + 00 310 + 00

2 - 3 Ft Ditch

Water Valve Water Valve

3 - 5 Ft Ditch

1 Ft Ditch

A A

027-470-014
HOOPER
MATTHEW R

027-470-009
DONOVEN
GREGORY N

027-470-007
CHALONE WINE
GROUP LTD

Driveway

Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge

0 25 50 100 Feet

18A

W E

Vine Train

2'

SHARED USE PATH

TRAVEL LANE

CL 10' 2' 10' 5' 8' 12' CL

SHOULDER SHOULDER

A' - A' Section

State Highway 29

329 + 00 328 + 00 327 + 00 326 + 00 325 + 00 324 + 00 323 + 00 322 + 00 321 + 00 320 + 00

1 - 2 Ft Ditch

34" White Oak

2 - 3 Ft Ditch

14" White Oak

40" White Oak

1 Ft Ditch

Driveway

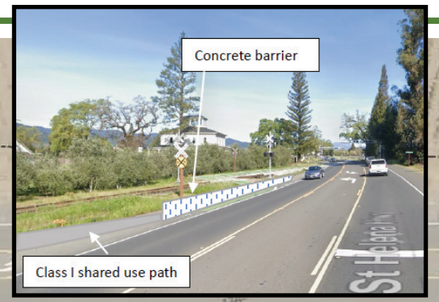
027-450-012
PESTONI
BROTHERS

027-470-011
LOUFAS JOHN /
RAKOS EFFIE

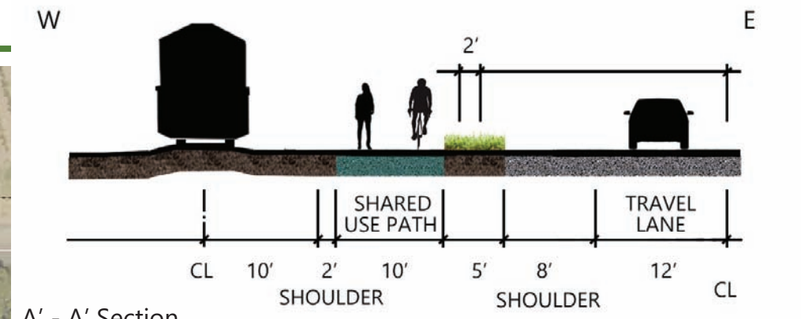
027-470-015
GEORGE
SAMIR K

0 25 50 100 Feet

18B



Transition of proposed Shared Use Path



A' - A' Section

339 + 00 338 + 00 337 + 00 336 + 00 335 + 00 334 + 00 333 + 00 332 + 00 331 + 00 330 + 00

027-450-008
Napa Valley
Vine Train

1 - 2 Ft Ditch
1 Ft Ditch
54" White Oak
24" White Oak
White Oak

A
A

7' Encroachment into Caltrans R/W (unpaved shoulder) between 314+50 and 336+00 (see X section A'-A')

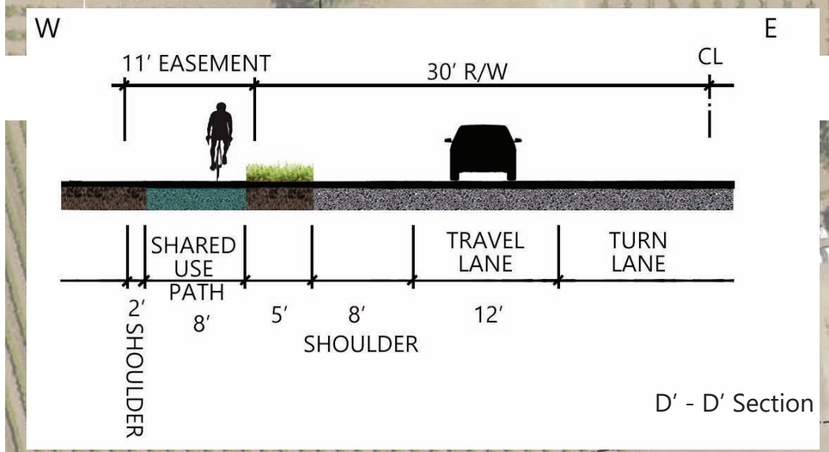
Stn 336+00 to 339+00 Realign and widen existing Bike shoulder into 8' wide bike path in Caltrans R/W. Install a barrier rail. (see X Section C'-C')

027-450-022
CHAVEZ MARY C

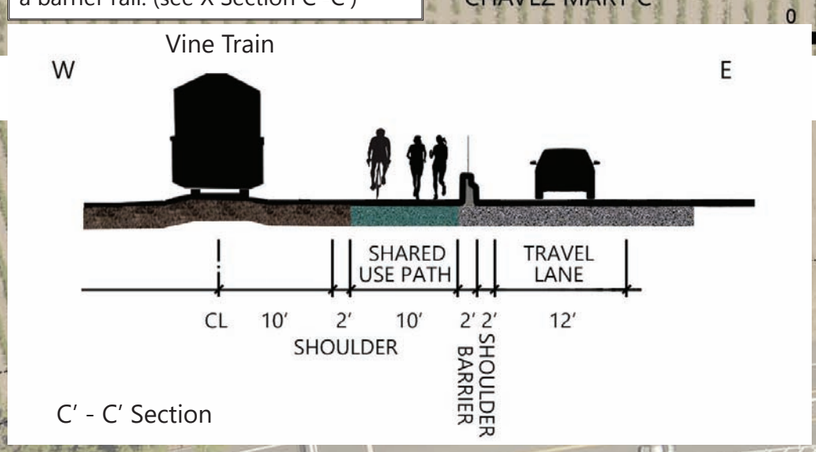
0 25 50 100 Feet

19A

Proposed Vine Trail Alignment
Manhole
Rock
Sign
Wall
Ditch
Tree
Utility
Fence
Structure
Rail Crossings
Controlled, Private
Uncontrolled, Private
Controlled, Public
Uncontrolled, Public
Property Boundary
1 Foot Contour
Rail Road
Potential Bridge



D' - D' Section



C' - C' Section

1' Encroachment into Caltrans R/W (unpaved shoulder) between 344+00 and 362+00 (see X section D'-D')

D
D

State Highway 29

No Parcel ID
Caltrans ROW

342 + 00 343 + 00 344 + 00 345 + 00 346 + 00 341 + 00 340 + 00 339 + 00 338 + 00

Whitehall Ln

027-450-013
CASTELLUCCI
ANTONIO & RITA TR

Study Limit

027-450-017
PESCH KRISTI L

027-450-008
Napa Valley
Vine Train

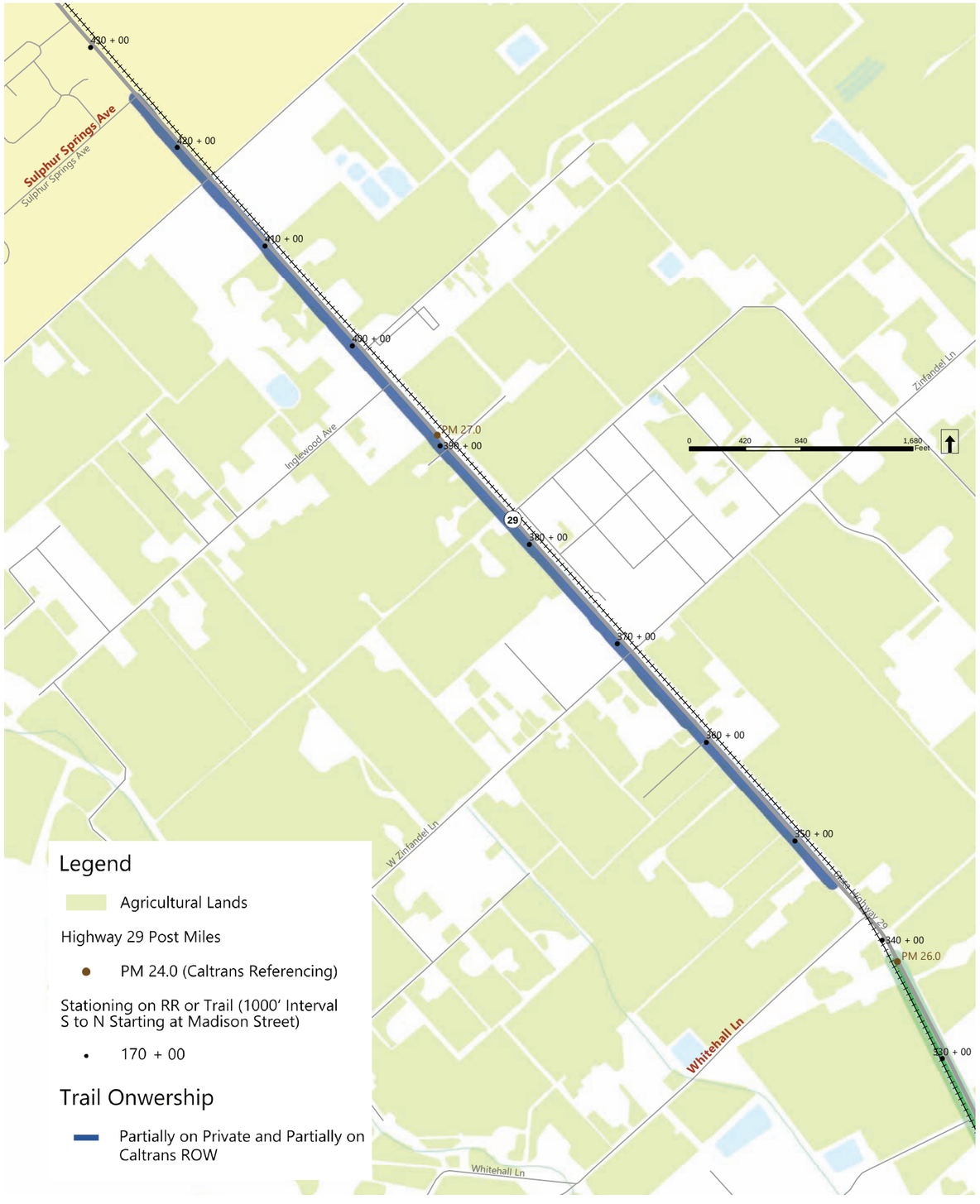
C
C

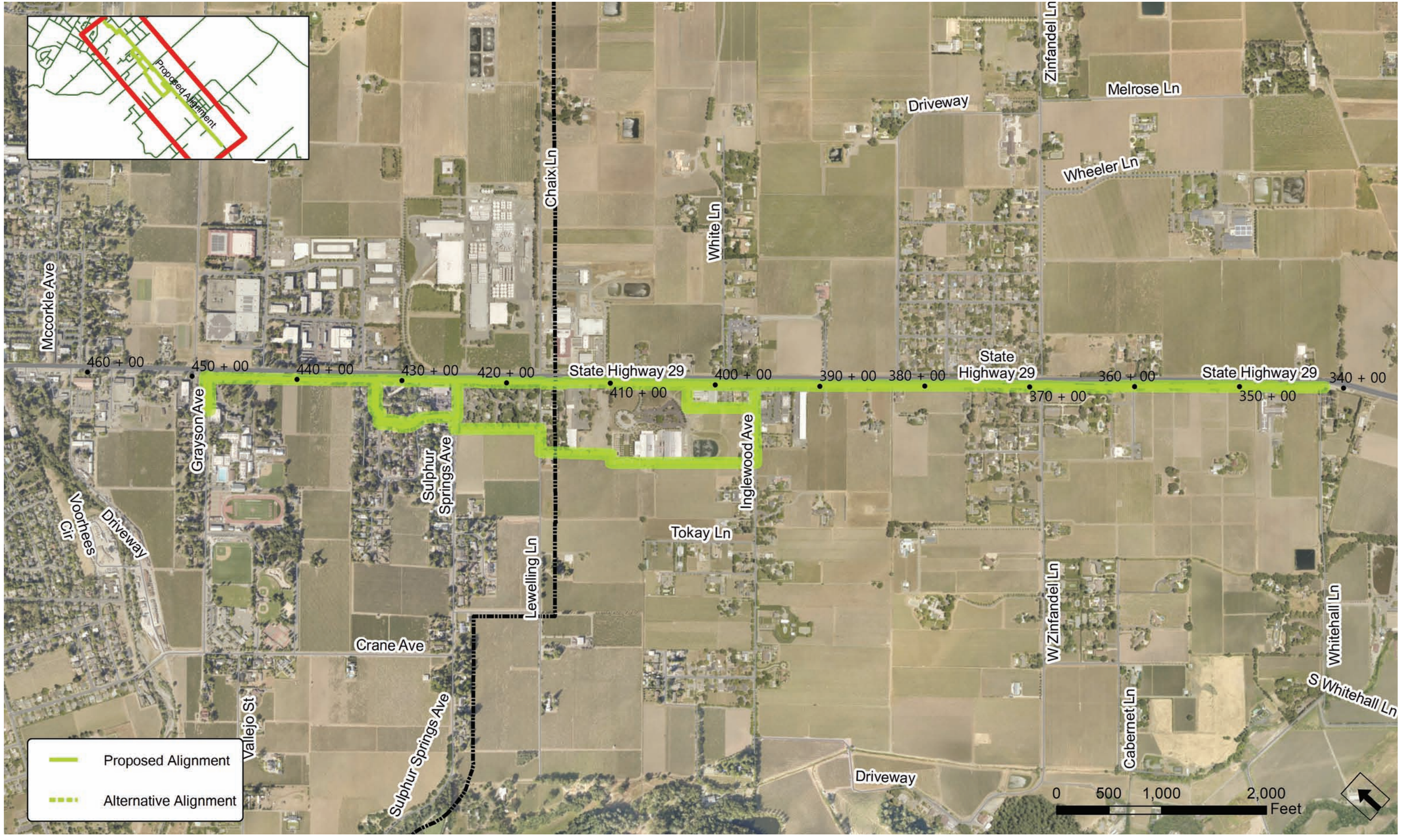
0 25 50 100 Feet

19B

Section B Whitehall Lane to Sulphur Springs Avenue

This Section B of the trail alignment is from Whitehall Lane to Sulphur Springs Avenue. The preferred trail alignment descriptions, cross-sections, maps and images are provided. Most of the route is aligned in the Highway 29 right of way with some additional right of way needed from adjacent private properties. The most challenging section is the section in front of Gary's Wine and Marketplace/Flora Springs parking lot.




Proposed Alignment
Mccorkle Ave
Chaix Ln
White Ln
Driveway
Zinfandel Ln
Melrose Ln
Wheeler Ln
460 + 00
450 + 00
440 + 00
430 + 00
420 + 00
State Highway 29
410 + 00
400 + 00
390 + 00
380 + 00
State Highway 29
370 + 00
360 + 00
State Highway 29
350 + 00
340 + 00
Grayson Ave
Sulphur Springs Ave
Inglewood Ave
Voorhees Cir
Driveway
Tokay Ln
Lewelling Ln
Crane Ave
W Zinfandel Ln
Cabernet Ln
Whitehall Ln
S Whitehall Ln
Vallejo St
Sulphur Springs Ave
Driveway
Proposed Alignment
Alternative Alignment
0 500 1,000 2,000
Feet

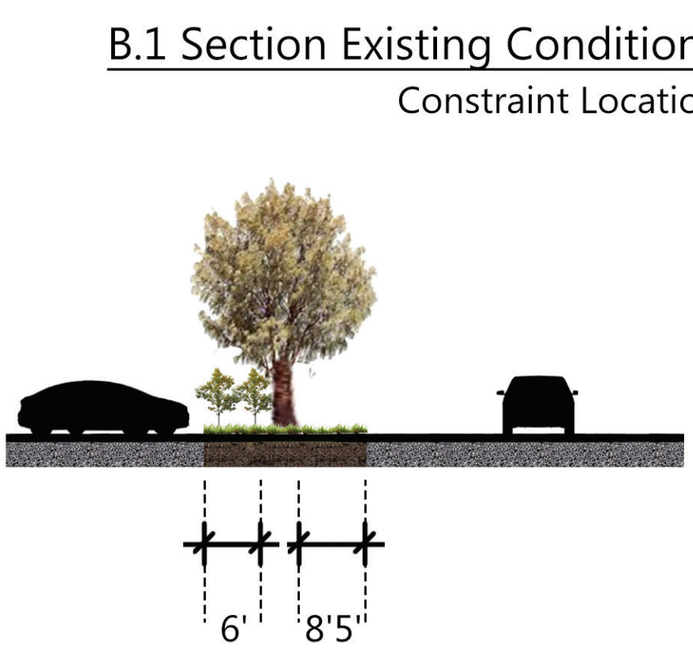
Section B.1: Whitehall Lane Vineyards

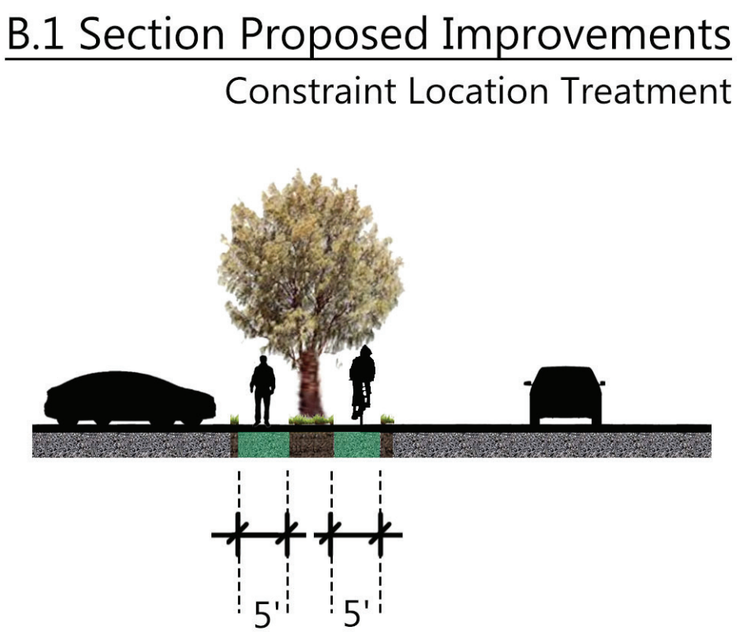
At the intersection with Whitehall Lane, the southern terminus of the study area, the Napa Valley Wine Train rail line crosses Highway 29 and the trail alignment in a skewed fashion, which would require design of a more perpendicular crossing when developing the continuation of the trail.

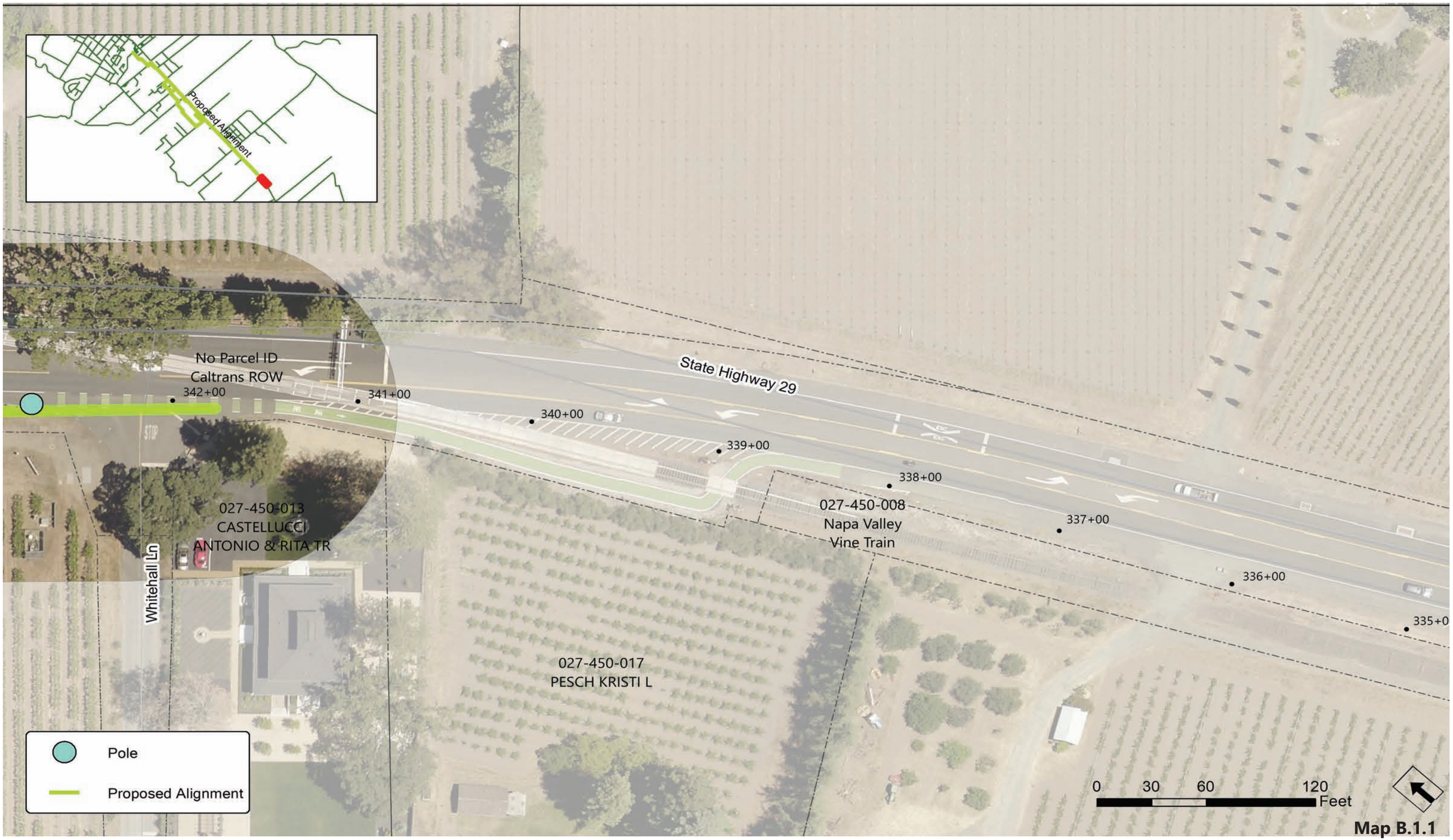
South of Whitehall Lane Vineyards, a drainage ditch close to the road would require the trail to bend around it on the west side and then return to its alignment on the east side of the bollards.

In front of Whitehall Lane Vineyards, a mature oak tree would force the trail to split around it, or possibly require the removal of some adjacent vines and reconfiguration of the drainage ditch, requiring permission and an easement from Whitehall Lane Vineyards (see Figure B.1).

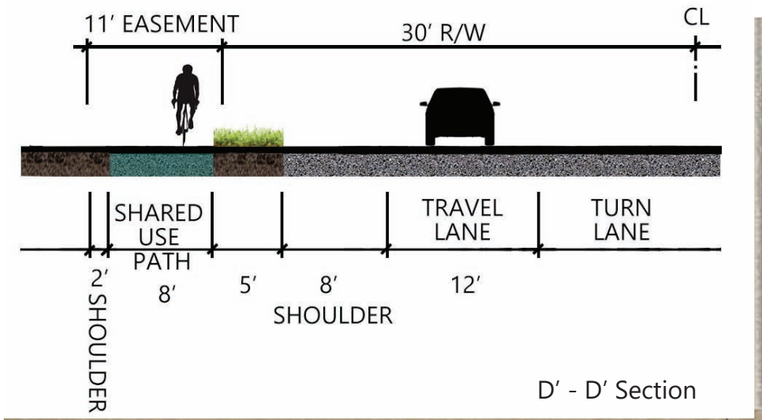
Figure B1: Pinch point in front of Whitehall Lane Vineyards (Source: Google Street View)






Proposed Alignment
No Parcel ID
Caltrans ROW
342+00
341+00
340+00
339+00
338+00
337+00
336+00
335+0
State Highway 29
027-450-013
CASTELLUCCI
ANTONIO & RITA TR
Whitehall Ln
027-450-017
PESCH KRISTI L
027-450-008
Napa Valley
Vine Train
Pole
Proposed Alignment
0
30
60
120
Feet

Map B.1.1



1′ Encroachment into Caltrans R/W (unpaved shoulder) between 344+00 and 362+00 (see X section D′-D′)

State Highway 29

D′

350+00 349+00 348+00 347+00 346+00 345+00 344+00 343+00

D′

027-100-040
FROGS LEAP
WINERY

027-100-012
LEONARDINI FAMILY
VINEYARDS LLC

Proposed Alignment
Drain
Driveway
Pinch Point
Sign
Tree
Pole

0 30 60 120 Feet

Map B.1.2

Section B.2: Whitehall Lane to Zinfandel Lane

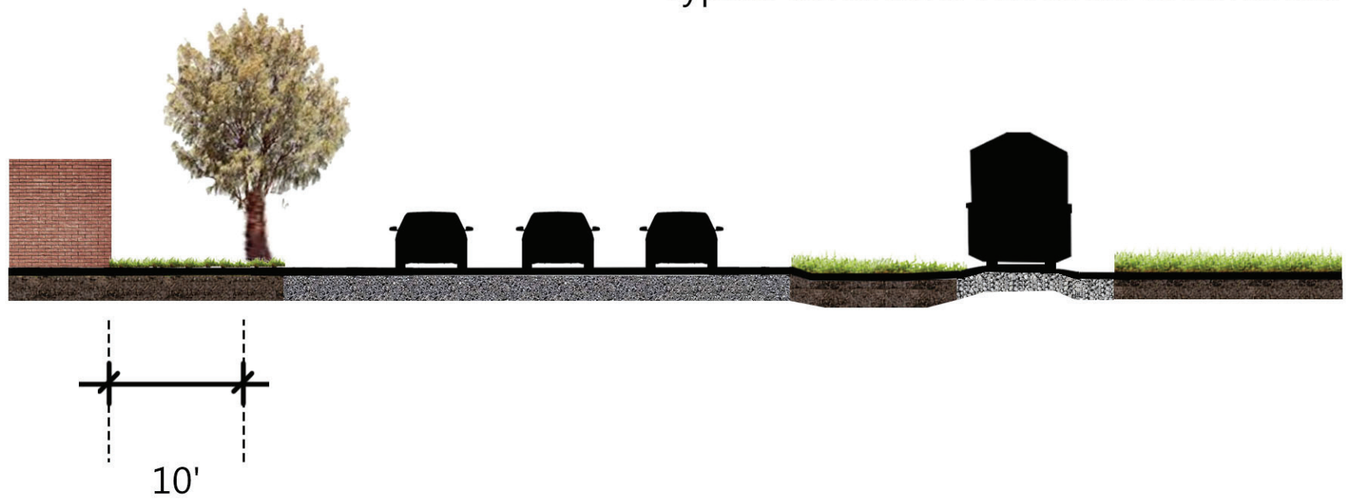
Section B.2 presents two typical cross-sections that occur between Whitehall Lane and Zinfandel Lane. Section B.2a is more common, as the corridor primarily features wide corridors of 15' or more with access roads on the west side of mature trees.

Just south of Zinfandel Lane Section B.2b is the applicable cross-section because the shoulder is over 15' wide with no landscaping but includes an array of surface vaults with bollards. Some bollards may need to be removed for the placement of the trail through this section.

Approximately 175' north of the Del Dotto Winery Estate Winery & Caves, a raised utility box with bollards surrounding it creates a pinch point for the trail as seen on the image in the Section B2 maps. The bollards on the west side of the box and a few vines adjacent to the box would need to be removed to create clearance for the trail.

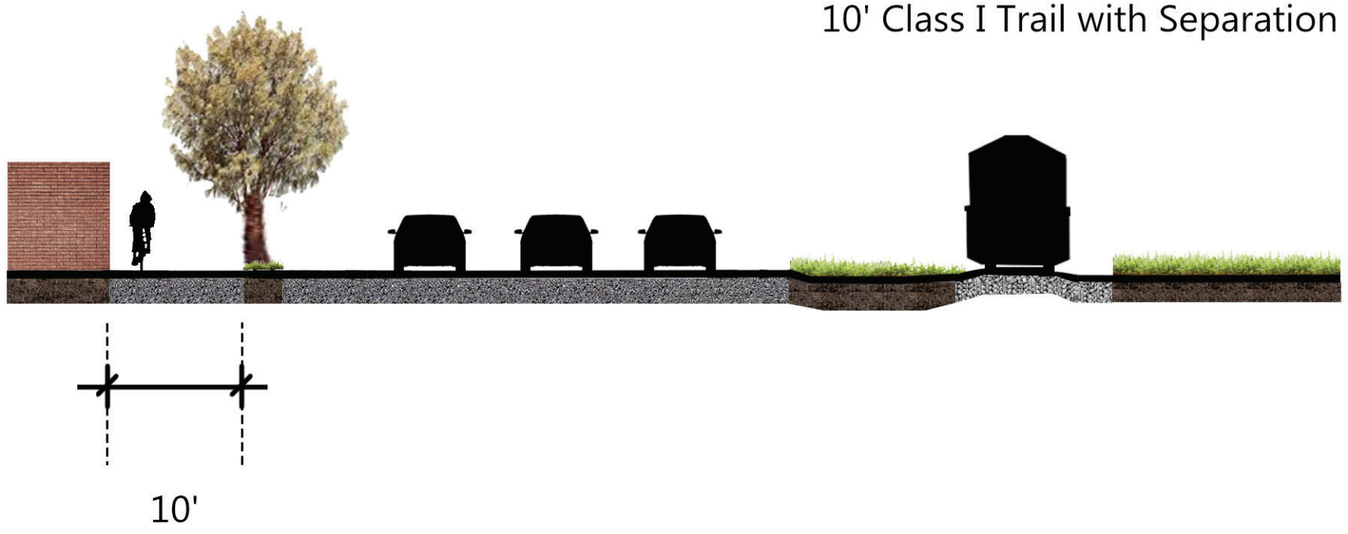
B.2a Section Existing Conditions 1

Typical conditions Whitehall to Zinfandel



B.2a Section Proposed Improvements

10' Class I Trail with Separation



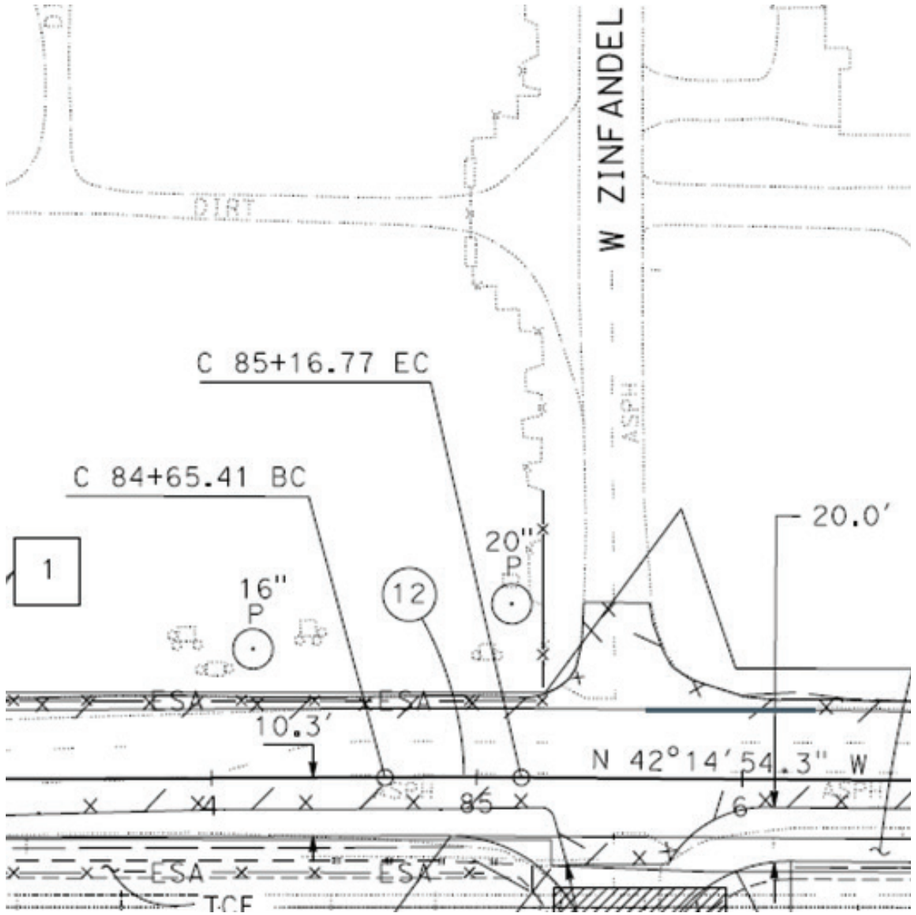
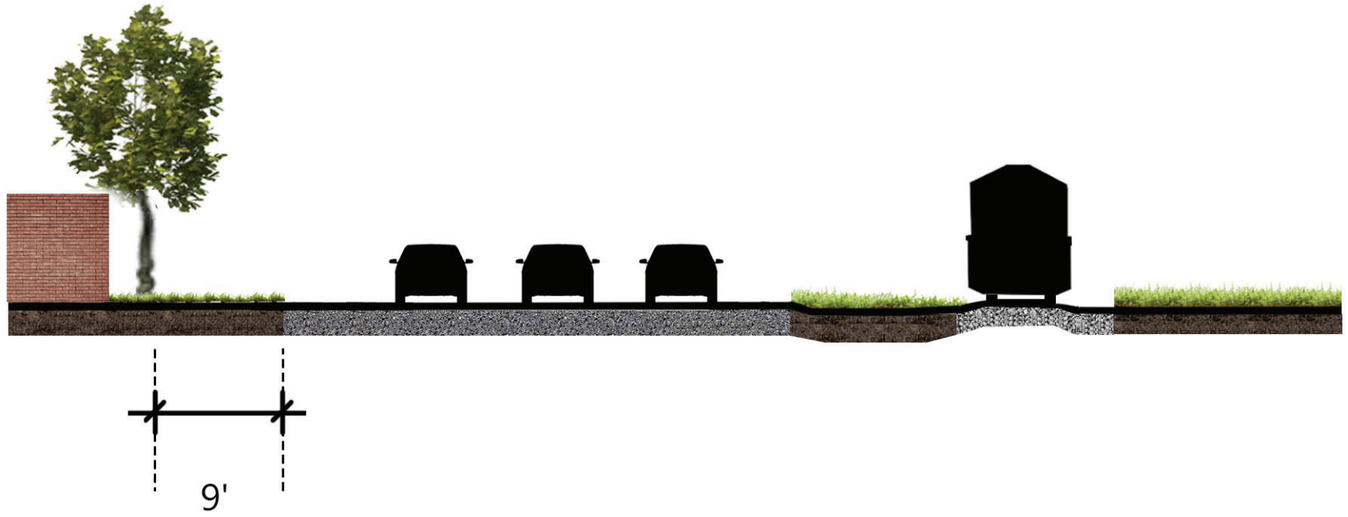


Figure B.2: Screen capture form Caltrans Highway 29 plans confirms that easements will be required for alignment of the trail south of Zinfandel Lane

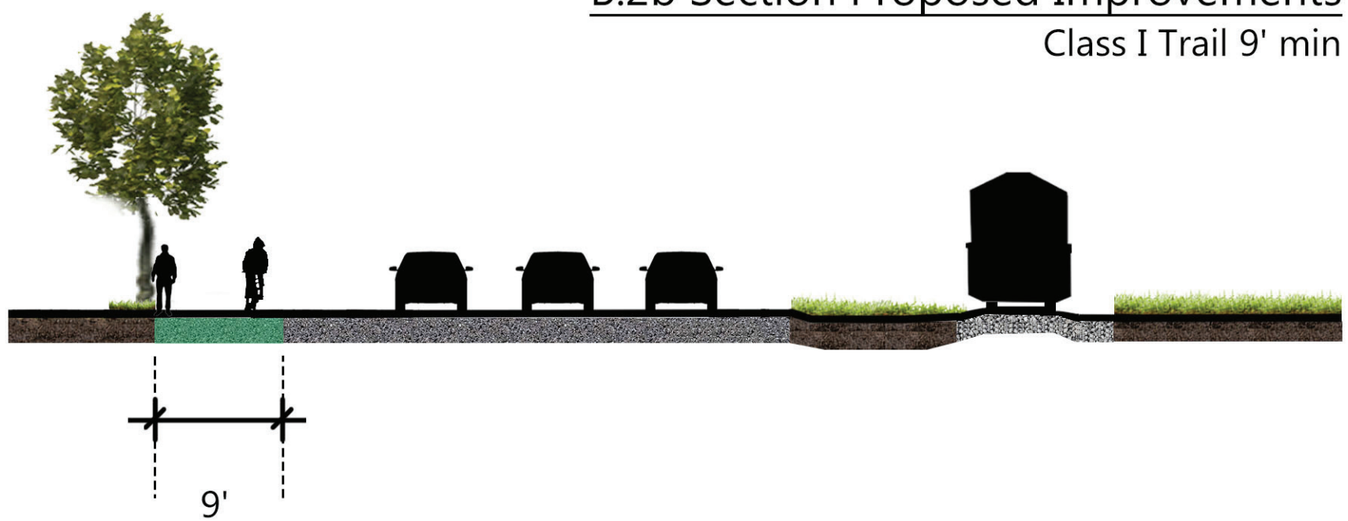
B.2b Section Existing Conditions

Typical conditions Whitehall to Zinfandel



B.2b Section Proposed Improvements

Class I Trail 9' min



State Highway 29

D'

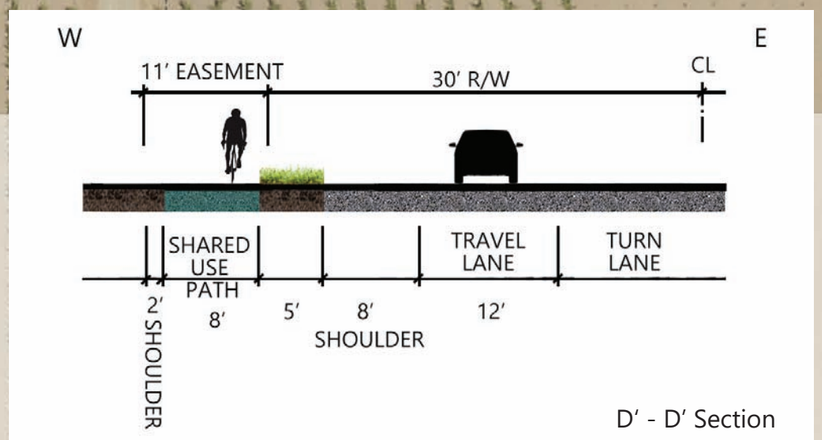
357+00
356+00
355+00
354+00
353+00
352+00
351+00

D'

027-100-040
FROGS LEAP
WINERY

027-100-012
LEONARDINI FAMILY
VINEYARDS LLC

1' Encroachment into Caltrans R/W (unpaved shoulder) between 344+00 and 362+00 (see X section D'-D')



D' - D' Section

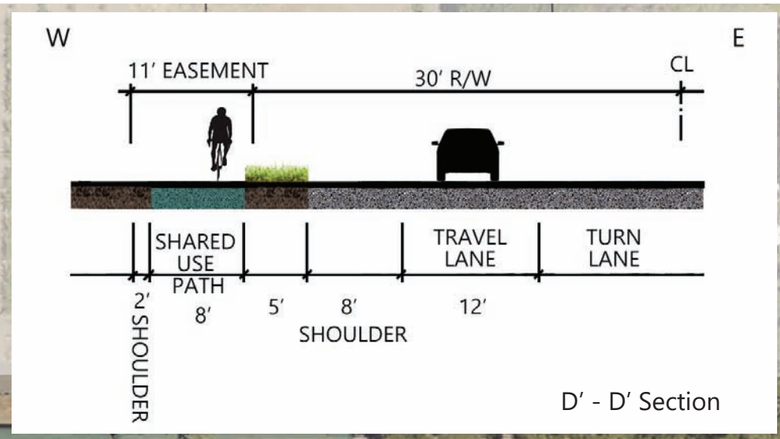
Driveway

Proposed Alignment

Low Area

0 30 60 120 Feet

Map B.2.1



State Highway 29

D′

D′

365+00

364

362+00

361+00

360+00

359+00

358+00

027-160-060
DELDOTTO FAMILY
WINERY INC

027-160-059
DDLM LC

Proposed Alignment

Bollard

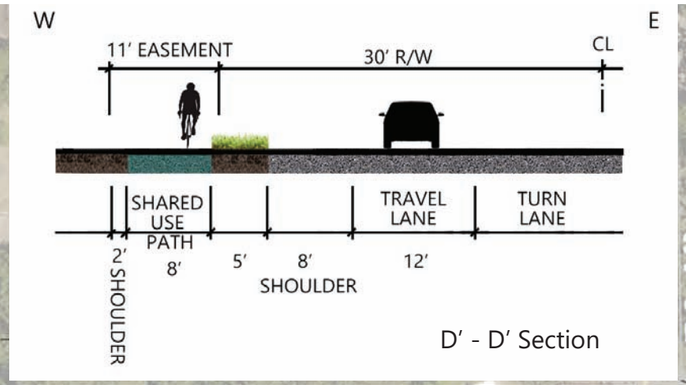
Driveway

Pinch Point

Box

0 30 60 120 Feet

Map B.2.2



1′ Encroachment into Caltrans R/W (unpaved shoulder) between 344+00 and 362+00 (see X section D′-D′)

Section B.3: Zinfandel Avenue to Pahlmeyer Wines

South of Station 395+00 this segment of the project study area is characterized primarily by vineyards on the west side of the road, with asphalt shoulders and a gravel or dirt frontage road that is 10' at minimum.

South of Delectus Vineyard, a drainage ditch runs parallel to the road, and the trail would be placed on the east side of the ditch. The ditch may need to be relocated west to improve trail stability. At the south end of the corridor, the trail would have to navigate between two mature oak trees and will appear similar to the cross-sections for B.2.

Landscaping, electrical utility poles, and pedestrian street light fixtures in front of Delectus Vineyard would need to be addressed. The trail could be aligned on the highway side of these utilities, split around them or some utilities reset west 10'.

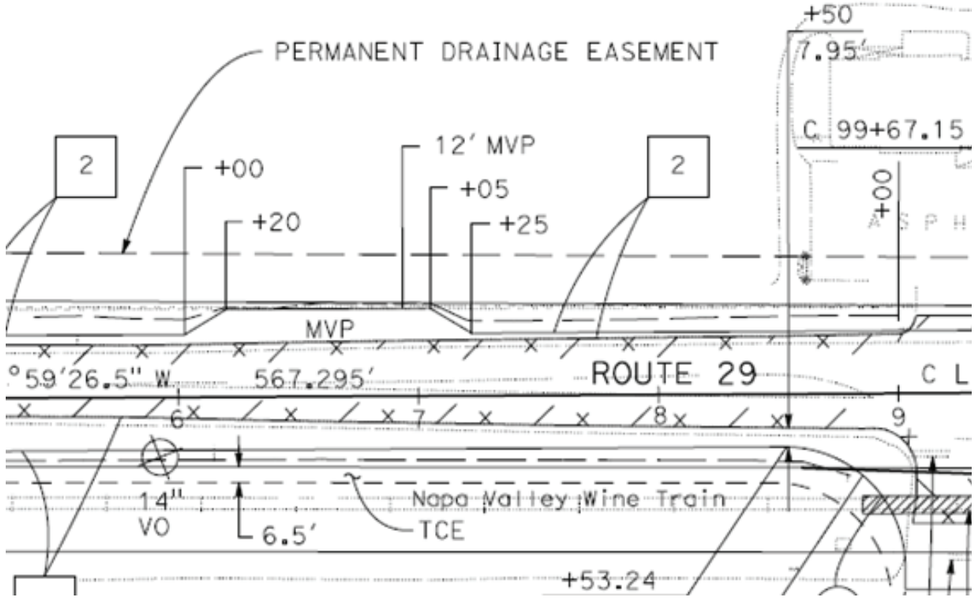
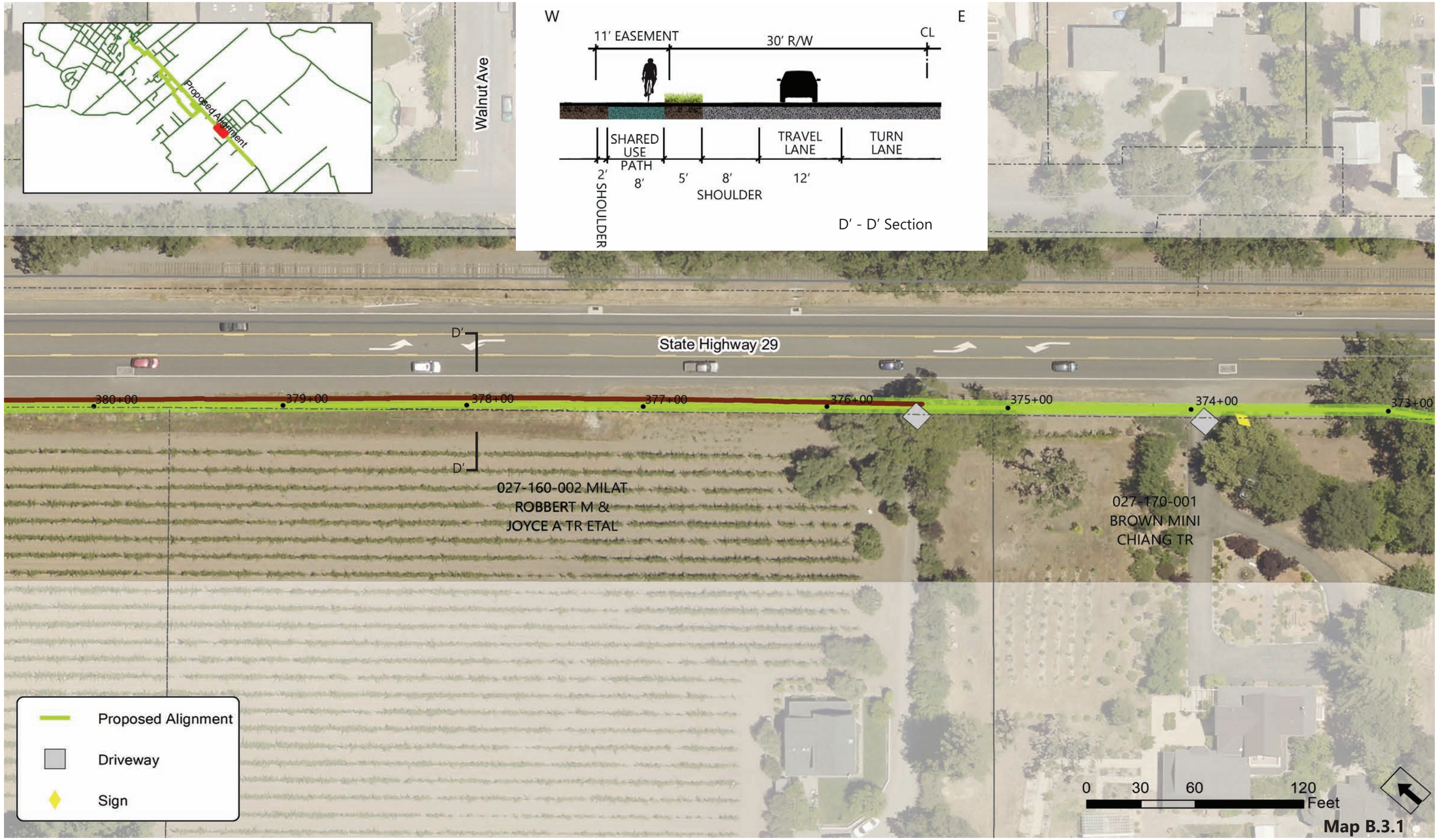
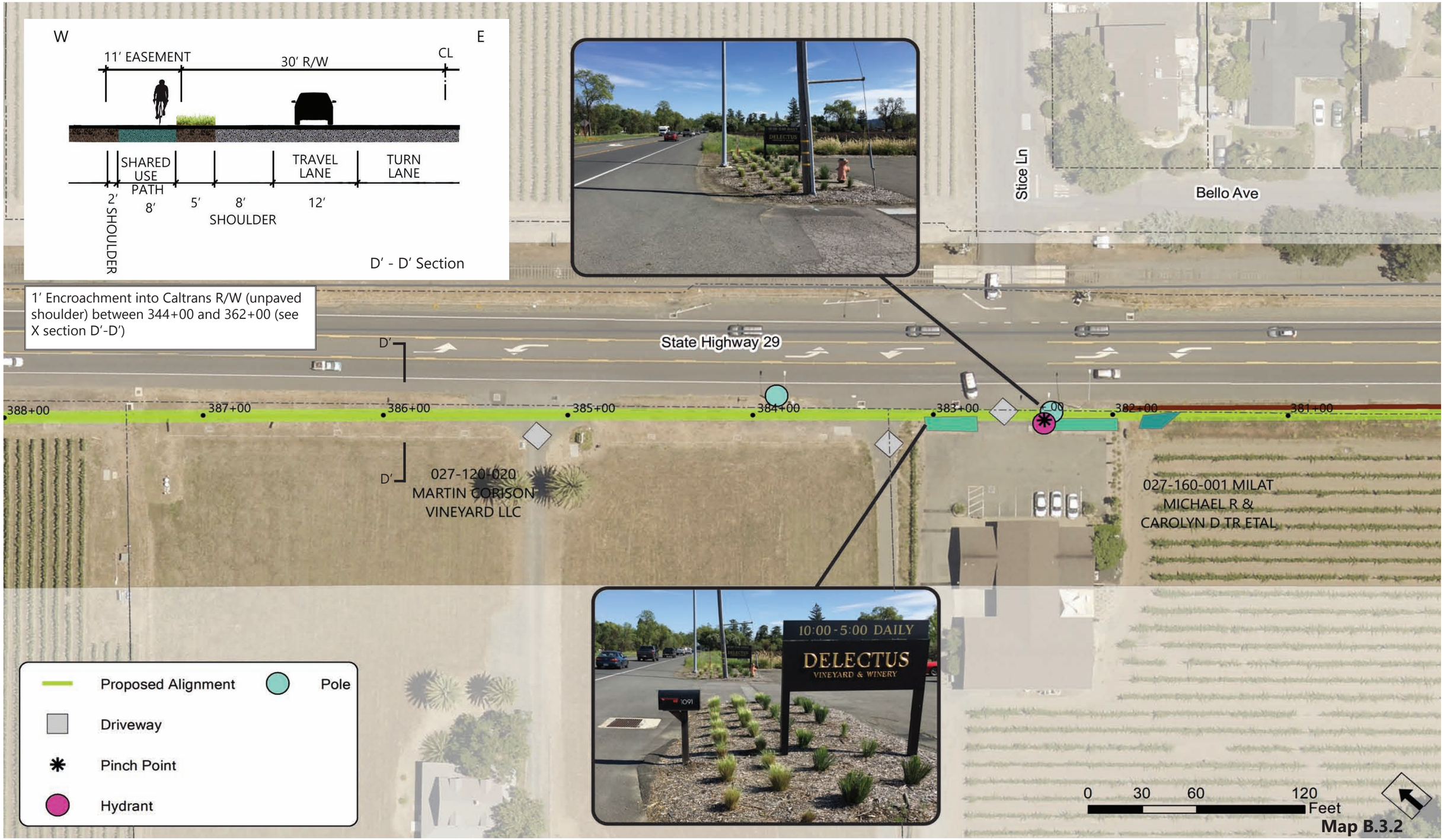


Figure B.3: Screen capture from Caltrans plans for Highway 29 confirms that there is 12' between the shoulder and the ditch south of Delectus Vineyards


Proposed Alignment
Walnut Ave
W
E
11' EASEMENT
30' R/W
CL
SHARED USE PATH
8'
2' SHOULDER
5'
8'
SHOULDER
TRAVEL LANE
12'
TURN LANE
D' - D' Section
D'
State Highway 29
380+00
379+00
378+00
377+00
376+00
375+00
374+00
373+00
D'
027-160-002 MILAT ROBBERT M & JOYCE A TR ETAL
027-170-001 BROWN MINI CHIANG TR
Proposed Alignment
Driveway
Sign
0
30
60
120
Feet

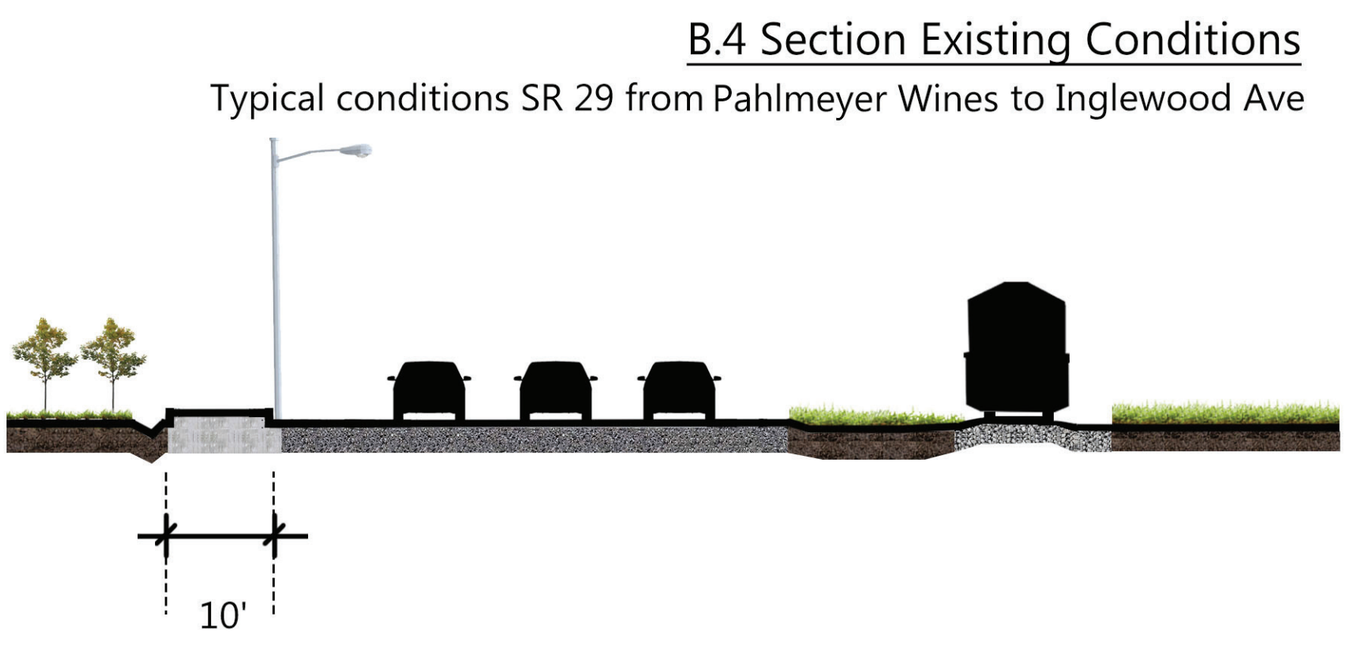
Map B.3.1

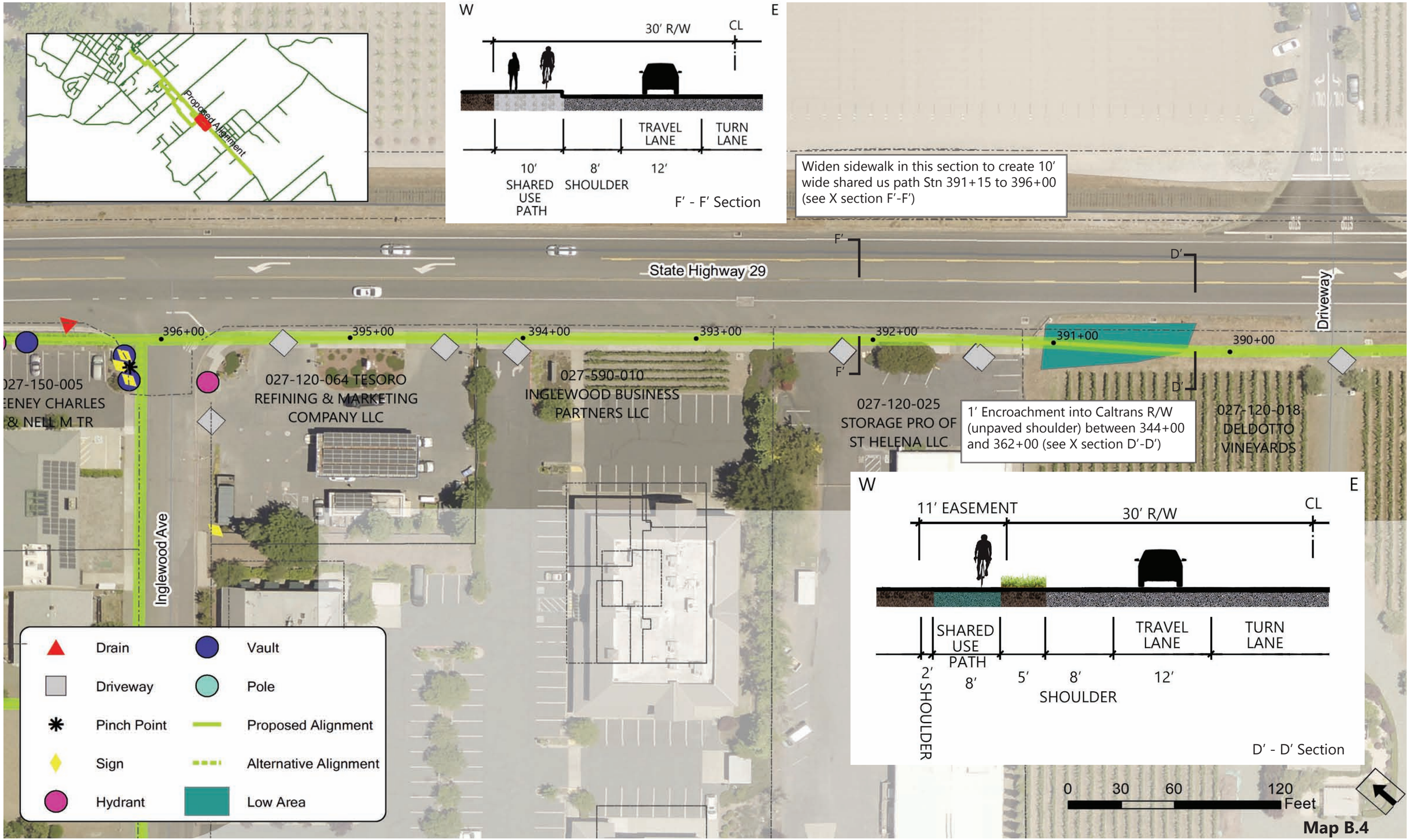

W
E
11′ EASEMENT
30′ R/W
CL
SHARED USE PATH
TRAVEL LANE
TURN LANE
2′
8′
5′
8′
12′
SHOULDER
SHOULDER
D′ - D′ Section
1′ Encroachment into Caltrans R/W (unpaved shoulder) between 344+00 and 362+00 (see X section D′-D′)
Stice Ln
Bello Ave
State Highway 29
D′
388+00
387+00
386+00
385+00
384+00
383+00
382+00
381+00
027-120-020
MARTIN CORISON
VINEYARD LLC
027-160-001 MILAT
MICHAEL R &
CAROLYN D TR ETAL
10:00 - 5:00 DAILY
DELECTUS
VINEYARD & WINERY
Proposed Alignment
Pole
Driveway
Pinch Point
Hydrant
0
30
60
120
Feet

Map B.3.2

Section B.4: Pahlmeyer Wines to Inglewood Avenue

This short segment is comprised of three properties immediately south of Inglewood Avenue, including a storage facility gas station, and office park, each of which feature wide driveways on the west side of the road that would need to be addressed. Existing side-walks at the gas station are 10' wide through this section and could be converted into a Class I trail.




Proposed Alignment
W
E
30′ R/W
CL
TRAVEL LANE
TURN LANE
10′ SHARED USE PATH
8′ SHOULDER
12′
F′ - F′ Section
Widen sidewalk in this section to create 10′ wide shared us path Stn 391+15 to 396+00 (see X section F′-F′)
State Highway 29
F′
D′
Driveway
396+00
395+00
394+00
393+00
392+00
391+00
390+00
027-150-005
EENEY CHARLES
& NELL M TR
027-120-064 TESORO REFINING & MARKETING COMPANY LLC
027-590-010 INGLEWOOD BUSINESS PARTNERS LLC
027-120-025 STORAGE PRO OF ST HELENA LLC
027-120-018 DELDOTTO VINEYARDS
1′ Encroachment into Caltrans R/W (unpaved shoulder) between 344+00 and 362+00 (see X section D′-D′)
Inglewood Ave
Drain
Vault
Driveway
Pole
Pinch Point
Proposed Alignment
Sign
Alternative Alignment
Hydrant
Low Area
W
E
11′ EASEMENT
30′ R/W
CL
SHARED USE PATH
8′
2′ SHOULDER
5′
8′ SHOULDER
TRAVEL LANE
12′
TURN LANE
D′ - D′ Section
0
30
60
120
Feet

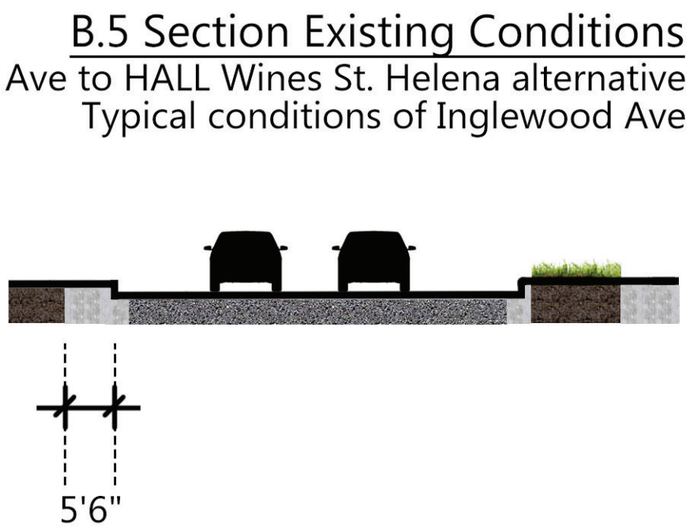
Map B.4

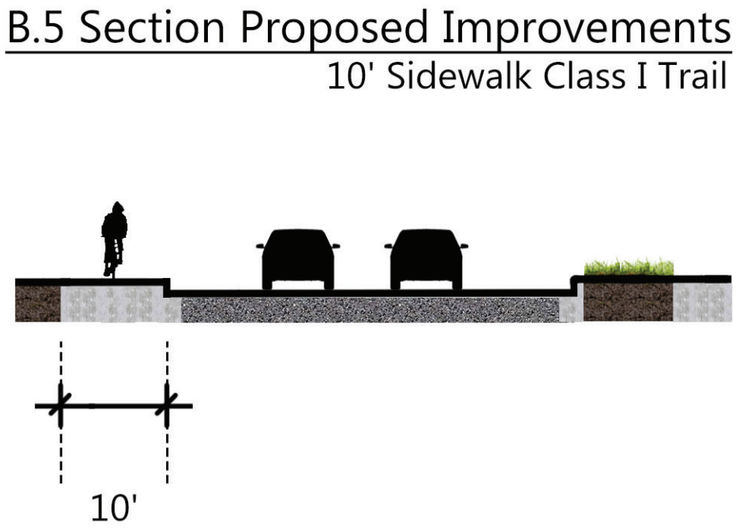
Section B.5: Inglewood Avenue to HALL Wines St. Helena

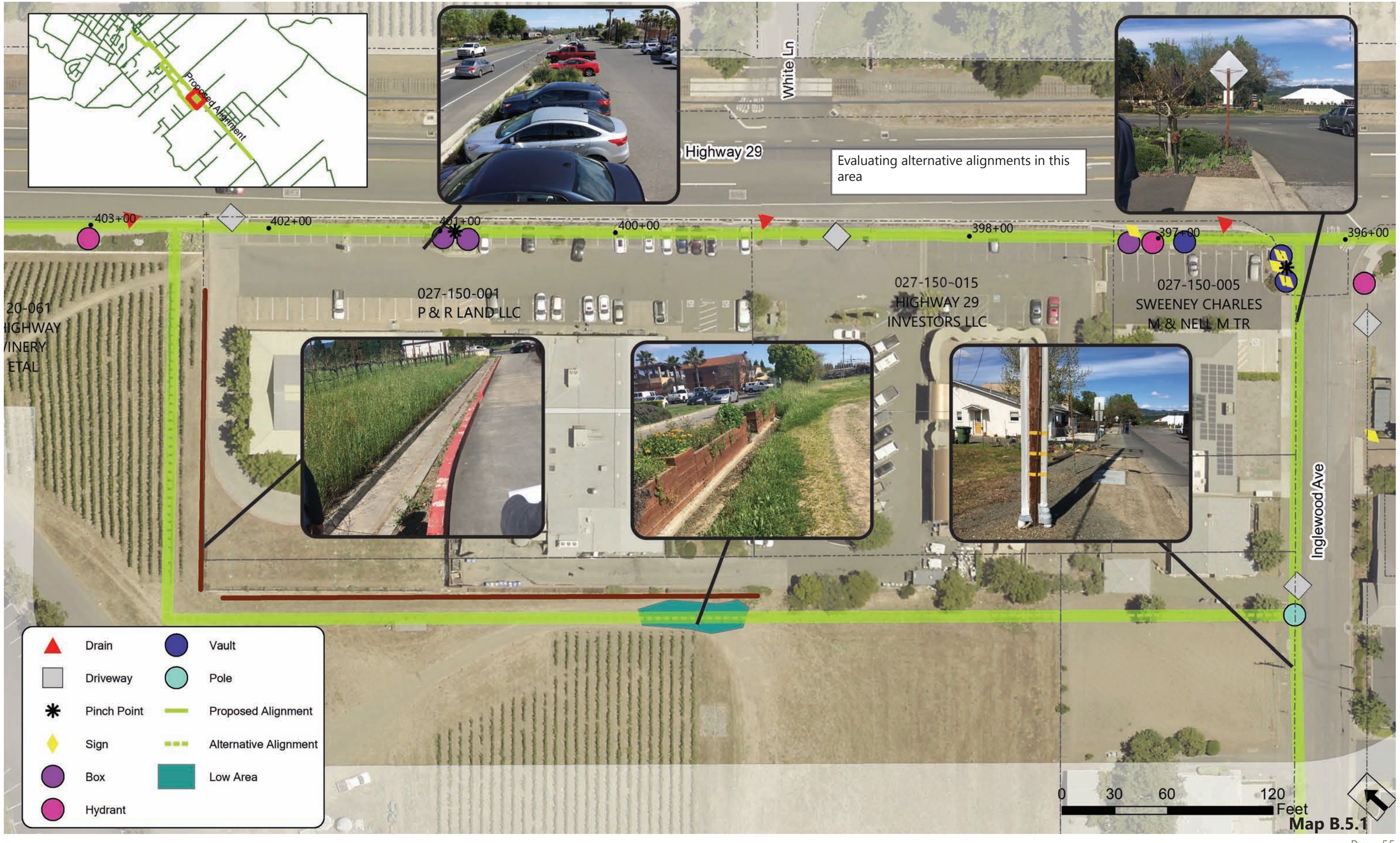
Gary's Wine and Marketplace/Flora Springs Parking Lot

This is possibly the most challenging location on the Vine Trail route (Gary's Wine and Marketplace - formerly Dean & DeLuca). The earlier study examined going behind these properties, but that didn't appear feasible. This section of Highway 29 has a 2-way center turn lane and approximately 12' shoulders with no sidewalk. An approximately 3' wide planter/green drainage space fronts the parking lot, which currently has 90 degree/perpendicular parking. Even if the lot was reorganized to provide space along the frontage for the trail there is a large backflow preventer that blocks the route that would have to be relocated. The concept illustrated on page 56 is that the parking would be reorganized into a one-way aisle with 45 degree angled parking, providing space for the trail. The 10' trail would be adjacent to the existing curb and gutter and the planter/drainage facility would be relocated to the edge of the parking. This modified layout would require that a new exit driveway be created at the south end of the Flora Springs parking lot.

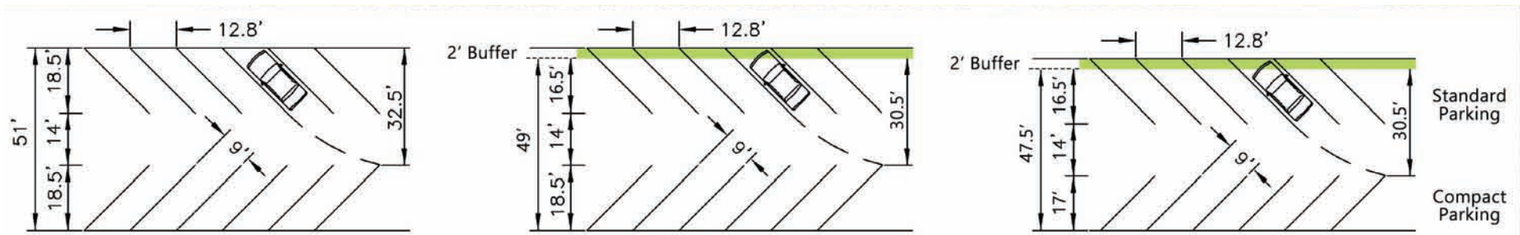
Figure B.4: Hall Vines St. Helena access road behind Flora Springs






Proposed Alignment
White Ln
Highway 29
Evaluating alternative alignments in this area
403+00
402+00
401+00
400+00
398+00
397+00
396+00
027-150-001
P & R LAND LLC
027-150-015
HIGHWAY 29
INVESTORS LLC
027-150-005
SWEENEY CHARLES
M & NELL M TR
Inglewood Ave
Drain
Driveway
Pinch Point
Sign
Box
Hydrant
Vault
Pole
Proposed Alignment
Alternative Alignment
Low Area
0
30
60
120
Feet

Map B.5.1



2020 Napa County Road and Street Standards - 45 Degree Angled Parking Layout

Map B.5.2

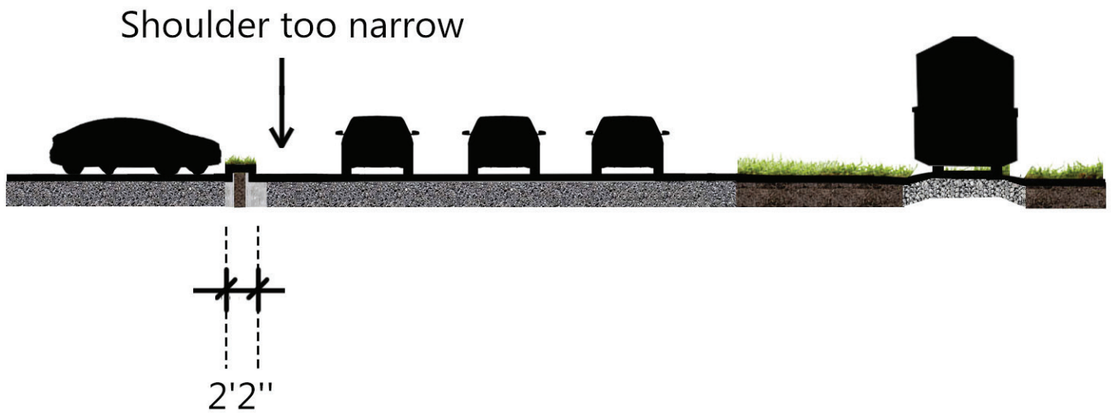
Section B.6: Inglewood Avenue to HALL Wines St. Helena
Alternative Alignment

Alternative Alignment

A potential alternative to the constrained segment of Highway 29 is to route the trail behind the Gary's Wine and Marketplace/Flora Springs property, following an access road that lies on HALL Wines St. Helena property from Inglewood Avenue. The trail would follow Inglewood Avenue from Highway 29. The north side of Inglewood Avenue is most feasible for continuing the Class I trail. A constraint with this alternative is that an easement would be required from the property that lies between Inglewood Avenue and HALL Wines St. Helena (see Map page 60). This alternative would also require acquiring an easement from HALL Wines St. Helena and might involve modification of the vineyard, or at least overlap between vineyard maintenance roads and the trail.

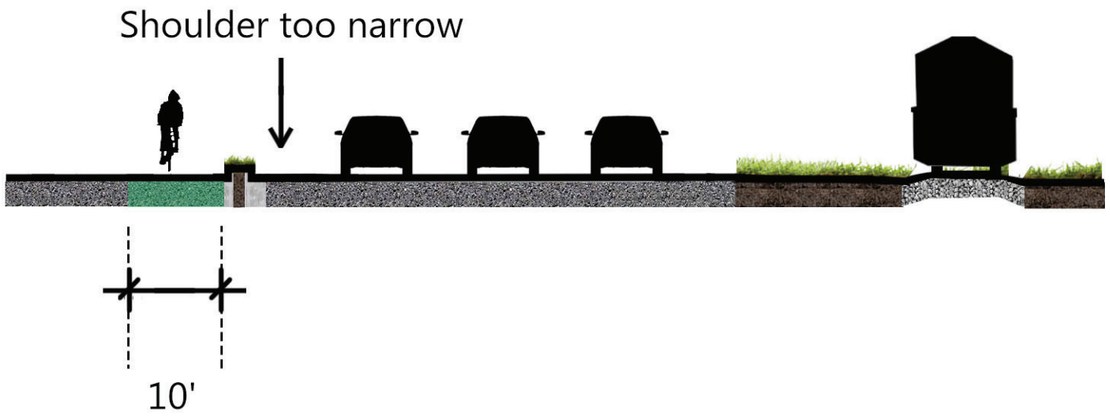
B.6 Section Existing Conditions

Typical conditions of SR29
from Inglewood Ave to HALL Wines St. Helena



B.6 Section Proposed Improvements

Eliminating parking space
to make Class I Trail



Section B.7: HALL Wines St. Helena

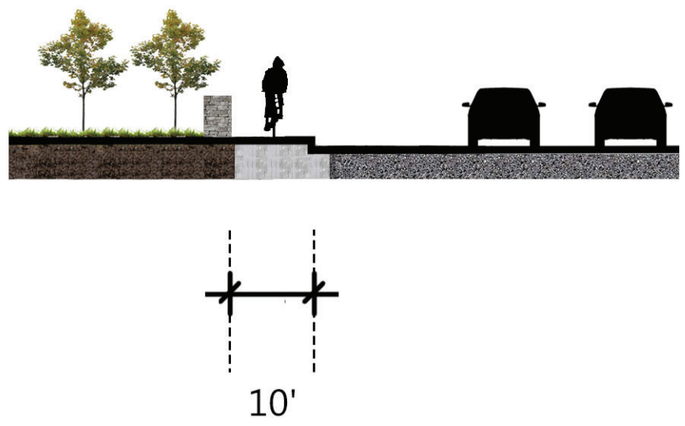
South of the mobile home park, the alignment for the trail could stay on the west side of Highway 29 in front of HALL Wines St. Helena, until Garys Wine and Marketplacea/Flora Springs. The trail would utilize existing sidewalk through this section by extending the sidewalk into the shoulder where possible.

B.7 Section Existing Conditions

Typical conditions of SR29
in front of HALL Wines St. Helena

B.7 Section Proposed Improvements

10' Sidewalk Trail



F′

State Highway 29

F′

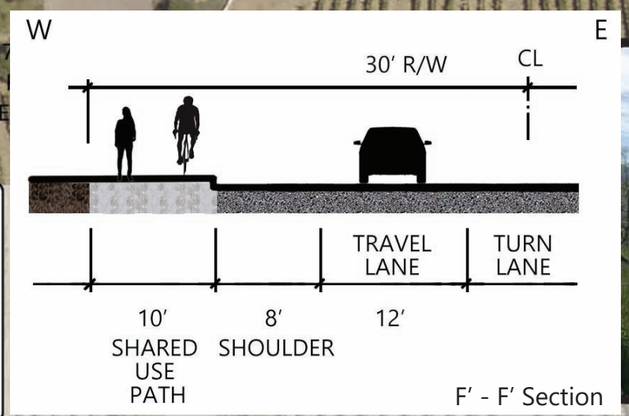
Widen sidewalk in this section to create 12′ wide shared us path Stn 408+00 to 414+25 (see X section F′-F′)

409+00 408+00 407 405+00 404+00 403+00

027-120-062
HALL VINEYARD

027-120-052
HALL
VINEYARD

027-120-061
HALL HIGHWAY 29
WINERY LLC ETAL



F′ - F′ Section

Drain
Alternative Alignment
Driveway
Hydrant
Proposed Alignment

30 60 120 Feet

Map B.7

Section B.8: HALL Wines St. Helena to Lewelling Lane

South of Sutter Home Winery, in front of the mobile home park, a sidewalk exists and could be used to develop a Class I trail. The mobile home park is set to be renovated in the near future and could provide an opportunity to construct part of the trail at that time.

Immediately south of Lewelling Lane, landscaping and a drainage ditch narrow the highway shoulder to 8' and would require the trail to turn into the Sutter Home Winery parking lot (see Map page 62). With this option the trail would pass through the front of the winery parking lot, requiring a significant redesign of the layout, and re-turn to Highway 29 at the main entrance to the parking lot as seen on the Map on page 63.

An alternative alignment could extend west to the frontage of the Sutter Home winery buildings, then north along the frontage to Lewelling Lane, and extend along Lewelling east to return to Highway 29. This alternative would involve less change to the parking and more change to site landscaping. Each of these alternatives would require an easement from Sutter Home Winery.

At Lewelling Lane, a pinch point occurs at an electrical utility pole and two trees at the entrance to Lewelling Lane, as seen in Figure 17. The trail could maintain its alignment on the east side of the trees if it was narrowed to 8 feet here.

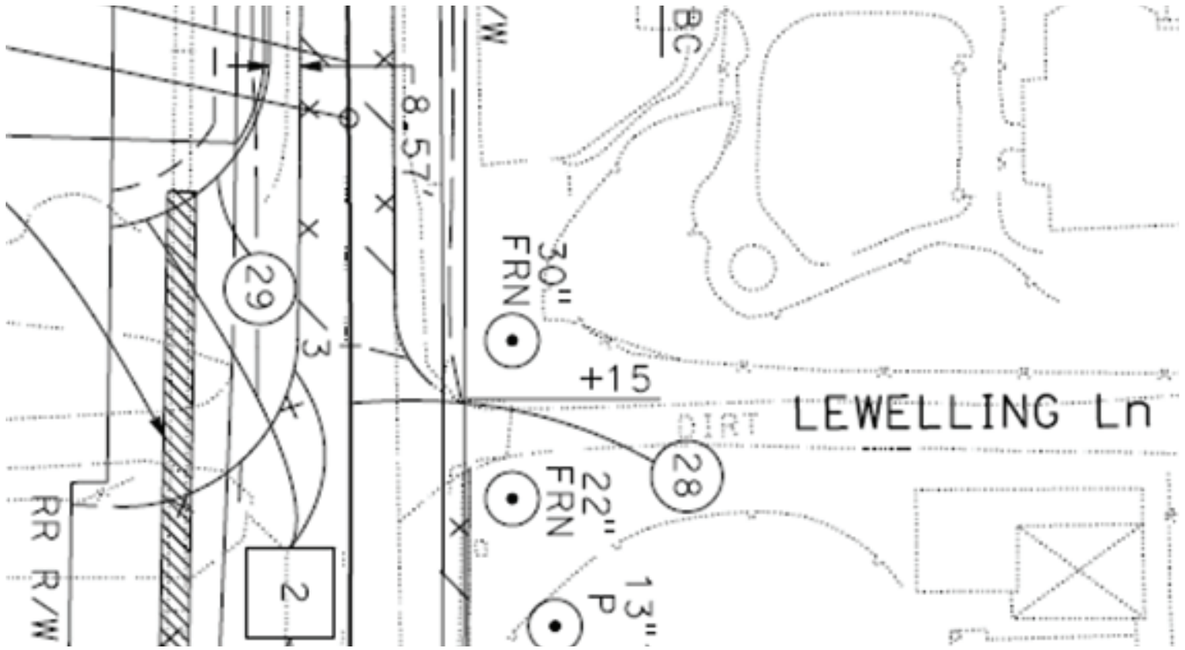
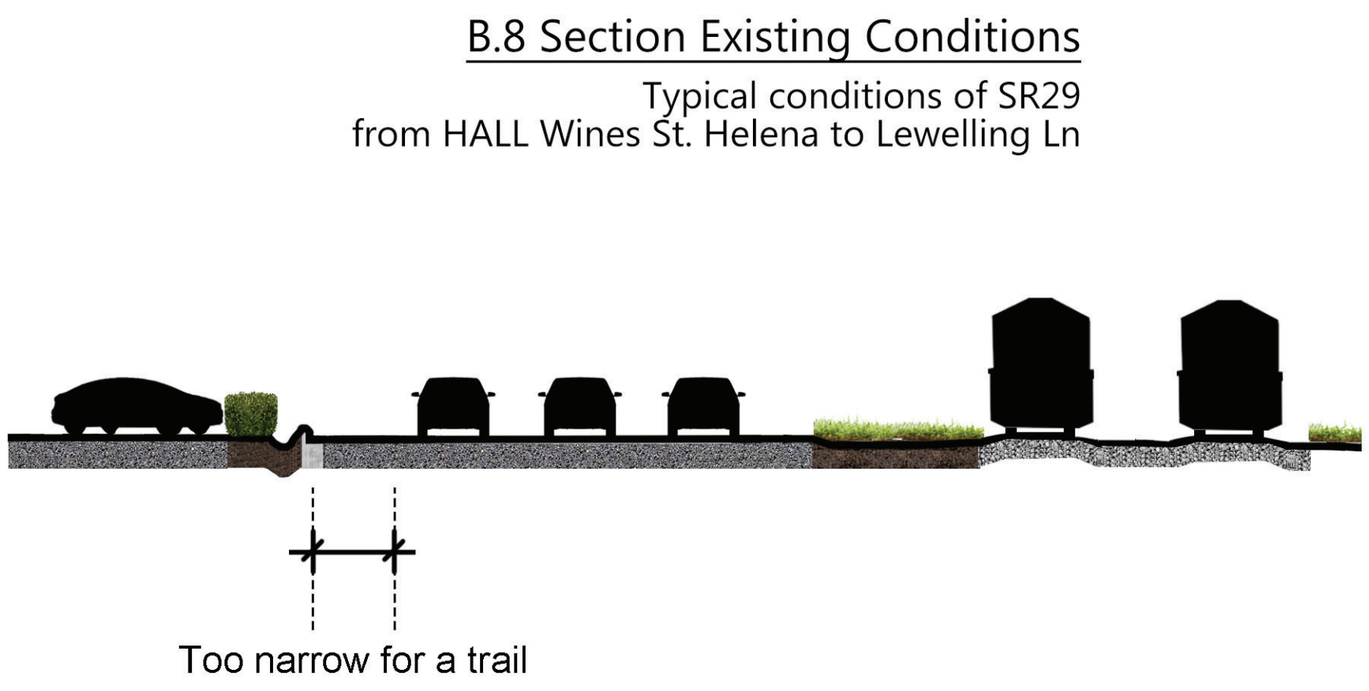
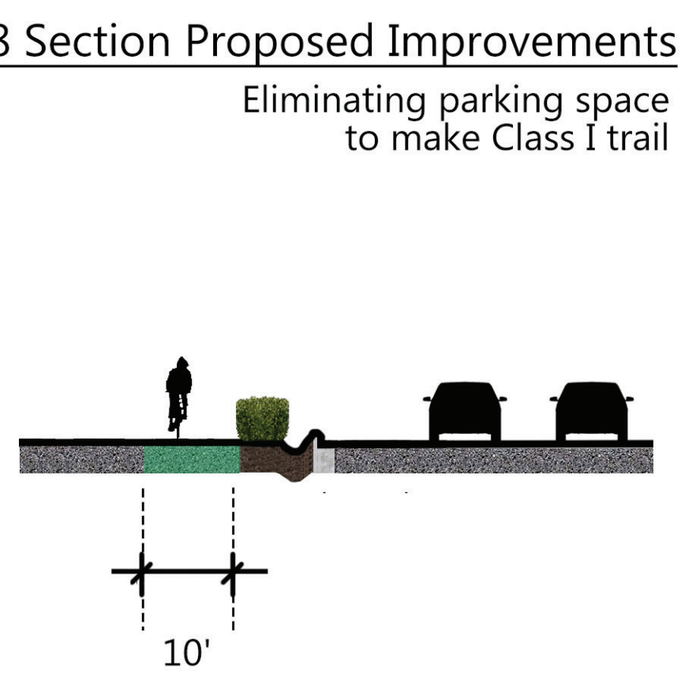
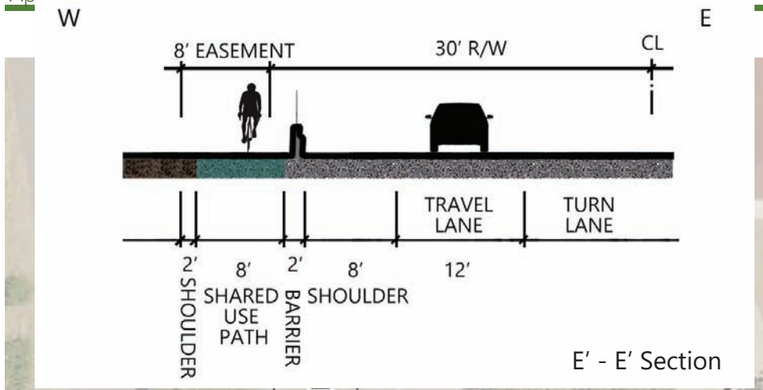


Figure B.5: Screen capture of Caltrans plans for Highway 29 confirms that easements will be required to place trail on west side of Sutter Home Winery landscaping

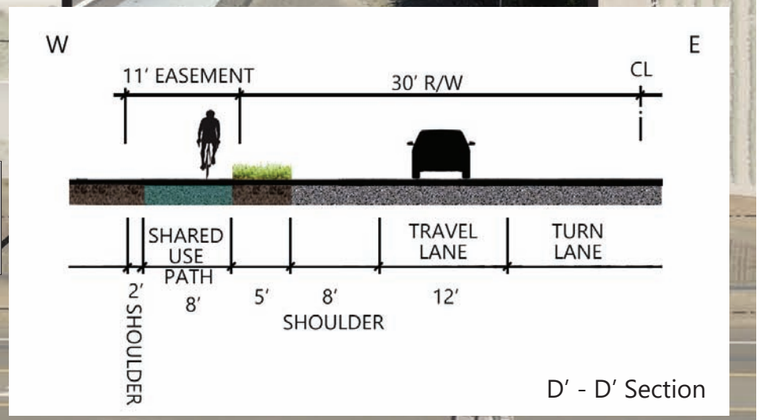






6'-6" Encroachment into Caltrans R/W between 416+50 and 424+00 (see X section E'-E')

1' Encroachment into Caltrans R/W (unpaved shoulder) between 408+00 and 414+25 (see X section D'-D')



Map B.8.1

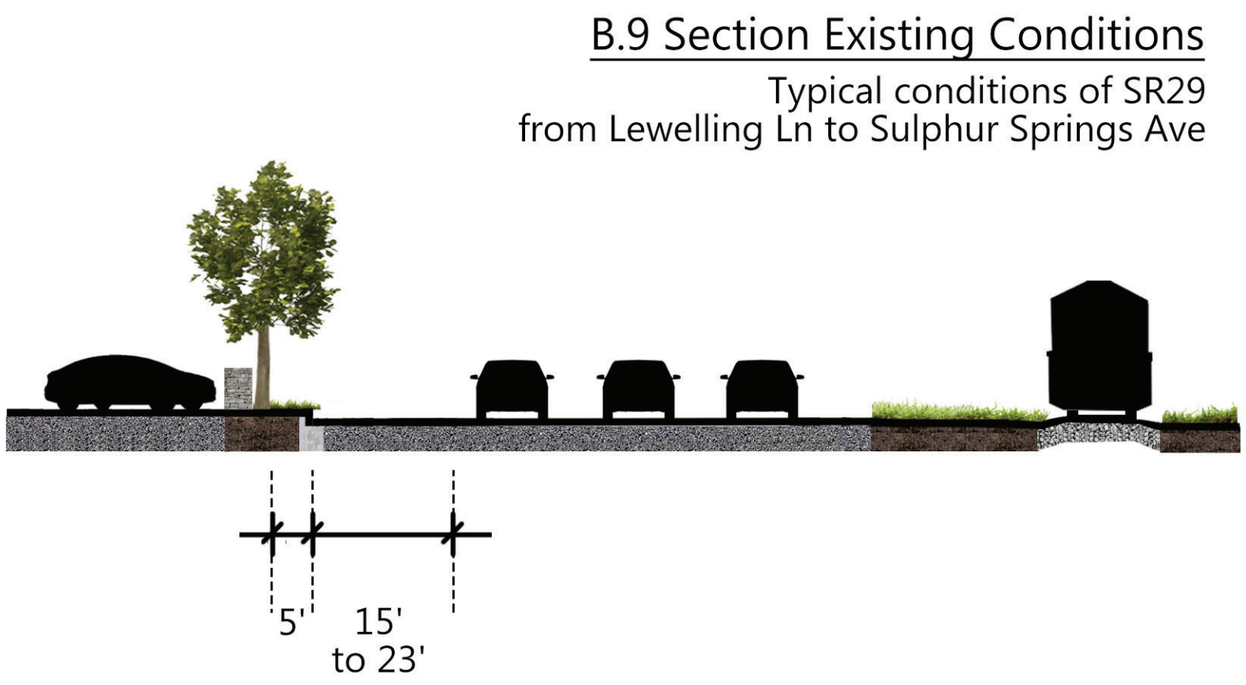

Proposed Alignment
27.5
Main St
State Highway 29
27.4
Lewelling Ln
Alternative Alignment
Proposed Alignment
0
25
50
100
Feet
Map B.8.2

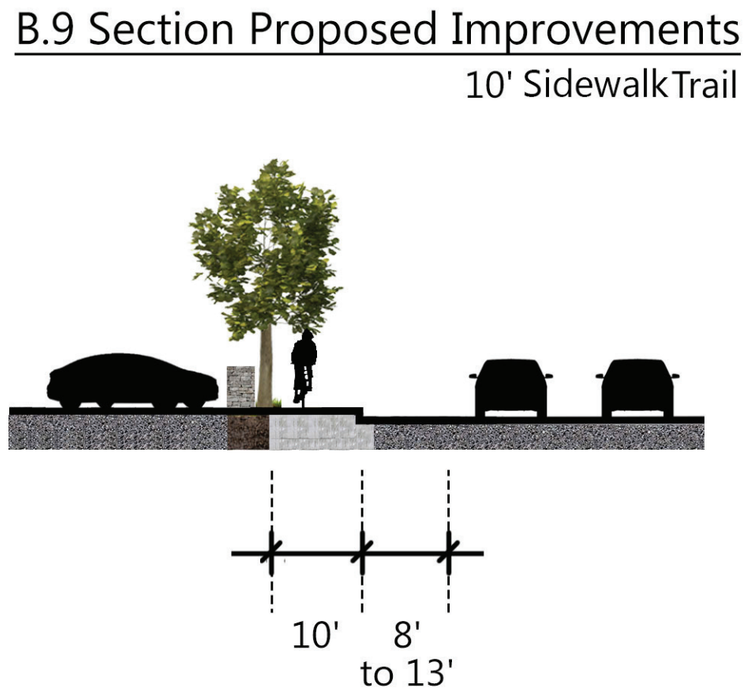
Section B.9: Lewelling Lane to Sulphur Springs Avenue

From Lewelling Lane to Sulphur Springs Avenue, Highway 29 features a wide shoulder and could be modified to accommodate a Class I trail on the west side of the road with two driveway crossings (see Map page 65).

A possible alternative alignment is the placement of the trail behind the Harvest Inn St. Helena, where an access lawn has the width necessary for a 10' Class I trail as seen in Figure B.6. This alignment, if continued north from Inglewood Avenue could avoid constraints at Sutter Home Winery and further north on Sulphur Springs Avenue. It could potentially tie-in to the alternative route and further south behind Gary's Wine and Marketplace/Flora Springs.

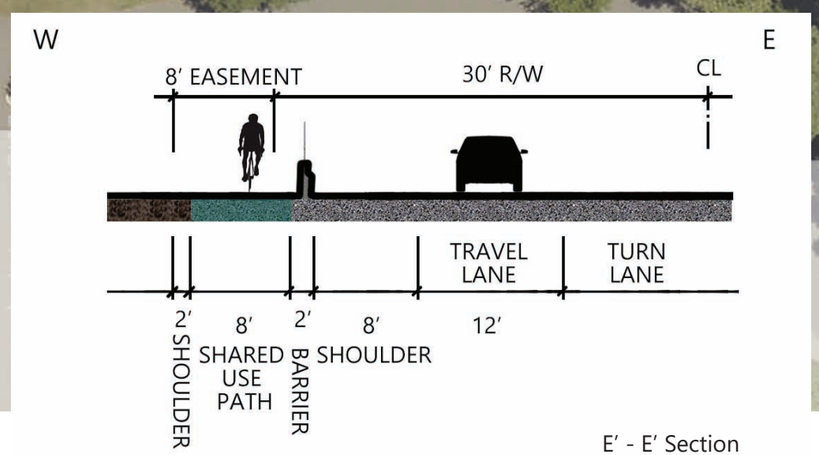
Figure B.6: Possible Alternative Alignment behind Harvest Inn St. Helena





Drain
Driveway
Pinch Point
Sign
Tree
Vault
Pole
Proposed Alignment

E′
Main St
425+00
424+00
423+00
422+00
421+00
420+00
419+00
418+00
E′
STOP
STOP
Sulphur Springs Ave
027-560-008 PALMER CITY-CORE MAIN ASSOCIATION LLC



E′ - E′ Section

0 30 60 120 Feet

Map B.9

Appendix A

Preliminary Cost Estimate

A planning-level estimate has been prepared for the Madison Street to Sulfur Springs Avenue Vine Trail Project. By definition, a "planning-level" cost estimate is preliminary as the trail design at this phase is not precise and there can be a significant variance in cost depending on the final design. The estimate is based on a series of per lineal foot trail type costs, and a series of added costs, as detailed in Appendix A. The estimate was broken down by sub-segments.

The estimate includes Construction Overhead/Preparation Costs adding up to 15% of the construction cost (detailed at the end of the estimate in Appendix A) including mobilization and demobilization, traffic control, site stormwater pollution prevention plan (SWPPP) and temporary erosion control, contractor's fee, general conditions (including inspections, permitting, drainage monitoring), and bonds and insurance. These costs are typically included in the contractors' bids.

A 20% contingency was added on top of the other costs for unanticipated items, as is typical for a planning-level estimate.

Reference to Prior Vine Trail Project

The actual construction bids for the completed Oak Knoll portion of the Vine Trail (see Reference Table), from 2015 are a good reference for some unit prices and an overall check against the planning-level cost estimate for the Madison to Grayson portion. The overall distance of the Oak Knoll segment from Redwood Road/Trancas Street in Napa north to California Avenue near Yountville is 31,367 LF (Lineal Feet). But the City of Napa built the Trower Avenue to Wine Country Avenue part separately. Subtracting that portion (2,457 LF) nets 28,910 LF (5.48 mi) for the Oak Knoll Vine Trail Project.

Some items from the Oak Knoll bids don't seem to apply to the Madison to Sulfur Springs portion:

20 - Removal of Trees (61" DBH and greater)

29 - Install PCC Curb and 24" Gutter

70 - Retaining Wall (Geowall Pro)

71 - Retaining Wall (Geowall Max)

72 - Retaining Wall Railing

73 - Retaining Wall Gate

74 - 4' Chain Link Fence

Subtracting these out of the high and low bid totals and dividing the totals by the 28,910 foot length gives a low of $174.79/LF and a high of $181.79/LF; a $178.29 average.

Prices would have gone up significantly from 2015 to 2020 (at least before the current economic crisis). In 2015 the low bid was 10% higher than the Engineers Estimate and the high bid was 19% higher. We used 3% per year compounded escalation for 5 years to get the 2020 cost per LF, which is $206.69.

The overall length of the Madison to Whitehall segment is 33,830 LF, and the Whitehall to Sulfur Springs portion is 10,606 LF, for a total of 45,606 LF. Multiplying that by the 2020 per LF cost from the Oak Knoll project ($206.69) yields $11,313,016. This was used as a reference to check against the planning-level estimate for Madison to Sulfur Springs, including all items and contingencies.

Reference: Vine Trail Oak Knoll Section (2015) Bid Price

Project Name: **Vine Trail Oak Knoll Section**

Date Bids Opened: June 5, 2015
Date Contract Awarded:

Project Location: Solano Ave.

Project Number: 15-02

No.	Item of Work	Quantity	Unit	GHILOTTI BROS/RM HARRIS JV Unit Price	GHILOTTI BROS/RM HARRIS JV Amount	MAGGIORA & GHILOTTI, INC. Unit Price	MAGGIORA & GHILOTTI, INC. Amount	Unit Price
1	Mobilization	1	L.S.	337,000.00	$337,000.00	298,070.50	$298,070.50	
2	Control of Work	1	L.S.	1,500.00	$1,500.00	25,000.00	$25,000.00	
3	Construction Staking	1	L.S.	25,000.00	$25,000.00	24,000.00	$24,000.00	
4	Dust Control	1	L.S.	5,000.00	$5,000.00	20,000.00	$20,000.00	
5	Clearing, Grubbing, and Landscape Restoration	1	L.S.	70,000.00	$70,000.00	20,000.00	$20,000.00	
6	Temporary Traffic Control	1	L.S.	135,000.00	$135,000.00	80,000.00	$80,000.00	
7	Water Pollution Control Program	1	L.S.	190,000.00	$190,000.00	180,000.00	$180,000.00	
8	Environmental Fencing	1	L.S.	3,000.00	$3,000.00	2,000.00	$2,000.00	
9	Tree Protection	1	L.S.	21,000.00	$21,000.00	4,000.00	$4,000.00	
DEMOLITION								
10	Remove and Dispose Portion of Wine Country Ave Culvert	1	L.S.	22,000.00	$22,000.00	10,000.00	$10,000.00	
11	Cold Planing Asphalt Concrete for Overlay (1.5")	33090	S.F.	0.40	$13,236.00	0.50	$16,545.00	
12	Cold Planing Asphalt Concrete for Overlay (2")	559	S.F.	5.25	$2,934.75	11.00	$6,149.00	
13	Remove and Dispose PCC Curb and Gutter	577	L.F.	10.00	$5,770.00	12.00	$6,924.00	
14	Remove and Dispose Concrete Flatwork	23506	S.F.	1.50	$35,259.00	4.50	$105,777.00	
15	Remove Traffic Stripes, Pavement Markers, and Pavement Markings	500	L.F.	5.00	$2,500.00	5.00	$2,500.00	
16	Remove Street Light	1	EA	2,500.00	$2,500.00	2,000.00	$2,000.00	
17	Remove and Dispose of Tree (13" - 20" DBH)	4	EA	600.00	$2,400.00	565.00	$2,260.00	
18	Remove and Dispose of Tree (21" - 36" DBH)	7	EA	1,800.00	$12,600.00	1,650.00	$11,550.00	
19	Remove and Dispose of Tree (37" - 60" DBH)	6	EA	2,700.00	$16,200.00	2,500.00	$15,000.00	
20	Remove and Dispose of Tree (61" DBH and greater)	13	EA	15,000.00	$195,000.00	11,100.00	$144,300.00	
21	Tree Salvage	8	EA	2,500.00	$20,000.00	1,650.00	$13,200.00	
22	Miscellaneous Demolition	1	L.S.	10,000.00	$10,000.00	13,000.00	$13,000.00	
GRADING & PAVING								
23	Earthwork (Final Quantity)	16000	C.Y.	17.50	$280,000.00	25.00	$400,000.00	
24	Export Soil (Final Quantity)	14000	C.Y.	17.00	$238,000.00	21.00	$294,000.00	
25	Over-Excavate and Replace Wet Soil	300	C.Y.	55.00	$16,500.00	60.00	$18,000.00	
26	Lime Treatment	10000	S.F.	2.25	$22,500.00	3.20	$32,000.00	
27	Geotextile Mirafi 700X	4000	S.F.	0.65	$2,600.00	1.00	$4,000.00	
28	Geogrid Mirafi 2XT	4000	S.F.	0.66	$2,640.00	1.00	$4,000.00	
29	Install PCC Curb and 24" Gutter	7273	L.F.	32.00	$232,736.00	35.00	$254,555.00	
30	Install PCC Curb and 12" Gutter	150	L.F.	28.00	$4,200.00	35.00	$5,250.00	
31	Install 6" PCC Curb (no gutter)	168	L.F.	31.00	$5,208.00	25.00	$4,200.00	
32	Install PCC Cross Gutter	473	S.F.	19.00	$8,987.00	10.00	$4,730.00	
33	Install PCC 4"	3750	S.F.	8.40	$31,500.00	8.40	$31,500.00	
34	Install PCC 6"	891	S.F.	17.00	$15,147.00	13.00	$11,583.00	
35	Install PCC Curb Ramp	15	EA	4,500.00	$67,500.00	4,700.00	$70,500.00	
36	Aggregate Base (8" for path and shoulders/buffers)	9142	C.Y.	52.00	$475,384.00	57.00	$521,094.00	
37	Aggregate Base (13" for Solano relocation)	289	C.Y.	82.00	$23,698.00	72.00	$20,808.00	
38	Hot Mix Asphalt (HMA) (2.5" for path construction)	4418	TONS	118.00	$521,324.00	115.00	$508,070.00	
39	Hot Mix Asphalt (HMA) (5.5" for Solano relocation)	244	TONS	140.00	$34,160.00	140.00	$34,160.00	
40	Hot Mix Asphalt (HMA) (Overlay)	313	TONS	128.00	$40,064.00	140.00	$43,820.00	
41	1-Inch Minus Aggregate	644	C.Y.	90.00	$57,960.00	140.00	$90,160.00	
42	8" Type A 1/2" HMA Plug	30	S.F.	19.00	$570.00	17.00	$510.00	
43	11" Type A 1/2" HMA Plug	14671	S.F.	14.00	$205,394.00	11.00	$161,381.00	
DRAINAGE								
44	Install G3 Drainage Inlet	4	EA	2,600.00	$10,400.00	3,000.00	$12,000.00	
45	Install Kristar P4 Duradrain	5	EA	500.00	$2,500.00	2,000.00	$10,000.00	
46	Through Curb Drain	62	EA	1,600.00	$99,200.00	2,000.00	$124,000.00	
47	PVC Drain Pipe (3")	30	L.F.	28.00	$840.00	65.00	$1,950.00	
48	PVC Drain Pipe (6")	219	L.F.	35.00	$7,665.00	68.00	$14,892.00	
49	PVC Drain Pipe (8")	40	L.F.	38.00	$1,520.00	92.00	$3,680.00	
50	Rip Rap Outfall	104	S.F.	27.00	$2,808.00	32.00	$3,328.00	
51	Modify Existing Storm Drain Inlet w/Side Inlet & Cover (at Yountville Fire Station)	1	L.S.	1,250.00	$1,250.00	2,600.00	$2,600.00	
52	Storm Drain Extension (at Yountville Fire Station)	1	L.S.	1,400.00	$1,400.00	2,000.00	$2,000.00	
53	Storm Drain Extension and Headwall (at Luke Dr.)	1	L.S.	8,500.00	$8,500.00	10,000.00	$10,000.00	
54	Culvert Extension (at Wine Country Ave.)	1	L.S.	130,000.00	$130,000.00	100,000.00	$100,000.00	
55	Storm Drain Extension (at 277+96)	1	L.S.	1,500.00	$1,500.00	2,200.00	$2,200.00	
56	Relocate Existing Storm Drain Inlet (at 293+19)	1	L.S.	3,400.00	$3,400.00	2,600.00	$2,600.00	
UTILITIES								
57	Adjust Water Valve Box and Lid to Grade	29	EA	550.00	$15,950.00	285.00	$8,265.00	
58	Adjust CP Test Box and Lid to Grade	9	EA	550.00	$4,950.00	285.00	$2,565.00	
59	Adjust Water Manhole to Grade	1	EA	1,100.00	$1,100.00	850.00	$850.00	
60	Relocate Air Release Valve	10	EA	4,000.00	$40,000.00	5,000.00	$50,000.00	
61	Remove Wharf Hydrant and Install Air Release Valve	1	EA	4,000.00	$4,000.00	6,000.00	$6,000.00	
62	Relocate Fire Hydrant	1	EA	4,200.00	$4,200.00	5,000.00	$5,000.00	
63	Relocate 2" Water Riser	1	EA	2,600.00	$2,600.00	3,000.00	$3,000.00	
64	Relocate 4" Water Riser	2	EA	2,700.00	$5,400.00	2,500.00	$5,000.00	
65	Relocate 2" Water Sample Riser	1	EA	2,800.00	$2,800.00	3,000.00	$3,000.00	
66	Adjust Small Utility Box and Lid to Grade	1	EA	400.00	$400.00	700.00	$700.00	
67	Adjust 4' x 6' Utility Vault Lid to Grade	2	EA	600.00	$1,200.00	1,700.00	$3,400.00	
68	Adjust 4' x 6' Utility Vault to Grade and Install New Lid	1	EA	2,200.00	$2,200.00	6,600.00	$6,600.00	
69	Install B30 Box and Lid	2	EA	850.00	$1,700.00	1,600.00	$3,200.00	
OTHER								
70	Retaining Wall (Geowall Pro)	1149	S.F.	19.50	$22,405.50	38.00	$43,662.00	
71	Retaining Wall (Geowall Max)	18456	S.F.	10.00	$184,560.00	27.00	$498,312.00	
72	Retaining Wall Railing	6345	L.F.	47.00	$298,215.00	56.00	$355,320.00	
73	Retaining Wall Railing Gate	1	EA	1,200.00	$1,200.00	2,100.00	$2,100.00	
74	4' Chain-Link Fence	85	L.F.	89.00	$7,565.00	42.00	$3,570.00	
75	Caltrans A77L1 Midwest Guard Rail	120	L.F.	95.00	$11,400.00	95.00	$11,400.00	
76	Caltrans A77R3 Type 16B Flared End Terminal	2	EA	3,500.00	$7,000.00	3,500.00	$7,000.00	

Project Name: **Vine Trail Oak Knoll Section**

Date Bids Opened: June 5, 2015
Date Contract Awarded:

Project Location: Solano Ave.

Project Number: 15-02

No.	Item of Work	Quantity	Unit	GHILOTTI BROS/RM HARRIS JV Unit Price	GHILOTTI BROS/RM HARRIS JV Amount	MAGGIORA & GHILOTTI, INC. Unit Price	MAGGIORA & GHILOTTI, INC. Amount	Unit Price
77	Caltrans 732B Barrier	125	L.F.	240.00	$30,000.00	300.00	$37,500.00	
78	Caltrans 732 Barrier	280	L.F.	140.00	$39,200.00	235.00	$65,800.00	
79	Relocate Existing Guardrail	10	L.F.	50.00	$500.00	50.00	$500.00	
80	Wheel Stop	10	EA	50.00	$500.00	50.00	$500.00	
81	Install Traffic Signal	2	EA	175,000.00	$350,000.00	215,000.00	$430,000.00	
82	Modify Traffic Signal	1	EA	75,000.00	$75,000.00	125,000.00	$125,000.00	
83	Purchase Eco-Counter	2	EA	5,000.00	$10,000.00	6,700.00	$13,400.00	
84	Install Eco-Counter	2	EA	2,500.00	$5,000.00	3,000.00	$6,000.00	
85	Trailhead Structure Foundation	1	EA	22,000.00	$22,000.00	19,000.00	$19,000.00	
86	Hinman Channel Bridges and Mid-Span Platform	1	L.S.	425,000.00	$425,000.00	325,000.00	$325,000.00	
87	Dry Creek Bridge Widening	1	L.S.	255,000.00	$255,000.00	255,000.00	$255,000.00	
LANDSCAPING								
88	Pet Waste Bag Dispenser	4	EA	500.00	$2,000.00	414.00	$1,656.00	
89	Bench	4	EA	3,600.00	$14,400.00	4,500.00	$18,000.00	
90	Trail Sign (Install Only)	6	EA	1,900.00	$11,400.00	1,800.00	$10,800.00	
91	Mile Post	22	EA	175.00	$3,850.00	320.00	$7,040.00	
92	Litter/Recycling Receptacle	3	EA	2,400.00	$7,200.00	7,500.00	$22,500.00	
93	Bicycle Rack (Install Only)	3	EA	425.00	$1,275.00	700.00	$2,100.00	
94	Soil Preparation	18697	S.F.	0.60	$11,218.20	0.50	$9,348.50	
95	Tree (15 Gallon)	236	EA	50.00	$11,800.00	50.00	$11,800.00	
96	Shrub (1 Gallon)	168	EA	10.00	$1,680.00	10.00	$1,680.00	
97	Root Barrier	181	SETS	120.00	$21,720.00	120.00	$21,720.00	
98	Mulch	306	C.Y.	30.00	$9,180.00	30.00	$9,180.00	
99	Maintenance, Guarantee and Replacement	1	L.S.	15,000.00	$15,000.00	18,500.00	$18,500.00	
100	Irrigation Point of Connection	4	EA	3,000.00	$12,000.00	2,700.00	$10,800.00	
101	Backflow Device	4	EA	850.00	$3,400.00	4,300.00	$17,200.00	
102	Relocate Irrigation Point of Connection	1	L.S.	2,100.00	$2,100.00	2,500.00	$2,500.00	
103	Irrigation System	31680	S.F.	7.00	$221,760.00	7.00	$221,760.00	
104	Irrigation System Trench Across Intersection	6	EA	13,000.00	$78,000.00	5,000.00	$30,000.00	
105	Colored Concrete Pavement	1245	S.F.	14.00	$17,430.00	10.00	$12,450.00	
106	Creeping Wild Rye (Protection Fencing)	770	L.F.	15.00	$11,550.00	5.50	$4,235.00	
107	Creeping Wild Rye (Removal/Harvesting)	2426	S.F.	3.00	$7,278.00	3.00	$7,278.00	
108	Creeping Wild Rye (Replanting)	2426	S.F.	3.00	$7,278.00	3.00	$7,278.00	
109	Riparian Enhancement Planting Area 1	1	L.S.	26,000.00	$26,000.00	26,000.00	$26,000.00	
110	Riparian Enhancement Planting Area 2	1	L.S.	15,000.00	$15,000.00	15,000.00	$15,000.00	
SIGNS AND MARKINGS								
111	Relocate Street Sign	26	EA	150.00	$3,900.00	150.00	$3,900.00	
112	Relocate Utility Marker Paddle	23	EA	75.00	$1,725.00	75.00	$1,725.00	
113	Install Street Sign	127	EA	150.00	$19,050.00	150.00	$19,050.00	
114	Install Bollard	23	EA	750.00	$17,250.00	1,000.00	$23,000.00	
115	Pedestrial Barricade	6	EA	750.00	$4,500.00	750.00	$4,500.00	
116	Thermoplastic Pavement Striping	9025	L.F.	0.75	$6,768.75	0.76	$6,859.00	
117	Thermoplastic Pavement Striping (2' wide in Crosswalks)	492	L.F.	6.50	$3,198.00	6.50	$3,198.00	
118	Thermoplastic Pavement Striping (Refresh)	500	L.F.	0.75	$375.00	0.75	$375.00	
119	Thermoplastic Pavement Marking	787	S.F.	3.50	$2,754.50	4.00	$3,148.00	
120	Install Truncated Domes	511	S.F.	46.00	$23,506.00	38.00	$19,418.00	
121	Install Truncated Domes on Existing Curb Ramp	56	S.F.	65.00	$3,640.00	50.00	$2,800.00	
122	Relocate Bus Stop and Sign	1	EA	2,500.00	$2,500.00	4,600.00	$4,600.00	
123	Relocate Bus Stop and Structure	1	EA	5,500.00	$5,500.00	5,800.00	$5,800.00	
				BASE BID TOTAL	**$6,123,186.70**	**BASE BID TO**	**$6,689,689.00**	
BID ALTERNATE 1 - Wine Country Avenue to Trower Avenue								
124	Aggregate Base (8" for path and shoulders/buffers)	758	C.Y.		$0.00		$0.00	
125	Hot Mix Asphalt (HMA) (2.5" for path construction)	340	TONS		$0.00		$0.00	
126	1-Inch Minus Aggregate	66	C.Y.		$0.00		$0.00	
127	Adjust Water Valve Box and Lid to Grade	4	EA		$0.00		$0.00	
128	Salvador Channel Bridges and Mid-Span Platform	1	L.S.		$0.00		$0.00	
129	4' Chain-Link Fence	65	L.F.		$0.00		$0.00	
130	Retaining Wall (Geowall Max)	860	S.F.		$0.00		$0.00	
131	Soil Preparation	2078	S.F.		$0.00		$0.00	
132	Tree (15 Gallon)	27	EA		$0.00		$0.00	
133	Root Barrier	20	SETS		$0.00		$0.00	
134	Mulch	34	C.Y.		$0.00		$0.00	
135	Irrigation System	3520	S.F.		$0.00		$0.00	
136	Mile Post	2	EA		$0.00		$0.00	
				BASE BID TOTAL	**$0.00**	**BASE BID TO**	**$0.00**	
BID ALTERNATE 2 - Substitute for Ameristar Railing (Line 73-74)								
137	4' Chain-Link Fence	6345	L.F.	30.00	$190,350.00	20.00	$126,900.00	
138	4' Chain-Link Gate	1	EA	1,500.00	$1,500.00	2,500.00	$2,500.00	
				BASE BID TOTAL	**$191,850.00**	**BASE BID TO**	**$129,400.00**	
BID ALTERNATE 3 - Chainlink Fence along R/W								
139	6' Chain-Link Fence	1410	L.F.	33.00	$46,530.00	25.00	$35,250.00	
				BASE BID TOTAL	**$46,530.00**	**BASE BID TO**	**$35,250.00**	
	BID TOTAL BASE AND ALTS				**$6,361,566.70**		**$6,854,339.00**	
	BID AVERAGE							
	Amount + or - of Engrs. Est.				$588,922.45		$1,081,694.75	
	Percent Difference + or -				10%		19%	
	RANKING				1		2	

Preliminary Estimate Section A (from Madison to Whitehall)

	Unit	Unit Price	Quantity	Cost
Section A1 (Stationing 00+00 - 56+50) (Length: 5650 LF)				
Striping and signing for Class III route in roadway	LF	$ 25	1,000	$ 25,000
Class I park tread trail (10' wide) on agricultural road	LF	$ 210	3,050	$ 640,500
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or highway shoulder	LF	$ 55	1,600	$ 88,000
Trail through a wet area	LF	$ 100	465	$ 46,500
New high-vis crosswalk with pedestrian signals	EA	$ 91,100	2	$ 182,200
New public rail crossing	LS	$ 800,000	1	$ 800,000
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	2	$ 800
A1 Construction Cost				$ 1,788,143
15% construction overhead costs + 20% contingency			35%	
Adjusted Section A1 Total Cost				**$2,413,993**
Section A2 (Stationing 56+50 - 110+00) (Length: 5350 LF)				
Class I park tread trail (10' wide) on agricultural road	LF	$ 210	450	$ 94,500
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or highway shoulder	LF	$ 55	4,400	$ 242,000
Trail through a wet area	LF	$ 100	535	$ 53,500
Relocation of ditch adjacent to trail	LF	$ 50	200	$ 10,000
New/relocated culvert across trail	LF	$ 300	40	$ 12,000
Trail bridge	LF	$ 3,250	40	$ 130,000
Driveway crossing	EA	$ 5,000	2	$ 10,000
Mid-block crossing of public road	EA	$ 13,500	1	$ 13,500
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	5	$ 2,000
A2 Construction Cost				$ 572,643
15% construction overhead costs + 20% contingency			35%	
Adjusted Section A2 Total Cost				**$ 773,068**

	Unit	Unit Price	Quantity	Cost
Section A3 (Stationing 110+00 - 165+50) (Length: 5550)				
Class I park tread trail (10' wide) on agricultural road	LF	$ 210	4,850	$ 1,018,500
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or high-way shoulder	LF	$ 55	1,500	$ 82,500
Trail through a wet area	LF	$ 100	600	$ 60,000
Public road crossing at/near intersection	EA	$ 5,000	1	$ 5,000
Mid-block crossing of public road	EA	$ 13,500	1	$ 13,500
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	3	$ 1,200
A3 Construction Cost				$ 1,185,843
15% Construction overhead costs + 20% contingency			35%	
Adjusted Section A3 Total Cost				**$1,600,888**
Section A4 (Stationing 165+50 - 214+00) (Length: 4850)				
Class I park tread trail (10' wide) on agricultural road	LF	$ 210	3,270	$ 686,700
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or high-way shoulder	LF	$ 55	1,580	$ 86,900
Trail through a wet area	LF	$ 100	485	$ 48,500
Relocation of ditch adjacent to trail	LF	$ 50	320	$ 16,000
New/relocated culvert across trail	LF	$ 300	10	$ 3,000
Trail bridge	LF	$ 3,250	30	$ 97,500
Driveway crossing	EA	$ 5,000	3	$ 15,000
Public road crossing at/near intersection	EA	$ 5,000	1	$ 5,000
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	12	$ 4,800
A4 Construction Cost				$ 968,543
15% construction overhead costs + 20% contingency			35%	
Adjusted Section A4 Total Cost				**$1,307,533**

	Unit	Unit Price	Quantity	Cost
Section A5 (Stationing 214+00 - 292+70) (Length: 7870 LF)				
Class I park tread trail (10' wide) on agricultural road	LF	$ 210	170	$ 35,700
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or highway shoulder	LF	$ 55	7,700	$ 423,500
Trail through a wet area	LF	$ 100	787	$ 78,700
Relocation of ditch adjacent to trail	LF	$ 50	1,950	$ 97,500
Large pipe under trail that doesn't drain to creek	LF	$ 400	580	$ 232,000
New/relocated culvert across trail	LF	$ 300	55	$ 16,500
Driveway crossing	EA	$ 5,000	9	$ 45,000
Public road crossing at/near intersection	EA	$ 5,000	2	$ 10,000
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	22	$ 8,800
Adjust water manhole to grade	EA	$ 1,000	1	$ 1,000
A5 Construction Cost				$ 953,843
15% construction overhead costs + 20% contingency			35%	
Adjusted Section A5 Total Cost				**$1,287,688**
Section A6 (Stationing 292+70 - 338+30) (Length: 4560 LF)				
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or highway shoulder	LF	$ 55	4,560	$ 250,800
Trail through a wet area	LF	$ 100	456	$ 45,600
Relocation of ditch adjacent to trail	LF	$ 50	1,650	$ 82,500
Large pipe under trail with drain to creek	LF	$ 150	1,080	$ 162,000
Large trenched pipe under trail that connects existing ditch to Bale Slough	LF	$ 200	150	$ 30,000
New/relocated culvert across trail	LF	$ 300	20	$ 6,000
Trail bridge	LF	$ 3,250	45	$ 146,250
Driveway crossing	EA	$ 5,000	4	$ 20,000
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	11	$ 4,400
A6 Construction Cost				$ 752,693
15% construction overhead costs + 20% contingency			35%	
Adjusted Section A6 Total Cost				**$1,016,135**
Section A1 - A6 Construction Cost				$ 6,221,707
Adjusted Section A1 - A6 Total Cost				**$8,399,305**

Preliminary Estimate Section B (from Whitehall to Sulphur Springs Road)

Section B (Stationing 342+00 - 425+20) (Length: 8320 LF)	Unit	Unit Price	Quantity	Cost
Striping and signing for Class III route in roadway	LF	$ 25	820	$ 20,500
Class I asphaltic cement (A.C.) trail (10' wide) in rail ROW or highway shoulder	LF	$ 55	5,650	$ 310,750
Widening existing 5' sidewalk to 10' Class I trail on AC/concrete surface	LF	$ 150	700	$ 105,000
Widening existing 5' sidewalk to 10' Class I trail on landscape/ soil surface	LF	$ 125	220	$ 27,500
Trail through a wet area	LF	$ 100	100	$ 10,000
Driveway crossing	EA	$ 5,000	20	$ 100,000
Public road crossing at/near intersection	EA	$ 5,000	3	$ 15,000
Tree removal	LS	$ 36,000	0.1	$ 5,143
Utility reset or relocation	EA	$ 400	29	$ 11,600
Restriping parking lot	SF	$ 10	43,500	$ 435,000
Flora Springs parking: adding parking space exit	LS	$ 2,500	1	$ 2,500
Remove pavement to create space for trail	SF	$ 3	3,750	$ 11,250
Remove and reconstruct existing planter	LF	$ 64	300	$ 19,200
Relocate backflow preventer	LS	$ 5,000	1	$ 5,000
B Construction Cost				$ 1,078,443
15% construction overhead costs + 20% contingency			35%	
Adjusted Section B Total Cost				**$ 1,455,898**

Total Section A & B (County Section - Madison St to Sulphur Springs Road) 8.05 miles				
Section A1 - A6 and Section B Construction Cost				$ 7,300,150
Trailpeople Estimate Total*				**$9,855,203**
Construction increase for construction in 2025 @ 2.5%/year				$ 1,295,055
Adjusted total for construction in 2025				$11,150,258
Design, Engineering and Environmental (25%)				$ 2,787,564
Right of Way (allowance)				$ 1,000,000
Construction Management (5%)				$ 565,000
Caltrans Review (3%)				$ 316,400
Permits				$ 75,000
Vine Trail Shelters and signage (allowance)				$ 275,000
Total				**$16,169,222**
		Cost per mile		$ 2,008,599
* Includes 15% overhead and 20% contingency				

Prepared by

TrailPeople
Landscape Architects and Planners

Prepared for

VINE TRAIL
NAPA VALLEY