



Garcia and Associates



To: Molly Sandomire, TRC

From: Eric Jepsen

Date: January 15, 2016

RE: Fulton-Fitch Reconductoring Project, Water Crossing Mapping

Garcia and Associates was contracted to survey access route water crossings and work areas near wetland and riparian habitats within the Fulton-Fitch Reconductoring Project area in Sonoma County. Included in this memo are a summary of the completed surveys, two tables summarizing access route water crossings and work areas, a map of the survey area and results, and photo documentation.

Methods

GANDA biologists Eric Jepsen and Karen Klinger drove and/or walked each access route identified on project maps to identify water crossings. Each existing access road and all overland access routes indicated by solid yellow and dotted yellow lines on current mapping were surveyed to identify water crossings. During the survey, we recorded the depth and width of the crossing, whether it could be crossed using steel plates (or similar means), or if fill materials or other methods may be required to provide access. We also recorded data on existing culvert crossings to determine if they may need repair or replacement to allow project access. Data collected for culverts included the type of culvert (e.g. corrugated metal, clay or concrete), approximate size and condition (e.g. rusty, dented, new etc.). For each crossing, we collected GPS coordinates and photographs to document the location and existing condition.

During field surveys, we visited work locations near wetland and riparian habitats. These included poles, guard structures, pull sites, laydown areas, and landing zones. At each of these locations we recorded the distance from the work sites to the nearest wetland and riparian habitats to determine the potential for impact to these areas and the need for permitting. For each work location, we recorded GPS coordinates of the wetland or riparian habitat boundaries and

the project feature. We also collected photographs to document these locations. We surveyed a total of 23 access road crossing locations and 23 work areas that occur in the vicinity of wetland or riparian areas. This data collection effort focused on unimproved roads and overland routes. We did not collect data on culverts along heavily used main roads and driveways through vineyards, unless the water crossing required additional improvements to accommodate equipment or required additional biological review. We also excluded from this survey, locations south of Faught Road, which have already been included in previous surveys conducted by Mike Farmer of TRC.

Results

Access road water crossings and work areas within 50 feet of riparian or wetland areas are present throughout the project alignment. At the southern end of the project, most crossings and work areas were accessible by way of established roads or through vineyards, such that large trucks, bucket trucks, and heavy machinery could be used to access the site. Further north in the alignment many areas were only accessible by foot or with small off-highway vehicles. In these areas, there were also multiple locations, for which the following permits are required: U.S. Army Corps of Engineers (USACE) 404 permit, California Department of Fish and Wildlife (CDFW) 1602 Lake or Streambed Alteration (LSA) Agreement, and Regional Water Quality Control Board (RWQCB) 401 permit. Permit recommendations are given in Tables 1 and 2. Permit recommendations and suggested road restrictions are predicated on the assumption that contractors and personnel may access the project area at any time of the year. Some permits may not be required if areas are accessed during the dry season.

For ease of organization, we grouped crossing and work areas into regional areas, starting at the south end of the Fulton-Fitch line. These areas and pertinent access information for each area is presented below.

Fulton Substation to Faught Road (Poles 1-14)

This area was not surveyed because it had already been surveyed by Mike Farmer of TRC.

Faught Road to Shiloh Ranch Regional Park (Poles 15 - 23)

The alignment is fully accessible with large trucks and equipment by Faught Road (paved) and vineyard access roads (gravel). Parking is available on the road shoulder and at pull-outs.

Shiloh Ranch Regional Park (Poles 25 - 30)

Vineyard access roads, trails within Shiloh Ranch Regional Park, and a private driveway afford access to large trucks and equipment for Pole 23 and Poles 25, 26, and 30. Poles 27 and 28 are only accessible by way of narrow trails within Shiloh Ranch Regional Park, which are not suitable for large vehicles. Pole 28 is at the top of a steep trail that is not suitable for vehicle access.

Shiloh Ridge Road to Chalk Hill Road (Poles 31 - 41)

Though the alignment itself crosses both ponds and waterways, there are no mapped water crossings or work areas within 50 feet of water resource areas. No surveys were conducted in

this portion of the alignment.

Chalk Hill Road to Foothill Regional Park (Poles 42-52)

Poles 42 to 52 are accessible from Pleasant Avenue or Chalk Hill Road. When approaching through the vineyard at 385 Pleasant Avenue, the initial approach is through flat gravel vineyard access roads. There are a series of gates between vineyard and wooded areas, through which the gravel road extends. After the first gate at the bottom of the hill there is a curve approximately 550 feet west of Pole 42. Starting at this curve, there is an approximately 300-foot stretch of incline in which seasonal surface flow appears to occur. We have identified the water feature here as SEW44. Wattles are installed along this section of road and were replaced recently with new wattles during fall of 2015. This water flow appears to be related to the location of two large water tanks adjacent to the vineyard at the top of the incline. Given the current management of this road, coordination with the landowner is advised for necessary road improvements. This access road follows the ridge line, eventually connecting with a paved AT&T access road off of Chalk Hill Road.

Foothill Regional Park (Poles 53-55)

Poles within Foothill Regional Park are accessible through the Park entrance and along a series of bicycle and foot paths. We did not extensively follow all of these paths; however, access appeared to be limited to small paths that may only accommodate off-highway vehicles. There are also overland access routes from the AT&T access road to the south and Mt. Weske Drive to the north.

Mt. Weske Drive to Brooks Road (Poles 57-62)

Immediately east of the access gate at the end of Mt. Weske Drive is the mapped seasonal wetland SW1, which the two-track access road crosses before heading up the hill. Between SW1 and the Fulton-Fitch alignment there is an approximately 1000-foot section of access road which is crossed and re-crossed by the seasonal watercourse we identified as SEW45. This access route is passable in the dry season with standard-sized vehicles to all mapped work areas in this part of the alignment. Road improvements may be necessary to accommodate trucks and heavy equipment during the rainy season. Permits, including USACE 404, RWQCB 401, and CDFW 1602 may be required for work overlapping or crossing seasonal wetlands SW1 through SW3 and SEW45, dependent upon necessary improvements to roadways and work areas. The laydown area which is mapped immediately east of the intersection of the alignment and Brooks Road is easily accessible to large trucks and equipment.

Brooks Road to the Lazy P Ranch (Poles 63-67)

The access road through the Lazy P Ranch was not accessible due to the locked gate. The overland route between Poles 66 and 67 were surveyed. This route is an unimproved two-track which crosses the seasonal watercourse SEW3 in three locations and SEW2 in one location. These locations are crossable with a 4-wheel-drive vehicle without improvements during the dry season or otherwise with steel plates during the wet season. The final access route to both poles appears to be strictly by foot or with small off-highway vehicles. Permits USACE 404, RWQCB 401, and CDFW 1602 may be required for work overlapping or crossing seasonal watercourses

SEW2 and SEW3, dependent upon necessary improvements to roadways and work areas.

Windsor Oaks Vineyard (Poles 68-73)

The overland access routes for Poles 68 through 73 are accessible through the Windsor Oaks Vineyard. Poles 68 and 69 are both only accessible with small off-highway vehicles or by foot. Pole 70 is accessible with standard-sized vehicles, as are Poles 71 to 73, which occur adjacent to the vineyard.

Weston Ranch (Poles 74-79)

The access road to the Weston Ranch is an improved, gravel road with multiple culverts and one bridge crossing over a perennial stream with standing water within the mapped riparian woodland RIWO12. The bridge is lined with PG&E cones, covered with steel plates, and flagged with signage stating “No Wide Heavy Trucks”. Poles 74 through 76 are accessible only by foot or with small off-highway vehicles along an overland route beginning at the Weston Ranch driveway. Poles 77 through 79 may be accessed with standard-sized vehicles and equipment.

Grant Road/Saint George Winery (Poles 80-89)

The overland route from the end of Grant Road to Poles 80 through 89 crosses two seasonal watercourses, SEW 5 and SEW 6. The preliminarily identified overland route between Poles 85 and Pole 86 crosses SEW 5 where the banks have become steep since the overland route was first identified; therefore an alternate route is recommended approximately 130 feet east of the mapped route (Figure 1). Standard-sized vehicles and equipment may be used on these access roads.

Minaglia Ranch (Poles 90-91, 104).

This area was not surveyed because there were no mapped water crossings for the overland route off Minaglia Road.

Crossings

Most access route crossings were in good condition and require no road improvements. There were 23 crossing locations, of which 7 had culverts. No culverts appeared to require improvement. Most crossing points occurred in areas with ephemeral or seasonal flows. Ideally crossing at these locations should occur during dry season or times of low flow. Nine crossing locations require some level of modification to accommodate construction traffic. In most instances, steel plates would suffice in stabilizing the crossing point. Some locations may require additional gravel or installation of water bars to ensure accessibility. All crossings occurred in potential California red-legged frog dispersal habitat. However, two crossings (FFX13 and FFS19) occur adjacent to potential breeding areas. A complete summary of access route crossings is presented in Table 1 and in Figure 1. All photos of water crossings are presented in Appendix A, at the end of this document.

Work Areas

There were 21 locations at which work areas occurred within 50 feet of wetland or riparian habitat. Of these locations, 9 work areas overlapped with the habitat feature. Nonetheless impacts to wetland or riparian habitats are anticipated to be minimal or non-existent at most locations. A complete summary of surveyed work areas is presented in Table 2 and in Figure 1. All photos of work areas are presented in Appendix A, at the end of this document.

Table 1. Fulton-Fitch water crossings

ID	Northing	Easting	Feature Name	Feature Type	Depth (feet)	Width (feet)	Description	Culvert Information	CRLF	Avoidance and Minimization Recommendation	Permit Recommendation
FFX1	4266581	519686	SEW44	Seasonal watercourse	0-1	10	Water flows from vicinity of storage tanks, sheet flow along road for approximately 40 feet, then off; wattles are in place, presumably to slow water flow (dry at time of survey)	No Culvert	Dispersal	Access when road is dry; full-size vehicles okay	No permitting required
FFX2	4268737	517974	SW1	Seasonal Wetland	1	15	Unimproved road crosses through midpoint in narrow seasonal wetland	No Culvert	Dispersal	Access during dry season; may be crossed without improvement full size vehicles okay; wet season crossing may require steel plates and/or gravel fill	USACE 404, RWQCB 401, and CDFW 1602 permits required
FFX3	4268730	518099	SEW45	Seasonal Watercourse	1	2-10	Ephemeral water course parallels road, crossing with sheet flow and some erosion for 70ft along roadway	No Culvert	Dispersal	Access during dry season; steel plates and/or gravel; full size vehicles okay.	USACE 404, RWQCB 401, and CDFW 1602 permits required
FFX4	4268738	518198	SEW45	Seasonal Watercourse	1	4	Water course parallels road, crossing and flowing for 4ft along roadway	No Culvert	Dispersal	Access during dry season; steel plates and/or gravel; full size vehicles okay.	USACE 404, RWQCB 401, and CDFW 1602 permits required
FFX5	4269100	518174	SW2	Seasonal Wetland	0	10	Water flow not evident during dry season survey	No Culvert	Dispersal	Access during dry season; steel plates; full size vehicles okay.	USACE 404, RWQCB 401, and CDFW 1602 permits required
FFX6	4269385	517946	SW3	Seasonal Wetland	0	10	Water flow not evident during dry season survey	No Culvert	Dispersal	Access during dry season; for wet season: steel plates; full size vehicles okay.	Unless vehicles can bypass wetland, USACE 404 RWQCB 401, and CDFW 1602 permits required
FFX7	4270606	517116	SEW4	Seasonal Watercourse	2	3	Not advisable; steep ravine	No Culvert	Dispersal	Not crossable with any vehicle or equipment. If a vehicle makes it down the ravine, use steel plates or similar	If a vehicle actually makes it down the ravine and crosses the seasonal watercourse, USACE 404 RWQCB 401, and CDFW 1602 permits required

ID	Northing	Easting	Feature Name	Feature Type	Depth (feet)	Width (feet)	Description	Culvert Information	CRLF	Avoidance and Minimization Recommendation	Permit Recommendation
FFX8	4270214	517337	SEW3	Seasonal Watercourse	2-4	8	Dirt road drops into bottom of ravine and crosses seasonal watercourse/creek bed multiple times before reaching work area	2.5ft diameter by 8ft, rusted steel pipe, non-functioning (filled in with sediment)	Dispersal	Access during dry season; steel plates; full size vehicles not recommended	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX9	4270176	517349	SEW3	Seasonal Watercourse	5	6	Water parallels road and cuts into bank adjacent to road	No Culvert	Dispersal	Steel plate; shoring of the bank may be necessary; full size vehicles okay	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX10	4270116	517377	SEW2	Seasonal Watercourse	1	6	Dirt road drops into bottom of ravine and crosses seasonal watercourse/creek bed multiple times before reaching work area	No Culvert	Dispersal	Access during dry season; steel plates and/or wooden beams; full size vehicles okay	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX11	4270108	517380	SEW2	Seasonal Watercourse	0-1	2	Dirt road drops into bottom of ravine and crosses seasonal watercourse/creek bed multiple times before reaching work area	No Culvert	Dispersal	Access during dry season; steel plates and/or wooden beams; full size vehicles okay	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX12	4270976	516794	RIWO9	Riparian Woodland	3-6	5	Major access road between vineyards, crosses seasonal creek at this location	1.5ft diameter, 20ft length, corrugated steel pipe in good condition	Dispersal	No Action	No permitting required.

ID	Northing	Easting	Feature Name	Feature Type	Depth (feet)	Width (feet)	Description	Culvert Information	CRLF	Avoidance and Minimization Recommendation	Permit Recommendation
FFX13	4271356	516636	RIWO10	Riparian Woodland	6	4	Major access road between vineyards, crosses at drainage point of permanent pond	4ft diameter, 40ft length concrete-reinforced corrugated steel rusted at bottom	Breeding	No Action	CRLF monitor required for work occurring during breeding season
FFX14	4271561	515977	SEW8	Seasonal Watercourse	2	3	Overland access route with multiple stacks of dry, cut branches along the entire route	No Culvert	Dispersal	Access during dry season; off-highway vehicles only	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX15	4271545	516032	SEW8	Seasonal Watercourse	7	12	Bermed earth over culvert	2ft diameter, 45ft corrugated steel in good condition	Dispersal	Access during dry season; off-highway vehicles only	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX16	4271537	516037	RIWO11	Riparian Woodland	2	5	Crossing point at bottom of dry creek bed	No Culvert	Dispersal	Access during dry season; off-highway vehicles only	Recommend parking before reaching creek and walking to work area; if vehicles and road improvements are necessary, USACE 404, RWQCB 401, and CDFW 1602 permit may be required
FFX17	4271643	515648	D5	Drainage Ditch	1	2	Main entrance/driveway to Weston Ranch, well maintained, gravel	1ft diameter, 20ft corrugated steel in good condition	Dispersal	No Action	No permitting required.
FFX18	4271502	515341	SEW46	Seasonal Watercourse	1	1	Main entrance/driveway to Weston Ranch, well maintained, gravel	1ft diameter, 25ft pvc in good condition	Dispersal	No Action	No permitting required.

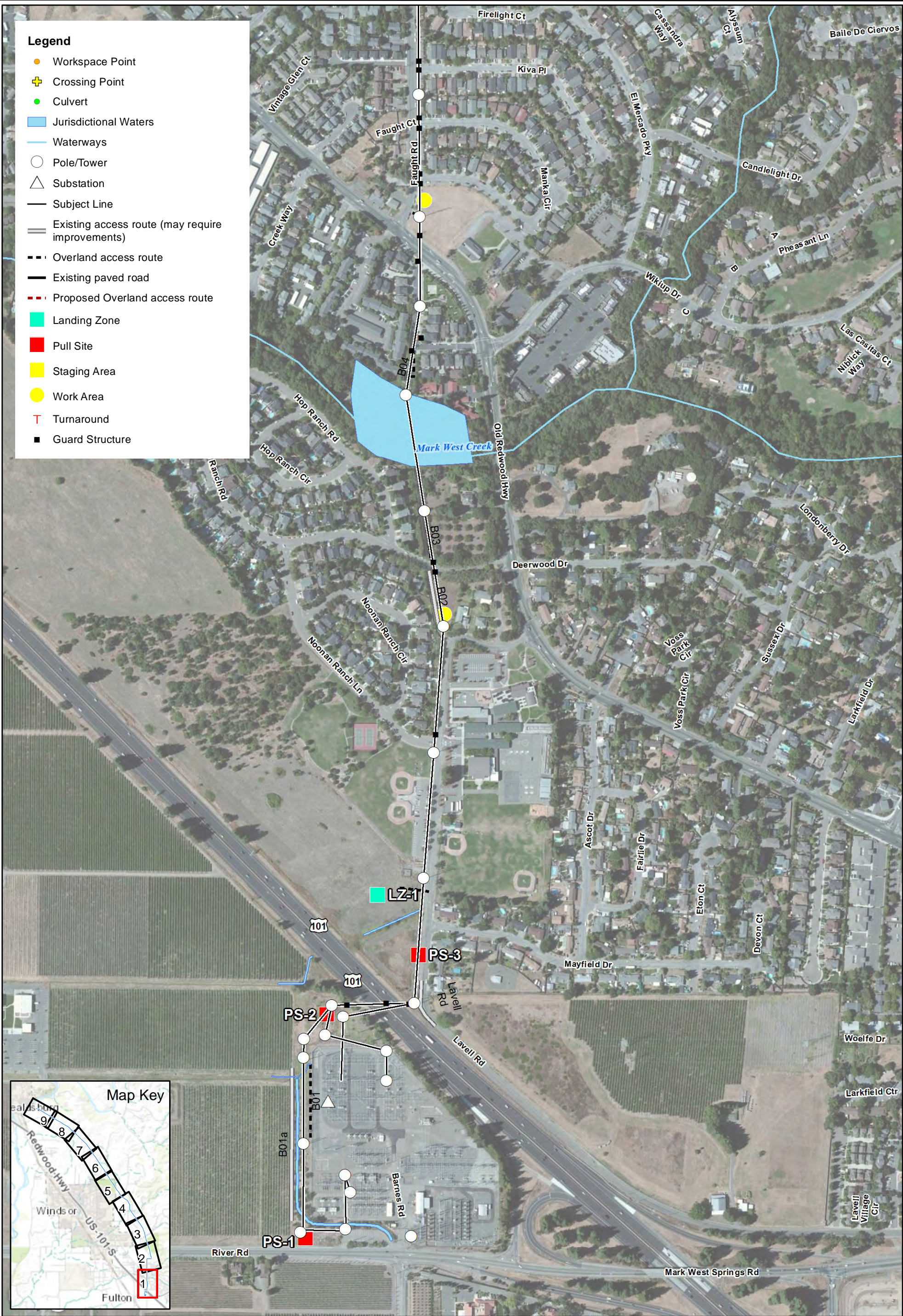
ID	Northing	Easting	Feature Name	Feature Type	Depth (feet)	Width (feet)	Description	Culvert Information	CRLF	Avoidance and Minimization Recommendation	Permit Recommendation
FFX19	4271488	515127	RIWO12	Riparian Woodland	13	8	Bridge crossing with several steel plates reinforcing the road surface and PG&E cones marking the route, and signage stating limit to small vehicles under 8 feet wide	7ft diameter, 11ft concrete eroded and in poor condition	Breeding	No heavy equipment	USACE 404, RWQCB 401, and CDFW 1602 permit required for improvements to bridge; CRLF monitor required for work occurring during breeding season
FFX20	4272741	514318	SEW6	Seasonal Watercourse	1-2	3-5	Unimproved dirt road crossing small, ephemeral stream	No Culvert	Dispersal	No Action	No permitting required.
FFX21	4272641	514353	SEW5	Seasonal Watercourse	1	3	Unimproved dirt road crossing small, ephemeral stream	No Culvert	Dispersal	No Action	No permitting required.
FFX22	4272703	514656	SEW5	Seasonal Watercourse	0-1	4	Overland route crossing small, ephemeral stream; mapped crossing point not suitable due to abrupt bank (see suggested alternate route)	No Culvert	Dispersal	Access during dry season; full size vehicles okay; recommended alternate overland route approximately 130 feet northeast of mapped route; stay high to avoid deep crossing	No permitting required.
FFX23	4272696	514615	SW13	Seasonal Wetland	0-1	30	Overland route crossing small seasonal wetland	No Culvert	Dispersal	Access during dry season; full size vehicles okay	No permitting required.

Table 2. Fulton Fitch work areas within 50 feet of water resource areas.

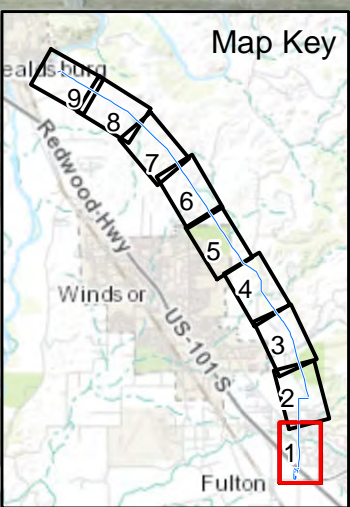
ID	Northing	Easting	Workspace	Feature Name	Feature Type	Distance to Feature (feet)	Workspace Elevation (relative to feature)	Potential CRLF Habitat	Permit Recommendation	Notes
FFW1	4263217	520886	Pole 20	SEW41	Seasonal Watercourse	24	Downslope	Dispersal	No permit required	Adjacent to road and vineyard; trucks and heavy equipment okay
FFW2	4263238	520886	PS4	D4	Drainage Ditch	0	Upslope	Dispersal	No permit required	Adjacent to road and vineyard; overlaps with drainage ditch; trucks and heavy equipment okay
FFW3	4263359	520907	PS4	SEW9A	Seasonal Watercourse	20	Downslope	Dispersal	No permit required	Adjacent to road and vineyard; overlaps with drainage ditch; trucks and heavy equipment okay; some vegetation removal may be required.
FFW4	4263363	520878	Pole 21	SEW9A	Seasonal Watercourse	10	Upslope	Dispersal	No permit required	Use vineyard access road; trucks and heavy equipment okay
FFW5	4263364	520877	PS5	SEW9A	Seasonal Watercourse	10	Upslope	Dispersal	No permit required	Use vineyard access road; trucks and heavy equipment okay
FFW6	4263378	521185	PS6	SEW1	Seasonal Watercourse	0	Even	Dispersal	No permit required	Within riparian woodland; trucks and heavy equipment okay; use BMP's to avoid impacts to waterway
FFW7	4263378	521185	Pole 23	SEW1	Seasonal Watercourse	0	Even	Dispersal	No permit required	Within riparian woodland; trucks and heavy equipment okay; use BMP's to avoid impacts to waterway
FFW8	4263453	521173	Pole 25	SEW9	Seasonal Watercourse	0	Even	Dispersal	No permit required	Use vineyard access road; trucks and heavy equipment okay
FFW9	4264108	521004	Pole 28	RIWO2	Riparian Woodland	0	Upslope	Dispersal	No permit required	Pedestrian access only; overland route not suitable for vehicles
FFW10	4266994	519716	Pole 46	SEW16	Seasonal Watercourse	40	Upslope	Dispersal	No permit required	Pedestrian or OHV access only; not suitable for large vehicles or equipment
FFW11	4267150	519624	Pole 47	SEW19	Seasonal Watercourse	80	Upslope	Dispersal	No permit required	Pedestrian or OHV access only; not suitable for large vehicles or equipment

ID	Northing	Easting	Workspace	Feature Name	Feature Type	Distance to Feature (feet)	Workspace Elevation (relative to feature)	Potential CRLF Habitat	Permit Recommendation	Notes
FFW12	4268070	518800	Pole 54	SEW22	Seasonal Watercourse	0	Upslope	Dispersal	No permit required	Pedestrian or OHV access only; not suitable for large vehicles or equipment; use BMP's to avoid impacts to waterway
FFW13	4268637	518433	Pole 57	SEW24	Seasonal Watercourse	20	Upslope	Dispersal	No permit required	Pedestrian or OHV access only; not suitable for large vehicles or equipment; use BMP's to avoid impacts to waterway
FFW14	4269385	517946	PS10	SW3	Seasonal Wetland	0	Even	Dispersal	USACE 404, RWQCB 401, and CDFW 1602 permit required	Trucks and heavy equipment okay; use BMP's to avoid impacts to waterway
FFW15	4269385	517946	Pole 62	SW3	Seasonal Wetland	0	Even	Dispersal	USACE 404, RWQCB 401, and CDFW 1602 permit required	Trucks and heavy equipment okay; use BMP's to avoid impacts to waterway
FFW16	4269652	517839	LZ5	RIWO8	Riparian Woodland	150	Upslope	Dispersal	No permit required	Trucks and heavy equipment okay; use BMP's to avoid impacts to waterway
FFW17	4270326	517304	Pole 67	SEW30	Seasonal Watercourse	0	Upslope	Dispersal	No permit required	Trucks and heavy equipment okay; use BMP's to avoid impacts to waterway
FFW18	4271159	516618	Pole 71	RIWO10	Riparian Woodland	0	Upslope	Dispersal	No permit required	Adjacent to vineyard; trucks and heavy equipment okay
FFW19	4271691	516038	Pole 75	SEW35	Seasonal Watercourse	30	Upslope	Dispersal	No permit required	Pedestrian or OHV access only; not suitable for large vehicles or equipment; use BMPs to avoid impacts to waterway
FFW20	4272535	514801	Pole 84	SEW40	Seasonal Watercourse	0	Upslope	Dispersal	No permit required	Trucks and heavy equipment okay; use BMPs to avoid impacts to waterway
FFW21	4272457	514968	Pole 83	SW12	Seasonal Wetland	50	Downslope	Dispersal	No permit required	Trucks and heavy equipment okay; use BMPs to avoid impacts to waterway

ID	Northing	Easting	Workspace	Feature Name	Feature Type	Distance to Feature (feet)	Workspace Elevation (relative to feature)	Potential CRLF Habitat	Permit Recommendation	Notes
FFW22	4272366	515106	Pole 82	SW11	Seasonal Wetland	0	Downslope	Dispersal	No permit required	Trucks and heavy equipment okay; use BMPs to avoid impacts to waterway
FFW23	4272858	514252	Pole 87	SW16	Seasonal Wetland	0	Downslope	Dispersal	No permit required	Trucks and heavy equipment okay; use BMPs to avoid impacts to waterway



- Legend**
- Workspace Point
 - ⊕ Crossing Point
 - Culvert
 - Jurisdictional Waters
 - Waterways
 - Pole/Tower
 - △ Substation
 - Subject Line
 - Existing access route (may require improvements)
 - - - Overland access route
 - Existing paved road
 - - - Proposed Overland access route
 - Landing Zone
 - Pull Site
 - Staging Area
 - Work Area
 - ⊥ Turnaround
 - Guard Structure



Source: Bing Maps Aerial; GANDA GIS 2015
 USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

* Routes were drawn to provide a preliminary centerline in order to establish a survey corridor

Project particulars are preliminary and subject to change with CPUC permitting, ground conditions and other project issues

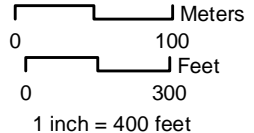
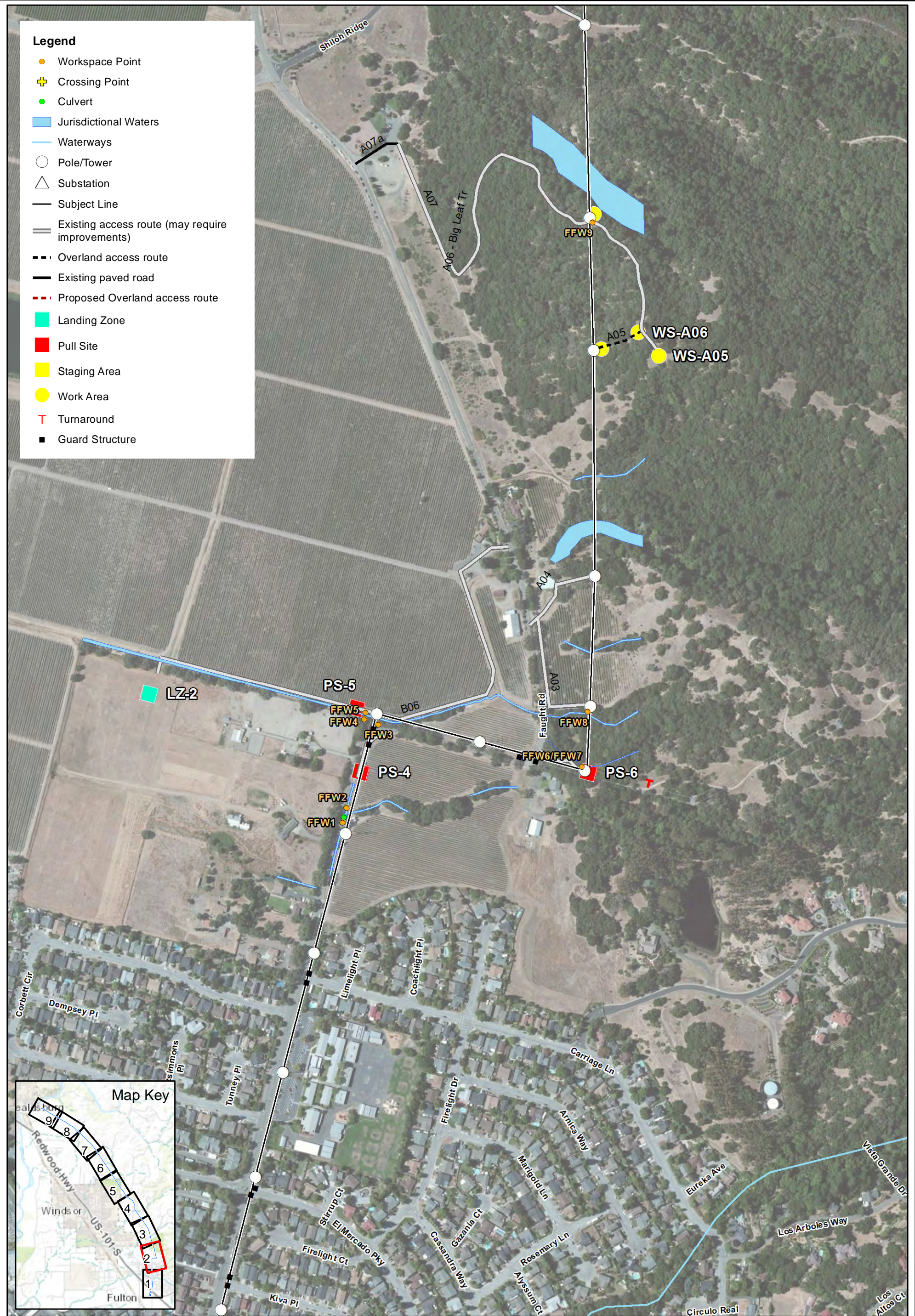


Figure 1. Water Crossings Map
 Fulton-Fitch Mountain Reconstructing Project



Source: Bing Maps Aerial; GANDA GIS 2015
USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

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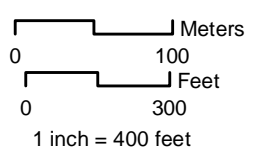
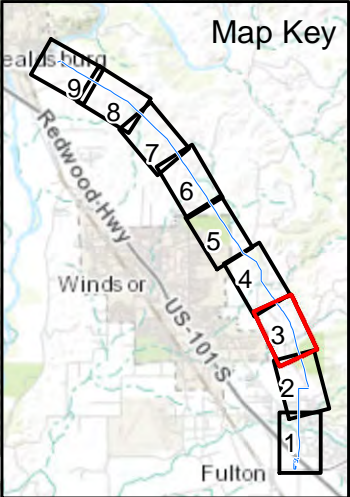
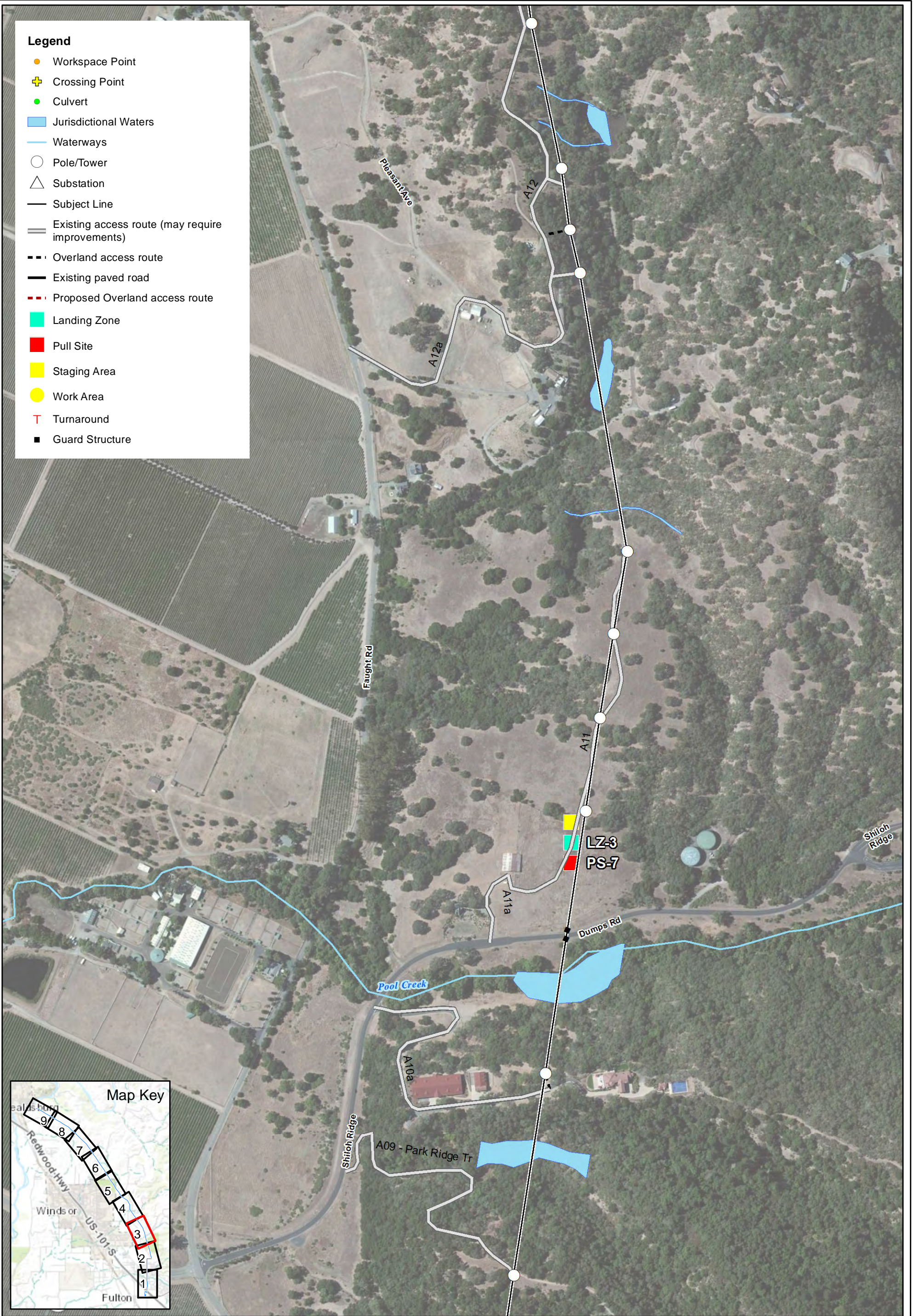


Figure 1. Water Crossings Map
Fulton-Fitch Mountain Reconductoring Project

Legend

- Workspace Point
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- Pole/Tower
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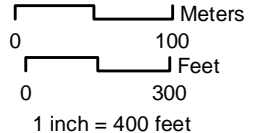
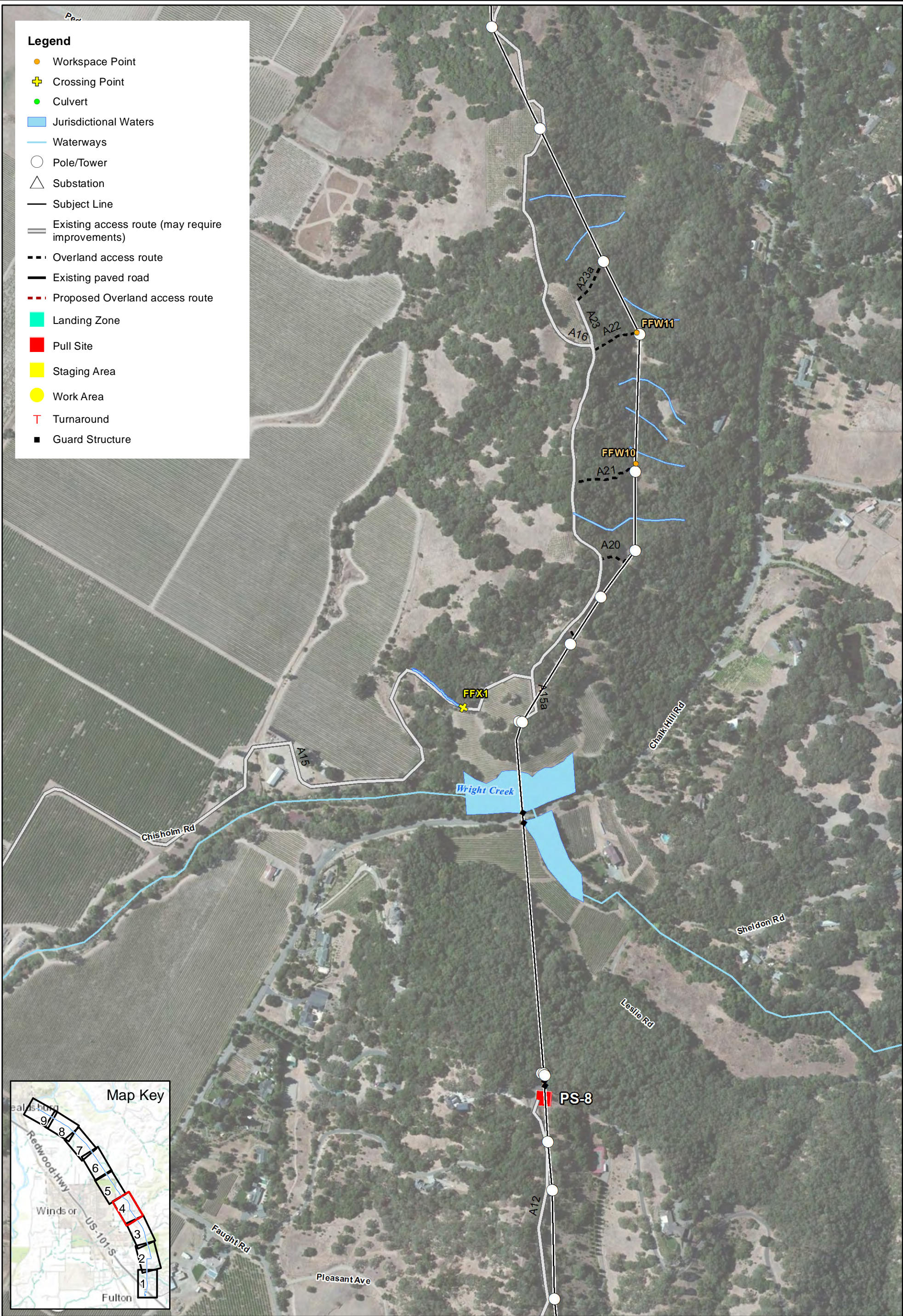
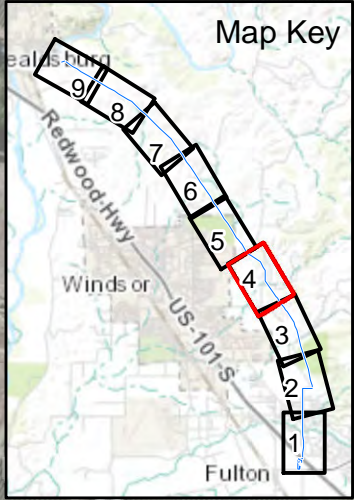


Figure 1. Water Crossings Map
Fulton-Fitch Mountain Reconstructing Project



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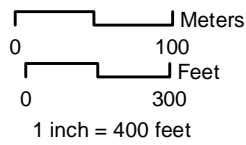
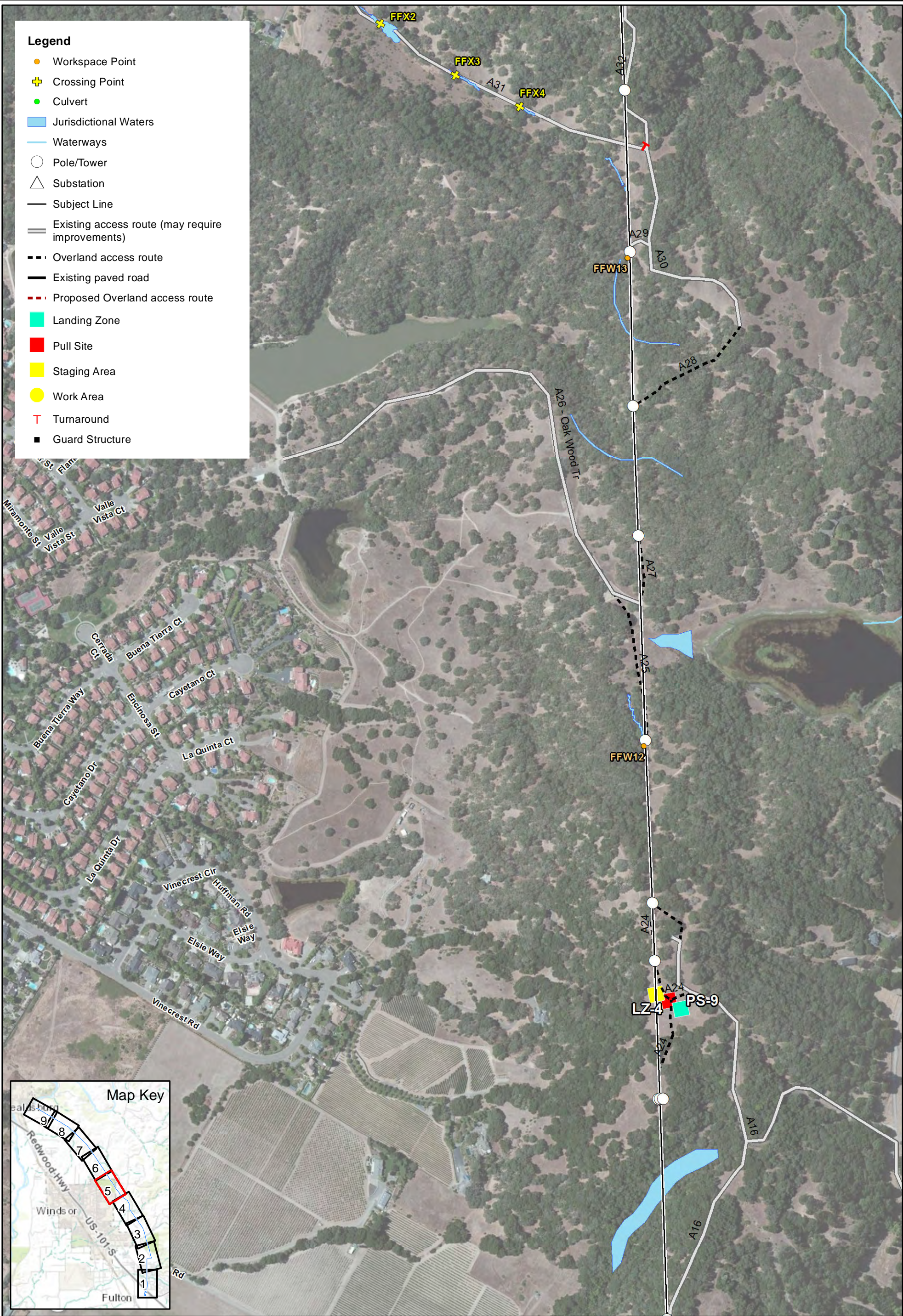


Figure 1. Water Crossings Map
 Fulton-Fitch Mountain Reconductoring Project

Sonoma County, CA
 Map 4 of 9



Source: Bing Maps Aerial; GANDA GIS 2015
 USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

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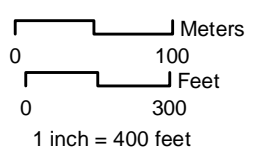
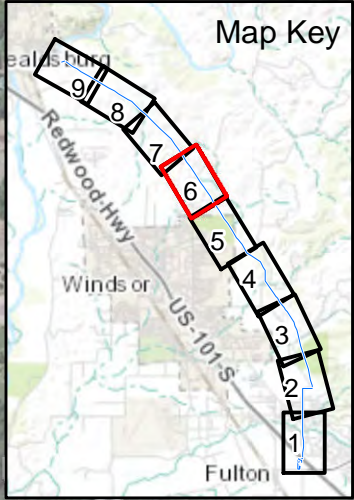
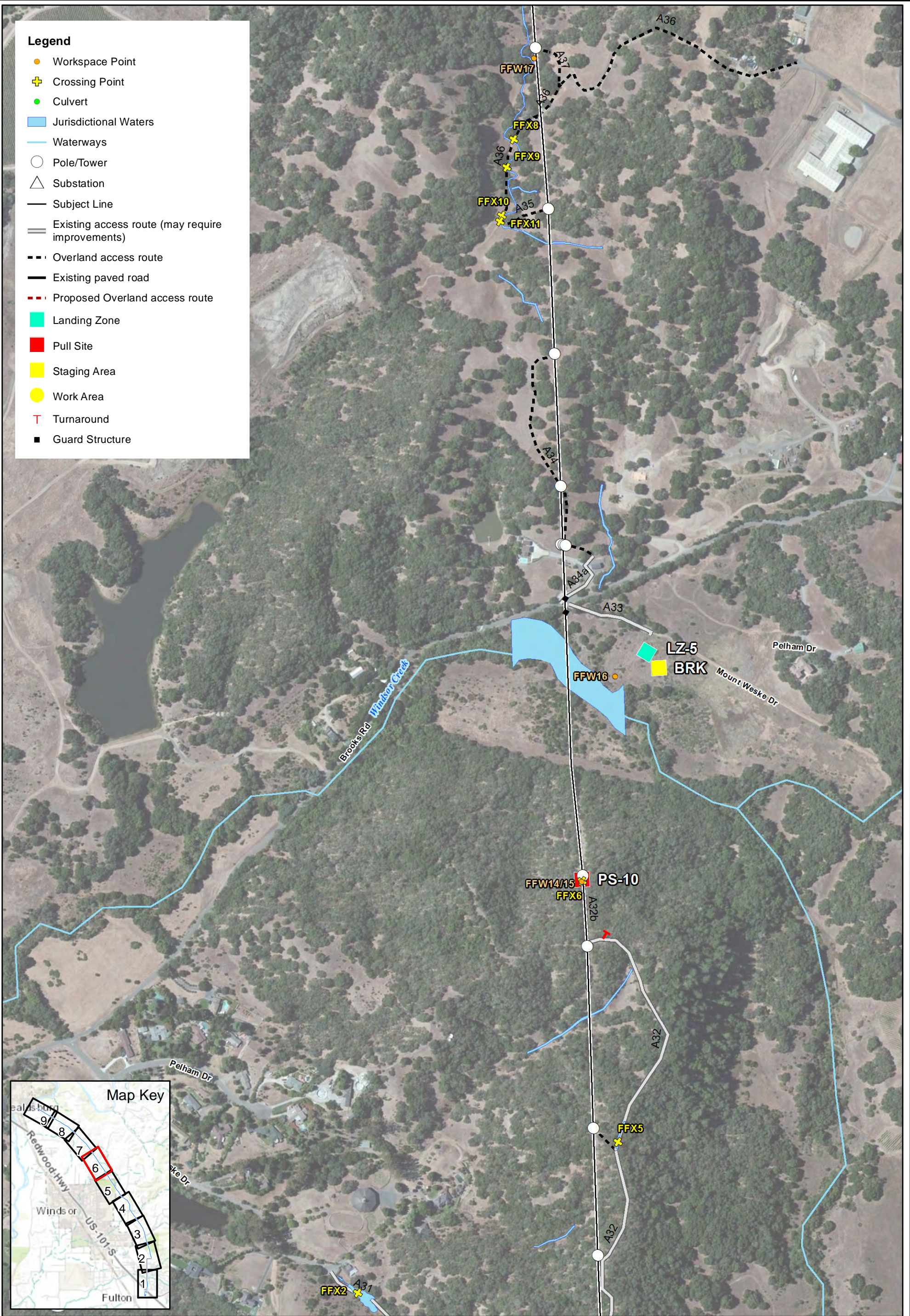


Figure 1. Water Crossings Map
 Fulton-Fitch Mountain Reconductoring Project

Legend

- Workspace Point
- ⊕ Crossing Point
- Culvert
- Jurisdictional Waters
- Waterways
- Pole/Tower
- △ Substation
- Subject Line
- Existing access route (may require improvements)
- - - Overland access route
- Existing paved road
- - - Proposed Overland access route
- Landing Zone
- Pull Site
- Staging Area
- Work Area
- ⊥ Turnaround
- Guard Structure



Source: Bing Maps Aerial; GANDA GIS 2015
 USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

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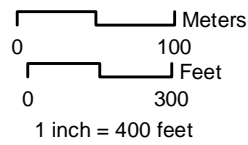
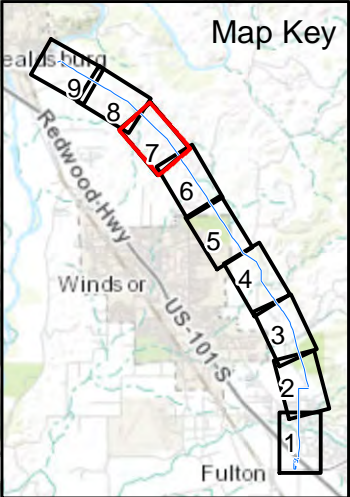
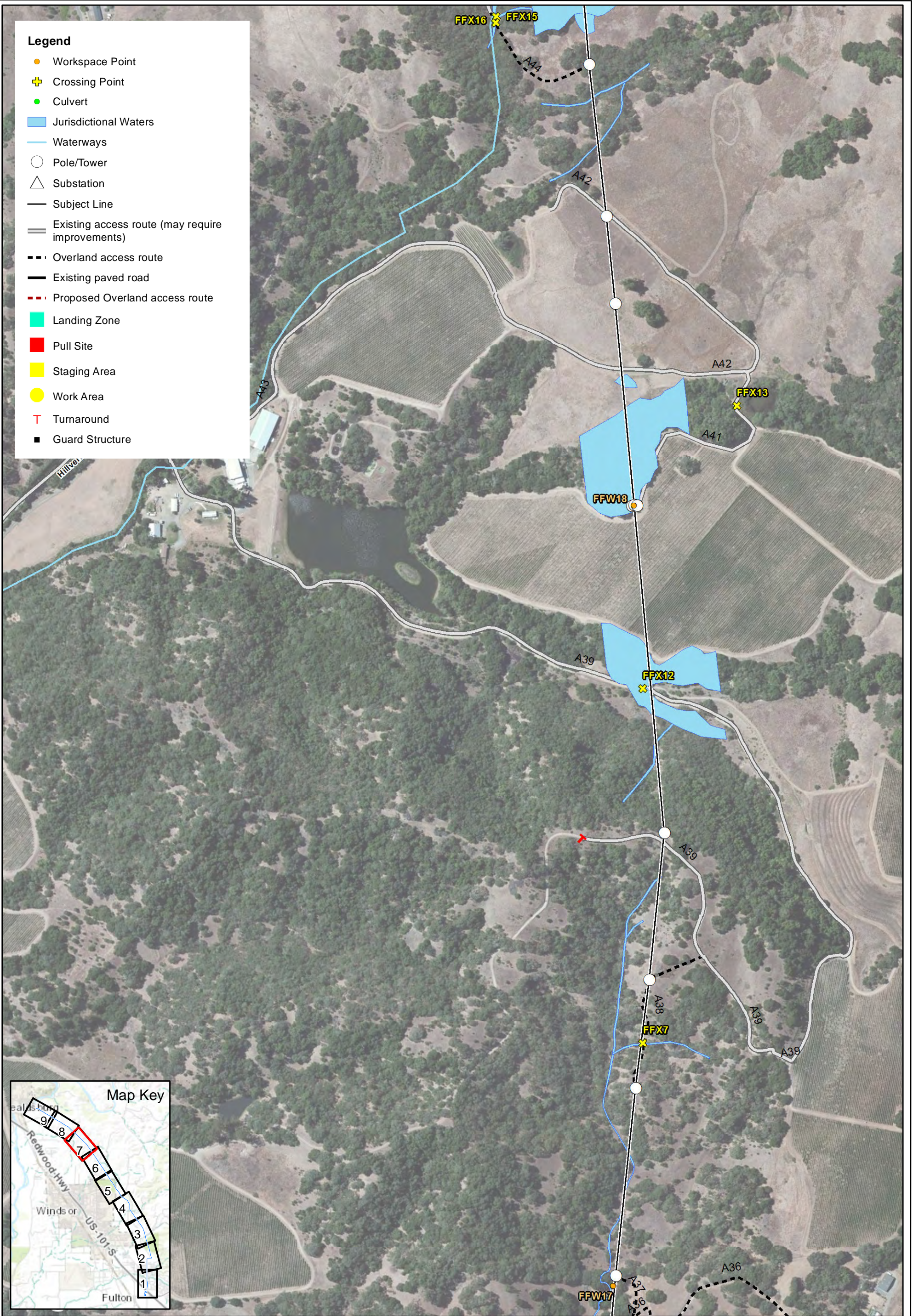


Figure 1. Water Crossings Map
 Fulton-Fitch Mountain Reconductoring Project

Sonoma County, CA
 Map 6 of 9

Legend

- Workspace Point
- ⊕ Crossing Point
- Culvert
- Jurisdictional Waters
- Waterways
- Pole/Tower
- △ Substation
- Subject Line
- Existing access route (may require improvements)
- - - Overland access route
- Existing paved road
- - - Proposed Overland access route
- Landing Zone
- Pull Site
- Staging Area
- Work Area
- ⊥ Turnaround
- Guard Structure



Source: Bing Maps Aerial; GANDA GIS 2015
USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

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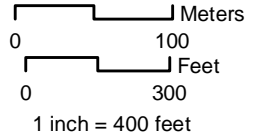
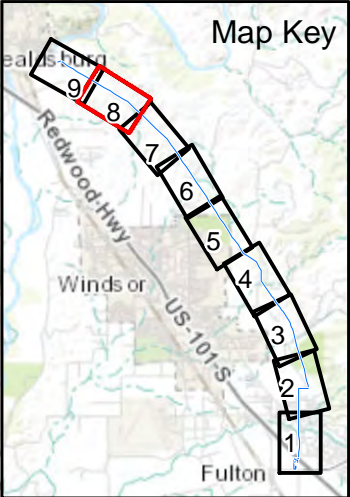
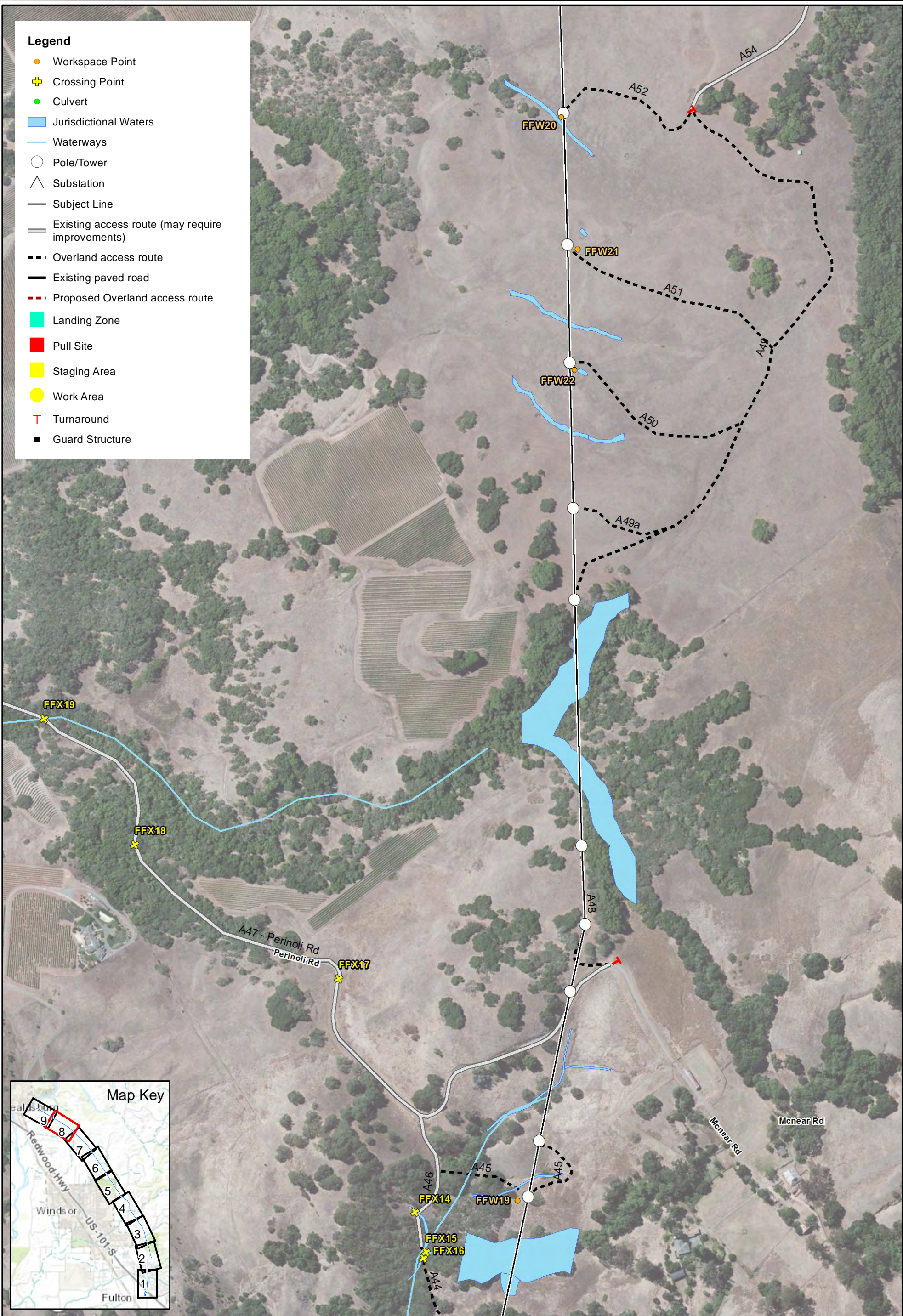


Figure 1. Water Crossings Map
Fulton-Fitch Mountain Reconstructing Project

Legend

- Workspace Point
- + Crossing Point
- Culvert
- Jurisdictional Waters
- Waterways
- Pole/Tower
- Substation
- Subject Line
- Existing access route (may require improvements)
- Overland access route
- Existing paved road
- Proposed Overland access route
- Landing Zone
- Pull Site
- Staging Area
- Work Area
- T Turnaround
- Guard Structure



Source: Bing Maps Aerial; GANDA GIS 2015
 USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

* Routes were drawn to provide a preliminary centerline in order to establish a survey corridor
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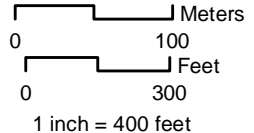
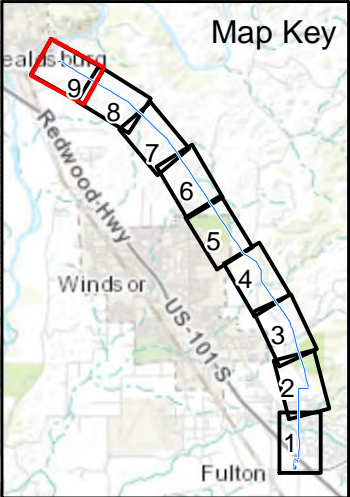
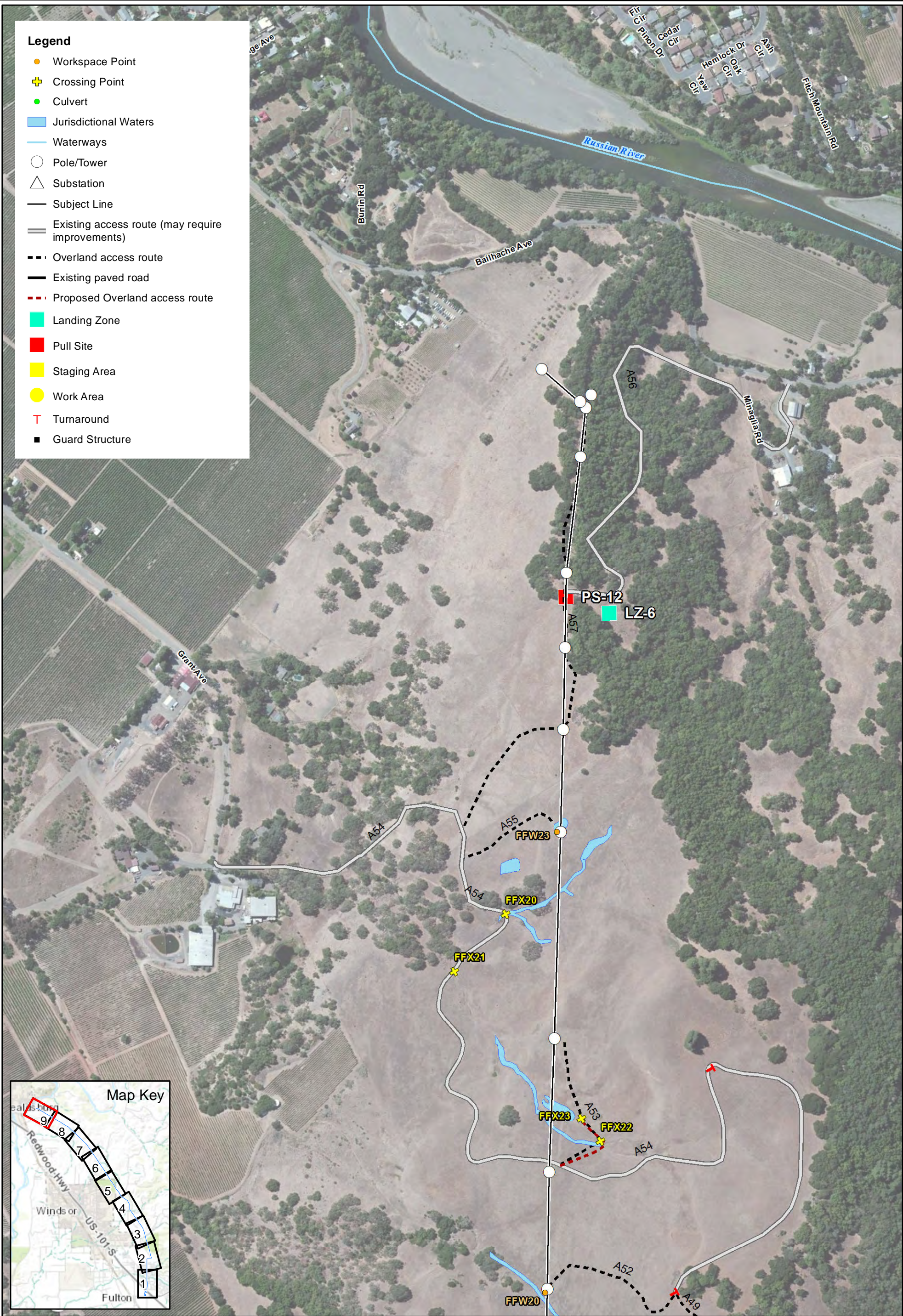


Figure 1. Water Crossings Map
 Fulton-Fitch Mountain Reconductoring Project

Legend

- Workspace Point
- ⊕ Crossing Point
- Culvert
- Jurisdictional Waters
- Waterways
- Pole/Tower
- △ Substation
- Subject Line
- Existing access route (may require improvements)
- - - Overland access route
- Existing paved road
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- Landing Zone
- Pull Site
- Staging Area
- Work Area
- ⊥ Turnaround
- Guard Structure



Source: Bing Maps Aerial; GANDA GIS 2015
USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

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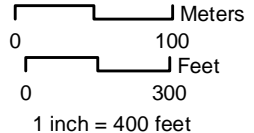


Figure 1. Water Crossings Map
Fulton-Fitch Mountain
Reconductoring Project

Sonoma County, CA
Map 9 of 9

Appendix A. Fulton-Fitch Work Area and Crossing Photos

FFW1 – Pole 20; SEW41 (photo facing south)



FFW1 – Pole 20; SEW41 Culvert at terminus of drainage (photo facing west)



FFW1 – Pole 20; SEW41 Culvert at terminus of drainage (photo facing east)



FFW2 – PS4; D4 Drainage ditch adjacent to east side of the roadway (photo facing north)



FFW3 – PS4; SEW9A (photo facing north)



FFW4 – Pole 21; SEW9A (Photo facing north)



FFW5 – PS5; SEW9A adjacent to overgrown draining ditch (photo facing northeast)



FFW6, FFW7, FFW8 – PS6; Pole 23; Pole 25 Pull-out entrance to access road (photo facing east)



FFX1 – SEW44; Access road with seasonal surface flow and wattles (photo facing west)



FFX1 – SEW44; Access road with seasonal surface flow and wattles (photo facing west)



FFX1 – SEW44; Access road with seasonal surface flow and wattles (photo facing west)



FFW10 – Pole 46; SEW16 (photo facing north)



FFW10 – Pole 46; SEW16 (photo facing north)



FFW11 – Pole 47; SEW19 (photo facing northeast)



FFW12 – Pole 54; SEW22 Work area at top of small seasonal watercourse (photo facing north)



FFW13 – Pole 57; SEW24; Work area upslope from seasonal watercourse (photo facing south)



FFW13 – Pole 57; SEW24; Work area upslope from seasonal watercourse (photo facing north)



FFX3 – SEW45; Ephemeral water course, which crosses the road and has sheet flow along roadway (photo facing east)



FFX3 – SEW45; Ephemeral water course with sheet flow along roadway (photo facing east)



FFX4 – SEW45; Ephemeral water course which crosses the roadway (photo facing east)



FFX6 – SW3 (photo facing north)



FFX6 – SW3 (photo facing south)



FFW14/15 – PS10; Pole 62; SW3 (photo facing north)



FFW14/15 – PS10; Pole 62; SW3 (photo facing north)



FFW16 – LZ5; RIWO8; Laydown area upslope of riparian (photo facing north)



FFX7 – SEW4; Mapped access route topographically challenging (photo facing west)



FFX7 – SEW4; Mapped access route topographically challenging (photo facing north)



FFX8 – SEW2; Existing culvert is filled in with sediment (photo facing west)



FFX8 – SEW2; Existing culvert is filled in with sediment (photo facing west)



FFX9 – SEW2; Bank of adjacent watercourse eroding into road (photo facing west)



FFX9 – SEW2; Bank of adjacent watercourse eroding into road (photo facing east)



FFX10 – SEW2; Roadway crosses dry creek bed (photo facing northeast)



FFX11 – SEW2; Roadway crosses dry creek bed and terminates into a tributary to the seasonal watercourse (photo facing southwest)



FFX11 – SEW2; Roadway crosses dry creek bed and terminates into a tributary to the seasonal watercourse (photo facing north)



FFW17 – Pole 67; SEW30; Work area occurs adjacent to seasonal waterway (photo facing northeast)



FFW17 – Pole 67; SEW30; Work area occurs adjacent to seasonal waterway (photo facing northeast)



FFX12 – RIWO9; Culvert crossing on vineyard access road (photo facing west)



FFX12 – RIWO9; Culvert crossing on vineyard access road (photo facing west)



FFX13 – RIWO10; Culvert crossing occurs immediately downstream of perennial pond (photo facing northwest)



FFX13 – RIWO10; Culvert crossing occurs immediately downstream of perennial pond (photo facing southeast)



FFX13 – RIWO10; Culvert crossing occurs immediately downstream of perennial pond (photo facing northwest)



FFW18 – Pole 71; RIWO10; Work area adjacent to vineyard and woodland (photo facing north)



FFW19 – Pole 71; SEW35; Work area upslope of drainage (photo facing northeast)



FFW19 – Pole 71; SEW35; Work area upslope of drainage (photo facing north)



FFX14 – SEW8; Overland access route has multiple stacks of cut brush piled along the roadway, obstructing vehicular travel (photo facing north)



FFX15 – SEW8; Culvert crossing through bermed earth at the bottom of the drainage (photo facing north)



FFX15 – SEW8; Culvert crossing through bermed earth at the bottom of the drainage (photo facing west)



FFX16 - RIWO11; Crossing point at bottom of dry creek bed (photo facing south)



FFX16 - RIWO11; Crossing point just below culvert, at bottom of dry creek bed (photo facing northeast)



FFX17 – D5; Culvert crossing for drainage ditch under improved road (photo facing northwest)



FFX18 – SEW46; Culvert crossing under improved road (photo facing east)



FFX18 – SEW46; Culvert crossing under improved road (photo facing east)



FFX19 – RIWO12; Bridge crossing over perennial watercourse within riparian woodland, on access road to Weston Ranch (photo facing west)



FFX19 – RIWO12; Bridge crossing over perennial watercourse within riparian woodland, on access road to Weston Ranch (photo facing east)



FFX19 – RIWO12; Bridge crossing over perennial watercourse within riparian woodland, on access road to Weston Ranch (photo facing west)



FFX19 – RIWO12; Signage for bridge crossing over perennial watercourse within riparian woodland, on access road to Weston Ranch (photo facing east)



FFX20 – SEW6; Crossing point for seasonal watercourse (photo facing northeast)



FFX20 – SEW6; Crossing point for seasonal watercourse (photo facing northwest)



FFX21 – SEW5; Crossing point for seasonal watercourse (photo facing southeast)



FFX21 – SEW5; Crossing point for seasonal watercourse (photo facing southwest)



FFX22 – SEW5; Crossing point for seasonal watercourse (photo facing southwest)



FFX22 – SEW5; Recommended alternate crossing point for seasonal watercourse (photo facing north)



FFX23 – SW13; Overland route and crossing point for seasonal watercourse (photo facing west)



FFW20 – Pole 84; SEW40; Work area is downslope from seasonal wetland (photo facing west)



FFW21 – Pole 83; SW12; Work area is downslope from seasonal wetland (photo facing southeast)



FFW22 – Pole 82; SW11; Configure work area to avoid overlap with seasonal wetland (photo facing east)



FFW23 – Pole 87; SW16; Configure work area to avoid overlap with seasonal wetland (photo facing west)



FFW23 – Pole 87; SW16; Configure work area to avoid overlap with seasonal wetland (photo facing northwest)

