



---

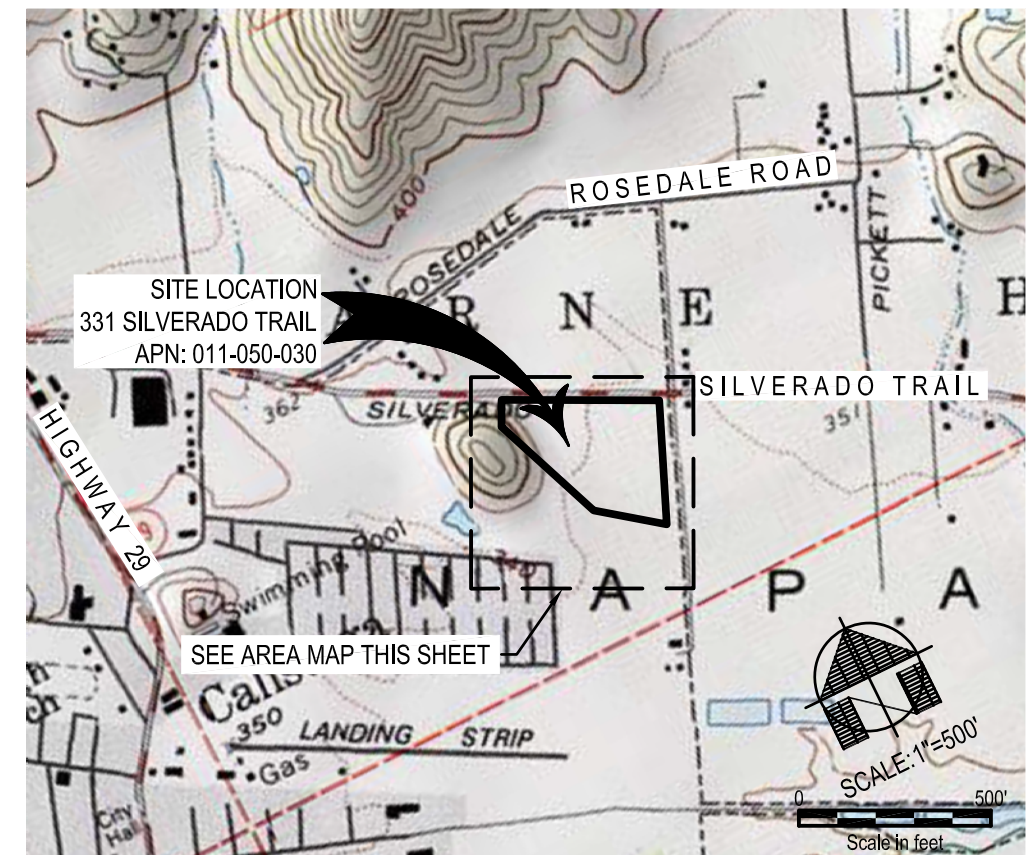
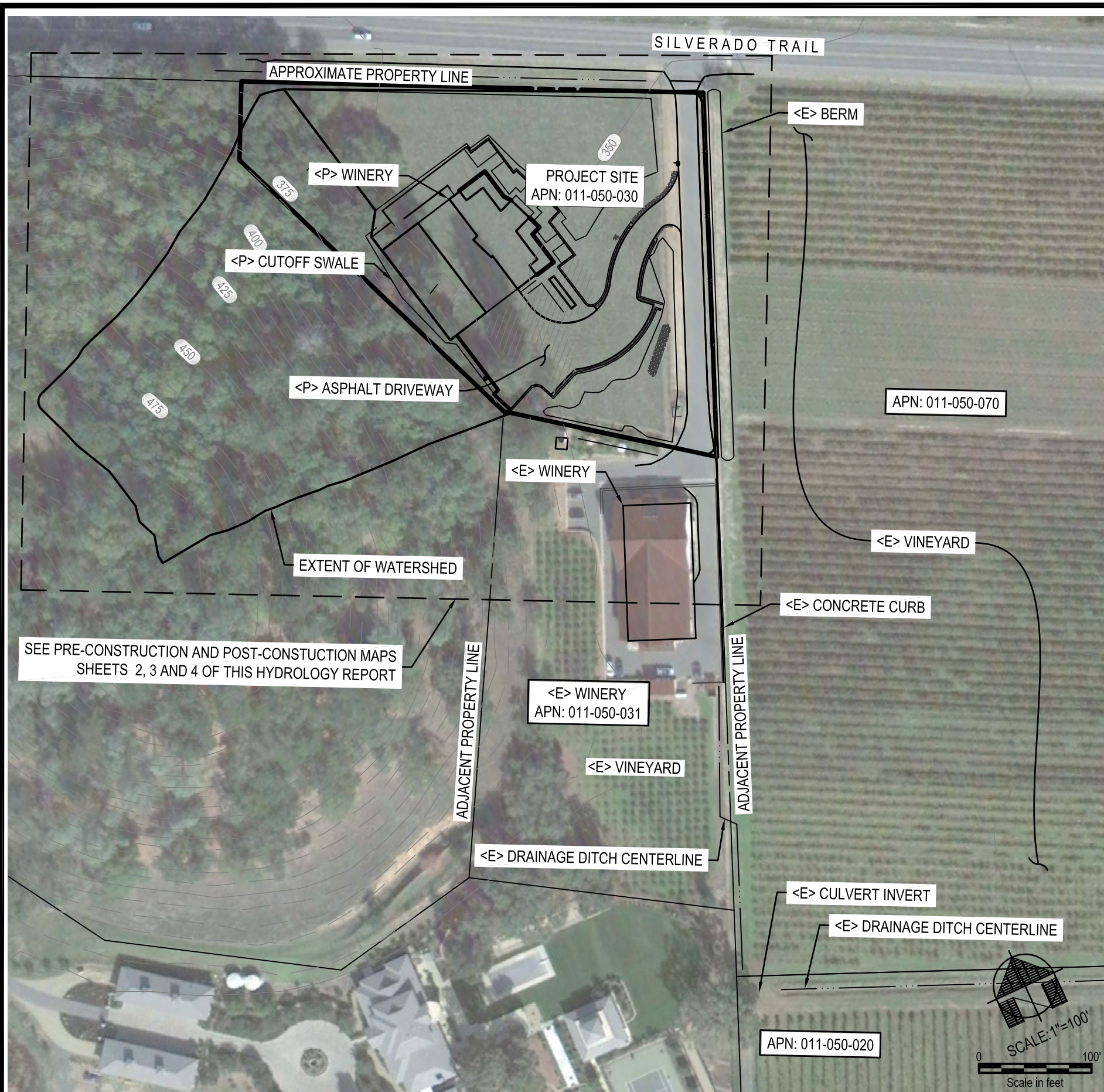
## APPENDIX

---

- Appendix A – Pre-Construction and Post-Construction Maps
- Appendix B – Pre-Construction Flow Patterns, Photo Documentary
- Appendix C – Detention Basin Volume Analysis
- Appendix D – Curve Number and Runoff Coefficient Reference Tables
- Appendix E – Use Permit Plans dated January 18, 2011
- Appendix F – Local Groundwater Readings
- Appendix G – Post-Construction Runoff Map
- Appendix H – Metering Box Detail and Calculations
- Appendix I – Peak Storm Water Runoff Flow Analysis
- Appendix J – Detention Basin Cross Section
- Appendix K – Excerpts from City of Santa Rosa Public Storm Drain Standards



## APPENDIX A



AREA MAP

MAP FROM USGS 7.5 MIN SERIES  
SCALE: 1"=500'

VICINITY MAP

CONTOURS BASED ON NAPA COUNTY 2002 DIGITAL TERRAIN MODEL AND TOPOGRAPHIC MAPPING

331 SILVERADO TRAIL, CALISTOGA, CA 94515

SCALE: 1"=100'

HYDROLOGY REPORT  
VICINITY MAP

DELTA CONSULTING & ENGINEERING  
OF ST. HELENA

1104 ADAMS STREET, SUITE 203 - ST. HELENA, CALIFORNIA 94574  
707-963-8456 + 707-963-8528 FAX

DATE: 01/12/12

SCALE: AS NOTED

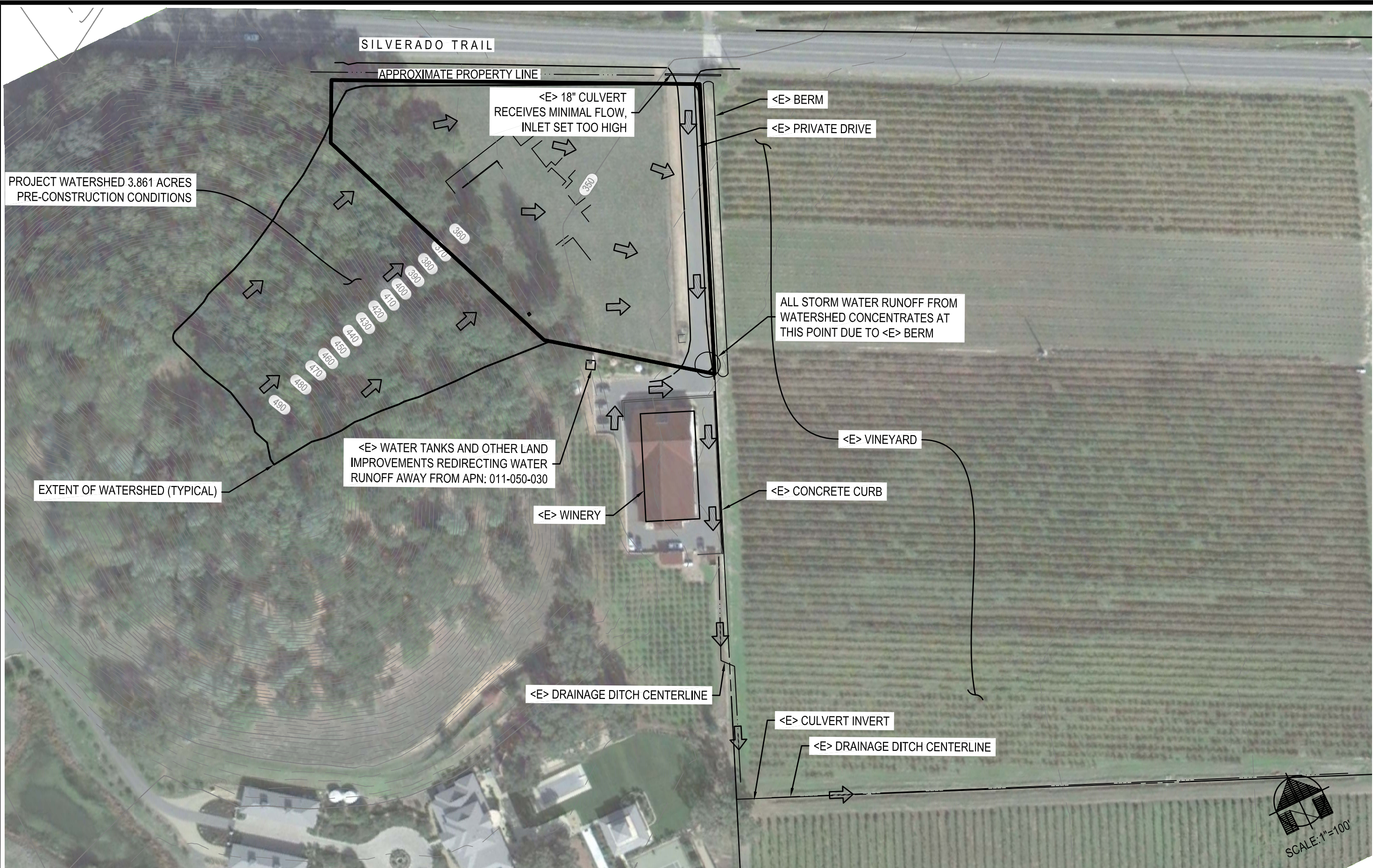
JOB #: K-149

APN: 011-050-030

1  
OF  
5

CALIFORNIA

CALISTOGA



PROJECT WATERSHED 3.861 ACRES  
PRE-CONSTRUCTION CONDITIONS

EXTENT OF WATERSHED (TYPICAL)

<E> WATER TANKS AND OTHER LAND  
IMPROVEMENTS REDIRECTING WATER  
RUNOFF AWAY FROM APN: 011-050-030

<E> 18" CULVERT  
RECEIVES MINIMAL FLOW,  
INLET SET TOO HIGH

<E> BERM

<E> PRIVATE DRIVE

ALL STORM WATER RUNOFF FROM  
WATERSHED CONCENTRATES AT  
THIS POINT DUE TO <E> BERM

<E> VINEYARD

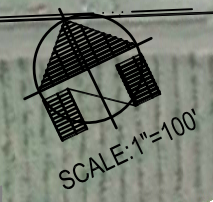
<E> CONCRETE CURB

<E> WINERY

<E> DRAINAGE DITCH CENTERLINE

<E> CULVERT INVERT

<E> DRAINAGE DITCH CENTERLINE



# WATERSHED BOUNDARY MAP

331 SILVERADO TRAIL, CALISTOGA, CA 94515

CONTOURS BASED ON NAPA COUNTY 2002 DIGITAL TERRAIN MODEL AND TOPOGRAPHIC MAPPING

HYDROLOGY REPORT  
WATERSHED BOUNDARY  
CALISTOGA CALIFORNIA

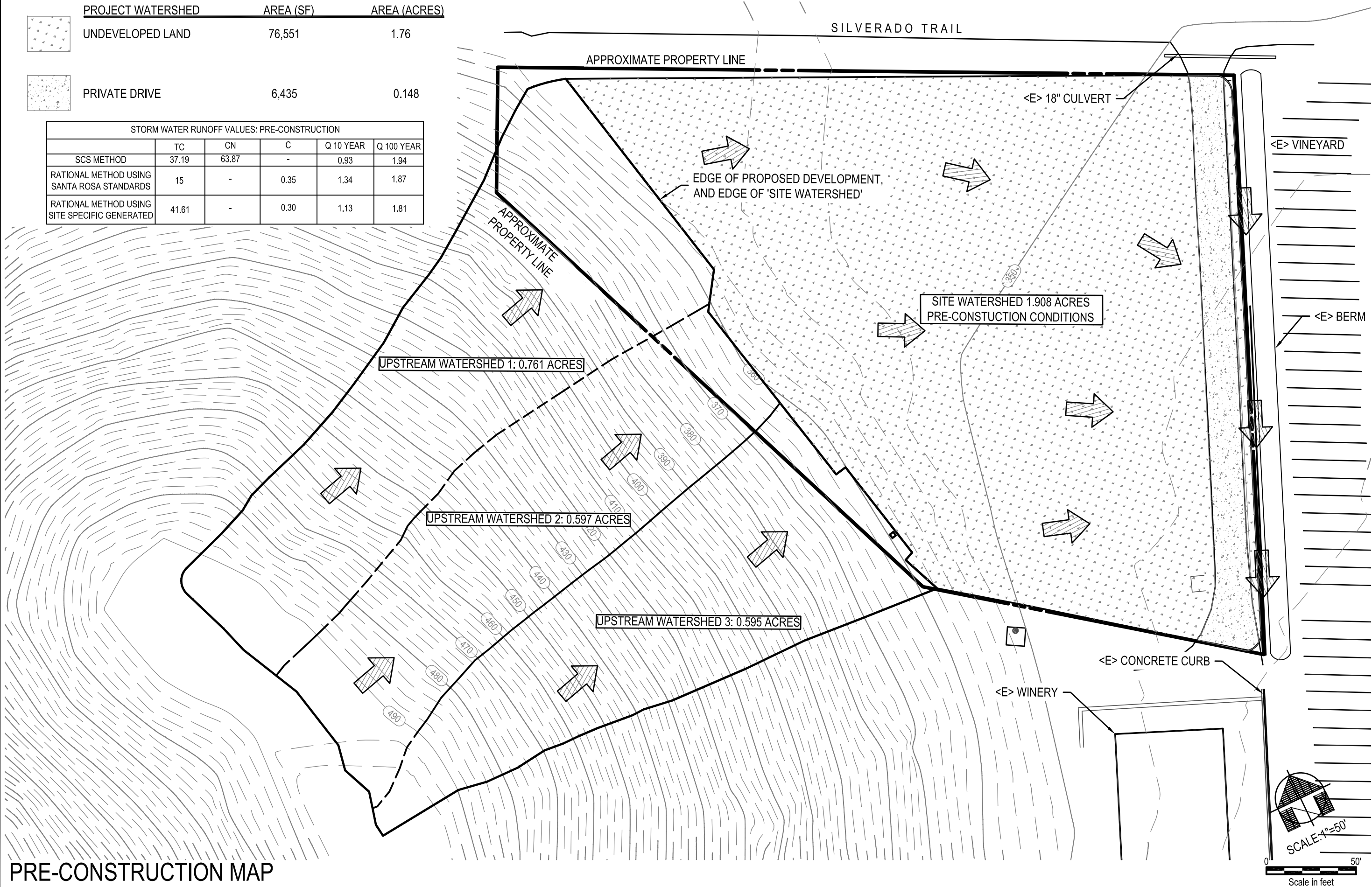
DELTA CONSULTING & ENGINEERING  
OF ST. HELENA  
1104 ADAMS STREET, SUITE 203 - ST. HELENA, CALIFORNIA 94574  
707-963-8456 + 707-963-8528 FAX

DATE: 01/12/12  
SCALE: 1"=100'  
JOB #: K-149  
APN: 011-050-030

2  
OF  
5

PROJECT WATERSHED	AREA (SF)	AREA (ACRES)
UNDEVELOPED LAND	76,551	1.76
PRIVATE DRIVE	6,435	0.148

STORM WATER RUNOFF VALUES: PRE-CONSTRUCTION					
	TC	CN	C	Q 10 YEAR	Q 100 YEAR
SCS METHOD	37.19	63.87	-	0.93	1.94
RATIONAL METHOD USING SANTA ROSA STANDARDS	15	-	0.35	1.34	1.87
RATIONAL METHOD USING SITE SPECIFIC GENERATED	41.61	-	0.30	1.13	1.81



**PRE-CONSTRUCTION MAP**

331 SILVERADO TRAIL, CALISTOGA, CA 94515







CONTOURS BASED ON NAPA COUNTY 2002 DIGITAL TERRAIN MODEL AND TOPOGRAPHIC MAPPING

**HYDROLOGY REPORT  
PRE-CONSTRUCTION MAP**

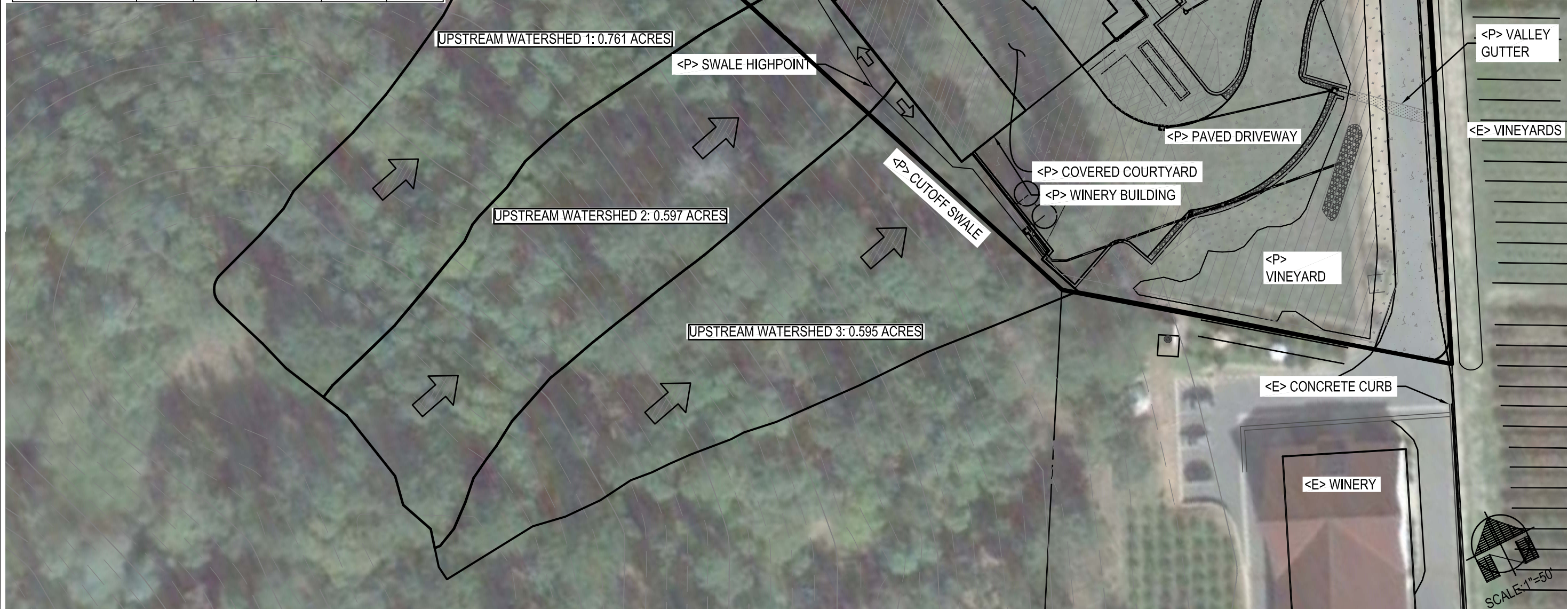
DELTA CONSULTING & ENGINEERING  
OF ST. HELENA  
1104 ADAMS STREET, SUITE 203 - ST. HELENA, CALIFORNIA 94574  
707-963-8456 + 707-963-8528 FAX

DATE: 01/12/12  
SCALE: 1"=50'  
JOB #: K-149  
APN: 011-050-030

CALISTOGA CALIFORNIA

PROJECT WATERSHED (ACRES)	AREA (SF)	AREA
 PAVED DRIVEWAY	18,232	0.418
 LANDSCAPE/PAVER	7,486	0.172
 COVERED PATIO	4,624	0.106
 WINERY BUILDINGS	7,130	0.164
 VINEYARD	29,717	0.690
 UNDEVELOPED LAND	16,027	0.358

STORM WATER RUNOFF VALUES: POST-CONSTRUCTION					
	TC	CN	C	Q 10 YEAR	Q 100 YEAR
SCS METHOD	22.42	78.38	-	1.94	3.37
RATIONAL METHOD USING SANTA ROSA STANDARDS	7	-	0.55	3.24	5.11
RATIONAL METHOD USING SITE SPECIFIC GENERATED	12.4	-	0.54	4.19	6.31



# POST-CONSTRUCTION MAP

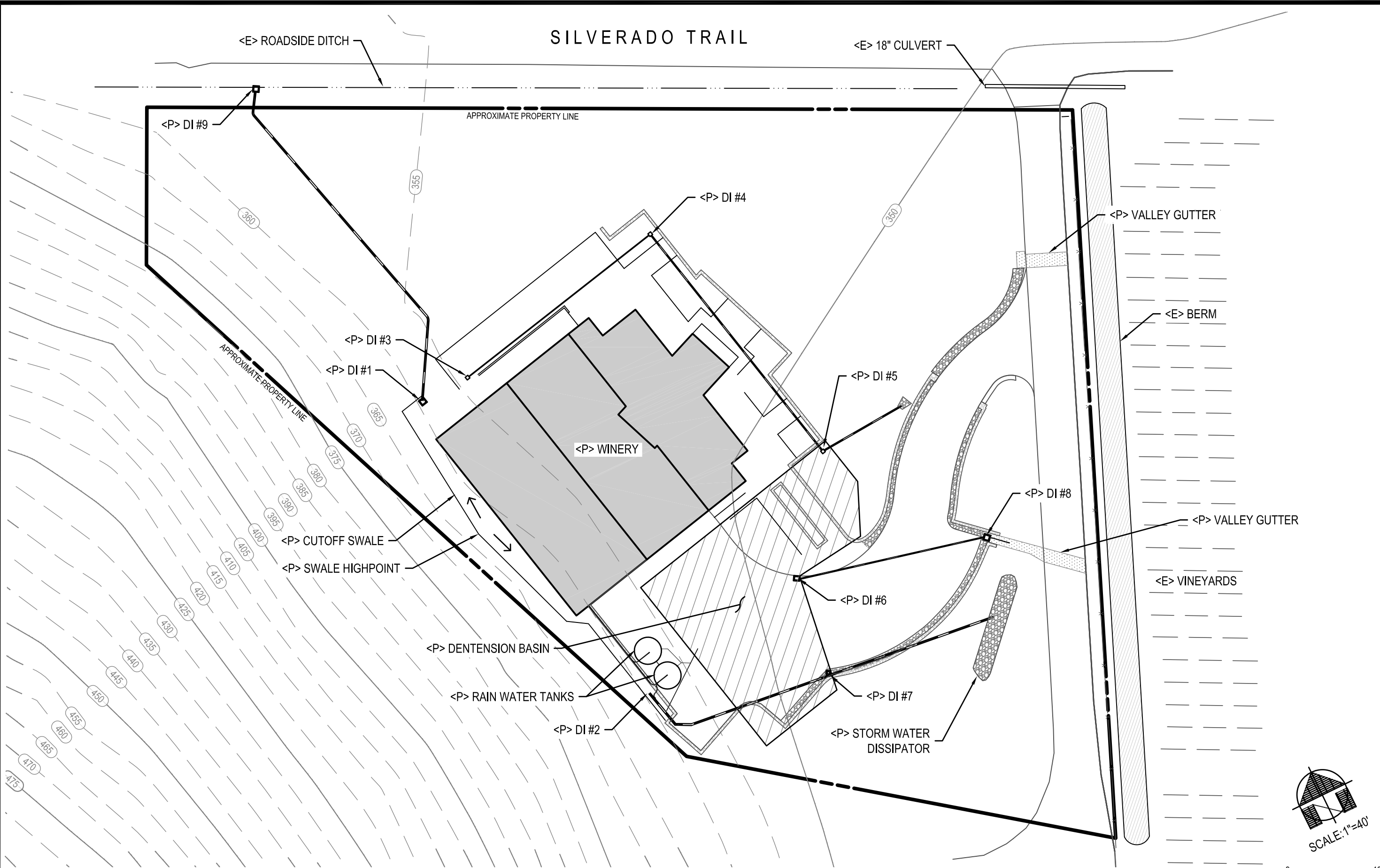
PROPOSED HARDSCAPE DELINEATIONS PER USE PERMIT PLANS PREPARED BY JIM CASSAYRE AND DATED DECEMBER 28, 2011

CONTOURS BASED ON NAPA COUNTY 2002 DIGITAL TERRAIN MODEL AND TOPOGRAPHIC MAPPING

**HYDROLOGY REPORT**  
**POST-CONSTRUCTION MAP**  
 CALISTOGA CALIFORNIA

**DELTA CONSULTING & ENGINEERING**  
 OF ST. HELENA  
 1104 ADAMS STREET, SUITE 203 - ST. HELENA, CALIFORNIA 94574  
 707-963-8456 + 707-963-8528 FAX

DATE: 01/12/12  
 SCALE: 1"=50'  
 JOB #: K-149  
 APN: 011-050-030

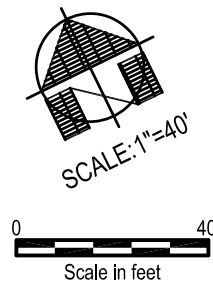


# STORM DRAIN SYSTEM

331 SILVERADO TRAIL, CALISTOGA, CA 94515

PROPOSED SITE PLAN PER USE PERMIT PLANS PREPARED BY JIM CASSAYRE AND DATED DECEMBER 28, 2011

CONTOURS BASED ON NAPA COUNTY 2002 DIGITAL TERRAIN MODEL AND TOPOGRAPHIC MAPPING



**HYDROLOGY REPORT**  
**STORM DRAIN SYSTEM**

CALISTOGA CALIFORNIA

---

**DELTA CONSULTING & ENGINEERING**  
OF ST. HELENA  
1104 ADAMS STREET, SUITE 203 - ST. HELENA, CALIFORNIA 94574  
707-963-8456 + 707-963-8528 FAX

---

DATE: 01/12/12	SCALE: 1"=40'	JOB #: K-149	APN: 011-050-030
----------------	---------------	--------------	------------------

---

5  
OF  
5