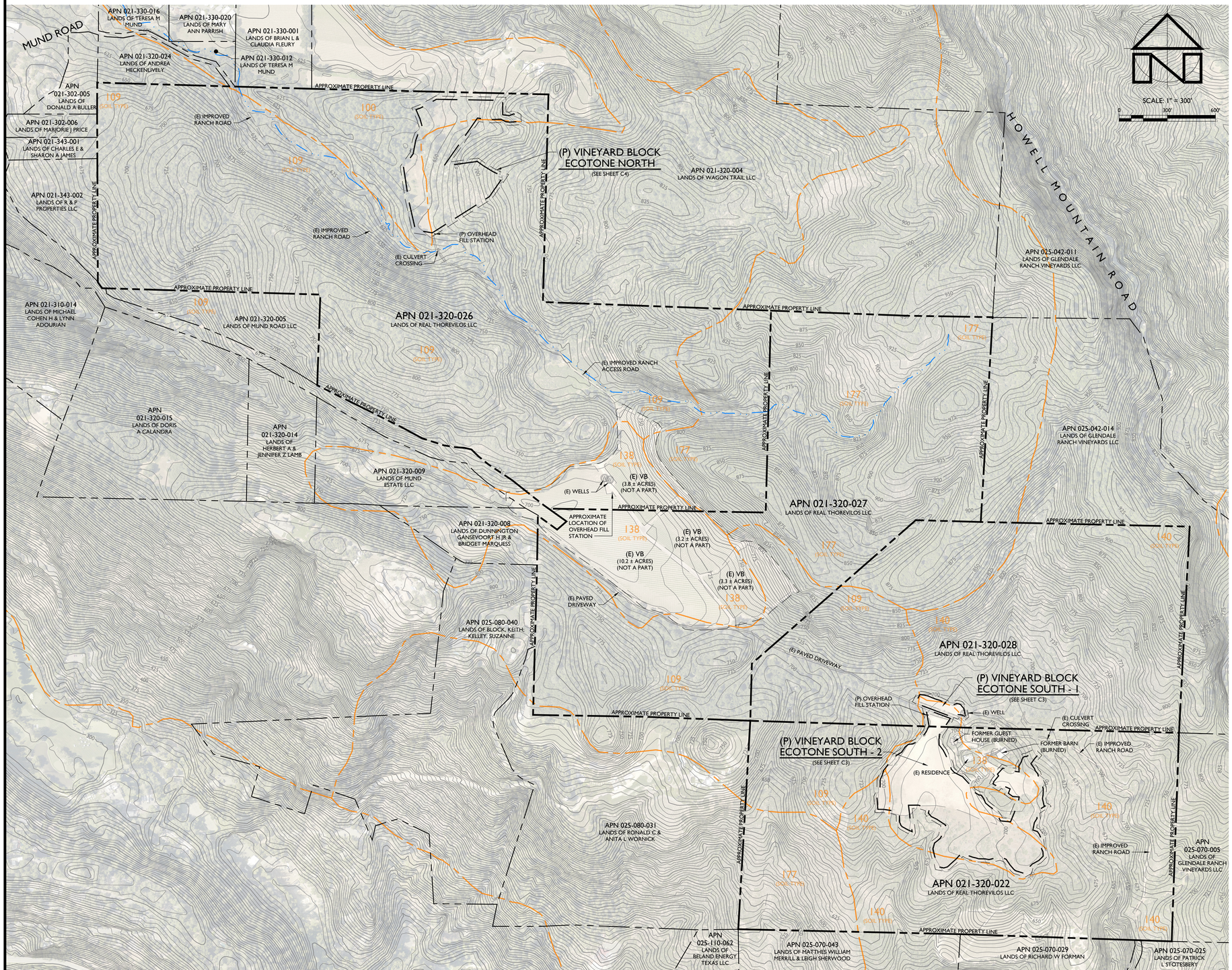
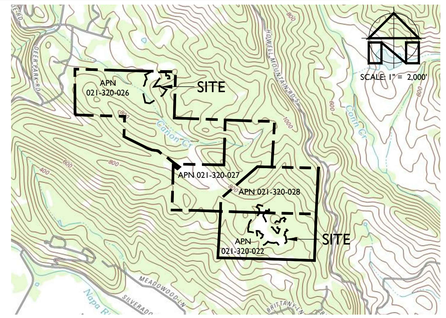
REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN



OVERALL SITE PLAN

SCALE: 1" = 300'



LOCATION MAP

SCALE: 1" = 2,000'

PROJECT INFORMATION:

PROPERTY OWNER & APPLICANT:
REAL THOREVILOS LLC
180 MUND ROAD
SAINT HELENA, CA 94574

SITE ADDRESS:
MUND ROAD
SAINT HELENA, CA 94574

ASSESSOR'S PARCEL NUMBERS:
021-320-022, -026, -027 & -028

PARCEL SIZES:
80 ±, 144.21 ±, 90 ± & 70 ± ACRES

PROJECT SIZE:
23.2 ± ACRES TOTAL DISTURBED
19.0 ± ACRES TOTAL PLANTED

ZONING:
AGRICULTURAL WATERSHED (AW)

SHEET INDEX:

PROJECT DESCRIPTION:

THE PURPOSE OF THIS PROJECT IS TO DEVELOP NEW VINEYARDS ON THE SUBJECT PROPERTIES.

FLOOD HAZARD NOTE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBER 06055C0264E & 06055C0265E, EFFECTIVE SEPTEMBER 26, 2008, THE PROJECT SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

SOIL TYPE LEGEND:

100	AIKEN LOAM, 2 TO 15 PERCENT SLOPES
109	BOOMER GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
138	FORWARD GRAVELLY LOAM, 2 TO 9 PERCENT SLOPES
140	FORWARD GRAVELLY LOAM, 30 TO 75 PERCENT SLOPES
177	ROCK OUTCROP-KIDD COMPLEX, 50 TO 75 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

- APPROXIMATE PROPERTY LINE
- SOIL TYPE BOUNDARY
- BLUELINE STREAM
- VINEYARD AVENUE / CLEARING LIMITS

APPLIED CIVIL ENGINEERING INCORPORATED
2074 West Lincoln Avenue
Napa, CA 94558
(707) 320-4968 (707) 320-2395 Fax
www.appliedcivil.com

REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN
OVERALL SITE PLAN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2022
9/7/2021
CIVIL
STATE OF CALIFORNIA

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JULY 9, 2021

REVISIONS:	BY:
9/7/2021 PLAN CHECK RESPONSE	BT

JOB NUMBER: 19-133

FILE: 19-133ECP-OSP.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C1

OF 6

GENERAL NOTES:

1. THESE DRAWINGS WERE DEVELOPED EXCLUSIVELY FOR THIS PROJECT AND ARE NOT TO BE REPRODUCED OR USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF APPLIED CIVIL ENGINEERING INCORPORATED.
2. ALL MATERIALS AND WORKMANSHIP FOR THE WORK DESCRIBED ON THESE PLANS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING STANDARDS AS ADOPTED AND AMENDED BY NAPA COUNTY:
   A. CALIFORNIA BUILDING CODE (2019)
   B. CALIFORNIA ELECTRIC CODE (2019)
   C. CALIFORNIA PLUMBING CODE (2019)
   D. CALIFORNIA MECHANICAL CODE (2019)
   E. CALIFORNIA FIRE CODE (2019)
   F. CALIFORNIA DEPARTMENT OF TRANSPORTATION (2018)
   G. NAPA COUNTY CODE (CURRENT)

   CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR BEING FAMILIAR WITH ALL STANDARDS, CODES AND REGULATIONS APPLICABLE TO THIS PROJECT.
3. CONTRACTOR SHALL BE APPROPRIATELY LICENSED WITH THE STATE OF CALIFORNIA TO PERFORM THE WORK SHOWN ON THESE PLANS.
4. CONTRACTOR SHALL SUPPLY ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO CONSTRUCT THE IMPROVEMENTS ILLUSTRATED ON THESE PLANS.
5. CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL MATERIALS AND PRODUCTS TO BE USED FOR THE SITE IMPROVEMENTS TO APPLIED CIVIL ENGINEERING INCORPORATED FOR REVIEW AND APPROVAL.
6. THE IMPROVEMENTS SHOWN ON THESE PLANS REQUIRE INSPECTION BY THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL INSPECTIONS.
7. CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH APPLIED CIVIL ENGINEERING INCORPORATED AND NAPA COUNTY AT LEAST ONE WEEK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO REVIEW THE PROJECT PLANS AND SPECIFICATIONS AND NAPA COUNTY REQUIREMENTS.
8. CONTRACTOR IS RESPONSIBLE FOR SECURING ALL CONSTRUCTION RELATED PERMITS FROM THE GOVERNING AGENCIES AND MAINTAINING A COPY OF THE PERMITS AND THE APPROVED PLANS ON THE JOB SITE AT ALL TIMES.
9. CONTRACTOR SHALL CONTACT THE NAPA COUNTY PUBLIC WORKS, FIRE AND SHERIFF DEPARTMENTS TO PROVIDE EMERGENCY TELEPHONE NUMBERS AND KEEP THE DEPARTMENTS INFORMED DAILY OF ANY STREETS THAT ARE UNDER CONSTRUCTION AND DETOURS. DETOURS ARE NOT PERMITTED UNLESS APPROVED IN ADVANCE IN WRITING BY THE NAPA COUNTY PUBLIC WORKS DEPARTMENT.
10. THE PROPERTY OWNER AND CONTRACTOR ARE RESPONSIBLE FOR OBTAINING ALL APPROPRIATE PERMITS FOR WORK WITHIN ANY RIPARIAN AREA PRIOR TO COMMENCING WORK IN THAT AREA.
11. CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE CONDITIONS AND THE SAFETY OF PROPERTY AND PEOPLE ON THE JOB SITE AT ALL TIMES. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE CONDITION, IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS, AT ALL TIMES, INCLUDING OUTSIDE OF NORMAL WORKING HOURS. CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
12. CONTRACTOR SHALL PROVIDE AND MAINTAIN BARRICADES TO PROVIDE FOR THE SAFETY OF THE GENERAL PUBLIC TO THE SATISFACTION OF NAPA COUNTY AND THE OWNER.
13. THESE PLANS ARE INTENDED TO PROVIDE HORIZONTAL AND VERTICAL CONTROL FOR THE PROPOSED SITE IMPROVEMENTS SHOWN HEREON.
14. ALL DIMENSIONS SHOWN ON THESE PLANS SHOW MEASUREMENTS IN A HORIZONTAL PLANE UNLESS OTHERWISE SPECIFIED.
15. ALL WRITTEN DIMENSIONS SUPERCEDE ANY SCALED DIMENSIONS. IF AN APPARENT DISCREPANCY IS IDENTIFIED CONTACT APPLIED CIVIL ENGINEERING INCORPORATED IMMEDIATELY FOR A WRITTEN CLARIFICATION.
16. IF ANY CONTRACTOR, SUBCONTRACTOR, OR SURVEYOR IDENTIFIES ANY OMISSIONS, DEFICIENCIES, CONFLICTS OR ERRORS IN THESE PLANS AND SPECIFICATIONS OR IF THERE IS ANY DOUBT AS TO THEIR MEANING OR INTENT, THEY SHALL CONTACT APPLIED CIVIL ENGINEERING INCORPORATED FOR A WRITTEN ADDENDUM OR CLARIFICATION. CONTRACTOR IS NOT ELIGIBLE FOR ADDITIONAL COMPENSATION IF THEY FAIL TO DO SO BEFORE PROVIDING A PROPOSAL.
17. CONTRACTOR IS TO PROTECT ALL EXISTING SITE IMPROVEMENTS, UTILITIES, BUILDINGS AND NATURAL FEATURES FROM DAMAGE THROUGHOUT THE DURATION OF CONSTRUCTION. ANY DAMAGE CAUSED BY CONTRACTOR SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
18. IN THE EVENT THAT ARCHEOLOGICAL ARTIFACTS OR HUMAN REMAINS ARE DISCOVERED DURING CONSTRUCTION, WORK SHALL CEASE IN A 50-FOOT RADIUS SURROUNDING THE AREA OF DISCOVERY. THE PERMITTEE SHALL CONTACT NAPA COUNTY PLANNING BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT AT (707) 253-4417 FOR FURTHER GUIDANCE, WHICH WILL LIKELY INCLUDE THE REQUIREMENT FOR THE PERMITTEE TO HIRE A QUALIFIED PROFESSIONAL TO ANALYZE THE ARTIFACTS ENCOUNTERED AND TO DETERMINE IF ADDITIONAL MEASURES ARE REQUIRED.

    IF HUMAN REMAINS ARE ENCOUNTERED DURING THE DEVELOPMENT, ALL WORK IN THE VICINITY MUST BE, BY LAW, HALTED, AND THE NAPA COUNTY CORONER INFORMED, SO THAT THE CORONER CAN DETERMINE IF AN INVESTIGATION OF THE CAUSE OF DEATH IS REQUIRED, AND IF THE REMAINS ARE OF NATIVE AMERICAN ORIGIN. IF THE REMAINS ARE OF NATIVE AMERICAN ORIGIN, THE NEAREST TRIBAL RELATIVES AS DETERMINED BY THE STATE NATIVE AMERICAN HERITAGE COMMISSION SHALL BE CONTACTED BY THE PERMITTEE TO OBTAIN RECOMMENDATIONS FOR TREATING OR REMOVAL OF SUCH REMAINS, INCLUDING GRAVE GOODS, WITH APPROPRIATE DIGNITY, AS REQUIRED UNDER PUBLIC RESOURCES CODE SECTION 5097.98.

SURVEY NOTES:

1. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION WAS TAKEN FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATABASE. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOGRAPHS WERE OBTAINED FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE, TAKEN APRIL TO JUNE 2018 AND MAY NOT REPRESENT CURRENT CONDITIONS.
3. CONTOUR INTERVAL: FIVE (5) FEET, HIGHLIGHTED EVERY TWENTY FIVE (25) FEET.

   BENCHMARK: NAVD 88
4. THE PROPERTY LINES SHOWN ON THESE PLANS DO NOT REPRESENT A BOUNDARY SURVEY. THEY ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
5. CONTRACTOR SHALL PRESERVE ALL EXISTING MONUMENTS THROUGHOUT THE DURATION OF CONSTRUCTION OR HAVE THEM REPLACED AT THEIR OWN EXPENSE. IF MONUMENTS ARE DISTURBED THEY NEED TO BE RE-SET BY A LICENSED LAND SURVEYOR AND A CORNER RECORD MUST BE FILED.
6. ALL CONSTRUCTION STAKING SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR.

GRADING NOTES:

1. ALL EARTHWORK IS TO CONFORM TO THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE, NAPA COUNTY CONSERVATION REGULATIONS AND THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - ENGINEERING DIVISION STANDARDS.
2. ALL CUT AND FILL SLOPES SHALL BE NO STEEPER THAN 2:1 UNLESS OTHERWISE APPROVED BY A GEOTECHNICAL ENGINEER.
3. ALL DEBRIS GENERATED DURING DEMOLITION, SITE STRIPPING AND GRADING ACTIVITIES IS TO BE DISPOSED OF PROPERLY OFFSITE BY THE CONTRACTOR.
4. CONTRACTOR IS RESPONSIBLE FOR IMPORTING AND / OR EXPORTING MATERIALS AS NECESSARY TO ACHIEVE THE FINISH GRADES ILLUSTRATED ON THESE PLANS.
5. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN A MANNER THAT PREVENTS WIND BLOWN DIRT AND DUST AND RELATED DAMAGE TO NEIGHBORING PROPERTIES.
6. CONTRACTOR SHALL CONFORM TO EXISTING IMPROVEMENTS WITH A SMOOTH TRANSITION TO AVOID ABRUPT CHANGES IN GRADE, LOW SPOTS OR OTHER HAZARDOUS CONDITIONS.
7. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL FINISH GRADED SLOPES AFTER THE COMPLETION OF CONSTRUCTION AND REPAIRING ANY EROSION DAMAGE.

EXISTING UTILITY NOTES:

1. THE EXISTING UTILITY LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. THEY ARE BASED ON INFORMATION PROVIDED BY THE PROPERTY OWNER, THE SURVEYOR AND THE RESPECTIVE UTILITY COMPANIES. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR THE COMPLETENESS OF THEIR LOCATIONS.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING UTILITY LOCATIONS PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION. IF A DISCREPANCY BETWEEN THE PLANNED AND ACTUAL HORIZONTAL OR VERTICAL LOCATION OF AN EXISTING UTILITY EXISTS, CONTACT APPLIED CIVIL ENGINEERING INCORPORATED FOR AN ALTERNATE DESIGN.
3. CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES TWO WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO MARK THE LOCATION OF EXISTING UTILITY LINES. CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 227-2600.
4. EXISTING UTILITIES ARE TO REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES PER THE REQUIREMENTS OF THE UTILITY OWNER.
5. CONTRACTOR SHALL COORDINATE ANY REQUIRED UTILITY RELOCATIONS WITH THE UTILITY OWNER.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL WORK WILL BE PERFORMED BY THE VINEYARD MANAGER IN ACCORDANCE WITH THIS APPROVED VINEYARD EROSION CONTROL PLAN.
2. ALL DISTURBED AREAS MUST BE WINTERIZED BY SEPTEMBER 15TH OF EACH YEAR THAT THE PROJECT IS UNDER CONSTRUCTION.
3. A REQUEST TO ALLOW GRADING TO EXTEND BEYOND SEPTEMBER 1ST MAY BE GRANTED BY THE NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT - CONSERVATION DIVISION IF A MAJORITY OF THE GRADING HAS BEEN COMPLETED AND THERE COULD BE A DETRIMENTAL EFFECT ON THE ENVIRONMENT IF THE REMAINING GRADING REMAINS INCOMPLETE. A REQUEST TO ALLOW GRADING TO EXTEND BEYOND SEPTEMBER 1ST MUST BE SUBMITTED IN WRITING TO NAPA COUNTY NO LATER THAN AUGUST 15TH. GRADING BEYOND THE WINTERIZATION DEADLINE WILL NOT BE ALLOWED PRIOR TO APPROVAL BY NAPA COUNTY.
4. ALL PERMANENT DRAINAGE FACILITIES AND SEDIMENT RETENTION STRUCTURES MUST BE INSTALLED BY SEPTEMBER 1ST.
5. ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (WATER BARS, SILT FENCE & STRAW WATTLES) MUST BE INSTALLED BY SEPTEMBER 15TH.
6. ALL EROSION CONTROL MEASURES MUST BE INSPECTED AND MAINTAINED BY THE CONTRACTOR THROUGHOUT THE RAINY SEASON (SEPTEMBER 15TH THROUGH APRIL 1ST). INSPECTIONS MUST BE PERFORMED AT LEAST ONCE PER WEEK DURING EXTENDED DRY PERIODS, IMMEDIATELY BEFORE ANTICIPATED RAIN EVENTS, ONCE EVERY 24 HOURS DURING EXTENDED RAIN EVENTS AND IMMEDIATELY FOLLOWING EACH RAIN EVENT.
7. ALL DISTURBED AREAS ARE TO BE STABILIZED BY PLANTING OF AN EROSION CONTROL COVER CROP. PRIOR TO APPLYING THE EROSION CONTROL SEED BLEND, THE SEED BED SHOULD BE PREPARED BY UNIFORMLY SCARIFYING THE GROUND SURFACE TO A DEPTH OF TWO TO FOUR INCHES AND CONDITIONING TO BREAK UP LARGE PEDS.
8. THE COVER CROP SEED BLEND SHOULD BE BROADCAST OR DRILLED AFTER THE SEED BED HAS BEEN PREPARED.

A TEMPORARY TILLED COVER CROP WILL BE ESTABLISHED IN THE VINEYARD BLOCK AREAS FOR THE FIRST THREE YEARS AFTER PLANTING WHILE THE VINEYARD IS GETTING ESTABLISHED. THE TEMPORARY COVER CROP SEED MIX FOR THE VINEYARD ESTABLISHMENT SHOULD BE THE "SOIL BUILDER" AVAILABLE FROM NAPA VALLEY AG SUPPLY APPLIED AT A MINIMUM RATE OF 75 POUNDS PER ACRE:

COMMON VETCH	10%
CALIFORNIA RED OATS	20%
FIELD PEAS	30%
BELL BEANS	40%

9. THE PERMANENT COVER CROP SEED MIX FOR ALL NO-TILL VINEYARD BLOCKS AND VINEYARD AVENUES SHOULD BE THE "VINTNER'S BLEND" AVAILABLE FROM NAPA VALLEY AG SUPPLY APPLIED AT A MINIMUM RATE OF 75 POUNDS PER ACRE:

CREEPING RED FESCUE	40%
CHEWING FESCUE	25%
DWARF PERENNIAL RYE	25%
ROSE CLOVER	8%
NEW ZEALAND WHITE CLOVER	2%

10. ALTERNATE SEED MIX MAY BE USED BY THE VINEYARD MANAGER PROVIDED THAT ATTENTION IS GIVEN TO CHOOSING A COVER CROP THAT IS SUITABLE FOR THE SITE SOIL AND TOPOGRAPHIC CONDITIONS. ANY ALTERNATE SEED MIX MUST BE APPROVED BY THE ENGINEER AND THE NAPA COUNTY RESOURCE CONSERVATION DISTRICT PRIOR TO USE.
11. ALL SEEDED AREAS ARE TO BE FERTILIZED TO PROMOTE SUCCESSFUL ESTABLISHMENT OF THE COVER CROP. THE RECOMMENDED FERTILIZER IS AMMONIUM PHOSPHATE (16-20-0) APPLIED AT A RATE OF 250 POUNDS PER ACRE.
12. ADDITIONAL SOIL AMENDMENTS WILL BE ADDED BASED ON FUTURE SOILS TESTING REPORTS BY OTHERS. TYPICAL AMENDMENTS INCLUDE: COMPOSTED ORGANIC MATTER, LIME AND / OR GYPSUM. THE AMENDMENTS SHOULD BE INCORPORATED DURING THE LAND PREPARATION PROCESS TO INCREASE SOIL NUTRIENT CONTENT AND AVAILABILITY, AND TO IMPROVE SOIL STRUCTURE AND WATER HOLDING CAPACITY.
13. AFTER THE SEED AND FERTILIZER HAVE BEEN PLACED THE SEEDED AREA SHOULD BE RAKED, DRAGGED OR HARROWED TO ENSURE THAT SEEDS ARE PROPERLY BEDDED.
14. ALL DISTURBED AREAS ARE TO BE MULCHED WITH STRAW AT A RATE OF 3,000 POUNDS PER ACRE TO PROTECT THE BARE SOILS WHILE THE COVER CROP IS GETTING ESTABLISHED.
15. STRAW SHOULD BE SPREAD BY HAND IN A MANNER THAT PROMOTES FORMATION OF AN INTERWOVEN MATRIX. CRIMPING STRAW INTO THE SOIL IS HIGHLY RECOMMENDED ESPECIALLY ON WINDY SITES AND IS MANDATORY ON SITES WHERE STRAW IS MECHANICALLY CHOPPED AND BLOWN INTO PLACE.
16. ALL SOIL CUT AND FILL SLOPES THAT ARE STEEPER THAN 4:1 (HORIZONTAL TO VERTICAL) MUST BE COVERED WITH NORTH AMERICAN GREEN C125BN EROSION CONTROL BLANKET AFTER THE EROSION CONTROL SEED AND FERTILIZER HAVE BEEN PLACED.
17. CONTRACTOR MUST MAINTAIN AN ADEQUATE SUPPLY OF EROSION CONTROL MATERIALS ONSITE TO FACILITATE MAINTENANCE AND REPAIR THROUGHOUT THE RAINY SEASON. TYPICAL MATERIALS THAT SHOULD BE KEPT ONSITE INCLUDE SILT FENCE AND STRAW WATTLE SEDIMENT BARRIERS, GRAVEL BAGS, EROSION CONTROL BLANKETS, STRAW AND EROSION CONTROL SEED MIX.

EROSION CONTROL COVER CROP MANAGEMENT NOTES:

1. ESTABLISHING AN EFFECTIVE VEGETATIVE COVER CROP WILL BE THE PRIMARY MEANS OF PREVENTING EROSION FROM THE PROPOSED VINEYARD DEVELOPMENT AREA. AFTER THE INITIAL LAND PREPARATION ACTIVITIES ARE COMPLETE A TEMPORARY COVER CROP WILL BE PLANTED AND STRAW MULCH WILL BE APPLIED THROUGHOUT THE CLEARED AREA TO STABILIZE THE PROJECT AREAS THROUGH THE WINTER. MINIMUM COVERAGE REQUIRED TO MAINTAIN EROSION RATES AT ACCEPTABLE LEVELS ARE LISTED IN THE VINEYARD BLOCK COVER CROP SPECIFICATION TABLE, THIS SHEET.
2. THE TEMPORARY COVER CROP WILL BE TILLED IN THE SPRING DURING THE INITIAL VINEYARD ESTABLISHMENT PERIOD (UP TO THE FIRST THREE YEARS). THE TILLED AREAS AND ANY OTHER DISTURBED AREAS OR AREAS WITH LESS THAN ADEQUATE COVER WILL ALSO BE MULCHED EACH YEAR IN THE FALL TO PROTECT THE BARE SOIL WHILE THE COVER CROP IS GETTING ESTABLISHED.
3. AFTER THE VINEYARD ESTABLISHMENT PERIOD ALL VINEYARD BLOCKS WILL BE CONVERTED TO A NO-TILL REGIME. THE NO-TILL COVER CROP WILL BE MOWED IN THE SPRING AND WILL BE RESEEDED AND MULCHED IN THE FALL AS NECESSARY TO ACHIEVE THE SPECIFIED COVER IN THE VINEYARD BLOCK COVER CROP SPECIFICATION TABLE, THIS SHEET.
4. ALL VINEYARD AVENUES WILL BE PROTECTED WITH A PERMANENT NO-TILL COVER CROP WITH DENSITIES MAINTAINED AT THE INDICATED COVER SPECIFICATION FOR THE BLOCK OR MORE THROUGHOUT THE RAINY SEASON. VINEYARD AVENUES SHALL NOT BE TILLED. ALTERNATIVELY, VINEYARD AVENUES MAY BE LINED WITH CRUSHED ROCK TO PROTECT FROM EROSION AND PROVIDE ALL WEATHER ACCESS.
5. THE COVER CROP SHOULD BE IRRIGATED PRIOR TO THE RAINY SEASON TO ESTABLISH A DENSE COVER PRIOR TO THE ONSET OF HEAVY RAINS. THIS IS ESPECIALLY IMPORTANT IN EROSION PRONE AREAS SUCH AS VINEYARD AVENUES AND MORE STEEPLY SLOPING AREAS. IN ORDER TO EFFECTIVELY ESTABLISH COVER, AT LEAST TWO INCHES OF WATER SHOULD BE APPLIED TO GERMINATE THE SEEDS. WATER SHOULD BE APPLIED BY SPRINKLER OR MICROSPRAYERS AT A RATE THAT DOES NOT CAUSE RUNOFF OR EROSION. ADDITIONAL WATER SHOULD BE APPLIED, AS NECESSARY, TO ACHIEVE THE DESIGN COVER PERCENTAGE AND TO MAINTAIN THE COVER CROP UNTIL SUFFICIENT RAINFALL OCCURS. IF ADEQUATE WATER IS NOT AVAILABLE TO IRRIGATE THE ENTIRE PROJECT AREA THEN 20 FOOT WIDE STRIPS, ORIENTATED ALONG THE CONTOUR, SHOULD BE IRRIGATED. LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

VINEYARD BLOCK COVER CROP SPECIFICATION TABLE

BLOCK ID	REQUIRED COVER %
EN	75%
ES-1	75%
ES-2	80% *

* 85 REQUIRED IN A SMALL ISOLATED AREA IN THE NORTH PART OF ES-2. SEE SHEET C3.

ABBREVIATIONS:

AB	AGGREGATE BASE	MIN	MINIMUM
AC	ASPHALT CONCRETE	OC	ON CENTER
AD	AREA DRAIN	OD	OUTSIDE DIAMETER
AP	ANGLE POINT	OG	ORIGINAL GRADE
BTM	BOTTOM	(P)	PROPOSED
CLR	CLEAR	PC	POINT OF CURVATURE
CONF	CONFORM	PCC	PORTLAND CEMENT CONCRETE
CP	CONTROL POINT	PL	PROPERTY LINE
DCV	DOUBLE CHECK VALVE	PT	POINT OF TANGENCY
DI	DROP INLET	PVC	POLYVINYL CHLORIDE
DS	DOWN SPOUT	PW	PROCESS WASTE
(E)	EXISTING	PWCO	PROCESS WASTE CLEANOUT
EC	END CURVE	RSV	RECIRCULATING SPLITTER VALVE
ELEV	ELEVATION	SAD	SEE ARCHITECTURAL DRAWINGS
EP	EDGE OF PAVEMENT	SD	STORM DRAIN
EOC	EDGE OF CONCRETE	SDCO	STORM DRAIN CLEANOUT
(F)	FUTURE	SDMH	STORM DRAIN MANHOLE
FDC	FIRE DEPARTMENT CONNECTION	SED	SEE ELECTRICAL DRAWINGS
FF	FINISH FLOOR	SF	SQUARE FEET
FG	FINISH GRADE	SHLDR	SHOULDER
FH	FIRE HYDRANT	SLD	SEE LANDSCAPE DRAWINGS
FL	FLOW LINE	SMD	SEE MECHANICAL DRAWINGS
FS	FINISH SURFACE	SPD	SEE PLUMBING DRAWINGS
FSR	FIRE SPRINKLER RISER	SSD	SEE STRUCTURAL DRAWINGS
GB	GRADE BREAK	SS	SANITARY SEWER
GM	GAS METER	SSCO	SANITARY SEWER CLEANOUT
HMA	HOT MIX ASPHALT	SSMH	SANITARY SEWER MANHOLE
HP	HIGH POINT	TC	TOP FACE OF CURB
INV	INVERT	TW	TOP OF WALL
IPS	IRON PIPE SIZE	TYP	TYPICAL
IRR	IRRIGATION	WM	WATER METER
LF	LINEAR FEET	WV	WATER VALVE
LP	LOW POINT	XFMR	TRANSFORMER
MAX	MAXIMUM		

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REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN
NOTES & ABBREVIATIONS

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2022
9/7/2021
CIVIL
STATE OF CALIFORNIA

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JULY 9, 2021

REVISIONS:	BY:
1 9/7/2021 PLAN CHECK RESPONSE	BT

JOB NUMBER: 19-133

FILE: 19-133ECP-NAL.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C2

OF 6

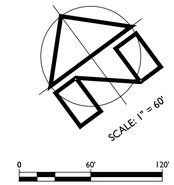
APN 021-320-028
LANDS OF REAL THOREVILOS LLC

VINEYARD BLOCK ES-1
0.7 ± ACRES DISTURBED
0.5 ± ACRES PLANTED
(5' VINE x 5' ROW SPACING)

APN 021-320-022
LANDS OF REAL THOREVILOS LLC

VINEYARD BLOCK ES-2
13.5 ± ACRES DISTURBED
11.1 ± ACRES PLANTED
(4' VINE x 6' ROW SPACING)

(E) CULVERT
(E) IMPROVED RANCH ACCESS ROAD (TYP)
(E) WELL
(E) PAVED DRIVEWAY TO REMAIN
APPROXIMATE PROPERTY LINE
FORMER BARN (BURNED)
FORMER GUEST HOUSE (BURNED)
(E) RESIDENCE
(E) TENNIS COURT
(E) BOCCE COURT
CONSTRUCTION PHASE STAGING AREA. SEE NOTE 4, THIS SHEET.
INSTALL 5'x5' ROCK ENERGY DISSIPATER AT EXISTING DRAIN OUTFALL
INSTALL STRAW WATTLE OR CONTOUR (TYP)
INSTALL STRAW WATTLE (TYP)
INSTALL TREE PROTECTION FENCING OR FLAGGING AT CLEARING LIMITS
VINEYARD AVENUE / LIMIT OF CLEARING
VINEYARD BLOCK / LIMIT OF RIPPING
APPROXIMATE TOP OF BANK
EPHEMERAL STREAM FLOWLINE
35' SETBACK FROM TOP OF BANK (TYP)
20' VINEYARD AVENUE
35' ROW
109 (SOIL TYPE)
138 (SOIL TYPE)
140 (SOIL TYPE)



LEGEND:

- APPROXIMATE PROPERTY LINE
- SOIL TYPE BOUNDARY
- BLUELINE STREAM
- VINEYARD AVENUE / CLEARING LIMITS
- VINEYARD BLOCK / LIMIT OF RIPPING
- ROW — VINE ROWS & ROW DIRECTION
- x — TREE PROTECTION FENCING OR FLAGGING
- STRAW WATTLE SEDIMENT BARRIER
- WB — WATERBAR
- ROCK ENERGY DISSIPATOR
- 1 — PORTION OF VINEYARD BLOCK ES-2 TO BE MANAGED WITH 85% PERMANENT COVER
- 1 — PHOTO LOCATION AND DIRECTION

SOIL TYPE LEGEND:

109	BOOMER GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
138	FORWARD GRAVELLY LOAM, 2 TO 9 PERCENT SLOPES
140	FORWARD GRAVELLY LOAM, 30 TO 75 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

NOTES:

1. ALL CLEARING LIMITS SHALL BE MARKED BY THE ENGINEER OR SURVEYOR PRIOR TO CONSTRUCTION AND TEMPORARY CONSTRUCTION FENCING (ORANGE FENCING OR EQUIVALENT) SHALL BE INSTALLED ALONG THE CLEARING LIMITS PRIOR TO ANY LAND PREPARATION ACTIVITIES. THE TEMPORARY CONSTRUCTION FENCING SHALL BE ADJUSTED AROUND THE CANOPY OF ANY TREES THAT ARE TO REMAIN OUTSIDE OF THE CLEARING LIMITS WITH CANOPY THAT OVERHANGS INTO THE CLEARING LIMITS TO KEEP LAND PREPARATION ACTIVITIES OUTSIDE OF THE TREE CANOPY AREA.
2. ALL STREAM SETBACKS SHALL BE VERIFIED BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. TRACK WALK ENTIRE DISTURBED AREA. SEE SURFACE ROUGHENING DETAIL, SHEET C6.
4. ALL TEMPORARY STAGING, STOCKPILE AND PARKING AREAS SHALL BE WITHIN THE PROPOSED DEVELOPMENT AREAS. NO STAGING, STOCKPILING, PARKING OR OTHER LAND DISTURBANCE SHALL OCCUR OUTSIDE OF THE PROPOSED DEVELOPMENT AREAS.

PHOTO NOTE:

1 REPRESENTS APPROXIMATE LOCATION AND DIRECTION OF ISOMETRIC VIEW OBTAINED FROM GOOGLE EARTH. SEE PHOTOGRAPHIC DOCUMENTATION OF EXISTING SITE CONDITIONS FOR THE REAL THOREVILOS LLC VINEYARD DEVELOPMENT EROSION CONTROL PLAN FOR PHOTOGRAPHS.

EROSION CONTROL PLAN - ECOTONE SOUTH-1 & ECOTONE SOUTH-2

SCALE: 1" = 60'

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www.appliedcivil.com

REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN
EROSION CONTROL PLAN - ECOTONE SOUTH-1 & ECOTONE SOUTH-2

PREPARED UNDER THE DIRECTION OF:

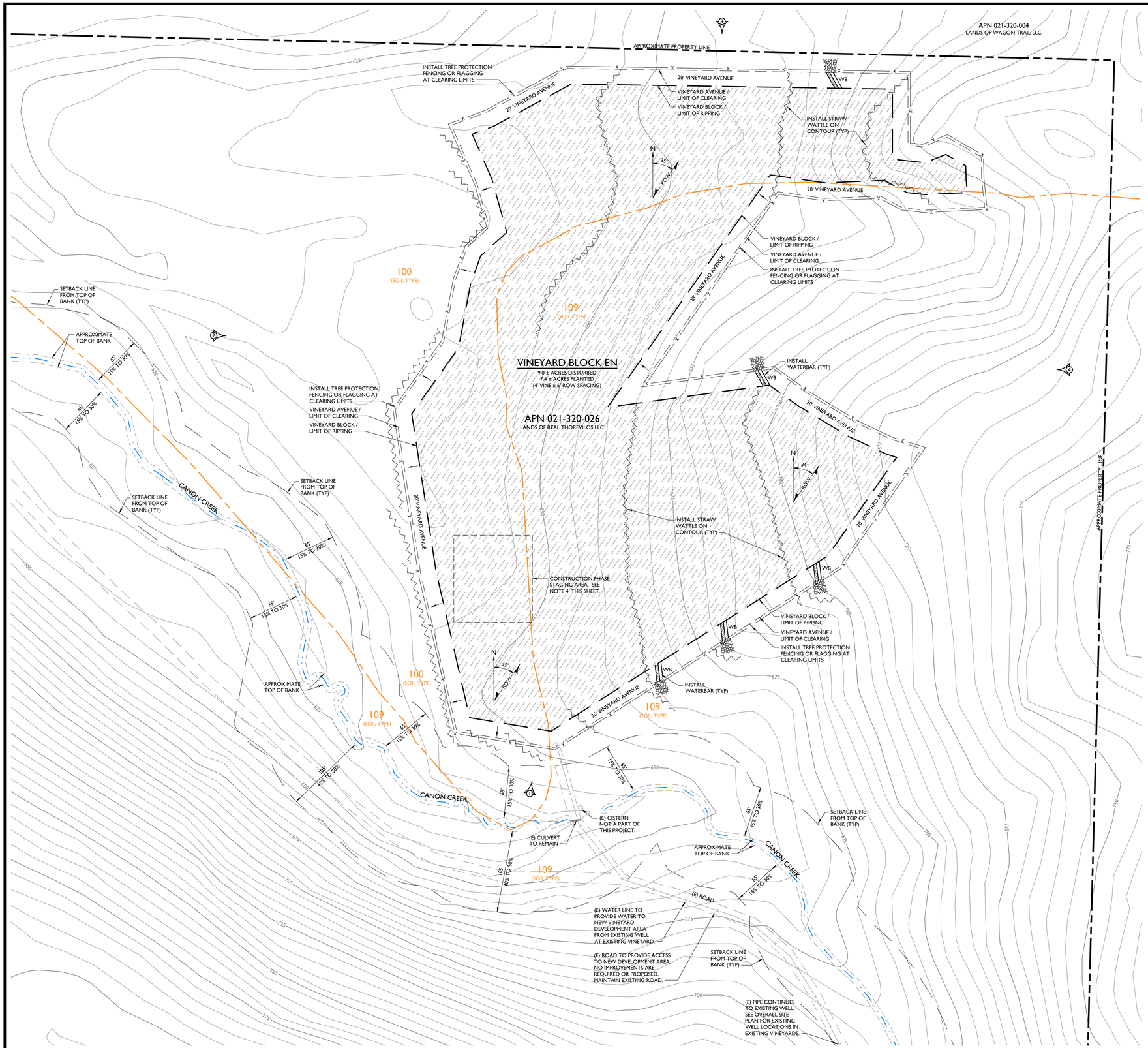
REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2022
9/7/2021
CIVIL
STATE OF CALIFORNIA

DRAWN BY: BT DRAFTING
CHECKED BY: MRM
DATE: JULY 9, 2021

REVISIONS:	BY:
1 9/7/2021 PLAN CHECK RESPONSE	BT

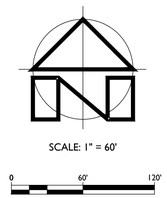
JOB NUMBER: 19-133
FILE: 19-133ECP-ES.DWG
ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C3
OF 6



EROSION CONTROL PLAN - ECOTONE NORTH

SCALE: 1" = 60'



LEGEND:

- APPROXIMATE PROPERTY LINE
- SOIL TYPE BOUNDARY
- BLUELINE STREAM
- VINEYARD AVENUE / CLEARING LIMITS
- VINEYARD BLOCK / LIMIT OF RIPPING
- ROW — VINE ROWS & ROW DIRECTION
- x — TREE PROTECTION FENCING OR FLAGGING
- STRAW WATTLE SEDIMENT BARRIER
- WB — WATERBAR
- ROCK ENERGY DISSIPATOR
- PHOTO LOCATION AND DIRECTION

SOIL TYPE LEGEND:

100	AIKEN LOAM, 2 TO 15 PERCENT SLOPES
109	BOOMER GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

NOTES:

1. ALL CLEARING LIMITS SHALL BE MARKED BY THE ENGINEER OR SURVEYOR PRIOR TO CONSTRUCTION AND TEMPORARY CONSTRUCTION FENCING (ORANGE FENCING OR EQUIVALENT) SHALL BE INSTALLED ALONG THE CLEARING LIMITS PRIOR TO ANY LAND PREPARATION ACTIVITIES. THE TEMPORARY CONSTRUCTION FENCING SHALL BE ADJUSTED AROUND THE CANOPY OF ANY TREES THAT ARE TO REMAIN OUTSIDE OF THE CLEARING LIMITS WITH CANOPY THAT OVERHANGS INTO THE CLEARING LIMITS TO KEEP LAND PREPARATION ACTIVITIES OUTSIDE OF THE TREE CANOPY AREA.
2. ALL STREAM SETBACKS SHALL BE VERIFIED BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. TRACK WALK ENTIRE DISTURBED AREA. SEE SURFACE ROUGHENING DETAIL, SHEET C6.
4. ALL TEMPORARY STAGING, STOCKPILE AND PARKING AREAS SHALL BE WITHIN THE PROPOSED DEVELOPMENT AREAS. NO STAGING, STOCKPILING, PARKING OR OTHER LAND DISTURBANCE SHALL OCCUR OUTSIDE OF THE PROPOSED DEVELOPMENT AREAS.

PHOTO NOTE:

① REPRESENTS APPROXIMATE LOCATION AND DIRECTION OF ISOMETRIC VIEW OBTAINED FROM GOOGLE EARTH. SEE PHOTOGRAPHIC DOCUMENTATION OF EXISTING SITE CONDITIONS FOR THE REAL THOREVILOS LLC VINEYARD DEVELOPMENT EROSION CONTROL PLAN FOR PHOTOGRAPHS.

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REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN
EROSION CONTROL PLAN - ECOTONE NORTH

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
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NO. 67435
Exp. 12/31/2022
9/7/2021
CIVIL
STATE OF CALIFORNIA

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JULY 9, 2021

REVISIONS:	BY:
9/7/2021 PLAN CHECK RESPONSE	BT

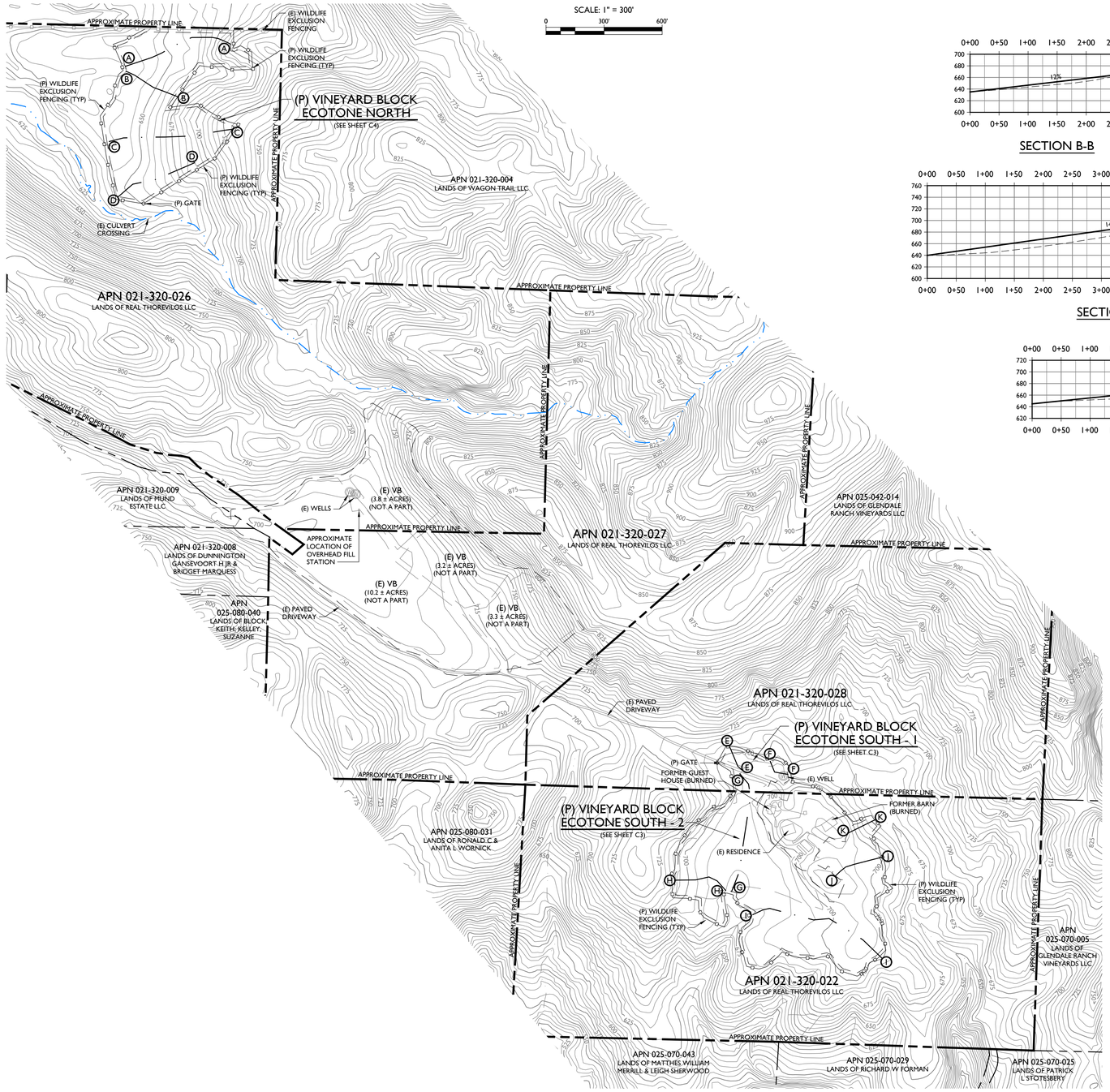
JOB NUMBER: 19-133

FILE: 19-133ECP-EN.DWG

ORIGINAL SIZE: 24" X 36"

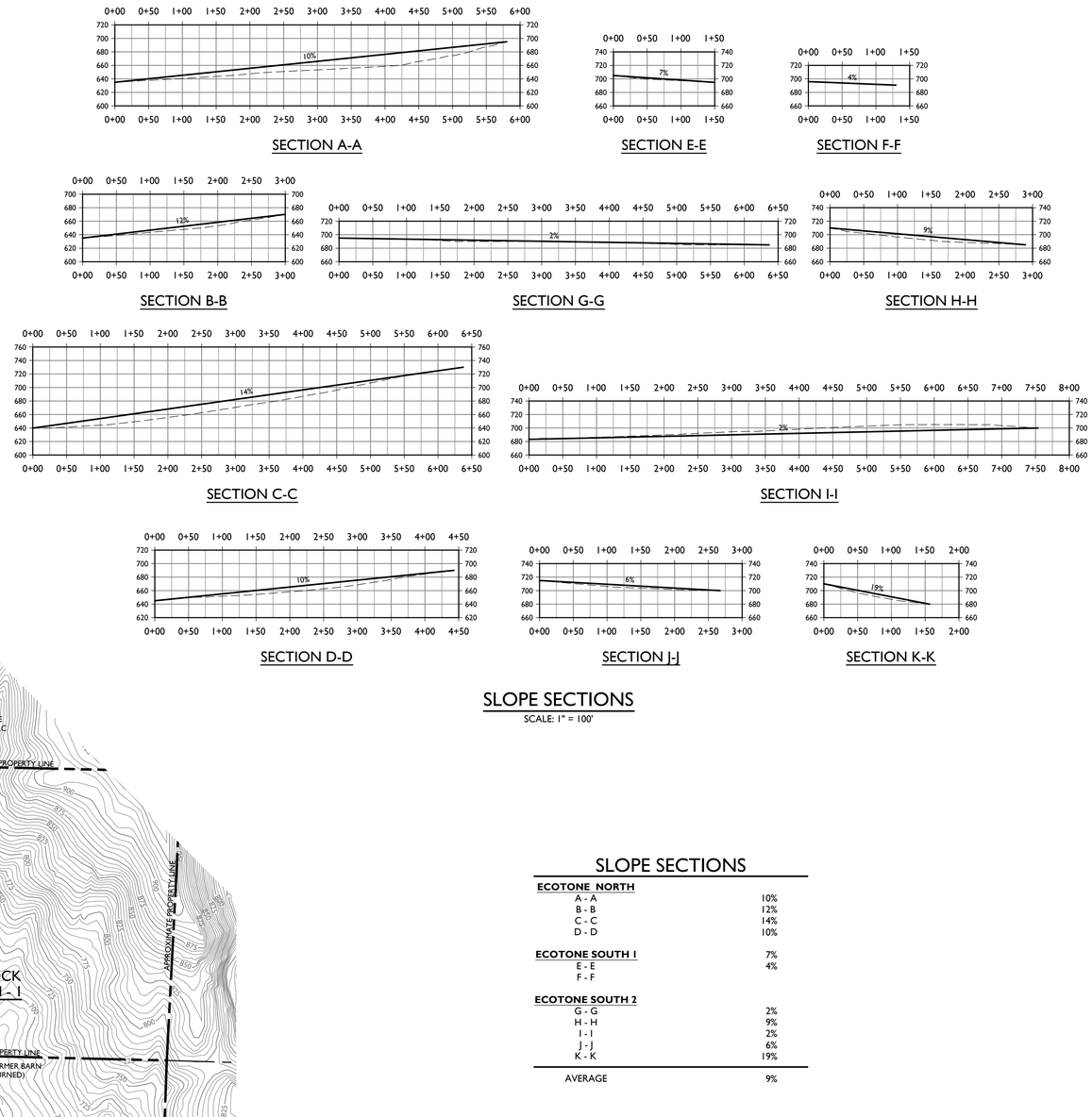
SHEET NUMBER: C4

OF 6



VINEYARD SLOPE DETERMINATION SECTIONS & FENCING PLAN

SCALE: 1" = 300'



SLOPE SECTIONS

SCALE: 1" = 100'

SLOPE SECTIONS

ECOTONE NORTH	
A - A	10%
B - B	12%
C - C	14%
D - D	10%
ECOTONE SOUTH 1	7%
E - E	4%
F - F	
ECOTONE SOUTH 2	
G - G	2%
H - H	9%
I - I	2%
J - J	6%
K - K	19%
AVERAGE	9%

LEGEND:

- APPROXIMATE PROPERTY LINE
- BLUELINE STREAM
- VINEYARD AVENUE / CLEARING LIMITS
- WILDLIFE EXCLUSION FENCING
- SLOPE SECTION. SEE TABLE, THIS SHEET.

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REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN
VINEYARD SLOPE DETERMINATION SECTIONS & FENCING PLAN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
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Exp. 12/31/2022
9/7/2021
CIVIL
STATE OF CALIFORNIA

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JULY 9, 2021

REVISIONS: BY:
1 9/7/2021 BT
PLAN CHECK RESPONSE

JOB NUMBER: 19-133

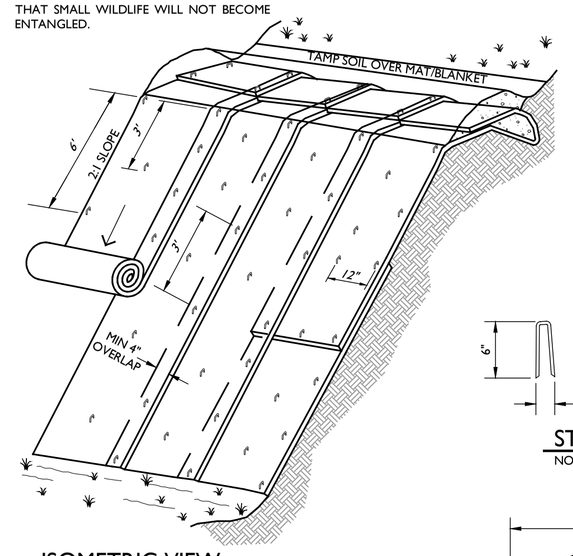
FILE: 19-133ECP-SITESEC.DWG

ORIGINAL SIZE: 24" X 36"

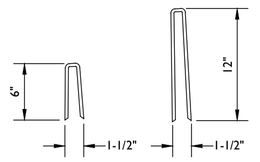
SHEET NUMBER:
C5
OF
6

NOTE:
ALL EROSION CONTROL MATERIALS SHALL BE FREE OF PLASTIC MONOFILAMENT SO THAT SMALL WILDLIFE WILL NOT BECOME ENTANGLED.

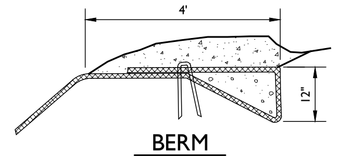
NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS / BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. MATS / BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.



ISOMETRIC VIEW



STAPLES
NOT TO SCALE

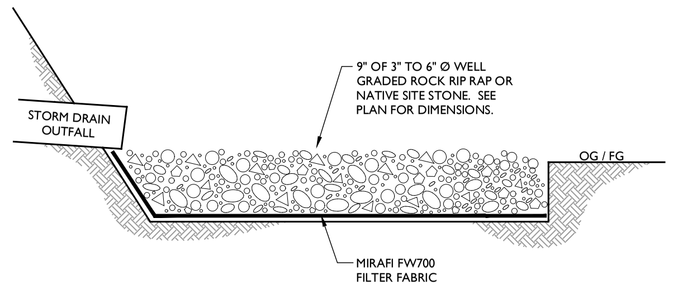


BERM
NOT TO SCALE

TYPICAL SLOPE
SOIL STABILIZATION

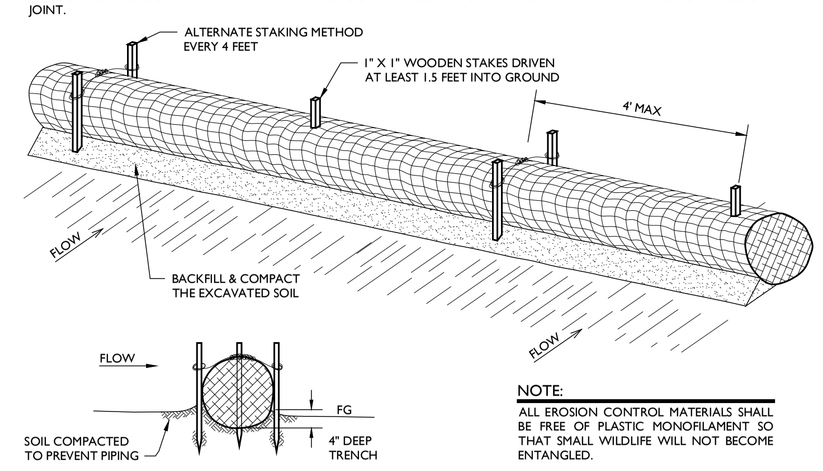
EROSION CONTROL BLANKET DETAIL

NOTE:
1. SEE PLAN VIEW FOR ADDITIONAL DIMENSIONS.



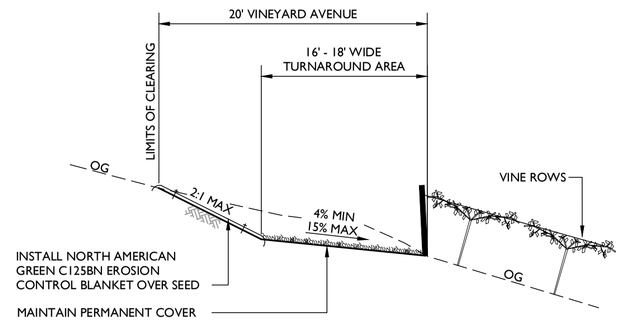
ROCK ENERGY DISSIPATOR DETAIL

NOTES:
1. PREPARE SMOOTH SLOPE BEFORE THE WATTLING PROCEDURE IS STARTED. SHALLOW GULLIES SHOULD BE SMOOTHED AS WORK PROGRESSES.
2. DIG SMALL TRENCHES ACROSS THE SLOPE ON CONTOUR, TO PLACE ROLLS IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE ONE THIRD TO ONE HALF THE THICKNESS OF THE ROLL. WHEN THE SOIL IS LOOSE AND UNCOMPACTED, THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE ROLL 2/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE.
3. IT IS CRITICAL THAT ROLLS ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR. A HAND LEVEL, LASER LEVEL OR EQUIVALENT TYPE OF INSTRUMENT SHOULD BE USED TO ENSURE LEVEL INSTALLATION. START DIGGING TRENCHES AND INSTALL ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
4. LAY THE ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.
5. USE A STRAIGHT BAR TO DRIVE CLEAN HOLES THROUGH THE WATTLE AND INTO THE SOIL. DRIVE THE STAKE THROUGH PREPARED HOLE INTO SOIL. LEAVE ONLY 1 OR 2 INCHES OF STAKE EXPOSED ABOVE ROLL.
6. INSTALL STAKES AT 4 FEET MAX INTERVALS.
7. USE EXCAVATED MATERIAL TO CREATE COMPACTED BERM ON UPSLOPE SIDE OF ROLL TO PREVENT WATER FROM PIPING UNDER ROLL AND FORCE IT TO FILTER THROUGHOUT THE ROLL.
8. ENDS OF ROLLS SHOULD BE OVERLAPPED 1' AND SHOULD BE SECURELY STAKED TO PREVENT WATER PASSAGE THROUGH THE JOINT.

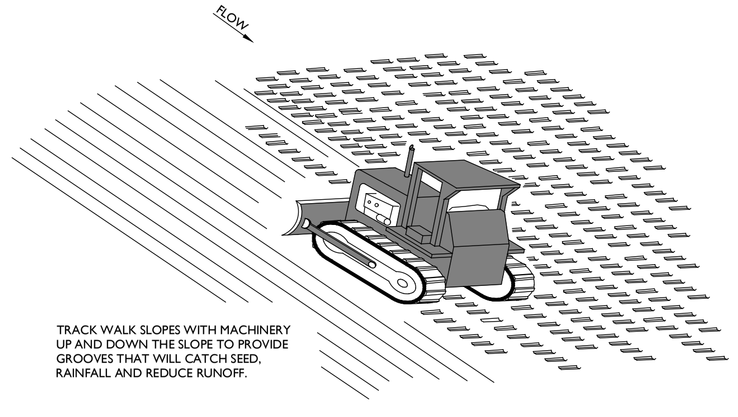


NOTE:
ALL EROSION CONTROL MATERIALS SHALL BE FREE OF PLASTIC MONOFILAMENT SO THAT SMALL WILDLIFE WILL NOT BECOME ENTANGLED.

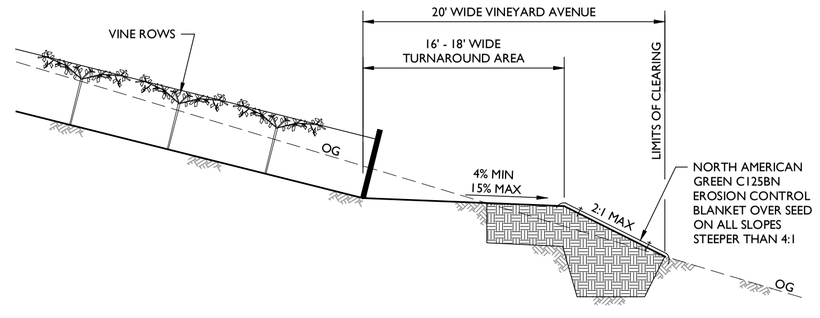
FIBER ROLL / WATTLE SEDIMENT BARRIER DETAIL



OUTSLOPED VINEYARD AVENUE AT TOP OF BLOCK DETAIL



SURFACE ROUGHENING DETAIL



OUTSLOPED VINEYARD AVENUE AT BOTTOM OF BLOCK

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REAL THOREVILOS LLC

VINEYARD DEVELOPMENT EROSION CONTROL PLAN
DETAIL SHEET

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MUELRATH
MRM
NO. 67435
Exp. 12/31/2022
9/7/2021
CIVIL
STATE OF CALIFORNIA

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JULY 9, 2021

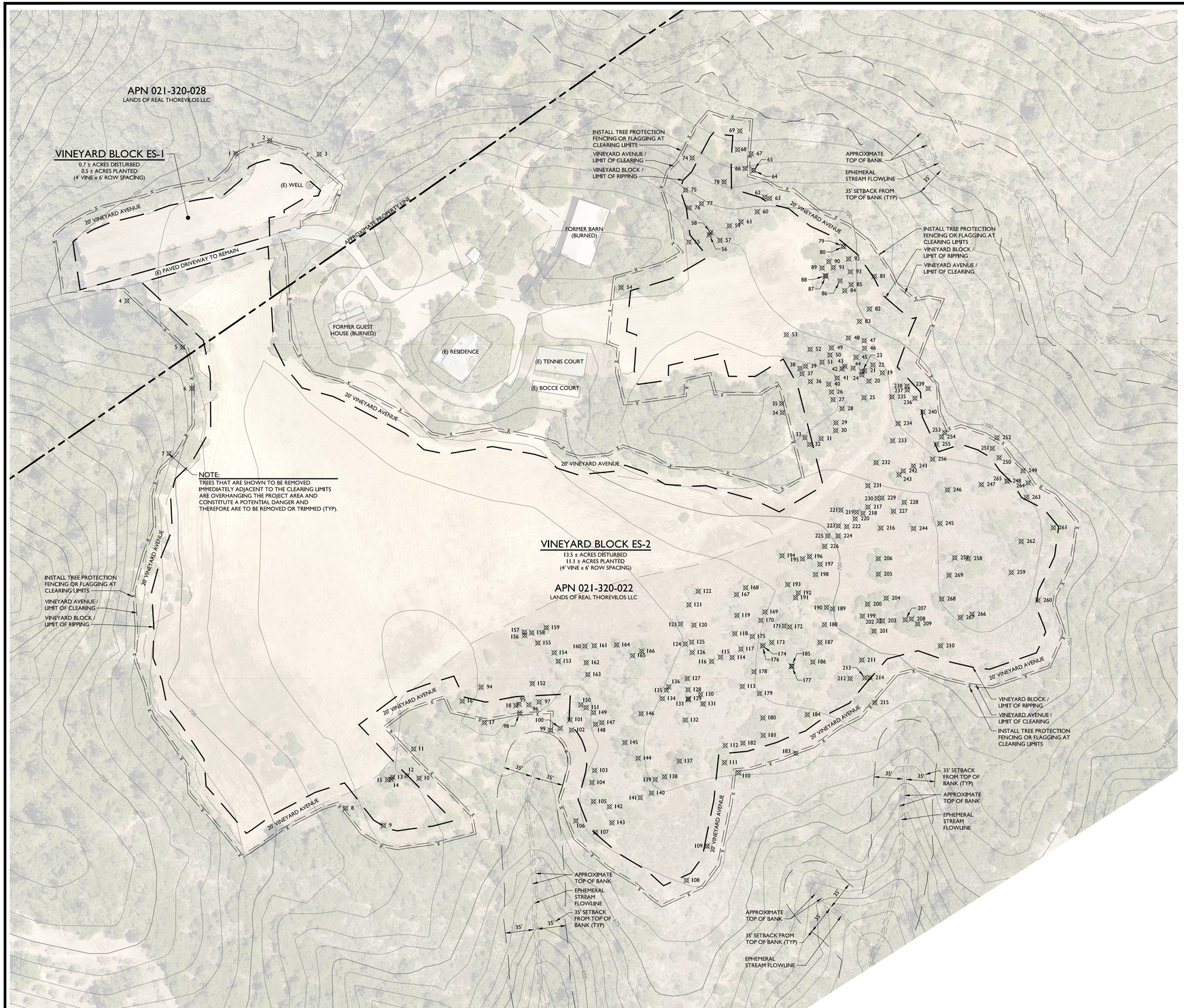
REVISIONS:	BY:
9/7/2021 PLAN CHECK RESPONSE	BT

JOB NUMBER: 19-133

FILE: 19-133ECP-DET.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: C6 OF 6



SCALE: 1" = 60'

0 60' 120'

LEGEND:

- APPROXIMATE PROPERTY LINE
- BLUELINE STREAM
- VINEYARD AVENUE / CLEARING LIMITS
- VINEYARD BLOCK / LIMIT OF RIPPING
- x — TREE PROTECTION FENCING OR FLAGGING
- ⊠ POINT# — TREE TO BE REMOVED

NOTES:

1. TREES IN THE ECOTONE NORTH BLOCK ARE BEING REMOVED UNDER AN EMERGENCY TIMBER HARVEST FOLLOWING THE GLASS FIRE OF 2020 AND ARE THEREFORE NOT INVENTORIED IN THESE EXHIBITS.
2. MOST IF NOT ALL TREES IN THIS AREA SUSTAINED SIGNIFICANT BURN DAMAGE FROM THE GLASS FIRE OF 2020. IT IS EXPECTED THAT AS MANY AS 75% OF THE TREES IDENTIFIED ON THESE PLANS WILL NOT SURVIVE HOWEVER THEY WERE LOCATED TO CONSERVATIVELY SHOW THE EXTENT OF TREE REMOVAL THAT WILL BE REQUIRED FOR THIS PROJECT.

TREE REMOVAL EXHIBIT - ECOTONE SOUTH BLOCKS

SCALE: 1" = 60'

APPLIED CIVIL ENGINEERING INCORPORATED
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Napa, CA 94558
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REAL THOREVILOS LLC

TREE REMOVAL EXHIBIT
TREE REMOVAL EXHIBIT - ECOTONE SOUTH BLOCKS

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MCGRATH
NO. 54703
EXP. 12/31/2022
CIVIL
STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JUNE 2021

REVISIONS: BY:

JOB NUMBER: 19-133

FILE: 19-133EXH-TREE.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: 1 OF 2

Point Number	DBH (inches)	Type
1	12	Live Oak
2	12	Black Oak
3	24	Black Oak
4	14	Live Oak
5	36	Douglas Fir
6	24	Live Oak
7	4 + 6	Live Oak
8	10	Live Oak
9	10	Live Oak
10	14	Live Oak
11	12 + 12	Live Oak
12	10 + 6	Live Oak
13	12	Live Oak
14	8	Live Oak
15	12	Live Oak
16	8 + 8	Live Oak
17	6	Live Oak
18	2 x 6	Live Oak
19	2 x 6	Live Oak
20	14	Oak
21	2 x 8	Oak
22	12	Oak
23	6	Oak
24	16	Oak
25	2 x 8	Oak
26	6	Olive
27	14	Oak
28	8	Oak
29	8 + 10	Oak
30	2x 6 + 2 x 8	Oak
31	6	Oak
32	2 x 8	Madrone
33	10	Oak
34	14	Oak
35	10 + 8	Live Oak
36	18	Live Oak
37	6 + 6 + 4	Live Oak
38	8 + 12	Live Oak
39	8	Oak
40	8	Oak
41	8 + 8	Oak
42	6	Oak
43	6	Oak
44	10	Oak
45	8 + 8	Oak
46	6	Oak
47	10	Live Oak
48	8	Live Oak
49	24	Black Oak
50	6 + 6	Live Oak
51	12 + 10	Live Oak
52		Blue Oak
53	8	Live Oak
54	10	Live Oak
55	36	Live Oak
56	22	Live Oak
57	16	Live Oak
58	20	Live Oak
59	18	Live Oak
60	12	Blue Oak
61	18	Blue Oak
62	18	Live Oak
63	6 + 2 x 16	Live Oak
64	8	Blue Oak
65	8	Live Oak
66	10	Live Oak
67	10	Live Oak
68	3 x 8 + 12	Live Oak
69	2 x 12	Live Oak
~~70~~	~~12~~	~~Live Oak~~
~~71~~	~~2 x 12~~	~~Live Oak~~
~~72~~	~~14~~	~~Blue Oak~~
~~73~~	~~6~~	~~Fir~~
74	3 x 10	Live Oak
75	16	Live Oak
76	16	Live Oak
77	2 x 14	Live Oak
78	16	Live Oak
79	8 + 10	Live Oak
80	8	Blue Oak
81	10	Blue Oak
82	8	Blue Oak
83	14	Blue Oak
84	20	Blue Oak
85	3 x 12	Live Oak
86	12	Live Oak
87	16	Blue Oak
88	16	Blue Oak
89	8	Live Oak
90	14	Blue Oak
91	8 + 10	Live Oak
92	2 x 8	Live Oak
93	8	Blue Oak
94	10	Live Oak
95	6	Live Oak
96	6	Live Oak
97	2 x 10	Live Oak
98	6	Live Oak
99	12	Oak
100	10	Blue Oak

Point Number	DBH (inches)	Type
101	2 x 6	Live Oak
102	6	Live Oak
103	6 + 4	Manzanita
104	3 x 8 + 12	Live Oak
105	2 x 6 + 8	Live Oak
106	4 x 8 + 6	Live Oak
107	3 x 8 + 10 + 12	Live Oak
108	6	Live Oak
109	8	Live Oak
110	8 + 10	Live Oak
111	8	Live Oak
112	2 x 8 + 10	Live Oak
113	6	Blue Oak
114	2 x 6	Blue Oak
115	6	Manzanita
116	4 x 6	Live Oak
117	6	Manzanita
118	2 x 6	Live Oak
119	12	Blue Oak
120	6	Blue Oak
121	6	Blue Oak
122	8 + 10	Blue Oak
123	3 x 6	Blue Oak
124	6	Live Oak
125	8	Blue Oak
126	8	Live Oak
127	2 x 6	Live Oak
128	2 x 6	Blue Oak
129	6	Live Oak
130	6	Live Oak
131	6	Blue Oak
132	10 + 8	Live Oak
133	6	Live Oak
134	8	Blue Oak
135	2 x 6	Live Oak
136	2 x 6	Live Oak
137	10 + 12 + 14	Live Oak
138	3 x 10	Live Oak
139	10 + 8	Live Oak
140	2 x 6 + 8	Live Oak
141	6	Manzanita
142	2 x 6	Manzanita
143	8	Manzanita
144	6 + 12	Live Oak
145	5 x 6	Live Oak
146	6 + 8 + 2 x 10	Live Oak
147	6	Live Oak
148	6	Live Oak
149	2 x 6	Live Oak
150	6	Blue Oak
151	2 x 8	Live Oak
152	6	Blue Oak
153	6	Blue Oak
154	2 x 6	Blue Oak
155	6	Blue Oak
156	10 + 6	Blue Oak
157	6	Blue Oak
158	6	Blue Oak
159	6	Blue Oak
160	2 x 6	Live Oak
161	2 x6	Blue Oak
162	6	Blue Oak
163	8	Blue Oak
164	8	Blue Oak
165	2 x 6	Blue Oak
166	2 x 8	Live Oak
167	2 x 6	Blue Oak
168	2 x 6	Live Oak
169	2 x 6	Live Oak
170	6	Manzanita
171	14	Live Oak
172	8	Manzanita
173	2 x 12 + 8	Live Oak
174	6	Live Oak
175	6	Blue Oak
176	6	Live Oak
177	12 + 8	Live Oak
178	3 x 6	Live Oak
179	2 x 6	Live Oak
180	3 x 6	Manzanita
181	2 x 8	Live Oak
182	2 x 6	Manzanita
183	6	Blue Oak
184	8 + 12	Live Oak
185	18	Live Oak
186	14 + 10	Live Oak
187	2 x 6	Manzanita
188	6	Manzanita
189	8	Blue Oak
190	6 + 8	Live Oak
191	6 + 8	Live Oak
192	8	Live Oak
193	2 x 6	Live Oak
194	8	Live Oak
195	8	Blue Oak
196	6	Blue Oak
197	12	Blue Oak
198	8	Blue Oak
199	2 x 10	Live Oak
200	4 xx 10	Live Oak

Point Number	DBH (inches)	Type
201	10	Live Oak
202	6	Manzanita
203	8	Live Oak
204	10	Live Oak
205	3 x 10	Live Oak
206	3 x 6 + 10	Live Oak
207	2 x 10 + 8	Live Oak
208	10 + 6	Live Oak
209	2 x 8	Manzanita
210	3 x 6	Live Oak
211	2 x 10	Live Oak
212	8	Manzanita
213	10	Live Oak
214	10	Live Oak
215	6 + 8	Live Oak
216	6	Blue Oak
217	8	Blue Oak
218	6	Blue Oak
219	6	Blue Oak
220	8	Blue Oak
221	2 x 6	Blue Oak
222	8	Blue Oak
223	3 x 6	Blue Oak
224	8	Live Oak
225	8	Blue Oak
226	8	Blue Oak
227	6	Blue Oak
228	2 x 8	Blue Oak
229	6	Blue Oak
230	6	Blue Oak
231	6	Blue Oak
232	6 + 8	Blue Oak
233	2 x 8	Blue Oak
234	6	Blue Oak
235	6	Blue Oak
236	8	Blue Oak
237	6	Blue Oak
238	6	Blue Oak
239	6	Blue Oak
240	6	Blue Oak
241	6	Blue Oak
242	6	Blue Oak
243	3 x 8	Live Oak
244	6	Blue Oak
245	6	Manzanita
246	2 x 12	Live Oak
247	8 + 12	Live Oak
248	8	Live Oak
249	3 x 8 + 10	Live Oak
250	10	Live Oak
251	8	Live Oak
252	8	Live Oak
253	16	Live Oak
254	2 x 6	Live Oak
255	3 x 6	Live Oak
256	3 x 6	Live Oak
257	18	Live Oak
258	12	Live Oak
259	6	Blue Oak
260	6	Manzanita
261	12	Live Oak
262	14	Live Oak
263	6	Blue Oak
264	8	Live Oak
265	10	Live Oak
266	24	Live Oak
267	10	Live Oak
268	6 + 8	Manzanita
269	6	Manzanita

TOTAL TREES TO BE REMOVED = 265

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REAL THOREVILOS LLC

TREE REMOVAL EXHIBIT

TREE REMOVAL TABLE - ECOTONE SOUTH BLOCKS

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MORRIS
No. 73118
CIVIL
STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: JUNE 2021

REVISIONS: BY:

JOB NUMBER: 19-133

FILE: 19-133EXH-TREE.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: 2 OF 2

Real Thorevilos LLC

Vineyard Development Erosion Control Plan

Erosion Control Plan Narrative

1. *The nature and purpose of all/any land clearing, grading or earthmoving activity, the amount of cut & fill, the location of spoils storage and disposal areas, the total number of acres of grading involved including but not limited to roads, vineyards, avenues, trenching for irrigation or pipes, reservoirs, wells, water tanks, septic systems, etc. Indicate the acres of land clearing, grading or earthmoving activity that will occur on 30% or greater slopes. (Note: slopes shall be calculated in whole percent)*

   The project site is on two parcels of land located at Mund Road approximately 1.7 aerial miles northeast of the City of St. Helena in Napa County, California (Napa County APNs 021-320-022, -026, -027 & -028. The two proposed project areas are located on a large holding of land owned by Real Thorevilos LLC that encompasses approximately 384 acres on these four parcels. Ecotone North is located in the northwest portion of the ranch and Ecotone South is located in the southeast portion of the ranch. Ecotone North an Ecotone South project areas are approximately 4,200 feet apart from each other.

   The entry to property is from the end of Mund Road, located approximately 0.8 road miles southeast of the intersection of Mund Road and Deer Park Road. Access to the Ecotone North project area is via an existing ranch road that starts at the end of Mund Road, continues northerly through an existing vineyard area and then turns northwesterly, following Cannon Creek, to the Ecotone North project site. Access to the Ecotone South project area is via an existing paved driveway that extends from the terminus of Mund Road to the existing main residence site which is located immediately adjacent to the Ecotone South project area. All roads required to provide access to the two project sites are existing and no new roads are planned as part of this project.

   The proposed vineyard development consists of three vineyard blocks (Ecotone North, Ecotone South-1 and Ecotone S-2). Ecotone South-1 and Ecotone South-2 are separated by the existing paved driveway that provides access to the existing residence on the property.

   The purpose of the proposed land clearing, grading and earthmoving is to prepare the project area for planting with new vineyard. Following is a list of planned land preparation activities:

   - Clearing and grubbing of existing vegetation (grass, shrubs, trees, etc.) and root systems
   - Minor re-contouring of existing topography to promote sheet flow
   - Ripping as needed to fracture subsoils and rock to a depth of approximately 36 to 48 inches to prepare soil for planting and to incorporate soil amendments (ripping to be limited to vineyard block areas shown on the plans)
   - Mechanical and hand rock raking to remove loose rocks from the ground surface
   - Discing and harrowing to prepare seedbed for vegetative erosion control measures

- Installation of erosion control features
- Installation of vineyard trellis and irrigation systems

Grading within the project area will be the minimum amount needed to smooth out the existing ground surface and create smooth slopes to promote sheet flow and to install the proposed runoff and erosion control measures. Cuts and fills will be minor and are expected to average from 0 to 1 foot. The estimated quantity of grading is approximately 2,000 cubic yards of cut and fill. An earthwork balance will be achieved onsite. Import and/or export of soil material is not planned however, soil amendments will be imported and incorporated into the project area as needed to improve soil tilth and thereby support vine and cover crop growth.

All temporary debris, vegetation, soil and soil amendment stockpiles and storage areas, if needed, will be located within the proposed vineyard development area and clearing limits identified on the plans. No long-term stockpiles of rock or soil are anticipated. Temporary stockpiles, equipment staging and storage areas will be kept within the proposed vineyard development area. It is planned that all rock will be disposed of within the development footprint by being buried. Rock may also be processed (crushed to a useable size) and used for lining existing roads within the vineyard development area and/or on existing ranch roads if sufficient rock is encountered.

The Blocks that are part of this project will have a row spacing of 6 feet and vine spacing along the row of 4 feet for an average vine density of 1,815 vines per acre and a total of approximately 34,485 vines (subject to change based on final viticultural assessments).

Access to both blocks that are part of this project are via existing driveways and existing ranch access roads. No new roads are required.

The total disturbed area for the vineyard development project is 23.2 ± acres. The total disturbed area includes the area to be planted with vines and the area used for perimeter avenues for farming equipment. The total planted area within the 23.2 ± acre project area is 19 ± acres.

Stream and drainage course setbacks for the two development areas are provided in accordance with the Napa County Conservation Regulations. Stream setbacks in the vicinity of the proposed project areas are shown on the Erosion Control Plan.

The details of the proposed vineyard development are shown on the Real Thorevilos LLC Vineyard Development Erosion Control Plan prepared by Applied Civil Engineering Incorporated.

2. *Comprehensive description of existing site conditions, including topography, vegetation (including under-story and canopy cover), and soils. Provide extent of tree canopy covered and shrub and brush without a tree canopy covered areas in acres for each parcel. Identify and indicate the project boundaries in watersheds, including municipal watersheds, and in the water deficient area. The plan preparer is required to visit the site and the narrative must include the date, purpose, and persons making each site visit. The description shall verify the source or validity of the topographic map. Wide angle or panoramic photographs documenting existing site conditions shall be provided. A photo location map indicating the date of the site visit and by whom it was made shall accompany such documentation.*

Topography:

The project area is located on moderately sloping hillside slopes in Napa County northeast of the City of St. Helena (Ecotone North Latitude = 38.532815° N & Longitude = 122.460390° W & Ecotone South Latitude = 38.522300° N & Longitude = 122.448909° W). Topography on the property varies widely and is characterized by gentle to steep slopes ranging from less than 5% to in excess of 50% throughout the properties.

Slopes within the proposed vineyard development area are gentle to moderate. Average slopes range from 2% to 19% within the proposed vineyard block areas with an overall average slope of 9%. These average slopes were determined using topographic data obtained from the Napa County Geographic Information System database and the slope transect method in several representative locations in the proposed development area. Less than 0.1 acres within the project area have slopes in excess of 30%.

Vegetation:

The Calveg designations for the subject parcels were obtained from the Napa County GIS database and are as follows:

CQ – Northern Mixed Chaparral
DF – Pacific Douglas-Fir
HG – Annual Grass / Forbs
NX – Mixed Hardwoods
PD – Gray Pine

Our visual observation of onsite vegetation in the vicinity of the project area is consistent with the Calveg designations.

Tree canopy and Brush / Grass canopy retention ratios are outlined below:

APN	021-320-022	021-320-026	021-320-028
Tree Canopy	52.4 acres	126 acres	63.3 acres
Tree Canopy Removed	5.7 acres	7.9 acres	.1 acres
% Tree Canopy Retained	89%	94%	99%
Brush / Grass Canopy	21.8 acres	8.7 acres	5.5 acres
Brush / Grass Canopy Removed	7.4 acres	1.1 acres	1.0 acres
% Brush / Grass Canopy Retained	66%	87%	82%

*all areas approximate based on aerial photo interpretation

Watershed:

Ecotone North Project Area:
Rainfall runoff from the Ecotone North project area flows westerly into Canon Creek. Canon Creek is a blueline stream and flows into the Napa River approximately 2.5 stream miles from the project site.

Ecotone South Project Area:
Rainfall runoff from the Ecotone South-1 Block and the eastern portion of the Ecotone South-2 block flows easterly via sheet flow into a small drainage that runs southerly across the property. The majority of the Ecotone South-2 Block flows southerly into small drainages that flow southerly and away from the property. These drainages all converge and are tributary to Meadowood Creek which is then tributary to the Napa River.

Entire Project Area:
No changes in runoff patterns are proposed as part of this project. All existing drainage patterns will be maintained.

The project area is not located within a municipal drinking water supply watershed.

The subject parcels are not located within the Milliken-Sarco-Tulocay groundwater deficient area.

Site Visits & Photograph Documentation:

Representatives from Applied Civil Engineering Incorporated have visited the site several times since the Spring of 2019. The purpose of the site visits was to review existing site conditions and to verify the general validity of the topographic mapping for this project that was obtained from the Napa County GIS database. Photographs of the project area were obtained from Google Earth to document site conditions. These photographs are presented in the Photographic Documentation of Existing Site Conditions for the Real Thorevilos LLC Vineyard Development Erosion Control Plan.

3. *All natural and man-made features on-site including but not limited to, streams, watercourses (drainage, channels, etc.), wetlands, riparian habitat, lakes, reservoirs, roads, water tanks, septic systems, reservoirs, ponds, etc. Indicate which ones may be affected by the proposed activity. For blue line and County-definitional streams indicate top, toe, and slope of bank, channel depth, and existing and proposed setback conditions. The entire length of blue line streams & 41 County-named streams on the parcel(s) shall be included in photo documentation (a recent aerial may be included). Provide the name and distance of the nearest blue line and/or County-definitional stream(s) to the project site.*

   Existing manmade improvements on the subject parcels include a residence (note that a second residence and barn was burned during the 2020 Glass Fire) paved, gravel and dirt roads, groundwater wells, vineyards and the related utility infrastructure serving the existing uses. None of the existing manmade improvements will be affected by the proposed project.

   The is one blue-line stream located on the subject properties. This stream is commonly known as Canon Creek. Canon Creek flows westerly and northerly through the properties and is tributary to the Napa River. At the closest point the project area is approximately 65 feet from the blueline stream. This occurs at the south edge of the Ecotone North block and is shown on the Erosion Control Plan. There are not any other streams in the vicinity of the Ecotone North block that were located by the project biologist (WRA).

   There are not any blue line streams in the vicinity of the Ecotone South blocks however there are multiple smaller ephemeral drainages that were located by WRA. These ephemeral drainages are provided with a minimum 35' setback to all new development as shown on the Erosion Control Plan.

4. Location and source of water for irrigation or other uses. Provide copies of all necessary permits.

   The irrigation source for the existing vineyards is from two wells located on the subject properties. The wells currently provide the water used at the existing vineyard and residential uses on the properties. No new wells or other water sources are planned at this time.

5. *Soil types/soil series identified in the Soil Conservation Service (SCS) Napa County Soil Survey, or, if prepared, a site-specific soils report.*

   The United States Department of Agriculture Soil Conservation Service Soils Map for Napa County shows several soil types mapped in the vicinity of the project area including:

   100 Aiken loam, 2 to 15 percent slopes
   109 Boomer gravelly loam, 30 to 50% slopes
   138 Forward gravelly loam, 2 to 9 percent slopes
   140 Forward gravelly loam, 30 to 75% slopes

The approximate soil type boundaries based on data obtained from the Napa County Geographic Information System database are illustrated on Sheets C1, C3 & C4 of the Real Thorevilos LLC Vineyard Development Erosion Control Plan.

6. *Critical areas of erosion and slope instability such as gullies, landslides, etc. within or potentially affecting the "development site" (i.e., the area disturbed by the project) or potentially affected by the work to be undertaken within the development site. In the case of landslides a report indicating the probable effects of the planned work on slope stability and erosion levels shall be prepared and submitted by a registered geologist.*

   Representatives from Applied Civil Engineering Incorporated have visited the site several times to review the project area and have not observed any signs of gullies, landslides, slope instability or excessive erosion within the project area or in close proximity to the project area that would affect, or be affected by, the proposed project.

   While the Napa GIS database indicates the potential presence of landslides in the vicinity of the Ecotone South project area, we have reviewed the USGS Geologic Map and it appears that such features are mapped as ancient landslide deposits. We judge that given the onsite soil conditions and shallow bedrock depths the project will not affect or be affected by historical landslide features.

7. *Any erosion calculations prepared.*

   The Universal Soil Loss Equation (USLE) was used to model pre-project and post-project conditions and estimate soil loss rates from the project area due to sheet erosion. The Soil Loss Analysis prepared by Dave Steiner, CPESC, CPSWC is included as an attachment to this document.

   The USLE calculations predict that net soil loss rates will decrease slightly relative to existing conditions after implementation of the proposed vineyard erosion control plan and in all cases will be less than the prescribed soil loss tolerance (T) for each soil type.

8. *Any/all proposed erosion control methods including, but not limited to:*

   a. *All drainage systems and facilities, walls, cribbing or other erosion protection devices to be constructed with, or as a part of the proposed work.*

      The following measures will be implemented to minimize the potential for erosion on the project site during development and following completion of the vineyard development program:

      - Sediment Barriers – Temporary silt fence and straw wattle type sediment barriers will be installed throughout the development area. The planned locations and installation details are provided on the erosion control plan. Additional sediment barriers will be installed as deemed necessary throughout the course of

construction. The sediment barriers are intended to provide temporary sediment control during development and until the cover crop is established.

- Erosion Control Blankets – Erosion control blankets will be installed over seed on all cut and fill slopes that are steeper than 4:1 (Horizontal : Vertical). Erosion control blankets will provide additional protection from rainfall impact on exposed soils while the cover crop is getting established. The erosion control blanket locations, specifications and installation details are provided on the erosion control plan.

- Water Bars – Temporary water bars will be installed on vineyard avenues to divert runoff from the avenues to prevent rutting. Water bar locations and installation details are shown on the erosion control plan. Water bar locations will be field verified and adjusted by the Engineer based on field conditions.

- Energy Dissipators – Rock rip-rap energy dissipators will be constructed at the outlet of all water bars and rolling dips that direct flow outside of the vineyard area to dissipate runoff energy and minimize the potential for erosion.

b. *Proposed vegetative erosion control measures including maintenance of plant material and slopes until a specified percentage of plant coverage is uniformly established.*

Establishing an effective vegetative cover crop will be the primary method of preventing erosion from the vineyard development area. After the land preparation activities are complete a temporary cover crop will be planted and straw mulch will be spread throughout the cleared area to stabilize the project area through the winter. Minimum coverage has been calculated for each block in order to maintain soil loss rates at or below existing conditions and also below the soil loss tolerance "T" for each soil type. Minimum coverage rates for each development area are as follows:

VINEYARD BLOCK COVER CROP SPECIFICATION TABLE		
Block ID	Required Cover %	Cover Type
Ecotone North	75%	No-Till
Ecotone South-1	75%	No-Till
Ecotone South-2	80%	No-Till

The seed, fertilizer and mulch specifications are provided on the erosion control plan.

This temporary cover crop will be cultivated in the spring and replanted in the fall for the first three years of the vineyard establishment period. Straw mulch will also be applied each fall during the vineyard established period. In the Fall following the vineyard establishment period all vineyard blocks that are to have no-till cover will be planted with a permanent cover crop seed mix and farming practices will transition to a permanent cover, no-till, farming regime. The permanent cover crop will be mowed in the Spring.

Spring mowing will be timed to allow maturation of seeds and promote natural stand regeneration. All permanent cover crop areas will be reseeded every two to three years or more frequently as needed to maintain the required cover percentage. Straw mulching and/or compost will also be applied each fall as needed to achieve the required coverage level.

In blocks with permanent no-till cover weed control under the vine rows will be primarily via mechanical means such as string trimmers and minimal herbicide usage. Herbicide used to control weeds within the vineyard block will be limited to spraying of post-emergent herbicide in a narrow 18 inch maximum width strip spray, if necessary to control weeds at the bases of the vines. The post emergent herbicide will be applied in the late winter or early spring to ensure that the spray area has vegetative protection through the rainy season. If the spray areas are not achieving adequate cover they must be mulched with straw or compost and reseeded each year to provide the required cover.

The cover crop should be irrigated prior to the onset of the rainy season for at least the first Fall following development to establish a dense cover prior to the onset of heavy winter rains.

c. *Proposed erosion control measures for vineyard avenues to accommodate farm or vineyard equipment and materials storage locations*

A permanent cover crop will be planted in the vineyard avenues the first Fall following land preparation activities and it will be maintained as permanent cover throughout the life of the vineyard. No tilling will occur in the vineyard avenues. The permanent cover crop will be mowed in the Spring. Mowing will be timed to allow maturation of seeds and promote natural cover crop regeneration. All permanent cover crop areas will be reseeded every two to three years or more frequently as needed to maintain at least coverage level specified for each vineyard block. Straw mulching and / or pre-irrigation of the cover crop will also be implemented as needed to achieve the required coverage. No herbicides will be used in the vineyard avenues.

Alternatively, vineyard avenues may be lined with crushed rock to limit their susceptibility to erosion and provide all weather access.

Water bars, rolling dips and / or straw wattles will be installed across the sloping vineyard avenues to force runoff off of the avenue and onto adjacent stable areas so that runoff does not concentrate on the vineyard avenues and cause erosion.

9. *Storm water stabilization measures to handle any increased peak rates of runoff from the development of the site that would result in flooding or channel degradation downstream. Include calculations of estimated increased runoff and/or an explanation of why an increase is/is not expected.*

Detailed calculations for predicted runoff rates within the project area for both pre- and post-project conditions utilizing the United States Department of Agriculture Technical Release 55

(USDA TR-55) methodologies are presented in the Hydrologic Analysis prepared by David Steiner, CPESC, CPSWQ. These calculations indicate that post-project conditions, including built in mitigations (i.e. dense cover crops) will result in runoff rates that are not greater than current conditions for the 2, 5, 10, 25, 50 and 100 year design storm events.

Since the project has been designed to maintain existing drainage patterns and since there will be no increase in peak runoff rates, the proposed project will not result in any significant change to local or regional hydrology / runoff patterns that could result in downstream flooding or channel degradation.

10. An implementation schedule indicating:

a. *The proposed vegetation clearing, earth moving/grading, and construction/planting schedule.*
b. *The proposed schedule for winterizing the site (by October 15th of each year the permit is in effect except in a municipal watershed where it is by September 1st).*
c. *The proposed schedule for installation of all interim erosion and sediment control measures (including vegetative measures) and the state of completion of such devices/measures at the end of the grading season (i.e., on October 15th [except in 5 designated municipal watersheds where it is September 1st] of each year the permit will be in effect).*
d. *The proposed schedule for installation of any permanent erosion and sediment control devices required.*

<u>Vineyard Development Schedule</u>

The schedule below is an estimate and is subject to change. Implementation of winterization and erosion control measure must be adjusted to accommodate any changes in development and planning under consultation with the Engineer. All land preparation, planting and erosion control work is to be performed by the property owner or by their contractor / vineyard manager. The vineyard redevelopment program will likely be completed in multiple phases. The schedule below is for Phase 1 and will be repeated as needed for future phases which may or may not overlap with Phase 1.

April 2022	Commence Vineyard Development Program
	Begin clearing and grubbing of existing vineyard vegetation. Complete land preparation for vineyard planting including: ripping, discing, rock removal and processing, recontouring and incorporation of soil amendments.
	Install waterbars and rock energy dissipators.
	Install irrigation and trellis systems. Plant rootstock.

Prior to October 15, 2022	Complete all earth disturbing activities. Winterize Site Seed vineyard with temporary cover crop seed mix Seed vineyard avenues with permanent cover crop seed mix Place fertilizer, straw mulch and erosion control blankets Install sediment barriers Install water bars Pre-irrigate cover crop to establish cover prior to rainy season. Establish reserve of erosion control measures to be maintained onsite throughout the rainy season to facilitate rapid deployment. Materials shall include silt fence, straw wattle, straw, erosion control seed mix, erosion control blanket and plastic sheeting.
October 15, 2022 - April 2023	Inspect and maintain vegetative cover and erosion control devices at least once per week, prior to each anticipated rainfall event, at least once every 24 hours during extended rainfall events and following each rainfall event. Reseed and mulch any erosion damaged areas or areas with less than the specified cover percentage and repair or replace erosion control devices as necessary.
Spring 2023	Cultivate temporary cover crop within vineyard block footprint area and perform fine site grading to repair any storm damaged areas. No tilling of vineyard avenues is to be performed.
Prior to October 15, 2023	Complete all earth disturbing activities & drainage improvements installation. Winterize Site Seed vineyard with temporary cover crop seed mix Seed vineyard avenues with permanent cover crop seed mix Place fertilizer, straw mulch and erosion control blankets Install sediment barriers Install water bars

	Establish reserve of erosion control measures to be maintained onsite throughout the rainy season to facilitate rapid deployment. Materials shall include silt fence, straw wattle, straw, erosion control seed mix, erosion control blanket and plastic sheeting.
October 15, 2023 - April 2024	Inspect and maintain vegetative cover and erosion control devices at least once per week, prior to each anticipated rainfall event, at least once every 24 hours during extended rainfall events and following each rainfall event. Reseed and mulch any erosion damaged areas or areas with less than the specified cover percentage and repair or replace erosion control devices as necessary.
Spring 2024	Cultivate temporary cover crop and perform fine site grading to repair any storm damaged areas.
Prior to October 15, 2024	Complete all earth disturbing activities & drainage improvements installation. Winterize Site Seed vineyard with temporary cover crop seed mix Seed vineyard avenues with permanent cover crop seed mix Place fertilizer, straw mulch and erosion control blankets Install sediment barriers Install water bars Establish reserve of erosion control measures to be maintained onsite throughout the rainy season to facilitate rapid deployment. Materials shall include silt fence, straw wattle, straw, erosion control seed mix, erosion control blanket and plastic sheeting.
October 15, 2024 - April 2025	Inspect and maintain vegetative cover and erosion control devices at least once per week, prior to each anticipated rainfall event, at least once every 24 hours during extended rainfall events and following each rainfall event. Reseed and mulch any erosion damaged areas or areas with less than the specified cover percentage and repair or replace erosion control devices as necessary.
Spring 2025	Cultivate temporary cover crop and perform fine site grading to repair any storm damaged areas.

Prior to October 15, 2025	Complete all earth disturbing activities & drainage improvements installation. Winterize Site Seed vineyard with permanent cover crop seed mix Seed vineyard avenues with permanent cover crop seed mix Place fertilizer, straw mulch and erosion control blankets Install sediment barriers Install water bars Establish reserve of erosion control measures to be maintained onsite throughout the rainy season to facilitate rapid deployment. Materials shall include silt fence, straw wattle, straw, erosion control seed mix, erosion control blanket and plastic sheeting.
October 15, 2025 - April 2026	Inspect and maintain vegetative cover and erosion control devices at least once per week, prior to each anticipated rainfall event, at least once every 24 hours during extended rainfall events and following each rainfall event. Reseed and mulch any erosion damaged areas or areas with less than the specified cover percentage and repair or replace erosion control devices as necessary.
Spring 2026 & Beyond	See Annual Maintenance Schedule

<u>Annual Maintenance Schedule</u>

Spring	Mow permanent cover crop in vineyard and vineyard avenues and perform fine site grading to repair any storm damaged areas.
Prior to October 15	Winterize Site Repair any damage to vineyard and vineyard avenues that has occurred during the farming season. Place seed and straw on all vineyard avenues as needed to achieve the specified cover percentage. Install water bars. Place erosion control seed, fertilizer, straw mulch, erosion control blankets and sediment barriers as necessary to

	stabilize any erosion prone areas outside and adjacent to the vineyard areas.
October 15 - April 1	Inspect and maintain vegetative cover and erosion control devices at least once per week, prior to each anticipated rainfall event, at least once every 24 hours during extended rainfall events and following each rainfall event. Reseed and mulch any erosion damaged areas or areas with less than the specified percentage cover and repair or replace erosion control devices as necessary.

11. The estimated cost of implementation of the erosion and sediment control measures.

Implementation of erosion and sediment control measures for this project is anticipated to cost approximately $5,000 to $10,000 per acre for installation and maintenance. This estimate includes only the erosion and sediment control portions of the project, not the entire cost of permitting, engineering, land preparation, development, irrigation systems, trellis systems, and plants.