

QUANTUM LIMIT VINEYARDS

NEW VINEYARD DEVELOPMENT - EROSION CONTROL PLAN

Exhibit 1-A

Erosion Control Notes:

- Perform erosion prevention and sediment control in accordance with the latest edition of appendix chapter 33 of the California Building Code, applicable Sonoma County regulations, and Section 20 of the Caltrans Standard Specifications.
- The approved plans shall conform with the erosion prevention and sediment control best management practices contained in the latest editions of the following publications or an equivalent best management practice:
Erosion and Sediment Control Field Manual by the San Francisco Bay Regional Water Quality Control Board.
Manual of Standards for Erosion & Sediment Control Measures by the Association of Bay Area Governments.
Construction Site Best Management Practices Manual by Caltrans.
Stormwater Best Management Practice Handbook by the California Stormwater Quality Association.
- If discrepancies occur between these notes, material referenced herein or manufacturer's recommendations, then the most protective shall apply.
- The owner is responsible for obtaining and complying with the national pollutant discharge elimination system (npdes) general permit no. Cas00002 waste discharge requirements for discharges of storm water runoff associated with construction activity disturbing land equal to or greater than one acre. Construction activities include but are not limited to clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement.
- Preservation of existing vegetation shall occur to the maximum extent practicable.
- The owner is responsible for preventing storm water pollution generated from the construction site year round. The owner must implement an effective combination of erosion prevention and sediment control on all disturbed areas during the rainy season (October 15 - April 15).
- Erosion prevention and sediment control measures shall be inspected by the owner before forecasted storm events and after actual storm events to ensure measures are functioning properly. Storm events produce at least 1 inch of precipitation in a 24 hour period. Erosion prevention and sediment control measures that have failed or are no longer effective shall be promptly replaced. Erosion prevention and sediment control measures shall be maintained until disturbed areas are stabilized.
- Changes to the erosion prevention and sediment control plan may be made to respond to field conditions. Changes shall be noted on the plan when made.
- Discharges of potential pollutants from construction sites shall be prevented using source controls to the maximum extent practicable. Potential pollutants include but are not limited to: sediment, trash, nutrients, pathogens, petroleum hydrocarbons, metals, concrete, cement, asphalt, lime, paint, stains, glues, wood products, pesticides, herbicides, chemicals, hazardous waste, sanitary waste, vehicle or equipment wash water and chlorinated water

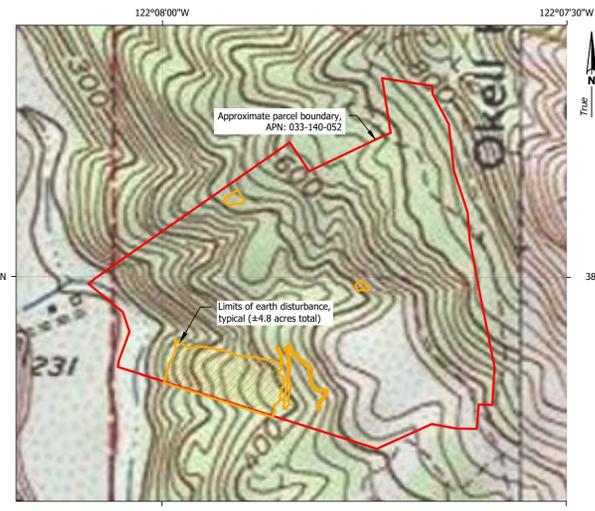
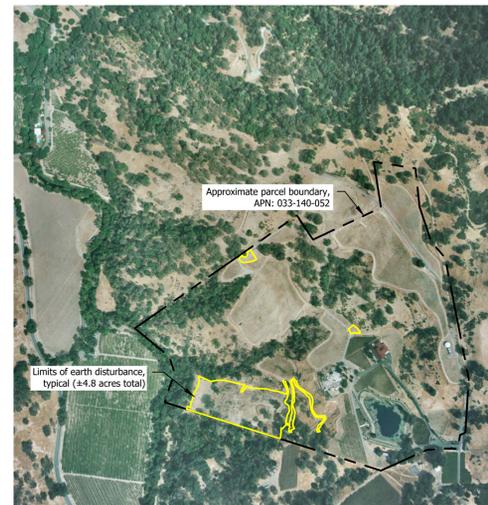
Erosion Control Plan Narrative:

- Nature and Purpose of All Land Clearing, Grading or Earthmoving Activity:**
 - This project proposes the development of approximately 4.1 net acres (4.8 gross acres) of vineyard at 25 Quail Ridge Dr., located in Napa, California. An additional 0.1 acres of earth disturbance will be required for trenching and installation of approximately 710 feet of new irrigation mainline, which shall be installed to provide irrigation water to the proposed vineyard development areas. The property is owned by Glenn C. Rice and corresponds to APN 033-140-052 (69.9 acres).
 - Activities associated with the completion of this project include tree and brush removal within the proposed development areas, ripping, rock removal, application of soil amendments prior to planting, seeding of cover crop, mulching, installation of straw wattles, trenching for irrigation pipelines, installation of a new surface drainage system, installation of end posts, trellis system and deer fence, and planting of vines.
 - No off-site spoils disposal sites are anticipated. Rocks encountered in the development area shall be used for decoration. Any leftover rocks shall be used as road base. All temporary rock, soil and soil amendments shall be stockpiled within the development areas, if needed. No long term stockpiles of rock or soil are anticipated.
- Description of Existing Site Conditions (prior to site disturbance):**
 - Topographic information was provided by CMP Civil Engineering & Land Surveying from September 2018 and December 2020. The datum is North American Vertical Datum from 1988 (NAVD 88). The elevations in the proposed vineyard areas range from approximately 265 feet to 525 feet above mean sea level. Slopes within the proposed vineyard areas range from 13 to 48 percent.
 - According to a biological report by WRA Environmental Consultants prior to site disturbance, the subject parcel contains vegetation that consists mostly of ruderal grassland interspersed with patches of interior live oak woodland and blue oak woodland. A complete list of plants located within the project areas is included in the biological report prepared by WRA Environmental Consultants, and dated September 2019.
 - The proposed project shall retain approximately 95% of the tree canopy and 86% of the shrub/brush/grass cover that existed on the property in 2018. The 2018 conditions were used as a baseline due to the fact that the subject parcel was damaged by the 2017 Atlas Fire (Napa County Ordinance No. 1441).
 - The project site is located in the Suisun Creek watershed, this is not a municipal watershed, nor is it a water deficient area.
 - Initial site visit was conducted by Omar Reveles of Acme Engineering Inc. on May 23, 2019. Followed by other site visits on May 31, 2019 and July 22, 2019. And the last site visit on August 21, 2019.
- Natural and man-made features on site:**
 - According to the biological report from WRA Environmental Consultants and dated September 2019, an ephemeral stream runs through the subject parcel. A 50 foot minimum setback shall be maintained from the development boundary to the watercourse top of bank. There is also a blue line stream (Suisun Creek) that runs just outside of the western parcel boundary. Setbacks based on existing ground slope shall be maintained from the development boundary to the top of bank of Suisun Creek. These setbacks shall protect any riparian habitat associated with the previously mentioned watercourses.
 - Based on the biological report from WRA Environmental Consultants and dated September 2019, there are no seasonal wetlands or vernal pools associated with the project footprint.
 - There is an existing reservoir on the subject parcel. The spillway of this reservoir drains into a portion of the proposed development area.
 - Access to the subject parcel is achieved through Quail Ridge Dr. off of Wooden Valley Cross Road. There is an existing network of paved, gravel and dirt roads which provide access to all of the existing structures and to the proposed vineyard areas. Structures on the subject parcel include a primary and secondary residence (currently under construction), as well as access roads to these structures.
 - The nearest blue line stream is Suisun Creek, it is approximately 180' west of the project site.
- There are four existing wells on the subject parcel, three of these wells provide water to the two residences, landscaping, livestock and existing vineyard. The fourth well is not yet plumbed into the existing infrastructure. The existing wells shall be the water source for the proposed vineyard. Based on a water availability analysis prepared by Acme Engineering Inc., the total irrigation water required is 1.64 acre-feet per year for the proposed vineyard, and 13.2 acre-feet per year for all water uses on the property (this includes domestic, livestock, landscaping and vineyard irrigation).
- Soil types, boundaries and erosion factors were obtained from Web Soil Survey (<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>).** The soil types present on the project sites are Bressa-Dibble Complex.
 - The Bressa-Dibble Complex has a K-factor (soil erodibility) of 0.43. and a T-factor (natural soil loss) of 3 tons per acre.
- There are no critical areas for erosion within the project site. Implementation of additional erosion control measures will only enhance the stability of the site.
- Soil loss was calculated using the Universal Soil Loss Equation (USLE). USLE calculations show that a 75% minimum ground cover combined with no tillage is adequate to maintain an acceptable soil loss. During the vineyard establishment period all rows will be tilled. In order to prevent excess soil loss during the establishment period, straw rolls will be installed on contour at blocks W, X1 and X2. USLE calculation show that a 75% minimum ground cover with all row tillage and the use of straw rolls is adequate to maintain an acceptable soil loss during the vineyard establishment period.
- Proposed Erosion and Sediment Control Methods:**
 - There are no functioning drainage structures installed at the project site. There is an existing drainage mainline at blocks V and X2, it is our understanding that this drainage mainline has been capped and abandoned. Based on soil loss calculations and a hydrology analysis prepared by Acme Engineering Inc. development of the proposed vineyard blocks will also require installation of certain surface drainage structures. These surface drainage structures consist of cross slope diversion, water bars, drop inlets, drainage mainlines and rock aprons. The purpose of the drop inlets, drainage mainline, cross slope diversions and water bars is to direct runoff away from proposed vineyard areas and towards stabilized discharge locations. Rock aprons shall be installed at all pipe and cross slope diversion outfalls to disperse water and prevent concentrated flow from forming and creating gullies. Water bars shall be installed at locations shown on site plans along vineyard avenues. The final pass with ripping and diskless implements shall be done parallel to contours to the maximum extent practicable to prevent channeling of water downhill during the first winter after development.
 - Proposed Vegetative Erosion Control Measures and Sediment Control Measures
 - Temporary erosion control measures shall consist of the following:
 - All row middles will be tilled for the first year and cover crop shall be established and maintained with a 75% minimum ground cover.
 - Temporary cover crop mix shall be used the first year & shall be installed as follows:
 - Roto-till row middles to a 4" depth within 8" of the vines.
 - Broadcast the following seed mix:

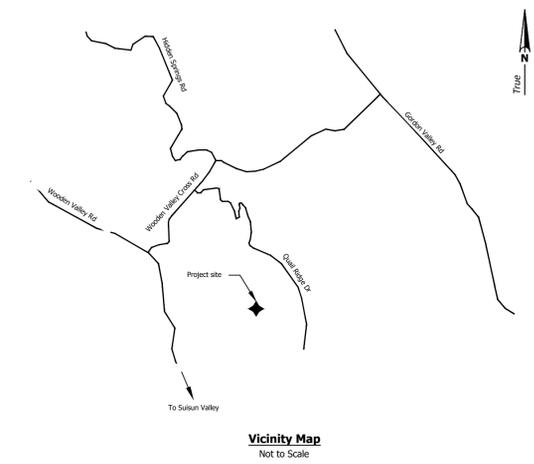
i. Annual Ryegrass	27 pounds per acre
ii. Barley	135 pounds per acre
 - Cover newly seeded soil with rice straw at a rate of 3,000 pounds per acre prior to October 15. Alternate seed mixes may be used upon approval of the project engineer.
 - Straw wattles shall only be required after earth disturbance and up to the first year after vineyard development at the locations shown on site plan. After the first year, straw wattles shall be installed in proposed vineyard and vineyard avenues if needed.
 - Permanent erosion control measures shall consist of the following:
 - Natural vegetation exists downslope of all blocks and is to be utilized in a permanent fashion as a no-touch buffer. No-touch buffers shall have a minimum width (adjacent to watercourses) as specified on the erosion control plan sheet. No-touch buffers shall consist of healthy existing native vegetation.
 - Beginning on the second year and for the remaining life of the vineyard, no tilling shall occur and cover crop shall be maintained with a 75% minimum ground cover.
 - Permanent cover crop mix shall be used the second year and on, and shall be installed as follows:
 - Broadcast the following seed mix:

i. Zorro Annual Fescue	10 pounds per acre
ii. Blando Brome	12 pounds per acre
iii. Rose Clover	17 pounds per acre
iv. Berber Orchardgrass	22 pounds per acre
v. Covar Sheep Fescue	17 pounds per acre
 - Cover newly seeded soil with rice straw at a rate of 3,000 pounds per acre prior to October 15th of each year in the development area until the required cover crop factor is attained and maintained and the site is stable. Alternate seed mixes may be used upon approval of the project engineer.
 - Fertilizer shall be applied as necessary by vineyard management personnel for both the vineyard and to achieve the specified vegetative ground cover percentage. A site specific soil analysis should be performed. Fertilizer shall be incorporated into the cover crop seeding process at the time of seeding.
 - The proposed vineyard spacing and row direction shall be as follows:
 - Block V: 4' x 3' (row x vine), hand farmed on existing benches with vine row direction oriented along the length of the existing benches.
 - Block W: 6.5' x 4.5' (row x vine), tractor farmed with vine row direction oriented up/down hill.
 - Blocks X1 & X2: 6' x 5' (row x vine), tractor farmed with vine row direction oriented up/down hill.
 - Block X3: 1 row on each edge of the access bench between the existing vineyard and proposed vineyard block X1. Row spacing varies with bench width and vine spacing shall be 3'. This block shall be hand farmed.
 - Block Y: 5' x 4.5' (row x vine), hand farmed with vine row direction oriented cross sloped.
 - The owner may subdivide the proposed vineyard blocks further based on viticultural and/or irrigation practices.
 - No pre-emergent herbicides will be strip sprayed in the vine rows for weed control. Contact or systemic herbicides may be applied. The maximum width of the spray strip shall 18 inches in order to achieve 75% minimum vegetative cover (based on 6' row spacing) in the proposed tractor farmed vineyard blocks. Spot spraying of herbicides in hand farmed vineyard blocks is allowed as long as a 75% minimum vegetative cover is attained and maintained.
 - Vineyard avenues shall not be disked and only mowed. Vineyard avenues shall be seeded and mulched prior to October 15 of the development year, and in bare or disturbed areas of the following years. Avenues that don't meet the minimum required vegetative cover percent shall be reseeded and mulched until the specified cover is attained. Seeding and mulching is not required on properly surfaced gravel roads and avenues. No off-site spoils disposal sites are anticipated. Rocks encountered in the development area shall be used for decoration. Any leftover rocks shall be used as road base. All temporary rock, soil and soil amendments shall be stockpiled within the development areas, if needed. No long term stockpiles of rock or soil are anticipated.
- Storm Water Stabilization Measures:**
 - The intention is to maintain the existing sheet flow and shallow concentrated flow characteristics to the maximum extent practicable; however, soil loss calculations show that excessive run lengths at specific locations need to be broken up in order to maintain soil loss values at an acceptable level. This is achieved by installing cross slope diversions at the locations specified on the erosion control plan sheet. These cross slope diversions shall break up the run lengths and divert surface runoff to more stabilized outfall locations.
 - At Block X2 there appears to be a shallow concentrated flow path that originates at the reservoir spillway location and runs through the proposed vineyard area. In order to prevent possible scouring at the future vineyard site, this project proposes that runoff above Block X2 be intercepted with a drop inlet and piped across Block X2 with a drainage mainline. Additional drop inlets shall be installed along the mainline to collect water from proposed cross slope diversions and water bars inside the development area. This will eliminate a potential source of erosive cutting within the vineyard. The runoff captured by the proposed drop inlets shall be directed away from the proposed vineyard and discharged at a more stabilized outfall location.
 - A hydrological study was performed using TR55. The results of this study show that the proposed development will not cause an increase in peak runoff for a 2 year - 24 hour storm, nor will there be an increase in peak runoff for a 100 year - 24 hour storm. Because of these results no increased channel degradation is anticipated due to the proposed vineyard development.
- Wildlife Exclusion Fencing:**
 - Deer fencing shall be at least 6 feet tall, include exit gates at the corners, and be comprised of no smaller than 6-inch by 6-inch squares, such that small animals can move freely through the area and deer do not become trapped within the fencing.
- Implementation Schedule:**
 - Land Preparation:** This portion of the development will consist of clearing, ripping, rock removal, application of soil amendments, maintenance and installation of the proposed drainage structures, installation of end posts, trellis system and deer fence. This will require heavy machinery and large trucks. Approximately 8 workers shall be required for land preparation tasks. These tasks shall be carried out from April to October 2020.
 - Installation of Vineyard and Erosion Control Measures:** This portion of the development will consist of installation of avenues. It shall also include vineyard staking, vineyard planting, irrigation system installation, planting of cover crop and straw mulching. This will require small machinery and foot traffic. Approximately 25 workers will be required for vineyard and erosion control measure installation. These tasks shall be carried out between April and October 2020.
 - Vineyard Maintenance:** This portion of the development will consist of annual vineyard farming practices, annual harvesting and it also includes any necessary adjustments of permanent erosion control practices. This will mostly require ATV and foot traffic; however, if repairs are required larger machinery may also be necessary. The exception to this is during harvest when large trucks and/or trailers are expected to be on site to transport the grapes. The number of workers will vary from 1 during erosion control measure inspections to several during harvest or pruning. These tasks shall begin in September 2020. Winterization tasks shall be completed by October 15 of each year.
 - Agricultural Chemical Mixing and Cleaning Areas:** Mixing of agricultural chemicals and cleaning/washing of chemical application equipment shall occur in the vineyards and at least 50 feet away from any creek, drainage and wetland area.
- Cost of Erosion Control Measures:**
 - Estimated cost of erosion control and sediment control measures (in addition to those previously installed) is approximately \$2,600.00 per acre.
- Directions to the site:**
 - In order to reach the project site; from Napa, take Silverado Trail north for approximately 12 miles. Turn right onto CA-121 N. Stay on CA-121 N for approximately 7 miles. Turn right onto Wooden Valley Rd. Stay on Wooden Valley Rd. for approximately 6 miles. Turn left onto Wooden Valley Cross Rd. Stay on Wooden Valley Cross Rd for approximately 1/4 of a mile. Turn right onto Quail Ridge Dr. Stay on Quail Ridge Dr. for approximately 3/4 of a mile. 25 Quail Ridge Dr. will be on the right hand side. To schedule a site visit please contact Omar Reveles of Acme Engineering Inc. at (707) 253-2263.
- Other projects associated with this property:**
 - There are no other projects associated with the subject parcel at this time.

- Entrance(s) to the construction site shall be maintained in a condition that will prevent tracking or flowing of potential pollutants offsite. Potential pollutants deposited on paved areas within the county right-of-way, such as roadways and sidewalks, shall be properly disposed of at the end of each working day or more frequently as necessary.
- Exposed slopes shall be protected by using erosion prevention measures to the maximum extent practicable, such as establishing 75% vegetative coverage, hydroseeding, straw mulch, geotextiles, plastic covers, blankets or mats.
- Whenever it is not possible to utilize erosion prevention measures, exposed slopes shall employ sediment control devices, such as fiber rolls and silt fences. Fiber rolls and silt fences shall be trenched and keyed into the soil and installed on contour. Silt fences shall be installed approximately 2 to 5 feet from toe of slope.
- Hydroseeding shall be conducted in a three step process. First, evenly apply seed mix and fertilizer to the exposed slope. Second, evenly apply mulch over the seed and fertilizer. Third, stabilize the mulch in place. Applications shall be broadcasted mechanically or manually at the rates specified below. Seed mix and fertilizer shall be worked into the soil by rolling or tamping. If straw is used as mulch, straw shall be derived from wheat, rice or barley and be approximately 6 to 8 inches in length. Stabilization of mulch shall be done hydraulically by applying an emulsion or mechanically by crimping or punching the mulch into the soil. Equivalent methods and materials may be used only if they adequately promote vegetation growth and protect exposed slopes.
- The owner shall protect storm drain inlets from potential pollutants until drainage conveyance systems are functional and construction has been completed.
- Energy dissipaters shall be installed at storm drain outlets which may convey storm water flow leading to soil erosion.
- Soil and material stockpiles shall be properly protected to minimize sediment and pollutant transport from the construction site.
- Solid waste, such as trash, discarded building materials and debris, shall be placed in designated collection areas or containers. The construction site shall be cleared of solid waste daily, or as necessary, and regular removal and proper disposal shall be arranged.
- A concrete washout area, such as a temporary pit, shall be designated to clean concrete trucks and tools. At no time shall concrete products and waste be allowed to enter county waterways such as creeks or storm drains.
- Proper application, cleaning and storage of potentially hazardous materials, such as paints and chemicals, shall be conducted to prevent the discharge of pollutants.
- When utilized, temporary restrooms and sanitary facilities shall be located and maintained to prevent the discharge of pollutants.
- Appropriate vehicle storage, fueling, maintenance and cleaning areas shall be designated and maintained to prevent discharge of pollutants.



Legend			
	Major contour (25' interval) from September 2018		Cross slope diversion with flow direction
	Minor contour (5' interval) from September 2018		Waterbar, with flow direction arrow
	Major contour (25' interval) from December 2020		Existing vineyard area
	Minor contour (5' interval) from December 2020		Slopes greater than 30% and less than 50%
	Approximate parcel boundary		Slope transect (2018) Slope transect (2020)
	Proposed development boundary		Photo location
	Proposed vineyard block boundary		Rock apron
	Access road		Existing well
	Ephemeral drainage		Existing spillway
	Blue line stream		Existing building
	Existing fence, to be maintained		Straw bale dike
	Proposed deer fence		Concrete cut off collar
	Existing barbed wire fence, to be removed		Tree to be removed, Blue Oak
	Approximate top of bank		Tree to be removed, Valley Oak
	Setback		Tree to be removed, Interior Live Oak
	Soil type boundary		Vine row direction
	Straw roll		Corrugated plastic pipe
	Boulders (to be maintained)		Dual wall



Site Information:

Property Owner:
 Glenn C. Rice
 2700 Aqua Vista Blvd., Fort Lauderdale, Florida
 (650)-333-1946

Civil Engineer:
 Acme Engineering Inc.
 Omar Reveles, P.E. RCE 74723
 1700 Soscol Avenue, Suite 9 Napa, CA 94559
 Phone: 707-253-2263
 Fax: 707-253-2149

Initial Plan Preparation:

November 2019

Vineyard Site:

Blocks V-Y

Site Address:

25 Quail Ridge Drive, Napa, California

Parcel Number:

033-140-052

Soil Types:

114 - Bressa-Dibble Complex



Existing Underground Utilities and Pipelines
 Underground utilities and pipelines may exist within limits of development. All utilities and pipelines shall be identified and protected prior to site disturbance.

Sheet Index:

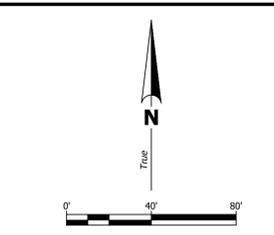
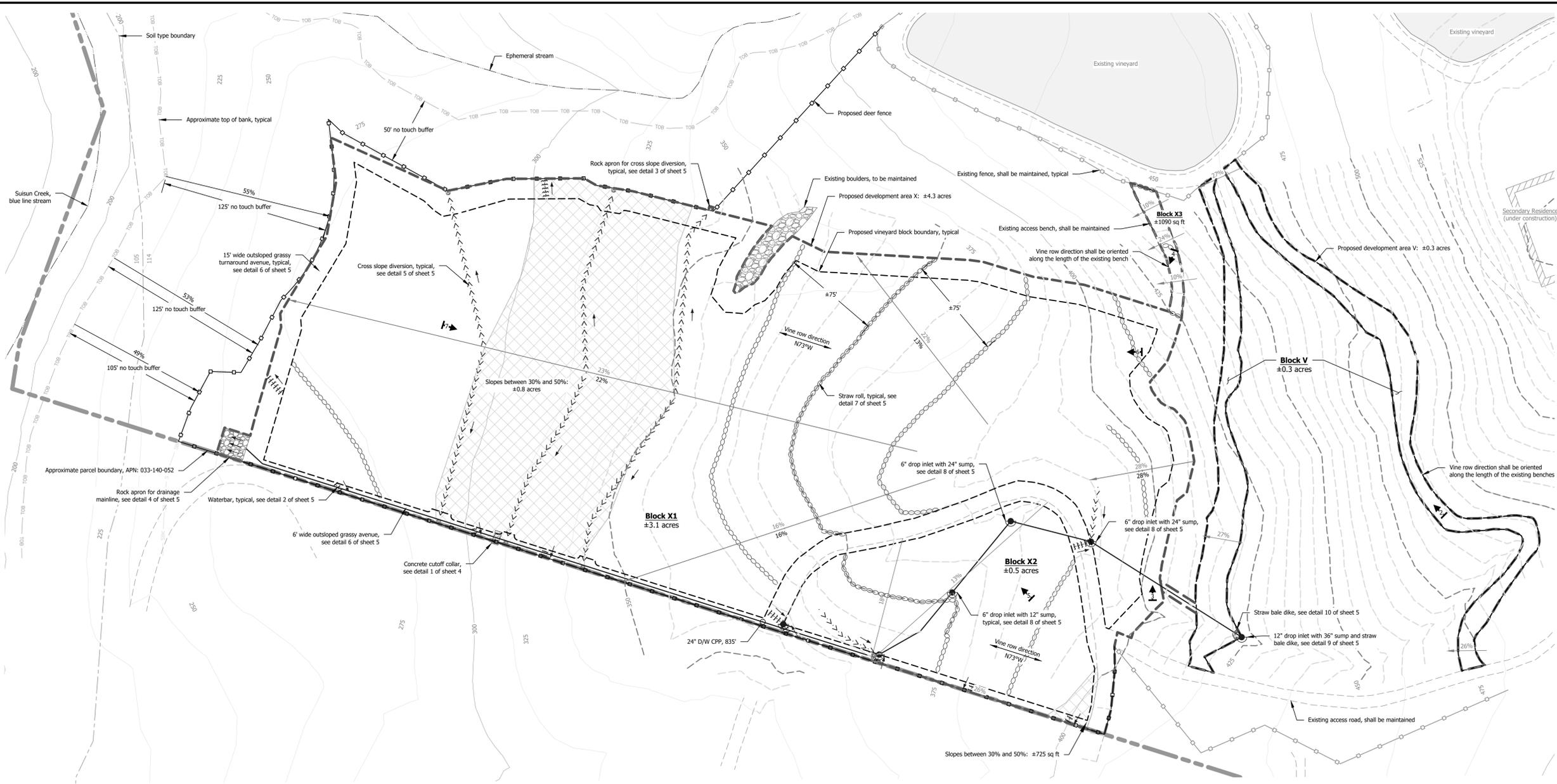
Sheet 1	Title Sheet and Narrative
Sheet 2	Overall Site Plan
Sheet 3	Demolition Site Plan
Sheet 4	Erosion Control Site Plan
Sheet 5	Details

Inspection Schedule:

- The project engineer shall be present at the project site for the following activities:
- Pre-construction meeting
 - Inspection of project site delineation
 - Inspection of surface drainage facilities
 - Winterization inspection during construction
 - Final winterization inspection
 - Year 1 monitoring inspection

Project engineer shall be notified at least 2 business days prior to each of the meeting/inspections listed above.

PROJECT NO. 190101-0104 DRAWING NO. 04 01 SCALE AS SHOWN DATE 03/24/2021	NOTES/REMARKS: 1. 1/2/2020. Addressed comments from Application Completion Determination Letter from Napa County PBES, dated 12/18/2019. 2. 12/17/2020. Incorporate updated topographical data from December 2020. 3. 03/24/2021. Addressed comments from Napa County PBES Engineering Division, dated February 17, 2021.	OR designed by OR checked by	OR designed by OR checked by	REGISTERED PROFESSIONAL ENGINEER O. REVELLES No. C. 74723 CIVIL State of California License No. 707-253-2149
QUANTUM LIMIT VINEYARDS NEW VINEYARD DEVELOPMENT - EROSION CONTROL PLAN TITLE SHEET AND NARRATIVE				
<h1>Exhibit 1-A</h1>				
SHEET	1			OF 5



Notes:
 1. Topographic information provided by CMP Civil Engineering & Land Surveying from September 2018 and December 2020.
 2. Datum: North American Vertical Datum of 1988 (NAVD 88).

Soil Types on Site:
 114 - Bressa-Dibble Complex

Roads & Vineyard Avenues:
 1. Grassy vineyard avenues shall be closed during rainy periods of the year.
 2. Paved & gravel roadways shall be all-season roads.

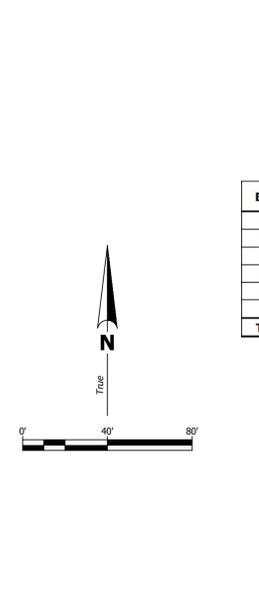
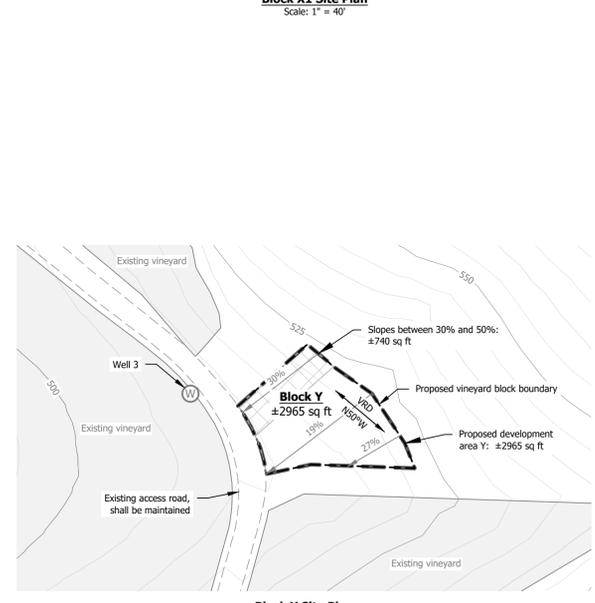
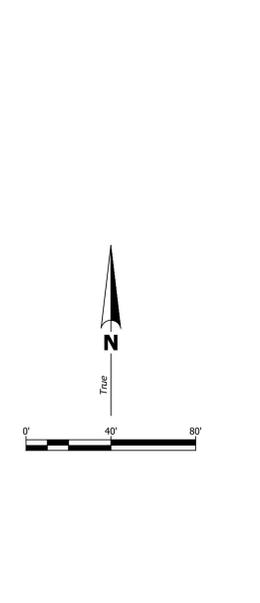
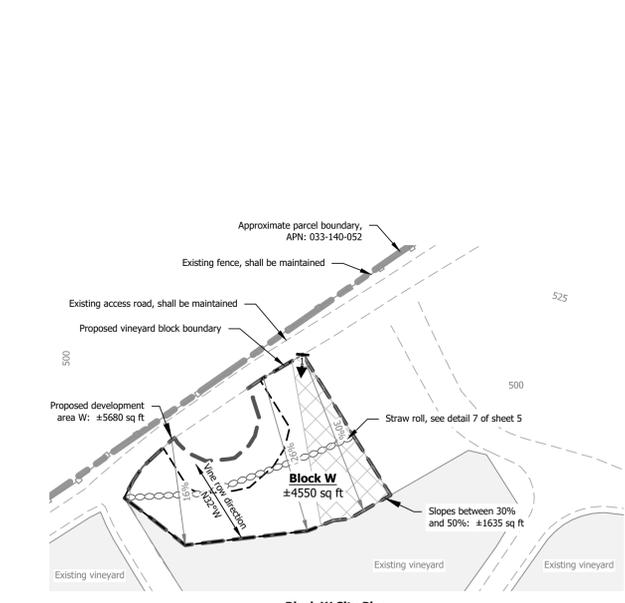
NOTES/REMARKS:

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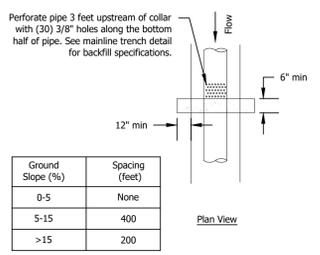
1. 1/17/2020. Addressed comments from Application Completion Determination Letter from Napa County PDES, dated 12/18/2019.
 2. 12/17/2020. Incorporate updated topographic data from December 2020.
 3. 03/24/2021. Addressed comments from Napa County PDES Engineering Division, dated February 17, 2021.



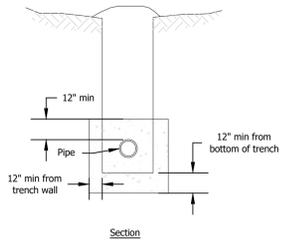
www.acmeeng.com
 1700 Soscol Avenue
 Ste. 97, Napa, CA 94559
 707-253-ACME



Block	Area	Spacing (row x vine)	Farmed by	Vine Row Direction
V	±0.3 acres	4' x 3'	Hand	Along length of existing benches
W	±6450 sq ft	6.5' x 4.5'	Tractor	N32°W
X1	±3.1 acres	6' x 5'	Tractor	N73°W
X2	±0.5 acres	6' x 5'	Tractor	N73°W
X3	±1090 sq ft	Varies x 3'	Hand	Along length of existing bench
Y	±2965 sq ft	5' x 4.5'	Hand	N50°W
Total	±4.1 acres	-	-	-



Ground Slope (%)	Spacing (feet)
0-5	None
5-15	400
>15	200



1 Concrete Cut-off Collar
 Not to Scale

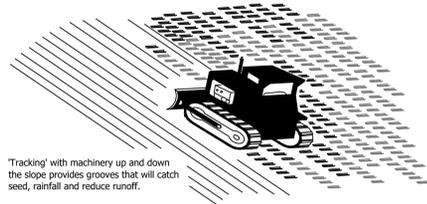
QUANTUM LIMIT VINEYARDS

NEW VINEYARD DEVELOPMENT - EROSION CONTROL PLAN

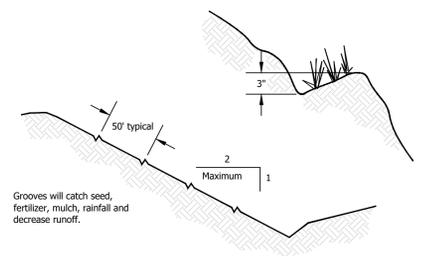
EROSION CONTROL SITE PLAN

PROJECT NO. 190101-0104
 DRAWING NO. 04 04
 SCALE 1" = 40'
 DATE 03/24/2021

4 OF 5



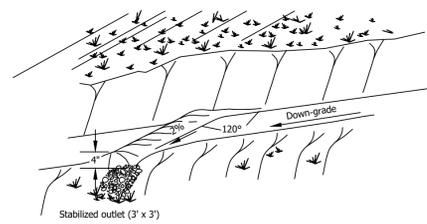
Tracking



Contour Furrows

Guideline Interval Spacing for Waterbars	
Slope Gradient (%)	Spacing (ft)
0-15	None
15-25	100
25-35	75
35-40	50
>40	25

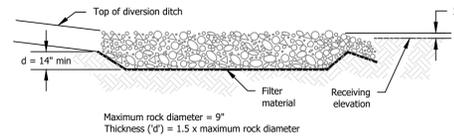
Or as specified on plan sheet



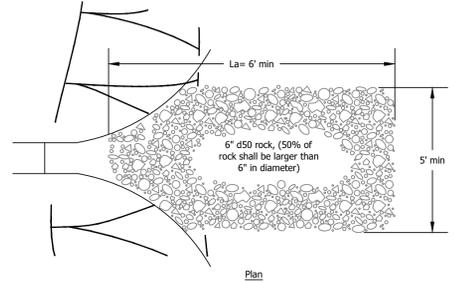
Stabilized outlet (3' x 3')

1
5 Surface Roughening
Not to Scale

2
5 Waterbar
Not to Scale



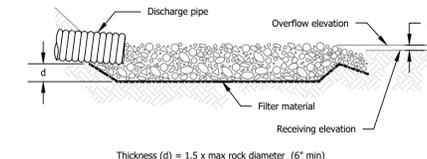
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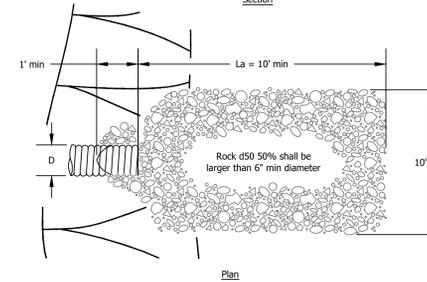
Plan

- Notes:**
1. Filter material shall be Mirafi 140n filter fabric or equivalent, or a 6" thick minimum graded gravel layer.
 2. 'La' = length of apron. Distance 'La' shall be of sufficient length to dissipate energy.
 3. Apron shall be set at a zero grade and aligned straight.
 4. The diameter of the largest stone size shall be 1.5 times the d50 size.

3
5 Rock Apron for Cross Slope Diversion
Not to Scale



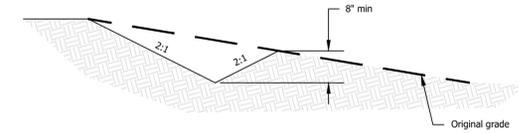
Section



Plan

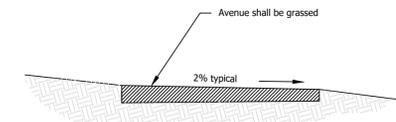
- Notes:**
1. Filter material shall be Mirafi 140n filter fabric or equivalent.
 2. 'La' = length of apron. Distance 'La' shall be of sufficient length to dissipate energy.
 3. Apron shall be set at a zero grade and aligned straight.
 4. The diameter of the largest stone size shall be 1.5 times the d50 size.

4
5 Rock Apron for Drainage Mainline
Not to Scale



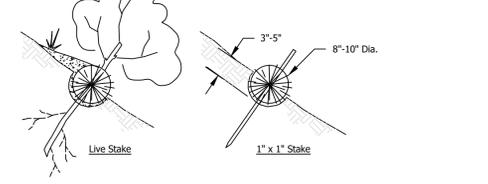
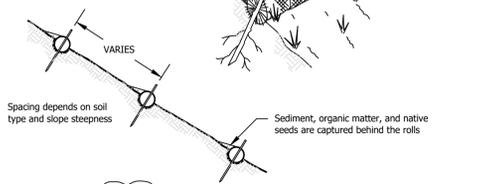
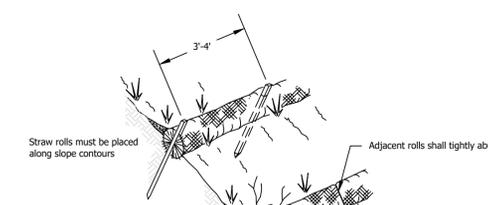
- Notes:**
1. Cross slope diversions shall be installed on 4% slopes.
 2. Cross slope diversions shall be grass lined.

5
5 Cross Slope Diversion
Not to Scale



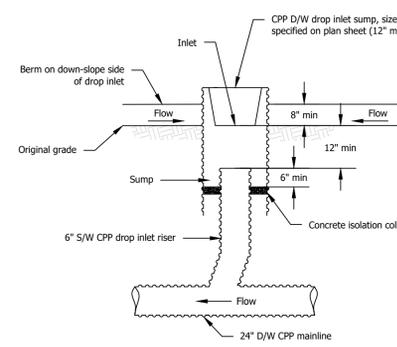
Section

6
5 Outloped Grassy Avenue
Not to Scale



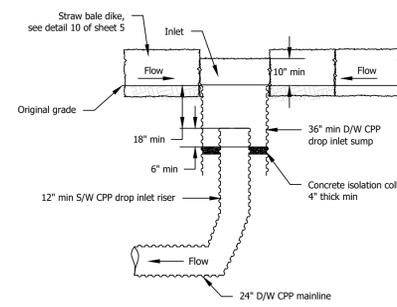
Note:
Straw roll installation requires the placement and secure staking of the roll in a trench, 3"-5" deep, dug on contour. Runoff must not be allowed to run under or around roll.

7
5 Straw Rolls
Not to Scale



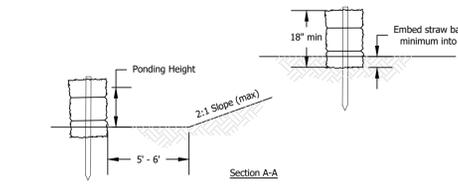
- Note:**
Sump area shall be checked regularly during storm season and cleaned as required.

8
5 Drop Inlet
Not to Scale

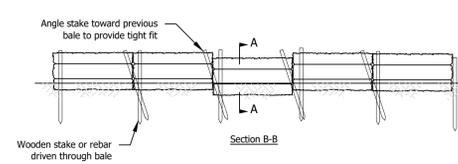


- Note:**
Sump area shall be checked regularly during storm season and cleaned as required.

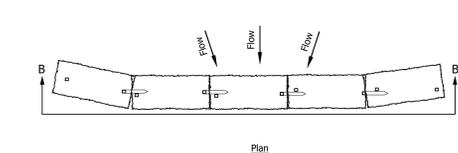
9
5 Drop Inlet with Straw Bale Dike
Not to Scale



Section A-A



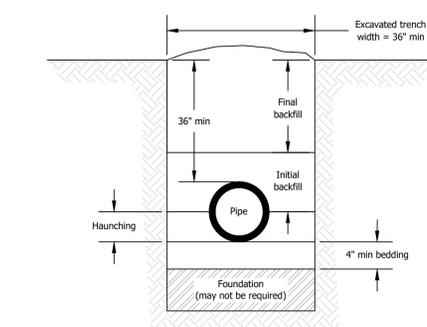
Section B-B



Plan

- Notes:**
1. The straw bales shall be installed on contour.
 2. Bales shall be installed in a row with the ends tightly abutting.
 3. Key in bales to prevent erosion or flow under bales.

10
5 Straw Bale Dike
Not to Scale



- Notes:**
1. Pipe shall be installed at sufficient depth below the ground surface to provide protection from hazards imposed by vehicular loading. Minimum depth of cover for pipe shall be 36 inches.
 2. Backfill shall be free of rocks, debris and organic matter, 3/4 minus and compacted to 90% RH. In areas subject to vehicular traffic, compaction shall be 95% RH minimum. Native material may be used if appropriate. Support pipe uniformly along its length prior to initial backfill.
 3. At low places on the ground surface, extra fill may be placed over pipeline to provide the minimum depth of cover. The top width of the fill shall be no less than 10 feet and the side slopes no steeper than 6:1. The fill material may be placed and compacted before the trench is excavated.
 4. Trench spoils shall be mounded over trench for future settling.
 5. Backfill shall be placed in 6" lifts in vineyard areas and compacted. No water jetting shall be used for backfill operations.

11
5 Trench and Backfill Detail
Not to Scale

PROJECT NO. 190101-0104
DRAWING NO. 04 05
SCALE NOT TO SCALE
DATE 03/24/2021



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