

**SHAFFER VINEYARDS  
BLODGETT VINEYARD**

**EROSION CONTROL PLAN  
REVISED SEPTEMBER 2020**



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**SHAFFER VINEYARDS  
BLODGETT VINEYARD**

**EROSION CONTROL PLAN**



**REVISED SEPTEMBER 2020  
ORIGINAL SUBMITTAL MARCH 2020**

**PREPARED BY:**

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**SHAFFER VINEYARDS  
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**EROSION CONTROL PLAN**

**NARRATIVE**

**1. The nature and purpose of the land disturbing activity and the amount of grading involved.**

- a) This ECP addresses the development of approximately 19.7 net acres (28.3 gross acres) of proposed vineyard on the property located at 5096 Silverado Trail in Napa. The ranch is located on APNs 039-051-019 (77.51 acres), 039-051-021 (36.10 acres), 039-051-023 (40.90 acres), and 039-051-033 (60.93 acres) for a total of approximately 215.44 acres per the Napa County Assessor's Office. Although the Assessor's Office lists the parcels as owned by different entities, all entities are under common ownership.
- b) Activities to be accomplished include removal of pasture, brush, and woodland within the proposed clearing limits, ripping, rock removal, cultivating the soil to prepare for planting, seeding cover crop, mulching, trenching for irrigation pipelines, installation of trellis system and deer fence, laying out the vine rows, and installing erosion control measures.
- c) Ripping will not occur outside of the clearing limits. The average depth of ripping will be 30" with maximum ripping depths up to 48" depending on site conditions.

**2. General description of existing site conditions, including topography, vegetation and soils.**

- a) The site is located in the Napa River – Yountville Reach, Oak Knoll Creek, and Soda Creek Watersheds.
- b) The elevations in the vineyard area range from approximately 132 to 446 feet above mean sea level per topographic mapping. Ground slopes within the project boundary range between 8 and 26 percent. There are small pockets of areas with slope over 30% in several vineyard blocks which total approximately 1.2 acres, please see Sheets 2 through 4 of the Plans for the locations.
- c) Topographic mapping was provided by American Aerial Mapping, Inc., flown on March 26, 2018.
- d) Existing vegetation consists of pasture, brush, and woodland. Please see the biological report prepared by WRA dated January 2020.

- e) Please see Appendix C for Vegetation Retention Calculations. The project proposes to retain a minimum of 75% of the tree canopy that exists on each parcel on areas under 50% slope and outside stream or wetland setbacks, exceeding the 3:1 tree preservation ratio. This analysis is based on the 2018 Napa County aerial photo because the property burned in the 2017 fires.
- f) There are structures on the property. Please see the cultural resources report prepared by Flaherty Cultural Resource Services dated May 3, 2019.
- g) A portion of the property is currently deer fenced. Please see Figure 5 in Appendix E for the Proposed Deer Fence map. The proposed deer fence includes blocks fenced individually and in clusters where appropriate.
- h) A site visit of the property was performed by Jim Bushey and Cody Corsetti of PPI Engineering on Thursday, August 23, 2018 to evaluate the vineyard development area and to collect photographic documentation. Photographs of pre-project conditions can be found in Appendix A.

An additional site visit of the property was performed by Jim Bushey and Cody Corsetti on Friday, September 14, 2018 to further evaluate the vineyard development area.

Additional site visits of the property were performed by PPI Engineering staff during 2018 and 2019.

**3. Natural and man-made features onsite including streams, lakes, reservoirs, roads, drainage, and other areas that may be affected by the proposed activity.**

- a) No natural or man-made features are expected to be adversely affected by this project.
- b) Tributaries on the property that meet the Napa County definition of a stream have the appropriate setbacks, determined by slope as outlined in Napa County Conservation Regulation 18.108.025, shown on Sheets 2 through 4. Prior to construction the Engineer shall stake the appropriate stream setbacks adjacent to vineyard blocks based on in-field determination of the top of bank and slope.
- d) All ephemeral or intermittent streams that do not meet the Napa County definition of a stream have been avoided with a minimum 35' buffer in accordance with Napa County Conservation Regulation 18.108.025.
- e) In this ECP, all wetlands are avoided with a minimum 50' buffer in accordance with Napa County Conservation Regulation 18.108.026.
- f) There is an existing network of ranch roads throughout the property. The existing road network is sufficient for access to proposed vineyard blocks. Please see Figure 3 in Appendix E for a figure depicting the network of existing roads.

**4. Location and source of water for irrigation or other uses.**

- a) The location of the existing wells, the proposed water source, are shown on the Site Plan and on the Vicinity Map. Please see the Site Plan and the Vicinity Map for the locations. Please see WAA prepared by Richard C Slade and Associates dated March 24, 2020.

**5. Soil types/soil series identified in the Soil Conservation Service (SCS) Napa County Soil Survey.**

- a) The USDA – SCS Napa County Soil Survey maps the soil within the project boundary as Hambright rock-Outcrop complex with 30 to 75% slopes, Rock outcrop-Hambright complex with 50 to 75% slopes, and Sobrante Loam with 5 to 30% slopes.
- b) Some rock is expected to be generated as a result of this project. An existing rock disposal area is shown on Sheet 2; this existing rock storage area will be used for storage of rock generated as a result of this development. In many locations rock will be used for rock-filled avenues that will help retain sediment as well as disperse runoff from vineyard blocks. Rock-filled avenues shall be located as shown on Sheet 3 and at the downslope edge of vineyard blocks as determined by the Engineer in the field at the time of construction. The toe of the rock avenue fill slope shall not extend past the proposed clearing limits. Because of the nature of the rock-filled avenues, the proposed block boundary location is conceptual and not exact. Rock may be crushed and used on the existing roads where needed. Rock staging areas shall be located inside of proposed clearing limits as necessary. Temporary rock stockpiles shall also be located inside of proposed clearing limits. No grading activities, ground disturbance, or rock storage will occur outside of the proposed clearing limits or existing rock storage area.

**6. Critical areas, if any, within the development site that have serious erosion potential or problems.**

- a) There are no areas with serious erosion potential or problems.

**7. Erosion calculations**

- a) Universal Soil Loss Equation (USLE) spreadsheets for this project are in Appendix B of this report.
- b) Please see the revised pre-project versus post-project soil loss analysis prepared by PPI Engineering dated September 2020.

**8. Proposed erosion control methods including:**

**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.**

1. A variety of drainage systems will be utilized for erosion control in this project. Existing and proposed diversion ditches will direct runoff to stable outlets. Rock filled avenues/level spreaders will be installed at outlets to prevent concentrated flow from forming and causing gullies. Please see Sheets 2 through 4 for locations of the above erosion control items. Please see the Detail Sheets 5 and 6 and the Special Provisions for additional information on the erosion control measures.
2. The final pass with disking equipment shall be performed across slopes to prevent channeling water downhill the first winter after development.
3. Straw wattles shall be installed the year of construction in the approximate locations shown on the Site Plan. Additional temporary erosion control measures shall be installed as needed.

**b) Proposed vegetative erosion control measures including location, type and quantity of seed, mulch, fertilizer and irrigation, timing and methods of planting, mulching and maintenance of plant material and slopes until a specified percentage of plant coverage is uniformly established.**

1. Disturbed areas shall be seeded as described below. Straw mulch shall be applied to all disturbed areas at a rate of 3,000 lbs/acre prior to October 15 of the year of construction.
2. A permanent cover crop strategy will be utilized. The permanent cover crop will be generated the first year by seeding with the following mix: Dwarf Barley at 50 lbs/acre, Blando Brome at 8 lbs/acre, Zorro Fescue at 12 lbs/acre, and Crimson Clover at 6 lbs/acre. A pre-approved alternative seed mix may be allowed.

The permanent cover crop will be managed each year such that any areas which have less than the percent vegetative cover specified below will be reseeded and mulched until adequate coverage is achieved. The permanent cover crop shall be mowed only and not disked.

Blocks with 75% vegetative cover: 8A & 9

Blocks with 80% vegetative cover: 2A, 5, & 7

Blocks with 85% vegetative cover: 2B, 3, 4, & 8B

Block with 90% vegetative cover: 6

3. No pre-emergent herbicides will be used for weed management. Contact or systemic herbicides may be applied in spring (no earlier than February 15<sup>th</sup> to ensure adequate vegetative cover in the spray strips for the remainder of the rainy season). The width of the spray strip shall be no wider than 1.5' in order to achieve 75% vegetative cover in Blocks 8A & 9. The width of the spray strip shall be no wider than 1.0' in order to achieve 80% vegetative cover in Blocks 2A, 5, & 7. No strip spraying shall be performed in Blocks 2B, 3, 4, 6, & 8B which require 85% or 90% vegetative cover respectively. Spot spraying of contact or systemic herbicides in spring (no earlier than February 15) will be allowed in Blocks 2B, 3, 4, 6, & 8B provided the 85% or 90% vegetative cover respectively is achieved. If the owner chooses to farm without herbicide, an alternative will be to hand-hoe around the base of the vine only, or other methods that do not result in a continuous bare strip.
4. In Blocks 2B, 3, 4, 5, 6, 7, & 9 the owner has the option of using a Dwarf Barley (or a pre-approved alternative) cover crop in the first three years that the block is planted to aid with vineyard establishment. If this option is used, seed shall be applied at a rate of 120 lbs/acre if broadcast or at a rate of 60 lbs/acre if drilled. The cover crop within the vineyard may be disked each spring after April 1 for the first three years within Blocks 2B, 3, 4, 5, 6, 7, & 9. An alternative cover crop seed mix may be used upon prior approval. Each year the owner chooses to disk, the area shall be straw mulched at a rate of 3,000 lbs/acre, and straw wattles shall be installed prior to October 15. The permanent seed mix will be seeded prior to October 15 of the fourth (or earlier) year.
5. In Blocks 2A, 8A, & 8B the permanent cover must be established the first year. Disking for the first three years to aid with vineyard establishment is not permitted due to the slope of the blocks and the proximity to local drainages.
6. The vineyard avenues shall be mowed only and shall not be disked. Unless otherwise noted, all avenues shall conform to the natural grade. Vineyard avenues shall be seeded and mulched prior to October 15 of the year of construction and in subsequent years in bare or disturbed areas. The cover crop will be managed each year such that any avenues which have less than the percent vegetative cover specified below will be reseeded and mulched until adequate coverage is achieved. Seeding and mulching is not required on avenues and roads properly surfaced with gravel.

Blocks with 75% vegetative cover: 8A & 9

Blocks with 80% vegetative cover: 2A, 5, & 7

Blocks with 85% vegetative cover: 2B, 3, 4, & 8B

Block with 90% vegetative cover: 6

7. The owner has the freedom to further subdivide vineyard blocks within the footprint of the proposed vineyard for irrigation and viticulture purposes. The proposed vine row directions shall not be altered without an approved modification from Napa County.
8. Fertilizer shall be applied as necessary by vineyard management personnel for both the vineyard and to ensure specified percent vegetative cover crop is achieved. Site-specific soil analysis should be performed.
9. The proposed vine and row spacing is 5' by 7'. Vine row width shall be increased as necessary where side slope is 15% or greater. In these areas, width of tillage equipment shall be no more than 75% of row width to allow for bench formation and to minimize erosion.
10. Irrigation pipelines shall be located within existing roadways, vineyards and vineyard avenues, and/or within proposed clearing limits. Regardless of pipeline location, pipeline trenches located on ground slopes greater than 15% shall be backfilled using imported or select native granular material to a depth of 6 inches above the pipelines such that voids do not form below haunches of pipe. Backfill shall be wheel rolled or otherwise compacted to reduce settlement. Final grading over trenches shall be mounded and water-barred such that water is directed away from trenches.
11. As stated in the Napa County Protocol for Re-Planting/Renewal of Approved Non-Tilled Vineyard Cover Crops dated March 23, 2004, when it becomes necessary, either by routine or emergency, to re-establish or renew vineyard cover crop the following measures should be followed:
  - Seek professional consultation, including soil nutrient analysis, to determine the reasons for the original cover crop's failure. Adjust soil fertility, irrigation and seed selection accordingly.
  - When tillage is necessary, alternate rows should be tilled, seeded, and straw-mulched to effectively accomplish the re-establishment/renewal process over a two-year period.
  - Tillage and re-seeding should be conducted in the following manner:
    - In year 1, till to prepare seed bed and sow desired cover crop in every other row ("the evens"), leaving the alternate rows ("the odds") untilled and mowed only.
    - Mulch all tilled rows having an up and down hill (perpendicular to contour) row direction with 3,000 lbs./acre of loose straw, or approved equivalent, after seeding.
    - Tilled rows with cross-slope (parallel to contour) row direction and slope gradients less than 15% may not require straw mulch.
    - In year 2, till to prepare seed bed and sow desired cover crop in "odd" rows.
    - In year 2, leave "even" rows untilled and mowed only.
    - Mulch rows tilled in year 2 as specified above.
    - Put all re-establishment measures in place by October 15
    - In year 3, return all rows to non-tilled culture.

9. **Stormwater stabilization measures, if the development of the site will result in increased peak rates of runoff that may cause flooding or channel degradation downstream.**

a) A hydrologic analysis was originally provided by PPI Engineering in March 2020. Please see the revised hydrology report prepared by PPI Engineering dated September 2020.

10. **An implementation schedule showing the following:**

- a) **The proposed clearing, grading, and/or construction schedule.**

| DATE        | DESCRIPTION   |
|-------------|---|
| April 1:    | Commence clearing and tillage operations.   |
| October 1:  | All tillage and erosion control completed. This shall include complete construction of all structural measures required in these blocks which could include ditches, drop inlets, surface drainage lines, level spreaders, etc. |
| October 15: | All winterization complete, including seeding, straw mulching, and straw wattle installation.   |

- b) **The proposed schedule for winterizing the site (generally by October 15 of each year the permit is in effect.)**

The site shall be winterized and all necessary erosion control measures described in the Erosion Control Plan shall be installed by October 15.

- c) **The proposed schedule of installation of all interim erosion and sediment control measures, including the stage of completion of such devices at the end of the grading season (generally October 15) of each year the permit will be in effect.**

See Item 10a).

- d) **The schedule for installation of permanent erosion and sediment control devices where required.**

See Item 10a).

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

Typical costs for installing erosion control measures as described in this plan range from \$1,000 to \$2,000 per acre.



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**EROSION CONTROL PLAN**

**STANDARD PROVISIONS**

**SECTION 1 - SCOPE OF WORK**

These specifications cover the construction of the erosion control measures for approximately 19.7 acres of vineyard to be developed by Shafer Vineyards.

The drawing numbered 11811001B, Sheets 1 through 6, and these Specifications describe in detail the construction of the complete erosion control system. Requests for further information or clarification of the work to be done can be made to Jim Bushey or Matt Bueno at the Napa office of PPI Engineering, phone (707) 253-1806.

All costs for the complete construction of the erosion control system must be included in the bid items, since no other payment will be made outside of the bid items. This includes all costs for moving onto and off of the job site, all equipment, tools, materials, labor, fuel, taxes, and incidentals for furnishing and installing the erosion control system.

Surveying adequate for construction will be provided by the Owner, at the Owner's expense. The Contractor will be responsible for preserving construction survey stakes and markers for the duration of their intended use. Any restaking costs or additional survey work requested by the Contractor shall be deducted from the final payment to the Contractor. The Owner does not guarantee that the project being bid will be awarded. The Owner also reserves the right to change the quantities of actual work performed as needed with payment made according to the new quantities at the unit price bid.

**SECTION 2 - AUTHORITY OF OWNER AND ENGINEER**

The property is owned by Shafer Vineyards. Shafer Vineyards or the appointed representative shall have the final say in the event of a dispute with the Contractor.

The Owner shall appoint PPI Engineering (PPI) as the Engineer to perform periodic review of the work. PPI Engineering shall report any unsatisfactory work to the Owner. The Contractor shall be responsible for any engineering fees or repair costs associated with bringing the unsatisfactory work into compliance with the Plans and Specifications.

### **SECTION 3 - CHANGES IN WORK**

Materials and the manner of performance of the work performed in this contract shall be according to the Plans and Specifications. Modifications to the Plans or Specifications shall be agreed upon in writing by the Contractor, Owner, and Engineer before the work in question is performed. Materials and construction methods shall be as specified on the Plans and Specifications. The burden of proof that a given material or method constitutes an equivalent to the one specified will rest with the Contractor.

### **SECTION 4 - UTILITIES**

At least two working days prior to beginning any excavation on the project, the Contractor shall contact Underground Service Alert (USA) at 1-800-642-2444 and request field location of all existing utilities.

Certain facilities at the site are existing. The Contractor shall be careful to avoid damaging existing facilities and shall notify the Owner immediately if any damage does occur. The cost of repairing any damage shall be the sole responsibility of the Contractor.

### **SECTION 5 - PROSECUTION OF THE WORK**

Unless otherwise provided, the contract time shall commence upon issuance of a Notice to Proceed by the Owner. The work shall start within ten days thereafter and be diligently prosecuted to completion within the time specified in the Contractor's bid. If weather conditions prevent completion of the project within the specified amount of time, the Owner may extend the completion date of the project.

### **SECTION 6 - RESPONSIBILITIES OF THE CONTRACTOR**

The Contractor agrees that in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including the safety of all persons and property. This requirement shall be made to apply continuously and not be limited to normal working hours. Contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, excepting liability arising from the sole negligence of design professional.

The Contractor shall be responsible for controlling dust and mud generated from construction activities. The Contractor shall not allow dust or mud to obstruct vehicular traffic on County roads or State Highways. The Contractor shall be responsible for cleaning all vehicles prior to leaving the site as required by the California Highway Patrol. The Contractor, at their own expense, shall provide adequate dust control and prevention of mud tracking on roads, and take other preventative measures as directed by the Owner.

The Contractor shall be responsible for following all safety laws that may be applicable. Of particular concern are the trench safety regulations issued by CAL-OSHA. The Contractor alone shall be responsible for the safety of their equipment and methods and for any damage or injury which may result from their failure, improper construction, maintenance, or operation.

The Contractor shall be responsible for installing necessary sediment retention measures to keep sediment from leaving the site if construction activities continue beyond October 1.

The Contractor shall keep the work site clean and free of rubbish and debris throughout the project. Materials and equipment shall be removed from the site as soon as they are no longer necessary or the project is completed.

The Contractor shall also be responsible for ensuring that all permits which are necessary for construction have been obtained and that copies of these permits are maintained onsite at all times.

The Contractor shall, at their own expense, furnish all necessary light, power, pumps, and water necessary for the work.

## **SECTION 7 - MEASUREMENT AND PAYMENT**

Payment shall be made at the unit prices bid according to the actual quantities installed. Measurement of the final quantities shall be the responsibility of the Owner's Engineer.

The Engineer shall periodically observe the project during construction and upon completion of the project any unfinished or unacceptable work observed will be brought to the Contractor's attention verbally and in writing. Final payment will be made upon satisfactory completion of all work items required by these Plans and Specifications.

## **SECTION 8 - GUARANTEE**

In addition to the guarantees from suppliers, the Contractor shall guarantee the work he performs for a period of two years. Any repairs needed to the system within two years of completion due to faulty workmanship or materials shall be promptly repaired at no expense to the Owner. Any costs incurred by the Owner and/or Engineer within two years of completion due to rubbish or debris placed in a trench or other excavation shall be paid by the Contractor.

Unless otherwise provided in writing, payment by the Owner to the Contractor for installation of this system shall constitute acceptance of all provisions in this document by the Contractor.

**SHAFFER VINEYARDS  
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**EROSION CONTROL PLAN**

**SPECIAL PROVISIONS**

**SECTION 1 - DITCH**

**1.1 GENERAL:**

Vineyard avenues along the uphill side of certain blocks will be constructed with a ditch along the uphill side to collect upslope runoff and direct it to a stable outlet or drop inlet as shown on Detail 2, Sheet 5.

**1.2 MATERIALS:**

Ditches will be cut into native material. Rock for lining ditches (if necessary) will be native rock generated onsite, 4-inch to 8-inch diameter. Filter fabric shall be Mirafi 140N or equal.

**1.3 INSTALLATION:**

Ditches shall be cut into native material to the extent possible. Fill material, if necessary, shall be moisture conditioned and compacted to 90% relative compaction per ASTM D1557. Flowline slope shall be 2% minimum and 5% maximum unless rock-lined. Side slopes of the ditches shall be 2:1 (Horizontal:Vertical) as shown on Detail 2, Sheet 5. The ditch shall be a minimum of 12 inches deep when complete and shall be lined with 4 to 8 inch diameter angular rock if the flowline slope exceeds 5%. A non-woven filter fabric shall be placed between the ground surface and the rock. The rocks shall be keyed into the sides of the ditch such that they do not obstruct or reduce the cross section of the channel. The ditch will outlet to a rock-filled avenue/level spreader or drop inlet.

**SECTION 2 – ROCKED WATER CROSSING**

**2.1 GENERAL:**

Rocked crossings shall be constructed as shown on Detail 3, Sheet 5 in the location shown on Sheet 4 and as staked in the field by the engineer.

**2.2 MATERIALS & INSTALLATION:**

Excavate channel bed or subgrade to a depth of 6" - 8". Place filter fabric (Mirafi 1100N or equal) under rock. Place clean 6-8" field rock in excavated channel bed, on grade with natural ground surface.

Care should be taken to not disturb the ditch any more than is necessary for rock crossing and road construction. All disturbed areas shall be seeded and mulched.

### **SECTION 3 – ROCK LEVEL SPREADERS**

#### **3.1 GENERAL:**

Rock level spreaders will be constructed as shown on Details 4 and 5, Sheet 5 in the locations shown on the plans and as staked in the field by the Engineer.

#### **3.2 MATERIALS:**

Rock used for construction shall be field rock generated onsite and shall be well-graded to prevent large voids within the structure. Smaller (3-inch minus) field rock and ¾-inch minus gravel will be used to line the trough of the spreader. Gravel may be crushed rock generated onsite but should contain sufficient fines to reduce the overall permeability of the spreader and cause water to flow laterally along the length of the structure (generally equivalent to Cal –Trans Class II Aggregate Base).

#### **3.3 INSTALLATION:**

A bench shall be cut along the outboard toe for placement of rock. Straw wattles shall be installed along the outboard edge of the bench **prior** to placing rock. Care shall be taken to remove as much of the fine material (clay and silt size) as possible prior to placing the rock. The rock level spreader shall be parallel to the contour to ensure the water is evenly distributed, and the ends shall be turned uphill at least 2 feet in elevation to prevent water from running around the end. The spreader shall be constructed of large, well-graded rock to a finished cross-section with a trough depth of at least 3 feet. A layer of 3-inch minus field rock shall be spread 6-inches thick within the trough and a 6-inch layer of gravel applied over the 3-inch minus rock. Finished depth of the trough shall be at least 2 feet.

Where a ditch outlets to the rock level spreader, the ditch shall be constructed so that the flow line gradually transitions to become parallel with the level spreader. Curve the berm of the spreader upstream to ensure water changes direction without overtopping.

Where a pipe discharges into the middle of the rock level spreader, a tee shall be used to re-direct flows parallel with the berm. The pipe shall be attached to the tee with two rows of sheet metal screws spaced approximately 6” apart along the circumference of the pipe – one row in the pipe and one row in the tee. At least one large rock, minimum 3-foot-diameter, shall be placed against the fitting.

Where a pipe discharges at the end of the rock level spreader, a 90° fitting shall be used to re-direct flows parallel with the berm. The pipe shall be attached to the elbow with two rows of sheet metal screws spaced approximately 6” apart along the circumference of the pipe – one row in the pipe and one row in the elbow. At least one large rock, minimum 3-foot-diameter, shall be placed against the fitting.

## **SECTION 4 – ROCK-FILLED AVENUE**

### **4.1 GENERAL:**

Rock-filled avenues will be constructed as shown in Detail 1, Sheet 6 along the field edges from excess fieldstone as staked in the field by the Engineer. Additional locations will be determined in the field by the Engineer during construction.

### **4.2 MATERIALS:**

Rock shall be clean, well-graded field rock generated onsite.

### **4.3 INSTALLATION:**

Field rock generated by ripping within the vineyard areas shall be used to construct outsloped avenues at the edges of certain vineyard areas. Vegetation shall be thoroughly incorporated and a bench cut as shown on the details. Rock shall be placed and shaped using a bulldozer and/or excavator, with smaller rock placed in voids and on top of the avenue to the extent possible. The toe of the fill slope shall not extend past the clearing limits.

## **SECTION 5 - SURFACE DRAINAGE PIPELINE**

### **5.1 GENERAL:**

Surface drainage pipelines shall be installed to collect surface runoff at low points throughout the project area and transport it to a protected outlet, as shown in Detail 2, Sheet 6.

### **5.2 MATERIALS:**

Surface drainage pipelines shall be constructed of solid corrugated polyethylene pipe (CPP) as shown on the Plans. Corrugated plastic pipe for use as surface drainage pipelines shall meet the standards of ASTM F667 and AASHTO M294, as applicable. Bent or damaged pipe shall not be used in the drainage system and shall be removed from the job site.

Pipe connections shall be made with fittings manufactured by the same manufacturer who made the pipe. All connections shall be securely fastened and the resulting connection shall not have gaps greater than 1/8 inch wide.

Gravel envelope bedding material may be volcanic rock or other granular material as approved by the Engineer. It shall be free of organic matter, clay, or other material which could prevent it from flowing uniformly around the pipe. One hundred percent of the material must pass the 1-1/2" clear square openings. Ninety to one hundred percent must pass through the 3/4" clear square openings. No more than 3% may pass the #200 U.S. Standard Sieve.

Gravel envelope material may also be a blend of clean hard sand and gravel. It shall be free of organic matter, clay, or other material that would decrease its hydraulic conductivity with time. The material shall be well graded. The coefficient of uniformity (D60/D10) must be greater than 4, and

the coefficient of curvature ( $(D_{30}^2/(D_{10} \times D_{60}))$ ) must be between 1 and 3. One hundred percent must pass the 1/2" clear square openings. No more than 5% may pass the #100 U.S. Standard Sieve. An example of this material would be 80% 3/8 crushed rock and 20% washed concrete sand.

Alternative bedding material may be approved by the Engineer. A sample and sieve analysis of the proposed material must be submitted to the Engineer at least 2 days prior to delivering material to the job site. It will be the responsibility of the Contractor to remove and dispose of all envelope material not used on the project.

### 5.3 INSTALLATION:

The Contractor may use a trencher, or drainage plow with vertical soil displacement or backhoe/excavator for the excavation and placement of the surface drainage pipe as dictated by soil conditions. The operator shall be skillful in laying the tubing. Grade control may be established by visual control with grade stakes set no more than 100 feet apart or by laser control with grade stakes set no more than 200 feet apart. Trenches must be sufficiently wide for bedding material to flow freely around the sides of the pipe.

Construction staking shall be provided by the Owner's Engineer. The slope, alignment, and depth of placement of the tubing shall be as shown on the Plans and as staked in the field. A minimum cover of 4.0 feet must be provided within vineyard areas, unless otherwise staked in the field by Engineer.

A gradual variation of no more than 0.10 foot from grade will be allowed where slopes are 2% or less. Where slopes are greater than 2%, a gradual variation of no more than 0.20 foot from grade will be allowed. No reverse grade will be allowed. A gradual variation of no more than 1 foot from design alignment is allowed.

Stretching of the tubing should be avoided during installation. No more than 10% stretch will be allowed.

Cobbles and rocks may be present on the project site. The Contractor shall take necessary actions to work around the cobbles and rocks at their own expense.

### 5.4 BEDDING AND BACKFILL:

Surface drainage piping shall be backfilled with approved gravel envelope material to a depth of at least 3 inches above the pipe. The trench bottom shall be continuous, firm, relatively smooth, and free of rocks or other objects larger than 1 inch. Pipe may be placed directly on the bottom of the trench. Care shall be taken to ensure that bedding material completely surrounds the pipe.

Surface drainage piping shall be backfilled with approved gravel envelope material. The trench bottom shall be continuous, firm, relatively smooth, and free of rocks or other objects larger than 1 inch. Bedding shall be provided around the pipe and shall be compacted to 90% in the haunching area.

Rocks or clods shall not be allowed to fall upon or otherwise strike the pipe during any phase of construction. No rocks larger than 6" may be placed within 12" of the pipe.

Final backfill shall be placed and spread in approximately uniform layers to fill the trench completely. Rolling equipment or heavy tampers shall not be used to consolidate backfill.

Where pipe is installed under all-weather roads, backfill shall be Class II Aggregate Base compacted to 90% per ASTM D1557. Road surface shall be regraded or paved as necessary to match original conditions.

## **SECTION 6 – STANDARD DROP INLET**

### **6.1 GENERAL:**

Drop inlets shall be furnished and installed by the Contractor in the locations shown on the plans and as staked in the field by the Engineer, according to Detail 3, Sheet 6. The dimensions of the riser and connector pipeline shall be as shown on the plans and details. A grate shall be installed over the top of each drop inlet.

### **6.2 MATERIALS:**

Drop inlet risers shall be galvanized, 14 gauge corrugated metal pipe (CMP) or dual-wall corrugated polyethylene pipe of the diameter shown on the Plans and/or Specifications.

Grates shall be Agri Drain Bar Guard or equal.

Concrete for the bottom of the inlet shall be Portland Cement concrete, 3,000 psi minimum compressive strength.

### **6.3 INSTALLATION:**

Standard Drop inlets shall be constructed as shown on the detail sheet and as staked in the field by the Engineer. Connector pipes shall be mortared in place to form a watertight seal. Grates shall be bolted or locked to drop inlet riser. Backfill around the inlet shall be compacted to 90% compaction by hand or water-jetted such that excessive settlement does not occur.



## **SECTION 7 - CUTOFF COLLAR**

### **7.1 GENERAL:**

Cutoff collars shall be installed on all solid pipelines with slopes greater than 5%, as shown in Detail 4, Sheet 6. Spacing between collars shall be as specified in the table below or as staked in the field by the Engineer.

| Ground Slope<br>(%) | Spacing<br>(Feet) |
|---------------------|-------------------|
| 0-5                 | None Required     |
| 6-15                | 200               |
| 16 and greater      | 100               |

### **7.2 MATERIALS:**

Cutoff collars shall be constructed of Portland Cement Concrete, 3,000-psi minimum compressive strength.

The envelope material shall be the same as that specified in Section 5, subsection 5.2.

### **7.3 INSTALLATION:**

Cutoff collars shall extend a minimum of 1.0 foot into native, undisturbed material on the sides and bottom of the trench and extend 1.0 foot above the top of the pipe. Cutoff collars shall be a minimum of 8 inches thick. A watertight seal shall be formed between the cutoff wall and the pipeline. The wall of the collar shall be poured against undisturbed soil. Backfill shall be placed around wall and hand compacted to ensure no voids are present.

The Contractor shall perforate the pipe with  $\pm 30$  3/8-inch diameter holes along the bottom half of the pipe a minimum of 3 feet upstream of the cutoff collar to allow water to infiltrate back into the drainline. This perforated section shall be backfilled with approved envelope material. Gravel envelope shall be a minimum of 3 inches thick on all sides of the pipe.

The Contractor shall take precautions to ensure that concrete does not flow through perforations in amounts that would cause any reduction in flow capacity of pipe.

## **SECTION 8 - TEMPORARY MEASURES**

### **8.1 GENERAL:**

Temporary erosion control measures shall be constructed by the Owner. These measures can include water bars, straw wattles, straw mulching, straw bale dikes, and other practices as needed. The measures shall be constructed in conformance with the detail drawings and maintained in a functional condition throughout the rainy season.

## **SECTION 9 - MAINTENANCE**

### **9.1 GENERAL:**

The erosion control measures described in these Specifications and shown on the Plans and Details require regular maintenance in order to function as intended. Vineyard management personnel shall assure that the erosion control measures are monitored throughout the rainy season each year and necessary repairs and/or maintenance are performed immediately. Maintenance operations shall include, but not be limited to the following activities.

### **9.2 DITCHES:**

Ditches shall be monitored for over-topping and repaired as needed. Debris that could reduce the capacity of the ditch shall be removed during/after each storm event.

### **9.3 STRAW WATTLES:**

Straw wattles shall be monitored and repaired as needed to ensure water does not run under the wattle or between adjacent wattles. Should excessive erosion cause the wattle to fill with sediment, this material shall be removed to a protected location and the source of the sediment located and protected as needed.

### **9.4 DROP INLETS:**

Drop inlets are designed with trash racks at the ground surface. Debris shall be removed from trash racks after each storm event or as necessary to ensure a clear flow path for water entering the drop inlet. Damaged trash racks shall be repaired immediately in order to ensure that unacceptable quantities of debris do not enter the storm drainage piping system. Drop inlets shall also be inspected annually for any sediment that may have accumulated within the riser. Sediment shall be removed and spread in a safe location and protected as necessary.

### **9.5 ROCK LEVEL SPREADERS:**

Level spreaders shall be inspected after each storm event the first year and at least annually thereafter to ensure proper functioning.

### **9.6 PERMANENT COVER CROP:**

All disturbed areas shall be fertilized and seeded in order to achieve the required vegetated coverage in the vineyard areas. The cover crop shall be reseeded in subsequent years where necessary prior to the rainy season in order to maintain the required degree of coverage. The cover crop, including avenues, shall be mowed only and shall not be disked.

## **APPENDIX A**

### **PHOTOGRAPHIC DOCUMENTATION**



**Photo 1**

08/23/2018



**Photo 2**

09/14/2018

## **APPENDIX B**

### **USLE CALCULATIONS**

PPI Engineering

Napa County  
Maximum Length of Slope  
for a soil loss of 3 tons per acre

NAME: Blodgett Vineyard

DATE: 6/14/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 152

Soil Name Hambright-Rock Outcrop

-K= 0.10

-R= 45

-T= 1

| Percent Cover  |    | 65%<br>Up & Down Hill | 70%<br>Up & Down Hill | 75%<br>Up & Down Hill | 80%<br>Up & Down Hill | 85%<br>Up & Down Hill | 90%<br>Up & Down Hill |
|--|----|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|  |    | C= 0.058<br>P= 1.0    | C= 0.046<br>P= 1.0    | C= 0.034<br>P= 1.0    | C= 0.022<br>P= 1.0    | C= 0.015<br>P= 1.0    | C= 0.010<br>P= 1.0    |
| P<br>E<br>R<br>C<br>E<br>N<br>T<br>S<br>L<br>O<br>P<br>E | 2  | 72,396,472            | 156,777,694           | 429,417,973           | 1,832,597,298         | 6,569,080,139         | 25,379,019,335        |
|  | 4  | 443,529               | 791,767               | 1,685,755             | 5,005,357             | 13,039,580            | 35,932,857            |
|  | 6  | 29,293                | 46,570                | 85,244                | 203,598               | 437,962               | 985,415               |
|  | 8  | 13,489                | 21,445                | 39,254                | 93,754                | 201,676               | 453,771               |
|  | 10 | 7,196                 | 11,441                | 20,942                | 50,018                | 107,594               | 242,086               |
|  | 12 | 4,355                 | 6,924                 | 12,673                | 30,269                | 65,113                | 146,504               |
|  | 14 | 2,856                 | 4,540                 | 8,311                 | 19,851                | 42,701                | 96,077                |
|  | 16 | 1,987                 | 3,159                 | 5,783                 | 13,811                | 29,710                | 66,847                |
|  | 18 | 1,447                 | 2,300                 | 4,211                 | 10,057                | 21,633                | 48,675                |
|  | 20 | 1,092                 | 1,737                 | 3,179                 | 7,593                 | 16,333                | 36,748                |
|  | 22 | 849                   | 1,350                 | 2,472                 | 5,904                 | 12,700                | 28,574                |
|  | 24 | 677                   | 1,076                 | 1,970                 | 4,705                 | 10,120                | 22,771                |
|  | 26 | 551                   | 876                   | 1,603                 | 3,828                 | 8,234                 | 18,527                |
|  | 28 | 456                   | 725                   | 1,328                 | 3,171                 | 6,820                 | 15,346                |
|  | 30 | 384                   | 610                   | 1,117                 | 2,667                 | 5,738                 | 12,910                |
|  | 32 | 327                   | 520                   | 952                   | 2,275                 | 4,893                 | 11,010                |
|  | 34 | 283                   | 449                   | 822                   | 1,964                 | 4,224                 | 9,504                 |
|  | 36 | 246                   | 392                   | 717                   | 1,713                 | 3,685                 | 8,292                 |
|  | 38 | 217                   | 345                   | 632                   | 1,509                 | 3,247                 | 7,306                 |
|  | 40 | 193                   | 307                   | 562                   | 1,342                 | 2,886                 | 6,493                 |
|  | 42 | 173                   | 275                   | 503                   | 1,202                 | 2,585                 | 5,817                 |
|  | 44 | 156                   | 248                   | 454                   | 1,085                 | 2,333                 | 5,250                 |
|  | 46 | 142                   | 225                   | 413                   | 985                   | 2,120                 | 4,769                 |
|  | 48 | 130                   | 206                   | 377                   | 901                   | 1,937                 | 4,359                 |
|  | 50 | 119                   | 189                   | 347                   | 828                   | 1,781                 | 4,007                 |

NOTES:

C=Cover and Management Factor

P=Practice Factor

PPI Engineering

Napa County  
Maximum Length of Slope  
for a soil loss of 3 tons per acre

NAME: Blodgett Vineyard

DATE: 6/14/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 176

Soil Name Rock Outcrop-Hambright

-K= 0.10

-R= 45

-T= 1

| Percent Cover |    | 65%<br>Up & Down Hill | 70%<br>Up & Down Hill | 75%<br>Up & Down Hill | 80%<br>Up & Down Hill | 85%<br>Up & Down Hill | 90%<br>Up & Down Hill |
|---------------|----|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|               |    | C= 0.058<br>P= 1.0    | C= 0.046<br>P= 1.0    | C= 0.034<br>P= 1.0    | C= 0.022<br>P= 1.0    | C= 0.015<br>P= 1.0    | C= 0.010<br>P= 1.0    |
|               | 2  | 72,396,472            | 156,777,694           | 429,417,973           | 1,832,597,298         | 6,569,080,139         | 25,379,019,335        |
|               | 4  | 443,529               | 791,767               | 1,685,755             | 5,005,357             | 13,039,580            | 35,932,857            |
|               | 6  | 29,293                | 46,570                | 85,244                | 203,598               | 437,962               | 985,415               |
|               | 8  | 13,489                | 21,445                | 39,254                | 93,754                | 201,676               | 453,771               |
|               | 10 | 7,196                 | 11,441                | 20,942                | 50,018                | 107,594               | 242,086               |
| P             | 12 | 4,355                 | 6,924                 | 12,673                | 30,269                | 65,113                | 146,504               |
| E             | 14 | 2,856                 | 4,540                 | 8,311                 | 19,851                | 42,701                | 96,077                |
| R             | 16 | 1,987                 | 3,159                 | 5,783                 | 13,811                | 29,710                | 66,847                |
| C             | 18 | 1,447                 | 2,300                 | 4,211                 | 10,057                | 21,633                | 48,675                |
| E             | 20 | 1,092                 | 1,737                 | 3,179                 | 7,593                 | 16,333                | 36,748                |
| N             | 22 | 849                   | 1,350                 | 2,472                 | 5,904                 | 12,700                | 28,574                |
| T             | 24 | 677                   | 1,076                 | 1,970                 | 4,705                 | 10,120                | 22,771                |
| S             | 26 | 551                   | 876                   | 1,603                 | 3,828                 | 8,234                 | 18,527                |
| L             | 28 | 456                   | 725                   | 1,328                 | 3,171                 | 6,820                 | 15,346                |
| O             | 30 | 384                   | 610                   | 1,117                 | 2,667                 | 5,738                 | 12,910                |
| P             | 32 | 327                   | 520                   | 952                   | 2,275                 | 4,893                 | 11,010                |
| E             | 34 | 283                   | 449                   | 822                   | 1,964                 | 4,224                 | 9,504                 |
|               | 36 | 246                   | 392                   | 717                   | 1,713                 | 3,685                 | 8,292                 |
|               | 38 | 217                   | 345                   | 632                   | 1,509                 | 3,247                 | 7,306                 |
|               | 40 | 193                   | 307                   | 562                   | 1,342                 | 2,886                 | 6,493                 |
|               | 42 | 173                   | 275                   | 503                   | 1,202                 | 2,585                 | 5,817                 |
|               | 44 | 156                   | 248                   | 454                   | 1,085                 | 2,333                 | 5,250                 |
|               | 46 | 142                   | 225                   | 413                   | 985                   | 2,120                 | 4,769                 |
|               | 48 | 130                   | 206                   | 377                   | 901                   | 1,937                 | 4,359                 |
|               | 50 | 119                   | 189                   | 347                   | 828                   | 1,781                 | 4,007                 |

NOTES:

C=Cover and Management Factor

P=Practice Factor

PPI Engineering

Napa County  
Maximum Length of Slope  
for a soil loss of 4 tons per acre

NAME: Blodgett Vineyard

DATE: 6/14/18

Cover Type: Permanent Cover Crop

Soil Unit No. (100-182)--- 178

Soil Name Sobrante

-K= 0.32

-R= 45

-T= 2

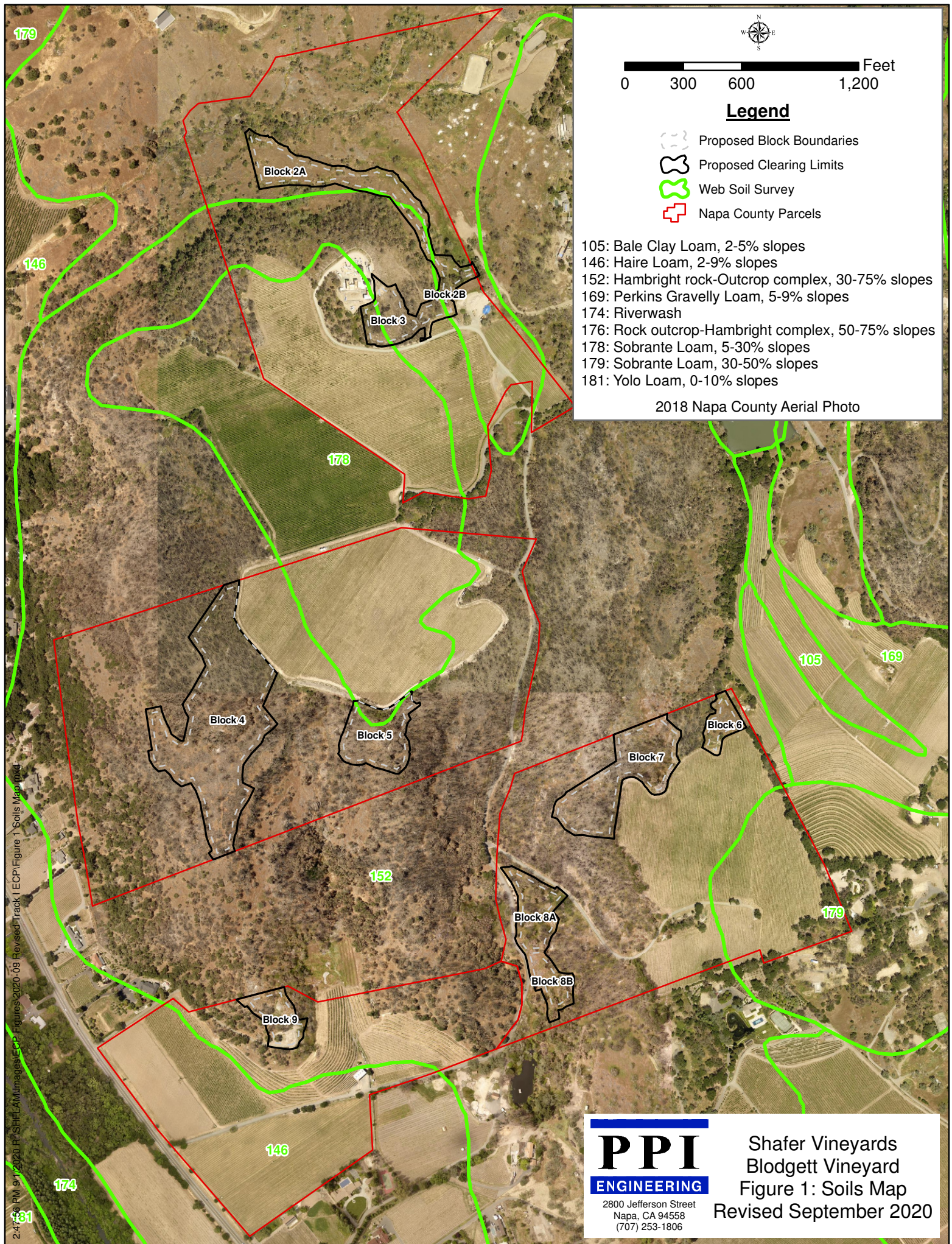
| Percent Cover    |    | 65%                | 70%                | 75%                | 80%                | 85%                | 90%                |
|------------------|----|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                  |    | Up & Down Hill     | Up & Down Hill     | Up & Down Hill     | Up & Down Hill     | Up & Down Hill     | Up & Down Hill     |
|                  |    | C= 0.058<br>P= 1.0 | C= 0.046<br>P= 1.0 | C= 0.034<br>P= 1.0 | C= 0.022<br>P= 1.0 | C= 0.015<br>P= 1.0 | C= 0.010<br>P= 1.0 |
| PERCENT<br>SLOPE | 2  | 3,911,541          | 8,470,611          | 23,201,212         | 99,014,205         | 354,923,718        | 1,371,214,188      |
|                  | 4  | 49,704             | 88,730             | 188,915            | 560,928            | 1,461,287          | 4,026,833          |
|                  | 6  | 5,086              | 8,085              | 14,799             | 35,347             | 76,035             | 171,079            |
|                  | 8  | 2,342              | 3,723              | 6,815              | 16,277             | 35,013             | 78,780             |
|                  | 10 | 1,249              | 1,986              | 3,636              | 8,684              | 18,679             | 42,029             |
|                  | 12 | 756                | 1,202              | 2,200              | 5,255              | 11,304             | 25,435             |
|                  | 14 | 496                | 788                | 1,443              | 3,446              | 7,413              | 16,680             |
|                  | 16 | 345                | 548                | 1,004              | 2,398              | 5,158              | 11,605             |
|                  | 18 | 251                | 399                | 731                | 1,746              | 3,756              | 8,451              |
|                  | 20 | 190                | 302                | 552                | 1,318              | 2,836              | 6,380              |
|                  | 22 | 147                | 234                | 429                | 1,025              | 2,205              | 4,961              |
|                  | 24 | 118                | 187                | 342                | 817                | 1,757              | 3,953              |
|                  | 26 | 96                 | 152                | 278                | 665                | 1,430              | 3,217              |
|                  | 28 | 79                 | 126                | 230                | 550                | 1,184              | 2,664              |
|                  | 30 | 67                 | 106                | 194                | 463                | 996                | 2,241              |
|                  | 32 | 57                 | 90                 | 165                | 395                | 850                | 1,911              |
|                  | 34 | 49                 | 78                 | 143                | 341                | 733                | 1,650              |
|                  | 36 | 43                 | 68                 | 125                | 297                | 640                | 1,440              |
|                  | 38 | 38                 | 60                 | 110                | 262                | 564                | 1,268              |
|                  | 40 | 34                 | 53                 | 98                 | 233                | 501                | 1,127              |
| 42               | 30 | 48                 | 87                 | 209                | 449                | 1,010              |                    |
| 44               | 27 | 43                 | 79                 | 188                | 405                | 911                |                    |
| 46               | 25 | 39                 | 72                 | 171                | 368                | 828                |                    |
| 48               | 22 | 36                 | 65                 | 156                | 336                | 757                |                    |
| 50               | 21 | 33                 | 60                 | 144                | 309                | 696                |                    |

NOTES:

C=Cover and Management Factor

P=Practice Factor







## **APPENDIX C**

### **VEGETATION RETENTION CALCULATIONS**

**SHAFFER VINEYARDS  
BLODGETT VINEYARD**

**3:1 Tree Preservation Calculations**

|  | APN<br>039-051-033 | APN<br>039-051-019 | APN<br>039-051-021 | APN<br>039-051-023 | Total      |
|--|--------------------|--------------------|--------------------|--------------------|------------|
| Proposed Clearing Limits (acres)                                     | 6.2                | 12.6               | 1.4                | 8.1                | 28.3       |
| Trees Existing in 2018 (acres) <sup>1</sup>                          | 13.3               | 36.2               | 6.2                | 20.5               | 76.2       |
| Trees Proposed to be Removed (acres)                                 | 1.8                | 7.7                | 0.4                | 4.8                | 14.7       |
| Trees on Less than 50% Slopes and Outside Setbacks on Parcel (acres) | 7.9                | 31.2               | 5.6                | 19.3               | 64.0       |
| Trees Preserved on Less than 50% Slopes and Outside Setbacks (acres) | 6.1                | 23.5               | 5.2                | 14.5               | 49.3       |
| Trees Preserved (percent) <sup>2</sup>                               | <b>77%</b>         | <b>75%</b>         | <b>93%</b>         | <b>75%</b>         | <b>77%</b> |

Notes:

1. Source: Tree canopy delineated from 2018 Aerial Photo provided by Napa County GIS Department
2. 75% retention (or higher) is the same as 3:1 preservation (or higher)

Some rounding may occur





2:51:24 PM 9/1/2020 P:\51\FLA\Images\EOP Figures\2020-09 Revised Track LEOP Figure 2 Tree Preservation.mxd

**PPI**  
**ENGINEERING**  
2800 Jefferson Street  
Napa, CA 94558  
(707) 253-1806

Shafer Vineyards  
Blodgett Vineyard  
Figure 2: Tree Preservation  
Revised September 2020



## **APPENDIX D**

### **SLOPE CALCULATIONS**

**SHAFFER VINEYARDS  
BLODGETT VINEYARD**

**Average Slope of Proposed Vineyard Blocks**

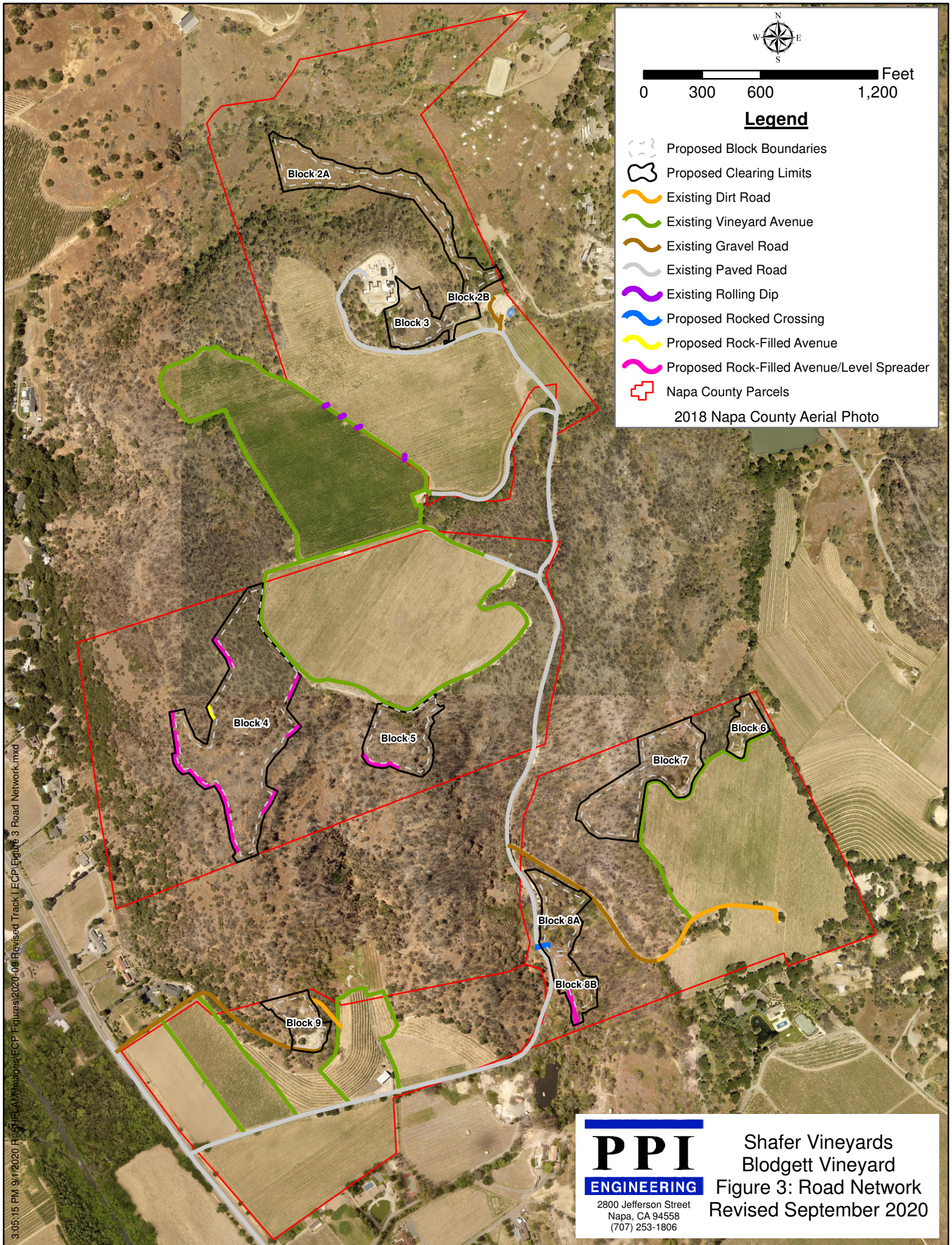
| <b>Block</b> | <b>Gross Acres</b> | <b>Net Acres</b> | <b>Slope #1</b> | <b>Slope #2</b> | <b>Average slope</b> |
|--------------|--------------------|------------------|-----------------|-----------------|----------------------|
| 2A           | 3.5                | 2.0              | 19%             | 17%             | 18%                  |
| 2B           | 1.2                | 0.5              | 12%             | 23%             | 18%                  |
| 3            | 1.5                | 1.0              | 10%             | 18%             | 14%                  |
| 4            | 10.1               | 8.2              | 8%              | 21%             | 15%                  |
| 5            | 2.5                | 2.0              | 19%             | 24%             | 22%                  |
| 6            | 0.9                | 0.4              | 9%              | 20%             | 15%                  |
| 7            | 4.3                | 3.1              | 19%             | 24%             | 22%                  |
| 8A           | 1.8                | 1.2              | 23%             | 25%             | 24%                  |
| 8B           | 1.1                | 0.6              | 24%             | 26%             | 25%                  |
| 9            | 1.4                | 0.8              | 16%             | 26%             | 21%                  |
| <b>Total</b> | <b>28.3</b>        | <b>19.7</b>      |                 |                 | <b>19%</b>           |

Note: Individual estimates may not add to the totals due to rounding

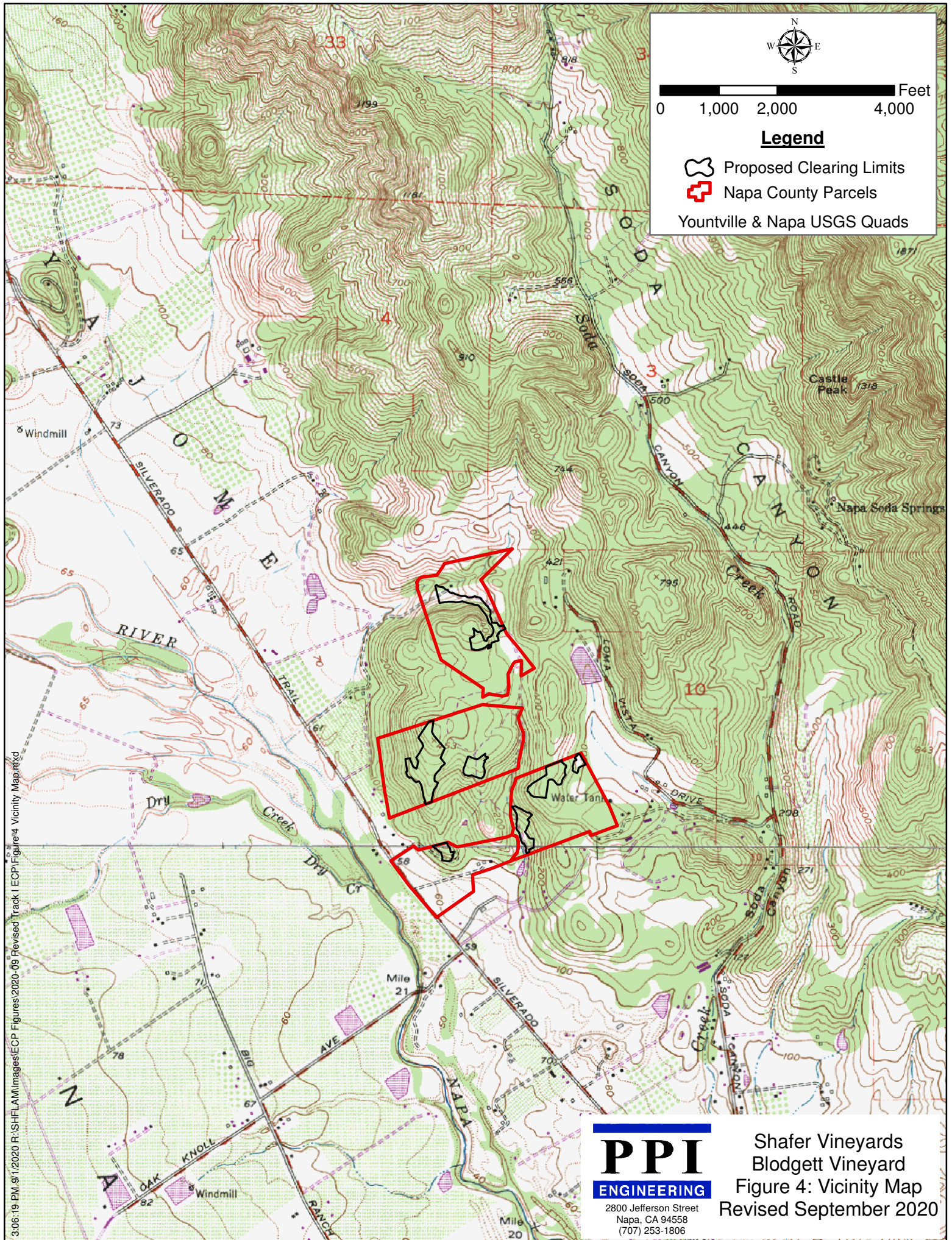
## **APPENDIX E**

### **SUPPORTING FIGURES**

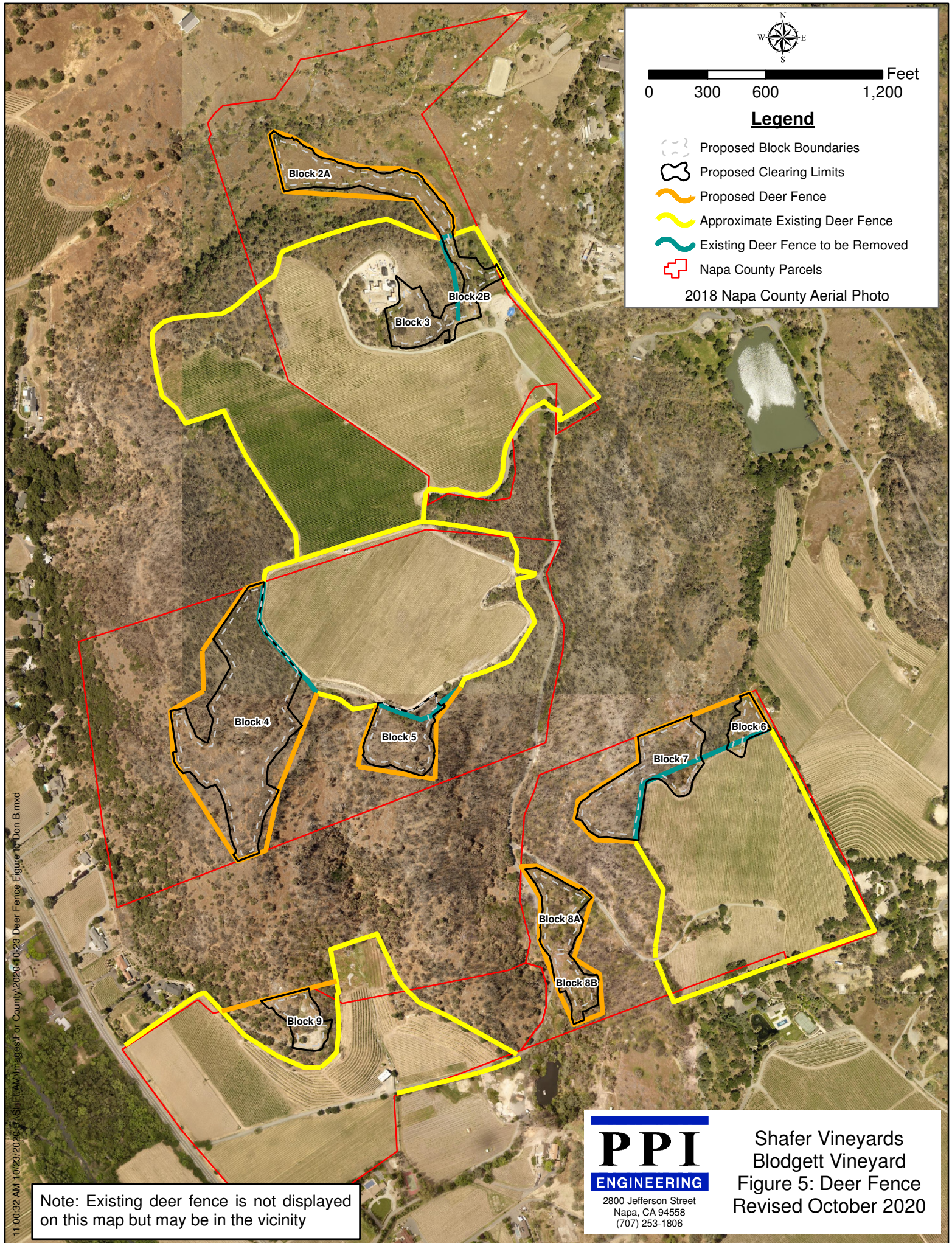




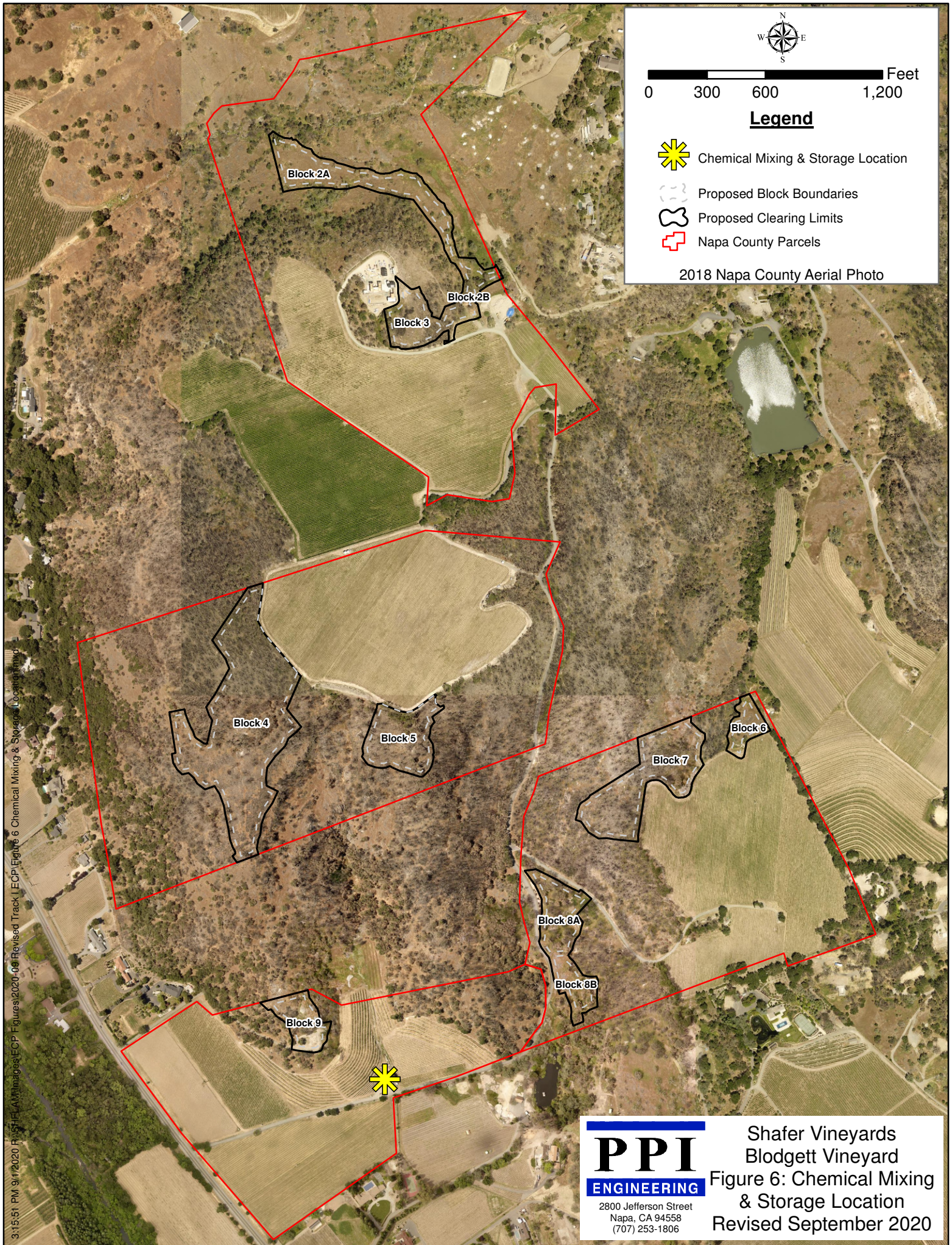




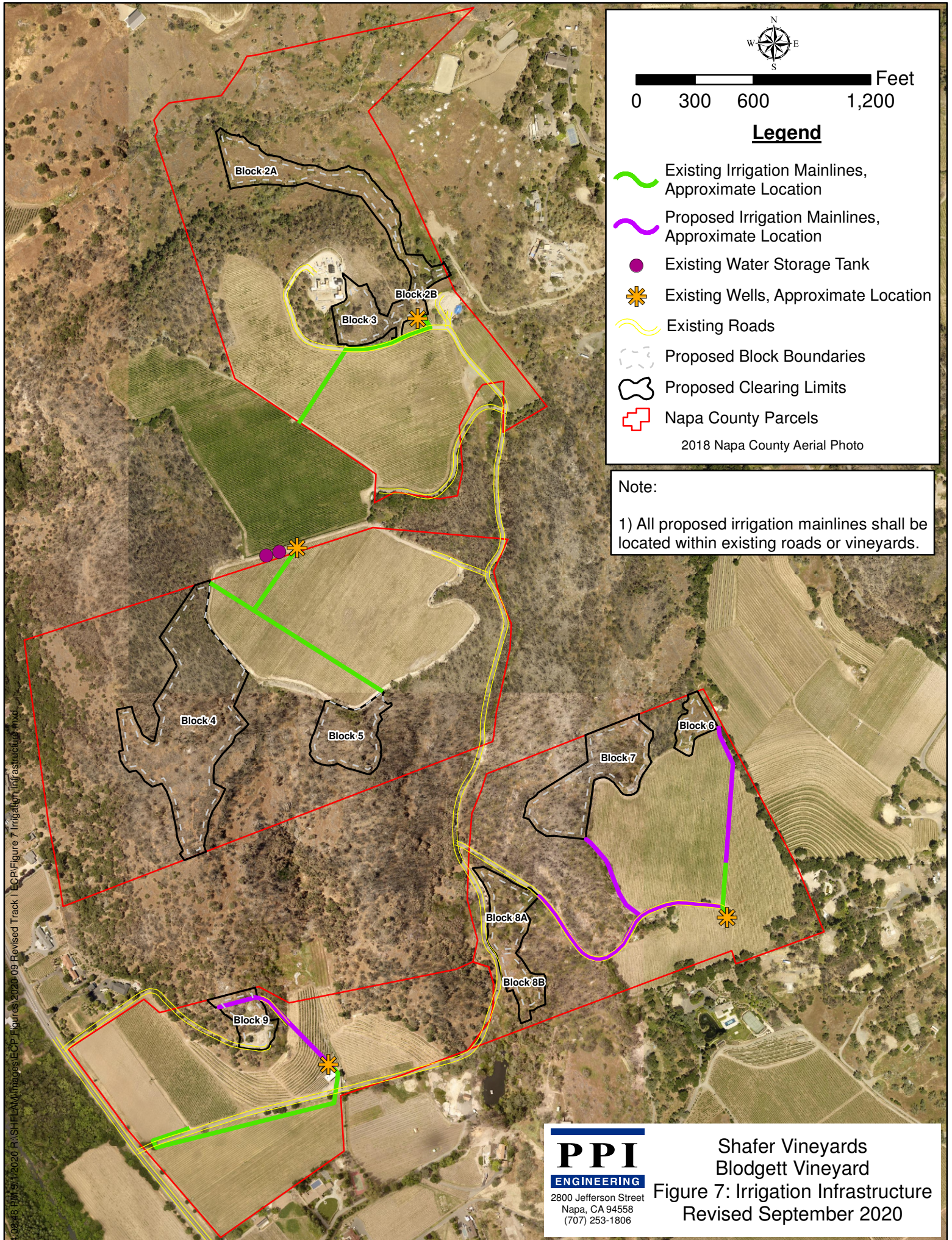




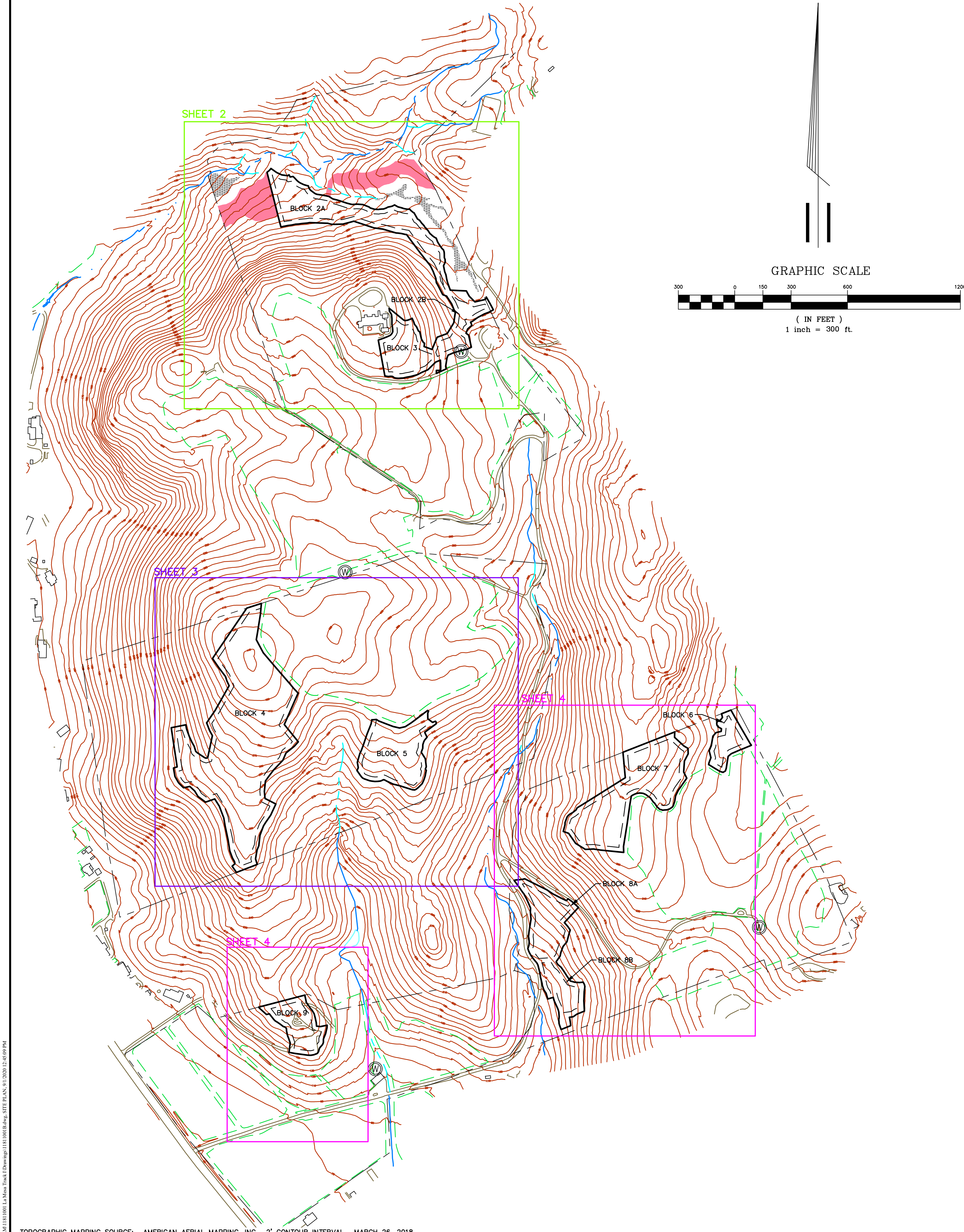












LEGEND

- APPROXIMATE PROPERTY LINE LOCATION
- U.S.G.S. BLUE LINE STREAM, MAPPED BY WRA
- U.S.G.S. BLUE LINE STREAM, APPROXIMATE LOCATION
- EPHEMERAL STREAM, MAPPED BY WRA
- EPHEMERAL STREAM, ASSUMED LOCATION
- SEASONAL WETLAND SWALE, MAPPED BY WRA
- EXISTING RESERVOIR
- EXISTING VINEYARD AREA
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING WELL, APPROXIMATE LOCATION
- AREA REMOVED FROM PROJECT
- PROPOSED VINEYARD CLEARING LIMITS
- PROPOSED VINEYARD BLOCK BOUNDARY

NOTES:

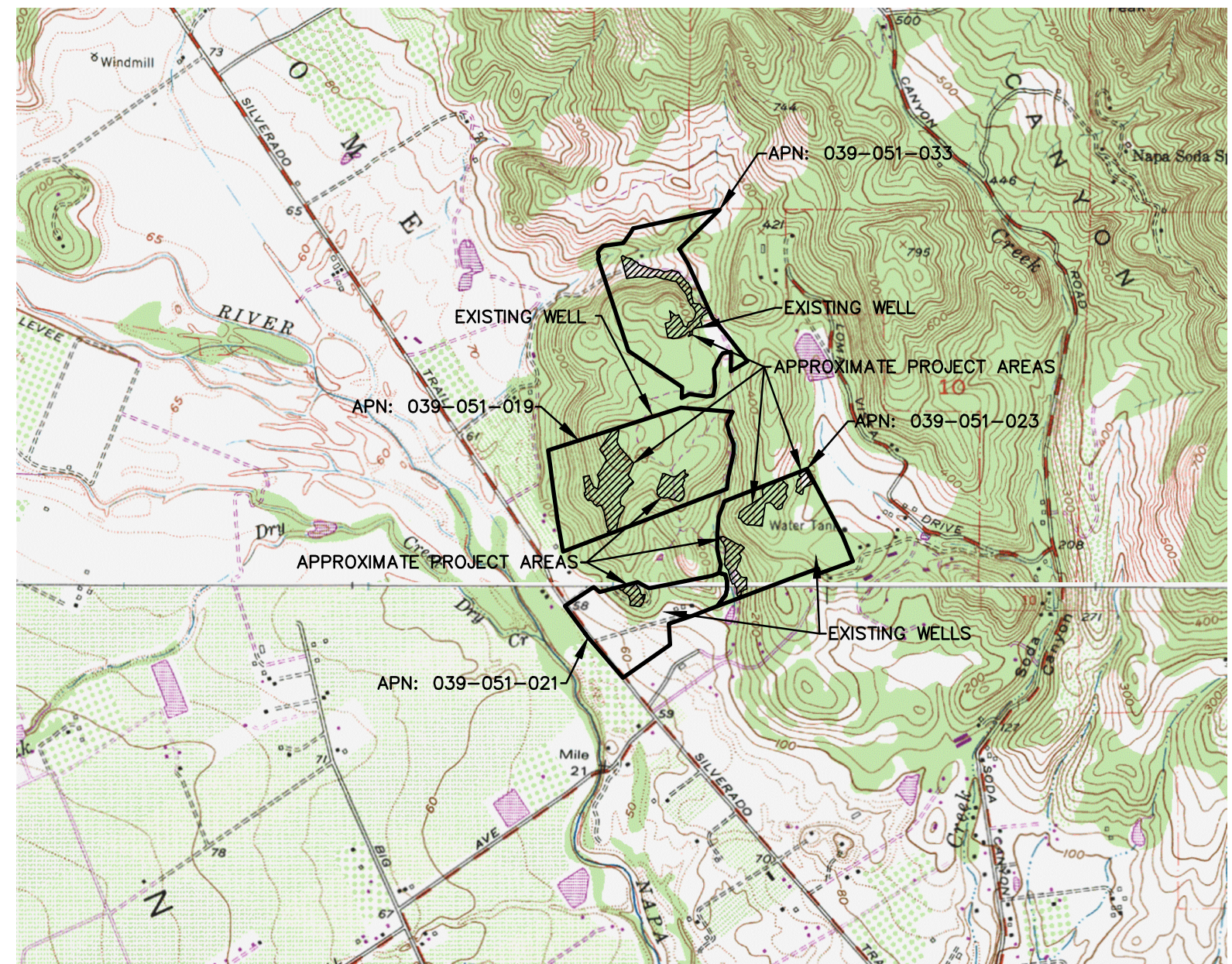
- OWNER: SHAFER VINEYARDS  
SITE ADDRESS: 5096 SILVERADO TRAIL  
APNS: 039-051-019, 039-051-021, 039-051-023, AND 039-051-033
- ACCESS TO PROJECT IS FROM SILVERADO TRAIL. THE SITE IS GATED AND LOCKED. ADMITTANCE IS AVAILABLE UPON REQUEST.
- EXISTING VEGETATION CONSISTS OF PASTURE, BRUSH, AND WOODLAND.
- DISTURBED AREAS SHALL BE SEEDED AS DESCRIBED BELOW. STRAW MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS AT A RATE OF 3,000 LBS/ACRE PRIOR TO OCTOBER 15 OF THE YEAR OF CONSTRUCTION.
- PERMANENT COVER CROP (NO-TILL):  
A PERMANENT COVER CROP STRATEGY WILL BE UTILIZED. THE PERMANENT COVER CROP WILL BE GENERATED THE FIRST YEAR BY SEEDING WITH THE FOLLOWING MIX:

| VARIETY        | RATE (LBS/ACRE) |
|----------------|-----------------|
| DWARF BARLEY   | 50              |
| BLANDO BROME   | 8               |
| ZORRO FESCUE   | 12              |
| CRIMSON CLOVER | 6               |

A PRE-APPROVED ALTERNATIVE SEED MIX MAY BE ALLOWED.

THE PERMANENT COVER CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AREAS WHICH HAVE LESS THAN THE PERCENT VEGETATIVE COVER SPECIFIED BELOW WILL BE RESEEDED AND MULCHED UNTIL ADEQUATE COVERAGE IS ACHIEVED. THE PERMANENT COVER CROP SHALL BE MOWED ONLY AND NOT DISKED.

BLOCKS WITH 75% VEGETATIVE COVER: 8A & 9  
BLOCKS WITH 80% VEGETATIVE COVER: 2A, 5, & 7  
BLOCKS WITH 85% VEGETATIVE COVER: 2B, 3, 4, & 8B  
BLOCK WITH 90% VEGETATIVE COVER: 6
- NO PRE-EMERGENT HERBICIDES WILL BE USED FOR WEED MANAGEMENT. CONTACT OR SYSTEMIC HERBICIDES MAY BE APPLIED IN SPRING (NO EARLIER THAN FEBRUARY 15TH TO ENSURE ADEQUATE VEGETATIVE COVER IN THE SPRAY STRIPS FOR THE REMAINDER OF THE RAINY SEASON). THE WIDTH OF THE SPRAY STRIP SHALL BE NO WIDER THAN 1.5' IN ORDER TO ACHIEVE 75% VEGETATIVE COVER IN BLOCKS 8A & 9. THE WIDTH OF THE SPRAY STRIP SHALL BE NO WIDER THAN 1.0' IN ORDER TO ACHIEVE 80% VEGETATIVE COVER IN BLOCKS 2A, 5, & 7. NO STRIP SPRAYING SHALL BE PERFORMED IN BLOCKS 2B, 3, 4, 6, & 8B WHICH REQUIRE 85% OR 90% VEGETATIVE COVER RESPECTIVELY. SPOT SPRAYING OF CONTACT OR SYSTEMIC HERBICIDES IN SPRING (NO EARLIER THAN FEBRUARY 15) WILL BE ALLOWED IN BLOCKS 2B, 3, 4, 6, & 8B PROVIDED THE 85% OR 90% VEGETATIVE COVER RESPECTIVELY IS ACHIEVED. IF THE OWNER CHOOSES TO FARM WITHOUT HERBICIDE, AN ALTERNATIVE WILL BE TO HAND-HOE AROUND THE BASE OF THE VINE ONLY, OR OTHER METHODS THAT DO NOT RESULT IN A CONTINUOUS BARE STRIP.
- IN BLOCKS 2B, 3, 4, 5, 6, 7, & 9 THE OWNER HAS THE OPTION OF USING A DWARF BARLEY (OR A PRE-APPROVED ALTERNATIVE) COVER CROP IN THE FIRST THREE YEARS THAT THE BLOCK IS PLANTED TO AID WITH VINEYARD ESTABLISHMENT. IF THIS OPTION IS USED, SEED SHALL BE APPLIED AT A RATE OF 120 LBS/ACRE IF BROADCAST OR AT A RATE OF 80 LBS/ACRE IF DRILLED. THE COVER CROP WITHIN THE VINEYARD MAY BE DISKED EACH SPRING AFTER APRIL 1 FOR THE FIRST THREE YEARS WITHIN BLOCKS 2B, 3, 4, 5, 6, 7, & 9. AN ALTERNATIVE COVER CROP SEED MIX MAY BE USED UPON PRIOR APPROVAL. EACH YEAR THE OWNER CHOOSES TO DISK, THE AREA SHALL BE STRAW MULCHED AT A RATE OF 3,000 LBS/ACRE, AND STRAW TATTLES SHALL BE INSTALLED PRIOR TO OCTOBER 15. THE PERMANENT SEED MIX WILL BE SEEDED PRIOR TO OCTOBER 15 OF THE FOURTH (OR EARLIER) YEAR.
- IN BLOCKS 2A, 8A, & 8B THE PERMANENT COVER MUST BE ESTABLISHED THE FIRST YEAR. DISKING FOR THE FIRST THREE YEARS TO AID WITH VINEYARD ESTABLISHMENT IS NOT PERMITTED DUE TO THE SLOPE OF THE BLOCKS AND THE PROXIMITY TO LOCAL DRAINAGES.
- THE VINEYARD AVENUES SHALL BE MOWED ONLY AND SHALL NOT BE DISKED. UNLESS OTHERWISE NOTED, ALL AVENUES SHALL CONFORM TO THE NATURAL GRADE. VINEYARD AVENUES SHALL BE SEEDED AND MULCHED PRIOR TO OCTOBER 15 OF THE YEAR OF CONSTRUCTION AND IN SUBSEQUENT YEARS IN BARE OR DISTURBED AREAS. THE COVER CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AVENUES WHICH HAVE LESS THAN THE PERCENT VEGETATIVE COVER SPECIFIED BELOW WILL BE RESEEDED AND MULCHED UNTIL ADEQUATE COVERAGE IS ACHIEVED. SEEDING AND MULCHING IS NOT REQUIRED ON AVENUES AND ROADS PROPERLY SURFACED WITH GRAVEL.
- BLOCKS WITH 75% VEGETATIVE COVER: 8A & 9  
BLOCKS WITH 80% VEGETATIVE COVER: 2A, 5, & 7  
BLOCKS WITH 85% VEGETATIVE COVER: 2B, 3, 4, & 8B  
BLOCK WITH 90% VEGETATIVE COVER: 6
- THE OWNER HAS THE FREEDOM TO FURTHER SUBDIVIDE VINEYARD BLOCKS WITHIN THE FOOTPRINT OF THE PROPOSED VINEYARD FOR IRRIGATION AND VITICULTURE PURPOSES. THE PROPOSED VINE ROW DIRECTIONS SHALL NOT BE ALTERED WITHOUT AN APPROVED MODIFICATION FROM NAPA COUNTY.
- FERTILIZER SHALL BE APPLIED AS NECESSARY BY VINEYARD MANAGEMENT PERSONNEL FOR BOTH THE VINEYARD AND TO ENSURE SPECIFIED PERCENT VEGETATIVE COVER CROP IS ACHIEVED. SITE-SPECIFIC SOIL ANALYSIS SHOULD BE PERFORMED.
- THE PROPOSED VINE AND ROW SPACING IS 5' BY 7'. VINE ROW WIDTH SHALL BE INCREASED AS NECESSARY WHERE SIDE SLOPE IS 15% OR GREATER. IN THESE AREAS, WIDTH OF TILLAGE EQUIPMENT SHALL BE NO MORE THAN 75% OF ROW WIDTH TO ALLOW FOR BENCH FORMATION AND TO MINIMIZE EROSION.
- THE LOCATION OF THE EXISTING WELLS, THE PROPOSED WATER SOURCE, ARE SHOWN ON THE SITE PLAN AND ON THE VICINITY MAP.
- THE PROJECT IS CURRENTLY DEER FENCED. ADDITIONAL DEER FENCE IS NEEDED FOR THE PROPOSED VINEYARD. SEE APPENDIX E FOR THE PROPOSED DEER FENCE MAP.
- REQUESTS FOR FURTHER INFORMATION, CLARIFICATION OF WORK TO BE DONE, OR INSPECTION INFORMATION CAN BE MADE TO JIM BUSHEY OR MATT BUENO AT PPI ENGINEERING IN NAPA, (707) 253-1806.
- PROPERTY LINES AS SHOWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.
- THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
- AT LEAST 48 HOURS PRIOR TO EXCAVATING, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT (U.S.A.) AT 1-800-642-2444 IN ORDER TO LOCATE EXISTING UTILITIES. IT IS THE OWNER'S RESPONSIBILITY TO LOCATE ANY ADDITIONAL UNDERGROUND UTILITIES THAT MAY HAVE BEEN INSTALLED "IN-HOUSE" OR BY PRIVATE CONTRACTORS AND THEREFORE MAY NOT BE LOCATED THROUGH UNDERGROUND SERVICE ALERT.
- IT IS THE OWNER'S RESPONSIBILITY TO INSTALL ALL STRUCTURAL MEASURES AS SHOWN ON THE SITE PLAN AND DETAILS AND AS DESCRIBED IN THE SPECIFICATIONS WITHIN THE TIME FRAMES SPECIFIED FOR THIS PROJECT. ANY DEVIATION FROM THESE PLANS MUST BE REVIEWED AND APPROVED BY NAPA COUNTY PLANNING, BUILDING AND ENVIRONMENTAL SERVICES DEPARTMENT. IT IS THE OWNER'S RESPONSIBILITY TO INITIATE THIS MODIFICATION PROCESS. PPI ENGINEERING MUST BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION IN ORDER TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE OWNER/MANAGER AND CONTRACTOR(S). FOR ONGOING MULTI-YEAR PROJECTS PPI ENGINEERING MUST BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF RESUMING CONSTRUCTION EACH YEAR.



VICINITY MAP

USGS YOUNTVILLE AND NAPA QUADRANGLES  
TOWNSHIP 6 N., RANGE 4 W.  
SCALE: 1" = ±2000'

TOPOGRAPHIC MAPPING SOURCE: AMERICAN AERIAL MAPPING, INC. 2' CONTOUR INTERVAL. MARCH 26, 2018.  
INTERMEDIATE CONTOURS TURNED OFF ON THIS SHEET

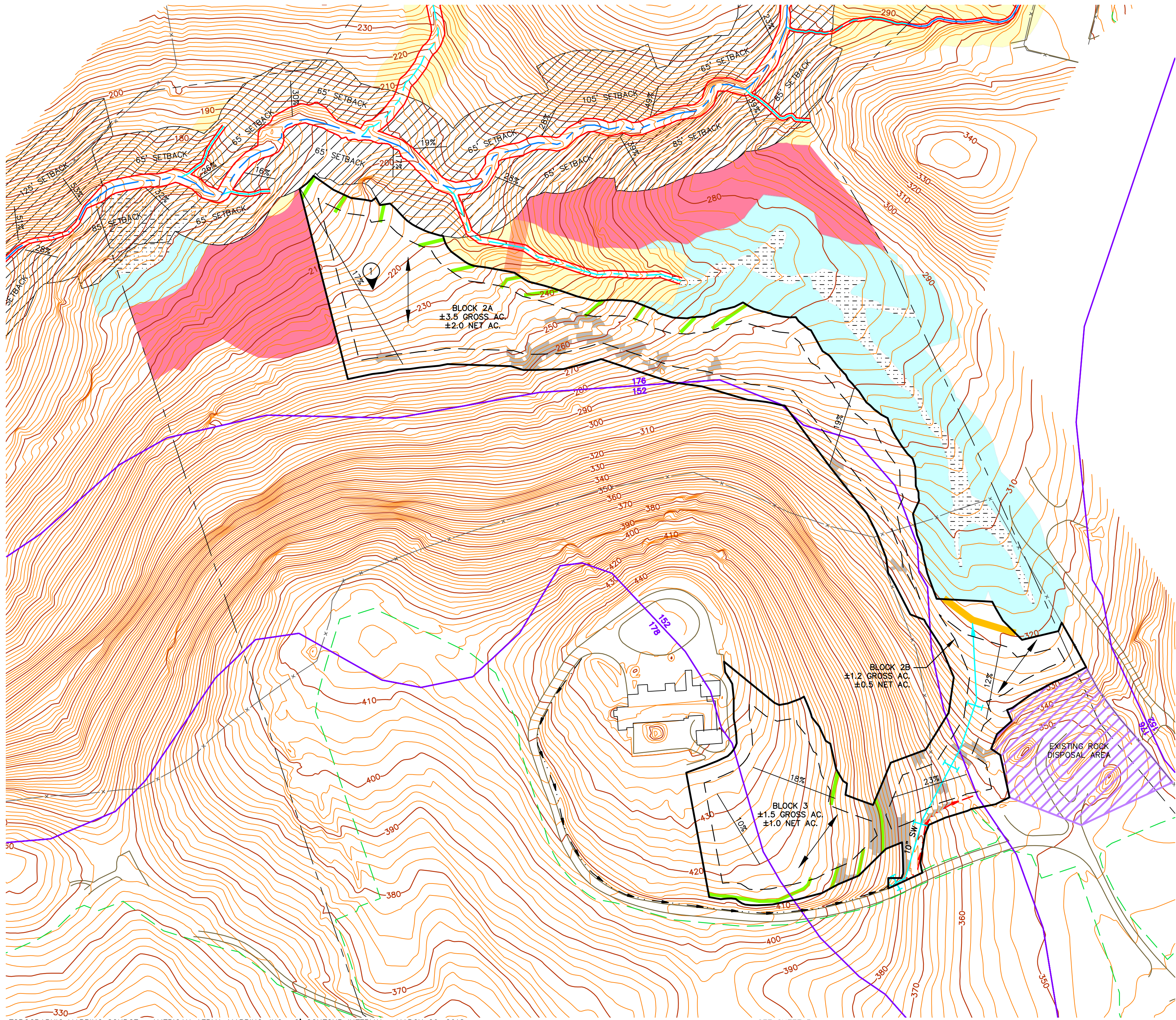


| SHAFER VINEYARDS<br>BLODGETT VINEYARD<br>EROSION CONTROL PLAN<br>SITE PLAN |          |           |           |        |        |
|--|----------|-----------|-----------|--------|--------|
| DESIGN ENGINEER:<br>J. BUSHEY, C. CORSETTI                                 |          |           |           |        |        |
| SCALE:   | AS SHOWN | DRAWN BY: | JCJ, SM   | DATE:  | 9-1-20 |
| JOB NO:  | 11811001 | DWG. NO:  | 11811001B | SHEET: | 1      |
|  |          |           |           | OF:    | 6      |

| REV. NO. | DESCRIPTION  | BY  | DATE   |
|----------|--|-----|--------|
| 1        | THIS DRAWING SUPERSEDES DRAWING 11811001A. DELETED BLOCK 1. ADJUSTED BOUNDARY OF BLOCK 2A. UPDATED NOTES 5, 6, 8, & 9. ADDED WELLS TO SITE PLAN. | JCJ | 9-1-20 |

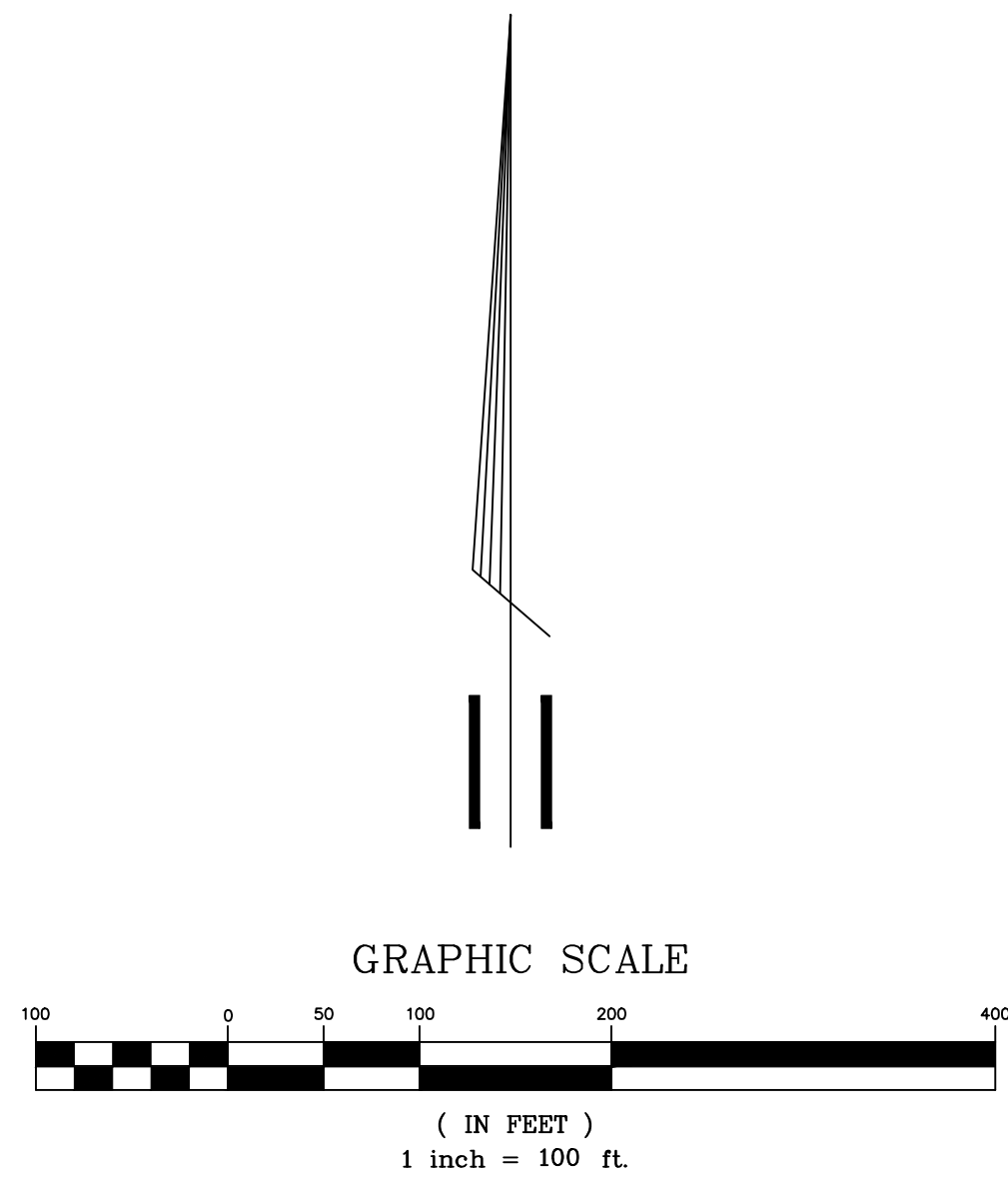
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TOPOGRAPHIC MAPPING SOURCE: AMERICAN AERIAL MAPPING, INC. 2' CONTOUR INTERVAL. MARCH 26, 2018.

SEE SHEET 3



LEGEND

- |     |   |     |   |
|-----|---|-----|---|
| --- | APPROXIMATE PROPERTY LINE LOCATION  |     | AREA REMOVED FROM PROJECT                                     |
| --- | U.S.G.S. BLUE LINE STREAM, MAPPED BY WRA  | --- | PROPOSED VINEYARD CLEARING LIMITS                             |
| --- | U.S.G.S. BLUE LINE STREAM, APPROXIMATE LOCATION   | --- | PROPOSED VINEYARD BLOCK BOUNDARY                              |
| --- | EPHEMERAL STREAM, MAPPED BY WRA   | ○   | PROPOSED 24" STANDARD DROP INLET (SEE DETAIL 3, SHEET 6)      |
| --- | EPHEMERAL STREAM, ASSUMED LOCATION  | I   | PROPOSED CUTOFF COLLAR (SEE DETAIL 4, SHEET 6)                |
| --- | TOP OF BANK, APPROXIMATE LOCATION   | →   | PROPOSED 10" SW SURFACE DRAINAGE LINE (SEE DETAIL 2, SHEET 6) |
| --- | SEASONAL WETLAND SWALE, MAPPED BY WRA   | →   | PROPOSED ROCK LEVEL SPREADER (SEE DETAIL 5, SHEET 5)          |
| --- | NAPA COUNTY STREAM SETBACK  | →   | PROPOSED STRAW WATTLE (SEE DETAIL 1, SHEET 5)                 |
| --- | 35' SETBACK   | SW  | SINGLE WALL CORRUGATED POLYETHYLENE PIPE                      |
| --- | 50' WETLAND SETBACK   | ↔   | PROPOSED VINEROW DIRECTION                                    |
| --- | EXISTING VINEYARD AREA  | ■   | AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER              |
| --- | EXISTING ROAD   | ⊗   | PHOTO POINT NUMBER & LOCATION (SEE APPENDIX A)                |
| --- | EXISTING FENCE  | X%  | AVERAGE SURFACE SLOPE   |
| --- | EXISTING BUILDING   | 152 | SOIL TYPE BOUNDARY  |
| --- | EXISTING DITCH, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, & MAINTAINED AS NEEDED (SEE DETAIL 2, SHEET 5) | 178 |   |
| --- | EXISTING DITCH, APPROXIMATE LOCATION, TO BE REMOVED   |     |   |
- USDA SOIL CLASSIFICATIONS:**
- |     |  |
|-----|--|
| 152 | HAMBRIGHT ROCK-OUTCROP COMPLEX 30-75% SLOPES |
| 176 | ROCK OUTCROP-HAMBRIGHT COMPLEX 50-75% SLOPES |
| 178 | SOBRANTE LOAM 5-30% SLOPES                   |



JOB NO: 11811001  
DWG. NO: 11811001B

SHAFER VINEYARDS  
BLODGETT VINEYARD

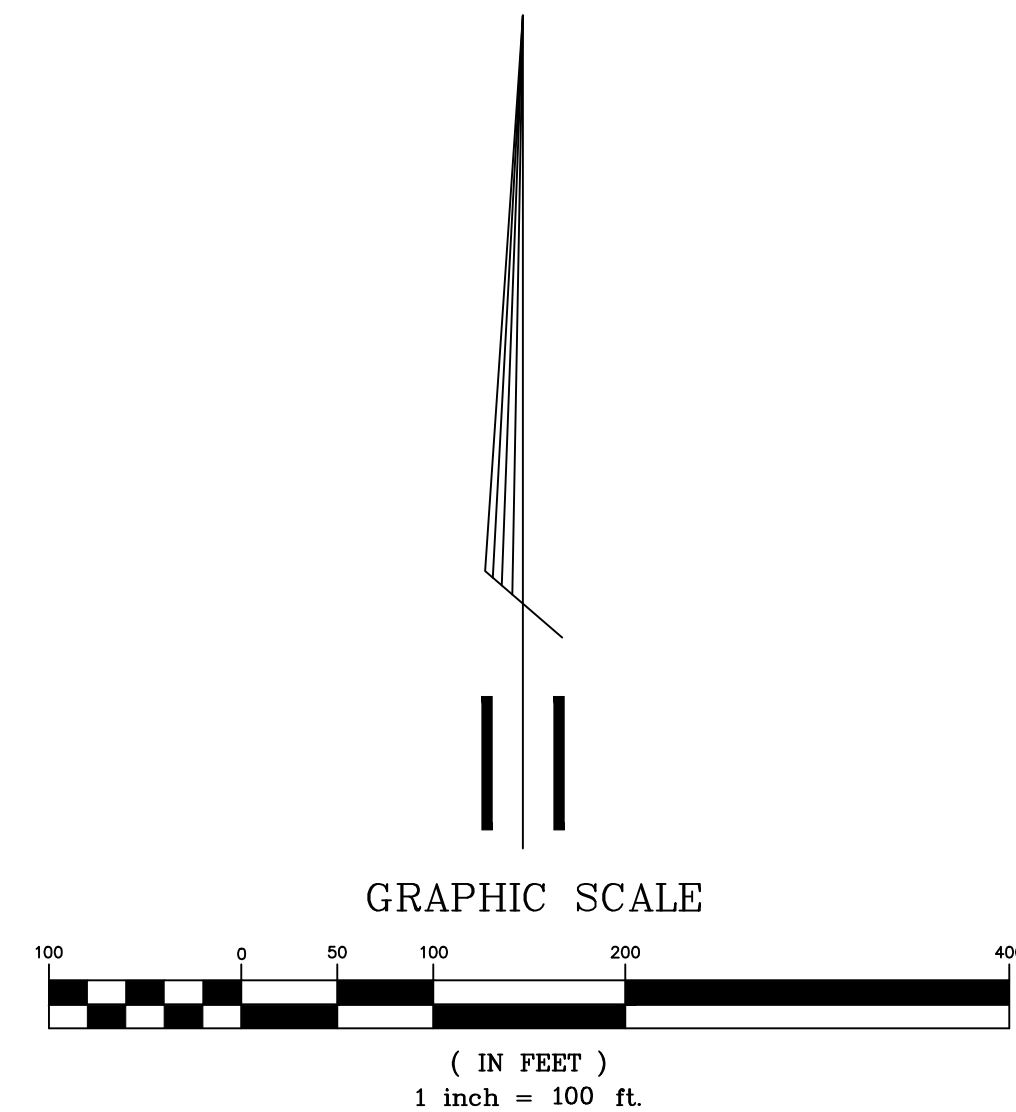
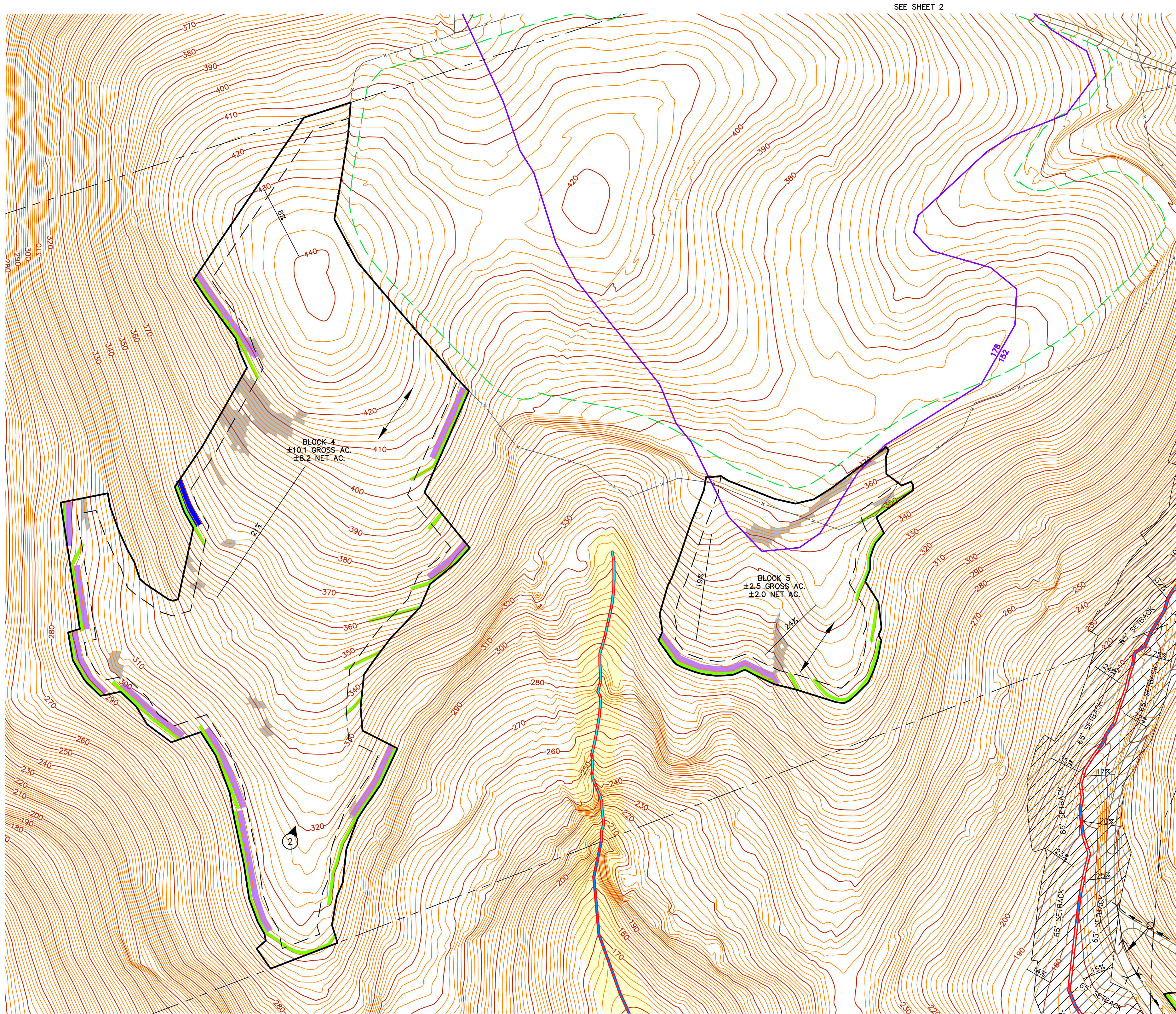
EROSION CONTROL PLAN  
BLOCKS 2 & 3

DESIGN ENGINEER:  
J. BUSHEY, C. CORSETTI

|        |          |           |         |       |        |        |   |
|--------|----------|-----------|---------|-------|--------|--------|---|
| SCALE: | AS SHOWN | DRAWN BY: | JCJ, SM | DATE: | 9-1-20 | SHEET: | 2 |
|        |          |           |         |       |        | OF:    | 6 |

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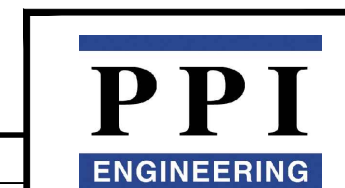


LEGEND

- APPROXIMATE PROPERTY LINE LOCATION
- U.S.G.S. BLUE LINE STREAM, MAPPED BY WRA
- U.S.G.S. BLUE LINE STREAM, APPROXIMATE LOCATION
- EPHEMERAL STREAM, MAPPED BY WRA
- EPHEMERAL STREAM, ASSUMED LOCATION
- TOP OF BANK, APPROXIMATE LOCATION
- NAPA COUNTY STREAM SETBACK
- 35' SETBACK
- EXISTING VINEYARD AREA
- EXISTING ROAD
- EXISTING FENCE
- EXISTING DITCH, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, & MAINTAINED AS NEEDED (SEE DETAIL 2, SHEET 5)
- EXISTING CULVERT
- EXISTING DROP INLET, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, REPLACED, OR MAINTAINED AS NEEDED (SEE DETAIL 3, SHEET 6)
- EXISTING SURFACE DRAINAGE LINE, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, REPLACED, OR MAINTAINED AS NEEDED (SEE DETAIL 2, SHEET 6)
- PROPOSED VINEYARD CLEARING LIMITS
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED ROCK-FILLED AVENUE/LEVEL SPREADER (SEE DETAIL 4, SHEET 5)
- PROPOSED ROCK-FILLED AVENUE (SEE DETAIL 1, SHEET 6)
- PROPOSED STRAW WATTLE (SEE DETAIL 1, SHEET 5)
- PROPOSED VINEROW DIRECTION
- AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER
- PHOTO POINT NUMBER & LOCATION (SEE APPENDIX A)
- AVERAGE SURFACE SLOPE
- 178
- 152
- SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS:

- 152 HAMBRIGHT ROCK-OUTCROP COMPLEX 30-75% SLOPES
- 178 SOBRANTE LOAM 5-30% SLOPES



2800 JEFFERSON STREET  
NAPA, CA 94958  
707/253-1806 FAX 707/253-1804

JOB NO: 11811001  
DWG. NO: 11811001B

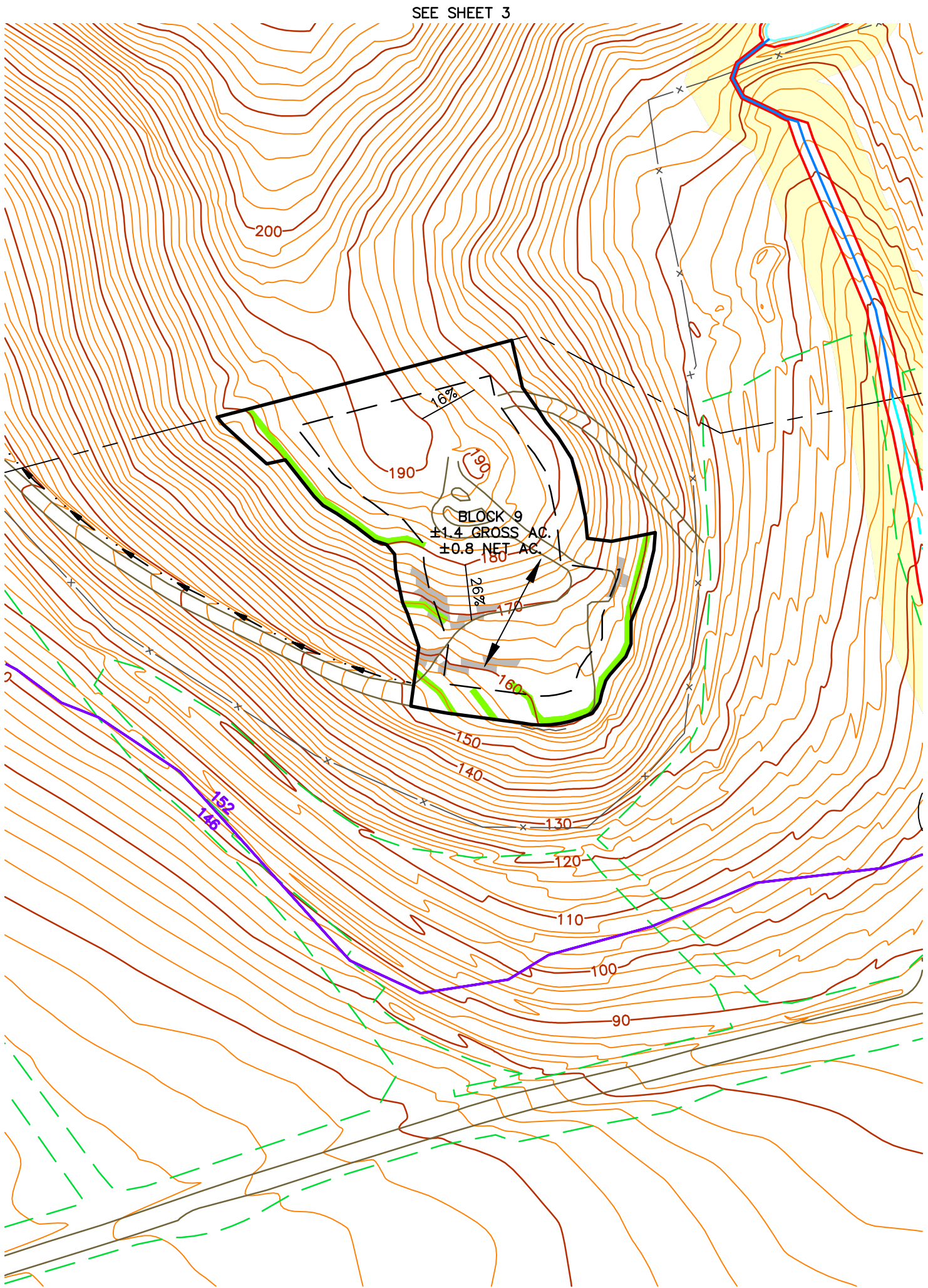
SHAFER VINEYARDS  
BLODGETT VINEYARD  
EROSION CONTROL PLAN  
BLOCKS 4 & 5

DESIGN ENGINEER: J. BUSHEY, C. CORSETTI  
SCALE: AS SHOWN  
DRAWN BY: JCJ, SM  
DATE: 9-1-20  
SHEET: 3 OF: 6

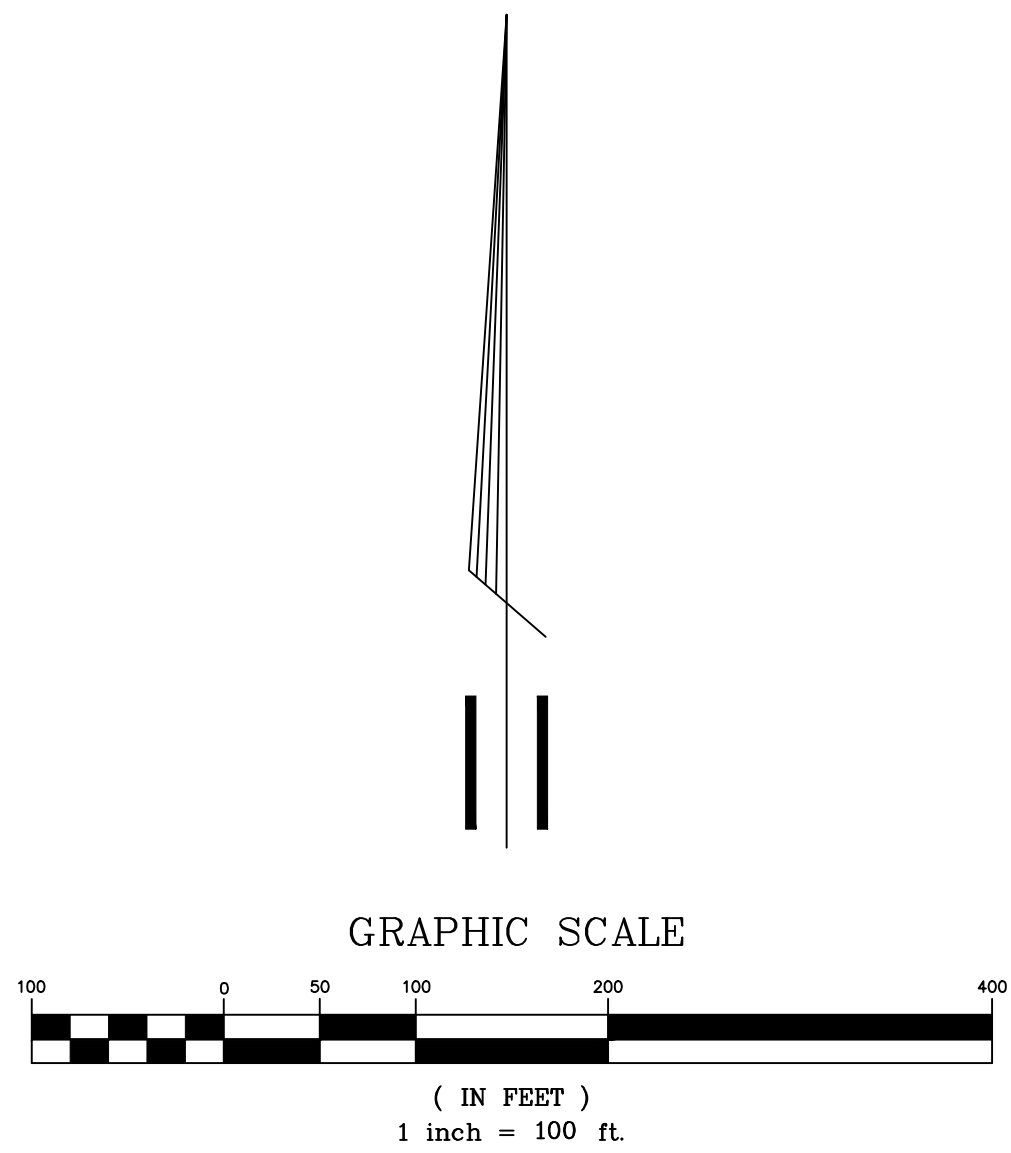
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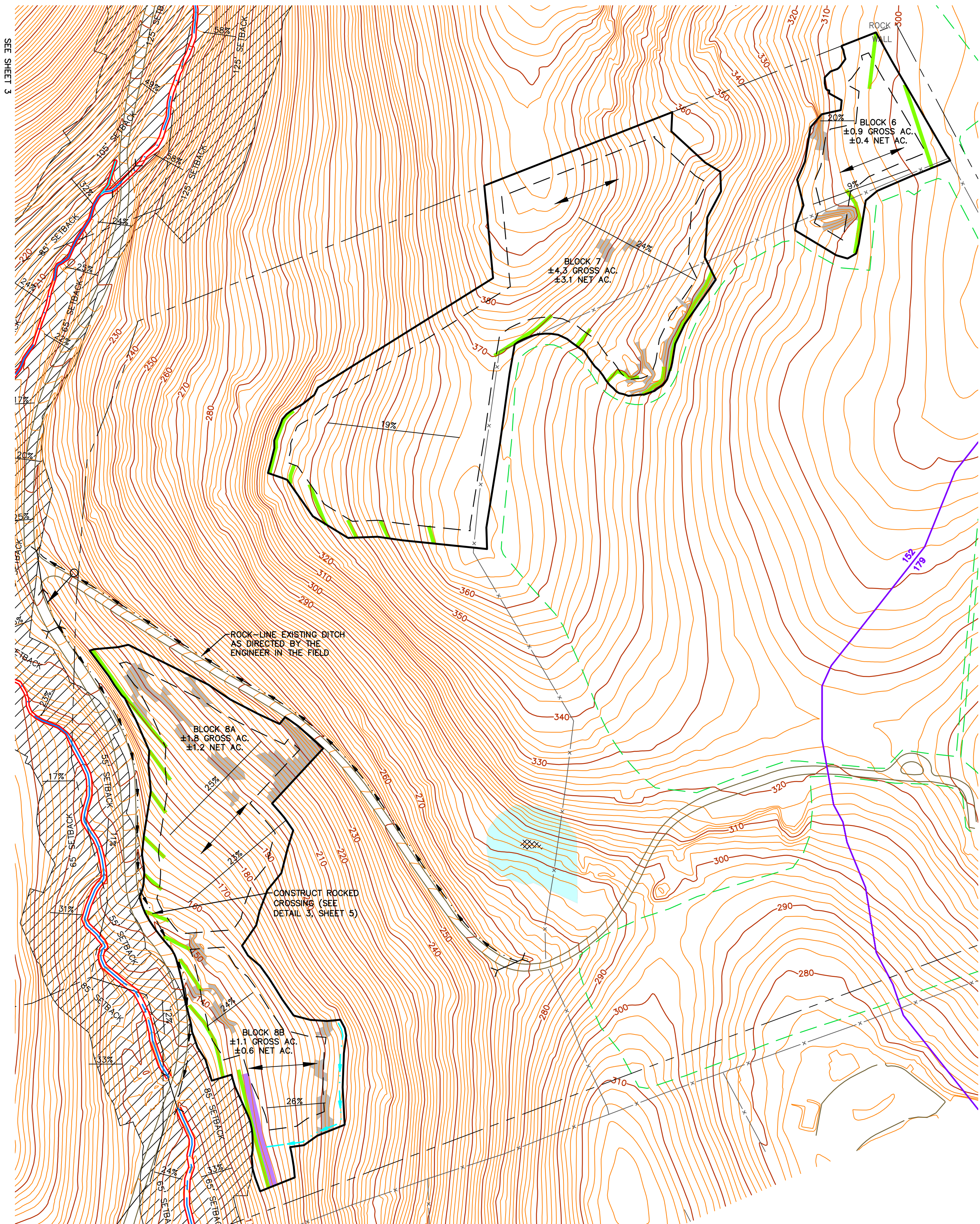


### LEGEND

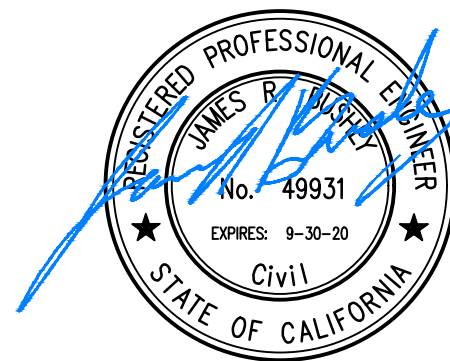
- APPROXIMATE PROPERTY LINE LOCATION
- U.S.G.S. BLUE LINE STREAM, MAPPED BY WRA
- U.S.G.S. BLUE LINE STREAM, APPROXIMATE LOCATION
- EPHEMERAL STREAM, MAPPED BY WRA
- EPHEMERAL STREAM, ASSUMED LOCATION
- TOP OF BANK, APPROXIMATE LOCATION
- EXISTING SEEP, MAPPED BY WRA
- NAPA COUNTY STREAM SETBACK
- 35' SETBACK
- 50' WETLAND SETBACK
- EXISTING RESERVOIR
- EXISTING VINEYARD AREA
- EXISTING ROAD
- EXISTING FENCE
- EXISTING DITCH, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, & MAINTAINED AS NEEDED (SEE DETAIL 2, SHEET 5)
- EXISTING CULVERT
- EXISTING DROP INLET, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, REPLACED, OR MAINTAINED AS NEEDED (SEE DETAIL 3, SHEET 6)
- EXISTING SURFACE DRAINAGE LINE, APPROXIMATE LOCATION, TO BE INSPECTED, REPAIRED, REPLACED, OR MAINTAINED AS NEEDED (SEE DETAIL 2, SHEET 6)
- PROPOSED VINEYARD CLEARING LIMITS
- PROPOSED VINEYARD BLOCK BOUNDARY
- PROPOSED DITCH (SEE DETAIL 2, SHEET 5)
- PROPOSED ROCK-FILLED AVENUE/LEVEL SPREADER (SEE DETAIL 4, SHEET 5)
- PROPOSED STRAW WATTLE (SEE DETAIL 1, SHEET 5)
- PROPOSED VINEROW DIRECTION
- AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER
- AVERAGE SURFACE SLOPE
- SOIL TYPE BOUNDARY

### USDA SOIL CLASSIFICATIONS:

- HAIRE LOAM 2-9% SLOPES
- HAMBRIGHT ROCK-OUTCROP COMPLEX 30-75% SLOPES
- SOBRANTE LOAM 30-50% SLOPES



TOPOGRAPHIC MAPPING SOURCE: AMERICAN AERIAL MAPPING, INC. 2' CONTOUR INTERVAL. MARCH 26, 2018.



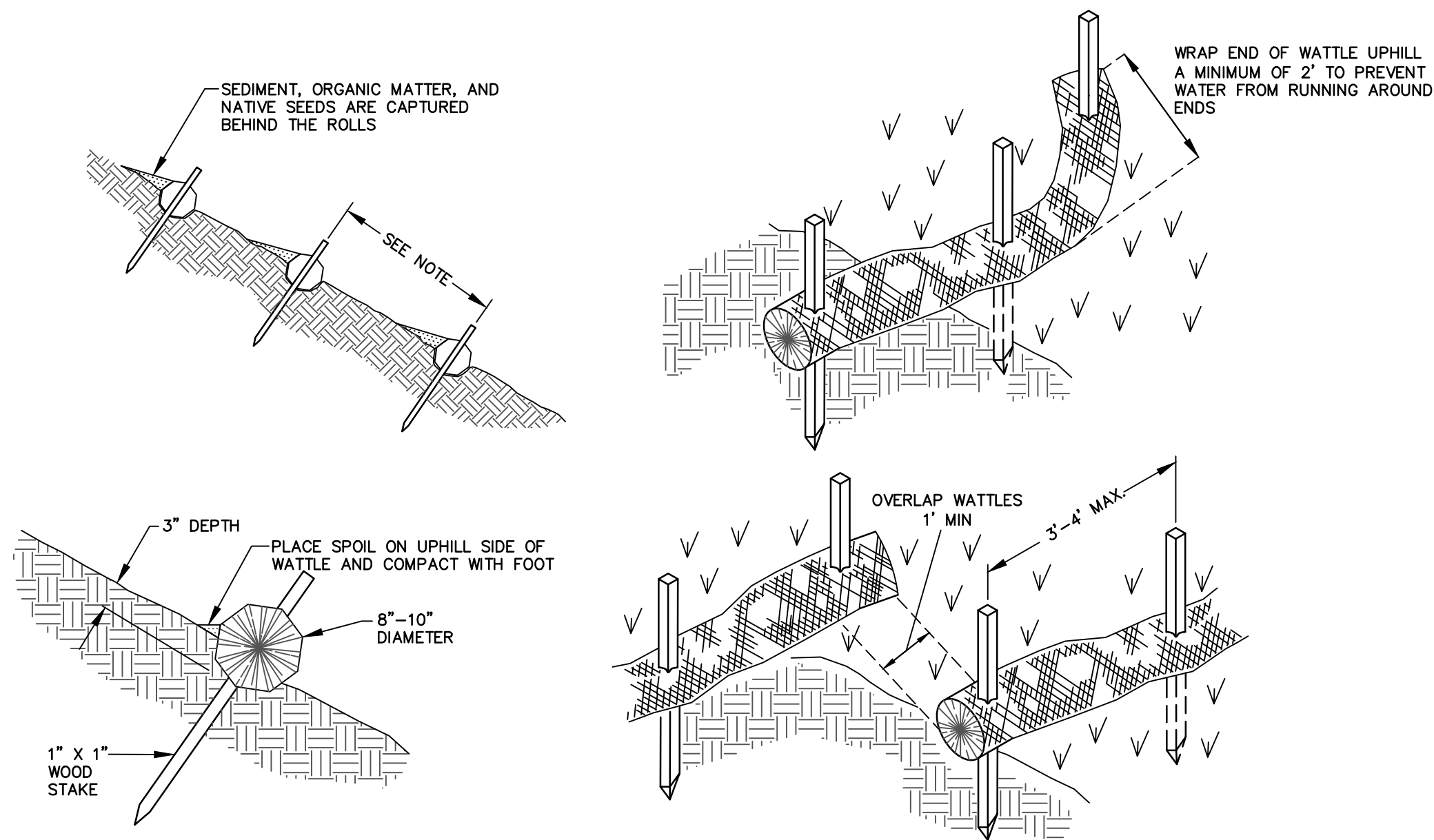
| SHAFER VINEYARDS<br>BLODGETT VINEYARD<br>EROSION CONTROL PLAN<br>BLOCKS 6-9 |                      |                 |                   |
|---|----------------------|-----------------|-------------------|
| DESIGN ENGINEER:<br>J. BUSHEY, C. CORSETTI                                  |                      |                 |                   |
| SCALE:<br>AS SHOWN  | DRAWN BY:<br>JCJ, SM | DATE:<br>9-1-20 | SHEET: 4<br>OF: 6 |

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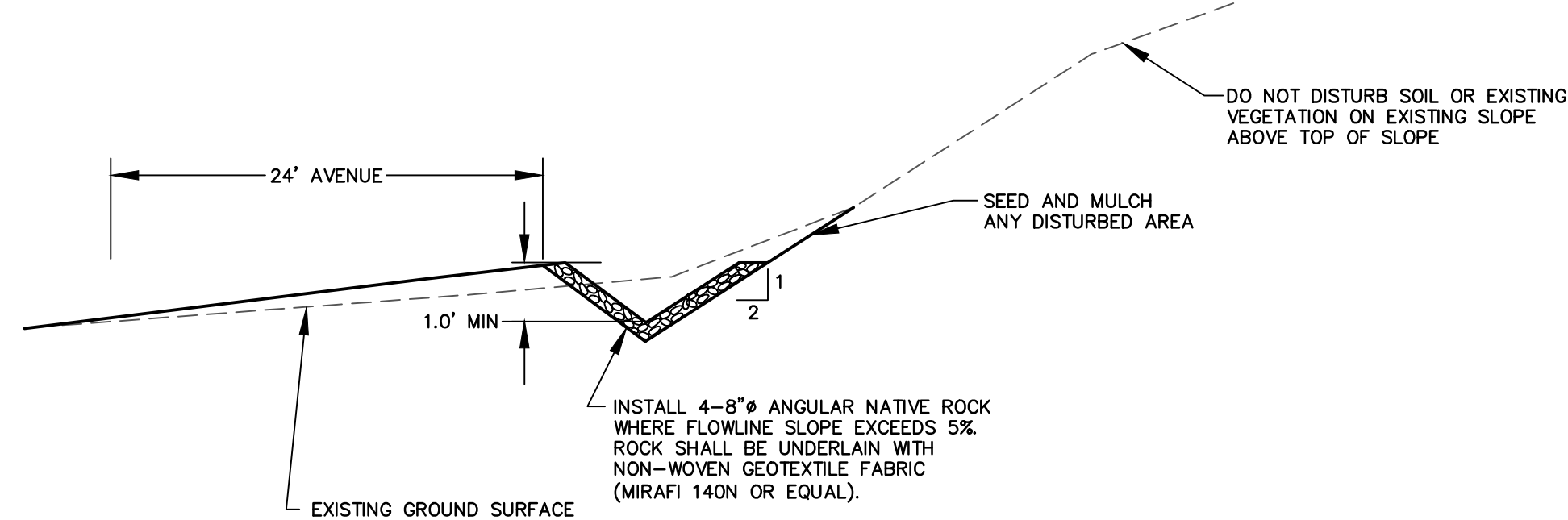
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DWG. NO: 11811001B

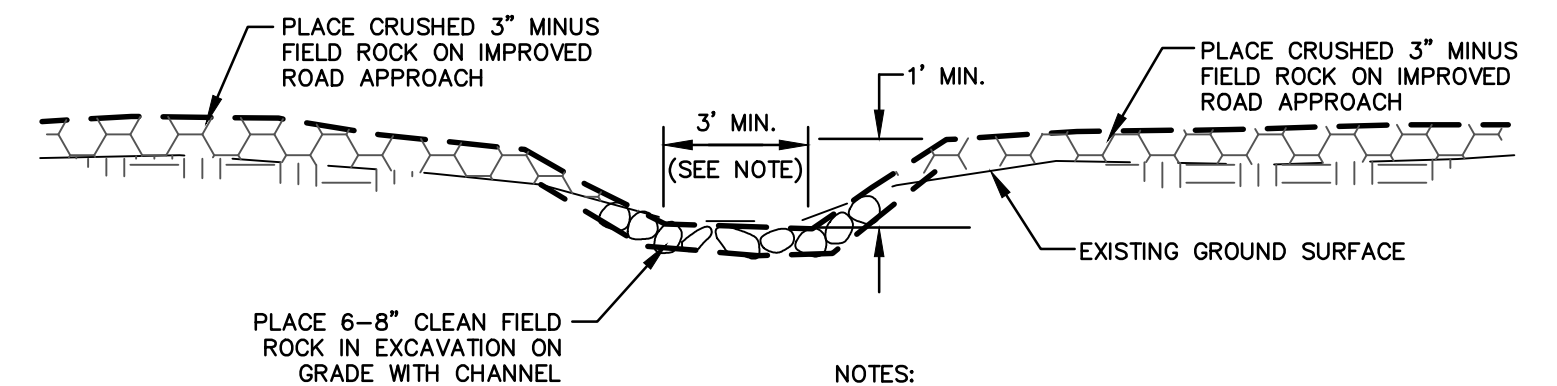




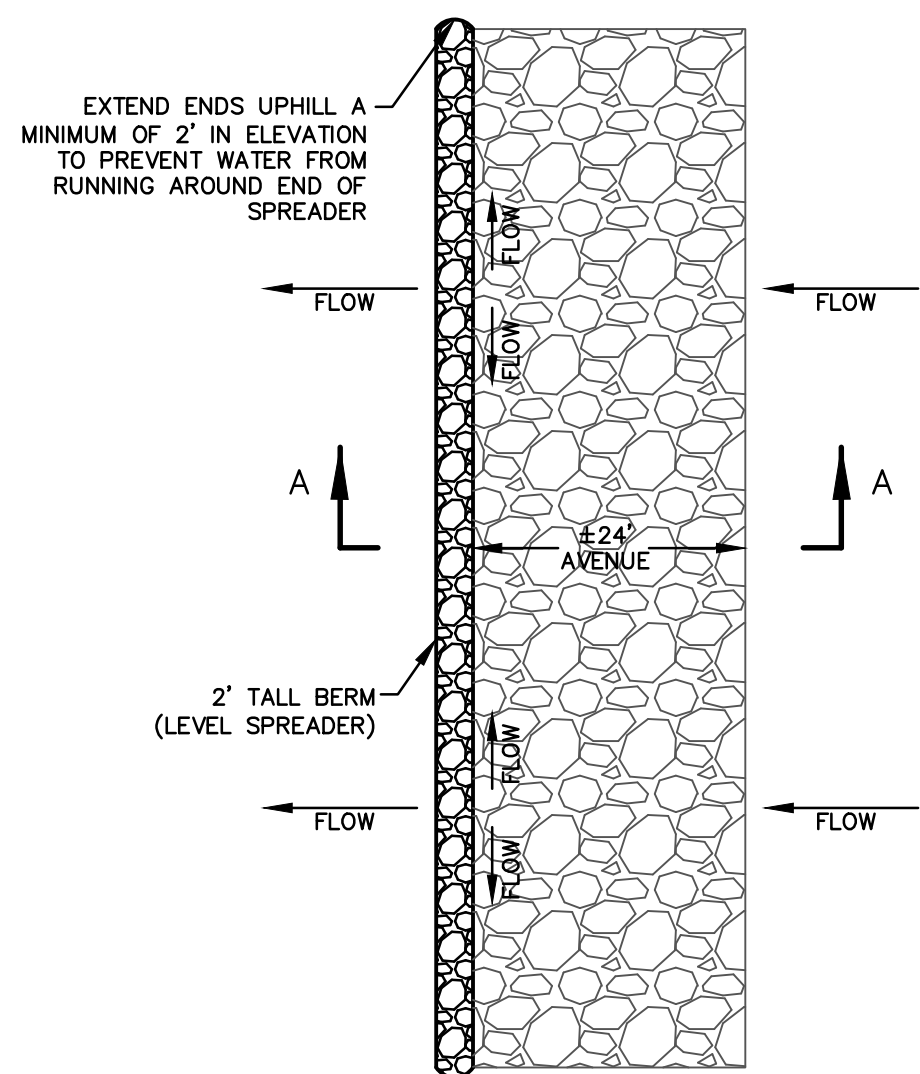
1  
5 STRAW WATTLE INSTALLATION  
N.T.S.



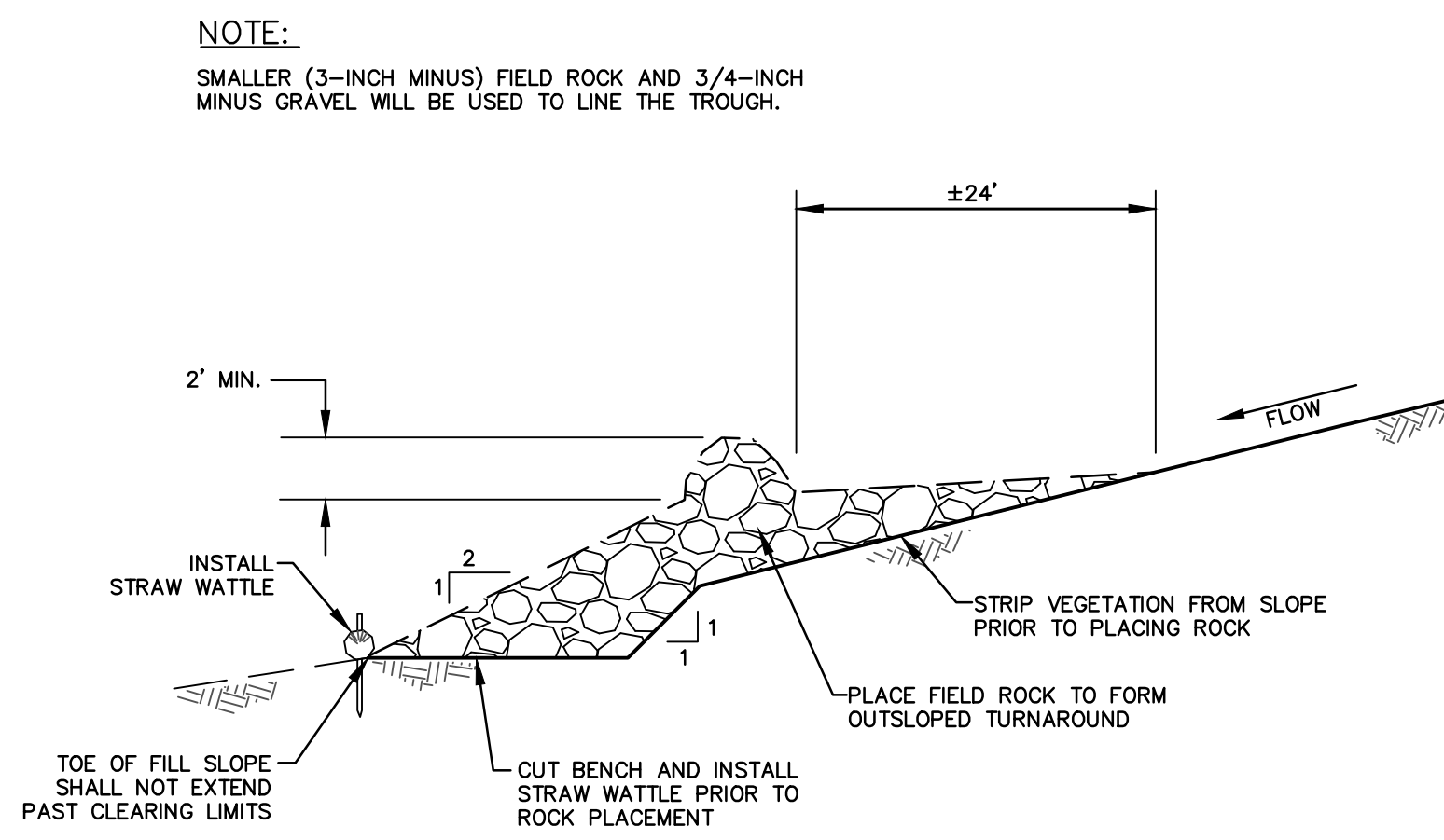
2  
5 DITCH TYPICAL CROSS SECTION  
N.T.S.



3  
5 ROCKED WATER CROSSING  
N.T.S.

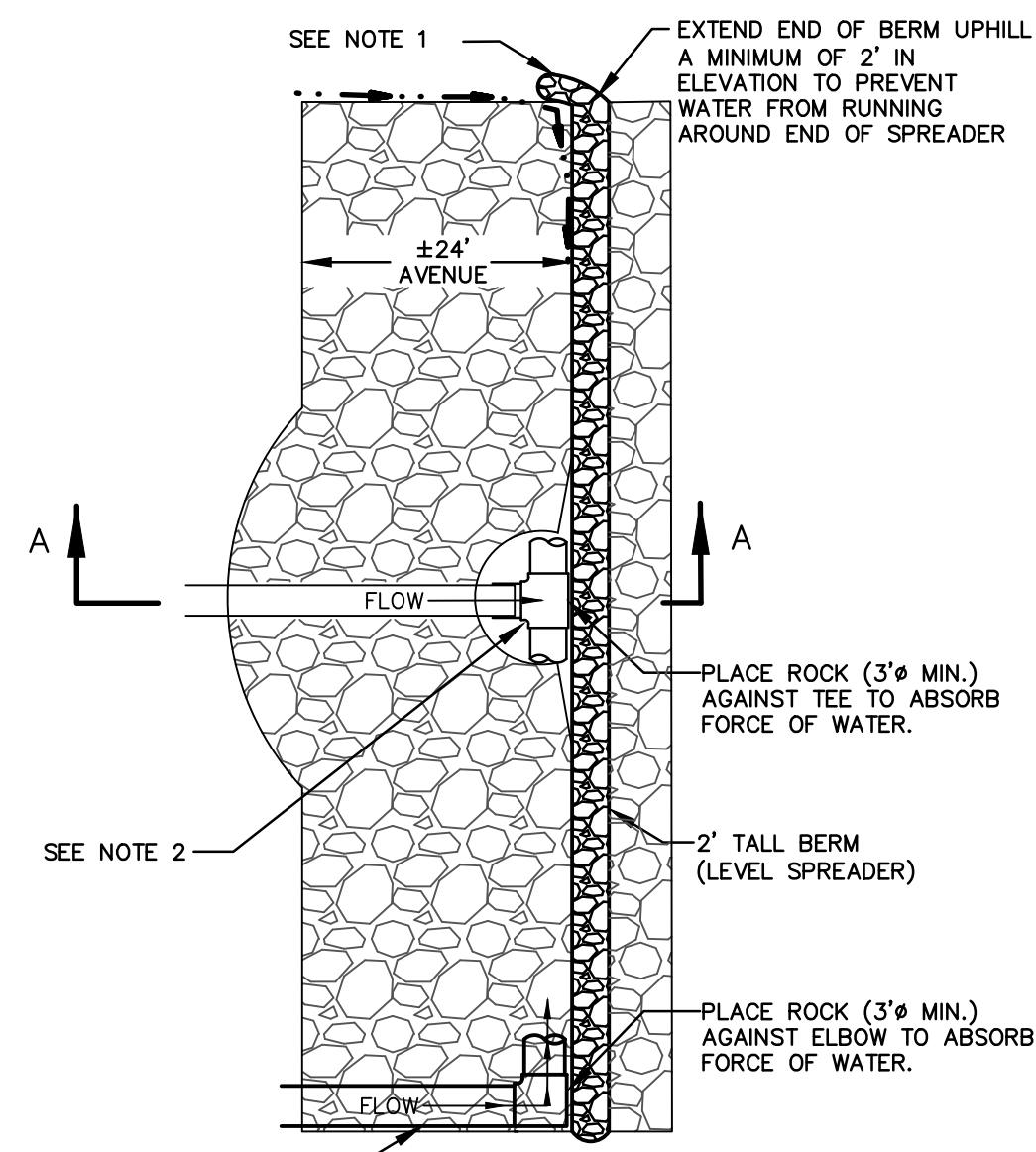


PLAN VIEW



SECTION A-A

4  
5 ROCK-FILLED AVENUE/LEVEL SPREADER  
N.T.S.

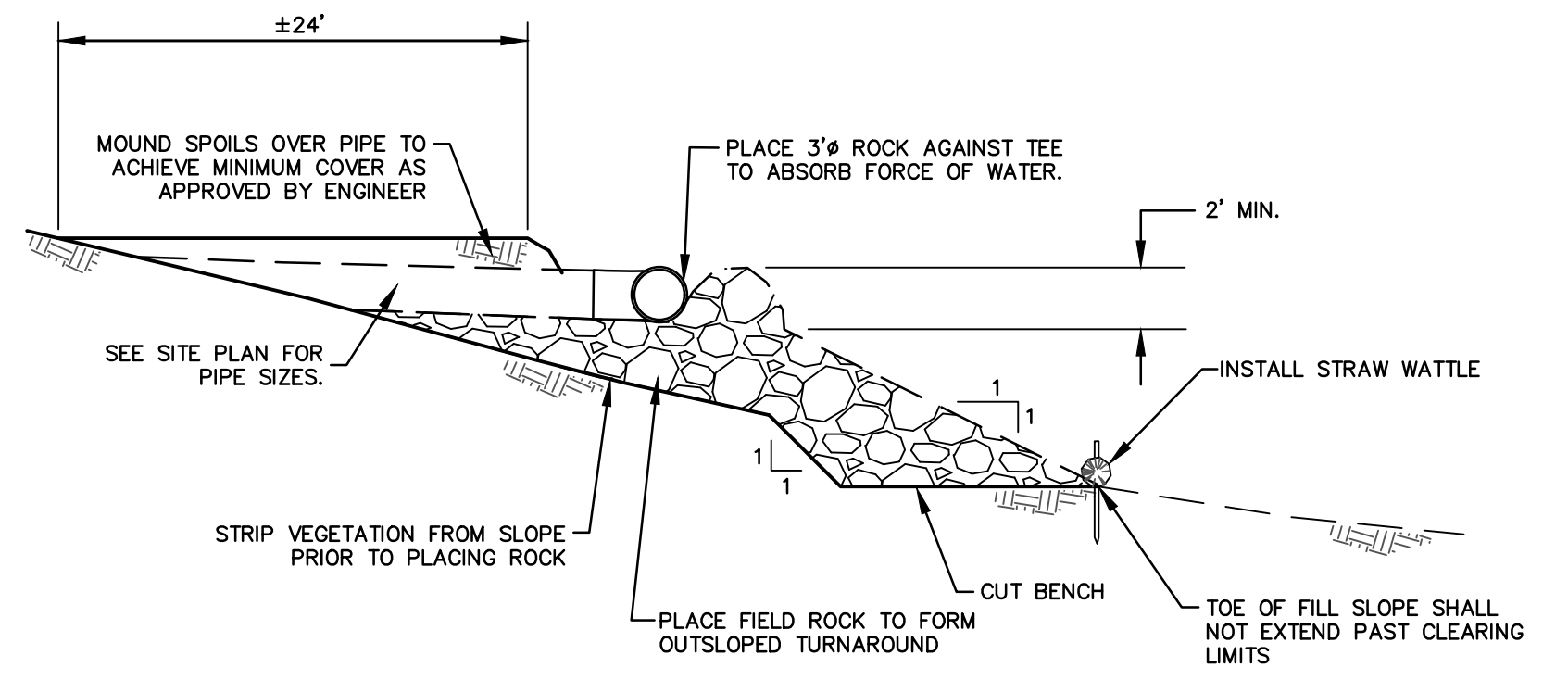


PLAN VIEW

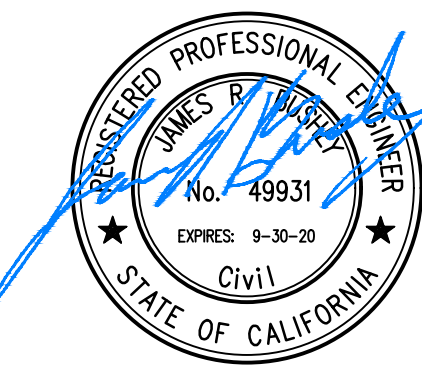
5  
5 ROCK LEVEL SPREADER  
N.T.S.

NOTES:

- WHERE A DITCH OUTLETS TO THE ROCK BENCH/LEVEL SPREADER, THE DITCH SHALL BE CONSTRUCTED SO THAT THE FLOW LINE GRADUALLY TRANSITIONS TO BECOME PARALLEL WITH THE LEVEL SPREADER. CURVE THE BERM OF THE SPREADER UPSTREAM TO ENSURE WATER CHANGES DIRECTION WITHOUT OVERTOPPING.
- WHERE A PIPE DISCHARGES INTO THE MIDDLE OF THE ROCK BENCH/LEVEL SPREADER, A TEE SHALL BE USED TO RE-DIRECT FLOWS PARALLEL WITH THE BERM. THE PIPE SHALL BE ATTACHED TO THE TEE WITH TWO ROWS OF SHEET METAL SCREWS SPACED APPROXIMATELY 6" APART ALONG THE CIRCUMFERENCE OF THE PIPE - ONE ROW IN THE PIPE AND ONE ROW IN THE ELBOW. AT LEAST ONE LARGE ROCK, MINIMUM 3' DIAMETER, SHALL BE PLACED AGAINST THE FITTING.
- WHERE A PIPE DISCHARGES AT THE END OF THE ROCK BENCH/LEVEL SPREADER, A 90° FITTING SHALL BE USED TO RE-DIRECT FLOWS PARALLEL WITH THE BERM. THE PIPE SHALL BE ATTACHED TO THE ELBOW WITH TWO ROWS OF SHEET METAL SCREWS SPACED APPROXIMATELY 6" APART ALONG THE CIRCUMFERENCE OF THE PIPE - ONE ROW IN THE PIPE AND ONE ROW IN THE ELBOW. AT LEAST ONE LARGE ROCK, MINIMUM 3' DIAMETER, SHALL BE PLACED AGAINST THE FITTING.
- SMALLER (3-INCH MINUS) FIELD ROCK AND 3/4-INCH MINUS GRAVEL WILL BE USED TO LINE THE TROUGH.



SECTION A-A



DETAILS ON THIS SHEET:  
STRAW WATTLE INSTALLATION  
DITCH TYPICAL CROSS SECTION  
ROCKED WATER CROSSING  
ROCK-FILLED AVENUE/LEVEL SPREADER  
ROCK LEVEL SPREADER

SHAFER VINEYARDS  
BLODGETT VINEYARD

EROSION CONTROL PLAN

DETAILS

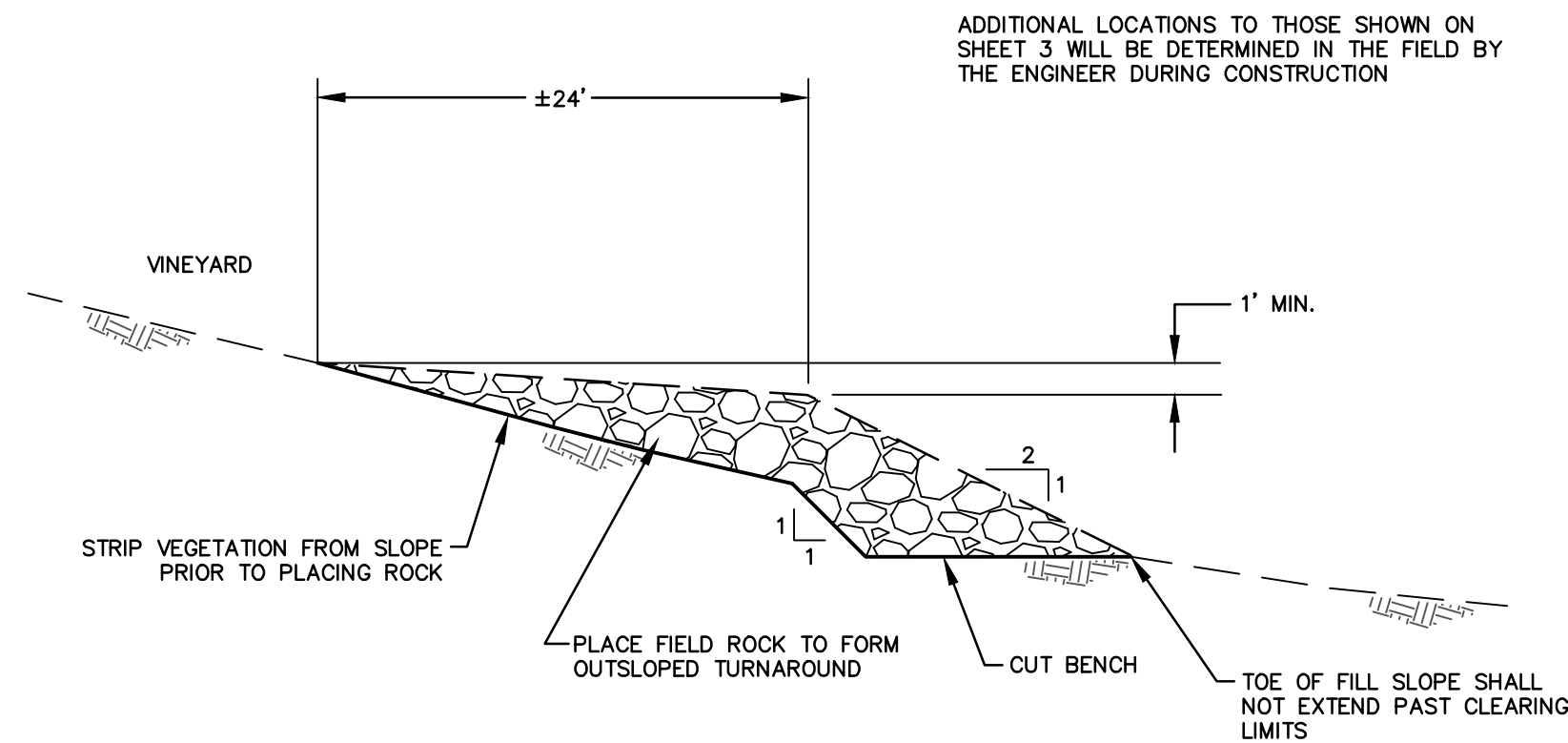
DESIGN ENGINEER:  
J. BUSHEY, C. CORSETTI

SCALE: AS SHOWN  
DRAWN BY: JCJ, SM  
DATE: 9-1-20  
SHEET: 5 OF 6

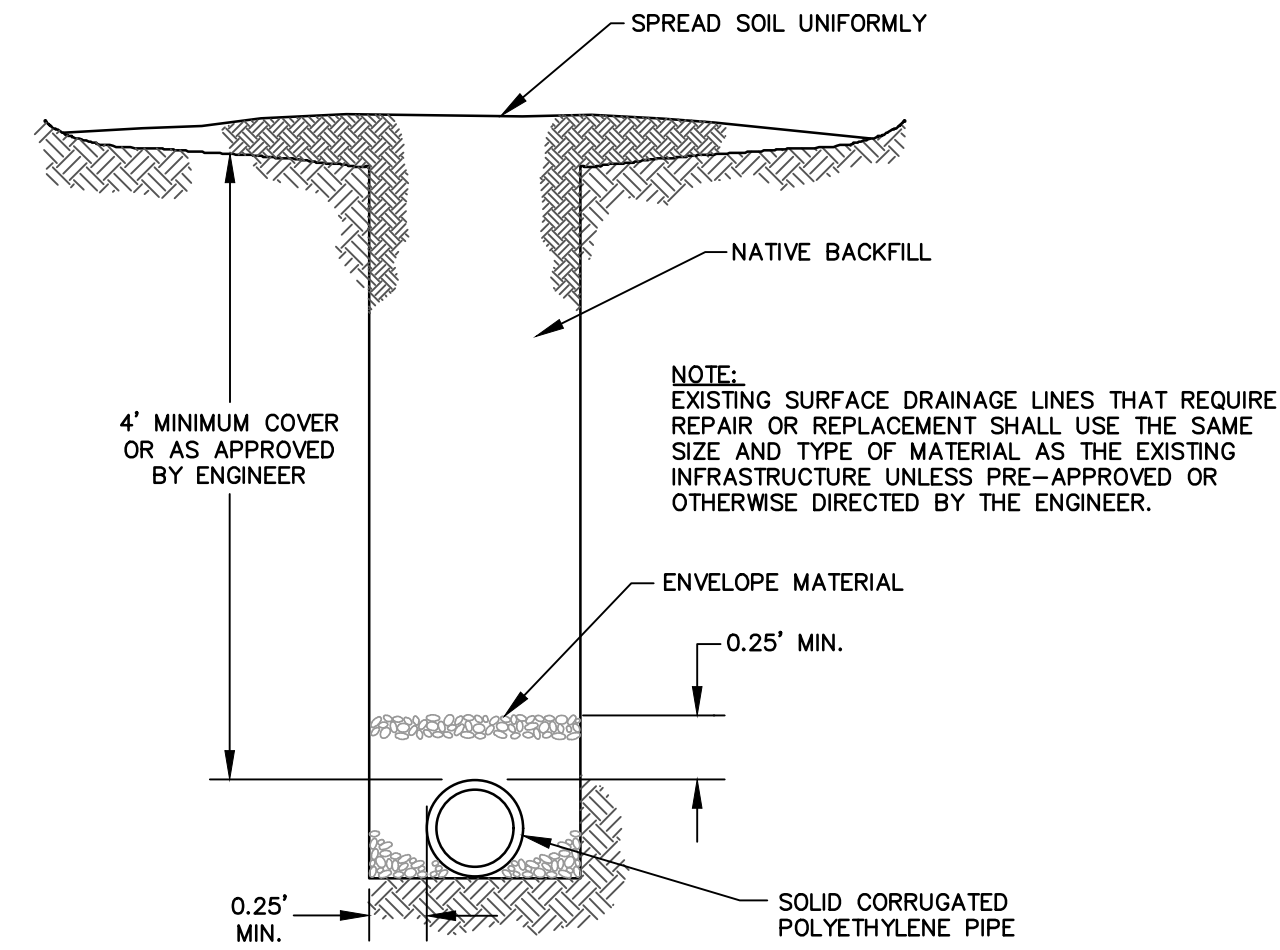
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ENGINEERING  
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NAPA, CA 94558  
707/253-1806 FAX 707/253-1804  
JOB NO: 11811001  
DWG. NO: 11811001B

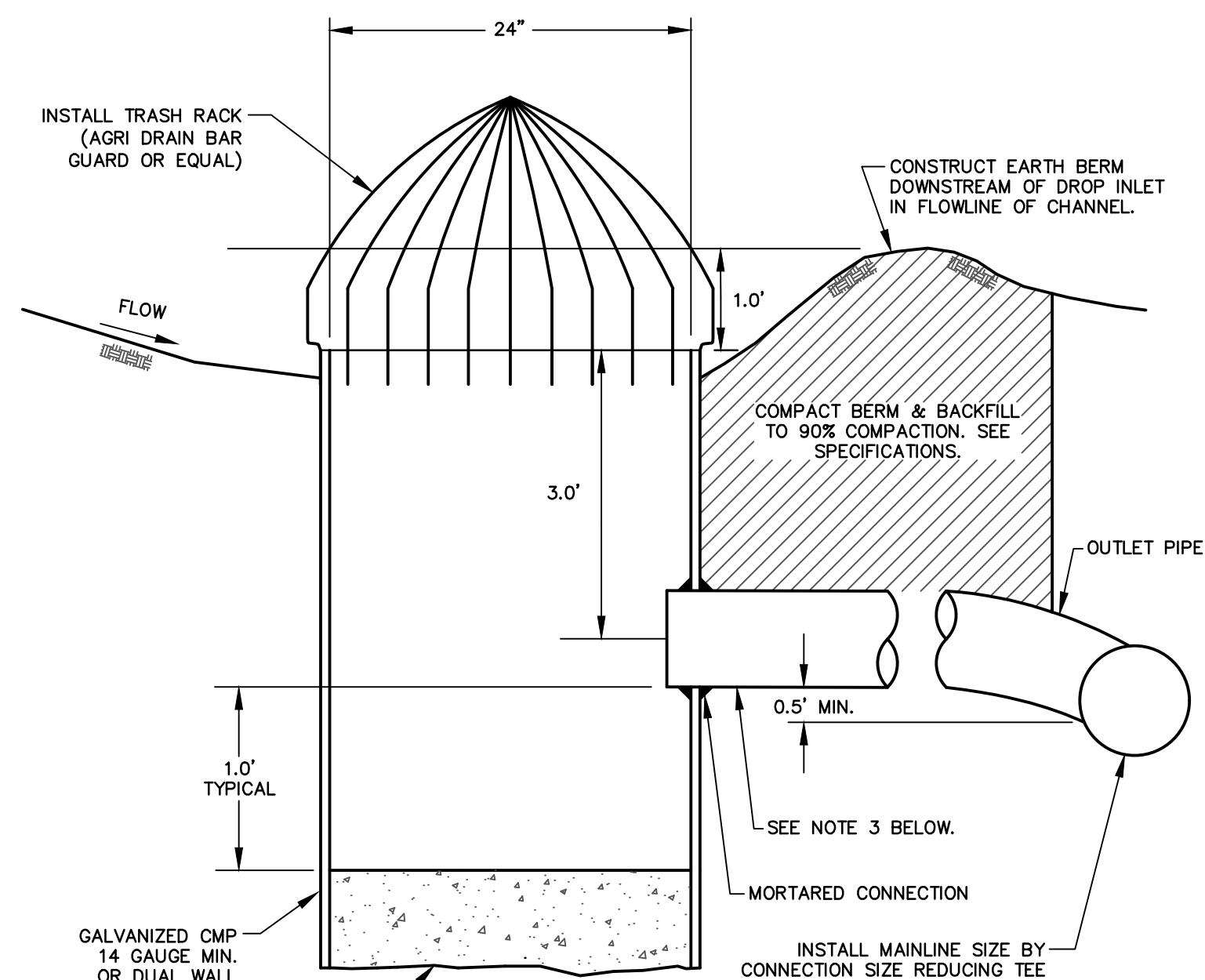
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1 ROCK-FILLED AVENUE  
N.T.S.



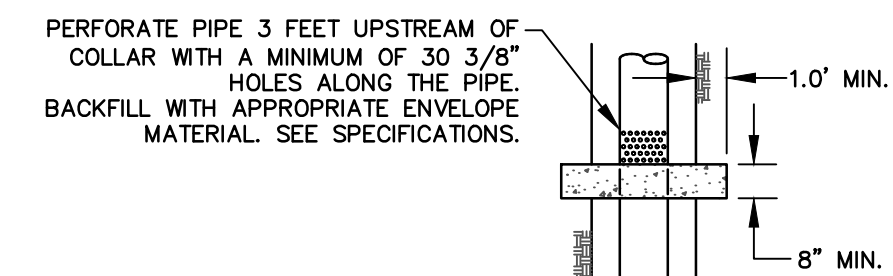
2 SURFACE DRAINAGE PIPELINE  
N.T.S.



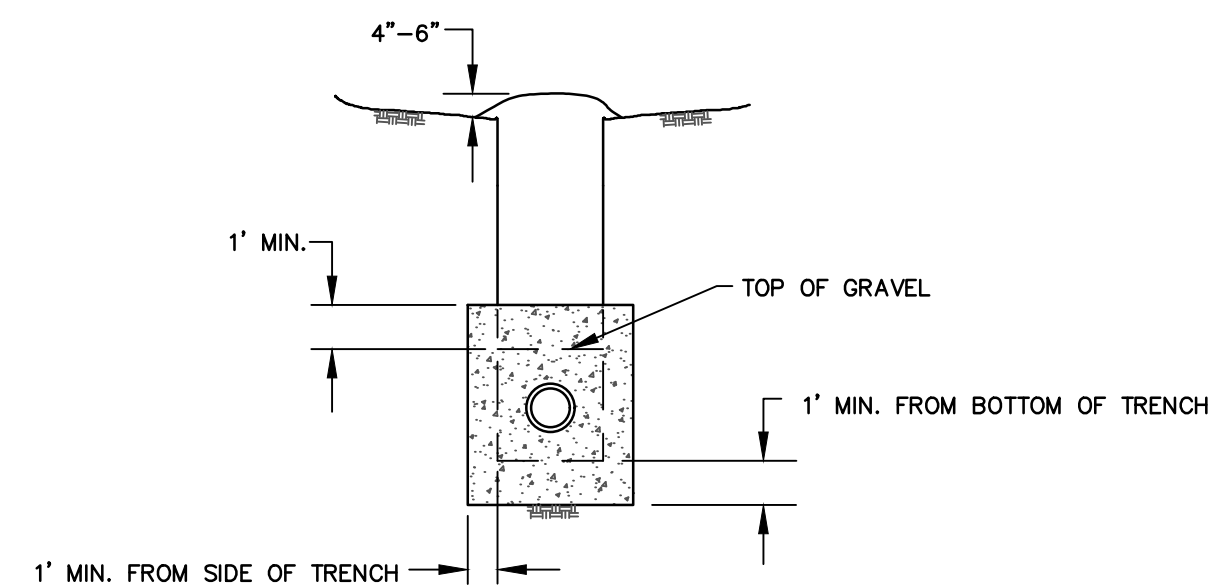
NOTES:

- EXISTING STANDARD DROP INLETS THAT REQUIRE REPAIR OR REPLACEMENT SHALL USE THE SAME SIZE AND TYPE OF MATERIAL AS THE EXISTING INFRASTRUCTURE UNLESS PRE-APPROVED OR OTHERWISE DIRECTED BY THE ENGINEER.
- LOCATE DROP INLET IN VINEYARD IF INLET IS LOCATED WITHIN THE VINEYARD. CONSTRUCT BERM TO DIRECT WATER TO DROP INLET.
- NO ADDITIONAL CONNECTOR PIPE SHALL BE REQUIRED WHERE THE INLET IS LOCATED AT UPPER END OF ALL MAINLINES. MAINLINE SIZES AS SPECIFIED SHALL CONNECT DIRECTLY TO DROP INLET.

3 STANDARD DROP INLET  
N.T.S.



PLAN VIEW



SECTION

4 CUTOFF COLLAR  
N.T.S.



DETAILS ON THIS SHEET:  
ROCK-FILLED AVENUE  
SURFACE DRAINAGE PIPELINE  
STANDARD DROP INLET  
CUTOFF COLLAR

SHAFER VINEYARDS  
BLODGETT VINEYARD

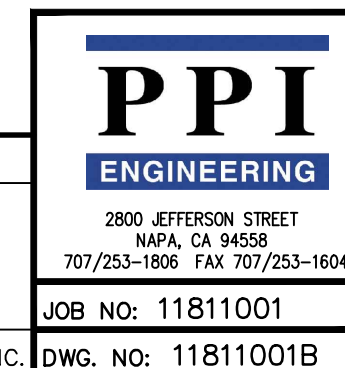
EROSION CONTROL PLAN

DETAILS

DESIGN ENGINEER: J. BUSHEY, C. CORSETTI

SCALE: AS SHOWN DRAWN BY: JCJ, SM DATE: 9-1-20 SHEET: 6 OF: 6

| REV. NO. | DESCRIPTION  | BY  | DATE   |
|----------|--|-----|--------|
| 1        | THIS DRAWING SUPERSEDES DRAWING 11811001A. NO CHANGES WERE MADE ON THIS SHEET. | JCJ | 9-1-20 |



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