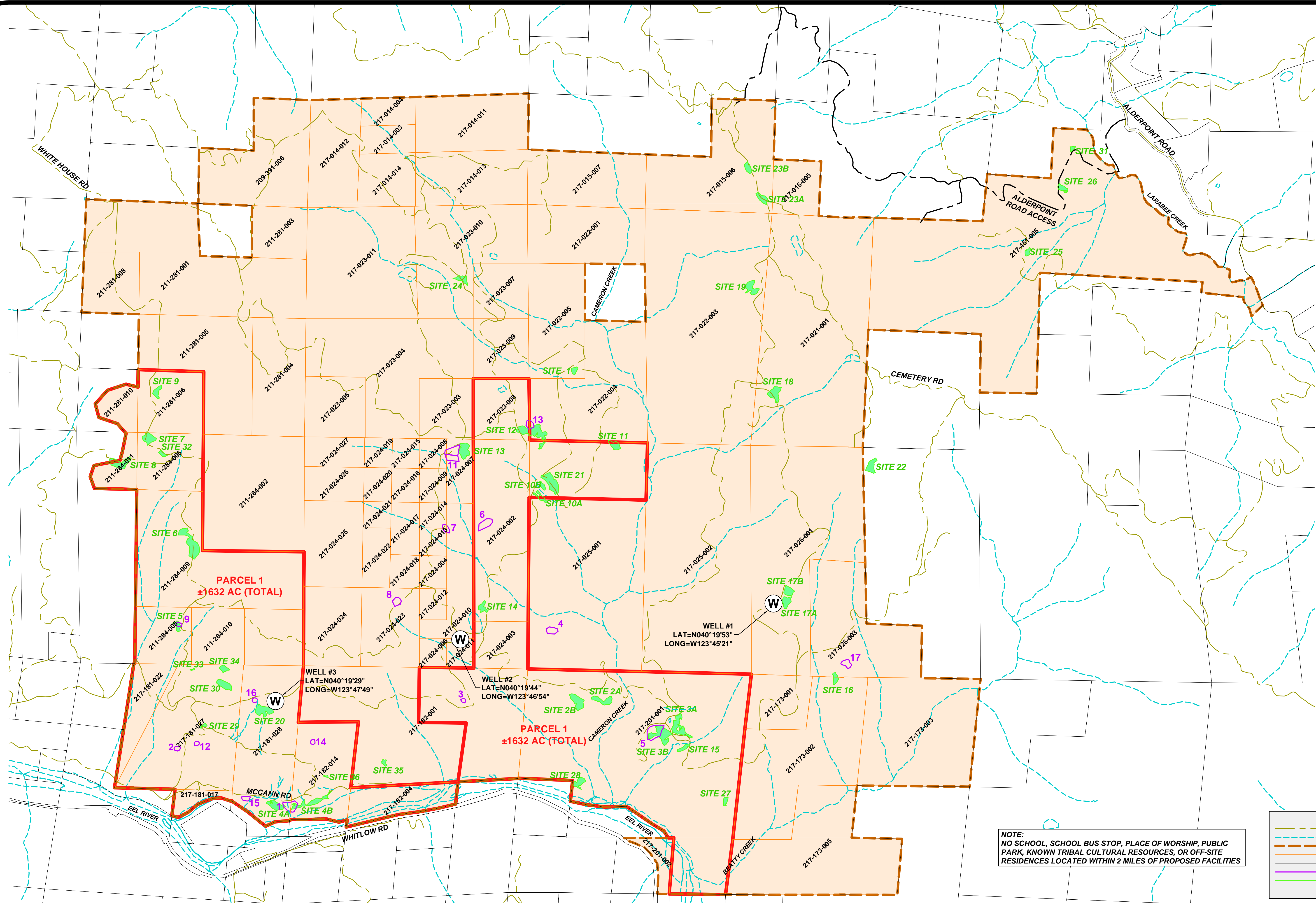


Appendix A

Plot Plans; BSE Consultants, INC.

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**ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA**



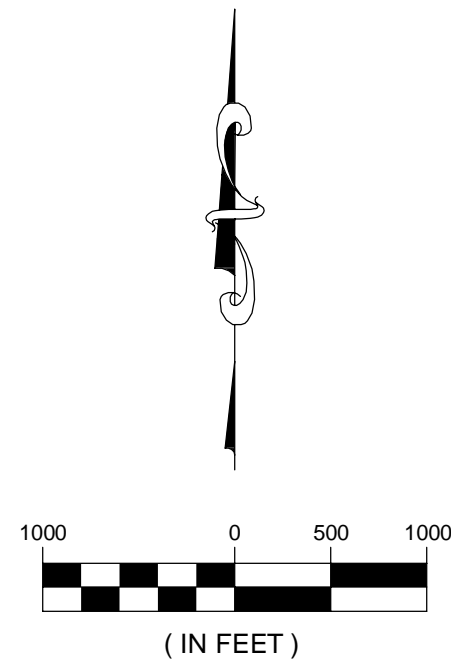
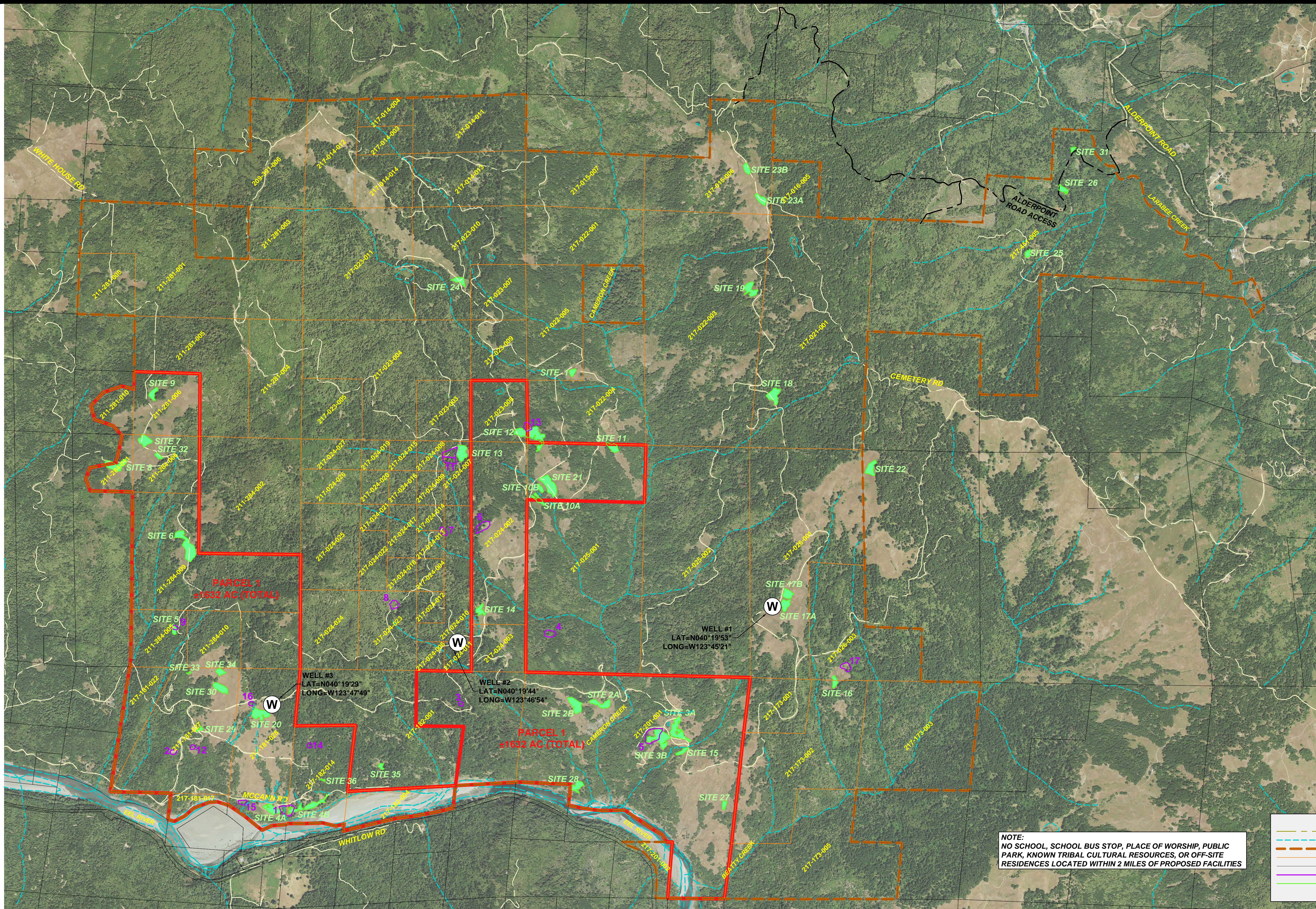
B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901 PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905



**OVERALL CANNABIS
DEVELOPMENT**

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

H:\Projects\11367\11367_Overall\11367_20011987_200_003.dwg January 3, 2020 10:17:11 AM DB



ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA



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312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901 PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
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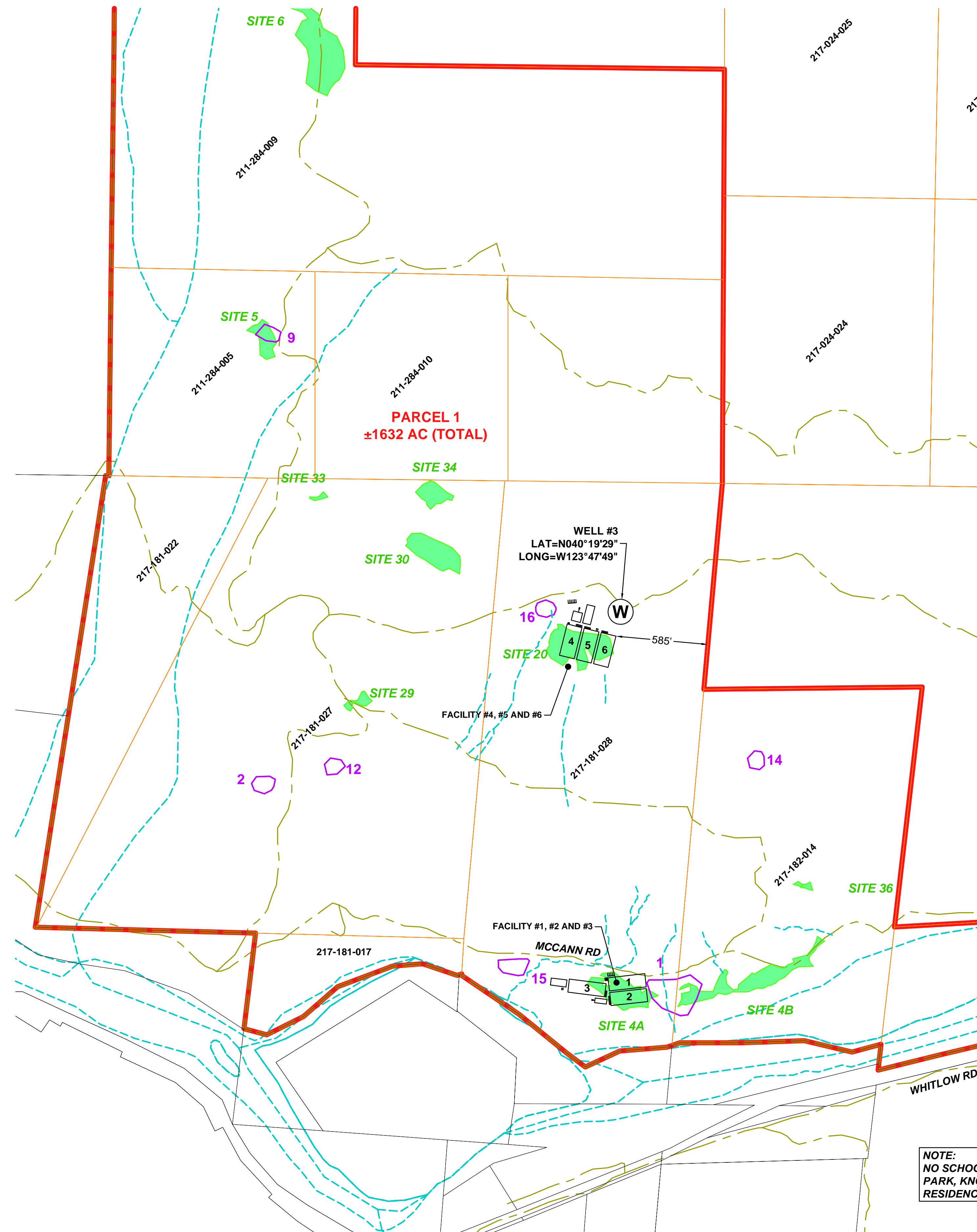


**OVERALL CANNABIS
DEVELOPMENT (AERIAL)**

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

DESIGN/DRAWN: SMG/DRB 11/06/19

H:\Projects\Parcel11367\Drawings\11367_200_003.dwg, June 19, 2020 1:29:02 PM, DB



NOTE:
NO SCHOOL, SCHOOL BUS STOP, PLACE OF WORSHIP, PUBLIC PARK, KNOWN TRIBAL CULTURAL RESOURCES, OR OFF-SITE RESIDENCES LOCATED WITHIN 2 MILES OF PROPOSED FACILITIES

LEGEND	
	EXISTING ROAD/TRAIL
	EXISTING WATER FEATURE
	OVERALL RANCH BOUNDARY
	PARCELS (APN) WITHIN RANCH
	PARCELS (APN)
	PRE-EXISTING CULTIVATION SITE
	PRIME SOILS SITE

ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA



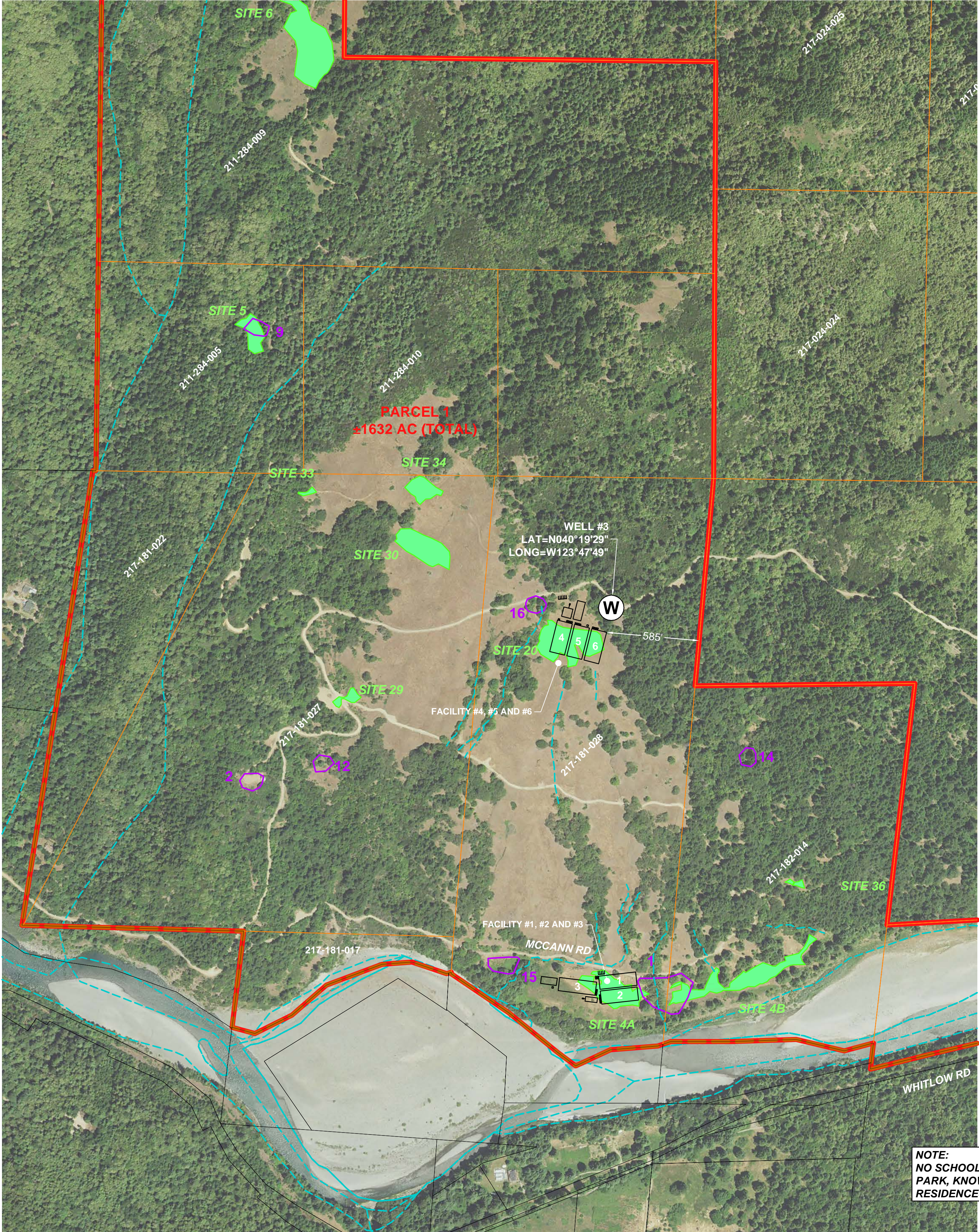
B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901 PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
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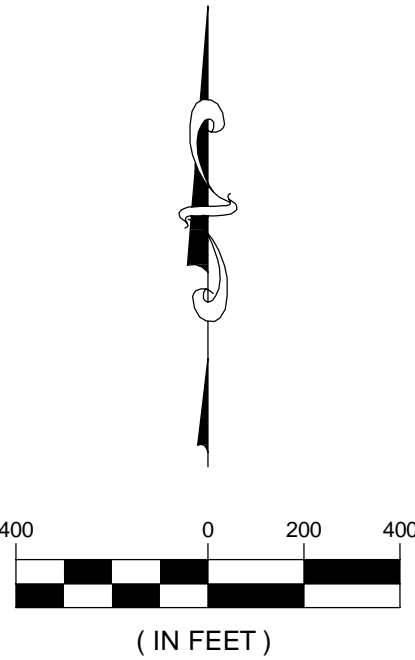
PARCEL 1
FACILITY #1 THROUGH #6

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

DESIGN/DRAWN: SMG/DRB 11/06/19



NOTE:
NO SCHOOL, SCHOOL BUS STOP, PLACE OF WORSHIP, PUBLIC PARK, KNOWN TRIBAL CULTURAL RESOURCES, OR OFF-SITE RESIDENCES LOCATED WITHIN 2 MILES OF PROPOSED FACILITIES



LEGEND	
	EXISTING ROAD/TRAIL
	EXISTING WATER FEATURE
	OVERALL RANCH BOUNDARY
	PARCELS (APN) WITHIN RANCH
	PARCELS (APN)
	PRE-EXISTING CULTIVATION SITE
	PRIME SOILS SITE

ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA



B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901 PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

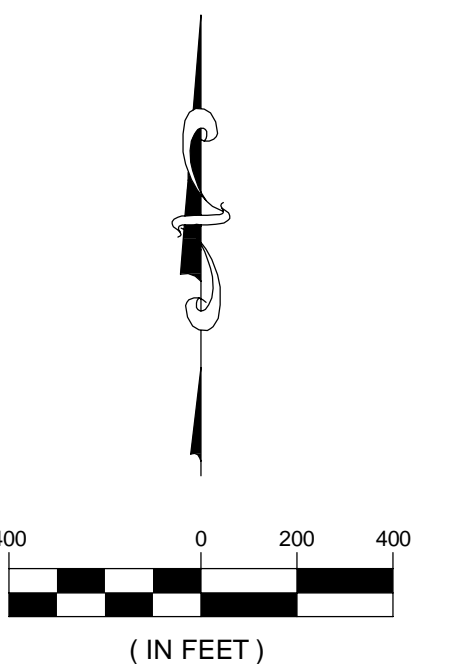
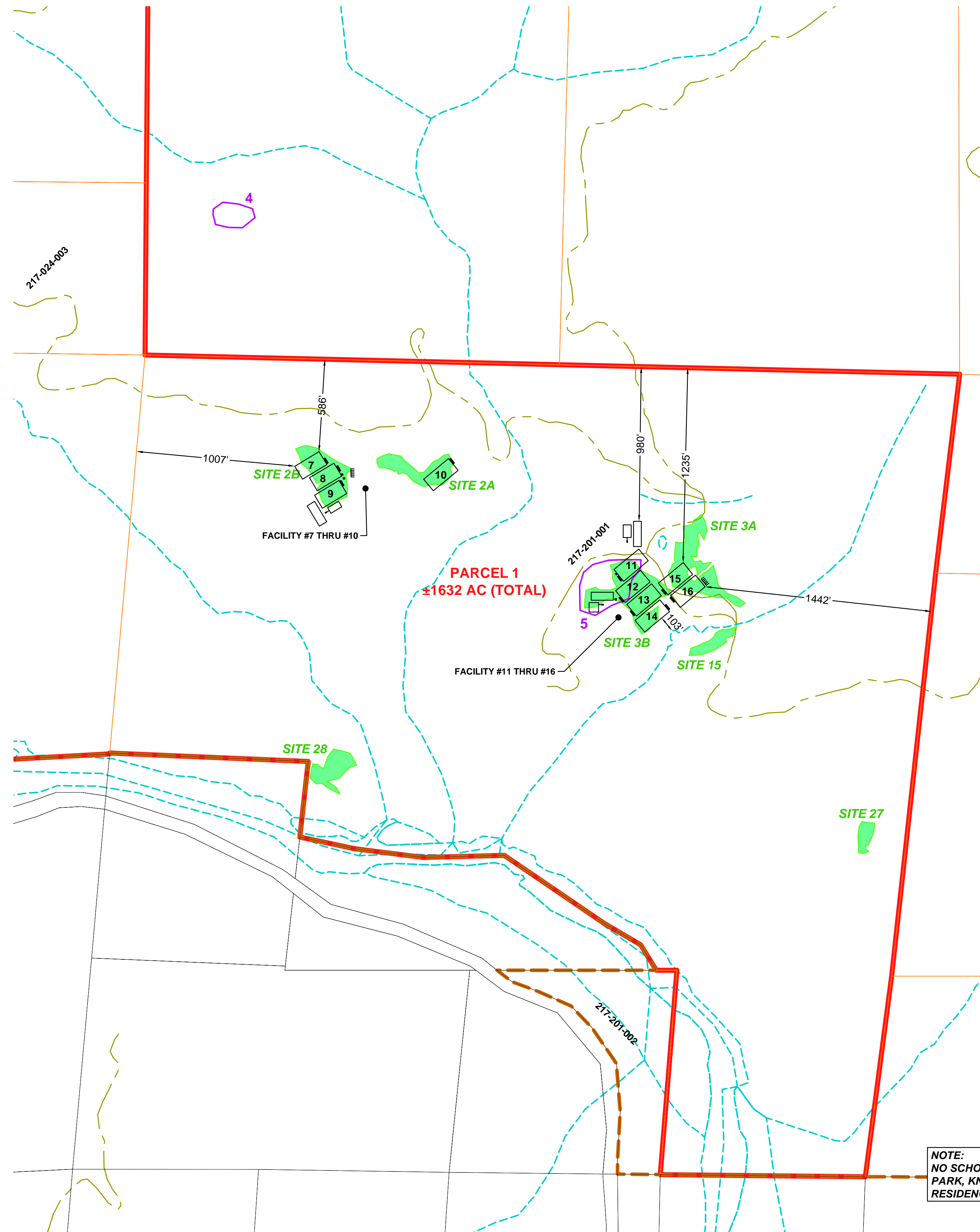


PARCEL 1 (AERIAL)
FACILITY #1 THROUGH #6

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

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DESIGN/DRAWN: SMG/DRB	11/06/19
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LEGEND	
	EXISTING ROAD/TRAIL
	EXISTING WATER FEATURE
	OVERALL RANCH BOUNDARY
	PARCELS (APN) WITHIN RANCH
	PARCELS (APN)
	PRE-EXISTING CULTIVATION SITE
	PRIME SOILS SITE

NOTE:
NO SCHOOL, SCHOOL BUS STOP, PLACE OF WORSHIP, PUBLIC
PARK, KNOWN TRIBAL CULTURAL RESOURCES, OR OFF-SITE
RESIDENCES LOCATED WITHIN 2 MILES OF PROPOSED FACILITIES

H:\Projects\Rolling Meadow Ranch\11367_200_003.dwg, June 16, 2020 2:47:48 PM, DB

DESIGN/DRAWN: SMG/DRB	11/06/19
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ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA



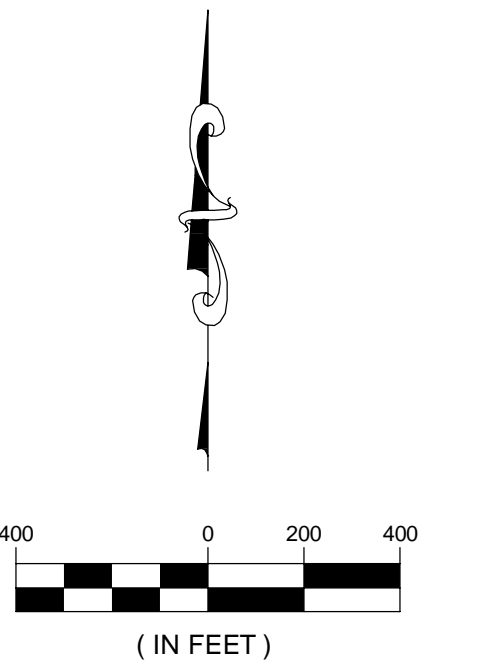
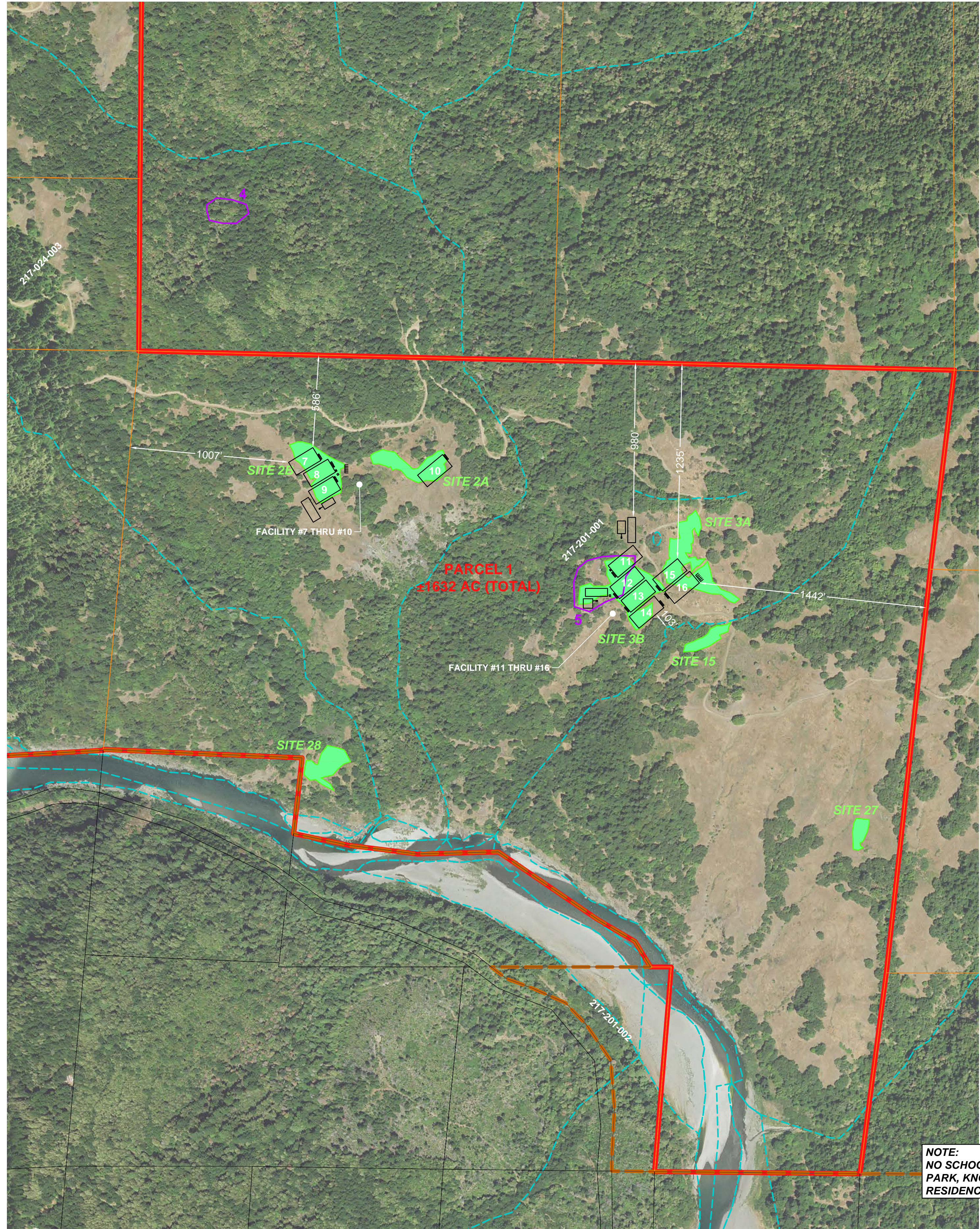
B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901 PHONE: (321) 725-3674 FAX: (321) 723-1159
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CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905



PARCEL 1
FACILITY #7 THROUGH #16

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

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LEGEND	
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	EXISTING WATER FEATURE
	OVERALL RANCH BOUNDARY
	PARCELS (APN) WITHIN RANCH
	PARCELS (APN)
	PRE-EXISTING CULTIVATION SITE
	PRIME SOILS SITE

ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA

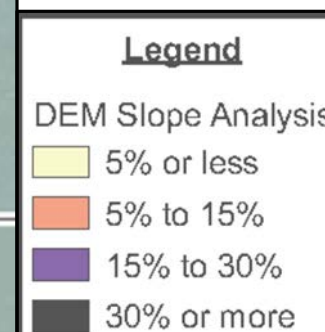
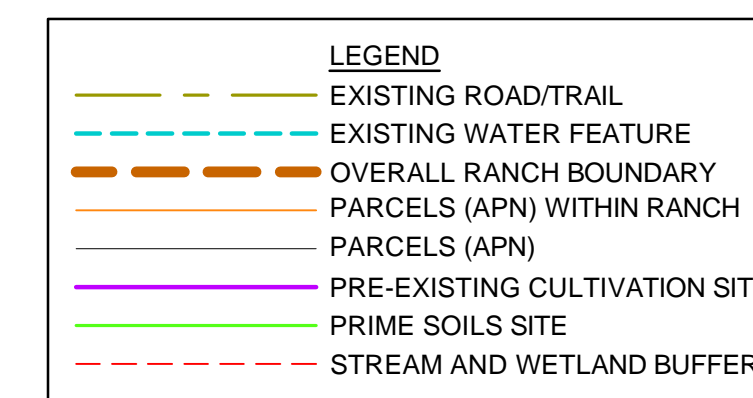
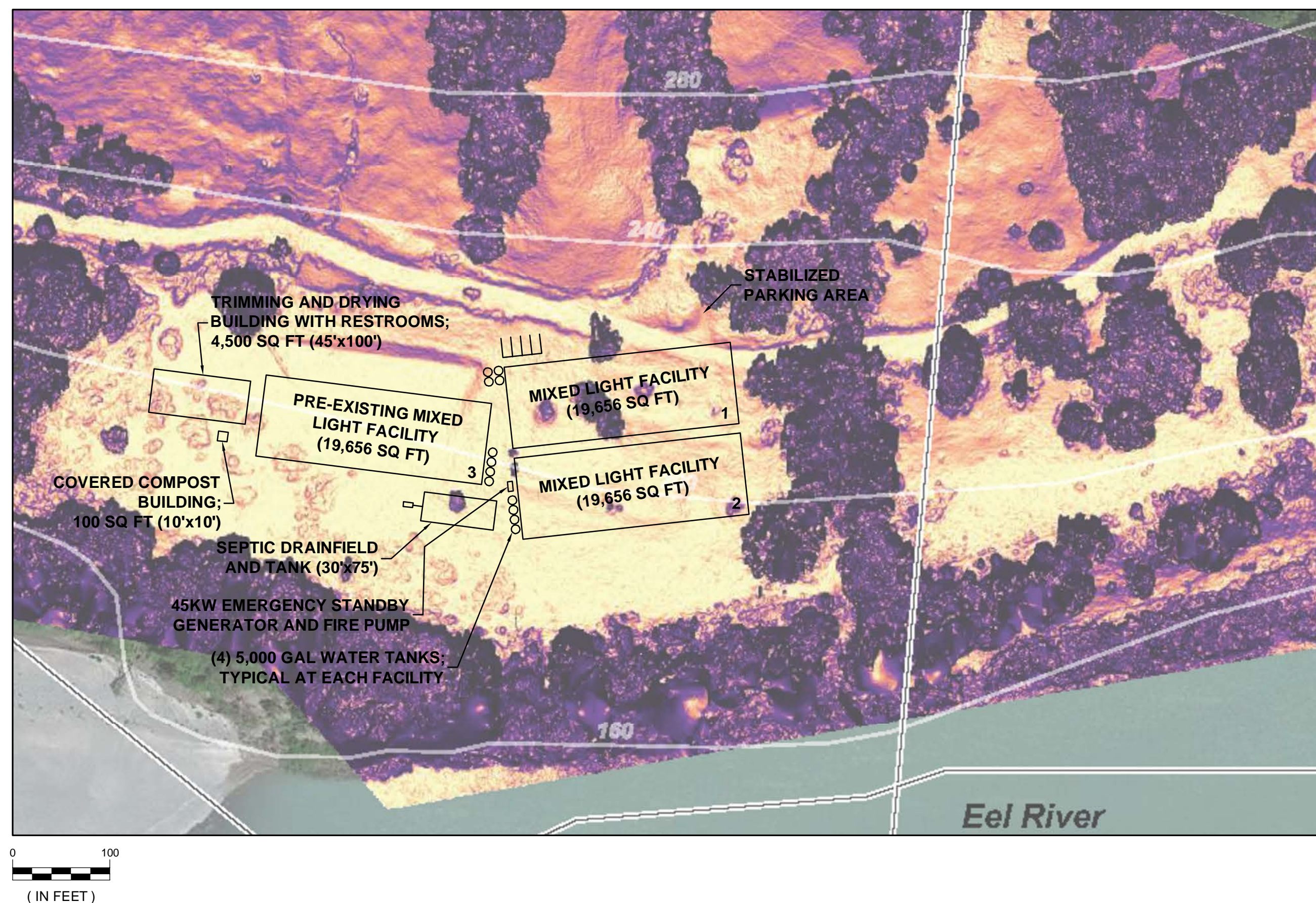
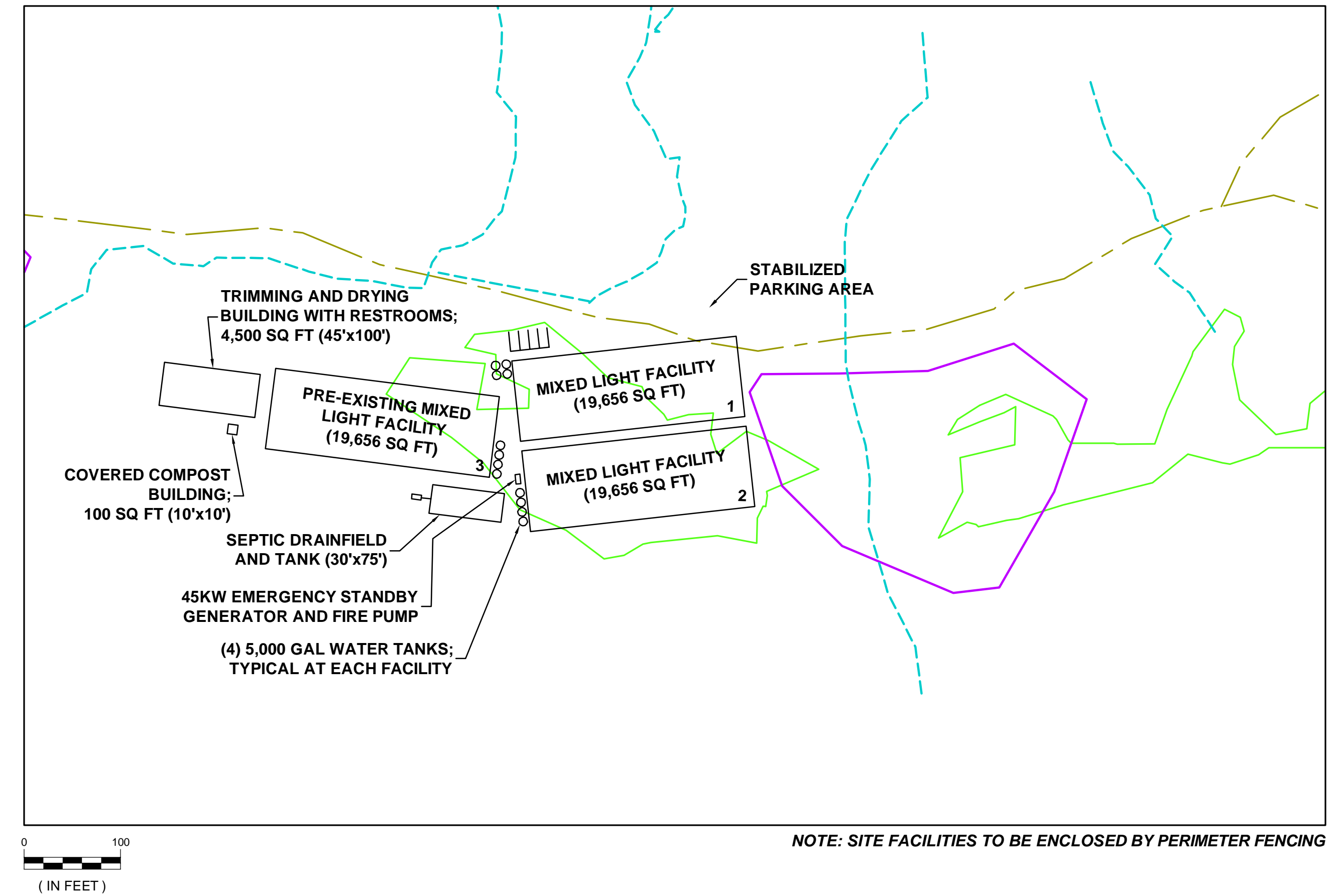
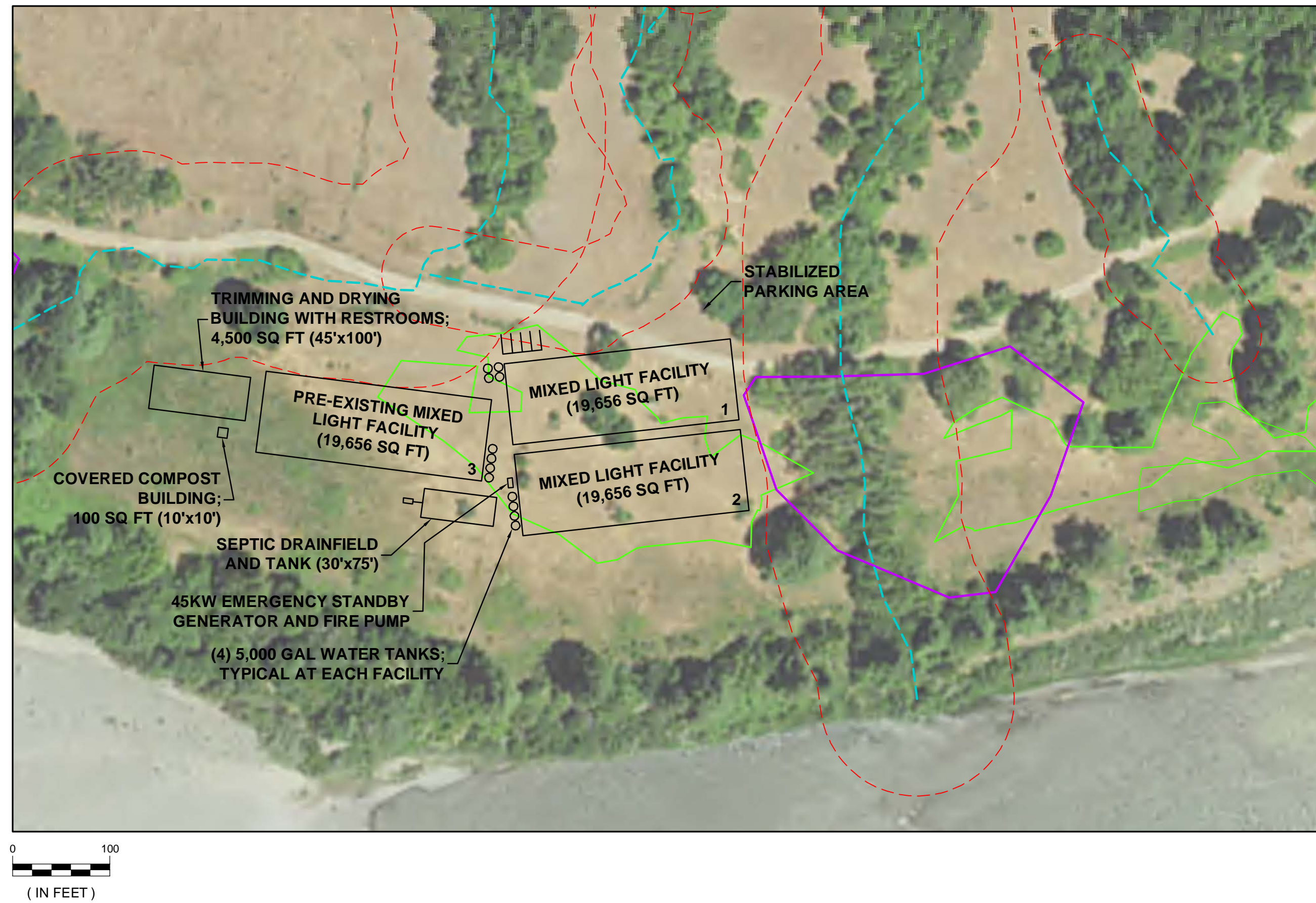


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CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905



PARCEL 1 (AERIAL)
FACILITY #7 THROUGH #16

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367



BACKGROUND AERIAL IMAGE AND SLOPE DATA
PROVIDED BY PLAN IT TECHS, LLC DEC. 2019;
JOSHUA ALLEN; FAA PART 107 #4152800

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UAS PHOTOGRAMMETRY ACQUIRED WITH A DJI INSPIRE PRO 17MM LENS AND
ANALYZED BY A LICENSED FAA UAS REMOTE PILOT WHO IS A QUALIFIED
PLANNER WITH EXPERIENCE IN GEOGRAPHIC INFORMATION SYSTEMS (GIS).

ROLLING MEADOW RANCH HUMBOLDT COUNTY, CA

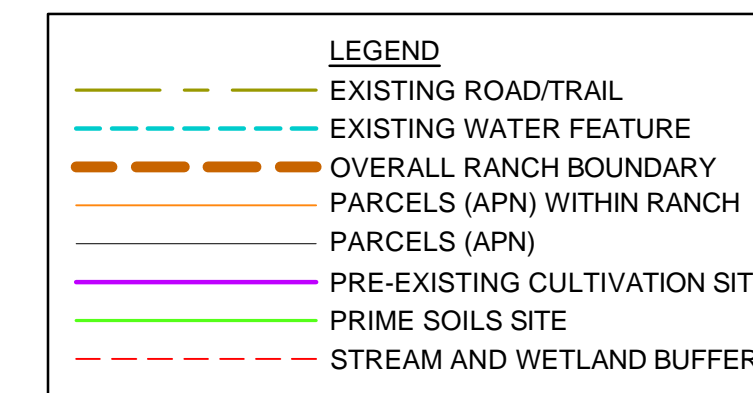
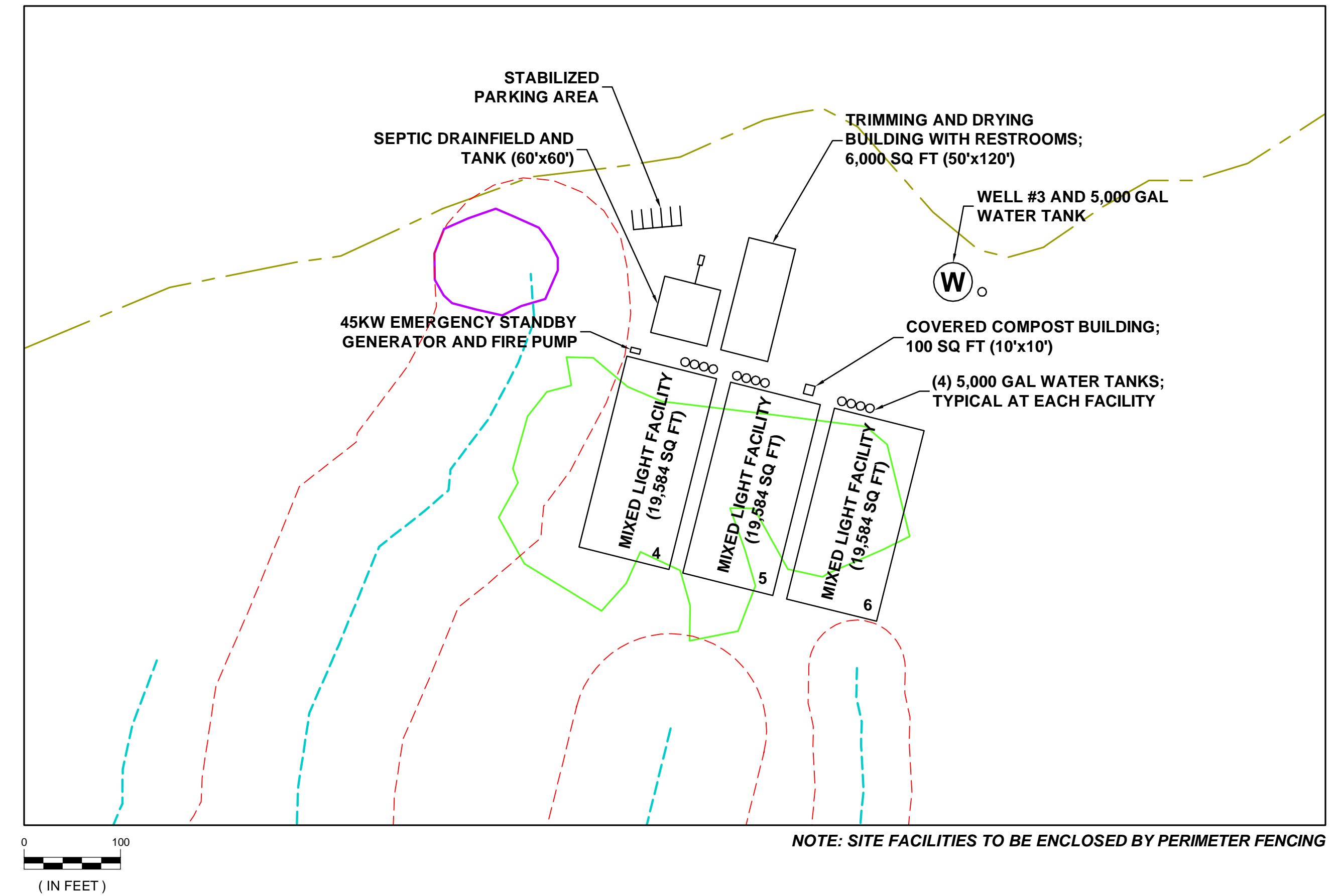


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CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
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CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905



FACILITY #1, #2, AND #3 DETAILS

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367



BACKGROUND AERIAL IMAGE AND SLOPE DATA
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 JOSHUA ALLEN; FAA PART 107 #4152800

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ROLLING MEADOW RANCH HUMBOLDT COUNTY, CA



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 CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
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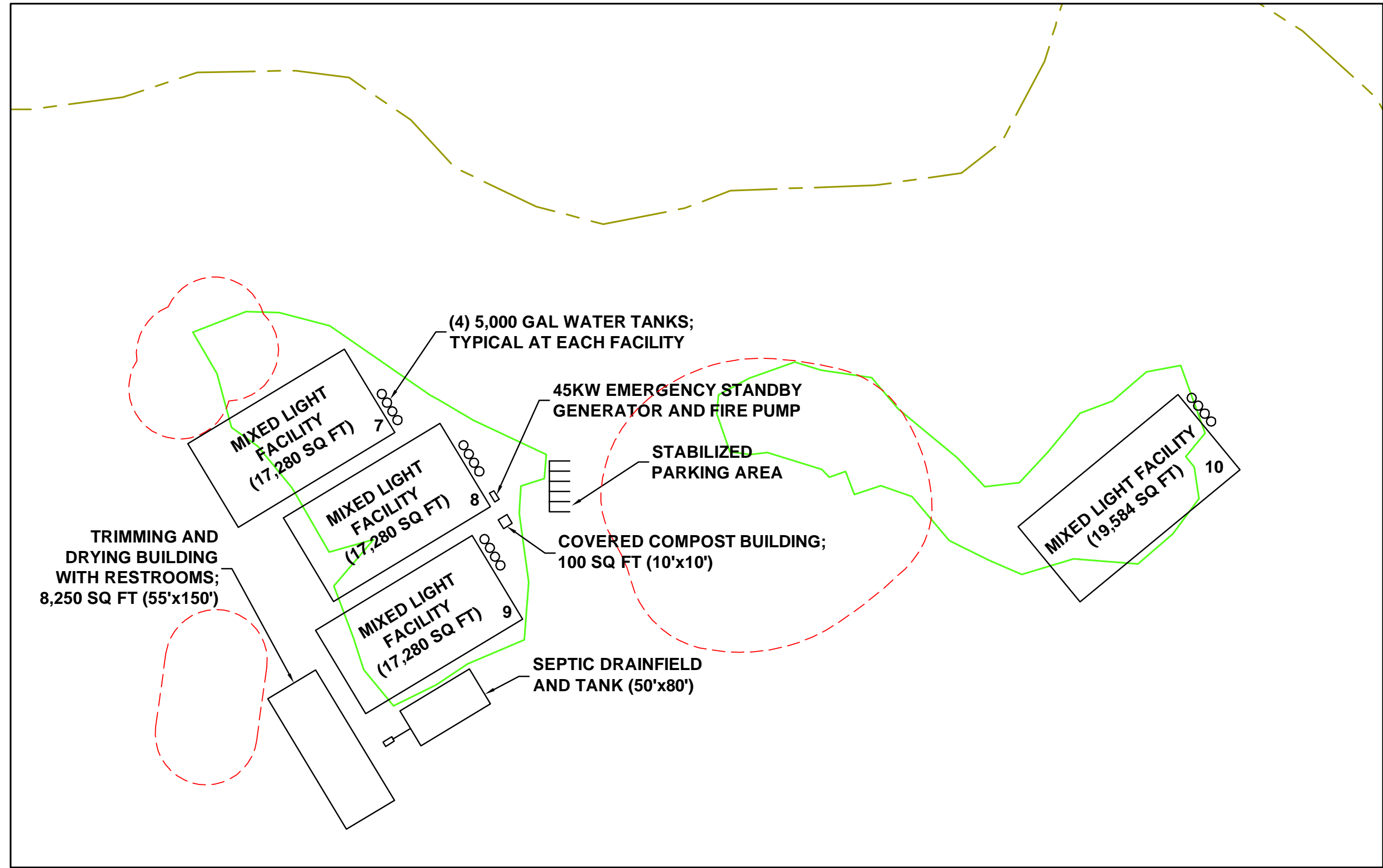


FACILITY #4, #5, AND #6 DETAILS

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

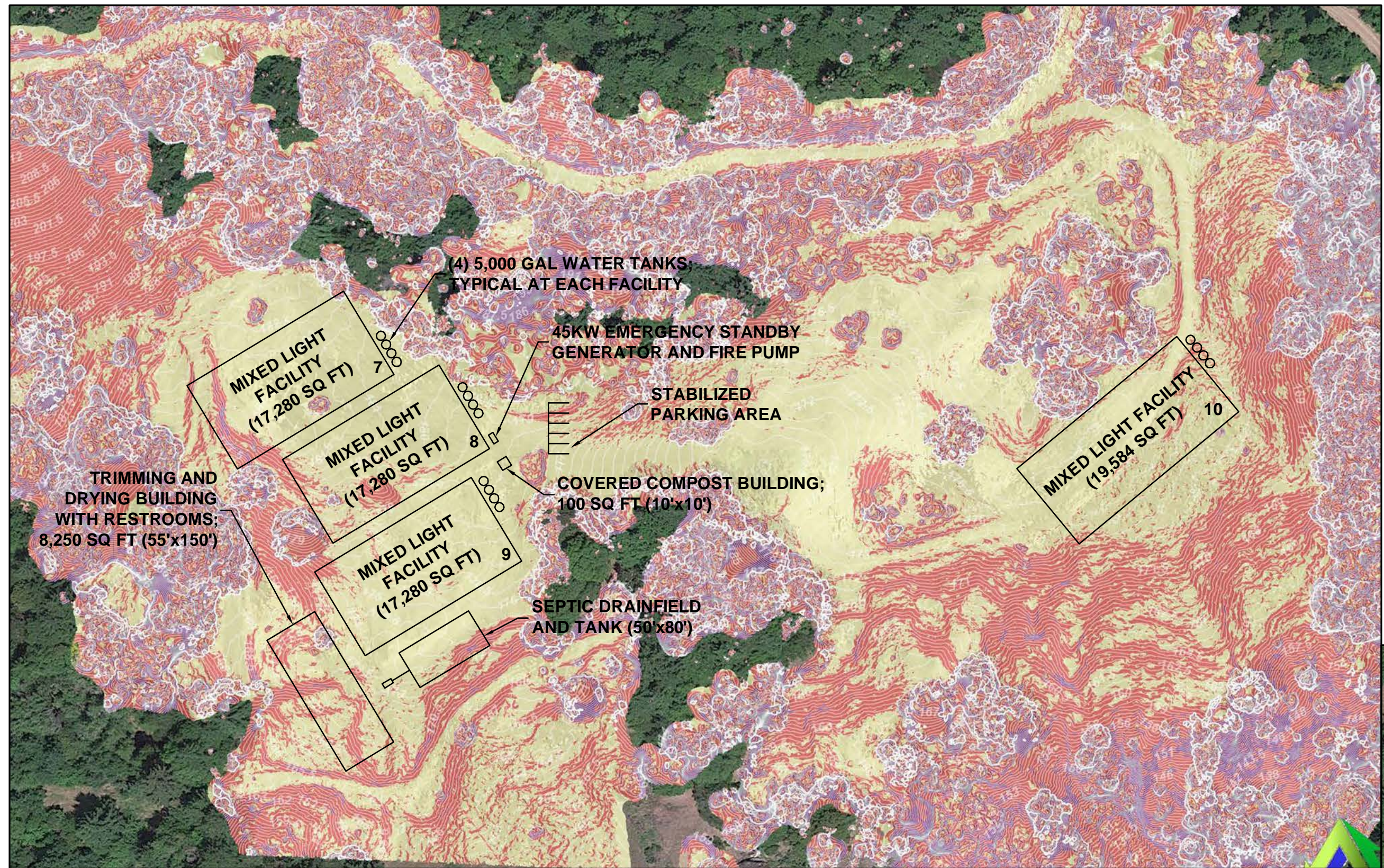


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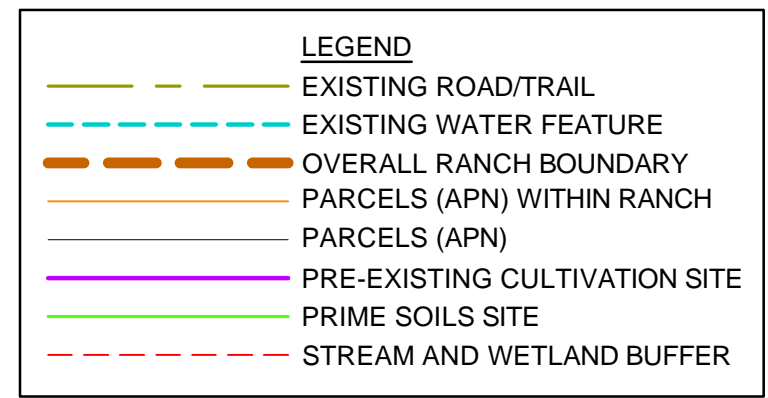
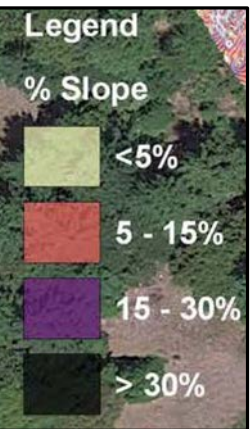


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NOTE: SITE FACILITIES TO BE ENCLOSED BY PERIMETER FENCING



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(IN FEET)



BACKGROUND AERIAL IMAGE AND SLOPE DATA
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PLANNER WITH EXPERIENCE IN GEOGRAPHIC INFORMATION SYSTEMS (GIS).

ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA



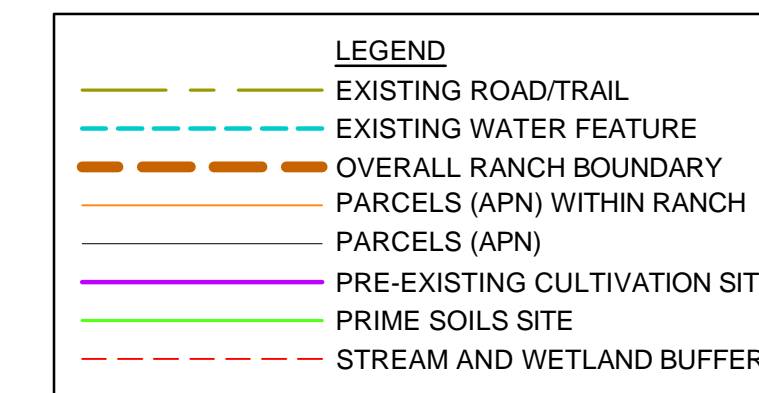
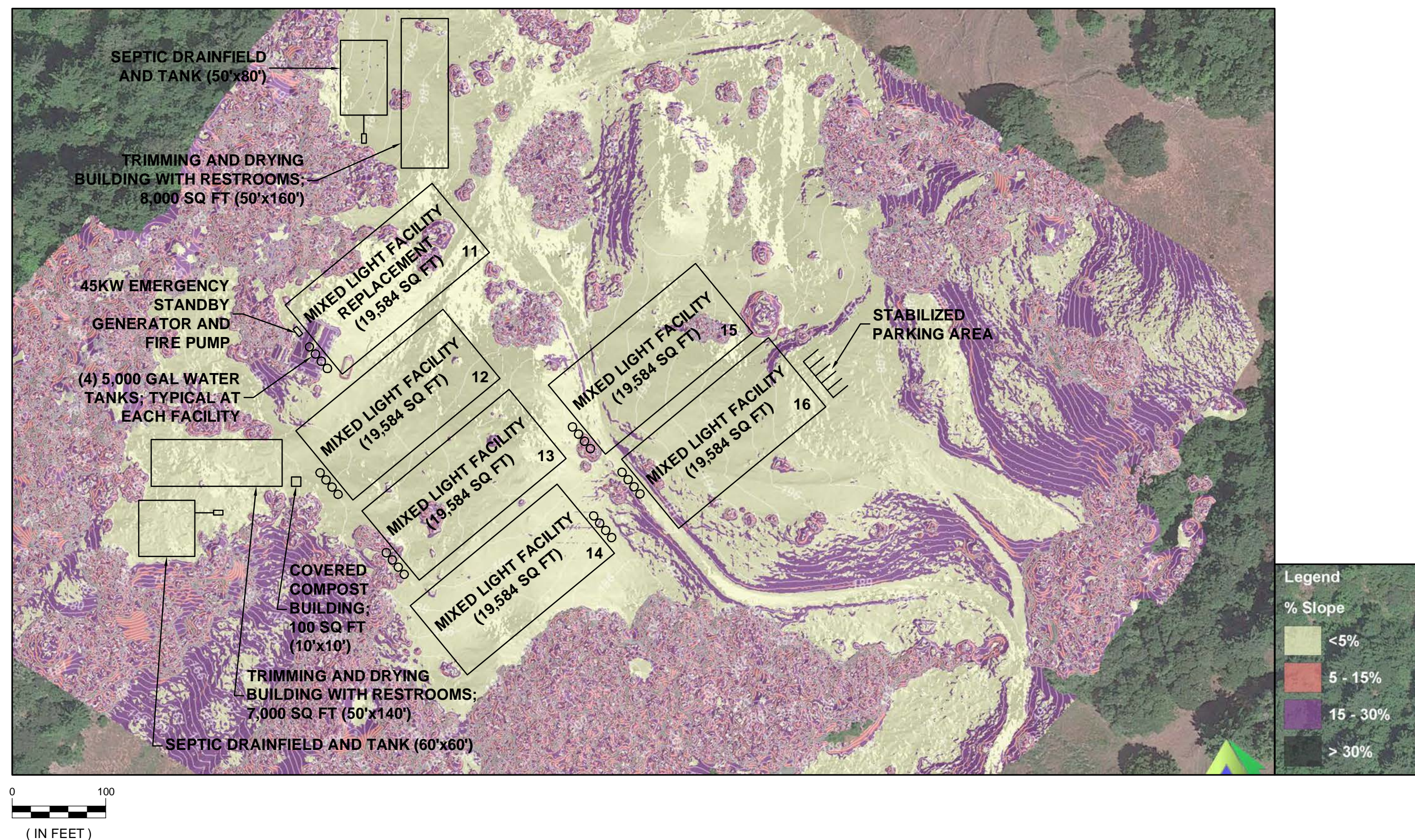
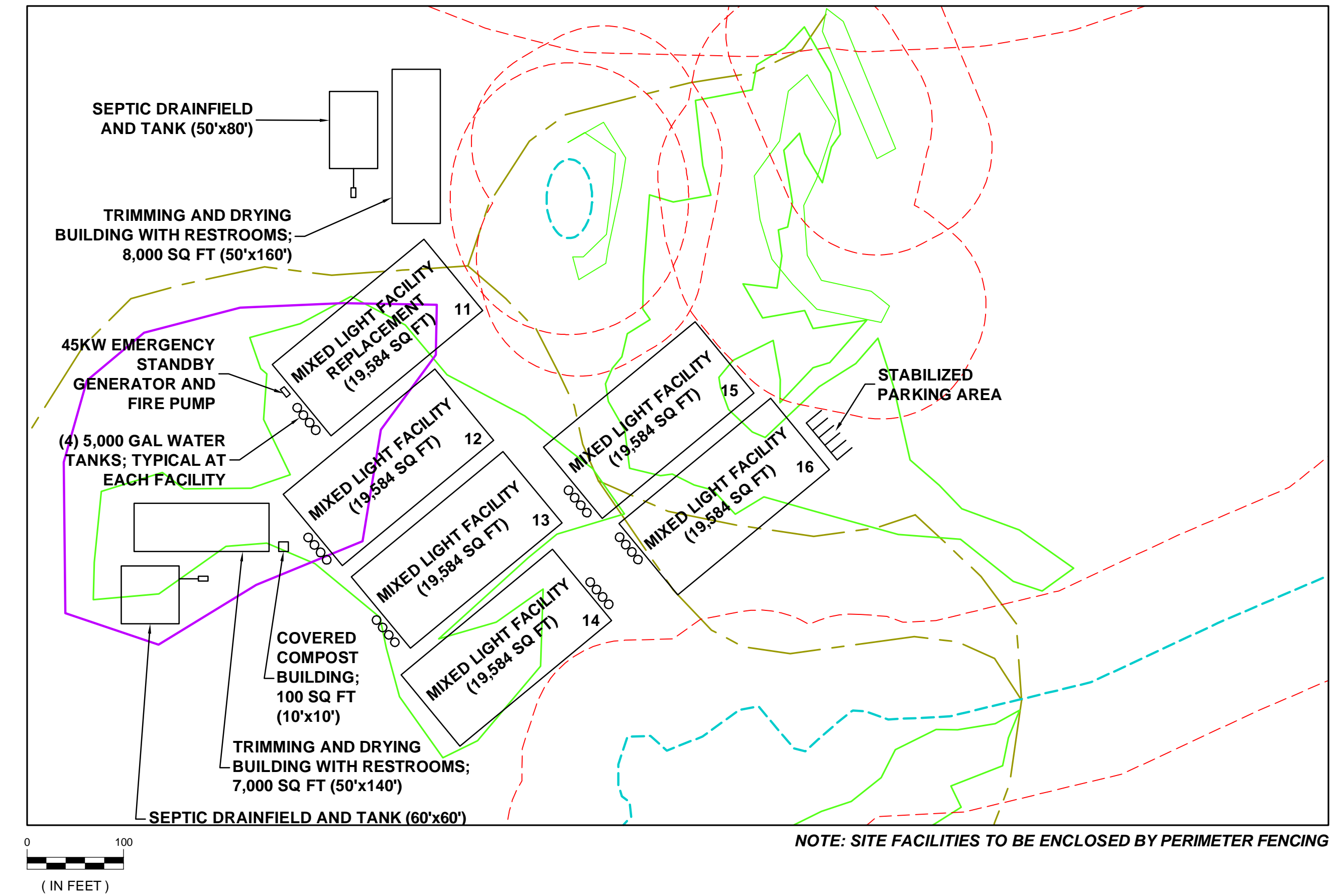
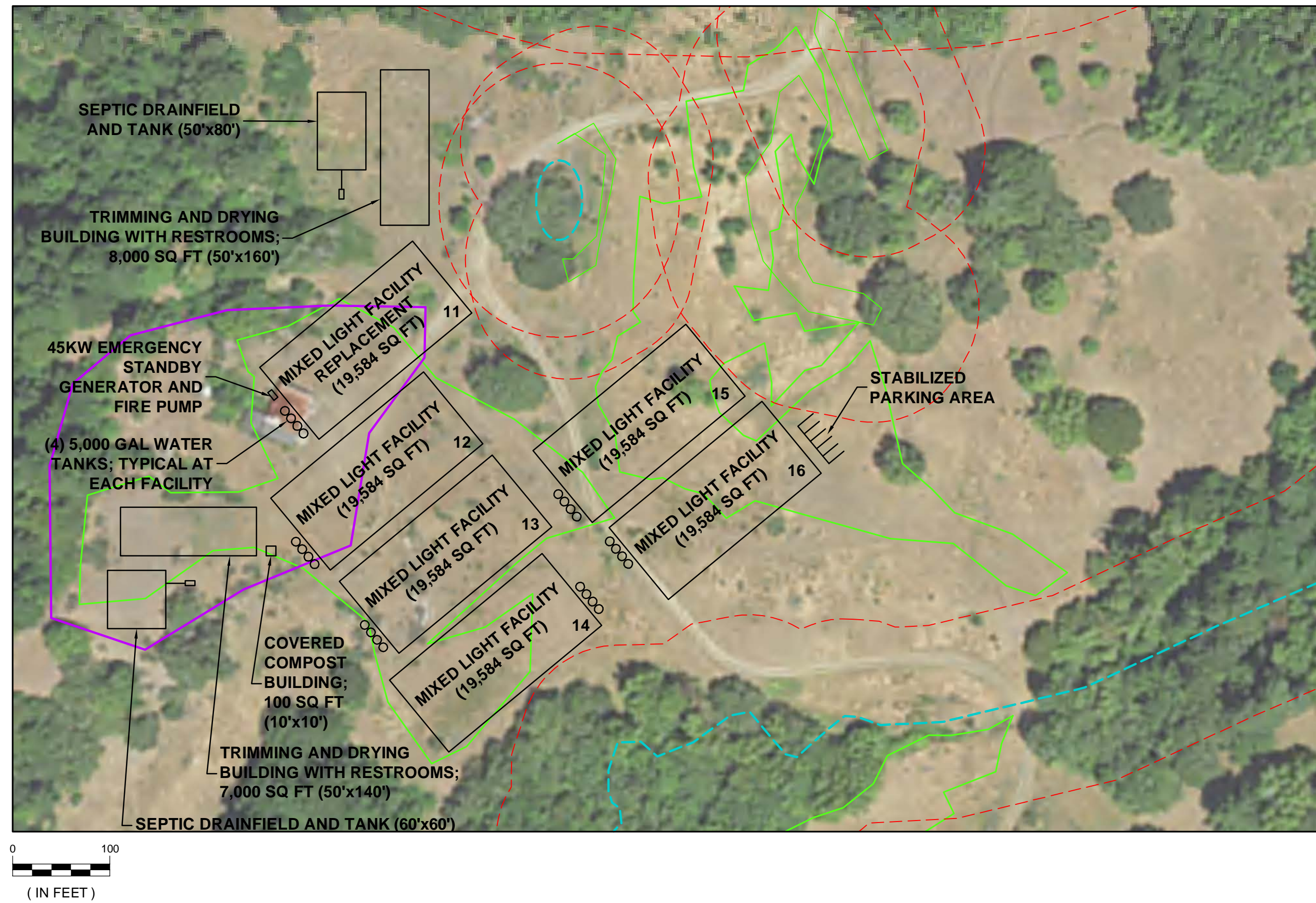
B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901 PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
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FACILITY #7 THRU #10 DETAILS

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

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PLANNER WITH EXPERIENCE IN GEOGRAPHIC INFORMATION SYSTEMS (GIS).

ROLLING MEADOW RANCH HUMBOLDT COUNTY, CA



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CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905



FACILITIES #11 THRU #16 DETAILS

DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367



DRAWING NO.
11367_200_003
SHEET
1 of 1
PROJECT NO.
11367

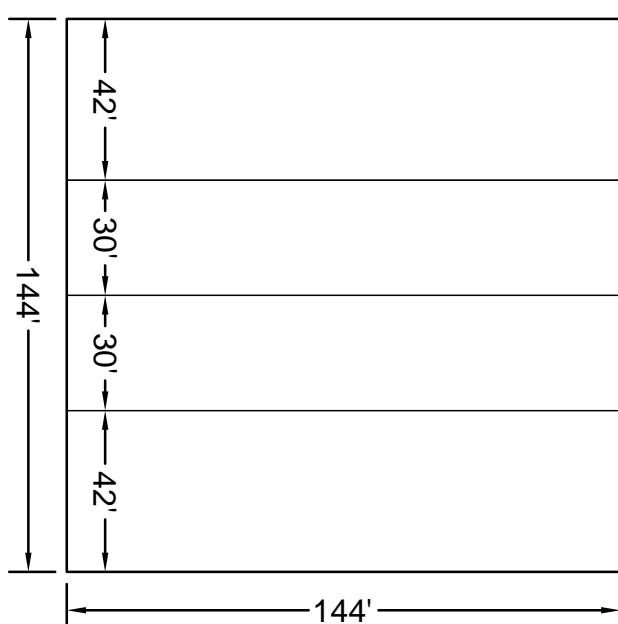


CALIFORNIA BUILDING PLANS

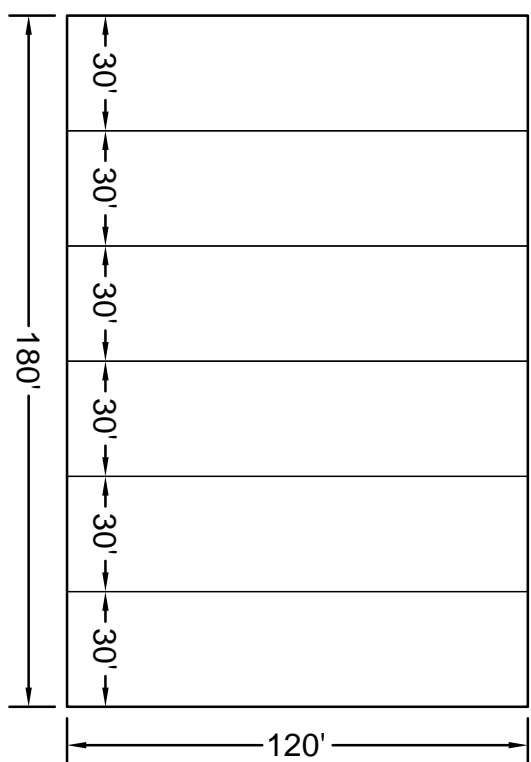


CALIFORNIA BUILDING PLANS

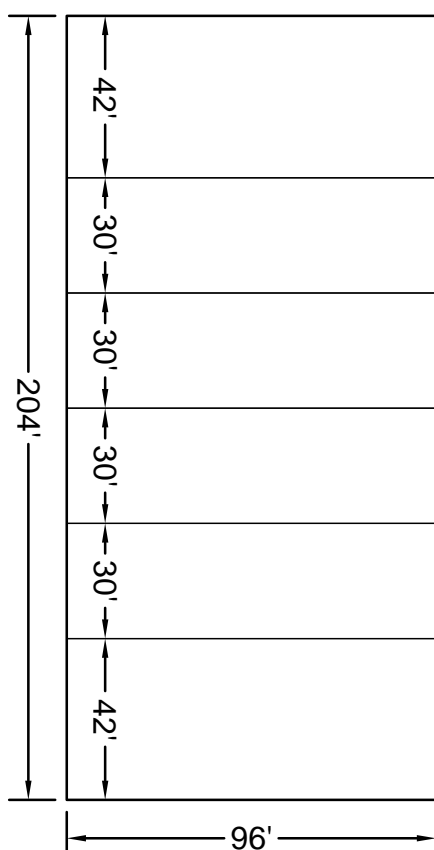
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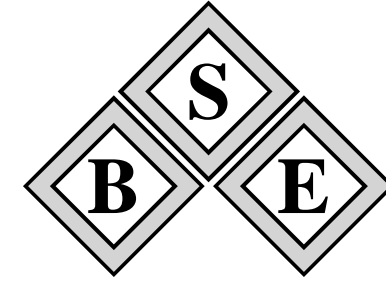
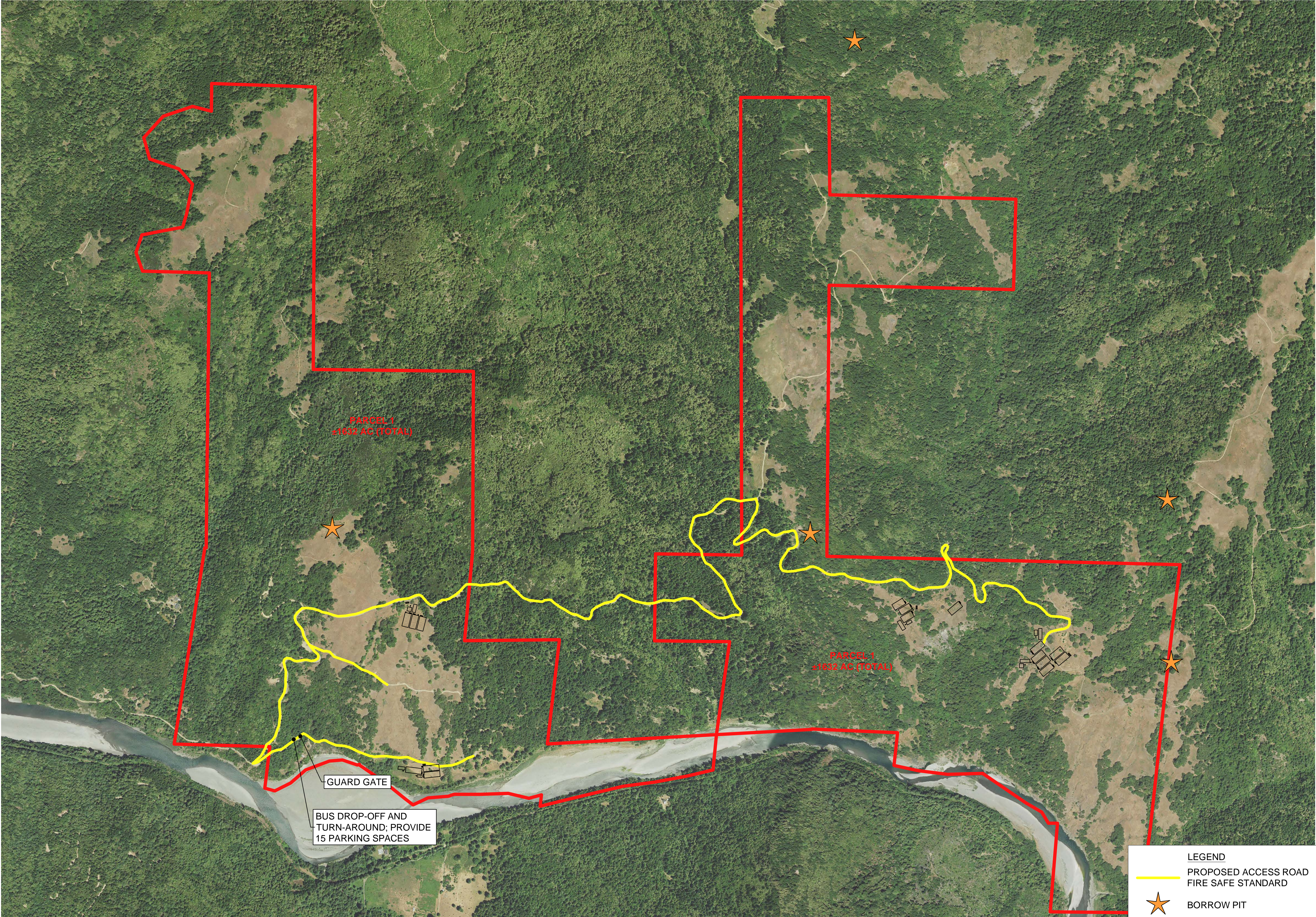
MIXED LIGHT FACILITY (21,600 SQ FT)



MIXED LIGHT FACILITY (19,584 SQ FT)



EXAMPLE FACILITY BAY CONFIGURATIONS

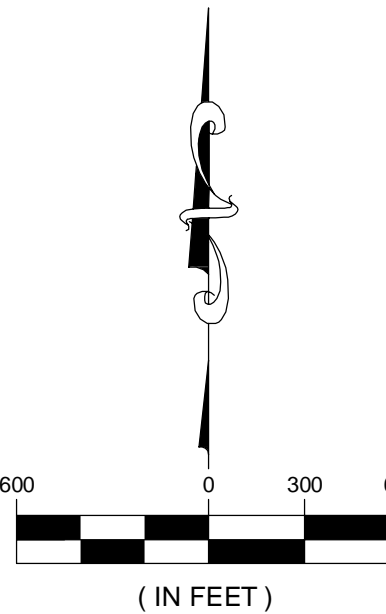


B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING -
LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 726-3074 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION #005
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004005

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951



△	
△	
△	
△	
△	REVISED FACILITY LOCATIONS 06/02/20
△	REVISED FACILITY LOCATIONS 12/13/19
△	REVISED FACILITY LOCATIONS 11/08/19
△	REVISED FACILITY LOCATIONS 02/15/19
△	REVISED FACILITY LOCATIONS 01/07/19
DATE:	12/19/18
DESIGN/DRAWN:	SMG/AH

PROJECT TITLE

**ROLLING
MEADOW RANCH
HUMBOLDT
COUNTY, CA**

SHEET TITLE

**ACCESS ROAD
EXHIBIT**

PROJECT NO.

11367

DRAWING NO.

11367_200_005

SHEET

1 of 1

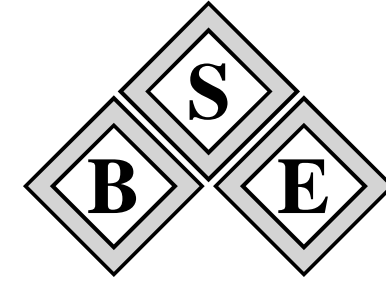
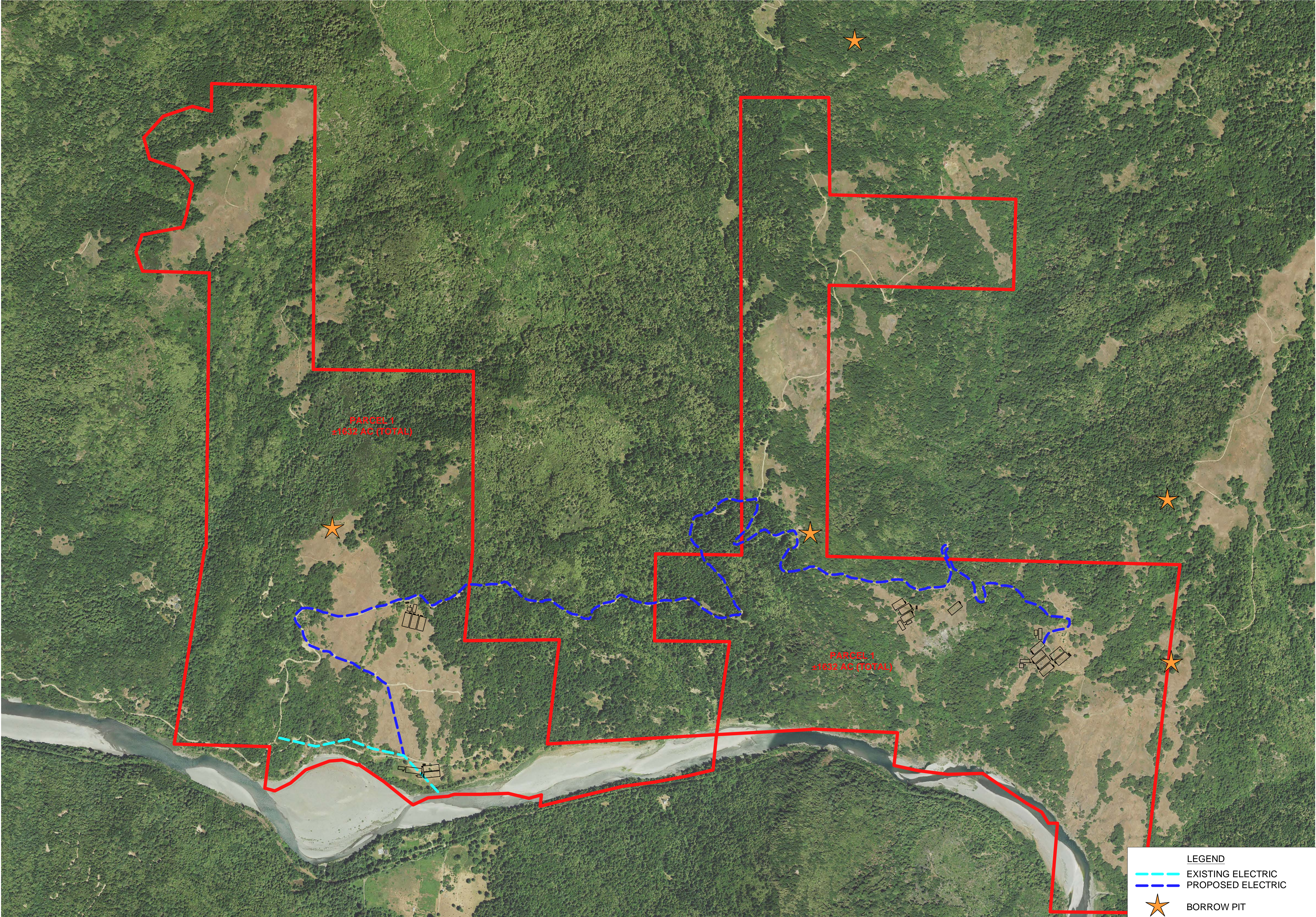
LEGEND

— PROPOSED ACCESS ROAD
FIRE SAFE STANDARD

★ BORROW PIT

H:\Projects Folder\11367\Drawings\11367_200_005.dwg, June 19, 2020 1:31:28 PM DB

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

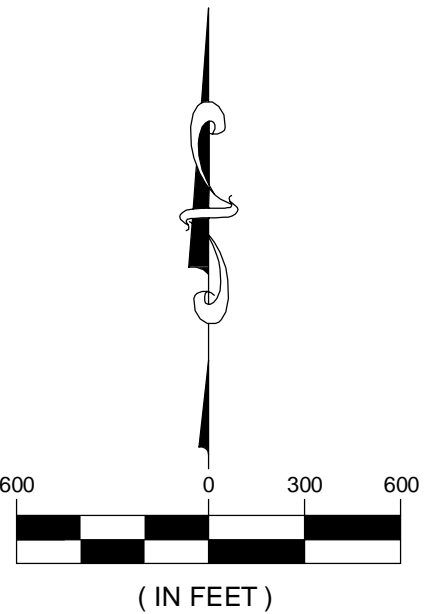


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CONSULTING - ENGINEERING -
LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
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PHONE: (321) 726-3074 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION #005
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004005

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951



△	
△	
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△	
△	REVISED FACILITY LOCATIONS 06/02/20
△	REVISED FACILITY LOCATIONS 12/13/19
△	REVISED FACILITY LOCATIONS 11/08/19
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△	REVISED FACILITY LOCATIONS 01/07/19
DATE:	12/19/18
DESIGN/DRAWN:	SMG/AH

PROJECT TITLE

**ROLLING
MEADOW RANCH
HUMBOLDT
COUNTY, CA**

SHEET TITLE

**ELECTRIC
EXHIBIT**

PROJECT NO.

11367

DRAWING NO.

11367_200_005

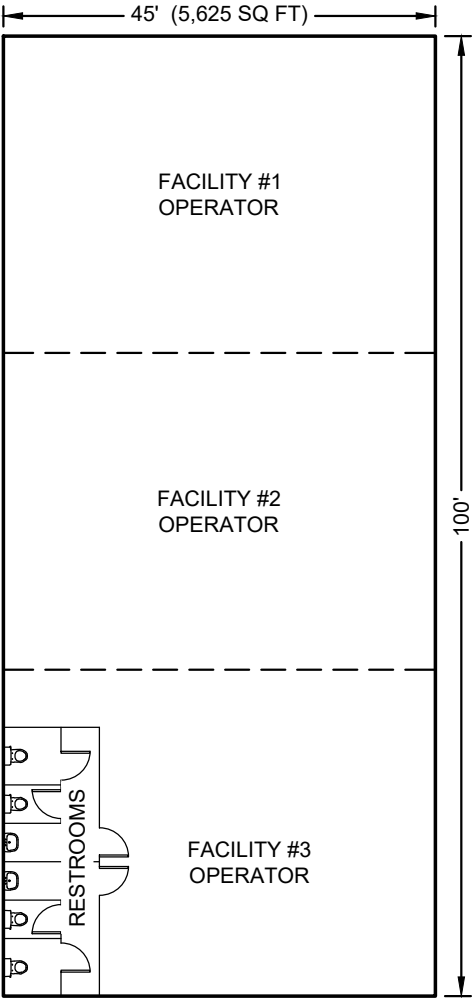
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1 of 1

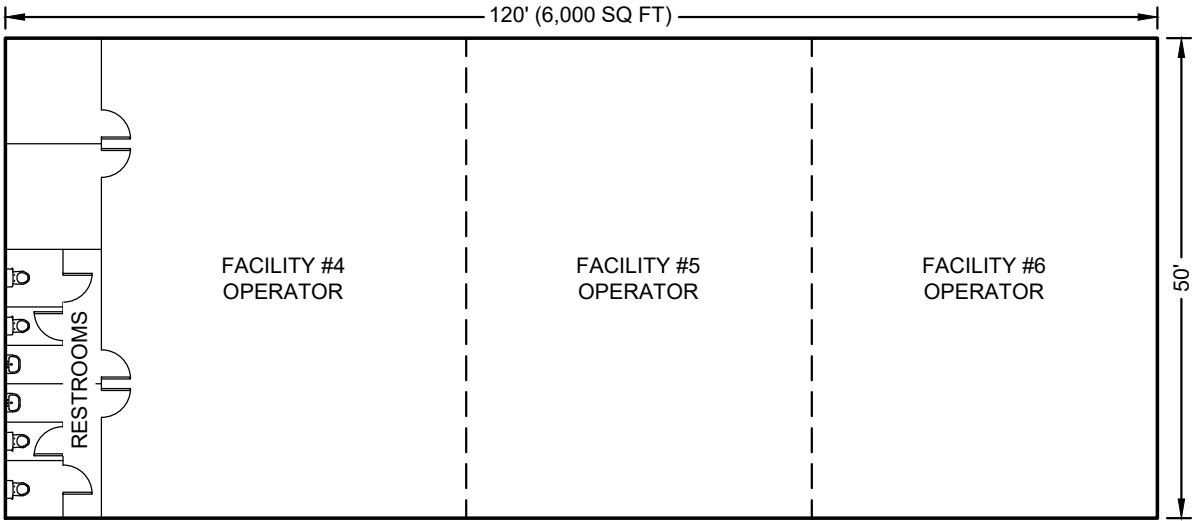
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	PROPOSED ELECTRIC
	BORROW PIT

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

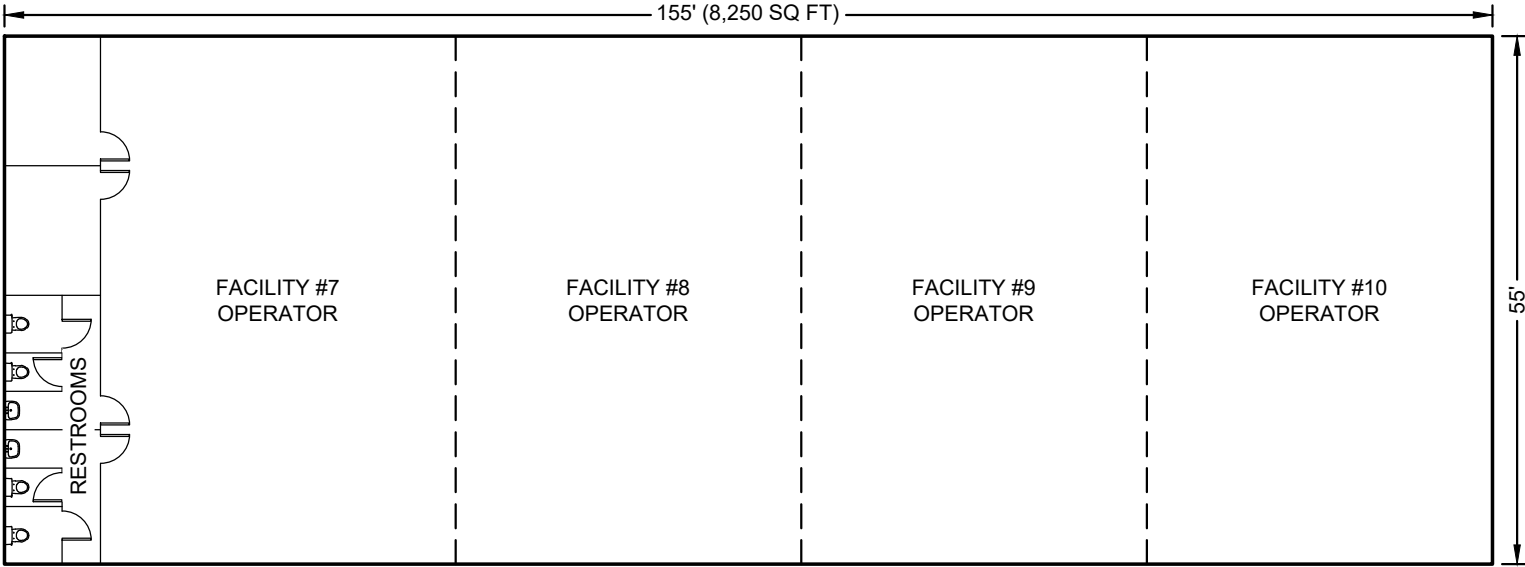
TRIMMING AND DRYING
BUILDING DETAILS



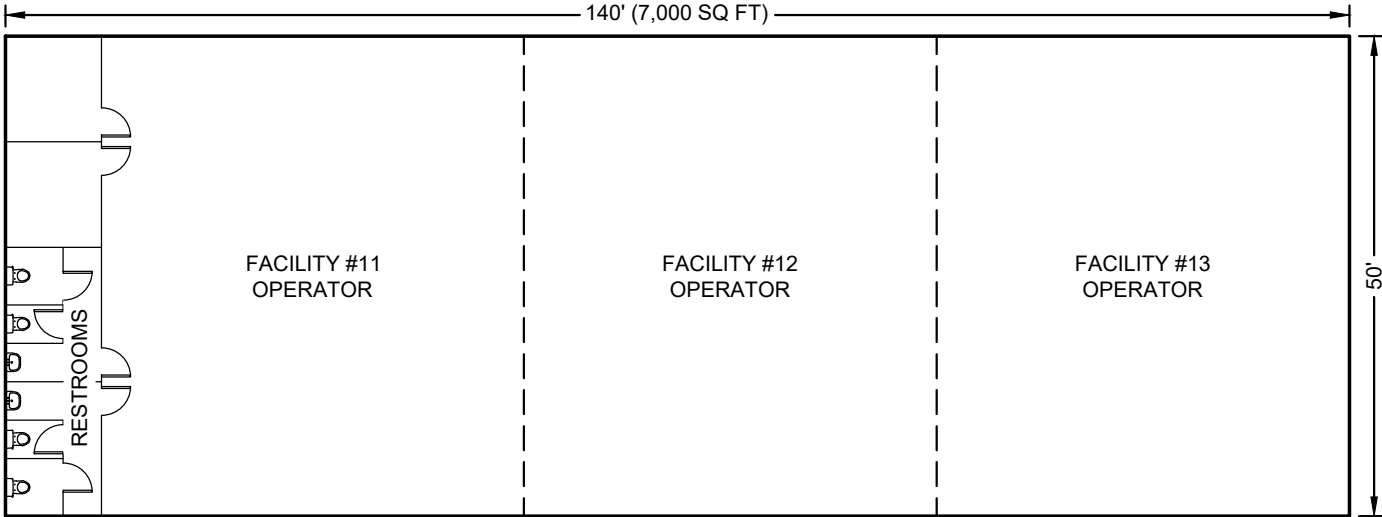
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RESTROOMS AT FACILITY #1, #2, AND #3



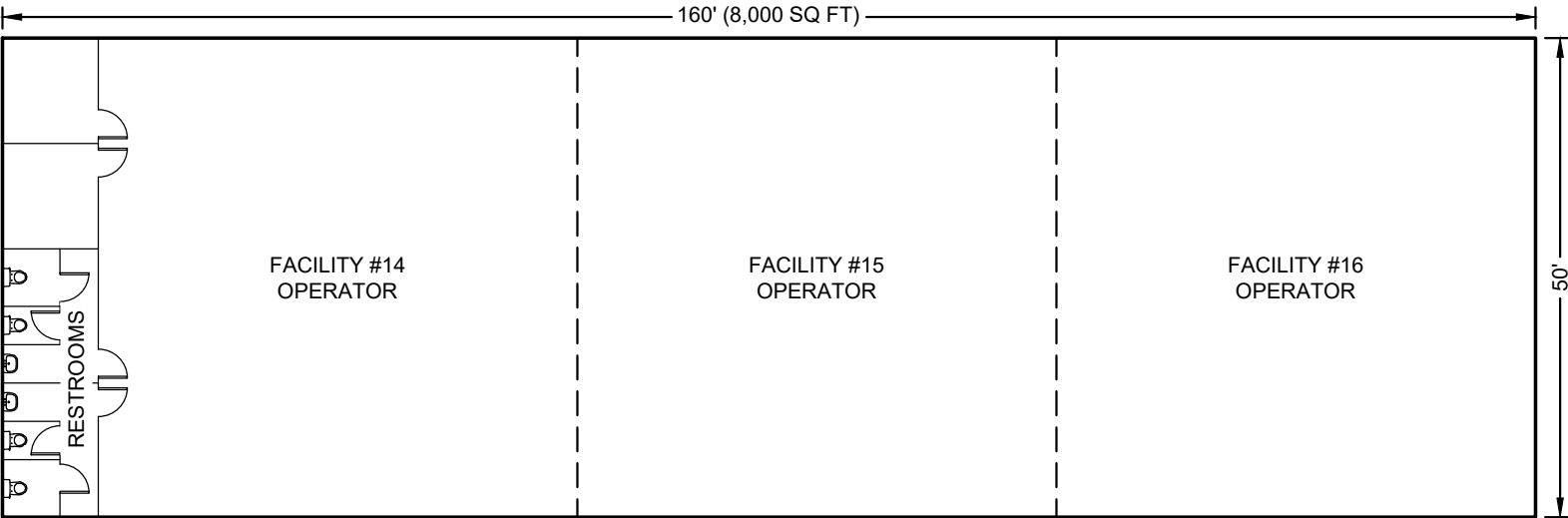
TRIMMING AND DRYING BUILDING WITH
RESTROOMS AT FACILITY #4, #5 AND #6



TRIMMING AND DRYING BUILDING WITH
RESTROOMS AT FACILITY #7, #8, #9, AND #10



TRIMMING AND DRYING BUILDING WITH
RESTROOMS AT FACILITY #11, #12, AND #13



TRIMMING AND DRYING BUILDING WITH
RESTROOMS AT FACILITY #14, #15, AND #16

DATE: 06/16/20
DESIGN/DRAWN: SMG/DRB
DRAWING# 11367_200_007
PROJECT# 11367
SHEET 1 OF 1



B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4 MELBOURNE, FL 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159
CERTIFICATE OF BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905



H:\Projects Folder\11367\Drawings\11367_200_007.dwg June 19, 2020 9:37:18 AM DB

Appendix B
Grading for Proposed Greenhouse Sites;
Oscar Larson and Associates, 2019



Oscar Larson & Associates
Consulting Engineers, Inc.
317 Third Street • 2nd Floor • Eureka • CA 95501

phone: 707-445-2043 • phone: 800-660-2043
fax: 707-445-8230
e-mail: larsen@olarson.com
website: www.olarson.com

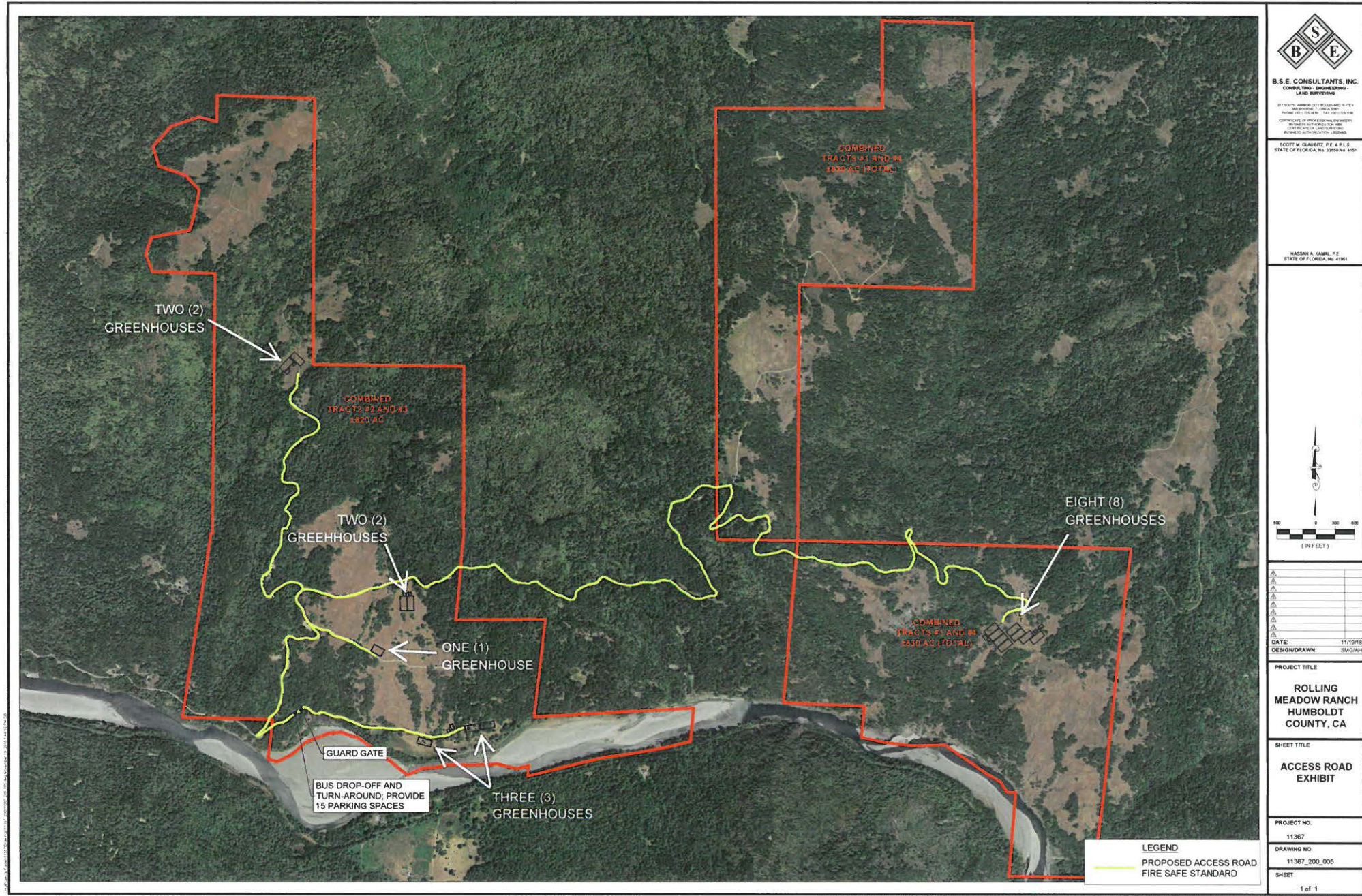
**Rolling Meadow Ranch
Humboldt County, California
Grading for Proposed Greenhouse Sites**

On 3/28/2018, and in late December 2018 and early January 2019, Oscar Larson & Associates (OLA) made visual observations of the proposed greenhouse sites within the Rolling Meadow Ranch, located within Humboldt County, California. Locations of the proposed greenhouses are shown on the attached Exhibit ("Access Road Exhibit"). Based on the above mentioned visual observations, it appears that the grading for the proposed greenhouse sites can be balanced on site. Final grading plans and design are to be based on topographic survey.



1/11/2019

Gregory M. Hall, PE



B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING -
LAND SURVEYING
217 SOUTH HUMBOLDT CITY ROAD, SUITE 4
HUMBOLDT, CA 95926
PHONE (707) 735-1800 FAX (707) 735-1700
CERTIFICATES OF PROFESSIONAL COMPETENCY
ISSUED BY THE BOARD OF LAND SURVEYING
BUSINESS AUTHORIZATION 10000000

SCOTT M. OLSEN, P.E. & P.L.S.
STATE OF CALIFORNIA No. 4100

HASAN A. KAMEL, P.E.
STATE OF CALIFORNIA No. 4100



DATE	11/16/18
DESIGN/DRAWN	SMG/DAH

PROJECT TITLE
**ROLLING MEADOW RANCH
HUMBOLDT COUNTY, CA**

SHEET TITLE
**ACCESS ROAD
EXHIBIT**

SYMBOLS SHOWN ARE GRAPHIC IN NATURE. DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

Appendix C

Road Evaluations

1. County Road Evaluation, Part A; 2017, David Rask
2. Alder Point Access Evaluation Letter; 2018, Manhard Consulting
3. Alder Point to McCann, Road Evaluation, 2018; Oscar Larson and Associates
4. Supplemental Field Investigation, Internal Access Road Evaluation, 2019; Oscar Larson and Associates

HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS
ROAD EVALUATION REPORT

PART A: Part A may be completed by the applicant

Applicant Name: _____ APN: _____

Planning & Building Department Case/File No.: _____

Road Name: _____ *(complete a separate form for each road)*

From Road (Cross street): _____

To Road (Cross street): _____

Length of road segment: _____ miles Date Inspected _____

Road is maintained by: ☐ County ☐ Other _____
(State, Forest Service, National Park, State Park, BLM, Private, Tribal, etc)

Check one of the following:

Box 1 ☐ The entire road segment is developed to Category 4 road standards (20 feet wide) or better. If checked, then the road is adequate for the proposed use without further review by the applicant.

Box 2 ☐ The entire road segment is developed to the equivalent of a road category 4 standard. If checked, then the road is adequate for the proposed use without further review by the applicant.

An equivalent road category 4 standard is defined as a roadway that is generally 20 feet in width, but has pinch points which narrow the road. Pinch points include, but are not limited to, one-lane bridges, trees, large rock outcroppings, culverts, etc. Pinch points must provide visibility where a driver can see oncoming vehicles through the pinch point which allows the oncoming vehicle to stop and wait in a 20 foot wide section of the road for the other vehicle to pass.

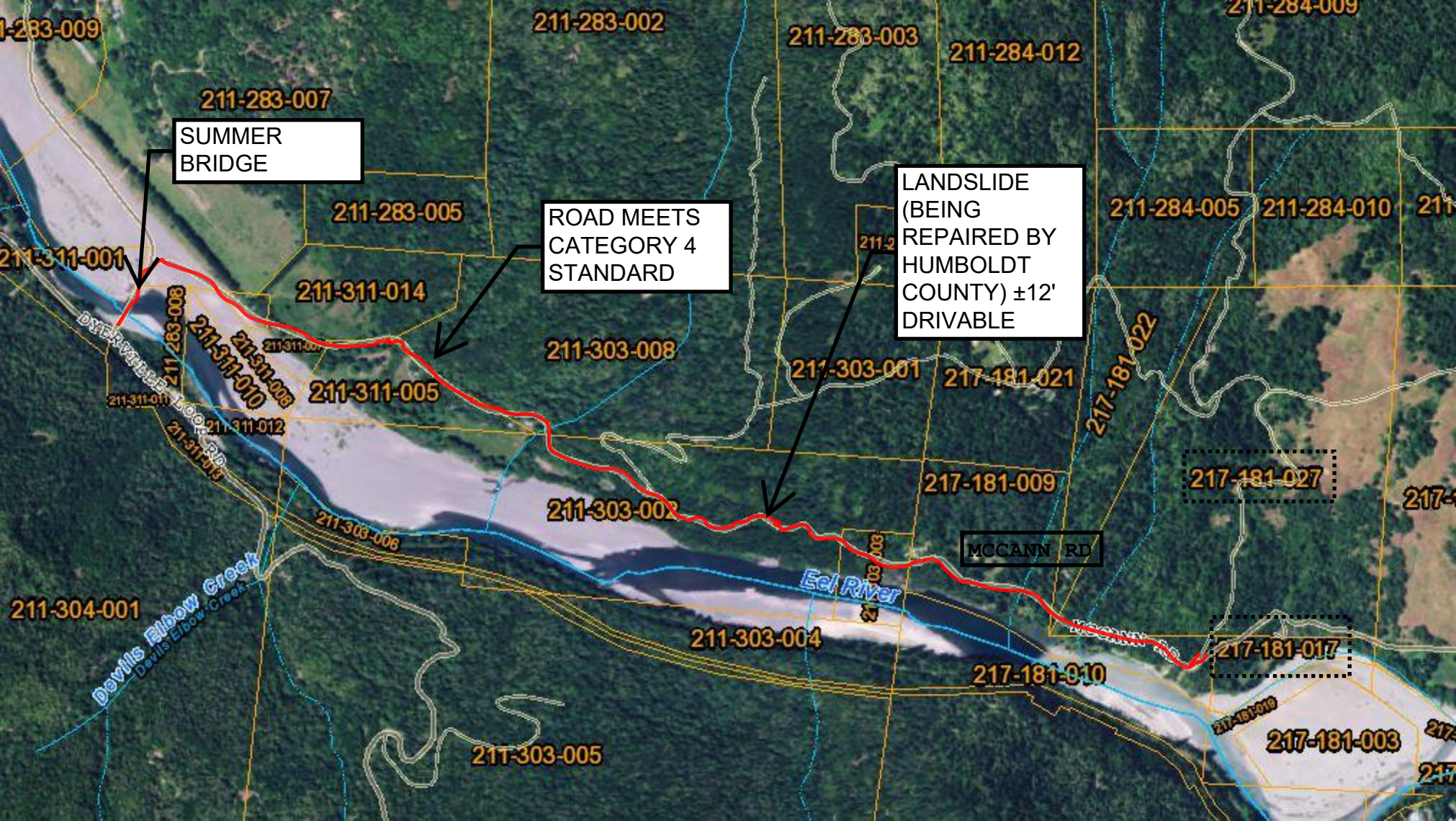
Box 3 ☐ The entire road segment is not developed to the equivalent of road category 4 or better. The road may or may not be able to accommodate the proposed use and further evaluation is necessary. Part B is to be completed by a Civil Engineer licensed by the State of California.

The statements in PART A are true and correct and have been made by me after personally inspecting and measuring the road.

Signature

Date

Name Printed



SUMMER
BRIDGE

ROAD MEETS
CATEGORY 4
STANDARD

LANDSLIDE
(BEING
REPAIRED BY
HUMBOLDT
COUNTY) ±12'
DRIVABLE

MCCANN RD

Eel River

Devils Elbow Creek
Devils Elbow Creek



Civil Engineering
Surveying
Water Resources Management
Construction Management
Landscape Architecture
Land Planning
Rural Property Services

Date: January 10, 2018

To: Humboldt County Planning Department
3015 H Street
Eureka, CA 95501
(707)445-7541

Subject: Rolling Meadows Ranch Inc
APN: 217-451-005

Cannabis Planner,

A field evaluation was completed for the subject application.

The alternate Alderpoint Road access roadway qualifies as a very low volume local road (less than 400 vehicles average daily traffic) as it is only accessed by the proposed development and the adjacent properties owned by Sierra Pacific. The AASHTO guidelines for geometric design of very low volume local roads allows for the existing design of the roads (width, elevation, sight distance, curvature, etc.) to remain in place unless evidence exists of site specific safety problems.

Our field evaluation did not identify evidence of crashes, collisions or other incidents and we have provided recommendations to mitigate these risks if issues arise. The Sierra Pacific properties adjacent to the access road was logged within recent years and have been left to naturally re-stock. No logging traffic can be expected for 20 to 30 years.

The proposed development would only use this road in case the primary access across McCann Road is inaccessible due to flooding or high water. Transportation would be provided for employees in the morning and evening, in no more than six to eight vehicle trips. A security guard will be posted at the access road in use and will be able to communicate and coordinate traffic on the road so the risk of conflict will be limited.

Please do not hesitate to contact me at (707)627-2911 pwhite@manhard.com with questions or any additional information.

Sincerely,


Praj O. White
Regional Manager



1-10-18



**Engineer's Report of
Rolling Meadow Ranch
Internal Access Road Evaluation**

On 3/28/2018 Oscar Larson & Associates (OLA) performed a site investigation to evaluate the internal access roads that will be used to access the proposed facilities within the Rolling Meadow Ranch, located within Humboldt County, California. The roads were evaluated per County criteria, and are identified on Sheet 1 of the attached drawings.

The field investigation, and documents provided to us, revealed no evidence of historic roadway radius problems, curve related crashes, substantial edge rutting, or other observations that would indicate site-specific roadway problems. As the ranch is the only user of the roads and the owner has committed to only allow controlled traffic, which is estimated at approximately eight trips per day, the estimated average daily traffic (ADT) will be lower than 400 ADT, and therefore the road is considered very-low volume per County standards and AASHTO guidelines. Per the AASHTO publication, "Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT \leq 400)," no changes to roadway or roadside geometrics are indicated to be required for these existing very low-volume local roads with no sign of historical site-specific roadway issues.

It is our understanding that employees will be bused to the work sites in approximately six to eight trips per day. Access to the property will be controlled at manned kiosks at the entrances to the property. The permittee intends to require that all traffic on the property will communicate by radio among one another and with the manned kiosks to mitigate risk of traffic conflicts and to control access. Based on our understanding of the proposed use, as provided to us by the permit applicant, and our field evaluation, we find that the road is suitable for the intended use. However, our evaluation noted a need for routine attention to general road maintenance and upkeep, which should occur on an as needed basis. It is recommended that the following maintenance be completed prior to use of the roads. Due to steep road grades in some locations, measured to be over 20%, and not measured but estimated to be up to approximately 30% for short distances, it is recommended that appropriate type vehicles be used when using the roads.

Recommended Maintenance:

1. Perform routine road maintenance to repair settlement, scour, and other damages caused by winter storms, including, but not limited to:
 - a. Re-grade and gravel roads as necessary.



- b. Remove downed trees, branches, and all other storm debris from full road sections.
2. Cut back encroaching vegetation to the full width of roads, including width of turnouts.
3. Install a porous base gravel up to ± 12 inches deep, as required, by ± 12 feet wide at locations shown on the attached drawing. It is recommended that the base gravel meet the requirements of Class 2 Permeable Material of the Caltrans Standard Specifications, or as approved by an Engineer.
4. Remove accumulated sediment from approximately 300 feet of inboard ditch at the location shown on the attached drawing, and verify that the existing culvert cross drain is free draining.
5. Perform cleanout maintenance of any culverts where they may collect sediments during winter storms to achieve free flow.

Attachments:

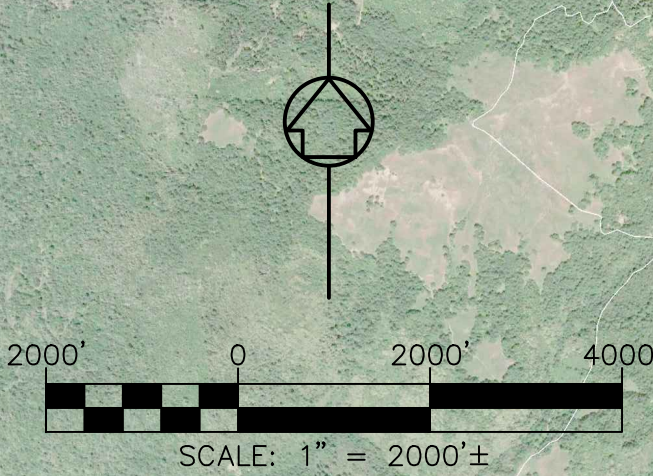
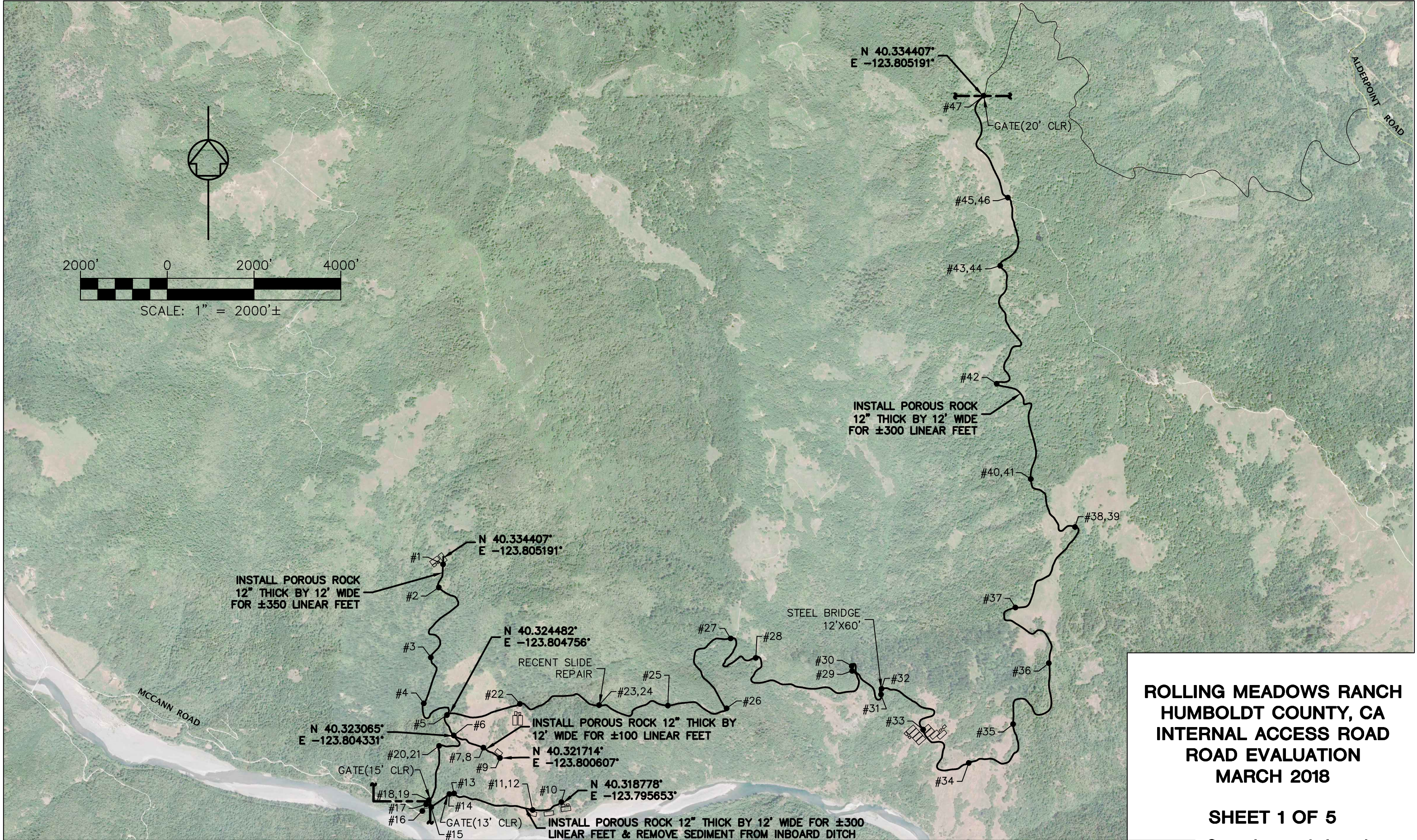
- Rolling Meadows Ranch, Humboldt County, CA, Internal Access Road, Road Evaluation, March 2018; Sheet 1 of 5 – Aerial Image from Google Earth with Legend and Notes
- Rolling Meadows Ranch, Humboldt County, CA, Internal Access Road, Road Evaluation, March 2018; Sheet 2 of 5 – Photos 1 – 14
- Rolling Meadows Ranch, Humboldt County, CA, Internal Access Road, Road Evaluation, March 2018; Sheet 3 of 5 – Photos 15 – 28
- Rolling Meadows Ranch, Humboldt County, CA, Internal Access Road, Road Evaluation, March 2018; Sheet 4 of 5 – Photos 29 – 42
- Rolling Meadows Ranch, Humboldt County, CA, Internal Access Road, Road Evaluation, March 2018; Sheet 5 of 5 – Photos 43 – 47



4/3/2018

Gregory M. Hall, PE

P:\7353 Machata Road Evaluation\CAD\Figures\7353 Road Evaluation_2018-04-02_05.dwg



LEGEND	
	RANCH BOUNDARY (APPROXIMATE)
	RANCH ROADS EVALUATED
	PHOTOGRAPH LOCATION AND NUMBER

NOTES	
1.	AERIAL IMAGE FROM GOOGLE EARTH, DATED MAY 26, 2016.
2.	SITE INVESTIGATION PERFORMED MARCH 28, 2018.
3.	LOCATIONS OF IMPROVEMENTS SHOWN HEREON ARE APPROXIMATE.

**ROLLING MEADOWS RANCH
HUMBOLDT COUNTY, CA
INTERNAL ACCESS ROAD
ROAD EVALUATION
MARCH 2018**

SHEET 1 OF 5



Oscar Larson & Associates
317 Third Street
Eureka, California 95501
(707) 445-2043



**PHOTO #1
(FACING NORTH)**



**PHOTO #2
(FACING NORTHWEST)**



**PHOTO #3
(FACING NORTH)**



**PHOTO #4
(FACING NORTHEAST)**



**PHOTO #5
(FACING SOUTHEAST)**



**PHOTO #6
(FACING SOUTH)**



**PHOTO #7
(FACING WEST)**



**PHOTO #8
(FACING EAST)**



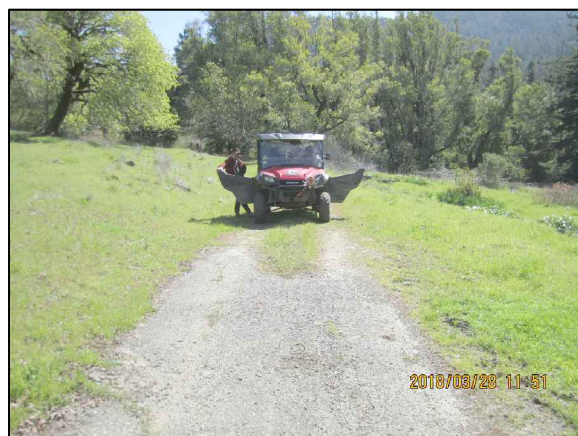
**PHOTO #9
(FACING WEST)**



**PHOTO #10
(FACING EAST)**



**PHOTO #11
(FACING WEST)**



**PHOTO #12
(FACING EAST)**



**PHOTO #13
(FACING EAST)**

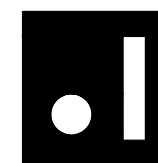


**PHOTO #14
(FACING NORTHEAST)**

**ROLLING MEADOWS RANCH
HUMBOLDT COUNTY, CA
INTERNAL ACCESS ROAD
ROAD EVALUATION
MARCH 2018**

SHEET 2 OF 5

**Oscar Larson & Associates
317 Third Street
Eureka, California 95501
(707) 445-2043**



NOTE

1. VEHICLE IN PHOTOGRAPHS (HONDA PIONEER 1000) IS $\pm 5'3"$ WIDE WITH DOORS CLOSED AND $\pm 11'$ WIDE WITH DOORS OPEN.



**PHOTO #15
(FACING NORTHEAST)**



**PHOTO #16
(FACING NORTHEAST)**



**PHOTO #17
(FACING SOUTHWEST)**



**PHOTO #18
(FACING SOUTHWEST)**



**PHOTO #19
(FACING NORTHEAST)**



**PHOTO #20
(FACING SOUTHWEST)**



**PHOTO #21
(FACING NORTHEAST)**



**PHOTO #22
(FACING WEST)**



**PHOTO #23
(FACING WEST)**



**PHOTO #24
(FACING EAST)**



**PHOTO #25
(FACING WEST)**



**PHOTO #26
(FACING SOUTHWEST)**



**PHOTO #27
(FACING WEST)**

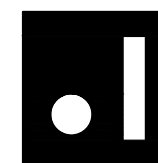


**PHOTO #28
(FACING NORTHEAST)**

**ROLLING MEADOWS RANCH
HUMBOLDT COUNTY, CA
INTERNAL ACCESS ROAD
ROAD EVALUATION
MARCH 2018**

SHEET 3 OF 5

**Oscar Larson & Associates
317 Third Street
Eureka, California 95501
(707) 445-2043**



NOTE

1. VEHICLE IN PHOTOGRAPHS (HONDA PIONEER 1000) IS $\pm 5'3"$ WIDE WITH DOORS CLOSED AND $\pm 11'$ WIDE WITH DOORS OPEN.



**PHOTO #29
(FACING SOUTH)**



**PHOTO #30
(FACING NORTHEAST)**



**PHOTO #31
(FACING SOUTH)**



**PHOTO #32
(FACING NORTHEAST)**



**PHOTO #33
(FACING NORTHEAST)**



**PHOTO #34
(FACING NORTHWEST)**



**PHOTO #35
(FACING SOUTH)**



**PHOTO #36
(FACING SOUTH)**



**PHOTO #37
(FACING WEST)**



**PHOTO #38
(FACING SOUTHEAST)**



**PHOTO #39
(FACING WEST)**



**PHOTO #40
(FACING SOUTH)**



**PHOTO #41
(FACING NORTH)**

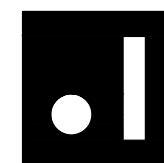


**PHOTO #42
(FACING EAST)**

**ROLLING MEADOWS RANCH
HUMBOLDT COUNTY, CA
INTERNAL ACCESS ROAD
ROAD EVALUATION
MARCH 2018**

SHEET 4 OF 5

**Oscar Larson & Associates
317 Third Street
Eureka, California 95501
(707) 445-2043**



NOTE

1. VEHICLE IN PHOTOGRAPHS (HONDA PIONEER 1000) IS $\pm 5'3"$ WIDE WITH DOORS CLOSED AND $\pm 11'$ WIDE WITH DOORS OPEN.



**PHOTO #43
(FACING SOUTH)**



**PHOTO #44
(FACING NORTHEAST)**



**PHOTO #45
(FACING SOUTHEAST)**



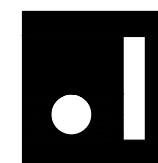
**PHOTO #46
(FACING NORTHWEST)**



**PHOTO #47
(FACING SOUTHWEST)**

**ROLLING MEADOWS RANCH
HUMBOLDT COUNTY, CA
INTERNAL ACCESS ROAD
ROAD EVALUATION
MARCH 2018**

SHEET 5 OF 5



**Oscar Larson & Associates
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NOTE

1. VEHICLE IN PHOTOGRAPHS (HONDA PIONEER 1000) IS $\pm 5'3"$ WIDE WITH DOORS CLOSED AND $\pm 11'$ WIDE WITH DOORS OPEN.



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**Supplemental Field Investigation
Rolling Meadow Ranch
Internal Access Road Evaluation
January 14, 2019**

On 3/28/2018 Oscar Larson & Associates (OLA) performed a site investigation to evaluate the internal access roads that will be used to access the proposed facilities within the Rolling Meadow Ranch, located within Humboldt County, California. Further field investigations were performed in December 2018 and January 2019 to evaluate current physical conditions of the roads identified on the attached Access Road Exhibit, and to identify the types of upgrades and improvements which characterize found existing field conditions for use in future design.

Specific criteria for the evaluation are from Humboldt County Road Standards and Fire Safe Regulations in Title III – Land Use and Development, Division 11, summarized as follows:

From Fire Safe Regulations:

- I. Unobstructed access to conventional drive vehicles including sedans and fire engines using County Road Category 2 standard for surfacing. Category 2 roadway width is to be 12 feet.
- II. Roadway turnouts are 10' wide, 80' long and tapered 25' from both ends.
- III. Turnarounds to be provided every 1,320 feet, at any structures and at the end of the road.
- IV. Grades over 16% to be in conformance with the County Roadway Design Manual.
- V. Curve radius requirements vary but, in general, curves should not be sharper than 200 foot radius. Additional surface width of four (4) feet to be added to curves of 50-100 feet radius. Additional surface width of two (2) feet added to curves of 100-200 feet.
- VI. Bridges and culverts built to carry a minimum load of 40,000 lbs. and:
 - A. Minimum 15' vertical clearance.
 - B. Signing showing bridge capacity, clearance, single lane access or other limitations.
 - C. One lane bridge has unobstructed visibility from both ends and intervisible turnouts at each end.
 - D. "Flatcar" bridge width of 9' minimum and same visibility criteria as above.



From County Road Standards:

- I. Roadway Category #2:
 - A. Single lane, 10 to 12 feet wide, with intervisible turnouts not to exceed 1/4 mile spacing.
 - B. No parking on traveled way.
 - C. Serves a maximum of ten (10) parcels having no more than one dwelling unit per parcel.
 - D. Rural area only.
 - E. Low speed - 25 mph design.
 - F. Surface of native earth, gravel or seal coat.
 - G. Grade not to exceed 12%, except may be up to 18% for short distances and/or as approved by Humboldt County Department of Public Works.

The following tables summarize areas where the above criteria are not met.

Road 1 (R1):



Bases of stationing for Road 1 is the tree with
“Private Road” sign attached, located at Station 1+00.



R1 Station	Criteria Not Met	Comments
0+00 to 5+00	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
2+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
3+30	Road width less than 12 feet	Road narrows to ± 10 feet wide for ± 12 feet due to slide on road fill side. Widen road to 12 foot minimum width.
4+40	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
6+20	Turnout Required	Install new turnout for traffic at gate.
11+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
12+00	Turnaround	Install turnaround at existing landing.
12+50 to 15+25	Grade over 16%	Road grade up to $\pm 24\%$. Re-grade or stabilize road.
15+50	Turnout Required	Install new turnout.
16+50	Turnaround	Install turnaround at existing landing.
22+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
22+50 to 24+00	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
24+50	Turnaround	Install turnaround at intersection with Road 3.
24+70 to 43+00	Roadway Surface	Ruts and surface erosion up to ± 10 inches deep. Grade and resurface.
26+75 to 28+50	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
29+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
30+90	Turnaround	Install turnaround at intersection with Road 4.
31+00 to 33+00	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade



R1 Station	Criteria Not Met	Comments
		or stabilize road.
35+00 to 36+00	Grade over 16%	Road grade up to $\pm 17\%$. Re-grade road.
36+25	Turnout Required	Road widens. Turnout may or may not be required.
39+75	Turnout Required	Road widens. Turnout may or may not be required.
46+00	Turnaround	Install turnaround at proposed facility location.
48+25	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
49+00 to 51+00	Grade over 16%	Road grade up to $\pm 17\%$. Re-grade road.
51+30	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
55+00	Turnaround	Install turnaround at existing landing.
56+90	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
57+00 to 58+50	Grade over 16%	Road grade up to $\pm 17\%$. Re-grade road.
59+40	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
60+00 to 61+65	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
61+75	Road width less than 12 feet	Road narrows for ± 50 feet at location of recent slide. Widen road to 12 foot minimum width.
62+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
64+00 to 64+60	Grade over 16%	Road grade up to $\pm 17\%$. Re-grade road.
64+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
67+75	Turnaround	Install turnaround at existing



R1 Station	Criteria Not Met	Comments
		landing.
69+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
72+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
74+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
77+30	Turnaround	Install turnaround at existing landing.
79+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
83+50	Turnout Required	Install new turnout.
85+20	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
88+00	Turnaround	Install turnaround at existing landing.
89+50	Turnout Required	Install new turnout.
91+70	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
93+80	Turnout Required	Install new turnout.
97+00 to 99+00	Roadway Surface	Ruts and surface erosion up to ± 4 inches deep. Grade and resurface.
101+00	Road width less than 12 feet	Road narrows to ± 9 feet wide for ± 40 . Widen road to 12 foot minimum width.
102+40	Turnaround	Install turnaround at existing landing.
108+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
109+75 to 111+50	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
110+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.



R1 Station	Criteria Not Met	Comments
113+50	Turnaround	Install turnaround at existing landing.
116+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
118+50	Turnout Required	Install new turnout.
121+50	Turnaround	Install turnaround at road junction.
123+50	Turnout Required	Install new turnout.
128+50	Turnaround	Install turnaround at road junction.
129+50 to 131+50	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
132+70	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
133+00 to 134+75	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
136+00	Turnaround	Install turnaround at existing landing.
136+00	Roadway Radius	Realign and/or widen road as required.
136+00	Grade over 16%	Road grade up to $\pm 18\%$ for ± 100 feet around curve. Re-grade or stabilize road.
138+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
141+30	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
142+80	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
143+85 to 145+30	Grade over 16%	Road grade up to $\pm 25\%$ for ± 50 foot section. Re-grade or stabilize road.
144+00 to 145+00	Roadway Surface	Ruts and surface erosion. Grade and resurface.
144+20	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.



R1 Station	Criteria Not Met	Comments
144+65	Road width less than 12 feet	Road narrows to ± 8 feet wide at 12" CMP culvert. Widen road to 12 foot minimum width.
146+00	Turnaround	Install turnaround at existing landing.
148+20	Turnout Required	Install new turnout.
149+40	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
151+65	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
153+00	Turnaround	Install turnaround at existing landing.
155+50 to 156+75	Roadway Surface	Ruts and surface erosion. Grade and resurface.
157+65	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
159+60	Turnaround	Install turnaround within stretch of wide road section.
160+30	Turnout Required	Install new turnout.
161+50 to 163+00	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
161+75 to 171+00	Roadway Surface	Ruts and surface erosion. Grade and resurface.
163+40	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
167+25	Turnout Required	Install new turnout.
168+65	Turnaround	Install turnaround at existing landing.
170+00 to 171+25	Grade over 16%	Road grade up to $\pm 17\%$. Re-grade road.
170+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
172+50	Turnout Required	Install new turnout.
173+65	Turnout Required	Install new turnout.
175+00	Turnout Required	Install new turnout.



R1 Station	Criteria Not Met	Comments
175+80	Road width less than 12 feet	Road narrows to ± 10 feet wide for ± 5 feet due to washout on road fill side. Widen road to 12 foot minimum width. Resolve drainage.
177+50	Turnaround	Install turnaround at road junction.
179+90	Turnout Required	Install new turnout.
182+90	Turnout Required	Install new turnout at junction with spur road.
184+00	Roadway Radius	Realign and/or widen road as required.
184+00	Grade over 16%	Road grade up to $\pm 18\%$ around curve. Re-grade or stabilize road.
184+50	Turnaround	Install turnaround at existing landing on curve.
187+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
189+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
191+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
193+00 to 197+75	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
195+00	Roadway Radius	Realign and/or widen road as required.
195+00	Turnout Required	Install new turnout.
195+50	Turnout Required	Install new turnout.
196+40	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
197+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout at approach to bridge. Grade and resurface as required.



R1 Station	Criteria Not Met	Comments
197+85 to 198+45	Signage for Bridge	1) Provide signage showing bridge weight capacity for the 12 foot wide x 60 foot long steel bridge. 2) Provide single lane access signage. 3) Verify bridge load capacity. 4) Remove accumulated sediment from bridge surface.
198+50	Turnaround	Install turnaround at existing landing.
199+50 to 200+50	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
200+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
201+00 to 204+00	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
202+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
205+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
207+00 to 209+00	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
207+00 to 209+00	Roadway Surface	Ruts and surface erosion. Grade and resurface.
209+00	Turnout Required	Install new turnout.
212+00	Turnout Required	Install new turnout at junction with spur road.
213+25	Turnaround	Install turnaround at road junction.
217+75	Turnaround	Install end of road turnaround.



Road 2 (R2):



Basis of stationing for Road 2 is the white paddle marker on the easterly side of the road at beginning of road, located at Station 0+00.

R2 Station	Criteria Not Met	Comments
2+15 to 2+75	Road width less than 12 feet	Road narrows to ± 10 feet wide for ± 60 feet. Widen road to 12 foot minimum width.
4+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
6+50	Turnaround	Install turnaround at existing landing.
7+50	Clearance at gate	± 12 foot clearance through gate. Replace gate.
8+00	Turnout Required	Install new turnout for traffic at gate.
8+75	Turnout Required	Install turnout at road junction.
10+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.



R2 Station	Criteria Not Met	Comments
11+00 to 11+60	Roadway Surface	Ruts and surface erosion up to ± 8 inches deep. Grade and resurface.
11+75 to 13+50	Road width less than 12 feet	Road narrows to ± 9 -10 feet wide. Widen road to 12 foot minimum width.
14+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
15+90 to 16+10	Road width less than 12 feet	Road narrows to ± 10 feet wide at culvert. Widen road to 12 foot minimum width.
17+00	Turnaround	Install turnaround at existing landing.
20+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
25+00	Turnout Required	Install new turnout.
25+90 to 27+75	Roadway Surface	Cleanout inboard ditch to improve drainage and reduce silt and standing water on road surface. Grade and resurface road.
28+00	Turnaround	Install turnaround at proposed facility location.
29+00	Turnout Required	Install new turnout.
30+00 to 30+30	Road width less than 12 feet	Road narrows to ± 10 feet wide at culvert. Widen road to 12 foot minimum width.
31+00	Turnaround	Install turnaround at proposed facility location.
31+25 to 32+50	Road width less than 12 feet	Road narrows to ± 10 feet wide. Widen road to 12 foot minimum width.
32+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
34+75	Turnaround	Install end of road turnaround at proposed facilities.



Road 3 (R3):

Basis of stationing for Road 3 is the intersection of Road 3 with Road 1, located at Station 0+00.

R3 Station	Criteria Not Met	Comments
0+00 to 11+00	Roadway Width and Surface	Widen and resurface road to provide 12 foot width.
2+80	Roadway Surface	Standing water on road surface. Resolve drainage.
3+60	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
5+70	Roadway Surface	Standing water on road surface. Resolve drainage.
6+60	Roadway Surface	Standing water on road surface. Resolve drainage.
7+50	Turnout Required	Install new turnout.
7+80	Roadway Surface	Standing water on road surface. Resolve drainage.
10+00	Turnout Required	Install new turnout.
11+00	Turnaround	Install end of road turnaround at proposed facilities.



Road 4 (R4):



Basis of stationing for Road 4 is a large flattop boulder located in-line with Station 0+00, approximately 60 feet to the east of the road.

Note: Station 53+00 is located at the intersection with Road 1.

R4 Station	Criteria Not Met	Comments
0+00	Turnaround	Install end of road turnaround at proposed facilities.
0+00 to 53+00	Roadway Surface	Resurface road full length and width.
0+00 to 20+50	Road width less than 12 feet	Widen road to 12 foot minimum width.
1+50 to 2+00	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
4+00	Turnout Required	Install new turnout.
4+00 to 10+00	Roadway Surface	Rough roadway w/ ruts and deep water bars. Grade and resurface road full 12' width.
4+25 to 10+00	Grade over 16%	Road grade up to $\pm 22\%$. Re-grade or stabilize road.



R4 Station	Criteria Not Met	Comments
6+60	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
10+15	Turnout Required	Install new turnout.
12+25	Turnout Required	Install new turnout.
12+25 to 24+00	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
14+60	Turnaround	Install turnaround at existing landing.
16+50	Turnout Required	Install new turnout.
19+00	Turnout Required	Install new turnout.
19+00 to 19+30	Roadway Surface	Ruts and surface erosion. Grade and resurface.
20+75	Turnout Required	Install new turnout.
22+40	Turnout Required	Install new turnout.
24+15	Turnaround	Install turnaround at existing landing.
24+75 to 25+50	Grade over 16%	Road grade up to $\pm 17\%$. Re-grade road.
26+00 to 27+00	Grade over 16%	Road grade up to $\pm 19\%$. Re-grade or stabilize road.
26+50	Turnout Required	Install new turnout.
28+00 to 37+00	Road width less than 12 feet	Widen road to 12 foot minimum width.
28+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
29+50 to 31+00	Grade over 16%	Road grade up to $\pm 19\%$. Re-grade or stabilize road.
32+00	Turnaround	Install new turnaround.
35+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
35+75 to 39+50	Grade over 16%	Road grade up to $\pm 20\%$. Re-grade or stabilize road.
37+75	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
40+00	Turnout Required	Install new turnout.
41+75	Turnaround	Install turnaround at road



R4 Station	Criteria Not Met	Comments
		junction.
42+00	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
43+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
45+50	Turnout Geometry and/or Surface	Verify dimensions of existing turnout. Grade and resurface as required.
46+60 to 49+75	Grade over 16%	Road grade up to $\pm 18\%$. Re-grade road.
50+00	Turnout Required	Install new turnout.
53+00	Turnaround	Install turnaround at intersection with Road 1.

Actions recommended to be taken where criteria are not met are as follows:

- I. Where grade criteria are not met, survey and design of improvements are required. In locations where re-grading will not achieve grades of 16% or less, improvements may include slight realignment of the road and/or stabilizing the road depending on specific conditions.
- II. Where turnout or turnaround criteria are not met, a new turnout or turnaround is to be constructed. If there is an existing turnout or turnaround that does not meet the criteria for a turnout or turnaround, the existing turnout or turnaround needs to be modified to meet the criteria. In either case, survey and design are required. Creating or modifying a turnout or turnaround is likely to require grading and surfacing, as well as removal of vegetation in some locations.
- III. Where the roadway width does not meet criteria, survey and design of roadway width improvements will be required. In some cases, where the improvements would involve cutting into steep banks for example, engineering investigations may be needed to establish criteria for cut bank or fill slopes.
- IV. At gate entrances with insufficient clearance, survey and design improvements to provide sufficient clearance.
- V. Where curves are less than 200 foot radius, survey and design for realignment to increase the road radius or road width may be required.

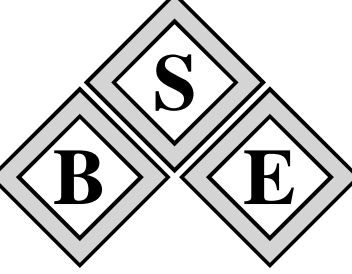
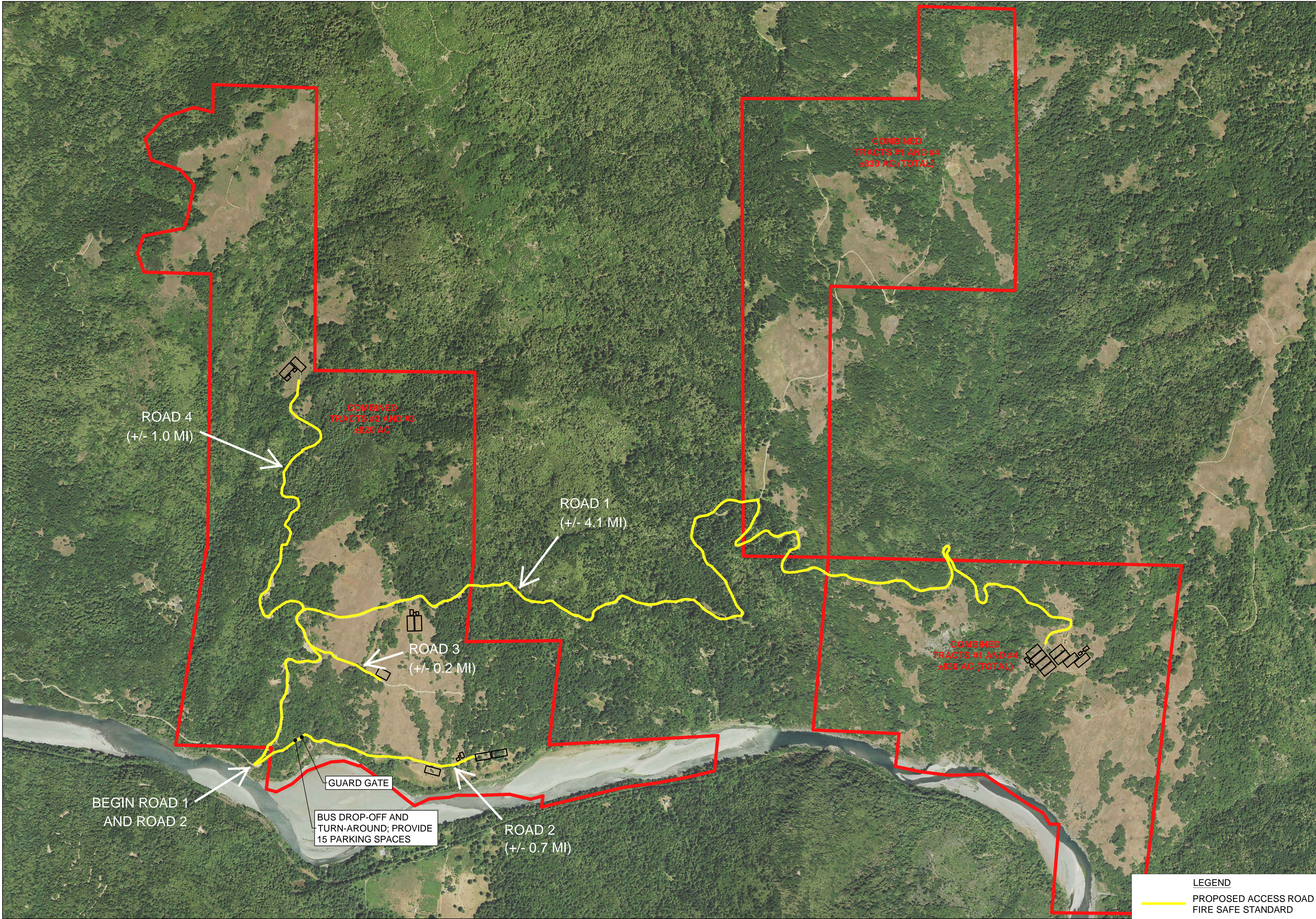


- VI. Other improvements that may be required include general regrading/resurfacing of rutted road sections and drainage improvements.



1/14/2019

Gregory M. Hall, P.E.

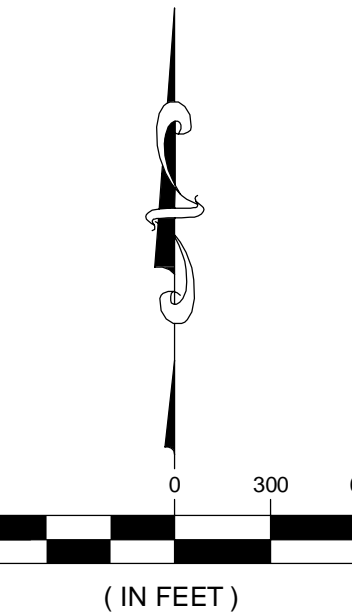


B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING -
LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 726-3074 FAX: (321) 723-1159
CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION #06
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004005

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951



△	
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△	
△	
△	
△	
△	
△	

DATE: 11/19/18
DESIGN/DRAWN: SMG/AH

PROJECT TITLE

ROLLING
MEADOW RANCH
HUMBOLDT
COUNTY, CA

SHEET TITLE

ACCESS ROAD
EXHIBIT

PROJECT NO.

11367

DRAWING NO.

11367_200_005

SHEET

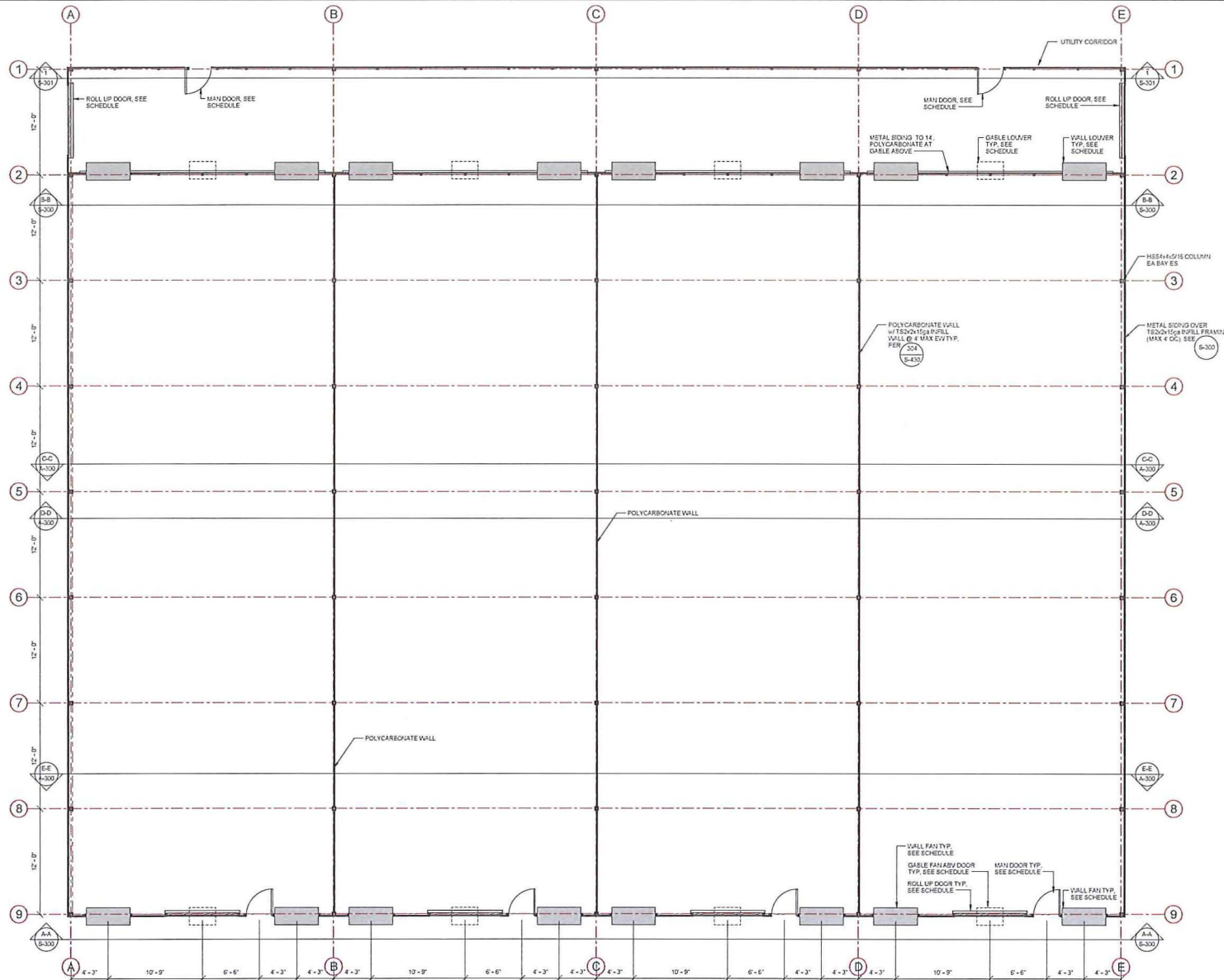
1 of 1

Appendix D

Greenhouse Design Schematic and Components

1. GrowTech Greenhouse Sample Schematic
2. QuietAire Fan Detail: decibel results; CRS Supply Group
3. QuietAire Fan Performance; CRS Supply Group

PRINT DATE: 01/08/2017 2:03:34 PM



COMPONENT SCHEDULE

ITEM	SIZE	OPENING
GABLE FAN	30"	35-5/8" H x 34-3/4" W
GABLE LOUVER	34"	34-3/4" H x 34-3/4" W
WALL FAN	43"	56-1/4" H x 52-3/4" W
WALL LOUVER	57"	57-3/4" H x 57-3/4" W
MAN DOOR	30"	84" H x 30" W
ROLL-UP DOOR	8'	10' H x 8' W



REVISIONS

These Drawings have been prepared by Lynchpin Structural Engineering, Inc. They are not suitable for use on other projects, in other locations, or by any other individuals without the written approval and participation of Lynchpin Structural Engineering, Inc. Reproduction is prohibited.

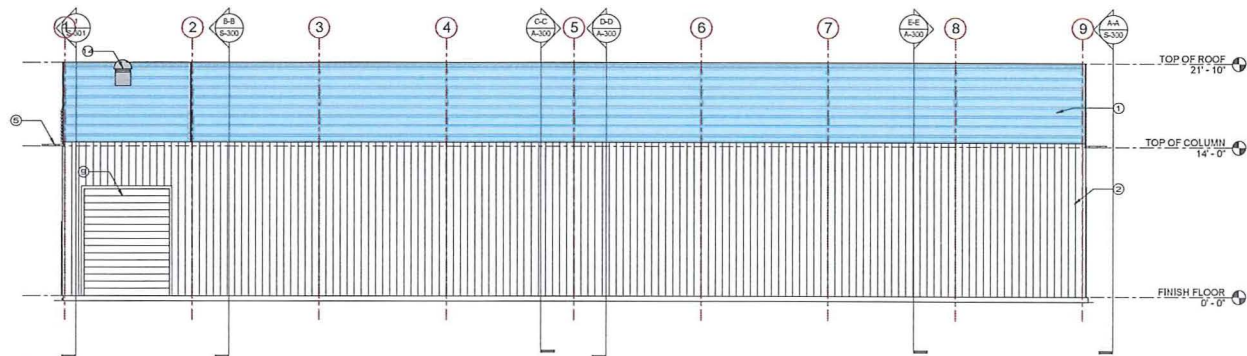
Gro-Tech
SYSTEMS, INC.
120x96 ALPINE GREENHOUSE

DESIGNED BY: BB
DRAFTED BY: BB
CLIENT INFORMATION: TBD
TBD

PROJECT#: 1755
ISSUE DATE: 06/03/17
SCALE: 3/16" = 1'-0"

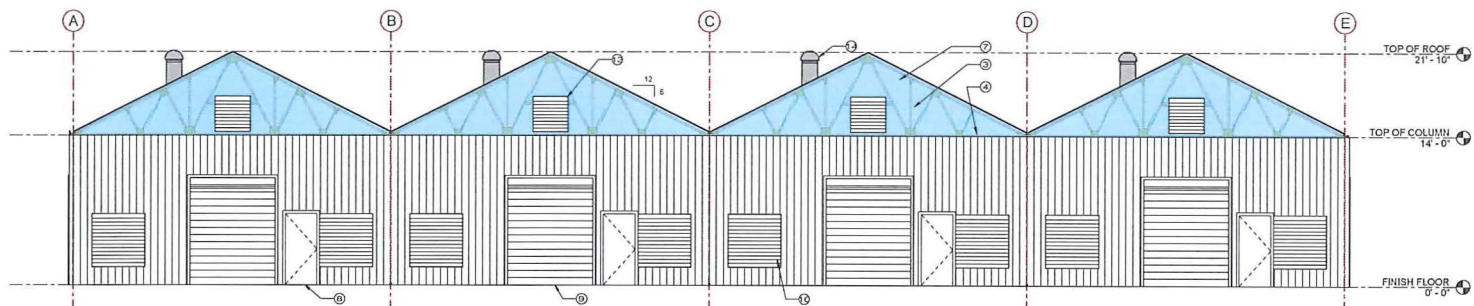
FLOOR PLAN

A-100



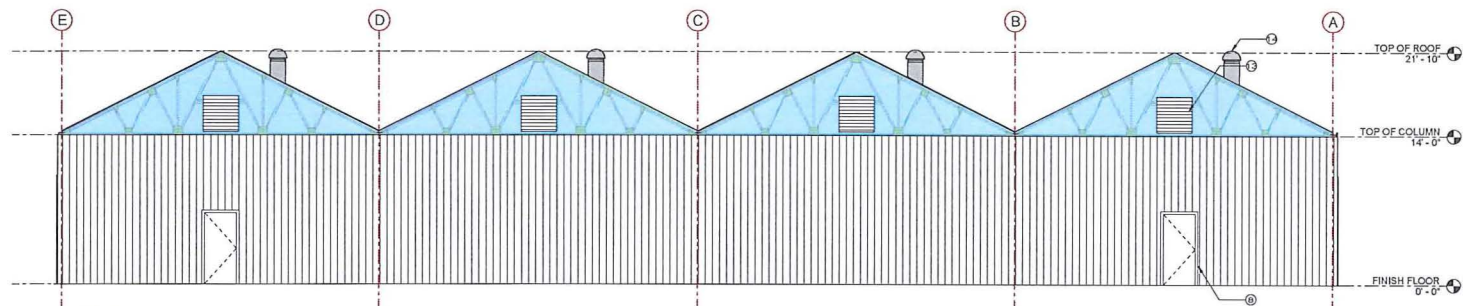
SIDE ELEVATION

3/16" = 1'-0"



FRONT ELEVATION

3/16" = 1'-0"



REAR ELEVATION

3/16" = 1'-0"

ELEVATION LEGEND

- 1 TWIN WALL POLY CARBONATE ROOF - CLEAR
- 2 CORRUGATED METAL SIDING - ASH GREY COLOR
- 3 3/4" Z-BAR FLASHING
- 4 D/G GEM FLASHING
- 5 GUTTER
- 6 GABLE LOUISER
- 7 TWIN WALL POLY CARBONATE SIDING - CLEAR
- 8 MAIN DOOR
- 9 ROLL-UP DOOR
- 10 WALL FAN
- 11 GUTTER CONNECTION
- 12 WALL LOUVER
- 13 GABLE FAN
- 14 PRESSURE RELIEF DAMPER



REVISIONS

These Drawings have been prepared by Linchip Structural Engineering, Inc. They are not to be used for any other projects or for any other purpose without the written approval and participation of Linchip Structural Engineering, Inc. Reproduction prohibited.



DESIGNED BY 88

DRAFTED BY 88

CLIENT INFORMATION

TBD
TBD

PROJECT# 1755

ISSUE DATE 06/01/17

SCALE As indicated

ELEVATIONS

A-200



Hello Andrew Machata,

The fans at the distances apart in your design will not interact (so no cumulative noise), and that noise from your greenhouse your design would be a point source not a linear source .

Thank you,

A handwritten signature in black ink, appearing to read "Clay Crider".

Clay Crider
CRS Supply Group
President



Decibel levels for the Quietaire 56" and 30" exhaust fans are listed below. The decibel readings may vary slightly based on wind, humidity, light traps, and static pressure.

56" Fan

53 decibels at 10 – 11 feet

51 decibels at 12 – 14 feet

49 decibels at 15 – 18 feet

47 decibels at 20 feet

30" Fan

35 decibels at 10 – 11 feet

33 decibels at 12 – 14 feet

31 decibels at 15 – 18 feet

29 decibels at 20 feet

Appendix E

Hydro Conductivity Letter; 2018, Fisch Drilling
Well Completion Reports; 2019, Fitch Drilling

FISCH DRILLING

3150 Johnson Rd.

Hydesville, CA 95547

Invoice

DATE	INVOICE NO.
2/15/2018	W1956

BILL TO
Rolling Meadow Ranch, Inc. 2060 Airport West Dr. Vero Beach, FL 32960

P.O. NO.	TERMS	DUE DATE
Blocksburg	Due on receipt	2/15/2018

QTY	DESCRIPTION	RATE	AMOUNT
	Hydro Conductivity Letter	95.00	95.00
Questions regarding this invoice. Call Chris (707)768-9800		Total	\$95.00



3150 JOHNSON RD.
HYDESVILLE, CA.
(707) 768-9800
dave@fischdrilling.com

February 15, 2018

Andy Machata
3060 Airport West Drive
Vero Beach, FL. 32960


**Rolling Meadow Ranch
McCann Rd.
Blocksburg, CA. 95514**

Result of site review of Rolling Meadow Ranch. APN 217-025-001, 217-201-001, 217-181-028, 211-284-009. The well sites in question will be located on parcel 217-025-001, 217-201-001, 217-181-028, 211-284-009 these wells are schedule to be drilled in spring of 2018.

These wells will be completed in the Franciscan Sandstone; the wells will most likely be drilled into a perched bedrock with little to no hydraulic connection to any surface water or any part of a larger shallow homogeneous aquifer.

Considering the depth of the wells, it appears to fall in line with the guide lines of a non-jurisdictional well of similar depth in the surrounding area.
Any questions please call (707)768-9800.

Thank You,



David Fisch
Fisch Drilling

State of California
Well Completion Report
Form DWR 188 Submitted 6/10/2019
WCR2019-007960

Owner's Well Number _____ Date Work Began 05/09/2019 Date Work Ended 06/03/2019
Local Permit Agency Humboldt County Department of Health & Human Services - Land Use Program
Secondary Permit Agency _____ Permit Number 16/17-1005 Permit Date 04/19/2017

Well Owner (must remain confidential pursuant to Water Code 13752)	Planned Use and Activity
Name <u>ROLLING MEADOW RANCH, INC., Andy Machata</u>	Activity <u>New Well</u>
Mailing Address <u>3060 Airport West Drive</u>	Planned Use <u>Water Supply Irrigation - Agriculture</u>
City <u>Vero Beach</u> State <u>FL</u> Zip <u>32960</u>	

Well Location			
Address <u>2487 Mc Cann RD</u>		APN <u>217-181-028</u>	
City <u>Blocksburg</u>	Zip <u>95514</u>	County <u>Humboldt</u>	Township <u>02 S</u>
Latitude <u>40</u> <u>19</u> <u>28.9596</u> <u>N</u>	Longitude <u>-123</u> <u>47</u> <u>52.3788</u> <u>W</u>	Range <u>03 E</u>	Section <u>02</u>
Deg. Min. Sec.	Deg. Min. Sec.	Baseline Meridian <u>Humboldt</u>	
Dec. Lat. <u>40.324711</u>	Dec. Long. <u>-123.797883</u>	Ground Surface Elevation _____	
Vertical Datum _____	Horizontal Datum <u>WGS84</u>	Elevation Accuracy _____	
Location Accuracy _____	Location Determination Method _____	Elevation Determination Method _____	

Borehole Information	Water Level and Yield of Completed Well
Orientation <u>Vertical</u> Specify _____	Depth to first water <u>152</u> (Feet below surface)
Drilling Method <u>Direct Rotary</u> Drilling Fluid <u>Air</u>	Depth to Static _____
Total Depth of Boring <u>270</u> Feet	Water Level <u>148</u> (Feet) Date Measured <u>06/03/2019</u>
Total Depth of Completed Well <u>270</u> Feet	Estimated Yield* <u>13</u> (GPM) Test Type <u>Air Lift</u>
	Test Length <u>4</u> (Hours) Total Drawdown <u>118</u> (feet)
	*May not be representative of a well's long term yield.

Geologic Log - Free Form		
Depth from Surface Feet to Feet		Description
0	5	over burden
5	20	loose sandstone
20	114	shale
114	246	sandstone shale mix
246	270	soft shale

Casings	
---------	--

Annular Material					
Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	20	Bentonite	Other Bentonite		Sanitary Seal
20	270	Filter Pack	Other Gravel Pack	3/8 Inch	Pea Gravel

Other Observations:

Borehole Specifications		
Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	270	10

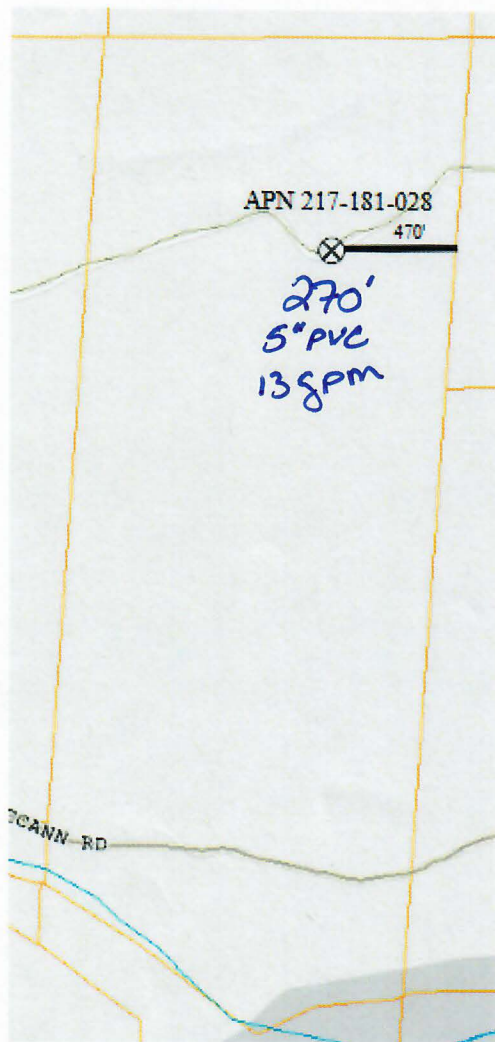
Certification Statement			
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief			
Name	FISCH DRILLING		
Person, Firm or Corporation			
3150 JOHNSON ROAD	HYDESVILLE	CA	95547
Address	City	State	Zip
Signed  <i>electronic signature received</i>	06/10/2019	683865	
C-57 Licensed Water Well Contractor	Date Signed	C-57 License Number	

Attachments
Scan.pdf - Location Map

DWR Use Only									
CSG #	State Well Number			Site Code			Local Well Number		
				N					W
Latitude Deg/Min/Sec					Longitude Deg/Min/Sec				

TRS:

APN:



Rolling Meadows LLC
Andy Machata 321-684-3074
Mc Cann Road
Blocksburg, CA 95514

lacy@fischdrilling.com

From: Fisch Drilling <chris@fischdrilling.com>
Sent: Monday, June 10, 2019 10:53 AM
To: lacy@fischdrilling.com
Subject: FW: OSWCR: Thank you for submitting Well Completion Report WCR2019-007960

From: OSWCR-NoReply@water.ca.gov <OSWCR-NoReply@water.ca.gov>
Sent: Monday, June 10, 2019 10:47 AM
To: chris@fischdrilling.com
Subject: OSWCR: Thank you for submitting Well Completion Report WCR2019-007960

*******Please do not reply to this e-mail message*******

Thank you for submitting your Well Completion Report - A New Production or Monitoring Well, **WCR2019-007960**, using the Online System for Well Completion Reports (OSWCR). The Department of Water Resources will review it for completeness. You will be notified if additional information is required. If you have any questions, please call your local DWR Region Office WCR contact.

DWR Northern Region Office
April Scholzen
(530)529-7368
April.Scholzen@water.ca.gov

To view this record, log in to OSWCR, or use the following link:
https://civicnet.resources.ca.gov/DWR_WELLS/urlrouting.ashx?type=1000&Module=WellCompletion&capID1=19CAP&capID2=00000&capID3=006JX&agencyCode=DWR_WELLS

Licensed Contractor: FISCH DRILLING License Number: 683865
Well Owner: Andy Machata Rolling Meadow Ranch, Inc.
Well Owner Address: 3060 Airport West Drive Vero Beach FL 32960

Well Address: 2487 Mc Cann RD, Blocksburg, CA 95514 County: Humboldt Parcel: 217-181-028
Latitude/Longitude: 40.324711°N, -123.797883°W
Submitted: 06/10/2019
Record Status: Submitted

State of California
Well Completion Report
 Form DWR 188 Submitted 6/14/2019
 WCR2019-008314

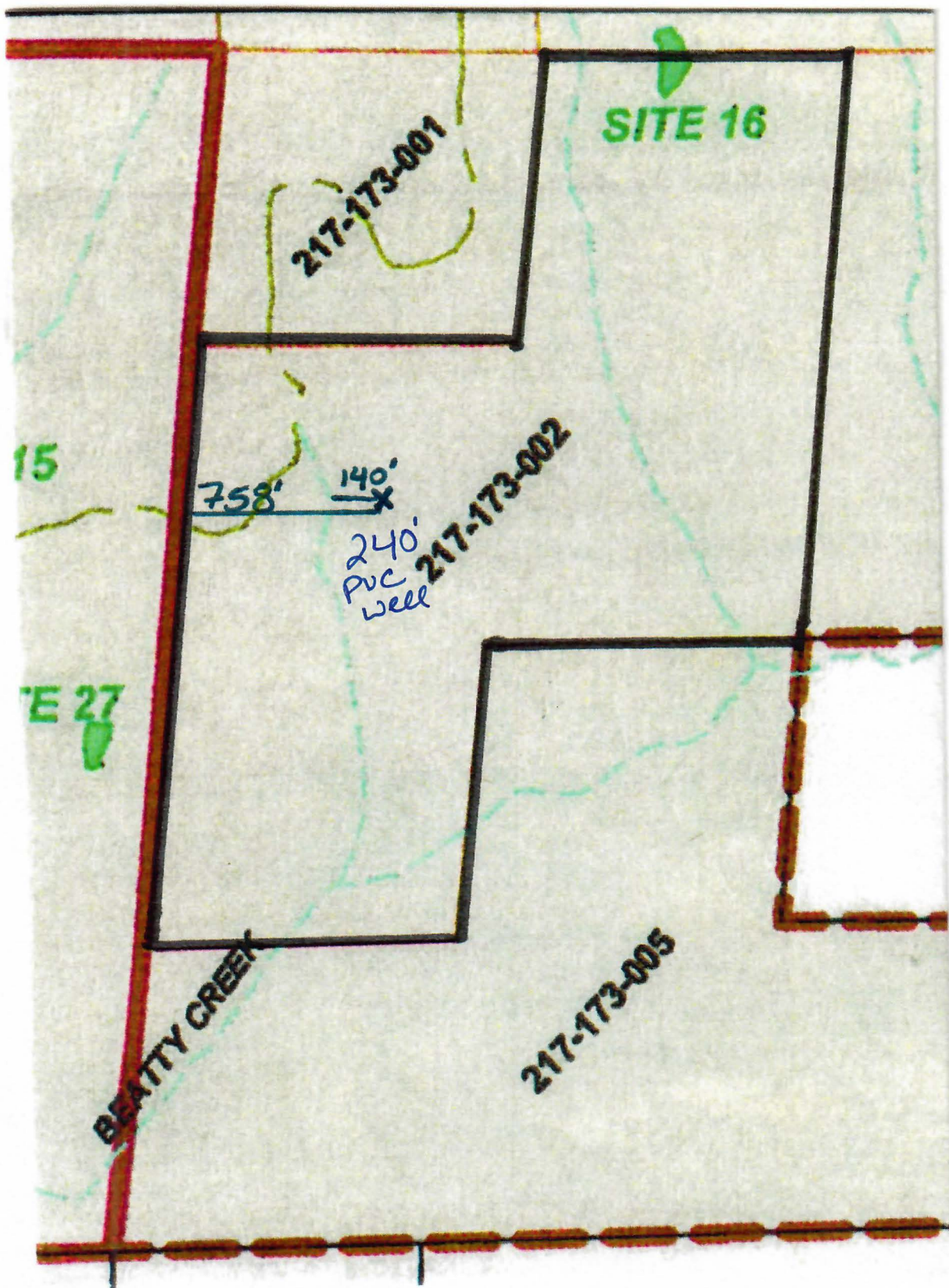
Owner's Well Number _____ Date Work Began 06/05/2019 Date Work Ended 06/14/2019
 Local Permit Agency Humboldt County Department of Health & Human Services - Land Use Program
 Secondary Permit Agency _____ Permit Number 16/17/1004 Permit Date 05/30/2017

Well Owner (must remain confidential pursuant to Water Code 13752)		Planned Use and Activity
Name <u>ROLLING MEADOW RANCH, INC., Andy Machata</u>	Activity <u>New Well</u>	
Mailing Address <u>3060 Airport West Drive</u>	Planned Use <u>Water Supply Irrigation - Agriculture</u>	
City <u>Vero Beach</u> State <u>FL</u> Zip <u>32960</u>		

Well Location		
Address <u>0 Mc Cann RD</u>	APN <u>217-173-002</u>	
City <u>Blocksburg</u> Zip <u>95514</u> County <u>Humboldt</u>	Township <u>01 S</u>	
Latitude <u>40</u> <u>19</u> <u>53.256</u> <u>N</u> Longitude <u>-123</u> <u>45</u> <u>24.7716</u> <u>W</u>	Range <u>04 E</u>	
Deg. Min. Sec. Deg. Min. Sec.	Section <u>32</u>	
Dec. Lat. <u>40.33146</u> Dec. Long. <u>-123.756881</u>	Baseline Meridian <u>Humboldt</u>	
Vertical Datum _____ Horizontal Datum <u>WGS84</u>	Ground Surface Elevation _____	
Location Accuracy _____ Location Determination Method _____	Elevation Accuracy _____	
	Elevation Determination Method _____	

Borehole Information	Water Level and Yield of Completed Well
Orientation <u>Vertical</u> Specify _____	Depth to first water <u>65</u> (Feet below surface)
Drilling Method <u>Direct Rotary</u> Drilling Fluid <u>Air</u>	Depth to Static _____
Total Depth of Boring <u>240</u> Feet	Water Level <u>34</u> (Feet) Date Measured <u>06/14/2019</u>
Total Depth of Completed Well <u>240</u> Feet	Estimated Yield* <u>20</u> (GPM) Test Type <u>Air Lift</u>
	Test Length <u>4</u> (Hours) Total Drawdown <u>175</u> (feet)
	*May not be representative of a well's long term yield.

Geologic Log - Free Form		
Depth from Surface Feet to Feet		Description
0	2	top soil
2	21	silty clay
21	43	silt stone
43	58	soft shale
58	213	sandstone shale mix
213	240	soft shale



Fisch Drilling

From: OSWCR-NoReply@water.ca.gov
Sent: Friday, June 14, 2019 11:02 AM
To: chris@fischdrilling.com
Subject: OSWCR: Thank you for submitting Well Completion Report WCR2019-008314

*******Please do not reply to this e-mail message*******

Thank you for submitting your Well Completion Report - A New Production or Monitoring Well, **WCR2019-008314**, using the Online System for Well Completion Reports (OSWCR). The Department of Water Resources will review it for completeness. You will be notified if additional information is required. If you have any questions, please call your local DWR Region Office WCR contact.

DWR Northern Region Office
April Scholzen
(530)529-7368
April.Scholzen@water.ca.gov

To view this record, log in to OSWCR, or use the following link:
https://civicnet.resources.ca.gov/DWR_WELLS/urlrouting.ashx?type=1000&Module=WellCompletion&capID1=19CAP&capID2=00000&capID3=006TW&agencyCode=DWR_WELLS

Licensed Contractor: FISCH DRILLING License Number: 683865
Well Owner: Andy Machata Rolling Meadow Ranch, Inc.
Well Owner Address: 3060 Airport West Drive Vero Beach FL 32960

Well Address: 0 Mc Cann RD, Blocksburg, CA 95514 County: Humboldt Parcel: 217-173-002
Latitude/Longitude: 40.33146°N, -123.756881°W
Submitted: 06/14/2019
Record Status: Submitted

State of California
Well Completion Report
Form DWR 188 Submitted 6/12/2019
WCR2019-008119

Owner's Well Number _____ Date Work Began 05/31/2019 Date Work Ended 06/05/2019
Local Permit Agency Humboldt County Department of Health & Human Services - Land Use Program
Secondary Permit Agency _____ Permit Number 16/17-1007 Permit Date 04/19/2017

Well Owner (must remain confidential pursuant to Water Code 13752)		Planned Use and Activity
Name <u>ROLLING MEADOW RANCH, INC., Andy Machata</u>	Activity <u>New Well</u>	
Mailing Address <u>3060 Airport West Drive</u>	Planned Use <u>Water Supply Irrigation - Agriculture</u>	
City <u>Vero Beach</u> State <u>FL</u> Zip <u>32960</u>		

Well Location	
Address <u>0 Mc Cann RD</u>	APN <u>217-024-010</u>
City <u>Blocksburg</u> Zip <u>95514</u> County <u>Humboldt</u>	Township <u>01 S</u>
Latitude <u>40</u> <u>19</u> <u>44.1479</u> <u>N</u> Longitude <u>-123</u> <u>46</u> <u>57.7235</u> <u>W</u>	Range <u>03 E</u>
Deg. Min. Sec. Deg. Min. Sec.	Section <u>36</u>
Dec. Lat. <u>40.32893</u> Dec. Long. <u>-123.782701</u>	Baseline Meridian <u>Humboldt</u>
Vertical Datum _____ Horizontal Datum <u>WGS84</u>	Ground Surface Elevation _____
Location Accuracy _____ Location Determination Method _____	Elevation Accuracy _____
	Elevation Determination Method _____

Borehole Information	Water Level and Yield of Completed Well
Orientation <u>Vertical</u> Specify _____	Depth to first water <u>42</u> (Feet below surface)
Drilling Method <u>Other - Under-Ream Down-Hole Hammer</u> Drilling Fluid <u>Air</u>	Depth to Static _____
Total Depth of Boring <u>200</u> Feet	Water Level <u>30</u> (Feet) Date Measured <u>06/05/2019</u>
Total Depth of Completed Well <u>200</u> Feet	Estimated Yield* <u>30</u> (GPM) Test Type <u>Air Lift</u>
	Test Length <u>4</u> (Hours) Total Drawdown <u>158</u> (feet)
	*May not be representative of a well's long term yield.

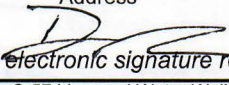
Geologic Log - Free Form		
Depth from Surface	Feet to Feet	Description
0	4	top soil
4	21	silty clay
21	72	brown sandstone
72	105	soft shale
105	200	blue sandstone with clay layers

Casings										
Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	40	Blank	Low Carbon Steel	Grade: ASTM A53	0.188	6			
1	40	190	Screen	Low Carbon Steel	Grade: ASTM A53	0.188	6	Milled Slots	0.05	
1	190	200	Blank	Low Carbon Steel	Grade: ASTM A53	0.188	6			

Annular Material					
Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	20	Bentonite	Other Bentonite		Sanitary Seal
20	200	Filter Pack	Other Gravel Pack	3/8 Inch	Pea Gravel

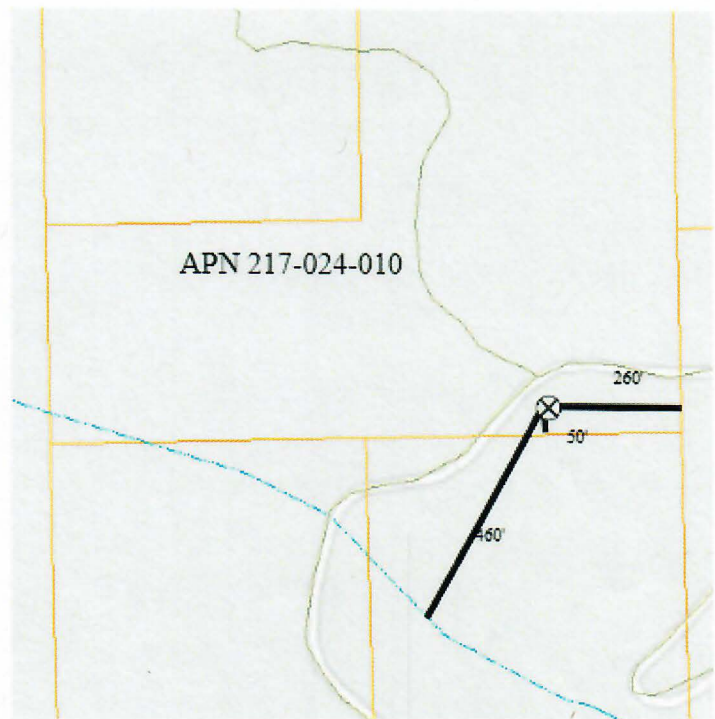
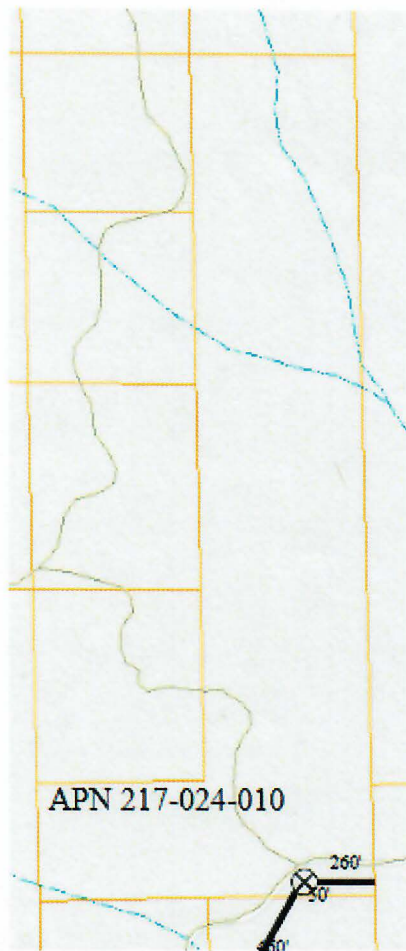
Other Observations:

Borehole Specifications		
Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	200	10

Certification Statement				
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief				
Name <u>FISCH DRILLING</u>				
Person, Firm or Corporation				
3150 JOHNSON ROAD		HYDEVILLE	CA	95547
Address		City	State	Zip
Signed		06/12/2019	683865	
	C-57 Licensed Water Well Contractor	Date Signed	C-57 License Number	

Attachments
Scan.pdf - Location Map

DWR Use Only			
CSG #	State Well Number	Site Code	Local Well Number
Latitude Deg/Min/Sec		Longitude Deg/Min/Sec	
<div style="display: flex; justify-content: space-between;"> TRS: APN: </div>			



Rolling Meadows LLC
Andy Machata 321-684-3074
Mc Cann Road
Blocksburg, CA 95514

lacy@fischdrilling.com

From: Fisch Drilling <chris@fischdrilling.com>
Sent: Wednesday, June 12, 2019 9:47 AM
To: lacy@fischdrilling.com
Subject: FW: OSWCR: Thank you for submitting Well Completion Report WCR2019-008119

From: OSWCR-NoReply@water.ca.gov <OSWCR-NoReply@water.ca.gov>
Sent: Wednesday, June 12, 2019 9:46 AM
To: chris@fischdrilling.com
Subject: OSWCR: Thank you for submitting Well Completion Report WCR2019-008119

*******Please do not reply to this e-mail message*******

Thank you for submitting your Well Completion Report - A New Production or Monitoring Well, **WCR2019-008119**, using the Online System for Well Completion Reports (OSWCR). The Department of Water Resources will review it for completeness. You will be notified if additional information is required. If you have any questions, please call your local DWR Region Office WCR contact.

DWR Northern Region Office
April Scholzen
(530)529-7368
April.Scholzen@water.ca.gov

To view this record, log in to OSWCR, or use the following link:
https://civicnet.resources.ca.gov/DWR_WELLS/urlrouting.ashx?type=1000&Module=WellCompletion&capID1=19CAP&capID2=00000&capID3=006OD&agencyCode=DWR_WELLS

Licensed Contractor: FISCH DRILLING License Number: 683865
Well Owner: Andy Machata Rolling Meadow Ranch, Inc.
Well Owner Address: 3060 Airport West Drive Vero Beach FL 32960

Well Address: 0 Mc Cann RD, Blocksburg, CA 95514 County: Humboldt Parcel: 217-024-010
Latitude/Longitude: 40.32893°N, -123.782701°W
Submitted: 06/12/2019
Record Status: Submitted

Appendix F

1. Total Parcel Square Footage Prime Agricultural Soil
2. NRCS Soil Map
- ~~3.~~ Prime Agricultural Soil Assessment; Dirty Business, 2017 – on file, Humboldt County Planning and Building.

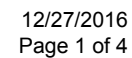
**Total Parcel Square Footage Prime Soil
by Combining all Tracts**

Tract Number	APN	Site Number	Square Footage Prime Soil	Useable Area (20%)	/14 = Maximum Canopy per Greenhouse
1	217-025-001 (Partial)	10A	27,066	5,413.20	386.66
		10B	13,229	2,645.80	188.99
	217-022-004	11	36,157	7,231.40	516.53
		12	56,395	11,279.00	805.64
	217-023-008	21	95,750	19,150.00	1,367.86
4	217-024-002	14	29,357	5,871.40	419.39
	217-201-001	2A	50,427	10,085.40	720.39
		2B	68,922	13,784.40	984.60
	217-201-001	3A	88,439	17,687.80	1,263.41
		3B	109,387	21,877.40	1,562.67
		15	19,937	3,987.40	284.81
		27	15,110	3,022.00	215.86
	217-201-001	28	38,760	7,752.00	553.71
		6	131,029	26,205.80	1,871.84
		7	53,065	10,613.00	758.07
2	211-284-009	32	13,859	2,771.80	197.99
	211-284-006	8	73,707	14,741.40	1,052.96
	211-284-011	9	28,806	5,761.20	411.51
	211-281-006	4A	51,884	10,376.80	741.20
	217-181-028	20	71,342	14,268.40	1,019.17
3	217-182-014	4B	69,477	13,895.40	992.53
		36	10,722	2,144.40	153.17
	211-284-005	5	22,797	4,559.40	325.67
	217-181-027	29	8,035	1,607.00	114.79
		30	49,055	9,811.00	700.79
	217-181-022	33	2,563	512.60	36.61
	211-281-010	34	22,191	4,438.20	317.01
	Total Area Per Parcel		1,257,468	251,493.60	17,963.83

Per certified Dirty Business site data previously supplied.


[illegible]

0 2000 4000 8000 12000 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, South Part, California

Survey Area Data: Version 5, Sep 12, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2010—Aug 24, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Humboldt County, South Part, California (CA601)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
100	Water and Fluvents, 0 to 2 percent slopes	216.8	1.9%
143	Shivelyflat, 0 to 2 percent slopes	7.7	0.1%
151	Parkland-Garberville complex, 2 to 9 percent slopes	8.7	0.1%
179	Eelriver and Cottoneva soils, 0 to 2 percent slopes	13.3	0.1%
402	Tannin-Wohly-Rockyglen complex, 50 to 75 percent slopes	85.1	0.7%
405	Tannin-Wohly-Rockyglen complex, 30 to 50 percent slopes	1,838.8	16.0%
407	Tannin-Wohly complex, 9 to 30 percent slopes	1,102.1	9.6%
410	Rockyglen-Hollowtree-Rock outcrop complex, 50 to 100 percent slopes	151.4	1.3%
451	Burgsblock-Coolyork-Tannin complex, 15 to 30 percent slopes	52.9	0.5%
452	Burgsblock-Coolyork-Tannin complex, 30 to 50 percent slopes	957.7	8.3%
461	Tannin-Burgsblock-Rockyglen complex, 30 to 50 percent slopes	456.2	4.0%
469	Tannin-Burgsblock-Rockyglen complex, 50 to 75 percent slopes	397.3	3.5%
513	Redwoodhouse-Yagercreek-Mailridge complex, 30 to 50 percent slopes	79.3	0.7%
514	Redwoodhouse-Yagercreek-Mailridge complex, 50 to 75 percent slopes	71.7	0.6%
570	Sproulish-Canoecreek-Redwohly complex, 15 to 30 percent slopes	95.1	0.8%
571	Sproulish-Canoecreek-Redwohly complex, 30 to 50 percent slopes	143.2	1.2%
572	Canoecreek-Sproulish-Redwohly complex, 50 to 75 percent slopes	140.5	1.2%

Humboldt County, South Part, California (CA601)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
573	Sproulish-Canoecreek-Redwohly complex, 15 to 30 percent slopes, warm	589.3	5.1%
574	Sproulish-Canoecreek-Redwohly complex, 30 to 50 percent slopes, dry	1,150.6	10.0%
575	Canoecreek-Sproulish-Redwohly complex, 50 to 75 percent slopes, dry	998.4	8.7%
643	Windynip-Rainbear complex, 15 to 50 percent slopes	213.6	1.9%
646	Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes	45.6	0.4%
649	Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes	0.5	0.0%
655	Yorknorth-Witherell complex, 15 to 30 percent slopes	255.2	2.2%
657	Yorknorth-Witherell complex, 2 to 15 percent slopes	60.0	0.5%
662	Yorknorth-Witherell complex, 30 to 50 percent slopes	340.6	3.0%
663	Yorknorth-Windynip complex, 15 to 50 percent slopes	155.2	1.4%
667	Dryfield-Yorknorth-Witherell complex, 5 to 30 percent slopes	124.5	1.1%
668	Dryfield-Yorknorth-Witherell complex, 30 to 50 percent slopes	327.4	2.8%
673	Coolyork-Yorknorth complex, 30 to 50 percent slopes	36.2	0.3%
4412	Hoagland-Chalkmountain-Pasturerock complex 15 to 30 percent slopes	444.2	3.9%
DA	Area not surveyed, access denied	929.5	8.1%
Totals for Area of Interest		11,488.5	100.0%

Appendix G

NSO Surveys; Cameron Holmgren

Northern Spotted Owl Summary for Rolling Meadow Ranch THP

There are 6 NSO Activity Centers HUM966, HUM891, HUM342, HUM346, HUM523, HUM524 are located within 0.7 air miles of the plan area. All NSO surveys followed USFWS Scenario 4, Attachment A". All surveys were called with a digital caller.

2018 is the first year of NSO protocol surveys. Six complete visits were done in 2018. There were no NSO or Barred Owl detections in 2018.

The timber type is unevenaged redwood, Douglas-fir, Oregon white oak, California black oak, tanoak, madrone, maple and Pepperwood. Canopy cover ranges from 0 to 100 percent and is typed as Nesting/Roosting, Foraging habitat and Non habitat.

Attachment A Spotted Owls

Northern Spotted Owl Mitigation Measures:

- This THP falls within the cost range of the northern spotted owl.
- The plan will comply with 14CCR 919.9(e) using USFWS Scenario 4. Attachment A dated 3-15-11.
- No timber operations shall occur until all surveys (which follow the most current USFWS approved protocols) for the current, or immediately preceding, survey period are complete; the results have been provided to CALFIRE; and the results of CALFIRE's take avoidance determination have been incorporated into the plan
- Habitat retention levels and operational protection measures for any known, or future known, activity centers (ACs) within 0.7 mile radius of the plan are as follows:

For all known Activity Centers, timber operations should adhere to the following recommendations:

- a. Within the 100-acre Core Area polygon of an NSO Activity Center (AC):
 1. Outside the breeding season, limited timber operations (i.e. road use and maintenance, map point work, tall-hold placements, use of existing skid roads, and loading) may be conducted, provided no trees > 11 inches DBH are cut or removed by the operations, and no logs are yarded through the Core Area.
 2. During the NSO breeding season, timber operations (including use of roads before July 9th), are not allowed within the 100-acre Core Area polygon, except as allowed in subsections d & e, below.
- b. Timber operations outside the 100-acre Core Area polygon, but within 0.25 mile of an NSO AC:
 1. Outside the breeding season, timber operations may be conducted.
 2. During the breeding season, no timber operations should proceed unless protocol surveys do not detect nesting NSO's.
- c. For all NSO Activity Centers, prior to May 15th (until the required May 15 or later survey is completed):
 1. Timber operations (except helicopter yarding or staging) may be conducted only on those THP areas >0.25 mile from the Activity Center.
 2. Helicopter yarding and staging may occur only on those THP areas >0.5 mile from the NSO AC.
- d. For all NSO Activity Centers where reproductive status has been determined to be non-nesting or failed nesting:
 1. Limited timber operations (road use and maintenance, map point work, use of existing skid roads, tail-hold placements and loading) may be conducted within the 100-acre Core Area polygon of the Activity Center provided no trees >11 inches DBH are cut or remove by the operations, and no logs are yarded through the Core Area.
 2. Full timber operations, including helicopter yarding and staging, may be conducted within 0.25 mile but not within the 100-acre core polygon of the Activity Center, Helicopter fly-overs shall not occur within 1000 feet of the NSO AC.
- e. For NSO Activity Centers, where reproductive status has been determined to be nesting:
 1. For Activity Centers where fledging status has been determined, timber operations may be conducted only on those THP areas that are >0.25 mile from the Activity Center until the end of the breeding season.
 2. Helicopter yarding and staging may occur only on those THP areas >0.5 mile from the NSO AC.

f. For NSO Activity Centers, where fledging status has been determined (either nest failure or fledglings have left the Core Area):

1. Full timber operations, including helicopter yarding and staging, may be conducted within 0.25 mile but not within the 100-acre core polygon of the Activity Center. Helicopter fly-overs shall not occur within 1000 feet of the NSO AC.
2. Limited timber operations (road use and maintenance, map point work, use of existing skid roads, tail-hold placements and loading) may be conducted within the 100-acre Core Area polygon of the Activity Center provided no trees >11 inches DBH are cut or removed by the operations, and no logs are yarded through the Core Area.

g. For any NSO Activity Center, regardless of reproductive status:

1. If NSO move to a new location (>1000 feet from the historical Activity Center) and reproductive behavior is confirmed at the new site, request technical assistance to evaluate the status of the historical AC.

Core Area Habitat Protection

a. Once an Activity Center has been accurately mapped, a 100-acre Core area polygon must be identified that contains the highest quality habitat (typically Nesting/Roosting) located contiguous with Activity Center.

b. When an Activity Center is surrounded by sufficient Nesting/Roosting habitat, the Core Area polygon is typically mapped starting with a 1,000-foot radius circle (72 acres) centered on the Activity center, and is connected on one side to a WLPZ and expanded until the Core Area includes 100 acres. Limited timber operations are allowed within the Core area polygon (see VIII, Timber Operations).

c. When an Activity Center is closer than 500 feet to the outside edge of the Nesting/Roosting polygon, the acres of non Nesting/Roosting habitat within 500 feet of the activity center are included, but should be augmented with additional Nesting/Roosting habitat elsewhere in the Core Area polygon to make a total of 100 acres of the highest quality habitat.

d. When the Activity Center is closer than 1,000 feet, but within 500 feet of the outside edge of the Nesting/Roosting polygon, the protected Core Area should extend to the most distant edge of the Nesting/Roosting habitat but shall not be less than a 500-foot radius.

e. Operations conducted outside the Core Area, but within 1,000 feet of an activity Center should retain the functionality of any NSO habitat present pre-harvest within this area, i.e. operations do not downgrade habitat.

f. Polygons of Nesting/Roosting habitat contiguous with the Activity Center, which are larger than 100 acres provide the most operational flexibility. If the Nesting/Roosting polygon is 200 acres or greater, and operations in the polygon outside the Core Area retained functional Nesting/Roosting habitat (i.e. no more than 33% of the basal area removed retaining a minimum of 100sq.ft. of basal area per acre of trees greater than 11" DBH), then the 100-acre core area can be redrawn in subsequent entries. However, the 500-foot radius should remain unchanged, and the redrawn core area should not include any acres harvested within the previous 5 years.

g. Within the 0.7 mile radius (985 acres) of each Activity Center please use the following:

1. Retain habitat to maximize attributes desirable for NSO.
2. Retain at least 500 acres of suitable (Nesting/Roosting/Foraging) NSO habitat, post-harvest, as follows:
 - a) Retain 200 acres of Nesting/Roosting Habitat within a 0.7 mile radius of the Activity Center consisting of:
 - I. 100 acres of the 200 acres of Nesting/Roosting habitat retained should be contiguous, or contiguous as possible with the Activity Center.
 - II. An additional 100 acres of Nesting/Roosting within the 0.7 mile radius:
 - 1) If the second 100 acres of Nesting/Roosting habitat is also contiguous with the Activity Center, or within the same drainage, operations should retain a minimum of 66% of the pre-harvest basal area per acre of trees at least 11" DBH.
 - 2) If the remaining 100 acres of Nesting/Roosting habitat is not contiguous with the Activity Center, retain at least 100 acres of Nesting/Roosting habitat.
 - b) Retain at least 300 acres of Suitable NSO habitat, post-harvest, of at least Foraging quality.
3. Remove no more than 1/3 of the remaining suitable habitat in excess of 500 acres within 0.7 mile of an Activity Center during the life of the timber operations.

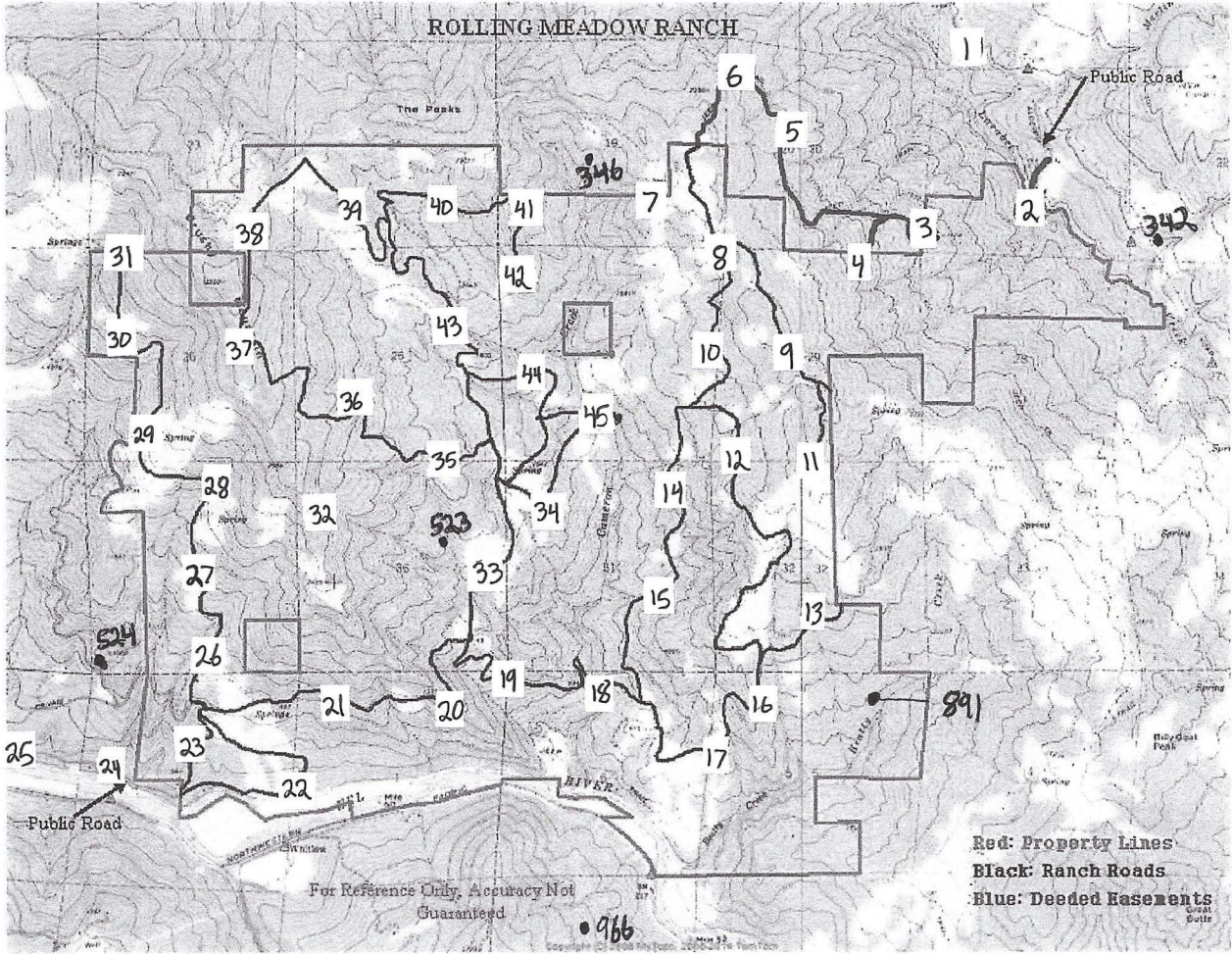
Road Use

- a. To avoid take of NSO from noise disturbance (see U.S. Fish & Wildlife Service 2006) road use within 0.25 mile (1,320 feet) of a NSO Activity Center during the breeding season is prohibited until July 10, unless:
 - 1. Non-nesting, or nesting failure at the Activity Center has been determined by an Activity Center Search (2011 NSO Protocol) conducted on or after May 15, or:
 - 2. The Activity Center (AC) is within, 165 feet of a major highway that typically has continuous traffic year around (HWY 1, 36, 101, 128, 299, etc.) and the appurtenant road is not within 165 feet of the AC.
 - 3. After July 9th until the end of the breeding season road use within the 100-acre core area is restricted to existing road use, maintenance and map point work.

USFWS Definitions

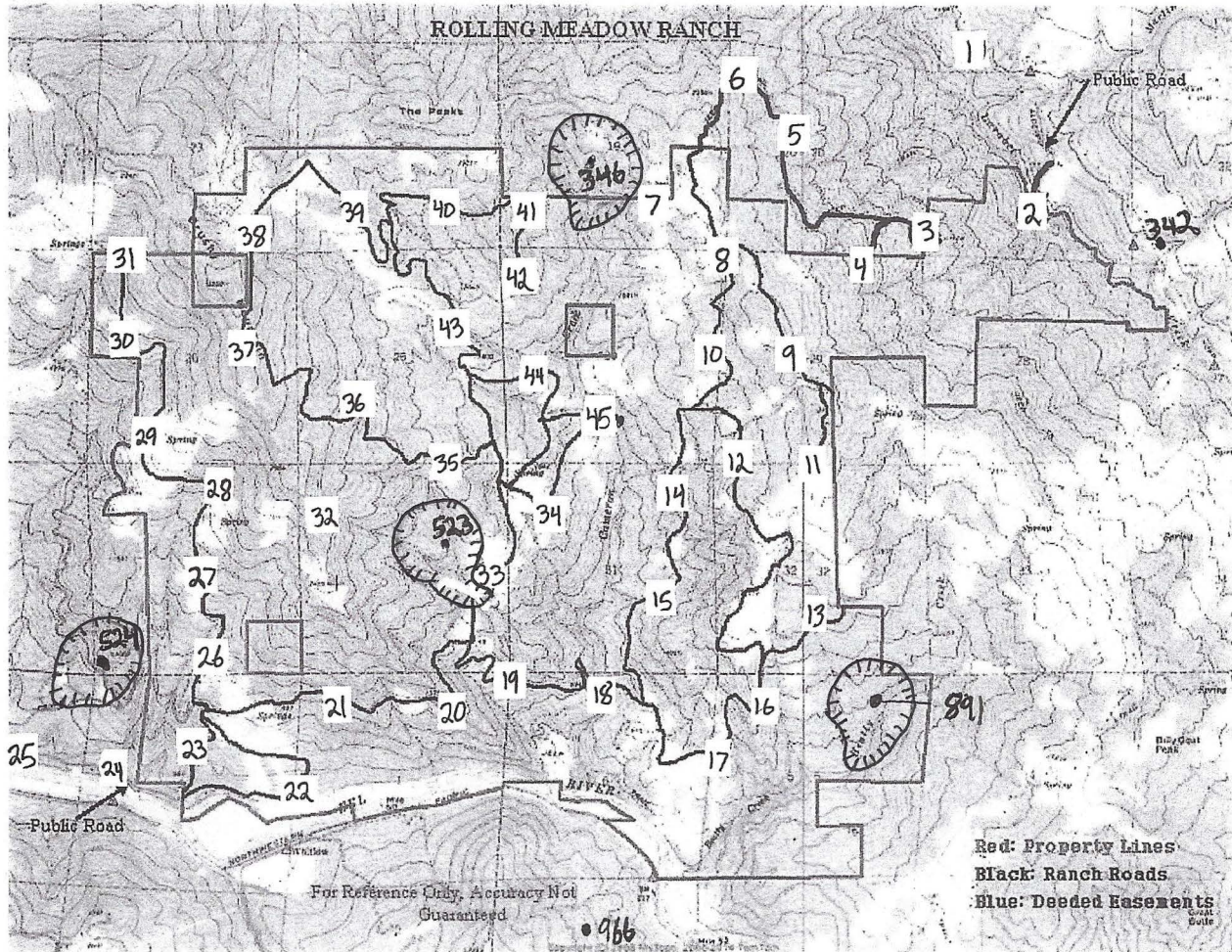
- a. Foraging Habitat: Habitat that contains > 40% canopy cover of trees that are > 11" DBH, and have a basal area >75 square feet per acre of trees >11" DBH. Trees may be hardwoods or conifers.
- b. Nesting/Roosting Habitat: Forested habitat that supports successful nesting and associated roosting behavior by NSO. Habitat with >60% canopy cover of trees that are > 11" DBH, and have a basal area > 100 square feet per acre of trees > 11" DBH. Trees may be conifer or hardwood.

2018 NSO Calling Station Map



NSO Core Area Map - TTTTTTTTT

Each NSO Activity Center - Has a 100 acre NO cut zone.



Northern Spotted Owl Survey Form

Visit # 1

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 3/27/18	Weather, Wind, Temp. CL, 1, 47°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
31	1937	1947	NC						
30	1956	2006	NC						
29	2012	2022	NC						
28	2029	2039	NC						
27	2044	2054	NC						
26	2059	2109	NC						
23	2114	2124	NC						
25	2134	2144	NC						
24	2148	2158	NC						
22	2211	2221	NC						
21	2230	2240	NC						
32	2259	2309	NC						
37	2316	2326	NC						
36	2341	2351	NC						
35	2356	00106	NC						
43	0114	0124	NC						
39	0133	0143	NC						
38	0159	0209	NC						
40	0220	0230	NC						
41	0236	0246	NC						
42	0257	0307	NC						
44	0329	0339	NC						
45	0344	0354	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 1

Project	Rolling Meadows		
Observer	Date	Weather, Wind, Temp.	
Justin Tallman	3/27-18	PC 1-2 40-45	

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
20	1940	1950	N/C						
34	2005	2015	N/C						
33	2022	2032	N/C						
19	2040	2050	N/C						
18	2058	2108	N/C						
15	2116	2126	N/C						
14	2134	2144	N/C						
17	2200	2210	N/C						
16	2216	2226	N/C						
13	2235	2245	N/C						
11	2254	2304	N/C						
9	2311	2321	N/C						
12	2332	2342	N/C						
10	2351	0101	N/C						
8	0109	0119	N/C						
7	0129	0139	N/C						
6	0145	0155	N/C						
5	0204	0214	N/C						
4	0221	0231	N/C						
3	0237	0247	N/C						
2	0256	0306	N/C						
1	0410	0420	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 2

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 4/10/18	Weather, Wind, Temp. CL, 1, 44°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
25	1951	2001	NC						
24	2005	2015	NC						
23	2024	2034	NC						
22	2045	2055	NC						
26	2107	2117	NC						
27	2124	2134	NC						
28	2145	2155	NC						
29	2201	2211	NC						
30	2220	2230	NC						
31	2240	2250	NC						
21	2318	2328	NC						
37	2346	2356	NC						
32	0106	0116	NC						
36	0122	0132	NC						
35	0137	0147	NC						
38	0214	0224	NC						
39	0230	0240	NC						
42	0259	0309	NC						
41	0315	0325	NC						
40	0330	0340	NC						
43	0349	0359	NC						
44	0404	0414	NC						
45	0418	0428	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 2

Project <u>Rolling Meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>4/10/18</u>	Weather, Wind, Temp. <u>OL/FG</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
14	1951	2051	N/C						
15	2057	2107	N/C						
18	2114	2124	N/C						
19	2130	2140	N/C						
20	2146	2156	N/C						
33	2204	2214	N/C						
34	2220	2230	N/C						
17	2247	2257	N/C						
16	2302	2312	N/C						
13	2319	2329	N/C						
11	2336	2346	N/C						
9	2357	0107	N/C						
8	0114	0124	N/C						
10	0130	0140	N/C						
12	0146	0156	N/C						
7	0203	0213	N/C						
6	0220	0230	N/C						
5	0236	0246	N/C						
4	0252	0302	N/C						
3	0309	0319	N/C						
2	0326	0336	N/C						
1	0352	0402	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 3

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 5/7/18	Weather, Wind, Temp. OC, 2, 50°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
45	2019	2029	NC						
44	2034	2044	NC						
43	2049	2059	NC						
39	2106	2116	NC						
38	2122	2132	NC						
40	2143	2153	NC						
41	2158	2208	NC						
42	2215	2225	NC						
35	2244	2254	NC						
36	2300	2310	NC						
32	2315	2325	NC						
37	2332	2342	NC						
21	0105	0115	NC						
22	0127	0137	NC						
31	0219	0229	NC						
30	0234	0244	NC						
29	0250	0300	NC						
28	0307	0317	NC						
27	0323	0333	NC						
26	0338	0348	NC						
23	0354	0404	NC						
24	0416	0426	NC						
25	0430	0440	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 3

Project <u>Rolling meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>5/7-18</u>	Weather, Wind, Temp. <u>OC 1-2 40-45</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
1	2020	2030	N/C						
2	2042	2052	N/C						
3	2100	2110	N/C						
4	2115	2125	N/C						
5	2131	2141	N/C						
6	2146	2156	N/C						
7	2203	2213	N/C						
8	2219	2229	N/C						
9	2236	2246	N/C						
11	2253	2303	N/C						
10	2313	2323	N/C						
12	2330	2340	N/C						
14	2351	0101	N/C						
15	0108	0118	N/C						
17	0127	0137	N/C						
16	0146	0156	N/C						
13	0207	0217	N/C						
18	0229	0239	N/C						
19	0247	0257	N/C						
33	0307	0317	N/C						
34	0325	0335	N/C						
20	0346	0356	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 4

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 6/4/18	Weather, Wind, Temp. CL, 1, 55°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
42	2045	2055	NC						
41	2100	2110	NC						
40	2115	2125	NC						
39	2131	2141	NC						
38	2147	2157	NC						
43	2209	2219	NC						
37	2230	2240	NC						
32	2247	2257	NC						
36	2306	2316	NC						
35	2320	2330	NC						
21	2344	2354	NC						
22	0119	0129	NC						
31	0158	0208	NC						
30	0216	0226	NC						
29	0237	0247	NC						
28	0255	0305	NC						
27	0312	0322	NC						
26	0327	0337	NC						
23	0343	0353	NC						
24	0402	0412	NC						
25	0416	0426	NC						
45	0450	0500	NC						
44	0506	0516	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # **4**

Project Rolling Meadows		
Observer Justin Tallman	Date 6-4-18	Weather, Wind, Temp. CL 1 5052

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
34	2045	2055	N/C						
33	2101	2111	N/C						
20	2117	2127	N/C						
19	2136	2146	N/C						
18	2152	2202	N/C						
17	2210	2220	N/C						
16	2226	2236	N/C						
13	2241	2251	N/C						
12	2302	2312	N/C						
15	2322	2332	N/C						
14	2340	2350	N/C						
10	2359	0109	N/C						
8	0116	0126	N/C						
9	0134	0144	N/C						
11	0152	0202	N/C						
7	0231	0241	N/C						
6	0250	0300	N/C						
5	0306	0316	N/C						
4	0320	0330	N/C						
3	0336	0346	N/C						
2	0355	0405	N/C						
1	0419	0429	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
 FG Fog
 PC Partly Cloudy
 OC Overcast
 DR Drizzle

Wind Codes:

0 Calm
 1 Light Air
 2 Light Breeze
 3 Gentle Breeze
 4 Moderate Breeze
 5 Fresh Breeze
 6 Strong Breeze

Sex Codes:

M Male
 F Female
 U Unknown
 PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 5

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 6/21/18	Weather, Wind, Temp. CL, 2, 54°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
25	2051	2101	NC						
24	2105	2115	NC						
23	2124	2134	NC						
22	2144	2154	NC						
26	2209	2219	NC						
27	2226	2236	NC						
28	2244	2254	NC						
29	2301	2311	NC						
30	2319	2329	NC						
31	2339	2349	NC						
45	0124	0134	NC						
44	0140	0150	NC						
43	0157	0207	NC						
39	0214	0224	NC						
38	0231	0241	NC						
40	0253	0303	NC						
41	0307	0317	NC						
42	0321	0331	NC						
35	0356	0406	NC						
36	0411	0421	NC						
37	0427	0437	NC						
32	0443	0453	NC						
21	0515	0525	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 5

Project	Rolling Meadows		
Observer	Justin Tallman	Date	6/21/18
		Weather, Wind, Temp.	CL 1-2 55°

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
1	2051	2101	N/C						
2	2116	2126	N/C						
3	2132	2142	N/C						
4	2148	2158	N/C						
5	2207	2217	N/C						
6	2224	2234	N/C						
7	2240	2250	N/C						
8	2257	2307	N/C						
9	2316	2326	N/C						
11	2334	2344	N/C						
10	2357	0107	N/C						
12	0117	0127	N/C						
13	0134	0144	N/C						
16	0151	0201	N/C						
17	0209	0219	N/C						
14	0227	0237	N/C						
15	0244	0254	N/C						
18	0300	0310	N/C						
19	0316	0326	N/C						
20	0335	0345	N/C						
33	0352	0402	N/C						
34	0409	0419	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 6

Project <u>Rolling Meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>6/29/18</u>	Weather, Wind, Temp. <u>CL 1-2 55</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
1	2052	2102	N/C						
2	2112	2122	N/C						
3	2130	2140	N/C						
4	2146	2156	N/C						
5	2204	2214	N/C						
6	2220	2230	N/C						
7	2236	2246	N/C						
8	2254	2304	N/C						
9	2312	2322	N/C						
11	2330	2340	N/C						
10	2357	0107	N/C						
12	0114	0124	N/C						
13	0130	0140	N/C						
16	0147	0157	N/C						
17	0204	0214	N/C						
14	0231	0241	N/C						
15	0252	0302	N/C						
18	0312	0322	N/C						
19	0330	0340	N/C						
20	0348	0358	N/C						
33	0409	0419	N/C						
34	0426	0436	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 6

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 6/29/18	Weather, Wind, Temp. CL, 0, 56°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
31	2053	2103	NC						
30	2109	2119	NC						
29	2125	2135	NC						
28	2142	2152	NC						
27	2200	2210	NC						
26	2216	2226	NC						
21	2234	2244	NC						
32	2304	2314	NC						
37	2320	2330	NC						
36	2336	2346	NC						
35	2350	0100	NC						
45	0107	0117	NC						
44	0121	0131	NC						
43	0136	0146	NC						
39	0153	0203	NC						
38	0211	0221	NC						
40	0234	0244	NC						
41	0249	0259	NC						
42	0316	0326	NC						
22	0402	0412	NC						
23	0425	0435	NC						
24	0442	0452	NC						
25	0456	0506	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

2019 Northern Spotted Owl Summary for Rolling Meadow Ranch THP

There are 6 NSO Activity Centers HUM966, HUM891, HUM342, HUM346, HUM523, HUM524 located within 0.7 air miles of the ownership area. All NSO surveys followed USFWS Scenario 4, Attachment A". All surveys were called with a digital caller.

2019 is the second year of NSO protocol surveys. Six complete visits were done in 2019. There was a single male vocal detection on visit 1. A follow up stand search of the detection area was done the next day and no NSO's were found. On visit 5 an additional stand search of the male NSO vocal detection area was done and NSO's were not detected. The Single Male NSO vocal detection was heard early in the breeding season and no additional NSO detections were heard in the area. A large portion of NSO roosting/nesting habitat was being logged across the Eel River to the south of the ownership during the time of the NSO response. In 2019 a single barred owl vocal detection was heard on visit 5.

2018 was the first year of NSO protocol surveys. Six complete visits were done in 2018. There were no NSO or Barred Owl detections in 2018.

The timber type is unevenaged redwood, Douglas-fir, Oregon white oak, California black oak, tanoak, madrone, maple and Pepperwood. Canopy cover ranges from 0 to 100 percent and is typed as Nesting/Roosting, Foraging habitat and Non habitat.

Attachment A Spotted Owls

Northern Spotted Owl Mitigation Measures:

- This THP falls within the cost range of the northern spotted owl.
- The plan will comply with 14CCR 919.9(e) using USFWS Scenario 4. Attachment A dated 3-15-11.
- No timber operations shall occur until all surveys (which follow the most current USFWS approved protocols) for the current, or immediately preceding, survey period are complete; the results have been provided to CALFIRE; and the results of CALFIRE's take avoidance determination have been incorporated into the plan
- Habitat retention levels and operational protection measures for any known, or future known, activity centers (ACs) within 0.7 mile radius of the plan are as follows:

For all known Activity Centers, timber operations should adhere to the following recommendations:

- a. Within the 100-acre Core Area polygon of an NSO Activity Center (AC):
 1. Outside the breeding season, limited timber operations (i.e. road use and maintenance, map point work, tall-hold placements, use of existing skid roads, and loading) may be conducted, provided no trees > 11 inches DBH are cut or removed by the operations, and no logs are yarded through the Core Area.
 2. During the NSO breeding season, timber operations (including use of roads before July 9th), are not allowed within the 100-acre Core Area polygon, except as allowed in subsections d & e, below.
- b. Timber operations outside the 100-acre Core Area polygon, but within 0.25 mile of an NSO AC:
 1. Outside the breeding season, timber operations may be conducted.
 2. During the breeding season, no timber operations should proceed unless protocol surveys do not detect nesting NSO's.
- c. For all NSO Activity Centers, prior to May 15th (until the required May 15 or later survey is completed):
 1. Timber operations (except helicopter yarding or staging) may be conducted only on those THP areas >0.25 mile from the Activity Center.
 2. Helicopter yarding and staging may occur only on those THP areas >0.5 mile from the NSO AC.
- d. For all NSO Activity Centers where reproductive status has been determined to be non-nesting or failed nesting:
 1. Limited timber operations (road use and maintenance, map point work, use of existing skid roads, tail-hold placements and loading) may be conducted within the 100-acre Core Area polygon of the Activity Center provided no trees >11 inches DBH are cut or remove by the operations, and no logs are yarded through the Core Area.

2. Full timber operations, including helicopter yarding and staging, may be conducted within 0.25 mile but not within the 100-acre core polygon of the Activity Center, Helicopter fly-overs shall not occur within 1000 feet of the NSO AC.
- e. For NSO Activity Centers, where reproductive status has been determined to be nesting:
 1. For Activity Centers where fledging status has been determined, timber operations may be conducted only on those THP areas that are >0.25 mile from the Activity Center until the end of the breeding season.
 2. Helicopter yarding and staging may occur only on those THP areas >0.5 mile from the NSO AC.
- f. For NSO Activity Centers, where fledging status has been determined (either nest failure or fledglings have left the Core Area):
 1. Full timber operations, including helicopter yarding and staging, may be conducted within 0.25 mile but not within the 100-acre core polygon of the Activity Center. Helicopter fly-overs shall not occur within 1000 feet of the NSO AC.
 2. Limited timber operations (road use and maintenance, map point work, use of existing skid roads, tail-hold placements and loading) may be conducted within the 100-acre Core Area polygon of the Activity Center provided no trees >11 inches DBH are cut or removed by the operations, and no logs are yarded through the Core Area.
- g. For any NSO Activity Center, regardless of reproductive status:
 1. If NSO move to a new location (>1000 feet from the historical Activity Center) and reproductive behavior is confirmed at the new site, request technical assistance to evaluate the status of the historical AC.

Core Area Habitat Protection

- a. Once an Activity Center has been accurately mapped, a 100-acre Core area polygon must be identified that contains the highest quality habitat (typically Nesting/Roosting) located contiguous with Activity Center.
- b. When an Activity Center is surrounded by sufficient Nesting/Roosting habitat, the Core Area polygon is typically mapped starting with a 1,000-foot radius circle (72 acres) centered on the Activity center, and is connected on one side to a WLPZ and expanded until the Core Area includes 100 acres. Limited timber operations are allowed within the Core area polygon (see VIII, Timber Operations).
- c. When an Activity Center is closer than 500 feet to the outside edge of the Nesting/Roosting polygon, the acres of non Nesting/Roosting habitat within 500 feet of the activity center are included, but should be augmented with additional Nesting/Roosting habitat elsewhere in the Core Area polygon to make a total of 100 acres of the highest quality habitat.
- d. When the Activity Center is closer than 1,000 feet, but within 500 feet of the outside edge of the Nesting/Roosting polygon, the protected Core Area should extend to the most distant edge of the Nesting/Roosting habitat but shall not be less than a 500-foot radius.
- e. Operations conducted outside the Core Area, but within 1,000 feet of an activity Center should retain the functionality of any NSO habitat present pre-harvest within this area, i.e. operations do not downgrade habitat.
- f. Polygons of Nesting/Roosting habitat contiguous with the Activity Center, which are larger than 100 acres provide the most operational flexibility. If the Nesting/Roosting polygon is 200 acres or greater, and operations in the polygon outside the Core Area retained functional Nesting/Roosting habitat (i.e. no more than 33% of the basal area removed retaining a minimum of 100sq.ft. of basal area per acre of trees greater than 11" DBH), then the 100-acre core area can be redrawn in subsequent entries. However, the 500-foot radius should remain unchanged, and the redrawn core area should not include any acres harvested within the previous 5 years.
- g. Within the 0.7 mile radius (985 acres) of each Activity Center please use the following:
 1. Retain habitat to maximize attributes desirable for NSO.
 2. Retain at least 500 acres of suitable (Nesting/Roosting/Foraging) NSO habitat, post-harvest, as follows:
 - a) Retain 200 acres of Nesting/Roosting Habitat within a 0.7 mile radius of the Activity Center consisting of:
 - I. 100 acres of the 200 acres of Nesting/Roosting habitat retained should be contiguous, or contiguous as possible with the Activity Center.
 - II. An additional 100 acres of Nesting/Roosting within the 0.7 mile radius:

- 1) If the second 100 acres of Nesting/Roosting habitat is also contiguous with the Activity Center, or within the same drainage, operations should retain a minimum of 66% of the pre-harvest basal area per acre of trees at least 11" DBH.
- 2) If the remaining 100 acres of Nesting/Roosting habitat is not contiguous with the Activity Center, retain at least 100 acres of Nesting/Roosting habitat.
- b) Retain at least 300 acres of Suitable NSO habitat, post-harvest, of at least Foraging quality.
3. Remove no more than 1/3 of the remaining suitable habitat in excess of 500 acres within 0.7 mile of an Activity Center during the life of the timber operations.

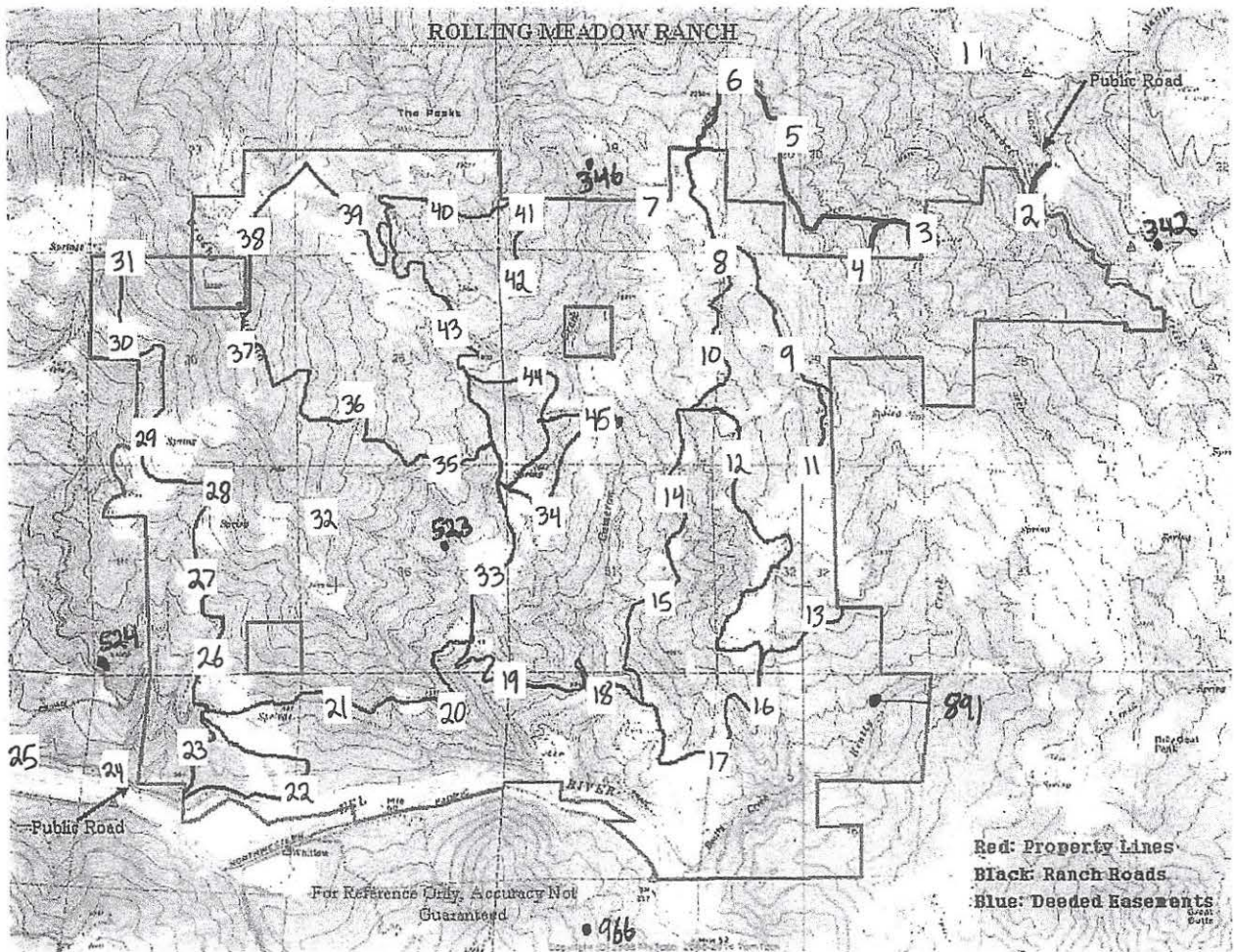
Road Use

- a. To avoid take of NSO from noise disturbance (see U.S. Fish & Wildlife Service 2006) road use within 0.25 mile (1,320 feet) of a NSO Activity Center during the breeding season is prohibited until July 10, unless:
 1. Non-nesting, or nesting failure at the Activity Center has been determined by an Activity Center Search (2011 NSO Protocol) conducted on or after May 15, or:
 2. The Activity Center (AC) is within, 165 feet of a major highway that typically has continuous traffic year around (HWY 1, 36, 101, 128, 299, etc.) and the appurtenant road is not within 165 feet of the AC.
 3. After July 9th until the end of the breeding season road use within the 100-acre core area is restricted to existing road use, maintenance and map point work.

USFWS Definitions

- a. Foraging Habitat: Habitat that contains > 40% canopy cover of trees that are > 11" DBH, and have a basal area > 75 square feet per acre of trees > 11" DBH. Trees may be hardwoods or conifers.
- b. Nesting/Roosting Habitat: Forested habitat that supports successful nesting and associated roosting behavior by NSO. Habitat with > 60% canopy cover of trees that are > 11" DBH, and have a basal area > 100 square feet per acre of trees > 11" DBH. Trees may be conifer or hardwood.

2019 NSD Calling Station Map



Northern Spotted Owl Survey Form

Visit # 1

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 3/31/19	Weather, Wind, Temp. CL, 0, 52°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
31	1944	1954	NL						
30	1959	2009	NL						
29	2013	2023	NL						
28	2028	2038	NL						
27	2043	2053	NL						
26	2057	2107	NL						
23	2112	2122	NL						
25	2133	2143	NL						
24	2147	2157	NL						
22	2207	2217	NL						
21	2226	2236	NL						
35	2249	2259	NL						
36	2304	2314	NL						
37	2318	2328	NL						
38	0101	0111	NL						
39	0116	0126	NL						
40	0136	0146	NL						
41	0153	0203	NL						
42	0213	0222	NL						
43	0243	0253	NL						
44	0259	0309	NL						
45	0314	0324	NL						
32	0341	0351	NL						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Date Logged _____

Date Entered _____

Northern Spotted Owl Survey Form

Visit # 1

Project <u>Rolling Meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>3/31/19</u>	Weather, Wind, Temp. <u>CL 0-1 50°</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
★	2025	2040	CON	2027	NSO	M	280°	700yd	★ is where i was unloading
34	2101	2111	NC						Quad, but caller on while
18	2126	2136	NC						unloading. Got a strong
17	2140	2150	NC						4 note male. Calling back
16	2154	2204	NC						he continued calling after
13	2209	2219	NC						the 10 minutes and stayed
11	2224	2234	NC						in same spot. Dropped
9	2239	2249	NC						stations 19,20,33
8	2257	2307	NC						
10	2314	2324	NC						
12	2329	2339	NC						
14	2347	2357	NC						
15	0107	0117	NC						
7	0131	0141	NC						
6	0148	0158	NC						
5	0207	0217	NC						
4	0226	0236	NC						
3	0244	0254	NC						
2	0306	0316	NC						
1	0328	0338	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

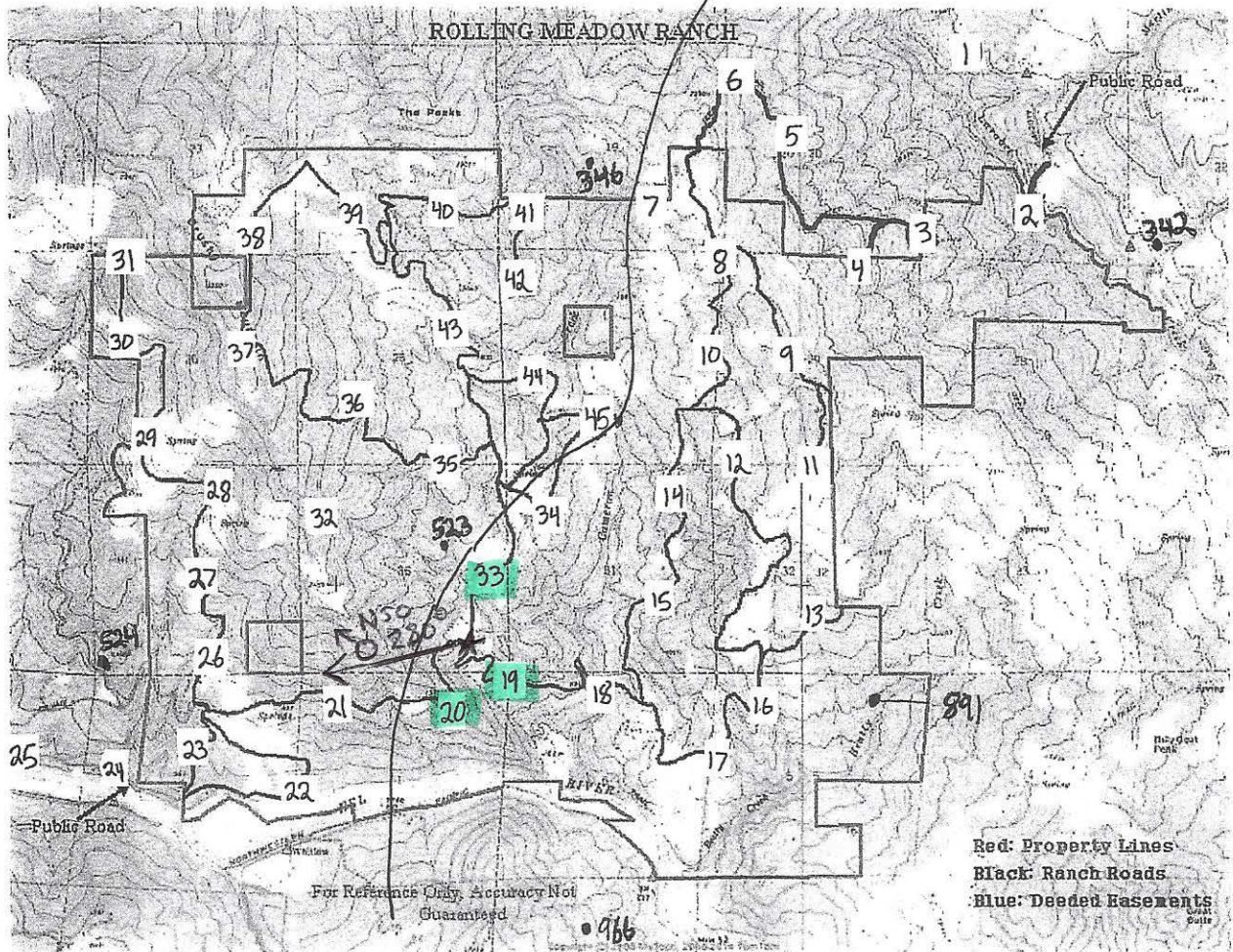
0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Date Logged _____

Date Entered _____



Northern Spotted Owl Survey Form

Visit # follow-up

Project <u>Rolling meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>4/1/19</u>	Weather, Wind, Temp. <u>OC 1-2 48-55</u>

[illegible]

*List all stations and note if skipped.

Weather codes;

CL	Clear
FG	Fog
PC	Partly Cloudy
OC	Overcast
DR	Drizzle

Wind Codes:

0	Calm
1	Light Air
2	Light Breeze
3	Gentle Breeze
4	Moderate Breeze
5	Fresh Breeze
6	Strong Breeze

Sex Codes:

M	Male
F	Female
U	Unknown
PR	Pair

Data Logged _____

Data Entered

Brushy Sund THP
Sec 36, T1S, R3E, HBM

N50 Follow-up 4/1/19

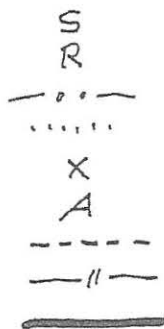
→ = Walking route

■ = Pellet + W.W

1111.410501 - Selection: Uneven Aged. Shelterwood Removal: Even Aged.

LEGEND

Selection
Shelterwood Removal
Class II watercourse
Class III watercourse
Skid crossing
Ref. point
Silviculture Boundary
Harvest Boundary
Property Boundary



Scale 1" to 1,000'

1 Mile

PACIFIC

Northern Spotted Owl Survey Form

Visit # 2

Project Rolling Meadows Ranch		
Observer Cameron Holmgren	Date 4/29/19	Weather, Wind, Temp. CL, 2, 52°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
42	2010	2020	NL						
41	2029	2039	NL						
40	2044	2054	NL						
38	2103	2113	NL						
39	2117	2127	NL						
43	2133	2143	NL						
45	2150	2200	NL						
44	2204	2214	NL						
37	2230	2240	NL						
36	2245	2255	NL						
35	2259	2309	NL						
32	2317	2327	NL						
21	2339	2349	NL						
26	2357	0107	NL						
27	0111	0121	NL						
28	0125	0135	NL						
29	0140	0150	NL						
30	0154	0204	NL						
31	0208	0218	NL						
22	0237	0247	NL						
23	0255	0305	NL						
24	0316	0326	NL						
25	0330	0340	NL						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 2

Project <u>Rolling meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>4/29/19</u>	Weather, Wind, Temp. <u>CL, 2, 52°F</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
34	2010	2020							
33	2024	2034							
20	2042	2052							
19	2059	2109							
18	2114	2124							
15	2132	2142							
14	2150	2200							
12	2209	2219							
10	2231	2241							
8	2247	2257							
9	2307	2317							
11	2324	2334							
13	2341	2351							
16	2358	0108							
17	0116	0126							
7	0152	0202							
6	0209	0219							
5	0226	0236							
4	0247	0257							
3	0309	0319							
2	0326	0336							
1	0356	0406							

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 3

Project Rolling Meadows Ranch		
Observer Cameron Holmgren	Date 5/11/19	Weather, Wind, Temp. CL, 2, 54°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
31	2031	2041	NC						
30	2046	2056	NC						
29	2101	2111	NC						
28	2115	2125	NC						
27	2130	2140	NC						
26	2144	2154	NC						
21	2203	2213	NC						
32	2235	2245	NC						
37	2254	2304	NC						
36	2311	2321	NC						
35	2326	2336	NC						
45	2344	2354	NC						
44	2359	0109	NC						
43	0114	0124	NC						
38	0133	0143	NC						
39	0149	0159	NC						
40	0206	0216	NC						
42	0233	0243	NC						
41	0250	0300	NC						
23	0342	0352	NC						
22	0402	0412	NC						
24	0427	0437	NC						
25	0440	0450	NC						
			NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 3

Project <u>Rolling Meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>5/11/19</u>	Weather, Wind, Temp. <u>OC / 1-2-50</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
34	2030	2040	N/C						
33	2047	2057	N/C						
20	2105	2115	N/C						
19	2123	2133	N/C						
18	2139	2149	N/C						
17	2156	2206	N/C						
16	2210	2220	N/C						
13	2225	2235	N/C						
11	2242	2252	N/C						
9	2300	2310	N/C						
8	2316	2326	N/C						
10	2333	2343	N/C						
14	2350	0100	N/C						
15	0107	0117	N/C						
4	0141	0151	N/C						
3	0159	0209	N/C						
2	0216	0226	N/C						
7	0258	0308	N/C						
6	0326	0336	N/C						
5	0341	0351	N/C						
1	0439	0449	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 4

Project Rolling Meadow Ranch		
Observer Cameron Holmgren	Date 5/31/19	Weather, Wind, Temp. CL, 2, 55°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
42	2045	2055	NC						
41	2103	2113	NC						
40	2118	2128	NC						
38	2141	2151	NC						
39	2158	2208	NC						
43	2214	2224	NC						
44	2230	2240	NC						
45	2246	2256	NC						
32	2315	2325	NC						
37	2334	2344	NC						
36	2349	2359	NC						
35	0104	0114	NC						
21	0133	0143	NC						
31	0159	0209	NC						
30	0214	0224	NC						
29	0229	0239	NC						
28	0243	0253	NC						
27	0257	0307	NC						
26	0312	0322	NC						
23	0330	0340	NC						
22	0349	0359	NC						
24	0415	0425	NC						
25	0429	0439	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 4

Project	Rolling Meadows		
Observer	Susan Tallman	Date	5/31/19
		Weather, Wind, Temp.	CL 1-2 55

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
34	2045	2055	N/C						
33	2106	2116	N/C						
20	2127	2137	N/C						
19	2144	2154	N/C						
18	2201	2211	N/C						
17	2217	2227	N/C						
16	2234	2244	N/C						
13	2252	2302	N/C						
9	2310	2320	N/C						
8	2329	2339	N/C						
10	2346	2356	N/C						
12	0107	0117	N/C						
14	0126	0136	N/C						
15	0142	0152	N/C						
7	0226	0236	N/C						
6	0244	0254	N/C						
5	0301	0311	N/C						
4	0317	0327	N/C						
3	0334	0344	N/C						
2	0351	0401	N/C						
1	0410	0420	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # ⁵ Stand search

Project Rolling Meadows		
Observer Justin Tallman	Date 6/9/19	Weather, Wind, Temp. CL 1-2 60

[illegible]

*List all stations and note if skipped.

Weather codes:

CL	Clear
FG	Fog
PC	Partly Cloudy
OC	Overcast
DR	Drizzle

Wind Codes:

0	Calm
1	Light Air
2	Light Breeze
3	Gentle Breeze
4	Moderate Breeze
5	Fresh Breeze
6	Strong Breeze

Sex Codes:


M	Male
F	Female
U	Unknown
PR	Pair

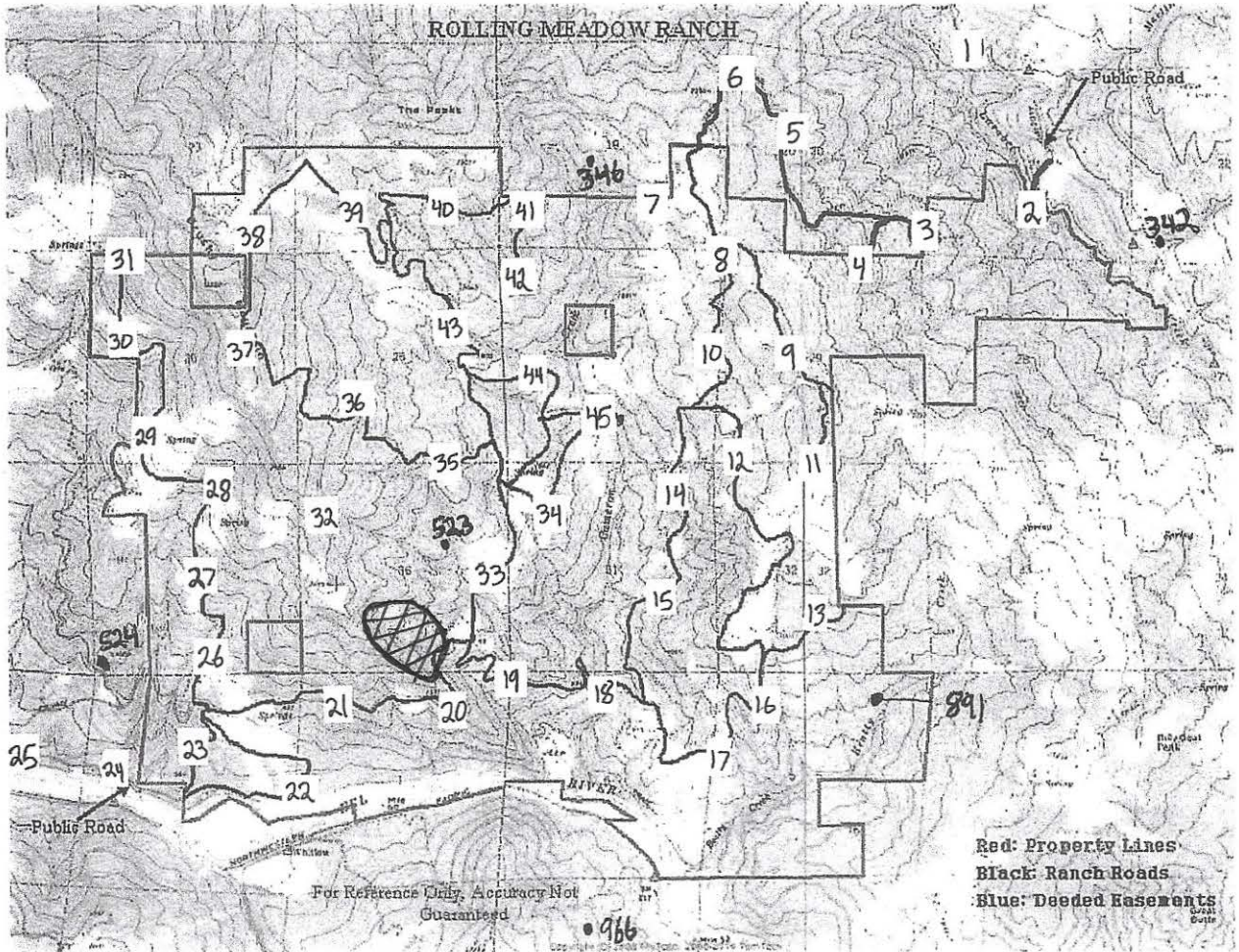
Data Logged _____

Data Entered _____

2019 NSO Calling Station Map

NSO Stand Search Visit 5, 6/9/19

Stand Search area 



Northern Spotted Owl Survey Form

Visit # 5

Project	Rolling Meadows		
Observer	Date	Weather, Wind, Temp.	
Justin Tallman	6/19	CL 1-2 60	

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
34	2055	2105	N/C						
33	2111	2121	N/C						
20	2126	2136	N/C						
19	2142	2152	N/C						
18	2158	2208	N/C						
15	2216	2226	N/C						
17	2237	2247	N/C						
16	2254	2304	N/C						
13	2310	2320	N/C						
11	2326	2336	N/C						
9	2344	2354	N/C						
8	0106	0116	N/C						
10	0124	0134	N/C						
12	0141	0151	N/C						
14	0158	0208	N/C						
7	0226	0236	N/C						
6	0247	0257	N/C						
5	0310	0330	N/C						
4	0338	0348	N/C						
3	0354	0404	N/C						
2	0411	0421	N/C						
1	0429	0439	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 5

Project Rolling Meadows		
Observer Cameron Holmgren	Date 6/9/19	Weather, Wind, Temp. CL, 2, 59°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
31	2054	2104	NC						
30	2108	2118	NC						
29	2123	2133	NC						
28	2137	2147	NC						
27	2151	2201	NC						
26	2206	2216	NC						
25	2224	2234	NC						
24	2238	2248	NC						
23	2255	2305	NC						
22	2312	2322	NC						
21	2332	2342	NC						
32	2359	0109	NC						
37	0119	0129	NC						
36	0135	0145	Barred Owl				NNE	1,400'	Single Barred Owl ^{Vocal} Response
35	0150	0200	NC						
45	0211	0221	NC						
44	0227	0237	NC						
43	0242	0252	NC						
38	0259	0309	NC						
39	0314	0324	NC						
40	0330	0340	NC						
41	0345	0355	NC						
42	0402	0412	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

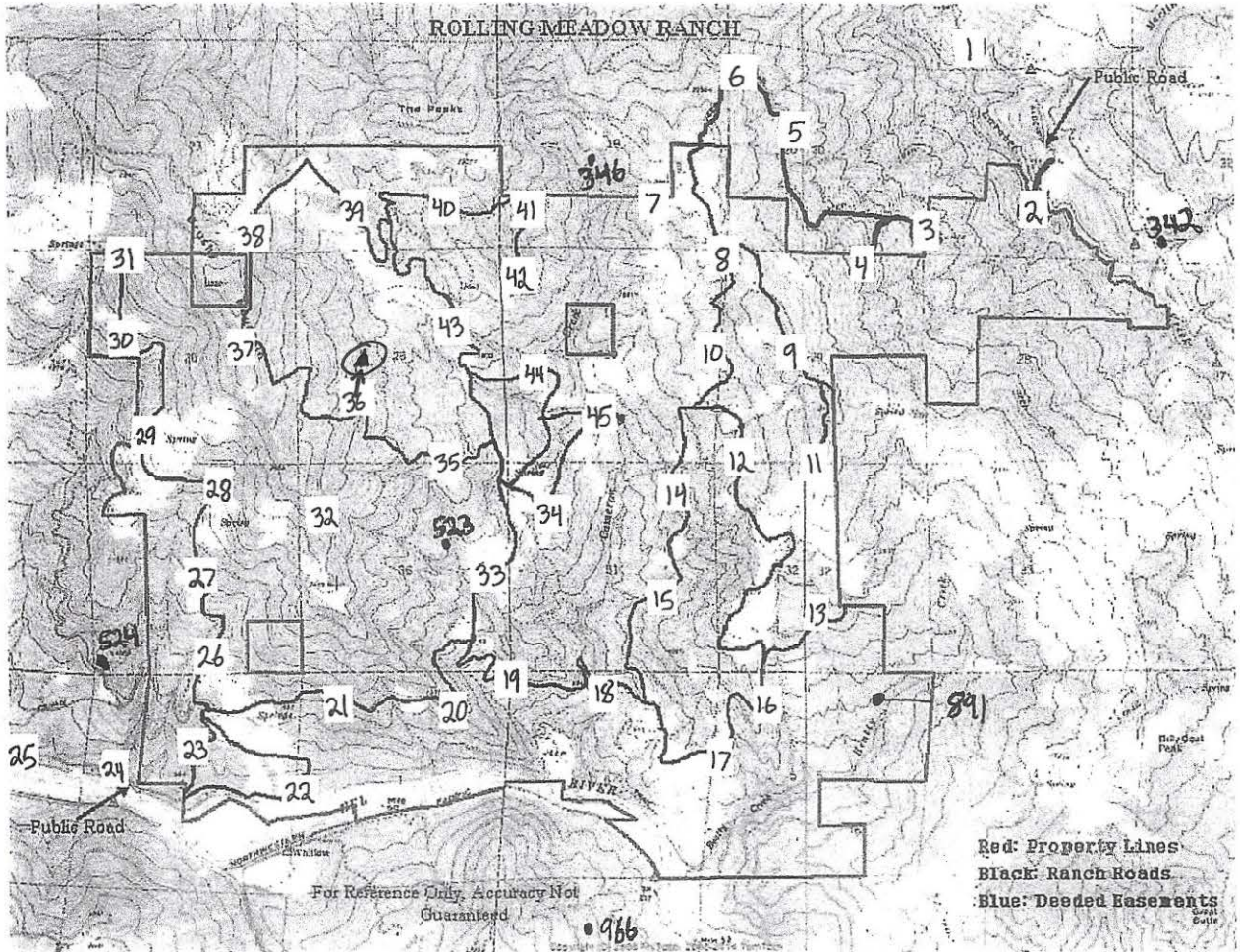
M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

2019 NSO Calling Station Map

Visit #5, 6/9/19 Barred owl Detection ①



Northern Spotted Owl Survey Form

Visit # 6

Project Rolling Meadows		
Observer Cameron Holmgren	Date 6/24/19	Weather, Wind, Temp. CL 1, 62°F

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
38	2057	2107	NC						
39	2112	2122	NC						
40	2129	2139	NC						
41	2143	2153	NC						
42	2201	2211	NC						
43	2226	2236	NC						
32	2257	2307	NC						
37	2320	2330	NC						
36	2335	2345	NC						
35	2351	0101	NC						
44	0109	0119	NC						
45	0124	0134	NC						
21	0149	0159	NC						
26	0206	0216	NC						
27	0220	0230	NC						
28	0235	0245	NC						
29	0249	0259	NC						
30	0304	0314	NC						
31	0318	0328	NC						
22	0349	0359	NC						
23	0407	0417	NC						
24	0424	0434	NC						
25	0438	0448	NC						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Data Logged _____

Data Entered _____

Northern Spotted Owl Survey Form

Visit # 6

Project <u>Rolling Meadows</u>		
Observer <u>Justin Tallman</u>	Date <u>6/24/19</u>	Weather, Wind, Temp. <u>CL 1-2 55-60</u>

Station*	Start	End	NSO Con/NC	CON Time	Species	Sex	Bearing	Distance	Notes
34	2100	2110	N/C						
33	2116	2126	N/C						
20	2134	2144	N/C						
19	2151	2201	N/C						
18	2206	2216	N/C						
17	2221	2231	N/C						
16	2238	2248	N/C						
13	2256	2306	N/C						
11	2312	2322	N/C						
9	2330	2340	N/C						
8	2346	2356	N/C						
10	0106	0116	N/C						
14	0123	0133	N/C						
15	0140	0150	N/C						
7	0228	0238	N/C						
8	0247	0257	N/C						
6	0306	0316	N/C						
5	0324	0334	N/C						
4	0340	0350	N/C						
3	0358	0408	N/C						
2	0416	0426	N/C						
1	0439	0450	N/C						

*List all stations and note if skipped.

Weather codes:

CL Clear
FG Fog
PC Partly Cloudy
OC Overcast
DR Drizzle

Wind Codes:

0 Calm
1 Light Air
2 Light Breeze
3 Gentle Breeze
4 Moderate Breeze
5 Fresh Breeze
6 Strong Breeze

Sex Codes:

M Male
F Female
U Unknown
PR Pair

Date Logged _____

Data Entered _____

Appendix H
North Coast Unified Air Quality Management District
(NCUAQMD)
District Response & Application Components

**North Coast Unified Air Quality
Management District**

707 L Street, Eureka, CA 95501

Telephone (707) 443-3093

FAX (707) 443-3099

<http://www.ncuaqmd.org>



May 14, 2019

Andrew Machata, Owner/Operator
Rolling Meadow Ranch
3060 Airport West Drive
Vero Beach, FL 32960

Re: Rolling Meadow Ranch Emergency Standby Propane-fueled Generators

Dear Mr. Machata:

The North Coast Unified Air Quality Management District (District) has received and reviewed your application for the proposed installation of five emergency standby propane-fueled generators at the Rolling Meadow Ranch facility on McCann Road, Myers Flat, Humboldt County (exact location detailed in permit application).

Based on the information you have provided, the District has determined that an air quality permit is not required for the five emergency standby propane-fueled generators detailed in your application.

Please contact me if you have any questions.

Sincerely,

Winslow Condon
Permit Engineer
(707) 443-3093 x121
wcondon@ncuaqmd.org

Cc: Breeanna Kalson, NRM Corp.



North Coast Unified Air
Quality Management District
707 L Street
Eureka, CA 95501
(707) 443-3093

APPLICATION FORM 1300

Authority To Construct, Modification of Existing Permit,
Permit Renewal, and Change of Ownership or Location

(Depending upon the source type, additional forms may be required –
see Section VII)

Section I – Application Request

This application is for the purpose of (check all that apply):

- ☐ New Construction ☐ Modification of Equipment or Permit Conditions ☐ Change of Location
☐ Change of Permittee/Owner ☐ Existing Equipment Without a Permit ☐ Title V Permit Renewal

Estimated construction start date:

Estimated construction completion date:

Section II – Owner / Operator / Responsible Official

Legal name of Owner/Operator:

Legal name of Responsible Official (if different than listed above):

Company mailing address:

City/State:

Zip:

Permit mailing address (if different from company mailing address):

City/State:

Zip:

Contact person:

Title:

Contact person's phone number:

Contact person's fax number:

Contact person's email address:

Are you the owner of the equipment under this application? ☐ yes ☐ no

If no, enter the your company's name (see section IX):

Section III – Facility Information

Facility name:

Facility physical address:

City/State:

Zip:

Type of business at this
address:

Primary Standard Industrial Code (SIC) for this facility:

Number of
employees at this
facility:

(Internet search: <http://www.osha.gov/oshstats/sicser.html>)

DISTRICT USE ONLY

TRACKING #

SIC/SCC CODES

PERMIT REVIEW

PERMIT REVIEW

FEE SCHEDULE:

CHECK/MONEY ORDER #

\$

AMOUNT:

Section IV – Facility Location			
Detailed driving directions from nearest California town (attach roadmap if necessary):			
Facility is	(distance) miles	(direction) of	(nearest town)
Status of land at facility (check one): <input type="checkbox"/> Private <input type="checkbox"/> Tribe/Rancheria <input type="checkbox"/> Government			
Name of nearest Class 1 area to the facility (see map on page 4):			
Is your facility boundary within 10 km of the boundary of nearest Class 1 area? (see map) <input type="checkbox"/> yes <input type="checkbox"/> no			
Distance to the nearest occupied residence or business: _____ ft. K-12 school _____ ft.			
Is emission generating equipment within 1,000 feet of the outer boundary of a school? <input type="checkbox"/> yes <input type="checkbox"/> no			
If yes, complete for all public or private schools, grade K-12, within a ¼ mile radius of facility property.			
School name(s): _____			
Address(es): _____			
Phone(s): _____			
Section V – Applicable Laws, Regulations, and Existing Permits			
Does this facility have a District permit(s)? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, the permit number is: _____			
Does this facility have a Title V permit(s)? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, submit Form 1313.			
A) Is this a "major source" under Title V of the federal Clean Air Act? (District Rule 501) <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unsure			
B) Is this source subject to a federal NSPS or NESHAP/MACT? (District Rule 104) <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unsure			
C) Is this a significant net increase in emissions? (District Rule 110 Section E) <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unsure			
D) Is this application in response to a Notice of Violation (NOV) or a Notice to Apply (NTA)? Yes If yes, date: _____ Tracking# _____ No			
<i>If you answered "yes" or "unsure" to A, B, C, or D, contact the District to see if a pre-application meeting is required.</i>			
Section VI - Other Information			
Does this facility emit any substance listed pursuant to Section 44321 of the Health and Safety Code? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, contact District Staff to determine if a health risk assessment is required.			
Is this project subject to the California Environmental Quality Act (CEQA)? yes no Conditional Use Permit? List ID # and Issuing Agency: _____			
Is there any information requested by this application that might be considered to be "trade secrets" that you don't wish to make public? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, attach documentation to describe and support your claim.			
This question must be answered for all applications for new construction or significant modifications. Are all major sources under same ownership in California in compliance with federal, State, and local air pollution control rules? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			

Section VII – Emission Device / Source Description – Supplemental Information

Indicate the type of device by marking the box. For each type of device used, complete the corresponding form. 1300 B is required for all devices except Fuel Dispensing and Storage Equipment – Form 1306.

- | | |
|---------------------------------------------------------------------------|--------------------------------------------------------------|
| <input type="checkbox"/> 1300 A (Reserved) | <input type="checkbox"/> 1307 Vapor Extraction Projects |
| <input type="checkbox"/> 1300 B Emissions, Fuel and Process Materials | <input type="checkbox"/> 1308 Miscellaneous Devices |
| <input type="checkbox"/> 1301 Internal Combustion Equipment | <input type="checkbox"/> 1309 Aggregate Plant |
| <input type="checkbox"/> 1302 External Combustion Equipment | <input type="checkbox"/> 1310 Hot Mix Asphalt Plant |
| <input type="checkbox"/> 1303 Particulate Matter (PM10) Control Equipment | <input type="checkbox"/> 1311 Reserved |
| <input type="checkbox"/> 1304 Volatile Organic Compound Control Equip. | <input type="checkbox"/> 1312 Gasoline Bulk Storage Facility |
| <input type="checkbox"/> 1305 Scrubber | <input type="checkbox"/> 1313 Title V |
| <input type="checkbox"/> 1306 Fuel Dispensing and Storage Equipment | <input type="checkbox"/> 1314 (Reserved) |

Section VIII – Equipment Description (not required if using Form 1306)

Unit No.	Source Description	Make	Manufacturer Model No.	Serial No.	Manufacture Date	Rated Capacity

Section IX – Certification

I hereby certify that all information and data provided on this application form and all supplemental District Forms, as well any technical drawings, emission calculations, or other supplemental information submitted as part of this application, are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signature of Preparer:

Date signed:

Type or print name of Signatory:

Title:

Phone:

If this application was prepared by person(s) other than the owner/operator/responsible official, it is not necessary to obtain the signatures listed below. Instead, attach documentation from the owner/operator/responsible official authorizing the preparer to sign on their behalf.

Signature of Owner/Operator/Responsible Official:

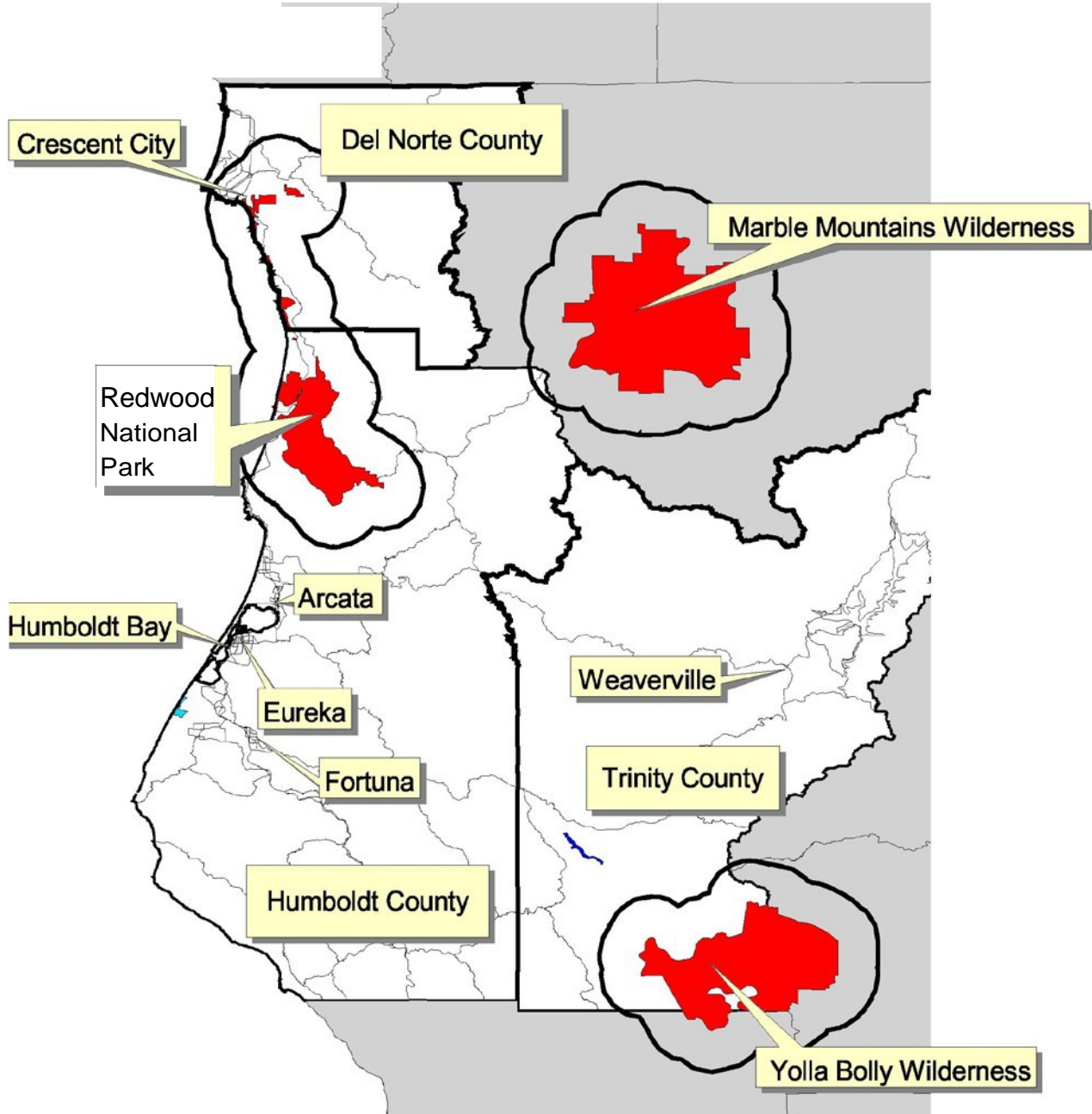
Date signed:

Type or print name of Signatory:

Title:

Phone:

CLASS I AREAS
WITH 10 KILOMETER BUFFER ZONES



Source: US EPA



North Coast Unified Air
Quality Management District
707 L Street
Eureka, CA 95501
(707) 443-3093

APPLICATION FORM 1300

Authority To Construct, Modification of Existing Permit,
Permit Renewal, and Change of Ownership or Location

(Depending upon the source type, additional forms may be required –
see Section VII)

Section I – Application Request

This application is for the purpose of (check all that apply):

- ☐ New Construction ☐ Modification of Equipment or Permit Conditions ☐ Change of Location
☐ Change of Permittee/Owner ☐ Existing Equipment Without a Permit ☐ Title V Permit Renewal

Estimated construction start date:

Estimated construction completion date:

Section II – Owner / Operator / Responsible Official

Legal name of Owner/Operator:

Legal name of Responsible Official (if different than listed above):

Company mailing address:

City/State:

Zip:

Permit mailing address (if different from company mailing address):

City/State:

Zip:

Contact person:

Title:

Contact person's phone number:

Contact person's fax number:

Contact person's email address:

Are you the owner of the equipment under this application? ☐ yes ☐ no

If no, enter the your company's name (see section IX):

Section III – Facility Information

Facility name:

Facility physical address:

City/State:

Zip:

Type of business at this
address:

Primary Standard Industrial Code (SIC) for this facility:

Number of
employees at this
facility:

(Internet search: <http://www.osha.gov/oshstats/sicser.html>)

DISTRICT USE ONLY

TRACKING #

SIC/SCC CODES

PERMIT REVIEW

PERMIT REVIEW

FEE SCHEDULE:

CHECK/MONEY ORDER #

\$

AMOUNT:

Section IV – Facility Location			
Detailed driving directions from nearest California town (attach roadmap if necessary):			
Facility is	(distance) miles	(direction) of	(nearest town)
Status of land at facility (check one): <input type="checkbox"/> Private <input type="checkbox"/> Tribe/Rancheria <input type="checkbox"/> Government			
Name of nearest Class 1 area to the facility (see map on page 4):			
Is your facility boundary within 10 km of the boundary of nearest Class 1 area? (see map) <input type="checkbox"/> yes <input type="checkbox"/> no			
Distance to the nearest occupied residence or business: _____ ft. K-12 school _____ ft.			
Is emission generating equipment within 1,000 feet of the outer boundary of a school? <input type="checkbox"/> yes <input type="checkbox"/> no			
If yes, complete for all public or private schools, grade K-12, within a ¼ mile radius of facility property.			
School name(s): _____			
Address(es): _____			
Phone(s): _____			
Section V – Applicable Laws, Regulations, and Existing Permits			
Does this facility have a District permit(s)? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, the permit number is: _____			
Does this facility have a Title V permit(s)? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, submit Form 1313.			
A) Is this a "major source" under Title V of the federal Clean Air Act? (District Rule 501) <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unsure			
B) Is this source subject to a federal NSPS or NESHAP/MACT? (District Rule 104) <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unsure			
C) Is this a significant net increase in emissions? (District Rule 110 Section E) <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unsure			
D) Is this application in response to a Notice of Violation (NOV) or a Notice to Apply (NTA)? Yes If yes, date: _____ Tracking# _____ No			
<i>If you answered "yes" or "unsure" to A, B, C, or D, contact the District to see if a pre-application meeting is required.</i>			
Section VI - Other Information			
Does this facility emit any substance listed pursuant to Section 44321 of the Health and Safety Code? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, contact District Staff to determine if a health risk assessment is required.			
Is this project subject to the California Environmental Quality Act (CEQA)? yes no Conditional Use Permit? List ID # and Issuing Agency: _____			
Is there any information requested by this application that might be considered to be "trade secrets" that you don't wish to make public? <input type="checkbox"/> yes <input type="checkbox"/> no If yes, attach documentation to describe and support your claim.			
This question must be answered for all applications for new construction or significant modifications. Are all major sources under same ownership in California in compliance with federal, State, and local air pollution control rules? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			

Section VII – Emission Device / Source Description – Supplemental Information

Indicate the type of device by marking the box. For each type of device used, complete the corresponding form. 1300 B is required for all devices except Fuel Dispensing and Storage Equipment – Form 1306.

- | | |
|---------------------------------------------------------------------------|--------------------------------------------------------------|
| <input type="checkbox"/> 1300 A (Reserved) | <input type="checkbox"/> 1307 Vapor Extraction Projects |
| <input type="checkbox"/> 1300 B Emissions, Fuel and Process Materials | <input type="checkbox"/> 1308 Miscellaneous Devices |
| <input type="checkbox"/> 1301 Internal Combustion Equipment | <input type="checkbox"/> 1309 Aggregate Plant |
| <input type="checkbox"/> 1302 External Combustion Equipment | <input type="checkbox"/> 1310 Hot Mix Asphalt Plant |
| <input type="checkbox"/> 1303 Particulate Matter (PM10) Control Equipment | <input type="checkbox"/> 1311 Reserved |
| <input type="checkbox"/> 1304 Volatile Organic Compound Control Equip. | <input type="checkbox"/> 1312 Gasoline Bulk Storage Facility |
| <input type="checkbox"/> 1305 Scrubber | <input type="checkbox"/> 1313 Title V |
| <input type="checkbox"/> 1306 Fuel Dispensing and Storage Equipment | <input type="checkbox"/> 1314 (Reserved) |

Section VIII – Equipment Description (not required if using Form 1306)

Unit No.	Source Description	Make	Manufacturer Model No.	Serial No.	Manufacture Date	Rated Capacity

Section IX – Certification

I hereby certify that all information and data provided on this application form and all supplemental District Forms, as well any technical drawings, emission calculations, or other supplemental information submitted as part of this application, are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signature of Preparer:

Date signed:

Type or print name of Signatory:

Title:

Phone:

If this application was prepared by person(s) other than the owner/operator/responsible official, it is not necessary to obtain the signatures listed below. Instead, attach documentation from the owner/operator/responsible official authorizing the preparer to sign on their behalf.

Signature of Owner/Operator/Responsible Official:

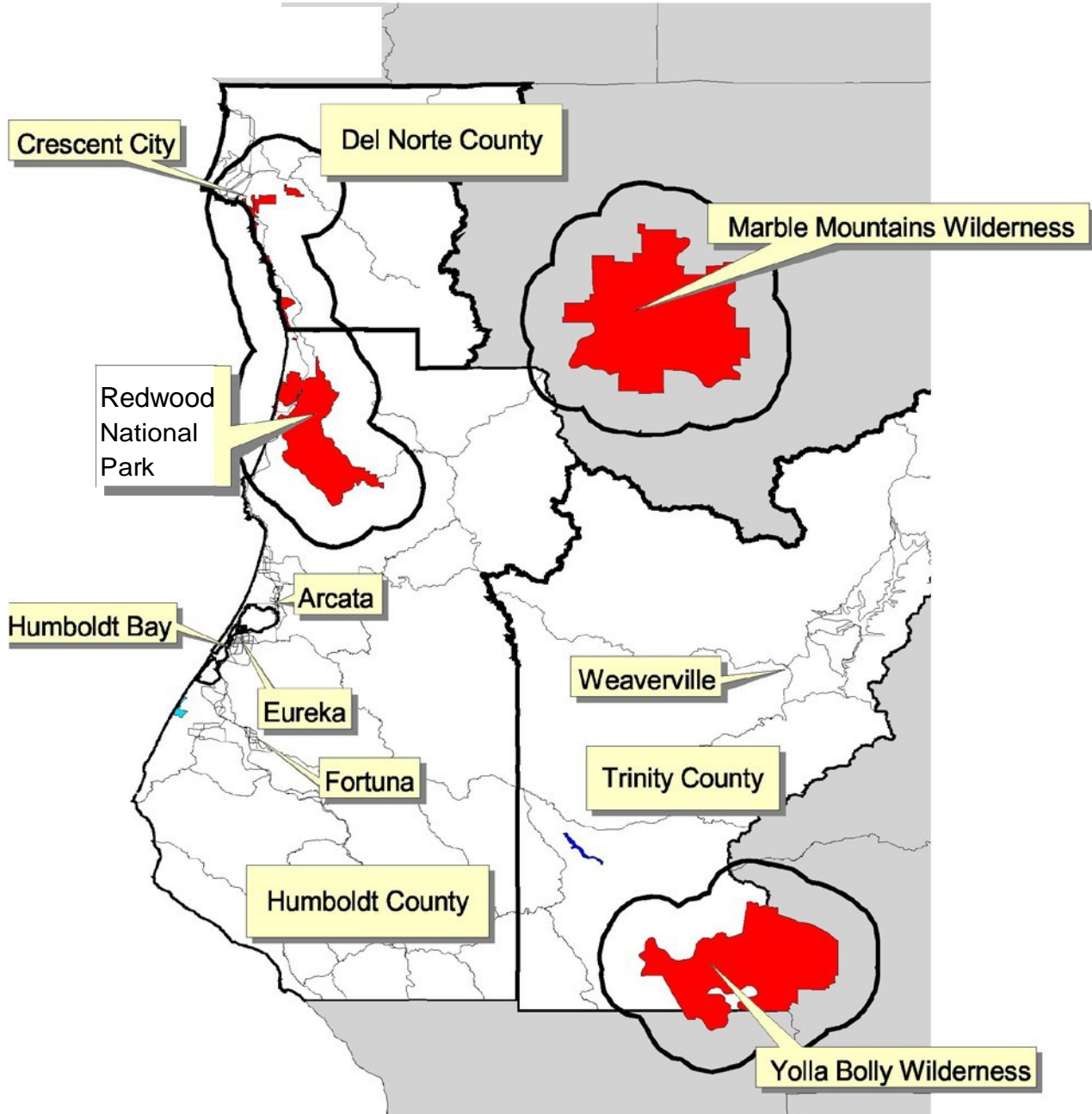
Date signed:

Type or print name of Signatory:

Title:

Phone:

CLASS I AREAS
WITH 10 KILOMETER BUFFER ZONES



Source: US EPA



North Coast Unified Air
Quality Management District
707 L Street
Eureka, CA 95501
(707) 443-3093

INTERNAL COMBUSTION ENGINE FORM 1301

Form 1300 must also accompany all submittals.

Section I - Equipment Information

1. Engine Function (check one):

- | | |
|----------------------------------------------------------------------------------|-----------------------------------------------|
| a. <input type="checkbox"/> Electrical Power | d. <input type="checkbox"/> Compressor Driver |
| b. <input type="checkbox"/> Pump Driver | e. <input type="checkbox"/> Fire Pump |
| c. <input type="checkbox"/> Cogeneration (describe on a separate sheet of paper) | f. <input type="checkbox"/> Other: _____ |

2. Will the engine be installed only for emergency use? ☐ yes ☐ no
3. Is the engine portable? (can be moved from one location to another) ☐ yes ☐ no
4. Will the engine be used at only one facility? ☐ yes ☐ no

Engine Information

- | | |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 5. Make: _____ | 6. Model: _____ |
| 7. Engine Serial Number: _____ | 8. Fuel Type: _____ |
| 9. Engine Family: _____ | 10. Executive Order: _____ |
| 11. Prime Rating: _____ hp _____ kW | 12. Standby Rating: _____ hp _____ kW |
| 13. Cycle Type: a. <input type="checkbox"/> Two Cycle b. <input type="checkbox"/> Four Cycle | |
| 14. Combustion Type: a. <input type="checkbox"/> Lean Burn b. <input type="checkbox"/> Rich Burn | |
| 15. Aspiration Type: | |
| a. <input type="checkbox"/> Turbocharged | c. <input type="checkbox"/> Naturally Aspirated |
| b. <input type="checkbox"/> Turbocharged/Aftercooled | d. <input type="checkbox"/> Timing Retarded $\geq 4^\circ$ (relative to standard timing) |
| 16. Air to Fuel Ratio: _____ | 17. Does engine have an air/fuel ratio controller? <input type="checkbox"/> yes <input type="checkbox"/> no |

Equipment Information

- | | |
|------------------------------------|----------------------------|
| 18. Make: _____ | 19. Model: _____ |
| 20. Equipment Serial Number: _____ | 21. Capacity/Rating: _____ |

Section II - Operation Information

22. Maximum operating schedule: hours/day _____ days/week _____ weeks/year _____ hours/year _____
23. Average operating schedule: hours/day _____ days/week _____ weeks/year _____ hours/year _____

Section IV- Title V Information: *Fill out if AQMD has identified your facility as a Title V facility*

The requested application involves a(n): (check all that apply)

- | | |
|-------------------------------------------------------------|-------------------------------------------------------------|
| a. <input type="checkbox"/> Administrative Permit Amendment | e. <input type="checkbox"/> Permit Shield |
| b. <input type="checkbox"/> Minor Permit Modification | f. <input type="checkbox"/> Alternative Operating Scenarios |
| c. <input type="checkbox"/> Significant Permit Modification | g. <input type="checkbox"/> Voluntary Emission Cap |
| d. <input type="checkbox"/> Non-Title V Permit Processing | i. <input type="checkbox"/> Other (specify): _____ |
- (Available until initial Title V permit is issued)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2019 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Generac Power Systems, Inc.
(U.S. Manufacturer or Importer)

Certificate Number: KGNXB02.42L2-014

Effective Date:

10/02/2018

Expiration Date:

12/31/2019

Byron J. Bunker, Division Director
Compliance Division

Issue Date:

10/02/2018

Revision Date:

N/A

Manufacturer: Generac Power Systems, Inc.

Engine Family: KGNXB02.42L2

Mobile/Stationary Certification Type: Stationary

Fuel : LPG/Propane

Emission Standards :

Part 90 Phase 1

CO (g/kW-hr) : 519.0

HC + NO_x (g/kW-hr) : 13.4

Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

From: Prairie Moore <pmoore@nrmcorp.com>
Sent: Monday, April 1, 2019 12:59 PM
To: bkalson@nrmcorp.com
Subject: Fwd: Re: Air Board

----- Forwarded Message -----

Subject:
Re: Air Board
Date:
Thu, 21 Mar 2019 12:01:00 -0400
From:
ANDREW MACHATA <dino2768@mac.com>
To:
Prairie Moore <pmoore@nrmcorp.com>

Go ahead

Sent from my iPhone

On Mar 21, 2019, at 11:51 AM, Prairie Moore <pmoore@nrmcorp.com> wrote:

Hi Andy,

One of the things the county asked for in the letter was that we : “Provide a statement from the North Coast Air Quality Management District that they are not concerned about emissions from propane generators”

We requested that from the NCAQMD, and they asked to see the generator lay out. We also explained to them that these generators were only for emergency use in times of fire.

In lieu of a statement, the NCUAQMD requests that we fill out an application and anticipates, but does not guarantee, that the emissions will be deemed insignificant. In other words he wants to look more closely at it before he gives us a statement saying it is insignificant. The application fee is only \$67, and it will probably take us a few hours to fill it out.

I wanted to get your permission to file this application with the NCAQMD

We didn't name a Generator in the IS (only the brand and size), but we need a specific model for the NCUAQMD permit. There are two possible generators in my file that both describe the dBA and fuel consumption as we did in the IS. They also seem to have the same exhaust output. However, since they are separate models, we still need to know which one will be used.

Generac Gaurdian Series LP 45kW 60Hz? or
Generac Protector Series LP 45kW 60Hz?

Thanks so much,

Prairie

-- Prairie Moore, MS

President

Environmental Services Director

Natural Resources Management Corporation

707-442-1735

707-499-5131 cell

pmoore@nrmcorp.com

April 1, 2019

North Coast Unified Air Quality Management District
707 L Street
Eureka, CA 95501
(707) 443-3093

Application 1300B Section VI: Attachments #1 & #2

Prepared for: Mr. Andrew Machata
3060 Airport West Drive
Vero Beach, FL 32960

Dear Winslow Condon,

The following is a written description of the routine operations of Mr. Machata's proposed facility at Rolling Meadow Ranch in Humboldt County and the role of the proposed equipment (five propane fueled Generac Protector Series 45kW generators (1300B #1). Included, are short descriptions and maps that will fulfill the Plot Plan and Location information requirements (#2, a-j) of the 1300B form requested by the NCUAQMD.

Project Description

The project is a cannabis production project located on the main stem of the Eel River in southern eastern Humboldt County. In its entirety, Rolling Meadows Ranch comprises 7,110 acres of agricultural and timber land. This project consists of four proposed cultivation areas herein known as Site Operator #1, #2, #3, and #4 (Figure 1). These four cultivation areas will be located on one legally combined parcel of 1632 acres. A total of 16 greenhouses, five drying and trimming buildings with restrooms, five septic systems, and three wells will be constructed. Greenhouses will vary in size from 20,000 to 22,000 square feet; processing buildings will be 2,000 square feet. All building will be professionally built to county building and fire code.

The access for the project is located off of McCann Road. A common route to the site is via Hwy 101 to the Dyerville loop road then over the McCann Bridge and onto McCann Rd East. At approximately 2 miles from the bridge, the county road ends at the project boundary and the private ranch road network begins. When the Eel River flow volume increases to 3,500 cubic feet per second (cfs), typically late November through late April, Humboldt county closes the McCann Bridge and vehicle traffic across the bridge is no longer possible. The project will close seasonally in anticipation of bridge closure. The access roads that the project will upgrade and maintain consists of approximately 4.5 miles of private driveway (Figure 7). This 4.5 miles will be upgraded to Cal Fire's Fire Safe standards (12 foot wide roads with standardized grades and pull outs).

The electricity needed for this project will be supplied by PGE. There is PG&E infrastructure currently on a portion of the Rolling Meadow Ranch; the stretch of existing PG&E power is located along the Eel River near the southern property boundary. This power is strung above ground on poles. Additional infrastructure will be run from this existing power supply North and then East to all project sites. The power will be lines strung on poles along the existing ranch roads (with some exceptions).

The project does not require generators for project operations. The project will install one generator and one underground 500 gallon propane tank near each processing building (5 total) in order to provide emergency fire protection. That is, if grid

power is lost and there is a fire, the generators will run water pumps for fire suppression. The generator activation and the water pump function will be automated as a component of the facility's emergency fire system. The generators proposed for this project are Generac Protector Series propane generators with a standby power rating of 45kW.

The project doesn't anticipate needing the five Generac generators, but will maintain them as part of emergency preparedness. According to the manufacture, in order to maintain readiness, the generators will automatically turn on and run for five minutes every two weeks. This "exercise cycle" runs the generator at lower RPMs. As a result, it uses less fuel (0.7 gal per hour) during the "exercise cycle". To maintain readiness each generator would run for a five minute interval 26 times a year, for a yearly total of 130 minutes (or 2 hour and 10 minutes). This would consume 1.5 gallons of propane a year. If no fires occur and the generators do not run apart from the "exercise cycle," the 500 gallon tanks would require refilling in the year 2119.

The generators have a five year warranty and the project expects that, with maintenance, the generators will last much longer. When the generators are no longer functional, and assuming that the project still has ownership of the generators, the project will drain the fluids and dismantle the generators. According to the Humboldt Waste Management Authority, the generators will be accepted as scrap metal. The fluids will be contained and submitted to the Hazardous Waste Facility.

Plot plans and location maps are included in the pages below.

Cordially,

Breeanna Kalson
707-269-1367
bkalsn@nrmcorp.com

Plot Plan and Location Information

a. & j. The following figure (1) is a general vicinity map showing the topographic features of the region and the locations of site operations (Meyer's Flat quadrangle).

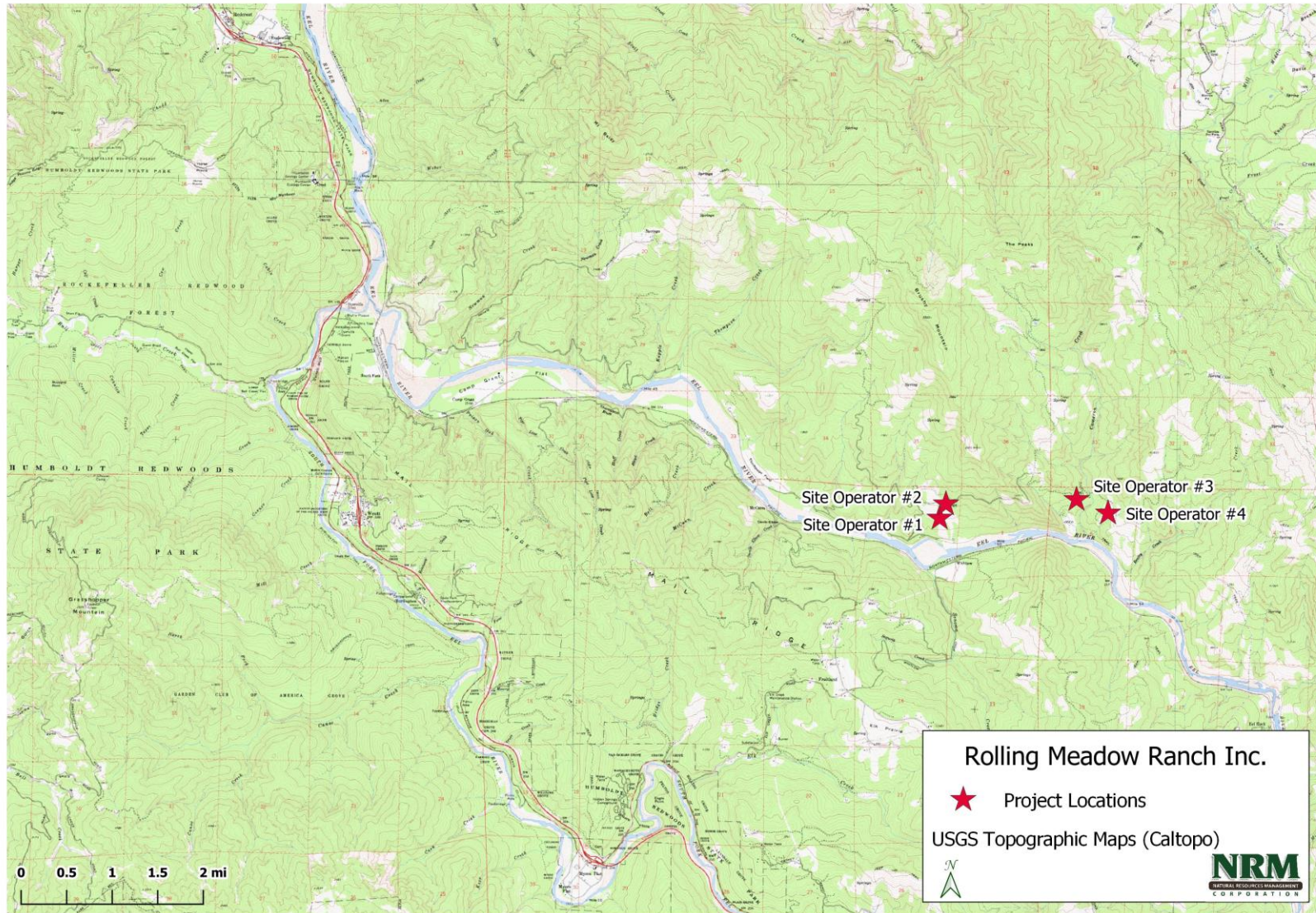


Figure 1

b. & c. Figures 2 and 3 (ortho) include the property boundary. The proposed buildings are single story buildings located far from adjacent property lines.

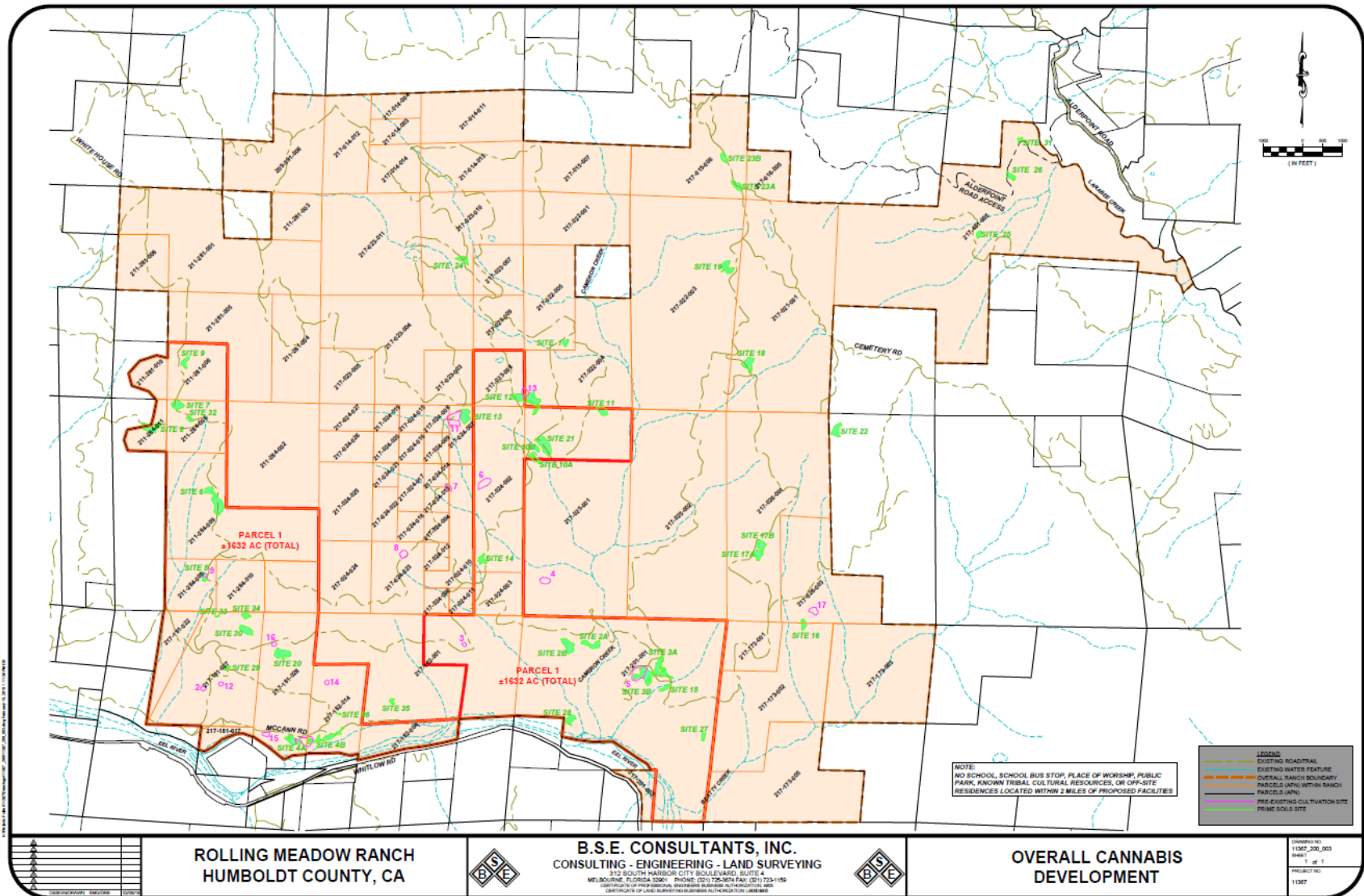


Figure 2

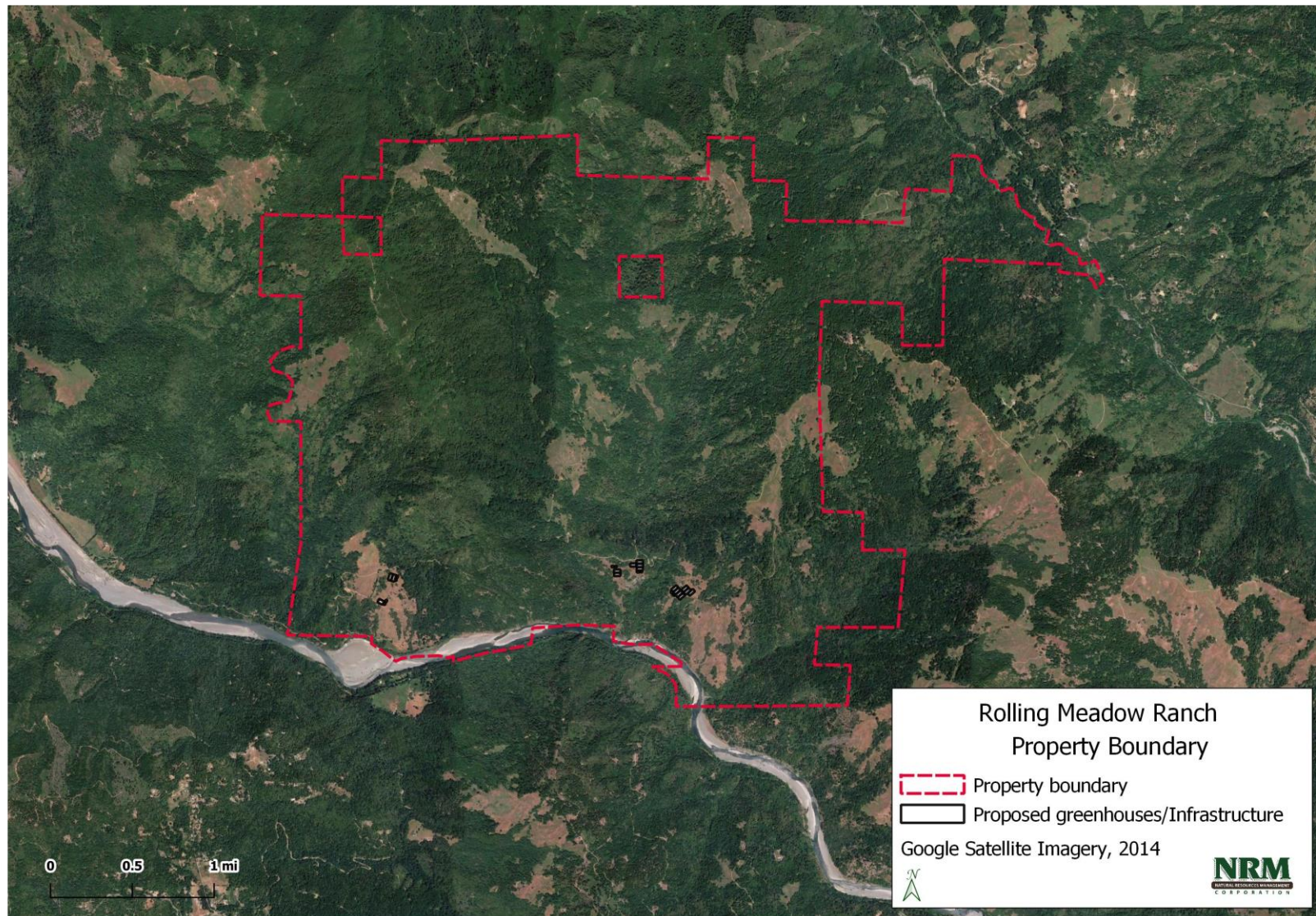


Figure 3

5/ Application 1300B Section VI: Attachments #1 & #2; Prepared for Mr. Andrew Machata, Rolling Meadow Ranch

c. & d. The following figures (4, 5, 6) give detail on the infrastructure – layout, sizes, and relative location of the generators

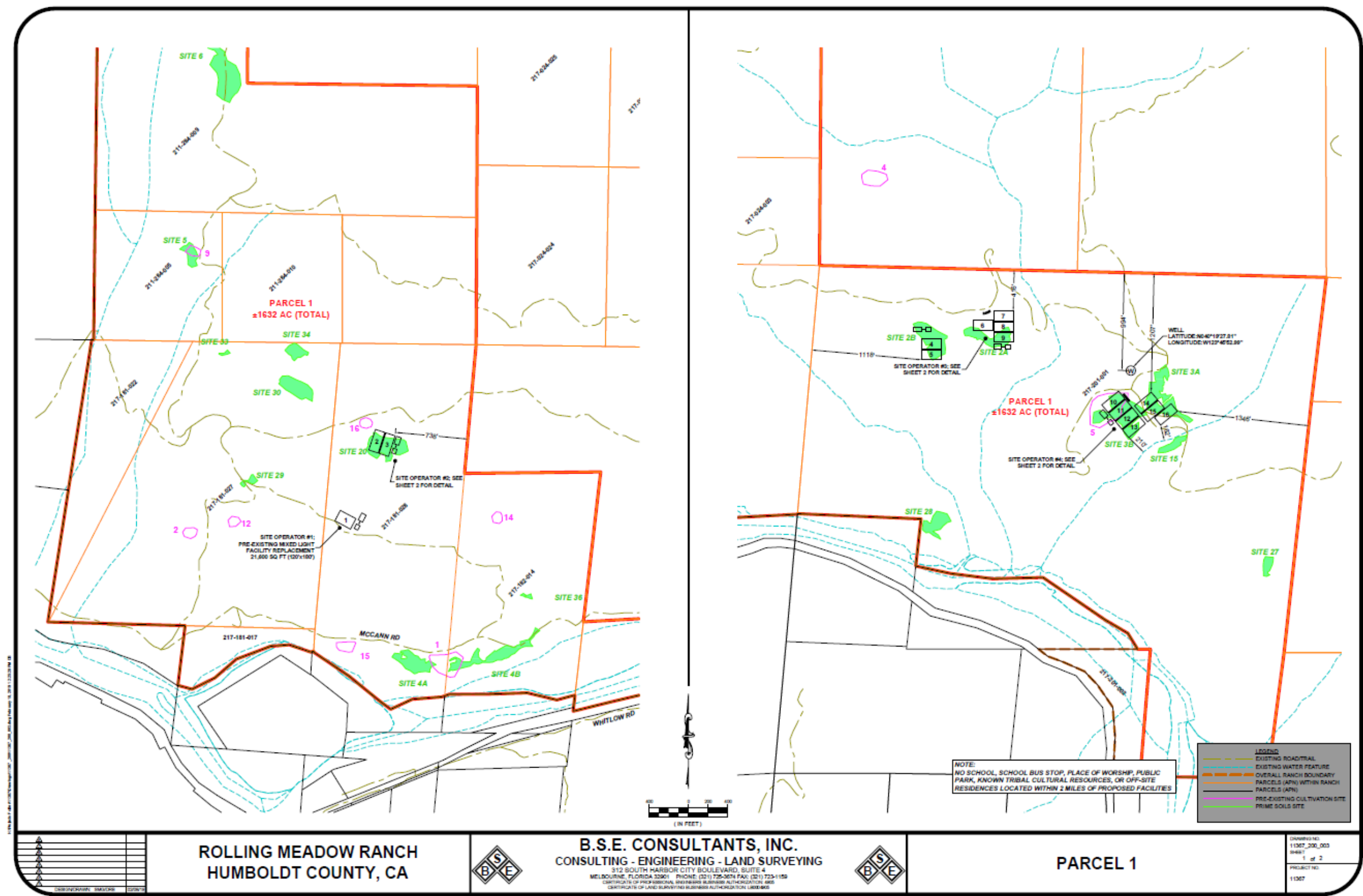


Figure 4

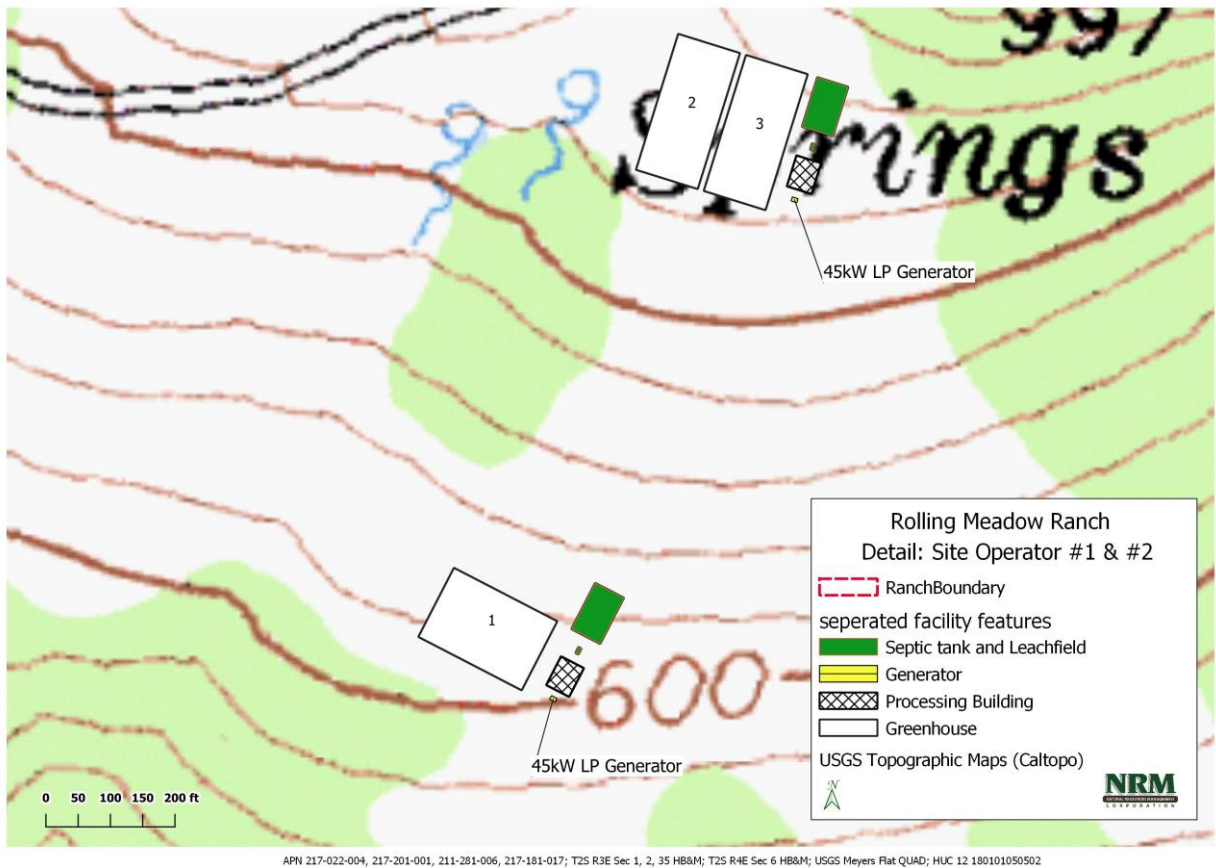


Figure 5. Site Operator #1 and #2; Greenhouse #s 1-3

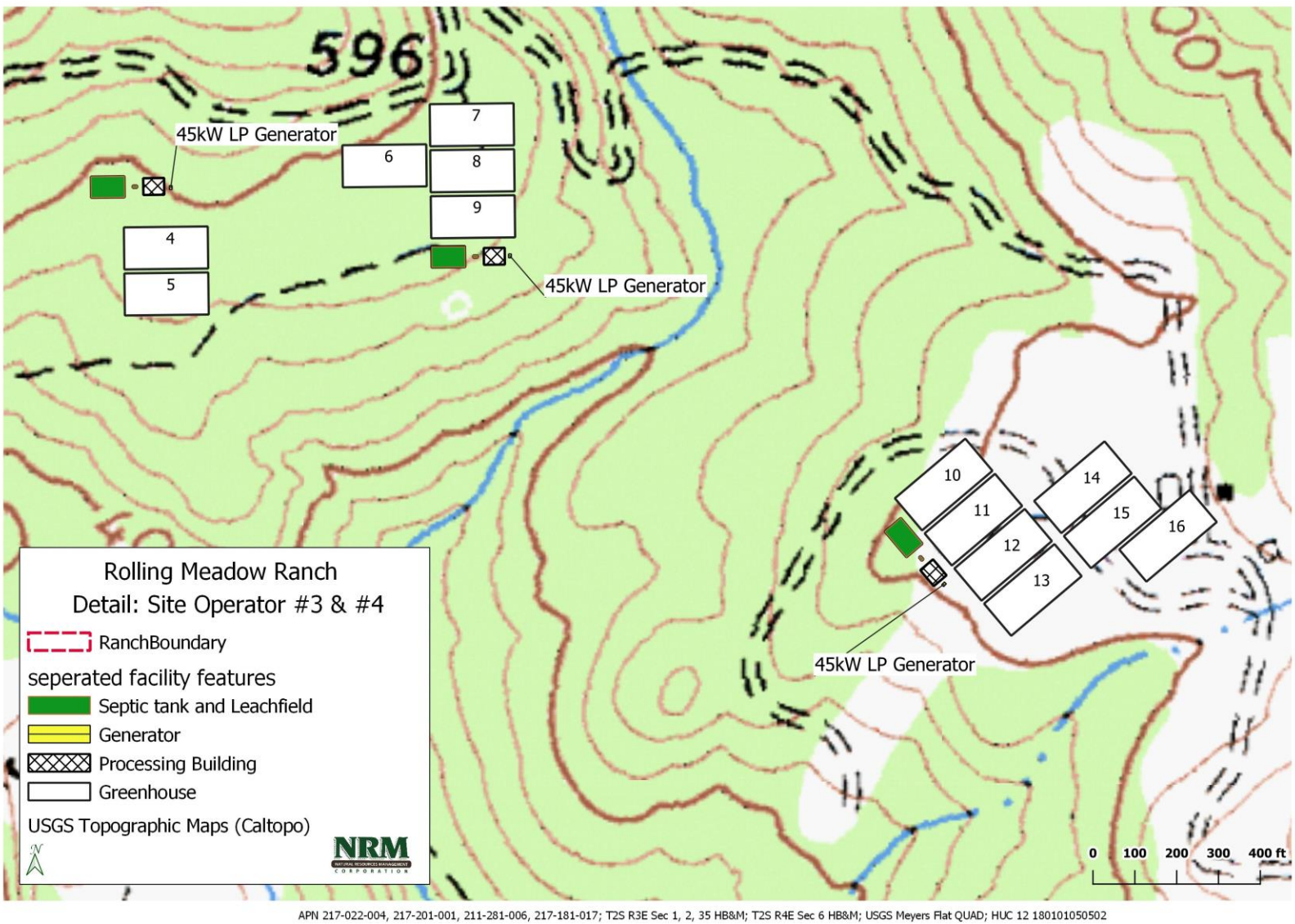


Figure 6. Site Operator # 3 and #4; Greenhouse #s 4-16

e. & f. Figure 7 is a map of the access roads that the project will improve and maintain. There are two gates restricting access at the Southern entrance and there are permanent gates at all other road intersection points off of the main access road highlighted in yellow.

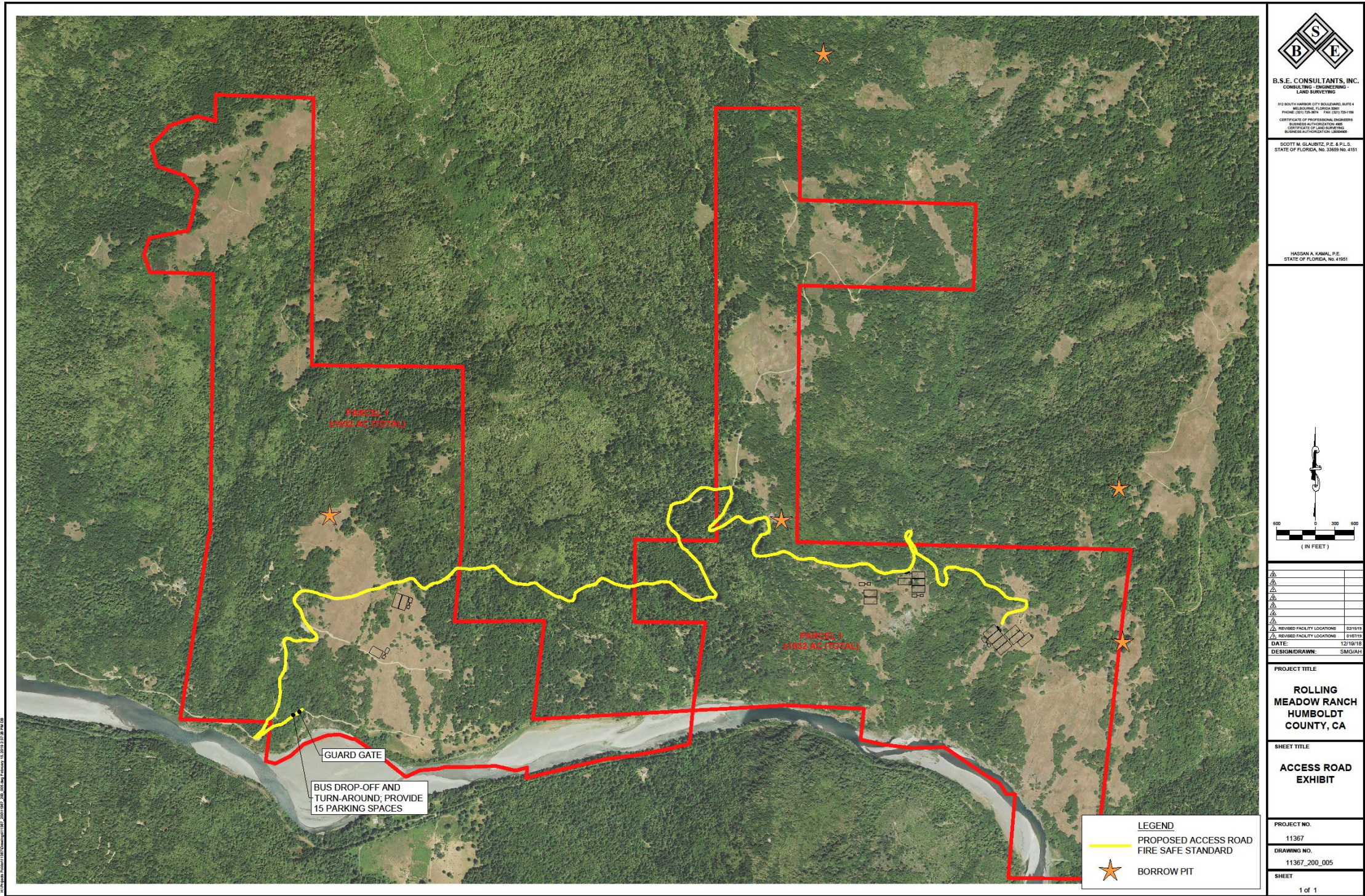


Figure 7

g. Figure 8 shows the distance to the nearest residence to be 2272-feet or .43 miles. The distance is taken from Site Operator #1, the closest project component to the residence. There is another residence to the West of Site Operators 1 and 2, and others across the river; none have been identified at a distance closer than .43 miles.

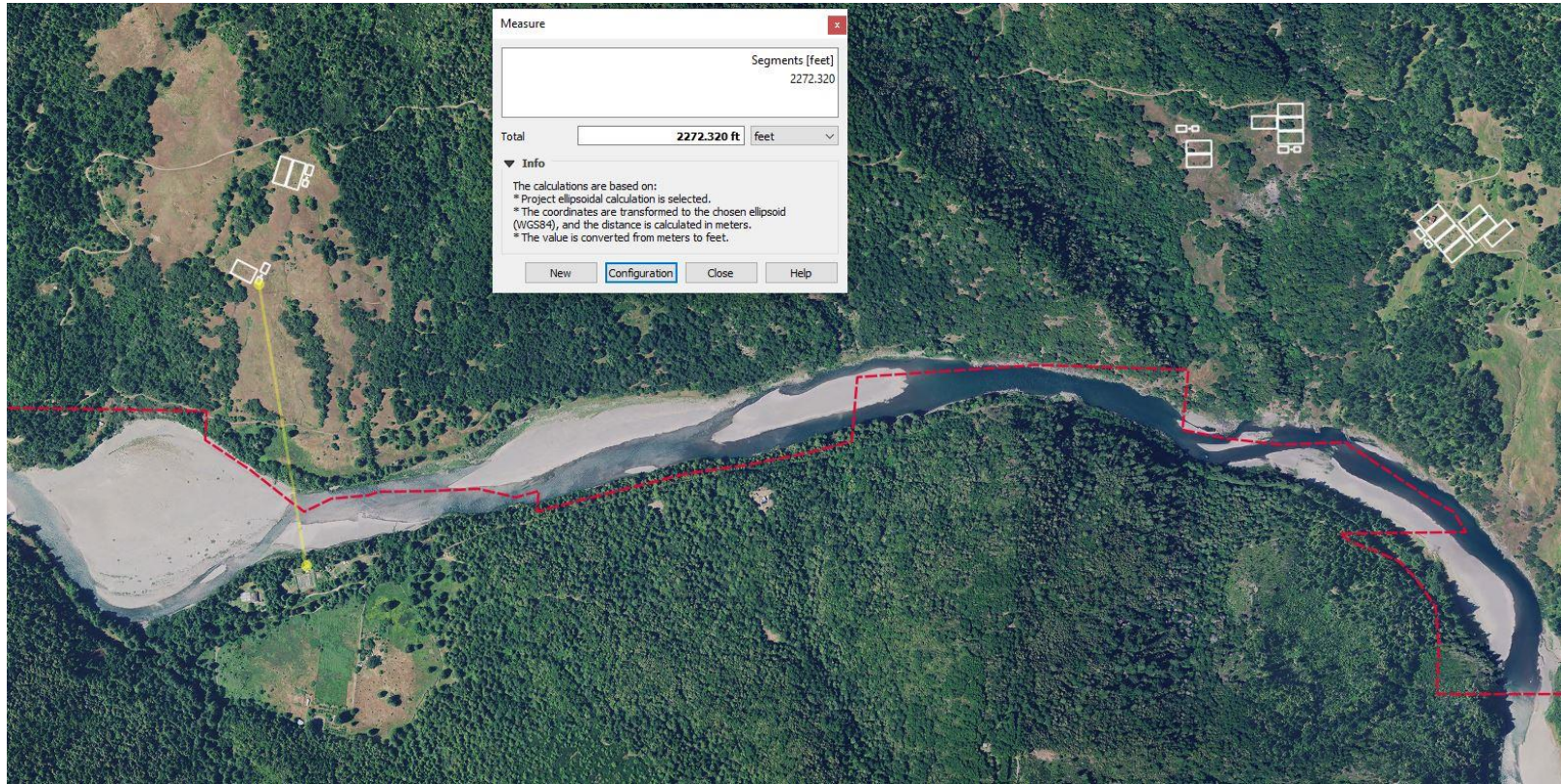
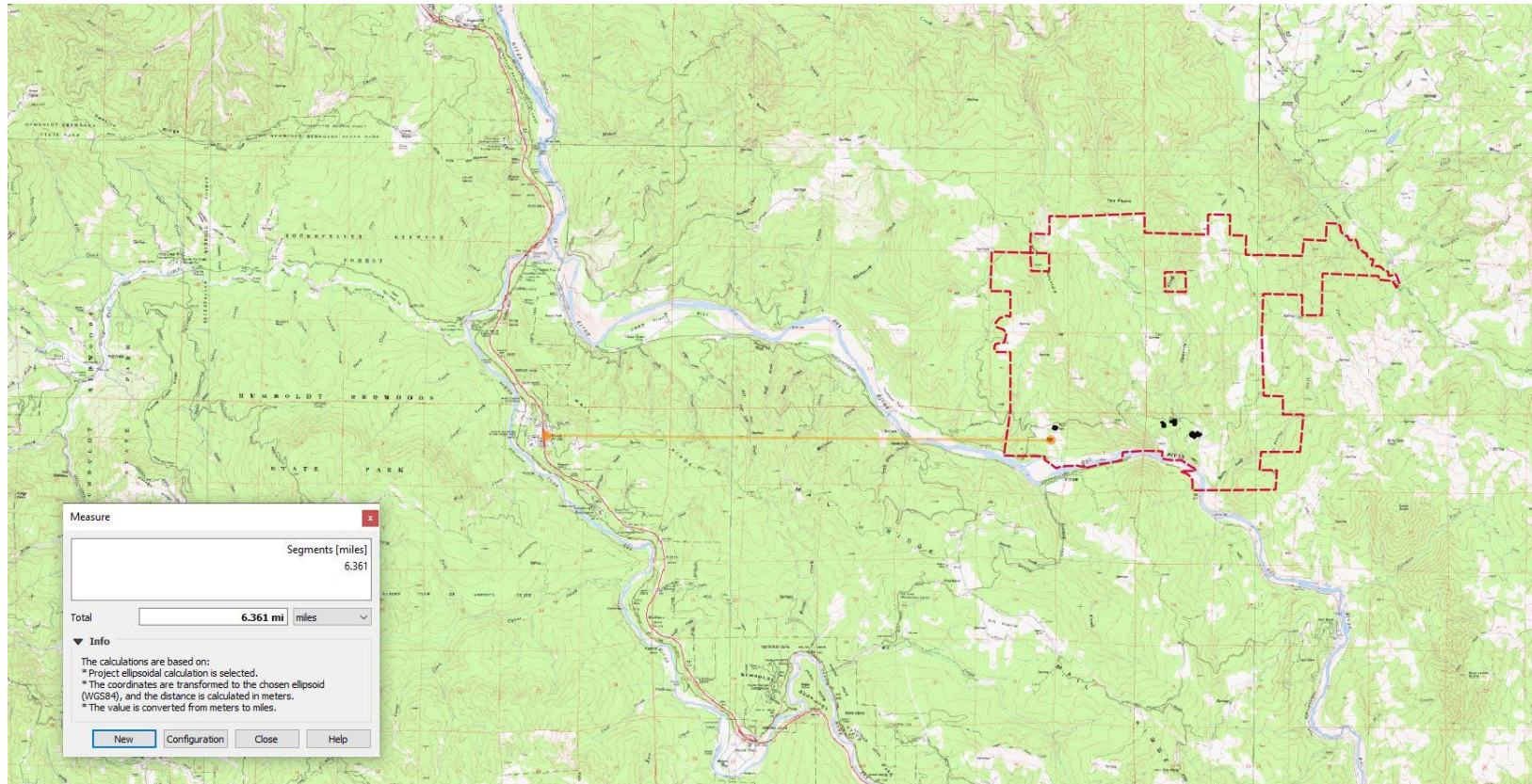


Figure 8

h. Figure 9 shows the distance to the nearest school (Agnes J. Johnson Elementary School in Weott) to be over 6 miles.



STATEMENT OF EXHAUST EMISSIONS

2019 SPARK-IGNITED GENERATORS

QT & RG SERIES - SCAQMD CERTIFIED

STATIONARY EMERGENCY

	Model	Engine	EPA Engine Family	Fuel	CAT Req'd *	SCAQMD CEP #	EPA Cert #	Grams/bhp-hr.			Rated RPM	BHP	Fuel Flow (lb/hr)
								THC	NOx	CO			
Small Spark Ignited Engines - SSIE (SORE)	RG022	2.4	KGXNB02.42NN	NG	No	NR	KGXNB02.42NN-055	2.34	2.15	101.28	1800	31.83	14.27
			KGXNB02.42NL	LPG	No	NR	KGXNB02.42NL-056	1.54	3.76	95.37	1800	35.63	15.31
	RG025	1.5	KGXNB01.52NN	NG	No	NR	KGXNB01.52NN-005	2.87	1.57	133.44	3600	47.10	20.35
			KGXNB01.52NL	LPG	No	NR	KGXNB01.52NL-010	1.99	1.62	134.47	3600	48.50	19.60
	RG030	1.5	KGXNB01.52NN	NG	No	NR	KGXNB01.52NN-005	2.87	1.57	133.44	3600	47.10	20.35
			KGXNB01.52NL	LPG	No	NR	KGXNB01.52NL-010	1.99	1.62	134.47	3600	48.50	19.60
	RG027	2.4	KGXNB02.42NN	NG	No	NR	KGXNB02.42NN-055	2.14	2.37	93.95	1800	38.39	16.52
			KGXNB02.42NL	LPG	No	NR	KGXNB02.42NL-056	1.43	4.38	86.18	1800	43.29	17.59
	RG045	2.4	KGXNB02.42L1	NG	Yes	457398	KGXNB02.42L1-006	0.62	0.22	1.00	3600	78.42	30.94
			KGXNB02.42L2	LPG	Yes	457398	KGXNB02.42L2-014	0.11	0.48	0.70	3600	85.51	35.01
	RG048	5.4	KGXNB05.42L1	NG	Yes	530213	KGXNB05.42L1-015	0.36	0.11	0.23	1800	75.70	24.30
			KGXNB05.42L2	LPG	Yes	530216	KGXNB05.42L2-016	0.06	0.56	0.27	1800	77.00	26.32
Large Spark Ignited Engines - LSIE	QT070	6.8	KGXNB06.82L1	NG	Yes	487844	KGXNB06.82L1-017	0.27	0.15	0.72	1800	108.35	40.91
			KGXNB06.82L2	LPG	Yes	487844	KGXNB06.82L2-007	0.05	0.19	1.35	1800	111.93	42.30
	QT100	6.8	KGXNB06.82C1	NG	Yes	453278	KGXNB06.82C1-042	0.42	0.16	0.90	2300	148.84	56.24
			KGXNB06.82C2	LPG	Yes	453278	KGXNB06.82C2-044	0.04	0.59	0.43	2300	162.25	62.90
	QT130	6.8	KGXNB06.82C1	NG	Yes	498304	KGXNB06.82C1-042	0.19	0.16	1.76	3000	191.87	73.53
			KGXNB06.82C2	LPG	Yes	498304	KGXNB06.82C2-044	0.06	0.59	1.36	3000	208.26	81.76
	QT150	6.8	KGXNB06.82C1	NG	Yes	483767	KGXNB06.82C1-042	0.12	0.02	1.51	3600	230.63	90.59
			KGXNB06.82C2	LPG	Yes	483767	KGXNB06.82C2-044	0.04	1.18	0.87	3600	231.35	90.73

* Three-Way Catalyst (TWC)

NR: Not Required

Refer to page 2 for definitions and advisory notes.

STATEMENT OF EXHAUST EMISSIONS

2019 SPARK-IGNITED GENERATORS

QT & RG SERIES - SCAQMD CERTIFIED

STATIONARY EMERGENCY

2019 EPA SPARK-IGNITED EXHAUST EMISSIONS DATA

Effective since 2009, the EPA has implemented exhaust emissions regulations on stationary spark-ignited (gaseous) engine generators for emergency applications. All Generac spark-ignited gensets, including SG, MG, QTA, QT and RG series gensets that are built with engines manufactured in 2009 and later meet the requirements of 40CFR part 60 subpart JJJJ and are EPA certified. These generator sets are labeled as EPA Certified with decals affixed to the engines' valve covers.

The attached documents summarize the general information relevant to EPA certification on these generator sets. This information can be used for submittal data and for permitting purposes, if required. These documents include the following information:

EPA Engine Family

The EPA Engine Family is assigned by the Manufacturer under EPA guidelines for certification purposes and appears on the EPA certificate.

Catalyst Required

Indicates whether a three-way catalyst (TWC) and Air/Fuel Ratio control system are required on the generator set to meet EPA certification requirements. Generally, units rated 80kW and smaller do not require a TWC to meet EPA certification requirements. Please note that some units that do not require a TWC to meet EPA requirements do need one if the California SCAQMD option is selected. Please see "California SCAQMD" below for additional information on this option.

Combination Catalyst or Separate Catalyst

SG and MG series generator sets typically utilize a single combination catalyst/silencer as part of meeting EPA certification requirements. Many QT and RG series generator sets use the same engines as SG series units, but have different exhaust configurations that require the use of conventional silencers with additional separate catalysts installed.

EPA Certificate Number

Upon certification by the EPA, a Certificate Number is assigned by the EPA.

Emissions Actuals - Grams/bhp-hr

Actual exhaust emission data for Total Hydrocarbons (THC), Nitrogen Oxides (NOx) and Carbon Monoxide (CO) that were submitted to EPA and are official data of record for certification. This data can be used for permitting if necessary. Values are expressed in grams per brake horsepower-hour; to convert to grams/kW-hr, multiply by 1.341. Please see advisory notes below for further information.

California Units, SCAQMD CEP Number

A separate low-emissions option is available on many Generac gaseous-fueled generator sets to comply with the more stringent South Coast Air Quality Management District requirements that are recognized in certain areas in California. Gensets that include this option are also EPA Certified.

General Advisory Note to Dealers

The information provided here is proprietary to Generac and its' authorized dealers. This information may only be disseminated upon request, to regulatory governmental bodies for emissions permitting purposes or to specifying organizations as submittal data when expressly required by project specifications, and shall remain confidential and not open to public viewing. This information is not intended for compilation or sales purposes and may not be used as such, nor may it be reproduced without the expressed written permission of Generac Power Systems, Inc.

Advisory Notes on Emissions Actuals

- The stated values are actual exhaust emission test measurements obtained from units representative of the generator types and engines described.
- Values are official data of record as submitted to the EPA and SCAQMD for certification purposes. Testing was conducted in accordance with prevailing EPA protocols, which are typically accepted by SCAQMD and other regional authorities.
- No emission values provided are to be construed as guarantees of emissions levels for any given Generac generator unit.
- Generac Power Systems reserves the right to revise this information without prior notice.
- Consult state and local regulatory agencies for specific permitting requirements.
- The emissions performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and must be consulted by the permit applicant/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems cannot be construed as a guarantee of installability of the generator set.
- The emission values provided are the result of multi-mode, weighted scale testing in accordance with EPA testing regulations, and may not be representative of any specific load point.
- The emission values provided are not to be construed as emission limits.

Appendix I

Botanical Survey Report; NRM, 2019.

Botanical Survey Report:

Rolling Meadow Ranch

Tract 1/4: Humboldt County APN 217-201-001
Tract 2/3: Humboldt County APNs 217-181-028, 217-182-014, and 211-284-009

Prepared by
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Prepared for
Rolling Meadow Ranch

July 20, 2018

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Introduction

We conducted a botanical survey to determine the presence of sensitive species or natural communities within the proposed project areas. Survey findings are useful in assessing the potential for significant negative impacts on botanical resources and are critical in mitigating those impacts to a less than significant level. The following

report conforms to the California Department of Fish and Wildlife's (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW, 2018).

Project Description

The project is located on the north side of the main stem of the Eel River in southeastern Humboldt County, approximately 5 miles east of Highway 101, and is accessed via McCann Rd. (Figure 1). The legal description of the proposed *Cannabis* cultivation area (herein "project") is the USGS 7.5' quadrangle Myers Flat T2S R3E Sections 1, 2, 35 HB&M and T2S R4E section 6 HB&M (see Fig. 1, Location Map). Elevations within the project area range from approximately 60 to 425 m (200 to 1400 ft), and slopes range from approximately 5 to 50 percent. Aspects are generally southern.

Proposed new construction consists of four *Cannabis* cultivation sites, distributed between two portions of the total ownership, referred to as "Tracts" in the engineering plans (and herein) which combine portions of several parcels. The project areas consist of Tracts 1 and 4 combined and Tracts 2 and 3 combined. Only those APNs with proposed projects are included in this report.

Tract 2/3 combined is located on APN's 217-181-028, 217-182-014, and 211-284-009. At this location it is proposed to construct seven 22,000 square foot mixed light facilities and one 21,600 square foot mixed light facility for a total of 175,600 square feet for facility space and 143,496 square feet (3.29 acres) of cultivation space. These facilities will be located in three areas, hereafter referred to as South, Middle and North (Figure 2). At this location three 2000 square foot drying and processing buildings with restrooms will also be constructed. Three permitted septic systems will also be installed. Two wells will be drilled to provide water for both the irrigation and building needs.

Tract 1/4 combined is located on APN 217-201-001. At this location it is proposed to construct eight 22,000 square foot mixed light facilities for a total of 176,000 square feet of facility space and 144,000 (3.3 acres) of cultivation space. At this location two 2000 square foot drying and trimming buildings with restrooms will also be constructed. Two permitted septic systems will also be installed. A well will be drilled to provide water for both the irrigation and building needs.

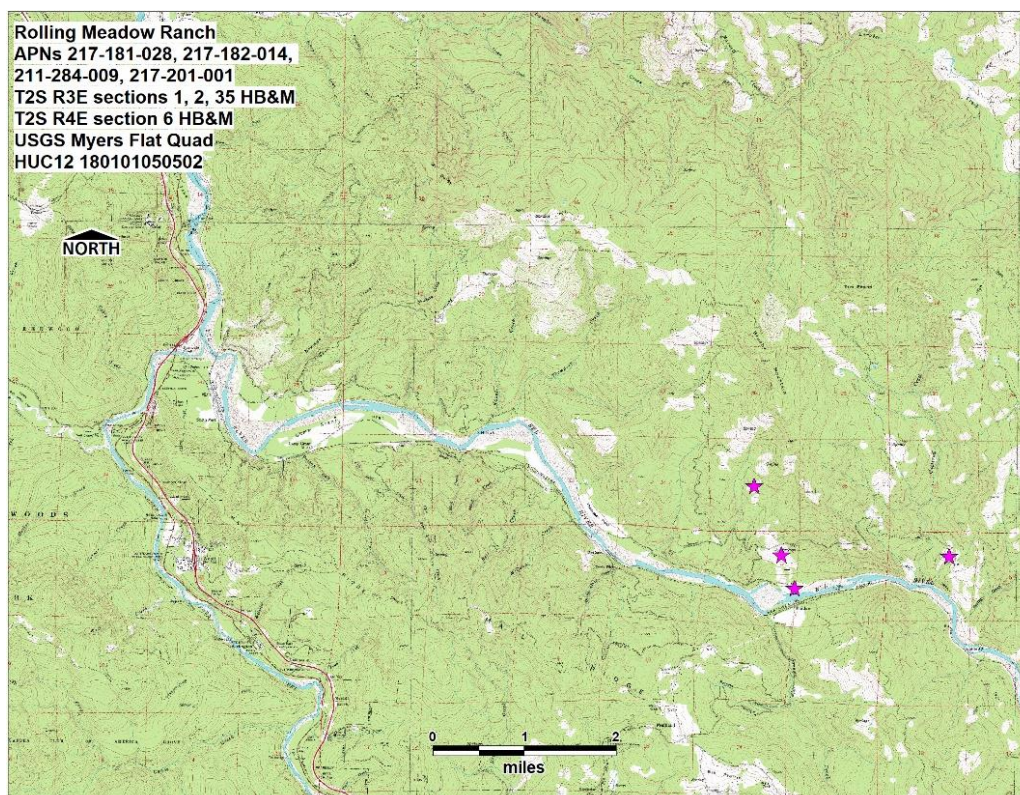


Figure 1. Location Map, Rolling Meadow Ranch, Topographic View.

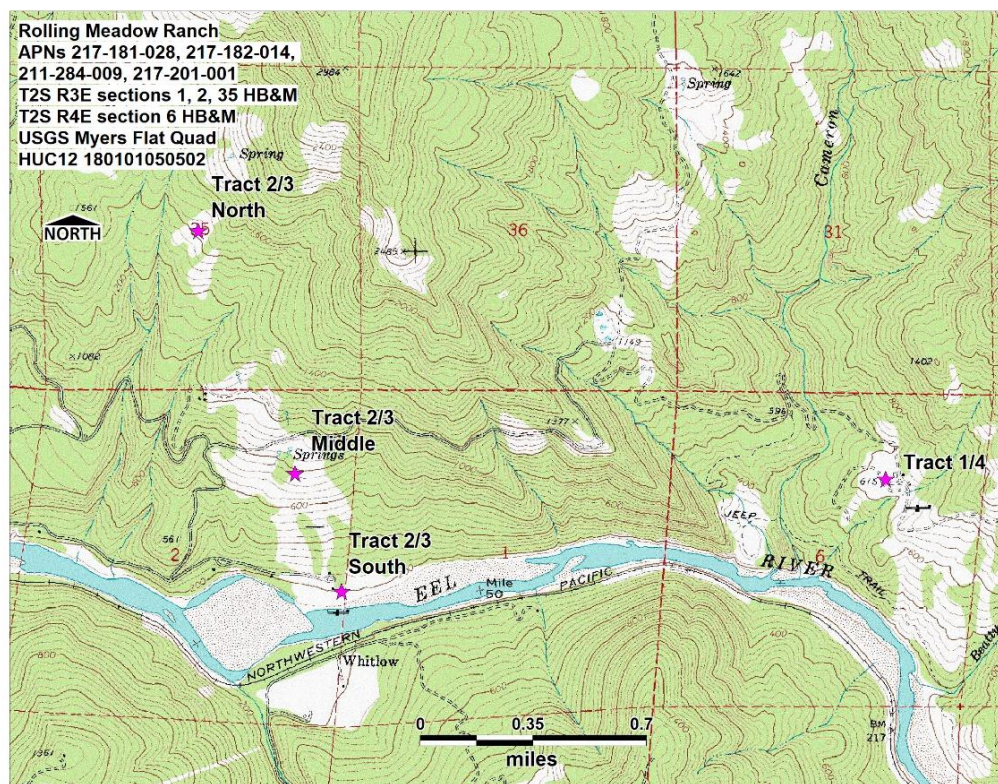


Figure 2a. Proposed Project Sites Rolling Meadow Ranch, Topographic View.

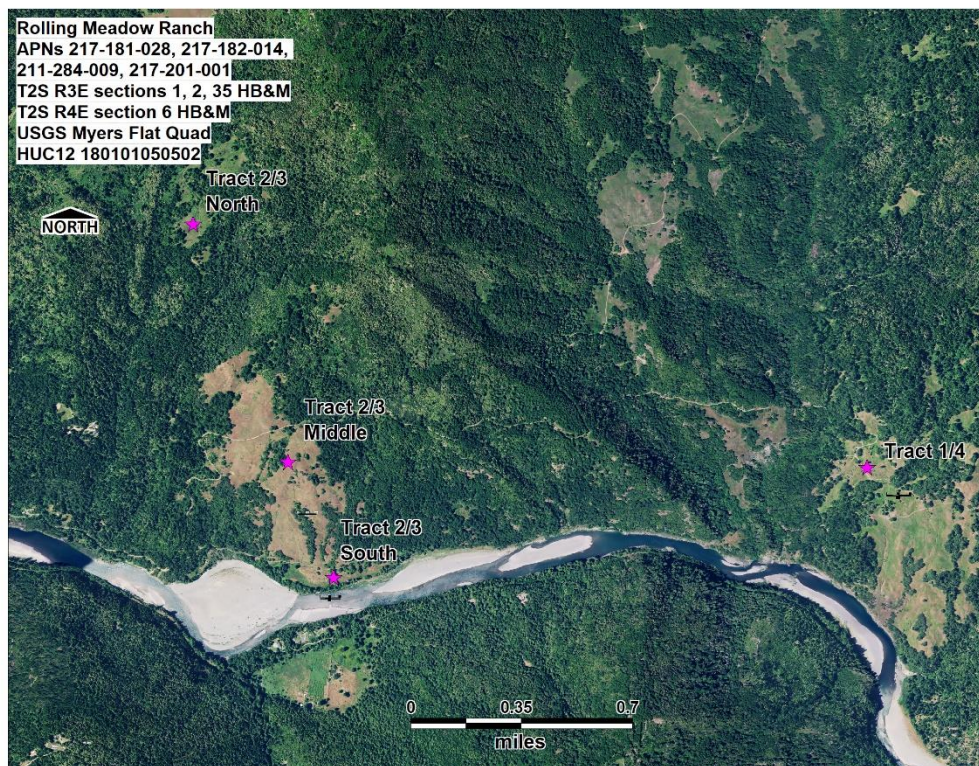


Figure 2b. Proposed Project Sites Rolling Meadow Ranch, Orthographic View. 2016 NAIP image.

Biological Description

Hydrology

The proposed project area is in the Eel River watershed (see Fig. 1, Location Map). Cameron & Beatty Creeks and numerous unnamed ephemeral streams drain the property. Several potential wetland areas were identified in and around the project area (Figures 4a-4d).

Soils

Soils within the proposed infrastructure footprint in the North section of Tract 2/3 are of the Wirefence-Windynip-Devilshole complex (5 to 30 percent slopes), with parent material of colluvium and residuum derived from sandstone (NRCS, 2018). These soils are described as well drained loams and underlain by gravelly loams and very gravelly fine sandy loams (NRCS, 2018). See Figure 3a, Tract 2/3 Project Area Soils Map.

Soils within the proposed infrastructure footprint in the Middle and South sections of Tract 2/3 are of the Yorknorth-Windynip complex (15 to 30 percent slopes), with parent material of colluvium derived from sandstone and/or earthflow deposits derived from schist (NRCS, 2018). These soils are described as moderately well drained silt loams underlain by silty clay loams (NRCS, 2018). See Figure 3a, Tract 2/3 Project Area Soils Map.

Soils within the proposed infrastructure footprint in Tract 1/4 are of the Yorknorth-Witherell complex (2 to 15 percent slopes) and the Yorknorth-Witherell complex (30 to 50 percent slopes), with parent material of colluvium derived from sandstone and/or earthflow deposits derived from schist (NRCS, 2018). The Yorknorth-Witherell complex (30 to 50 percent slopes) are described as moderately well drained silt loams underlain by silty clay loams, clay, and gravelly clay loams, while the Yorknorth-Witherell complex (2 to 15 percent slopes)

are described as moderately well drained loams underlain by layers of clays and clay loams (NRCS, 2018). See Figure 3b, Tract 1/4 Project Area Soils Map.

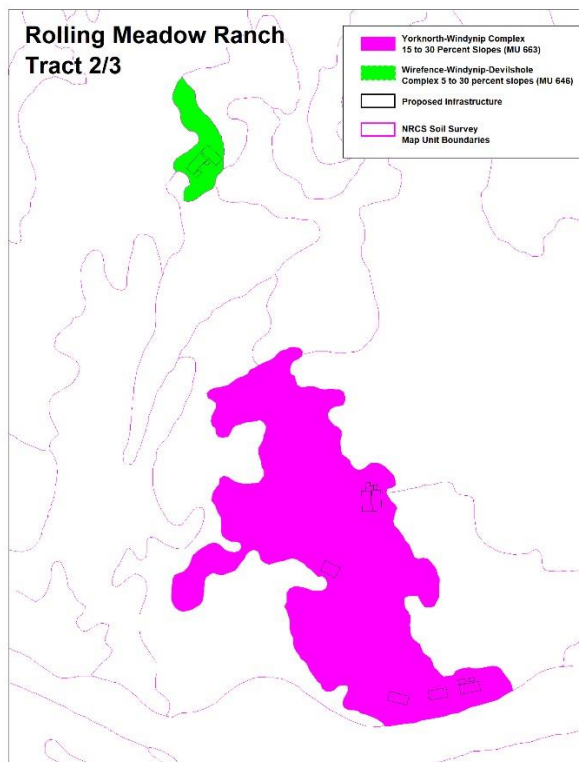


Figure 3a. Soils Map for Tract 2/3

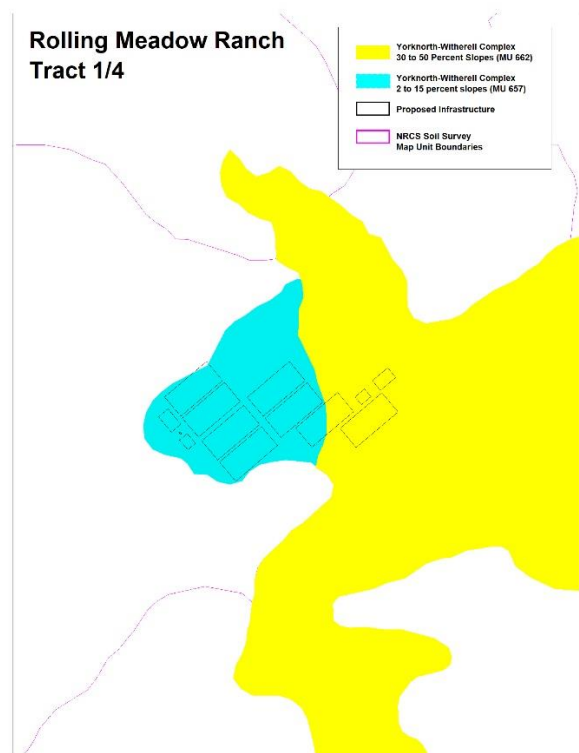


Figure 3b. Soils Map for Tract 1/4

Vegetation

The project area lies within a mosaic of redwood forest, mixed evergreen forest and coastal prairie and nonnative grassland, with inclusions of black oak woodland (Holland, 1986). Red alder forest forms the main vegetation type along and mainstem Eel. The forest is primarily composed of the *Pseudotsuga menziesii* - *Notholithocarpus densiflorus* Forest Alliance (S4) at upper elevations and the *Sequoia sempervirens* Forest Alliance (S3.2) at lower elevations (CNPS 2, 2018). Tree species present but not dominant within both alliances include *Umbellularia californica*, *Acer macrophyllum*, *Arbutus menziesii*, and *Notholithocarpus densiflorus* var. *densiflorus*. The oak woodland inclusions are composed of the *Quercus kelloggii* Forest Alliance (S4), containing a *Quercus kelloggii*-*Quercus chrysolepis* association and a *Quercus kelloggii*/*Toxicodendron diversilobum*/grass association (CNPS 2, 2018). *Umbellularia californica*, *Acer macrophyllum*, *Quercus garryana* and *Aesculus californica* trees and *Baccharis pilularis*, *Rubus armeniacus* and *Heteromales arbutifolia* shrubs are also present within this vegetation type. These forested areas have been extensively logged by previous property owners and are largely composed of even-aged stands of second or third-growth trees.

The proposed project footprint lies almost entirely within the prairie and grassland portions of this mosaic, which are primarily composed of the *Holcus lanatus*-*Anthoxanthum odoratum* Herbaceous Semi-Natural Alliance (SR: NONE), areas dominated by *Dactylis glomerata*, and areas dominated by *Briza maxima*-*Bromus hordeaceus*. Within these larger communities were inclusions of *Elymus glaucus* stands (S3), the *Centaurea (solstitialis, melitensis)* Herbaceous Semi-Natural Alliance, the *Danthonia californica* Herbaceous Alliance and areas dominated by *Arrhenatherum elatius*, (S3) (CNPS 2, 2018). Common forb species present include *Brodiaea elegans*, *Crepis capillaris*, and *Linum bienne*. Shrubs such as *Baccharis pilularis*, *Rubus armeniacus*, *Heteromales arbutifolia* and *Toxicodendron diversilobum* are present as scattered thickets. These prairies have been heavily utilized for cattle grazing in recent decades. There is no active livestock management under the current owner, however the areas continue to be utilized by trespassing cattle.

Potential wetland areas identified in the project areas are defined by the dominance of Obligate (OBL) and Facultative-Wetland (FACW) and Facultative (FAC) species, as listed in the United States Army Core of Engineers Western Mountains, Valleys & Coast 2016 Regional Wetland Plant List (Lichvar et al., 2016). These areas are found primarily within the open prairie and are generally dominated by *Mentha pulegium* (OBL), *Cyperus eragrostis* (FACW), *Juncus effusus* (FACW), and *Holcus lanatus* (FAC).

Streams were identified and mapped during a site visit preceding the survey dates, according to the United States Army Core of Engineers *A Guide to Ordinary HighWater Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mercel and Lichvar, 2014). There is one questionable stream like feature within Tract 2/3 North, where there is what appears like an ephemeral stream on possibly an old road bed. The landowner believes this feature is the manmade result of water captured on an old road. The topography in this area has been disrupted by road building in the past.

Botanical Survey Methods

Scoping

The current inventories of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 1, 2018), the CDFW California Natural Diversity Database (CNDDB, 2018) were consulted to determine which special status plant species may occur within the project area and to compile a target species list. A nine-Quad query of CNDDB and CNPS *Inventory* records resulted in 29 listed vascular and nonvascular plant species and one Sensitive Natural Community. This list was used to create a target species and communities list (Table 1). Species for which habitat does not exist in the project area (e.g., alpine habitat, coastal dunes) were not included in the target species list, resulting in a final list of 27 species (Table 1) and one Sensitive Natural

Community (Table 2). This list includes species listed, candidates for listing, or proposed for listing under the ESA, CESA and the California Native Plant Protection Act. These scoping strategies are consistent with the California Department of Fish and Wildlife protocols (CDFW, 2018) and the California Environmental Quality Act (State of California, 2001).

Table 1. Target Species List: CNPS Rare Plant Rank (CNPR) 1-4 Plants Known to Occur in the 9-quadrant Area Surrounding Project.

Scientific Name	Common Name	CRPR*	Bloom Period	Habitat	Micro Habitat	Elevation Low (m)	Elevation High (m)
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	1B.1	Apr-Sep	Broadleaved upland forest, North Coast coniferous forest	openings, disturbed areas, sometimes roadsides	120	800
<i>Carex arcta</i>	northern clustered sedge	2B.2	Jun-Sep	Bogs and fens, North Coast coniferous forest (mesic)		60	1400
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	4.2	Mar-Aug	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins		0	435
<i>Coptis laciniata</i>	Oregon goldthread	4.2	(Feb)Mar-May(Sep-Nov)	Meadows and seeps, North Coast coniferous forest (streambanks)	Mesic	0	1000
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	4.2	Mar-Aug	Lower montane coniferous forest, North Coast coniferous forest	usually serpentinite seeps and streambanks	100	2435
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	4.3	Jul-Sep	Broadleaved upland forest, North Coast coniferous forest	sandy or rocky	45	1800
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	sometimes serpentinite, rocky, openings	100	1150
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	Mar-Jul(Aug)	Bogs and fens, Broadleaved upland forest, North Coast coniferous forest	Mesic, streambanks	0	1600
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland		5	1665
<i>Kopsiopsis hookeri</i>	small groundcone	2B.3	Apr-Aug	North Coast coniferous forest		90	885
<i>Lathyrus glandulosus</i>	sticky pea	4.3	Apr-Jun	Cismontane woodland		300	800
<i>Lilium kelloggii</i>	Kellogg's lily	4.3	May-Aug	Lower montane coniferous forest, North Coast coniferous forest	Openings, roadsides	3	1300
<i>Lilium rubescens</i>	redwood lily	4.2	Apr-Aug(Sep)	Broadleaved upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Sometimes serpentinite, sometimes roadsides	30	1910
<i>Listera cordata</i>	heart-leaved twayblade	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest		5	1370
<i>Lycopodium clavatum</i>	running-pine	4.1	Jun-Aug(Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	often edges, openings, and roadsides	45	1225
<i>Mitellastrum caulescens</i>	leafy-stemmed mitrewort	4.2	(Mar)Apr-Oct	Broadleaved upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	mesic, sometimes roadsides	5	1700

<i>Montia howellii</i>	Howell's montia	2B.2	(Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	vernally mesic, sometimes roadsides	0	835
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2B.2	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	Sometimes roadsides	30	650
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	(Mar)May-Sep	Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest	sometimes serpentinite	30	1310
<i>Pityopus californicus</i>	California pinefoot	4.2	(Mar-Apr)May-Aug	Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	mesic	15	2225
<i>Pleuropogon refractus</i>	nodding semaphore grass	4.2	(Mar)Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	mesic	0	1600
<i>Sanicula tracyi</i>	Tracy's sanicle	4.2	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	openings	100	1585
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2	(Mar)Apr-Aug	Broadleaved upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	often in disturbed areas	0	730
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B.2	May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	often roadcuts	15	880
<i>Tracyina rostrata</i>	beaked tracyina	1B.2	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland		90	790
<i>Usnea longissima</i>	Methuselah's beard lichen	4.2		Broadleaved upland forest, North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers	50	1460
<i>Wyethia longicaulis</i>	Humboldt County wyethia	4.3	May-Jul	Broadleaved upland forest, Coastal prairie, Lower montane coniferous forest	sometimes roadsides	750	1525

*Listing codes are as follows: CRPR 1B = rare, threatened, or endangered in CA and elsewhere; CRPR 2B = rare, threatened, or endangered in CA, but more common elsewhere; CRPR 3 = plants about which more information is needed; a review list; CRPR 4 = of limited distribution or infrequent throughout a broader area in California. Ranks at each level also include a threat rank and are determined as follows: 0.1-Seriously threatened in California; 0.2-Moderately threatened in California; 0.3-Not very threatened in California (CNPS 1, 2018).

Table 2. Target Sensitive Natural Communities List: Communities Known to Occur in the 9-quad Area Surrounding Project.

Community Name	State Rank*	Legacy CNDDB Occurrence?	Alliance Name (Sawyer and Keeler-Wolf, 2009)
Upland Douglas -fir forest (Holland, 1986)	S3.1	Yes	<i>Pseudotsuga menziesii</i> Forest Alliance

*Listing codes are as follows: S1: Fewer than 6 viable occurrences worldwide/ statewide, and/ or up to 518 hectares; S2: 6-20 viable occurrences worldwide/ statewide, and/ or more than 518-2,590 hectares; S3: 21-100 viable occurrences worldwide/ statewide, and/ or more than 2,590-12,950 hectares; S4: Greater than 100 viable occurrences worldwide/ statewide, and/ or more than 12,950 hectares; S5: Demonstrably secure because of its worldwide/ statewide abundance. Additional Threat Ranks: 0.1=Very threatened; 0.2=Threatened; 0.3= No current threat known.

Surveys

Surveys were conducted according to the CDFW *Protocols* (CDFW, 2018) by Claire Brown on May 28 and July 3, 2018. Claire holds a Bachelor of Science Degree in Ecology and Evolutionary Biology from the University of Tennessee and has 6 years of experience performing botanical surveys in California, including in the North Coast region. Field survey hours totaled 16. The comprehensive survey method was used to cover the proposed project

areas intensively (Figures 4a-4d). The survey was seasonally appropriate (i.e., conducted during target species' blooming windows or when plants were readily identifiable by vegetative characteristics) for most target species (Table 1). Suitable habitat (when present) for each target species was identified. It was not possible to visit reference populations of target species. Vascular plants encountered in the field were identified to the lowest taxonomic level necessary for a rare species determination. Species were identified using the *Jepson Manual* 2nd edition (Baldwin et al., 2012) A comprehensive species list for the project area was recorded and is attached (Table 4).

Vegetation types within and around the project area were identified and recorded according to the conventions of *A Manual of California Vegetation, Second Edition* (Sawyer and Keeler-Wolf, 2009). CDFW's *California Sensitive Natural Communities* list (CDFW 3, 2018) was referenced to determine if Sensitive Communities were included in the vegetation alliances and associations found on-site.



Figure 4a. Survey Routes, Tracts 2/3 South. 2016 NAIP image.



Figure 4b. Survey Routes, Tracts 2/3 Middle. 2016 NAIP image.

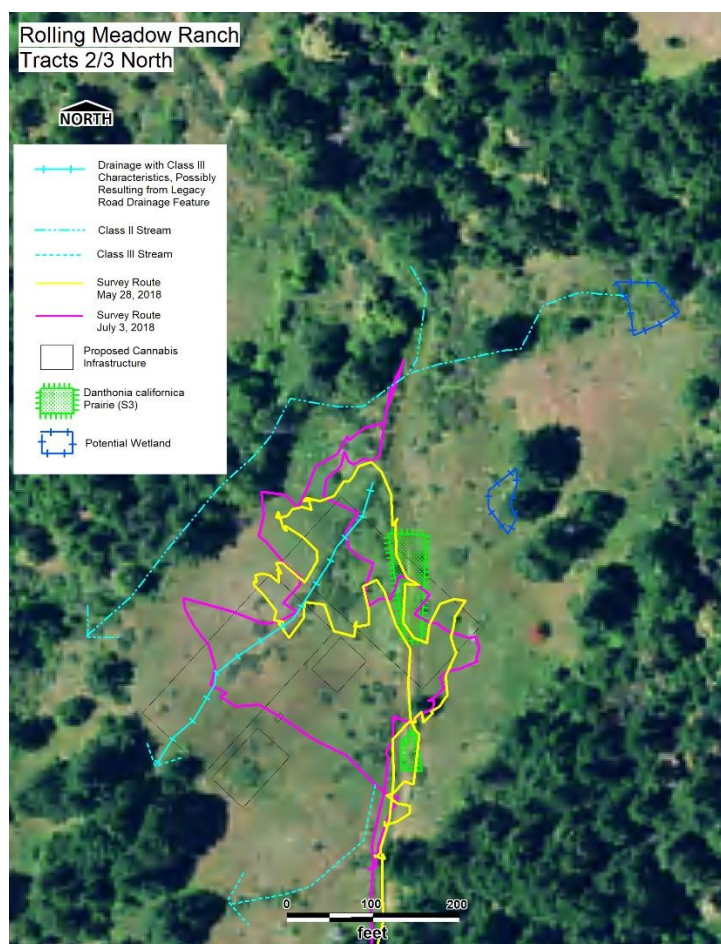


Figure 4c. Survey Routes, Tracts 2/3 North. 2016 NAIP image.



Figure 4d. Survey Routes, Tracts 1/4. 2016 NAIP image.

Survey Results

Special Status Species

No rare, endangered, or CNPS list 1, 2, 3 or 4 plants were found during the surveys. The overall survey results are summarized in Table 3. A total of 140 plant taxa were identified within the project area. All taxa are listed in Table 4. Weather patterns and climate conditions in the months prior to the surveys were average, and conditions should have been suitable for growth and flowering of most species for which habitat was present. The early survey was potentially too late in the season to detect Howell's Montia (*Montia howellii*) but only marginal habitat was found on site.

Table 3. Summary of Findings for Special Status Plant Species

Scientific Name	Common Name	CRPR	Blooming Period	Species Detected?	Potential Habitat Present?
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	1B.1	Apr-Sep	No	Yes-roadsides and forest openings
<i>Carex arcta</i>	northern clustered sedge	2B.2	Jun-Sep	No	Marginal – seasonal wetlands present, no fens or bogs.
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	4.2	Mar-Aug	No	Yes-prairie areas with thin soils
<i>Coptis laciniata</i>	Oregon goldthread	4.2	(Feb)Mar-May(Sep-Nov)	No	Marginal -project footprint largely within prairie, away from streambanks
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	4.2	Mar-Aug	No	Marginal - no serpentine soils present
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	4.3	Jul-Sep	No	Marginal – no sandy or rocky outcroppings present, only rocky thin soils
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	Mar-Jun(Jul)	No	Marginal -project footprint largely within prairie, away from streambanks
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	Mar-Jul(Aug)	No	Marginal -project footprint largely within prairie, away from streambanks
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	Apr-Aug	No	Yes-some rocky areas with thin soils present within prairie
<i>Kopsiopsis hookeri</i>	small groundcone	2B.3	Apr-Aug	No	Marginal- madrone present but not within project footprint
<i>Lathyrus glandulosus</i>	sticky pea	4.3	Apr-Jun	No	Marginal- usually found at higher elevations than project area.
<i>Lilium kelloggii</i>	Kellogg's lily	4.3	May-Aug	No	Yes - shady roadside habitat present
<i>Lilium rubescens</i>	redwood lily	4.2	Apr-Aug(Sep)	No	Marginal-forest edge habitat present but project footprint largely within prairie
<i>Listera cordata</i>	heart-leaved twayblade	4.2	Feb-Jul	No	Marginal -project footprint largely within prairie
<i>Lycopodium clavatum</i>	running-pine	4.1	Jun-Aug(Sep)	No	Marginal-habitat present along roadsides
<i>Mitellastrum caulescens</i>	leafy-stemmed mitrewort	4.2	(Mar)Apr-Oct	No	Marginal -project footprint largely within prairie, away from streambanks
<i>Montia howellii</i>	Howell's montia	2B.2	(Feb)Mar-May	No	Marginal- seasonal wetlands present but few low-cover vernal pools. Roads grassy.
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2B.2	(Jan-Apr)May-Jul(Aug)	No	Marginal -project footprint largely within prairie, potential habitat found along roadsides
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	(Mar)May-Sep	No	Marginal -project footprint largely within prairie, some habitat under trees in Tract 2/3 South and along roadsides
<i>Pityopus californicus</i>	California pinefoot	4.2	(Mar-Apr)May-Aug	No	Marginal -project footprint largely within prairie
<i>Pleuropogon refractus</i>	nodding semaphore grass	4.2	(Mar)Apr-Aug	No	Marginal -project footprint largely within prairie

<i>Sanicula tracyi</i>	Tracy's sanicle	4.2	Apr-Jul	No	Marginal -project footprint largely within prairie
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2	(Mar)Apr-Aug	No	Yes-roadsides
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B.2	May-Aug	No	Yes-prairie and roadsides
<i>Tracyina rostrata</i>	beaked tracyina	1B.2	May-Jun	No	Yes- prairie, oak woodland
<i>Usnea longissima</i>	Methuselah's beard lichen	4.2		No	Marginal -project footprint largely within prairie
<i>Wyethia longicaulis</i>	Humboldt County wyethia	4.3	May-Jul	No	Marginal -Usually found at elevations higher than within the project area

Sensitive Natural Communities

Pseudotsuga menziesii - *Notholithocarpus densiflorus* Forest Alliance (S4) and the *Sequoia sempervirens* Forest Alliance (S3.2) are found in the vicinity of the project area. The proposed construction footprint does not directly impact these communities with the exception of the small portion of the footprint within the Tract 2/3 South area, where several *Sequoia sempervirens* trees are within the footprint (Figure 4a).

Stands of *Danthonia californica* Prairie (S3, Alliance Code 41.050.00) and the *Elymus glaucus* association (S3 association code 41.640.01) were identified within several of the project sites. Each of these stands were smaller than the conventional minimum mapping unit of 1 acre and cannot therefore be conventionally mapped as a Natural Community and submitted to VegCAMP (CDFW 2, 2018). However, the size and location of these stands was included within the survey maps (Figures 4a-4d).

Discussion

No rare, endangered, or CNPS list 1, 2, 3 or 4 plants were found during the surveys. Climate conditions in the months preceding the surveys were within the range of average. *Tracyina rostrata*, for example, bears close resemblance to other common weedy Asteraceae species when fruiting, and despite careful searching could be overlooked if survey timing did not align perfectly with blooming. As no reference populations were available, bloom time predictions were made based on elevation, aspect and position within the geographic range of each species.

Sensitive natural communities (with a State Rank of S1-3) were only found to exist in stands less than one acre in size (Figures 4a-4b). Development at all sites would impact small stands of *Danthonia californica* Prairie (S3), and development in Tract 1/4 would impact several small stands of *Elymus glaucus* (S3) (Figure 4d).

The proposed project footprint is outside of any stream or wetland areas, except for within Tract 2/3 North, where a drainage with the characteristics of an ephemeral (Class III) stream runs through the proposed cultivation area. The landowner believes this feature is the result of a legacy drainage issue in an old road. The topography in the area has been disrupted by road building in the past (Figure 4c).

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Table 4. Overall list of vascular and non-vascular plant species and lichens noted within project area

Trees

Species Name	Common Name	Family
<i>Acer macrophyllum</i>	Bigleaf maple	Sapindaceae
<i>Aesculus californica</i>	Buckeye	Sapindaceae
<i>Alnus rubra</i>	Red alder	Betulaceae
<i>Arbutus menziesii</i>	Madrone	Ericaceae
<i>Notholithocarpus densiflorus</i> var. <i>densiflorus</i>	Tanoak	Fagaceae
<i>Prunus cerasifera</i>	Cherry plum	Rosaceae

<i>Pseudotsuga menziesii</i>	Douglas-fir	Pinaceae
<i>Quercus garryana</i>	Oregon Oak	Fagaceae
<i>Quercus kelloggii</i>	Black oak	Fagaceae
<i>Sequoia sempervirens</i>	Coast redwood	Cupressaceae
<i>Umbellularia californica</i>	California bay laurel	Lauraceae

Shrubs

Species Name	Common name	Family
<i>Bacharis pilularis</i>	Coyote brush	Asteraceae
<i>Bacharis pilularis</i>	Coyote bush	Asteraceae
<i>Gaultheria shallon</i>	Salal	Ericaceae
<i>Genista monspessulana</i>	French broom	Fabaceae
<i>Heteromeles arbutifolia</i>	Toyon	Rosaceae
<i>Holodiscus discolor</i> var. <i>discolor</i>	Oceanspray	Rosaceae
<i>Kniphofia uvaria</i>	Red hot poker	Asphodelaceae
<i>Mimulus aurantiacus</i>	Sticky monkeyflower	Phrymaceae
<i>Oemlaria cerasiformis</i>	Oso berry	Rosaceae
<i>Ribes menziesii</i>	Gooseberry	Grossulariaceae
<i>Ribes roezlii</i> var. <i>cruentum</i>	Spiny fruited gooseberry	Grossulariaceae
<i>Rosa californica</i>	California wild rose	Rosaceae
<i>Rosa canina</i>	Dog rose	Rosaceae
<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae
<i>Rubus leucodermis</i>	Whitebark raspberry	Rosaceae
<i>Rubus parviflorus</i>	Thimbleberry	Rosaceae
<i>Rubus ursinus</i>	California blackberry	Rosaceae
<i>Toxicodendron diversilobum</i>	Poison oak	Anacardiaceae

Herbaceous Plants

Species Name	Common Name	Family
<i>Carduus pycnocephalus</i>	Italian thistle	Asteraceae
<i>Acemisson americanus</i> var. <i>americanus</i>	American lotus	Fabaceae
<i>Acemisson parviflorus</i>	Hill lotus	Fabaceae
<i>Agoseris</i> sp.	Dandelion	Asteraceae

<i>Amaryllis belladonna</i>	Pink naked ladies	Amaryllidaceae
<i>Ansiocarpus madiodes</i>	Woodland Tarweed	Asteraceae
<i>Brodiaea elegans ssp. elegans</i>	Harvest Brodiaea	Themidaceae
<i>Centaurea solstitialis</i>	Yellow star thistle	Asteraceae
<i>Chlorogalum pomeridianum</i>	Soap plant	Asparagaceae
<i>Cichorium intybus</i>	Chicory	Asteraceae
<i>Cirsium vulgare</i>	Bull thistle	Asteraceae
<i>Clarkia purpurea</i>	Winecup clarkia	Onagraceae
<i>Claytonia perfoliata ssp. perfoliata</i>	Miner's lettuce	Montiaceae
<i>Convolvulus arvensis</i>	Bindweed	Convolvulaceae
<i>Crepis capillaris</i>	Hawks beard	Asteraceae
<i>Cyperus eragrostis</i>	Tall Flat Sedge	Cyperaceae
<i>Daucus carota</i>	Wild carrot	Apiaceae
<i>Daucus pusillus</i>	rattlesnake weed	Apiaceae
<i>Dipsacus fullonum</i>	Teasel	Dipsacaceae
<i>Elymus caput-medusae</i>	Medusa Head	Poaceae
<i>Epilobium ciliatum ssp. ciliatum</i>	Willow herb	Onagraceae
<i>Erodium botrys</i>	Broad leaved filaree	Geraniaceae
<i>Eschscholzia californica</i>	California poppy	Papaveraceae
<i>Foeniculum vulgare</i>	Fennel	Apiaceae
<i>Fragaria vesca</i>	Woodland strawberry	Rosaceae
<i>Geranium dissectum</i>	Cut leaved geranium	Geraniaceae
<i>Hordeum marinum</i>	Seaside Barley	Poaceae
<i>Hordeum murinum ssp. leporinum</i>	Barley	Poaceae
<i>Hypericum perforatum</i>	St. John's wort	Hypericaecea
<i>Hypochaeris radicata</i>	Cat's ear	Asteraceae
<i>Iris douglasiana</i>	Douglas iris	Iridaceae
<i>Iris germanica</i>	Bearded Iris	Iridaceae
<i>Lactuca virilis</i>	Bitter lettuce	Asteraceae
<i>Lactuca virosa</i>	Bitter lettuce	Asteraceae
<i>Leucanthemum vulgare</i>	Oxeye daisy	Asteraceae
<i>Linum bienne</i>	Pale flax	Linaceae

<i>Logfia filaginoides</i>	California cottonrose	Asteraceae
<i>Logfia gallica</i>	Narrowleaf cottonrose	Asteraceae
<i>Lonicera hispidula</i>	Pink honeysuckle	Caprifoliaceae
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	Lythraceae
<i>Madia exigua</i>	Small tarweed	Asteraceae
<i>Madia gracilis</i>	Grassy tarweed	Asteraceae
<i>Medicago polymorpha</i>	Medic	Fabaceae
<i>Mentha pulegium</i>	Pennyroyal	Lamiaceae
<i>Mimulus guttatus</i>	Seep monkeyflower	Phrymaceae
<i>Osmorhiza berteroi</i>	Sweet cicely	Apiaceae
<i>Plantago lanceolata</i>	English plantain	Plantaginaceae
<i>Polygala californica</i>	California milkwort	Polygalaceae
<i>Polygonum aviculare</i>	Prostrate knotweed	Polygonaceae
<i>Prunella vulgaris ssp. lanceolata</i>	Self-heal	Lamiaceae
<i>Prunella vulgaris ssp. vulgaris</i>	Self-heal	Lamiaceae
<i>Rumex acetosella</i>	Sheep sorrel	Polygonaceae
<i>Rumex pulcher</i>	Fiddle dock	Polygonaceae
<i>Sanicula crassicaulis</i>	Pacific sanicle	Apiaceae
<i>Silybum marianum</i>	Milk thistle	Asteraceae
<i>Sisyrinchium bellum</i>	Blue-eyes grass	Iridaceae
<i>Sonchus asper ssp. asper</i>	Spiny sow's thistle	Asteraceae
<i>Sonchus oleraceus</i>	Sow's thistle	Asteraceae
<i>Spergularia rubra</i>	Purple sand spurry	Caryophyllaceae
<i>Stachys rigida var. quercetorum</i>	Rough hedge nettle	Lamiaceae
<i>Torilis arvensis</i>	Hedge parsley	Apiaceae
<i>Trifolium dubium</i>	Shamrock clover	Fabaceae
<i>Trifolium hirtum</i>	Rose clover	Fabaceae
<i>Trifolium hybridum</i>	Aslike clover	Fabaceae
<i>Trifolium repens</i>	White clover	Fabaceae
<i>Triteleia hyacinthina</i>	Wild hyacinth	Themidaceae
<i>Triteleia laxa</i>	Ithuriel's spear	Themidaceae
<i>Verbena lasiostachys</i>	Western vervain	Verbenaceae

<i>Veronica serpyllifolia</i> ssp. <i>humifusa</i>	Bright Blue speedwell	Plantaginaceae
<i>Vicia sativa</i> subsp. <i>nigra</i>	Common vetch	Fabaceae
<i>Whipplea modesta</i>	Modesty	Hydrangeaceae
<i>Zeltnera muehlenbergii</i>	Centaury	Gentianaceae
<i>Wyethia angustifolia</i>	Narrow-leaf mule's ears	Asteraceae

Grasses and Graminoids

Species Name	Common Name	Family
<i>Agrostis capillaris</i>	Colonial bentgrass	Poaceae
<i>Aira caryophyllea</i>	Silver hairgrass	Poaceae
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	Poaceae
<i>Arrhenatherum elatius</i>	Tall Oatgrass	Poaceae
<i>Avena barbata</i>	Wild Oats	Poaceae
<i>Briza maxima</i>	Rattlesnake grass	Poaceae
<i>Bromus diandrus</i>	Rip gut brome	Poaceae
<i>Bromus hordeaceus</i>	Soft Chess	Poaceae
<i>Bromus madritensis</i> ssp. <i>rubens</i>	Foxtail brome	Poaceae
<i>Bromus sterilis</i>	Poverty Brome	Poaceae
<i>Carex barbarae</i>	Valley sedge	Cyperaceae
<i>Carex gynodynema</i>	Wonder woman sedge	Cyperaceae
<i>Cynodon dactylon</i>	Burmuda Grass	Poaceae
<i>Cynosurus echinatus</i>	Hedgehog dogtail grass	Poaceae
<i>Dactylis glomerata</i>	Orchard grass	Poaceae
<i>Danthonia californica</i>	California oat grass	Poaceae
<i>Deschampsia elongata</i>	Hairgrass	Poaceae
<i>Elymus glaucus</i>	Blue wild rye	Poaceae
<i>Festuca arundinacea</i>	Tall fescue	Poaceae
<i>Festuca myuros</i>	Sixweeks grass	Poaceae
<i>Festuca perennis</i>	Italian Rye	Poaceae
<i>Holcus lanatus</i>	Purple velvet grass	Poaceae
<i>Juncus bufonius</i> var. <i>bufonius</i>	Toad rush	Juncaceae
<i>Juncus confusus</i>	Colorado rush	Juncaceae
<i>Juncus effuses</i> ssp. <i>pacificus</i>	Common rush	Juncaceae

<i>Juncus patens</i>	Grey rush	Juncaceae
<i>Luzula comosa</i>	Common wood rush	Juncaceae
<i>Melica harfordii</i>	Hartford's melic	Poaceae
<i>Melica torreyana</i>	Torrey's melica	Poaceae
<i>Stipa pulchra</i>	Purple needlegrass	Poaceae

Ferns and Allies

Species Name	Common name	Family
<i>Athyrium filix-femina</i>	Lady fern	Pteridaceae
<i>Dryopteris sp.</i>	Wood fern	Dryopteridaceae
<i>Equisetum laevigatum</i>	Smooth scouring rush	Equisetaceae
<i>Pentagramma triangularis ssp. triangularis</i>	Gold back fern	Pteridaceae
<i>Polypodium glycyrrhiza</i>	Licorice fern	Polypodiaceae
<i>Polystichum munitum</i>	Sword fern	Dryopteridaceae
<i>Pteridium aquilinum var. pubescens</i>	Western bracken fern	Dennstaedtiaceae

Bryophytes

Species Name	Common Name	Family
<i>Polytrichum sp.</i>	Star moss	Polytrichaceae

Lichens

Species Name	Common Name	Family
<i>Usnea sp.</i>	beard lichen	Parmeliaceae