



County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: June 21, 2022

TO: Development Services and Capital Projects, Attn: William M. Kettler, Division Manager
Development Services and Capital Projects, Attn: Chris Motta, Principal Planner
Development Services and Capital Projects, Current Planning, Attn: David Randall, Senior Planner
Development Services and Capital Projects, Policy Planning, ALCC, Attn: Mohammad Khorsand, Senior Planner
Development Services and Capital Projects, Zoning & Permit Review, Attn: Daniel Gutierrez/James Anders
Development Services and Capital Projects, Site Plan Review, Attn: Hector Luna
Development Services and Capital Projects, Building & Safety/Plan Check, Attn: Dan Mather
Development Engineering, Attn: Laurie Kennedy, Grading/Mapping
Road Maintenance and Operations, Attn: Martin Querin/Wendy Nakagawa/Nadia Lopez
Design Division, Transportation Planning, Attn: Mohammad Alimi/Gloria Hensley/Erin Haagenson
Water and Natural Resources Division, Attn: Augustine Ramirez/ Roy Jimenez
Department of Public Health, Environmental Health Division, Attn: Deep Sidhu/ Kevin Tsuda
San Joaquin Valley Unified Air Pollution Control District (PIC-CEQA Division), Attn: PIC Supervisor
Consolidated Irrigation District; Attn: Phil Desatoff
CA Regional Water Quality Control Board, Attn: centralvalleyfresno@waterboards.ca.gov
CA Department of Fish and Wildlife, Attn: R4CEQA@wildlife.ca.gov
US Fish & Wildlife Service, Attn Mathew Nelson
State Department of Health Services, Office of Drinking Water, Fresno District, Attn: Jose Robledo, Cinthia Reyes
Nisei Farmers League, Attn: Manuel Cunha, Jr.
Central King GSA, Attn: pdesatoff@cidwater.com
Fresno County Fire Protection District; Attn: FKU.Prevention-Planning@fire.ca.gov

FROM: Ejaz Ahmad, Planner 
Development Services and Capital Projects Division

SUBJECT: Initial Study No. 8116; Unclassified Conditional Use Permit Application No. 3718
(REVISION)

APPLICANT: Borrego Solar Systems, Inc.

DUE DATE: July 6, 2022

The Department of Public Works and Planning, Development Services and Capital Projects Division is reviewing the subject applications proposing to allow a public utility battery storage facility on a 11.30-acre portion of a 37.56-acre parcel in the AE-20 (Exclusive Agriculture; 20-acre minimum parcel size) Zone District. The site is located on the northeast corner of E. Jenson Avenue and S. McCall Avenue approximately 1.25 miles west of the City of Sanger (APN 314-080-36) (SUP. DIST. 5).

The project has been revised to include the following modifications:

The battery storage array has been increased in size from the proposed 7 acres to 11.3 acres. This change is reflected in the revised Site Plan and the documents included in this routing.

Based upon this review, a determination will be made regarding conditions to be imposed on the project, including necessary on-site and off-site improvements.

We must have your comments by **July 5, 2022**. Any comments received after this date may not be used.

If you do not have comments, please provide a “NO COMMENT” response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Ejaz Ahmad, Planner, Development Services and Capital Projects Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4204 or email eahmad@fresnocountyca.gov.

EA

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Activity Code (Internal Review): 2384

Enclosures



Fresno County Department of Public Works and Planning

CUP3718 (Revision) (Application No.)

MAILING ADDRESS: Department of Public Works and Planning Development Services Division 2220 Tulare St., 6th Floor Fresno, Ca. 93721

LOCATION: Southwest corner of Tulare & "M" Streets, Suite A Street Level Fresno Phone: (559) 600-4497 Toll Free: 1-800-742-1011 Ext. 0-4497

APPLICATION FOR:

- Pre-Application (Type)
Amendment Application
Amendment to Text
Conditional Use Permit
Variance (Class)/Minor Variance
Site Plan Review/Occupancy Permit
No Shoot/Dog Leash Law Boundary
General Plan Amendment/Specific Plan/SP Amendment
Time Extension for
Director Review and Approval
for 2nd Residence
Determination of Merger
Agreements
ALCC/RLCC
Other

DESCRIPTION OF PROPOSED USE OR REQUEST:

Revision to CUP3718 to increase battery storage array from 7 acres to 11.30 acres on a 37.56 acres parcel in AE-20 zone District.

CEQA DOCUMENTATION: Initial Study PER N/A

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. Attach Copy of Deed, including Legal Description.

LOCATION OF PROPERTY: North side of E Jensen Ave between S McCall Ave and S. Dockery Ave Street address: 10018 E Jensen Ave, Sanger, CA 93657

APN: 314-080-36 Parcel size: 37.56 acre Section(s)-Twp/Rg: S 853 - T B.14 S/R 816.5 E

ADDITIONAL APN(s):

I, Cory Haynes (signature), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

Table with 5 columns: Name, Address, City, Zip, Phone. Rows include Craig Richard Constance, Borrego Solar Systems Inc., and Jacobs Engineering, Cory Haynes.

CONTACT EMAIL: Cory.Haynes@jacobs.com and Anthony.Kingman@jacobs.com

OFFICE USE ONLY (PRINT FORM ON GREEN PAPER)

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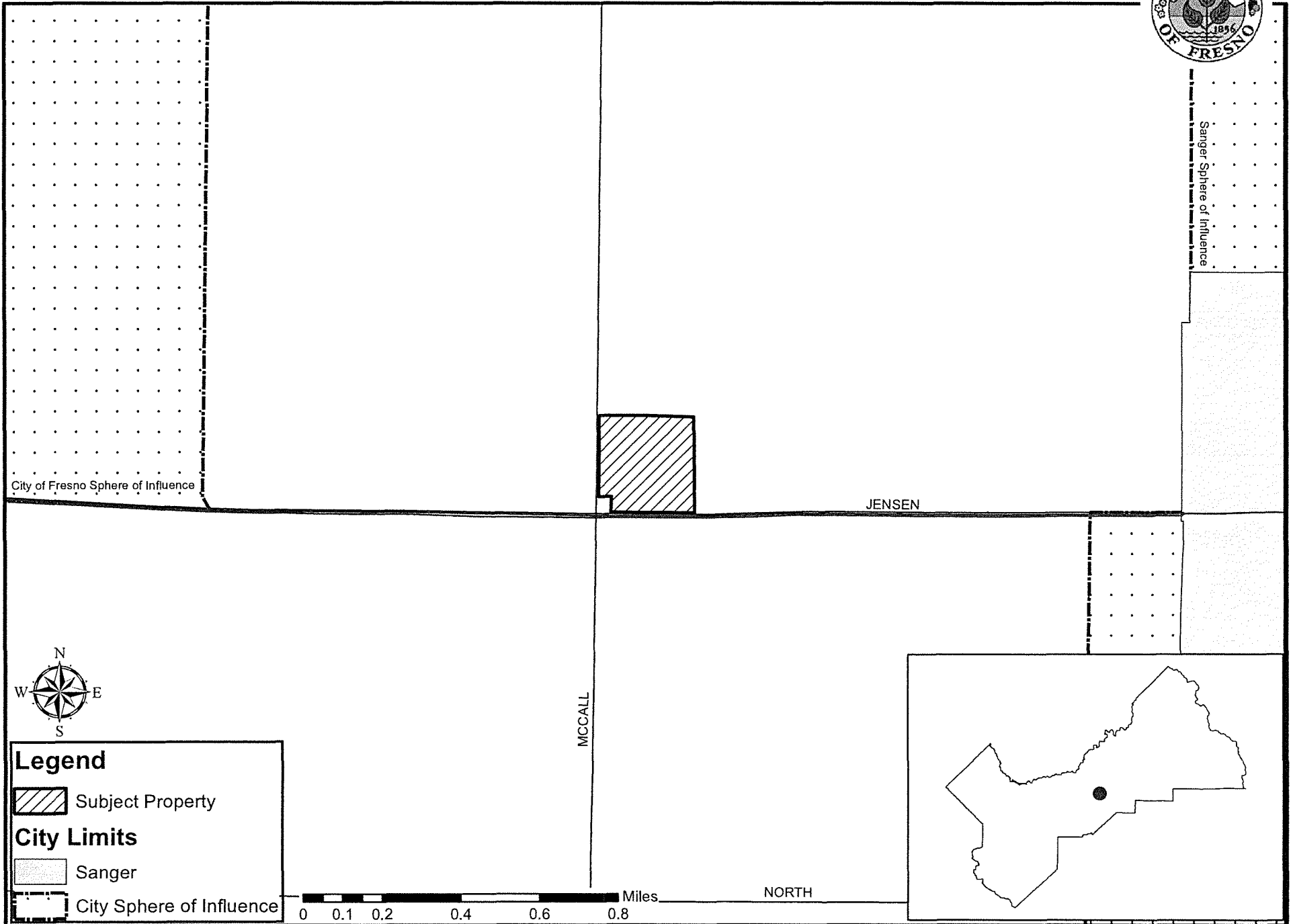
(PRINT FOR

Application Type / No.: CUP(U) 3718 - Revision Fee: \$ 2,280.75
Application Type / No.: Fee: \$
Application Type / No.: Fee: \$
Application Type / No.: Fee: \$
PER/Initial Study No.: Fee: \$
Ag Department Review: Fee: \$
Health Department Review: Fee: \$
Received By: Mam'sa for Es. Invoice No.: TOTAL: \$ 2,280.75

STAFF DETERMINATION: This permit is sought under Ordinance Section:

Related Application(s):
Zone District:
Parcel Size:

LOCATION MAP



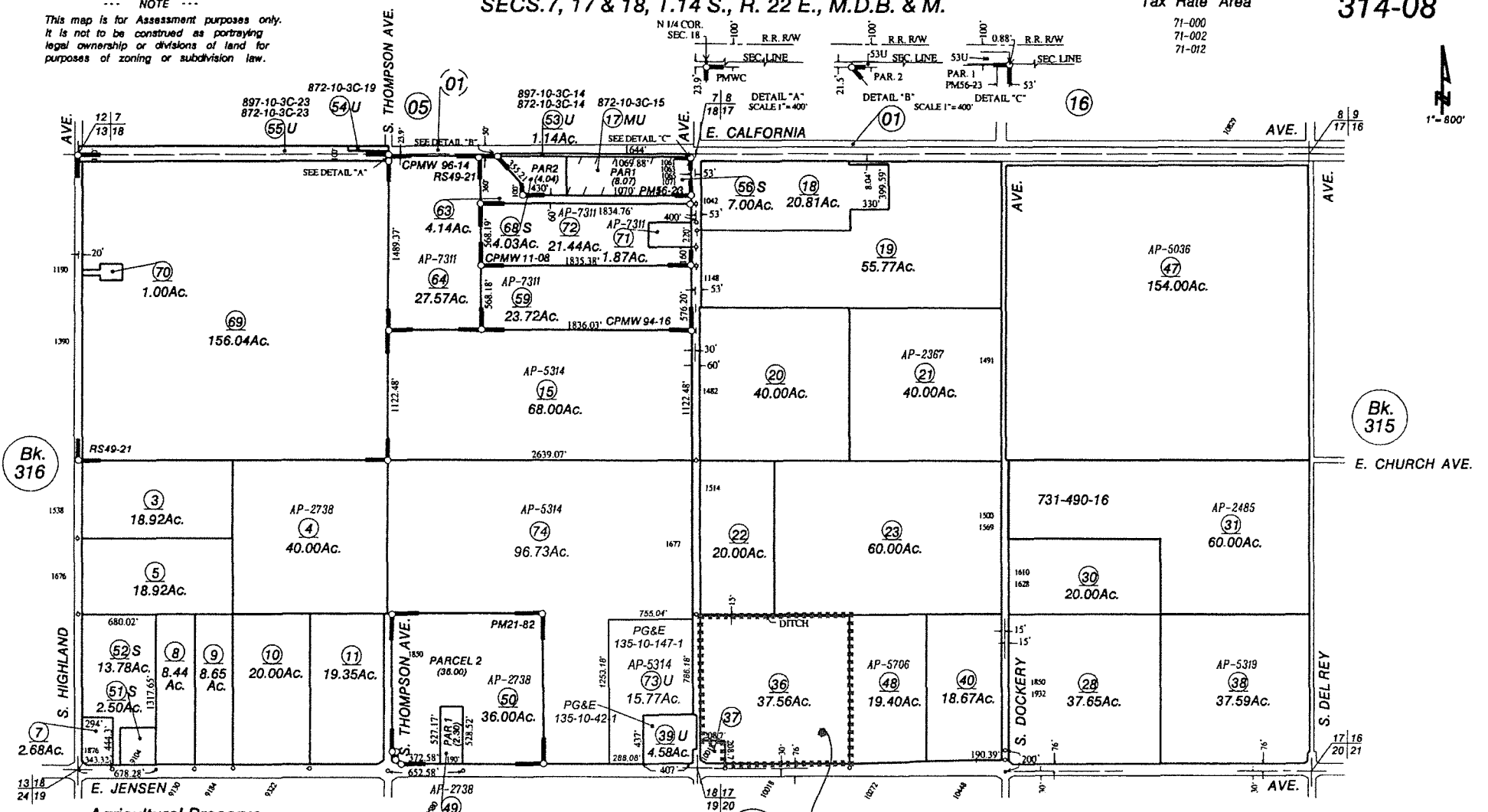
--- NOTE ---
 This map is for Assessment purposes only.
 It is not to be construed as portraying
 legal ownership or divisions of land for
 purposes of zoning or subdivision law.

SECS. 7, 17 & 18, T. 14 S., R. 22 E., M.D.B. & M.

Tax Rate Area

314-08

71-000
 71-002
 71-012



Agricultural Preserve
 Parcel Map No. 3034 - Bk. 21, Pg. 82
 Parcel Map No. 7629 - Bk. 56, Pg. 23
 Certificate of Parcel Map Waiver No. 96-14, Doc. 6804 1/16/1997
 Certificate of Parcel Map Waiver No. 11-08, Doc. 82369 6/13/2012
 Record of Survey - Bk. 49, Pg. 21

Bk. 332
 PROJECT SITE

Assessor's Map Bk. 314 - Pg. 08
 County of Fresno, Calif.

NOTE - Assessor's Block Numbers Shown in Ellipses.
 Assessor's Parcel Numbers Shown in Circles.

Project Description – Battery Energy Storage Project
10018 E Jensen Avenue, Fresno, CA



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1.0 Overview

The Battery Energy Storage System (BESS) will consist of lithium-ion based battery modules housed in purpose-built metal enclosures, with integrated power conversion equipment and fire suppression systems. In addition, the BESS will have interconnection equipment including transformers and the system will be completely enclosed within a 7-foot high perimeter fence. Interconnection to the PG&E substation will also require a 115kV transmission pole for the overhead wires.

The BESS will operate continuously for the expected project operational term of 20 years. Typical operation of the system will include charging from the grid during the day and discharging during peak electric demand at night.

2.0 Project Objectives

Borrego is proposing to develop and construct a battery energy storage system (BESS) adjacent to the PG&E Sanger substation at 10018 E Jensen Avenue. The project is being developed to add reliability to the California electric grid and help meet the June 2021 California Public Utility Commission's (CPUC) decision requiring 11,500 megawatts of new capacity additions to the California Independent System Operator (CAISO) system.

3.0 Project Location and Site History

3.1 Project Location

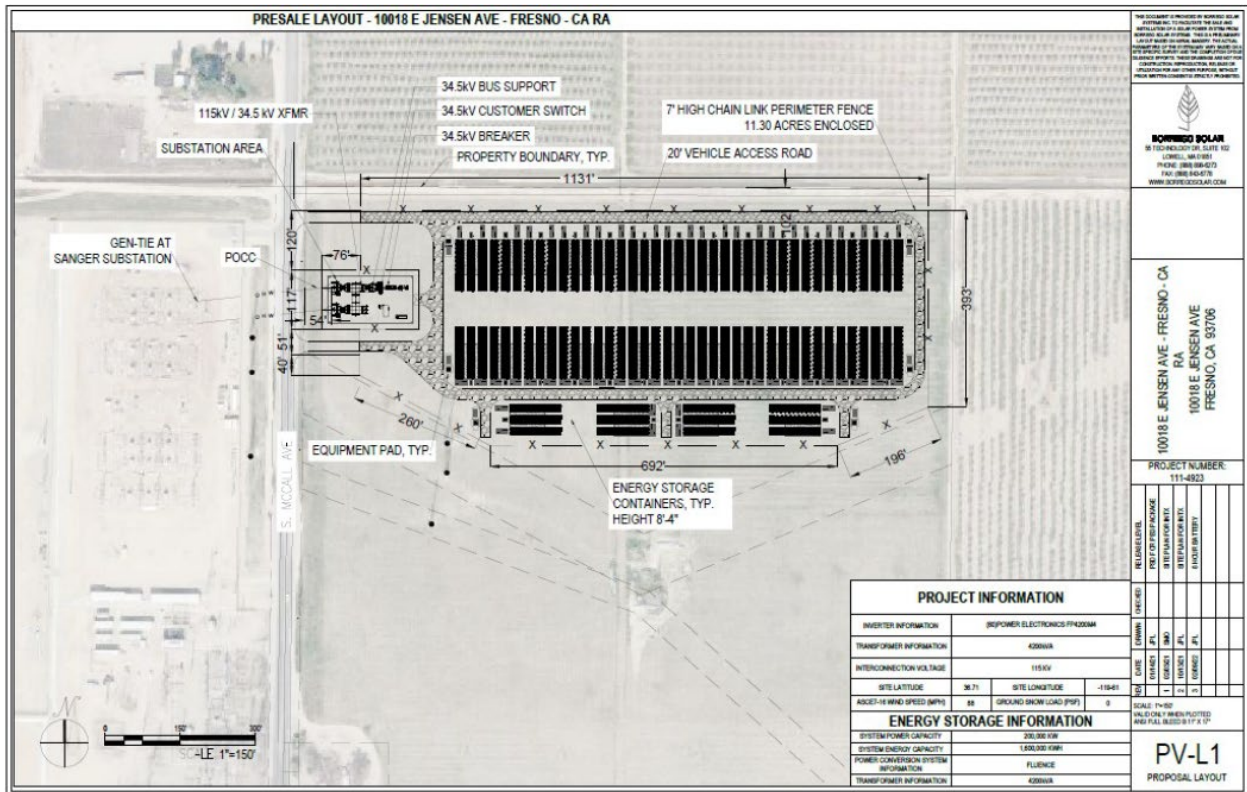
The project is located at 10018 E Jensen Ave in Fresno County, California. The APN for the parcel is 314-080-36.

3.2 Site History

The parcel has been Agriculture/vacant land since at least 1937. There are no structures on the parcel. The Phase 1 ESA done for this project did not find any Historical Recognized Environmental Conditions.

4.0 Project Sites

Project is located on APN 314-080-36.



5.0 Schedule

Expected construction start = 6/2024
Expected COD = 6/2025

6.0 Surrounding Land Uses and Conditions

6.1 Regional Setting

The project site is located in Fresno County, around primarily agriculture land. The city of Sanger lies approximately 2.5 miles to the east of the site, and the City of Fresno approximately 10 miles WNW of the site.

6.2 Local Setting

The project is primarily surrounded by Agriculture. To the SW of the site is a commercial building. To the west of the site is the Sanger substation operated by PG&E. The rest of the surrounding land is agriculture with some residences.

7.0 County Zoning

The parcel is located in the AE-20 county zoning district.

8.0 Detailed Project Description

8.1 Facilities & Design

8.1.1 Overview of BESS Technology

The BESS will consist of lithium-ion based battery modules housed in purpose-built metal enclosures, with integrated power conversion equipment and fire suppression systems.

8.1.2 Access and Parking

There are two site access points off of S. McCall Avenue, both with 2 access points with vehicle access gates. The access road is 20' wide with ample turning radius for trucks. There will be adequate area on the property for vehicle parking and equipment staging during construction and operational phases.

8.1.3 Perimeter Fencing

The proposed perimeter fence will be 7' high. There will be two (2) vehicle gates at the entrances off S. McCall Avenue for access.

8.1.4 Control Systems

The energy storage units will have control systems in place to monitor cell activity, voltages, and temperatures.

Control Architecture of the BMS section of the Fluence Control System is as shown below:

The BMS is provided by CATL and functions to monitor cell activity, taking measurements of cell voltage, module temperature, battery current and voltages. Fault alarms on the BMS level are sent to limit discharge or contactor operation. The safety alarms will indicate over-voltage,

under-voltage, high temperature, low temperature, over current, contactor(s) faults, etc. and are continuously streamed, along with all the battery information to Fluences' higher-level controllers. It is this data stream that is used to inform the intelligent management system of signs of distress with the battery system and prevention of further events. Estop functionality is triggered by the fire suppression system in the cube, an emergency shutdown signal from the core (system level) controller, cube emergency signal, a single CO smoke detection, or sudden changes in voltage of an individual cell.

8.1.5 Signage and Lighting

There will be no additional continuous lighting for the system or parking lot.

8.1.6 Stormwater Facilities

Stormwater facilities will be designed to meet all local, state, and federal requirements.

8.1.7 Other Infrastructure

Gen Tie to connect the system with Sanger substation across the street will include 115kv overhead wires.

A project substation with inverters and step-up transformers will also be located on the project area.

8.1.8 Applicant Proposed Best Management Practices

8.2 Construction

Construction duration is expected to take about 6 months. There will be no anticipated tree clearing associated with the project.

8.3 Operations and Maintenance

After completion of construction activities which are expected to take 6 months, the BESS will operate unstaffed. The system will be monitored remotely and regular operations and maintenance will be conducted approximately quarterly by service personnel estimated to be 1-2 persons with 1 vehicle.

8.4 Decommissioning

There will be a decommissioning bond established for decommissioning of the energy storage system at the end of its useful life.

9.0 Permits

TBD

10.0 References

Operational Statement – Sanger Energy Storage Project

1900 S McCall Ave, Sanger, CA - Fresno County

1. **Nature of Operation:**

Borrego is proposing to develop and construct a battery energy storage system (BESS) adjacent to the PG&E Sanger substation at 1900 S McCall Ave (APN #314-080-36), approximately 2 miles west of Sanger. The parent parcel is a 74 acre tract of land which is not under Williamson Act. The parcel is zoned *AE20 Exclusive Agricultural*. The project is being developed to add reliability to the California electric grid and help meet the November 2019 CPUC decision requiring capacity additions to the CAISO system.

In addition, the BESS will have interconnection equipment including transformers and the system will be completely enclosed within a 7-foot high perimeter fence. Interconnection to the PG&E substation will also require a 115kV transmission pole for the overhead wires crossing S McCall Ave. The project area is estimated to be approximately 11.30 acres.

2. **Operational Time Limits:**

The BESS will operate continuously for the expected project operational term of 20 years. Typical operation of the system will include charging from the grid during the day and discharging during peak electric demand at night. At the property lines, the BESS will produce negligible sound and the system will have minimal lighting for safety at night.

3. **Number of Customers or Visitors:**

After completion of construction activities which are expected to take 6 months, the BESS will operate unstaffed.

4. **Number of Employees:**

The system will be monitored remotely, and regular operations and maintenance will be conducted approximately quarterly by service personnel estimated to be 1-2 persons.

5. **Service and Delivery Vehicles:**

Quarterly service will be conducted using 1 vehicle.

6. Access to the Site:

Both during the construction and operation terms, access to the site will be via an existing road onto the property from S McCall Ave.

7. Number of parking spaces for employees, customers, and service/delivery vehicles:

There will be adequate area on the property for vehicle parking and equipment staging during construction and operational phases.

8. Are any goods to be sold on-site?

No goods are to be sold on-site.

9. What equipment is used?

Please see example project layout and example project image below for equipment to be used.

10. What supplies or materials are used and how are they stored?

No supplies are required to be stored on site.

11. Does the use cause an unsightly appearance?

The BESS appearance is in keeping with the character of the adjacent PG&E electrical substation and will not cause an unsightly appearance.

12. List any solid or liquid wastes to be produced.

Once built, the BESS will not utilize any water, produce any waste, or require any other public utilities.

13. Estimated volume of water to be used (gallons per day).

No water is anticipated to be used during operations.

14. Describe any proposed advertising including size, appearance, and placement.

No advertising will be present other than the required placards on the system as required by the National Electric Code and markings identifying the equipment manufacturer and system owner.

15. Will existing buildings be used or will new buildings be constructed?

The BESS will consist of newly constructed lithium-ion based battery modules housed in purpose-built metal enclosures, with integrated power conversion equipment and fire suppression systems.

16. Explain which buildings or what portion of buildings will be used in the operation.

Regular operations and maintenance will be conducted quarterly on the constructed BESS systems.

17. Will any outdoor lighting or an outdoor sound amplification system be used?

Outdoor light will be used during construction, but no outdoor lighting will exist during normal operations.

18. Landscaping or fencing proposed?

The BESS will be completely enclosed within a 7-foot high perimeter fence.

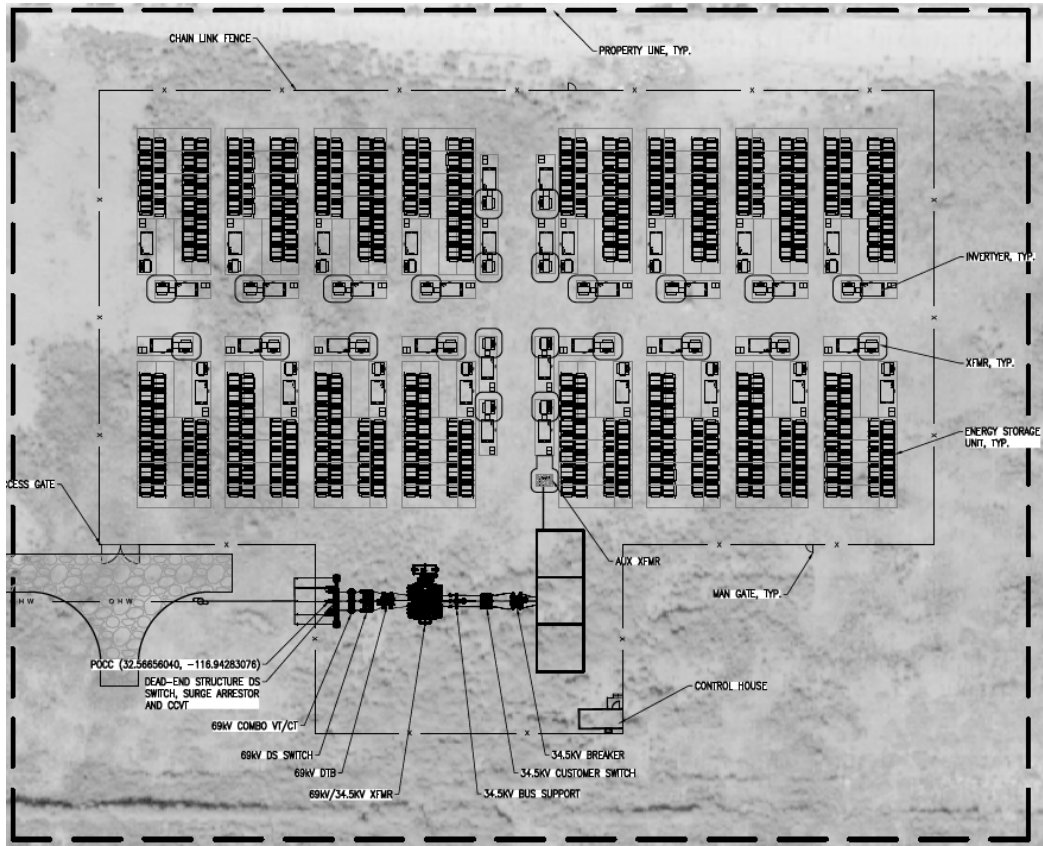
19. Any other information that will provide a clear understanding of the project or operation.

In addition, the BESS will have interconnection equipment including transformers. Interconnection to the PG&E substation will also require a 115kV transmission pole for the overhead wires crossing S McCall Ave.

20. Identify all Owners, Officers and/or Board Members for each application.

Owners, applicants, and representatives will be listed on the signed application forms.

Example Project Layout



Example Project Image





County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

Solar Facility Guidelines (Revised by BOS 12/12/17)

The need to accommodate new renewable energy technology must be balanced with the need to protect important farmlands and minimize impacts to existing agricultural operations. The land use process for evaluating solar facilities should rely on general guidelines and policies rather than specific standards which may not be flexible enough to accommodate the evolving technology.

Applicants for solar facilities shall address the following as part of the application review process:

1. Information shall be submitted regarding the historical agricultural operational/usage of the parcel, including specific crop type and crop yield, for the last ten years (if no agricultural operation in the last ten years, specify when land was last in agricultural use).

-The parcel has been Agriculture/vacant land since at least 1937. There are no structures on the parcel. The Phase 1 ESA done for this project did not find any Historical Recognized Environmental Conditions.

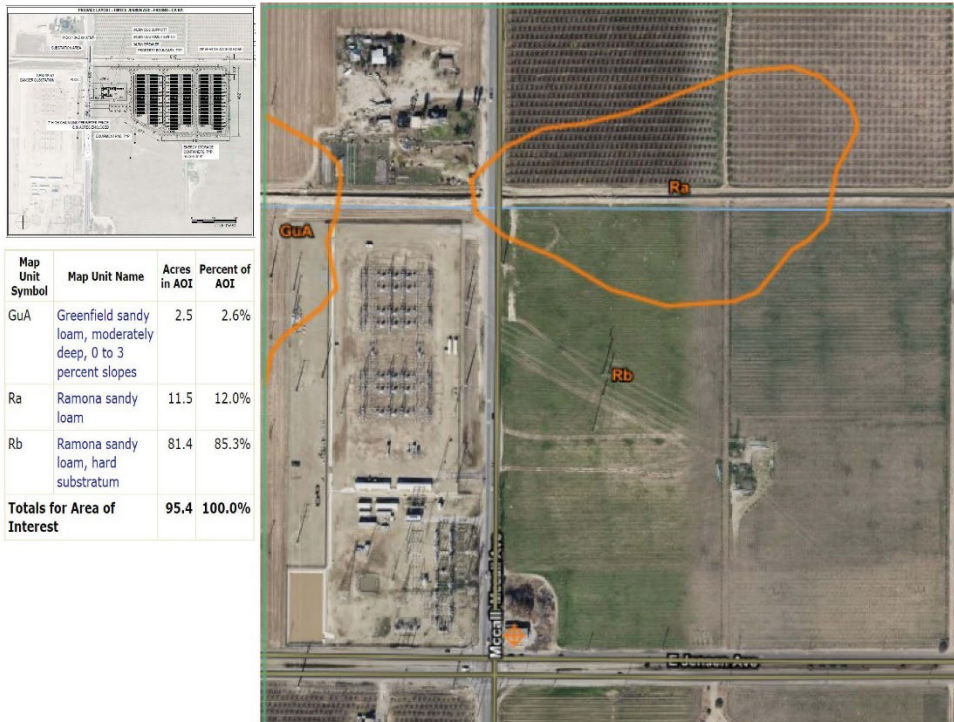
2. Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e. utilized on-site or moved to other locations) for the last ten years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.

- Once built, the BESS will not utilize any water, produce any waste, or require any other public utilities. No water is anticipated to be used during operations. No well use is planned. Water use would be brought in by trucks (dust control) or just some small containers on site used for miscellaneous construction activities. Approximate amounts will depend on local weather patterns.

3. Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.

- The parent parcel is a 74-acre tract of land which is not under Williamson Act. The parcel is zoned AE20 Exclusive Agricultural.

- Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.



- List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on Site Plan) and provide factual/technical data supporting the effectiveness of said proposed buffering measures.

- The BESS appearance is in keeping with the character of the adjacent PG&E electrical substation and will not cause an unsightly appearance. The BESS will be completely enclosed within a 7-foot-high perimeter fence.

6. Provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements and specific measures to return the site to the agricultural capability prior to installation of solar improvements. If the project is approved, adequate financial security to the satisfaction of the County shall be provided to ensure site reclamation.

- The BESS will operate continuously for the expected project operational term of 20 years. Financial assurances (in accordance with County standards) equal to the cost of reclamation estimate will be submitted prior to the start of construction.

7. Provide information documenting efforts to locate the proposed solar facility on non-agricultural lands and non-contracted parcels and detailed information explaining why the subject site was selected.

- The primary driver for the site location is the adjacent PG&E substation. This is one of a select few substations in the California Independent System Operator (CAISO) grid with the characteristics required for interconnection of a transmission-scale energy storage project. Primarily because it has been recently upgraded and will not require cost-prohibitive and lengthy upgrades to the grid to interconnect. In addition, the site being immediately adjacent to the substation minimizes the amount of land that would be impacted by the overhead interconnection transmission lines from the project to the substation.

8. Develop and submit a project site Pest Management Plan to identify methods and frequency to manage weeds, insects, disease and vertebrate pests that may impact adjacent sites.

- Pest Management Plan attached

9. The applicant must acknowledge the County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement.

-Right to Farm Notice will be recorded.

10. Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of new land use permit will need to be obtained.

-New permits will be applied for if the lease is to be extended

11. If the project is approved, the applicant shall make all reasonable efforts to establish a point of sale in Fresno County for equipment and construction related items necessary for the project.

Reasonable efforts will be made to establish point of sale in Fresno County for equipment and construction related items necessary for the project

12. If the project is approved, the applicant shall make all reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce.

-Reasonable efforts will be made to conduct local recruitment efforts and hire from the local workforce

13. In addition to disclosing the number of trips in the required project Operational Statement, the applicant shall disclose the weight of the shipments anticipated to the site. If the project is approved, pursuant to the CEQA analysis and based upon the existing road conditions and the weight/frequency of shipments to the site, the applicant shall mitigate impacts to County roads.

-Based on the CEQA analysis and existing road conditions, all impacts to County roads will be mitigated

14. If the project is approved, the applicant shall make all reasonable efforts to purchase products and equipment from local (Fresno County) manufacturing facilities and/or vendors.

-Reasonable efforts will be made to purchase products and equipment from local manufacturing facilities and vendors

**10018 E JENSEN AVE RECLAMATION PLAN
RECLAMATION PLAN**

1. Description of present use of the site.

-Site is currently a vacant agricultural field. The land is currently fallow with low native grasses.
2. Describe the proposed alternate use of the land (all equipment to be installed above and underground, structures, fencing, etc.).

- New Leaf is proposing to develop and construct a battery energy storage system (BESS) adjacent to the PG&E Sanger substation at 1900 S McCall Ave (APN #314-080-36). The BESS will have interconnection equipment including transformers and the system will be completely enclosed within a 7-foot high perimeter fence. Interconnection to the PG&E substation will also require a 115kV transmission pole for the overhead wires crossing S McCall Ave. The project area is estimated to be approximately 11.30 acres. Please see attached project layout and example project photo.
3. Duration of the alternate use of the property (specify termination date).

- The BESS will operate continuously for the expected project operational term of 15-30 years depending on property owner options.
4. Address ownership of the property (lease or sale).

-Property is to be leased for the duration of the operational term (15-30 years).
5. Describe how the subject property will be reclaimed to its previous agricultural condition, specifically:
 - A) Timeline for completion of reclamation after solar facility lease has termed (identify phasing if needed); and

-The following are some typical timelines that can be expected during decommissioning. These will be revised during the owner/operators recurring estimation of the decommissioning cost and plan.
 - B) Removal of the BESS, Concrete Pads, and fencing: 1-3 months
 - X) Removal of all electrical equipment: 2-4 weeks
 - Δ) Removal of road and Stormwater features: 2-4 weeks
 - E) Re-establishment of vegetation: 1-3 months
6. Handling of any hazardous chemicals/materials to be removed; and

- The third-party vendor will ensure that local, state and federal waste-handling requirements are met. Additionally, they will determine if the batteries can be reused or recycled, reduce the charges in the batteries, disconnect the system, and make decisions on how to remove, transport and package the batteries and remove and transport the containers that house them.
7. Removal of all equipment, structures, buildings and improvements at and above-grade; and
8. Removal of any below-grade foundations;
9. Removal of any below-grade infrastructure (cables/lines, etc.) that are no longer deemed necessary by the local public utility company; and
10. Detail any grading necessary to return the site to original grade

- Activities associated with removing a battery storage system from service include removal of all other electrical equipment such as transformers, breaking up concrete pads and footings, removing electrical wiring, conduits, fencing, and power poles. The site will be re-graded to existing conditions.

- G) Type of crops to be planted; arid
- Crop type will be decided on by the property owner. Any disturbed areas not reverted to active agriculture will be reseeded with native grasses.
- H) Irrigation system details to be used {existing wells, pumps, etc. should remain throughout the solar facility use).
- No irrigation systems currently exist on the property, and no systems are planned to be installed.
6. A Site Plan shall be submitted along with the text of the Reclamation Plan showing the location of equipment, structures, above and underground utilities, fencing, buffer area, reclamation phasing, etc.
- Site Plan is attached
7. An engineering cost estimate of reclaiming the site to its previous agricultural condition shall be submitted for review and approval
- Reclamation cost estimate is attached
8. Financial assurances equal to the cost of reclaiming the land to its previous agricultural condition shall be submitted to ensure the reclamation is performed according to the approved plan. Financial assurances shall be made to the County of Fresno and may take the form of cash, letter of credit or bond that complies with Section 66499 of the California Government Code, et. seq.
- Financial assurances equal to the cost of reclamation estimate will be submitted prior to the start of construction
9. Evidence that all owners of record have been notified of the proposed Reclamation Plan.
- Owners will be notified via email of reclamation plan

**STANDARD INFORMATION AND CONDITIONS FOR ALL UTILITY-GRADE
PHOTOVOLTAIC PROJECTS**

- " Applicants must work to achieve a minimum 50-foot buffer from the edges of the property boundaries to the closest structural improvements or equipment (excluding fencing). Required setbacks will be included in this buffer.
- " Salvage value estimates cannot be included to offset the estimated reclamation costs provided in the engineer's estimates.
- " The following condition of approval will be included for all projects: *The reclamation plan shall be revised to provide for an annual increase in costs at 3% or tied to the Consumer Price Index (CPI) or other mechanism acceptable to the Department of Public Work's and Planning.*



Decommissioning Estimate

Date: 03/02/2023

10018 E Jensen Ave
Sanger, CA 93657

This Decommissioning Estimate has been prepared by New Leaf Energy in an attempt to predict the cost associated with the removal of the proposed battery energy storage facility. The primary cost of decommissioning is the labor to dismantle and load equipment, as well as the cost of trucking materials off-site. All material will be removed from the site, including the concrete equipment pads and strip footings, which will be broken up at the site and hauled to the nearest transfer station.

The following values were used in this Decommissioning Estimate:

System Specifications

Total Batteries	46,080
Total Battery Weight (lbs)	39,365,740
Number of Containers	2880
Number of Transformers	66
Number of Power Conversion Systems	0
Number of Neutral Grounding Reactors	1
Number of Meters	1
Electrical Wiring Length (ft)	23,535
Length of Perimeter Fence (ft)	3,538
Number of Power Poles	0
Total Disturbed Area (SF)	671,845
Total Fence Weight (lbs)	3,998

Labor and Equipment Costs

Labor Rate (\$/hr)	\$ 63.53
Operator Rate (\$/hr)	\$ 95.47
Bobcat Cost (\$/hr)	\$ 125.00
Front End Loader Cost (\$/Day)	\$ 1,000.00
Excavator Cost (\$/Day)	\$ 1,000.00
Trucking Cost (\$/hr)	\$ 130.00
Backhoe Cost (\$/hr)	\$ 245.00
Power Pole Removal Cost (\$/pole)	\$ 1,500.00
Grader Cost (\$/day)	\$ 1,800.00
Seeding Cost (\$/SF)	\$ 0.10
Fuel Cost (\$/mile)	\$ 0.50
Battery Disposal Fee (\$/battery)	\$ 0.50

Equipment & Material Removal Rates

Module Removal and Packaging (min/mod)	45
Large Equipment Removal Rate (hr/unit)	0.5
Electric Wiring Removal Rate (min/LF)	3
Fence Removal Rate (min/LF)	0.5
Days req. to break up concrete pads	376
Days req. with Rough Grader	8
Days req. with Fine Grader	16
Total Truckloads to Transfer Station	2568
Round-Trip Dist. to Transfer Station (miles)	20
Round-Trip Time to Transfer Station (hr)	1
Total Truckloads to Battery Recycling	1406
Round-Trip Dist. to Battery Rec. (miles)	20
Round-Trip Time to Battery Rec. (hr)	1

Contingency & CAPM

Contingency Percentage	15%
Contract Admin and Proj Mgmt Sum	\$10,000



Decommissioning Estimate/Plan

Date: 03/2/2023

10018 E Jensen Ave
Sanger, CA 93657

Labor, Material, and Equipment Costs

1. Battery Modules Removal and Packaging Cost

Remove and Package Individual Battery Module.

$$(Number\ of\ Battery\ Modules \cdot Module\ Removal\ Rate) / 60\ Min\ per\ Hour \cdot Labor\ Rate = \\ Battery\ Module\ Removal\ and\ Packaging\ Cost$$

Total = \$ 2,195,596.80

2. Load Electrical Equipment

Electrical equipment includes transformers and inverters. We assume that companies removing electrical equipment will provide trucking services and will reclaim valuable materials themselves.

$$(Number\ of\ containers \cdot containers\ Removal\ Rate + Number\ of\ Transformers \cdot Transformer \\ Removal\ Rate) \cdot (Operator\ Rate + Bobcat\ Cost) = \\ Electrical\ Equipment\ Removal\ Cost$$

Total = \$ 324,752.31

3. Break Up Concrete Pads

Concrete pads are broken up using an excavator and jackhammer.

$$Number\ of\ Demolition\ Days \cdot (Excavator\ Cost + Labor\ Cost) =$$

Total = \$ 663,173.76

4. Remove Electrical Wiring

Electrical wiring will be removed from all underground conduits.

$$Cable\ Length \cdot Cable\ Removal\ Rate \cdot (Operator\ Cost + Backhoe\ Cost) \\ = Total\ Cable\ Removal\ Cost$$

Total = \$ 400,648.07

5. Remove Fencing

Fencing posts, boards, and foundations will be loaded onto a truck and removed from site. Trucking costs included in this line item are for the removal process. Trucking to a recycling facility are included in item #8.

$$(Total\ Length\ of\ Fence \cdot Fence\ Removal\ Rate) \cdot (Operator\ Rate + Bobcat\ Cost + Trucking\ Cost) =$$

Total = \$ 10,333.02

6. Remove Power Poles

Power poles will be removed and shipped off site.

$$\text{Number of Power Poles} \cdot \text{Pole Removal cost} =$$

Total = \$ 100,000.00

7. Seed Disturbed Areas

Seeding cost includes labor and materials for reseeding all disturbed areas including the reclaimed gravel road area, former electrical areas, and areas disturbed by racking foundation removal.

$$\frac{\text{Seeding Cost} \cdot \text{Disturbed Area}}{\text{Total Seeding Cost}} =$$

Total = \$ 67,184.50

8. Truck to CCDD

All material will be trucked to the nearest CCDD station that accepts construction material (i.e. fence, concrete pads and gravel).

The nearest transfer station is TBD

$$\frac{(\text{Total Trucks to CCDD} \cdot \text{Roundtrip Time} \cdot \text{Trucking Cost})}{\text{Total Trucking Cost to CCDD}} =$$

Total = \$ 333,840.00

9. Truck to Recycling Facility Plus Disposal Fee

All batteries will be transported to the nearest recycling facility.

$$(\text{Total Trucks to Recycling Facility} \cdot \text{Roundtrip Distance} \cdot \text{Trucking Cost}) + (\text{Number Batteries} \cdot \text{Battery Disposal Fee}) =$$

Total = \$ 205,820.00

10. Administrative Fees

Development of bid Package, contract administration, and project management.

Flat Fee

Total = \$ 10,000.00



11. 15% Contingency plan

(Subtotal of sections 1-10) • (15% Contingency plan)

Total = \$ 646,702.27

Salvage Values

Salvage Value Not Included

Summary of Decommissioning Costs and Salvage Values

Line Item	Task	Cost
1	Remove and Package Battery Modules	\$ 2,195,596.80
2	Electrical Equipment Loading and Removal	\$ 324,752.31
3	Break Up Concrete Pads	\$ 663,173.76
4	Electrical Wiring Removal	\$ 400,648.07
5	Fence Removal	\$ 10,333.02
6	Power Pole Removal	\$ 100,000.00
7	Seed Disturbed Areas	\$ 67,184.50
8	Trucking to CCDD	\$ 333,840.00
9	Trucking to Recycling Facility Plus Disposal Fee	\$ 205,820.00
10	Administrative Fees	\$ 10,000.00
11	Contingency Plan	\$ 646,702.27
Subtotal =		\$ 4,958,050.74

Task	Number of Batteries	Battery removal Rate (Min/Battery)	Labor Rate	Total Cost
Remove and Package Battery Modules	46,080	45	\$ 63.53	\$ 2,195,596.80

Task	Number of Equipment	Loading rate (hr/unit)	Labor Rate	Total Cost
Transformer Loading and Removal	66	0.5	220.47	\$ 7,275.51
Inverter Loading and Removal	2880	0.5	220.47	\$ 317,476.80
Total Electrical Loading and Removal				\$ 324,752.31

Task	# of Demolition Days	FEL Cost/Day	Labor Rate	Total Cost
Break Up Concrete Pads	376	\$ 1,000.00	\$ 95.47	\$ 663,173.76

Task	Length of Cable	Cable Removal Rate	Labor Rate	Backhoe cost/Hr	Total Cost
Electrical Wiring Removal	23535	3 Min/L.F	95.47	\$ 245.00	\$ 400,648.07

Task	Total Length Fence	Fence Removal Rate	Labor Rate	Bobcat Cost/Hr	Truck Cost/Hr	Total Cost
Fence Removal	3538	0.5	\$ 95.47	\$ 125.00	\$ 130.00	\$ 10,333.02

Task	Number of Poles	Pole Removal Cost	Total Cost
Power Pole Removal	4	\$25,000	\$ 100,000.00

Task	Area to be seeded (sf)	Seeding Cost/sf w/Labor	Total Cost
Seed Disturbed Areas	671845	\$ 0.10	\$ 67,184.50

Task	Number of Trips	Length of trip (Hr)	Trucking Cost / Hr	Total Cost
Trucking to CCDD	2568	1	130	\$ 333,840.00

Task	Number of Trips	Length of Trip (Hr)	Trucking Cost / Hr	# of Batteries	Battery Disposal Cost	Total Cost
Trucking to Recycling Facility Plus Disposal Fee	1406	1	130	46080	0.5	\$ 205,820.00

Task	Fixed Fee	Total Cost
Administrative costs	\$ 10,000.00	\$ 10,000.00

Subtotal	\$ 4,311,348.47
15% Contingency	\$ 646,702.27
Grand Total	\$ 4,958,050.74

PRESALE LAYOUT - 10018 E JENSEN AVE - FRESNO - CA RA

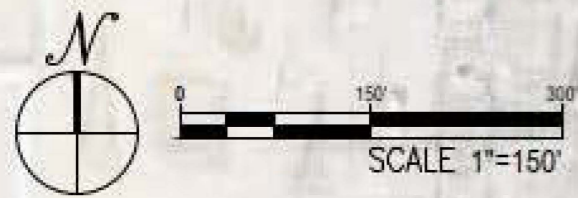
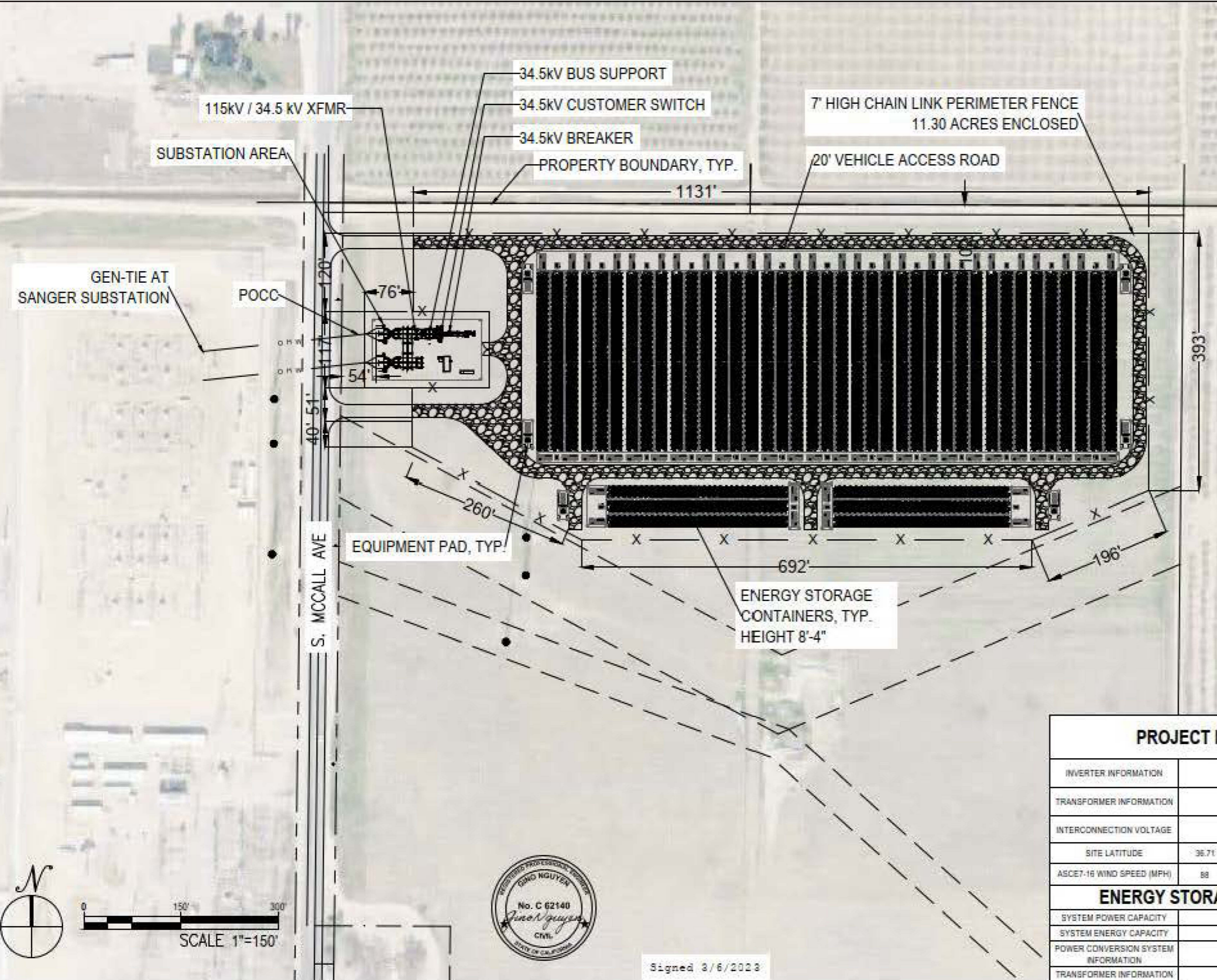
THIS DOCUMENT IS PROVIDED BY BORREGO SOLAR SYSTEMS INC. TO FACILITATE THE SALE AND INSTALLATION OF A SOLAR POWER SYSTEM FROM BORREGO SOLAR SYSTEMS. THIS IS A PRELIMINARY LAYOUT BASED ON AERIAL IMAGERY. THE ACTUAL PARAMETERS OF THE SYSTEM MAY VARY BASED ON A SITE SPECIFIC SURVEY AND THE COMPLETION OF DUE DILIGENCE EFFORTS. THESE DRAWINGS ARE NOT FOR CONSTRUCTION, REPRODUCTION, RELEASE OR UTILIZATION FOR ANY OTHER PURPOSE, WITHOUT PRIOR WRITTEN CONSENT IS STRICTLY PROHIBITED.

BORREGO SOLAR
 55 TECHNOLOGY DR, SUITE 102
 LOWELL, MA 01851
 PHONE: (888) 898-6273
 FAX: (888) 843-6778
 WWW.BORREGOSOLAR.COM

10018 E JENSEN AVE - FRESNO - CA
 RA
 10018 E JENSEN AVE
 FRESNO, CA 93706

PROJECT NUMBER:
 111-4923

RELEASE LEVEL	CHECKED
PSD FOR P63 PACKAGE	
SITE PLAN FOR INTX	
SITE PLAN FOR INTX	
8 HOUR BATTERY	



Signed 3/6/2023

PROJECT INFORMATION			
INVERTER INFORMATION	(60) POWER ELECTRONICS FP4203M4		
TRANSFORMER INFORMATION	4200kVA		
INTERCONNECTION VOLTAGE	115 KV		
SITE LATITUDE	36.71	SITE LONGITUDE	-119.61
ASCE7-16 WIND SPEED (MPH)	88	GROUND SNOW LOAD (PSF)	0
ENERGY STORAGE INFORMATION			
SYSTEM POWER CAPACITY	200,000 KW		
SYSTEM ENERGY CAPACITY	1,600,000 KWH		
POWER CONVERSION SYSTEM INFORMATION	FLUENCE		
TRANSFORMER INFORMATION	4200kVA		

DATE	DATE	DATE	DATE
01/14/21	03/03/21	10/02/21	03/09/22
JPL	SMO	JPL	JPL

SCALE: 1"=150'
 VALID ONLY WHEN PLOTTED
 ANSI FULL BLEED 8.5" X 11"

PV-L1
 PROPOSAL LAYOUT



County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

INITIAL STUDY APPLICATION

INSTRUCTIONS

Answer all questions completely. An incomplete form may delay processing of your application. Use additional paper if necessary and attach any supplemental information to this form. Attach an operational statement if appropriate. This application will be distributed to several agencies and persons to determine the potential environmental effects of your proposal. Please complete the form in a legible and reproducible manner (i.e., USE BLACK INK OR TYPE).

OFFICE USE ONLY	
IS No.	_____
Project No(s).	_____
Application Rec'd.	_____

GENERAL INFORMATION

- Property Owner :** Craig Richard Constance **Phone/Fax** _____

Mailing Address: P.O. Box 819, Sanger, CA 93657

Street City State/Zip
- Applicant :** Borrego Solar Systems Inc. **Phone/Fax:** (424) 537-9168

Mailing Address: 5005 Texas St., Ste. 400, San Diego, CA 92108

Street City State/Zip
- Representative:** Jacobs Engineering, Cory Haynes **Phone/Fax:** (706) 296 4184

Mailing Address: 4 Embarcadero Center, Ste. 3800, San Francisco, CA 94105

Street City State/Zip
- Proposed Project:** Borrego is proposing to develop and construct a battery energy storage system (BESS) approximately 2 miles west of Sanger.

- Project Location:** Adjacent to the PG&E Sanger substation at 1900 S McCall Ave (APN #314-080-36)

- Project Address:** 10018 Jensen Ave., Sanger, CA 93657

- Section/Township/Range:** 853 / B.14 / 816.5 **Parcel Size:** 37.56 acre

- Assessor's Parcel No.** 314-080-36 OVER.....

10. Land Conservation Contract No. (If applicable): N/A

11. What other agencies will you need to get permits or authorization from:

- | | |
|--|--|
| <input type="checkbox"/> LAFCo (annexation or extension of services) | <input type="checkbox"/> SJVUAPCD (Air Pollution Control District) |
| <input type="checkbox"/> CALTRANS | <input type="checkbox"/> Reclamation Board |
| <input type="checkbox"/> Division of Aeronautics | <input type="checkbox"/> Department of Energy |
| <input type="checkbox"/> Water Quality Control Board | <input type="checkbox"/> Airport Land Use Commission |
| <input type="checkbox"/> Other _____ | |

12. Will the project utilize Federal funds or require other Federal authorization subject to the provisions of the National Environmental Policy Act (NEPA) of 1969? Yes No

If so, please provide a copy of all related grant and/or funding documents, related information and environmental review requirements.

13. Existing Zone District¹: AE-20

14. Existing General Plan Land Use Designation¹: Agriculture

ENVIRONMENTAL INFORMATION

15. Present land use: Vacant agricultural field
Describe existing physical improvements including buildings, water (wells) and sewage facilities, roads, and lighting. Include a site plan or map showing these improvements:

Describe the major vegetative cover: Fallow agricultural field with low native grasses

Any perennial or intermittent water courses? If so, show on map: N/A

Is property in a flood-prone area? Describe:

No

16. Describe surrounding land uses (e.g., commercial, agricultural, residential, school, etc.):

North: Agricultural

South: Agricultural

East: Agricultural

West: PG&E Substation and Agricultural

17. What land use(s) in the area may be impacted by your Project?: None

18. What land use(s) in the area may impact your project?: None

19. Transportation:

NOTE: The information below will be used in determining traffic impacts from this project. The data may also show the need for a Traffic Impact Study (TIS) for the project.

A. Will additional driveways from the proposed project site be necessary to access public roads?
 Yes X No

B. Daily traffic generation:

I. Residential - Number of Units _____
Lot Size _____
Single Family _____
Apartments _____

II. Commercial - Number of Employees _____
Number of Salesmen _____
Number of Delivery Trucks _____
Total Square Footage of Building _____

III. Describe and quantify other traffic generation activities:
After completion of construction activities which are expected to take 6 months, the BESS will operate unstaffed. The system will be monitored remotely and regular operations and maintenance will be conducted approximately quarterly by service personnel estimated to be 1-2 persons with 1 vehicle. Both during the construction and operation terms, access to the site will be via an existing road onto the property from S McCall Ave. There will be adequate area on the property for vehicle parking and equipment staging during construction and operational phases.

20. Describe any source(s) of noise from your project that may affect the surrounding area: _____
At the property lines, the BESS will produce negligible sound and the system will have minimal lighting for safety at night.

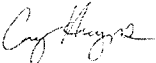
21. Describe any source(s) of noise in the area that may affect your project: None

22. Describe the probable source(s) of air pollution from your project: None

23. Proposed source of water:
() private well
() community system³-name: No water systems are proposed to be used at this time OVER.....

- 24. Anticipated volume of water to be used (gallons per day)²: None during operations
- 25. Proposed method of liquid waste disposal:
() septic system/individual
() community system³-name N/A
- 26. Estimated volume of liquid waste (gallons per day)²: None
- 27. Anticipated type(s) of liquid waste: N/A
- 28. Anticipated type(s) of hazardous wastes²: N/A
- 29. Anticipated volume of hazardous wastes²: N/A
- 30. Proposed method of hazardous waste disposal²: N/A
- 31. Anticipated type(s) of solid waste: N/A
- 32. Anticipated amount of solid waste (tons or cubic yards per day): N/A
- 33. Anticipated amount of waste that will be recycled (tons or cubic yards per day): N/A
- 34. Proposed method of solid waste disposal: N/A
- 35. Fire protection district(s) serving this area: N/A
- 36. Has a previous application been processed on this site? If so, list title and date: No
- 37. Do you have any underground storage tanks (except septic tanks)? Yes _____ No X
- 38. If yes, are they currently in use? Yes _____ No _____

TO THE BEST OF MY KNOWLEDGE, THE FOREGOING INFORMATION IS TRUE.

 Cory Haynes, JACOBS 2/22/2022
SIGNATURE DATE

¹Refer to Development Services and Capital Projects Conference Checklist

²For assistance, contact Environmental Health System, (559) 600-3357

³For County Service Areas or Waterworks Districts, contact the Resources Division, (559) 600-4259

NOTICE AND ACKNOWLEDGMENT

INDEMNIFICATION AND DEFENSE

The Board of Supervisors has adopted a policy that applicants should be made aware that they may be responsible for participating in the defense of the County in the event a lawsuit is filed resulting from the County's action on your project. You may be required to enter into an agreement to indemnify and defend the County if it appears likely that litigation could result from the County's action. The agreement would require that you deposit an appropriate security upon notice that a lawsuit has been filed. In the event that you fail to comply with the provisions of the agreement, the County may rescind its approval of the project.

STATE FISH AND WILDLIFE FEE

State law requires that specified fees (effective January 1, 2020: \$3,445.25 for an EIR; \$2,480.25 for a Mitigated/Negative Declaration) be paid to the California Department of Fish and Wildlife (CDFW) for projects which must be reviewed for potential adverse effect on wildlife resources. The County is required to collect the fees on behalf of CDFW. A \$50.00 handling fee will also be charged, as provided for in the legislation, to defray a portion of the County's costs for collecting the fees.

The following projects are exempt from the fees:

- 1. All projects statutorily exempt from the provisions of CEQA (California Environmental Quality Act).*
- 2. All projects categorically exempt by regulations of the Secretary of Resources (State of California) from the requirement to prepare environmental documents.*

A fee exemption may be issued by CDFW for eligible projects determined by that agency to have "no effect on wildlife." That determination must be provided in advance from CDFW to the County at the request of the applicant. You may wish to call the local office of CDFW at (559) 222-3761 if you need more information.

Upon completion of the Initial Study you will be notified of the applicable fee. Payment of the fee will be required before your project will be forwarded to the project analyst for scheduling of any required hearings and final processing. The fee will be refunded if the project should be denied by the County.



Applicant's Signature

02/22/2022

Date

Pest Management Plan

Apache Battery

Energy Storage

Project

APN 314-080-36 and 314-080-37

New Leaf Energy

February 23, 2023

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1.0 Project and Objectives

New Leaf Energy proposes to construct a battery energy storage facility near Sanger, Fresno County, California. The project will involve constructing the facility on a total of about 11.3 acres (APN 314-080) in a fallow agricultural field northeast of the intersection of East Jensen Avenue and McCall Avenue (Figures 1 and 2). The proposed project site plan is depicted in Figure 3.

General site investigations of the study area were conducted on January 21, 2021, during which the site and the surrounding area were evaluated for the presence of various plant and animal species, including rodents. The results of the site visit and a literature review are contained in AEI Consultants Biological Review (2021).

The purpose of this Pest Management Plan is to discuss potential pest problems that may occur within the boundaries of the project site during the life of the battery storage project. In addition, the Plan outlines the various methods for preventing and/or controlling potential pest problems that may arise during operation of the battery storage facility.

This Plan provides information on the various pests known to occur in the region that could potentially cause an infestation on the property. Available resources and various control measures are discussed below which will help to control any future pest problems, if they occur. As necessary, various measures will be implemented to control any rodent populations present on the site in such a manner as to ensure minimal impact to the environment.

2.0 Existing Site Conditions

2.1 Vegetation

The Project site has been intensively cultivated since at least 1998 and supported a vineyard as recently as 2016 (Google 2021). At the time of the survey, it consisted of routinely disked fallow agricultural land with ruderal plant species. It was bordered to the north by an irrigation canal and orchards, to the south and east by fallow agricultural land, and to the west by McCall Avenue and an electric substation.

Table 1. Vascular Plants and Wildlife Detected during Site Visit

Common Name	Scientific Name	Status
Plants		
Family Asteraceae		
Smooth cat's ear	<i>Hypochaeris glabra</i>	Nonnative
Prickly lettuce	<i>Lactuca serriola</i>	Nonnative
Rough cocklebur	<i>Xanthium strumarium</i>	Native
Family Brassicaceae		
Common mustard	<i>Brassica rapa</i>	Nonnative
Family Chenopodiaceae		
Russian thistle	<i>Salsola tragus</i>	Nonnative

Family Geraniaceae		
Big heron bill	<i>Erodium botrys</i>	Nonnative
Family Onagraceae		
Annual fireweed	<i>Epilobium brachycarpum</i>	Native
Family Poaceae		
Ripgut brome	<i>Bromus diandrus</i>	Nonnative
Foxtail chess	<i>Bromus madritensis</i>	Nonnative
Family Polygonaceae		
Sorrel	<i>Rumex sp.</i>	Nonnative
Family Solanaceae		
Sacred datura	<i>Datura wrightii</i>	Native
Birds		
Family Accipitridae		
Red-tailed hawk	<i>Buteo jamaicensis</i>	MBTA, CFGC
Family Cathartidae		
Turkey vulture	<i>Cathartes aura</i>	MBTA, CFGC
Family Charadriidae		
Killdeer	<i>Charadrius vociferus</i>	MBTA, CFGC
Family Columbidae		
Mourning dove	<i>Zenaida macroura</i>	MBTA, CFGC
Family Corvidae		
American crow	<i>Corvus brachyrhynchos</i>	MBTA, CFGC
Common raven	<i>Corvus corax</i>	MBTA, CFGC
Family Emberizidae		
Song sparrow	<i>Melospiza melodia</i>	MBTA, CFGC

Although not seen during the site visit, various small rodents are also known to inhabit the general region. These include:

Voles, Moles, and Pocket Gophers: There are six vole species that occur throughout California; the California vole (*Microtus californicus*) is the most common. California voles are typically found in grassland communities and wet meadows (CDFW, 1990). Voles frequently cause damage to a wide range of ornamental plants and may also damage other landscape plantings (University of California, 2010).

Moles (*Scapanus* sp.) are small mammals that are widely distributed throughout the dry regions of the Central Valley. The species lives entirely underground and normally has an extensive system of interconnecting tunnels. The greatest damage from mole activities is primarily from their burrowing activities that can create mounds and ridges throughout an area and undermines support structures.

Pocket gophers (*Thomomys* sp.) are one of the more common mammals throughout California and population density can sometimes reach very high levels (60+ gophers per acre) (CDFW, 1990). Botta's gophers are the most common gopher species in the area and are most likely to occur on the project site. Gophers are prolific diggers and can do considerable damage within a relatively short time (University of California, 2009). The first sign of the species is usually numerous mounds of dirt scattered throughout the area.

Rats: Norway rats (*Rattus norvegicus*) and roof rats (*Rattus rattus*), which are species which were introduced to North America, have been observed throughout California, and create a significant amount of damage wherever they are present. They typically consume large amounts of food (i.e., grain, etc.) and are responsible for contaminating food that has been stored (University of California, 2003). In addition to the damage they can cause, they are the carriers of various diseases.

Mice: The common house mouse (*Mus musculus*) also occurs throughout California and is most commonly seen in association with structures (i.e., houses, sheds, barns, etc.). The house mouse is one of the more damaging rodents in the country and typically consumes and contaminates food wherever it is found (University of California, 2010). They thrive under a variety of conditions such as in and around houses and commercial structures as well as in open fields and on agricultural land. House mice consume and contaminate food meant for humans, pets, livestock, and other animals. In addition, they cause considerable damage to structures and property, and they can transmit pathogens and cause disease such as salmonellosis, a form of food poisoning.

California Ground Squirrels: This species of ground squirrel (*Spermophilus beecheyi*) is one of the more common ground squirrels and is associated with grassland habitats, particularly in disturbed areas and along roadsides (CDFW, 1990). Damage done by the species consists primarily due to excavation of burrows that could potentially undermine structures such as support poles and pilings.

3.0 Control Options and Removal Methods

3.1 Preventive Controls

Preventive controls are used to minimize rodent infestations in areas of concern and involve numerous approaches. As noted in Section 2.0, the main rodents likely to occur on the site include voles, rats, mice, gophers, and California ground squirrels. Preventive measures for each of these species are somewhat different; however, there are several measures common to all that can be implemented for the project as needed. These measures are summarized below:

Managing Vegetation: Rodents typically occur in areas where vegetation is allowed to grow; therefore, the vegetative cover around the exterior of site should be controlled. This can be achieved through periodic mowing.

The objective is to prevent the growth of undesirable vegetation in and around the solar panel installation with the least environmental impact and at a reasonable cost. Many weed control options are available. The following describes control options and identifies resources available for identifying the most suitable options for this situation. The UC Davis IPM program provides extensive guidance for controlling weeds. Its website for weed control in landscaping is <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7441.html> (UC Davis 2007). Although the IPM program applies to weed control methods for agricultural crops or for landscaping, the battery energy storage system can use many of its techniques.

The UC Davis IPM guide for landscaped areas offers ideas that may be considered during construction to minimize later weed growth.

An integrated approach utilizing several methods is the most economical and effective means of controlling weeds. The IPM guide recommends following these five basic steps:

- Site assessment: Before soil preparation and when the weeds are visible, evaluate the soil, mulch, and slope of the site so problems can be corrected, or future problems anticipated before planting. Site characteristics to look for include drainage, soil compaction, shading, and water infiltration rate. Identify the weed species in the area, with particular focus on perennial weeds. The best time to look for winter annual weeds is mid- to late winter: perennials and summer annuals are easiest to identify in mid- to late summer.
- Site preparation: Control existing weeds, especially perennials, before any grading and development is started. Glyphosate (Roundup®, etc.) can be used to kill existing annual and perennial weeds. Pre-plant treatment with fumigants (available to licensed pesticide applicators only) or soil solarization can be used if time allows; however, 6 weeks are required for solarization, and it is most effective when done during the time of highest sun radiation— from June to August in California.
- Watering large areas where there are no plants will only encourage weeds to grow.
- Do not introduce weeds. Weeds are sometimes introduced either in soil that has been transported to the landscape site, when amending the soil or in the potting mix of transplants.

- Hand weeding and keeping weeds from producing seeds in the landscape will greatly reduce overall weed populations.

Chemical: Herbicides can also be utilized, where possible, to control weeds, shrubs, and dense vegetative cover. However, frequent application of herbicides is required for long-term control of vegetation.

Other Options: Various other measures are available for control of rodents such as commercial repellents, electromagnetic, and burrow fumigants; however, these measures have a very low success rate and may also be cost prohibitive for large sites such as this project.

Natural Control: Natural predators such as hawks and falcons do occur in the area and prey on voles, rats, and ground squirrels on a regular basis. Raptors are expected to utilize the site during hunting activities; however, it would be difficult to ensure frequent or constant “patrol” of the site by hawks and falcon.

3.2 Removal Methods

In the event a rodent infestation occurs on the site or in certain portions of the property, various removal methods may need to be used to remove or at least lower the number of pests present on the site. Construction of the proposed battery storage project will have the benefit of reducing the number of rodents which may presently occur on the site due to modification and removal of the present vegetation on the site. As part of the construction process, the site will be graded, and all vegetation will be removed. Additional control methods are as follows:

Trapping: Removal of various rodent species through trapping measures is an effective way to control populations of pests; however, trapping is labor intensive and can be relatively expensive. Trapping is most effective when dealing with small projects and on those projects where the rodents are confined to a relatively small portion of the site.

Trapping may be an effective measure for the project if the rodent infestation problem is confined to a small area but if the rodents are evenly dispersed throughout the site, baiting (see below) may be a more effective measure. In the event an infestation problem does arise, the site operations manager should consult with a pest control expert to determine if trapping is suitable.

Baiting: The use of toxic bait is an effective means of controlling rodents when the infestation occurs over a large area of a project site. Baits are the quickest and most cost-effective means in controlling pest infestation; however, toxic substances can create a safety problem for children, pets, and other animals (livestock). Anticoagulants are the most common baits used to control rats and mice and are available as over-the-counter substances (see below).

Rodenticides: First generation anticoagulants kill by preventing blood from clotting and it does take multiple feedings to gain success. The problem with this class of product is that when it was on the market for the public (consumer), children and animals could pick up the poison and ingest it, resulting in injury or death.

Whereas the first-generation anticoagulants take multiple feedings, the second generation of anticoagulants was created so that rodents who had become resistant to the first gen products would have an alternative permanent solution. Second generation anticoagulants are much faster acting; in some cases, a single night feeding can result in death. However, this is dangerous when it comes to children and pets under the Risk Mitigation Decision. EPA took this class of rodenticide off the consumer market and these products can only be purchased for commercial pest control and structural pest control markets. Products containing second generation anticoagulants must be sold in containers holding at least 16 pounds of bait if they are labeled for use by professional applicators and at least 8 pounds of bait if labeled for use in or near agricultural structures.

4.0 Conclusion

Pests are not expected to be an issue of significant concern for the battery storage project, as the project will not produce any crops or other plant materials that might attract the various rodents known to occur in the area. Vegetation management will be required to avoid interference of grasses with fencing and electrical equipment; this will reduce the amount of useful habitat for pests on the site.

Managing the vegetation is the first line of defense against rodent infestation. However, if an infestation does occur during the operational phase of the project, a professional exterminator should be consulted to determine the rodents which are causing the problem, and to determine the best approach for dealing with the specific rodents present. The consultant will also be able to determine which baits can be used in accordance with local, State, and federal laws.

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Figure 1.

