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2 Project Description

Vaca Dixon BESS LLC and Arges BESS LLC (Applicants), propose to construct and operate the Vaca Dixon Power Center Project (Project). The battery energy storage system (BESS) facilities are proposed to be installed on an approximately 10-acre site in the City of Vacaville in Solano County, California (Figure 2-1, Figure 2-2). The proposed BESS facilities are located on Assessor Parcel Number (APN) 0133-060-060. The Project would be capable of operating 7 days a week, 365 days a year, as grid conditions allow and require, with an up to 35-year[1] anticipated lifespan. The primary Project facility components at the approximately 10-acre combined BESS Project Area include:

- Vaca Dixon BESS (57 megawatts [MW], 1-hour duration, 57 MW hour [MWh]), including electrical switchyard
- Arges BESS (100 MW, 4-hour duration, 400 MWh), including electrical switchyard

The Project also includes transmission intertie (gen-tie) lines crossing Interstate 80 (I-80) to the north to connect the BESS facilities to the existing Pacific Gas & Electric (PG&E) Vaca-Dixon Substation located on a PG&E-owned parcel (APN 0133-060-070) in unincorporated Solano County. Both BESS components would interconnect to the existing PG&E Vaca-Dixon Substation at 115 kilovolts (kV). The Vaca Dixon 57 MWh BESS is proposed to connect to the existing 13.8/115 kV generation step up (GSU) transformer at the existing CalPeak Power - Vaca Dixon Peaker Plant (VDPP) on the PG&E parcel via a new overhead 13.8 kV line from the proposed BESS switchyard to the low side of the VDPP GSU transformer to the north. The existing GSU transformer in the VDPP switchyard is connected to the PG&E substation by an existing 115 kV line. The Arges 400 MWh BESS would interconnect directly to the PG&E substation via a new overhead 115 kV gen-tie to be constructed from the Arges 400 MWh BESS switchyard at the BESS Project Area south of I-80 to the PG&E substation to the north.

The proposed common gen-tie components for the Vaca Dixon 57 MWh and Arges 400 MWh BESS facilities would be co-located on shared transmission structures carrying both 13.8 kV and 115 kV conductors for approximately 1,~~500~~450 feet of the gen-tie lengths, from the vicinity of the BESS switchyards across I-80 and up to the northwest corner of the VDPP facility site. As shown in Figure 2-3, from that point, the 13.8 kV gen-tie component for the Vaca Dixon 57 MWh BESS would continue approximately 125~~50~~ feet to the east via an underground cable trench or duct bank for connection to the low side of the 13.8/115 kV GSU transformer at the VDPP. The Arges 400 MWh BESS 115 kV gen-tie route continues approximately 600~~725~~ feet north and east to the connection point at the monopole west of the PG&E Vaca-Dixon Substation. The gen-tie crossing of I-80 would require an encroachment permit from the California Department of Transportation (Caltrans).

The Project location and related facilities were selected taking into consideration the Project objectives, engineering constraints, site geology, potential environmental impacts, water, waste and fuel constraints, and electric transmission constraints among other factors. A detailed discussion of the basis project objectives and the site selection is provided in this Section 2 and in Chapter 6, *Alternatives.*

[1] After 35 years, the Project would be repowered or decommissioned.

Figure 2-1 Regional Location

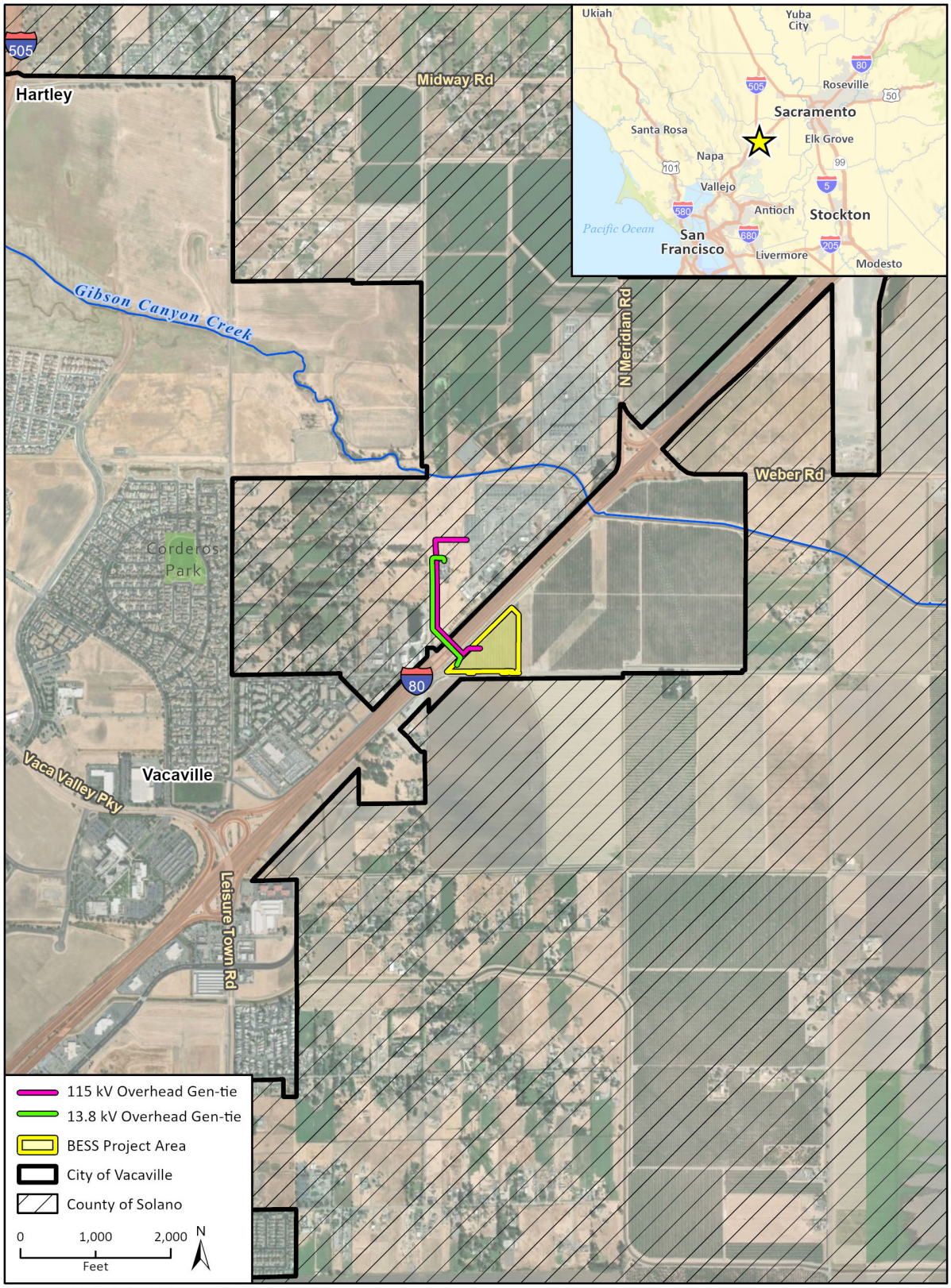

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Fig 2-1 Regional Location_Portrait

Figure 2-2 Project Area and Components

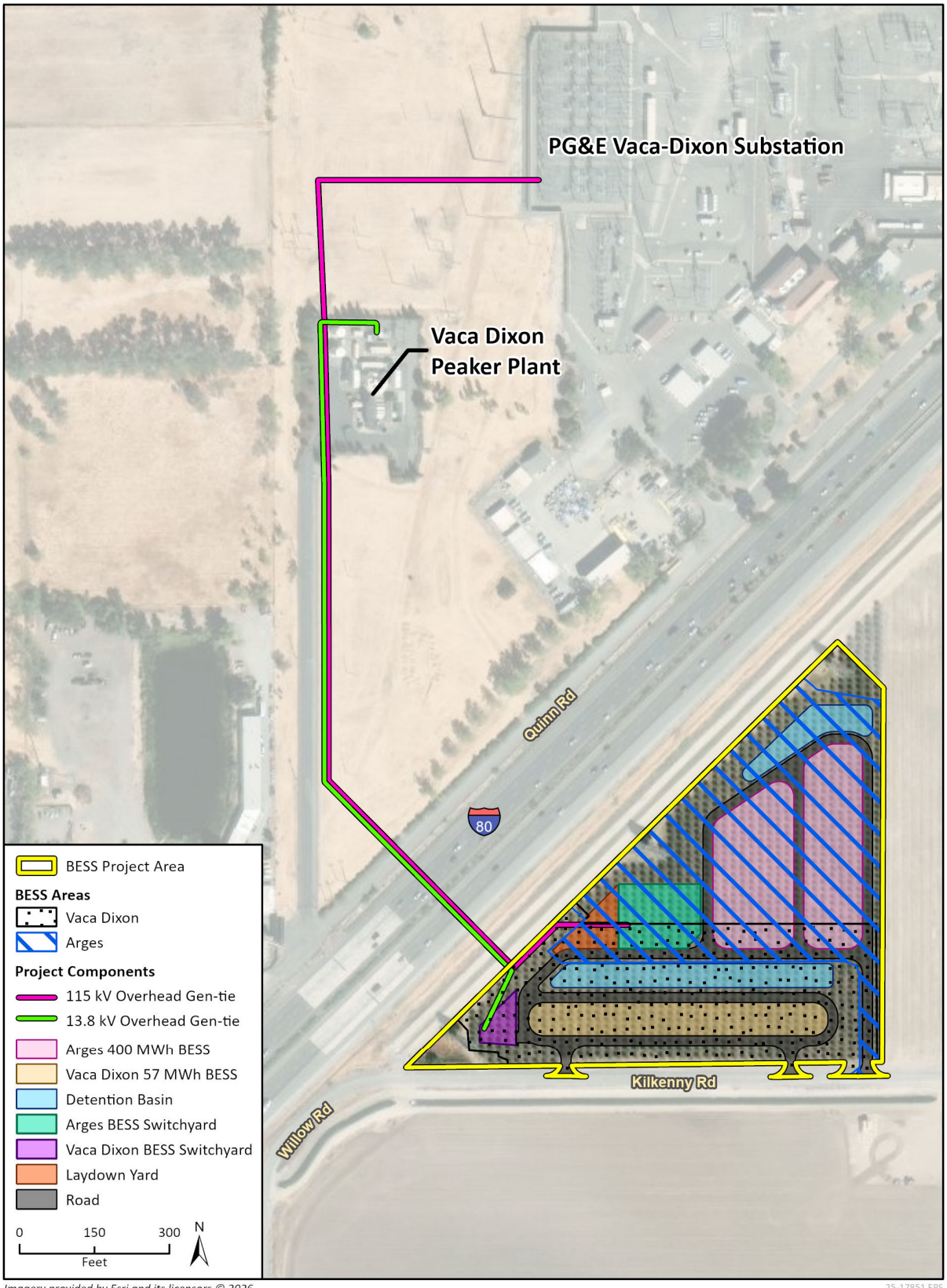

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Fig X Project Site and Components_Labels_Portrait

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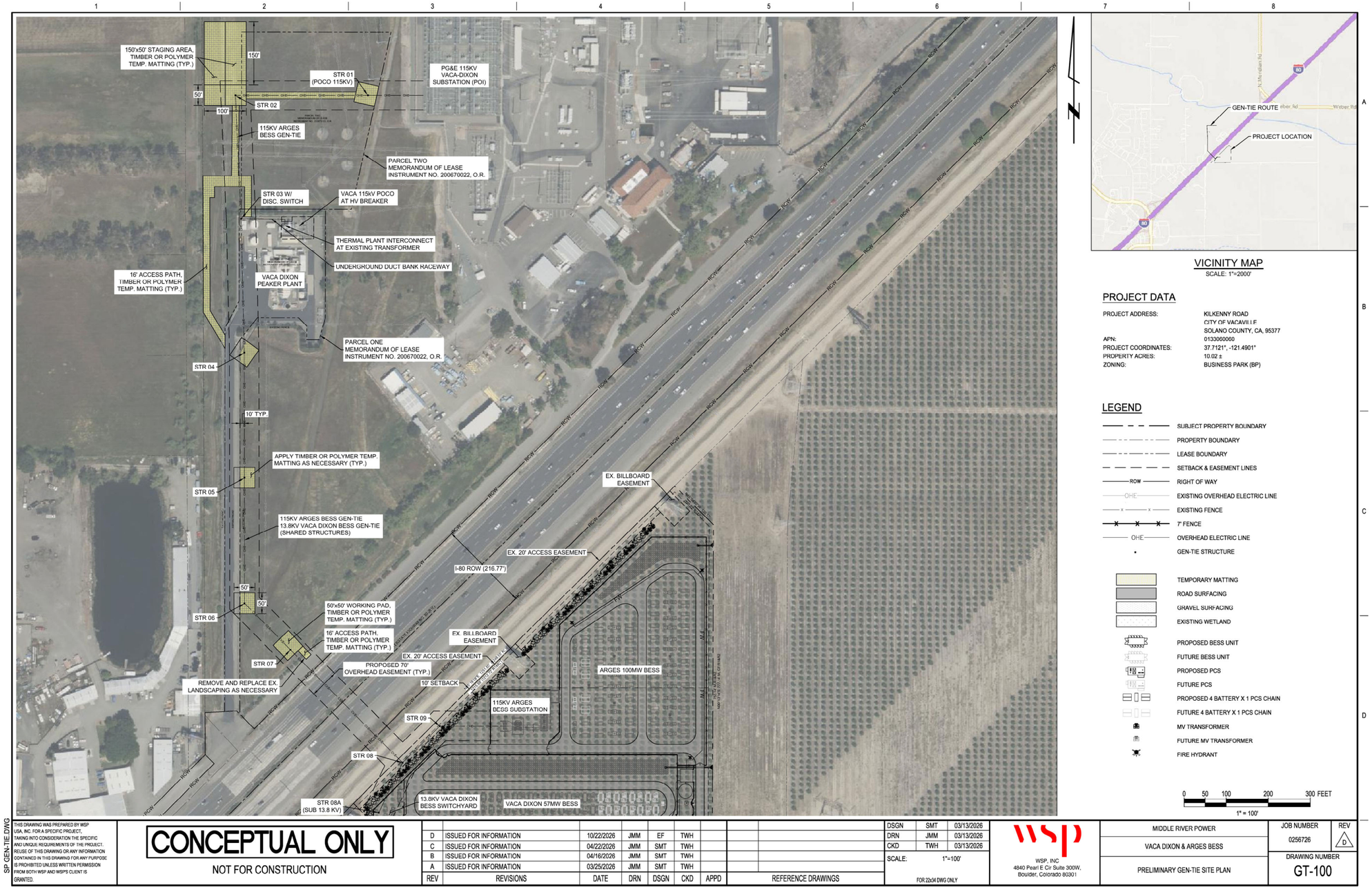
Figure 2-3 Gen-Tie Site Plan Design and Work Areas



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WSP, INC
4840 Pearl E Cir Suite 300W,
Boulder, Colorado 80301

MIDDLE RIVER POWER

VACA DIXON & ARGES BESS

PRELIMINARY GEN-TIE SITE PLAN

JOB NUMBER 0256726

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2.1 Facility Description, Design, and Operation

The Vaca Dixon Power Center Project has a capacity of 457 MWh and includes a 57 MWh BESS and a 400 MWh BESS, with appurtenant facilities. The Vaca Dixon 57 MWh BESS and the Arges 400 MWh BESS components would likely be constructed in succession starting with construction of the Vaca Dixon 57 MWh BESS.

2.1.1 Project Location

The BESS components of the proposed Project are located in the City of Vacaville, California. The combined BESS components footprint encompasses approximately 10 acres on APN 0133-060-060. The proposed Vaca Dixon 57 MWh BESS component would be located on approximately 4.25 acres in the southern portion of the 10-acre BESS Project Area. The proposed Arges 400 MWh BESS component would be located on approximately 5.75 acres of the Project Site.

As detailed in Chapter 5.2, *Land Use,* the proposed BESS Project Area is designated by the City of Vacaville General Plan as Business Park and the BESS Project Area is located within the City's Northeast Growth Area. Pursuant to Vacaville General Plan Policy LU-P18.1, development within the Northeast Growth Area is intended for job generating uses such as high-quality offices, industrial uses, and technology campuses. The purpose of this overlay district is to guide temporary or interim development in a manner that preserves existing land for future development in the Northeast Growth Area. Permitted and Conditional Uses in the Northeast Growth Area do not include BESS projects. The CEC has exclusive approval authority over the Project through the AB 205 Opt-In process, and the CEC has the authority to approve the Project. Land uses surrounding the BESS Project Area include I-80 (Caltrans jurisdiction) to the north and west, a PG&E transmission line easement and agricultural land within the City of Vacaville to the east, and Kilkenny Road and agricultural land within Solano County to the south. The proposed gen-tie facility locations on the PG&E parcel (APN 0133-060-070) are designated by the Solano County General Plan as Public/Quasi-Public land, including existing PG&E facilities associated with the PG&E Vaca-Dixon Substation to the east. Adjacent land uses to the gen-tie routes on the PG&E parcel, which are all in Solano County, include a commercial auto body shop and pond to southwest, designated as Urban Commercial land; and undeveloped land and backyards of residential lots on Mills Lane to the west and northwest, designated as Urban Residential, Public Open Space, and Public/Institutional lands.

2.1.2 Site Arrangement and Layout

Figure 2-5 shows the overall Project layout and location of the BESS facilities including battery modules, inverters, access roads, stormwater detention basins, construction laydown areas, and electrical interconnection facilities which are discussed in further in this Chapter. The Vaca Dixon 57 MWh and Arges 400 MWh BESS layouts are shown in Figure 2-6 and Figure 2-7, respectively.

The Project parcels, section, township, and range, as well as the proposed locations of the Project components are shown in Figure 2-4. Section 5.5, *Visual Resources*, includes photo simulations of the Project. In addition, Appendix C contains scale plan and elevation drawings depicting the relative size and location of all facilities that were used to create Project visual simulations.

Figure 2-4 Project Parcels

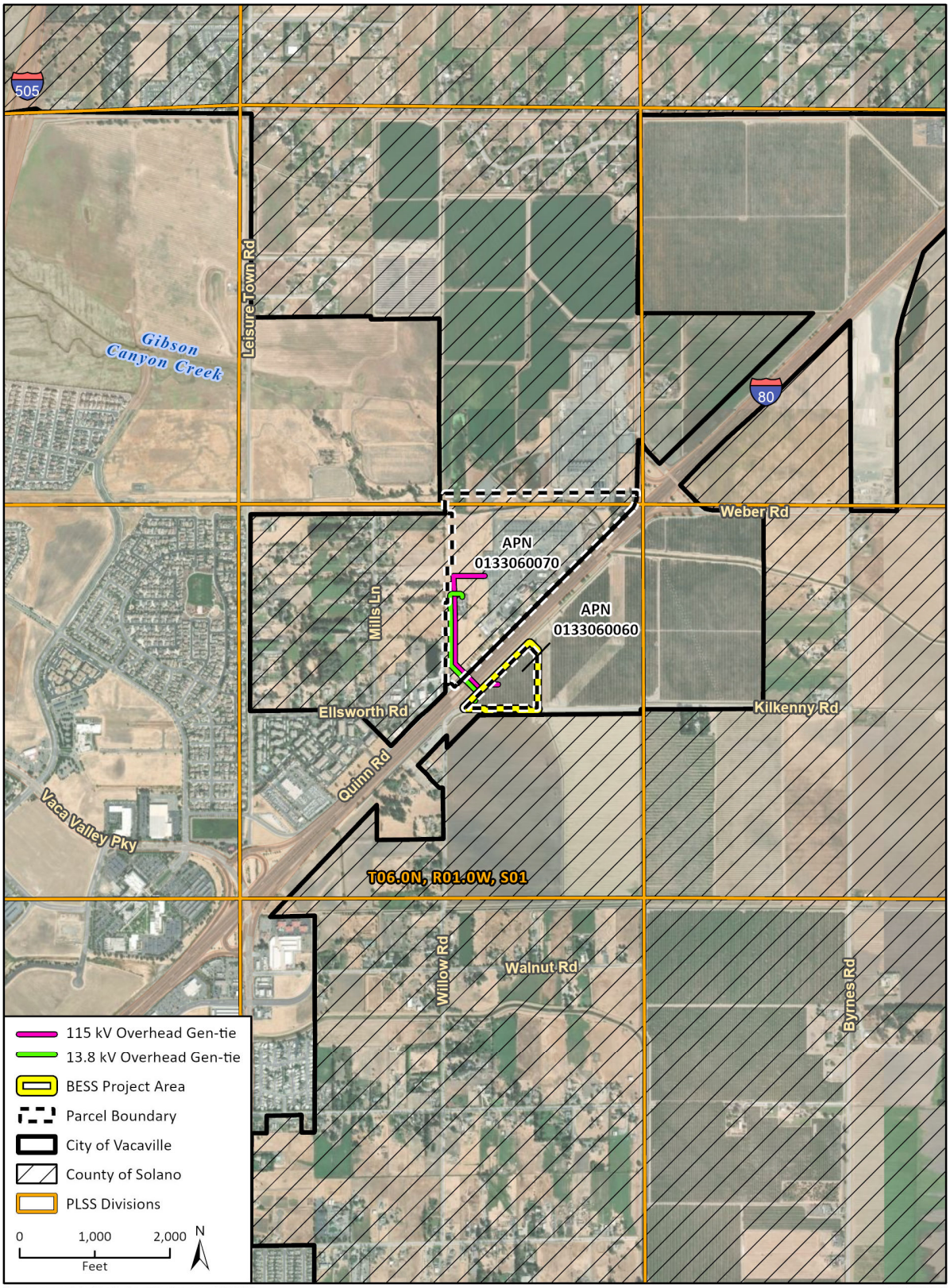

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Fig X Project Site and TRS

Figure 2-5 Vaca Dixon Power Center Project Site Plan – Full Site

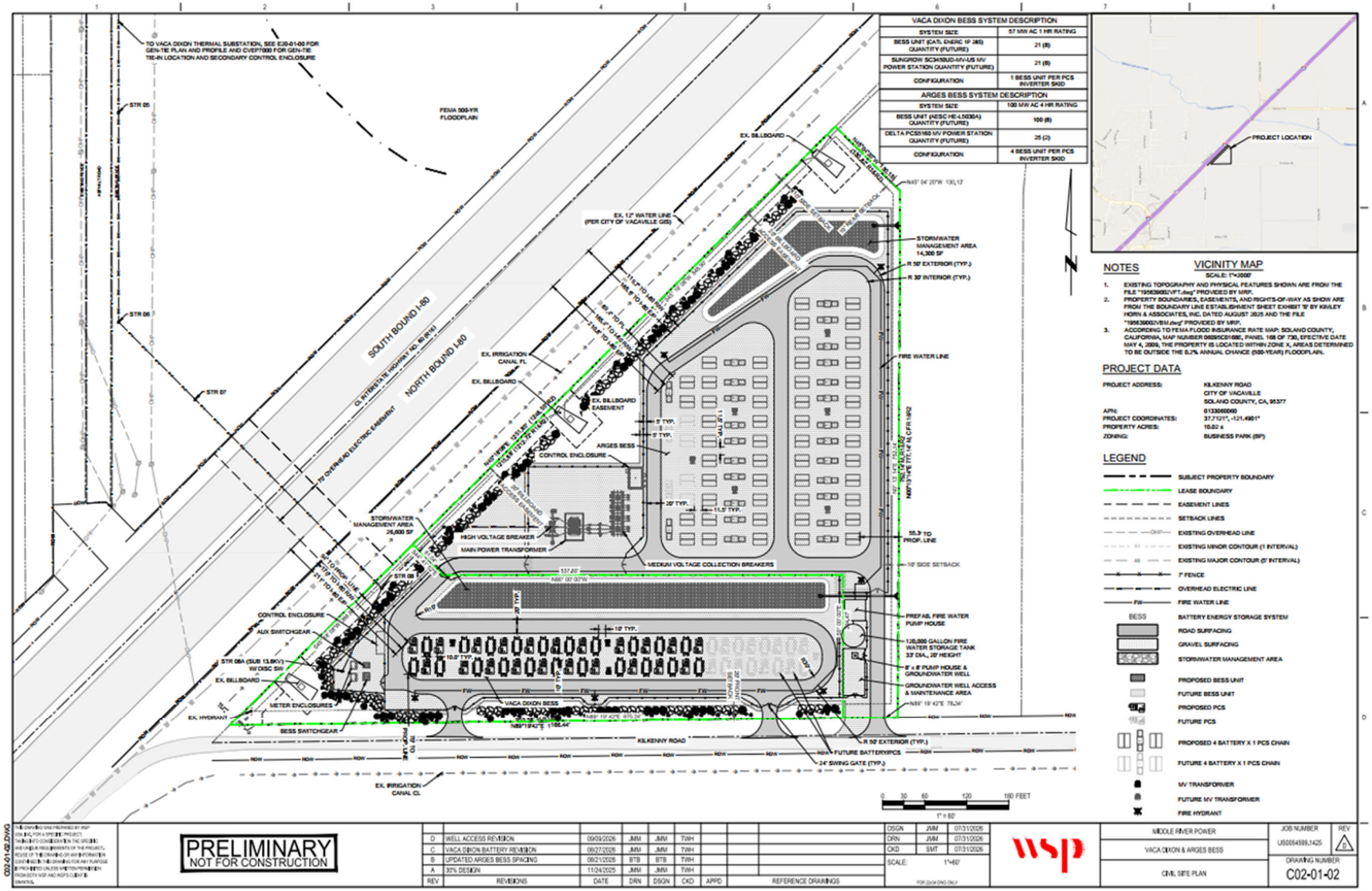


Figure 2-6 Vaca Dixon 57 MWh BESS Component

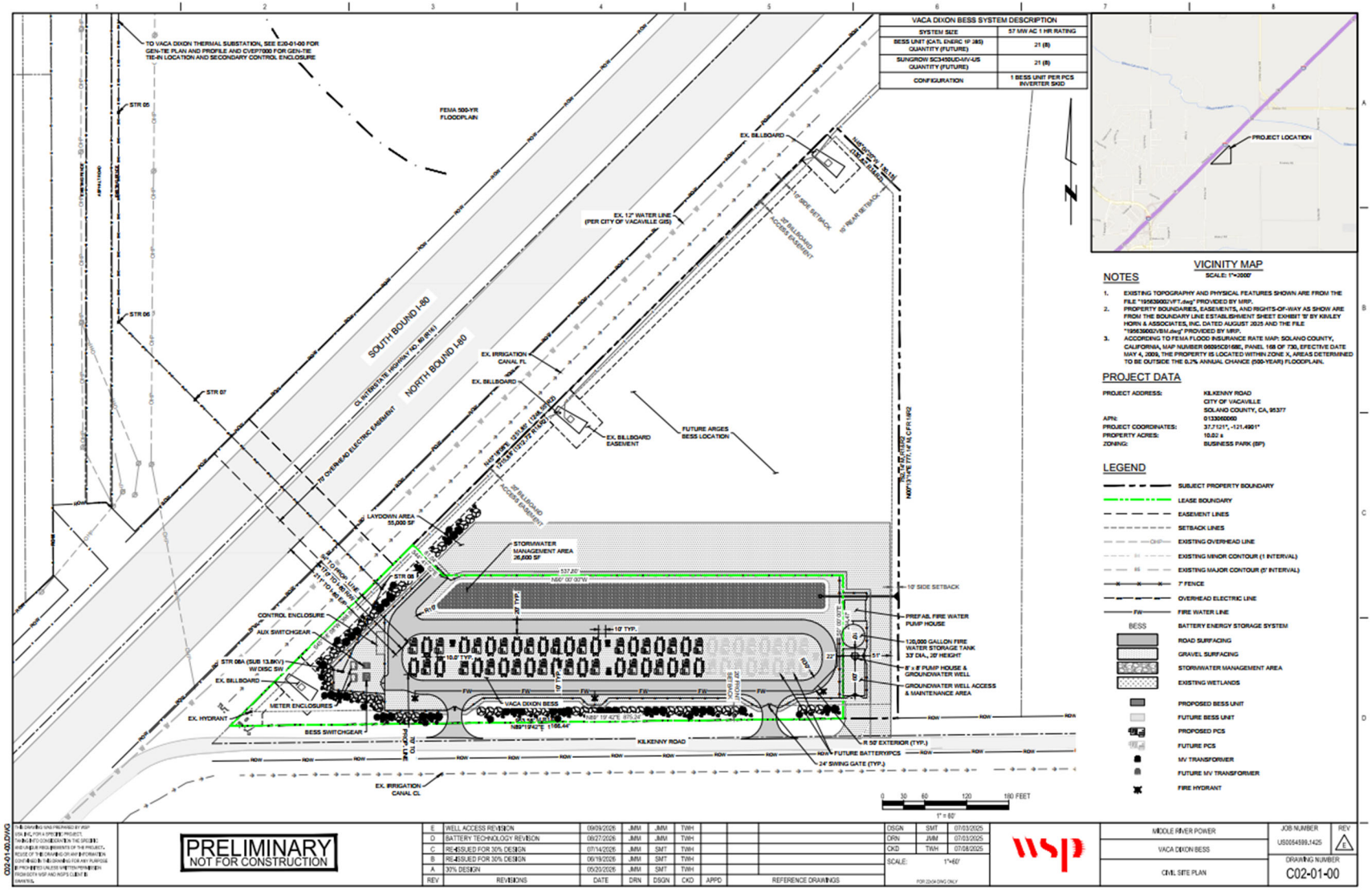
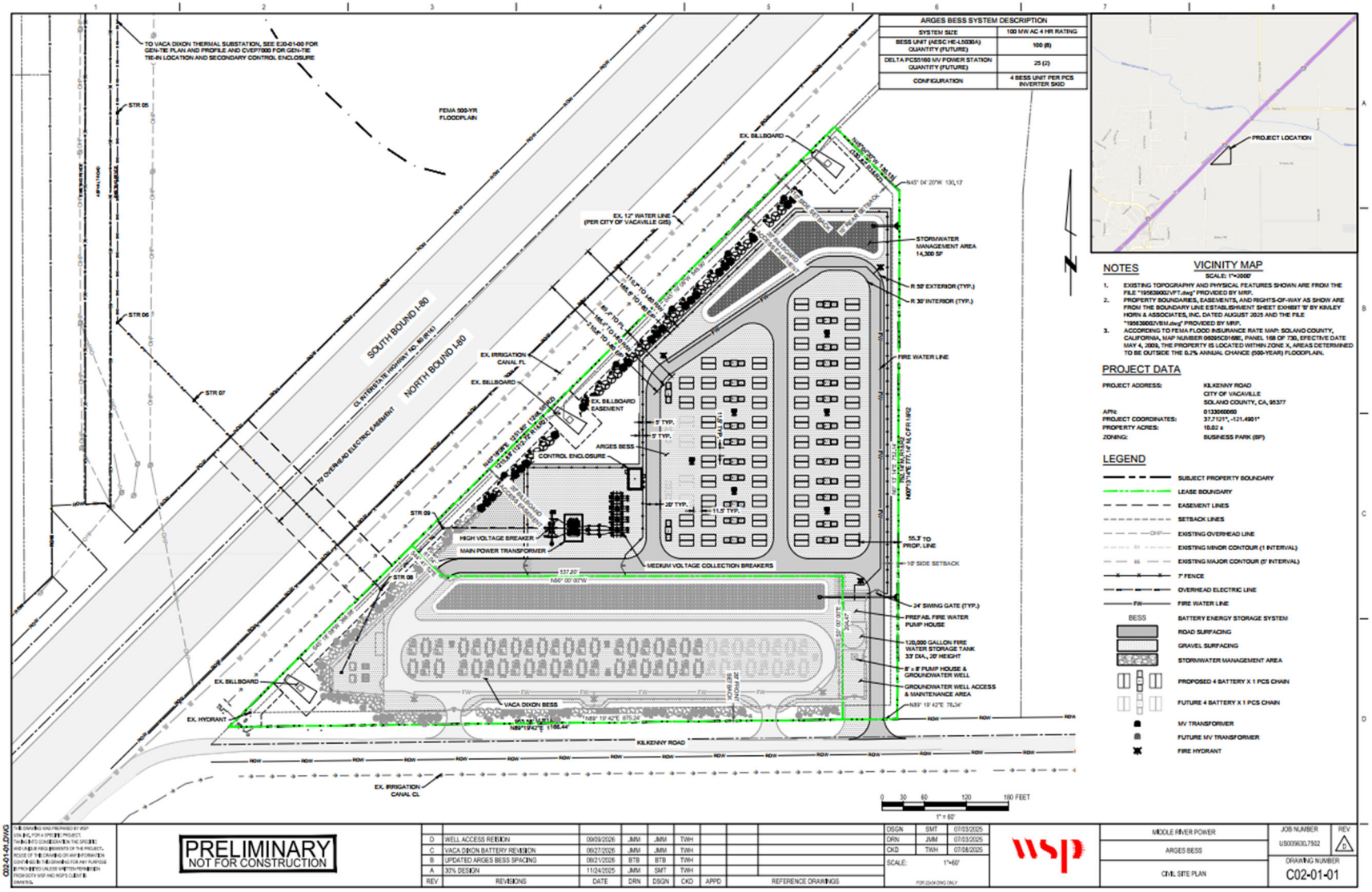


Figure 2-7 Arges 400 MWh BESS Component



Site Access

Main access to the BESS Project Area would be provided from Kilkenny Road. The gen-tie routes on the PG&E parcel to the north would be accessed primarily from the existing VDPP access road located along the southwestern portion of the PG&E parcel. The existing VDPP access road connects to Quinn Road on the southern end. Internal asphalt access roads approximately 20 feet wide would be constructed to provide vehicular access within the BESS facilities south of I-80.

2.1.3 Battery Energy Storage System Description

2.1.3.1 Battery Energy Storage System Basic Project Objectives

The Project is designed with the following principle Basic Project Objectives:

- Construct and operate economically viable, and commercially financeable BESS facilities totaling 457 MWh in Solano County.
- Obtain site control of a parcel at least 10 acres in size to provide adequate space and to allow design flexibility for the Project that includes batteries, switchyards, inverters, transformers, stormwater control, access routes, and fencing.
- Develop electricity storage facilities at energy facilities located on a dedicated parcel in the direct vicinity of the VDPP and the PG&E Vaca-Dixon Substation, to utilize existing infrastructure and assets while also minimizing potential environmental impacts, including the avoidance and minimization of potential impacts from new transmission lines.
- Offer energy storage to curtail dispatch and displace the need for additional fossil fuel based generating stations needed to serve peak demand periods when intermittent renewable sources may be inadequate or unavailable and allow for the deferral or avoidance of regional transmission facilities.
- Support California's current need for additional electrical supply capacity during peak load demand time periods and assist California in meeting its goal of reducing statewide annual greenhouse gas emissions from the electric sector to 25 million metric tons by 2035.
- Balance electricity generation from renewable sources, such as wind and solar, with electricity demand by storing excess generation and delivering it back to the grid when demand exceeds real-time generation supply.
- For the Vaca Dixon 57 MWh BESS, take advantage of existing interconnection capacity and integrate BESS operations with the natural gas-fueled VDPP to optimize project operations and afford the opportunity to avoid and minimize natural gas operations where feasible.
- For the Arges 400 MWh BESS, utilize the transmission interconnection capacity available to the BESS at the PG&E Vaca-Dixon Substation.
- Enhance electricity reliability without requiring the construction of new regional transmission infrastructure or substantial network upgrades.
- Locate site near existing roadways and related infrastructure where available and feasible for construction and O&M access.
- On a system-wide basis, reduce the need for additional fossil fuel-based generating stations required to serve peak demand periods when renewable sources may be inadequate or unavailable.
- Assist California electric utilities in meeting obligations under California's Renewable Portfolio Standard Program and Senate Bills 100 and 1020, which require renewable energy sources and

zero-carbon resources to supply 60 percent of all retail sales of electricity to California end-use customers by December 31, 2030, 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, and 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045.

- Assist California utilities in meeting obligations under the California Public Utility Commission's (CPUC's) Mid-Term Reliability Procurement Requirements.
- Create prevailing wage construction jobs, facilitating local community benefits, and resulting in economic benefits to the City of Vacaville and Solano County through construction and operation of the Project.

2.1.3.2 Battery Energy Storage System Facility Components

The Project would include a battery storage system capable of storing up to 457 MWh of electricity, requiring approximately 10 acres, including onsite ancillary facilities. As shown in Figure 2-2, the battery systems would be located near the existing VDPP and the existing PG&E Vaca-Dixon Substation to facilitate interconnection and metering. Operation of the proposed Vaca Dixon 57 MWh BESS component would be integrated with the existing VDPP, but the Project BESS facilities would be charged from the electrical grid and not the VDPP. The Vaca Dixon 57 MWh BESS component would charge/discharge electricity for one hour per day, and the Arges 400 MWh BESS component would charge/discharge electricity for four hours per day.

Battery Energy Storage System

The storage system would consist of battery banks housed in non-habitable electrical enclosures and buried electrical conduits, with approximately 80 battery modules per enclosure. The battery storage technologies being considered include lithium-iron-phosphate (lithium-ion) ~~or other similar technologies that may become commercially available as the BESS component undergoes final design~~. The battery equipment manufacturers and models proposed for the Vaca Dixon 57 MWh BESS and Arges 400 MWh BESS are identified in Table 2-1. A total of 121 BESS units within 71 enclosures measuring approximately 8 feet wide by 9.5 feet tall by 20 feet long would be installed on ~~piers,~~ piles~~, spread footings, and/or mat foundations~~ during the initial Project installation. Enclosures would be spaced in compliance with UL Certification requirements. Battery modules would be added every 2 to 5 years and would be placed adjacent to Project BESS enclosures in areas designated for future battery/power conversion system (PCS) augmentation (see Figure 2-5).

Table 2-1 Proposed Battery Equipment Manufacturers and Models

BESS Component	Manufacturer	Model
Vaca Dixon 57 MWh BESS		
Battery Cell	CATL	CBDC0
Battery Module	CATL	M01285P10L01
Battery Rack/Unit	CATL	M01285P10L01
BESS Enclosure	CATL	C1P (C04285P10L01)
Arges 400 MWh BESS		
Battery Cell	AESC	HC-L315A
Battery Module	AESC	HP-L630B
Battery Rack/Unit	AESC	HP-L630B
BESS Enclosure	AESC	HE-L5030A

AESC = Automotive Energy Supply Corporation
CATL = Contemporary Amperex Technology

The BESS enclosures would include internal heating, ventilation, and air conditioning (HVAC) and internal fire detection and fire suppression systems in each enclosure. The internal HVAC systems would allow the battery enclosures to function properly in temperatures ranging from approximately -13 degrees Fahrenheit to approximately 131 degrees Fahrenheit. These enclosures would also include a battery management system which monitors battery voltage, current, temperature, security, fault diagnosis and management, and external communication with the power conversion system. The PCS inverter skids would be connected to the BESS enclosures by underground electrical conductors. Each PCS inverter skid would be approximately 8 feet wide by 9.5 feet tall by 20 feet long. A total of 46 PCS inverter skids would be initially installed with each including an inverter, step up transformer, protection equipment, direct current and alternating current circuit breakers, and a connection cabling system. In addition, medium voltage transformers would be located adjacent to the inverter/PCS skids.

Vaca Dixon 57 MWh BESS Component

The Vaca Dixon 57 MWH BESS component would consist of an initial installation of 21 BESS enclosures sending/receiving power from 21 PCS inverter skids for charging and discharging from the grid. In addition, approximately eight BESS enclosures and eight PCS inverter skids would be installed over the course of the Project life cycle to account for the degradation of the initially installed equipment.

Arges 400 MWh BESS Component

The Arges 400 MWH BESS component would consist of an initial installation of 100 BESS units within 50 BESS enclosures sending/receiving power from 25 PCS inverter skids for charging and discharging from the grid. In addition, approximately 14 BESS enclosures and seven PCS inverter skids would be installed over the course of the Project life cycle to account for the degradation of the initially installed equipment.

Water Supply

~~The water supply requirements for the Project would be met by tapping on-site City of Vacaville water facilities.~~ Construction water would be supplied by connecting to a fire hydrant adjacent to the southwest corner of the BESS Project Area or from off-site sources. Operational phase water for fire water supply ~~the fire water loop shown on~~ would be obtained by the proposed on-site groundwater well and stored in an on-site water tank, further described in Section 2.1.5.2 Operational Water and Wastewater Requirements. ~~tapping an existing 12-inch diameter City water main that parallels the northern site boundary~~. ~~The final design of the fire water loop would be in compliance with the California Fire Code (CFC).~~

Interconnection

The Vaca Dixon 57 MWh BESS would interconnect via the existing 13.8 kV/115 kV GSU transformer at the VDPP, which is already connected to the PG&E Vaca-Dixon Substation by an existing 115 kV line. The Arges 400 MWh BESS would interconnect directly to the PG&E Vaca-Dixon Substation at 115 kV.

Ancillary Facilities

A Project 115 kV collector switchyard, the Arges 400 MWh BESS switchyard, would be installed adjacent to the west side of the Arges 400 MWh BESS component that includes an outdoor rated 34.5 kV collection bus, the main power transformer to step up from 34.5 kV to 115 kV, and a 115 kV circuit breaker with gen-tie takeoff structure. The Arges 400 MWh BESS switchyard would connect to the PG&E Vaca-Dixon Substation switchyard by a 115 kV gen-tie with several transmission structures (monopoles) as shown in Figure 2-12. The Arges 400 MWh BESS switchyard would also include a control enclosure to house the Project protection and control equipment, Supervisory Control and Data Acquisition (SCADA) and communications equipment, and station control power battery.

The Project would also include a switchyard located immediately west of the Vaca Dixon 57 MWh BESS component. The switchgear~~s~~ equipment within the Project switchyard would be outdoor rated and collect the Project BESS circuits at 13.8 kV. The Project switchgear~~s~~ equipment would also manage and control the electrical energy flow within the BESS system and would be able to isolate different parts of the BESS for safety during operation and maintenance activities. Additionally, the switchgear would ensure the BESS can connect to, and disconnect from, the energy grid to allow the BESS to provide or absorb power when required and provide energy at peak demand times. The switchgear would also transfer energy stored in the BESS to and from the grid with ~~an overhead~~an overhead gen-tie with an underground segment to the existing VDPP.

Landscaping

Landscaping would be installed along the northwestern and southern portions of the BESS Project Area perimeter as shown in Figure 2-5. Landscaping is anticipated to consist of small coniferous trees, clumping shrubs, and ornamental perennial plants.

2.1.4 Operations Methods and Activities

Upon commissioning, the Project would enter the operational phase. The Project would be capable of operating 24 hours a day, 7 days a week, 365 days a year. Operational activities at the Project facilities would include:

- Site security;
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics; and
- Communicating with PG&E, transmission grid system operators, and other entities involved in facility operations.

Each BESS component would have an operational life of 35 years. The Vaca Dixon 57 MWh BESS component is assumed to be operational from 2028 to 2062, and the Arges 400 MWh BESS component would be operational from ~~2029~~ 2030 to 206~~3~~4.

The Project BESS components and the VDPP may be operated simultaneously in accordance with the market-optimized dispatch instructions received from the California Independent System Operator's (CAISO) Automated Dispatching System, but the combined output would be control-limited to not exceed the limit of the Generator Interconnection Agreements (Appendix E).

2.1.4.1 Operations and Maintenance Facility

The Project does not include a separate operations and maintenance facility area, as the Project would be unmanned and operated remotely using a ~~Supervisory Control and Data Acquisition (~~SCADA~~)~~ system, described in Section 2.1.11.1. Two uninhabitable control enclosures would accommodate the Project facility control power battery, relaying, and communication equipment. The control enclosures would be small, conditioned, factory-assembled enclosures without water or sewer facilities. The control enclosures would be approximately 15 feet at the tallest point and 20 feet by 30 feet (up to approximately 600 square feet) in size with a concrete foundation. Spare parts and other materials for ongoing facility operations and maintenance activities would be stored in two on-site shipping containers: one within the Vaca Dixon 57 MWh BESS area and one within the Arges 400 MWh BESS switchyard area. The containers would be approximately 60 feet long by 11 feet wide and up to 10 feet tall with a concrete foundation.

2.1.4.2 Operations and Maintenance Workforce

During operation of the Project, up to two staff would visit the Project up to two times a week on average for operations and maintenance activities. Off-site Project operators may be on call to respond to specific alerts generated by the monitoring equipment at the Project facility. Security personnel would be on call. The control enclosure would house Project security monitoring equipment, including security camera feeds for monitoring the Project 24 hours per day.

2.1.4.3 Site Maintenance

The Project maintenance program would be largely conducted during daytime hours. Maintenance typically would include the following: maintenance of transformers, inverters, energy storage system, and other electrical equipment; road and fence repairs; vegetation and pest management; and detention basin maintenance. On-site vegetation would be managed to maintain access to all areas of the site, and to reduce fire risk.

Two stormwater management areas with detention basins are proposed, one in the northern portion of the BESS Project Area to the north of the Arges 400 MWh BESS facilities and one centrally located in the BESS Project Area, north of the Vaca Dixon 57 MWh BESS facilities. The stormwater basin would be regularly monitored and maintained to remove accumulated sediment and debris, and to repair any areas that have been damaged. As needed, grass within the basins would be

mowed during the growing season, and woody vegetation would be removed. Drainage inlets would have clogs removed and damaged pipe replaced to limit ponding and soil saturation. A stormwater basin maintenance plan would be prepared prior to construction to include protocols for inspections and monitoring for sediment and debris buildup, erosion, and damage.

Operations and maintenance vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance. Large heavy-haul transport equipment may be brought to the Project facility infrequently for equipment repair or replacement.

A transmission line maintenance plan would be followed to keep transmission facilities clear of all incompatible trees, brush, and other vegetation that could grow too close to conductors or otherwise interfere with the safe operation and maintenance of the facility. Incompatible vegetation is defined as vegetation that at maximum mature height could encroach within maintained clearance distances. Routine maintenance includes tree felling, pruning, mowing and herbicide application.

2.1.5 Water Supply and Use

2.1.5.1 Construction Water and Wastewater

Construction of the Project would require an estimated 4.8 to 5.6 acre-feet[2] of water, as shown in Table 2-2. Water demand during construction would primarily be related to dust suppression required for site preparation. The proposed Project fire water supply source is the on-site groundwater well and associated water storage tank located on the southeastern ~~existing 12-inch diameter water main owned by the City of Vacaville located along the northwestern~~ edge of the BESS Project Area. Construction water would be obtained from an existing City of Vacaville fire hydrant located adjacent to the southwest corner of the BESS Project Area on the north side of Kilkenny Road or from off-site sources. Up to approximately 5,000 gallons of water per day would be required for the first 2 to 3 months (during site grading and leveling activities) and 2,000 to 3,000 gallons per day would be required for the balance of construction activities involving ground disturbance (such as trenching and other dust generating activities) during each of the approximately 12-month construction periods for the Vaca Dixon 57 MWh and Arges 400 MWh BESS project components. The Project would utilize portable restroom facilities during construction. An on-site water supply would not be required for project construction, and no wastewater discharges are anticipated.

Table 2-2 Total Estimated Construction Water Demands

Water Use	Daily Demand (gallons)	Total Demand (acre-feet)
Vaca Dixon 57 MWh BESS		
Site Grading and Leveling	5,000	1.5
Dust Suppression During Ground-Disturbing Activities	2,000 to 3,000	0.9 to 1.3
Total	**N/A**	**2.4 (min) to 2.8 (max)**
Arges 400 MWh BESS		
Site Grading and Leveling	5,000	1.5
Dust Suppression During Ground-Disturbing Activities	2,000 to 3,000	0.9 to 1.3
Total	**N/A**	**2.4 (min) to 2.8 (max)**

[2] One acre-foot is equivalent to 325,851 gallons.

Water Use	Daily Demand (gallons)	Total Demand (acre-feet)
Total Across Both Construction Periods	**N/A**	**4.8 (min) to 5.6 (max)**

2.1.5.2 Operational Water and Wastewater Requirements

Water demand during operation of the Project would be primarily related to fire water and landscaping, as applicable. During operation, the total annual water demand for the Project would be approximately 1.45 acre-feet per year (AFY); however, the majority of this demand would be associated with landscaping and would be naturally met through rainfall. During average rainfall years, landscaping would only need to be watered during summer months and periods of low rainfall. An estimated 0.2 to 0.3 AFY of non-rainfall water demand would be anticipated to be needed during years of normal rainfall. This demand would be met through water sourced from the on-site water well or through existing off-site sources. The Project would utilize portable restroom facilities for which an on-site water supply would not be required. Section 5.13, *Water Resources*, provides additional details regarding the Project's water requirements. ~~The Project would utilize portable restroom facilities for which an on-site water supply would not be required.~~

Fire Water Supply

The Project would include a dedicated on-site fire water supply system independent of municipal water infrastructure. The system would include:

- A non-potable groundwater well with an associated supply pump and controls (pump skid)
- A 120,000-gallon fire water storage tank
- A fire water pump house with associated pumps and controls
- A fire water distribution loop surrounding the BESS facilities

Water withdrawn from the on-site groundwater well would be used to initially fill the 120,000-gallon fire water storage tank and the fire water distribution loop and to replenish stored water following fire suppression activities, periodic testing, maintenance, or other operational uses of the fire water system. The fire water storage tank and fire water loop would be dedicated exclusively to fire protection purposes. Because the fire water supply would be maintained in storage and only utilized during emergency response events or infrequent system testing and maintenance activities, ongoing operational fire water demand would be minimal.

~~In addition, the Project design includes installation of a fire water loop around the BESS facilities. Annual water usage associated with this system would include flow testing for the fire water system. Section 5.13, Water Resources, provides additional details regarding the Project's water requirements. The Project would utilize portable restroom facilities for which an on-site water supply would not be required.~~

Water Quality

Section 5.13, *Water Resources*, includes a discussion of water quality based on available testing data. Water to support ~~P~~project construction ~~water~~ would be supplied through ~~is proposed to be~~ City of Vacaville water~~, and would be obtained~~ via a hookup~~s~~ to the existing fire hydrant near the southwest corner of the BESS site~~and 12-inch water main~~ or through off-site sources. The construction water is expected to be of municipal water supply quality. Fire water during the operational phase would be supplied by the proposed on-site non-potable groundwater well. Final

well design would be based on site-specific hydrogeologic conditions and aquifer-zone testing conducted during well drilling. ~~The on-site well would be non-potable~~.

2.1.5.3 Water Treatment

~~Section 5.13, *Water Resources*, includes a description of water facilities and infrastructure, including water quality treatment.~~ No treatment of construction water or groundwater used for fire water supply during the operational phase is planned for the Project. ~~No water treatment is planned for the Project.~~

2.1.6 Grading, Stormwater, and Drainage

The grading and drainage plan for the Project is shown in Figure 2-8. Project construction would include the disturbance of approximately 10 acres at the BESS Project Area as well as minor disturbance at each of the gen-tie transmission structures to be installed. During construction of the Vaca Dixon 57 MWh BESS component, approximately 5.15 acres would be graded. The grading and drainage plan for the Vaca Dixon 57 MWh BESS component is shown in Figure 2-9. During construction of the Arges 400 MWh BESS component, approximately 5.3 acres would be graded to final grade, including regrading of a portion of the area disturbed for the Vaca Dixon 57 MWh BESS component. The grading and drainage plan for the Arges 400 MWh BESS component is shown in Figure 2-10.

Construction of the above-ground components of the Project (e.g. BESS facilities, access roads, fire water supply components, and related infrastructure) would introduce approximately 7.6 acres of impervious surfaces to the BESS Project Area. New impervious surfaces would be designed to drain to the stormwater management areas for quality and quantity control. The stormwater detention basins would be designed with subsurface infiltration trenches to allow on-site percolation. Above the infiltration trench, the ponds would store additional runoff volume temporarily, releasing water slowly to mimic the pre-construction site runoff characteristics. A preliminary Hydrology and Stormwater Management Report for the Project was conducted by POWER Engineers (POWER) in June 2025 (Appendix D) and is described in more detail in Section 5.13, *Water Resources.*