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April 15, 2002

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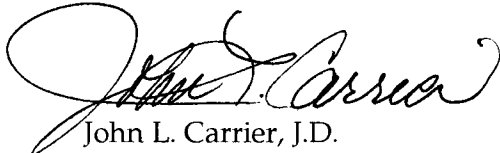
RE: AFC Supplement B  
Cosumnes Power Plant (01-AFC-19)

On behalf of the Sacramento Municipal Utility District, we are filing 125 copies of Supplement B to the AFC. This supplement analyzes potential impacts to the project from the compressor stations required for Phase 2, valve stations, the addition of a construction access road, and the widening of the transmission line corridor to add 3 additional poles.

Please call me if you have any questions.

Sincerely,

CH2M HILL



John L. Carrier, J.D.  
Program Manager

c: Colin Taylor/SMUD  
Kevin Hudson/SMUD  
Steve Cohn/SMUD

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**COSUMNES POWER PLANT  
(01-AFC-19)**

**AFC SUPPLEMENT B**

Submitted by  
**SACRAMENTO MUNICIPAL  
UTILITY DISTRICT (SMUD)**

April 15, 2002



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# 1.0 INTRODUCTION

The Sacramento Municipal Utility District (SMUD or District) proposes to develop a natural gas-fueled power plant at the southern edge of Sacramento County, California called the Cosumnes Power Plant (CPP). On September 13, 2001, the District filed an Application for Certification (AFC) with the California Energy Commission (CEC). Supplemental materials, added to the AFC as a result of the CEC's October 11, 2001 Data Adequacy recommendation letter, were docketed on November 13, 2001. Supplement A, assessing the potential impacts from a change in the plant's general arrangement, was filed on March 15, 2002.

The District is filing this Supplement B to the Cosumnes Power Plant AFC to provide the Commission and the public with additional information regarding the compressor stations required for Phase 2 of the plant to have sufficient gas line pressure to operate. It also addresses, in response to community concerns, a rerouting of construction traffic around the populated area of Clay East Road. In addition, SMUD is seeking to widen the transmission line corridor to allow two sets of transmission poles between the CPP switchyard and the Rancho Seco switchyard, plus make small adjustments to the proposed CPP and Rancho Seco switchyard tie-ins to accommodate a third line.

## 1.1 Gas Pipeline

When Phase 2 of the project is constructed, additional natural gas supply will be needed. To provide that gas supply, compressor stations will need to be added in Winters, CA and near the Carson Cogeneration plant in Elk Grove, CA. These stations are described below.

In addition, three valve stations will be added to the gas line to provide for emergency shut-off capability. Both the compressor and valve stations were described in Data Response #89 (Set 1A), but have been included here to allow their potential impacts to be addressed in more detail. At the interconnection and valve stations, mainline valves will be below ground, with valve operators visible above ground.

### 1.1.1 Gas Compressor Stations

In order for the new 26-mile gas line to supply sufficient fuel for Phase 2 of the project, a gas compressor station will need to be added at both Winters, CA and at the valve #190 crosstie in Elk Grove, CA. A 4,152 HP electric-driven compressor would be required at Winters and a 2,191 HP electric-driven compressor at the valve #190 crosstie.

#### 1.1.1.1 Compressor Station at Winters, CA (second phase)

A compressor will be installed within the existing inter-tie station located at 27700B County Road 29 in Winters, CA (see Figure 1-1, figures are at the end of each section). The Winters Compressor Station is located on Road 29 in the SE 1/4 of Section 29, T9N, R1W in Yolo County. Road 29 borders the south side of the compressor station. The compressor is anticipated to be skid mounted, approximately 10 feet x 20 feet x 8 feet high, surrounded on four sides by an acoustical wall or in an acoustical enclosure for noise attenuation. The existing inter-tie station is currently surrounded by a slatted fence enclosure. The area is surrounded by orchards with the nearest residences about 0.1 mile away.

A list of property owners within a 1,000-foot radius of the compressor station at Winters is provided in Appendix A.

#### **1.1.1.2 Compressor Station at Valve #190 Crosstie (second phase)**

The Valve #190 Crosstie Compressor Station will be installed at the existing inter-tie located at the crosstie measurement and valve #190, which is located within the Sacramento Regional Wastewater Treatment Plant buffer lands, north of the Carson Cogeneration Plant (see Figure 1-2). Two gravel access roads lead into the site; one from the west and the other from the south.

The compressor is anticipated to be skid mounted, approximately 10 feet x 20 feet x 8 feet high, within a slatted fence enclosure or surrounded by acoustical walls or within an acoustical enclosure. The nearest residences are 1,000+ feet away. Since this compressor station is located on the Sacramento Regional Wastewater Treatment Plant site, no additional property owners need to be identified since the Sacramento Regional County Sanitation District was included in the list of adjacent property owners included in Appendix 1A of the AFC.

### **1.1.2 Interconnection and Valve Stations**

The AFC considered the construction of the interconnection and valve stations as part of the construction impacts from building the gas pipeline. However, the AFC did not identify the location of these structures. Therefore, they have been included in this Supplement so that any potential impacts from their proposed location can be addressed.

At the interconnection and valve stations, all mainline valves will be below ground. The only items to be above ground will be the high head extensions for the valves (about 3.5 feet above the ground surface), a blow off stack (about 8 feet above the ground surface and up to 10 inches in diameter), and a Remote Terminal Unit (RTU) for the SCADA (a metal box about 3 feet x 3 feet x 4 feet tall). The RTU will be enclosed in a 5-foot x 8-foot x 8-foot structure. Each net usable space will be enclosed by a slatted, 6-foot cyclone fencing and topped with barbed wire.

#### **1.1.2.1 Interconnection Station**

The new pipeline will connect to SMUD's existing pipeline at an interconnection station located in the agricultural field immediately south of the Carson Cogeneration facility at the intersection of Laguna Station Road and Glacier Way (see Figures 1-3 and 1-4). A buried pipeline, irrigation equipment, and power poles are in the general valve station location. This area was previously disturbed by agricultural and construction-related activities.

At the interconnection, there will also be a launcher for pigging operation. The launcher station is about 10 feet x 10 feet x 5 feet tall.

#### **1.1.2.2 Valve Station 1**

This station will occupy a net usable space of 50 feet by 50 feet on the north side of Core Road and west side of Bruceville Road, Sacramento County, California (see Figure 1-5). Station facilities include, buried valves with elevated stems, a pipeline blow down stack and control equipment and RTU.

### **1.1.2.3 Valve Station 2**

This station will occupy a net usable space of 50 feet by 50 feet on the northwest corner of Arno and Valensin roads, Sacramento County, California (see Figure 1-6). Station facilities include buried valves with elevated stems, a pipeline blow down stack and control equipment and RTU.

### **1.1.2.4 Valve Station 3**

This station will occupy a net usable space of 100 feet by 100 feet on the southwest corner of Valensin and Alta Mesa roads, Sacramento County California (see Figure 1-7). Station facilities include above ground valves, buried valves with elevated stems, a pipeline blow down stack, a pig launcher, RTU and control equipment.

## **1.2 Construction Access Road**

Workshops in the Herald community have identified a potential safety concern with the project. Local residents are concerned for the safety of their children that walk along the side of Clay East Road to catch their school bus and to return to their homes after the bus drops them off. In response to these concerns, SMUD is proposing to develop an access road along the east side of the Rancho Seco Plant (RSP). It is proposed that construction workers and equipment access the CPP site by traveling east along Twin Cities Road, turning south into the joint entrance of RSP and Rancho Seco Park. The workers would then follow the road to Rancho Seco Park for a short distance. Once past the park's entrance gate, the workers would turn south and follow a road that would be constructed from the gate house due south to Clay East Road (see Figure 1-8).

The construction access road will be two lanes, 24 feet wide (12 feet per lane), asphaltic concrete on a raised gravel base, with several drainages to accommodate naturally occurring seasonal flows. The road will be designed to handle heavy loads needed for construction of the plant.

## **1.3 Transmission Line Corridor and Switchyard Arrangement**

Originally, the transmission line was planned to require one set of three transmission poles between the CPP switchyard and the RSP switchyard. However, to enhance reliability for CPP, provide flexibility for Phase 2, and use existing tie-in positions at the RSP switchyard, SMUD would like to widen the corridor to allow two sets of poles from CPP to RSP. Each set of towers would require a corridor 25 feet wide. Therefore, the required width of the transmission line corridor would be 50 feet (see Figure 1-8). An access road will not be needed for construction. The pole foundations will be approximately 6 feet in diameter and 20 feet deep. No laydown area will be needed. Construction will occur by using a drill rig to dig the foundation and then bring in the transmission line tower with a crane.

A total of three overhead circuits would be constructed between the CPP switchyard and the RSP switchyard (Figure 1-9). The circuits would be carried on one set of double-circuit steel pole structures and one set of single-circuit single pole structures. In other words, two sets of transmission line towers (6 towers in all) and all three lines would be constructed as part of Phase 1. The Phase 2 construction would use the same sets of towers and lines with the addition of the second phase of the CPP switchyard.



To accommodate the third circuit, the CPP switchyard will consist of eleven, 230-kV SF<sub>6</sub> insulated circuit breakers. The main buses will be designed for 2,000-amp continuous current. Because the total output of the CPP switchyard is expected to be in the range of 3,000 to 4,000 amps, at least 2 of the 3 lines must be in service to transmit the full capacity of the facility to the RSP switchyard. If one circuit is out for maintenance, or should one circuit fail, the remaining two circuits would not be subject the plant to an operational limitation.

As before, auxiliary power transformers connected to the step-up transformer side of the generator breakers on each gas turbine generator will serve to start-up the plant and provide power for all auxiliary loads within CPP. But power will be distributed via 4-kV metal-clad switchgear, instead of 5-kV metal-clad switchgear.

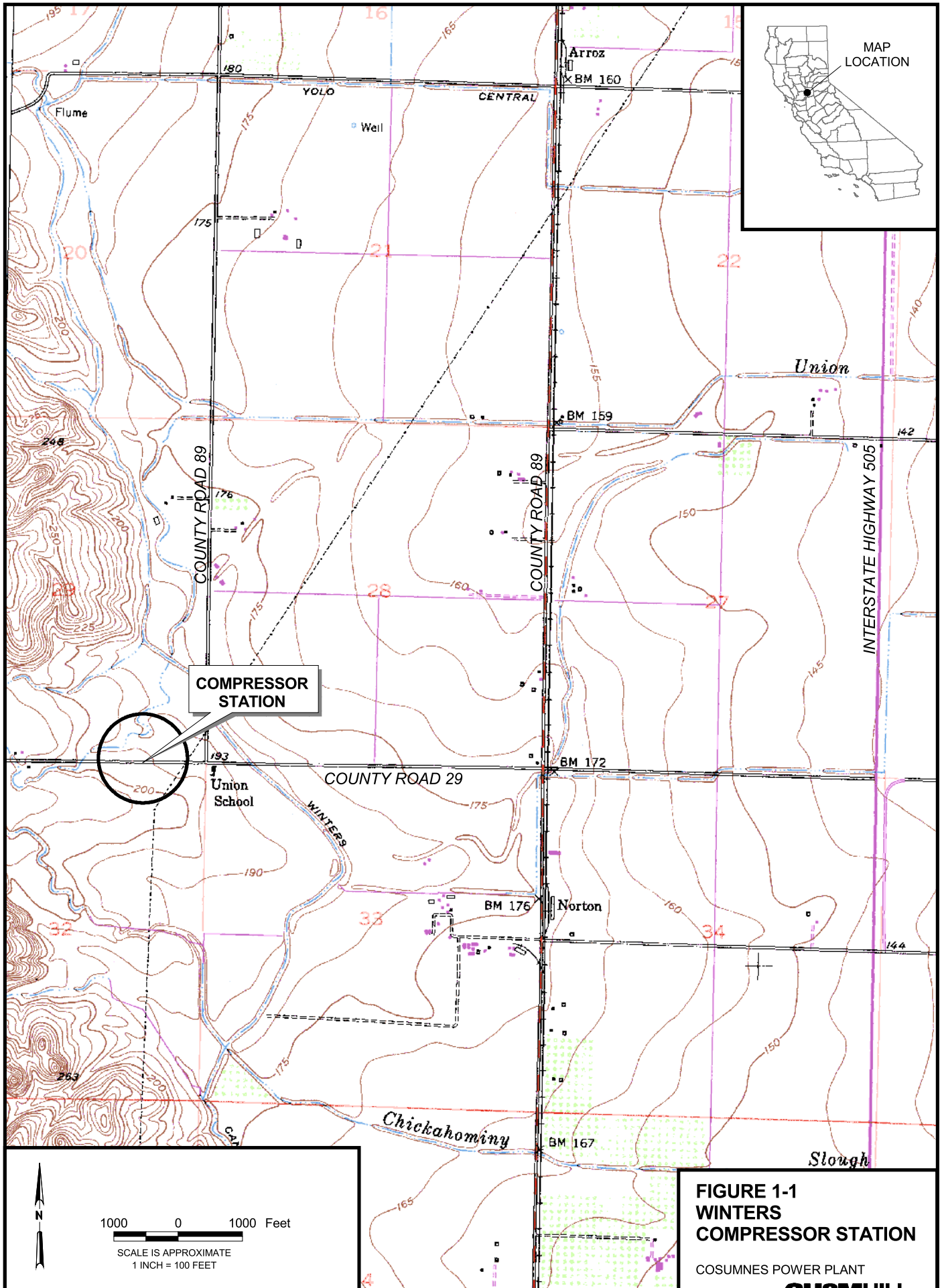
As depicted on Figures 1-10 and 1-11, the RSP switchyard currently has three existing positions that can accept the three lines from CPP. As part of the RSP decommissioning, the existing circuits that currently support plant activities are no longer needed or have been significantly reduced making the existing position available for interconnection with CPP.

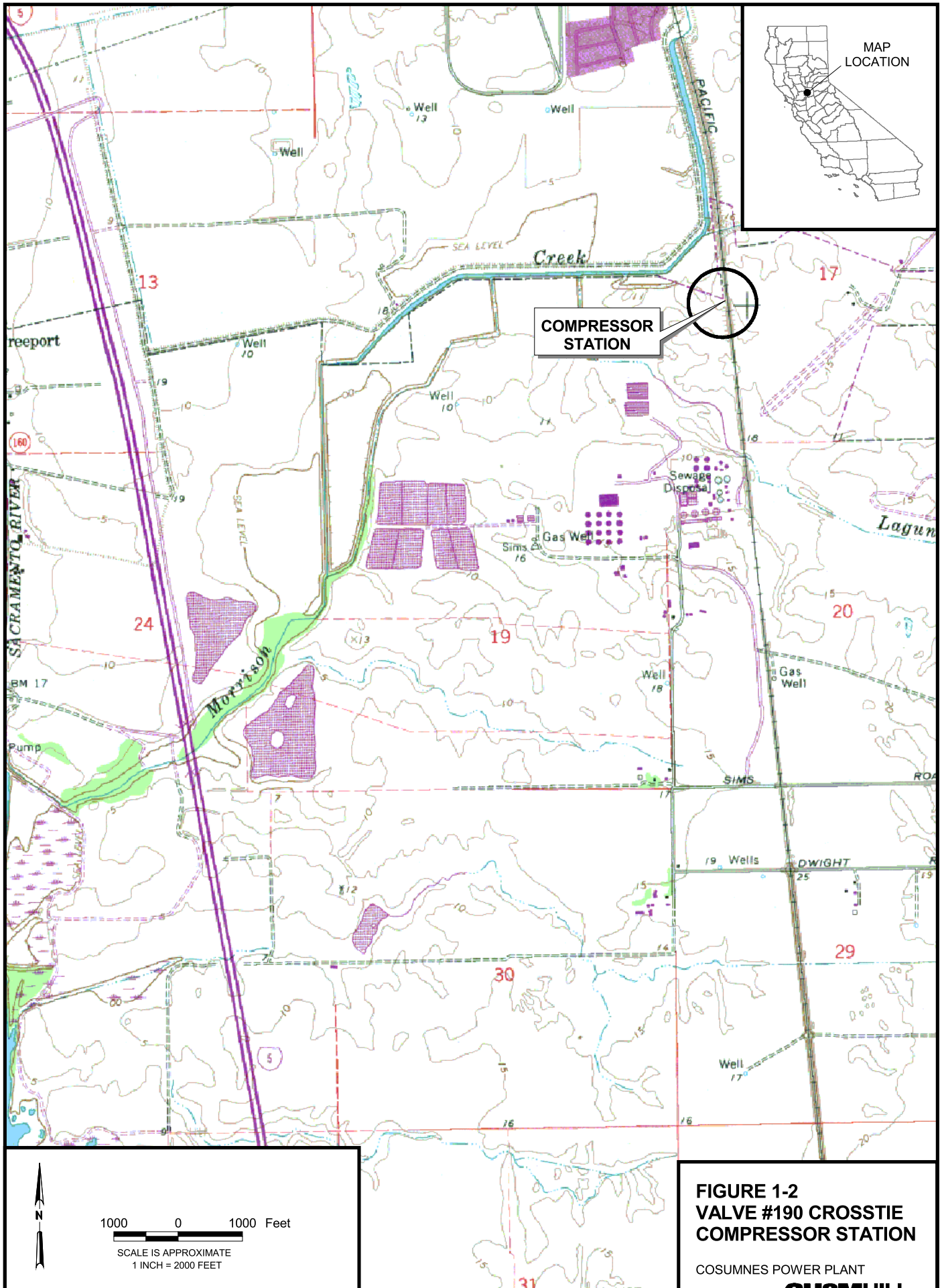
Reusing these three positions provides the District significant benefits in reduced capital and operation and maintenance costs, increased reliability and requires no modification to the existing switchyard structure.

The three overhead circuits will exit the CPP switchyard and align due north, parallel to and approximately 80 feet to the east of the existing PG&E easement, for approximately 0.3 mile, where they will bear northeast 0.1 mile toward the existing structures at the east side of the RSP switchyard Figure 1-11. Interconnection to the RSP switchyard will be made at 3 existing tie-in positions on the east side of the switchyard. Turning towers at each position will align the three circuits from CPP into the existing positions.

## **1.4 Organization of Supplement B**

AFC Supplement B is divided into the following sections. Section 2.0 provides an analysis of the proposed compressor stations and valve stations. Section 3.0 analyzes the potential environmental impacts associated with the construction access road. Section 4.0 provides an analysis of the potential impacts from the wider transmission corridor and Section 5.0 looks at the cumulative impacts of these changes.

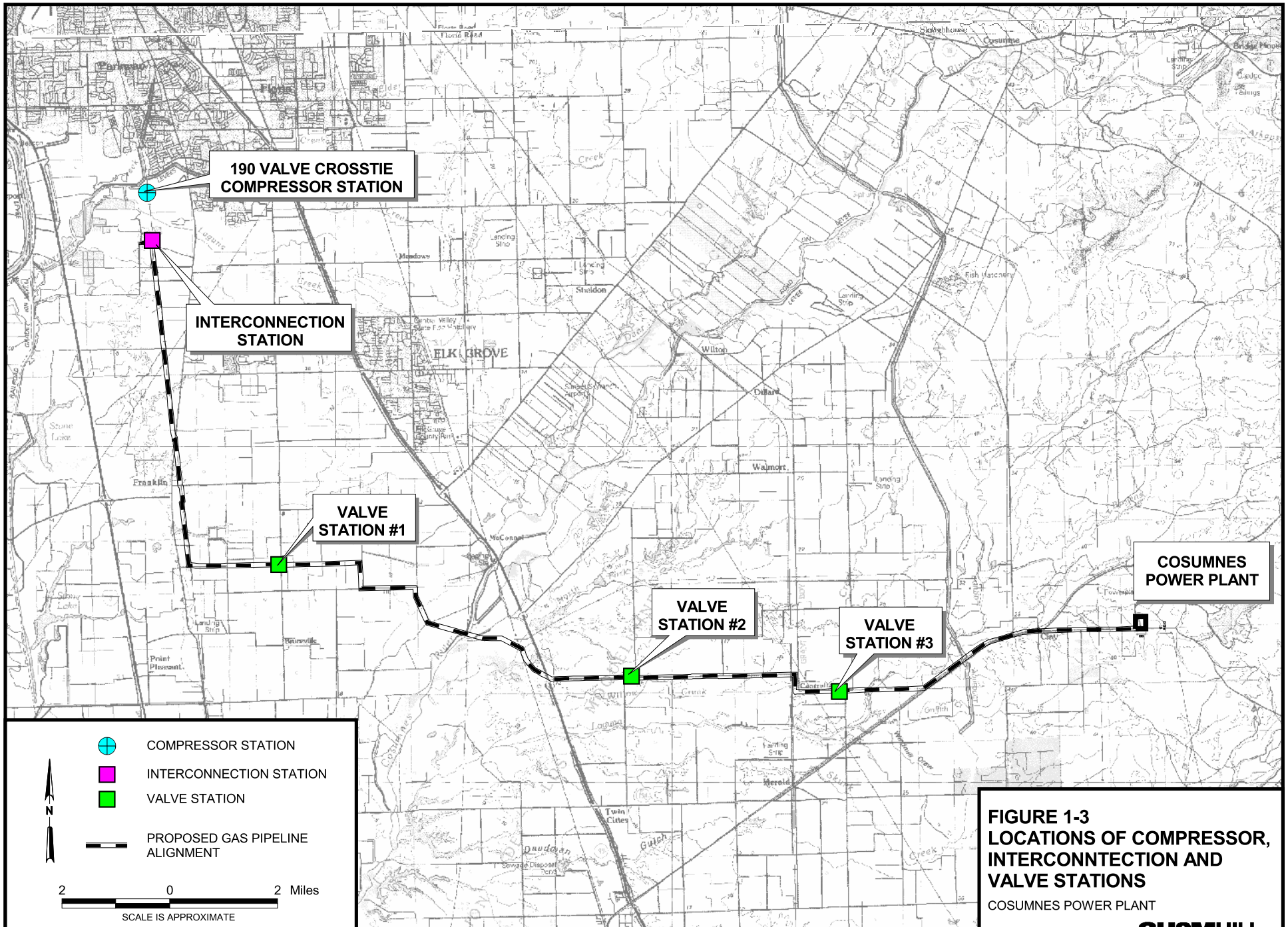




**FIGURE 1-2**  
**VALVE #190 CROSSTIE**  
**COMPRESSOR STATION**

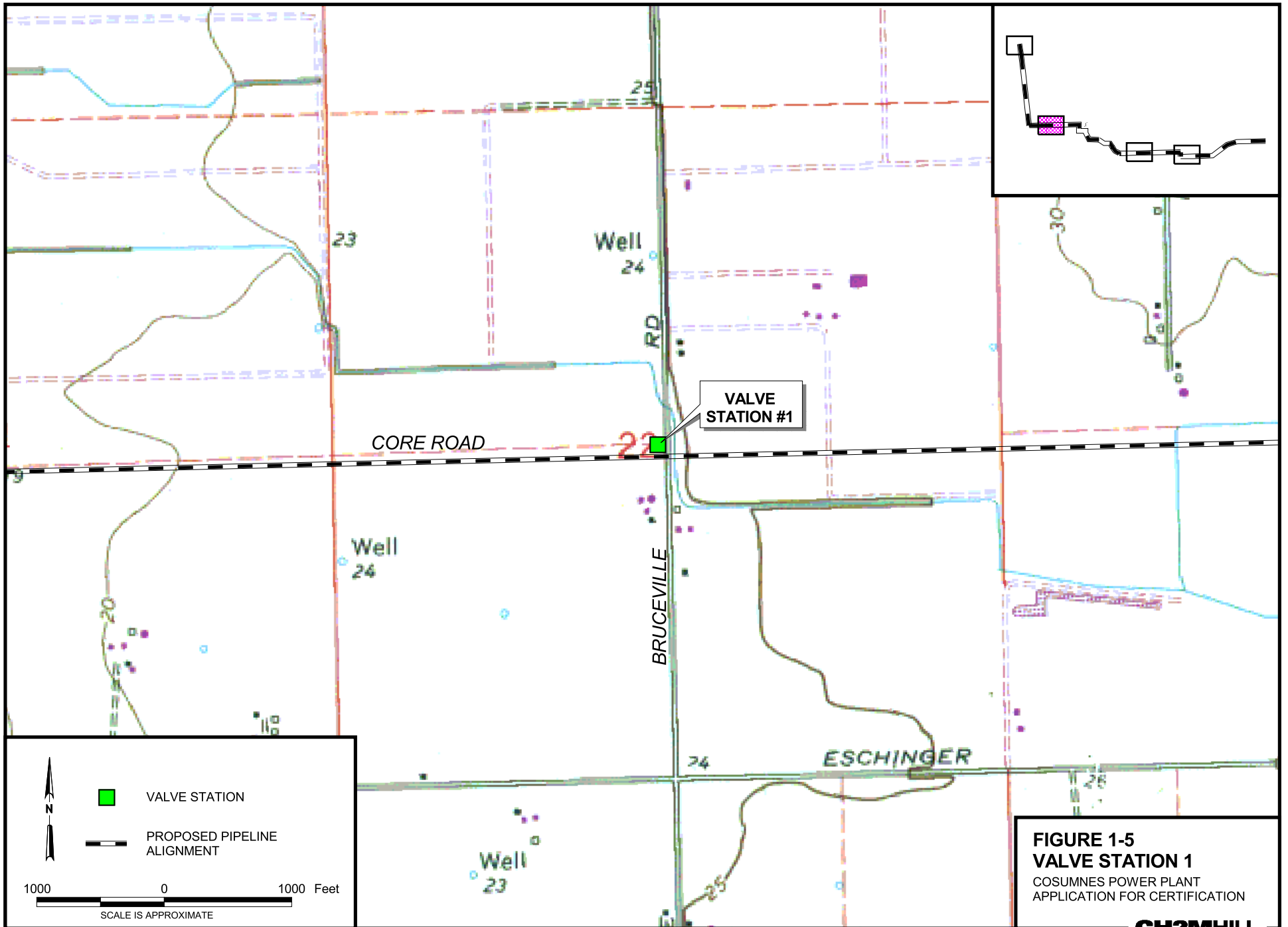
COSUMNES POWER PLANT



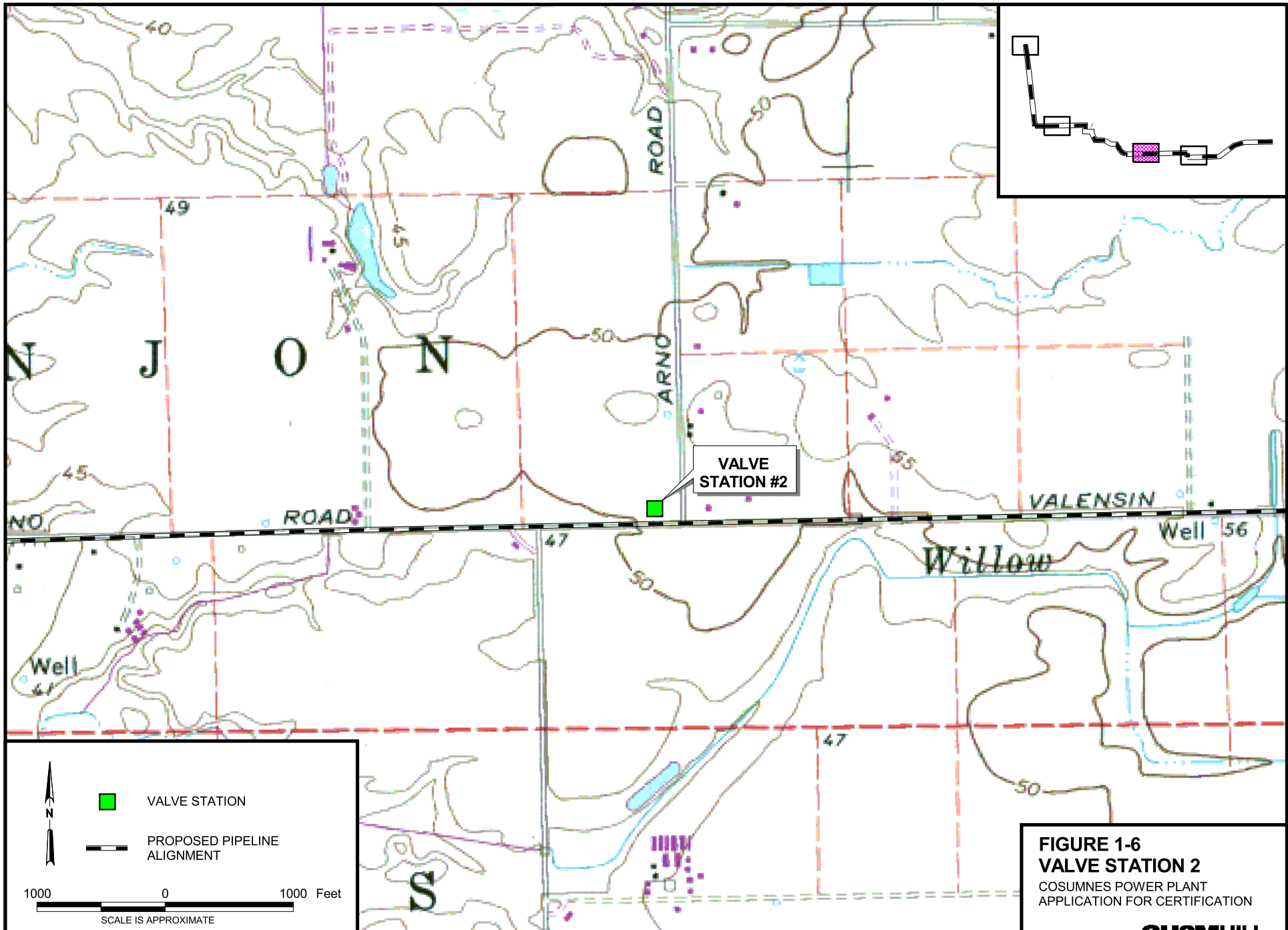


**FIGURE 1-3**  
**LOCATIONS OF COMPRESSOR,**  
**INTERCONNECTION AND**  
**VALVE STATIONS**  
 COSUMNES POWER PLANT

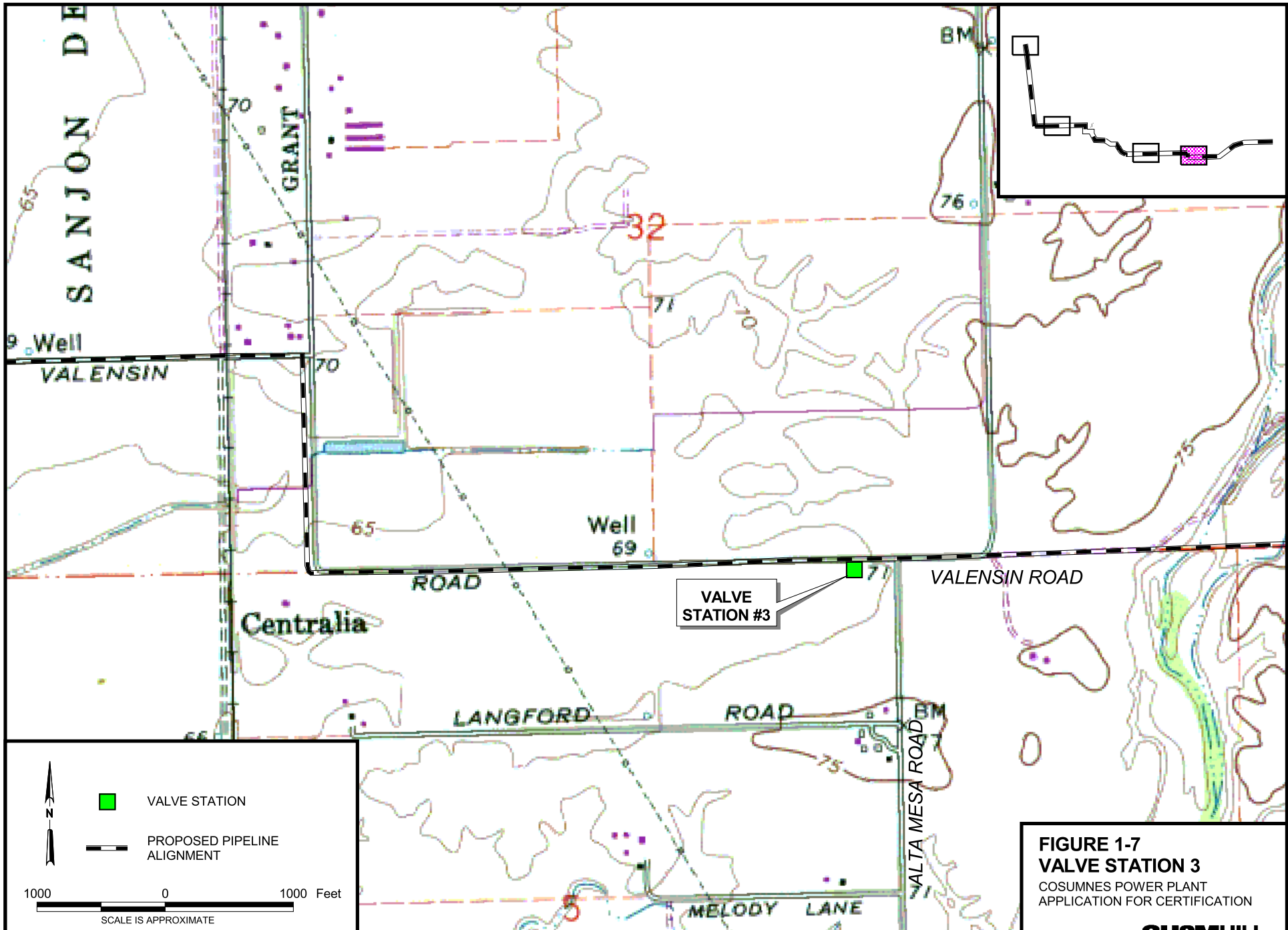




**FIGURE 1-5**  
**VALVE STATION 1**  
 COSUMNES POWER PLANT  
 APPLICATION FOR CERTIFICATION

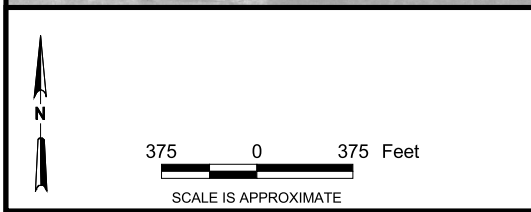
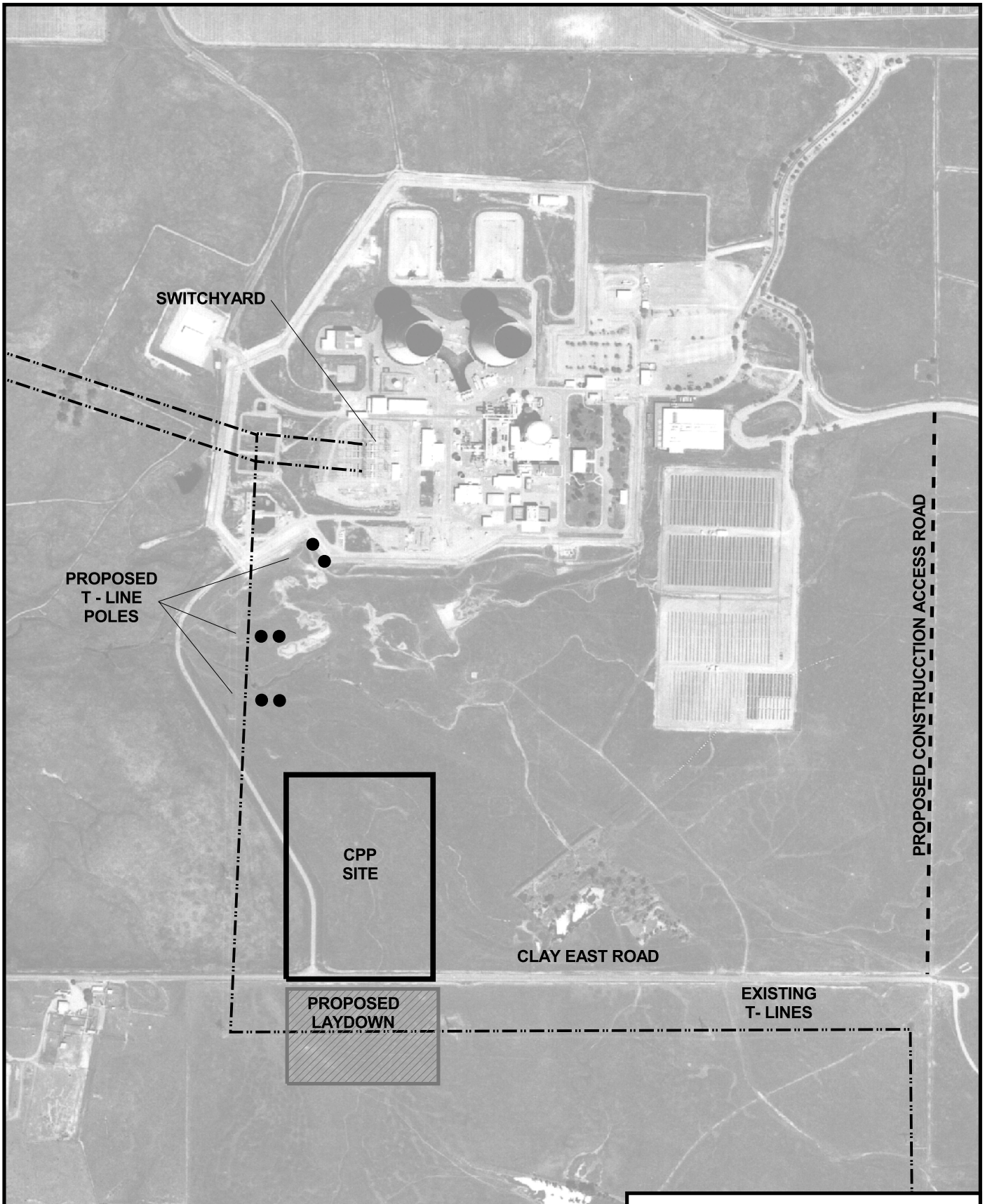


**FIGURE 1-6**  
**VALVE STATION 2**  
 COSUMNES POWER PLANT  
 APPLICATION FOR CERTIFICATION

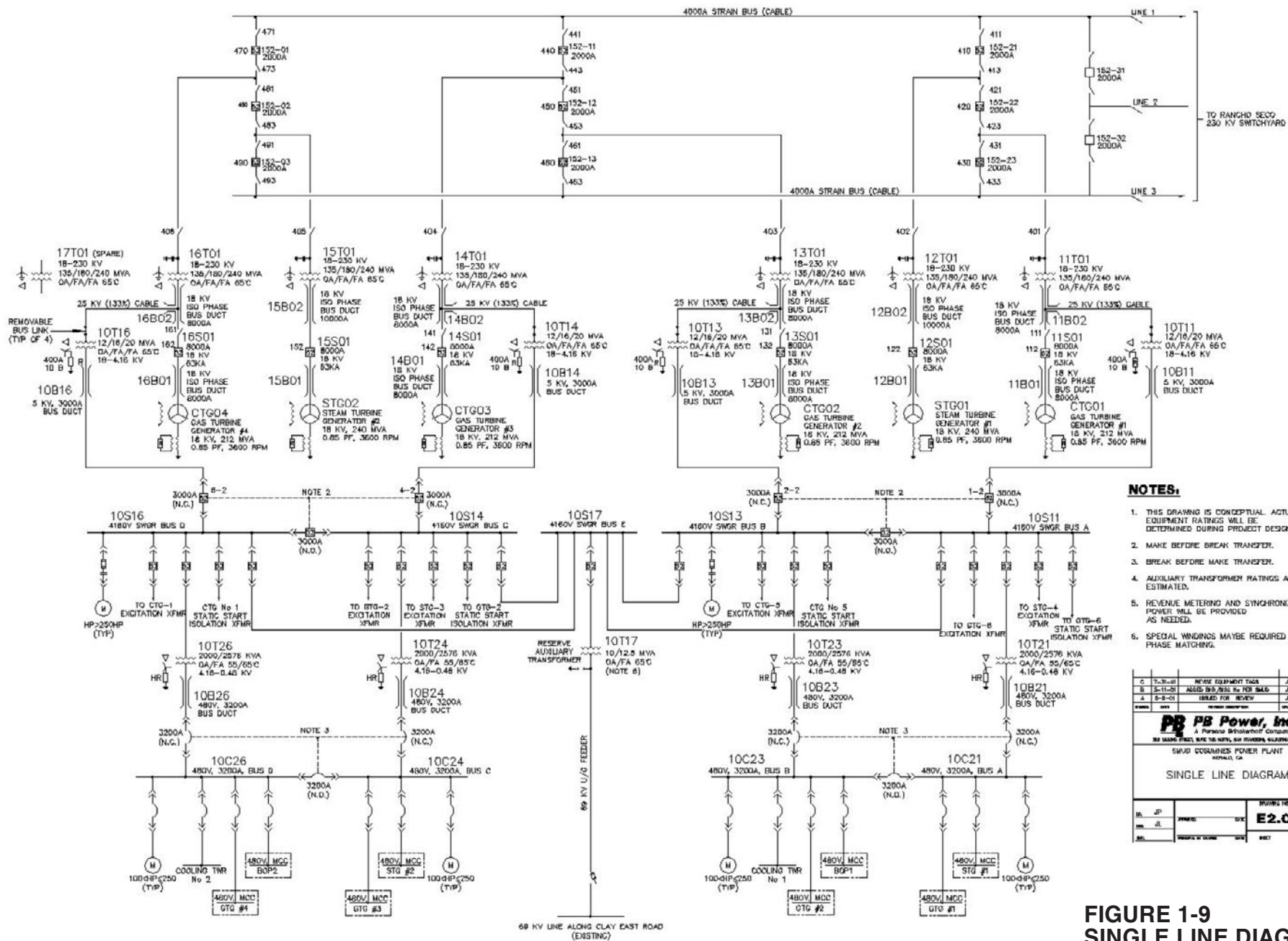


**FIGURE 1-7**  
**VALVE STATION 3**  
 COSUMNES POWER PLANT  
 APPLICATION FOR CERTIFICATION





**FIGURE 1-8**  
**LOCATION OF CONSTRUCTION**  
**ACCESS ROAD AND ADDITIONAL**  
**TRANSMISSION LINE TOWER**  
**AND TOWER PLACEMENT**  
 COSUMNES POWER PLANT



- NOTES:**
1. THIS DRAWING IS CONCEPTUAL. ACTUAL EQUIPMENT RATINGS WILL BE DETERMINED DURING PROJECT DESIGN.
  2. MAKE BEFORE BREAK TRANSFER.
  3. BREAK BEFORE MAKE TRANSFER.
  4. AUXILIARY TRANSFORMER RATINGS ARE ESTIMATED.
  5. REVENUE METERING AND SYNCHRONIZATION POWER WILL BE PROVIDED AS NEEDED.
  6. SPECIAL WINDINGS MAYBE REQUIRED FOR PHASE WINDING.

REV	DATE	BY	CHKD	DESCRIPTION
0	7-26-01			ISSUE EQUIPMENT TAGS
1	5-11-01			ADD BUS, BUS TO PER SMDG
2	5-8-01			ISSUE FOR REVIEW

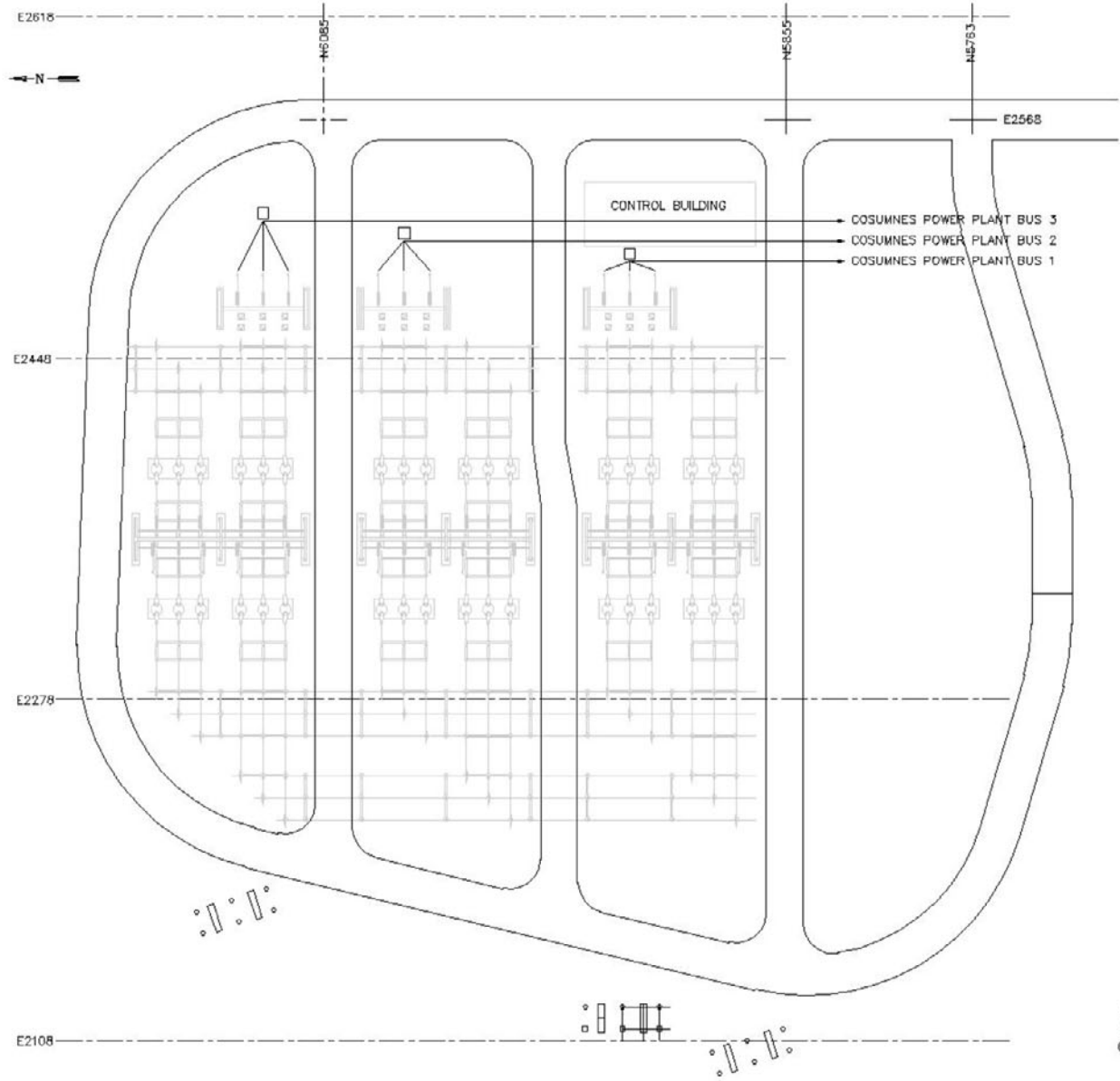
**PB Power, Inc.**  
A PROFESSIONAL ENGINEERING COMPANY  
3840 S. FRENCH BLVD. SUITE 100, NORTH, SAN JOSE, CALIFORNIA 95134  
SMDG COSUMNES POWER PLANT  
REDFIELD, CA

**SINGLE LINE DIAGRAM**

DR. JP	DESIGNED BY	DATE	REVISED BY	REV
IL				
ML				
PL				

**FIGURE 1-9**  
**SINGLE LINE DIAGRAM**  
COSUMNES POWER PLANT





A		22-2-03		REVISED FOR REVISION	JP
DATE	BY	REVISION	DATE	BY	APP.
 <b>PB Power, Inc.</b> A Parsons Brinckerhoff Company <small>AN EQUAL OPPORTUNITY, AFFIRMATIVE ACTION, AND NEUTRALITY COMPANY</small>					
COSUMNES POWER PLANT 230 KV SWITCHYARD					
DR.	JP	DESIGNED BY	DATE	DRAWING NO.	REV.
CHK.	JP	CHECKED BY	DATE	<b>E4.0</b>	A
APP.	JL	APPROVED BY	DATE	HEET	OF

GRAPHIC SCALE  
 0' 10' 20' 40' 60'

**FIGURE 1-11**  
**RANCHO SECO 230 KV SWITCHYARD**  
 COSUMNES POWER PLANT