

Executive Summary

1.1 Introduction

This Application for Certification (AFC) for the Walnut Energy Center (WEC) project has been prepared by Turlock Irrigation District (TID) in accordance with the California Energy Commission's (CEC's) Power Plant Site Certification Regulations (August 2000). This Executive Summary provides an overview of the Project in accordance with Appendix B, Section (a) of the regulations and includes figures taken from other sections of this AFC.

This AFC has been prepared in accordance with CEC guidelines and provides:

- A detailed description of the proposed Project
- An assessment of the Project's likely impact on the existing environment
- TID-committed measures to mitigate Project impacts to assure that environmental issues are properly and responsibly addressed
- A discussion of compliance with applicable laws, ordinances, regulations, and standards (LORS) provided within the project description and each resource section

1.2 Project Overview

TID proposes to develop a natural-gas-fired generating facility west of the downtown portion of the City of Turlock (City) (see Figure 1.1-1, figures are located at the end of the section) in Stanislaus County (County), California. The proposed WEC will be a high-efficiency, combined-cycle facility that will be integrated into TID's plans to meet its growing native load, and provide other ancillary services and benefits to TID.

WEC will consist of the following components:

- A nominal 250-megawatt (MW), natural-gas-fired, combined-cycle generating facility consisting of two natural-gas-fired combustion turbines and one condensing steam turbine
- A 115-kilovolt (kV) and 69-kV switchyard
- Approximately 1,950 feet of new 115-kV transmission line
- Approximately 670 feet of new 69-kV transmission line
- Approximately 3.6 miles of new 8-inch diameter natural gas pipeline
- Approximately 1.6 miles of new 12 to 24-inch diameter pipeline for recycled water supply
- Approximately 0.9-mile of new pipeline for potable water supply to the plant

The Project would occupy 18-acres within a 69-acre parcel. The plant would occupy approximately 16 acres near the northeast corner of the rectangular parcel. An additional 2 acres would be needed for primary access, emergency access to the plant and transmission lines, with the remaining 51 acres available for equipment laydown and construction parking (see Figure 1.1-2). After construction, the 51 acres would be available for lease as agricultural land or future development as determined by TID's Board of Directors. A schematic arrangement of the plant is presented as Figure 1.1-3. Figure 1.1-4 shows the proposed routes for the transmission lines, gas line, and recycled and potable water lines.

A full-page photograph of the site prior to construction is presented as Figure 1.1-5. A visual simulation of the plant and transmission lines after construction is presented as Figure 1.1-6.

The generating facility will consist of two combustion turbine generators (CTGs) equipped with dry, low oxides of nitrogen (NO_x) combustors; two heat recovery steam generators (HRSGs); one condensing steam turbine generator (STG); a deaerating surface condenser; a 5-cell mechanical-draft cooling tower; and associated support equipment providing a nominal generating capacity of 250 MW. The combustion turbines are expected to be General Electric Frame 7EA units.

The electrical transmission interconnections will link WEC to the TID power grid by looping the nearby Walnut Hilmar 115-kV and the Walnut Industrial 69-kV Line 2 transmission lines into the WEC switchyard.

Natural gas for the facility will be delivered to the site via approximately 3.6 miles of new 8-inch pipeline that will connect to Pacific Gas & Electric Company's (PG&E's) existing main pipeline (Line 215) at West Bradbury Road (Figure 1.1-4).

The proposed cooling water supply source for the project recycled water from the City of Turlock's Regional Wastewater Treatment Plant (WWTP) approximately 1.6 miles southeast of the project site. The City is in the process of developing a Title 22 Tertiary Wastewater Treatment Plant, which will be online by May 1, 2006. The project proposes to use potable water from the City of Turlock for all potable, plant service, and fire protection needs. The project will also use this water as a "bridge supply" for cooling water during the interim months until recycled water from the WWTP is available. After the recycled water supply is available, potable supply will be used only for potable, plant service and fire protection needs.

1.2.1 Project Objectives

TID's Project objectives are described in more detail in this AFC. Some of TID's basic Project objectives include the following:

- To safely construct and operate a nominal 250-MW, natural-gas-fired, combined-cycle generating facility within the TID service territory.
- To provide additional generation to meet TID's growing load and meet the demands of customers within 200+ square miles of PG&E's service territory. This service territory acquisition is presently before the California Public Utility Commission (CPUC).
- To provide additional generation within TID to replace the expiration of significant long-term power purchase agreements.

- To increase the possibility of TID becoming a control area, or joining a different control area, both of which would require TID to have additional generation.
- To assist the State of California (State) in developing increased local generation projects, thus reducing dependence on imported power.
- To contribute to the diversification of the County's economic base by providing increased employment opportunities and a reliable power supply.

1.2.2 Project Site Selection

TID's approach to Project site selection focused on identifying potential project sites that satisfy TID's basic project objective and that have low potential for environmental impacts. TID also gave consideration to sites located near existing infrastructure and within the TID service area. The proposed Project site is consistent with these site selection criteria and was based, in part, on the following key selection criteria:

- Ability to gain site control
- Availability of sufficient land area
- Proximity to existing transmission and distribution lines and close to an existing substation
- Proximity to recycled water supply
- Proximity to PG&E main gas pipeline
- Adjacent to a rail line to facilitate rail delivery of heavy equipment
- Consistency with the City and County General Plans and zoning ordinances, height restrictions, and existing land uses
- The ability, with implementation of reasonable mitigation measures, to have a less-than-significant impact on the environment
- Location in area appropriate for industrial development
- Location within TID's service territory

1.3 Facility Location

TID's board of directors has authorized the execution of a purchase option on a 69-acre parcel of industrially zoned land (see Appendix 1A). The parcel is located in Section 20, Township 5 South, Range 10 East (Hatch 7.5-minute Quadrangle). The assessor's parcel number (APN) for the site is 044-003-014. The legal description of the parcel is provided in Appendix 1B.

WEC is generally located at the western edge of Turlock, approximately 2.7 miles west of Highway 99, just south of West Main Avenue (J17), off of Washington Road. This site consists of approximately 18 acres within a 69-acre parcel of industrial land. Industrial development exists on the north and east sides. Agricultural uses are located south of the site

and agricultural, residential, and utility uses are to the west. The plant would be located in an industrially zoned area of Turlock that has several tall industrial structures within the context of mixed industrial, agricultural, and residential uses.

The site is adjacent to a major 115-kV transmission line that connects to the existing Walnut peaking plant and substation. The existing switchyard has sufficient transmission capacity to serve a new 250-MW plant. The site would also be located next to a Tidewater Southern Railroad spur.

Parcel numbers and the names of the landowners within 1,000 feet of the site and within 500 feet of the linear corridors are included in Appendix 1C.

1.4 Project Schedule

Actual construction would take place over approximately 24 months, from first quarter 2004 to fourth quarter 2005. Plant testing is planned to commence in the fourth quarter of 2005, and commercial operation is expected to commence in the first quarter 2006.

1.5 Project Ownership

The power plant and transmission lines will be owned by TID. TID is a public agency operated under the State Water Code. It is governed by a Board of Directors, elected by its ratepayer-owners. Consistent with PG&E practice and CPUC law and regulation, the natural gas pipeline will be owned by PG&E. The potable water and recycled water lines will be owned by the City of Turlock.

The initial capital cost of the project is \$120 million to \$220 million. Of this, materials and supplies are estimated at approximately \$100 million. The estimated value of materials and supplies that will be purchased locally (within Stanislaus County) during construction is between \$2 million and \$4 million.

1.6 Project Alternatives

The California Energy Commission (CEC) conducts its review of alternatives to satisfy the Warren-Alquist Act and the California Environmental Quality Act (CEQA). Appendix B (f) (1) of the CEC Guidelines requires a discussion of the range of reasonable alternatives to the project, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project. To enable this review, the criteria and objectives that led to the selection of the site and design features of the proposed WEC Project are provided, along with a detailed discussion of the range of alternatives considered (see Section 9.0).

A “No Project” alternative was considered and rejected as inconsistent with TID’s objectives, which include the need to develop additional generation sources. In addition, the “No Project” alternative could result in greater fuel consumption and air pollution in the state because generation from older, less-efficient plants with higher air emissions would not be reduced by generation from cleaner, more-efficient plants, such as WEC. Other possible alternative sites in the general vicinity of the proposed site were reviewed and found to be

less acceptable than the proposed site. Alternative routes for the natural gas line, electric transmission line, and recycled water line were also reviewed and found to be less acceptable than the proposed routes.

Several alternative generating technologies were reviewed in a process that led to the selection of a modern, proven, combustion turbine combined-cycle arrangement for WEC using natural gas for fuel. The alternative technologies included conventional oil and natural-gas-fired plants, simple-cycle combustion turbines, biomass-fired plants, waste-to-energy plants, solar plants, wind-generation plants, and others. None of these technologies are feasible alternatives to the combined-cycle technology selected for WEC. A complete discussion of project alternatives is presented in Section 9.0 along with natural gas pipeline alternatives, and recycled water line alternatives.

1.7 Environmental Considerations

Sixteen areas of possible environmental impact from the proposed project were investigated. Detailed descriptions and analyses of these areas are presented in Subsections 8.1 through 8.16 of this AFC. With the implementation of reasonable and feasible mitigation measures, there will be no significant environmental effects. The potential effects of some key areas typically of greater interest to CEC staff are summarized briefly in this section.

1.7.1 Air Quality

The site is located in an area designated as nonattainment for State and federal ozone air quality standards, and for State fine particulate matter (PM₁₀) standards. An assessment of the impact to air quality was performed using detailed air dispersion modeling. The air impacts from the Project will be mitigated by the advanced nature of the combustion turbine emission control technology. Emission reduction credits (ERCs) have been obtained to offset increases in emissions of volatile organic compounds (VOCs) and NO_x (both precursors of ozone), and of PM₁₀. The combination of the detailed air quality modeling analyses and these mitigation measures will result in the project having no significant adverse impact on air quality. See Subsection 8.1 for a detailed analysis of air quality.

1.7.2 Water Resources

The Project will use recycled water for the majority of its water needs. Use of recycled water conserves higher quality surface water for potable and other critical uses and will have a net positive impact on water resources by reducing the amount of wastewater discharged to the San Joaquin River.

1.7.3 Visual Resources

The landscape surrounding the Project site has an open appearance, but it includes some major industrial and infrastructure facilities, creating a visual mixture of agriculture and industry. The site itself is flat and open, and contains no features considered to be scenic resources. Several of the industrial facilities that are scattered throughout the area have tall silos and generate water vapor plumes. For example, Foster Farms owns and operates a grain facility adjacent to the WEC site. It has several existing silos, the tallest of which is about 140 feet to the top of the silo and 170 feet to the top of the elevator. In most of the views toward the site that were evaluated,

the visual quality of the landscape from the various key observation points (KOPs) ranged from moderately low to low. Agricultural-related residences in the Project viewshed are relatively few, and the closest lies approximately 375 feet from the site.

The WEC features would include two HRSGs that are 100 feet long, 24 feet wide, 65 feet high to the top of the casing, and 105 feet high to the top of the highest relief valves and vent silencers. The HRSG stacks would be 132 feet tall and 16 feet in diameter. The 5-cell cooling tower structure would be 271 feet long, 55 feet wide, 42 feet high to the top of the deck, and 56 feet high to the top of the fan shrouds. WEC would have an orderly appearance, would be painted using a neutral color scheme designed to break up its mass and relate it to its backdrop, and would have landscaping to comply with the City's development standards and integrate the plant into its industrial setting.

The lighting associated with the project would be limited, and would not pose a hazard or adversely affect day or nighttime views toward the site. The project is in general conformance with all LORS related to visual resources in the City plans and zoning ordinance provisions that pertain to this area.

1.7.4 Biology

The Project site presently is in agricultural use (field corn was recently harvested). Land uses in the vicinity of the Project site are primarily agricultural and industrial, not urban. Habitat types potentially affected in the project area are composed of agricultural, irrigation ditches, ruderal roadsides, commercial, landscape, small residential farms, and a small fragmented riparian habitat. Historical agricultural practices in this area were not consistent with maintaining wildlife habitat, and therefore, biological resources are scarce and widely separated.

Wildlife with a high or moderate likelihood of occurring in the project area include: Aleutian Canada goose, Swainson's hawk, Ferruginous hawk, white-tailed kite, greater sandhill crane, Long-billed curlew, and loggerhead shrike.

TID has informally consulted with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), U.S. Army Corps of Engineers (USACE), and National Marine Fisheries Service (NMFS) and determined that with implementation of appropriate mitigation measures during construction, operation, and maintenance, the project would cause no significant adverse impact to these species. Subsection 8.2 provides a detailed analysis of biological resources and the methods proposed to avoid significant impacts to them.

1.7.5 Noise

Ambient noise measurements were collected to determine the L_{90} (the noise level that is exceeded during 90 percent of the measurement period) nighttime noise level at the nearest residence (i.e., sensitive receptor). Noise modeling was used to determine the contribution to the nighttime ambient levels the plant would make during operation. Noise levels at the nearest residences will be less than the City of Turlock's Noise Ordinance and General Plan requirements for industrial zoned areas. Since the noise level at the nearest receptor will be in accordance with local LORS, no adverse impact is expected from the normal operation of the plant.

1.8 Key Benefits

1.8.1 Environmental

WEC will employ advanced, high-efficiency combustion turbine technology and selective catalytic reduction (SCR) to minimize emissions from the facility. Using natural gas for fuel, WEC will be among the cleanest facilities of comparable size in the nation. Project emissions will be as much as 85 percent lower than those for existing older generating facilities. WEC has also obtained emission offsets to more than compensate for the air emissions.

WEC will also minimize freshwater use. Recycled water from the Turlock WWTP will be used for plant cooling and process water needs. This will allow for the commercial use of a wastewater stream and will have a net positive impact on water resources by reducing the amount of wastewater discharged to the San Joaquin River.

1.8.2 Employment

The Project will provide for a peak of approximately 277 construction jobs, with an average of almost 114 construction jobs, over a 2-year period. In addition, it would provide approximately 21 full-time, living-wage jobs throughout the life of the plant.

1.8.3 Energy Efficiency

WEC will be an efficient, environmentally responsible source of economic and reliable energy to serve the growing energy demands of TID. WEC will help ensure reliable, clean, low-cost electricity in the future.

1.9 Persons Who Prepared the AFC

Persons with primary responsibility for the preparation of each section of this AFC are listed in Appendix 1D.

1.10 Laws, Ordinances, Regulations, and Standards (LORS)

Each section addresses the relevant LORS and addresses compliance with them. For convenience, a summary LORS table is provided in Appendix 1E.

1.11 Permitting Requirements

Each section provides a list of applicable federal, state, and local permits that would be required by each jurisdiction for the project. For convenience, a table summarizing those permits is provided in Appendix 1F, and an agency contact list for each section is provided in Appendix 1G.

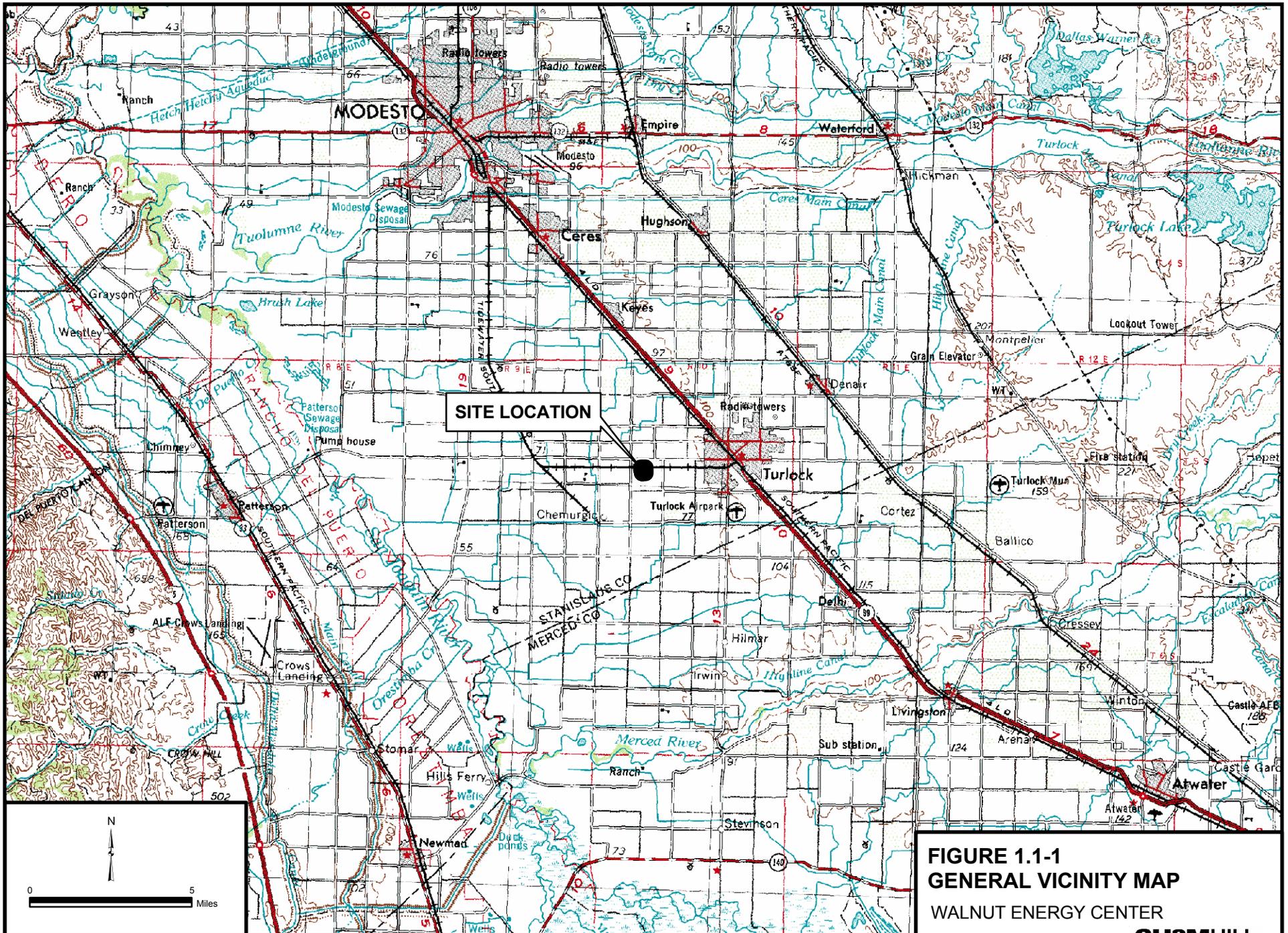
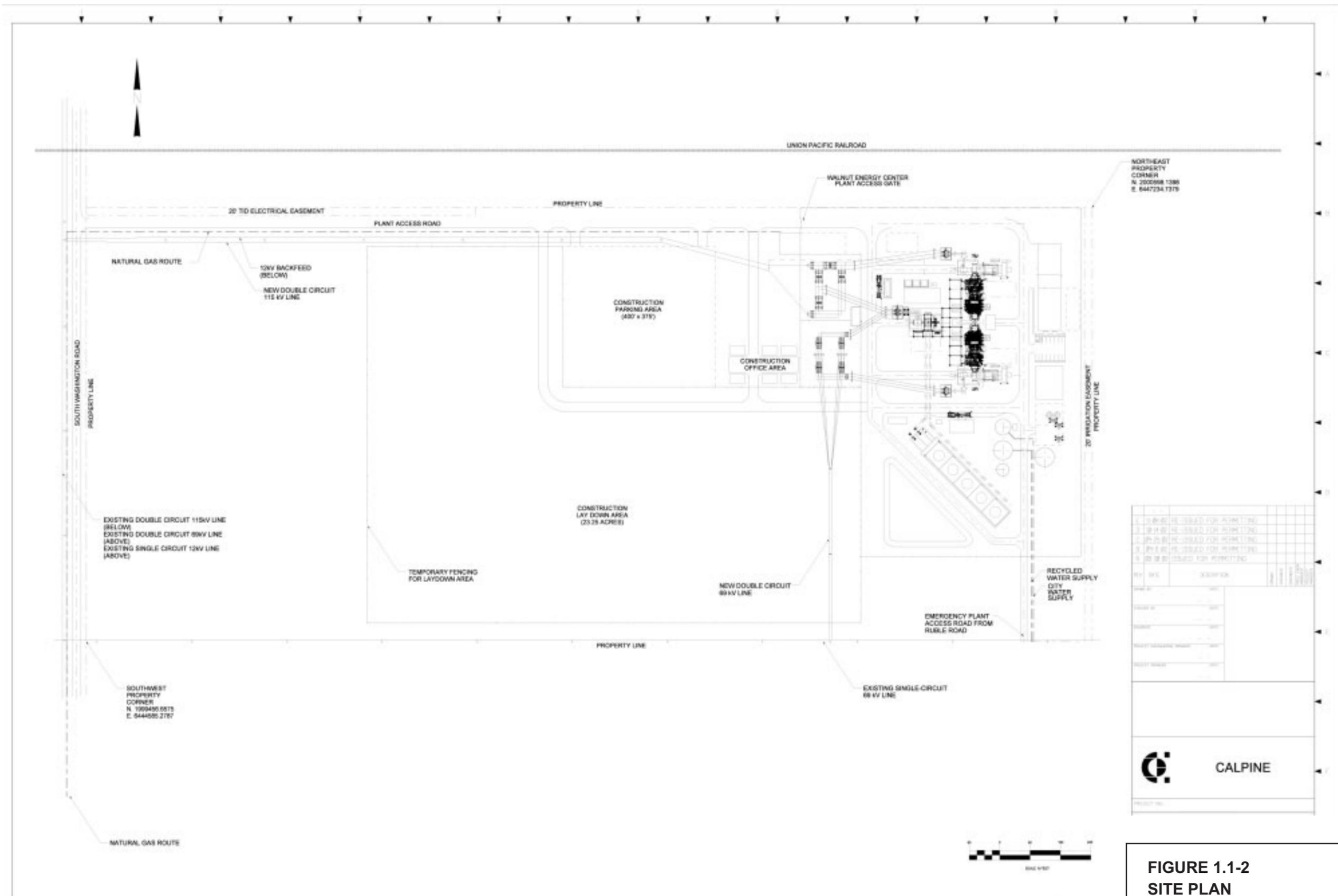


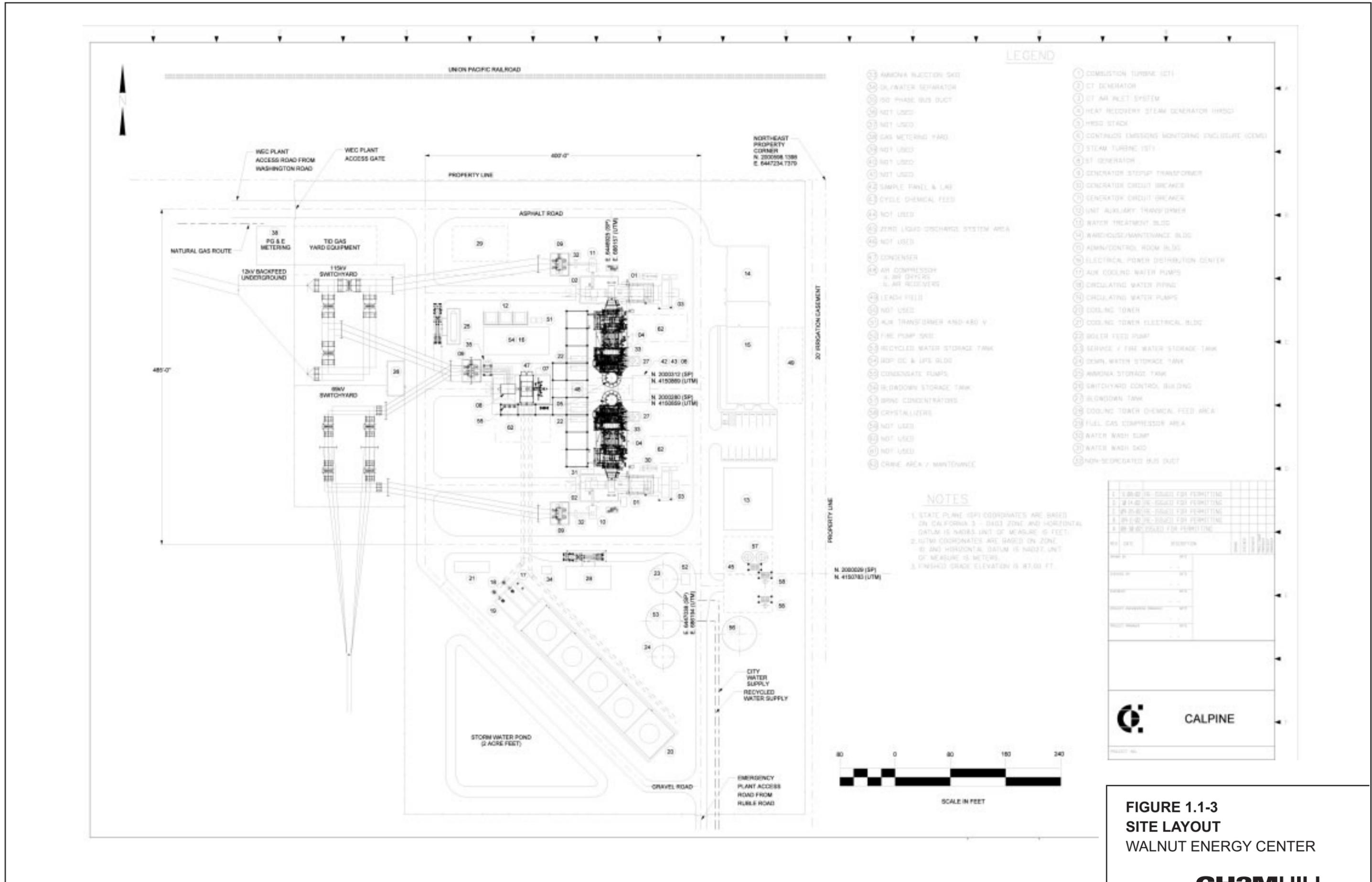
FIGURE 1.1-1
GENERAL VICINITY MAP
 WALNUT ENERGY CENTER



1	TO BE USED FOR PERMITTING
2	TO BE USED FOR PERMITTING
3	TO BE USED FOR PERMITTING
4	TO BE USED FOR PERMITTING
5	TO BE USED FOR PERMITTING
6	TO BE USED FOR PERMITTING
7	TO BE USED FOR PERMITTING
8	TO BE USED FOR PERMITTING
9	TO BE USED FOR PERMITTING
10	TO BE USED FOR PERMITTING
11	TO BE USED FOR PERMITTING
12	TO BE USED FOR PERMITTING
13	TO BE USED FOR PERMITTING
14	TO BE USED FOR PERMITTING
15	TO BE USED FOR PERMITTING
16	TO BE USED FOR PERMITTING
17	TO BE USED FOR PERMITTING
18	TO BE USED FOR PERMITTING
19	TO BE USED FOR PERMITTING
20	TO BE USED FOR PERMITTING
21	TO BE USED FOR PERMITTING
22	TO BE USED FOR PERMITTING
23	TO BE USED FOR PERMITTING
24	TO BE USED FOR PERMITTING
25	TO BE USED FOR PERMITTING
26	TO BE USED FOR PERMITTING
27	TO BE USED FOR PERMITTING
28	TO BE USED FOR PERMITTING
29	TO BE USED FOR PERMITTING
30	TO BE USED FOR PERMITTING
31	TO BE USED FOR PERMITTING
32	TO BE USED FOR PERMITTING
33	TO BE USED FOR PERMITTING
34	TO BE USED FOR PERMITTING
35	TO BE USED FOR PERMITTING
36	TO BE USED FOR PERMITTING
37	TO BE USED FOR PERMITTING
38	TO BE USED FOR PERMITTING
39	TO BE USED FOR PERMITTING
40	TO BE USED FOR PERMITTING
41	TO BE USED FOR PERMITTING
42	TO BE USED FOR PERMITTING
43	TO BE USED FOR PERMITTING
44	TO BE USED FOR PERMITTING
45	TO BE USED FOR PERMITTING
46	TO BE USED FOR PERMITTING
47	TO BE USED FOR PERMITTING
48	TO BE USED FOR PERMITTING
49	TO BE USED FOR PERMITTING
50	TO BE USED FOR PERMITTING
51	TO BE USED FOR PERMITTING
52	TO BE USED FOR PERMITTING
53	TO BE USED FOR PERMITTING
54	TO BE USED FOR PERMITTING
55	TO BE USED FOR PERMITTING
56	TO BE USED FOR PERMITTING
57	TO BE USED FOR PERMITTING
58	TO BE USED FOR PERMITTING
59	TO BE USED FOR PERMITTING
60	TO BE USED FOR PERMITTING
61	TO BE USED FOR PERMITTING
62	TO BE USED FOR PERMITTING
63	TO BE USED FOR PERMITTING
64	TO BE USED FOR PERMITTING
65	TO BE USED FOR PERMITTING
66	TO BE USED FOR PERMITTING
67	TO BE USED FOR PERMITTING
68	TO BE USED FOR PERMITTING
69	TO BE USED FOR PERMITTING
70	TO BE USED FOR PERMITTING
71	TO BE USED FOR PERMITTING
72	TO BE USED FOR PERMITTING
73	TO BE USED FOR PERMITTING
74	TO BE USED FOR PERMITTING
75	TO BE USED FOR PERMITTING
76	TO BE USED FOR PERMITTING
77	TO BE USED FOR PERMITTING
78	TO BE USED FOR PERMITTING
79	TO BE USED FOR PERMITTING
80	TO BE USED FOR PERMITTING
81	TO BE USED FOR PERMITTING
82	TO BE USED FOR PERMITTING
83	TO BE USED FOR PERMITTING
84	TO BE USED FOR PERMITTING
85	TO BE USED FOR PERMITTING
86	TO BE USED FOR PERMITTING
87	TO BE USED FOR PERMITTING
88	TO BE USED FOR PERMITTING
89	TO BE USED FOR PERMITTING
90	TO BE USED FOR PERMITTING
91	TO BE USED FOR PERMITTING
92	TO BE USED FOR PERMITTING
93	TO BE USED FOR PERMITTING
94	TO BE USED FOR PERMITTING
95	TO BE USED FOR PERMITTING
96	TO BE USED FOR PERMITTING
97	TO BE USED FOR PERMITTING
98	TO BE USED FOR PERMITTING
99	TO BE USED FOR PERMITTING
100	TO BE USED FOR PERMITTING



FIGURE 1.1-2
SITE PLAN
 WALNUT ENERGY CENTER



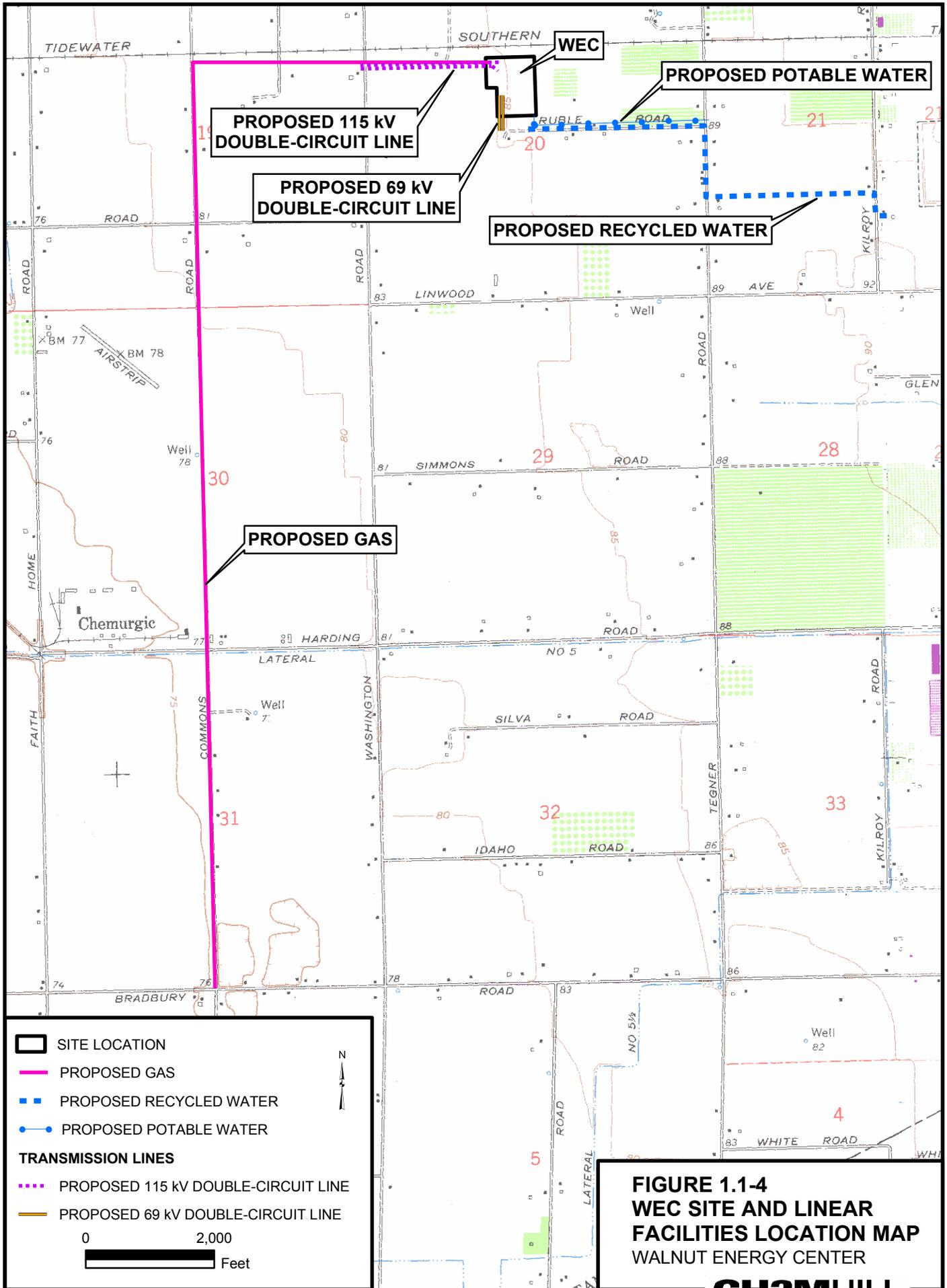




FIGURE 1.1-5
APPEARANCE OF SITE
BEFORE CONSTRUCTION
WALNUT ENERGY CENTER



FIGURE 1.1-6
APPEARANCE OF SITE
AFTER CONSTRUCTION
WALNUT ENERGY CENTER