

SECTION 1.0

Executive Summary

Executive Summary

1.1 Introduction

The City and County of San Francisco (CCSF) is proposing to construct and operate a simple-cycle peaking power plant, the San Francisco Electric Reliability Project (SFERP), in San Francisco.

This Supplement to the Application for Certification (AFC) for the SFERP (referred to as Supplement A) has been prepared by CCSF for the relocation of the project site to a 4-acre site of City of San Francisco (City)-owned land, located near the San Francisco Bay in the Potrero District of San Francisco (see Figure 1-1; figures are located at the end of this section). The SFERP will consist of a nominal 145-megawatt (MW) simple-cycle plant, using three natural gas-fired, General Electric LM 6000 gas turbines and associated infrastructure (see Figure 1-2).

The SFERP is being pursued by the City to eliminate the need for existing unreliable and highly-polluting in-City generation while maintaining the reliability of the electric system. According to the California Independent System Operator, construction of the SFERP, in combination with the construction of a number of planned transmission projects and the construction of a small generating facility at the San Francisco International Airport, will provide for the release of units at the Potrero Power Plant from the applicable Reliability-Must-Run (RMR) agreement. Release from the RMR agreement will eliminate a significant source of revenue for continued operation of the units and will allow Mirant Potrero, LLC to shut down the units. Prior to the construction of the SFERP, completion of the Jefferson-Martin transmission project, and a number of additional transmission projects that are currently either complete or in progress, will provide for closure of the Hunters Point Power Plant. The City is committed to achieving the closure of the Hunters Point and Potrero power plants as soon as possible.

The City is committed to minimizing impacts on the community in Southeast San Francisco, where the SFERP will be located. The City recognizes that the Southeast San Francisco community has been disproportionately impacted by industrial facilities including electric power generation. The SFERP will emit substantially less NO_x than existing in-City generation. Nonetheless, the City has procured an option for local emission reduction credits to offset NO_x emissions from the SFERP. In addition, although the modeling shows that the SFERP is not expected to contribute significantly to cumulative regional or localized impacts of any air pollutants, including NO₂ and PM₁₀, there will be PM₁₀ impacts from the SFERP in both Potrero and Bayview/Hunters point. Also, although the impacts of toxic air contaminants from the project are below the levels considered to be significant by regulatory agencies, the City recognizes that the highest acute health hazard index from the project will be in Bayview/Hunters point. To address these concerns, the City is developing, with community input, a PM₁₀ mitigation/community benefits package. The City will target the mitigation to the areas affected by the impacts from the project.

The generating units that comprise the SFERP have been made available to the City as part of a global settlement between the Williams Energy Marketing and Trading Company and a large number of parties including numerous State entities and the City. The settlement resolved claims associated with the 1999-2001 energy crisis and provided the City with four natural-gas-fired, General Electric LM 6000 turbines along with a budget for their development. The City has a power purchase agreement for sale of the output of the four turbines to the California Department of Water Resources, provided that certain conditions are met.

The SFERP, for which this Supplement is being submitted, consists of three of the units available to the City for development to be sited on City-owned land adjacent to the new MUNI Metro East Light Rail Vehicle Maintenance and Operations Facility (the MUNI project). The City is pursuing permitting of the fourth unit at the San Francisco International Airport.

1.2 Project Overview

The SFERP will consist of a nominal 145-megawatt (MW) simple-cycle plant, using three natural gas-fired, General Electric LM 6000 gas turbines and associated infrastructure. The project site is located near the San Francisco Bay in the Potrero District of San Francisco, on City-owned land adjacent to the new MUNI project. Approximately 4 fenced acres will be required to accommodate the generation facilities. The construction laydown area will be approximately 8.5 acres and located on land leased from a City department, the Port of San Francisco (Port). The laydown area is located directly east and adjacent to the project site between 25th and Cesar Chavez streets, and the waterfront and the SFERP site (see Figure 1-2).

The project will include the construction of a new air-insulated 115-kilovolt (kV) switchyard on the north side of the site adjacent to 25th Street. The SFERP will link to the power grid through the PG&E Potrero Substation by two redundant three-phase 115-kV solid dielectric underground transmission circuits. From the SFERP switchyard to the connection at the Potrero Substation breakers, the total transmission distance is approximately 3,000 feet.

Natural gas for the facility will be delivered through a new 900-foot-long, 12-inch diameter (or less) pipeline that will connect to PG&E's existing natural gas transmission line, which is located at the intersection of Illinois and 25th streets.

Process water for the project will be delivered from a water pump station (WPS) located on Marin Street near Cesar Chavez to a new water treatment plant located on the SFERP project site. The WPS will be located near an existing combined sewer system structure and will include three variable frequency drive pumps (two operational and one standby). A 0.76-mile-long pipeline will connect the WPS and the SFERP's onsite treatment system. This pipeline consists of two sections. The first section, approximately 1,300 feet long, will be installed within an existing collection box. The remaining section will be new construction (Figure 1-2). The onsite treatment system will be designed to produce California Code of Regulations (CCR) Title 22-quality recycled water.

Plant wastewater and reject water from the SFERP's water treatment system will be discharged into the City's combined sewer system, which routes the waste to the Southeast Water Pollution Control Plant (SEWPCP).

A general vicinity map is presented as Figure 1-1; the plant site and location of linear facilities are presented in Figure 1-2; the site plan is presented as Figure 1-3; and an oblique simulation of the plant and adjacent MUNI Metro East Light Rail Vehicle Maintenance and Operations Facility is presented as Figure 1-4.

1.2.1 Project Objectives

The City has identified several basic objectives, consistent with the findings and recommendations contained in its Electricity Resource Plan (ERP), for the development of a power project. These objectives are:

- Facilitate the shutdown of older, more polluting in-City generation
- Minimize local impacts of electrical generation
- Maintain the City of San Francisco's electricity reliability

The City of San Francisco, PG&E, and the California Independent System Operator (CAISO) have extensively studied the electrical infrastructure in the City of San Francisco. Section 3.0 (Purpose and Need) discusses the regional electrical system in the City and why the SFERP is needed, as part of a portfolio of resources, to maintain system reliability and provide for closure of existing power plants. As that section documents, the City is committed to maximizing energy efficiency improvements, developing renewable power, encouraging clean distributed generation, and supporting needed transmission additions. Nonetheless, the siting of new, clean and operationally flexible generation is also necessary to facilitate the near-term closure of the Potrero Power Plant.

1.2.2 Project Site Selection

The criteria developed to evaluate the site's suitability correspond with the reasons the proposed site was selected. These criteria include the following:

- Environmental justice considerations
- Ensure impacts can be mitigated
- Availability of sufficient land area under City control
- Proximity to an existing substation
- Proximity to PG&E main gas pipeline
- Consistency with the General Plan and zoning ordinances, height restrictions, and existing land uses

1.3 Facility Location

The project site is located near the San Francisco Bay in the Potrero District of San Francisco, on a 4-acre site of City-owned land that is surrounded by industrial development. The site is zoned for industrial use. Development of a power plant in this area would be consistent with the zoning ordinance. The center of the SFERP site is located at approximately 37°47'7.50" N. latitude and 122°23'0.82" W. longitude in Township 2 S., Range 5 W. This township has

never been surveyed into sections because it was part of an original Spanish land grant. All the proposed SFERP facilities will be located within either the southernmost portion of the U.S. Geological Survey (USGS) San Francisco North or the northernmost portion of the San Francisco South 7.5' (1:24,000-scale) standard topographic maps. The site is located on Block 474 and portions of Blocks 473, 467, and 468.

The site is near PG&E's 115-kV Potrero Substation. The existing substation has sufficient transmission capacity to serve a new 145-MW plant. Natural gas would be supplied to the new power plant from the PG&E main located at the corner of Illinois and 25th streets. Additional natural gas compressors would be necessary to serve the new plant. Water supply for the proposed plant would be obtained from the City's combined sewer system via a pumping station, a pipeline, and an onsite primary, secondary, and tertiary recycled water treatment system that will produce CCR Title 22-quality recycled water. Wastewater from the plant would be returned to the City's combined sewer system.

The plant would be located in an industrial area of San Francisco and would be screened by structures to be constructed as part of the MUNI project. The nearest dwelling units to the project, which are potentially sensitive noise receptors, are located approximately 1,600 feet from the project.

Block and lot 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 1A.

1.4 Project Schedule

Construction of the generating facility, from site preparation and grading to commercial operation, is expected to take approximately 12 months. Major milestones are listed in Table 1-1.

TABLE 1-1
Project Schedule Major Milestones

Activity	Date
Begin Construction	2nd Quarter 2006
Startup and Test	2nd Quarter 2007
Commercial Operation	2nd Quarter 2007

The site will be accessed for construction via either 25th or Cesar Chavez and Maryland streets. Normal construction will be scheduled between 7 a.m. and 8 p.m., Monday through Friday. During the startup phase of the project, some activities will continue 24 hours per day, 7 days per week.

1.5 Project Ownership

The power plant and transmission lines will be owned and operated by CCSF. Consistent with PG&E practice and California Public Utilities Commission (CPUC) law and regulation,

the natural gas pipeline will be owned by PG&E. The potable water and process water lines will be owned by CCSF.

The initial capital cost of the SFERP is estimated to be \$140 million. The estimated value of materials and supplies that will be purchased locally (within San Francisco) during construction is between \$2 and \$3 million.

1.6 Project Alternatives

The 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 SFERP are provided, along with a detailed discussion of the range of alternatives considered (see Section 9.0, Alternatives).

A “No Project” alternative was considered and rejected as inconsistent with the City’s objectives. Development of new power generation facilities will allow closure of existing, dirty generation facilities that impact low income/minority communities and will improve local electric reliability.

1.7 Environmental Justice

The City recognizes that Southeast San Francisco is a community of color with relatively high rates of serious respiratory diseases and that the Southeast San Francisco has been disproportionately impacted by industrial facilities. To address these concerns, Ordinance 124-01 sets forth requirements for any new fossil-fueled power generation at the Potrero Hill Power Plant in Southeast San Francisco. Although the SFERP is no longer proposed to be sited at the Potrero Hill Power Plant, Ordinance 124-01 still provides general policy guidance about the City’s objectives for the development of generation in Southeast San Francisco. The SFERP supports the objectives of Ordinance 124-01 by reducing emissions of NO_x, and facilitating the closure of the Potrero Power Plant. In addition, the City is committed to developing a meaningful PM₁₀ mitigation/community benefits package to mitigate the adverse impacts of the SFERP on the community. Although the modeling shows that the SFERP is not expected to contribute significantly to cumulative regional or localized air quality impacts of any air pollutant, including NO₂ and PM₁₀, there will be PM₁₀ impacts from the SFERP in both Potrero and Bayview/Hunters Point. Also, although the impacts of toxic air contaminants from the project are below the levels considered to be significant by regulatory agencies, the City recognizes that the highest acute health hazard index from the project will be in Bayview/Hunters Point. The City will target the mitigation to the areas affected by the impacts from the project.

1.8 Environmental Considerations

Sixteen different types of possible environmental impacts from the proposed project were investigated in preparing this Supplement. Detailed descriptions and analyses of these issues are presented in Subsections 8.1 through 8.16. This section briefly summarizes the potential effects typically of greater interest to CEC staff and the public.

1.8.1 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 use of state-of-the-art combustion turbine emission control technology. The City has obtained an option to procure sufficient local emission reduction credits (ERCs) to meet the offset requirements for this project. The option is for sufficient ERCs to offset on a one-to-one basis increases in emissions of precursor organic compounds (POCs) and NO_x (both precursors of ozone). In addition, the City, with community input, is developing a PM₁₀ mitigation and community benefits plan. See Subsection 8.1, Air Quality, for a detailed analysis of air quality.

1.8.2 Water Resources

Water for the SFERP for process and cooling, equipment wash and the dual plumbing system (toilets) will be recycled water produced on the site at a new water treatment system included as part of the project. The City will provide wastewater from a process water pumping station to be constructed on Marin Street near Cesar Chavez Street, about 0.76 mile from the site. The pipeline consists of two parts. Approximately 1,300 feet of the pipeline will be installed within an existing collection box. The remaining portion will be new construction (see Figure 1-2).

The onsite treatment system will be designed to produce Title 22-quality recycled water, with the treatment system providing primary, secondary, and tertiary treatment plus disinfection either by ultraviolet system or chlorination. Potable water will be provided for fire protection, domestic uses, and emergency backup for cooling and process needs.

1.8.3 Visual Resources

The proposed project features will change the existing landscape from a site that is mostly undeveloped (the exception is the existing temporary cement plant that will be removed prior to project construction) to a paved site with several onsite buildings and electrical generation and transmission structures. Three 85-foot-tall stacks will be the tallest project features at the site. The exteriors of all project elements will be treated with a neutral gray finish that will optimize visual integration with the surrounding environment. With project implementation, much more of the site will be occupied with equipment than is currently the case, and the site, when viewed from adjacent parcels, will appear more orderly and maintained than it does now.

Although the proposed power plant is a peaking unit, it could be operated 24 hours per day, 7 days per week for periods of time. Its operation would require onsite nighttime lighting for safety and security. To reduce offsite lighting impacts, lighting at the facility would be

restricted to areas required for safety, security, and operation. Exterior lights would be hooded, and lights would be directed onsite so that significant light or glare would be minimized. Low-pressure sodium lamps and fixtures of a non-glare type would be specified. For areas where lighting is not required for normal operation, safety, or security, switched lighting circuits would be provided, thus allowing these areas to remain dark at most times, minimizing the amount of lighting potentially visible offsite.

1.8.4 Noise

While the proposed SFERP will produce noticeable noise, the noise levels will be in compliance with San Francisco's Noise Ordinance requirements for industrial properties. Noise will also be produced at the site during the construction phase of the project. The construction noise may be audible at the nearest dwelling units but is not anticipated to exceed current exposure levels and the noisiest construction activities will be confined to the daytime hours.

1.9 Key Benefits

1.9.1 Closure of In-City Generation and Reliability

Construction of the SFERP, in combination with the construction of a number of planned transmission projects and the construction of a small generating facility at the San Francisco International Airport, will provide for the release of units at the Potrero Power Plant from the applicable RMR agreement. Release from the RMR agreement will eliminate a significant source of revenue from continued operation of the units and allow Mirant Potrero LLC to shut down the units. The City is committed to securing the closure of the Potrero Power Plant through negotiations with Mirant or other means. Prior to the construction of the SFERP, completion of the Jefferson-Martin transmission project and a number of additional transmission projects that are currently either complete or in progress will provide for closure of the Hunters Point Power Plant. The SFERP complements the City's efforts to promote energy efficiency, renewable resources, and clean distributed generation.

1.9.2 Environmental

SFERP will employ advanced, high-efficiency combustion turbine technology and selective catalytic reduction (SCR) to minimize emissions from the facility. Project NO_x emissions will be as much as 85 percent lower than those for existing older peaking facilities in the City. The City has obtained options for local emission offsets to compensate for the air emissions. The City is also developing a PM₁₀ mitigation plan. The City will target the mitigation to the areas by the impacts from the project.

Recycled water will be used for plant cooling and process water needs. This will allow for industrial reuse of wastewater and will minimize the amount of potable water required.

1.9.3 Local Control and Employment

The SFERP will provide for local control over, and accountability with regard to, a strategically located new resource.

The workforce on the project during construction will peak at approximately 264 people, including construction craft persons and supervisory, support, and construction management personnel. In addition, it would provide approximately 11 full-time, living-wage jobs throughout the life of the plant.

1.9.4 Energy Efficiency

SFERP will be an efficient, environmentally responsible source of reliable peaking energy to serve the growing energy demands of the City. SFERP will help ensure reliable, clean electricity in the future.

1.10 Persons Who Prepared the Supplement

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

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.

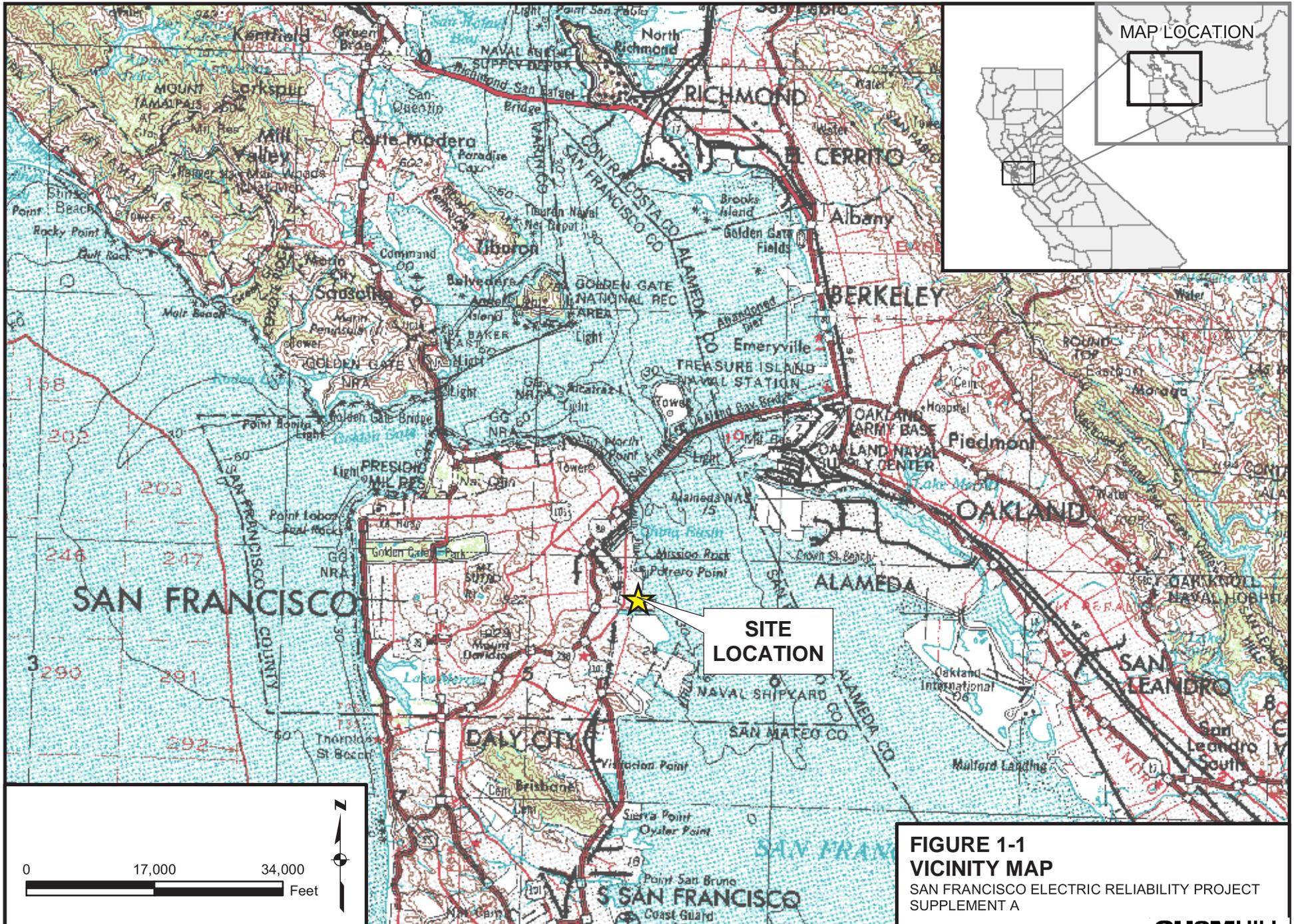
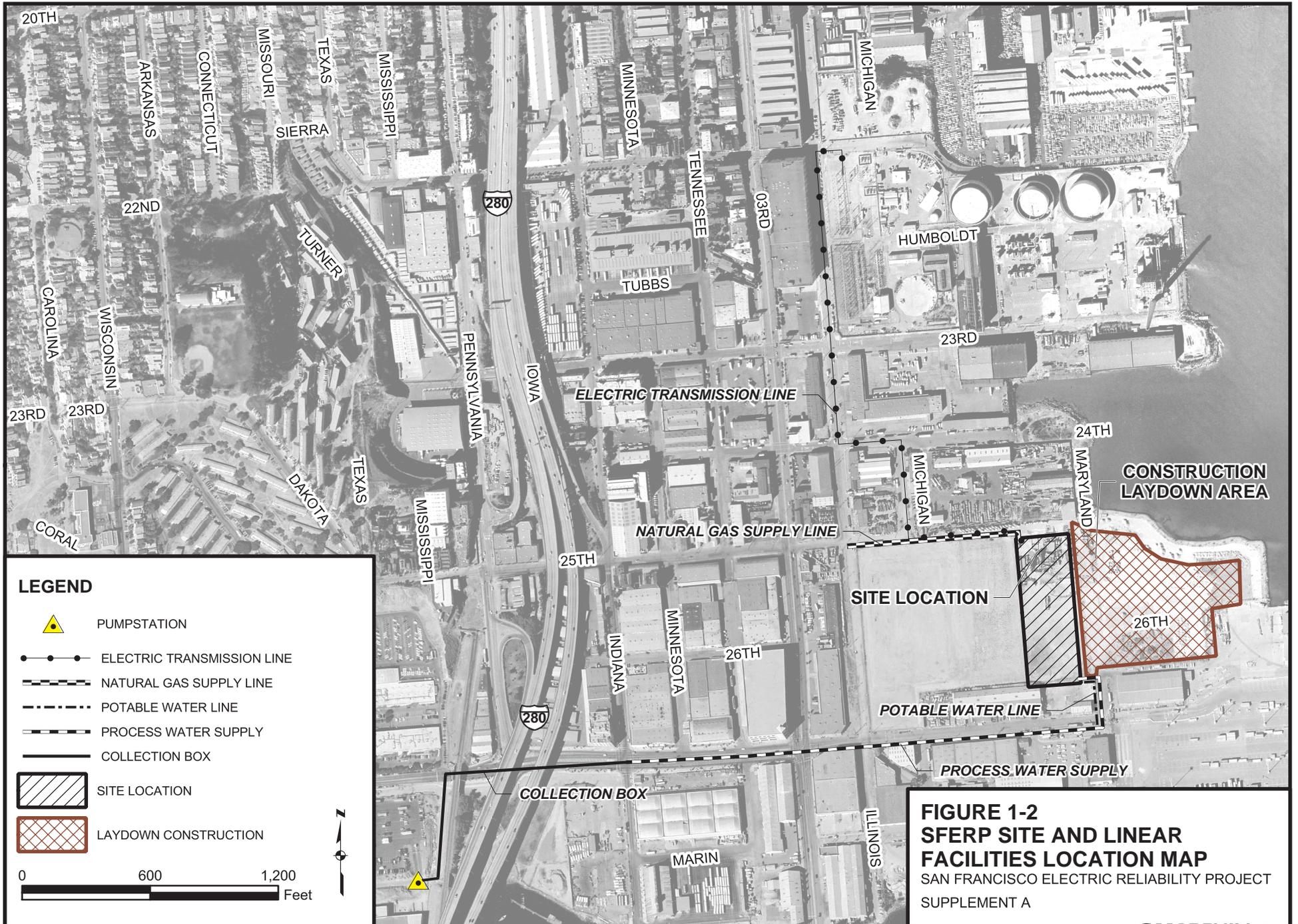
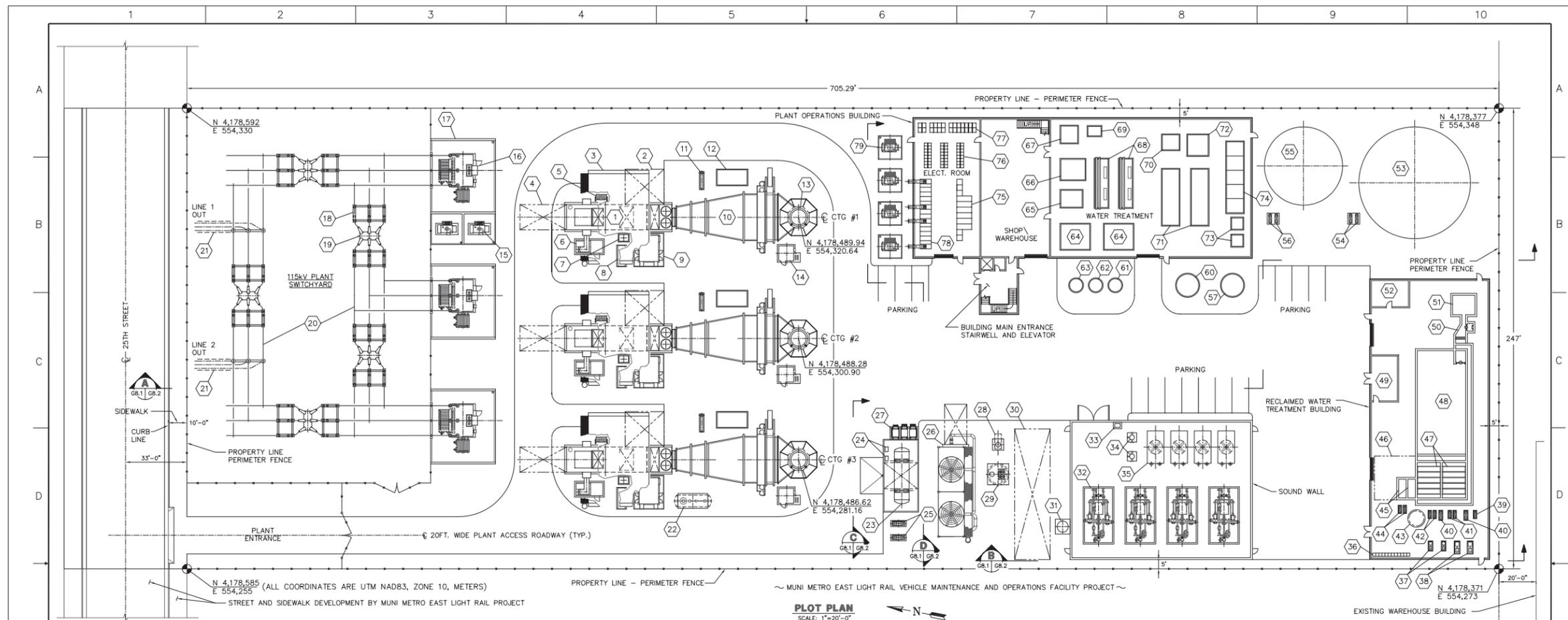


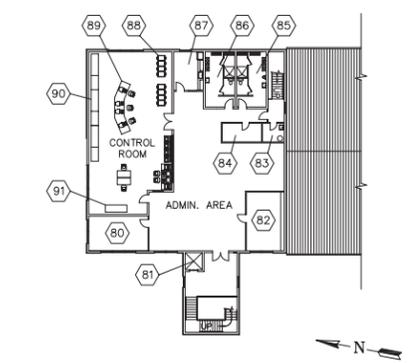
FIGURE 1-1
VICINITY MAP
 SAN FRANCISCO ELECTRIC RELIABILITY PROJECT
 SUPPLEMENT A



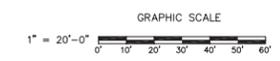


LEGEND.

- | | | | |
|---------------------------------------|---------------------------------------|---------------------------------------|---|
| 1 LM6000 COMBUSTION TURBINE GENERATOR | 26 CHILLER/COOLING TOWER PACKAGE | 51 COMBINED INLET SYSTEM | 76 480V MCC'S |
| 2 TURBINE REMOVAL/MAINTENANCE AREA | 27 COOLING TOWER CHEMICAL SYSTEM | 52 OFFICE/CONTROL ROOM | 77 BATTERIES |
| 3 CTG AIR INTAKE FILTER SYSTEM | 28 OIL/WATER SEPARATOR (UG) | 53 TREATED WATER STORAGE TANK | 78 480V SWITCHGEAR |
| 4 GENERATOR ROTOR REMOVAL AREA | 29 WASTE WATER SUMP AND LIFT STATION | 54 TREATED WATER PUMPS | 79 480V STATION SERVICE TRANSFORMERS (TYP. 4) |
| 5 CTG FIRE PROTECTION SKID | 30 NATURAL GAS METERING STATION | 55 DI WATER STORAGE TANK | 80 PRIVATE OFFICE |
| 6 GENERATOR BREAKER SWITCHGEAR | 31 NATURAL GAS INLET SCRUBBER | 56 DI WATER PUMPS | 81 ELEVATOR |
| 7 SPRINT SYSTEM SKID | 32 FUEL GAS COMPRESSOR (TYP. 4) | 57 RO PERMEATE TANK | 82 CONFERENCE/TRAINING ROOM |
| 8 NOx WATER INJECTION SKID | 33 HYDROCARBON DRAIN TANK | 58 (NOT USED) | 83 JANITOR'S STORAGE |
| 9 AUXILIARY SKID | 34 DISCHARGE FILTER SCRUBBER (TYP. 2) | 59 (NOT USED) | 84 OFFICE SUPPLY STORAGE |
| 10 SCR/CO CATALYST SYSTEM | 35 FUEL GAS COOLING RADIATOR (TYP. 4) | 60 ULTRA FILTRATION PERMEATE TANK | 85 MEN'S LOCKERS/SHOWER |
| 11 AMMONIA FLOW BALANCE SKID | 36 480V MCC'S | 61 BULK CAUSTIC STORAGE (IF REQUIRED) | 86 WOMEN'S LOCKERS/SHOWER |
| 12 AMMONIA VAPORIZATION SKID | 37 SUPPLEMENTAL AERATION BLOWERS | 62 BULK ACID STORAGE (IF REQUIRED) | 87 LUNCH ROOM |
| 13 STACK | 38 MEMBRANE AIR SCOUR BLOWERS | 63 BULK SODIUM HYPOCHLORITE STORAGE | 88 INPUT/OUTPUT CABINETS |
| 14 CEMS | 39 DRAIN PUMP | 64 EDI TRAIN | 89 HUMAN/MACHINE INTERFACE |
| 15 5KV AUXILIARY TRANSFORMER (TYP. 2) | 40 PERMEATE PUMP (TYP. 2) | 65 EDI FEED PUMP SKID | 90 CTG CONTROL PANELS |
| 16 13.8KV/115KV GSU (TYP. 3) | 41 MIXED LIQUOR RECIRCULATION PUMPS | 66 RO CLEAN IN PLACE SKID | 91 SWITCHYARD CONTROL PANEL |
| 17 FIRE/BLAST WALL (TYP.) | 42 CIP/BACKPULSE PUMPS | 67 RO FEED PUMP SKID | |
| 18 115KV SWITCH (TYP. 10) | 43 CIP/BACKPULSE TANK | 68 RO TRAINS | |
| 19 115 KV BREAKER (TYP.5) | 44 DIP TANK RECIRC/DRAIN PUMPS | 69 RO CARTRIDGE FILTERS | |
| 20 SWITCHYARD BUS WORK | 45 DIP TANKS | 70 ULTRA FILTRATION SYSTEM WASTE SKID | |
| 21 115KV DUCT BANK | 46 CASSETTE LAYDOWN AREA | 71 ULTRA FILTRATION SYSTEM TRAINS | |
| 22 TURBINE WASH WATER DRAIN TANK (UG) | 47 MEMBRANE TANKS | 72 ULTRA FILTRATION SYSTEM PUMP SKID | |
| 23 AQUEOUS AMMONIA STORAGE TANK | 48 AEROBIC ZONE | 73 AIR BLOWERS | |
| 24 AQUEOUS AMMONIA FORWARDING PUMPS | 49 CHEMICAL FEED/STORAGE ROOM | 74 CHEMICAL METERING SYSTEMS | |
| 25 AUXILIARY COOLING PUMPS | 50 FEED CHANNEL | 75 5KV SWITCHGEAR | |



PLANT OPERATIONS BUILDING - 2ND FLOOR - PLAN
SCALE: 1"=20'-0"



PRELIMINARY

SYMBOL	DATE	REVISION DESCRIPTION	DRAWN	APPROVED
G	3-1-05	PROPERTY, PERIMETER FEATURES ADDED		
F	1-24-05	COORD. SYSTEM ADJUSTED		
E	1-21-05	STACK COORD. CHANGED TO METERS		
D	1-21-05	NAD83 COORDINATES ADDED AND ITEMS 58 & 59 DELETED		
C	1-6-05	MUNI UNDEVELOPED SITE		
B	11-4-04	2 + 2 ACRE SITE		
A	10-21-04	PRELIMINARY ISSUE		

PB Power, Inc.
A Parsons Brinckerhoff Company
303 SECOND STREET, SUITE 700 NORTH, SAN FRANCISCO, CALIFORNIA 94107

POTRERO POWER PLANT
SAN FRANCISCO, CALIFORNIA
MUNI SITE
PLOT PLAN - 3 UNITS SIMPLE CYCLE

DR. JJB	APPROVED	DATE	G8.1	REV	C
DES. JJB					
CHK. SB	PRINCIPAL IN CHARGE	DATE	SHEET	OF	

C:\x-ref: NONE
S:\Projects\2005\001RDD_29\Drawings\Site\SitePlan\SitePlan.dwg
Date: 3-1-05 11:49am Tuesday Plotted by: jbradell

FIGURE 1-3
SITE LAYOUT
SAN FRANCISCO ELECTRIC RELIABILITY PROJECT
SUPPLEMENT A

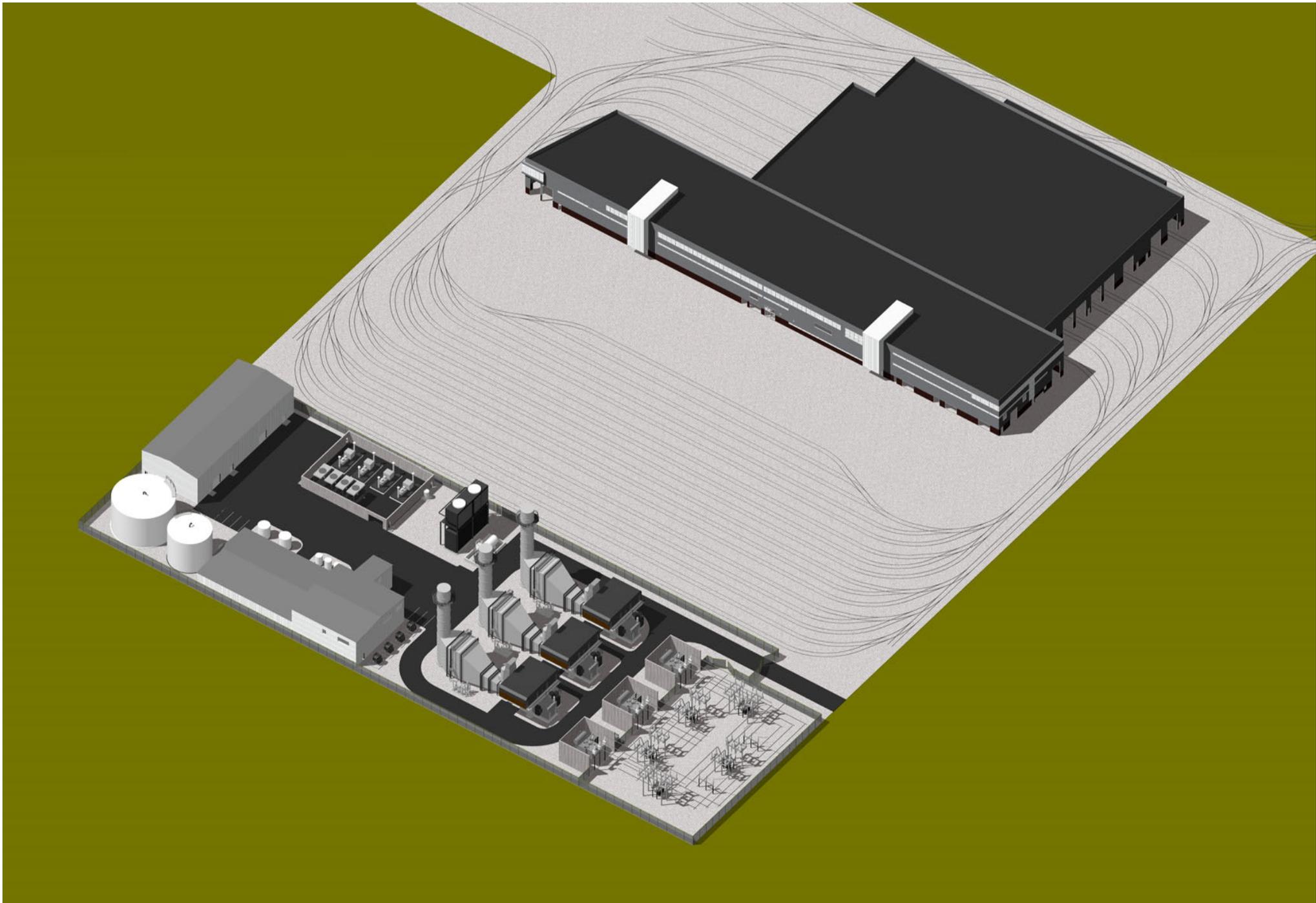


FIGURE 1-4
OBLIQUE VIEW OF PROJECT AND MUNI FACILITY
SAN FRANCISCO ELECTRIC RELIABILITY PROJECT
SUPPLEMENT A