CH2M HILL
2485 Natomas Park Drive
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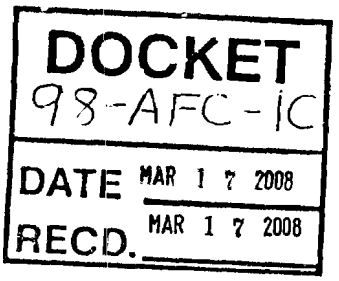
March 17, 2008



Ms. Paula David
Compliance Project Manager
California Energy Commission
1516 9th Street
Sacramento, CA 95814

Re: Petition for Amendment, Los Medanos to Dow Pittsburg Transmission Line
Los Medanos Energy Center (98-AFC-1C)

Dear Ms. David:

On behalf of Los Medanos Energy Center, LLC, please find attached one original and 12 copies of a Petition to Amend the certification of the Los Medanos Energy Center (98-AFC-1C). This petition seeks to add the Los Medanos to Dow Pittsburg Transmission line to the certification.

If you have any questions about this matter, please contact me at 916-286-0278.

Sincerely,

Douglas M. Davy, Ph.D.
Program Manager

Attachment

cc: D. Schell (Dow)
B. McBride (Calpine)
J. Harris (ESH)

Petition for Amendment

Los Medanos Energy Center to Dow Pittsburg 115-kV Transmission Line

Pittsburg, California

for the

Los Medanos Energy Center

(98-AFC-1)

Submitted to

California Energy Commission

Submitted by

Los Medanos Energy Center, LLC

With Technical Assistance by

CH2MHILL

2485 Natomas Park Drive
Sacramento, California 95833

March 2008

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Acronyms and Abbreviations

ADT	Average Daily Traffic
AFC	Application for Certification
BAAQMD	Bay Area Air Quality Management District
BOE	Board of Equalization
Calpine	Calpine Corporation
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CE	California Endangered
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFP	California fully protected
CHRIS	California Historical Resources Information System
CNPS	California Native Plant Society
CSC	California Species of Concern
CT	California threatened
Dow	The Dow Chemical Company
FE	federally endangered
FT	federally threatened
HDPE	high-density polyethylene
kV	kilovolt
LMEC	Los Medanos Energy Center
LORS	laws, ordinances, regulations, and standards
LOS	Level of Service
NOx	oxides of nitrogen
NRCS	Natural Resources Conservation Service
NWIC	Northwest Information Center
PCE	passenger car equivalent

PDEF	Pittsburg District Energy Facility
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM_{10}	particulate matter less than 10 micrometers in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in aerodynamic diameter
PVC	polyvinylchloride
ROG	reactive organic compounds
SR	state route
UCMP	University of California Museum of Paleontology
UPI	USS-POSCO Steel Incorporated
USGS	United States Geological Survey
V/C	volume-to-capacity ratio
XPLE	cross-link polyethylene

Executive Summary

Los Medanos Energy Center, LLC (LMEC, LLC) petitions the California Energy Commission (CEC) to amend the certification for the Los Medanos Energy Center (LMEC) (98-AFC-1). This Amendment petition proposes to add a 4,950-foot-long (0.93-mile-long) double-circuit 115-kilovolt transmission line extending from LMEC to the Pittsburg Facility of The Dow Chemical Company (Dow), which is located east of LMEC. This transmission line will be a dedicated line to connect LMEC with the Dow Pittsburg facility, for the purpose of providing electrical power to the Dow facility. This Amendment will allow LMEC, LLC's parent company (Calpine Corporation) and Dow to decommission an older, less efficient power plant with a higher heat rate and higher rates of air emissions and to replace the power from this older plant with newer, cleaner and more efficient power from the LMEC facility. Because of the close proximity of LMEC to Dow Pittsburg, there will be little transmission loss of electricity.

The LMEC to Dow Pittsburg Transmission Line will be located entirely on property belonging the USS-POSCO Incorporated (UPI) steel mill, and Dow at their Pittsburg plant. The first 900 feet of the transmission line project, extending from the LMEC switchyard, will consist of installing a conductor in LMEC's existing underground duct bank. The next 650 feet of the transmission line, extending from just east of LMEC facility, will be underground, in a newly constructed duct bank that parallels the existing steam line between LMEC and Dow. The remainder of the transmission line will be installed overhead on support towers 85 to 90 feet high. These will be located within open land at the UPI facility, within the UPI rolled steel storage yard, and within and next to the Dow Pittsburg surplus equipment storage yard. The project includes a new switchyard and control center to be constructed at the Dow Pittsburg facility.

The project is located entirely on privately held land in an area that is zoned General Industrial. The project owner suggests minor revisions to the Conditions of Certification set forth in the 1999 certification for LMEC. With these changes, and adherence to the relevant Conditions of Certification, the LMEC to Dow Pittsburg Transmission Line will not cause significant adverse impacts to the environment.

SECTION 1.0

Introduction

1.1 Overview of Amendment

LMEC, LLC petitions the California Energy Commission (CEC) to amend the certification for LMEC (98-AFC-1). The Application for Certification (AFC) for this project was filed in 1998 (PDEF, LLC, 1998) and the facility received CEC certification on August 17, 1999 (CEC, 1999). At the time of licensing, this facility was named the Pittsburg District Energy Facility (PDEF). The LLC that owned the project was acquired by Calpine Corporation and renamed, Los Medanos Energy Center, LLC and the project was renamed Los Medanos Energy Center (LMEC).

This Amendment petition proposes to add a 4,950-foot-long (0.93-mile-long) double-circuit 115-kilovolt (kV) transmission line from LMEC to the Pittsburg Facility of Dow, which is located east of LMEC in Pittsburg, Contra Costa County, California. This transmission line will be a dedicated line to connect LMEC with the Dow Pittsburg facility, for the purpose of providing electrical power to the Dow facility. The electrical power from LMEC will replace power that is currently being generated for Dow at the existing 70-megawatt Calpine Pittsburg Power Plant, which is owned and operated by Calpine. The Calpine Pittsburg Power Plant will be shut down and decommissioned.

This Amendment contains all of the information that is required pursuant to the CEC's Siting Regulations (California Code of Regulations [CCR] Title 20, Section 1769, Post Certification Amendments and Changes). The information necessary to fulfill the requirements of Section 1769 is contained in Sections 1.0 through 6.0 as summarized in Table 1.1-1. Figure 1.1-1 is a map showing the project in its regional location. Figure 1.1-2 shows the project and its nearby surroundings.

TABLE 1.1-1
Informational Requirements for Post-Certification Amendments and Changes

Section 1769 Requirement	Section of Petition Fulfilling Requirement
(A) A complete description of the proposed modifications, including new language for any conditions that will be affected	Section 2.0—Proposed modifications Sections 3.1 to 3.15—Proposed changes to conditions of certification, where necessary, are located at the end of each technical section
(B) A discussion of the necessity for the proposed modifications	Section 1.3
(C) If the modification is based on information that was known by the petitioner during the certification proceeding, an explanation why the issue was not raised at that time	Section 1.3
(D) If the modification is based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the final decision, an explanation of why the change should be permitted	Sections 1.4, 3.1 to 3.16

TABLE 1.1-1
Informational Requirements for Post-Certification Amendments and Changes

Section 1769 Requirement	Section of Petition Fulfilling Requirement
(E) An analysis of the impacts the modification may have on the environment and proposed measures to mitigate any significant adverse impacts	Section 3.1 to 3.14
(F) A discussion of the impact of the modification on the facility's ability to comply with applicable laws, ordinances, regulations, and standards;	Section 3.1 to 3.15
(G) A discussion of how the modification affects the public	Section 4.0
(H) A list of property owners potentially affected by the modification	Section 5.0
(I) A discussion of the potential effect on nearby property owners, the public and the parties in the application proceedings.	Section 6.0

1.2 Ownership of the Transmission Line

Los Medanos Energy Center, LLC is the owner of LMEC. LMEC, LLC will develop the new transmission line in partnership with Dow Chemical Corporation. Once the line is constructed, Dow will have full ownership of the transmission line portion of the project. Los Medanos Energy Center, LLC will retain ownership of the LMEC.

1.3 Necessity of Proposed Changes

The Siting Regulations require a discussion of the necessity for the proposed revision to LMEC certification and whether the modification is based on information known by the petitioner during the certification proceeding (Title 20, CCR, Sections 1769 [a][1][B], and [C]). This Amendment will allow LMEC's parent company and Dow to decommission an older, less efficient power plant with a higher heat rate and higher rates of air emissions and replace the power from this older plant with newer, cleaner and more efficient power from the LMEC facility. Because of the close proximity of LMEC to Dow Pittsburg, there will be little transmission loss of electricity.

At the time LMEC was certified, the Calpine Pittsburg Power Plant had not yet reached the end of its useful generating life. Dow for that reason had no need to purchase power from LMEC.

1.4 Consistency of Changes with Certification

The Siting Regulations also require a discussion of the consistency of the proposed project revision with the applicable laws, ordinances, regulations, and standards (LORS) and whether the modifications are based upon new information that changes or undermines the assumptions, rationale, findings, or other basis of the final decision (Title 14, CCR Section

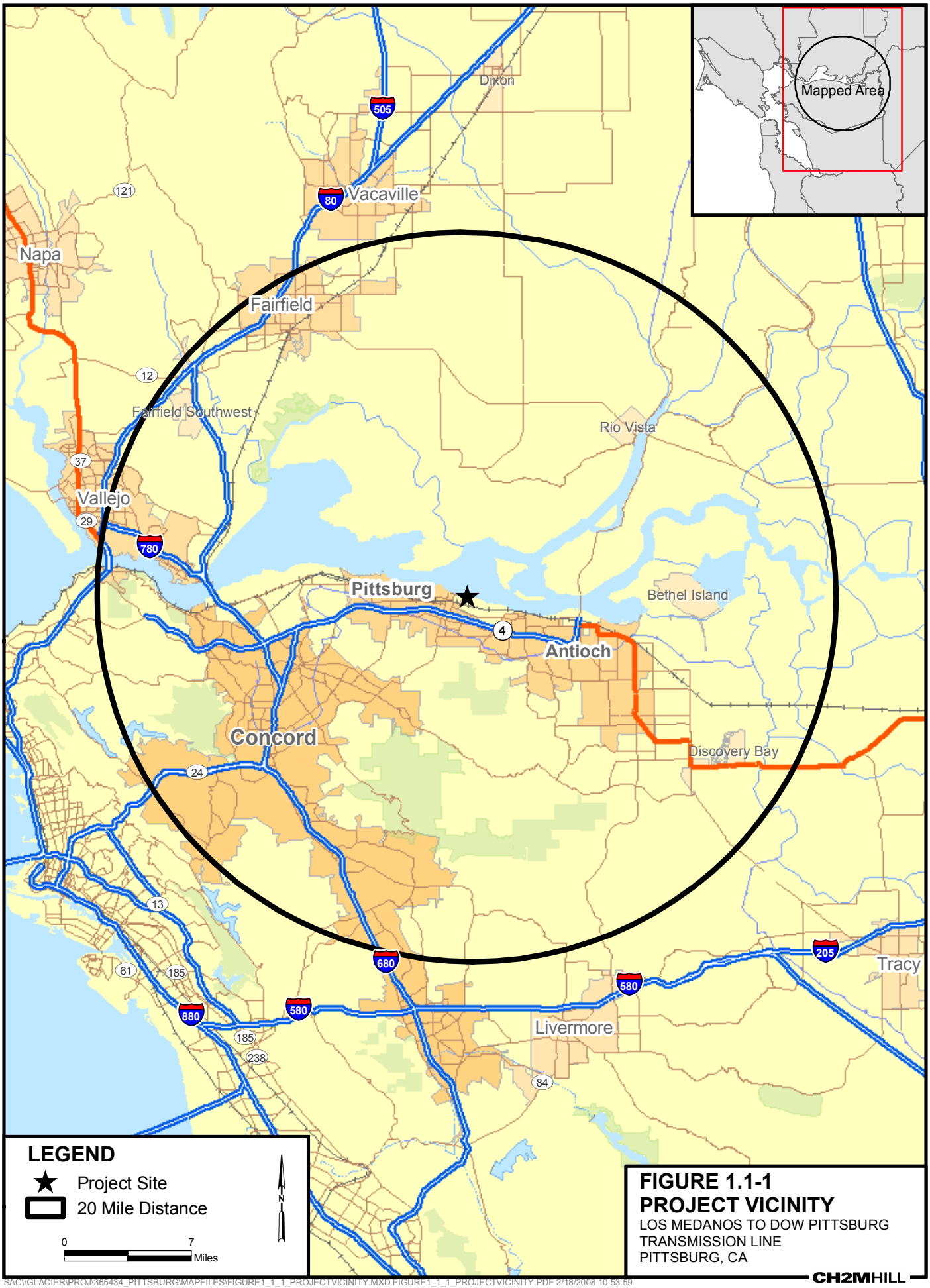


FIGURE 1.1-1
PROJECT VICINITY
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CA

CH2MHILL

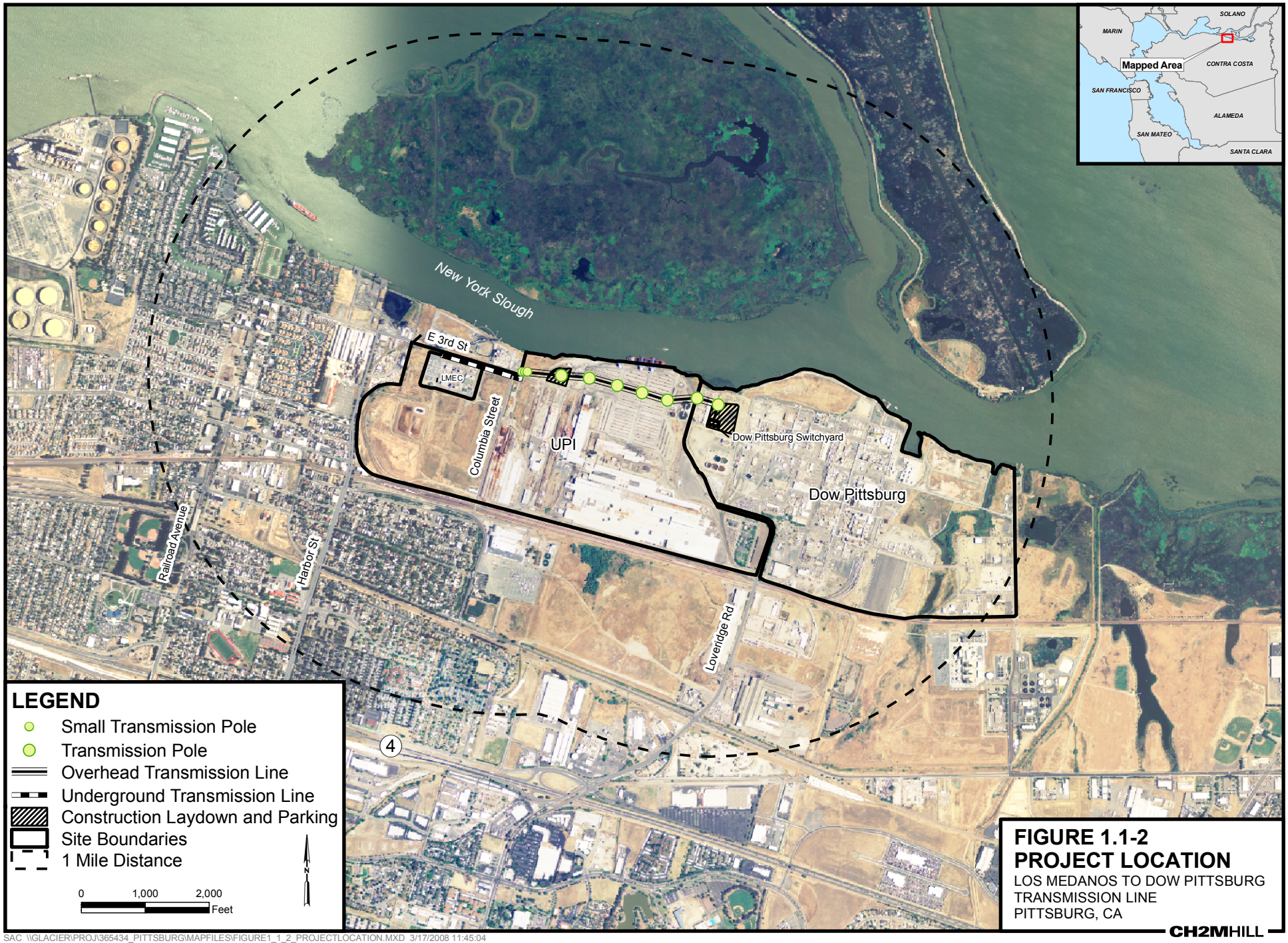


FIGURE 1.1-2
PROJECT LOCATION
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CA

CH2MHILL

SAC \\GLACIER\PROJ\365434_PITTSBURG\MAPFILES\FIGURE1_1_2_PROJECTLOCATION.MXD 3/17/2008 11:45:04

1769 [a][1][D]). If the project is no longer consistent with the certification, the Amendment must provide an explanation why the modification should be permitted.

The proposed project revisions are consistent with all applicable LORS. This Amendment is not based upon new information that changes or undermines any basis for the final Decision. The findings and conclusions contained in the Commission Decision for LMEC (CEC, 1999) are still applicable to the project as modified.

1.5 Summary of Environmental Impacts

The CEC Siting Regulations require that an analysis be conducted to address the potential impacts the proposed Amendment may have on the environment and proposed measures to mitigate any potentially significant adverse impacts (Title 20, CCR, Section 1769 [a][1][E]). The regulations also require a discussion of the impact of the proposed Amendment on the facility's ability to comply with applicable LORS (Section 1769 [1][a][F]). Section 3.0 of this Amendment includes a discussion of the potential environmental impacts associated with the Amendment as well as a discussion of the consistency of the modification with LORS. For discipline areas affected by the proposed modifications, Section 3.0 also includes any information necessary to update environmental baseline information to reflect significant changes in baseline conditions that may have occurred between the time information submitted previously in support of the application was developed and the present and that could also have a bearing on environmental analysis of the Amendment. Section 3.0 concludes that there will be no significant environmental impacts associated with implementing the actions specified in the Amendment and that the project as modified will comply with all applicable LORS.

1.6 Conditions of Certification

The construction of the LMEC to Dow Pittsburg Transmission line requires changes to the relevant CEC Conditions of Certification for LMEC. These are discussed in each individual discipline-specific section, below. Suggested condition changes are indicated in redline-strikeout text, with boldface and underlined text signifying a suggested addition and strikethrough text indicating a suggested deletion.

1.7 References

California Energy Commission (CEC). 1999. Commission Decision on Pittsburg District Energy Facility. California Energy Commission, Sacramento, California.

Pittsburg District Energy Facility, LLC (PDEF, LLC). 1998. Application for Certification for the Pittsburg District Energy Facility. Submitted to the California Energy Commission. Submitted by Pittsburg District Energy Facility, LLC, a subsidiary of the Enron Capital and Trade Resources Corporation.

SECTION 2.0

Description of Project Amendment

This section includes a complete description of the proposed project Amendment consistent with CEC Siting Regulations (Title 20, CCR, Section 1769 [a][1][A]).

2.1 Transmission Facilities

2.1.1 Transmission Line Location

The LMEC to Dow Pittsburg Transmission Line extends from LMEC for approximately 4,000 feet east-southeast to the Dow Pittsburg chemical manufacturing facility. The facility will have four distinct components: (1) installation of approximately 900 feet of conductor in an existing underground duct bank from the LMEC switchyard to a point just east of LMEC, (2) new underground duct bank for 650 feet east from the LMEC site boundary, (3) an overhead segment from Columbia Avenue to the Dow Pittsburg switchyard, and (4) the switchyard at the Dow Pittsburg facility. The transmission line will be located on two separate parcels: (1) the UPI steel mill property, and (2) the Dow Pittsburg property. The total distance for the entire transmission line, including the installation of 900 feet of conductor in the existing duct bank is 4,950 feet (0.93 mile).

The existing duct bank extends from the LMEC switchyard north, along LMEC's north boundary to the east to a point 170 feet of the LMEC fenceline, a total of 900 feet. The new underground (duct bank) segment begins at the northeast corner of the LMEC site and extends for 650 feet to the east-southeast, past Columbia Avenue to the UPI access road that lies just east of Columbia Avenue. The duct bank runs immediately south of 3rd Street and just north of the existing steam pipeline that connects LMEC with UPI and Dow. From a point just east of Columbia Avenue, the duct bank will make a right angle turn to the north and will cross under East 3rd Street. The transmission line will surface on the north side of East 3rd Street, just east of the existing Pacific Gas and Electric Company (PG&E) substation that is located within the UPI fenceline. Three short poles will serve as transition structures from the duct bank to transmission tower #1, located just north of East 3rd Street.

The aboveground portion of the transmission line extends from the north side of East 3rd Street, through the UPI property, for a distance of 3,400 feet, to the Dow switchyard site. The overhead portion of the transmission route is shown in greater detail on Figures 2.1-1a and 2.1-1b. From the initial, transitional tower, the route runs east across an open field covered in ruderal vegetation. The route then crosses a UPI rail spur and a large, open area that is covered in gravel, and which will serve as the worker parking and construction laydown area for the UPI portion of the project. One transmission tower will be located in this graveled area (Tower #2). The transmission line then enters UPI's storage yard for rolled steel sheeting. Surfacing for this yard is approximately 18 inches of asphalt. There will be four transmission towers (#3, #4, #5, and #6) located in the rolled steel storage yard.

Exiting the rolled steel product yard, the route crosses a UPI utility area north of two UPI clarifier tanks and then crosses into the Dow Pittsburg property, with a transmission tower just inside the Dow fence (Tower #7). The line crosses a Dow equipment storage yard and then spans the top of Dow Building 30 to a tower on the east side of the building. From this point (Tower #8), the line makes a right-angle turn to the south and extends 280 feet to the switchyard site. The Dow switchyard site will measure 152 feet east-west and 78 feet north-south and will include switchgear for both circuits as well as a control center.

2.1.2 Transmission System Design

2.1.2.1 Connection with LMEC and Underground Line

The underground portion of the line will involve extending the existing LMEC duct bank eastward to an area clear of overhead obstructions. The existing LMEC facility's switchyard was designed and configured to accept two additional external loads. The LMEC to Dow Pittsburg Transmission Line will connect with these two circuits. The connection will be made using a 115-kV cable terminator to an open bus in LMEC's switchyard and will be between two sets of 115-kV circuit breakers arranged in a breaker-and-a-half scheme.

The bottom of the duct bank will be approximately five feet below grade and will contain six 4-inch-diameter polyvinylchloride (PVC) conduits for the power cable and two 1.25-inch diameter PVC conduits for the fiber optic communication cable; arranged in a 2-on-3 configuration with the fiber optic cable on top. The fiber optic cable is for protective relaying and control of the transmission lines. The duct bank will be reinforced with steel rebar and constructed of concrete (with red pigment added) to cover the PVC conduits. The duct bank will be backfilled with soil up to final grade.

The underground conductor will be aluminum conductor, 500 kcmil, insulated with cross-link polyethylene (XPLE), 132-kV rating, copper wire shield, high-density polyethylene (HDPE) jacket. The underground conductor is rated at approximately 395 amps. Figures 2.1-2a through 2.1-2c show the existing duct bank's connection with the LMEC switchyard and the location and design of the new portion of duct bank.

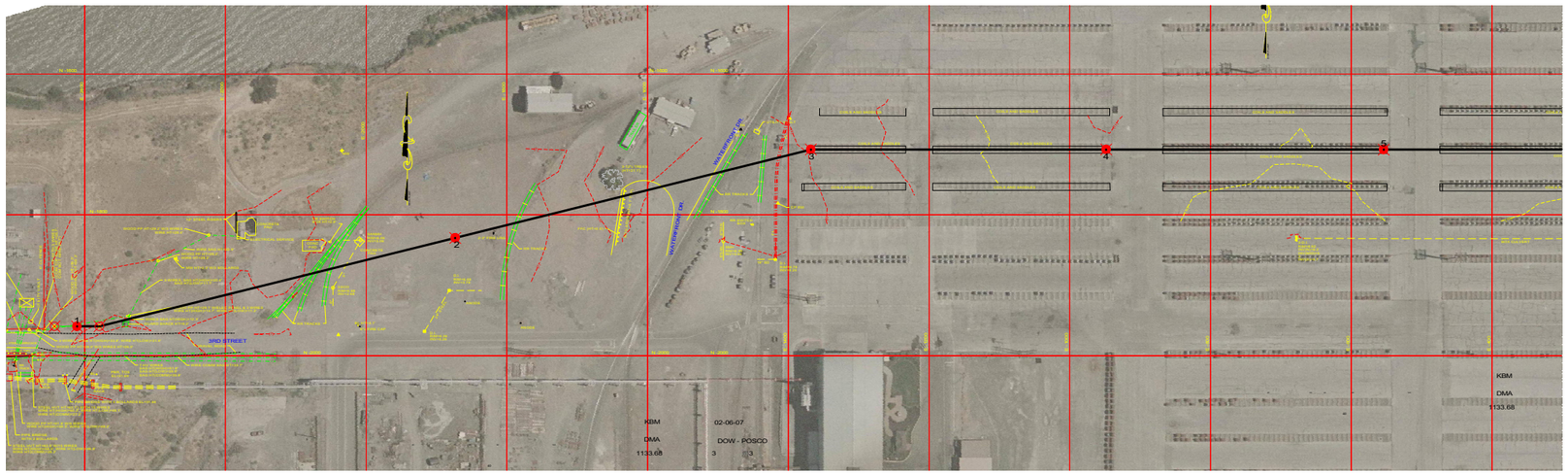
2.1.2.2 Overhead Line

The transmission system is a dual-circuit, 115-kV transmission line rated at 75 MVA, based on the load transformers connected to the system. The system is designed to carry the power to the Dow Pittsburg site on a single-circuit feed, should a fault occur or maintenance on one of the circuits be required.

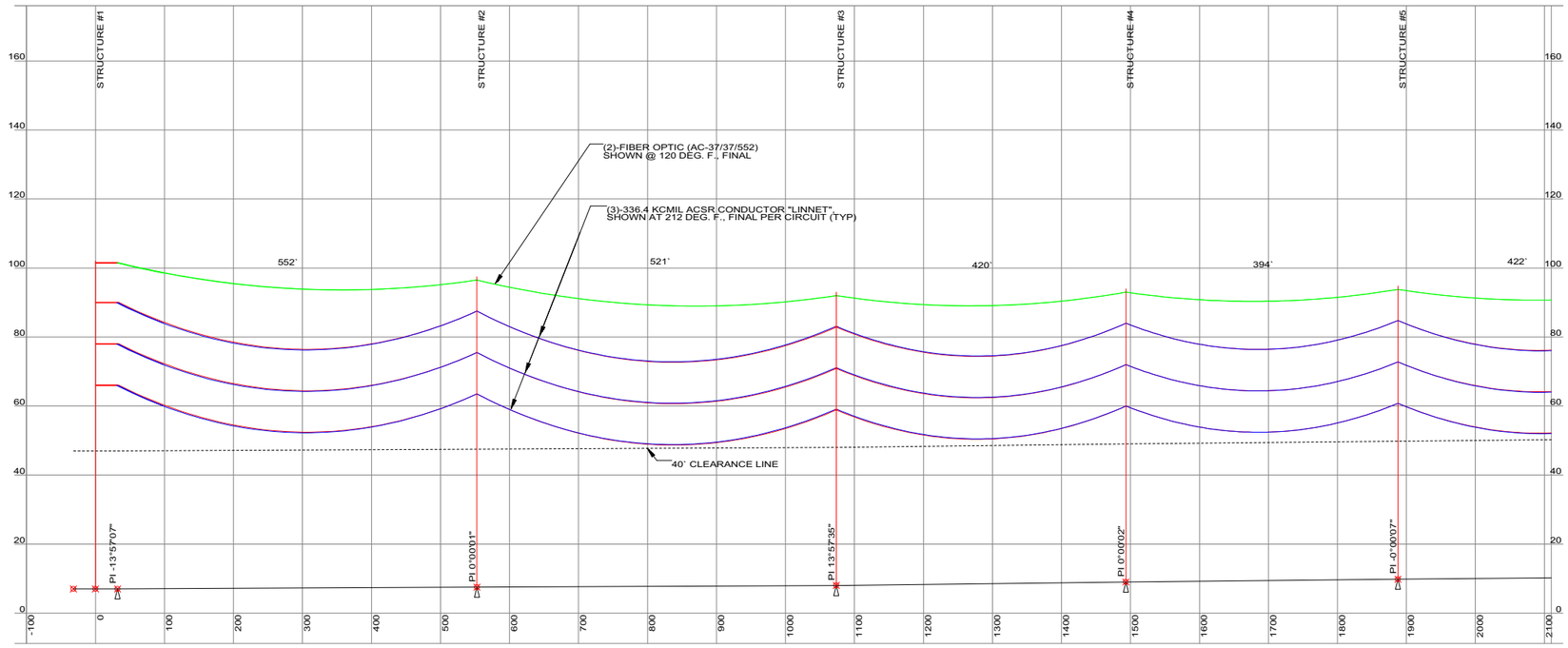
The transmission towers will be of tubular design, tapering from 36-inches in diameter at the top to 75-inches in diameter at the base. The towers will be made of carbon steel and hot dip galvanized steel, with steel cross arms (see Figure 2.1-3). The overhead conductor will be aluminum cable, 26/7 stranding, concentric lay, 336.4 kcmil ACSR, bare, 0.072-inch overall cable diameter, of the "Linnet" code-word type. The overhead conductor is rated at approximately 550 amps. Tower heights will be either 85 or 90 feet, depending on location.

The tower base design (foundation) is a pipe pile, 5/8th to 1 inches thick, 66 to 96 inches in diameter, and 35 to 45 feet in length. The entire length of the pile is coated inside and outside with polyurethane coating. The pipe pile will be driven 35 to 40 feet into the

POLE NO.	POLE TYPE	DESCRIPTION	EAST COORDINATES	NORTH COORDINATES
1	PS522P	2 CKT - 95' - TERM. STR.	-2410.89	-1958.46
2	PS102N	2 CKT - 90' - TANGENT	-1873.41	-1832.88
3	PS432M	2 CKT - 85' - DEADEND	-1367.92	-1707.30
4	PS102M	2 CKT - 85' - TANGENT	-948.23	-1707.36
5	PS102M	2 CKT - 85' - TANGENT	-553.85	-1707.42



PLAN VIEW



PROFILE VIEW

VERTICAL SCALE (1 IN = 20 FEET)

HORIZONTAL SCALE (1 IN = 100 FEET)

Source: InfraSource Dashiell, 2007

DESIGN DATA

1. NESC LIGHT LOADING DISTRICT.
2. G.O. 95 LIGHT LOADING DISTRICT
3. EXTREME WIND LOAD @ 90 MPH.

DESIGN LIMITS

1. CONDUCTOR, 3,600 LB. @ NESC LIGHT.
2. FIBER OPTIC, 35% ULT. STRENGTH @ 60° F, INITIAL.

LEGEND

- NEW POLE
- NEW LINE
- RAILROAD
- FENCELINE
- LIGHT TOWER
- EXISTING STRUCTURE

REFERENCE DRAWINGS

FIBER OPTIC B/M	88326A-DT0-02040
STEEL B/M	88326A-DT0-02500
BARE CONDUCTOR B/M	88326A-DT0-02540
TERMINATOR POLE	88326A-DT2-52001
TANGENT POLE	88326A-DT2-52002
DEADEND ANGLE POLES	88326A-DT2-52003
DEADEND ANGLE POLES	88326A-DT2-52004
SAG & TENSION DATA	88326A-DT4-00001

FIGURE 2.1-1A
PLAN AND PROFILE VIEW
SHEET 1

LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

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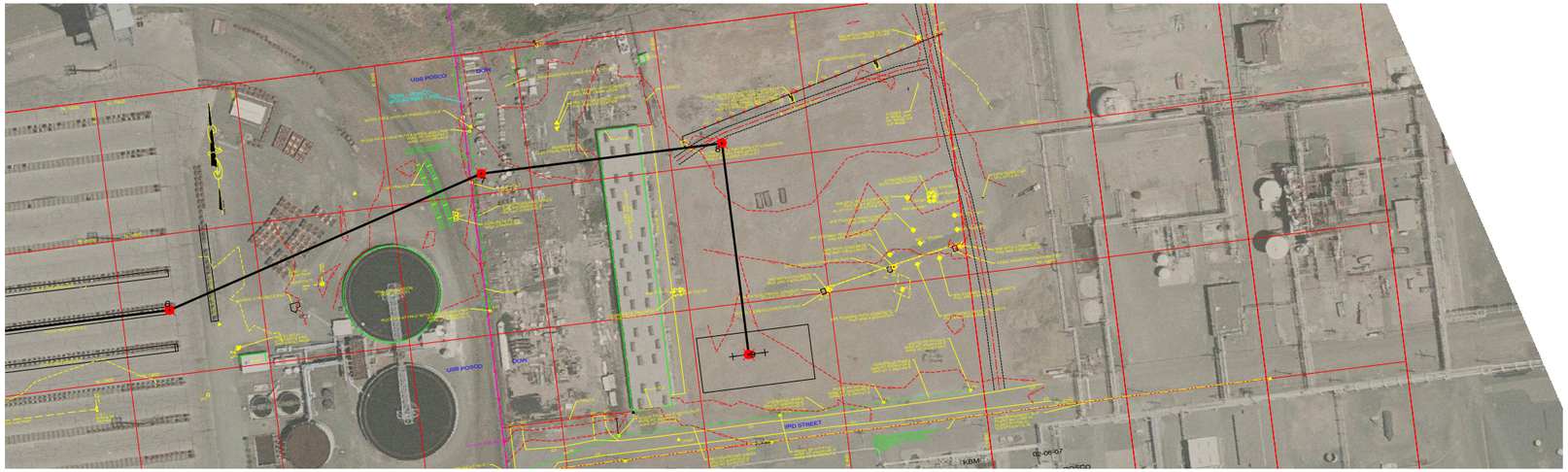
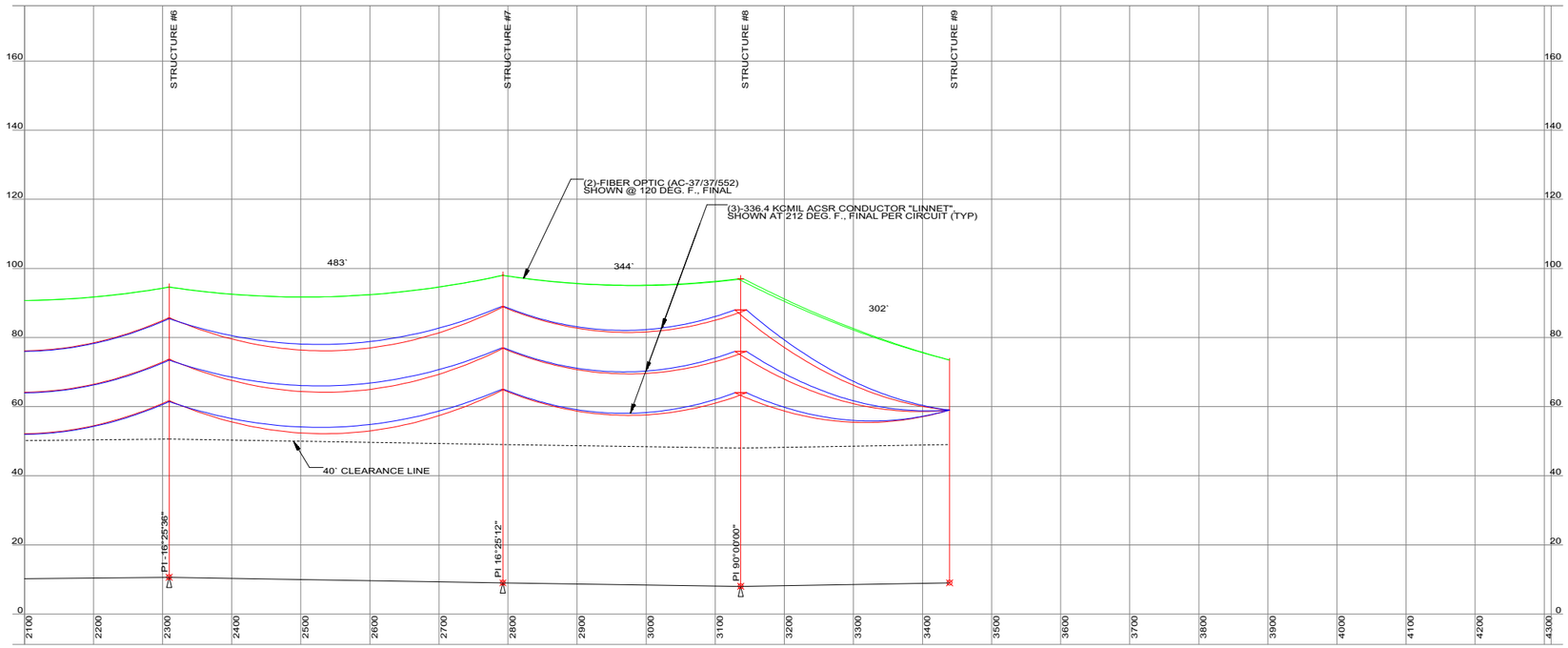
POLE NO.	POLE TYPE	DESCRIPTION	EAST COORDINATES	NORTH COORDINATES
6	PS432M	2 CKT - 85° - DEADEND	-132.15	-1707.47
7	PS432N	2 CKT - 90° - DEADEND	331.28	-1570.90
8	PS492N	2 CKT - 90° - DEADEND	675.50	-1570.90
9		SUB DEADEND		



PLAN VIEW



PROFILE VIEW

DESIGN DATA

1. NESC LIGHT LOADING DISTRICT.
2. G.O. 95 LIGHT LOADING DISTRICT
3. EXTREME WIND LOAD @ 90 MPH.

DESIGN LIMITS

1. CONDUCTOR, 3,600 LB. @ NESC LIGHT.
2. FIBER OPTIC, 35% ULT. STRENGTH @ 60° F, INITIAL.

LEGEND

- NEW POLE
- NEW LINE
- RAILROAD
- FENCELINE
- LIGHT TOWER
- EXISTING STRUCTURE

REFERENCE DRAWINGS

FIBER OPTIC B/M	88326A-DT0-02040
STEEL B/M	88326A-DT0-02500
BARE CONDUCTOR B/M	88326A-DT0-02540
TERMINATOR POLE	88326A-DT2-52001
TANGENT POLE	88326A-DT2-52002
DEADEND ANGLE POLES	88326A-DT2-52003
DEADEND ANGLE POLES	88326A-DT2-52004
SAG & TENSION DATA	88326A-DT4-00001

VERTICAL SCALE (1 IN = 20 FEET)
0 10 20 40 80

HORIZONTAL SCALE (1 IN = 100 FEET)
0 50 100 200 400

Source: InfraSource Dashiell, 2007

FIGURE 2.1-1B
PLAN AND PROFILE VIEW
SHEET 2
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

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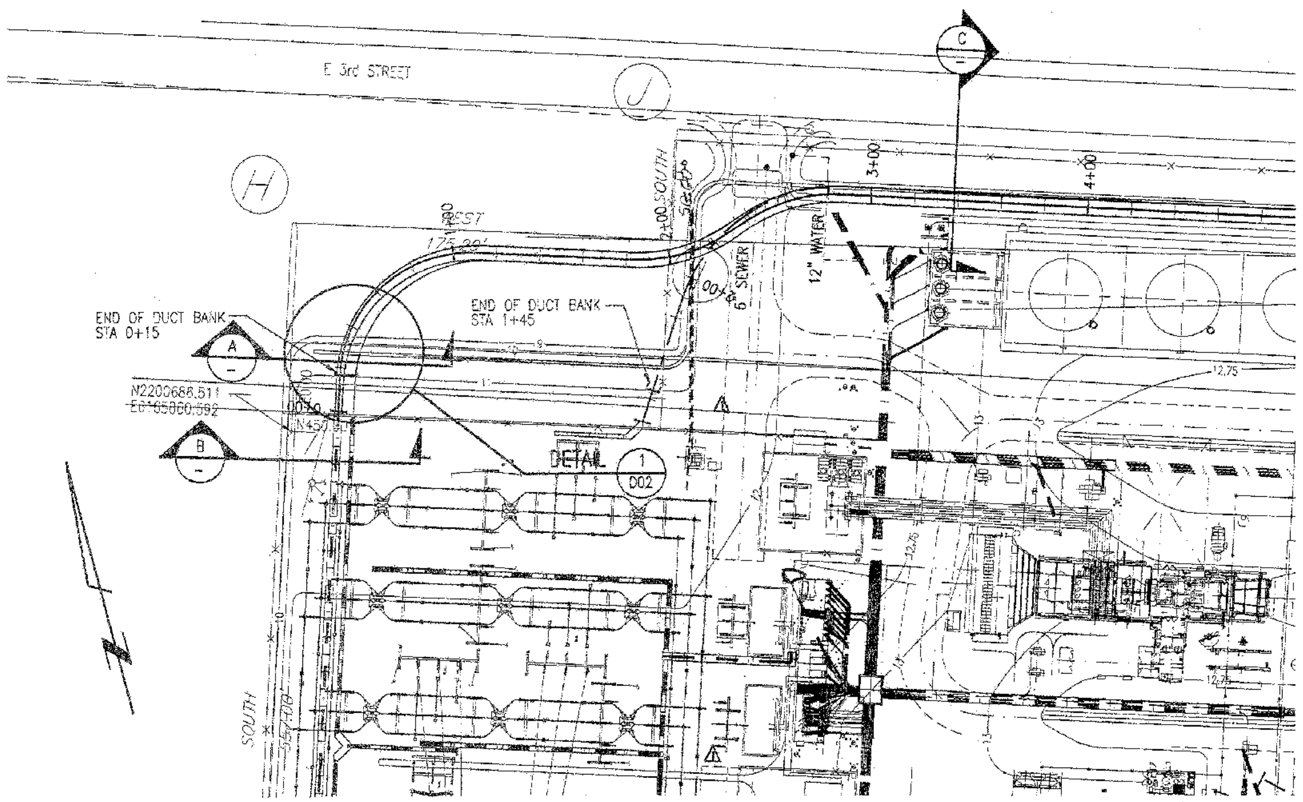
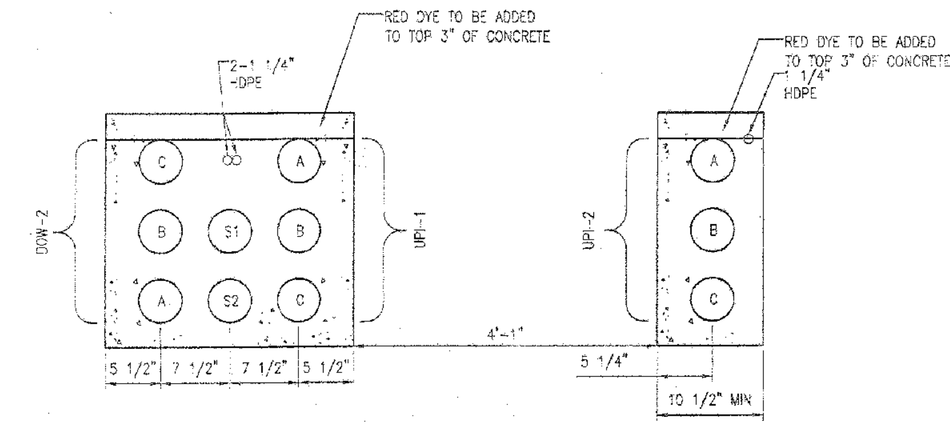
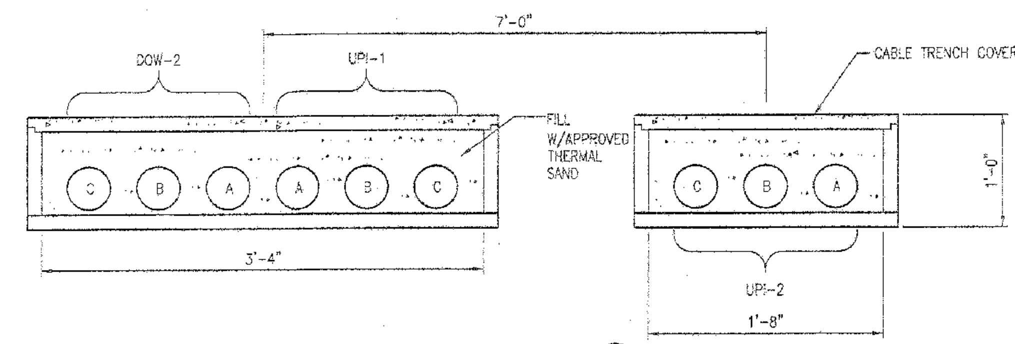


DUCT BANK ENTRY LAYOUT
SCALE 1" = 40'

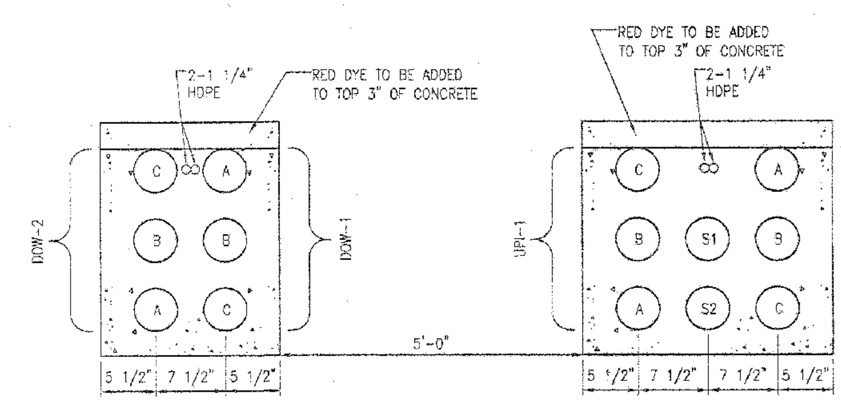


SECTION A
SCALE NTS



SECTION B
SCALE NTS
CABLE TRENCH CROSS SECTION
AT NW CORNER OF SWITCH YARD

FOR INFORMATION ONLY
AUG 17 2007



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CALPINE

SECTION C
SCALE NTS

C 61116

FIGURE 2.1-2A
DUCT BANK DETAILS
SHEET 1

LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

Source: Power Engineers, 2007

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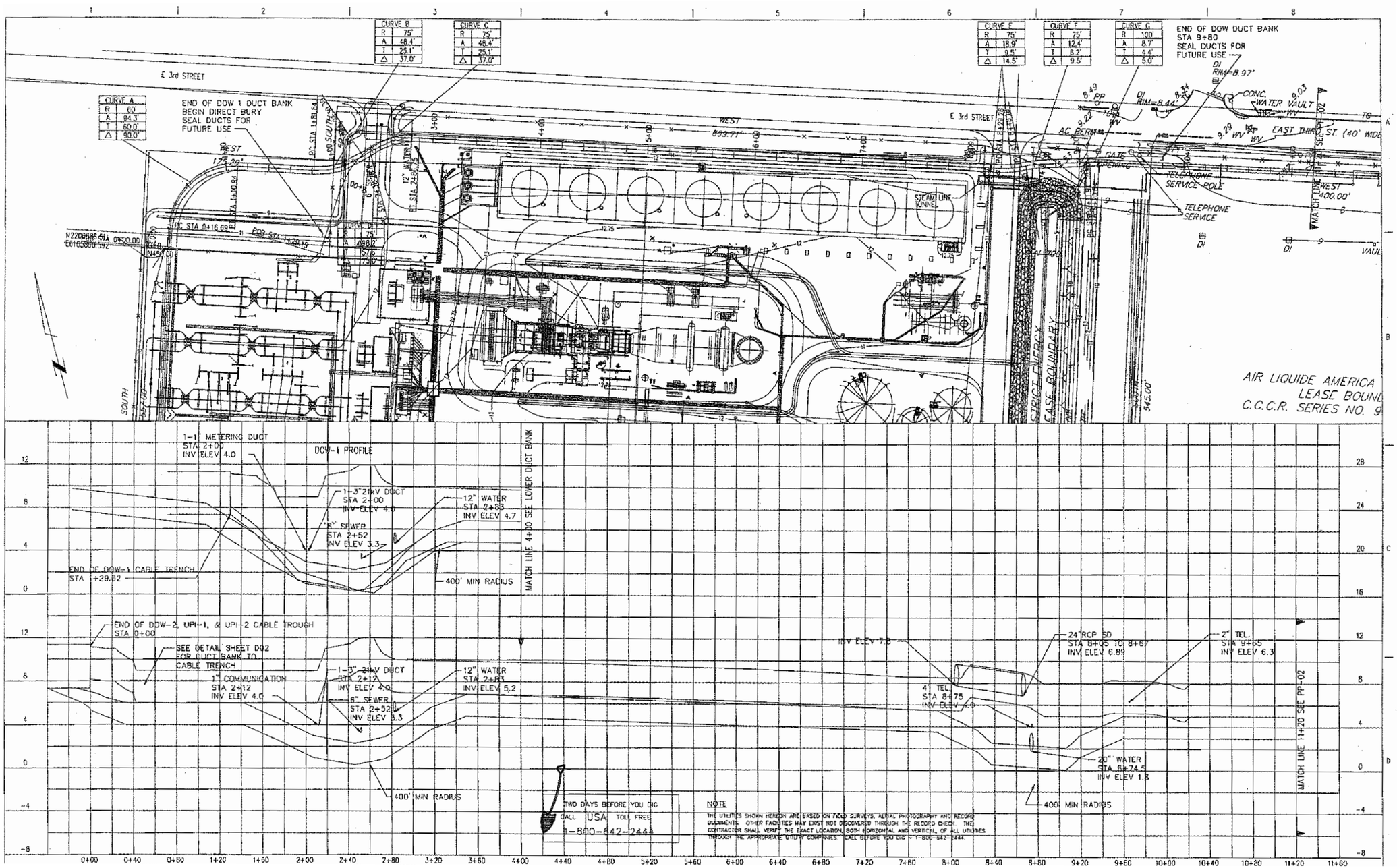
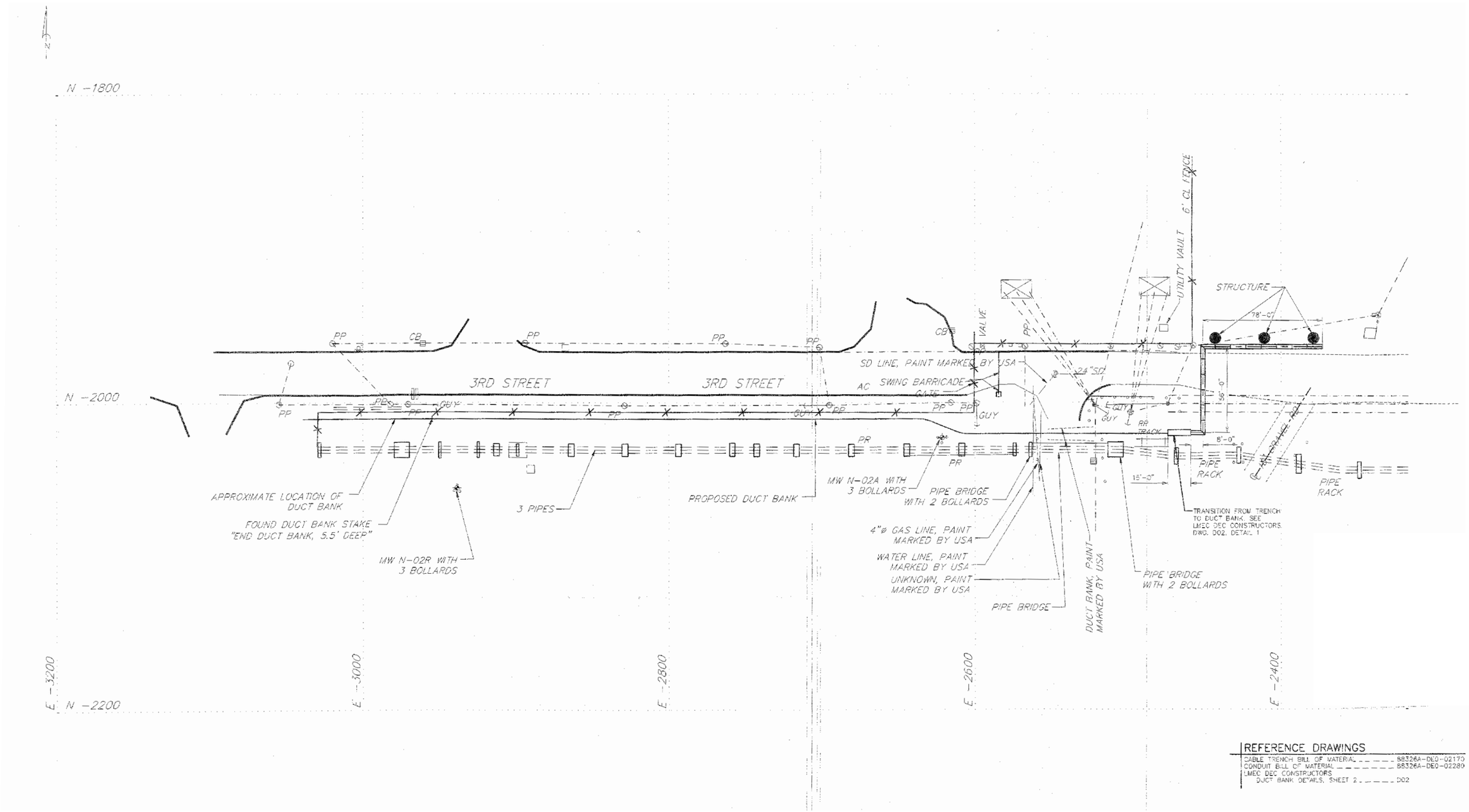


FIGURE 2.1-2B
DUCT BANK DETAILS
SHEET 2
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

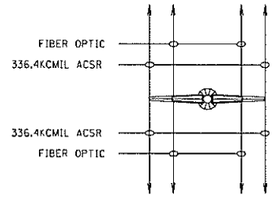
Source: Power Engineers, 2007



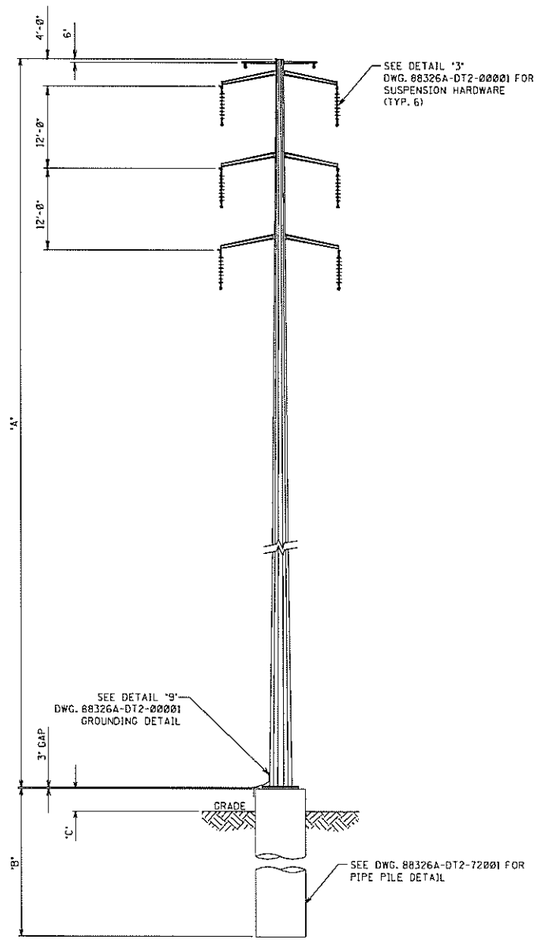
Source: InfraSource Dashiell, 2007

FIGURE 2.1-2C
DUCT BANK DETAILS
SHEET 3
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

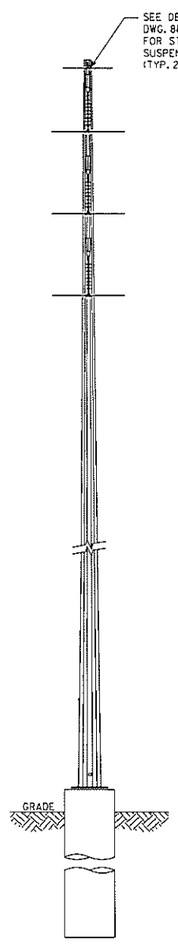
POLE NO.	POLE TYPE	DESCRIPTION	DIM 'A'	DIM 'B'	DIM 'C'
2	PS102N	2 CKT - 5° TANGENT POLE	90'-0"	35'-0"	3'-0"
4	PS102M	2 CKT - 5° TANGENT POLE	85'-0"	40'-0"	8'-0"
5	PS102M	2 CKT - 5° TANGENT POLE	85'-0"	40'-0"	8'-0"



PLAN



ELEVATION



SIDE VIEW

5° TANGENT POLE

REFERENCE DRAWINGS

STEEL POLE B/M	88326A-DT0-02571
POLE SETTING SPECIFICATION	88326A-DT0-04540
LINE HARDWARE DETAILS	88326A-DT0-15001
PLAN AND PROFILE	88326A-DT2-00001

Source: InfraSource Dashiell, 2007

FIGURE 2.1-3
TRANSMISSION POLE DESIGN
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

ES112007013SAC figure_2-1_3.ai 12/04/07 tdaus

ground. The top eight feet inside the pile will be cleared of any soil or material (if needed) to allow for installation of an anchor bolt cage to support the tower. Concrete will then be poured inside the pile around the anchor bolts to fill the top eight feet of pile. Figure 2.1-4 shows the tower base design.

2.1.2.3 Switchyard

The switchyard equipment will include 15-kV, metal-enclosed, arc-resistant switchgear installed in a pre-fabricated, steel, power control center including all protective relaying, metering, controls, and station service equipment typically in use in a substation. The switchyard will contain two regulating step-down power transformers and associated transmission line disconnect switches and primary and secondary connections. Figures 2.1-5a and 2.1-5b show the switchyard and switchyard control center designs, respectively.

2.1.2.4 Fiber Optic Line

The fiber optic line will be connected at the LMEC and Dow Pittsburg switchyards using standard fiber connection boxes (splice boxes and patch panels). It will be installed in the underground duct bank to the transition structure and the spliced to the overhead section. The overhead section will be an optical ground wire installed on the transmission towers in the shield position above the transmission line conductors (See Figure 2.1-3). The optical ground wire has the dual function of providing communications for the protective relaying, metering, and control circuits as well as providing overhead lightning protection for the circuits.

2.2 Project Construction

2.2.1 Construction Schedule

Construction will start soon after receiving the construction permit. It is anticipated that construction will start in the spring of 2008 and will continue for six to eight months.

2.2.2 Construction Workforce

The peak construction force will be 25 to 30 workers. The average workforce per day during construction will be 15 workers. There will be anywhere from 10 to 15 construction vehicles and equipment (bucket trucks, lift trucks, cranes, backhoes, pile driving rigs/hammers, pick-up trucks etc.) in use at different times during construction of the project.

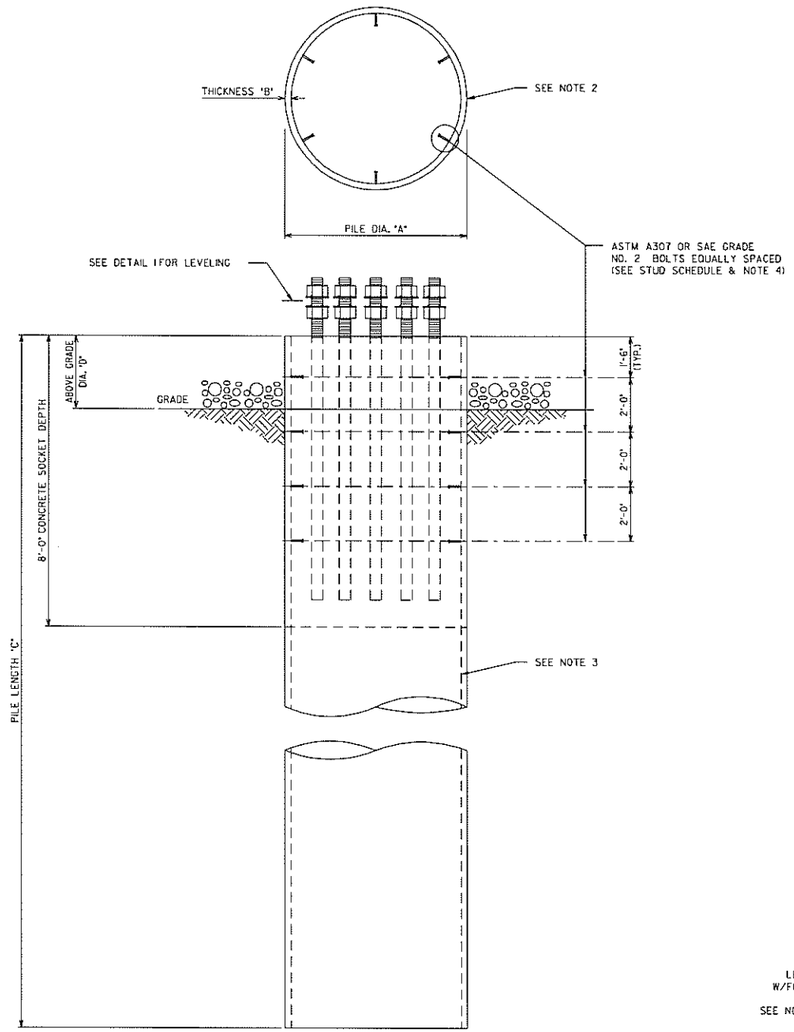
2.2.3 Construction Worker Parking and Laydown

There will be two construction worker parking and laydown areas located outside of the existing LMEC boundaries, and one parking and laydown area within the LMEC boundary. When the construction crew is working on the LMEC site installing the conductor in the existing duct bank, they will park within the LMEC boundary, either in existing parking spaces or north of the switchyard. When the construction crew is working on the duct bank and on the UPI property on the underground line and eastern portion of the overhead line, the parking and laydown area will be the empty graveled lot within the UPI property where Tower #2 is located. When the construction crew is working on the Dow Pittsburg property,

the laydown and worker parking area will be located on the vacant lot immediately east of Building 30, just north of the Dow switchyard site.

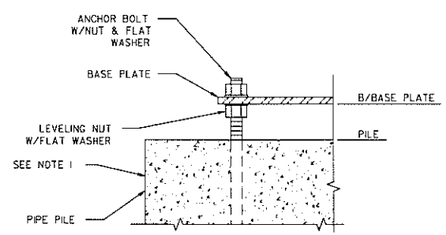
2.3 Transmission Line Operation

LMEC's operational workforce will not differ from that described in the AFC. Additional staff will not be required at LMEC to operate the transmission line. The new switchyard at Dow will employ one part-time operator.



PIPE PILE DETAIL

(SEE PIPE PILE SCHEDULE)



DETAIL "1"

TYP. LEVELING BASE DETAIL

PIPE PILE SCHEDULE

FDN. NO.	PILE ITEM NO.	PILE DIA. "A"	THICKNESS "B"	PILE LENGTH "C"	ABOVE GRADE "D"	T.O.C. FT.	CONCRETE CU. YARDS	ANCHOR BOLT PLAN NO.
1A	P84407	84"	7/8"	40'-0"	-	8.00'	14.25	PLAN "1"
1B	P84407	84"	7/8"	40'-0"	-	8.00'	14.25	PLAN "1"
1C	P84407	84"	7/8"	40'-0"	-	8.00'	14.25	PLAN "1"
2	P66355	66"	5/8"	35'-0"	3.00'	-	9.00	PLAN "2"
3	P84455	84"	7/8"	45'-0"	8.00'	-	14.25	PLAN "3"
4	P66405	66"	5/8"	40'-0"	8.00'	-	9.00	PLAN "4"
5	P66405	66"	5/8"	40'-0"	8.00'	-	9.00	PLAN "4"
6	P84455	84"	7/8"	45'-0"	8.00'	-	14.25	PLAN "5"
7	P84407	84"	7/8"	40'-0"	3.00'	-	14.25	PLAN "6"
8	P96508	96"	1"	50'-0"	3.00'	-	19.00	PLAN "7"
9A	P66355	66"	5/8"	35'-0"	-	10.00'	9.00	PLAN "8"
9B	P66355	66"	5/8"	35'-0"	-	10.00'	9.00	PLAN "8"
9C	P66355	66"	5/8"	35'-0"	-	10.00'	9.00	PLAN "8"
9D	P66355	66"	5/8"	35'-0"	-	10.00'	9.00	PLAN "8"

* SEE DWG. 88326A-DT2-72002 FOR ANCHOR BOLT PLANS

STUD SCHEDULE

PILE DIA. "A"	STUD	NO. OF STUDS PER ROW	TTL NO. OF STUDS REQ'D
66"	3/4x3"	6	24
84"	3/4x3"	8	32
96"	3/4x3"	8	32

NOTES

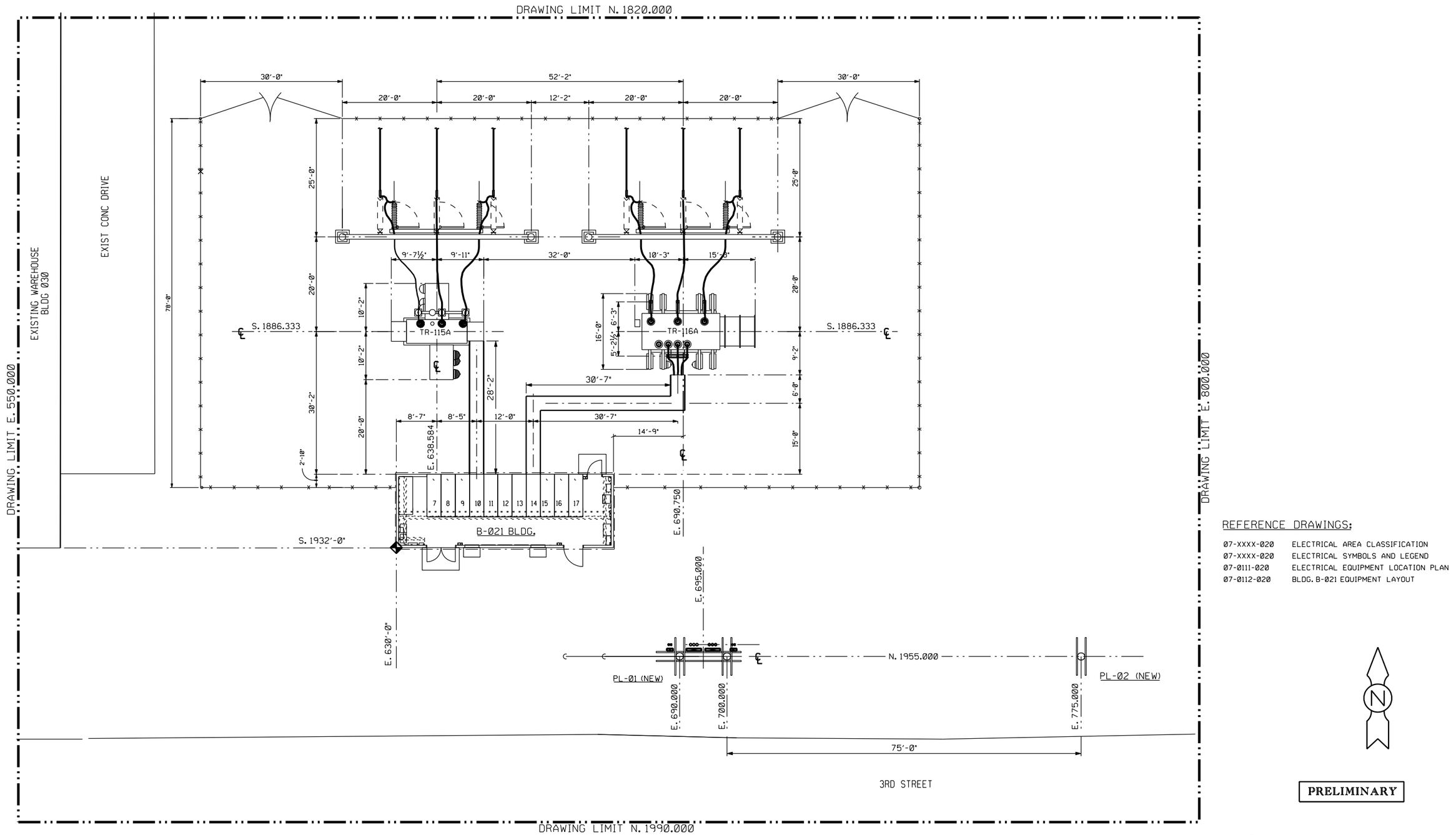
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS PER ASTM C-94.
2. STEEL SHALL BE 36 KSI MINIMUM YIELD STRENGTH.
3. COATING SHALL BE 15 MILS OF POLYURETHANE CORROCOTE-II CLASSIC OR ENGINEER APPROVED EQUAL THE ENTIRE LENGTH OF PILE.
4. STUDS SHALL BE HEX HEAD BOLTS OF APPROVED GRADE AND SPECIFIED SIZE BOLT SHANK LENGTH SHALL EQUAL REQUIRED STUD LENGTH.

REFERENCE DRAWINGS

PIPE PILE B/M ____ 88326A-DT0-02580
STEEL PIPE PILE FAB. SPEC. ____ 88326A-DT0-04520
ANCHOR BOLT PLANS ____ 88326A-DT2-72002

FIGURE 2.1-4
TOWER BASE DESIGN
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

Source: InfraSource Dashiell, 2007



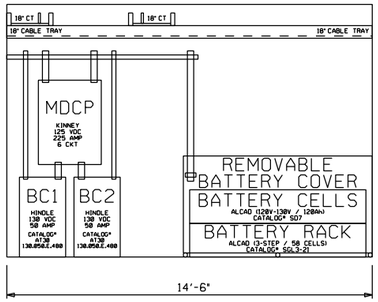
REFERENCE DRAWINGS:

07-XXXX-020	ELECTRICAL AREA CLASSIFICATION
07-XXXX-020	ELECTRICAL SYMBOLS AND LEGEND
07-0111-020	ELECTRICAL EQUIPMENT LOCATION PLAN
07-0112-020	BLDG. B-021 EQUIPMENT LAYOUT

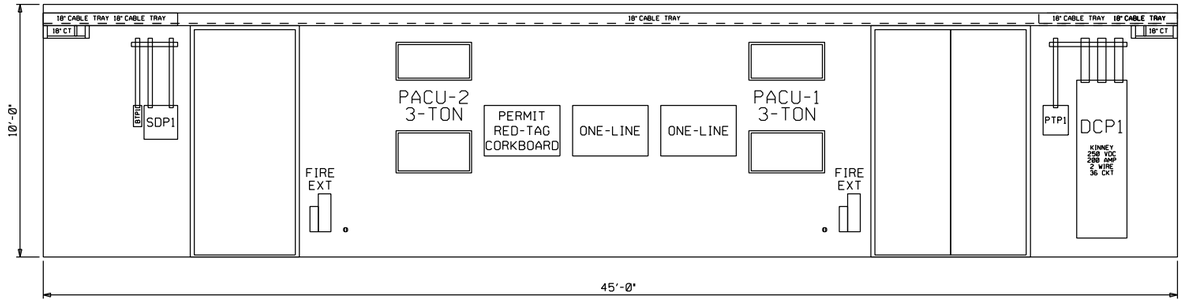
PRELIMINARY

FIGURE 2.1-5A
DOW SWITCHYARD DESIGN
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

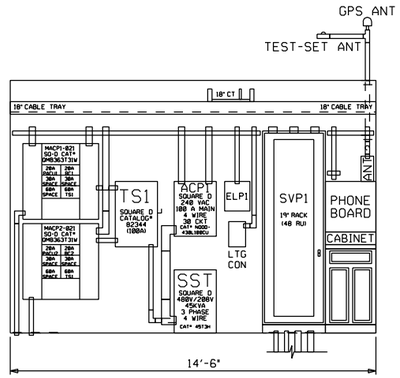
Source: InfraSource Dashiell, 2007



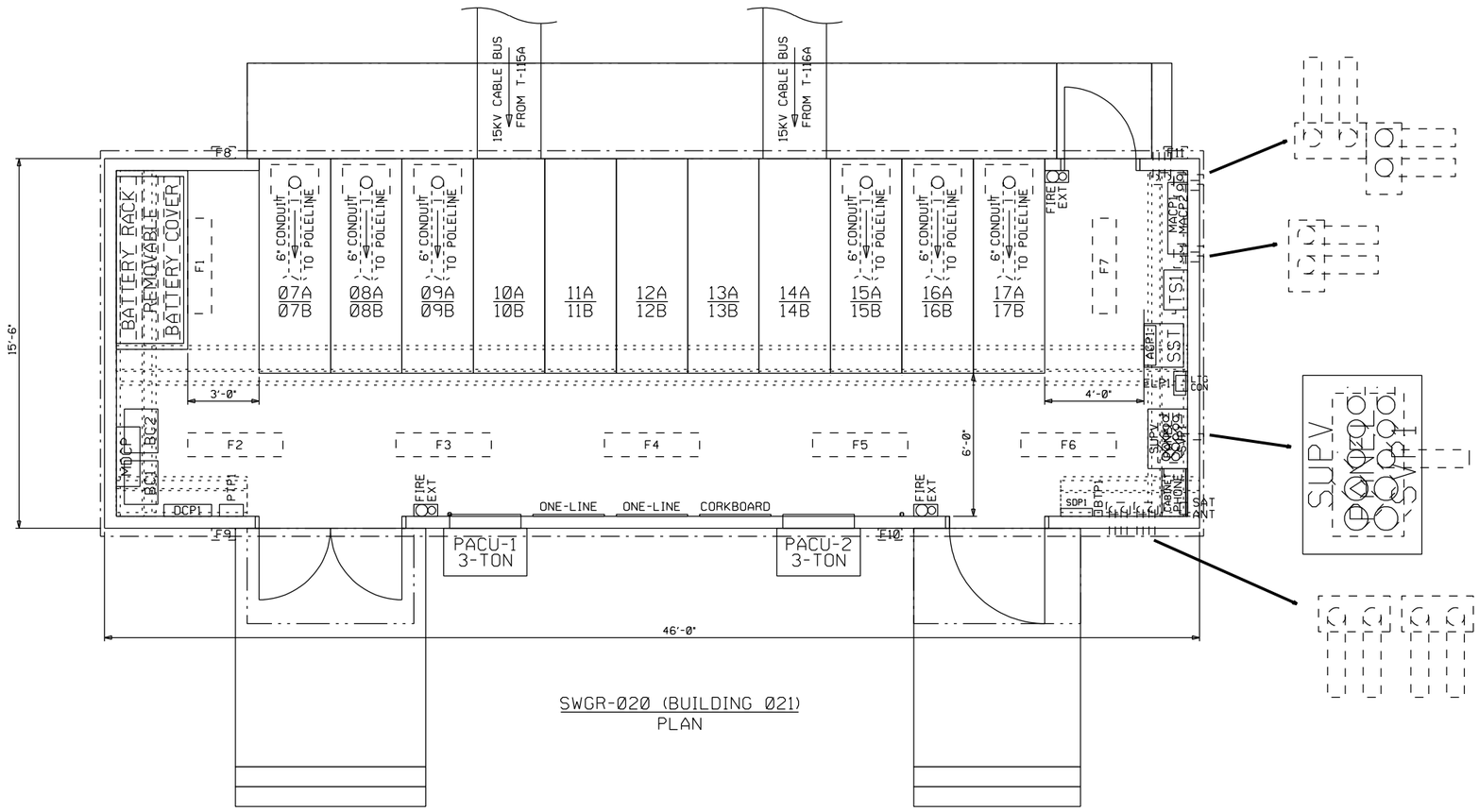
WEST WALL (BUILDING 021)
LOOKING WEST



SOUTH WALL (BUILDING 021)
LOOKING SOUTH



EAST WALL (BUILDING 021)
LOOKING EAST



SWGR-020 (BUILDING 021)
PLAN

FIGURE 2.1-5B
DOW SWITCHYARD BUILDING
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

SECTION 3.0

Environmental Analysis of Proposed Project Amendment

The following sections provide an environmental analysis for each of 14 different discipline areas that addresses: (1) significant changes to the project area environmental baseline if these changes have taken place since the certification was granted and have a bearing on the environmental impact analyses for the amended project, and (2) significant potential changes to environmental impacts of the project that would be a result of the new transmission line project. Each section includes an environmental analysis, followed by a list of any changes to the Conditions of Certification that are necessary because of the project Amendment changes, provided as a text mark-up.

The environmental disciplines are addressed in alphabetical order, as follows:

3.1 Air Quality
3.2 Biological Resources
3.3 Cultural Resources
3.4 Geology and Paleontology
3.5 Hazardous Materials Management
3.6 Land Use
3.7 Noise
3.8 Public Health
3.9 Socioeconomics
3.10 Soil and Water Resources
3.11 Traffic and Transportation
3.12 Visual Resources
3.13 Waste Management
3.14 Worker Safety and Fire Protection
3.15 Laws, Ordinances, Regulations, and Standards

3.1 Air Quality

This section presents the evaluation of emissions and impacts resulting from the construction and operation of the LMEC to Dow Pittsburg Transmission Line project as well as the proposed mitigation measures to be used to minimize emissions and impacts below established significance thresholds.

3.1.1 Environmental Baseline Information

As described in the AFC, the project is located within the San Francisco Bay Area air basin, and within the Bay Area Air Quality Management District (BAAQMD). Once in operation, the LMEC to Dow Pittsburg transmission line will not generate any regulated air pollutants, and therefore this portion of the project would not require permitting from the BAAQMD. The potential impacts of the project on air quality are temporary and short-term impacts related to construction and the use of construction vehicles. Detailed information about the Bay Area air basin and its air pollutant attainment status at the time of licensing is found in the AFC.

Construction of the LMEC to Dow Pittsburg Transmission Line is expected to start in spring 2008 and continue for six to eight months. The construction will involve grading and land clearing in preparation for tower base construction and grading and trenching in preparation for construction of the duct bank. This construction work will involve the use of diesel-powered equipment, including approximately ten to fifteen diesel vehicles/power equipment, such as bucket trucks, lift trucks, cranes, backhoes, pile driving rigs/hammers, and pick-up trucks in use at different times during construction of the project. Emissions from the transmission line and duct bank extension are discussed below.

3.1.2 Environmental Consequences

Exhaust emissions from construction equipment and heavy-duty diesel trucks would result in short-term emissions of ozone precursors including oxides of nitrogen (NO_x) and reactive organic compounds (ROG). Particulate matter emissions during construction would result in fugitive dust from activities such as soil disturbance and travel on unpaved roads, as well as mobile source exhaust particulate emissions.

For construction projects of this nature, the BAAQMD emphasizes implementation of effective control measures and does not require detailed quantification of construction emissions (BAAQMD, 1999). According to the BAAQMD California Environmental Quality Act (CEQA) Guidelines, implementation of the mitigation measures identified in the CEQA Guidelines (see Mitigation Measures) would reduce fugitive PM_{10} emissions during construction. However, these measures would not address exhaust emissions of NO_x or ROG. Construction equipment emissions (NO_x and ROG) are included in the emissions inventory that is the basis for the regional air quality plans and are not expected to impede attainment or maintenance of the ozone standards in the Bay Area (BAAQMD, 1999). Therefore, short-term air quality impacts from construction of the project would be less than significant.

Emission estimates for site grading/land clearing and off-road construction equipment were calculated using URBEMIS2007 9.2.2. Emissions from on-road vehicles were calculated

using EMFAC 2007. A summary of the expected emissions from the construction of the transmission line and duct bank extension is provided in Table 3.1-1. Calculation spreadsheets are included in Appendix 3.1.

TABLE 3.1-1
Summary of Construction Emissions (tons per year)

Construction Phase	ROG	NO_x	PM_{10}	$PM_{2.5}$
Grading/Land Clearing*	0.38	3.26	2.77	0.66
Transmission Line Construction Equipment	0.40	3.71	0.17	0.16
Transmission Line On-Road Trucks	0.05	0.17	0.01	0.01
Total Project Emissions (tons)	**0.83**	**7.14**	**2.95**	**0.83**

* Estimated footprint for all construction activities is 5.4 acres.

The LMEC to Dow Pittsburg Transmission Line will transmit power generated at the LMEC for use by Dow. As such, it will replace the power currently generated by the Calpine Pittsburg Power Plant. In this way, the transmission line will enable the reduction of emissions including greenhouse gases that contribute to global warming, because it will result in the decommissioning of older technology that emits larger quantities of criteria pollutants and greenhouse gases. The emissions from LMEC will not increase due to this project.

3.1.3 Mitigation Measures

The existing measures per the Conditions of Certification will be adequate and adopted for the revised project and construction plans. Additional mitigation measures (beyond those of the Commission Decision) are not required for this Amendment.

3.1.4 Consistency with LORS

The construction and operation of the transmission line, as amended, will conform with all applicable LORS related to air quality.

3.1.5 Conditions of Certification

This Amendment does not require changes to the Air Quality Conditions of Certification.

3.1.6 References

Bay Area Air Quality Management District (BAAQMD). 1999. *BAAQMD CEQA Guidelines; Assessing the Air Quality Impacts of Projects and Plans*. December.

3.2 Biological Resources

3.2.1 Environmental Baseline Information

The proposed transmission line is located in the Delta subsection of the Great Valley ecological region (Miles and Gouday, 1997). This area is characterized by a low, nearly level plain at the confluence of the Sacramento and San Joaquin Rivers. The project area is located in an industrial area on the north side of Pittsburg, California. New York Slough is located between approximately 260 and 370 feet north of the proposed alignment and Brown's Island is located approximately 1,000 feet to the north. The transmission line would be located in developed industrial areas and open areas associated with the UPI steel mill and the Dow Pittsburg plant. Regionally the climate is moderate with annual temperatures ranging between 37 ˚F and 91 ˚F. Average annual precipitation is 13.3 inches, the majority of which falls between November and March. Soils in the project area have been mapped as Clear Lake Clay, which is described as natural to moderately alkaline (NRCS, 2007; 1977).

3.2.1.1 Biological Surveys

Supplementary reconnaissance-level field surveys were performed by CH2M HILL biologist Russell Huddleston on November 1, 2007. This survey focused on characterization of the vegetation communities and the potential for wetlands, wildlife habitats and special-status species to occur in the vicinity of the proposed transmission line. A resume indicating Mr. Huddleston's qualifications are provided in Appendix 3.2.

The field surveys were aided by aerial photographs, which helped identify land uses on the site and surrounding areas. The presence or potential presence of sensitive biological resources was determined from the former biological studies (Woodward-Clyde, 1988), the 2007 field survey, and natural resource agency databases (CDFG, 2007). A list of plant species and wildlife observed during the 2007 biological surveys is included in Table 3.2-1. A list of wildlife species observed during the 2007 biological surveys is included in Table 3.2-2.

Vegetation communities, habitats and land use in the project area have not significantly changed from those described in the 1998 AFC and include disturbed annual grassland, open gravel and industrial areas (Figure 3.2-1). The disturbed annual grassland is characterized largely by non-native species such as rip-gut brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), yellow star-thistle (*Centaurea solstitialis*) and stinkwort (*Dittrichia graveolens*). Common native species in this area included western ragweed (*Ambrosia psilostachya*) and common gumplant (*Grindelia camporum*). Open gravel areas (also includes some industrial facilities such as railroad tracks, paved areas and small buildings) are largely devoid of vegetation. A few scattered patches of saltgrass (*Distichlis spicata*) and Russian thistle (*Salsola tragus*) are present in the open gravel area on the east side of the alignment. A few cottonwood trees are present along the upper banks of New York Slough, and a small clump of Peruvian peppertrees are present near the UPI office buildings. Industrial areas include LMEC, the Koch Carbon petroleum coke storage facility, UPI and the Dow Pittsburg plant. Very little wildlife was observed during the surveys and what was observed included common species (Table 3.2-3).

TABLE 3.2-1
Plant Species Observed During the Biological Reconnaissance Visit

Common Name	Scientific Name	Location
Plants		
Bermuda grass	*Cynodon dactylon*	Common throughout ruderal grassland on the west side of the UPI buildings
cheeseweed	*Malva* sp.	Sparse in open areas associated with ruderal grassland on the west side of the UPI buildings
common gumplant	*Grindelia camporum*	Common throughout ruderal grassland on the west side of the UPI buildings
cottonwood	*Populus fremontii*	Along the south side of New York Slough on the northwest side of the Dow Pittsburg Plant
English plantain	*Plantago lanceolata*	Scattered throughout ruderal grassland on the west side of the UPI buildings
fennel	*Foeniculum vulgare*	Sparse in the ruderal grassland on the west side of the UPI buildings
fireweed	*Epilobium* sp.	Scattered throughout ruderal grassland on the west side of the UPI buildings
Himalayan blackberry	*Rubus discolor*	Scattered patches growing among the debris on the west side of the old building on the Dow Pittsburg Plant
Johnson grass	*Sorghum halepense*	Scattered throughout ruderal grassland on the west side of the UPI buildings
mustard	*Brassica* sp.	Scattered throughout ruderal grassland on the west side of the UPI buildings
perennial pepperweed	*Lepidium latifolium*	Scattered throughout ruderal grassland on the west side of the UPI buildings
prostrate knotweed	*Polygonum aviculare*	Sparse in open gravel areas on the Dow Pittsburg Plant
rip-gut brome	*Bromus diandrus*	Common throughout ruderal grassland on the west side of the UPI buildings
Russian thistle	*Salsola tragus*	Sparse in open gravel areas on the Dow Pittsburg Plant
saltgrass	*Distichlis spicata*	Scattered in small patches in open gravel areas on the DOW site
sow thistle	*Sonchus* sp.	Sparse in the ruderal grassland on the west side of the UPI buildings
stinkwort	*Dittrichia graveolens*	Common throughout ruderal grassland on the west side of the UPI buildings
Western ragweed	*Ambrosia psilostachya*	Common throughout ruderal grassland on the west side of the UPI buildings
yellow star thistle	*Centaurea solstitialis*	Common throughout ruderal grassland on the west side of the UPI buildings

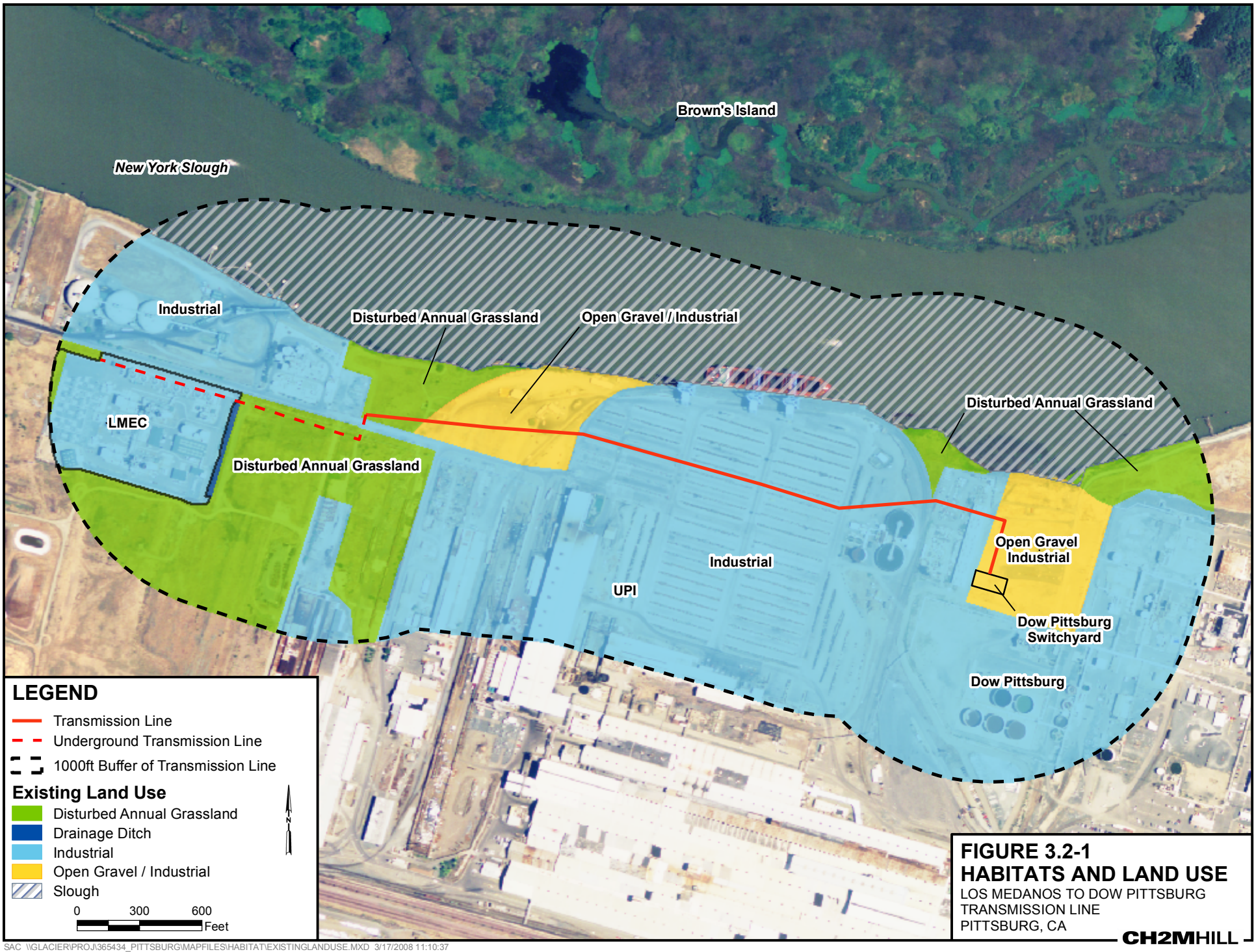


FIGURE 3.2-1
HABITATS AND LAND USE
LOS MEDANOS TO DOW PITTSBURG
TRANSMISSION LINE
PITTSBURG, CA

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SAC \\GLACIER\PROJ\365434_PITTSBURG\MAPFILES\HABITAT\EXISTINGLANDUSE.MXD 3/17/2008 11:10:37

saltmarsh common yellowthroat
saltmarsh common yellowthroat
Delta mudwort
Suisun song sparrow
Antioch Dunes evening-primrose
Mason's lilaeopsis
Suisun Marsh aster
Delta tule pea
Delta tule pea
Delta tule pea
Delta tule pea
Delta tule pea
Suisun song sparrow
California black rail
Suisun Marsh aster
Mason's lilaeopsis
Antioch Dunes evening-primrose
Mason's lilaeopsis
LMEC
Suisun song sparrow
Suisun Marsh aster
western pond turtle
Suisun song sparrow
UPI
DOW PITSBURG SWITCHYARD
big tarplant
DOW PITTSBURG
salt-marsh harvest mouse
vernal pool fairy shrimp
big tarplant
California linderiella
showy madia

LEGEND

- Overhead Transmission Line
- Underground Transmission Line
- Property Boundaries
- 1 Mile Buffer

CNDDB November 2007

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)

CA Dept. of Fish and Game, Biogeographic Data Branch, California Department of Fish and Game's Biogeographic Data Branch.

0 750 1,500 Feet

FIGURE 3.2-2
SPECIAL-STATUS SPECIES RECORDED IN THE PROJECT AREA
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CA

CH2MHILL

SAC \\GLACIER\PROJ\365434_PITTSBURG\MAPFILES\HABITAT\CNDDB_1MI.MXD 3/17/2008 11:17:26

TABLE 3.2-2
Wildlife Species Observed During the Biological Reconnaissance Visit

Common Name	Scientific Name	Location
Birds		
barn swallow	*Hirundo rustica*	Observed around old buildings on the west side of the Dow Pittsburg Plant
belted kingfisher	*Megaceryle alcyon*	Observed in Cotton wood tree along New York Slough, northwest side of the Dow Pittsburg Plant
Mammals		
Black-tailed jackrabbit	*Lepus californicus*	Observed on the west side of the UPI buildings in ruderal grassland area
Reptiles		
Western fence lizard	*Sceloporus occidentalis*	Around old building on the west side of the Dow Pittsburg Plant

3.2.1.2 Special-status Species

A search of the California Natural Diversity Database for the Antioch North and Honker Bay U.S. Geological Survey Quadrangles identified a total of 54 special-status species in the vicinity of the project area (CDFG, 2007). A total of 14 special-status plant species have been reported to occur within one mile of the proposed transmission line (Figure 3.2-2). The majority of these occurrences are found on Brown's Island and other brackish marsh habitats including the Dow Wetlands.

Special-status Plants

Results from the data base search identified a total of 21 special-status plant species of which four are federally-listed threatened or endangered. The other 17 species are considered to be rare, threatened, or endangered in California, but have not been formally listed (Table 3.2-3). As with the original assessment in the 1998 AFC, habitat for special-status plant species is considered to be extremely poor due the limited amount of highly disturbed and fragment annual grassland in the immediate project area. No rare plants have been reported from the proposed project area and no special-status species were noted during the 1998 or 2007 site surveys. Therefore the proposed project is not expected to adversely affect any special-status plant species.

TABLE 3.2-3
Special-Special-Status Plants Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State/ CNPS Status	Habitat Description	Potential for Species to Occur
Arctostaphylos auriculata	Mt. Diablo manzanita	--/--/1B.3	Found on sandstone in chaparral communities at elevations of 135-650 meters. Blooms from January to March.	None – no suitable habitat present.

TABLE 3.2-3
Special-Special-Status Plants Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State/ CNPS Status	Habitat Description	Potential for Species to Occur
Astragalus tener var. *tener*	Alkali milk-vetch	--/--/1B.2	Occupies alkaline, adobe clay soils in valley and foothill grasslands and vernal pools. Blooming period is from March to June.	Very Low – limited poor quality habitat present.
Atriplex joaquiniana	San Joaquin spearscale	--/--/1B.2	Alkaline soils of chenopod scrub, meadows and seeps, and valley and foothill grassland communities. Elevations range from 1 to 320 meters. Bloom period is from April to October.	Very Low – limited poor quality habitat present.
Blepharizonia plumosa	Big tarplant	--/--/1B.1	Valley and foothill grassland communities at elevations of 30 to 505 meters. Bloom period is from July to October.	Very Low – limited poor quality habitat present.
Cordylanthus mollis ssp. *mollis*	Soft birds's-beak	FE/CR/1B.2	Coastal marshes and swamps at elevations from 0 to 3 meters. Bloom period is from July to November.	None – no suitable habitat present.
Crypthantha hooveri	Hoover's cryptantha	--/--/1A	Occupies sandy soils of valley and foothill grassland communities between elevations of 3 and 150 meters. Bloom period is from April to May	None – no suitable habitat present.
Downingia pusilla	Dwarf downingia	--/--/2.2	Mesic areas of valley and foothill grasslands and vernal pool communities. Elevations range from 1 to 445 meters. Bloom period is March to May.	None – no suitable habitat present.
Eriogonum truncatum	Mt. Diablo buckwheat	--/--/1B.1	Sandy soils of chaparral, coastal scrub, valley and foothill grassland communities. Elevations range from 105 to 600 meters. Bloom period is from April to November.	None – no suitable habitat present.
Erodium macrophylla	Round-leaved filaree	--/--/1B.1	Clay soils of cismontane woodland, valley and foothill grassland communities. Elevations range from 15-1200 meters.	Very Low – limited poor quality habitat present.
Erysimum capitatum var. angustatum	Contra Costa wallflower	FE/CE/1B.1	Found in inland dunes at elevations of 3 to 20 meters. Bloom period is from March to July.	None – no suitable habitat present.
Eschscholzia rhombipetala	Diamond-petaled California poppy	--/--/1B.1	Only found on alkaline clay soils of valley and foothill grassland communities. Elevations range from sea level to 975 meters. Bloom period is March to April.	Very Low – limited poor quality habitat present.

TABLE 3.2-3
Special-Special-Status Plants Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State/ CNPS Status	Habitat Description	Potential for Species to Occur
Fritillaria liliacea	Fragrant fritillary	--/--/1B.2	Often found on serpentine soils of cismontane woodlands, also occurs in coastal prairie, coastal scrub, and valley and foothill communities. Elevations range from 3 to 410 meters. Bloom period is from February to April.	Very Low – limited poor quality habitat present.
Hesperolinon breweri	Brewer's western flax	--/--/1B.2	Mostly found on serpentine soils of chaparral, cismontane woodlands, and valley and foothill grassland communities. Elevations range from 30 to 900 meters. Bloom period is between May and July.	None – no suitable habitat present.
Isocoma arguta	Carquinex goldenbush	--/--/1B.1	Alkaline soils of valley and foothill grassland communities. Elevations range from 1 to 20 meters. Bloom period is August to December.	Very Low – limited poor quality habitat present.
Lasthenia conjugens	Contra Costa goldfields	FE/--/1B.1	Mesic conditions of cismontane woodlands and vernal pools, alkaline soils of playas. Elevations range from sea level to 470 meters. Bloom period is from March to June.	None – no suitable habitat present.
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	--/--/1B.2	Freshwater and brackish marshes and swamps. Elevations are restricted from sea level to 4 meters above sea level. Bloom period is May to September.	None – no suitable habitat present.
Lilaeopsis masonii	Mason's lilaeopsis	--/CR/1B.1	Freshwater, brackish marshes and swamps and riparian scrub communities. Elevations are sea level to 10 meters above sea level. Bloom period is from April to November.	None – no suitable habitat present.
Limosella subulata	Delta mudwort	--/--/2.1	Found in marshes and swamps from sea level to 3 meters above. Bloom period is May to August.	None – no suitable habitat present.
Madia radiata	Showy madia	--/--/1B.1	Cismontane woodland and valley and foothill grassland communities. Elevations range from 25 to 900 meters. Bloom period is from March to May.	Very Low – limited poor quality habitat present.
Oenothera deltoids ssp. *howellii*	Antioch Dunes evening-primrose	FE/CE/1B.1	Found in inland dunes at elevations of 0 to 30 meters above sea level. Bloom period is from March to September.	None – no suitable habitat present.

TABLE 3.2-3
Special-Special-Status Plants Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State/ CNPS Status	Habitat Description	Potential for Species to Occur
Symphyotrichum lentum	Suisun Marsh aster	--/--/1B.2	Brackish and freshwater marshes and swamps. Elevation is from 0 to 3 meters. Bloom period is May to November.	None- no suitable habitat present

FE = Federally endangered
CE = California endangered
CR = California rare
CNPS = California Native Plant Society
1A = Presumed extinct in California (Rediscovered in 2005 and proposed to be classified as 1B)
1B.1 = Rare, threatened, or endangered in California and elsewhere; seriously threatened in California (high degree/immediacy of threat).
1B.2 = Rare, threatened, or endangered in California and elsewhere; fairly threatened in California (moderate degree/immediacy of threat).
1B.3 = Rare, threatened, or endangered in California and elsewhere; not very threatened in California (low degree/immediacy of threats or no current threats known).

Special-status Wildlife

A total of 20 special-status animal species have been reported in the vicinity of the proposed project. Eleven of these species have been listed as threatened or endangered under the federal and/or state endangered species act. The remaining nine species are state species of concern (Table 3.2-4). Many of the special-status species identified in the region are associated with aquatic habitats including rivers, coastal salt marshes, wetlands and vernal pools. While the project is located just south of New York Slough and Brown's Island, no aquatic habitats would be affected by the proposed transmission line. Suitable habitat for grassland species such as the burrowing owl and white tailed kite is present, but very limited, fragmented and highly disturbed. Based on the survey performed in 1998 and again in November 2007, it was determined that suitable habitat for special-status wildlife was very limited and of extremely poor quality, therefore the project is not expected to adversely affect any special-status wildlife species.

TABLE 3.2-4
Special-Special-Status Wildlife Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State Status	Habitat Description	Potential for Species to Occur
Actinemys marmorata	Western pond turtle	--/CSC	Found in low elevation ponds and streams. Nesting habitat is in uplands with well-drained silty soil, usually within 400 meters. 1-13 eggs are laid in late spring within a shallow hole covered by dirt.	None – no suitable habitat
Agelaius tricolor	Tricolored blackbird	--/CSC	Most numerous in the Central Valley but also occurring in the foothills surrounding the valley and sparsely in the coastal regions. Colonia breeding species, usually in cattail marshes from March to April.	None – no suitable habitat

TABLE 3.2-4
Special-Special-Status Wildlife Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State Status	Habitat Description	Potential for Species to Occur
Ambystoma californiense	California tiger salamander	FT/CSC	A lowland species restricted to grasslands and low foothill regions of Central and Northern California. Breeding habitat in long-lasting vernal pools and seasonal wetlands. Dry season refugia are within 1.6 kilometers of breeding habitat and usually within small mammal burrows.	None – no suitable habitat
Apodemia mormo langei	Lange's metalmark butterfly	FE/--	Currently found only at Antioch Sand Dunes in Contra Costa County. All life stages are found close to the larval food plant naked buckwheat (*Eriogonum nudum* var. *auriculatum*). Eggs are deposited on leaves from August to September and hatch during rainy months. Larvae feed exclusively on naked buckwheat, whereas adults use a variety of species for feeding.	None – no suitable habitat
Archoplites interruptus	Sacramento perch	--/CSC	Warm water lacustrine species. Currently found in reservoirs and farm ponds in association with submerged, aquatic vegetation and other submerged objects. Spawning takes place from spring to early summer in water temperatures of 21.7 to 23.9 °C.	None – no suitable habitat
Asio flammeus	Short-eared owl	--/CSC	Winter migrant found primarily in the Central Valley and western Sierra Nevada foothills. Migrants usually arrive in September to October and depart in April. The species requires dense vegetation for roosting and resting cover. Nesting is usually on dry ground in depressions concealed by vegetation. Breeding is from early March through July with an incubation period of 21-28 days.	None – no suitable habitat
Athene cunicularia	Burrowing owl	--/CSC	Found in open, dry grasslands, desert habitats, and rangeland in association with burrowing mammals. Nesting season is late March to April with incubation lasting from 28-30 days.	Very Low – limited poor quality habitat present.

TABLE 3.2-4
Special-Special-Status Wildlife Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State Status	Habitat Description	Potential for Species to Occur
Branchinecta lynchi	Vernal pool fairy shrimp	FT/--	Found throughout the Central Valley from Shasta to Tulare County, along the Coast Range from Solano to Santa Barbara County, and in southern California in Riverside and San Diego Counties. Habitats are restricted to vernal pools and seasonal wetlands that fill in winter and dry in the spring (December to May).	None – no suitable habitat
Elanus leucurus	White-tailed kite	--/CFP	Habitats include marshes and open fields in the Central Valley and coastal plains close to irrigated agriculture fields. Nests are built in large trees with eggs being laid in February to April. Fledgling occurs between May and June and incubation is 28-32 days.	Very Low – limited poor quality habitat present.
Geothlypis trichas simuosa	Saltmarsh common yellowthroat	--/CSC	Inhabits marshes of the San Francisco and San Pablo bay areas. Nesting takes place in March on the ground, in tules, and in taller vegetation of marshes.	None – no suitable habitat
Hypomesus transpacificus	Delta smelt	FT/CT	Found only in the Sacramento-San Joaquin Estuary and have been reported as far upstream as the confluence of the American and Sacramento Rivers. They inhabit brackish water with salinity ranges of 2 ppm to 14 ppm. They migrate in late winter to early summer to spawn in freshwater.	None – no suitable habitat
Laterallus jamaicensis coturniculus	California black rail	--/CT	Inhabits saltwater, brackish, and freshwater marshes. Historical distribution records are from the San Francisco Bay area and the delta of the Sacramento and San Joaquin rivers. The majority are found in tidal salt marshes of san Pablo and Suisun Bays.	None – no suitable habitat
Lepidurus packardi	Vernal pool tadpole shrimp	FE/--	Found throughout the Central Valley from Shasta to Merced County. Habitats are restricted to vernal pools and seasonal wetlands that fill in winter and dry in the spring (December to May).	None – no suitable habitat
Melospiza melodia maxillaris	Suisun song sparrow	--/CSC	Occupies emergent vegetation and endemic to Suisun Bay. Nesting occurs in emergent vegetation well above the tidal fluctuation line. Egg-laying begins in late March and incubation is approximately 10-14 days.	None – no suitable habitat

TABLE 3.2-4
Special-Special-Status Wildlife Potentially Occurring Within the Project Area

Scientific Name	Common Name	Federal/State Status	Habitat Description	Potential for Species to Occur
Phalacrocorax auritus	Double-crested cormorant	--/CSC	Historically bred on coastal cliffs and offshore islands along the coast from Marin, south to San Diego County, and in the interior in northeastern California, Sacramento Valley, the San Joaquin Valley and the Salton Sea. Currently, the species is not known to breed in the Sacramento and San Joaquin valleys.	None – no suitable habitat
Rallus longirostris obsoletus	California clapper rail	FE/CE	Year-round inhabitant of tidal salt marshes of the San Francisco Bay. Breeding occurs between February and August.	None – no suitable habitat
Rana aurora draytonii	California red-legged frog	FT/CSC	Occurs from Shasta County south, to the Mexican border. Habitat is characterized by dense, shrubby riparian vegetation associated with deep, still or slow-moving water. Breeding occurs between November and April.	None – no suitable habitat
Reithrodontomys raviventris	Salt-marsh harvest mouse	FE/CE	Inhabits tidal and nontidal salt marshes of Suisun, San Pablo, and central and south San Francisco bays. Breeding takes place from spring to fall.	None – no suitable habitat
Sternula antillarum browni	California least tern	FE/CE	Neotropical migrant that nests along the Pacific coast from southern Baja California to San Francisco Bay. They arrive in California in April and depart in August, nesting in colonies on bare ground or sparsely vegetated substrates near the coast.	None – no suitable habitat
Thamnophis gigas	Giant garter snake	FT/CT	Inhabits rice fields, sloughs, and slow-moving waterways of the Central Valley. Hibernate from October to April and breed from late July to September.	None – no suitable habitat

FE = Federally endangered
FT = Federally threatened
CE = California endangered
CFP = California fully protected
CSC = California Species of Concern
CT = California threatened

3.2.2 Environmental Consequences

In the 1998 AFC, potential direct and indirect impacts to biological resources were evaluated to determine the permanent and temporary effects of project construction, operation, maintenance, and decommissioning of the LMEC project and supporting facilities. The following includes an evaluation of the impacts associated with the proposed LMEC to Dow Pittsburg Transmission Line.

3.2.2.1 Standards of Significance

As with the 1998 analysis, impacts on biological resources are considered significant if one or more of the following conditions could result from implementation of the proposed project:

- Cause a fish or wildlife population to drop below self-sustaining levels.
- Threaten to eliminate a plant or animal community.
- Substantially affect, reduce the number, or restrict the range of a unique, rare, or endangered species of animal or plant, or habitat of the species.
- Substantially diminish or reduce habitat for fish, wildlife or plants.
- Interfere substantially with the movement of resident or migratory fish or wildlife species.
- Substantially change the diversity of species, number of species of plants or animals.
- Introduce new species of plants or animals into an area, or act as a barrier to the normal replenishment of existing species.
- Increase the rate of use of any natural resources.
- Deteriorate existing fish or wildlife habitat.

3.2.2.2 Potential Impacts from the Additional Transmission Line

The new transmission line would be located in an area with exiting utility lines or in open developed areas. Construction of the transmission line would not result in any significant impacts to natural habitats or special-status species.

One potential impact of the transmission lines associated with LMEC at the time of licensing was the potential for bird mortality due to collision with the transmission lines. Condition of Certification BIO-6 took this potential impact into consideration by requiring a three-year monitoring program to determine whether or not bird mortality was, in fact, occurring after construction of the transmission lines. The program was discontinued, in accordance with Condition BIO-6 because the monitoring showed that the transmission lines were not causing significant bird mortality.

Wetlands and Waters of the United States

No jurisdictional wetlands or waters are present within the proposed transmission line alignment.

Noise

Noise impacts resulting from construction would be minimal relative to the existing noise levels associated with the adjacent industrial areas.

3.2.3 Mitigation Measures

The existing measures will be adequate and adopted for the revised project and construction plans. Additional mitigation measures (beyond those of the Commission Decision) are not required for this Amendment.

3.2.4 Consistency with LORS

The construction and operation of the transmission line, as amended, will conform with all applicable LORS related to biological resources.

3.2.5 Conditions of Certification

The project owner suggests the following change to Condition BIO-4 to make it consistent with current practice, allowing the Worker Environmental Awareness Training to be presented in the form of a video presentation.

BIO-4 The project owner shall develop and implement a Worker Environmental Awareness Program in which each of its own employees, as well as employees of contractors and subcontractors who work on the project site or related facilities (including any access roads, storage areas, transmission lines, water and gas lines) during construction and operation, are informed about biological resource sensitivities associated with the project.

Protocol: The Worker Environmental Awareness Program:

a) shall be developed by the designated biologist and consist of an on-site or classroom presentation **or video presentation** in which supporting written material is made available to all participants;

3.2.6 References

California Department of Fish and Game (CDFG). 2007. California Natural Diversity Data Base, *Rarefind* Version 3.1.0.

Scott Miles and Charles Goudey (editors). 1997. *Ecological Subregions of California. United States Department of Agriculture, Forest Service.* Pacific Southwest Division. R5-EM-TP-005. San Francisco.

Natural Resources Conservation Service (NRCS). 2007. Official Soils Series Description for Clear Lake Clay. U.S. Department of Agriculture. Available on line at: http://soils.usda.gov/technical/classification/osd/index.html

Natural Resources Conservation Service (NRCS). 1977. Soil Survey of Contra Costa County, California. U.S. Department of Agriculture.

Woodward-Clyde. 1998. A*pplication for Certification for the Los Medanos Energy Center.* Submitted to the California Energy Commission on June 15, 1998.

3.3 Cultural Resources

The addition of a transmission line linking LMEC with the Dow Pittsburg facility involves the potential disturbance of areas not previously considered in the LMEC licensing proceeding and these areas may contain significant cultural resources, including historic and prehistoric archaeological sites or historic buildings and structures. For this reason, the project owner conducted additional background research and field inventory to determine whether or not significant cultural resources are present or near the transmission line right-of-way.

3.3.1 Environmental Baseline Information

The project owner conducted a cultural resources field archaeological inventory and architectural reconnaissance of the project's area of potential effects. Pedestrian archaeological inventory was conducted for all elements of the project, including the underground duct bank, overhead transmission line, Dow switchyard, UPI laydown/parking area, and Dow laydown/parking area (Figure 3.3-1). Douglas Davy, Ph.D., RPA conducted the pedestrian field inventory. A resume for Dr. Davy is provided in Appendix 3.3A. The archaeological inventory was conducted by walking the transmission line right-of-way and laydown and parking parcels in systematic, linear transects spaced 20 meters apart or less where possible. For the purposes of this project, the right-of-way was defined as an area approximately 20 meters (60 feet) wide, within which most construction activities would take place. The exception to this is the duct bank, which will be sited in an area 7 meters wide, between an existing aboveground steam pipeline and the East 3rd Street roadside ditch.

Ground disturbance during project construction that may affect surficial or buried archaeological deposits will include excavation of the duct bank, drilling for transmission tower erection, and grading and leveling for the Dow switchyard foundation. Potential indirect effects of the transmission line would include changes to the setting of historic buildings and structures.

3.3.1.1 Literature Search

The project owner commissioned a cultural resources literature search to be conducted by the California Historical Resources Information System (CHRIS), Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park, California. This literature search (File number NWIC 07-0779) included all areas within one mile of the project site. Sources checked included the CHRIS's records of previously recorded cultural resources inventories and sites, as plotted on United States Geological Survey (USGS) topographic maps for the Honker Bay and Antioch 7.5-minute quadrangles, National Register of Historic Places, California Historic Landmarks, Office of Historic Preservation historic properties directory, and California Inventory of Historical Resources. The CHRIS also examined and provided copies of historical maps, including the 1869 Rancho Los Medanos Plat Map, 1870 General Land Office Plat Map, and 1908 USGS Antioch 15-minute quadrangle map. The complete record search results are included as Appendix 3.3B to this Amendment Petition. Because it contains potentially sensitive site locational information, however, this document has been filed under a request for confidentiality.

This literature reviewed indicated that five previous cultural resources studies have been filed with the CHRIS that have included part of the project area and an additional 18 studies have been completed for areas within a mile of the project site. The studies that have included parts of the project area are listed in Table 3.3-1. The studies within one mile are found in the record search report. Four of the five studies that included part of the project site were conducted as part of the LMEC AFC proceeding. Previous surveys included all of LMEC to Dow Transmission Line duct bank area and most of the overhead transmission line through the UPI property.

TABLE 3.3-1
Previous Cultural Resources Studies Including Portions of the Project Area

NWIC File #	Year	Author	Title	Comment
S-020465/S-024322	1998	Hatoff and Harrington	Pittsburg District Energy Facility Cultural Resources Technical Report (AFC Appendix K)	Survey for the Los Medanos Energy Center, included the duct bank route. Recorded P-07-0761, Pacific Coast Stone Company Site
S-024289	2001	URS Corporation	Los Medanos Energy Facility Final Cultural Resources Report	Final report for Los Medanos Energy Center
S-024322	1998	Morgan and Bachand	Pittsburg District Energy Facility Cultural Resources Technical Report (AFC Appendix K)	Part of the LMEC AFC
S-024323	1998	Morgan and Bachand	Pittsburg District Energy Facility Cultural Resources Technical Report (AFC Appendix K Supplement)	Addendum to the LMEC AFC
S-030579	2004	Busby	Cultural Resources Report, Delta Energy Center Site and Associated Linears, Cities of Pittsburg and Antioch, Contra Costa, California	AFC for the Calpine Delta project, SE of LMEC

The literature search also indicated that one cultural resources site, P-07-761 (CA-CCO-715H), the Pacific Coast Stone Company Site, has been recorded for a location near the project site, and an additional 21 cultural resources sites have been recorded within one mile of the project site. Most of the latter are buildings and structures located in residential neighborhoods near the project site.

The Pacific Coast Stone Company site was recorded during cultural resources inventories for the LMEC AFC (then called the Pittsburg District Energy Facility), specifically the steam pipeline that runs parallel and adjacent to the proposed LMEC to Dow Pittsburg Transmission Line duct bank route. This site is located near the southeast corner of Columbia Street and East 3rd Street, within the UPI property. According to the site record:

> This site consists of three discrete historic foundation remains. One is the foundation slab and footing foundations for some type of calcining operating, which predates 1911 (Feature C). The other two foundation features are associated with an abandoned PG&E power plant (Features A & B).

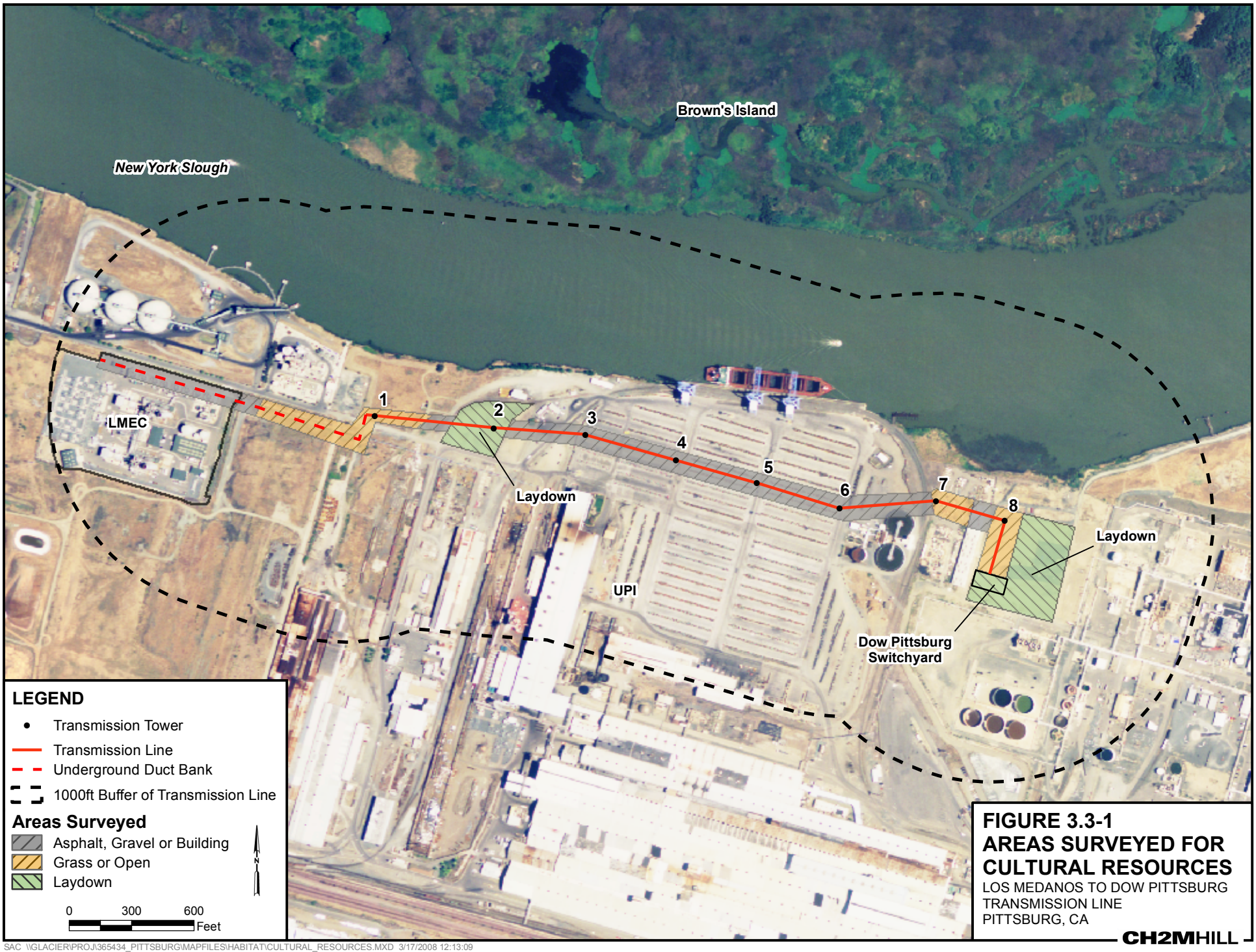

FIGURE 3.3-1
AREAS SURVEYED FOR CULTURAL RESOURCES
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CA

CH2MHILL

SAC \\GLACIER\PROJ\365434_PITTSBURG\MAPFILES\HABITAT\CULTURAL_RESOURCES.MXD 3/17/2008 12:13:09

The site record later clarifies that Features A and B are associated with an abandoned PG&E substation, not a power generating station.

Background research on the site shows that it appears on Sanborn insurance maps between 1911 and 1966. According to these records, the business at this site was named Pacific Coast Stone Company in 1911 and Hoff Magnesite Company in 1917. The site record states that this site fails to meet the National Register of Historic Places criteria for two principal reasons: (1) the site has been demolished to the extent that only damaged foundations remain and (2) buried archaeological deposits associated with the site that would be of archaeological value are unlikely to be present.

3.3.1.2 Archaeological Inventory

The pedestrian archaeological inventory for the LMEC to Dow Pittsburg Transmission Line was conducted on November 1, 2007. Figure 3.3-1 depicts the areas covered in the intensive pedestrian survey. The duct bank right-of-way was surveyed from the LMEC fenceline east to (now abandoned) Columbia Street in a single transect. The duct bank will be constructed between the existing aboveground LMEC to Dow steam pipeline and the UPI fenceline along East 3rd Street and this area is approximately 7 meters wide. This area was covered in dense grass and forbs at the time of survey and ground visibility was poor. The area had been previously surveyed as part of the AFC effort for the steam line and no archaeological deposits were found during either survey.

From a location east of Columbia Street, the transmission line will make a right-angle turn to the north under the roadway (that is an extension of East 3rd Street within the UPI property) and will surface on the north side of the road, to a transition structure. The remainder of the transmission line will be an overhead installation.

At the point at which the transmission route turns south, it is near the boundary of site of the Pacific Coast Stone Works (P-07-0761), described above. The remnants of the foundations at this site are south of the LMEC to Dow Pittsburg steam pipeline, and the new transmission line duct bank will be located between the road and the steam pipeline near the boundary, but not within the boundary, of this site.

Between the north side of East 3rd Street and the Dow switchyard, the transmission line will be overhead, with the conductors supported by poles. Ground visibility in the area between the north side of East 3rd Street, where the transmission line emerges from the duct bank, and the UPI rolled steel storage yard, is poor to moderately good between the site of the first tower and the area that will be used for construction laydown (the westernmost first 300 feet of the overhead transmission line route). Because the laydown yard is covered in gravel, there is no ground visibility in this location. One transmission support tower will be placed in this laydown yard (Tower #2). The UPI rolled steel yard (towers 3 through 6) was not surveyed for two reasons: (1) this area is hazardous because the large rolls of flat steel are being moved around the yard by large vehicles and are subject to unpredictable movement, and (2) the rolled steel yard is covered in 18-inches of asphalt, so the ground is not visible.

The overhead transmission line continues east from UPI to the Dow Switchyard. To do so, it crosses through a surplus equipment storage area (one tower), and over the top of a warehouse building, Dow Building 30. The line then turns south across an open lot to the Dow switchyard site. The open lot is partly covered in gravel, with miscellaneous metal and

concrete refuse, presumably from the demolition of buildings formerly present here, but ground surface is visible in many places. This lot will be used for construction laydown and parking, as well as being the site of the Dow switchyard.

No cultural resources were identified that are located where construction of the transmission line will take place. As stated above, the duct bank will be constructed near the margins of the foundation ruins of the Pacific Coast Stone Works site but will not affect this site.

3.3.1.3 Architectural Reconnaissance Results

Architectural reconnaissance of the new parcels consisted of examining the area near the new project parcels to determine whether or not buildings or structures older than 45 years might be located near the project facilities that are significant architecturally or historically and that the project would affect.

While there are many buildings and structures in the vicinity of the project that may be older than 50 years (for example, most of the UPI mill buildings and some of the structures on the Dow Pittsburg property), the project's effect on them would only be indirect effects that would involve a minor change in the setting or the surroundings of the building or structure. There will be no buildings or structures demolished or significantly altered for construction of the project. All of the properties surrounding the LMEC to Dow Pittsburg Transmission Line, however, are utilitarian and industrial properties. These include a petroleum coke storage and loading facility, power plant, substation, steel mill, chemical manufacturing facility, transmission lines, railroad spurs, and other industrial facilities. Adding an additional utilitarian/utility or industrial element such as a transmission line to this kind of setting would not be an adverse effect to a property that was considered historically important because of its role in the development of local industry.

On the Dow Pittsburg property, the transmission line will cross over the roof of Building 30, a building on the Dow Pittsburg property that predates Dow's purchase of the property in the 1950s. Building 30 is a large warehouse building, 55 feet wide and 400 feet long of concrete construction, with ventilator/skylight structures in the roof in patterns of four. This building is one of several similar warehouses that were at one time used by a rubber manufacturing company (Dale Schell, The Dow Chemical Company, personal communication). Building 30 is currently used for inventory recovery.

3.3.2 Environmental Consequences

No archaeological resources were located during the surveys. The project would involve trenching near the Pacific Coast Stone Works site (P-07-0761) but would not affect the remaining foundations of this property. It is remotely possible that vegetation clearing and excavations in this area could encounter refuse or building materials deposited here at the time the buildings were demolished. The project is unlikely to encounter archaeological deposits of scientific value, however, at this location.

The project would therefore have no significant adverse impacts to any known archaeological resources. It is possible that trenching for the duct bank could encounter previously undiscovered cultural resources that are buried. The Conditions of Certification will ensure that there are no significant impacts to cultural resources if this occurs.

The LMEC to Dow Pittsburg Transmission line would avoid Dow Building 30, but would change the setting slightly by spanning it. The property, however, is an unremarkable utilitarian building, the original setting of which has been entirely removed, as all surrounding buildings and structures are of more modern vintage and are associated with use of this property by Dow. The effect would not be significant.

3.3.3 Mitigation Measures

No significant impacts to cultural resources will result from the approval of this Amendment. Therefore, mitigation measures beyond those stipulated in the Commission Decision are not necessary.

3.3.4 Consistency with LORS

The construction and operation of the project, as amended, will conform with all applicable LORS related to cultural resources.

3.3.5 Conditions of Certification

Condition CUL-6: The project owner suggests the following change to Condition CUL-6, for clarity and to bring the Condition into consistency with current practice.

> **CUL-6** Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resource specialist shall provide the CPM-approved training to all project managers, construction supervisors, and workers. **This training may be provided in the form of a video presentation.** The project owner and construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance.
>
> **Verification:** Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resources specialist shall present the CPM-approved training program on the potential for project impacts to sensitive cultural resources. The training shall include a set of reporting procedures for cultural resources encountered during project activities. The project owner shall provide documentation to the CPM that the employee training and the set of procedures have been provided to all project managers, construction supervisors, and all workers.

Condition CUL-10: The project owner suggests the following change to Condition CUL-6, for clarity and to bring the Condition into consistency with current practice.

> **CUL-10** The designated cultural resource specialist **or a qualified cultural resources monitor designated by the cultural resource specialist,** shall be present at all times to monitor construction-related grading, excavation, trenching, and/or augering in the vicinity of previously recorded archaeological sites and in areas where cultural resources have been identified during project construction.
> …
>
> The daily logs prepared by the designated cultural resource specialist **or cultural resources monitor** shall indicate by tenths of a post mile, where and when monitoring has taken place and where monitoring has been deemed unnecessary.
>
> **Verification:** The project owner shall include in the Monthly Compliance Reports to the CPM, copies of the weekly summary reports prepared by the designated cultural resource specialist **or cultural resources monitor** on project-related cultural resource activities.

3.4 Geology and Paleontology

The construction of the proposed LMEC to Dow Pittsburg Transmission Line will not cause geological hazards to people or property beyond those analyzed by the CEC during the original certification process. The findings of the original AFC classified the lithological units surrounding the area as having a "high" paleontological sensitivity. This is due to the nature of the geological deposits at the project site. However, mitigation measures stipulated in the Commission Decision will ensure that the project's potential to impact paleontological resources discovered during construction would be fully mitigated.

3.4.1 Environmental Baseline Information

Studies conducted for the AFC indicated that all project components lie within sedimentary geological units of Quaternary age (Qal) including units designated the Montezuma Formation (Qmz). The AFC assigns this Qal a "high" sensitivity rating, because this formation has the potential to contain significant fossil resources. The Commission Decision indicated that fossils belonging to camel, bison, and rodent mammalian taxa and also an osteichthyean fish skull had previously been found within a mile of the LMEC. However, no fossil resources were observed during any component of the original certified project.

The information found in the AFC environmental baseline was updated for this amendment by conducting a new paleontological record search to determine whether or not significant fossils have previously been found either along the proposed transmission route or nearby, since the AFC was prepared. This record search was completed by consulting the University of California, Berkeley, Museum of Paleontology (UCMP). UCMP records indicated that there has been one vertebrate fossil find in the general project area, site #V40505. This site is more than 5 miles from the proposed project site, however, and so documentation of this find is not provided in this amendment petition.

3.4.2 Environmental Consequences

Because no new paleontological resources or sites were identified within a mile of the project site, it is unlikely that the construction of the transmission line would result in impacts to significant fossils. Because fossils are buried underneath the ground surface, however, there is the possibility that construction activities could encounter them. Project activities having the potential to impact significant fossils include trenching to install the underground transmission line duct bank and excavation to install the transmission tower bases, and grading to prepare for installation of the Dow Pittsburg switchyard. Because project construction will use existing, vacant graveled lots for construction laydown and worker parking and disturbances in these locations would be limited to locations very near the surface, impacts to significant fossils from use of the laydown and parking areas is not expected.

3.4.3 Mitigation Measures

No changes to previously identified impacts to geological or paleontological resources would result from the approval of this Amendment. Therefore, mitigation measures beyond those stipulated in the Commission Decision are not necessary. The mitigation measures previously stipulated are adequate to mitigate impacts to geological and paleontological

resources that could occur as a result of project construction. These measures include designation of a Paleontological Resources Specialist, preparation of a Paleontologic Mitigation and Monitoring Plan, a program to train construction workers regarding the paleontological sensitivity of the project area and procedures to follow if fossils are found during construction.

3.4.4 Consistency with LORS

This assessment is consistent with guidelines promulgated by the Society for Vertebrate Paleontology for the evaluation and mitigation of impacts to paleontological resources. The construction and operation of the LMEC to Dow Pittsburg Transmission Line will conform with all applicable LORS related to geological and paleontological resources.

3.4.5 Conditions of Certification

The project owner suggests the following changes to the Paleontology Conditions of Certification to make them more consistent with standard conditions that CEC Staff recommends in current siting cases.

PAL-3 Prior to the start of project construction, the designated paleontologic resources specialist shall prepare and conduct an employee training program. The project owner shall submit the paleontologic resources training program to the CPM for review and approval. **This training program may be presented in the form of a video presentation.**

Protocol: The paleontologic training program will discuss the potential to encounter fossil resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources. The training shall also include the set of reporting procedures that workers are to follow if sensitive paleontologic resources are encountered during project activities. The training program will be presented by the designated paleontologic resource specialist and may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

PAL-5 The designated paleontologic resource specialist shall be present at times he or she deems appropriate to monitor construction-related grading, excavation, trenching, and/or augering in areas where potentially fossilbearing sediments have been identified. **Monitoring may be done by a qualified paleontological resources monitor as designated by the paleontologic resource specialist.**

3.5 Hazardous Materials Management

Hazardous materials management will not differ significantly from that described in the AFC. The hazardous materials management impacts associated with this Amendment would be less than significant.

3.5.1 Environmental Baseline Information

3.5.1.1 Construction Phase

Project construction would not involve the use of hazardous materials other than those described in the AFC. These materials would include standard construction materials, such as gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. There are no feasible alternatives to vehicle fuels and oils for operating construction equipment. Regulated substances, as defined in California's Health and Safety Code, Section 25531, will not be used during construction of the project.

3.5.1.2 Operation Phase

Most of the hazardous materials that will be used for the project operation are required for facility maintenance, and lubrication of equipment or will be contained within transformers and electrical switches at the Dow Switchyard. These materials are discussed in the AFC.

3.5.2 Environmental Consequences

No significant impacts would result from constructing the LMEC to Dow Pittsburg Transmission Line in terms of hazardous materials management.

3.5.3 Mitigation Measures

No significant impacts in terms of hazardous materials management would result from the approval of this Amendment. Therefore, mitigation measures beyond those stipulated in the Commission Decision are not necessary.

3.5.4 Consistency with LORS

The construction and operation of the LMEC to Dow Pittsburg Transmission Line will conform with all applicable LORS related to hazardous materials management as identified in the Commission Decision.

3.5.5 Conditions of Certification

This Amendment does not require changes to the hazardous materials management Conditions of Certification.

3.6 Land Use

The addition of the LMEC to Dow Pittsburg Transmission line will not involve any significant changes to the land use findings and conclusions reached in the original Application for Certification. Because the entirety of the transmission line will be constructed and operated within an industrial area, no new zoning measures are necessary and no zoning exemptions or variances are required. This transmission line will be sited entirely on property already zoned for industrial usage.

3.6.1 Environmental Baseline Information

The LMEC to Dow Pittsburg Transmission Line project site is located entirely within the city limits of the City of Pittsburg in Contra Costa County. Any restrictions regarding the City of Antioch General Plan as described in the Application for Certification are therefore not applicable to this project. The site is located on the following major parcels:

073-020-012
073-030-013
073-030-015
073-210-031
073-220-029

These parcels are all zoned as IG (General Industrial District) according to the most recent zoning map available (Ord. 07-1284: Exhibit G) and are designated as Industrial in the most recent update of the City of Pittsburg's General Plan. These zoning qualifications present no change from the zoning restrictions of the original Application for Certification or the City of Pittsburg Redevelopment Plan.

3.6.2 Environmental Consequences

No new significant long or short-term impacts with regard to land use will result from the construction of the LMEC to Dow Pittsburg Transmission Line. Specifically, the proposed project will not: (1) physically divide an established community; (2) conflict with applicable land use plans, policies or regulations; or (3) conflict with an applicable habitat conservation plan.

The proposed transmission line is an industrial land use that is consistent with all current zoning and land use designations, and no planned changes for the current zoning and land use designations are planned, according to the Planning and Redevelopment Departments of the City of Pittsburg. The currently proposed project remains an industrial use located in an industrial area; therefore, the conclusion that it will be consistent with surrounding land uses and will not physically divide any elements of the local community remains valid. Findings of the Commission Decision relating to the transmission line proposed for the original LMEC construction apply as well to the LMEC to Dow Pittsburg Transmission Line.

> The overhead/underground transmission line and the transition structures are allowable uses in all zoning districts in which they will be sited and are not subject to height limitations.

3.6.3 Mitigation Measures

No significant impacts to land use will result from the approval of this Amendment. Therefore, mitigation measures beyond those stipulated in the original Commission Decision are not recommended.

3.6.4 Consistency with LORS

The construction and operation of the LMEC to Dow Pittsburg Transmission line will conform to all applicable LORS related to land use. Specifically, the project will be required to conform to all applicable City General Plan and Municipal Code standards. The General Plan policies, standards, and applicable LORS of the City of Pittsburg are described in detail in the original project AFC. Conformance with the City of Pittsburg Municipal Code regarding structure heights is discussed in Section 3.12 (Visual Resources).

3.6.5 Conditions of Certification

This Amendment does not require changes to the Land Use Conditions of Certification.

3.7 Noise and Vibration

The construction of the transmission line described in this amendment will cause no significant increase to the amount of noise generated by the LMEC. The LMEC to Dow Pittsburg Transmission Line will not generate noticeable quantities of noise during its operation. Any potential noise impacts will instead be due to the temporary effects of construction. The project will meet the standards of the 1974 Pittsburg Municipal Code noise ordinance.

3.7.1 Environmental Baseline Information

This Amendment does not require changes to the Environmental Baseline Information as described in the AFC. There are no additional sensitive receptors in the project area and there have been no significant changes in terms of local development that would change the ambient noise environment, except for construction of the LMEC itself. Although the LMEC may have increased ambient noise in the project area, the new transmission line addressed in this amendment would not add operational noise. For these reasons, additional ambient noise monitoring was not necessary and was not conducted. The nearest residential noise receptor (nearest property zoned residential) is the same as described in the original AFC—Monitor Position Number 10, located at the corner Harbor and East 9th Streets, approximately 0.38 miles from the center of the LMEC power plant property. This remains the nearest residence to the project site.

3.7.2 Environmental Consequences

3.7.2.1 Transmission Line Operation

Noise from the transmission line will consist of occasional breaker operation in the switchyard, corona noise, and very low-level magnetostriction hum from the conductors. Breaker noise is considered impulsive in nature, lasting a very short duration and may occur only a few times per year. Corona noise is characterized as a buzz or hum and is usually worse when conductors are wet, such as in rain or fog. Based upon the analysis described in the original AFC, an additional transmission line will be negligible in volume and will cause no significant adverse impacts. The additional noise will be very small, and will take place at a distance from the other noise sources at the LMEC. Any noise from the underground portion of the transmission line will be muffled and mostly undetectable. The overhead portion of the line begins about 650 feet east of the LMEC facility site boundary. This is about 0.61 miles from the nearest residence.

3.7.2.2 Transmission Line Construction

Construction of the transmission line is expected to begin in early 2008 and last six to eight months. Construction activities will be the same as those contemplated for the transmission line component of the project in the original AFC. Because all transmission line construction will be taking place within an industrial area with a high ambient-noise level, is buffered from sensitive receptors, and is a temporary impact, no significant noise impacts will result from transmission line construction.

3.7.3 Mitigation Measures

Operation of the transmission line will not cause significant noise impacts; thus, no noise mitigation is required beyond what is stipulated in the Commission Decision. These measures include the restriction of construction to certain times of day, in accordance with the City of Pittsburg Municipal Code and Condition of Certification NOISE-8.

Construction equipment to be used for the transmission line construction will be fitted with properly functioning muffling and silencing equipment. Use of pile drivers, pneumatic hammers or other particularly noisy equipment will be limited in accordance with the City of Pittsburg's Municipal Code. Movement of equipment shall be scheduled to minimize noise affecting offsite locations. Construction activities shall comply with applicable laws, regulations and ordinances.

3.7.4 Consistency with LORS

Design, construction and operation of the LMEC to Dow Pittsburg Transmission Line will: (1) conform to all worker safety and health noise limits, (2) be conducted in accordance with applicable LORS relating to project noise, and (3) conform to the Conditions of Certification. The noise from the project, as amended, will remain below all applicable noise standards.

3.7.5 Conditions of Certification

This Amendment does not require changes to the Conditions of Certification for Noise.

3.7.6 References

City of Pittsburg. 1974. City of Pittsburg Municipal Code, Chapter 9.44, Sections 9.44.010, Part J.

Tandberg, Leah. 2007. City of Pittsburg Code Enforcement Dept. Personal Communication. November 15.

3.8 Public Health

The addition of the LMEC to Dow Pittsburg Transmission Line to LMEC will not have a significant adverse effect on public health. One benefit of the project could be that it will enable Dow to shut down and decommission the existing Calpine Pittsburg Power Plant. This plant uses older technology that is less efficient than LMEC and that emits higher concentrations of air pollutants per megawatt of electricity generated when operating. Because the same amount of electricity will be generated to serve Dow's needs while emitting fewer air contaminants per unit of power generated, there will be an overall reduction in air toxics in the project area, and a potential benefit to public health.

3.8.1 Environmental Baseline Information

It is not necessary to update the environmental baseline for public health for the LMEC to Dow Pittsburg Transmission Line, because this Amendment potentially would have a beneficial effect on public health.

3.8.2 Environmental Consequences

Construction and operation of the LMEC to Dow Pittsburg Transmission Line will not cause any significant effects in terms of public health.

3.8.3 Mitigation Measures

No mitigation measures are necessary for public health, for this amendment.

3.8.4 Consistency with LORS

The construction and operation of the transmission line will conform with all applicable LORS related to public health, as identified in the Commission Decision.

3.8.5 Conditions of Certification

The Commission Decision contains one Condition of Certification that has to do with the testing of imported soil. No change to this condition is necessary for the LMEC to Dow Pittsburg Transmission Line.

3.9 Socioeconomics

The modification of the project location and construction parking area will have no significant effects in terms of socioeconomics. The project will result in the addition of one operation job at the Dow Pittsburg switchyard. An indirect result of the project, however, will be that the Calpine Pittsburg Power Plant will be shut down, resulting in the loss of employment or reassignment of employees currently operating and maintaining the Dow Pittsburg facility. Construction of the project will create 30 (average 15) temporary, construction jobs.

3.9.1 Environmental Baseline Information

The following subsections describe the effects of construction and operation that will take place as a result of constructing the LMEC to Dow Pittsburg Transmission Line.

Construction Workforce

Construction will take place over approximately 6 to 8 months beginning in the spring of 2008 and will employ a maximum of 30 workers (average 15) during this period. Contra Costa County has sufficient skilled labor force available that demand from the project will not place an undue burden on the local workforce. In addition, because the City of Pittsburg is in the San Francisco Bay Area, which is an area with a very large workforce, construction of the project is unlikely to result in construction labor shortages.

3.9.2 Environmental Consequences

No significant impacts to socioeconomics will result from the approval of this Amendment. The project will not cause an influx of a significant number of construction or operation workers into the local area; will not have an adverse effect on employment, housing, schools, medical, tax revenues, and fire and police protection; will result in increased revenue from sales taxes due to construction activities; and will recruit employees and purchase materials within the Bay Area to the greatest extent possible.

3.9.3 Mitigation Measures

No changes to the mitigation measures described in the Commission Decision are necessary.

3.9.4 Consistency with LORS

The construction and operation of the LMEC to Dow Pittsburg Transmission Line as amended will conform to all applicable LORS related to socioeconomics as identified the Commission Decision.

3.9.5 Conditions of Certification

This Amendment does not require changes to the Socioeconomics Conditions of Certification.

3.9.6 References

California Board of Equalization (BOE). 2007. California City and County Sales and Use Tax Rates Publication 71. http://www.boe.ca.gov/pdf/pub71.pdf

3.10 Soil and Water Resources

Soil erosion potential and water use for construction of the LMEC to Dow Pittsburg Transmission Line would be minor or negligible during construction. The project will not use water during operation and, if constructed according to accepted practices, would not cause soil erosion during operation.

Construction of the LMEC to Dow Pittsburg Transmission Line will involve excavation of approximately 650 feet of trench to extend the existing duct bank. The remainder of the installation will involve drilling for transmission tower placement. Construction of the Dow Pittsburg switchyard and operations center will involve minor amounts of grading and leveling.

3.10.1 Environmental Baseline Information

Project area soil types and water resources are as described in the AFC and Commission Decision. Soil types tend to be fine-grained alluvial soil derived from overbank flooding and colluvial wash from the Coast Ranges and Mt. Diablo foothills. Because of the long-term use of the area as an industrial area, there are also imported fills in many parts of the project area and along the transmission line route.

Water use during construction would be negligible and would be limited to spreading water for dust control at the laydown and parking sites and to control fugitive dust during construction of the Dow Switchyard.

3.10.2 Environmental Consequences

No new significant impacts to soil and water will result from the changes proposed as part of this amendment. Specifically, the proposed project changes will not: increase erosion, decrease the water supply, increase wastewater disposal, or increase stormwater drainage into the nearby wetlands. Water use during construction will be minor and negligible. There will be little or no water use associated with the transmission line and switchyard during operation.

3.10.3 Mitigation Measures

As long as the mitigation measures included in the Commission Decision are implemented, no significant impacts in terms of soil and water will result from the approval of this Amendment. Therefore, additional mitigation measures beyond those in the Commission Decision are not necessary.

3.10.4 Consistency with LORS

The construction and operation of the LMEC to Dow Pittsburg Transmission Line, as amended, will conform with all applicable LORS related to soil and water resources.

3.10.5 Conditions of Certification

The Conditions of Certification found in the Commission Decision require that the project owner develop a Storm Water Pollution Prevention Plan for construction. This Condition is

sufficient to ensure that no significant impacts result from construction or operation of the LMEC to Dow Pittsburg Transmission Line. No changes to this or other soil and water conditions are necessary.

3.11 Traffic and Transportation

3.11.1 Environmental Baseline Information

3.11.1.1 Regional

This Amendment does not require changes to the regional environmental baseline information as described in the AFC. The location of the new transmission line remains in the vicinity of the Los Medanos Energy Center, and regional access roads have not changed.

3.11.1.2 Local

The local streets that construction vehicles will use differ from what was originally submitted in the AFC. The access routes are slightly different because the transmission line will involve construction on the Dow Pittsburg property, in addition to the area surrounding the LMEC facility. The underground part of the transmission line will be located along East 3rd Street, starting east of Columbia Street, and will emerge on the north side of East 3rd Street, within the UPI property. From this point east, the transmission line will be aboveground, and run through UPI and Dow Pittsburg properties.

The roadways near the project site that will experience construction traffic are as follows:

- State Route 4 (SR-4) is an east-west highway that extends between Interstate 80 in Hercules and State Route 89 near the California-Nevada border. The facility passes south of the project site. Near the project site, a four-lane freeway serves commuters' and recreational travelers' needs.
- Loveridge Road is a two- to four-lane north-south arterial providing direct access to SR-4. It is classified by the City of Pittsburg General Plan as a Major Arterial, extending from Buchanan Road to the Burlington Northern Santa Fe railroad tracks near the waterfront.
- Pittsburg-Antioch Highway is also classified as a Major Arterial, extending from Harbor Street to the west, to Somersville Road to the East in Antioch. The facility has one to two lanes in each direction, and parallels SR-4 on most of its length.
- Harbor Street is a four-lane north-south minor arterial providing direct access to SR-4. The facility begins south at Buchanan Road, and ends at East 3rd Street near the waterfront.
- East 3rd Street is a collector running along the waterfront from Marina Boulevard to Arcy Lane, with one lane in each direction.

Other facilities that are near the project site, but are not public thoroughfares are as follows:

- Columbia Street, between Pittsburg-Antioch Highway and East 3rd Street, on UPI properties.
- Waterfront Road (also known as Pittsburg Street), within the Dow Pittsburg property.

- East 3rd Street, which belongs to UPI east of the company's entrance gate, at the west end of the small substation on the north side of East 3rd Street. This street also extends through the Dow Pittsburg property.

The most likely access routes for project construction access are as follows:

- From SR-4 westbound, vehicles going to the LMEC vicinity or UPI will exit on Harbor Street via California Avenue. Next, they will make a right onto East 3rd Street and turn right into the construction site.
- From SR-4 eastbound, vehicles going to the LMEC vicinity or UPI will exit on Harbor Street via Railroad Avenue and onto Bliss Avenue. Next, they will make a right onto East 3rd Street and turn right into the construction site.
- Vehicles going to the Dow Pittsburg property will use the Loveridge Interchange from SR-4, turn onto Loveridge Road, and enter Dow at the Dow main gate, which is located where Loveridge Road makes a right-angle and turns west towards Waterfront Road.

The only local roadways near the site that may experience a direct project impact due to the construction of the transmission line are Harbor Street, East 3rd Street and Loveridge Road.

The access routes are illustrated in Figure 3.11-1.

In 2006, SR-4 had an annual average daily traffic (ADT) of 130,000 vehicles at Railroad Avenue, and 118,000 vehicles at Loveridge Road. The peak hour volumes were 8,700 and 7,900 vehicles per hour, respectively.

Table 3.11-1 lists the most recent average daily traffic volume available, along with design capacities, estimated peak hour traffic and Level of Service (LOS) on some roadway segments that may be affected by the project during its operation and construction. Highway capacities were based on 1,800 vehicles/lane/hour; and arterial and collector capacities were based on 800 vehicles/lane/hour (considering the effects of signals, driveways, and other factors).

Other available traffic counts are as follows:

- Loveridge Road, north of SR-4: 2006 ADT of 20,518 vehicles/day, 1,616 vehicles/hour (AM peak) and 1,385 vehicles/hour (PM peak)
- Pittsburg-Antioch Highway, between Columbia Road and Loveridge Road: 2000 ADT of 12,650 vehicles/day
- California Avenue between Harbor Street and Loveridge Road: 2000 ADT of 24,600 vehicles/day
- Bliss Avenue between Railroad Avenue and Harbor Street: 2000 ADT of 6,976 vehicles/day
- Harbor Street, between SR-4 and East 10th Street: 1990 ADT of 12,500 vehicles/day
- Harbor Street, between East 10th Street and East 3rd Street: 1990 ADT of 4,100 vehicles/day

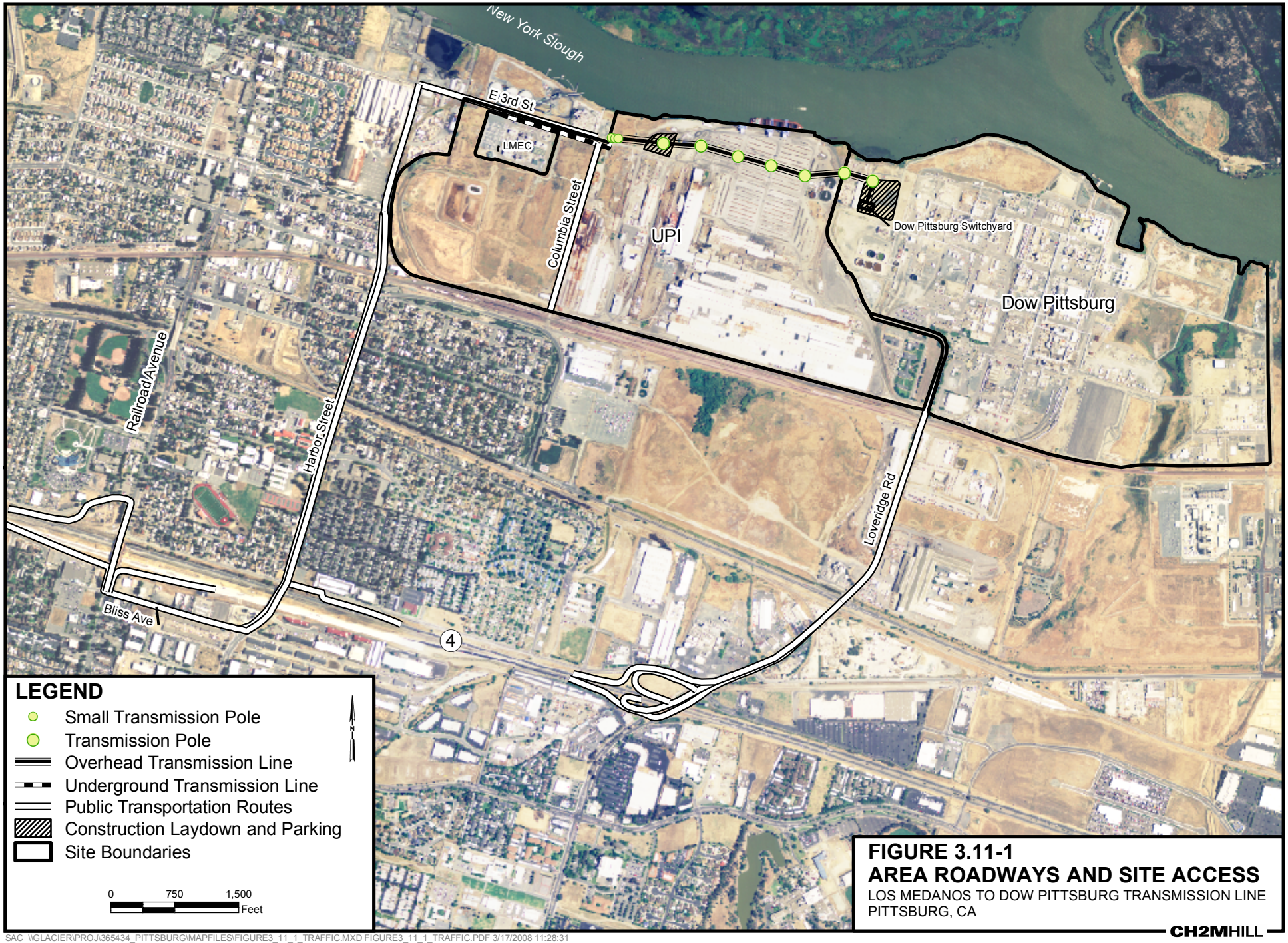

FIGURE 3.11-1
AREA ROADWAYS AND SITE ACCESS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CA

CH2MHILL

SAC \\GLACIER\PROJ\365434_PITTSBURG\MAPFILES\FIGURE3_11_1_TRAFFIC.MXD FIGURE3_11_1_TRAFFIC.PDF 3/17/2008 11:28:31

TABLE 3.11-1
Existing Roadway Daily Volume / Capacity Assessment

Roadway Segment	Between	Road Class	Median	Number of Lanes	Average Daily Traffic Volume	Year ADT was taken	Peak Design Capacity	Peak Hour Demand	Peak V/C**	Peak LOS
SR-4	Loveridge Road and Harbor Street	Highway	Divided	4	118,000	2006	1,800	7,900	1.12	F
SR-4	Harbor Street and Railroad Avenue	Highway	Divided	4	130,000	2006	1,800	8,700	1.24	F
Pittsburg-Antioch Highway	Loveridge Road and Harbor Street	Major Arterial	Undivided	2	12,650	2000	800	997*	0.66	B
California Avenue	Loveridge Road and Harbor Street	Minor Arterial	Undivided	2 to 4	24,600	2000	800	1,939*	0.64	B
Harbor Street	SR-4 and East 10th Street	Minor Arterial	Divided	4	12,500	1990	800	985*	0.65	B
Harbor Street	East 10th Street and East 3rd Street	Minor Arterial	Divided	2	4,100	1990	800	324*	0.22	A
Loveridge Road	SR-4 and the Dow Pittsburg Entrance	Major Arterial	Undivided	4	20,518	2006	800	1,616	0.54	A
Bliss Avenue	Railroad Avenue and Harbor Street	Minor Arterial	Undivided	4	6,976	2000	800	550*	0.18	A

Source: City of Pittsburg, 2007a and Caltrans, 2006

V/C = volume-to-capacity ratio
Freeway/Highway: A road with limited access, designed to serve regional through traffic.
Major Arterial: A road whose principal function is to provide mobility, access and circulation between neighborhoods, activity centers and highways and other regional routes.
Minor Arterial: A road whose principal function is to provide balance between mobility and access, carrying a mix of local and regional traffic. This type of facility provides circulation between neighborhoods, activity centers, and highways and other regional routes.

***Note:** Peak hour factor was estimated based on the peak hour and ADT volumes provided by the City of Pittsburg for Loveridge Road in 2006.
****Note:** Truck percentages were not available from the City; therefore, it has been assumed that 12% of the traffic is truck traffic. On SR-4, Caltrans estimated that 4.6% of the vehicles were trucks on SR-4 near Bailey Road in 2005, which is what is used here on SR-4. The Passenger Car Equivalent (PCE) factor has been assumed as equal to 1.5.

Level of Service Criteria for Urban Streets, Highway Capacity Model, Transportation Research Board, 2000:

A	0.00-0.60	Free flow. Insignificant delays
B	0.61-0.70	Stable operation. Minimal delays
C	0.71-0.80	Stable operation. Acceptable delays
D	0.81-0.90	Approaching unstable. Queues develop rapidly but no excessive delays
E	0.91-1.00	Unstable operation. Significant delays
F	>1.00	Forced flow. Jammed conditions

Traffic volumes are growing rapidly in the city, and the older traffic data may not reflect the current existing conditions. To have a better idea of the current conditions, the City of Pittsburg General Plan provides some projections for target year 2025. Projected ADTs for SR-4 east of Railroad Avenue and Loveridge Road are 155,000 and 161,000 vehicles/day, respectively. California Avenue east of Railroad Avenue is expected to serve 16,400 vehicles/day, and Harbor Street (south of SR-4) will serve about 32,000 vehicles daily. Loveridge Road north of Buchanan Road is projected to have an ADT of 20,200 vehicles/day, and Pittsburg-Antioch Highway east of Loveridge Road is projected to have an ADT of 28,900 vehicles/day.

Along City streets, major arterials have experienced significant increase in traffic volumes due to the congestion levels on SR-4. Therefore, the City's General Plan encourages motorists through Goal 7-P-20 to use SR-4 for the peak-hour commute, rather than using arterial streets in Concord and other East County cities

3.11.2 Environmental Consequences

3.11.2.1 Summary of Construction Phase Impacts

This amendment petition addresses the potential impact to traffic and transportation of constructing the LMEC to Dow Pittsburg Transmission Line over a six- to eight-month period.

3.11.2.2 Construction Traffic Impacts

It is expected that up to 30 workers will enter and exit the project site during the peak construction period, with an average of 15 workers per day. These vehicles represent a small fraction of the current volumes on the facilities they will use to reach the project site. For example, 30 vehicles would represent less than 2 percent of the 2006 AM peak hour traffic on Loveridge Road and less than 0.5 percent on SR-4. In addition, the vehicles headed to Dow Pittsburg or UPI will split between Loveridge Road and Harbor Street to reach their respective destinations, depending on whether they are traveling from the east or west. In addition, the construction workday will begin before the AM peak commute hours and end before the PM peak commute hours. Finally, the effect of project construction on local traffic will be temporary, lasting only six to eight months.

Since operations are acceptable on local streets (LOS A or B, per Table 3.11-1), there will be no significant impacts on these roadways. SR-4 operates at LOS F, but the percent of additional traffic on the freeway is less than 0.5 percent (even if all of the workers use SR-4). Therefore, there are no significant traffic impacts expected due to the construction worker traffic resulting from the project.

Truck traffic will include deliveries of equipment and construction materials by truck, such as bucket trucks, lift trucks, cranes, backhoes, pile driving rigs/hammers, pull-and-tensioning rigs, and pick-up trucks. The estimated number of trucks needed is 10 to 15 vehicles, but many trucks will not leave the site each day, as heavy equipment will stay on site during construction and move periodically from UPI to Dow properties. Truck traffic will not significantly affect the traffic/truck mix along state highways or designated truck routes. Per City staff, the truck routes serving the industrial area from SR-4 are Loveridge Road, Pittsburg-Antioch Highway, and Harbor Street; truck routes as described in the

Municipal Code (1974) are outdated. Because trucks are not expected to travel during peak hours, but rather throughout the day at random times, they should have less than significant traffic impacts.

Because the laydown areas will be located on the open areas within the UPI and Dow properties, no traffic delays due to the movement of materials and equipment between the construction laydown areas and the construction site are expected.

3.11.2.3 Transmission Line Construction Impacts

The transmission line will be built entirely on private properties. The underground part east of Columbia Street along the public portion of East 3rd Street will not be buried under the roadway, but rather under the setback area south of East 3rd Street, between the public right-of-way line and the aboveground pipeline that conveys steam from LMEC to UPI and Dow Pittsburg. The pipeline will then go across Columbia Street, then to the north side of East 3rd Street, under private properties. Therefore, the construction activity will not disrupt traffic on public roads.

3.11.2.4 Operation Phase Impacts

This Amendment does not require changes to the project operations subsection submitted in the original AFC. The construction of the transmission line will not increase staffing or operations-related activities.

3.11.2.5 Transport of Hazardous Materials

This Amendment does not require changes to the Transport of Hazardous Materials subsection submitted in the original AFC. The construction of the transmission line does not require such type of materials.

3.11.3 Cumulative Impacts

Approved development projects located in the vicinity of the construction site include the Koch Carbon petroleum coke storage facility, located at 707 East 3rd Street (which is currently under construction), and the Mount Diablo Recycling Center, located at 1300 Loveridge Road. City staff could not provide the end of construction date for the former, nor the construction dates for the latter. The Loveridge Road Interchange portion of the SR-4 widening project was planned to begin construction in September 2007, but is still under planning phase at this point.

The construction of a future manufacturing plant off East 3rd Street between Harbor Street and Columbia Street has been appealed by the City Council, and will not likely be constructed before the project is completed.

3.11.4 Mitigation Measures

The project's impacts are less than significant, and will therefore not require additional mitigation measures.

3.11.5 Consistency with LORS

The LMEC to Dow Pittsburg Transmission Line project, as amended, will remain consistent with all applicable LORS related to Traffic and Transportation.

3.11.6 Conditions of Certification

This Amendment does not require changes to the Traffic and Transportation Conditions of Certification.

3.11.7 References

California Department of Transportation (Caltrans). 2006. 2006 Traffic Counts for SR-4. http://traffic-counts.dot.ca.gov/2006all/r002-4i.htm. (Site accessed November 15, 2007)

City of Pittsburg. 1974. Pittsburg Municipal Code, Section 10.36.080-Truck Routes.

City of Pittsburg. 2001 (includes updates up to December 2004). City of Pittsburg General Plan-Transportation Element. http://www.ci.pittsburg.ca.us/Pittsburg/Government/Departments/Planning-Building/gen-plan-main.htm. (Site accessed November 15, 2007)

City of Pittsburg. 2007a. Traffic Control Plan Checklist. http://www.ci.pittsburg.ca.us/pittsburg/government/departments/engineering/engg-traffic.htm. (Site accessed November 15, 2007)

City of Pittsburg. 2007b. Planning Department Project Pipeline List. http://www.ci.pittsburg.ca.us/Pittsburg/Government/Departments/Planning-Building/ (Site accessed November 15, 2007)

ESA. February 2007. DOW MEI Project CEQA Documentation-Initial Study.

3.12 Visual Resources

The Commission Decision determined that, with implementation of the mitigation measures specified by the Visual Resources Conditions of Certification, the LMEC project would not have significant impacts on visual resources. Under the current amendment proposal, the project would add a 115-kV transmission line that would extend for less than a mile to the east of LMEC, to connect with the Dow Pittsburg facility. The first 650 feet of this line, from the LMEC facility east, would be installed underground in a duct bank, and would thus not be visible. The remainder of the transmission line would be above ground and would be visible from some vantage points. The new transmission line will be sited within an area that is intensively developed for industrial purposes.

3.12.1 Environmental Baseline Information

3.12.1.1 Project Area Visual Character

The AFC contains a detailed analysis of the visual character of the project area. A review of this document shows that this character has not significantly changed since the AFC was prepared in 1998. For example, the AFC's description of the character of the area surrounding LMEC is still mostly accurate, as follows:

> Industrial land uses lie to east, north, and west of the site. To the east is the USS-POSCO steel mill, and to the north is the GWF Power Plant, a PG&E Substation, and Koch Carbon, Inc. storage and shipping facilities. …To the northwest is the Pittsburg Marine Terminal petroleum coke handling facility… Flanking the west side of the plant site is an area of mixed industrial commercial land uses consisting of warehouses, auto and marine services, and junkyards along Industry Road… West of Harbor Street and south of East 3rd Street is the Schuller Plant Facility… and industrial buildings line East 3rd Street near its intersection with harbor Street. South of the site is vacant land owned by USS-POSCO (AFC 5.13-10).

The industrial character of the area in general is underscored by the presence of the massive UPI manufacturing and warehouse buildings, to the east and, along the north side of East 3rd Street, by the three large Koch Carbon petroleum coke fuel storage domes with attached loading conveyors and marine terminal, and GWF power plant. The area consists of small mixed industrial uses along Industry Road including storage yards and equipment repair facilities. Although there is a large vacant lot that is part of the UPI facility south of LMEC, the southern portion of this lot contains a large railyard that serves UPI, and one rail spur which extends to the western property boundary of LMEC.

Although the general character of land use in the project area has not changed in the nearly 10 years since the AFC was prepared, there have been two significant specific land use changes in the project area. These are (1) the construction of LMEC itself and (2) and the demolition of the Schuller manufacturing facility that was located approximately 800 feet west of the LMEC facility site, at the corner of East 3rd and Harbor Streets. LMEC fills more than 10 acres of what was formerly a large open space on the UPI property on the south side of East 3rd Street. The LMEC consists of two combustion turbines with heat recovery steam

generators and exhaust stacks, a steam turbine-generator, an 8-cell cooling tower, switchyard, and associated piping and equipment.

The Schuller Roofing Systems complex was a large manufacturing facility consisting of manufacturing equipment and several large fabrication and storage warehouses. The entire facility was demolished recently, and the site is currently occupied by large piles of earth and holes in the ground that resulted from hazardous materials cleanup after the demolition.

Residential areas remain to the south of the LMEC beyond the UPI railyard and Pittsburg-Antioch Highway about 0.44 miles from the proposed transmission line and to the west beyond the former Schuller Plant site at about the same distance. These residential areas are walled off, however, from adjacent properties by high masonry buffer walls.

The AFC's assessment of sensitive viewers and viewpoints is also applicable today:

> The nearest sensitive public viewing positions are from residential areas to the west, southwest, and south of the plant site. Views from residential areas are considered to be highly sensitive…the two closest residential developments shown are within about 0.38 mile of the center of the plant site… The nearest active recreation areas in the site (sic) are the marina, City Park, and Central Park; the former two are each about 0.85 mile from the plant site and to the northwest and southwest, respectively. (AFC pp 5.13-10 and -11).

This description of visual character and nearby sensitive viewpoints applies mainly to the portion of the LMEC to Dow Pittsburg Transmission Line that will be installed near the LMEC facility. Much of this is the underground portion of the line, however. The overhead portion of the line begins about 650 feet east of LMEC, within the UPI steel mill property, where the surroundings consist of the steel mill buildings, gravel parking areas, and the rolled steel storage yard. The remainder of the overhead portion of the line would be located on Dow Pittsburg property. This area is also entirely industrial, consisting of manufacturing equipment warehouses, and aboveground piping.

Figures 3.12-1a through 3.12-1f show several current views of the project area that depict the industrial character of the East 3rd Street corridor and the UPI and Dow Pittsburg properties.

3.12.1.2 Visibility of Project Features

The only transmission line project features that would be visible at a distance by private viewers on land would be the overhead transmission line towers. These would be tubular steel support towers 90 or 85 feet tall with supports for six conductors each and with the fiber optic cable attached at the top of the tower. The westernmost portion of the line would be below ground, and would not be visible. The upper portions of the switchyard equipment could also be visible from boats in New York slough.

View east along East 3rd Street from the nearest residence. A LMEC stack is visible in the right middleground. The LMEC to Dow Pittsburg transmission line will be located beyond the line of wooden transmission poles on the left side of the road.

FIGURE 3.12-1A
PROJECT RIGHT-OF-WAY PHOTOGRAPHS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

View west just north of East 3rd Street towards LMEC along the underground transmission line right-of-way.
The LMEC to Dow Pittsburg steam pipeline is on the left; the Koch petroleum coke fuel bins are on the right.

FIGURE 3.12-1B
PROJECT RIGHT-OF-WAY PHOTOGRAPHS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

View south towards the UPI property from the top of the New York Slough bank. The transmission line would be located across the street from the existing transmission lines and steam pipeline. The PG&E substation is to the right.

FIGURE 3.12-1C
PROJECT RIGHT-OF-WAY PHOTOGRAPHS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

View west-southwest from the Tower #2 location (stake in foreground) towards LMEC across the laydown yard on the UPI property.

FIGURE 3.12-1D
PROJECT RIGHT-OF-WAY PHOTOGRAPHS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

View east-northeast from the Tower #2 location (stake in foreground) towards the UPI rolled steel yard across the UPI laydown yard.

FIGURE 3.12-1E
PROJECT RIGHT-OF-WAY PHOTOGRAPHS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

Dow Pittsburg switchyard site and laydown area, looking northwest.

FIGURE 3.12-1F
PROJECT RIGHT-OF-WAY PHOTOGRAPHS
LOS MEDANOS TO DOW PITTSBURG TRANSMISSION LINE
PITTSBURG, CALIFORNIA

CH2MHILL

Views from the west—Viewers residing in the residential area along East 3rd Street east of the project site could possibly see project features, the transmission towers, looking east along East 3rd Street. Figure 3.12-1a shows this view eastward down East 3rd Street from the nearest residence, located at East 3rd and Riverview Drive, approximately 0.61 miles from the nearest project transmission tower location. As the photograph shows, wooden-pole transmission towers line both sides of East 3rd Street, and a transmission line with steel-lattice towers extends east from the PG&E substation at the eastern end of East 3rd Street. The LMEC to Dow Pittsburg Transmission Line would appear in this view as taller structures visible in between gaps in the line of existing transmission poles on the left hand (north) side of East 3rd Street. As such, the transmission line would be introducing an element entirely consistent with the industrial nature of the other elements in the view, and would not be particularly visible or noticeable among all of the other transmission poles that line the street or connect with the PG&E substation.

Views from the south—Another possible viewpoint to the transmission line would be from the residences located on East Santa Fe Avenue looking directly north, at a distance of 0.44 miles, across the UPI property. A high masonry wall, however, currently separates the neighborhood along East Santa Fe Avenue from the Pittsburg-Antioch Highway immediately south of it. Views from the highway itself are blocked by rail cars in the UPI railyard immediately south of the highway. Even if the transmission towers were visible from this viewpoint, they would appear small.

Once the transmission line enters the UPI property, there are no public viewing areas from the south, from which the structures can be seen. This is because the very large manufacturing and warehouse buildings at the UPI steel mill and Dow Pittsburg manufacturing facility will block any such views.

Views from the north—Views from the north would be restricted to recreational boaters using New York Slough. Despite the high bank (approximately 20 feet) from the slough to the adjacent UPI and Dow Pittsburg land areas, it is possible that a vessel in New York Slough could see some of the transmission towers. Vessels near this bank may or may not see them because of their angle of view. Vessels further out into the slough could see some portions of the towers. Figure 3.12-1c shows the view from the top of the slough bank.

Views from the east—There are no public views of project facilities from the east, because private land belonging to Dow extends for more than a mile to the east of the proposed transmission line and Dow switchyard. Tall structures that are part of Dow's manufacturing equipment would intervene to block the views from this direction.

3.12.2 Environmental Consequences

Residential viewers—As stated above, the most sensitive viewers would be residential viewers, who could see the transmission towers either looking east down East 3rd Street, or from the residential neighborhood to the south along East Santa Fe Avenue. As Figure 3.12-1a shows, however, the project's transmission towers, if visible at all, would only be added to the view down the row of existing power/communications poles that line East 3rd Street. The project's change to this viewshed would be negligible and the towers would barely be visible at this distance and given the other structures in the viewshed.

As stated above, the residents of the neighborhood south of the Pittsburg-Antioch Highway along East Santa Fe Avenue would not be able to see the transmission towers because of the large masonry sound/view screening wall that has been constructed there. Drivers along the highway would often have their view blocked by the rail cars in the UPI railyard that is immediately north of the highway. Even if the transmission towers were visible, they would be visible only at a relatively great distance (0.43 mile), and by viewers who are not considered sensitive viewers (commuters).

Recreational Boating Viewers—It is possible that the transmission towers might be seen by boaters using New York Slough from the north. Because the bank to the UPI and Dow Pittsburg properties is relatively high from New York Slough (estimated 20 feet), the boat would have to be positioned fairly far back away from this bank in order to see the transmission towers, which will be located, at the nearest, about 250 feet south from the slough bank top.

Assuming, however, that boating viewers could see the transmission towers and that, as recreational viewers, they are sensitive viewers, the addition of the transmission lines would not cause a significant adverse visual impact. Although the view from the slough towards Mt. Diablo has some scenic quality because the mountain rises rapidly behind the town of Pittsburg, the towers would be injected to the foreground-middleground of this view, which is filled with the UPI steel mill and Dow Pittsburg chemical manufacturing facilities. These include transmission lines, very large buildings for manufacturing and warehousing, and extensive pipe racks (see Figure 3.12-1c). The transmission line's addition to this scene would be negligible and entirely consistent with the industrial character of the rest of this view. New York Slough, furthermore, is not a secluded natural waterway, but a utilitarian channel that is lined with docking facilities for the unloading of petroleum coke fuel, rolled steel, and other goods, and is plied by large cargo vessels.

In summary, there are very few sensitive viewers who would be able to see any of the LMEC to Dow Pittsburg Transmission Line facilities. Their views would be distant and, at these distances, the transmission towers' effect on the viewsheds would be small to negligible. The visual character of the surrounding project area, furthermore, is heavily industrial, within which a transmission line is an expected and consistent feature. For these reasons, the project would not have a significant adverse effect on visual resources.

3.12.3 Mitigation Measures

The LMEC to Dow Pittsburg project's impacts on visual resources are less than significant, and will therefore not require additional mitigation measures.

3.12.4 Consistency with LORS

The LMEC to Dow Pittsburg Transmission Line project, as amended, will remain consistent with all applicable LORS related to Visual Resources. Transmission lines and towers are permitted uses in areas zoned general industrial without regard to building height limitations (City of Pittsburg Municipal Code 18.80.30 C). When setback limits are observed, the City's 50-foot structure height limit is extended to 75 feet (Municipal Code 18.54.100). This limit can be extended by an additional 20 feet, to a total of 95 feet, for transmission towers and similar structures (Municipal Code 18.80.020). The overhead portion of the

LMEC to Dow Pittsburg Transmission Line will be entirely on private property, and the nearest tower structure to a public right-of-way will be located approximately 250 feet east of the end of public right-of-way on East 3rd Street.

3.12.5 Conditions of Certification

This Amendment requires one change to the Visual Resources Conditions of Certification. Condition VIS-10 stipulates that transmission poles must be less than 75 feet in height. In the original design, however, the transmission routes extended adjacent to and through residential areas. The project owner suggests a more flexible wording for this Condition that will allow the LMEC to Dow Pittsburg Transmission Line, which is not located within a sensitive residential view, to have poles taller than 75 feet.

VIS-10 All transmission poles shall be a maximum of 75 feet in height **in residential areas**.

Protocol: The project owner shall submit to the CEC CPM for review and approval final plans for the transmission poles, specifying their height. If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan. The transmission poles shall not be installed before the plan is approved. The project owner shall notify the CPM when the poles have been installed and are ready for inspection.

3.13 Waste Management

Waste management will not differ significantly from that described in the AFC. The waste management impacts associated with this Amendment would be less than significant.

3.13.1 Environmental Baseline Information

3.13.1.1 Project Waste Generation—Construction Phase

Project construction would not involve the discard of waste materials other than those described in the AFC. These materials would include standard construction materials such as paper, wood, glass, and plastics that will be generated from packing materials, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, excess concrete, steel from welding/cutting operations, and various lubricants.

These wastes will be recycled where practical. Waste that cannot be recycled will be disposed of weekly in a Class III landfill. Onsite, the waste will be placed in dedicated project dumpsters**.** Waste concrete will be disposed of weekly in a Class III landfill or at clean fill sites, if available, or will be recycled and disposed of at a construction and demolition site.

3.13.1.2 Project Waste Generation—Operation Phase

There would be little or no waste generated as part of the operation of the transmission line. At most, it would be necessary to discard and replace broken insulators and transformer lubricants. These activities would take place infrequently, however, and would not involve the generation of significant amounts of waste.

3.13.2 Environmental Consequences

Portions of the UPI property have known subsurface contamination. Specifically, portions of the rolled steel laydown yard are a solid waste management unit for arsenic-contaminated soil. This contamination, however, is at a depth of 17 feet below surface and the surface in this area is covered with 18 inches of asphalt. The methods used to construct the transmission supports, however, will prevent any contaminated soils from reaching the surface or causing a possible exposure. The tower supports will be constructed by first driving an anchor pipe into the ground to a depth of 35, 40, 45, or 50 feet (depending on the location). The pipe will be either 66 inches in diameter and 5/8-inch thick, 84 inches in diameter and 7/8-inch thick, or 96 inches in diameter and 1-inch thick (depending on location). Soil from the top 8 feet of the pipe will be removed and replaced with concrete, into which SAE Grade #2 anchor bolts will be placed. The conductor support tower will be bolted on to the anchor bolts.

This construction method will prevent any contaminated soil from the rolling yard from coming to the surface because the contamination is restricted to an area 17 feet under the current ground surface. Only the top 8 feet of soil will be removed from inside the anchor pipe. The concrete and asphalt around the concrete base will prevent any contamination from escaping to the surface. The small amount of waste dirt will be disposed of properly.

3.13.3 Mitigation Measures

No significant impacts in terms of waste management would result from the approval of this Amendment. Therefore, mitigation measures beyond those stipulated in the Commission Decision are not necessary.

3.13.4 Consistency with LORS

The construction and operation of the LMEC to Dow Pittsburg Transmission Line will conform to all applicable LORS related to waste management as identified in the Commission Decision.

3.13.5 Conditions of Certification

This Amendment does not require changes to the Waste Management Conditions of Certification.

3.14 Worker Safety and Fire Protection

Since all workers will undergo proper training under the terms of the current license, the proposed modifications to the project will not result in impacts different than those analyzed by the CEC during certification. As a result, any potential Worker Safety and Fire Protection impacts associated with this Amendment will be less than significant.

3.14.1 Mitigation Measures

No significant impacts in terms of worker safety and fire protection will result from the approval of this Amendment. Therefore, mitigation measures beyond those stipulated in the Commission Decision are not necessary.

3.14.2 Consistency with LORS

The construction and operation of the LMEC to Dow Pittsburg Transmission Line, as amended, will conform with all applicable LORS related to worker safety and fire protection as identified in Appendix A to the Commission Decision.

3.14.3 Conditions of Certification

This Amendment does not require changes to the Worker Safety and Fire Protection Conditions of Certification.

3.15 LORS

The Commission Decision certifying the LMEC to Dow Pittsburg Transmission Line project concluded that the project is in compliance with all applicable LORS. The project, as amended, will continue to comply with all applicable LORS.

SECTION 4.0

Potential Effects on the Public

This section discusses the potential effects on the public that may result from the modifications proposed in this Amendment application, per CEC Siting Regulations (Title 20, CCR, Section 1769[a][1][G]).

The modifications proposed in this Amendment will benefit the public and local economy by increasing the project's contribution to the local tax base, compared with the project as proposed in the AFC and analyzed in the Commission Decision (see Sections 2.0 and 3.9). No adverse effects on the public will occur because of the changes to the project as proposed in this Amendment.

SECTION 5.0

List of Property Owners

This section lists the property owners in accordance with the CEC Siting Regulations (Title 20, CCR, Section 1769[a][1][H]). Appendix 5 contains a list of all property owners whose property is located within 500 feet of the new transmission alignment. The list is provided in a format suitable for copying to mailing labels.

SECTION 6.0

Potential Effects on Property Owners

This section addresses potential effects of the project changes proposed in this Amendment on nearby property owners, the public, and parties in the application proceeding, per CEC Siting Regulations (Title 20, CCR, Section 1769 [a][1][I]).

The property owners adjacent to the project site include the GWF Corporation, which owns and operates a power plant on 3rd Street near LMEC, PG&E, which owns a substation near LMEC, UPI, and Dow. LMEC, LLC; Dow; and UPI have agreements that allow construction of the LMEC to Dow Pittsburg Transmission Line on UPI and Dow property. The transmission line will be located near the GWF power plant and PG&E substation, but will not affect these properties or activities that take place there. Therefore, the project will have no adverse effects on nearby property owners, the public, or other parties in the application proceeding.

APPENDIX 3.1

Air Calculation Spreadsheets

LMEC-Dow Transmission Line Amendment

Table 1. Summary of Construction Exhaust Emissions

Construction Phase	ROG	NOx	PM_{10}	$PM_{2.5}$	URBEMIS Filename
Grading/Land Clearing - URBEMIS	0.38	3.26	2.77	0.66	LMEC-Dow_T-Line.urb9
TransmissionLine Construction -URBEMIS	0.40	3.71	0.17	0.16	LMEC-Dow_T-Line.urb9
TransmissionLine Construction - On-Road Trucks	0.05	0.17	0.01	0.01	NA - See sheet "Calculation of Truck Emissions"
GRAND TOTAL (tons/yr)	0.83	7.14	2.95	0.83	
Assume that all PM_{10} from on-road trucks is $PM_{2.5}$					

LMEC-Dow Transmission Line Amendment

Table 2. Summary of URBEMIS2007 Input Values

Grading/Land Clearing	
Type of Equipment	**No. of this Equipment Type**
Grader	1
Scraper	1
Water Truck	1
Tractor / Loader / Backhoe	1
Transmission Line/Duct Bank Construction	
Type of Equipment	**No. of this Equipment Type**
Bore / Drill Rig	1
Crane	1
Aerial – Lift Truck	2
Digger/Derrick - Truck	1
1 Ton Pickup Trucks	4
Rubber Tired Dozer	1
Tractor / Loader / Backhoe	1

1. All equipment was assumed to begin operation on January 1, 2008 and operate for 8 months (conservative length of construction). Construction equipment listed is an assumed mix of equipment typically used for a project of his type.

2. A water truck was added to the list of equipment for Land clearing and grading for dust suppression.

3. Acreage for Grading/Lnd Clearing was estimated at 22,500 square feet (150 x 150 foot square) for each tower, and 32,500 square feet for the Duct Bank (50 x 650 feet).

LMEC-Dow Transmission Line Amendment

Table 3. Emission Estimates for On-Road Trucks

Type of Equipment	No. of this Equipment Type	Emissions (tons/project)		
		ROG	NOx	PM_{10}
Digger/Derrick - Truck	3	0.0357	0.1268	0.0077
1 Ton Pickup Trucks	6	0.0040	0.0187	0.0005
Worker Commute	15	0.0106	0.0255	0.0011
Total (tons per project)		0.0504	0.1710	0.0094

Digger/Derrick Truck
Heavy duty diesel trucks in EMFAC2007
Assume truck is running idle during total hours of operation
Assume truck operates 8 hours per day.

Pickup Trucks
Assume medium-duty diesel trucks, traveling 20 miles per day at a speed of 25 mph
Assume worker commute is 40 miles per day
Assume construction activities occur 5 days a week for 8 months

Table 4. EMFAC2007 Emission Factors

Truck Type	Emission Factors			Miles per Day
	ROG	NOx	PM_{10}	
Digger/Derrick - Truck (g/hr)	23.028	81.723	4.992	N/A
1 Ton Pickup Trucks (g/mile)	0.172	0.803	0.023	20
Worker Trucks (g/mile)	0.228	0.548	0.023	40

EMFAC2007 version 2.3 for Contra Costa County for the year 2008

APPENDIX 3.2

Russell Huddleston Resume

Russell T. Huddleston

Wetland Ecologist/Botanist

Education

M.S., Ecology, University of California at Davis
B.S., Biology, Southern Oregon University

Professional Registrations

Certified Professional Wetland Scientist
Endangered Species Act Section 10 Scientific Take Permit for Threatened and Endangered Vernal Pool Crustaceans (Permit TE-054230-0)
California Department of Fish and Game Scientific Collectors Permit for Threatened and Endangered Vernal Pool Crustaceans (Permit 5934)
California Department of Fish and Game Scientific Collectors Permit for Threatened and Endangered Plants (Permit 05073)
Oregon Department of Agriculture Permit to Collect State-Listed Plant Species

Relevant Experience

Fort Ord Operable Unit 01, Monterey, California. Conducted surveys for two federally listed plant species, Monterey Spineflower (*Chorizanthe pungens* var. p*ungens*) and sand gilia (*Gilia tenuiflora* ssp. *arenaria*). Project involved identification and mapping of all populations of these species in an approximately 590-acre site. Plant populations were identified and mapped using global positioning system (GPS) technology.

Roseville Energy Center, California. Rare plant surveys and wetland delineation of the approximately 70-acre study area were conducted to determine if special-status plant species occur onsite. These rare plant surveys were floristic in nature and followed California Department of Fish and Game rare plant survey guidelines.

Napa River Flood Protection Project, Napa, California. Vegetation monitoring and habitat mapping for the 835-acre south wetlands opportunity area. Establishment of permanent transects and vegetation monitoring plots, general habitat mapping and data analysis were conducted to assess the conditions of the restored wetland/floodplain area along the Napa River.

California State Route 79, Riverside, California. Protocol level presence/absence surveys were conducted for federally listed vernal pool crustaceans near the townships of Hemet and San Jacinto as part of the State Route 79 realignment project.

Pipeline/Transmission Line Alternatives Study, Calpine Teayawa Energy Center, California. Provided habitat mapping along several proposed pipeline and transmission line alternatives in the Coachella Valley. Habitat types included Sonoran Desert creosote scrub, alkali scrub, desert riparian areas, palm oases, and tamarisk woodlands.

California Oregon Border Power Plant, Bonanza, Oregon. Habitat mapping and evaluation, rare plant surveys and wetland delineations were conducted as part of the Site Certificate Application through the Oregon Office of Energy. Natural habitats included sagebrush steppe, juniper woodland, ponderosa pine forest and seasonal wetlands. Vegetation within each habitat was characterized and the habitat was evaluated based on Oregon Department of Fish and Wildlife's Habitat Classification System.

Sierra Army Depot, U.S. Army Corps of Engineers, Sacramento, California. An assessment of jurisdictional waters of the U.S. (including wetlands) was conducted on approximately 110-acre site of the Sacramento Army Depot in southern Sacramento County, California. This assessment includes lands to be transferred to the City of Sacramento as part of the Base realignment and Closure Act.

State Route 153 Roadway Improvement Project, Federal Highway Administration, Beaver, Utah. An assessment of jurisdictional waters of the U.S. (including wetlands) was conducted for approximately 766 acres along Utah State Highway 153. Wetland delineation was conducted along 11.5 miles of roadway.

In-Delta Storage Project. California Department of Water Resources, Sacramento and Contra Costa Counties. Assisted DWR botanists with rare, threatened and endangered plant surveys in the Sacramento-San-Joaquin Delta. Habitat types included inter-tidal areas, annual grassland, riparian areas and agricultural lands.

Pipeline Transmission Line Alternatives Study, Calpine East Altamont Energy Center, California. Provided habitat mapping and evaluation of suitability for special-status plant and wildlife species along several proposed pipeline alternatives in the San Joaquin Valley. Natural habitat types included annual grassland, alkali meadow, and seasonal wetlands.

Sacramento Municipal Utility District's Cosumnes Power Plant, California. Conducted rare plant surveys for the proposed energy facility site, laydown area and 26-mile natural gas supply pipeline. Habitat types included annual grassland, seasonal wetlands, vernal pools, and riparian areas.

Proposed Sewer Alignment, Vallejo Flood and Sanitation District, California. Conducted preconstruction plant surveys for special status plant species along a proposed sewer pipeline alignment. Habitat types included inter-tidal marsh, annual grasslands, wet meadows, riparian areas, and wetlands.

Pacific Gas and Electric Line 401 Capacity Loops Project. Conducted biological resource surveys including rare, threatened and endangered plant species. Habitat types included mixed conifer forest, sagebrush steppe, seasonal wetlands and riparian areas.

Kesterson Reservoir, California, U.S. Bureau of Reclamation. Vegetation monitoring as part of long- term monitoring program at Kesterson Reservoir. Projected included estimates of vegetative cover at fixed plot locations in the former retention pond areas and data analysis of long term trends in changes of the plant community. Habitat types included annual grassland and alkali scrub.

APPENDIX 3.3A

Doug Davy Resume

Douglas M. Davy, Ph.D.

Consulting Archaeologist

Education

Ph.D., Archaeology
M.A., Anthropology
B.A., Anthropology

Registrations

Registered Professional Archaeologist

Relevant Experience

Twenty-two years of experience in cultural resources management, including prehistoric and historic archaeology, and historic buildings and structures, and Native American consultation. Twenty years of experience as a manager of archaeological field projects in support of regulatory compliance programs for energy, transportation, mineral and water resources development, and hazardous materials management projects.

Representative Projects

North Area Right-of-Way Maintenance Environmental Assessment/California-Oregon Transmission Line; Western Area Power Administration. Project Manager for cultural and biological resources inventories for 770 miles of 230 kV and 500 kV electrical transmission line rights-of-way and associated access roads in Northern California for transmission system operations and maintenance program. Coordinated teams of archaeologists and biologists conducting field inventories of the transmission line and access road rights-of-way for archaeological inventory and habitat mapping. Field teams collected information using sub-meter accuracy global positioning system equipment and exported to a Geographic Information System. Created database of information that will serve as a basis for Western's environmental management system and an automatic cultural site record generation system.

Cultural Resources Testing and Evaluation for 30 sites in Management Region 5, Edwards Air Force Base, U.S. Army Corps of Engineers. Project Manager and co-Principal Investigator for archaeological testing and National Register of Historic Places evaluation of 30 prehistoric archaeological sites located in the Precision Impact Range Area at Edwards Air Force Base, western Mojave Desert, California. Prepared archaeological research design and work plan for test excavations and laboratory analysis and served as Project Director, coauthor, and general editor of final report. Project is part of a long-range sampling program for compliance with Section 106 of the National Historic Preservation Act.

Eastern Transportation Corridor; Transportation Corridor Agencies - Project Archaeologist/Principal Investigator for 24-mile-long multi-lane toll road in Orange County, California. Directed construction monitors, consulted with 5 Native American Tribes, prepared Archaeological Resources Management Plan, developed and managed test excavation and laboratory analysis program to determine National Register eligibility of 22

archaeological sites discovered during construction and authored survey and excavation reports. Directed data recovery excavations to mitigate impacts to prehistoric rockshelter site and three deeply buried, Early Holocene sites discovered during construction.

Statewide Historic Buildings and Structures Inventory, DoD Installations, State of California; U.S. Army Corps of Engineers, Sacramento District. Project Manager for inventory and overview of buildings and structures surveys for 93 military bases in California. Prepared inventory and analysis of studies and coordinated with a team of Architectural Historians. Co-authored one of three report volumes. Project involved literature search and historic context development for California as a region and for the Cold War and Korean War periods. The resulting report serves as a guide for all future historic buildings and structures inventories in California. Project review committee included representatives of each of the four military service branches, State Historic Preservation Office, Advisory Council on Historic Preservation, and National Park Service. This project won the Governor's Historic Preservation Award for 2001.

Gilroy Energy Center, Calpine Corporation. – Designated Cultural Resources Specialist for California Energy Commission Application for Certification for merchant thermal power plant. Planned and conducted cultural resources inventories and prepared license application. Prepared Monitoring and Mitigation Plan and supervised construction monitoring. Conducted presence-absence testing program for buried archaeological deposits at site of zero liquid discharge system, planned and managed data recovery excavations for protohistoric site encountered during construction of the natural gas pipeline.

Roseville Energy Park, Roseville Electric. – Designated Cultural Resources Specialist for California Energy Commission Application for Certification for thermal power plant for municipal utility. Planned and conducted cultural resources inventories and prepared license application. Prepared Monitoring and Mitigation Plan and supervised construction monitoring. Coordinated field monitoring efforts during construction.

Pico Power Project, Silicon Valley Power. – Designated Cultural Resources Specialist for California Energy Commission Application for Certification for thermal power plant for municipal utility. Planned and conducted cultural resources inventories and prepared license application. Prepared Monitoring and Mitigation Plan and supervised construction monitoring. Coordinated field monitoring efforts during construction. Evaluated finds of cultural materials during construction.

Downtown-Natomas-Airport Corridor Environmental Impact Statement, Sacramento Regional Transit – Project Manager for archaeological and historic architectural surveys for light rail extension program in Sacramento, California. Coordinated archaeological inventory and architectural survey. Conducted backhoe testing to determine boundaries of prehistoric mound. Consulted with State Historic Preservation Officer for Section 106 compliance.

APPENDIX 3.3B

CHRIS Confidential Documents (Confidential)

APPENDIX 3.3B

CHRIS Confidential Documents (Confidential)

Appendix 3.3B, CHRIS Confidential Documents, was submitted separately under a request for confidentiality.

APPENDIX 5

Property Owners within 500 feet of the New Transmission Alignment

	PARCEL	OWNERFIRST	OWNERLAST	MAILNUMBER	MAILSTREET	MAILCITY	MAILSTATE	MAILZIP
1	073 010 002	Pittsburg Redevelopment Agency		65	Civic Ave	Pittsburg	CA	94565
2	073 010 003	Pittsburg Redevelopment Agency		340	Marina Blvd	Pittsburg	CA	94565
3	073 010 013	Tesoro Refining & Marketing Co		300	Concord Plaza Dr	San Antonio	TX	78216
4	073 020 004	Marine Express Inc		695	E 3rd St	Pittsburg	CA	94565
5	073 020 007	State of California			Po Box 7791	San Francisco	CA	94120
6	073 020 012	State of California			Po Box 7791	San Francisco	CA	94120
7	073 020 014	State of California			Po Box 7791	San Francisco	CA	94120
8	073 020 015	State of California			Po Box 7791	San Francisco	CA	94120
9	073 020 016	State of California			Po Box 7791	San Francisco	CA	94120
10	073 020 019	Gwf Power Systems L P		4300	Railroad Ave	Pittsburg	CA	94565
11	073 020 020	Isle Capital Corporation		1460	Washington Blvd #b10	Concord	CA	94521
12	073 020 022	State of California		650	Howe Ave	Sacramento	CA	95825
13	073 030 007	Isle Capital Corporation		1460	Washington Blvd #b10	Concord	CA	94521
14	073 030 013	Uss Posco Industries			Po Box 471	Pittsburg	CA	94565
15	073 030 015	Uss Posco Industries			Po Box 471	Pittsburg	CA	94565
16	073 041 001	Douglas A & Cheryl	Foskett		Po Box 145	Clayton	CA	94517
17	073 041 002	Douglas A & Cheryl	Foskett		Po Box 145	Clayton	CA	94517
18	073 041 003	Jeffrey V	Augusts	311	Harbor St	Pittsburg	CA	94565
19	073 041 004	Lewis H & Elma R	White		Po Box 773	Lafayette	CA	94549
20	073 041 005	Adolfo	Morales	760	Wedgewood Dr	Pittsburg	CA	94565
21	073 041 006	Refining & Marketing Co	Tesoro	300	Concord Plaza Dr	San Antonio	TX	78216
22	073 042 003	Clayton Lee	Manning	6	Industry Rd	Pittsburg	CA	94565
23	073 042 004	Clayton Lee	Manning	6	Industry Rd	Pittsburg	CA	94565
24	073 042 005	Mary K	Evola	198	Pueblo Dr	Pittsburg	CA	94565
25	073 042 007	Peggy B	Rossini	227	Pueblo Dr	Pittsburg	CA	94565
26	073 042 012	Sayed Bashir	Rahimi		Po Box 3	Pittsburg	CA	94565
27	073 042 013	Le S	Lin	108	Santa Paula Ct	San Pablo	CA	94806
28	073 042 015	Alan	Giovacchini	3095	Frandoras Cir	Oakley	CA	94561
29	073 042 017	Bruno & Eva	Giovacchini	290	Davi Ave	Pittsburg	CA	94565
30	073 042 019	Le S	Lin	108	Santa Paula Ct	San Pablo	CA	94806
31	073 042 023	Pittsburg City Of		2020	Railroad Ave	Pittsburg	CA	94565
32	073 042 024	Raul R & Candace A	Ugarte	2960	Almondwood Pl	Oakley	CA	94561
33	073 042 025	Romer Llc			Po Box 512	Pittsburg	CA	94565
34	073 050 001	Pittsburg River Park Llc		36	Washington St #250	Wellesley	MA	02481
35	073 210 008	California State Of			Columbia St	Pittsburg	CA	94565
36	073 210 017	California State Of			Waterfront Rd	Pittsburg	CA	94565
37	073 210 018	California State Of			Po Box 7791	San Francisco	CA	94120
38	073 210 031	Uss Posco Industries			Po Box 471	Pittsburg	CA	94565
39	073 220 029	Dow Chemical Company			Us Area Tax-apb Bldg	Freeport	TX	77541
40	073 220 037	Dow Chemical Company			Usa Tax Dept-apb Bld	Freeport	TX	77541