Applicant Design Guide

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PG&E Company–Non-Disclosure Agreement

AD Global Information Gas

AD Global Information Electric

PG&E Approval Transmittal

Section 1.0: Introduction

1.1. PG&E *Applicant Design Guide* Overview

The *Applicant Design Guide* serves as a source document for both internal Pacific Gas and Electric Company (PG&E) employees involved with applicant design projects and external (to PG&E) applicant designers and engineers who opt to design the electric and/or gas utility distribution systems and/or services for residential and commercial projects.

Use the *Applicant Design Guide* as a resource for the applicant design process. This guide details the procedures for planning, submitting, reviewing, and approving designs for gas and electric systems.

In most cases, applicants for new service under PG&E Gas and Electric Rule 15 and Rule 16 have the option either to have PG&E perform the design work for the Company's portion of their utility installations or to perform the design work themselves using their own design engineers. These designs must conform to all of PG&E's design standards and practices.

Designers and engineers will need more specific information regarding the applicant design process than can be found in this *Applicant Design Guide*. The titles and descriptions of other documents and forms important to the applicant design process also are included in this document.

1.2. Job Packages

When performing applicant design for a project, applicants must provide engineering and design information to PG&E in a standardized, orderly manner by creating job packages. These job packages are designed to organize complex construction information into standard design packages. The following information must be included in the applicant design job packages (see Section 11, "PE's Stamp," for details).

A. Project descriptions

B. Job instructions

C. Material lists with PG&E material code numbers

D. Construction sketches

E. Other detailed engineering instructions

Job packages provide the information necessary to coordinate work between PG&E departments and divisions, other PG&E business units, and any subcontractors who are either directly and/or indirectly involved with the project.

This guide details the responsibilities of both the applicant designer and PG&E in preparing the applicant design job package.

Section 2.0: Applicability

2.1. Types of Projects

Applicant design is available for individual projects; residential subdivisions and developments; and commercial, industrial, and agricultural new-business projects, as described below.

A. Applicant design ***is*** an option for the following types of projects.

(1). Residential gas and electric distribution and/or service extensions (Rule 13, Rule 15, and Rule 16).

(2). Electric commercial, industrial, and agricultural (Ag) distribution and/or service extensions (Rule 13, Rule 15, and Rule 16), including primary service.

(3). Gas commercial, industrial, and Ag distribution and/or service extensions and services with pressure below 60 pounds per square inch gauge (psig) (Rule 13, Rule 15, and Rule 16).

(4). Designing new services that originate ***from*** splice boxes or vaults on the network system in San Francisco and Oakland. (Design work on PG&E's network system is ***not*** allowed.)

B. Applicant design ***is not*** an option for the following types of projects.

(1). Stand-alone, Rule 2-only extension without an application for new service.

(2). Removing existing PG&E facilities without an application for new service*.

(3). Betterment or reinforcement without applying for new service*.

(4). Relocating or rearranging existing facilities without applying for new service*.

(5). Rule 20-A underground projects.

(6). Rule 20-B or Rule 20-C conversions without applying for new service*.

(7). Electric projects 60 kilovolts (kV) and above.

(8). Electric distribution protection.

(9). Gas transmission projects (60 psig and above).

* New service is defined as a new service installation subject to allowance. This excludes insignificant load; e.g., sprinkler controllers.

(10). Gas or electric system planning.

(11). PG&E-initiated reconstruction.

(12). Design work on PG&E's network system in San Francisco and Oakland. (Designing new services ***from*** the network system is allowed under Subsection 2.1.A.(4). on the previous page.)

2.2. Applicant Design Eligibility for Removal, Relocation/Rearrangement, Reinforcement, Rule 20 Undergrounding, and Betterment Work

A. All applicant design work must be associated with an application for new service.

(1). When removal, relocation/rearrangement, reinforcement, Rule 20 undergrounding, and betterment work is required by bona fide applications for new service, this work ***is eligible*** for applicant design. However, when this work is not required for new service, it ***is not eligible*** for applicant design.

(2). To be eligible for applicant design, a bona fide new service application/extension must be the primary driver for the work described in this subsection. The new service portion of the overall project must be the primary reason for the project. The removal, betterment, relocation, rearrangement, reinforcement, undergrounding, or replacement must be the ancillary component of the project. ***The applicant design work must be a result of the new business project, not vice versa.***

In addition, the work must be *both*:

a. Required* in order to facilitate the installation of the new service and/or development of the parcel (and)

b. A contiguous and minor enhancement of the project.

An example of a contiguous and minor enhancement of the project is undergrounding the lines adjacent to the project, where the undergrounding work is a minor part of the entire project, but not where the undergrounding work is the major part of the project.

(3). The work described in this subsection and performed in connection with an application for insignificant load (e.g., sprinkler controllers) ***is not eligible*** for applicant design.

* ***Required*** means either established by a technical necessity or mandated by a permitting authority as a condition of the project.

(4). Relocation work, Rule 20-B work, and Rule 20-C work (i.e., overhead-to-underground conversions) ***are eligible*** for applicant design, but only when the work is performed in conjunction with a new Rule 15 or Rule 16 distribution or service extension. For more information, reference Page 9 of California Public Utility Commission (CPUC) Decision 97-12-099.

> "…applicant design should not be a utility tariff option in cases where there is no applicant for new line or service extension work (e.g., system replacement, system relocation)."

Section 3.0:
PG&E Manuals, Standards, and References

3.1. Distributing PG&E Documents

Outside applicant designers and engineers may obtain PG&E's construction manuals only when they are conducting business with PG&E and after it is determined there is a need for the information. Before providing a manual to a third party, PG&E will:

A. Verify either that a current and complete application for a new project is on file with the Company, or

B. Verify that the applicant designer or engineer is conducting business with PG&E on an ongoing basis (i.e., has been involved in past projects and will be designing future projects).

PG&E employees can find all of the manuals necessary to perform work available on PG&E's Intranet.

Table 3-1: Available PG&E Reference Documents

Reference Documents	Nondisclosure Agreement Required	Cost
Applicant Design Guide	No	No Charge
Electric Design Manual	Yes	$40.00
Gas Applicant Design Manual	Yes	$40.00
Electric Underground Construction Manual	Yes	$100.00
Electric Overhead Construction Manual	Yes	$150.00
Electric Overhead and Underground Construction Manual Updates	Yes	No Charge
UO Standard S5451, "Uniform Symbols for Electric Estimating and Mapping," Attachment 1	No	No Charge
Gas Mapping Symbols	No	No Charge
UO Standard S5453, "Joint Trench"	No	No Charge
Electric and Gas Service Requirements (Greenbook) [1]	No	No Charge

[1] Customers can find the online version of the *Greenbook* at: http://www.pge.com/mybusiness/customerservice/otherrequests/newconstruction/greenbook/servicerequirements

C. PG&E will provide applicant designers and engineers with the appropriate estimating bulletins, guidelines, numbered documents, and standards where the subject specifically applies to the project. When a new design standard is published that specifically applies to the project, it is PG&E's responsibility to provide the new design standard at the Globals Meeting.

D. PG&E employees have access to the Technical Information Library (http://www/techlib/) where electronic versions of all applicable documents are available. Also, the Technical Information Library offers a subscription service that provides automated email notices when specific Company documents are revised. To use this service, click the "Subscriptions" icon in the banner at the top of the page.

3.2 Signing Non-Disclosure Agreements

A. All applicant designers are required to sign a Company Form 62-1074, "Non-Disclosure Agreement." The responsible PG&E representative will provide the "Non-Disclosure Agreement" and order the appropriate manuals (see Section 3, "PG&E Manuals, Standards, and References," Subsection 3.3, "Acquiring PG&E Documents and Updates"). The nondisclosure agreement must be signed both by a principal of the applicant designer's firm and by the applicant designer receiving the manual(s).

B. PG&E does *not* countersign (i.e., execute) or return a copy of the agreement, as is the practice with extension or special facilities agreements.

C. The PG&E representative must ensure that the signed "Non-Disclosure Agreement" forms, along with the information below, are forwarded to the following address:

PG&E Technical Services, 245 Market St.,
Mail Code N7P, San Francisco, CA 94105

The required information must include:

For PG&E

Representative's name and LAN ID

For Applicant Designer

- Email address
- Telephone number
- Street address

For Applicant Design Company

- Principal contact's name
- Email address
- Telephone number
- Street address

3.3. Acquiring PG&E Documents and Updates

A. The first time, when an applicant-design company signs a "Non-Disclosure Agreement" with PG&E, they will receive one hard-copy set and one CD of the requested manuals at no charge. Additional sets of hard-copy manuals can be purchased for the prices shown in Table 3-1, "Available PG&E Reference Documents," on Page 3-1.

When an applicant designer signs a nondisclosure agreement and the associated applicant design company already has a nondisclosure agreement on file with PG&E, the Company will supply a CD of requested manuals to the applicant designer at no charge. Any requested hard copies of manuals may be purchased as outlined in Subsection 3.3.B., below.

B. When requested, PG&E's representative will order hard-copy manuals and CDs by accessing the Technical Information Library and selecting "Order a Manual" from the menu at the top of the webpage. The next screen provides a selection of available manuals, as well as an online form for ordering those manuals. Process any required applicant designer payments using Company Form 62-4527, "Agreement to Perform Tariff Schedule Related Work," in the Non-Energy Billing System (NEBS).

C. When manuals are updated, each applicant designer with a nondisclosure agreement on file will receive a CD of the manual updates at no charge. These updates are distributed by General Office technical support.

D. The associate distribution engineer (ADE) will provide the applicant designer with the most current version numbers for PG&E manuals and documents on the "Global Information Sheet."

E. Updates for references other than manuals are ***not*** provided automatically to applicant designers who purchase PG&E manuals. Third parties must continue to conduct business with PG&E to obtain updated information and references relevant to the type of business being conducted.

F. ***PG&E does not provide*** applicant designers with training on new, updated information in reference manuals and associated materials.

G. Where specifications in two documents are in conflict, the specification in the most recently revised document generally will prevail; however, PG&E retains the right to make the final decision as to which standard is applicable.

H. PG&E employees may check the Technical Information Library for current references, or may sign up for the Technical Information Library's subscription service and receive notification automatically when a document to which they have subscribed is updated. To use this service, go to the Technical Information Library's home page and click on the "Subscriptions" icon in the top banner.

I. Both employees and third parties can access PG&E tariffs by searching on PG&E's Internet website at http://www.pge.com/tariffs/**.**

PG&E's tariffs for Gas and Electric Rule 15 and Rule 16 contain details on the "Applicant Design Option."

Section 4.0: Proprietary Materials

4.1. Applicant designers ***do not*** have the right to access PG&E's estimating programs and tools. These are PG&E's sole property and are not shared with anyone outside of the Company, including applicant designers. The programs and tools are not for sale. These include, but are not necessarily limited to, the following proprietary software and data.

- AutoCAD symbols, line fonts, forms, plotting templates
- Fast Flow Estimating (FFE)
- Data contained in estimating tools (compatible units, costs, etc.)

4.2. PG&E's internal data also is proprietary, and cannot be shared with applicant designers. Confidential internal data includes the capacity of facilities and operational information, as shown below.

- Substation and circuit loading.
- Gas regulation station capacity.
- San Francisco (SF) network capacity.
- Transmission line capacity.
- The Company's long-term, load-growth forecasts and plans.

4.3. Customer billing data and account numbers are not released without written authorization from the customer (see Utility Standard Practice 23, "Third Party Inquiries Regarding Individual Customers," Exhibit A, "Authorization to Receive Customer Information or Act on a Customer's Behalf").

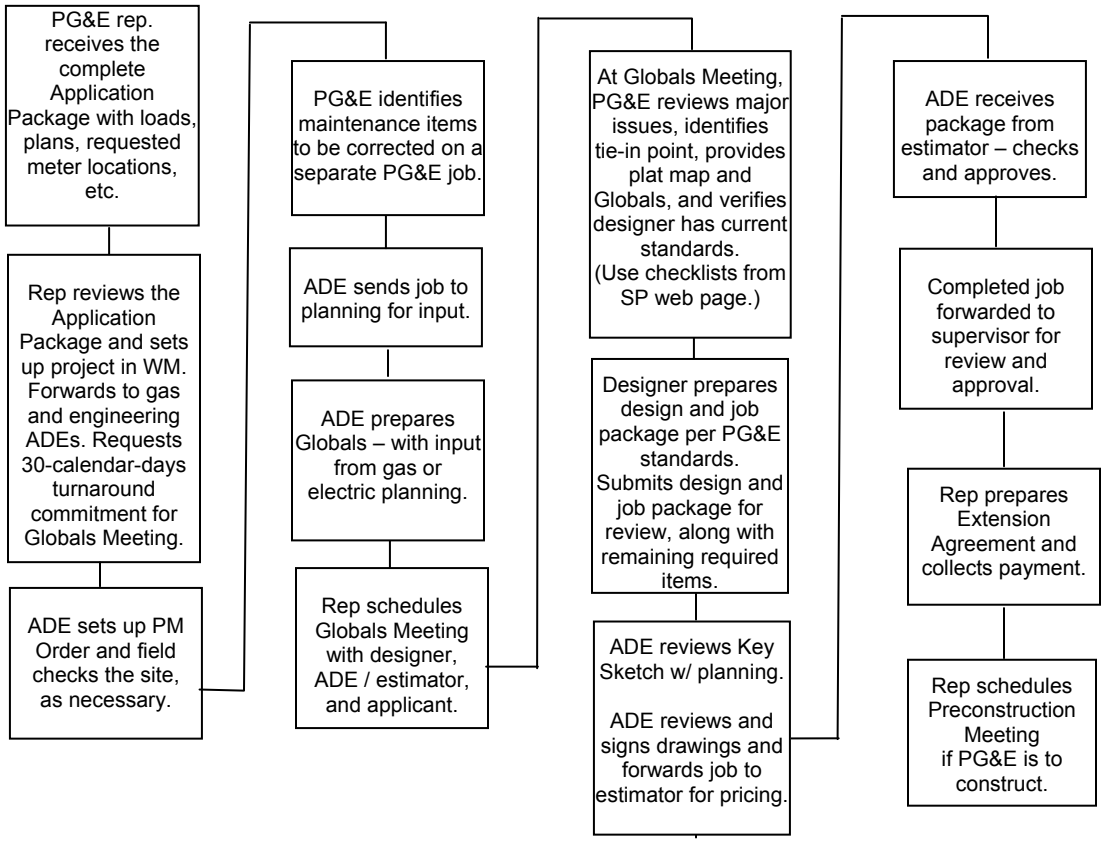
NOTE: This may require blocking out customer account information from DART reports when preparing Globals for applicant designers. Applicant designers will be provided with existing transformer loading information, as well as the number of customers in the affected area, as described in Section 8, "Globals," Subsection 8.1.L.

4.4. Applicant designers will be provided with maps and plat sheets, but only for the specific area affected by the design, as described in Section 6, "Initial Contact," Subsection 6.1. In other words, PG&E will not provide a full plat sheet when a smaller section can depict the required detail.

4.5. PG&E administrative and general indirects, overheads, labor rates, and material costs are confidential and proprietary to PG&E. (For more information, see Section 22, "Applicant Design Project Communications," Subsection 22.3, "Providing a Breakdown of Charges to Third Parties").

Section 5.0:
Process Flow Chart

This flowchart shows the approval process an applicant design document follows before it is approved and construction can begin.



Flowchart 5-1: Overview of the Application Process

6.0:
Initial Contact

6.1. All PG&E maps are provided at the Globals Meeting. The PG&E maps should be limited to the actual facilities needed in relation to the project – the entire map is not provided. This refers to both the distribution and circuit maps.

6.2. Applicant designers must coordinate their projects through the appropriate PG&E representative. Ensure that *all* requests for information are coordinated with the PG&E representative.

6.3. PG&E will explain the design process to applicant designers and discuss specific design requirements using Globals, as described in Section 8, "Globals." Applicant designers must be familiar with the Company's standards and construction requirements. PG&E employees will communicate changes to standards at the Globals Meeting, but will *not* train applicant designers (see Subsection 3.3.F.).

6.4. Additional design references not specifically described in PG&E manuals, and required for specific projects, will be provided with the PG&E Globals. These additional references can take the form of excerpts from standards or other documents that are specific to the project requirements (see Section 2, "Applicability"). Document additional references in the project file or in the Globals. Questions related to the references also should be answered at the Globals Meeting.

6.5. Applicant designers are treated as any other PG&E customer. Applicant designers are ***not*** allowed to access any confidential PG&E information. Applicant designers should ***not*** be allowed on PG&E property unescorted, except for public areas such as lobbies or bill payment areas. Applicant designers should ***not*** use PG&E equipment such as phones, copiers, computers, or plotters.

Section 7.0: Application

7.1. Complete Application Packages

A. An applicant design project does not begin until PG&E receives a completed Application Package. The completeness of an Application Package is based on the scope of the job and will be validated by a service planning representative. Details are provided in the "Applicant Design Required Plans and Information Checklist," which is located in the "Forms" Section of the Appendix.

B. An Application Package provided by the applicant designer must include the following elements.

(1). A completed "Application for Service," submitted to PG&E either by the applicant, or by the applicant designer with written proof of authorization to act on the applicant's behalf. Written proof consists of either a letter from the applicant on his or her stationery or a power of attorney.

(2). Detailed site improvement plans indicating roads, sidewalks, and driveways, as well as the locations of other site infrastructure elements. For individual parcels/single buildings, include the proposed locations of gas and electric meters, building elevations, and proposed future improvements. (Meter locations are subject to PG&E approval.)

(3). Other plans and information as described in the "Applicant Design Required Plans and Information Checklist."

An engineering advance may be required for the project. "Requirements for Engineering Advances" are determined in the same way for both PG&E-design and applicant-design work.

7.2. Incomplete Application Packages

A. If an Application Package is incomplete (i.e., required data is missing), PG&E will perform the following actions.

(1). Contact the customer after 30 days and again after 60 days to obtain the missing information. If the customer responds, the application process continues until the Application Package is complete.

(2). If PG&E does not receive a response from the customer after the 30-day and 60-day intervals, or if the customer fails or refuses to provide the missing information, PG&E will notify the customer that the application will be cancelled after 90 days. PG&E also informs the customer that he or she may re-apply if the project resumes.

Section 8.0: Globals

8.1. Defining Globals and Describing Globals Meetings

A. Globals refers to the package of information PG&E provides to the applicant designer detailing key information necessary to prepare a design for submittal.

B. A Globals Meeting is a PG&E requirement. Do not confuse a Globals Meeting with a pre-engineering meeting.

C. Preferably, Globals Meetings can be held where PG&E representatives and the applicant designer can meet face-to-face; however, telephone conference calls are an acceptable alternative if PG&E, the applicant designer, and the applicant agree.

NOTE: Applicants will always be invited to the Globals Meetings.

D. Globals Meetings should be held within 30 calendar days after PG&E receives a complete Application Package. The PG&E project coordinator should work with the applicant designer and the PG&E ADE to schedule the Globals Meeting.

The PG&E project coordinator will inform the applicant designer if PG&E will not be able to conduct the Globals meeting within 30 calendar days. Both the applicant and the applicant designer should receive a confirmation from the PG&E project coordinator when the date for the Globals Meeting is set, either in writing or by email.

E. Before the Globals Meeting, the ADE should review the project plans and field check the job. This may not be required if the tie-in point is not yet constructed or if the project is a phased continuation of an existing development with known tie-in details. If photos of the tie-in point are available, the ADE should provide them to the applicant designer (e.g., tie in box, pole).

F. ADEs will use the standard Applicant Design forms and checklists, available on the internal PG&E Intranet, for the Globals package.

G. A Globals Meeting should result in an agreement between PG&E and the applicant designer on the facts and issues related to the project. The meeting is not complete until both parties sign and date the Globals, acknowledging that they understand and agree on the content details.

Globals Meetings that are conducted over the phone are not exempt from this requirement. Globals can be emailed before the meeting using pdf files.

After the meeting, a final Globals package marked up with information gathered and confirmed at the meeting either must be given or emailed to the applicant designer. The ADE preparing the Globals package should sign the final Globals form. The applicant designer is required to return a signed and dated copy of the final Globals form, either by fax or an emailed pdf file, if necessary.

H. Globals are valid for 90 days. A 90-day review ensures that out-of-date Globals are not used to design projects when local field conditions have significantly changed (e.g., new projects have been approved immediately surrounding the site, increases in area loads affect design requirements).

I. Before submitting design work on projects with Globals that are older than 90-days, the applicant designer must verify with PG&E that the design parameters outlined in the Globals remain valid. PG&E reserves the right to review and revise the Globals, if necessary, when the Globals have passed the 90-day window and the applicant designer has not yet submitted a design.

PG&E is not obligated to credit the applicant designer any re-engineering costs when Globals are updated and revised under this provision. See Section 15, "Changing the Design after Globals," Subsection 15.7., "Requests for First Plan Check with Outdated Globals."

J. Globals must stipulate the version numbers and dates of the current PG&E documentation to ensure that the applicant designer is working with the most current versions of these documents.

(1). In most cases, if the Globals are current (within the 90-day window), the documents in effect when the project Globals are issued will remain in effect and will be acceptable, even when a new standard or document has subsequently been issued.

(2). If a new document is issued and PG&E requires the applicant designer to incorporate new or updated information into the submitted, approved design while the Globals are still current, the applicant designer must revise the design accordingly, but will receive credit for the design changes. (See Section 15.)

K. Alternate or in-development PG&E designs or standards will not be provided to, or used by, applicant designers unless the division estimating groups have received appropriate documentation. PG&E employees will verify that updates have been issued using the Technical Information Library website.

L. Existing transformer loads and customer numbers are provided with maps as part of the Globals. Individual customer information, such as account numbers, are proprietary information and will not be shared. This requires blocking out customer account information from DART loading reports when preparing Globals for applicant designers, as mentioned in Subsection 4.3.

8.2. Pre-Engineering Meetings

A. A pre-engineering meeting may be required with the applicant and the applicant designer before the Globals Meeting when the ADE or others identify issues that must be resolved before the Globals can be prepared.

B. Examples of the types of problems that could prompt a pre-engineering meeting include:

- Issues with other utilities.
- Land rights.
- Unusual city or county requirements.

  For inner-city, high-density projects (e.g., San Francisco, Oakland, San Jose), the number of switchboards and proposed locations, and governmental agency-approved equipment-vault locations and/or proposed dry-vault specifications are required before issuing the Globals. A pre-engineering meeting is required to establish the requirements for these conditions.
- Questions about the overall development plans for the area.

NOTE: Any of the participating parties may request a pre-engineering meeting. If a pre-engineering meeting is required, it is the applicant designer's responsibility to coordinate with attendees.

C. Globals are not available for the applicant designers when a pre-engineering meeting is held. The PG&E representative should ensure that both the applicant and applicant designer understand that Globals will not be available until the Globals Meeting.

D. When a pre-engineering meeting is necessary, the 30-calendar-day Globals timeline may be extended. PG&E representatives should work with the applicant designer and establish a new Globals-availability date at the conclusion of a successful pre-engineering meeting.

Section 9.0: Submitting a Design

9.1. Methods for Submitting Design Plans

A. PG&E will not accept an applicant design submittal before the Globals Meeting.

B. If an applicant designer makes a design submittal at the Globals Meeting, the documents will be reviewed to ensure that they conform to the general Globals requirements.

(1). If the submittal is in conformance, the PG&E ADE will accept the applicant designer's submittal and put it in the queue for a first plan check. An example of a situation where a submittal is acceptable during a Globals Meeting would be when an applicant designer presents a design package with plans for the 2nd or 3rd phase of a multiphase subdivision development where the project parameters are clearly a continuation of the 1st phase.

(2). If the documents are not in conformance with the Globals requirements, they will not be accepted by PG&E as a design submittal. They will be returned to the applicant designer at the Globals Meeting with instructions on correcting the deficiencies.

C. PG&E encourages applicant designers to submit preliminary planning reviews for complicated jobs.

(1). At the PG&E ADE's discretion, the applicant designer may be required to submit a proposed electrical primary circuit key sketch or a gas distribution extension proposal for a preliminary planning review before submitting the design. This should be discussed at the Globals Meeting and included as a required item.

(2). A Preliminary Planning Review helps to ensure that the applicant designer is proceeding with an acceptable design. ADEs should accommodate an applicant designer's request for a review of a proposed electrical primary circuit key sketch or gas distribution extension proposal whenever possible. This early review can pinpoint design flaws and reduce/eliminate the need for major changes to the design later in the process. This avoids possible major delays in the project.

(3). This review is contingent on the application being accepted and the Globals Meeting being held. The "Applicant Design Transmittal Form" has provisions for, and is used to, track and document this review.

NOTE: PG&E charges the job for the time it takes to complete a preliminary planning review. This preliminary review is ***not*** considered part of the first plan check.

D. The applicant designer does not have the option to request preliminary reviews of the design (i.e., box and conduit placement) before the first plan check.

9.2. Reviewing the Applicant Designer's Job Submittal

After receiving a job submittal from an applicant designer, PG&E reviews the package to ensure its completeness using the "Applicant Design First Plan Review Checklist." The applicant designers receive this checklist as part of their Globals package. If the submitted job package does not include all of the items required on the "Applicant Design First Plan Review Checklist," the PG&E representative returns the package to the applicant designer with the missing items noted.

Section 10.0:
PG&E Plan Checks and Design Approval

10.1. Costs for Plan Check

As described in Gas and Electric Rule 15, PG&E will perform one plan check on each project at no expense to the applicant.

If more than one design check is required because of deficiencies, the additional design checks will be charged to the applicant. PG&E's charges for reviewing the applicant submittals are provided in Section 14, "Credits, Reimbursements, and Charges."

10.2. Inadequate First-Design Submittal

A. If the design submittal contains design flaws or significant issues that impact the job, PG&E's ADE may return the design submittal without performing a full plan check. The ADE will include appropriate notes pertaining to each issue. Examples include the following:

   (1). Does not follow the Globals.

   (2). Incomplete submittal.

   (3). Sketch is not clear (e.g., nonstandard symbols, scale inaccurate, not enough detail, tie-in points not identified).

   (4). Excessive error rate (e.g., 50% errors on first 10% of the locations).

   (5). Facilities placed in unworkable locations (e.g., trenching or setting a pole or anchor too close to a tree; pad-mount transformers in driveways).

   (6). Significant errors in voltage-drop calculations.

B. PG&E's ADE will retain a copy of the applicant design transmittal form, including the ADE's notes to the applicant designer, in the ADE's project file. The ADE may need to coordinate a meeting with the applicant designer and developer at this point to discuss the design issues.

   NOTE: At the ADE's discretion, this review of the design issues discovered on the first design submittal may be considered a first plan check, depending on the amount of time spent on the review. If it is considered a first plan check, subsequent checks will be charged.

10.3. Plan Check

A. PG&E's goal for design review turnaround is 30 calendar days on a first in / first out basis. If it will not be possible to conduct the review within 30 days, the PG&E representative will inform the applicant designer about the delay and provide a new design-review date. Also, the ADE will document the reason(s) for the delay in the project notification long text in the SAP work management system.

B. The Company review of applicant-design jobs and PG&E-design jobs is done in a *non-discriminatory* manner (i.e., neither the applicant designer's job nor PG&E's job is given priority).

C. The applicant's design submittal is reviewed to verify that the design:

- Complies with all aspects of PG&E's design standards.
- Incorporates PG&E's Globals instructions.
- Can be understood clearly.
- Is sufficient for PG&E's operating and recordkeeping purposes.

D. Checklists for gas and electric design drawings and electric key sketches are available in this document's Appendix and can be used by both parties. The ADE may provide copies of the checklists to the applicant designer at the Globals Meeting. Checklists are included in the Appendix section. For PG&E employees only, these checklists also are available in the Technical Information Library.

E. The ADE's plan-check notes should provide sufficient detail to allow the applicant designer to make corrections at a particular location number; however, the ADE should not re-engineer the project. Following are examples of correction notes.

(1). Excess Detail

- ► Loc #3 – Need 3 splice kits, 3 cable adapters, 3 space connectors. You have the wrong kit. It should be Code 300544.
- ► Loc #7 – Change 200 A fault indicators to 450 A fault indicators.
- ► Loc #10 – Use secondary slip-fit connector Code 300010.

(2). Adequate Detail

- ► Loc #3 – Incorrect material.
- ► Loc #7 – Incorrect fault indicators.
- ► Loc #10 – Incorrect secondary slip fit.

F. ADEs usually do not complete field checks after the Globals are prepared; however, under some circumstances, additional field checking may be required during the plan-check stage.

G. The applicant designers must ensure that the trench lengths, boxes, pedestals, and excavations match in their joint trench drawings and construction drawings. ADEs will review the joint trench drawings.

H. The applicant designer's title block on field construction drawings identifies the original designers. PG&E will not replace the applicant designer title block with a PG&E logo block.

10.4. Process When the Applicant Design *Passes* the Plan Check

A. If the applicant designer's job package *includes* the three required copies of final drawings with a PE Stamp and signature (see Subsection 11.1.C), and the material specification packages, the PG&E ADE will perform the following actions.

(1). The PG&E ADE will sign and approve the design. The ADE then returns one signed and approved set to the applicant designer. The ADE will include the PG&E "Applicant Design Transmittal Form" with the "Design Approved" box checked. The "Design Approval Form" should be copied to both the PG&E representative and the applicant.

(2). PG&E will then finalize the cost estimate and prepare the necessary extension agreements and contracts.

B. If the applicant designer's job package ***does not include*** the three required copies of final drawings with PE Stamp and signature (see Subsection 11.1.C) and the material specification packages, then PG&E's ADE will perform the following actions.

(1). Return the PG&E "Applicant Design Transmittal Form" with the "Design Not Approved" box checked. The ADE will request the applicant designer to forward the three stamped-and-signed copies of the final drawings and material specification packages, as required. The transmittal should be copied to both the PG&E representative and the applicant.

(2). When PG&E's ADE receives the completed job package, the ADE will sign and approve the design. The ADE then returns one signed and approved set of final drawings to the applicant designer, who is advised that the ADE will require time for a final review of the submitted job package when it is returned and will not necessarily sign the submittal immediately (i.e., on demand). This is to provide the ADE the time required for the review.

NOTE: Front-counter requests ***will not*** be accommodated.

10.5. Process When the Applicant Design *Fails* the Plan Check

A. When a submitted job package is insufficient, PG&E's ADE returns the applicant designer's job package, noting the deficiencies. The ADE may note the deficiencies on the "Applicant Design First Plan Review Checklist," as well as on the applicant's job submittal sketches and material specification package. The ADE will include a PG&E "Applicant Design Transmittal Form" with the "Design Not Approved" box checked. The ADE retains a copy of the submitted job package and documents the actions taken in the file.

B. When an applicant designer's job package fails for a *third* time because of applicant-designer deficiencies, the PG&E representative will set up a meeting that includes the applicant designer, the ADE, the developer, and the PG&E representative. to obtain a commitment to make the necessary corrections.

10.6. PG&E Final Approval

PG&E's plan check and design approval does not release the applicant from responsibility to construct the facilities according to PG&E's standards. If there is a conflict during construction between PG&E standards and the approved plans, PG&E standards take precedence.

In addition to the ADE's dated signature on the applicant designer's final approved drawings, PG&E's approval stamp will include these conditions.

PG&E APPLICANT DESIGN APPROVAL

PG&E's Plan Check does not release the Applicant from responsibility to construct the facilities according to PG&E's Standards.

In the event of a conflict during construction between PG&E Standards and the plans, PG&E Standards will control.

Approval Signature_____

PG&E LAN ID: _____ Date: _____

Figure 10-1
Example of PG&E Approval Stamp

Section 11.0: PE's Stamp

11.1. General Information about PE Stamps

A. A professional engineer's (PE's) stamp and signature are required on applicant-designed drawings to ensure that all gas and electric design drawings are reviewed by an appropriate PE. This rule is required by Electric and Gas Rule 15.

- Electrical designs must be stamped by an electrical or civil engineer (not a mechanical engineer).
- Gas designs must be stamped by a mechanical or civil engineer (not an electrical engineer).

B. The CPUC requirement for PE stamps to be placed on applicant-designed drawings can be found in CPUC Decision 95-12-013, as quoted in the paragraph below.

> "Also, as required by the Business and Professions Code… Applicants' designers should be professionally registered and the designer's official seal should appear on original drawings as is the usual practice for the construction industry."

NOTE: PE stamps are not required on joint trench drawings.

C. An electronically generated representation of the PE stamp and signature is accepted by the State of California Board of Professional Engineers and Land Surveyors in the *California Code of Regulations*, Title 16, Section 411.(e) and (f).

11.2. PE Stamp Limitations/Restrictions

A. PE's cannot limit, restrict, or absolve themselves from any harm or responsibility related to the use of their stamps. That action contradicts the CPUC's ruling regarding a PE stamp requirements set forth in Gas and Electric Rule 15 and Rule 16. PE disclaimers accompanying the PE stamp are not accepted. Examples of disclaimers that are invalid include:

- "This seal implies conformance with PG&E standards only. No other professional liability is assumed or implied."
- "This seal implies conformance with PG&E standards."

Section 12.0: Applicant Designer Responsibilities

12.1. Specific List of Applicant Designer Responsibilities

Applicant designers are responsible for ensuring that the following items are performed safely and accurately.

A. Tentatively scheduling the project design and construction.

B. Field checking the project site to verify the location(s) of existing facilities.

C. Preparing a vicinity sketch.

D. Preparing a circuit and/or key sketch.

E. Preparing construction detail drawings. (Ensure that the final drawings are stamped and signed by a registered PE, either civil, mechanical, or electrical, depending on the type of project, as described in Subsection 11.1., "General Information about PE Stamps.")

F. Providing job instructions and material lists.

G. Identifying and noting any required permits, including any environmental permits or issues.

H. Identifying and noting any existing rights-of-way and new rights-of-way required by utility.

I. Providing cross sections on construction drawings depicting trench and service facilities in relation to the property line.

J. Indicating meter locations, preapproved by PG&E. The applicant designer also will provide a profile view of the desired meter location showing details and area dimensions. PG&E will design and size meter sets.

K. Identifying and noting known future service points on the applicant designer's construction drawings.

L. Providing streetlight design and rate schedule - approved by the applicable governmental agency.

M. Providing engineering calculations (voltage drop, flicker, short-circuit duty, pulling tension, pole sizing, guying, etc.).

N. Identifying stubs, stub-completions, services, and branch service locations that are pre-approved by PG&E.

O. Identifying main locations.

P. Providing information about any work being done on new or existing joint poles (JP) on the construction drawing. (Refer to the "AD Joint Pole Data Sheet" in the Appendix.)

Q. Identifying pole and anchor staking, as well as trench-route staking.

R. Coordinating with other utilities.

S. Investigating and resolving conflicts.

T. Preparing design changes during construction when field conflicts occur.

U. Providing additional copies of construction drawings after the original distribution.

V. Preparing a joint trench (JT) notice of intent, joint trench drawing, and Company Form F5453-D, "Notice of Intention to Install Underground Facility," if designated as the trench design coordinator (TDC). See Utility Standard S5453, "Joint Trench," Exhibit E, "Job Estimate - Authorization for Joint Trench Construction."

NOTE: Company Form F5453-D, also known as a joint trench letter of intent, is included at Attachment D under Utility Standard S5453.

12.2. Scope of Design Work

A. Extending Distribution Facilities both Within and Outside of Existing Project Boundaries

(1). The applicant designer may design new facilities within the project that extend outside of the project boundaries to the tie-in point, ***if*** it is continuous and without gaps. Under these conditions, the applicant designer will provide the complete Rule 15 and Rule 16 design from the tie-in point to the service point(s).

NOTE: Design work includes riser poles and offsite fusing, as specified by the ADE in the Globals. Include this work on the applicant designer's construction drawing.

(2). Lot Sale Projects: The applicant designer must design the distribution extension, including boxes and stubs for future services.

(3). Unusual Obstructions along the Extension Route: The applicant designer must design and coordinate appropriate crossings for creeks, attachments to bridges, or other design issues.

(4). The applicant designer is responsible for adding a required third phase to an existing pole line.

B. Discuss required, unusual facilities (e.g., equipment for voltage support and protection) and include them on the Globals and on the applicant designer's construction drawing and specifications.

12.3. Job Instructions

A. The applicant designer will provide a separate set of job instructions for each work agent (i.e., either PG&E or the applicant).

B. The job instructions must be tied to sketch locations and include the appropriate accounting breakdown. Some of the accounting items to be identified are Rule 15, Rule 16, franchise/third party, private property, and betterment. This allows PG&E to account for project costs and applicant charges properly.

C. Applicant designers must place gas job instructions on the construction sketch. Electric job instructions must be placed on a separate spreadsheet. See the Appendix for "Samples and Examples" to find samples of electric and gas job instructions.

12.4. Material Lists

A. The applicant designer will provide separate material lists specifically for each work agent (i.e., either PG&E or the applicant). This allows PG&E to properly account for project costs and applicant charges.

B. Material lists must have the same accounting breakdown as the job instructions. Some of the accounting items to be identified are Rule 15, Rule 16, franchise/third party, private property, and betterment. This allows PG&E to properly account for project costs and applicant charges.

C. The applicant designer must create the material lists for both gas and electric jobs on spreadsheets. See the Appendix "Samples and Examples" to find samples of material lists.

12.5. System Reinforcement and/or Betterment

A. System reinforcement and/or betterment work must be identified on the Globals and discussed during the Globals Meeting. If applicable, and as described in the CPUC rules, PG&E will grant any appropriate credits on the project contracts.

B. Within the New Business Project Boundaries

When the existing, energized, electric distribution or gas main within the project boundary requires an upgrade to serve additional loads, the applicant designer may perform the design work. The Globals will specify the scope of the work.

C. Outside the New Business Project Boundaries

The applicant designer may design reinforcement of existing PG&E distribution facilities that lie outside the boundaries of the new business project if the facilities are directly adjacent to the project. PG&E will determine applicability for applicant design on a project-specific basis.

D. Betterment for New Gas or Electric Facilities

(1). The Globals will specify any facilities to be installed that involve betterment. The cost of betterment work is separated from the cost of new business work and is not chargeable to the applicant.

(2). The applicant designer must identify and itemize the betterment work on both the job instructions and material list to enable PG&E to readily isolate and properly account for these costs when preparing the job cost estimate and contracts. This may include a separate set of job instructions and material list for this portion of the work. Discuss betterment issues at the Globals Meeting.

E. The group providing the new-business project design is responsible for designing the distribution back-ties required to serve the new load. This includes all rights-of-way work. Specific requirements will be included in the Globals.

12.6. Safety Orders or PG&E Standards Infractions

An applicant designer's proposals should not create infractions. Existing infractions will be identified in the Globals, as well as the group responsible for performing the corrective work. The applicant designer must include this information on the design drawing.

12.7. Removing Idle Facilities

PG&E will determine which facilities are idle and require removal. These will be identified as part of the Globals package. Removing idle facilities will be included in the applicant designer's work package if the removal is part of a new business project.

12.8. Land Rights and Permit Responsibilities

A. Land rights and permits are identified by the designer. Permits may include, but are not limited to, those listed in Table 12.1, "Examples of Permits," below.

Table 12.1: Examples of Permits

Encroachment – City or County	Reclamation District
Excavation	Irrigation District
Installation of Poles	Railroad
State Fish and Game	Caltrans
Rights-of-Way Across Third-Party Property	US Army Corp of Engineers

B. The applicant designer must identify all required land rights and pubic utility easements (PUEs) on the design. The applicant can obtain land rights and PUEs, through either a qualified third-party land agent or PG&E's land department, at the applicant's option. These documents are a nonrefundable expense.

C. The applicant designer must identify any special permits or approvals required by a governmental agency for work that PG&E will perform. PG&E must obtain the approvals.

D. Environmental Approvals and Permits

(1). The applicant will provide the PG&E representative with copies of all the permits obtained by the applicant.

(2). The applicant is required to provide any conditions that must be factored into the design and construction activities ***in writing***.

(3). PG&E's construction activities must be described accurately and included in the applicant's permits. Also, these activities must be factored into the design and construction phases.

E. Applicants are responsible to:

(1). Provide PG&E with copies of the permits for which they are responsible.

(2). Identify ***in writing*** any permit condition(s) related to the utility distribution and service facilities that will deliver the applicant's power.

(3). Identify any requirements that may affect the project design and/or PG&E's power delivery.

F. The installing agent is responsible for obtaining encroachment permits. If PG&E obtains the permits, the costs for the permits are included in the project costs and in the Extension Agreement as a nonrefundable charge.

NOTE: Governing agencies may require permits by both the installing agent and the owner of the facilities (the utility). PG&E may obtain permits at the applicant's expense.

Section 13.0:
Specific PG&E Responsibilities

13.1. Provide specifications for the design format.

13.2. Provide Globals facilities planning including, but not limited to, the following information.

- Number of facilities
- Size of facilities
- Kind of pipe/conductor
- Conduits
- Tie pressure/voltage/phase
- System isolation requirements
- Special material specifications

13.3. Assign streetlight identification numbers.

13.4. Assign electric equipment identification numbers.

13.5. Perform a utility plan check when the applicant design process is completed.

13.6. Work with the applicant designer on required post-design changes, at the applicant's expense, if initially included in the Globals (see Section 15).

13.7. Prepare joint pole (JP) intent using the JP data that is included on the construction drawing, as prepared by the applicant designer.

13.8. Prepare the gas service orders.

13.9. Prepare the manifold design.

13.10. Provide the Rule 20-B equivalent overhead (OH) design and material list.

13.11. Prepare job accounting and costs.

13.12. Prepare contracts and agreements.

Section 14.0: Credits, Reimbursements, and Charges

14.1. Design Credits

A. The design credit for applicant designers performing design work for the PG&E system is project-specific and determined by the ADE. The design credit is provided on the gas and electric contract and is not paid directly to the applicant design firm.

B. Design credits are based on PG&E's estimated hours to perform the design work. The ADE calculates the estimated hours and the design credit using the Job Hour Assignment tool and the current hourly rate for applicant design credit. The design credit is the same as PG&E's design bid to do the design.

C. Applicant design credits will include time for PG&E-requested reinforcement and betterment design work.

14.2. Design Charges

A. PG&E charges the time required to research and prepare the project Globals to the order under a separate SAP/WM Globals operation. PG&E treats this time as part of the order estimating cost, which means that potentially it is subject to allowances and refund.

B. PG&E charges the time required to review the applicant designer's first submittal to the order under a separate SAP/WM operation for the first plan check. The time for the first plan check is provided at PG&E's expense, as described in Rule 15, and is ***not*** included in the contract or charged to the applicant.

C. PG&E charges the time required for the second and subsequent plan checks (beyond the first plan check) to the order under specific SAP/WM operations for this work. PG&E charges the applicant for the time required to perform the second and subsequent applicant designer plan checks as a nonrefundable cost in the project contract. This includes the Income Tax Component of Contribution (ITCC). Additional plan-check time has a minimum charge of 1 hour, with additional ½-hour increments. The additional plan checks are charged to the applicant in the project contract, and not to the applicant designer directly.

14.3. Cancelled Projects

If an applicant cancels a project before signing an installation contract, PG&E will seek reimbursement of its costs from the applicant, as provided and agreed to in the "Application for Service" form.

Section 15.0:
Changing the Design after Globals

NOTE: For more specific information about Globals, see the expanded discussion following this summary.

Table 15-1: Changing Project Designs after Globals Are Issued

DESIGN STATUS	CHANGE	ADJUSTMENTS
15.1. Globals are issued (no plan checks completed).	PG&E requests changes.	Applicant designer makes changes. ♦ PG&E adds applicant designer credit to the job through the extension agreement.
15.2 First plan-check completed.	PG&E changes Globals or requests changes to a job.	Applicant designer makes changes. ♦ PG&E adds applicant designer credit to job through the extension agreement.
15.3 PG&E accepts the final design, and then minor site conflicts or changes are caused by others (e.g., one or two flop lots, moving a pad or splice box to mitigate a conflict).	The applicant designer resolves the issue. PG&E approves the change. The applicant designer updates the minor changes on the completed drawings.	No charge (minor time required by ADE).
15.4 First plan check is complete. PG&E's job is completed and approved. Then PG&E receives a major change in scope from the applicant (e.g., additional lots, additional facilities).	The applicant designer makes the changes, subject to PG&E approval.	<u>Refundable / Nonrefundable Facilities</u> ♦ Re-engineering is refundable to the extent that the additional facilities would have required extra engineering on the original job. ♦ If extra engineering would not have been required on the original job to include the additional facilities, all of the re-engineering costs are nonrefundable. ♦ Applicant-designer credits are based on the net additional facilities.

Table 15: Changing Project Designs after Globals Are Issued, continued

DESIGN STATUS	CHANGE	ADJUSTMENTS
15.5 After the first plan check is complete, PG&E discovers the design was developed from: ♦ Inaccurate plans ♦ Incomplete plans ♦ Preliminary plans	PG&E will request the applicant designer to submit new plans and changes in the design.	The applicant designer will perform additional design work at the applicant's (non-refundable) expense. A major change(s) may result in a full redesign, with any required re-engineering becoming a non-refundable charge.
15.6 PG&E identifies an improved design.	If the applicant designer's design follows PG&E's standards, the applicant designer is not required to change the design.	PG&E may make a revision to the design at its own expense. Close coordination with the installing contractor would be required.
	Where the applicant designer's design is excessive and outside of PG&E's standards, PG&E will require the design to be revised.	Revisions to the applicant designer's design will be identified through the normal review process.
15.7 Applicant designer's request for the first plan check with outdated Globals (i.e., Globals older than 90 days).	PG&E reviews the submitted Globals and may issue revised Globals. If so, the design is returned to the applicant designer for revision. If revisions are not required, the design will be reviewed as a first plan check.	When the design is returned due to outdated Globals, it is not counted as a first plan check. The applicant designer completes the changes at the applicant's expense.

15.1. PG&E Requests Changes in Design after Globals Are Issued

CHANGE: PG&E has provided Globals to the applicant designer at the Globals Meeting, the applicant designer develops the design, and PG&E then elects to change the design parameters. No plan checks completed.

ADJUSTMENTS: PG&E will add design credit to the job at the standard design rate, and design credits will be made through the extension agreement. PG&E will not pay for changes at the applicant designer's standard billing rate or pay the applicant designer directly.

15.2. First Plan Check Complete

CHANGE: The applicant designer has provided PG&E with the complete design for the first plan check and PG&E changes the Globals or requests changes to the design.

ADJUSTMENTS: PG&E will add design credit to the job at the standard design rate (credits are included in the extension agreement). PG&E will not pay for changes at the applicant designer's standard billing rate or pay the applicant designer directly.

15.3. Design Accepted by PG&E - Minor Site Changes or Conflicts Arise

CHANGE: Occasionally, *after the design is approved and accepted*, minor revisions to the design may be required because of unforeseen field conditions or changes in the project (e.g., site plan changes resulting in conflicts with gas and electric design). The changes are not initiated by PG&E.

ADJUSTMENTS: The applicant designer resolves the conflict. The resolution may be communicated by phone-in order to facilitate construction. The applicant must fax follow-up sketches for PG&E's approval. No PG&E charges. The title block revisions are updated. Due to the minor nature of the changes, there are no adjustments to the extension agreement.

15.4. Major Site Changes or Conflicts Arise

CHANGE: The first plan check is completed. PG&E's job is completed and approved. Then the applicant makes a major change in the project's scope (e.g., a change in project phasing). The applicant designer makes changes in design, subject to PG&E's approval. Additional facilities are added to the job and to the amount subject for refund.

ADJUSTMENTS: PG&E charges its re-engineering costs to the job; however, the costs are subject to refund where the additional facilities would have required additional engineering in the original job. Where no (net) additional engineering would have been required to design the additional facilities, re-engineering is non-refundable.

15.5. Inaccurate, Incomplete Plans; Preliminary Plans

CHANGE: When the ADE finds plans submitted by the applicant designer are insufficient or inaccurate, the ADE will request new plans and changes to the design (by the applicant designer), as needed.

ADJUSTMENTS: Additional design work is at the applicant's expense, without design credits from PG&E. If major changes in a project result in a new job, PG&E will be reimbursed for its engineering and representative's time if the original project is cancelled.

15.6. Improved Design

A. After an applicant designer submits a design that is adequate and follows PG&E standards, PG&E cannot require the applicant designer to revise the design based on an ADE's modified design, even if PG&E believes it is more effective. This applies even where the applicant designer's design may be more expensive.

B. The ADE may suggest design points that would reduce the cost of the job, thereby reducing the applicant's up-front costs. Where the design is within PG&E standards, the applicant designer may appeal the requested changes using the resolution process (see Section 23, "Applicant Designer Issue-Resolution Process").

C. Special facilities are not applicable to the difference in cost between an applicant's design and another, more economical design, when PG&E identifies a more economical design after the proposal is submitted. The only exception is if the applicant's design does not follow PG&E standards.

D. If PG&E identifies an improved design, revisions may be made by PG&E at the Company's expense since, once accepted, the designs become the utility's property.

E. Where an applicant designer's design is excessive; for example, it uses larger cable or transformers than specified in PG&E standards, PG&E can require the applicant designer to modify the design. The ADE will site the specific design or construction standard reference.

15.7. Requests for First Plan Check with Outdated Globals

CHANGE: When the applicant designer submits a design for the first plan check using Globals that have passed the 90-day review period, PG&E reserves the right to review the Globals and may issue revised Globals if significant changes in field conditions or distribution loading has occurred.

ADJUSTMENTS: If required, revised Globals will be prepared and forwarded to the applicant designer and applicant. The submitted design will be returned to the applicant designer for revision and resubmission for the first plan check. When the Globals do not require revision, the design will be accepted for the first plan check.

Section 16.0:
Quality and Accuracy of Applicant Design Work

16.1. PG&E can check an applicant designer's automated calculations against its own programs, but will not require documentation or certification of the applicant designer's design programs. Where errors are found, PG&E will reject the package with a note indicating, for example, that the "cable pull calculations are wrong." PG&E will not attempt to qualify, run, or check the applicant designer's calculation programs.

16.2. The tariff and the CPUC applicant designer decision clearly states that applicant designers are entitled to the first plan check at PG&E's expense. PG&E cannot reject a complete design based solely on the number of hours required to review the package. See exceptions for inadequate design submittals in Section 10, "PG&E Plan Checks and Design Approval," Subsection 10.2., "Inadequate First-Design Submittal," Paragraph 10.2.B.

16.3. PG&E ***does not provide training*** for applicant designers. When a new design standard that applies specifically to the project is published, it is PG&E's responsibility to provide that standard at the Globals Meeting.

16.4. Applicant designers are required to prepare all electronic drawings and supporting calculations using licensed software. The intent is to protect PG&E from software piracy and copyright infringement liability if an applicant designer improperly uses unlicensed software to prepare design drawings that PG&E will ultimately own. AutoCad educational software cannot be used for gas or electric designs.

16.5. Design Practices: Applicant designers planning to employ practices that are not specified in PG&E's standards and manuals, or in the Globals, should verify their approachs with their ADEs before developing their designs.

16.6. PG&E-Generated Designs: PG&E does not provide PG&E-generated designs to applicant designers to use instead of their own design work.

16.7. PG&E does not use PG&E-generated designs (i.e., automated computer designs) to evaluate or reject the applicant designer's design. PG&E does not require the applicant designer to make changes to his or her design to match the results achieved when creating a PG&E-generated design drawing.

Section 17.0: Changing the Design Options

17.1. Conditions for Changing the Design Option

The applicant may change the design option selection at any time before signing the final project contracts (e.g., gas and electric extension agreements).

17.2. Changes in the Design Option from PG&E to Applicant Design

PG&E will charge its engineering time for work already in progress/completed, as well as other costs incurred (including ITCC), *as a nonrefundable payment*. This is consistent with PG&E's policy for charging its engineering time for cancelled projects and re-engineering costs.

17.3. Changes in the Design Option from Applicant Design to PG&E

PG&E will recover any expenses incurred under the applicant design option.

Section 18.0:
Construction Ahead of an Approved Applicant Design Job

NOTE: Applicant designers should ensure that projects have PG&E's approval before installing facilities.

18.1. See PG&E Form 79-716, "General Terms And Conditions for Gas and Electric Extension and Service Construction By Applicant," for information about an applicant's responsibilities when installing PG&E facilities. As described in these terms and conditions, applicants and their contractors and subcontractors must use only PG&E-approved construction drawings for construction purposes.

18.2. ***Do not*** perform construction using an unauthorized or preliminary drawing. The applicant assumes full responsibility for errors, omissions, or changes if the project is constructed using either preliminary drawings or drawings that are not approved by PG&E.

18.3. PG&E will not accept nor assume ownership of additional facilities installed where the applicant begins construction before the design is completed and approved by PG&E. Additional facilities, even if provided at no cost to PG&E, represent increased plant in the rate base. This includes associated, long-term increases in taxes and maintenance expenses. Applicants are responsible for any additional design or rework costs that may be required if PG&E does not accept unapproved facilities. PG&E will not energize and/or pressurize a system that has not received final design approval.

Section 19.0:
Testing Poles, Measuring and Accessing Splice Boxes

19.1. When pole tests are required, those tests may be performed only by PG&E employees or PG&E's qualified contractors. The facilities belong to PG&E and applicant designers do not have the right to access, modify, or tamper with PG&E-owned equipment. The ADE can test the pole during the field check before the Globals Meeting, if necessary.

19.2. Measuring line clearance on energized facilities (i.e., sticking) is a safety issue and can be dangerous if performed improperly. Only PG&E employees or PG&E's qualified contractors can perform this work. Applicant designers may not take line-clearance measurements on energized facilities.

19.3. Accessing PG&E-Owned Facilities

Only qualified PG&E employees are allowed to access and work on splice boxes, subsurface and pad-mounted equipment, and large vaults. The applicant design consultant may be present when a facility is opened, but may not work on the facility.

19.4. Accessing PG&E's Large Vaults (Non-Network)

Due to the various types of construction found in vaults, this is a site-specific consideration to be determined by the local construction group. In instances where applicant designers are allowed to enter vaults, they must be accompanied by qualified PG&E employees. Alternately, the ADE may provide the applicant designer with photographs and/or sketches of a vault's interior arrangements in lieu of a physical, onsite visit.

19.5. Applicant designers may view, sketch, or photograph the interiors of pedestals, splice boxes, and subsurface and pad-mounted equipment only when the facilities are accessed or opened by a qualified PG&E employee.

19.6. The applicant designer is not charged directly for pole testing or accessing splice boxes or vaults. PG&E charges the time for this work to the order as costs potentially are subject to allowances and refund.

Section 20.0:
Joint Trench Occupants

20.1. Facilities that are not owned by one of the participating "dry" utilities are not permitted in joint trench installations with PG&E facilities. These non-utility owned facilities pose an operational risk to PG&E facilities. Also, ownership and use of any "spare" or "future" conduits must be specified.

20.2. "Wet" utilities and/or propane are not allowed in a joint trench containing PG&E facilities.

20.3. Streetlighting circuits owned by a municipality or Caltrans are allowed in the joint trench; however, municipal fire alarm circuits are excluded.

20.4. Privately owned customer or homeowner-association lighting circuits, and/or privately owned communications facilities, are not allowed in trenches containing PG&E facilities. This is true even when the trench is located on private property.

20.5. Occupants of the joint trench must be members of Underground Service Alert (USA). This ensures that trench occupants will respond to requests to mark and locate their facilities and will take appropriate care when excavating and performing repairs on their facilities in existing trenches.

20.6. Company Form F5453-D, "Notice of Intention to Install Underground Facility," is prepared and forwarded to potential users by the designated TDC. The form must show the number and size of pipe or conduit, the placement, the intended use (e.g., power, communication, street light), and the facility owner.

20.7. Refer to Utility Operations (UO) Standard S5453, "Joint Trench," for details on joint trench design.

Section 21.0:
Applicant Design Construction Conflict Resolution

21.1. Resolving Conflicts and Problems with Obstructions

The applicant designer is responsible for resolving conflicts between the applicant design and other utilities or obstructions when this conflict is discovered after the final design has been approved by PG&E. This is true whether PG&E construction employees or an applicant's contractor discovers the problem. Also, see Section 16, "Quality and Accuracy of Applicant Design Work." All resolutions are subject to PG&E's approval. Additional facilities could require a full job revision.

21.2. Construction (Field) Facilities Conflict-Resolution Procedure

When either the applicant installer and/or the PG&E inspector discovers a conflict onsite, follow the procedure below.

A. The PG&E inspector gathers conflict information and contacts the ADE or PG&E representative to inform him or her of the situation.

B. The applicant installer contacts the applicant and the applicant designer.

C. The applicant designer proposes a solution subject to ADE review and approval, and prepares drawing revisions.

Depending on the extent of the change, either a CPUC-approved Form 62-0579 "Change Order Form," or a job revision may be required, depending on the scope of the revision. A resolution may include:

- Red-lining the current construction drawings (subject to PG&E engineering approval).
- Major design revisions and updated construction drawings.
- Major design-package revisions including applicant designer drawings, PG&Es job estimate, and extension agreements.

D. PG&E, as the ultimate owner, will determine the extent of the resolution.

Section 22.0:
Applicant Design Project Communications

22.1. Identifying the Project

When faxes, emails, or voicemail messages are sent to PG&E representatives, the applicant designer must include the PG&E PM order number and project name to avoid confusion and aid in providing a timely response.

22.2. Communication Between PG&E and the Applicant and/or Applicant Designer

A. PG&E may include the applicant or copy the applicant on any communication because the applicant is PG&E's customer as well as the applicant designer. However, PG&E does not attempt to interfere with or supplant the applicant designer/applicant business relationship. PG&E often keeps the applicant in the communication loop because the Company's experience indicates that applicants generally appreciate direct phone communication from service planning when design and construction issues occur.

B. When agreed-on dates are missed (e.g., Globals or plan check review dates), the communications are sent both to the applicant designer and to the applicant.

C. Copies of plan checks are sent to applicants.

D. When a third plan check is rejected, PG&E organizes a conference call or meeting that includes PG&E, the applicant designer, and the applicant. PG&E's goal is to obtain a commitment to make corrections. For more information, see Section 10, Subsection 10.5., "Process When the Applicant Design *Fails* the Plan Check," Paragraph 10.5.B.

E. When the applicant designer has a process question, follow the procedures outlined in Section 23., "Applicant Designer Issue-Resolution Process."

22.3. Providing a Breakdown of Charges to Third Parties

A. PG&E does not provide detailed job-cost breakdowns for applicant design firms or applicants. See Section 4., "Proprietary Materials," Subsection 4.5.

If the job includes additional plan checks, change orders, special facilities, or unusual construction costs, PG&E can provide contract-level costs for major components; for example, costs for:

- Engineering and administration
- Re-engineering and composite preparation
- Trench
- Substructures
- Metering
- Inspection
- Tie in
- ITCC

B. PG&E does not provide copies of job cost estimates. Requests for costs provided as described in Paragraph 22.3.A. (above) will be in contract-level financial dollars without proprietary information such as administrative and general indirects (see Subsection 4.5.).

Section 23.0:
Applicant Designer Issue-Resolution Process

If an applicant designer or applicant needs clarification about any of the information found in the *Applicant Design Guide*, he or she should address that question or issue as described in the paragraphs below, in sequential order.

23.1. An applicant designer should first bring questions and issues about the applicant design process to the PG&E representative or ADE. The PG&E representative or ADE will reference the *Applicant Design Guide*, applicant designer checklists, project Globals, and/or the project file and provide a response.

23.2. If the applicant designer does not agree with this response, the PG&E representative will forward the issue to the local service planning or estimating supervisor with a description of the applicant designer's questions or issues. The local service planning or estimating supervisor will review the questions, make a decision, and communicate the response to the PG&E representative or supervisor. That response will, in turn, be passed on to the applicant designer.

23.3. If the applicant designer does not agree with the PG&E supervisor's decision, the PG&E representative or supervisor will forward the issue to the area service planning manager.

23.4. The PG&E area service planning manager will review the questions or issues and makes a determination. The manager's decision is communicated to the applicant designer.

23.5. If the applicant designer disagrees with the manager's decision, the applicant designer will be given the name and contact information for PG&E's designated single-point liaison for applicant design. The applicant designer will contact the PG&E applicant design liaison either in writing or by email. The applicant designer must provide the PG&E office with which he or she is working, the PG&E representative's name, the ADE's name, and a project description that includes PG&E order number(s), as appropriate.

A. The PG&E applicant design liaison confers with the division representative or ADE.

B. The PG&E applicant design liaison researches the issue, using, for example, this *Applicant Design Guide*, tariffs, the *Tariff Application Guide*, technical support group members, tariffs and compliance documents, the law department, and applicant design work group members.

C. The PG&E applicant designer liaison reaches a decision on the applicant design issue and confirms the decision with the PG&E parties involved.

NOTE: The applicant is PG&E's customer, and PG&E will keep the applicant advised on project issues, as appropriate, including copying the applicant on necessary communications (as described in Subsection 22.2., "Communication Between PG&E and the Applicant and/or Applicant Designer").

Section 24.0:
Acronyms and Definitions

The following acronyms and definitions are found in this guide and have been collected here for your convenience.

24.1. Acronyms

1. ADE: associate distribution engineer
2. CPUC: California Public Utility Commission
3. FFE: Fast Flow Estimating
4. ITCC: Income Tax Component of Contribution
5. JP: joint pole
6. JT: joint trench
7. kV: kilovolt
8. OH: overhead
9. PG&E: Pacific Gas and Electric Company
10. PM Number: project management order number
11. psig: pounds per square inch gauge
12. PUE: public utility easement
13. TDC: trench design coordinator
14. USA: Underground Service Alert

24.2. Definitions

1. **Globals:** The package of information PG&E provides to the applicant designer detailing key information necessary to prepare a design for submittal.

2. **Globals Meeting:** A meeting held either face-to-face with PG&E representatives and the applicant designer, or via telephone conference calls (if PG&E, the applicant designer, and the applicant agree to this alternate method) to discuss the project. PG&E will have the Globals ready to hand off at this meeting. Do not confuse a Globals Meeting with a pre-engineering meeting.

3. **Job Package:** Documents that provide the information necessary to coordinate work between PG&E departments and divisions, other PG&E business units, and any subcontractors who are either directly and/or indirectly involved with the project.

4. **New Service:** A new service installation subject to allowance. Excludes insignificant load; e.g., sprinkler controllers.

5. **Required:** Either established by a technical necessity or mandated by a permitting authority as a condition of the project.

Applicant Design – Required Plans and Information Checklist

No.	*Items 1 thru 3 are required for global preparation.*	Required for:	Job Type* R	C	S	A
1	Detailed site improvement plans indicating roads, sidewalks, driveways, location of other site infrastructure elements. For individual parcels/single buildings, proposed location of gas and electric meters, building elevations, and proposed future improvements. (Meter locations are subject to PG&E approval). For inner city single buildings, proposed location of transformer(s) is also required for Global Preparation.	***Globals Preparation***	x	x	x	x
2	When offsite work is involved, a set of site improvement plans, including grading plans are required. Plans should include location of water, sewer, and storm drains. (Include an electronic copy of the site plan in AutoCAD 2000i format.)	***Globals Preparation***		x	x	
3	Disclosure of related adjacent reinforcement or WRO work (ie: Rule 20.B/C conversion, facility relocation and/or removal, etc.). If a Rule 20 is involved, the extent of the undergrounding must be known, such as rising on the closest adjacent existing pole, or if a new pole set will be acceptable with the city or county.	***Globals Preparation***	x	x	x	
	The items below are required for design submittal review based on applicability for your project. Consult with your local PG&E contact. *Items 4 thru 7 are preferred up front in the project to insure that there is a viable project and that PG&E can proceed with minimal changes.*					
4	Soils reports for projects that involve requests to install / use subsurface transformers (Soils test results must be in compliance with PG&E's requirements or subsurface transformers will not be allowed).	***Design Submittal***	x	x	x	x
5	Title 24 Utility Report or building permit.	***Design Submittal***	x	x	x	x
6	Copies of all environmental permits and/or conditions of approval. Applicant is responsible to identify all environmental requirements within said permits, approvals and/or conditions.	***Design Submittal***	x	x	x	x
7	Assessors parcel or tract map showing all easements, rights-of-way, property lines, etc.	***Design Submittal***	x	x	x	
8	Landscaping plans including sprinkler controller meter location.	***Design Submittal***		x	x	
9	Streetlight and traffic signal plans.	***Design Submittal***		x	x	
10	Building floor plan and exterior elevations.	***Design Submittal***		x		
11	Electric drawings with complete breakdown of equipment including single line drawing with number of meters. Gas plumbing plans showing service points, BTU / each building & number of meters.	***Design Submittal***		x		
12	Electric switchboard drawings. (Must be approved by PG&E prior to manufacturing the main panel.)	***Design Submittal***		x		

Job Type Index:
R = residential single family dwelling ***C*** = commercial/industrial development;
S = residential subdivision/development ***A*** = agricultural

Notes: One copy of the county or city approved plot plan with assigned address is required to establish the PG&E account prior to meter set. When there is a disagreement between the Applicant Designer and PG&E in regards to required plans and information for a project, refer to the Applicant Design Guide, Section 23, 'Applicant Designer Issue-Resolution Process'.

APPLICANT DESIGN ELECTRIC KEY SKETCH

ELECTRIC KEY SKETCH CHECKLIST

Date:	
PM Number:	
Project Name:	
Checked By:	
Office:	

	ITEM	✓	PG&E INFORMATION & COMMENTS
1	North Arrow		
2	Street Names		
3	Scale		
4	Title Block		
5	Legend and Symbols		
6	Substation Name		
7	Circuit Numbers		
8	Voltage		
9	Existing Circuitry & Equipment		
10	Equipment Numbers		
11	Standard Sketch Size		
12	Project Management Number		
13	Short Circuit Duty *		
14	Circuit Load *		
15	Sketch Details as Required		
16	Circuit Map Number		
17	Sheet Numbering		
18	Circuit Change Sheet		
19	P. E. Stamp		

* DATA provided by PG&E

APPLICANT DESIGN ELECTRIC CONSTRUCTION SKETCH

ELECTRIC CONSTRUCTION SKETCH CHECKLIST

Date:	
PM Number:	
Project Name:	
Checked By:	
Office:	

	ITEM	✓	PG&E INFORMATION AND COMMENTS
1	North Arrow		
2	Street Names		
3	Scale		
4	Title Block		
5	Legend and Symbols		
6	Conduit & Substructures		
7	Right-of-Way Information		
8	Construction Notes		
9	Material Lists (M&S codes numbers and quantities) [1] and Job Instructions		
10	Block Map Numbers		
11	Standard Sketch Size		
12	Project Management Number		
13	Lot Number / Addresses		
14	Sheet Number		
15	Transformer Load Data*		
16	Conductor Size and Length (existing & proposed) *		
17	Voltage Drop & Flicker *		
18	Pole Data [2] *		

[1] Includes installation, removal and abandonment listed by location

ELECTRIC CONSTRUCTION SKETCH CHECKLIST

19	Anchor & Guy Data[3] *		
20	Equipment Numbering[4]		
21	Transformer Coordinate Numbers [4]		
22	Cable Pulling Direction *		
23	Riser Quadrant		
24	Work Location Numbers		
25	Clearances & Mechanical Protection (PM & SS Equipment)		
26	Street Lights & Numbers		
27	Form B		
28	Joint Trench Drawing (Composite)		
29	Joint Pole Information		
30	Professional PE Stamp (Electrical or Civil)		
31	Service Locations		
32	Short Circuit Duty		

[2] Size & Class
[3] Size Lead & Strain
[4] Provided by PG&E after First Review

* Supporting DATA provided by the Applicant's Designer

APPLICANT DESIGN - GAS

GAS CONSTRUCTION DRAWING CHECKLIST

Date:	
PM Number:	
Project Name:	
Checked By:	
Office:	

	ITEM	✓	PG&E INFO AND COMMENTS
1	North Arrow		
2	Street Names		
3	Scale		
4	Dimensioning		
5	Title Block		
6	Legend and Symbols		
7	Sheet Numbering		
8	Lot Numbers & Addresses		
9	Driveway & Service Locations (Building Setback)		
10	Gas Meter / Houseline Location		
11	Gas Notes		
12	Gas Work Recap (summary of proposed work)		
13	Contractor / PG&E Construction References		
14	Project / Vicinity Location Component		
15	Gas Tie-In Notes (include Gas Std Mat'l Codes)		
16	Special or Non-Standard Tie-In Detail		
17	Permit Notations (Local Agency or Caltrans, special reqm'ts)		
18	Professional Engineer (PE) Certification Stamp		
19	USA Notification Stamp		
20	Right of Way Stamp		
21	Pressure Test Data Stamp		

APPLICANT DESIGN - GAS

GAS CONSTRUCTION DRAWING CHECKLIST

	ITEM	✓	PG&E INFO AND COMMENTS (con't)
22	Weld Inspection Stamp		
23	Plastic Pipe Inspection / Data Stamp		
24	Corrosion Mechanic Notification Stamp		
25	Cathodic Protection Requirements		
26	Material List (M&S Code Numbers & Quantities) (1)		
27	Pipe & Fitting Specifications		
28	Wall Map and Plat Sheet Numbers		
29	Cathodic Protection Area / System Numbers		
30	Cathodic Protection Conflicts (Rectifiers, Anode Beds)		
31	MAOP		
32	Emergency Zone Number (optional)		
33	Therm Billing Area Number (optional)		
34	Local contact: ADE name and phone number		
35	Substructures in Conflict (i.e. sewer, water, storm drain, other utilities)		
36	Form B *		
37	Joint Trench Drawing *		
38	Joint Trench Recap / Occupancy Guide on JT Drawing *		
39	Proposed Electric Substructures (Size and Quantity) *		
40	Proposed Telephone, CATV, Other Substructures (Size and Quantity) *		
41	Substructures: (i.e. sewer, water, storm drain, other utilities)		
42	Proposed Trench and Box Location Typical *		
43	Cover and Clearance Component (stamp) *		
44	Design Change Component (stamp) *		
45	Substructure Verification Component (stamp) *		

(1) Includes installation, removal & deactivation

* These items are required on Joint Trench-Composite Drawing(s) but, as an option, may be combined to a Gas Construction with Joint Trench-Composite Drawing(s) in one. **These are not** Required for Gas Only Construction Drawing(s)

Joint Pole Data Sheet – Applicant Design Guide

When JP's (joint poles) are involved in an applicant design job, the applicant designer shall contact the communication engineer and other joint pole owners to develop a 'confirming agreement' on the joint pole details, including but not limited to communication grade poles, pole loading, anchor loading, party installing or removing facilities, and salvaging poles. *This is a key step and should be completed early in the process to insure a timely response*. Please note that the turnaround time of JP Intents from other utilities can be up to 45 days.

The applicant designer shall include the following data on construction drawings for each poles and anchors:

-- EXISTING JP DATA --	-- NEW JP DATA (continued) --
JP Intent / pole number	party to set pole
location number	party to transfer facilities
existing pole occupants	facilities being transferred
party to remove pole	pole size / class
party to top pole	grade / space
facilities to be relinguished	anchor size and strain
pole size / class	
	-- ADDERS --
-- NEW JP DATA --	set in rock
location number	hand dig
location description	remove and replace concrete (area)
JP Intent number	wood heel, new construction
new pole tenant(s)	wood heel, existing
tenant name, contact person, phone	wood toe
each tenant attachment and space	tree removal
	inaccessible to setting equipment

Place a summary of the joint pole data on the construction sketch, including:

* Notes with the name of the communications engineer, phone number, date of the 'confirming agreement'.
* Indicate whether the agreement was made by phone or in person.
* Show all grades, strains, and tensions on the electric construction sketch for all parties attaching to the new or existing poles and anchors.
* Show the safety factor for all existing poles where the strains and tensions will change (i.e. installing down guys, transformers, re-conductoring). Attach calculation sheets.
* At all riser pole locations, provide detail of all risers to be installed and ensure the appropriate grouping of utility risers so as not to create a G.O. 95 climbing space infraction (show riser quadrant detail for all utilities involved).
* Include instructions regarding transfer of Pac Bell or CATV facilities by party (PG&E or Applicant Installer) installing new poles.

Joint Pole Data Sheet – Applicant Design Guide

Below is an example of a typical set of notes:

Typical Construction Drawing Notes for a two owner joint pole:

NEW JP Auth # _____

LOCATION 1	**LOCATION 2**
PG Top and Relinquish to OU* 1-50' PT 50116 JP# 3	PG Top and Relinquish to OU* 1-50' PT 50116 JP# 5
PG to set 1-55' Cl 2 Pole JP# _____ PG 48' - 15' OU 27' - 9' OU Tenant (CATV) @ 27'	PG to set 1-55' Cl 4 Pole JP# _____ PG 48' - 15 OU 27' - 9' OU Tenant (CATV) @ 27'
ADDERS: Rem and Repl concrete 25 sq ft Set in Place	ADDERS: None

*OU = Other Utility. Please identify this utility by it's ID code, which can be obtained from PG&E Engineering.

Pole staking is the responsibility of the Applicant Designer.

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

JOB INSTRUCTIONS					
Sketch Location	**Quantity**	**Ea/Ft**	**Material Code**	**Description**	**Accounting Footnote**
801	***2***	***ea.***	***30-0480***	***Elbow 200A LB 1/0Al 25kV***	***PGE***
801	***2***	***ea.***	***30-0481***	***Bushing Insert, 200A***	***PGE***
801	***1***	***ea.***	***36-0267***	***Fault Indicator, 200/200/2***	***PGE***
801			***As Reqd***	***Phase & Desig.Tags***	***PGE***
1	50	ft.	01-6472	Conduit, 4" PVC	
1	2	ea.	36-0761	4" Bend, 22.5, 60"r	
1	1	ea.	36-0323	Coupling, 4"	
1	1	ea.	36-0423	4" End Bell	
1	1	ea.	36-0443	4" Cap Plug	
802	***302***	***ft.***	***29-0046***	***Cable, 2-1/0 Al EPR, 25kV***	***PGE***
802	***4***	***ea.***	***38-2130***	***Cable End Cap, 1/0 Pri.***	***PGE***
802	***1***	***gal.***	***50-0031***	***Pulling Compound, 2 1/2 Gallon***	***PGE***
802	***2***	***ea.***	***50-0117***	***Front End Pack 4"-6"***	***PGE***
2	1	ea.	36-0007	Ped. Sec. 10x14	
2	3	ea.	30-0551	Ped. Bus Al. (4 Term.)	
2	1	ea.	St.Lt.Con	Streetlight Conn. Point	*PGE*
2	1	ea.	35-7232	Emb. Stl. Street Light Pole, 32'6" w/6' Arm	SL
2	1	ea.	12-8077	18" Diameter Circular Tube	SL
2	7	ft.	29-0072	#6CU Ground Wire	SL
2	1	ea.	35-0378	70 Watt Reactor Luminare	SL
2	1	ea.	45-2093	70 Watt Lamp	SL
2	1	ea.	35-0870	Photo Electric Control	SL
2	70	ft.	01-6468	Conduit, 2" PVC, SL	SL
2	3	ea.	36-0393	2" Bend, 90, 24"r, SL	SL
2	2	ea.	36-0796	2" Bend, 22.5, 36"r, SL	SL
2	2	ea.	36-0420	2" End Bell,SL	SL
2	2	ea.	36-0440	2" Cap Plug,SL	SL
2	84	ft.	29-4347	Cable, #6 A DPX, 600V	SL
2	4	ea.	38-2039	Cable End Cap, #6A	SL
2	2	ea.	30-5926	Conn., #6 to #10CU	SL
2	70	ft.	29-4991	#10 Solid Copper Wire	SL
2	1	ea.	50-0118	Front End Pack 2"-3"	SL
3	95	ft.	01-6471	Conduit, 3" PVC	
3	2	ea.	36-0405	3" Bend, 90, 24"r	
3	2	ea.	36-0800	3" Bend, 22.5, 36"r	
3	2	ea.	36-0421		
3	2	ea.	36-0441		
3	109	ft.	29-4371	Cab	
3	4	ea.	38-2042	Cab	
3	2	ea.	38-2041	Cab	
3	2	ea.	50-0118	Fro	
4	1	ea.	36-0007	P	
4	3	ea.	30-0551	Ped. Bus Al. (4 Term.)	
5	65	ft.	01-6471	Conduit, 3" PVC	

SAMPLE ELECTRIC JOB INSTRUCTIONS -- NOT INTENDED TO DEPICT CONSTRUCTION STANDARDS

PGE - PGE Supply+Install Matl.
1600 - R16 by Applicant
1603 - R16 PP Substructures by Applicant
SL- Streetlight by Applicant
All Other Matl.is R15 by Applicant

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

JOB INSTRUCTIONS					
Sketch Location	**Quantity**	**Ea/Ft**	**Material Code**	**Description**	**Accounting Footnote**
5	2	ea.	36-0405	3" Bend, 90, 24"r	
5	2	ea.	36-0800	3" Bend, 22.5, 36"r	
5	2	ea.	36-0421	3" End Bell	
5	2	ea.	36-0441	3" Cap Plug	
5	79	ft.	29-4371	Cable, 4/0 AT, 600V	
5	4	ea.	38-2042	Cable End Cap, 4/0A	
5	2	ea.	38-2041	Cable End Cap, 1/0A	
5	2	ea.	50-0118	Front End Pack 2"-3"	
6	1	ea.	26-1509	Transf. PM 100kVA, LB4	
6	1	ea.	36-0002	Transf. Pad, 50"x52"	
6	4	ea.	30-0480	Elbow 200A LB 1/0Al 25kV	
6	4	ea.	30-0481	Bushing Insert, 200A	
6	1	ea.	36-0267	Fault Indicator, 200/200/2	
6	3	ea.	30-0010	Connector, Sec. Bar	
6	3	ea.	03-1605	Cover, Bar Connector	
6	2	ea.	18-7012	Ground Rod Clamp	
6	2	ea.	18-7013	Ground Rod, 5/8"x8'	
6	15	ft.	29-0074	Wire, Ground, #2 AWG Cu.	
6			As Reqd	Phase & Desig.Tags	
6			As Reqd	High Voltage Decal	
6			As Reqd	T# Decal	
7	60	ft.	01-6471	Conduit, 3" PVC	
7	2	ea.	36-0405	3" Bend, 90, 24"r	
7	2	ea.	36-0800	3" Bend, 22.5, 36"r	
7	2	ea.	36-0421	3" End Bell	
7	2	ea.	36-0441	3" Cap Plug	
7	74	ft.	29-4371	Cable, 4/0 AT, 600V	
7	4	ea.	38-2042	Cable End Cap, 4/0A	
7	2	ea.	38-2041	Cable End Cap, 1/0A	
7	2	ea.	50-0118	Front End Pack 2"-3"	
8	1	ea.	36-0006	Ped. Sec. 14.5x22.5	
8	3	ea.	30-0553	Ped. Bus Al. (8 Term.)	
8	1	ea.	St.Lt.Con	Streetlight Conn. Point	PGE
8	1	ea.	35-7232	Emb. Stl. Street Light Pole, 32'6" w/6' Arm	SL
8	1	ea.	12-8077	18" Diameter Circular Tube	SL
8	7	ft.	29-0072	#6CU Ground Wire	SL
8	1	ea.	35-0378	70 Watt Reactor Luminare	SL
8	1	ea.	45-2093	70 Watt Lamp	SL
8	1	ea.	35-0870	Photo Electric Control	SL
8	65	ft.	01-6468	Conduit, 2" PVC, SL	SL
8	3	ea.	36-0393	2" Bend, 90, 24"r, SL	SL
8	2	ea.	36-0796	2" Bend, 22.5, 36"r, SL	SL
8	2	ea.	36-0420	2" End Bell,SL	SL
8	2	ea.	36-0440	2" Cap Plug,SL	SL
8	79	ft.	29-4347	Cable, #6 A DPX, 600V	SL
8	4	ea.	38-2039	Cable End Cap, #6A	SL
8	2	ea.	30-5926	Conn., #6 to #10CU	SL

PGE - PGE Supply+Install Matl.
1600 - R16 by Applicant
1603 - R16 PP Substructures by Applicant
SL- Streetlight by Applicant
All Other Matl.is R15 by Applicant

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

JOB INSTRUCTIONS					
Sketch Location	**Quantity**	**Ea/Ft**	**Material Code**	**Description**	**Accounting Footnote**
8	70	ft.	29-4991	#10 Solid Copper Wire	SL
8	1	ea.	50-0118	Front End Pack 2"-3"	SL
9	390	ft.	01-6472	Conduit, 4" PVC	
9	2	ea.	36-0414	4" Bend, 90, 36"r	
9	2	ea.	36-0761	4" Bend, 22.5, 60"r	
9	2	ea.	36-0423	4" End Bell	
9	2	ea.	36-0443	4" Cap Plug	
9	404	ft.	29-0046	Cable, 2-1/0 Al EPR, 25kV	
9	4	ea.	38-2130	Cable End Cap, 1/0 Pri.	
9	1.5	gal.	50-0031	Pulling Compound, 2 1/2 Gallon	
9	2	ea.	50-0117	Front End Pack 4"-6"	
10	1	ea.	36-0007	Ped. Sec. 10x14	
10	3	ea.	30-0551	Ped. Bus Al. (4 Term.)	
11	70	ft.	01-6471	Conduit, 3" PVC	
11	2	ea.	36-0405	3" Bend, 90, 24"r	
11	2	ea.	36-0800	3" Bend, 22.5, 36"r	
11	2	ea.	36-0421	3" End Bell	
11	2	ea.	36-0441	3" Cap Plug	
11	84	ft.	29-4371	Cable, 4/0 AT, 600V	
11	4	ea.	38-2042	Cable End Cap, 4/0A	
11	2	ea.	38-2041	Cable End Cap, 1/0A	
11	2	ea.	50-0118	Front End Pack 2"-3"	
12	1	ea.	36-0006	Ped. Sec. 14.5x22.5	
12	3	ea.	30-0553	Ped. Bus Al. (8 Term.)	
12	1	ea.	St.Lt.Con	Streetlight Conn. Point	PGE
12	1	ea.	35-7232	Emb. Stl. Street Light Pole, 32'6" w/6' Arm	SL
12	1	ea.	12-8077	18" Diameter Circular Tube	SL
12	7	ft.	29-0072	#6CU Ground Wire	SL
12	1	ea.	35-0378	70 Watt Reactor Luminare	SL
12	1	ea.	45-2093	70 Watt Lamp	SL
12	1	ea.	35-0870	Photo Electric Control	SL
12	5	ft.	01-6468	Conduit, 2" PVC, SL	SL
12	2	ea.	36-0393	2" Bend, 90, 24"r, SL	SL
12	2	ea.	36-0420	2" End Bell,SL	SL
12	2	ea.	36-0440	2" Cap Plug,SL	SL
12	20	ft.	29-4347	Cable, #6 A DPX, 600V	SL
12	4	ea.	38-2039	Cable End Cap, #6A	SL
12	2	ea.	30-5926	Conn., #6 to #10CU	SL
12	70	ft.	29-4991	#10 Solid Copper Wire	SL
13	70	ft.	01-6471	Conduit, 3" PVC	
13	2	ea.	36-0405	3" Bend, 90, 24"r	
13	2	ea.	36-0800	3" Bend, 22.5, 36"r	
13	2	ea.	36-0421	3" End Bell	
13	2	ea.	36-0441	3" Cap Plug	
13	84	ft.	29-4371	Cable, 4/0 AT, 600V	

PGE - PGE Supply+Install Matl.
1600 - R16 by Applicant
1603 - R16 PP Substructures by Applicant
SL- Streetlight by Applicant
All Other Matl.is R15 by Applicant

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

JOB INSTRUCTIONS					
Sketch Location	**Quantity**	**Ea/Ft**	**Material Code**	**Description**	**Accounting Footnote**
13	4	ea.	38-2042	Cable End Cap, 4/0A	
13	2	ea.	38-2041	Cable End Cap, 1/0A	
13	2	ea.	50-0118	Front End Pack 2"-3"	
14	1	ea.	26-1509	Transf. PM 100kVA, LB4	
14	1	ea.	36-0002	Transf. Pad, 50"x52"	
14	2	ea.	30-0480	Elbow 200A LB 1/0Al 25kV	
14	2	ea.	30-0481	Bushing Insert, 200A	
14	2	ea.	30-0486	Insulated Bushing Well Plug	
14	3	ea.	30-0010	Connector, Sec. Bar	
14	3	ea.	03-1605	Cover, Bar Connector	
14	2	ea.	18-7012	Ground Rod Clamp	
14	2	ea.	18-7013	Ground Rod, 5/8"x8'	
14	15	ft.	29-0074	Wire, Ground, #2 AWG Cu.	
14			As Reqd	Phase & Desig.Tags	
14			As Reqd	High Voltage Decal	
14			As Reqd	T# Decal	
15	70	ft.	01-6471	Conduit, 3" PVC	
15	2	ea.	36-0405	3" Bend, 90, 24"r	
15	2	ea.	36-0800	3" Bend, 22.5, 36"r	
15	2	ea.	36-0421	3" End Bell	
15	2	ea.	36-0441	3" Cap Plug	
15	84	ft.	29-4371	Cable, 4/0 AT, 600V	
15	4	ea.	38-2042	Cable End Cap, 4/0A	
15	2	ea.	38-2041	Cable End Cap, 1/0A	
15	2	ea.	50-0118	Front End Pack 2"-3"	
16	1	ea.	36-0007	Ped. Sec. 10x14	
16	3	ea.	30-0552	Ped. Bus Al. (6 Term.)	
16	1	ea.	St.Lt.Con	Streetlight Conn. Point	PGE
16	1	ea.	35-7232	Emb. Stl. Street Light Pole, 32'6" w/6' Arm	SL
16	1	ea.	12-8077	18" Diameter Circular Tube	SL
16	7	ft.	29-0072	#6CU Ground Wire	SL
16	1	ea.	35-0378	70 Watt Reactor Luminare	SL
16	1	ea.	45-2093	70 Watt Lamp	SL
16	1	ea.	35-0870	Photo Electric Control	SL
16	75	ft.	01-6468	Conduit, 2" PVC, SL	SL
16	3	ea.	36-0393	2" Bend, 90, 24"r, SL	SL
16	2	ea.	36-0796	2" Bend, 22.5, 36"r, SL	SL
16	2	ea.	36-0420	2" End Bell,SL	SL
16	2	ea.	36-0440	2" Cap Plug,SL	SL
16	89	ft.	29-4347	Cable, #6 A DPX, 600V	SL
16	4	ea.	38-2039	Cable End Cap, #6A	SL
16	2	ea.	30-5926	Conn., #6 to #10CU	SL
16	70	ft.	29-4991	#10 Solid Copper Wire	SL
16	1	ea.	50-0118	Front End Pack 2"-3"	SL
17	1	ea.	02-5601	Pri. Box 3'X5'X3.5' IVT	
803	***2***	***ea.***	***30-0487***	***Splice, 200A, 1/0A EPC***	*PGE*

PGE - PGE Supply+Install Matl.
1600 - R16 by Applicant
1603 - R16 PP Substructures by Applicant
SL- Streetlight by Applicant
All Other Matl.is R15 by Applicant

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

JOB INSTRUCTIONS					
Sketch Location	**Quantity**	**Ea/Ft**	**Material Code**	**Description**	**Accounting Footnote**
803	***2***	***ea.***	***36-2616***	***Cable Rack Kit, 2 Blk.***	*PGE*
17	20	ft.	29-0074	Wire, Ground, #2 AWG Cu.	
17	1	ea.	01-0098	Ground Rod, 3/4"x12'	
17	1	ea.	18-7017	Ground Rod Clamp	
17			As Reqd	Phase & Desig.Tags	
803			***As Reqd***	***Phase & Desig.Tags***	*PGE*
18	225	ft.	01-6472	Conduit, 4" PVC	
18	1	ea.	36-0414	4" Bend, 90, 36"r	
18	3	ea.	36-0761	4" Bend, 22.5, 60"r	
18	2	ea.	36-0423	4" End Bell	
18	2	ea.	36-0443	4" Cap Plug	
18	242	ft.	29-0046	Cable, 2-1/0 Al EPR, 25kV	
18	4	ea.	38-2130	Cable End Cap, 1/0 Pri.	
18	1.5	gal.	50-0031	Pulling Compound, 2 1/2 Gallon	
18	2	ea.	50-0117	Front End Pack 4"-6"	
1600	1,908	ft.	29-4371	Cable, 4/0 AT, 600V	1600
1600	88	ea.	38-2042	Cable End Cap, 4/0A	1600
1600	44	ea.	38-2041	Cable End Cap, 1/0A	1600
1600	20	ea.	50-0118	Front End Pack 2"-3"	1600
1602	1,150	ft.	01-6471	Conduit, 3" PVC	1602
1602	21	ea.	36-0405	3" Bend, 90, 24"r	1602
1602	10	ea.	36-0800	3" Bend, 22.5, 36"r	1602
1602	10	ea.	36-0328	3" Bend, 90, 36"r	1602
1602	21	ea.	36-0421	3" End Bell	1602
1602	21	ea.	36-0426	3" Rigid Cap	1602
1602	21	ea.	36-0441	3" Cap Plug	1602
1603	440	ft.	01-6471	Conduit, 3" PVC	1603
1603	22	ea.	36-0800	3" Bend, 22.5, 36"r	1603
1612	22	ea.	24-0328	Meter, Soc. Type Class 200	*PGE*

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

PG&E Install Material List				
Material Code	Accounting Footnote	Description	Ea/Ft	Total
24-0328	PGE	Meter, Soc. Type Class 200	ea.	22
29-0046	PGE	Cable, 2-1/0 Al EPR, 25kV	ft.	302
30-0480	PGE	Elbow 200A LB 1/0Al 25kV	ea.	2
30-0481	PGE	Bushing Insert, 200A	ea.	2
30-0487	PGE	Splice, 200A, 1/0A EPC	ea.	2
36-0267	PGE	Fault Indicator, 200/200/2	ea.	1
36-2616	PGE	Cable Rack Kit, 2 Blk.	ea.	2
38-2130	PGE	Cable End Cap, 1/0 Pri.	ea.	4
50-0031	PGE	Pulling Compound, 2 1/2 Gallon	gal.	1
50-0117	PGE	Front End Pack 4"-6"	ea.	2
As Reqd	PGE	Phase & Desig.Tags	(blank)	
St.Lt.Con	PGE	Streetlight Conn. Point	ea.	4

SAMPLE Material List
NOT INTENDED TO DEPICT CONSTRUCTION STANDARDS
Elec Material Lists should be a pivot table spun from the job instructions.

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

Applicant Install Material List				
Material Code	Accounting Footnote	Description	Ea/Ft	Total
01-0098	(blank)	Ground Rod, 3/4"x12'	ea.	1
01-6468	SL	Conduit, 2" PVC, SL	ft.	215
01-6471	1602	Conduit, 3" PVC	ft.	1150
	1603	Conduit, 3" PVC	ft.	440
	(blank)	Conduit, 3" PVC	ft.	430
01-6472	(blank)	Conduit, 4" PVC	ft.	665
02-5601	(blank)	Pri. Box 3'X		1
03-1605	(blank)	Cover, Bar		6
12-8077	SL	18" Diamet		4
18-7012	(blank)	Ground Ro		4
18-7013	(blank)	Ground Ro		4
18-7017	(blank)	Ground Ro		1
26-1509	(blank)	Transf. PM		2
29-0046	(blank)	Cable, 2-1/		646
29-0072	SL	#6CU Ground Wire	ft.	28
29-0074	(blank)	Wire, Ground, #2 AWG Cu.	ft.	50
29-4347	SL	Cable, #6 A DPX, 600V	ft.	272
29-4371	1600	Cable, 4/0 AT, 600V	ft.	1908
	(blank)	Cable, 4/0 AT, 600V	ft.	514
29-4991	SL	#10 Solid Copper Wire	ft.	280
30-0010	(blank)	Connector, Sec. Bar	ea.	6
30-0480	(blank)	Elbow 200A LB 1/0Al 25kV	ea.	6
30-0481	(blank)	Bushing Insert, 200A	ea.	6
30-0486	(blank)	Insulated Bushing Well Plug	ea.	2
30-0551	(blank)	Ped. Bus Al. (4 Term.)	ea.	9
30-0552	(blank)	Ped. Bus Al. (6 Term.)	ea.	3
30-0553	(blank)	Ped. Bus Al. (8 Term.)	ea.	6
30-5926	SL	Conn., #6 to #10CU	ea.	8
35-0378	SL	70 Watt Reactor Luminare	ea.	4
35-0870	SL	Photo Electric Control	ea.	4
35-7232	SL	Emb. Stl. Street Light Pole, 32'6" w/6' Arm	ea.	4
36-0002	(blank)	Transf. Pad, 50"x52"	ea.	2
36-0006	(blank)	Ped. Sec. 14.5x22.5	ea.	2
36-0007	(blank)	Ped. Sec. 10x14	ea.	4
36-0267	(blank)	Fault Indicator, 200/200/2	ea.	1
36-0323	(blank)	Coupling, 4"	ea.	1
36-0328	1602	3" Bend, 90, 36"r	ea.	10
36-0393	SL	2" Bend, 90, 24"r, SL	ea.	11
36-0405	1602	3" Bend, 90, 24"r	ea.	21
	(blank)	3" Bend, 90, 24"r	ea.	12
36-0414	(blank)	4" Bend, 90, 36"r	ea.	3
36-0420	SL	2" End Bell,SL	ea.	8
36-0421	1602	3" End Bell	ea.	21
	(blank)	3" End Bell	ea.	12
36-0423	(blank)	4" End Bell	ea.	5
36-0426	1602	3" Rigid Cap	ea.	21
36-0440	SL	2" Cap Plug,SL	ea.	8
36-0441	1602	3" Cap Plug	ea.	21
	(blank)	3" Cap Plug	ea.	12
36-0443	(blank)	4" Cap Plug	ea.	5
36-0761	(blank)	4" Bend, 22.5, 60"r	ea.	7

SAMPLE Material List
NOT INTENDED TO DEPICT CONSTRUCTION STANDARDS
Elec Material Lists should be a pivot table spun from the job instructions.

PGE - PGE Supply+Install Matl.
1600 - R16 by Applicant
1603 - R16 PP Substructures by Applicant
SL- Streetlight by Applicant
All Other Matl.is R15 by Applicant

PM #30xxxxxx
Date: 6-3-09
Revision: 3

INSTALL URD SYSTEM
YOUR PROJECT DESCRIPTION HERE

Applicant Install Material List				
Material Code	Accounting Footnote	Description	Ea/Ft	Total
36-0796	SL	2" Bend, 22.5, 36"r, SL	ea.	6
36-0800	1602	3" Bend, 22.5, 36"r	ea.	10
	1603	3" Bend, 22.5, 36"r	ea.	22
	(blank)	3" Bend, 22.5, 36"r	ea.	12
38-2039	SL	Cable End Cap, #6A	ea.	16
38-2041	1600	Cable End Cap, 1/0A	ea.	44
	(blank)	Cable End Cap, 1/0A	ea.	12
38-2042	1600	Cable End Cap, 4/0A	ea.	88
	(blank)	Cable End Cap, 4/0A	ea.	24
38-2130	(blank)	Cable End Cap, 1/0 Pri.	ea.	8
45-2093	SL	70 Watt Lamp	ea.	4
50-0031	(blank)	Pulling Compound, 2 1/2 Gallon	gal.	3
50-0117	(blank)	Front End Pack 4"-6"	ea.	4
50-0118	1600	Front End Pack 2"-3"	ea.	20
	SL	Front End Pack 2"-3"	ea.	3
	(blank)	Front End Pack 2"-3"	ea.	12
As Reqd	(blank)	High Voltage Decal	(blank)	
		Phase & Desig.Tags	(blank)	
		T# Decal	(blank)	

SAMPLE ELECTRIC KEY SKETCH

LEGEND

(PROPOSED)

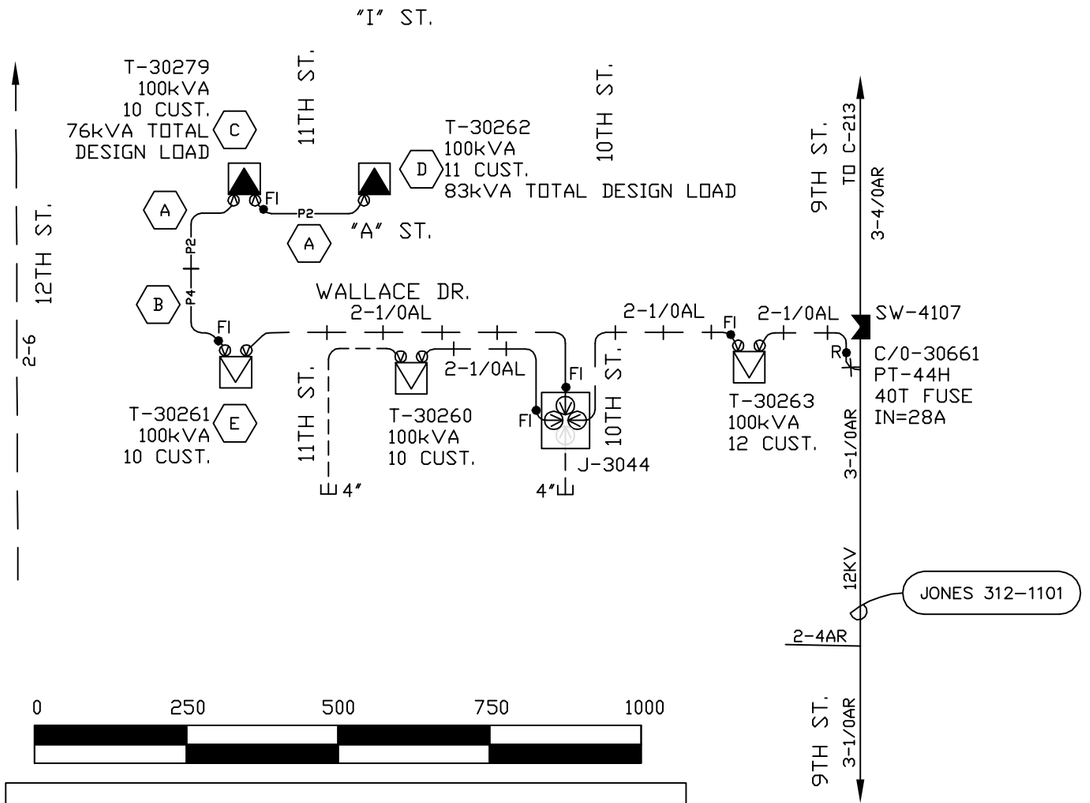
- P2 — PRIMARY UNDERGROUND DISTRIBUTION (2-1/0AL EPR-CONC-ENCAP-PE 25kV CABLE IN 4" CONDUIT)
- P4 — PRIMARY UNDERGROUND DISTRIBUTION (2-1/0AL EPR-CONC-ENCAP-PE 25kV CABLE IN EXISTING 4" CONDUIT)
- DF — PADMOUNT TRANSFORMER
- FI — UNDERGROUND FAULT INDICATOR

(EXISTING)

- THREE PHASE PRIMARY OVERHEAD DISTRIBUTION (SIZE AS SHOWN)
- SINGLE PHASE PRIMARY OVERHEAD DISTRIBUTION (SIZE AS SHOWN)
- SINGLE PHASE PRIMARY UNDERGROUND DISTRIBUTION (SIZE AS SHOWN)
- EMPTY CONDUIT (SIZE AS SHOWN)
- DEADFRONT PADMOUNT TRANSFORMER
- 200A PADMOUNT JUNCTION
- R — PRIMARY RISER
- FUSED CUTOUT
- OVERHEAD SWITCH
- FI — UNDERGROUND FAULT INDICATOR

(FUTURE)

- 200A LOADBREAK ELBOW



MAP: EE-3-1A

SUMMER INTERIOR
INSUL. DIST. D
VOLT. AREA 2
LIGHT LOADING
12kV NON CORROSION
JONES SUBSTATION
CIR 312-1101

N

WORK DESCRIPTION

- A — INSTALL 2-1/0AL EPR-CONC-ENCAP 25kV CABLE IN 4" PVC CONDUIT. (BY CONTRACTOR)
- B — INSTALL 2-1/0AL EPR-CONC-ENCAP 25kV CABLE IN 4" PVC CONDUIT. (CONDUIT BY CONTRACTOR, CABLE AND TERMINATIONS BY PG&E)
- C AND D — INSTALL 1-100kVA, 12/21YKV-120/240V, 1ø PADMOUNT TRANSFORMER. (BY CONTRACTOR)
- E — INSTALL ELBOWS AS REQUIRED. (BY PG&E)

NOTES:
AMPS ARE SUMMER INTERIOR - CLIMATE ZONE "S"
RESIDENTIAL PRIMARY LOAD 6.7kVA/CUSTOMER.

0 250 500 750 1000

SAMPLE SKETCH ONLY
NOT INTENDED TO DEPICT CONSTRUCTION STANDARDS

THE ORIGINAL SKETCH IS ANSI 'B' SIZE - 11"X17"

YOUR PE STAMP HERE

PRIMARY CIRCUIT MAP
YOUR TITLE BLOCK
PROJECT INFO
INSTALL UNDERGROUND RESIDENTIAL DISTRIBUTION SYSTEM
SOMEWHERE, CA

REV	DATE	DESCRIPTION
1	8/3/09	REVISED PER PG&E COMMENTS
2	8/13/09	REVISED FOR PHASE CHANGES
3	9/10/09	REVISED PER PG&E COMMENTS

YOUR TITLE BLOCK

PG&E PM# 30_____
PG&E N#10_____
PG&E APPROVAL:
ISSUED FOR BID:
DATE: 6/3/09
SCALE: 1"=250'

DRAWING NO. E-01
YOUR JOB #
REVISION NUMBER 3
SHEET 1 OF 2
LOCATION INFO

LEGEND

(PROPOSED)

- ——P2—— PRIMARY UNDERGROUND DISTRIBUTION (2–1/0AL EPR–CONC–ENCAP–PE 25KV CABLE IN 4" PVC CONDUIT)
- ——P4—— PRIMARY UNDERGROUND DISTRIBUTION (2–1/0AL EPR–CONC–ENCAP–PE 25KV CABLE IN EXISTING 4" PVC CONDUIT)
- ——S1—— SECONDARY UNDERGROUND DISTRIBUTION (4/0A TPX IN 3" PVC CONDUIT)
- ——SV1—— UNDERGROUND SERVICE (4/0A TPX IN 3" PVC CONDUIT)
- ——SL—— STREETLIGHT SERVICE (#6A DPX IN 2" PVC CONDUIT)
- DF DEADFRONT PADMOUNT TRANSFORMER
- P2 10"x14" SECONDARY PEDESTAL
- P3 14"x22" SECONDARY PEDESTAL
- 5 3'X5'X3'6" PRIMARY BOX
- STREETLIGHT

(EXISTING)

- SINGLE PHASE PRIMARY UNDERGROUND DISTRIBUTION (SIZE AS SHOWN)
- UNDERGROUND SECONDARY DISTRIBUTION (SIZE AS SHOWN)
- STREET LIGHT UNDERGROUND (SIZE AS SHOWN)
- EMPTY CONDUIT (SIZE AS SHOWN)
- P2 10"x14" SECONDARY PEDESTAL
- P3 14"x22" SECONDARY PEDESTAL
- P5 200A PADMOUNT JUNCTION
- DEADFRONT PADMOUNT TRANSFORMER
- STREETLIGHT

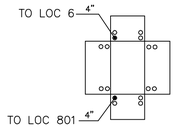
TRANSFORMER DATA TABLE

LOC.#	TRF#	TX. SIZE	#CUST	#–BUSHING	ESD. KVA.	PRI. VOLTS	SEC. VOLTS	COORDINATE #	MANUFACTURE	SERIAL NUMBER
6	T–30279	100 KVA	10	4	76	12 KV	240/120	_____	_____	_____
14	T–30262	100 KVA	11	4	83	12 KV	240/120	_____	_____	_____

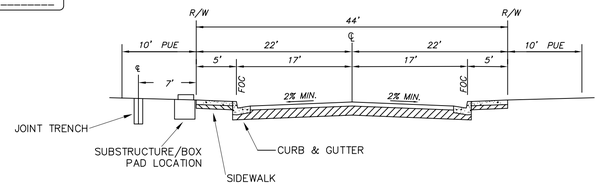
PG&E'S PLAN CHECK DOES NOT RELEASE THE APPLICANT FROM RESPONSIBILITY TO CONSTRUCT THE FACILITIES ACCORDING TO PG&E'S STANDARDS.

IN THE EVENT OF A CONFLICT DURING CONSTRUCTION BETWEEN PG&E STANDARDS AND THE PLANS, PG&E STANDARDS WILL CONTROL.

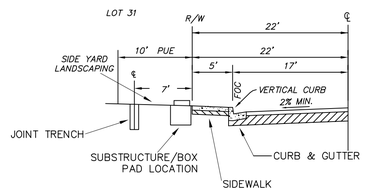
SAMPLE ELECTRIC CONSTRUCTION SKETCH



17 DETAIL 3'X5'X3.5' IVT BEHIND SIDEWALK



44' STREET TYPICAL SECTION
THEATRE DR. 'A' ST. N.T.S.



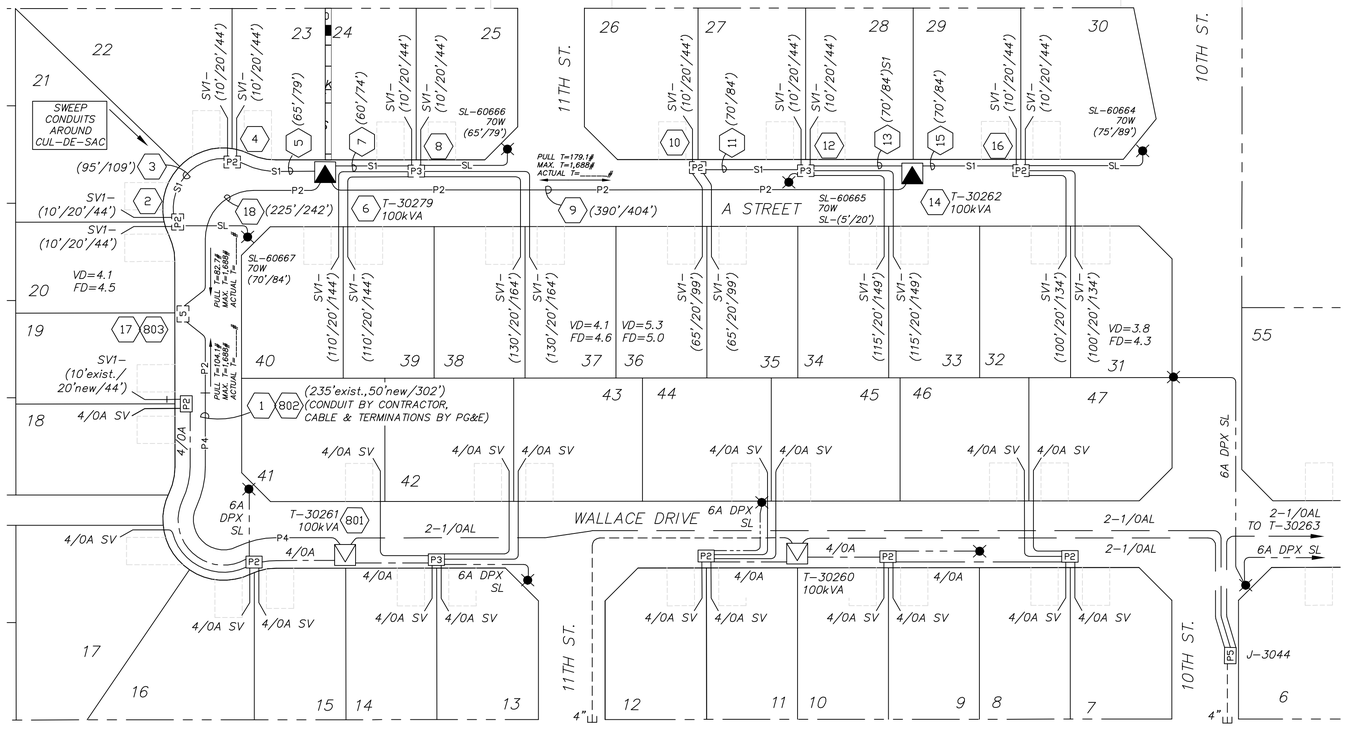
10TH STREET SECTION–BETWEEN THEATRE DR. & A ST. N.T.S.

SEE PM #30xxxxxx FOR PHASE 1 INSTALLS.

0 100 200 300 400

SAMPLE SKETCH ONLY
NOT INTENDED TO DEPICT CONSTRUCTION STANDARDS

THE ORIGINAL SKETCH IS ANSI 'D' SIZE – 22"X34"



MAP: C,0–9–22

SUMMER INTERIOR
INSUL. DIST. D
VOLT. AREA 2
LIGHT LOADING
12KV NON CORROSION
JONES SUBSTATION
CCT 312–1101

NOTES

1. CALL UNDERGROUND SERVICE ALERT (U.S.A.) AT 811 AT LEAST TWO WORKING DAYS PRIOR TO DIGGING. LOCATE ALL UNDERGROUND FACILITIES BEFORE TRENCH & EXCAVATION.
2. BEFORE BEGINNING SUBSTRUCTURE WORK, PLEASE CALL PG&E UNDERGROUND INSPECTOR TWO WORKING DAYS IN ADVANCE.
3. THIS IS AN APPLICANT INSTALLED JOB. SERVICE COMPLETIONS BY DEVELOPER. STUB & CAP SERVICE CONDUITS AT PROPERTY LINE FOR LATER COMPLETION.
4. TRENCH TO BE JOINT WITH ELECTRIC, GAS, TELEPHONE AND CATV.
5. CITY PERMITS REQUIRED.
6. FACILITIES LOCATED IN 10' P.U.E. JOINT TRENCH IS 6' BEHIND FACE OF CURB, AND SUBSTRUCTURES ARE BEHIND JOINT TRENCH IN THE PUE.
7. DESIGN CRITERIA: 2,000 SQ. FT. SINGLE FAMILY RESIDENCE, 200A M.S., 5 TON A/C, 4/0A TPX SERVICE IN 3" PVC CONDUIT.
8. THE FAULT DUTY AT ALL MAIN SERVICES IS AT OR BELOW 10,000A BASED ON PG&E STANDARDS.
9. CABLE LENGTHS INCLUDE TAILS. (FRANCHISE/PRIVATE PROPERTY/CABLE)
10. SEE UTILITY COMPOSITE DRAWING FOR ACTUAL TRENCH AND SUBSTRUCTURE LOCATIONS, AND RETAINING WALL REQUIREMENTS.
11. RIGID CAP ALL SPARE CONDUITS.
12. SECONDARY & SERVICE CONDUITS SHALL ENTER BOXES FROM UNDERNEATH WITH 90 DEGREE VERTICAL BENDS.
13. STREETLIGHTS PER LS–1E, (4) 70W HPSV, 32'6" STEEL POLE, 6' MAST ARM. SEE UTILITY COMPOSITE DRAWING FOR STREETLIGHT SYSTEM DETAILS. (4) 120V S.L. CONNECTION POINTS.

RIGHT OF WAY NOTE:

PG&E LAND DEPARTMENT TO REVIEW FOR ADEQUATE RIGHTS OF WAY FOR PG&E FACILITIES. ANY ADDITIONAL REQUIRED RIGHTS OF WAY TO BE SURVEYED AND DOCUMENTED BY PG&E AT APPLICANT'S EXPENSE.

TRANSFORMERS, PADMOUNT–JUNCTION BOXES AND 3'X5' ENCLOSURE INSTALLATIONS REQUIRE RIGHTS FOR ENCLOSURE OR PAD AND 3' OF OPERATING SPACE ON ENDS OR SIDES AND ALONG THE BACK (PROPERTY) SIDE.RIGHTS FOR OTHER TYPE EQUIPMENT SHALL BE AS NECESSARY FOR THE SPECIFIC EQUIPMENT REQUIREMENTS. LAND RIGHTS SHALL INCLUDE NECESSARY OPERATING ROOM AS PER PG&E STANDARD 051122 AND SPECIFIC EQUIPMENT REQUIREMENTS.

APPLICANT INSTALLATION NOTES:

1. INSTALL "AIF" TAGS ON ALL SPLICES & TERMINATIONS (DATED & SIGNED).
2. INSTALL TEMPORARY END CAPS ON ALL CABLES PER PG&E DWG. 048640.
3. INSTALL IDENTIFICATION TAGS, PLATES AND EXTERNAL SIGNS PER PG&E DWGS. 033582 & 051768.
4. INSTALL CABLES PER PG&E DWG. 038193.
5. BOND COMMUNICATION CIRCUITS PER PG&E DWG. 060981.
6. FAULT INDICATORS SHOULD BE AUTOMATIC RESET REMOTE INDICATING TYPE PER PG&E DWG. 061683.
7. APPLICANT TO MAKE CONNECTION BETWEEN PROPOSED AND EXISTING VACANT CONDUITS AS DIRECTED BY THE PG&E INSPECTOR.
8. MAINTAIN 6" SEPARATION, WHERE POSSIBLE, BETWEEN CONDUITS ENTERING SPLICE BOX KNOCKOUTS.
9. CAP ALL CONDUITS NOT ENTERING A SPLICE BOX OR ENCLOSURE PER PG&E DWG. 062288, TABLE 10.
10. INSTALL END BELLS ON ALL CONDUITS ENTERING SPLICE BOXES OR ENCLOSURES (UNLESS DUCT TERMINATORS ARE UTILIZED) PER PG&E DWG. 062288, TABLE 12. SEE BULLETIN 2002–41B.
11. MAXIMUM PREFORMED BENDS IN ANY SINGLE RUN NOT TO EXCEED 330 DEGREES. A SERVICE BOX ON PRIVATE PROPERTY WILL BE REQUIRED IF THE RUN, INCLUDING BEND AT SERVICE RISER, EXCEEDS 330 DEGREES.
12. ALL HORIZONTAL SECONDARY & SERVICE BENDS TO BE 36" RADIUS. ALL PRIMARY HORIZONTAL BENDS TO BE 60" RADIUS (2" CONDUIT MAY BE 36"). ALL SECONDARY BENDS ENTERING THE BOTTOM OF BOXES TO BE 24" RADIUS AND TRANSFORMER PADS TO BE 36" RADIUS. ALL SERVICE BENDS ENTERING THE BOTTOM OF BOXES AND BENDS AT SERVICE RISER TO BE 24" RADIUS. ALL PRIMARY BENDS ENTERING UNDER TRANSFORMER OR SWITCH PADS ARE TO BE 36" RADIUS.
13. SPARE SECONDARY/SERVICE CONDUITS ARE NOT TO ENTER SECONDARY SPLICE BOXES UNLESS SPECIFIED ON THE CONSTRUCTION DRAWING. TERMINATE CONDUITS PAST CURB OR BEHIND SIDEWALK. IF DRIVEWAY EXISTS AT TERMINATION POINT, TURN CONDUIT WITH 90° BEND TOWARDS SOURCE OF CABLE AND TERMINATE CONDUIT PAST DRIVEWAY.
14. APPLICANT TO INSTALL ALL SPLICE BOXES, ENCLOSURES, PADS AND OTHER SUBSURFACE EQUIPMENT TO FINAL GRADE AND MEET ALL REQUIREMENTS OF PG&E STANDARD DWG. 051122.
15. WHEN WORKING IN VICINITY OF ENERGIZED FACILITIES, CONTACT PG&E INSPECTOR TO ARRANGE FOR STANDBY PG&E PERSONNEL.
16. THE MANUFACTURER NAME AND SERIAL NUMBER MUST BE NOTED ON THE CONSTRUCTION SKETCH FOR ALL EQUIPMENT INSTALLED.

YOUR PE STAMP HERE

YOUR FIRM INFO

PG&E PM# 30xxxxxx
PG&E N# 10xxxxxxx
PG&E SO# N/A
ISSUED FOR BID: DATE: 06/03/09
SCALE: 1"=50'

REV	DATE	DESCRIPTION
1	6/3/09	REVISED PER PG&E COMMENTS
2	8/13/09	REVISED FOR PHASE CHANGES
3	9/10/09	REVISED PER PG&E COMMENTS

YOUR TITLE BLOCK
CONSTRUCTION DRAWING
PROJECT INFO
PROJECT INFO
SOMEWHERE, CA

DRAWING NO. E–02
JOB NUMBER
REVISION NUMBER 3
SHEET 1 OF 1
LOCATION INFO

Joint Pole Data Sheet – Applicant Design Guide

When JP's (joint poles) are involved in an applicant design job, the applicant designer shall contact the communication engineer and other joint pole owners to develop a 'confirming agreement' on the joint pole details, including but not limited to communication grade poles, pole loading, anchor loading, party installing or removing facilities, and salvaging poles. *This is a key step and should be completed early in the process to insure a timely response*. Please note that the turnaround time of JP Intents from other utilities can be up to 45 days.

The applicant designer shall include the following data on construction drawings for each poles and anchors:

-- EXISTING JP DATA --	-- NEW JP DATA (continued) --
JP Intent / pole number	party to set pole
location number	party to transfer facilities
existing pole occupants	facilities being transferred
party to remove pole	pole size / class
party to top pole	grade / space
facilities to be relinguished	anchor size and strain
pole size / class	
	-- ADDERS --
-- NEW JP DATA --	set in rock
location number	hand dig
location description	remove and replace concrete (area)
JP Intent number	wood heel, new construction
new pole tenant(s)	wood heel, existing
tenant name, contact person, phone	wood toe
each tenant attachment and space	tree removal
	inaccessible to setting equipment

Place a summary of the joint pole data on the construction sketch, including:

* Notes with the name of the communications engineer, phone number, date of the 'confirming agreement'.
* Indicate whether the agreement was made by phone or in person.
* Show all grades, strains, and tensions on the electric construction sketch for all parties attaching to the new or existing poles and anchors.
* Show the safety factor for all existing poles where the strains and tensions will change (i.e. installing down guys, transformers, re-conductoring). Attach calculation sheets.
* At all riser pole locations, provide detail of all risers to be installed and ensure the appropriate grouping of utility risers so as not to create a G.O. 95 climbing space infraction (show riser quadrant detail for all utilities involved).
* Include instructions regarding transfer of Pac Bell or CATV facilities by party (PG&E or Applicant Installer) installing new poles.

Joint Pole Data Sheet – Applicant Design Guide

Below is an example of a typical set of notes:

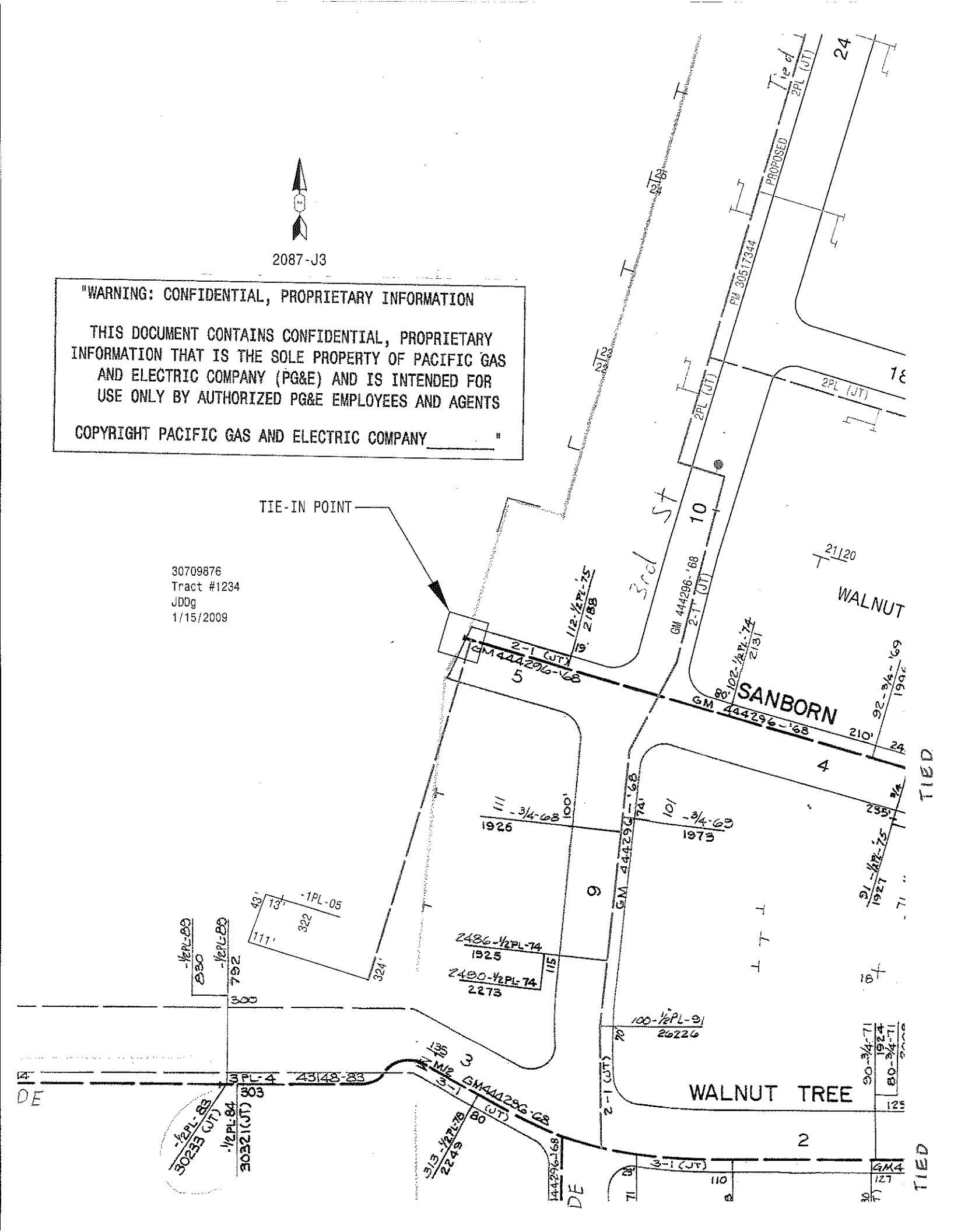
Typical Construction Drawing Notes for a two owner joint pole:

NEW JP Auth # _____

LOCATION 1	**LOCATION 2**
PG Top and Relinquish to OU* 1-50' PT 50116 JP# 3	PG Top and Relinquish to OU* 1-50' PT 50116 JP# 5
PG to set 1-55' Cl 2 Pole JP# _____ PG 48' - 15' OU 27' - 9' OU Tenant (CATV) @ 27'	PG to set 1-55' Cl 4 Pole JP# _____ PG 48' - 15 OU 27' - 9' OU Tenant (CATV) @ 27'
ADDERS: Rem and Repl concrete 25 sq ft Set in Place	ADDERS: None

*OU = Other Utility. Please identify this utility by it's ID code, which can be obtained from PG&E Engineering.

Pole staking is the responsibility of the Applicant Designer.



"WARNING: CONFIDENTIAL, PROPRIETARY INFORMATION

THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY (PG&E) AND IS INTENDED FOR USE ONLY BY AUTHORIZED PG&E EMPLOYEES AND AGENTS

COPYRIGHT PACIFIC GAS AND ELECTRIC COMPANY_____"

PM# 30991234 12-25-10

PG&E Materials

Quantity	Unit	M-Code	Description	Rule
1	EA	020928	TEE MET PIPE 3/4" X 1"CTS PUNCH	16

Applicant Materials

Quantity	Unit	M-Code	Description	Rule
167	FT	016083	TUBING POLYETHYLENE 1	16
2	EA	018740	RISER GAS SERVICE 1-1/4" X 1" CTS PE	16
2	EA	020774	PLUG MET PIPE 3/4 inch	16
2	EA	020776	PLUG MET PIPE 1-1/4 inch	16
2	EA	036242	COCK GAS SVCE IRON BODY SCREWED 3/4"	16
2	EA	036243	COCK GAS SVCE IRON BODY SCREWED 1-1/4"	16
2	EA	231398	PROTECTOR WING COCK	16
2	EA	231437	CAP END HARDENED STEEL COLD	16
2	EA	240051	LOCK BARREL MEDIUM STD LEVEL SECURITY	16
177	FT	294414	WIRE ELEC INSL COP 10 AWG 600V YELLOW	16
2	EA	306345	SLEEVE CABLE/WIRE #10 - #10 AWG COPPER	16

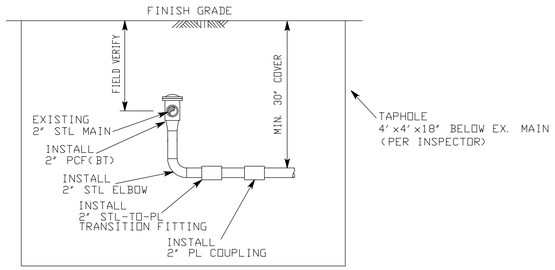
The materials list may be included on the title page of the sketch as an option.
Example Only-Not intended to depict engineering standards.

REFERENCE EXAMPLE ONLY
GAS CONSTRUCTION

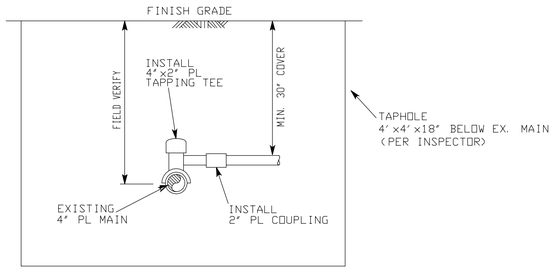
BILL OF MATERIALS

DESCRIPTION	PG&E MATERIAL CODE	UNITS	APPROX. QUANTITY
2" PL PIPE	016079	Ft.	1095
1/2" PL PIPE	033929	Ft.	953
LOCATING WIRE	294414	Ft.	2183
5 LBS ZINC ANODE	569145	EA	1
FRAME COVER	043225	EA	1
FRAME BODY	043271	EA	1
FRAME BODY EXTENSION	016063	EA	1
1/2" SERIES 400 EFV	020948	EA	5
2"x1/2" PL SVC TEE	018720	EA	16
1/2" 3-WAY BLIND END WYE	020663	EA	11
3/4"x1/2" RISER	040762	EA	27
3/4" SVC VALVE	036224	EA	27
3/4" STL PLUG	020759	EA	27
TIE-IN MATERIAL			
2" STL BOTTOM TAPPING TEE	022740	EA	1
2" STL PIPE	010147	FT.	5
2" STL ELBOW	022136	EA	1
2" STL-TO-PL TRANSITION FITTING	029805	EA	1
2" PL COUPLING	029754	EA	2
4"x2" PL TAPPING TEE	030602	EA	1

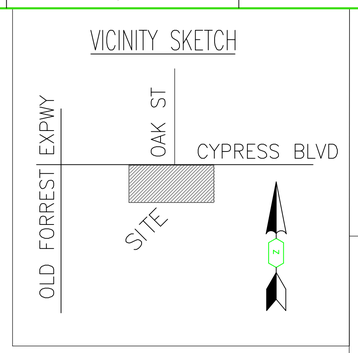
* THE APPLICANT IS RESPONSIBLE FOR FURNISHING ALL MATERIALS FOR THE WORK, PER GENERAL TERMS AND CONDITIONS FOR GAS AND ELECTRIC EXTENSION AND SERVICE CONSTRUCTION BY APPLICANT. HOWEVER, IF PG&E IS PROVIDING TIE-IN MATERIAL, ENSURE APPLICANT IS BILLED FOR THE MATERIAL.

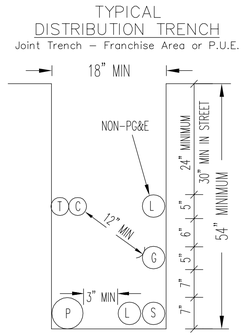


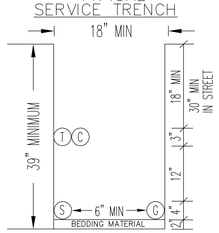
DETAIL A
NTS

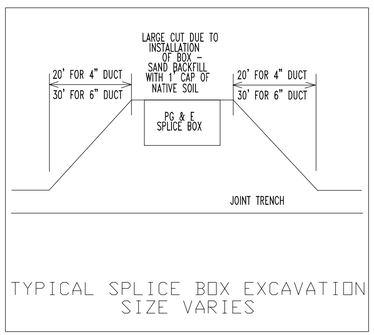


DETAIL B
NTS

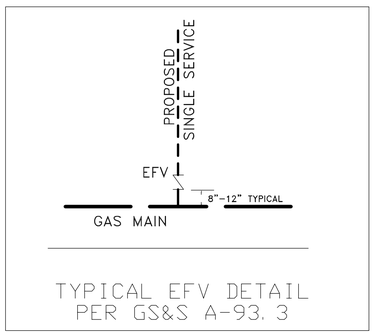








TYPICAL SPLICE BOX EXCAVATION
SIZE VARIES



TYPICAL EFV DETAIL
PER GS&S A-93.3

THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO COMMENCING THE WORK.

ATTENTION FOREMAN
PRIOR TO STARTING JOB, CONSULT AREA CORROSION MECHANIC FOR LOCATING WIRE INSTALLTION AND CATHODIC PROTECTION REQUIREMENTS.

FOREMAN NOTE:
CONTACT CORROSION MECHANIC 24 HOURS PRIOR TO JOB COMPLETION AT THIS PHONE NUMBER: _____
SIGNED_____DATE_____

Installation Tested or Inspected and Noted on Drawing. All Levels Satisfactory per PG&E GS&S 0-16

Qualified Employee _____ Date _____

Corrosion mechanic's signature is required when a CPA boundary is within the scope of the project.

APPLICANT WILL PROVIDE PSE/PUE FOR ALL UTILITIES WITHIN THE DEVELOPMENT

PIPE WRAP REMOVAL

-For work on pre-1972 pipe, assume the wrap contains >1% asbestos until the wrap can be tested.
-Obtain samples of the wrap, and have samples tested for asbestos in accordance with RP 4711.
-Test results are to be included with as-builts.
-Follow procedure in RP 4711 for removal of pipe wrap.

PIPE TYPE: _____
YEAR INSTALLED: _____

PROJECT CONDITIONS STAMP

Type(s) of Work:
☐ New Business
☐ PG&E Maintenance & Construction

Project Conditions:
☐ NONE APPARENT (if project design changes, contact ADE)
or
☐ CONDITIONS APPLY:
☐ PERMITS ☐ TAILBOARD ☐ OTHER
(Provide additional information on line below)

BY: SIGNATURE, NAME, [CORPORATE ID], DATE

48 HOURS PRIOR TO TRENCHING
CALL: 811

NOTIFIED U.S.A.
DATE:
TICKET #
BY:

GAS LOAD SUMMARY PER UNIT:
* WATER HEATING @ 100 GALLONS
* SPACE HEATING @ 80 MBTU
* OVEN / RANGES @ 65 MBTU
* DRYER STUBS @ 35 MBTU

JOB NOTES:

APPLICANT TO TRENCH AND BACKFILL

APPLICANT TO INSTALL:

- 1095' - 2" HP PLASTIC GAS MAIN (JT)
- 953' - 1" HP PLASTIC GAS SERVICES (JT)
  (16 SERVICES & 11 BRANCHES)
- (1) - 5# ZINC ANODE

APPLICANT TO OBTAIN ALL NECESSARY PERMITS

PG&E TO DO ALL HOT TIE-IN WORK

CONTRACTOR CONSTRUCTION REFERENCES

1. REFER TO GAS STANDARDS A-90, A-91 & A-93.1 FOR TYPICAL DIRECT BURIAL PLASTIC GAS MAIN AND SERVICE INSTALLATION.
2. REFER TO GAS STANDARDS A-90, A-90.2, A-90.3 & A-91 FOR TYPICAL PLASTIC GAS MAIN AND SERVICE INSERT CONSTRUCTION.
3. THE GAS BRANCH SERVICE FACILITIES WILL BE INSTALLED PER GAS STANDARD A-42.
4. REFER TO GAS STANDARDS A-90.2, O-12, O-13, O-13.1 & O-16 FOR TYPICAL ANODE AND LOCATING WIRE INSTALLATION ON DIRECT BURIAL LASTIC GAS MAIN AND SERVICES.
5. REFER TO GAS STANDARDS A-90 & A-91 FOR TYPICAL GAS SERVICE RISER INSTALLATION.
6. REFER TO GAS STANDARD A-34 FOR TEST CRITERIA ON GAS MAIN AND SERVICES.
7. PACIFIC GAS AND ELECTRIC TO PERFORM ALL HOT TIE-INS AND PURGING OF GAS PIPING PER GAS STANDARD A-38.
8. CONTRACTOR IS RESPONSIBLE FOR CROSSING EXISTING WATER, SEWER AND STROM DRAIN LINES, EITHER UNDER OR OVER, AS REQUIRED TO MEET PG&E COVER AND CLEARANCE REQUIREMENTS. REFER TO UO STANDARD S5453.
9. THE LOCATION OF ALL EXISTING OR NEWLY INSTALLED WATER, SEWER, AND STORM DRAIN OR OTHER LINES, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT RELY ON PG&E TO LOCATE FACILITIES. (PG&E WILL LOCATE PG&E FACILITIES UPON PROPER USA NOTIFICATION). CALL USA AT "811" 48 HOURS PRIOR TO DIGGING.
10. THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE TRENCH SPOIL WITH SELECT BACKFILL AS REQUIRED BY PG&E SPECIFICATIONS, AND ANY LOCAL CITY, COUNTY OR STATE REQUIREMENTS.
11. THE CONTRACTOR WILL BE REQUIRED TO PLACE TEMPORARY AND/OR PERMANENT PAVING IN ACCORDANCE WITH ANY LOCAL CITY, COUNTY OR STATE REQUIRMENTS.
12. USE #10 WIRE ON ALL MAINS AND SERVICES.

LEGEND

G	GAS
P	ELECTRIC PRIMARY
S	ELECTRIC SECONDARY
T	TELEPHONE
C	CABLE TV
L	STREET LIGHT
———	GAS MAIN (JT)
- - -	GAS SERVICE (JT)
▽	EFV
●	5# ZINC ANODE
(E)	ELECTROLYSIS TEST STATION IN FRAME AND COVER
▲	PROPOSED PADMOUNT TRANSFORMER
[S]	PROPOSED 17" X 30" SECONDARY BOX
[T]	PROPOSED 17" X 30" TELEPHONE BOX
[C]	PROPOSED 17" X 30" CATV BOX
SD	STORM DRAIN
SWR	SEWER
WTR	WATER

PM# 30991234
NOTIF# 10199999
MAOP 60 PSIG
NOP 40 PSIG
CPA 2311-22
PLAT 2311-A7(23)
TBA P14
EMERG ZONE 06-50-B6

CO: SD: NOTIF.: Other: SHT: SHEETS REV.

ENGINEERING AND PLANNING DEPT.
PHONE #: FAX #:
PACIFIC GAS AND ELECTRIC COMPANY

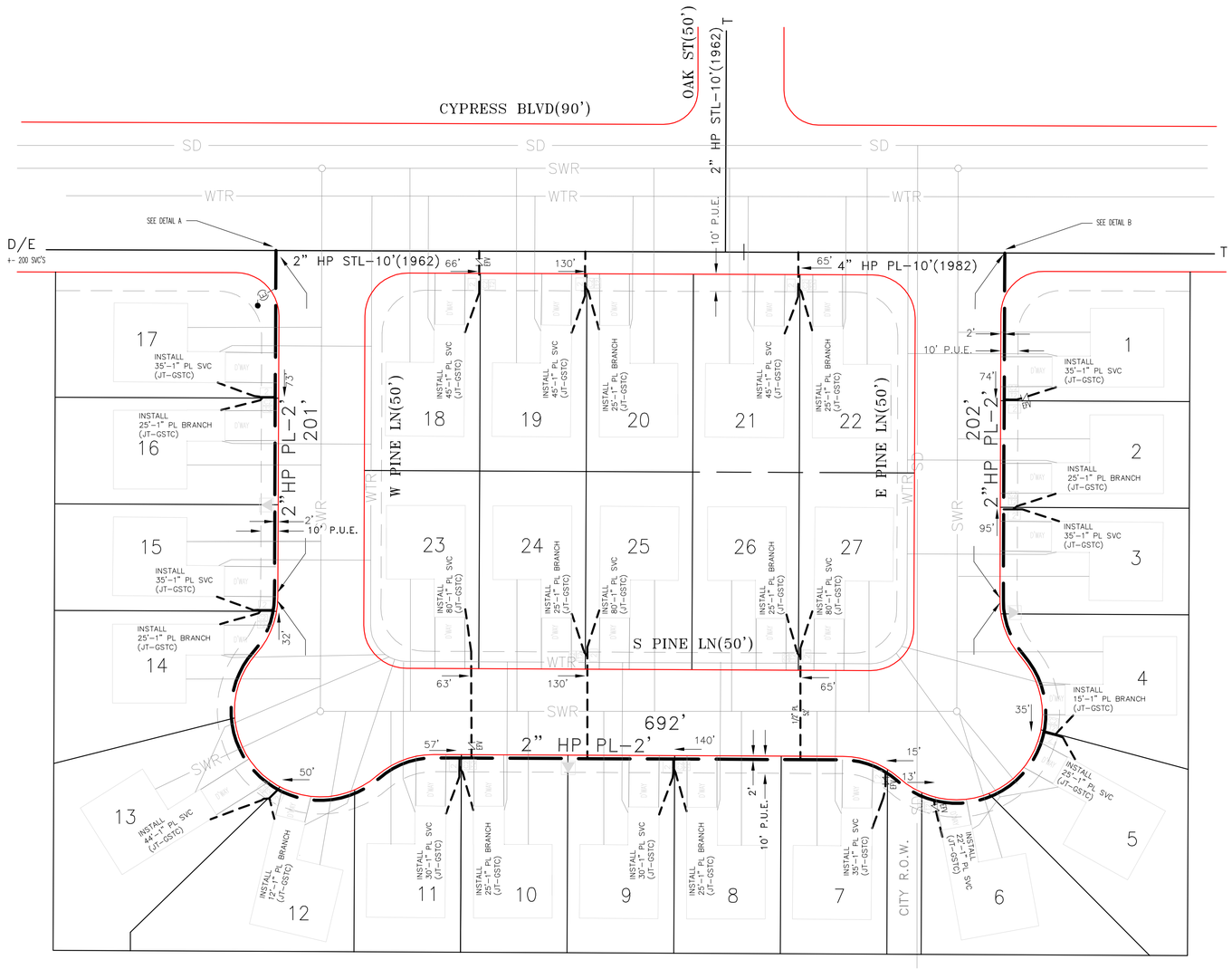
EST: ADE: SUPV: REP: PLNR: SCALE: 1"=100' DATE:

REVISIONS

NO.	DATE	DESCRIPTION	ORDER #	DWN	CHKD	SUPV	APVD	BY

0 1 INCH
6 5 4 3 2 1 INCH 0

REFERENCE EXAMPLE ONLY
GAS CONSTRUCTION



48 HOURS PRIOR TO TRENCHING
CALL: 811

NOTIFIED U.S.A.
DATE:
TICKET #
BY:

TEST AT 100-110 PSI FOR MINIMUM OF 5 MIN.			
PRESSURE	DURATION	INITIALS	DATE OF TEST
PLASTIC PIPE DATA			
SIZE	MANUFACTURED	DATE OF MANUFACTURE	
1/2"			
2"			

Welding Inspected per PG&E Gas Standard D-40
Visual.....☐
Magnetic Particle.....☐
Inspector_____
Date _____

PG&E CONTACTS:	
REP:	PHONE:
EST SUPV:	PHONE:
GAS ADE:	PHONE:
GAS EST:	PHONE:

DESIGN CHANGE COMPONENT
ANY CHANGE TO THIS DESIGN MUST BE APPROVED BY: local ADE name PHONE:

PM# 30991234
NOTIF# 10199999
MAOP 60 PSIG
NOP 40 PSIG
CPA 2311-22
PLAT 2311-A7(23)
TBA P14
EMERG ZONE 06-50-B6

CO:
SD:
NOTIF.:
Other:
SHT:
SHEETS
REV.

ENGINEERING AND PLANNING DEPT.
PHONE #:
FAX #:
PACIFIC GAS AND ELECTRIC COMPANY

EST:
ADE:
SUPV:
REP:
PLNR:
SCALE: 1"=100'
DATE:

REVISIONS

NO.	DATE	DESCRIPTION	ORDER #	DWN	CHKD	SUPV	APVD BY

REFERENCE EXAMPLE ONLY

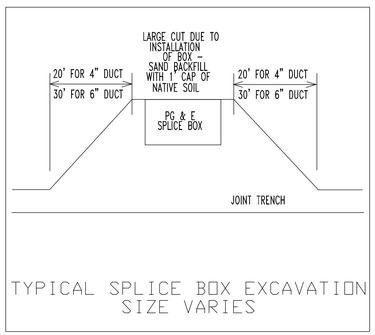
JOINT TRENCH COMPOSITE

JOINT TRENCH RECAP

TRENCH SECTION	INDICATES SPECIFIC UTILITIES IN TRENCH G	T	C	S	P				FIG.	DIST. OR SERV DIST	SVC-F	SVC-P	TRENCH SIZE "W" x "D"	BACKFILL 4"SHADE	ADDITIONAL REQ'D	GRAVEL	SPREAD	HAUL	SURFACE DIRT	PVMT.	CONC.	OTHER	FOOTAGE
GPSTC	X	X	X	X	X					X			30"x54"				X		X				565
GPTC	X	X	X		X					X			30"x53"					X		X				140
GSTC	X	X	X	X						X			30"x54"				X		X				355
PTC		X	X		X					X			30"x39"					X		X				230
STC		X	X	X						X			30"x54"				X		X				300
GC	X		X							X			30"x39"				X		X				50
T		X								X			12"x34"				X		X				125
GSTC	X	X	X	X							X		24"x39"				X		X				156
G	X										X		12"x34"				X		X				30
GSTC	X	X	X	X								X	24"x39"				X		X				767

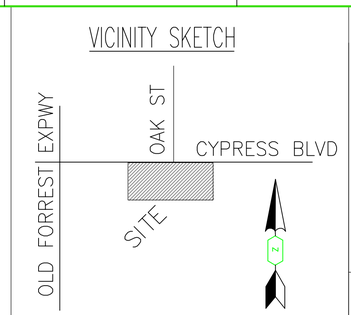
MINIMUM SEPARATION AND CLEARANCE REQUIREMENTS

		G	T	T	C	S	P	MINIMUM COVER
G	GAS	—	12"	12"	12"	6"	12"	24"; 30" in street
T	TELEPHONE	12"	—	1"	1"	12"	12"	24"; 30" in street
T	TELEPHONE (DB)	12"	1"	—	1"	12"	12"	24"; 30" in street
C	CATV	12"	1"	1"	—	12"	12"	24"; 30" in street
S	ELECTRIC SECONDARY	6"	12"	12"	12"	—	3"	24"; 30" in street
P	ELECTRIC PRIMARY	12"	12"	12"	12"	3"	—	30"; 36" in street
SL	STREETLIGHT	6"	12"	12"	12"	1"	3"	24"; 30" in street

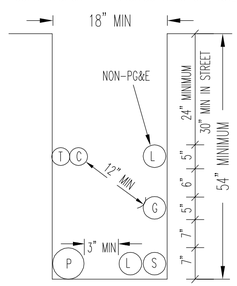


TYPICAL SPLICE BOX EXCAVATION
SIZE VARIES

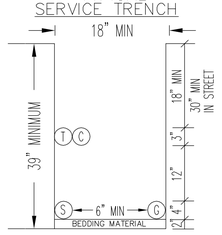
THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO COMMENCING THE WORK.



TYPICAL
DISTRIBUTION TRENCH
Joint Trench – Franchise Area or P.U.E.



TYPICAL
SERVICE TRENCH



APPLICANT WILL PROVIDE PSE/PUE FOR ALL UTILITIES WITHIN THE DEVELOPMENT

JOB NOTES:

APPLICANT TO TRENCH AND BACKFILL.
ALL TRENCHES AND CONDUITS MUST BE INSPECTED AND APPROVED BY A PG&E INSPECTOR.
NOTIFY 48 HOURS IN ADVANCE.
APPLICANT TO STAKE LOT LINES AT PROPERTY CORNER.
APPLICANT TO OBTAIN ALL NECESSARY PERMITS.

PG&E TO DO ALL HOT TIE-IN WORK.

ALL CONDUITS SHALL BE PROVEN FREE OF DIRT, CAPPED AND MARKED.
ALL SERVICE CONDUITS TO EXXTEND FROM MAIN LINE TRENCH TO 5' INSIDE PROPERTY. ALL OTHER CONDUITS TO CLEAR AT RADIUS.

CONTRACTOR CONSTRUCTION REFERENCES:

1. All trenching, backfilling and installation must comply with PG&E UO Standard S5453,
2. Backfill shall be approved by the utility companies and the City. Compaction will be tested and passed by the soils engineer.
3. If soil is not rock free, add 4" of sand bedding.
4. The trenching agent shall coordinate the utility companies' installation.
5. The Contractor shall notify Underground Service Alert (USA) two working days prior to start of work.
6. This plan is to be used for the sole purpose of digging the Joint Trench. See PG&E, phone, and cable TV companies' engineered plans for the exact size and number of conduits or pipe installed in the Joint Trench.
7. The preferred trench location is in the Public Utilities Easement (P.U.E.).
8. All depths and resulting cover requirements are measured from final grade.
9. Water, sewer, drains, sanitary waste, fuels, oil, propane, sprinkler, irrigation, steam and other wet facilities shall maintain a minimum of three feet from the nearest outer surface of PG&E's facilities with no less than one foot of undisturbed soil between the adjacent sides of the individual trenches.
10. Non-Utility facilities are not allowed in any Joint Utility trench, e.g., irrigation control lines, building fire alarm systems, private telephone systems, outdoor electrical cable, etc.
11. Trench dimensions shown are typical. Trench sizes and configurations may vary depending upon occupancy and/or field conditions. Trench size and configuration must at all times be constructed in a manner that ensures proper clearances and cover requirements are met. Any "change" to the trench width and configurations as shown in this exhibit must be designed to ensure this requirement.
12. The Trenching Agent is responsible for the removal of excess spoil and associated costs.
13. The contractor and/or developer are responsible for obtaining all necessary right-of-ways and Public Utility Easements (PUE).
14. Applicant will obtain all permits.

PG&E will obtain tie-in permit if required by local jurisdiction.

LEGEND

G	GAS
P	ELECTRIC PRIMARY
S	ELECTRIC SECONDARY
T	TELEPHONE
C	CABLE TV
L	STREET LIGHT
	PROPOSED DISTRIBUTION TRENCH
	PROPOSED SERVICE TRENCH
	PROPOSED PADMOUNT TRANSFORMER
	PROPOSED 17" X 30" SECONDARY BOX
	PROPOSED 17" X 30" TELEPHONE BOX
	PROPOSED 17" X 30" CATV BOX
SD	STORM DRAIN
SWR	SEWER
WTR	WATER
GPSTC 65	OCCUPANTS (GAS, PRIMARY, SECONDARY, TELEPHONE, CABLE) FEET OF TRENCH

PROJECT CONDITIONS STAMP
Type(s) of Work:
☐ New Business
☐ PG&E Maintenance & Construction
Project Conditions:
☐ NONE APPARENT (If project design changes, contact ADE)
or
☐ CONDITIONS APPLY:
☐ PERMITS ☐ TAILBOARD ☐ OTHER
(Provide additional information on line below)
BY: _____
SIGNATURE, NAME, [CORPORATE ID], DATE

48 HOURS PRIOR TO TRENCHING
CALL: 811

NOTIFIED U.S.A.
DATE:
TICKET #
BY:

PM# 30991234
NOTIF# 10199999
MAOP 60 PSIG
NOP 40 PSIG
CPA 2311-22
PLAT 2311-A7(23)
TBA P14
EMERG ZONE 06-50-B6

CO: SD: NOTIF.: Other: SHT: SHEETS REV.
PM:
ENGINEERING AND PLANNING DEPT.
PHONE #: FAX #:
PACIFIC GAS AND ELECTRIC COMPANY
EST: ADE: SUPV: REP: PLNR: SCALE: 1"=100' DATE:
DWN CHKD SUPV APVD BY
ORDER #
REVISIONS
NO. DESCRIPTION DATE

REFERENCE EXAMPLE ONLY
JOINT TRENCH COMPOSITE

SUBSTRUCTURE VERIFICATION

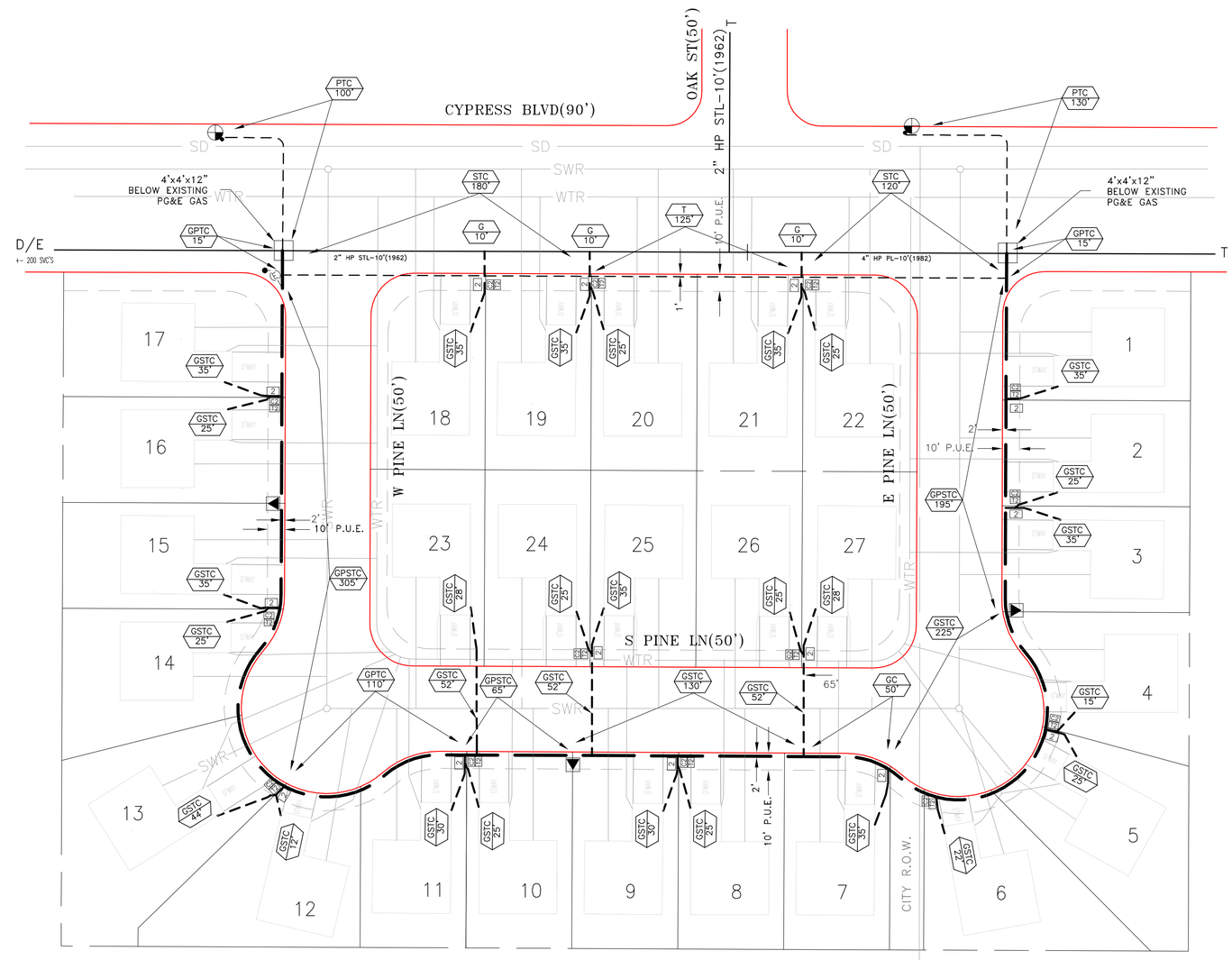
TRENCHING AGENT:

Proper depth of trench and substructures are imperative to the design of our utility distribution system.

If a variance is necessary please notify PG&E so that our inspector or engineering department can approve and initial those sections of trench and/or substructures which do not comply with the original design. This must be done prior to installation of any substructures.

The trenching agent will be held responsible for any unapproved design changes in trench or substructure depth or configuration.

This does not supercede, but is in addition to any of the normal trench inspections your project may require.



MINIMUM SEPARATION AND CLEARANCE REQUIREMENTS							
		G	T	T	C	S	P	MINIMUM COVER
G	GAS	—	12"	12"	12"	6"	12"	24"; 30" in street
T	TELEPHONE	12"	—	1"	1"	12"	12"	24"; 30" in street
T	TELEPHONE (DB)	12"	1"	—	1"	12"	12"	24"; 30" in street
C	CATV	12"	1"	1"	—	12"	12"	24"; 30" in street
S	ELECTRIC SECONDARY	6"	12"	12"	12"	—	3"	24"; 30" in street
P	ELECTRIC PRIMARY	12"	12"	12"	12"	3"	—	30"; 36" in street
SL	STREETLIGHT	6"	12"	12"	12"	1"	3"	24"; 30" in street

PG&E CONTACTS:	
REP:	PHONE:
EST SUPV:	PHONE:
GAS ADE:	PHONE:
GAS EST:	PHONE:

48 HOURS PRIOR TO TRENCHING
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REVISIONS

NO.	DATE	DESCRIPTION	ORDER #	DWN	CHKD	SUPV	APVD BY