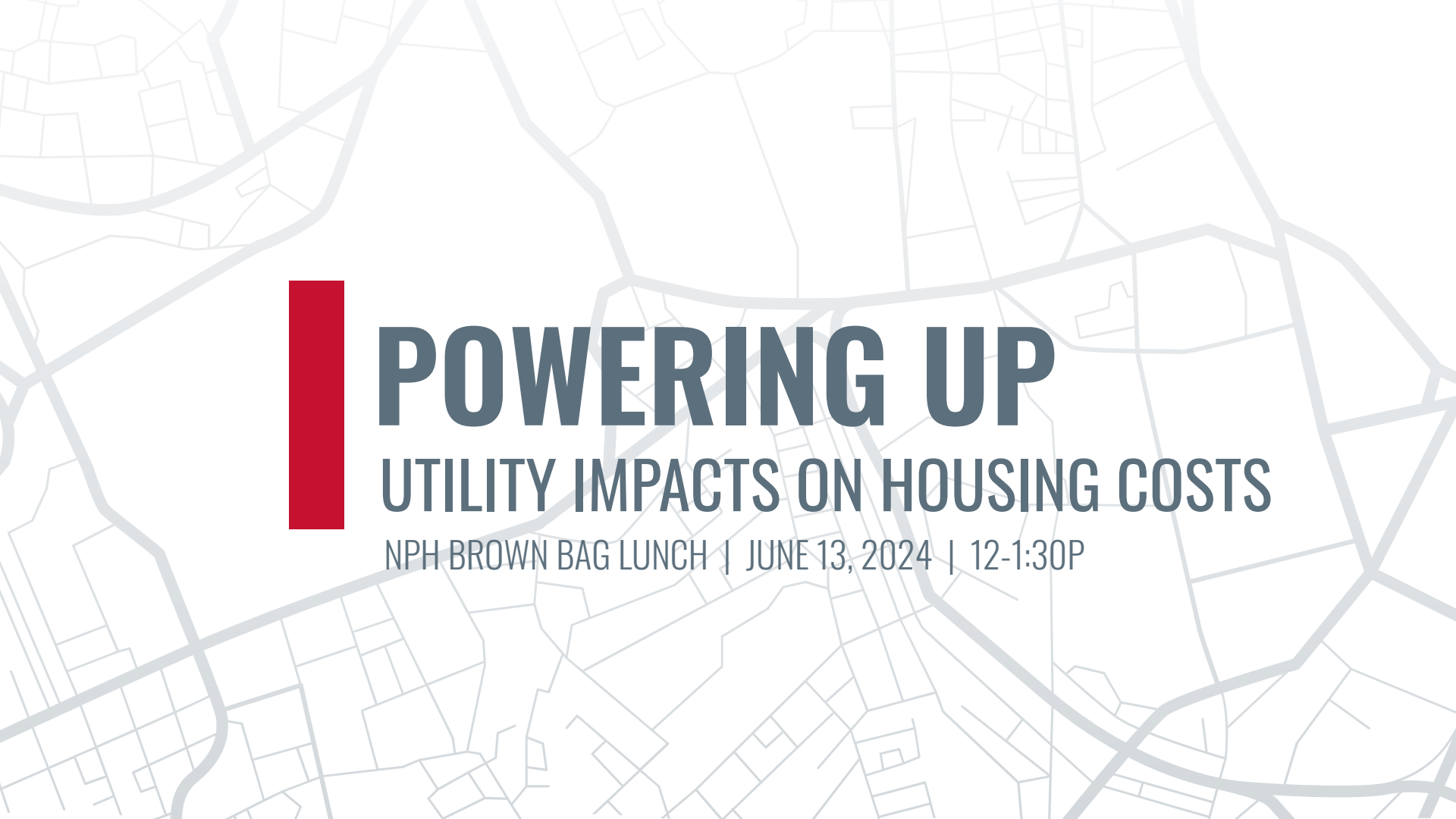




POWERING UP

UTILITY IMPACTS ON HOUSING COSTS

NPH BROWN BAG LUNCH | JUNE 13, 2024 | 12-1:30P

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HIGH PERFORMANCE RESULTS

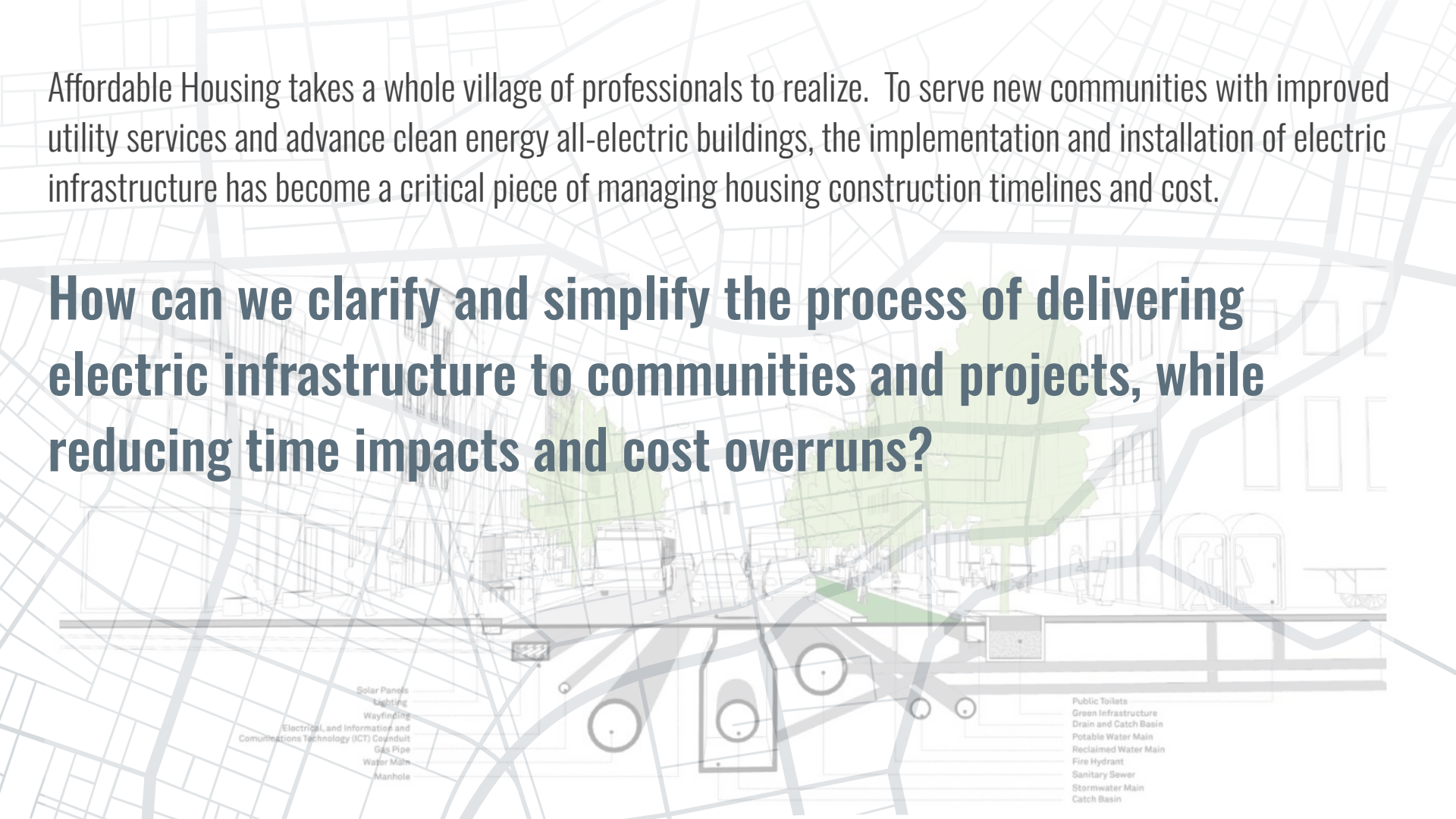
180 Jones Street, San Francisco

The background of the slide is a light gray map of a city street grid. The streets are represented by thin gray lines, with some thicker lines indicating major thoroughfares. The grid is irregular, with various block shapes and street orientations. A solid red vertical bar is positioned on the right side of the slide, to the right of the main text.

PANEL AND PANELIST INTRODUCTIONS

Affordable Housing takes a whole village of professionals to realize. To serve new communities with improved utility services and advance clean energy all-electric buildings, the implementation and installation of electric infrastructure has become a critical piece of managing housing construction timelines and cost.

How can we clarify and simplify the process of delivering electric infrastructure to communities and projects, while reducing time impacts and cost overruns?



Solar Panels
Lighting
Wayfinding
Electrical, and Information and
Communications Technology (ICT) Conduit
Gas Pipe
Water Main
Manhole

Public Toilets
Green Infrastructure
Drain and Catch Basin
Potable Water Main
Reclaimed Water Main
Fire Hydrant
Sanitary Sewer
Stormwater Main
Catch Basin

PANELISTS



JASON LING

Principal, Civil Engineer
Urban Design Consulting Engineers
(UDCE)



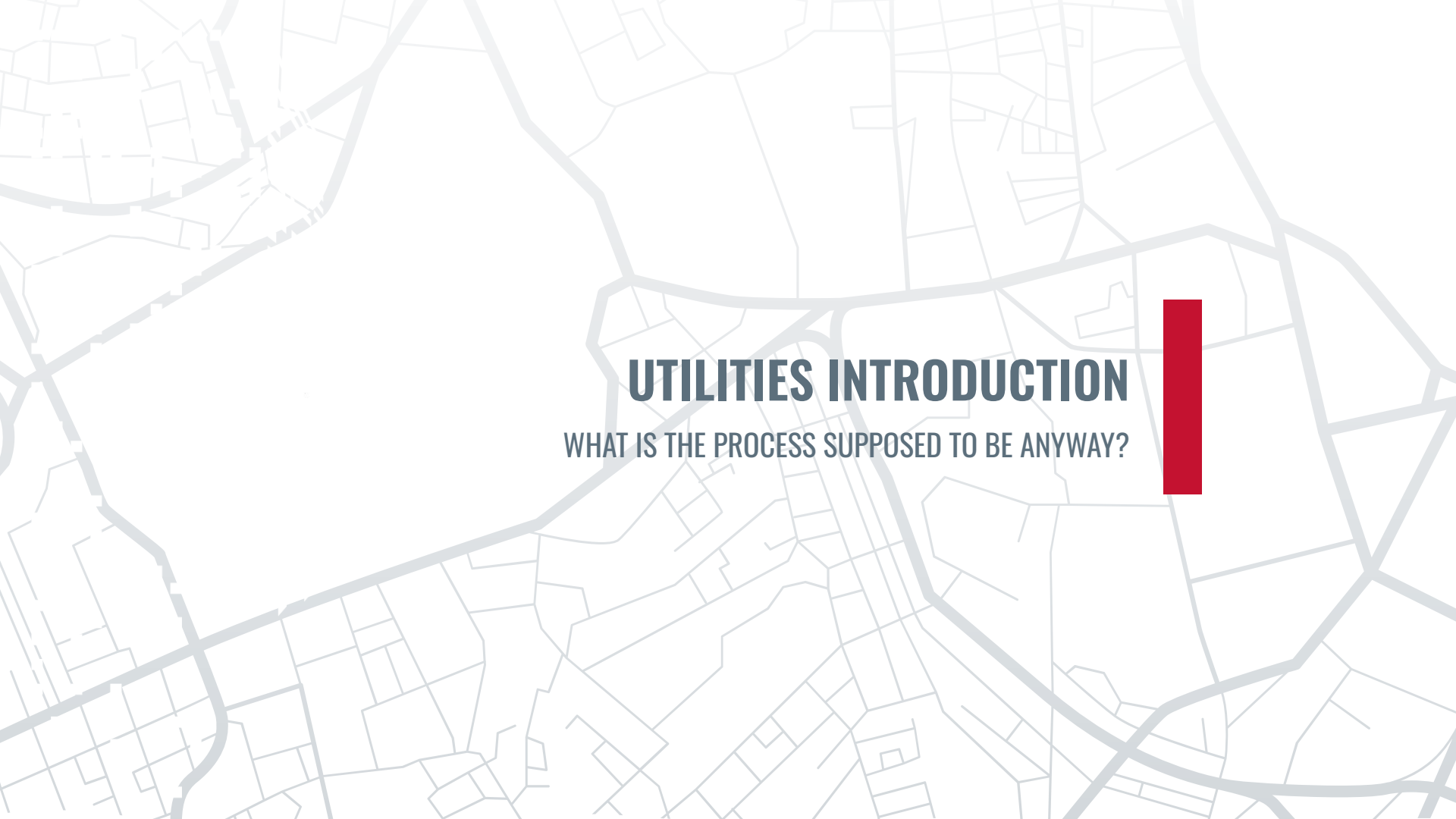
BEN CHUAQUI

Partner, Architect
Van Meter Williams Pollack (VMWP)



JACOB GOLDSTEIN

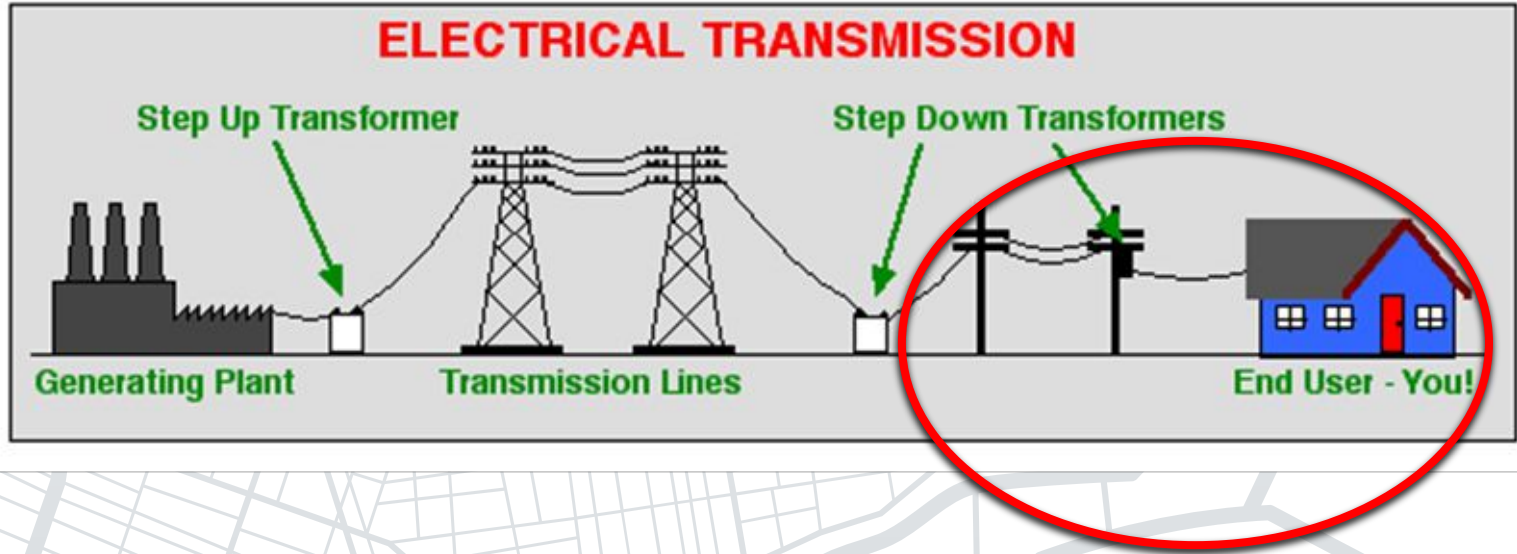
Project Manager
Tenderloin Neighborhood Development
Company (TNDC)



UTILITIES INTRODUCTION

WHAT IS THE PROCESS SUPPOSED TO BE ANYWAY?

Where are we in the electrical world of things?

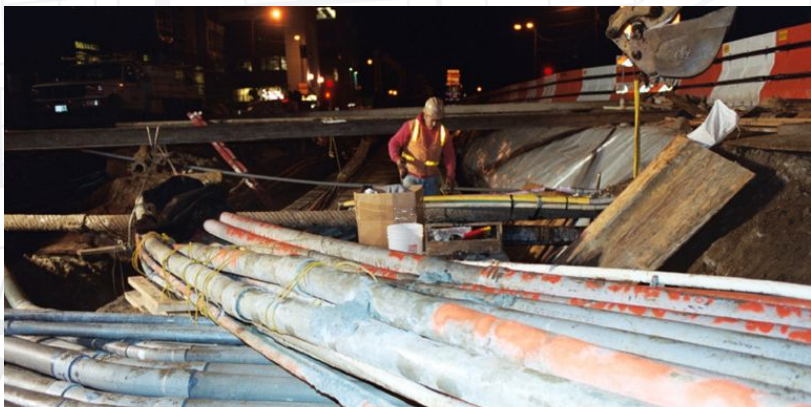


Transmission voltage

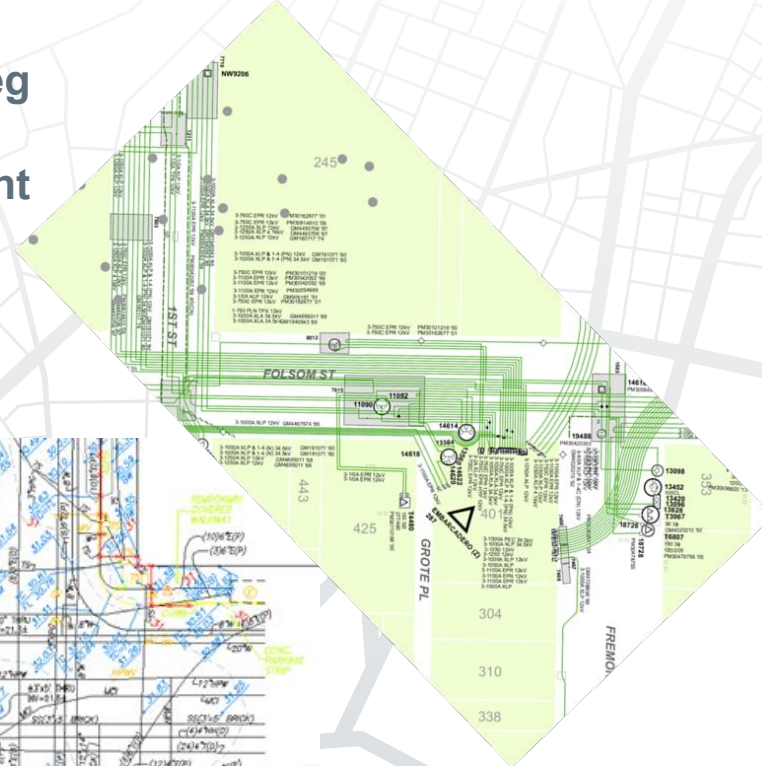
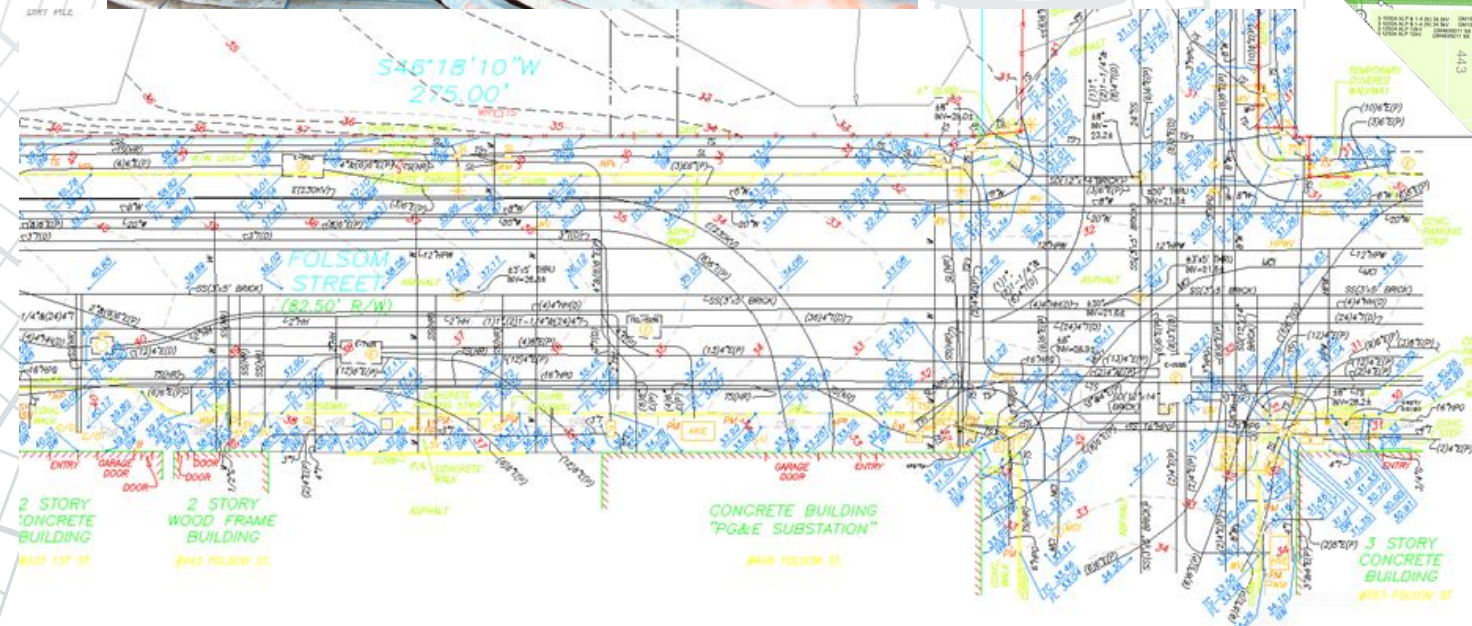


Distribution voltage





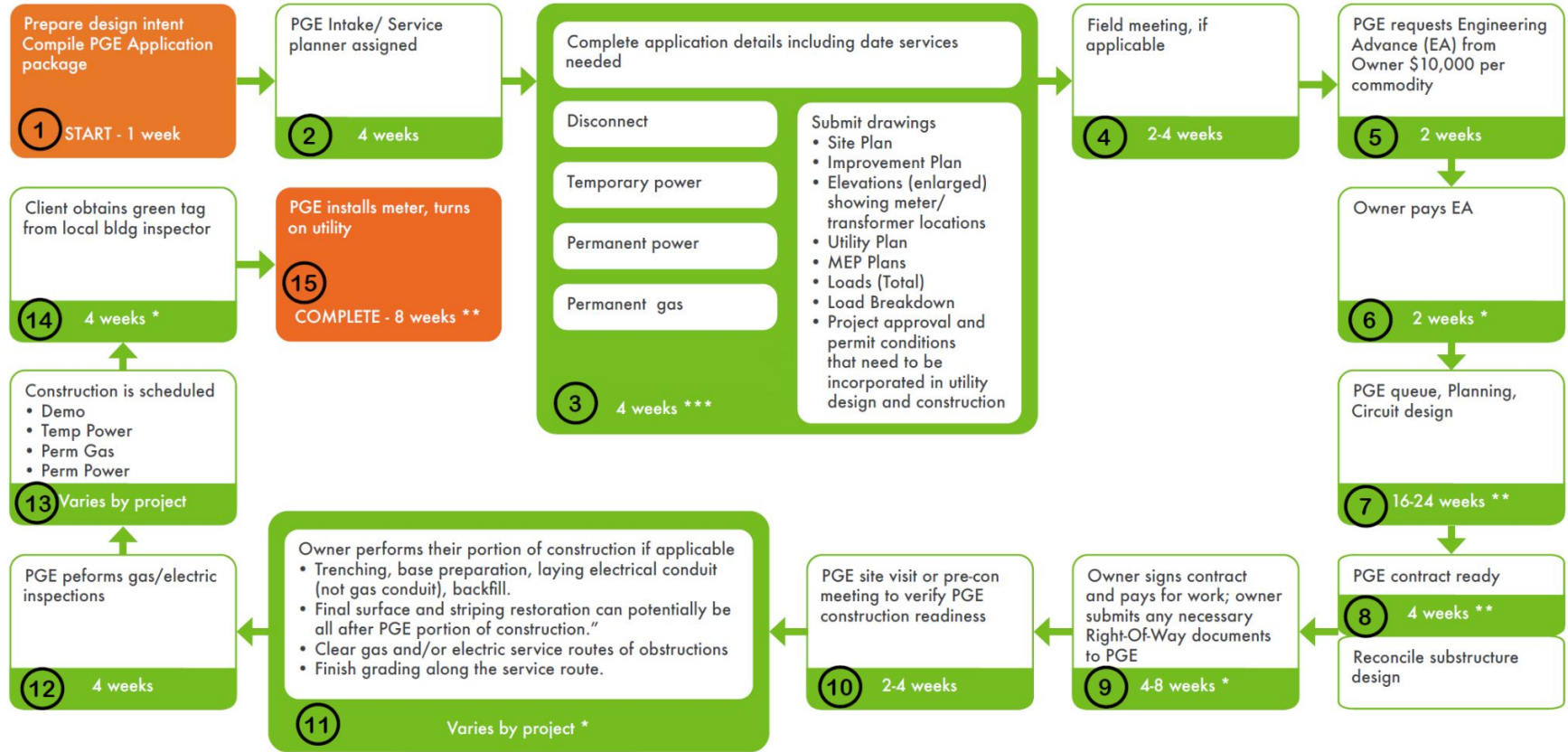
The last leg
is critical
and fraught
with risk.



Finally arriving at the building.



PGE FLOW CHART



Plan for 18 months
Subject to complexities of project, PGE and Owner

* Duration controlled by owner

** Duration controlled by PGE

*** Assumes level of detail required is available

App to SFPUL

SFPUL (WDT) PGE FLOW CHART



Plan for 18 months
Subject to complexities of project, PGE and Owner

* Duration controlled by owner
** Duration controlled by PGE
*** Assumes level of detail required is available



San Francisco
Water Power Sewer

Services of the San Francisco Public Utilities Commission



ALAMEDA
MUNICIPAL POWER



CITY OF
PALO ALTO



SILICON
VALLEY
POWER.
CITY OF SANTA CLARA



SMUD[®]

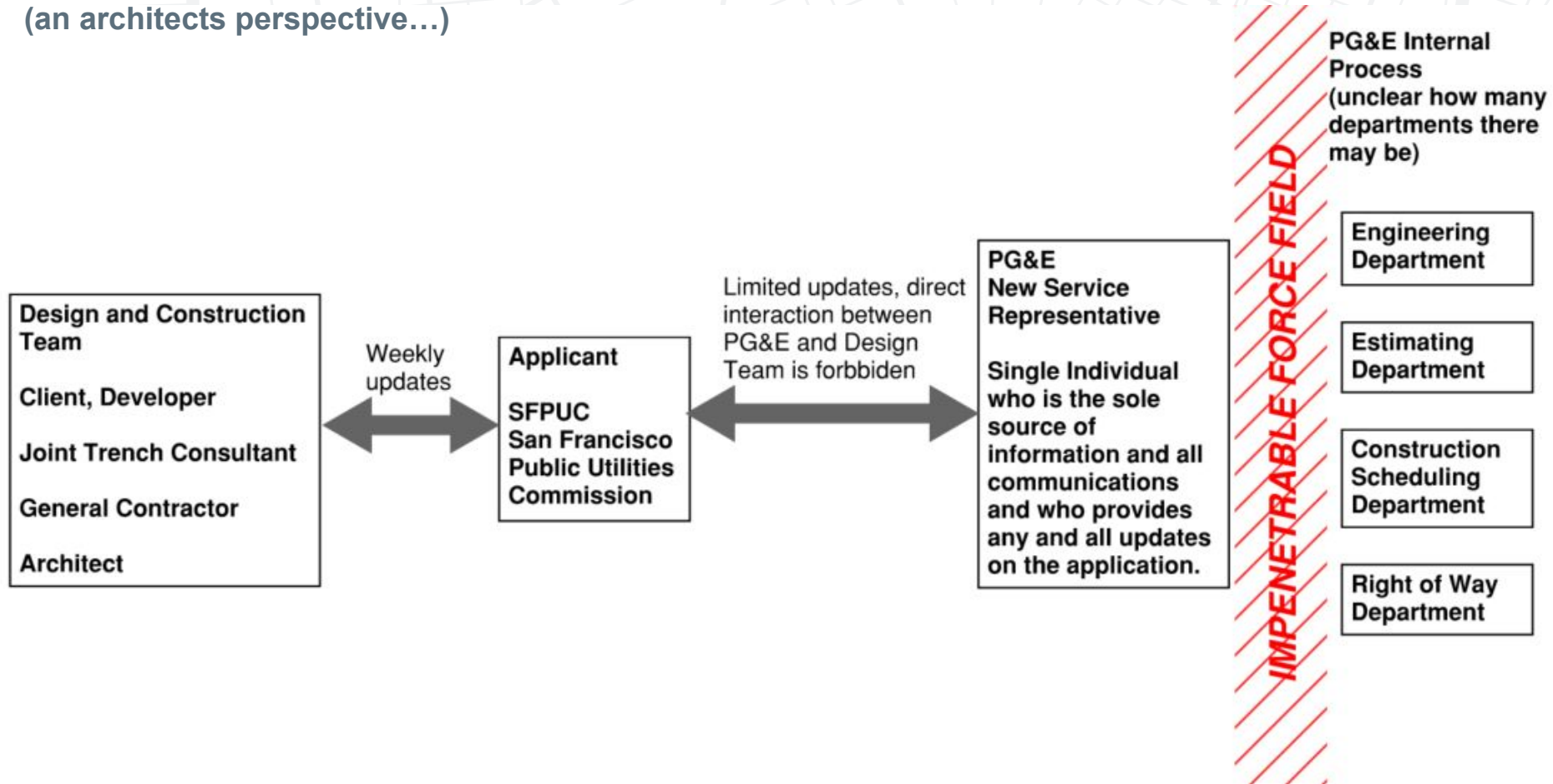




ARCHITECT'S PERSPECTIVE

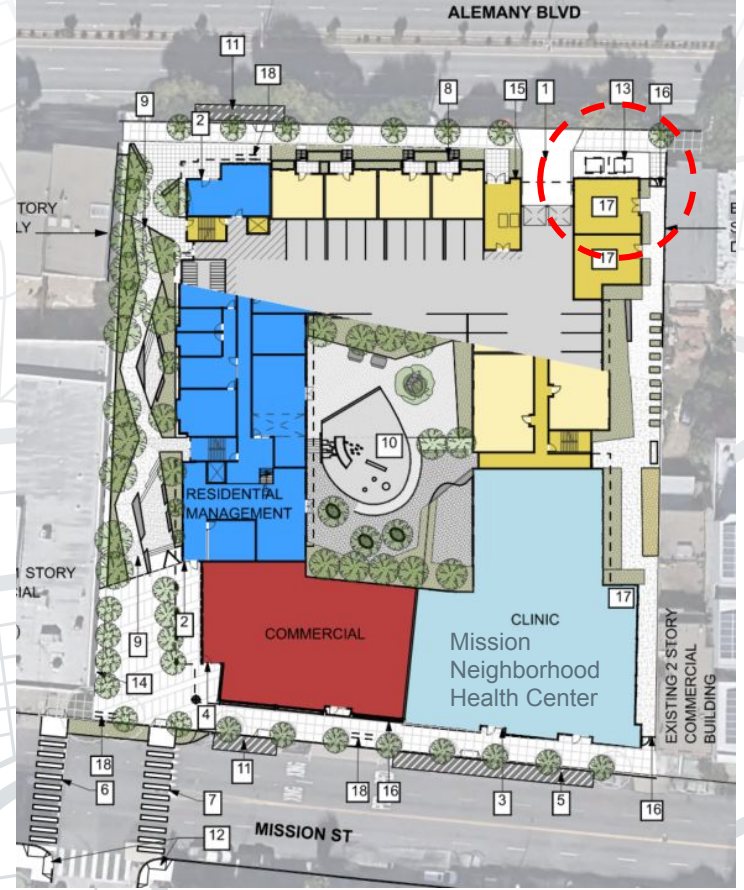
4840 MISSION STREET, SAN FRANCISCO

Parties involved in the Application Process (an architects perspective...)

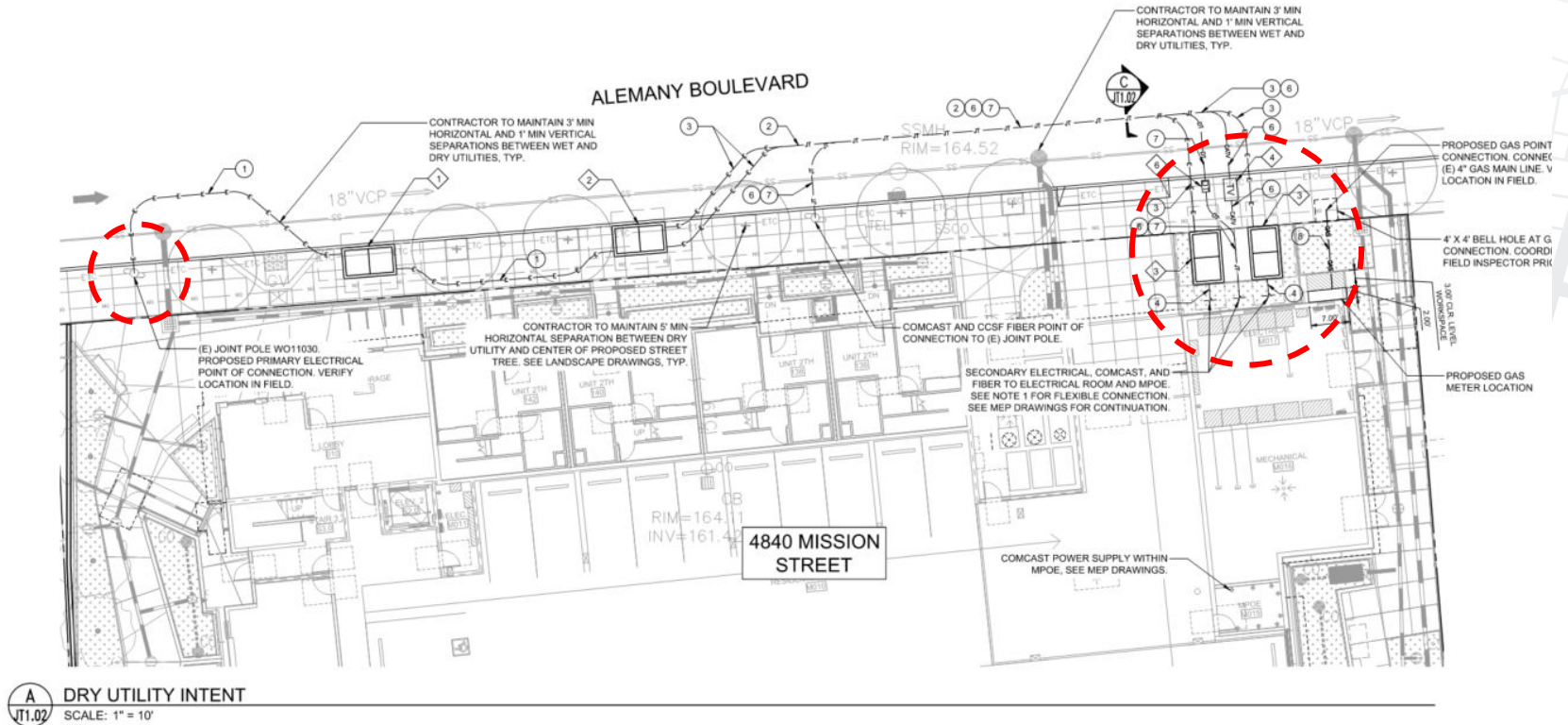




4840 Mission, BRIDGE Housing
137 Family Affordable Housing Units
Excelsior District, San Francisco

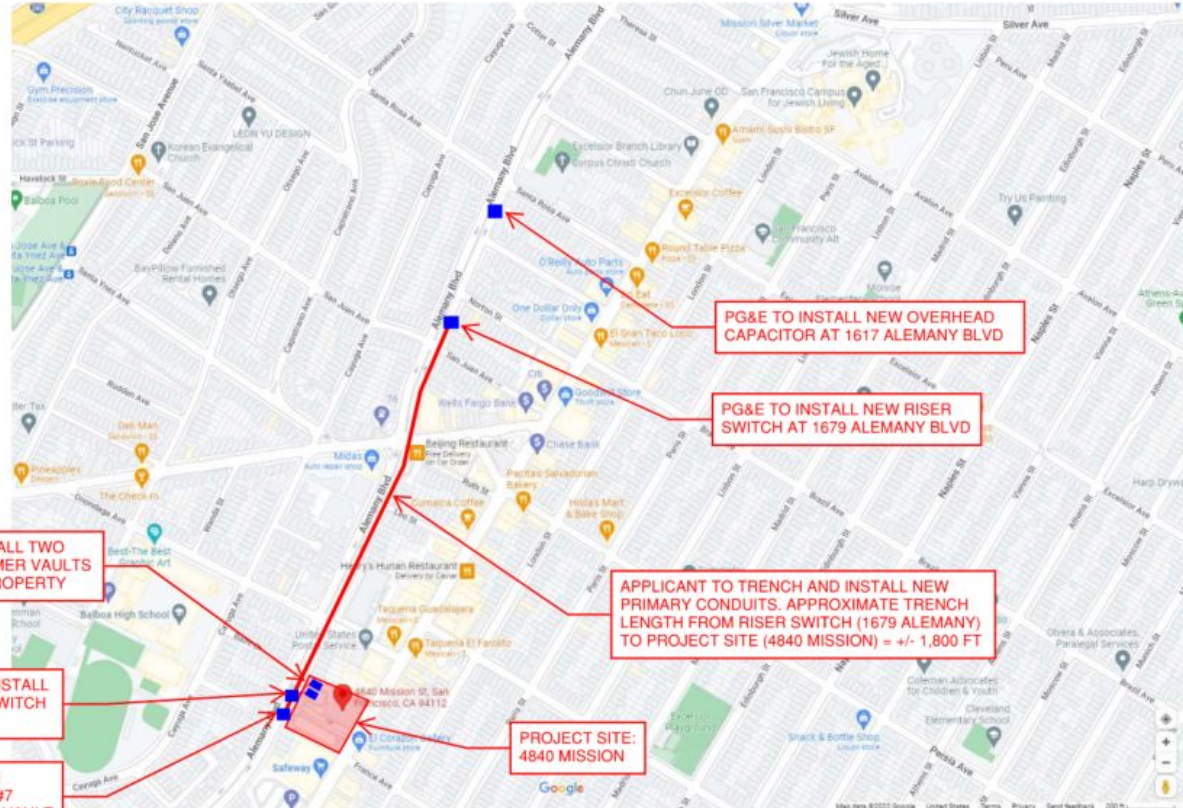


- Construction Start April 2021 & 1st PG&E application
- Building is completed in June of 2023
- Permanent Power to building in January of 2024
- TCO February of 2024



**4840 MISSION
PRELIMINARY PREM POWER TIE-IN, VERSION 2
UDCE MARKUP
DATE: 06/07/2022**

LEGEND:
NEW EQUIPMENT: ■
NEW TRENCH: —



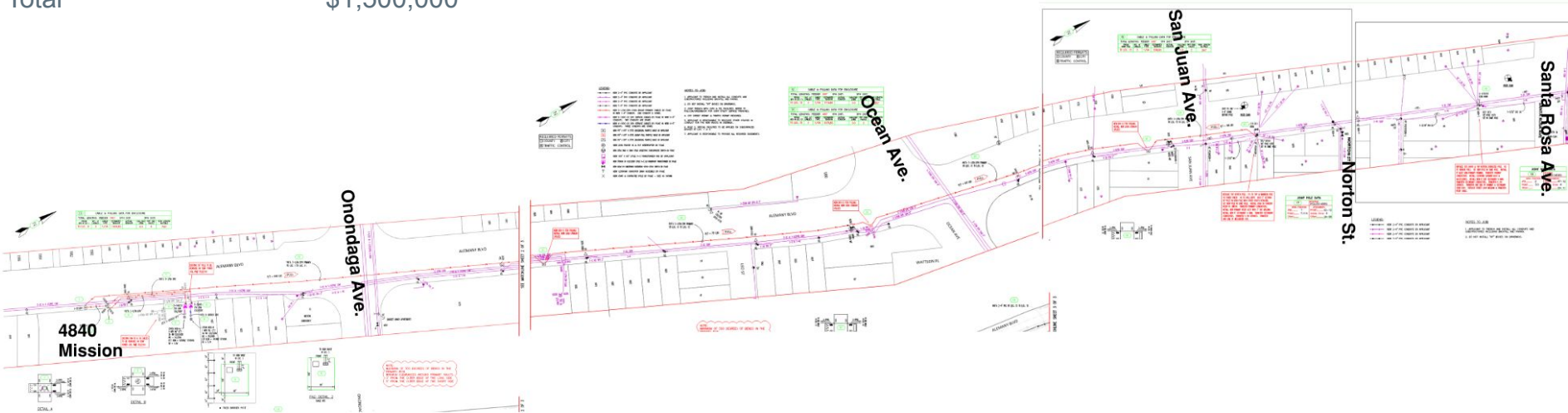
PG&E Engineering Drawings for 4840 Mission Permanent Power

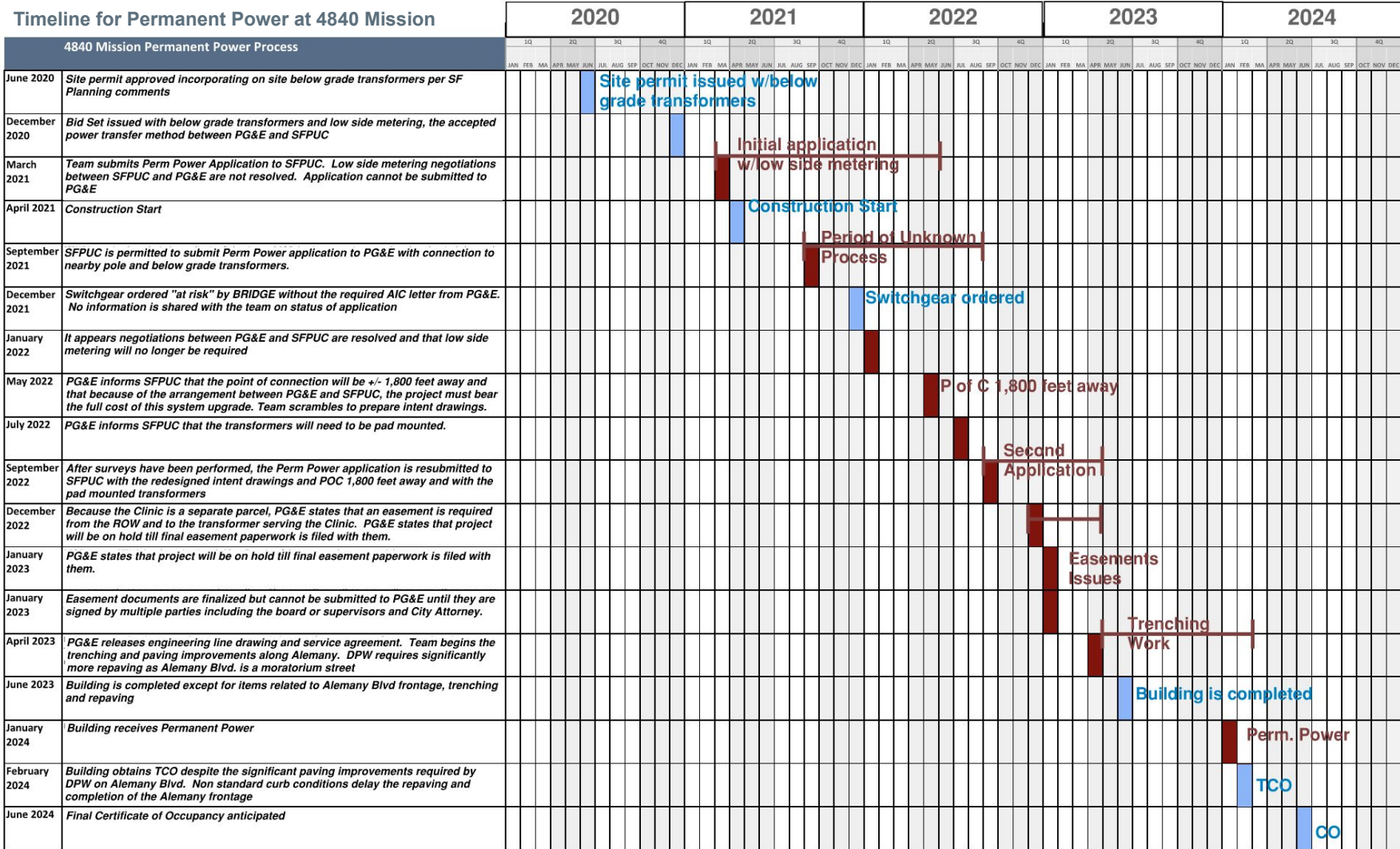
2nd Application submitted September 2022

Single line Drawings Received April 2023

Approximate Trench Extension Related Costs

Power Related	\$1,100,000
Repavement related	\$ 400,000
Total	\$1,500,000







DEVELOPER'S PERSPECTIVE

HOW CAN YOU SETUP YOUR PROJECT FOR SUCCESS?

1. HIRE A GOOD TEAM

- A) You need an architect, GC, and joint trench consultant who have done this before and understand the PG&E process
- B) Risks = schedule delays and major cost overruns – in other words, every developer's nightmare.

2. DO YOUR DUE DILIGENCE

- A) PG&E delays in electrifying buildings at the end of the construction process are garnering media and political attention, but the earlier parts in the process can be an even greater risk to the developer.
- B) On the developer's side, much of risk is in PG&E assigning the **path of travel** from your project's point of connection into their power network - and the associated timeline and due diligence requirements.

CONSTRUCTION NOTE
 APPLICANT TO TRENCH, BACKFILL, INSTALL ALL SUBSTRUCTURES, AND RE-PAVE IN FRANCHISE AS NEEDED, PG&E WILL DESIGN, INSTALL SERVICE, INSTALL NEW METER, AND MAKE TIE-IN CONNECTION.

LEGEND

- LOC 1:**
 - SV PULL 7-SETS 1000A QPX UG SVC THRU APPL INSTALLED 7-5" CONDUITS
 - 2S INSTALL 1 MAIN PGE METER W CTs INTO 2000A 120/208V 3PH 4W M5S.
 - 2S INSTALL 750KVA UCD TX IN APPL INSTALLED #7 BOX (4'6"x8'6"x6') INT TYPE
- LOC 2:**
 - 2S INSTALL 600A SW-SW-INT IN APPL INSTALLED #7 BOX (4'6"x8'6"x6') INT TYPE
 - P1 PULL 1-SET 3-1/0A EPR, 25KV, 4" CONDUIT AND 1-4" SPARE FROM SW-SW-INT ENCLOSURE TO 750KVA UCD TX ENCLOSURE
- LOC 3:**
 - P2 PULL 1-SET 3-750 CU EPR, 6" APP INSTALLED CONDUIT & (1) 6" SPARE CONDUIT TOTAL
- LOC 4:**
 - 2S INSTALL 600A 3W-3W-SW IN APPL INSTALLED #7 BOX (4'6"x8'6"x6') INT TYPE
- LOC 5:**
 - P3 PULL 2-SETS 3-750 CU EPR, 6" APP INSTALLED CONDUIT & (1) 6" SPARE CONDUIT
- LOC 6:**
 - 2343 PRIMARY TIE-IN CONNECTION @ MH2343, PG&E STANDBY FOR CORE DRILLING FOR APPL INSTALLED CONDUITS



FLAGGING REQUIRED

NO PARKERS REQUIRED

TRUCK ACCESSIBLE

REQUIRED PERMITS

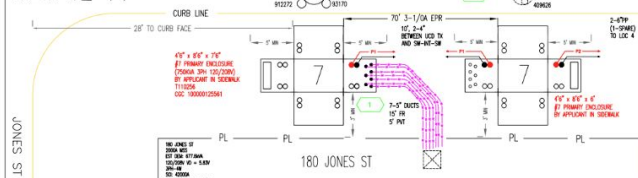
COUNTY - 58 CITY - 58 TRAFFIC CONTROL

FOR TRENCH INSPECTIONS CALL 415-895-7919 48 HOUR NOTICE NEEDED

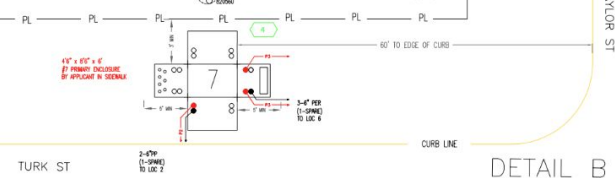
(2)
 COORDINATE # 100000125041
 LOADING DISTRICT - COASTAL
 TX SIZE - 750KVA 3PH
 KVA TR - NONE
 KVA 3P - 677.67KVA
 W L.F. - 60K

SIMPLIFIED VERSION OMITTING EXISTING UG PRIMARY, SECONDARY, AND SERVICE TO SHOW PROJECT SCOPE MORE CLEARLY

DETAIL A TURK ST



DETAIL B



ENGINEERING AND PLANNING DEPARTMENT
 2180 HARRISON ST
 SAN FRANCISCO, CA 94103
 TEL: 415-377-7666 FAX: 415-377-7663
 WWW: WWW.SFPD.CA.GOV

CONSTRUCTION SKETCH
 180 JONES ST
 SAN FRANCISCO
 MET - 3000A 120/208V 3PH SVC
 PG&E & ELECTRIC COMPANY

2. DO YOUR DUE DILIGENCE - PATH OF TRAVEL (CONT.)

- 1) There is a long delay between submitting your joint trench intent drawings and receiving final PG&E line drawings - often 12+ months.
- 2) In congested urban areas, this is generally not a direct path – your connection point can be quite a distance from your site.
- 3) It is ultimately on the developer to identify and resolve any conflicts in the path of travel. PG&E does some due diligence, but just because they provided the path of travel does not mean the path is free of obstructions.
- 4) If you cannot resolve issues within the path of travel workable, then you would have essentially restart the PG&E application process.

3. BUILD IN AS MUCH CONTINGENCY AS POSSIBLE

- A) Because of the PG&E timeline, you will often be starting construction without an approved plan for temp or perm power
- B) Budget 3 separate pots of money for power:
 - a) cost for permitting & fees
 - b) cost of the work itself (in GC contract)
 - c) contingency for unknowns (since you don't have an approved plan)



HIGH PERFORMANCE RESULTS

180 JONES STREET



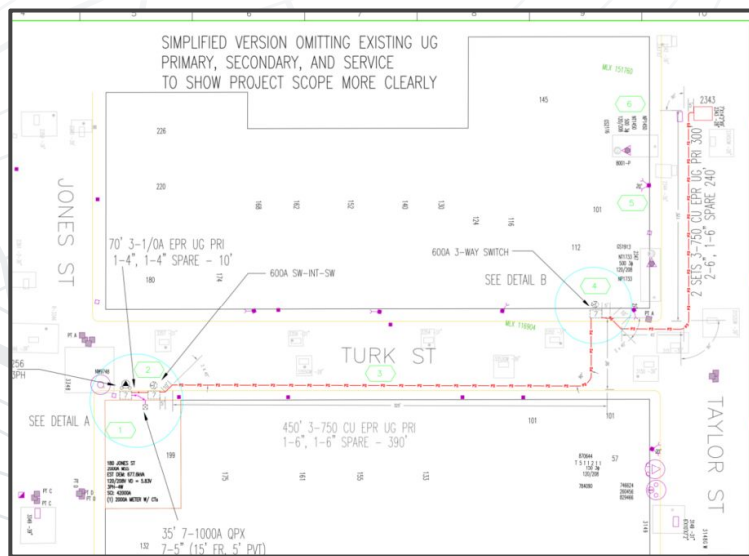
View of 180 Jones
Corner of Turk & Jones streets

ABOUT 180 JONES

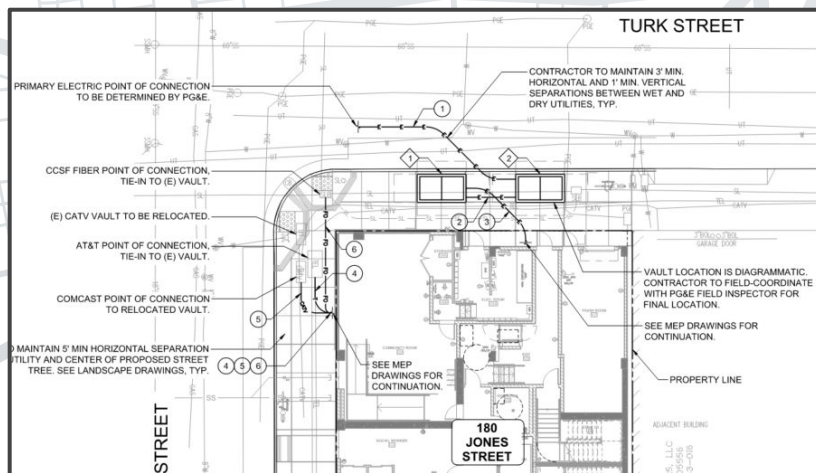
- 100% affordable housing building in the Tenderloin neighborhood in San Francisco
- 70 units (all studios), 35 of set aside for individuals with experiences of homelessness
- 9 story, Type 1A concrete building
- Architect: VWMP; GC: Cahill Contractors; Owner & Developer: TNDC
- Began construction in June 2022, received TCO in February 2024; building is now fully leased

TIMELINE

1. **September 2021:** UDCE submits joint trench intent drawings
2. **June 2022:** Project closes on financing and begins construction
3. **May 2023:** Received final PG&E Engineering line drawings
4. **Late Nov. 2023:** Project fully electrified



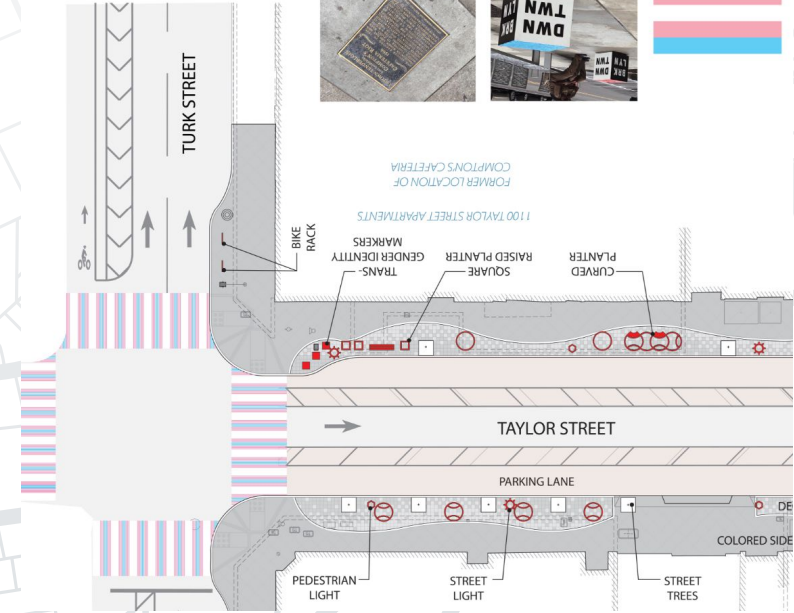
**Final PG&E
Engineering Line
Drawings
May 2023**



**Joint Trench Intent
Drawings
September 2021**



Proposed Safer Taylor Improvements (DPW)



Existing conditions, agreements made with building owners, site assessments and coordination with the Department of Public Works Safer Taylor Street Program

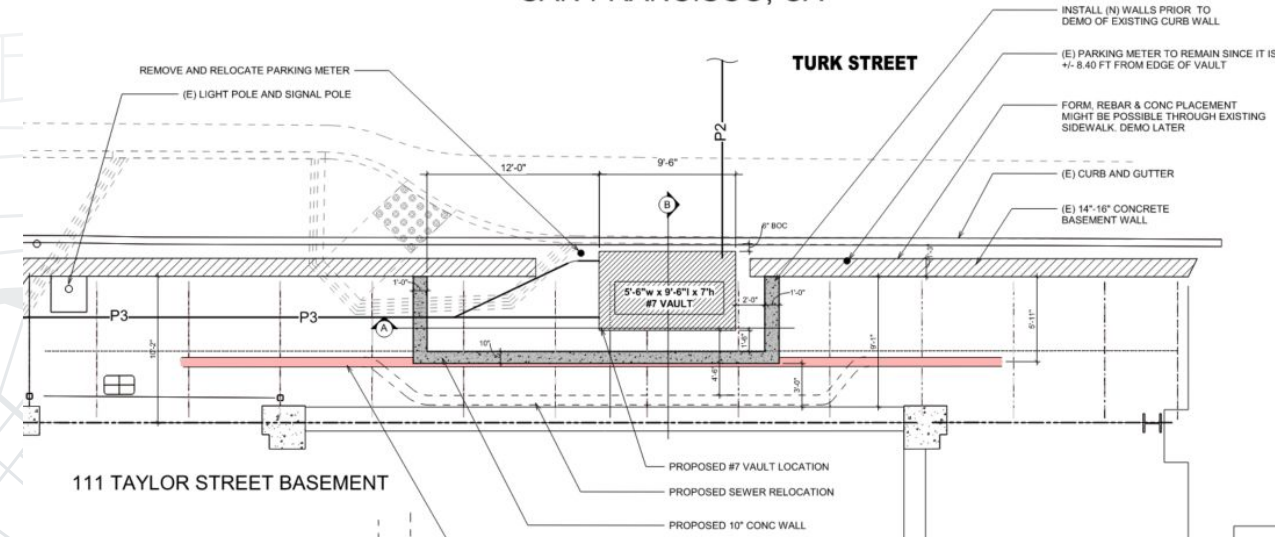
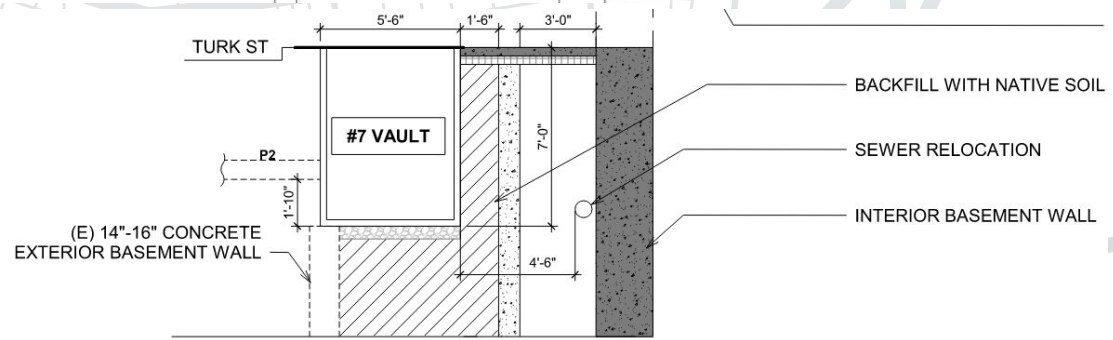


111 TAYLOR STREET SAN FRANCISCO, CA

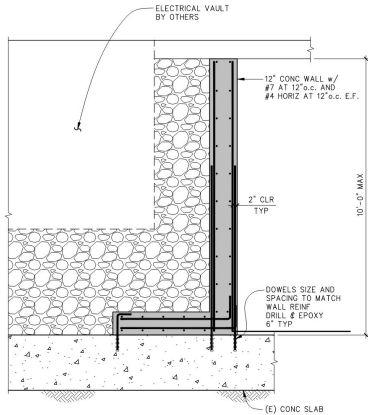
Separate Permit and agreements for work within 111 Taylor Basement

Work included:

- Concrete walls anchored to the existing slab
- Partial removal of the existing exterior basement wall
- Relocation of a sewer main
- Coordination with the DPW "Safer Taylor Street" improvements.



B EAST-WEST SECTION THROUGH THE VAULT



Structural Section of Retaining wall

Architectural Section

What made this a successful electrification?

1. Project had set-aside designated contingency for PG&E unknowns
2. Project team was prepared to a cost/benefit analysis once we received the path of travel and was able to make a decision quickly
3. Collaborative team where everyone played a vital role:

GC handled exploratory demo, trenching, and installation

Owner negotiated neighbor agreement

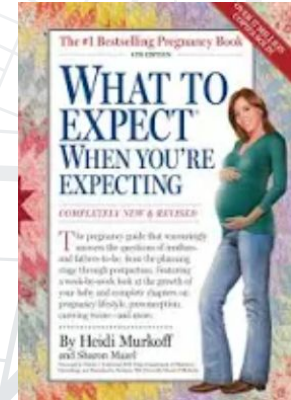
Architect designed vault enclosure & handled permitting

UDCE kept pressure on appropriate PG&E and PUC decision-makers

End result: project remained on schedule and on budget, with the building fully electrified 2 months ahead of TCO.

WHAT TO EXPECT

1. Design to the PG&E Greenbook
2. Plan for Utilities very early and don't make them an afterthought that needs to get shoehorned in
3. PG&E is inflexible at times and we receive different feedback, depending on Planner/City
4. PG&E/SFPUC Wholesale Distribution Tariff (WDT) processes have even less flexibility and longer timelines
5. Expect to find undetected conflicts underground – it always happens
6. Procure Switchgear early (still at 50+ weeks lead time)
7. Maintain single point of contact with agencies; they want it and it helps avoid confusion
8. Be prepared to pay large sums of money when designs are complete, and quickly if construction has or will be starting soon



**ELECTRIC & GAS
SERVICE
REQUIREMENTS**
(TD-7001M)
2022–2023

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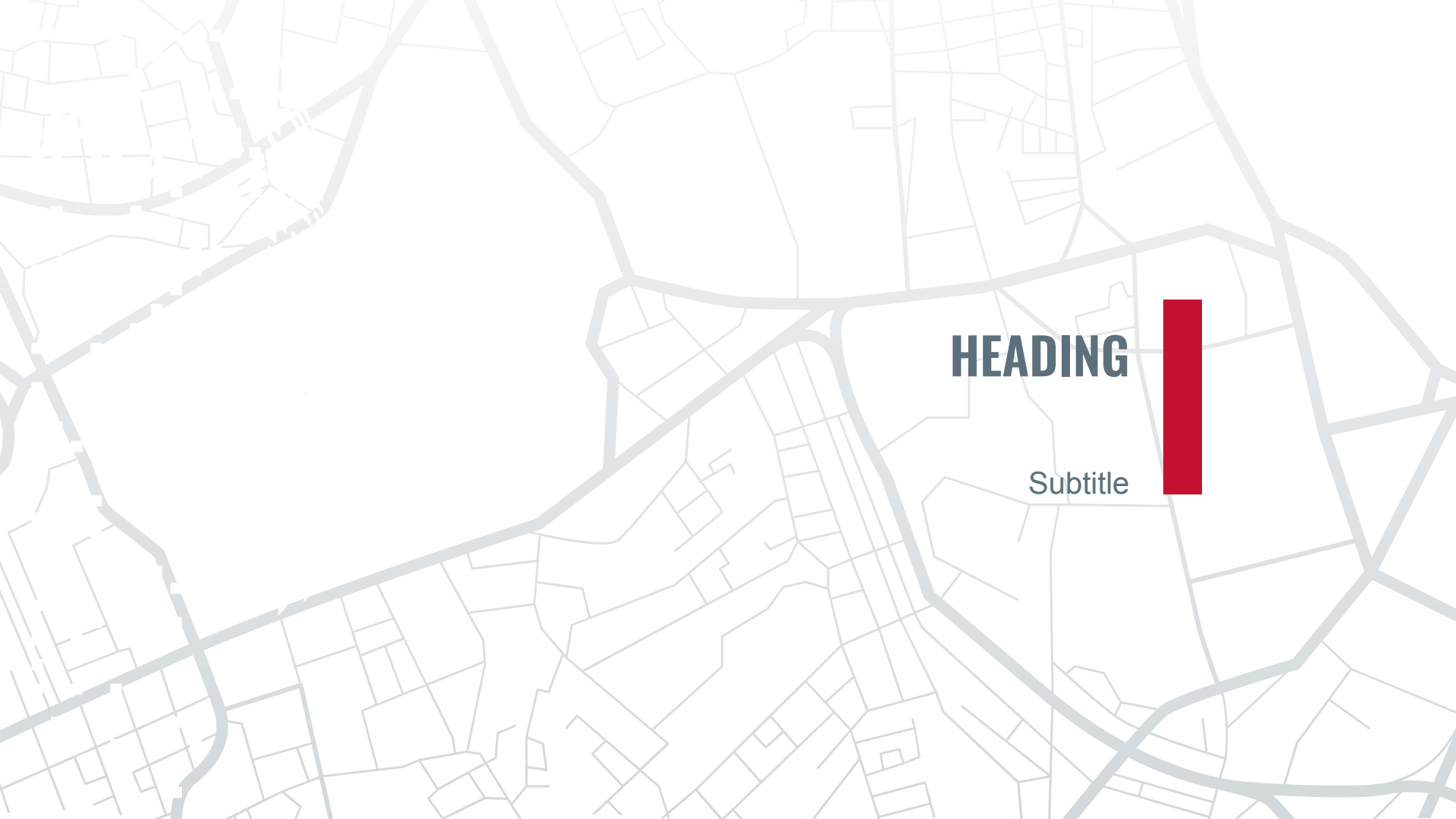


GOT QUESTIONS?

WE MAY OR MAY NOT HAVE ANSWERS



THANK YOU!

A light gray background featuring a stylized map pattern of streets and building footprints.

HEADING

Subtitle

