

**American River Flood Control District
Central Valley Flood Protection Board Permit Application
Gas Line Abandonment at Two Locations (PG&E)
Staff Report**

Discussion:

This application from PG&E is for the abandonment of a gas line that crosses the American River near Del Paso Boulevard and Highway 160. PG&E is requesting a permit to formally abandon the gas line where it crosses District levees at two locations. These locations are shown in the attached submittal materials.

The method of abandonment proposed by PG&E is to completely fill the pipe with grout in the sections that cross the levee.

Special Conditions:

An endorsement of this application should include Special Conditions that indicate the applicant shall be responsible for the complete removal of the abandoned gas line sections at some time in the future if they interfere with any flood control project. This is necessary in the case that the levees require future flood control improvements and the abandoned pipe section impedes or obstructs the contractor. This would subject the project sponsors to considerable additional costs.

Recommendation:

The General Manager recommends that the Board endorse the permit application with Special Conditions.



185 Commerce Circle
Sacramento, CA 95815

voice (916) 929-4006

fax (916) 929-4160

www.arfcd.org

Board of Trustees

Brian F. Holloway

Cyril A. Shah

Rachelanne Vander Werf

Steven T. Johns

Tamika L'Ecluse

Item 5

General Manager

Timothy R. Kerr, P.E.

Permit Conditions

Permit Application No.: (to be designated by the Central Valley Flood Protection Board)

Location: North Levee American River near Del Paso Blvd, South Levee American River near Highway 160, Sacramento, CA

Applicant: Pacific Gas & Electric

Description: The applicant requests permission to abandon a gas line at two levee crossings

CONDITIONS:

1. Permittee shall obtain all necessary permits and regulatory approvals for the proposed work.
2. Maintenance of all encroaching facilities under this permit shall remain the responsibility of permittee.
3. Permittee shall pay the full costs, including but not limited to construction costs, staff time, consultant time and attorney time, that may be required on the part of the proponent of a future flood control project to remove, alter, relocate or reconstruct all or any of the existing or future flood control works located in the area of the facilities being abandoned pursuant to this Permit if such removal, alteration, relocation or reconstruction is due, in whole or part, to Permittee's facilities that are being abandoned pursuant to this permit.



Chris Ellis
Principal Land Planner
5555 Florin-Perkins Road, Rm 128D
Sacramento, CA 95826
Phone: (916) 995-5848
Email: cre3@pge.com

April 8, 2019

Central Valley Flood Protection Board
3310 El Camino Ave. #170
Sacramento, CA 95821

Subject: Central Valley Flood Protection Board Encroachment Permit Application Package for Distribution Feeder Main 0613-01 American River Crossing Retirement Project

Attention: Mr. Gary Lemon, Chief - Permitting Section:

Pacific Gas and Electric Company (PG&E) is providing the Central Valley Flood Protection Board (CVFPB) with two (2) hardcopies and one (1) electronic copy of the enclosed CVFPB encroachment permit application package for the retirement of Distribution Feeder Main 0613-01 where it crosses the American River in Sacramento.

The permit application package contains the following information:

1. Application for a Central Valley Flood Protection Board Encroachment Permit Form;
2. Environmental Assessment Questionnaire;
3. Encroachment Permit Continuation Pages with detailed project description;
4. Figures showing key project details, and 90% engineering drawings;
5. Supporting biological study reports and measures to protect fish, wildlife, and plant resources;
6. Arborist report detailing vegetation removal work.

To avoid confusion, please note this permit application package is covering the same pipeline as a permit application submitted in April 2018 to the CVFPB for pipeline replacement. This initial submission was withdrawn shortly after submission, and to our understanding prior to review by the CVFPB. The reason for the withdrawal was the change in scope from replacement to retirement of this segment of DFM-0613-01 due to the recent installation of new natural gas pipelines in the Sacramento area.

Please use the enclosed information for CVFPB review and approval of this project. Please contact me if you have any questions or require additional information. I can be reached by telephone at (916) 995-5848 or by email [at CRE3@pge.com](mailto:cre3@pge.com). Thank you for your assistance with this project.

Sincerely,

A handwritten signature in cursive script that reads 'Chris Ellis'.

Chris Ellis
Principal Land Planner
Pacific Gas and Electric Company

Enclosure: CVFPB Encroachment Permit Application Package

**CENTRAL VALLEY FLOOD PROTECTION BOARD
ENCROACHMENT PERMIT APPLICATION**

**PACIFIC GAS & ELECTRIC COMPANY
DISTRIBUTION FEEDER MAIN 0613-01
AMERICAN RIVER CROSSING RETIREMENT
PROJECT**

SUBMITTED TO:

Central Valley Flood Protection Board
3310 El Camino Ave # 170
Sacramento, CA, 95821
(916) 574-0649

APPLICANT:

Pacific Gas and Electric Company
5555 Florin-Perkins Road
Sacramento, CA 95826
Contact: Chris Ellis
(916) 386-5103



*Pacific Gas and
Electric Company®*

PREPARED BY:

Surf to Snow ERM, Inc.
2246 Camino Ramon
San Ramon, CA 94583
Contact: Derek Hitchcock
(925) 718-3103



April 2019

Pacific Gas and Electric Company. 2019. Application for Central Valley Flood Protection Board Encroachment Permit — Pacific Gas and Electric Company Distribution Feeder Main 0613-01 American River Crossing Retirement Project. March 2019. (74004048). Sacramento, CA. Prepared by Surf to Snow Environmental Resource Management, Inc., San Ramon, CA.

Contents

Application for Central Valley Flood Protection Board Encroachment Permit	1
Environmental Assessment Questionnaire	3
Continuation Pages	4
1. Description of Proposed Work	4
Project Purpose	4
Proposed Project	4
Construction Activities	4
2. Project Location	6
3. Adjacent Property Owners	7
4. CEQA	7

Tables

Table 1 – Project Tree Removal	5
Table 2 – Properties within the Project at the American River Parkway and USACE Levees	7
Table 3 – Properties Adjacent to the Project Site at the American River Parkway and USACE Levees	7

Appendices

Appendix A Figures

- Figure 1 – Project Vicinity
- Figure 2 – Proposed Project
- Figure 3 – Engineering Drawings
- Figure 4 – Preconstruction Photographs

Appendix B Biological Memo

Appendix C Best Management Practices

Appendix D Arborist Report

Acronyms and Abbreviations

APN	Assessor's Parcel Number
BMP	Best Management Practice
CPUC	California Public Utilities Commission
CTS	Cathodic testing stations
CVFPB	Central Valley Flood Protection Board
DBH	Diameter at breast height
DFM	Distribution Feeder Main
MP	Mile point
PG&E	Pacific Gas & Electric Company
PIG	Pipeline inspection gauge
SR	State Route
USACE	U.S. Army Corps of Engineers

**APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD
ENCROACHMENT PERMIT**

Application No. _____
(For Office Use Only)

1. Description of proposed work being specific to include all items that will be covered under the issued permit.

Refer to Continuation Pages

2. Project

Location: Sacramento County, in Section 30

Township: 9 N (N) (S), Range: 5 E (E) (W), M. D. B. & M.

Latitude: 38°35'51.05" N Longitude: 121°28'33.58" W

Stream : American River , Levee : Refer to Continuation pg Designated Floodway: Refer to Continuation pg

APN: Refer to Continuation pg

3. Pacific Gas & Electric of 5555 Florin-Perkins Road Room 128D
Name of Applicant / Land Owner Address

Sacramento CA 95826 (916) 386-5103
City State Zip Code Telephone Number
CRE3@pge.com
E-mail

4. Chris Ellis of 5555 Florin-Perkins Road Room 128D
Name of Applicant's Representative Company

Sacramento CA 95826 (916) 386-5103
City State Zip Code Telephone Number
CRE3@pge.com
E-mail

5. Endorsement of the proposed project from the Local Maintaining Agency (LMA):

We, the Trustees of _____ approve this plan, subject to the following conditions:
Name of LMA

Conditions listed on back of this form Conditions Attached No Conditions

Trustee Date

Trustee Date

APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMIT

6. Names and addresses of adjacent property owners sharing a common boundary with the land upon which the contents of this application apply. If additional space is required, list names and addresses on back of the application form or an attached sheet.

Name	Address	Zip Code
Refer to Continuation Pages		

7. Has an environmental determination been made of the proposed work under the California Environmental Quality Act of 1970? Yes No Pending

If yes or pending, give the name and address of the lead agency and State Clearinghouse Number:

SCH No. _____

8. When is the project scheduled for construction? August 13, 2019

9. Please check exhibits accompanying this application.

- A. Regional and vicinity maps showing the location of the proposed work.
- B. Drawings showing plan view(s) of the proposed work to include map scale.
- C. Drawings showing the cross section dimensions and elevations (vertical datum?) of levees, berms, stream banks, flood plain,
- D. Drawings showing the profile elevations (vertical datum?) of levees, berms, flood plain, low flow, etc.
- E. A minimum of four photographs depicting the project site.



 Signature of Applicant

5/9/19

 Date

Include any additional information:

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

This environmental assessment questionnaire must be completed for all Central Valley Flood Protection Board applications. Please provide an explanation where requested. Incomplete answers may result in delays in processing permit applications. Failure to complete the questionnaire may result in rejection of the application.

1. Has an environmental assessment or initial study been made or is one being made by a local or State permitting agency in accordance with the California Environmental Quality Act? Yes No

If yes, identify the Lead Agency, type of document prepared or which will be prepared, and the State Clearinghouse Number:

PG&E is requesting CVFPB as CEQA lead agency. The Project qualifies for a categorical exemption under CEQA Section 15301, Existing Facilities, for Class 1 facilities. The Project is consistent with the requirements of this exemption because the project consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.

2. Will the project require certification, authorization or issuance of a permit by any local, State or federal environmental control agency? Yes No

List all other governmental permits or approvals necessary for this project or use, including U.S. Army Corps of Engineer' 404 and Section 10 permits, State Water Quality Certification, Department of Fish and Game 1600 agreement, etc. Attach copies of all applicable permits.

U.S. Army Corps of Engineers Section 408 Permit

3. Give the name and address of the owner of the property on which the project or use is located. Please submit a copy of your current Title Report (Grant Deed), if your proposed project includes a private residence.

Refer to Table 2 of the Continuation Pages

4. Will the project or use require issuance of a variance or conditional use permit by a city or county?

Yes No

Explain:

A variance or conditional use permit will not be triggered by project activities. In addition, the California Public Utilities Commission (CPUC) has jurisdiction over the design, construction, and operation of gas pipelines and associated facilities, and the Project is not subject to local discretionary regulations.

5. Is the project or use currently operating under an existing use permit issued by a local agency?

Yes No

Explain:

No. The CPUC has jurisdiction over the design, construction, and operation of gas pipelines and associated facilities, and the Project is not subject to local discretionary regulations.

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS Item 5
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

6. Describe all types of vegetation growing on the project site, including trees, brush, grass, etc.

The Project site is within the American River Parkway, north of the American River, consists of a mix of oak and walnut woodlands, ruderal grasslands, and roadways. Refer to Appendix B Biological Memo and Appendix D Arborist Report, for additional information.

7. Describe what type of wildlife or fish may use the project site or adjoining areas for habitat, food source, nesting sites, source of water, etc.

Special-status wildlife that could occupy the American River Parkway portion of the Project site include Sanford's arrowhead, Swainson's hawk, White-tailed kite, and nesting migratory birds. Elderberry shrubs, the host plant for Valley elderberry longhorn beetle, were identified outside but adjacent to the Project Site. Special-status fish species that could occupy the American River include Delta smelt, Longfin smelt, Purple martin, and Steelhead; however, no work is to occur within the channel. Refer to Appendix B, Biological Memo, for additional information.

8. Has the Department of Fish and Game, U.S. Fish and Wildlife Service, or National Marine Fisheries Service been consulted relative to the existence of, or impacts to, threatened or endangered species on or near the project site?

Yes No

Explain:

No discussions have occurred with agencies to date. No species listed by the federal or state Endangered Species Acts will be affected by the Project, except for Valley Elderberry Beetle (VELB). Refer to Appendix B for more details. PG&E's VELB Conservation Program (USFWS Biological Opinion (BO) (File 1-1-01-F-0114)) provides for 30 years of incidental take coverage and was issued on June 27, 2003.

9. Will the project or use significantly change present uses of the project area?

Yes No

Explain:

The existing pipeline would be retired in place (except for removal of a few small segments and two valves). Following construction, the contours and conditions of temporarily disturbed areas would be restored to approximate pre-Project conditions.

10. Will the project result in changes to scenic views or existing recreational opportunities?

Yes No

Explain:

Changes to scenic views or existing recreational opportunities during construction would be minor and temporary. Recreation areas, such as the bike path along the southern CVFPB/USACE levee, may be temporarily rerouted during removal of the deactivated pipe segment at the south end of SR-160 bridge. Construction equipment may also temporarily impact views in the American River Parkway. All existing contours would be restored to approximate pre-Project conditions. Permanent views may have minor impacts from tree removal for the Project.

11. Will the project result in the discharge of silt or other materials into a body of water?

Yes No

Explain:

Construction activities outside the channel would be located far enough away to avoid discharges to the American River. No other waters of the United States/State are located within the Project site.

Item 5

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

12. Will the project involve the application, use, or disposal of hazardous materials? Yes No

If yes, list the types of materials, proposed use, and disposal plan. Provide copies of all applicable hazardous material handling plans.

Hazardous materials may be used for retired pipe cleaning. This may include petroleum products and welding gases. All of these materials are routinely used by PG&E during pipeline construction activities and PG&E will implement standard procedures to ensure materials are safely handled.

13. Will construction activities or the completed project generate significant amounts of noise?

Yes No

Explain:

Construction activities associated with the Project would require earth-moving equipment, trucks, and other equipment that would result in temporary increases in noise levels. Construction generally would occur in the daytime, although some night work may occur for activities that cannot stop once they begin. Project-related construction noise may be audible to those living in nearby residences or working at adjacent properties. Construction noise impacts would be temporary and the completed project would not generate significant amounts of noise.

14. Will construction activities or the completed project generate significant amounts of dust, ash, smoke, fumes, or odors?

Yes No

Explain:

Significant amounts of ash, smoke, fumes, or odors will not be generated from construction activities or the completed project. Construction generated dust will be reduced by efforts including defining ingress and egress within the Project site, applying water to disturbed areas where necessary, and properly containing stockpiled soils.

15. Will the project activities or uses involve the burning of brush, trees, or construction materials, etc?

Yes No

Explain, and identify safety and air pollution control measures:

Project activities or uses do not involve the burning of brush, trees, or construction materials. Vegetation removed for the project will be chipped or hauled offsite.

16. Will the project affect existing agricultural uses or result in the loss of existing agricultural lands?

Yes No

Explain:

There are no agricultural lands or uses within or adjacent to the project site.

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS Item 5
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

17. Have any other projects similar to the proposed project been planned or completed in the same general area as the proposed project?

Yes No

Explain and identify any other similar projects:

PG&E conducts routine maintenance throughout the service area. No work is planned adjacent to the Project on the existing pipeline at the time of this application.

18. Will the project have the potential to encourage, facilitate, or allow additional or new growth or development?

Yes No

Explain:

Refer to Section 1 of the Encroachment Permit application for a detailed discussion of the project purpose. It is proposed to retire in place the existing pipeline that crosses the American River.

19. Will materials be excavated from the floodplain? Yes No If yes, please answer the remaining questions.

THE REMAINING QUESTIONS MUST ONLY BE ANSWERED IF THE ANSWER TO QUESTION NO. 19 WAS "YES". IF THE ANSWER TO QUESTION NO. 19 WAS "NO", YOU DO NOT NEED TO COMPLETE THE REMAINING QUESTIONS.

A. What is the volume of material to be excavated?

Annually _____ Total Approximately 25 cubic yards

B. What types of materials will be excavated?

Materials would primarily be native soil but also gravel, pavement/concrete and road base aggregate/fill in Northgate Boulevard and American River Bike Trail.

C. Will the project site include processing and stockpiling of material on site?

Yes No

Explain:

Excavated native materials will temporarily be stockpiled on site until excavations are backfilled with native material and repaved in roadways.

D. What method and equipment will be used to excavate material?

Excavators/backhoes/vacuum trucks will be used to excavate material.

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS ^{Item 5}
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

E. What is the water source for the project?

The Project is anticipated to require water during the site preparation and construction phases for soil conditioning and dust control, among other uses. Water would be obtained through a local water supply municipality/company and trucked to the Project site or obtained through a fire hydrant or other connections on-site if available.

F. How will waste materials wash water, debris, and sediment be disposed of?

During construction, general types of solid nonhazardous waste would be produced such as food, glass, paper, and plastic. Solid waste would be recycled and/or disposed of appropriately. Construction materials would be removed from all work areas and debris would be hauled off-site for reuse or disposed of at the appropriate landfill. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during excavation activities, the excavated soil will be tested and, if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The water will then be tested before being hauled off-site to an appropriate disposal site, discharged to a sewer drain connecting to a publicly owned treatment network, or used on-site for dust control.

G. What is the proposed end land use for the project site?

There will be no change in land use for the project site as existing conditions will be restored upon completion of construction activities.

H. Has a reclamation plan been prepared for this site in accordance with the Surface Mining and Reclamation Act of 1975?

Yes No If yes, please attach a copy.

Continuation Pages

1. Description of Proposed Work

The following description focuses on work within the jurisdiction of the Central Valley Flood Protection Board (CVFPB), consisting of the American River, American River Parkway, and the north and south U.S. Army Corps of Engineers (USACE) levees and 10 feet landward.

Project Purpose

The existing DFM 0613-01 (pipeline) crosses over the American River attached to the SR-160 bridge and was a key interconnect between a large gas load center and the gas transmission system serving urban Sacramento. Due to the recent installation of new natural gas pipelines in the Sacramento area, the pipeline is no longer necessary for natural gas transmission. The pipeline crosses the American River on the SR-160 bridge.

Proposed Project

In total, approximately 2,700 feet of pipe will be retired in place within the jurisdiction of the CVFPB/USACE (Figure 2). The pipeline will be segmented at intervals within the retirement area. Air to soil transitions on either side of the bridge will be removed, and the portion of the pipe on the bridge will be purged and retired in place. To comply with Title 23 requirements, segments of the pipeline installed within the levees will be filled with Cell-Crete, a flowable concrete mix. The pipeline will be filled with Cell-Crete for approximately 1175' from just north of the northern CVFPB/USACE levee south to Northgate Blvd., and for approximately 160' from the top of the southern CVFPB/USACE levee southwest to outside the toe of the levee. Two valves near the eastern abutment of the SR-160 bridge will be removed. (Figure 2 and Figure 3).

Small segments of existing pipe will be removed where the above-ground pipe at each end of SR-160 transitions to below ground. The pipe segment removed from the southern end of the SR-160 bridge is located at the southern CVFPB/USACE levee (Figure 2 and Figure 3). The remaining deactivated pipe will be retired in place, either buried beneath ground or attached to the SR-160 bridge. Existing electronic testing stations and cables for corrosion projects will be disconnected from the existing pipeline. In addition, an existing 6-inch distribution pipe parallel to the pipeline north of the American River will be plugged and deactivated. Other above ground features, such as vent stacks, will also be removed, as shown in Figure 3. Pipe cleaning is not expected to be required as Hydrotests up and downstream of this retirement did not require pipe cleaning.

Construction Activities

Construction is anticipated to begin summer 2019 and require three months. There are four Project construction areas between the north and south CVFPB/USACE levees and 10 feet landward (Figure 2). There are two additional associated construction areas for Cell-Crete injection outside the levees to the north and to the south (Figure 2). No construction will occur within the American River channel and impacts to vegetation along the river banks will be avoided. The construction areas will be used for cut and cap and Cell-Crete catch points, valve removal, Save-A-Valve installation, and equipment staging and laydown space. A total of 4 trees will be removed and 2 trees trimmed from the Project site in the American River Parkway. A summary of trees proposed for removal is shown in Table 1 and the area of vegetation removal at the Project site is shown in Figure 2. All 4 trees planned for removal are non-native orchard species that do not constitute a natural part of the original landscape; therefore, no replanting is proposed. Additional details can be found in the Arborist Report (Appendix 4).

Continuation Pages

Table 1 - Project Tree Removal and Trimming

Tree Species	Action	Number	DBH ¹ Range (inches)	Height Range (feet)
Valley Oak (<i>Quercus lobata</i>)	Trim	2	23-32	25-55
Walnut (<i>Juglans sp.</i>)	Removal	2	24-32	18-19
Almond (<i>Prunus dulcis</i>)	Removal	2	16-22	10-10

¹ DBH = diameter at breast height

The construction area and access routes will be prepared by first grubbing and removing vegetation, followed by installation of erosion control best management practices (BMPs) and other minor improvements necessary to mobilize construction equipment and materials, refer to Appendix C. Portable lights will be utilized during any night work and at any laydown yard where materials and equipment are staged. Chain link fence panels or orange safety fence will provide a barrier for exposed excavations during construction as well as any lay down yards. A security guard will also be stationed at the main lay down yard during off hours. Traffic control measures will be utilized as required by encroachment permits for work in roadways and bike paths. Steel plates will typically be placed over the excavations where use of impacted areas may be necessary during non-working hours.

Pipeline Retirement

Construction begins with mobilizing construction equipment and then potholing within construction areas to locate the existing pipeline and utilities. Pipeline retirement requires excavating approximately 8-foot-wide by 6-foot-long bell holes for Cell-Crete injection and catch points and 8-foot-wide by 8-foot-long bell holes for valve removal within the construction areas along the pipeline. Figure 2 shows areas where construction activities are located and where vegetation removal is required within the construction areas for construction to occur in a safe manner. Unless specifically noted below, bell hole excavation uses heavy equipment such as excavators and backhoes.

The process within the bell holes at Cell-Crete catch points involves cutting out a small segment of pipe and capping both ends with a steel plate. Prior to injection a small hole is cut on top of the downstream pipeline. Cell-Crete slurry will then be pumped into the existing pipeline in excavations at the designated upstream Cell-Crete injection location (Figure 2). Once injection begins, crew members watch the small hole at the Cell-Crete catch point excavation to determine precisely when to stop injecting Cell-Crete. Approximately 1 cubic-foot of Cell-Crete comes out of the small hole before injection is ceased. Excavations will be backfilled with native material and repaved in roadways and compacted per Title 23 Standards.

The pipe ends in each excavation and on SR-160 will be capped by welding on a steel plate. Once complete, pipe ends in excavations will be buried below ground surface. Two existing valves will be removed in the work area near the north end of the SR-160 bridge. All removed pipe segments and the valves will be disposed of offsite at approved locations.

The installation of a Save-A-Valve on top of the northern USACE levee (Figure 2) entails digging an approximately 8-foot-long by 8-foot-wide by 3-foot-deep bell hole to expose the existing pipe. A small backhoe would perform the initial digging, and once within 2' of the pipe, hand digging would complete the excavation. Then a 5-inch-long by 2.5-inch diameter nipple (termed in the industry a Save-A-Valve) will be welded to the top of the pipe. This nipple will be used to bleed air from the pipe as Cell-Crete is being pumped through the pipeline. Once the

Continuation Pages

process of filling the pipeline with Cell-Crete is complete, the nipple will be closed off and the bell hole will be backfilled and compacted per Title 23 Standards.

Work on the southern USACE levee (Figure 2) does not involve any ground-breaking activities. This Cell-Crete catch point location and associated cut and cap of the pipeline occurs where the pipeline is above ground and attached to the SR-160 bridge (see Figure 4, Photo 4). A crew truck will park on the bike trail on top of the levee and the crew will proceed by foot to the location of the pipe at the bridge. Cables for welding will be run across the levee from the truck to the pipeline at the bridge.

Pipe cleaning is not expected to be required as Hydrotests up and downstream of this retirement did not require pipe cleaning. However, it is still possible the existing pipeline being retired may require cleaning to remove contaminants that may have built up inside the pipe. All existing work areas were sized to accommodate pipe cleaning activities, including staging. If cleaning is necessary, pipeline inspection gauge (PIG) launchers and receivers will be temporarily installed on the deactivated pipe at the identified work areas (Figure 2) to insert PIGs and liquids (water or cleaning fluids) into the pipeline. Air compressors staged at both the launching and receiving ends of each cleaning section will propel the PIGs and liquids through the pipeline. Multiple cleaning runs may be necessary to remove all contaminants, if present. Upon completion of each PIG run, the PIGs and liquids will be removed from the pipeline and collected in temporary storage (frac) tanks connected to PIG receivers by temporary pipes/hoses. PIGs and liquids will be sampled and disposed of off-site in accordance with all environmental regulations.

Site Restoration

Site restoration will begin immediately after construction activities. Construction areas will be restored to approximate pre-Project conditions. Restoration of public streets, sidewalks, and curbs above the pipe bedding shall be in accordance with the latest city, county, or agency standards. All undeveloped areas subject to ground disturbance will be revegetated with hydroseeding using an appropriate native seed mix. BMPs for erosion control will be installed as appropriate and monitoring of vegetation growth will be conducted in compliance with the Project Stormwater Pollution Prevention Plan, refer to Appendix C.

2. Project Location

The CVFPB and USACE maintain levees delineating the floodplain from the American River at the Project location. The southern CVFPB/USACE levee extends immediately along the American River with the bike trail forming the top of the levee prism. The northern CVFPB/USACE levee is located approximately 0.35 miles north of the American River at the Project location. The floodplain area between the American River and the northern CVFPB/USACE levee consist of the American River Parkway. In addition to serving as the floodplain, the American River Parkway provides wildlife and recreation areas and contains scattered developments. Table 2 below identifies assessor's parcel numbers (APNs) containing the Project site (including all construction areas) within the jurisdiction of the CVFPB.

Continuation Pages

Table 2 – Properties within the Project at the American River Parkway and CVFPB/USACE Levees

Landowner	Address	APN/Road
County of Sacramento	4040 Bradshaw Rd., Sacramento, CA 95827	274-0190-035-0000, 274-0190-036-0000, 274-0190-026-0000, 274-0120-018-0000, 274-0120-019-0000, 274-0190-034-0000
City of Sacramento	915 I St. #5 th , Sacramento, CA 95814	274-0190-037-0000, 274-0200-010-0000
State of California	3165 Gold Valley Dr. #111, Rancho Cordova, CA 95742	274-0190-042-0000, 274-0190-043-0000
Hart Enterprises	1617 Kingsford Dr., Carmichael, CA 95608	001-0070-005-0000, 001-0070-029-0000
Curt A. Thompson	P.O. Box 987, Winters, CA 95694	274-0120-010-000

3. Adjacent Property Owners

Table 3 identifies property owners adjacent to the Project site within the jurisdiction of the CVFPB.

Table 3 – Properties Adjacent to the Project Site at the American River Parkway and CVFPB/USACE Levees

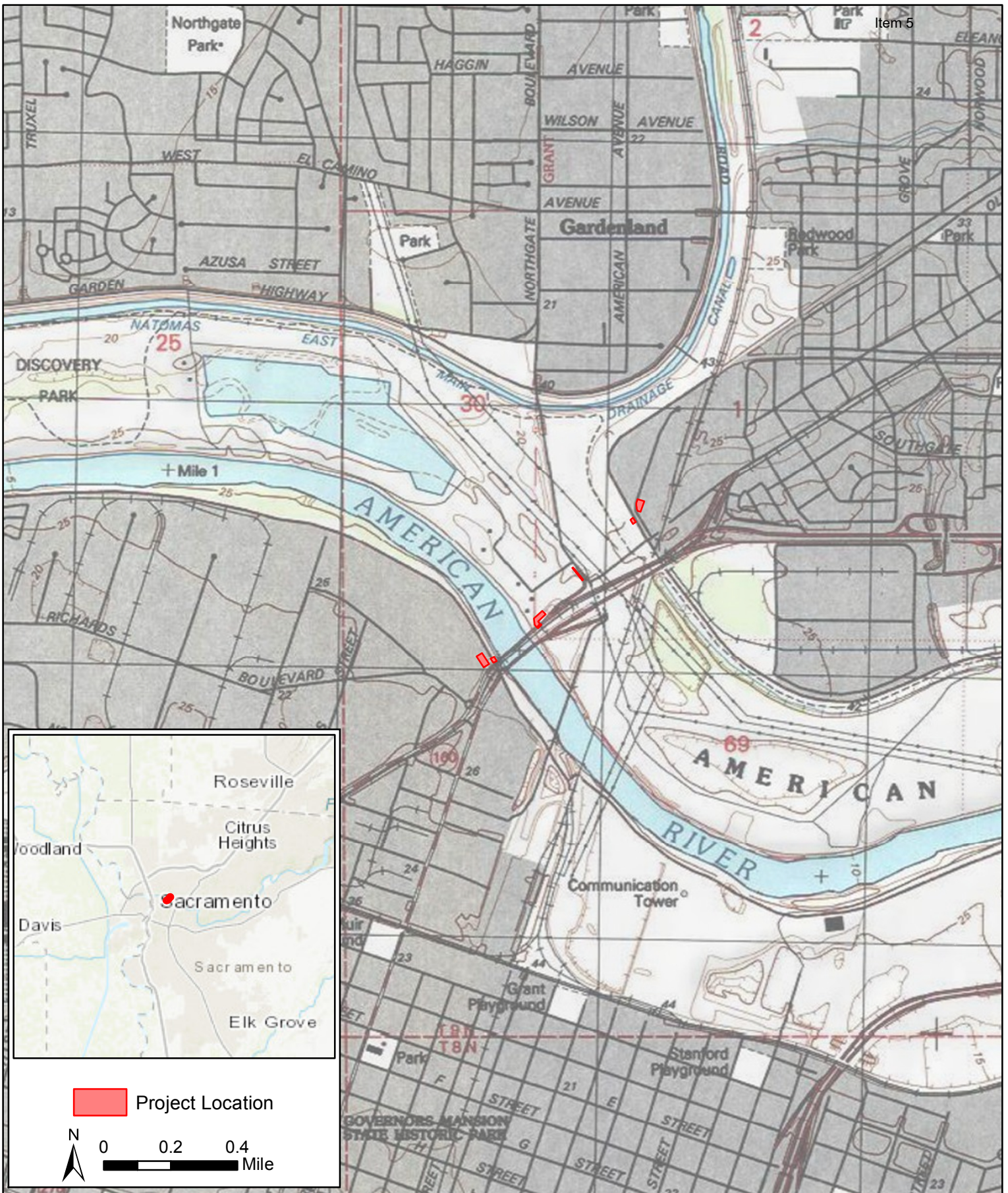
Property Owner	Address	Zip Code
County of Sacramento	461 Del Paso Boulevard, Sacramento CA	95815
County of Sacramento	Northgate Boulevard, Sacramento CA	95833
County of Sacramento	Del Paso Boulevard, Sacramento CA	95833
Western Pacific Railroad	Del Paso Boulevard, Sacramento CA	95815
State of California	N/A	95833
Westcore Croydon	1955 Railroad Drive, Sacramento CA	95815
Lovotti and Company	1940 Railroad Drive, Sacramento CA	95815
Jessica Ramos	1960 Railroad Drive, Sacramento CA	95815
Demo 6 LLC	1421 Richards Boulevard, Sacramento CA	95811
Caltrans	State Route (SR) 160	N/A
Demicheli Fox	Richards Boulevard, Sacramento CA	95811

4. CEQA

The Project qualifies for a categorical exemption under CEQA Section 15301, Existing Facilities, for Class 1 facilities. The Project is consistent with the requirements of this exemption because it consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.

Appendix A

Figures



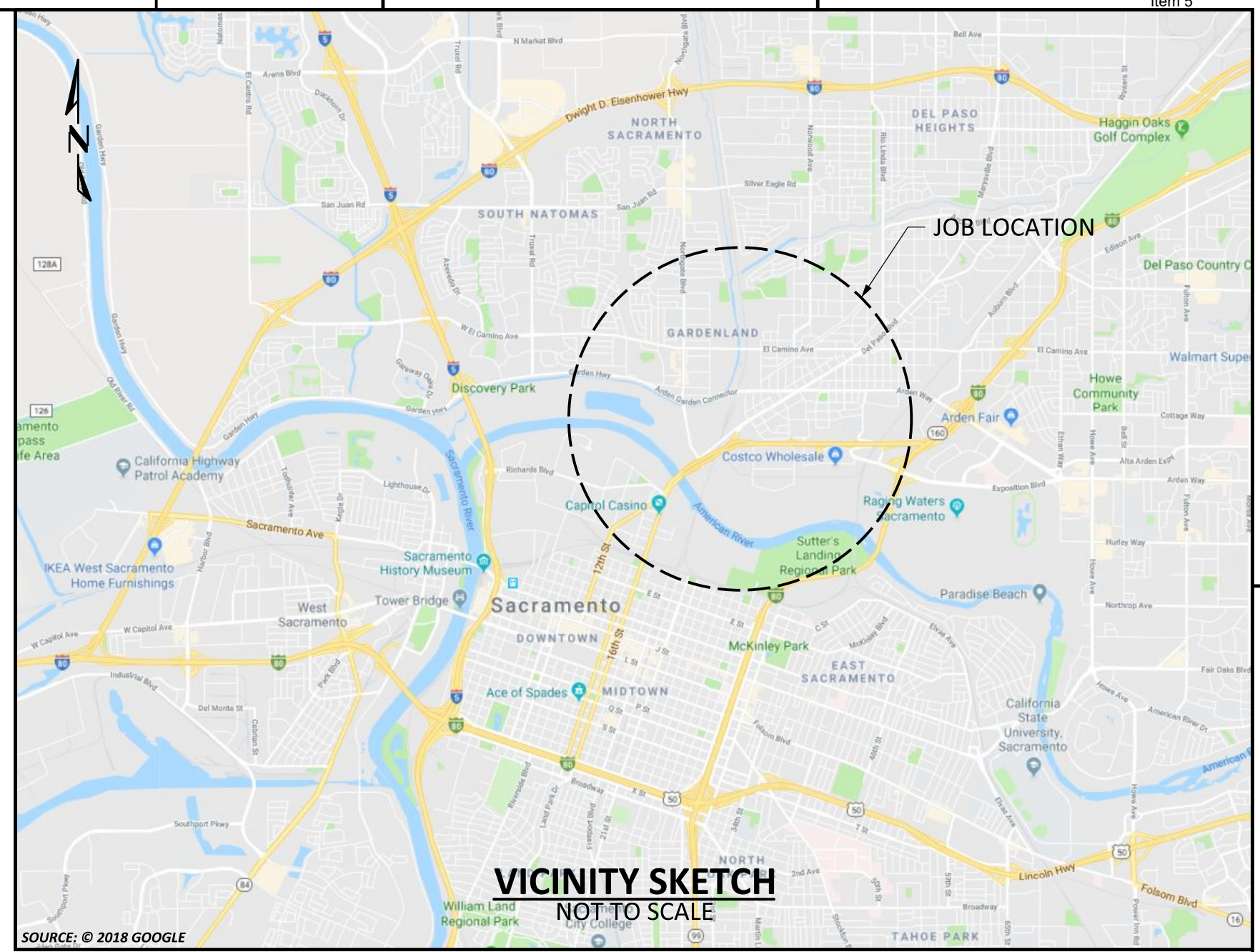
Pacific Gas and Electric
 Distribution Feeder Main 0613-01
 American River Crossing Retirement Project

Figure 1: Project Vicinity



2246 Camino Ramon
 San Ramon, CA 94583

DFM 0613-01 MP 2.94 - 5.29 RETIRE APPROX 12,250' OF 12" PIPE SACRAMENTO, SACRAMENTO COUNTY



KEY MAP
SCALE: 1" = 800'

SCHEDULE OF SHEETS

- SHEET 1 -- TITLE & INDEX
- SHEET 2 -- CONSTRUCTION NOTES
- SHEET 3 -- LEGEND & STAMPS
- SHEET 4 -- POT HOLE
- SHEET 5-14 -- DETAILS
- SHEET 15 -- BILL OF MATERIALS

SAFETY PLEDGE

I ALWAYS PUT SAFETY FIRST
I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.

**GAS TRANSMISSION & DISTRIBUTION
ESTIMATING & DESIGN**

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

JOB ID **R-582**

SHEET NO. 1 OF 15 SHEETS

74004048 0

WARNING:
THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
© PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KIT6	MDGR		

PIPELINE - TITLE & INDEX
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

SUMMARY OF PROPOSED WORK:

1. INSTALL (1) 12" & (1) 6" STOPPER FITTING.
2. RETIRE APPROX 12,250' OF DFM 0613-01 BY SECTIONALIZING AT (13) LOCATIONS.
3. REMOVE (1) MAINLINE VALVE.
4. TRENCH AND BACKFILL.
5. HYDROTEST NEW MAIN LINE.

SEQUENCE OF OPERATIONS:

1. PRIOR TO TAKING PIPELINE CLEARANCE, THE FOLLOWING MUST BE PERFORMED:
 - A. PG&E GPOM TO CHECK ANY DRIPS IN SHUT-IN SEGMENT FOR PRESENCE OF PIPELINE LIQUIDS.
 - B. REMOVE PIPE WRAP FROM CUT OUT SECTIONS EXTENDING 1' BEYOND EACH END OF THE CUT-OUT AND SANDBLAST TO NEAR WHITE.
 - C. COMPLETE A-FORMS IN ALL EXPOSED PIPE AND INCLUDE IN AS-BUILT PACKAGE. IF UT WT MEASUREMENTS DO NOT MATCH EXISTING PIPE SPECIFICATIONS AS SHOWN ON DRAWINGS, IMMEDIATELY NOTIFY PROJECT ENGINEER (PED).
 - D. INSTALL SAVE-A-VALVES FOR OIL TESTING AND SNIFF HOLES WHERE DESIGNATED. CONFIRM LOCATION AND NUMBER OF SAVE-A-VALVES AND ENSURE WELD PROCEDURE CALCULATIONS ARE PROVIDED BY ENGINEERING PRIOR TO WELDING SAVE-A-VALVES ON PIPELINE.
 - E. STRENGTH TEST, DEWATER, AND DRY TIE-IN PIECES PER UTILITY PROCEDURE TD-4137S.
2. COMPLETE CLEARANCE PER APPROVED CLEARANCE PROCEDURE.
3. REMOVE RETIRED PIPE AND FITTINGS AS NECESSARY PER DRAWING.
4. TIE-IN NEW 12" PIPING.

CONSTRUCTION NOTES:

GENERAL REQUIREMENTS:

1. UNDERGROUND SERVICE ALERT: CALL 811 (1-800-227-2600) A MINIMUM OF 2 BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE FOR THE MARKING OF UNDERGROUND UTILITIES, INCLUDING ALL NON-UTILITIES BEFORE YOU DIG, GRADE, OR EXCAVATE.
2. UTILITY NOTES:
 - A. DIMENSIONS SHOWN ON THESE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION FROM SEVERAL SOURCES, AND SHALL BE VERIFIED IN THE FIELD BY CONSTRUCTION PERSONNEL PRIOR TO FABRICATION.
 - B. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES, PROPERTY LINES, AND OTHER SUBSTRUCTURES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE, UNLESS OTHERWISE NOTED. CONSTRUCTION PERSONNEL ARE RESPONSIBLE FOR MAKING ALL DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AND OTHER SUBSTRUCTURES AS NECESSARY TO AVOID DAMAGE OR ENCROACHMENTS.
 - C. PROSPECTING IS REQUIRED AHEAD OF WORK. ALL OFFSETS OR ROPING WILL NEED TO BE APPROVED BY THE PG&E PROJECT ENGINEER (PED), AND REDLINED DETAILS SHOWN ON PROFILE AND CONSTRUCTION DETAIL SHEETS OF EACH ADDITIONAL SUBSTRUCTURE.
 - D. ALL EXCAVATIONS WITHIN EXISTING STATIONS SHALL BE HAND DUG OR EXCAVATED USING SOFT DIG METHODS (e.g. VACUUM EXCAVATIONS OR SIMILAR).
3. ELBOWS AND FIELD BENDS:
 - A. ALL BENDS ARE SMOOTH FIELD BENDS, EXCEPT WHERE ELBOWS ARE SHOWN. FIELD BENDS SHALL BE MADE IN ACCORDANCE WITH A-36, SECTION 4D. FIELD BENDS MAY BE USED IN LIEU OF ELBOWS WHEN PREAPPROVED BY THE PG&E PROJECT ENGINEER (PED).
 - B. IN ORDER TO AVOID EXCESSIVE STRAIN ON THE PIPELINE, THERE SHALL BE A MINIMUM SEPARATION OF 5 FEET BETWEEN A ROPEL SECTION OF PIPELINE AND ANY ELBOWS OR FIELD BENDS.
 - C. ALL ANGLES SHOWN IN THE PLAN AND PROFILE ARE APPROXIMATE AND SHALL BE CUT TO SUIT FIELD CONDITIONS.
4. SEPARATION FROM OTHER STRUCTURES:
 - A. CROSSING UNDERGROUND FACILITIES: PG&E PIPELINE MUST BE INSTALLED WITH AT LEAST 24 INCHES OF CLEARANCE FROM ANY OTHER SUBSTRUCTURE/UTILITY NOT ASSOCIATED WITH THE PIPELINE UNLESS NOTED ON THE DRAWINGS.
 - B. PARALLELING UNDERGROUND FACILITIES: THIS PIPELINE MUST BE INSTALLED WITH AT LEAST 5 FEET OF CLEARANCE FROM ANY OTHER UNDERGROUND STRUCTURE/UTILITY NOT ASSOCIATED WITH THE PIPELINE UNLESS NOTED ON THE DRAWINGS.
5. RESTORATION AND CLEAN UP:
 - A. RESTORATION OF PUBLIC STREETS, SIDEWALKS, CURBS, ETC. ABOVE PIPE BEDDING SHALL BE IN ACCORDANCE WITH THE LATEST CITY, COUNTY, OR AGENCY STANDARDS.
 - B. WHERE EVER THERE ARE ROW CROPS, THE TOPSOIL SHALL BE REMOVED TO A DEPTH OF 12" AND STORED ON SITE. UPON COMPLETION OF CONSTRUCTION, THE TOPSOIL SHALL BE RESTORED. TAKE CARE TO PREVENT MIXING OF TOPSOIL AND SUBSOIL.
6. DESIGN NOTES:
 - A. THIS DRAWING HAS BEEN CREATED BY REVIEW OF THE AS-BUILT DRAWINGS & RECORDS. ACCURACY IS DEPENDENT UPON THE SOURCE DOCUMENT LISTED ON THE REFERENCE DRAWINGS.
7. WELDING REQUIREMENTS:
 - A. ALL ARC WELDING IS TO BE PERFORMED IN ACCORDANCE WITH THE GAS WELDING CONTROL MANUAL TD-4160M. ALL CANS OR SPOOLS SHALL BE A MINIMUM LENGTH OF ONE PIPE DIAMETER, WHENEVER POSSIBLE.
 - B. INSTALL TEST STATIONS WITH THERMITE WELD CONNECTION IN ACCORDANCE WITH GAS T & D CORROSION CONTROL MANUAL O-10, O-10.1 AND O-10.2.
8. WELDING:
 - A. WHEN INTERNAL MISALIGNMENT EXCEEDS 0.094", BACKWELD ANY GIRTH WELD WHERE THERE IS ACCESS TO THE INSIDE OF THE WELD. WHERE THERE IS NO ACCESS TO THE INSIDE OF THE WELD, MACHINE BORING OR GRINDING IS REQUIRED. BACKWELDING, GRINDING, OR BORING MUST BE DONE IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROCEDURE IN THE GAS WELDING CONTROL MANUAL TD-4160M.
9. STRENGTH TEST REQUIREMENTS
 - A. STRENGTH TESTING SHALL MEET PRESSURE AND DURATION REQUIREMENTS OF GAS STANDARD A-34 AND SHALL BE CONDUCTED IN ACCORDANCE WITH UTILITY PROCEDURE TD-4137S.
 - B. ALL WELDS THAT HAVE NOT BEEN STRENGTH TESTED AND ALL FITTINGS SHALL BE SOAP TESTED AT 100 PSI AND AT OPERATING PRESSURE BEFORE COATING CAN OCCUR.
10. COATING REQUIREMENTS:
 - A. ALL EXPOSED PIPE AND FITTINGS ARE TO BE COATED IN ACCORDANCE WITH GAS STANDARD E-30. ALL COATING ON BURIED PIPE AND FITTINGS ARE TO BE APPLIED IN ACCORDANCE WITH GAS STANDARD E-35.
 - B. FOR COATING SELECTIONS ON BURIED PIPE, SEE DIRECT BURIAL COATING SELECTIONS TABLE.
 - C. CONTACT THE PROJECT ENGINEER (PED) TO REQUEST VARIANCE FROM THE APPROVED COATING PRODUCTS.
11. INSPECTION OF EXISTING PIPELINE:
 - A. WHENEVER EXISTING BURIED GAS FACILITIES ARE EXCAVATED DURING ENGINEERING OR DURING CONSTRUCTION, FOLLOW TD-5100P-01 TO DOCUMENT PIPE INSPECTION. THIS APPLIES TO EXISTING AND TO BE RETIRED FACILITIES.
 - B. EXISTING GIRTH WELDS, AT TIE-IN LOCATIONS, SHALL BE IDENTIFIED AND REMOVED IF PRACTICAL.
 - C. PRIOR TO TIE-IN, INSPECT COATING AND PIPE FOR DEFECTS. IF DEFECTS ARE FOUND, CONTACT PROJECT ENGINEER (PED) FOR GUIDANCE.
12. TIE-IN AND CLEARANCE PROCEDURE TO BE PREPARED AND PERFORMED IN ACCORDANCE WITH THE FOLLOWING WORK PROCEDURES:
 - A. TD-4100-01, HOT AND COLD WORK METHODS FOR NATURAL GAS TRANSMISSION PIPELINE SHUTDOWN AND TIE-IN.
 - B. TD-4441S, GAS CLEARANCE PROCEDURES FOR FACILITIES OPERATING OVER 60 PSIG.

13. COATING REMOVAL:

- A. PERFORM THE FOLLOWING STEPS, IN ACCORDANCE WITH TD-4711P-01, BEFORE REMOVING ASPHALTIC PIPE WRAP ON PIPELINES INSTALLED PRIOR TO 1972 (BASED ON PG&E ANALYSIS, PIPE INSTALLED IN 1972 OR LATER DOES NOT HAVE PIPE WRAP THAT CONTAINS ASBESTOS):
 1. REFER TO THE "EXISTING PIPE SPECS (PRE-1972)" STAMP TO DETERMINE IF A SAMPLE HAS BEEN COLLECTED OR IF A SAMPLE IS REQUIRED:
 - a. "YES" REPRESENTS HISTORICAL RESULTS ARE AVAILABLE SHOWING THAT PIPE WRAP CONTAINS ASBESTOS. NO SAMPLE IS REQUIRED.
 - b. "NO" REPRESENTS HISTORICAL RESULTS ARE AVAILABLE AND THE PIPE WRAP DOES NOT CONTAIN ASBESTOS (CONTENT WAS NON DETECT). NO SAMPLE IS REQUIRED.
 - c. "UNKNOWN" REPRESENTS NO HISTORICAL RESULTS ARE AVAILABLE. A SAMPLE IS REQUIRED IF THE PIPE INSTALLATION DATE IS PRIOR TO 1972.
 2. WHEN A PIPE WRAP SAMPLE IS REQUIRED TO BE ANALYZED FOR ASBESTOS:
 - a. COLLECT SAMPLE PER TD-4711P-01 AND COMPLETE CHAIN OF CUSTODY FORM TD-4711P-01-F01.
 - b. FILE PINK COPY OF THE CHAIN OF CUSTODY FORM AND FINAL LABORATORY RESULTS WITH THE AS-BUILTS.
 3. WHEN REMOVING PIPE WRAP THAT CONTAINS ASBESTOS, OR FOR EMERGENCY WORK, FOLLOW TD-4711P-01 "PIPE WRAP REMOVAL, HANDLING AND DISPOSAL".

CATHODIC PROTECTION NOTES:

1. FOLLOW TD-5100P-01 TO DOCUMENT INTERNAL CORROSION AND EXTERNAL CORROSION INSPECTION OF THE PIPELINE.
2. UPON COMPLETION OF BORINGS, CONTACT THE CORROSION SUPERVISOR FOR THE LOCAL AREA/DIVISION TO PERFORM CURRENT DRAIN TESTS ON THE PIPELINE SEGMENT THAT WAS INSTALLED IN THE BORE. THE CURRENT DRAIN TEST MUST BE PERFORMED PRIOR TO WELDING PIPE ON EITHER SIDE OF THE BORE.
3. FOR THE INSTALLATION OF THE OMNIMETRIX RECTIFIER REMOTE MONITOR, CONTACT THE CORROSION SUPERVISOR FOR THE LOCAL AREA/DIVISION.
4. BONDING CABLES TO BE INSTALLED ACROSS PIPELINE CUT-OUTS AT ALL LOCATIONS THE PIPELINE IS SEVERED PRIOR TO REMOVAL. CHAIN CLAMPS, MAGNETIC CLAMPS, OR OTHER CONSTRUCTION MANAGEMENT APPROVED CLAMPS AND #6 (MIN) STRANDED CABLE SHALL BE UTILIZED. CLAMPS TO REMAIN IN PLACE UNTIL PIPELINE IS TIED IN.

RETIREMENT PROCEDURE FOR EXISTING PIPE:

1. GT&D UTILITY WORK PROCEDURE TD 9500P-16, "DEACTIVATION AND/OR RETIREMENT OF UNDERGROUND GAS FACILITIES," SHALL BE FOLLOWED.
2. THE EXISTING PIPE SECTIONS SHALL HAVE FREE LIQUIDS REMOVED AND BE 100% PURGED PER GAS DESIGN STANDARD A-38, "PROCEDURES FOR PURGING GAS FACILITIES."
3. THE PIPE SHALL BE SECTIONALIZED AT INTERVALS AS SPECIFIED IN THE RETIREMENT PLAN. THE LOCATIONS CALLED OUT ARE APPROXIMATE AND ARE SUBJECT TO FIELD VERIFICATION TO IDENTIFY THE MOST OPTIMUM LOCATION IN THAT VICINITY. ACCURATE SURVEY DATA MAY NOT BE AVAILABLE FOR THESE LOCATIONS SO USE CAUTION DURING EXCAVATION AND WHEN IDENTIFYING THE PIPELINE TO BE RETIRED. OTHER ACTIVE PIPELINES MAY BE IN THE AREA.
4. AT EACH SUCH LOCATION NOTED ABOVE, A PIECE OF PIPE AT LEAST 24" LONG SHALL BE REMOVED. INSTALL A 1" HIGH PRESSURE SAVE-A-VALVE (H-17491, M022287) TO CHECK FOR PRODUCT AND PRESSURE PRIOR TO CUTTING INTO THE PIPELINE. THE OPEN ENDS OF THE RETIRED PIPE SHALL BE SEALED BY THE MOST APPROPRIATE METHOD OUTLINED IN GT&D UTILITY WORK PROCEDURE TD-9500P-16. BACKFILL MUST BE THOROUGHLY COMPACTED IN PLACE OF THE REMOVED SECTION OF PIPE.

DESIGN CHANGE PROCEDURE

MAINTENANCE AND CONSTRUCTION PERSONNEL MUST OBTAIN APPROVAL FROM THE PROJECT ENGINEER (PED) BEFORE MAKING ANY DESIGN CHANGE TO GAS FACILITIES PER TD-4014P-01.

CONTACT INFORMATION:

PROJECT MANAGER	----	CHRISTINE MIER	925-244-8978
PROJECT ENGINEER (PED)	----	VILNEY OCHOA	925-244-7265
PIPELINE ENGINEER (PLE)	----	MIKE ARONOFF	916-307-9472
ESTIMATOR / DESIGNER	----	KEVIN TORBIK	916-472-2157
FIELD ENGINEER / CM	----	CRAIG WOOSLEY	916-539-8916
LAND PLANNER	----	CHRIS ELLIS	916-955-8545
CULTURAL MONITOR	----	KIM CUEVAS	661-398-5911
ENVIRONMENTAL	----	BILL FROLICH	925-549-5691

REFERENCE DRAWINGS:

OPERATING MAPS	----	382875, REV 83
AS-BUILTS	----	104986 - 1951
	----	70194 - 1943
	----	56132 - 1939
	----	48825 - 1935
	----	7036880 - 2001

WARNING:
THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
© PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

PIPELINE - CONSTRUCTION NOTES
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

JOB ID **R-582**

SHEET NO. 2 OF 15 SHEETS

74004048 0

DIRECT BURIAL COATING SELECTIONS	
MAIN LINE COATING	FBE (E-35.4)
MINOR REPAIRS	LIQUID EPOXY (E-35.3) OR FBE PATCH STICK (E-35.4)
TIE-IN WELDS	LIQUID EPOXY (E-35.1)
GIRTH WELDS	LIQUID EPOXY (E-35.1)
BUTT WELDED FITTINGS	LIQUID EPOXY (E-35.1)
VALVE ASSEMBLIES	LIQUID EPOXY (E-35.7), WAX TAPE (E-35.7)
SHORT SEGMENTS OF PIPE	LIQUID EPOXY (E-35.1)
AIR-TO-SOIL TRANSITIONS	LIQUID EPOXY/PSX 700 (E-35.8)
PRESSURE CONTROL FITTINGS	LIQUID EPOXY (E-35.7), WAX TAPE (E-35.7)
TIE-INS/COATING TRANSITIONS	LIQUID EPOXY (E-35.3)
BORED COATING SELECTIONS	
MAIN LINE COATING	ARO APPLIED OVER FBE (E-35.4)
MINOR REPAIRS	LIQUID EPOXIES (E-35.2)
TIE-IN WELDS	LIQUID EPOXIES (E-35.2)

INTERNAL CORROSION (IC) DESIGN & CONSTRUCTION REVIEW		
IC THREAT (PER TD-4810P-16)	YES	NO
IC REVIEW COMPLETED BY (CORROSION ENGINEER OR DESIGNATE)	LAN ID	DATE
CORROSION ENGINEERING HAS REVIEWED THIS DESIGN AND INCORPORATED ANY NECESSARY IC DESIGN AND CONSTRUCTION CONSIDERATIONS. DOCUMENTATION OF THE REVIEW AND ACTIONS TAKEN ARE IN THE JOB PACKAGE AND INCORPORATED IN THIS DESIGN.		
EDRS ROUTING NUMBER:	-	

QUALIFIED EMPLOYEE		DATE
CORROSION MECHANIC'S SIGNATURE IS REQUIRED WHEN A CPA BOUNDARY IS WITHIN THE SCOPE OF THE PROJECT.		

LEGEND:

GT	GAS TRANSMISSION LINE (PROPOSED)	FENCE	GAS LINE MARKER (OTHER)
GT (T)	GAS TRANSMISSION LINE (TO BE TESTED)	WALLTYPE	INSULATION JOINT
GS	GAS SERVICE LINE (EXISTING)	BARRIER	PRESSURE CONTROL FITTING
GD	GAS DISTRIBUTION LINE (EXISTING)	TEMPORARY BARRIER (TYPE K)	GAS BOX
GT	GAS TRANSMISSION LINE (RETIRED)	GUARD RAIL	GAS HIGH PRESSURE REGULATOR
GD	GAS DISTRIBUTION LINE (RETIRED)	TOE OF SLOPE	GAS METER
GS	GAS SERVICE LINE (RETIRED)	TOP OF SLOPE	GAS DISTRICT REGULATOR
FOREIGN GAS LINE		EDGE OF PAVEMENT	PG&E GAS MANHOLE
JT	JOINT TRENCH	FACE OF CURB	GAS VAULT
ET	ELECTRIC TRANSMISSION LINE	BACK OF WALK	GAS VENT
ED	ELECTRIC DISTRIBUTION LINE	DASHED PAVEMENT MARKINGS	GAS VALVE
ES	ELECTRIC SERVICE LINE	UNPAVED ROAD	PG&E ELECTRIC MANHOLE
ETOH	ELECTRIC TRANSMISSION OVERHEAD	RAILROAD	ELECTRIC VAULT
EDOH	ELECTRIC DISTRIBUTION OVERHEAD	ACCESS ROAD	UTILITY POLE (ELECTRIC)
T	TELEPHONE LINE	LAYDOWN / STAGING / CONSTRUCTION IMPACT AREA	UTILITY POLE (OTHER)
FO	FIBER OPTIC LINE	EXCAVATION / BELL HOLE	JOINT POLE
TV	CABLE TV LINE	SAFETY ZONE LIMITS	EXISTING ELECTRIC TOWER
SD	STORM DRAIN LINE	ENVIRONMENTALLY SENSITIVE AREAS	STORM DRAIN INLET
SS	SEWER LINE		UTILITY MANHOLE
W	WATER LINE		WATER METER
UNK	UNKNOWN UTILITIES		
CASING			
PROPERTY BOUNDARY			
PG&E EASEMENT			
TEMPORARY EASEMENT			
FOREIGN RIGHT-OF-WAY			
CALTRANS RIGHT-OF-WAY			

DETAIL LEGEND:

	PROPOSED GAS TRANSMISSION LINE		WATER VALVE
	EXISTING GAS TRANSMISSION LINE		CABLE TV BOX
	TEMPORARY GAS TRANSMISSION LINE (OWNED BY PG&E)		TELECOMM BOX
	TEMPORARY GAS TRANSMISSION LINE (OWNED BY OTHERS)		TELECOMM VAULT
	RETIRED GAS TRANSMISSION LINE		STREET LIGHT BOX
	GAS TRANSMISSION LINE (TO BE REMOVED)		TREE
	CUT LINE (TO BE REMOVED)		ANODE
	EXISTING GAS DISTRIBUTION LINE		DEEPWELL ANODE
	PROPOSED GAS DISTRIBUTION LINE		COMPUTER AUTOMATED TEST STATION
	TOP OF GRADE		COUPON TEST STATION
	GAS VALVE		ELECTROLYSIS TEST STATION
	PIPE END CUT (SIDE)		POLE-MOUNTED RECTIFIER
	PIPE END CUT		DCI MITIGATION CABINET
	FLOW ARROW		POTHOLE
	TIE-IN WELD		CITY/COUNTY MONUMENT
	MATERIAL OF RECORD ASSET		MONUMENT, SEE DESCRIPTION
	BILL OF MATERIALS ASSET		SURVEY CONTROL POINT
			CENTERLINE

Acronym (E) (P) AB ABN AC API APN APPROX AVE ARC ASME ASTM BBCL BC BD BEG BKF BLDG BLVD BM BMP BOM BR BTU BV BW CATS CCV CI CL CMP CNG CO CONC COND CP CPT CROP CTS CU CULV D DE DCUST	Definition Existing Proposed Aggregate Base Abandon Asphalt Concrete American Petroleum Institute Assessor's Parcel Number Approximate Avenue Abrasion Resistant Coating American Society of Mechanical Engineers American Society for Testing Materials Bell Bell Chill Ring Begin Curve Blowdown Begin Backfill Building Boulevard Benchmark Best Management Practice Bill of Materials Bridge British Thermal Units Ball Valve Back of Walk Computer Automated Test Station Corrosion Control Volume Cast Iron Centerline Corrugated Metal Pipe Compressed Natural Gas County Concrete Conduit Cathodic Protection Catch Point Conditional Reduction of Pressure Coupon Test Station Copper Culvert Depth Dead End Distribution Customer	Acronym DEG DET DFM DI DIA DIST DPV DR DREG DSAW DWA DWY E EASE EC EL ELECT ELEV EM EMS ENGR EP EQ ERW ESA ETS ETW F F & C FBE FC FDP FG FH FIG FL FLG FWY GS GS&S GV GW H HDD	Definition Degree Detail Distribution Feeder Main Drainage Inlet Diameter Distribution Damage Prevention Volume Distribution Regulator District Regulator Double Submerged Arc-Welded Deep Well Anode Driveway East Easement End Curve Elbow Electric Elevation Electronic Marker Engineering Material Specification Engineer Edge of Pavement Equation Electric Resistance Welded Environmentally Sensitive Area Electrolysis Test Station Edge of Traveled Way Filter Frame and Cover Fusion Bonded Epoxy Face of Curb Future Design Pressure Finished Grade Fire Hydrant Figure Flow Line Flange Freeway Natural Gas Service Gas Standards and Specifications Gate Valve Natural Gas Well Horizontal Horizontal Directional Drill	Acronym HFV HPR HWY ID ILI INV IRR JN JP JT L LAT LN LNG LOC LONG LT M MAOP MAX MH MIN MISC MLV MOI MON MOP MP MSP MTR MW MWP N NDE NOP NPC NTS OD OG OH P P/L PC PCF	Definition High Frequency Weld High Pressure Regulator Highway Inside Diameter In-Line Inspection Invert Irrigation Job Number Joint Pole Joint Trench Line Number Latitude Lane Liquid Natural Gas Location Longitude Left Monitor Maximum Allowable Operating Pressure Maximum Manhole Minimum Miscellaneous Main Line Valve Method of Installation Monument Maximum Operating Pressure Mile Point Maximum Stopping Pressure Meter Working Monitor Maximum Working Pressure North Non-Destructive Examination Normal Operating Pressure Non-Protected/Native Coupon Not to Scale Outside Pipe Diameter Original Ground Overhead Pipeline Property Line Point of Curvature Pressure Control Fitting	Acronym PKWY PL PLC PRUPF PSI PV PVM QTY R RCP RD RDWY REG REL REPL REV RR RT RTE R/W S SAWH SAWL SCADA SD SG SHT SMLS SMYS SPEC SS SSAW ST STA STD STL STPR T TCE TCP TD TDW TEL	Definition Parkway Plastic Programmable Logic Controllers Procedure for the Resolution of Unknown Pipeline Features Pounds per Square Inch Plug Valve Pavement Quantity Radius Reinforced Concrete Pipe Road Roadway Regulator Relocate Replace Revision Railroad Right Route Right of Way South Submerged Arc-Welded Helical Submerged Arc-Welded Longitudinal Supervisory Control and Data Acquisition Storm Drain Subgrade Sheet Seamless Specified Minimum Yield Strength Specification Sanitary Sewer Single Submerged Arc-Welded Street Station Standard Steel Strength Test Pressure Report Tied (Connected to System) Temporary Construction Easement Traffic Control Plan Technical Document T. D. Williamson Telephone	Acronym TEMP TG TT TSP TYP UG USA UT V VIF VOL W WT WV W/ W/O WP	Definition Temporary Top of Grade Top Tap Transmission System Planning Typical Underground Underground Service Alert Ultra-Sonic Test Valve Verify in Field Volume Water Wall Thickness Water Valve With Without Work Procedure
---	--	---	---	--	---	---	--	--	---

WARNING:
THIS DOCUMENT CONTAINS
CONFIDENTIAL, PROPRIETARY
INFORMATION THAT IS THE SOLE
PROPERTY OF PACIFIC GAS AND
ELECTRIC COMPANY AND IS
INTENDED FOR USE ONLY BY
AUTHORIZED PACIFIC GAS AND
ELECTRIC COMPANY EMPLOYEES
AND ITS AGENTS.
© PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KIT6	MDGR		

PIPELINE - LEGEND & STAMPS
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

GAS TRANSMISSION
ESTIMATING & DESIGN

**90% DESIGN
REVIEW**

PACIFIC GAS AND
ELECTRIC COMPANY

BILL OF MATL SHEET 15

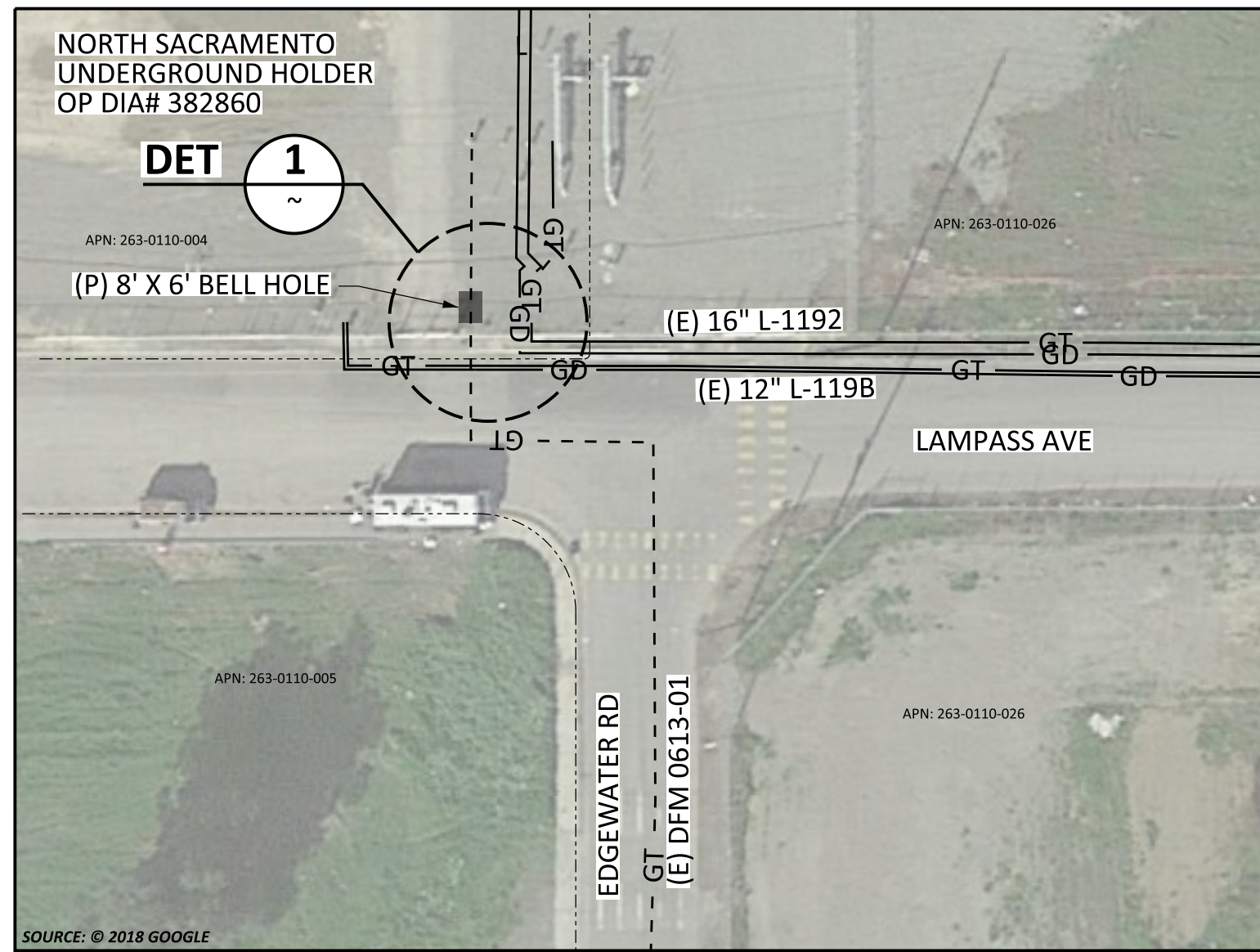
JOB ID **R-582**

SHEET NO. 3 OF 15 SHEETS

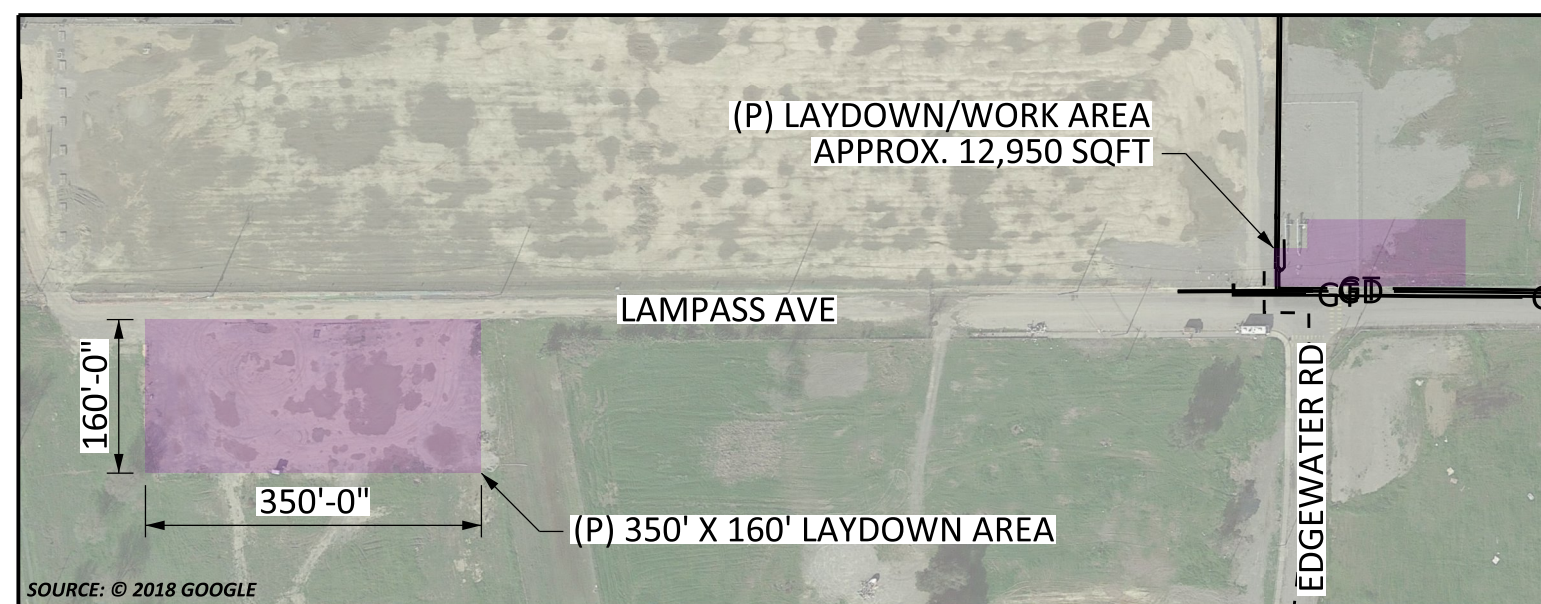
74004048 0

Estimating Dept

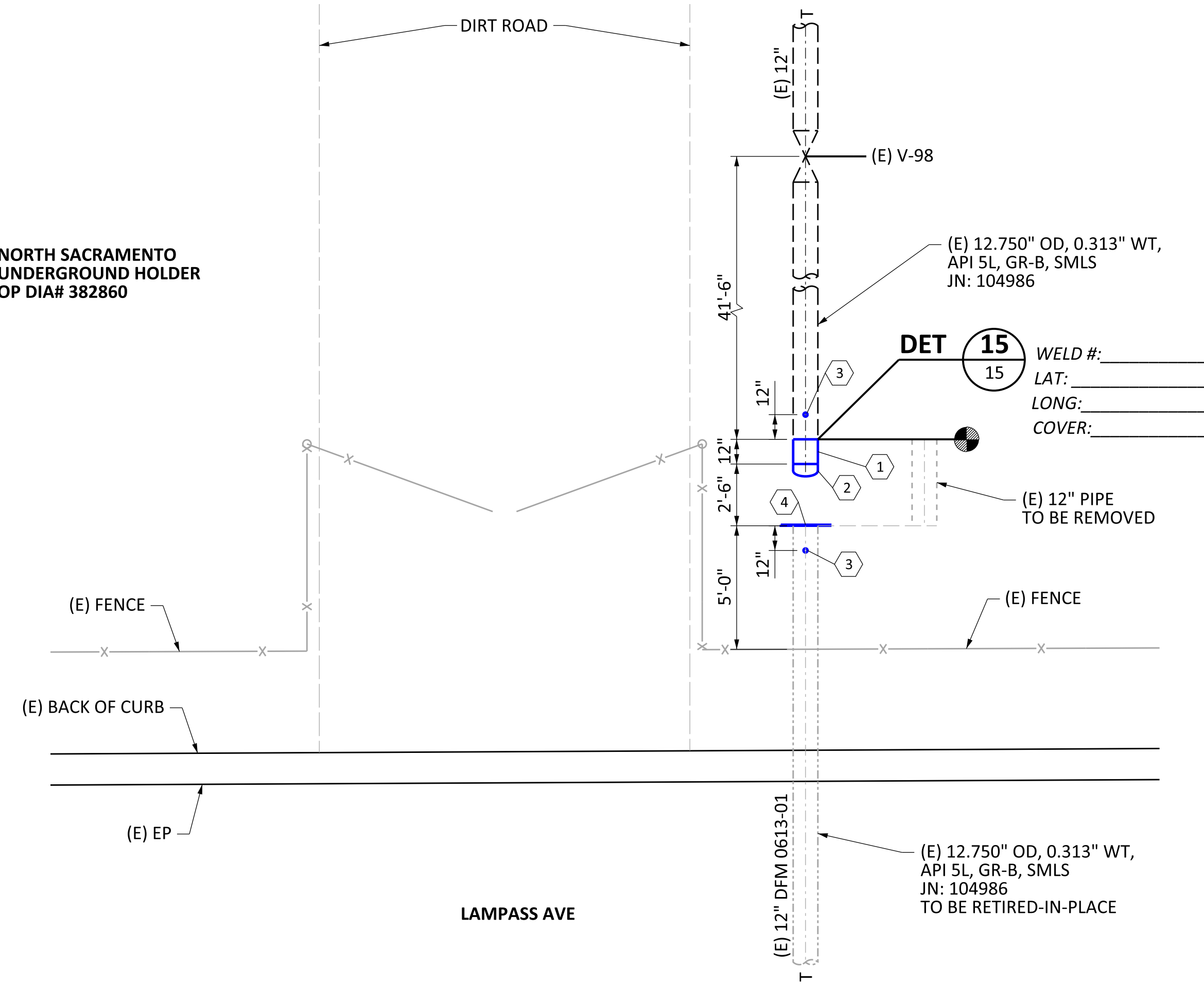
LOCATION A
LAMPASS AVE & EDGEWATER RD
WALL MAP - 2525; PLAT - D8; DFM 0613-01, MP 5.29
(SCALE: 1" = 40')



LOCATION A WORK AREAS
(SCALE: 1" = 200')



NORTH SACRAMENTO UNDERGROUND HOLDER OP DIA# 382860



DETAIL 1
SCALE: 1/4" = 1'-0"
CUT & CAP DFM 0613-01
NORTH SAC UG HOLDER

HEADER PIPE SPECS (PRE-1972)	
HEADER SIZE:	12.750" WALL THICKNESS: 0.313"
PIPE SPECS:	API 5L, GR B, SMLS
PRESENT MAOP:	260 PSIG
% SMYS @ MAOP:	15.13%
INSTALL JN:	104986 YEAR: 1951
HISTORICAL RESULTS, CONTAINS ASBESTOS?	
YES	<input type="checkbox"/>
NO	<input type="checkbox"/>
UNKNOWN	<input checked="" type="checkbox"/>
PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED	
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE, UNLESS:
B) (260 PSIG)	WHEN WELDING WITHIN 3":
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GROUDES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

WARNING:
THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
© PG&E CO.

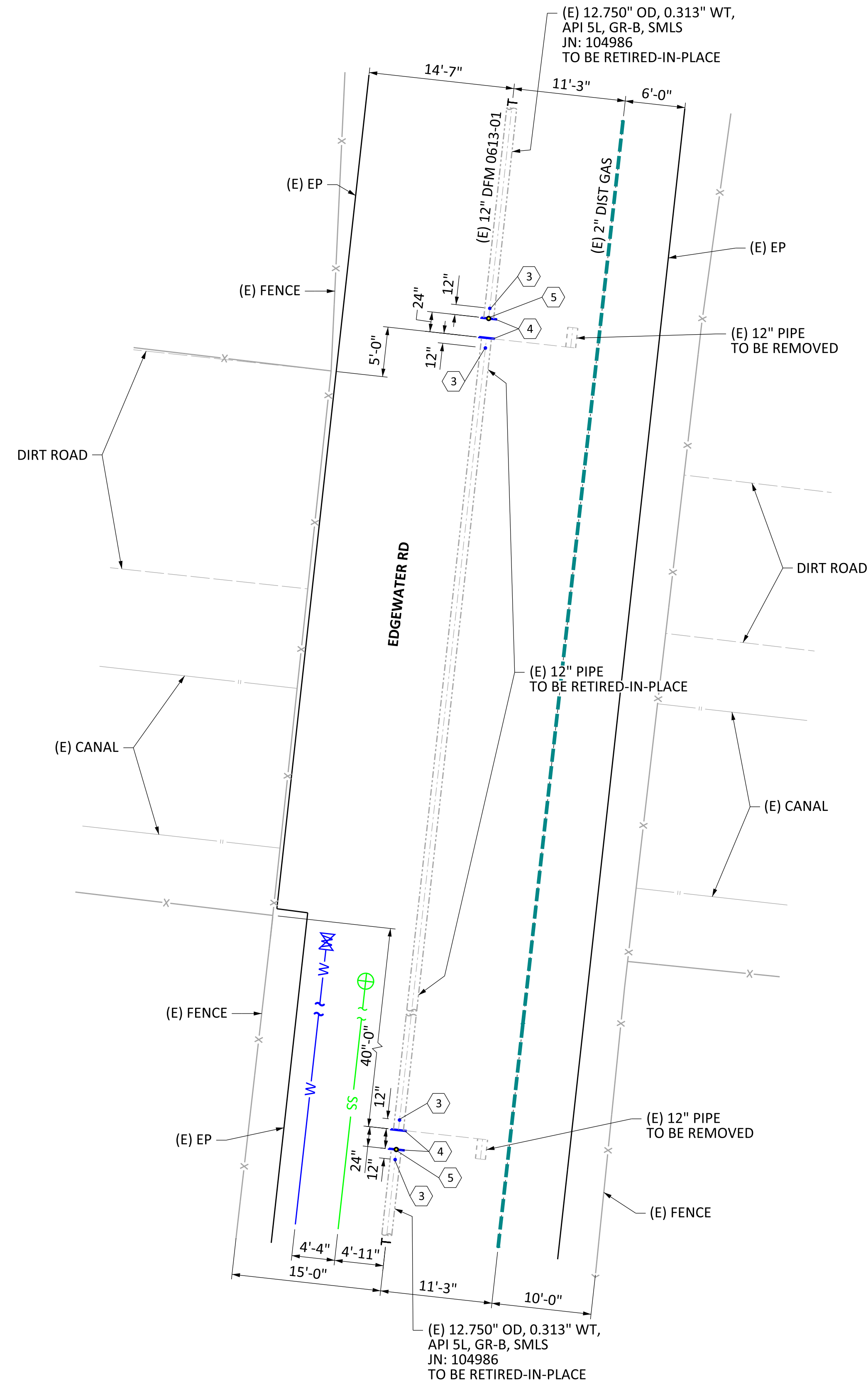
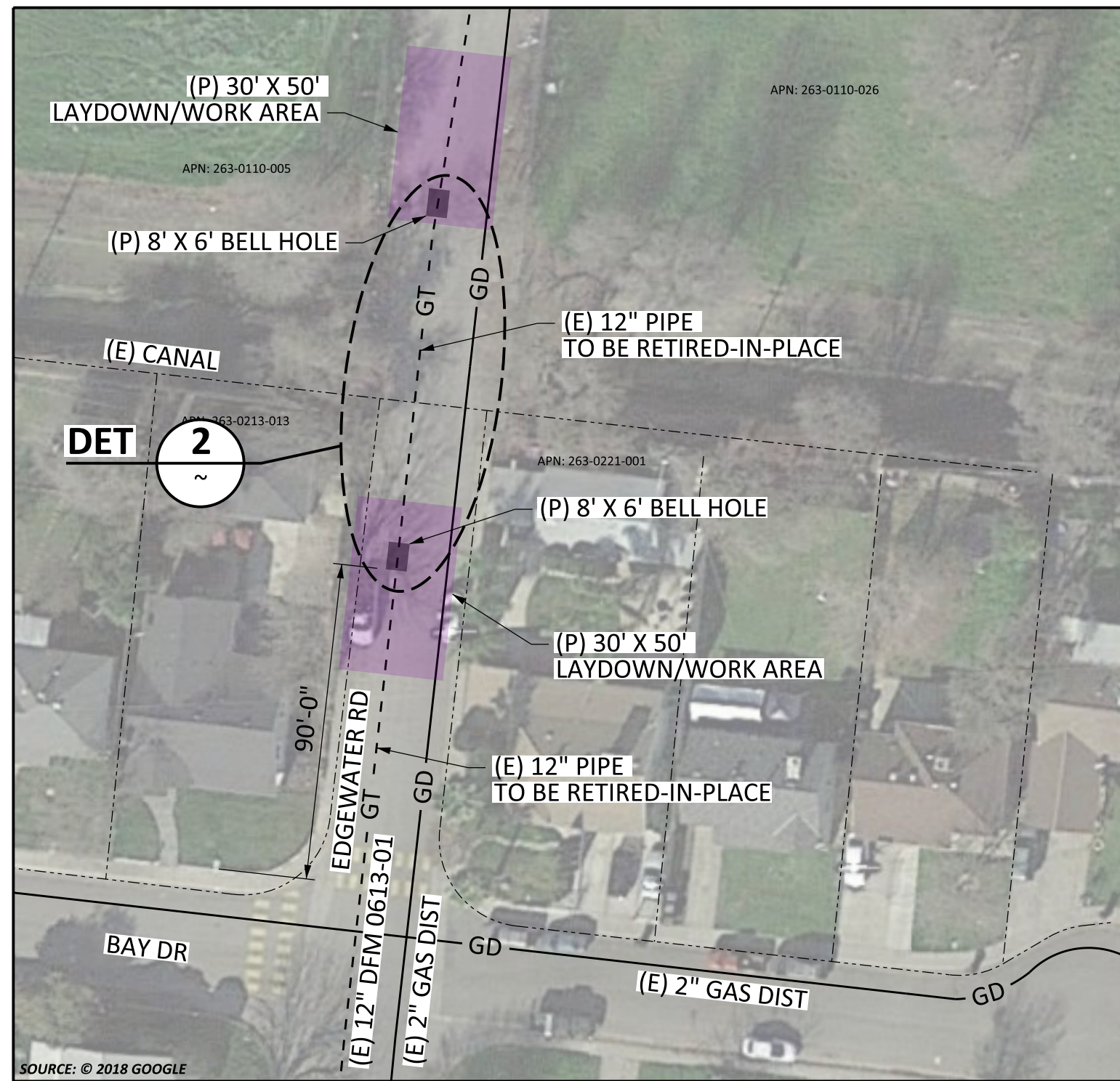


REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

PIPELINE - DETAILS
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

PG&E
GAS TRANSMISSION ESTIMATING & DESIGN
90% DESIGN REVIEW
PACIFIC GAS AND ELECTRIC COMPANY
BILL OF MATL SHEET 15
JOB ID **R-582**
SHEET NO. 5 OF 15 SHEETS
74004048 0

LOCATION B
 EDGEWATER RD APPROX 130' N/O BAY DR
 WALL MAP - 2525; PLAT - D8; DFM 0613-01, MP 5.04
 (SCALE: 1" = 40')



DETAIL 2 SECTIONALIZE AT CANAL
 EDGEWATER RD
 SCALE: 1/8" = 1'-0"

HEADER PIPE SPECS (PRE-1972)	
HEADER SIZE:	12.750" WALL THICKNESS: 0.313"
PIPE SPECS:	API 5L, GR B, SMLS
PRESENT MAOP:	260 PSIG
% SMYS @ MAOP:	15.13%
INSTALL JN:	104986 YEAR: 1951
HISTORICAL RESULTS, CONTAINS ASBESTOS?	
YES	<input type="checkbox"/>
NO	<input type="checkbox"/>
UNKNOWN	<input checked="" type="checkbox"/>
PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED	
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-23)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE, UNLESS:
B) (260 PSIG)	WHEN WELDING WITHIN 3":
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GOUGES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

WARNING:
 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
 © PG&E CO.



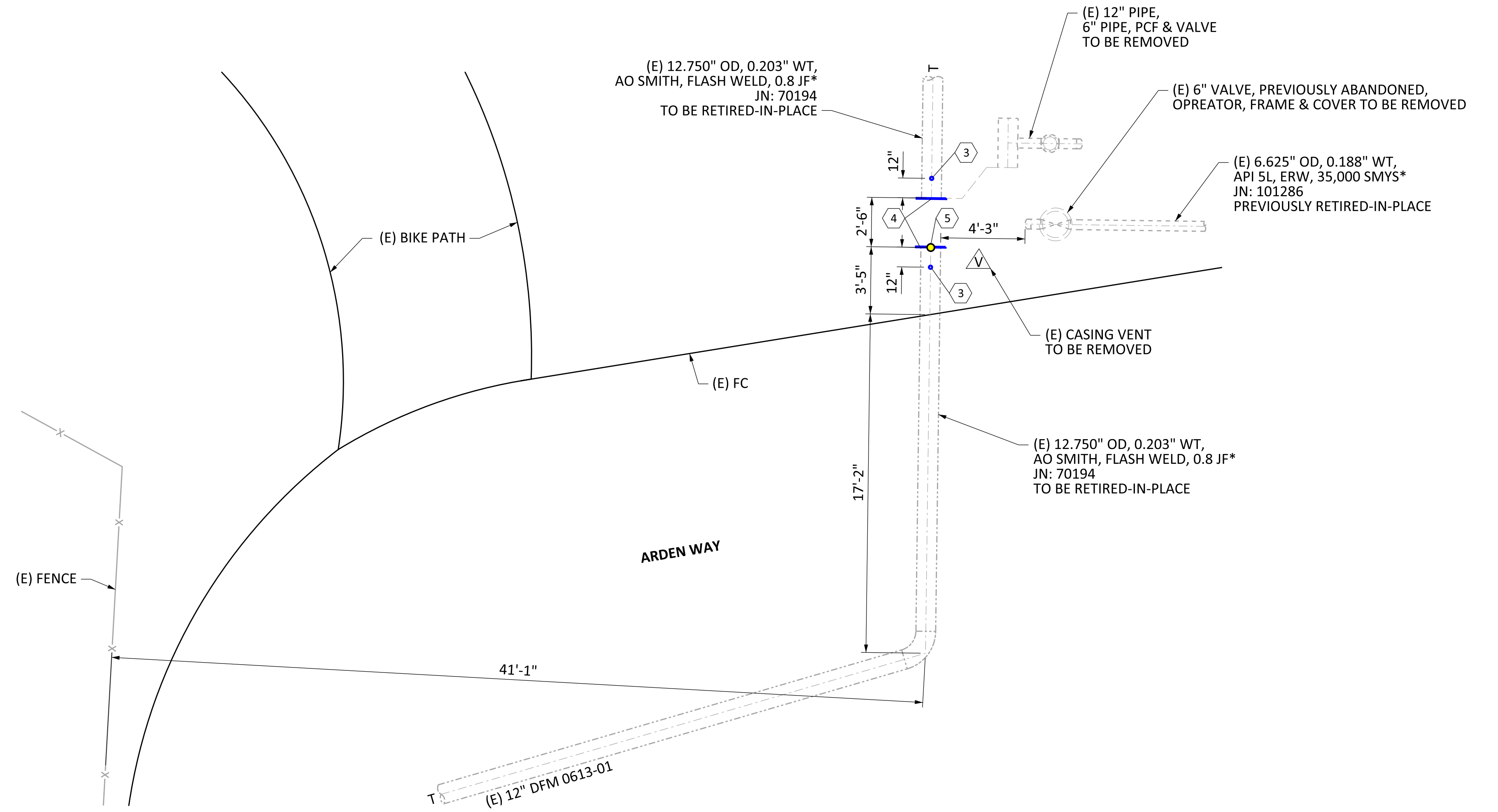
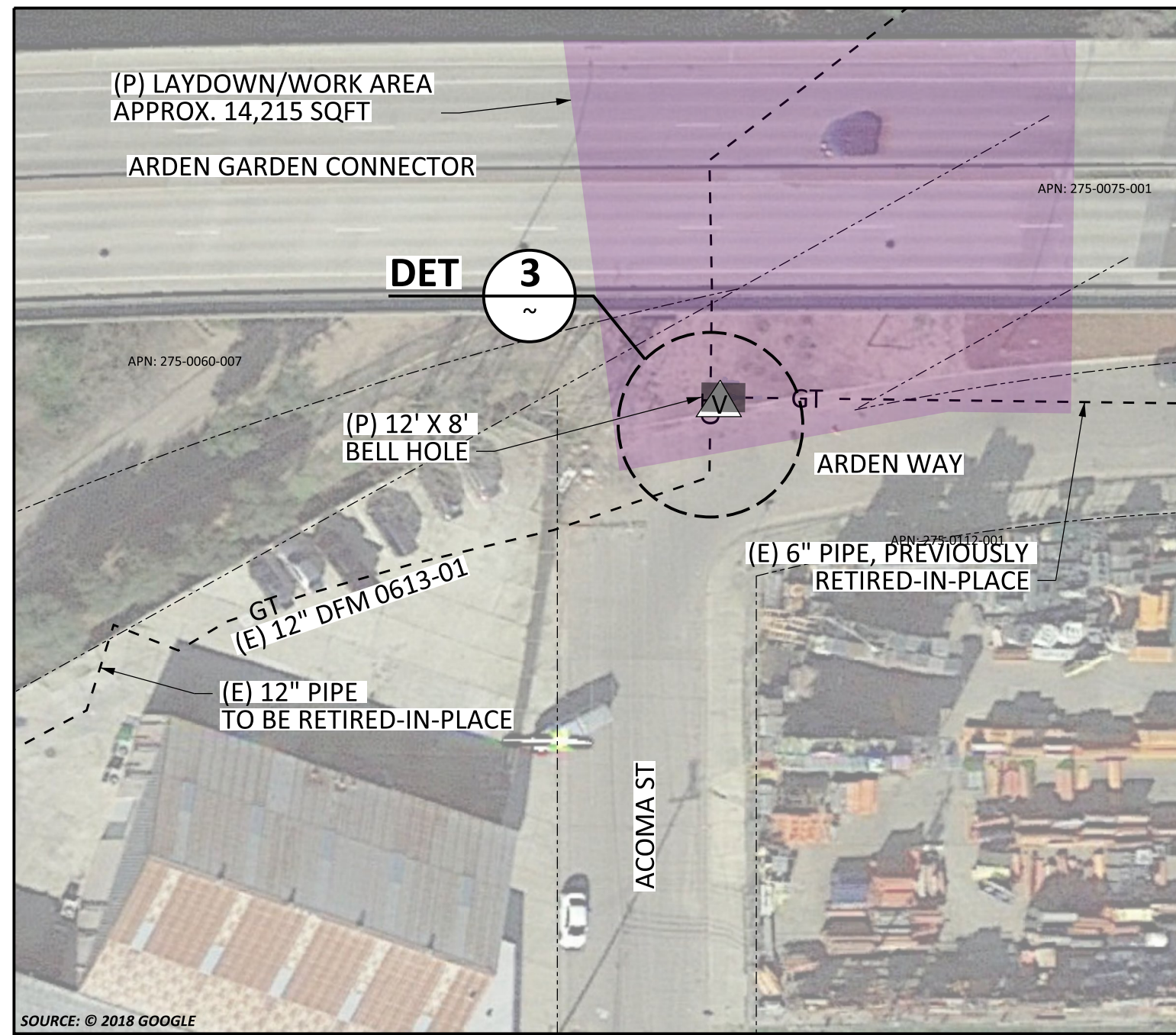
REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	3-1-19	100% DESIGN REVIEW	74004048	KIT6	MDGR		

PIPELINE - DETAILS
 DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

PG&E
 GAS TRANSMISSION ESTIMATING & DESIGN
100% DESIGN REVIEW
 PACIFIC GAS AND ELECTRIC COMPANY
 BILL OF MATL SHEET 15
 JOB ID **R-582**
 SHEET NO. 6 OF 15 SHEETS
74004048 0

Estimating.dgn

LOCATION C
 ARDEN WAY @ ACOMA ST
 WALL MAP - 2525; PLAT - E7; DFM 0613-01, MP 4.38
 (SCALE: 1" = 40')



DETAIL 3 SECTIONALIZE DFM 0613-01
 SCALE: 1/4" = 1'-0"
 ARDEN WAY @ ACOMA ST

HEADER PIPE SPECS (PRE-1972)	
HEADER SIZE:	12.750" WALL THICKNESS: 0.203"
PIPE SPECS:	AO SMITH, FW, 35,000 SMYS
PRESENT MAOP:	260 PSIG
% SMYS @ MAOP:	34.02%
INSTALL JN:	70194 YEAR: 1943
HISTORICAL RESULTS, CONTAINS ASBESTOS?	
YES	<input type="checkbox"/>
NO	<input type="checkbox"/>
UNKNOWN	<input checked="" type="checkbox"/>
PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED	
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE. UNLESS,
B) (152 PSIG)	WHEN WELDING WITHIN 3".
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GROUDES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

WARNING:
 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
 © PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

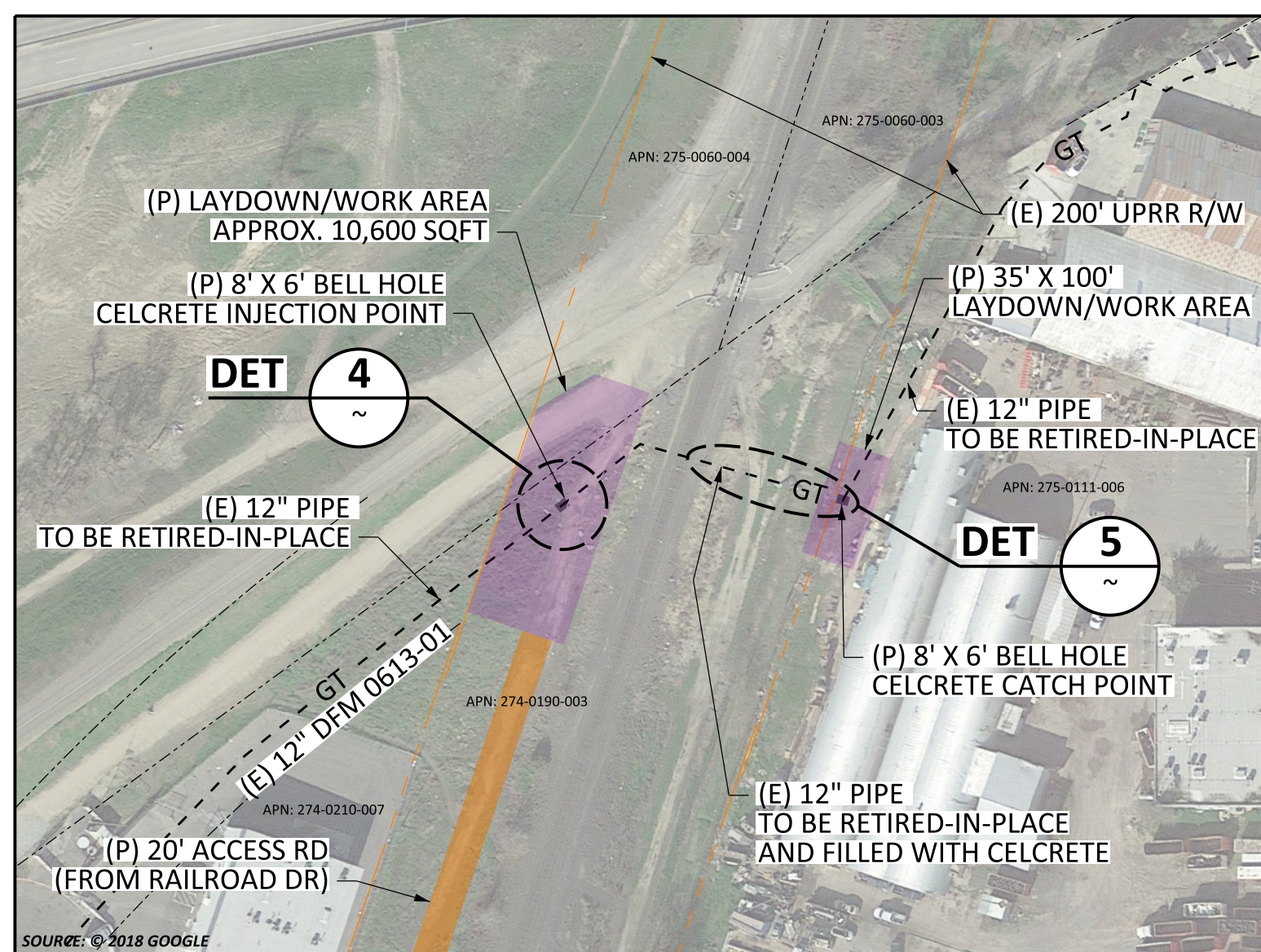
PIPELINE - DETAILS
 DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

PG&E
 GAS TRANSMISSION ESTIMATING & DESIGN
90% DESIGN REVIEW
 PACIFIC GAS AND ELECTRIC COMPANY
 BILL OF MATL SHEET 15
 JOB ID **R-582**
 SHEET NO. 7 OF 15 SHEETS
74004048 0

Estimating.dgn
 19-DEC-2018 11:59AM

LOCATION D

LAT: 38.305665, LONG: -121.467926
 WALL MAP - 2525; PLAT - E7; DFM 0613-01, MP 4.26
 (SCALE: 1" = 40')

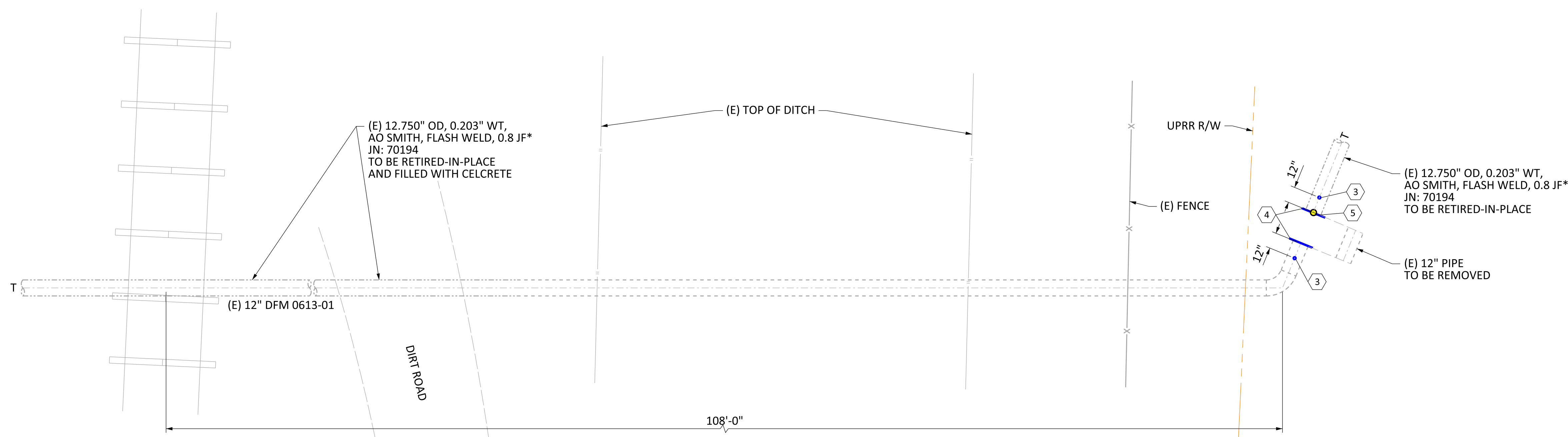


(E) 12.750" OD, 0.203" WT,
 AO SMITH, FLASH WELD, 0.8 JF*
 JN: 70194
 TO BE RETIRED-IN-PLACE
 AND FILLED WITH CELCRETE

(E) 12" PIPE
 TO BE REMOVED

(E) 12.750" OD, 0.203" WT,
 AO SMITH, FLASH WELD, 0.8 JF*
 JN: 70194
 TO BE RETIRED-IN-PLACE

DETAIL 4 SECTIONALIZE DFM 0613-01
 W/S UPRR CROSSING
 SCALE: 1/4" = 1'-0"



DETAIL 5 SECTIONALIZE DFM 0613-01
 E/S UPRR CROSSING
 SCALE: 1/4" = 1'-0"

***ASSUMED SPECS PER TD-4125P-09**

HEADER PIPE SPECS (PRE-1972)	
HEADER SIZE: 12.750" WALL THICKNESS: 0.203"	
PIPE SPECS: AO SMITH, FW, 35,000 SMYS	
PRESENT MAOP: 260 PSIG	
% SMYS @ MAOP: 34.02%	
INSTALL JN: 70194	YEAR: 1943
HISTORICAL RESULTS, CONTAINS ASBESTOS?	
<input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN
PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED	
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE, UNLESS,
B) (152 PSIG)	WHEN WELDING WITHIN 3".
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GROUDES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

WARNING:
 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
 © PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	3-1-19	100% DESIGN REVIEW	74004048	KJT6	MDGR		

PIPELINE - DETAILS
 DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

GAS TRANSMISSION ESTIMATING & DESIGN

100% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

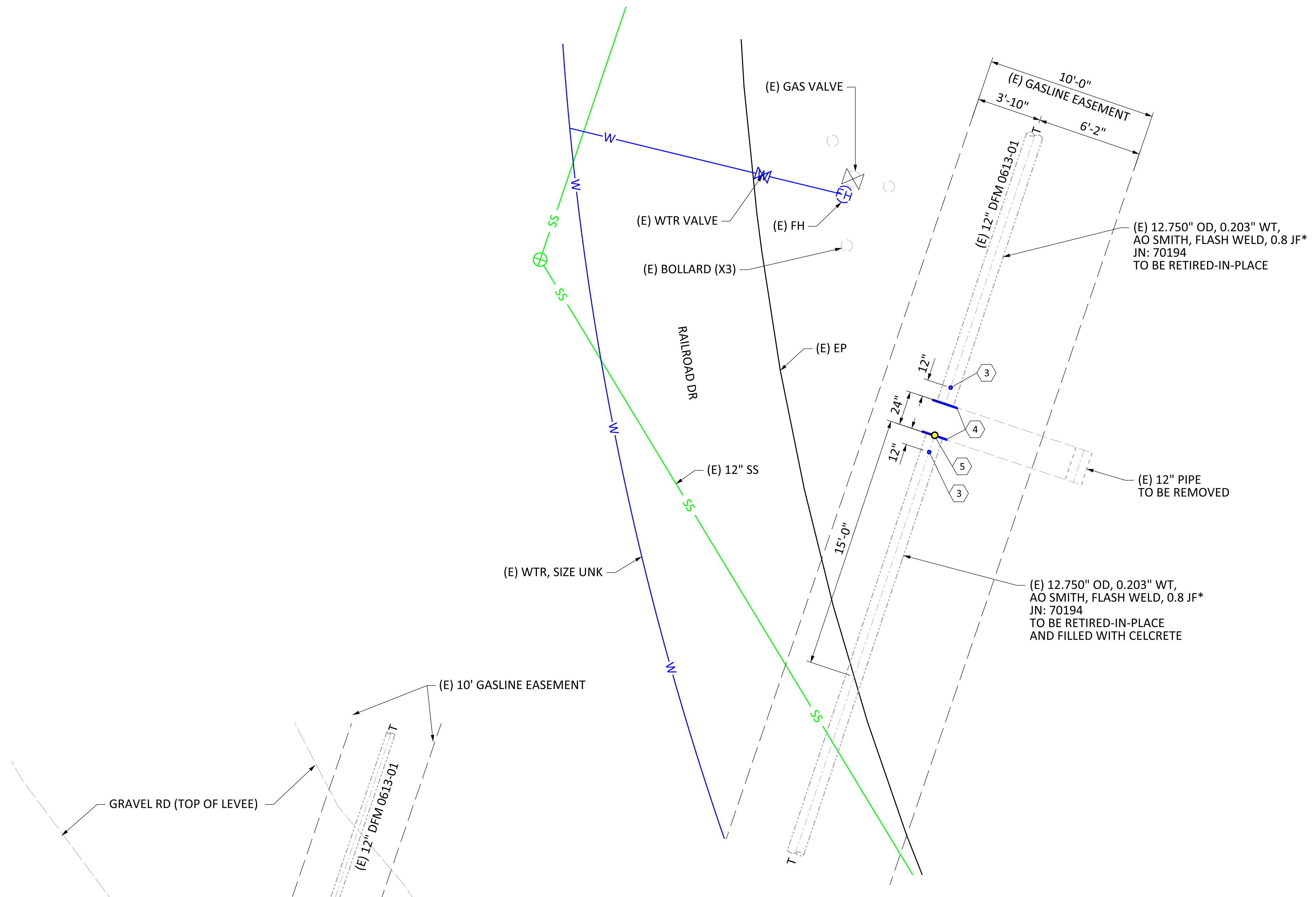
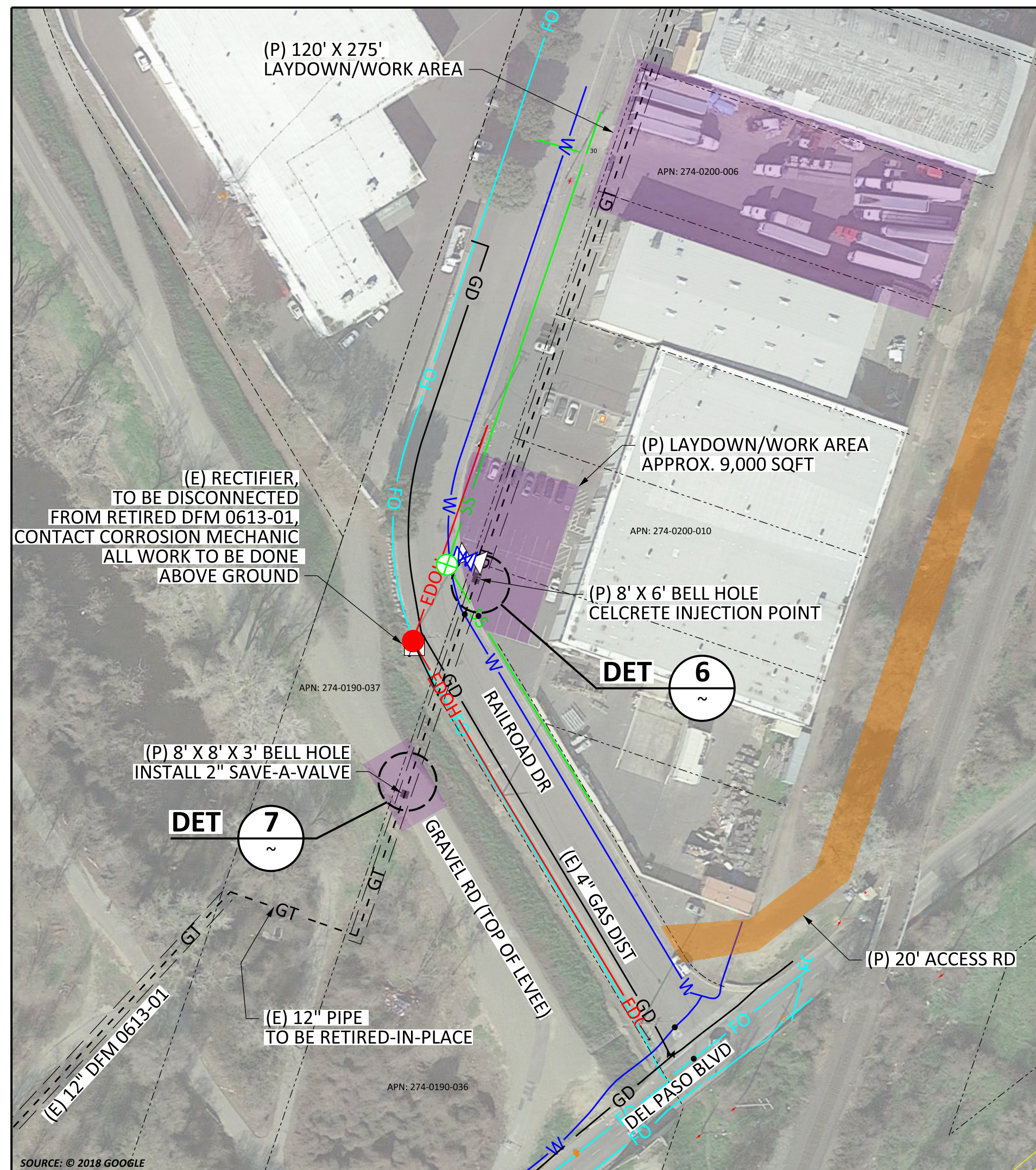
JOB ID **R-582**

SHEET NO. 8 OF 15 SHEETS

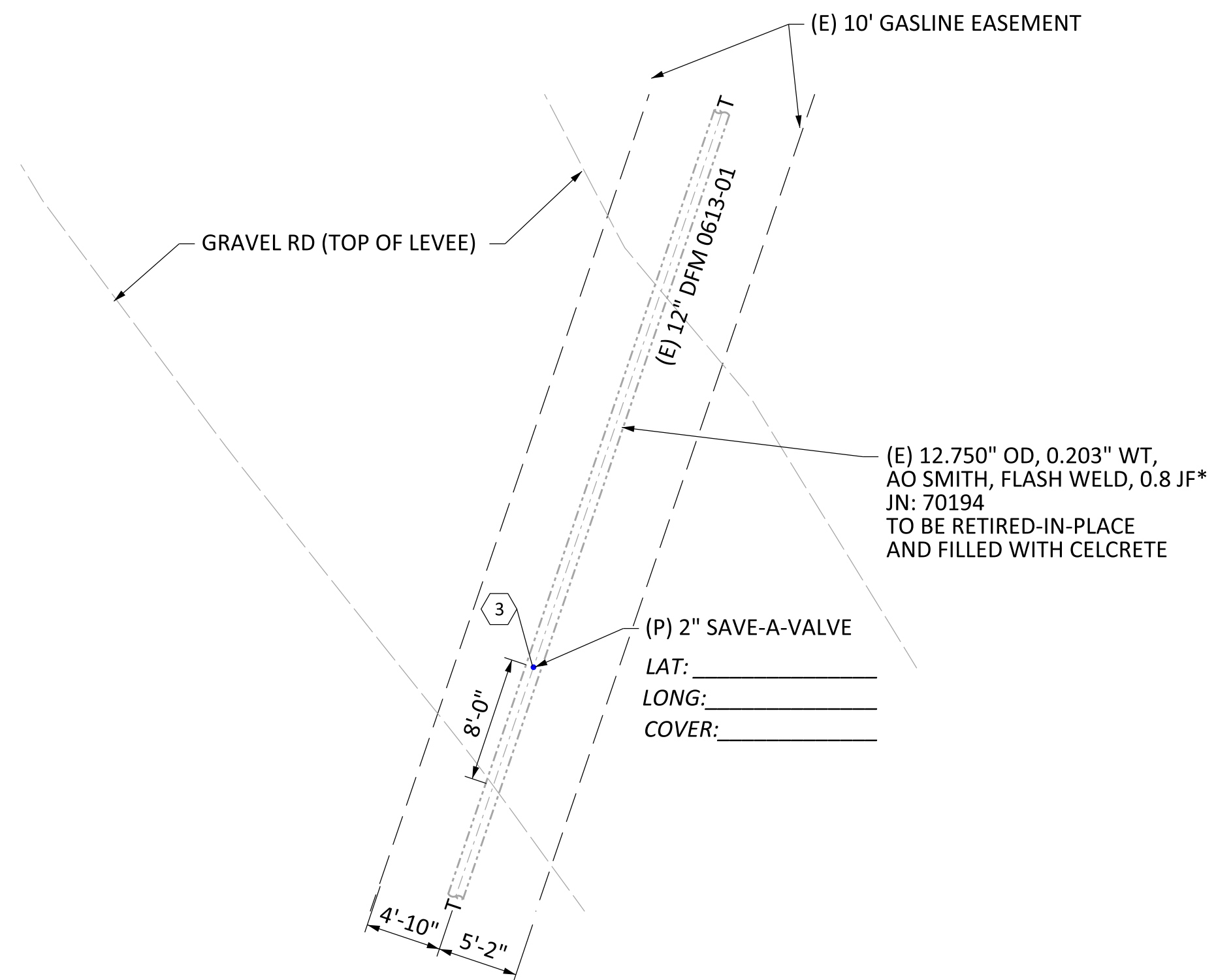
74004048 0

Estimating.pcn

LOCATION E
RAILROAD DR
WALL MAP - 2525; PLAT - F7; DFM 0613-01, MP 3.90
(SCALE: 1" = 80')



DETAIL 6 SECTIONALIZE DFM 0613-01 AT RAILROAD DR
SCALE: 1/4" = 1'-0"



DETAIL 7 INSTALL SAVE-A-VALVE AT TOP OF LEVEE
SCALE: 1/8" = 1'-0"

***ASSUMED SPECS PER TD-4125P-09**

HEADER PIPE SPECS (PRE-1972)	
HEADER SIZE: 12.750" WALL THICKNESS: 0.203"	
PIPE SPECS: AO SMITH, FW, 35,000 SMYS	
PRESENT MAOP: 260 PSIG	
% SMYS @ MAOP: 34.02%	
INSTALL JN: 70194	YEAR: 1943
HISTORICAL RESULTS, CONTAINS ASBESTOS?	
<input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN
PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED	
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE, UNLESS,
B) (152 PSIG)	WHEN WELDING WITHIN 3"
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GOUGES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

WARNING:
THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
© PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KIT6	MDGR		

PIPELINE - DETAILS
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

PG&E
GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

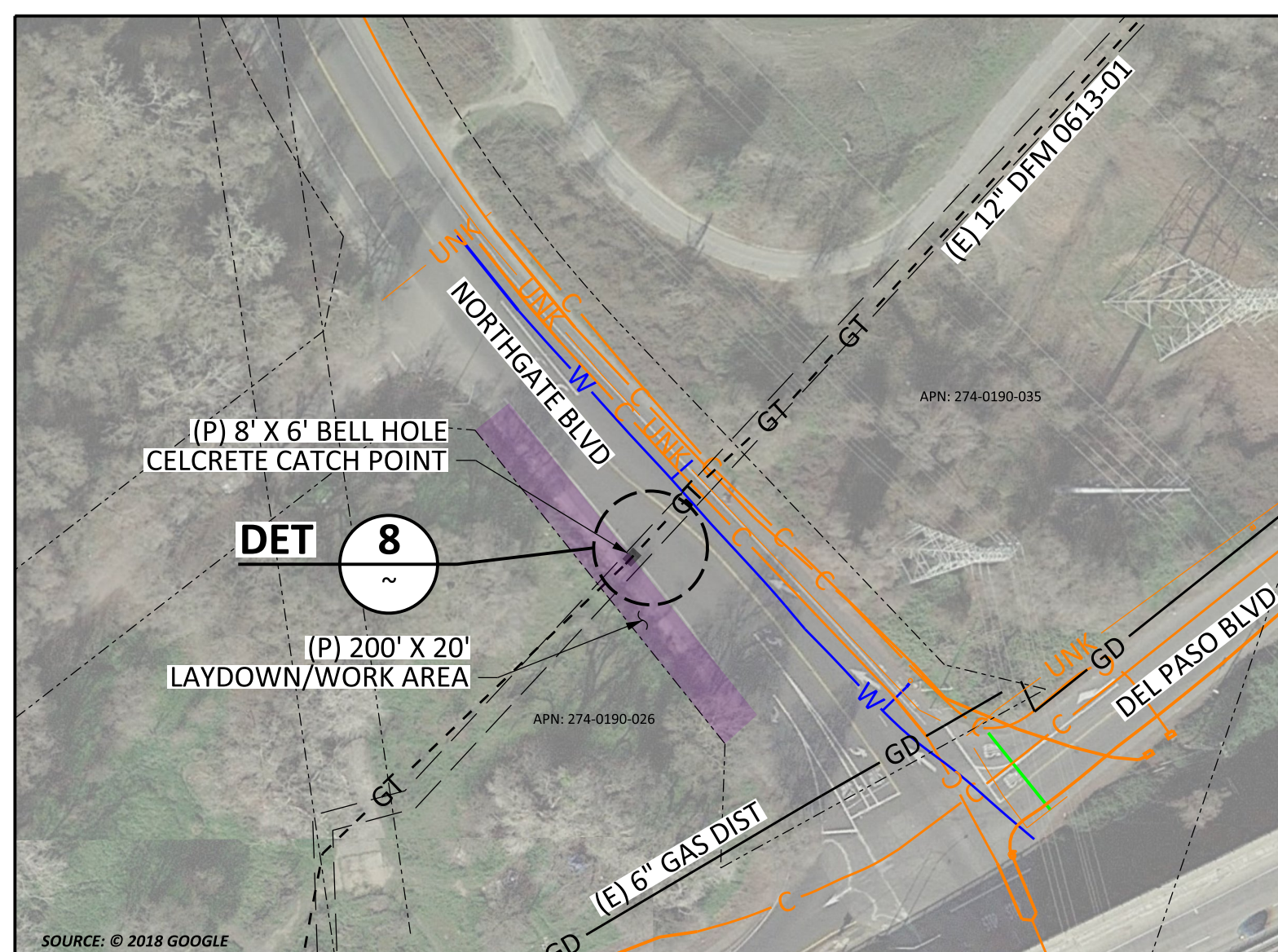
JOB ID **R-582**

SHEET NO. 9 OF 15 SHEETS

74004048 0

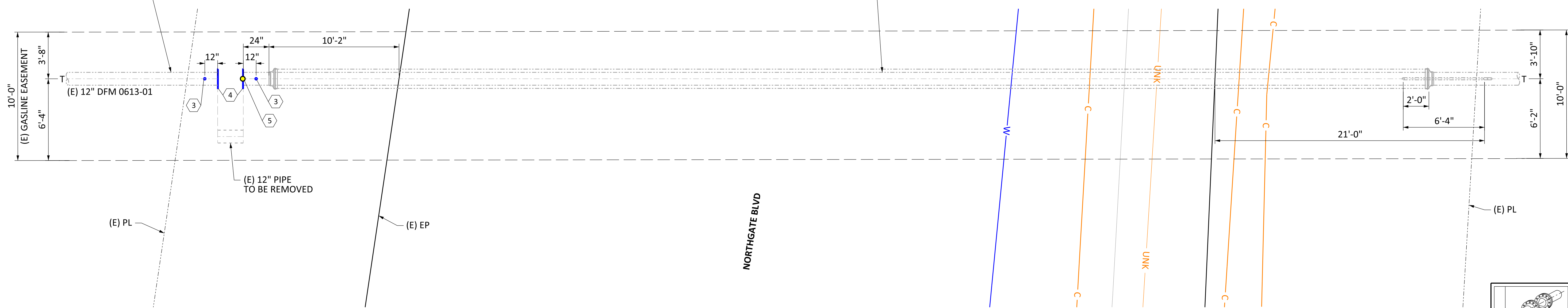
LOCATION F

NORTHGATE BLVD
WALL MAP - 2525; PLAT - F6; DFM 0613-01, MP 3.68
(SCALE: 1" = 80')



(E) 12.750" OD, 0.203" WT,
AO SMITH, FLASH WELD, 0.8 JF*
JN: 70194
TO BE RETIRED-IN-PLACE

(E) 12.750" OD, 0.203" WT,
AO SMITH, FLASH WELD, 0.8 JF*
IN 18" CASING
JN: 70194
TO BE RETIRED-IN-PLACE
AND FILLED WITH CELCRETE



***ASSUMED SPECS PER TD-4125P-09**

HEADER PIPE SPECS (PRE-1972)	
HEADER SIZE: 12.750" WALL THICKNESS: 0.203"	
PIPE SPECS: AO SMITH, FW, 35,000 SMYS	
PRESENT MAOP: 260 PSIG	
% SMYS @ MAOP: 34.02%	
INSTALL JN: 70194	YEAR: 1943
HISTORICAL RESULTS, CONTAINS ASBESTOS?	
YES	<input type="checkbox"/> NO <input checked="" type="checkbox"/> UNKNOWN
PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED	
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE. UNLESS,
B) (152 PSIG)	WHEN WELDING WITHIN 3".
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GOUCHES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

DETAIL 8

SCALE: 1/4" = 1'-0"

SECTIONALIZE DFM 0613-01 AT RAILROAD DR

WARNING:
THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
© PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

PIPELINE - DETAILS
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

PG&E
GAS TRANSMISSION & DISTRIBUTION
ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

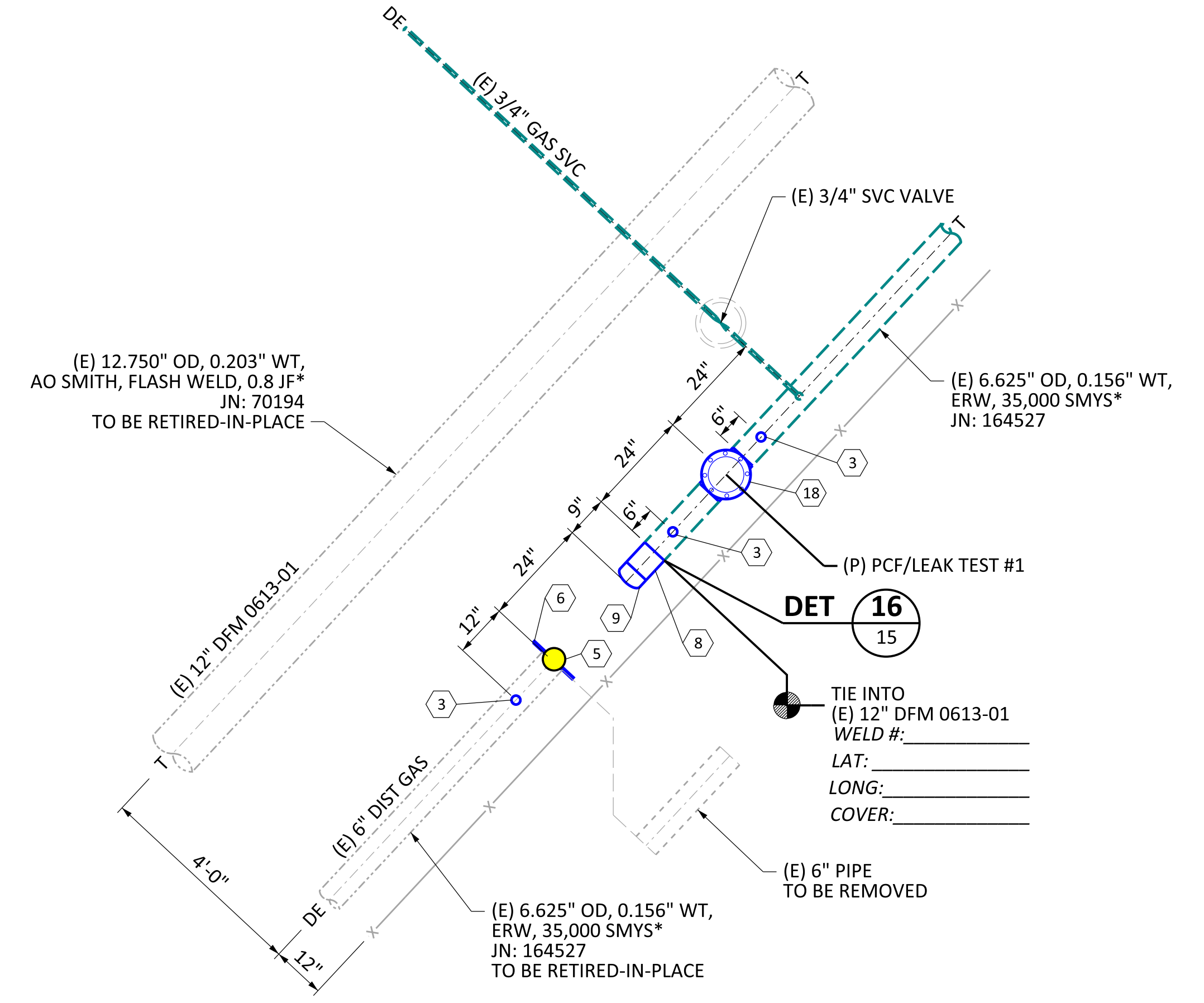
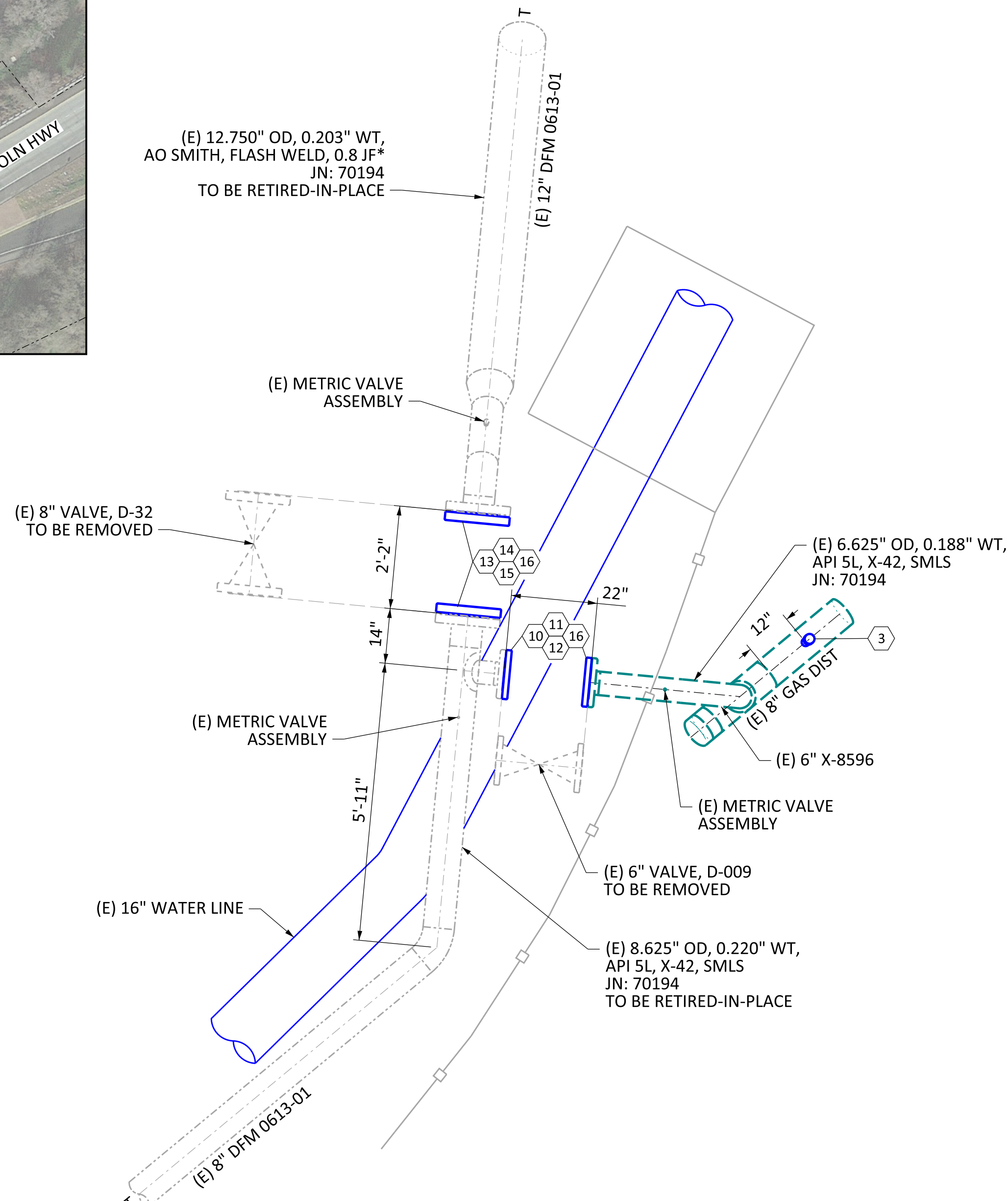
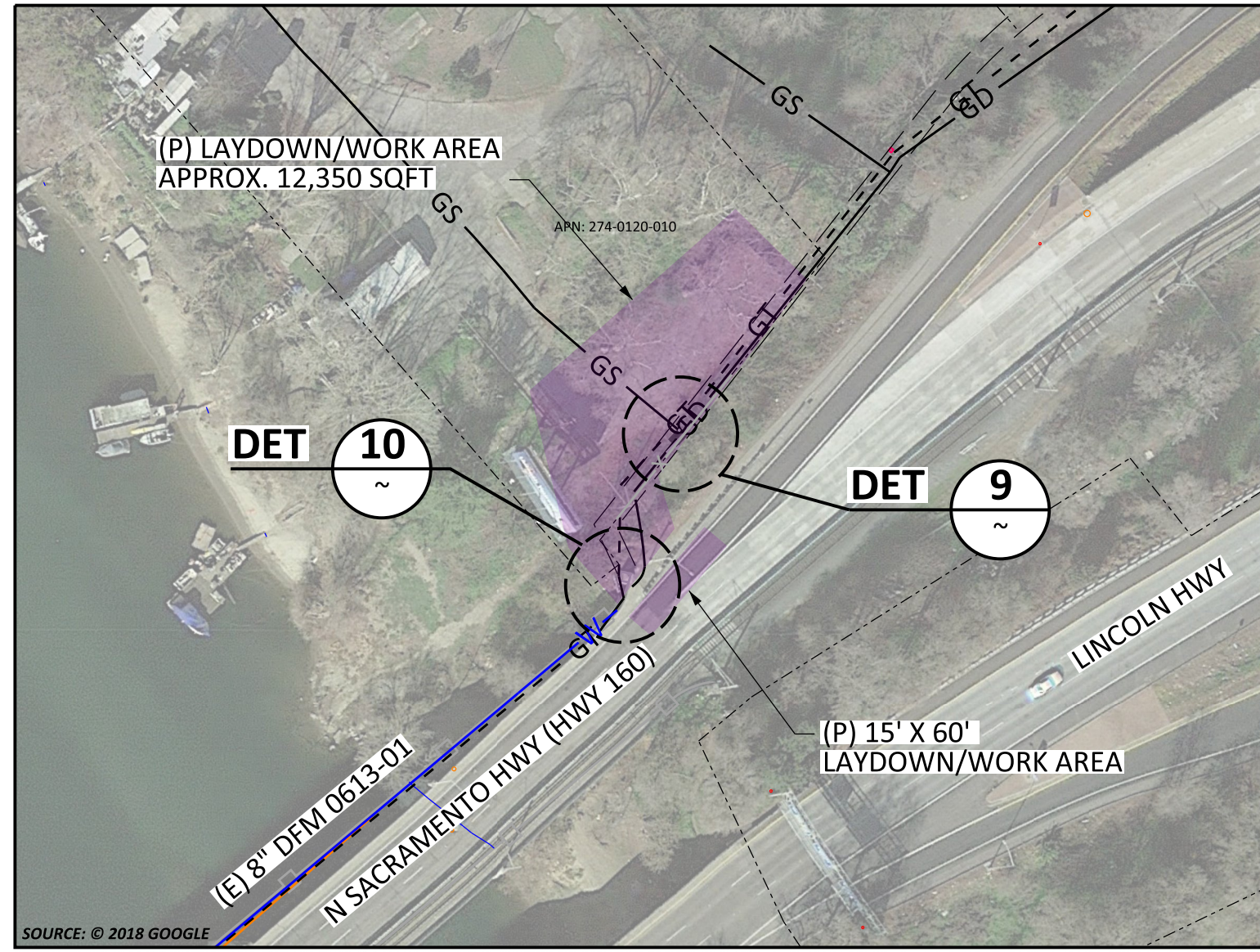
JOB ID: **R-582**

SHEET NO. 10 OF 15 SHEETS

74004048 0

LOCATION G

N/E SIDE OF AMERICAN RIVER
WALL MAP - 2525; PLAT - F6; DFM 0613-01, MP 3.52
(SCALE: 1" = 80')



DETAIL 10 REMOVE MLV D-32 & MAOP SEPARATION VALVE D-009, AT EAST SIDE OF AMERICAN RIVER
SCALE: 1/4" = 1'-0"

DETAIL 9 CUT & CAP DIST GAS MOBILE HOME PARK
SCALE: 1/4" = 1'-0"

***ASSUMED SPECS PER TD-4125P-09**

HEADER PIPE SPECS (PRE-1972)	HEADER PIPE SPECS (PRE-1972)
HEADER SIZE: 8.625" WALL THICKNESS: 0.220"	HEADER SIZE: 6.625" WALL THICKNESS: 0.156"
PIPE SPECS: API 5L, X-42, SMLS	PIPE SPECS: ERW, 35,000 SMYS
PRESENT MAOP: 260 PSIG	PRESENT MAOP: 260 PSIG
% SMYS @ MAOP: 12.13%	% SMYS @ MAOP: 15.77%
INSTALL JN: 70194 YEAR: 1942	INSTALL JN: 164527 YEAR: 1966
HISTORICAL RESULTS, CONTAINS ASBESTOS?	HISTORICAL RESULTS, CONTAINS ASBESTOS?
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22) EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING. A) (260 PSIG) WHEN WELDING ON BODY OF THE PIPE, UNLESS: B) (260 PSIG) WHEN WELDING WITHIN 3".	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN PRE-1972 AND UNKNOWN: SAMPLE IS REQUIRED MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22) EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING. A) (260 PSIG) WHEN WELDING ON BODY OF THE PIPE, UNLESS: B) (260 PSIG) WHEN WELDING WITHIN 3". OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GOUGES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.

*** PCF LEAK TEST # 1 ***

ACTUAL TEST PRESSURE:	PSIG
DURATION OF TEST:	
DATE OF TEST:	
PIGGABLE INSERT OR COUPON INSTALLED	<input type="checkbox"/> YES <input type="checkbox"/> NO
ALIGNMENT X-RAY #:	

WARNING:
THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
© PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJTG	MDGR		

PIPELINE - DETAILS
DFM 0613-01 MP 2.94 - 5.29
RETIRE APPROX 12,250' OF 12" PIPE
SACRAMENTO, SACRAMENTO COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

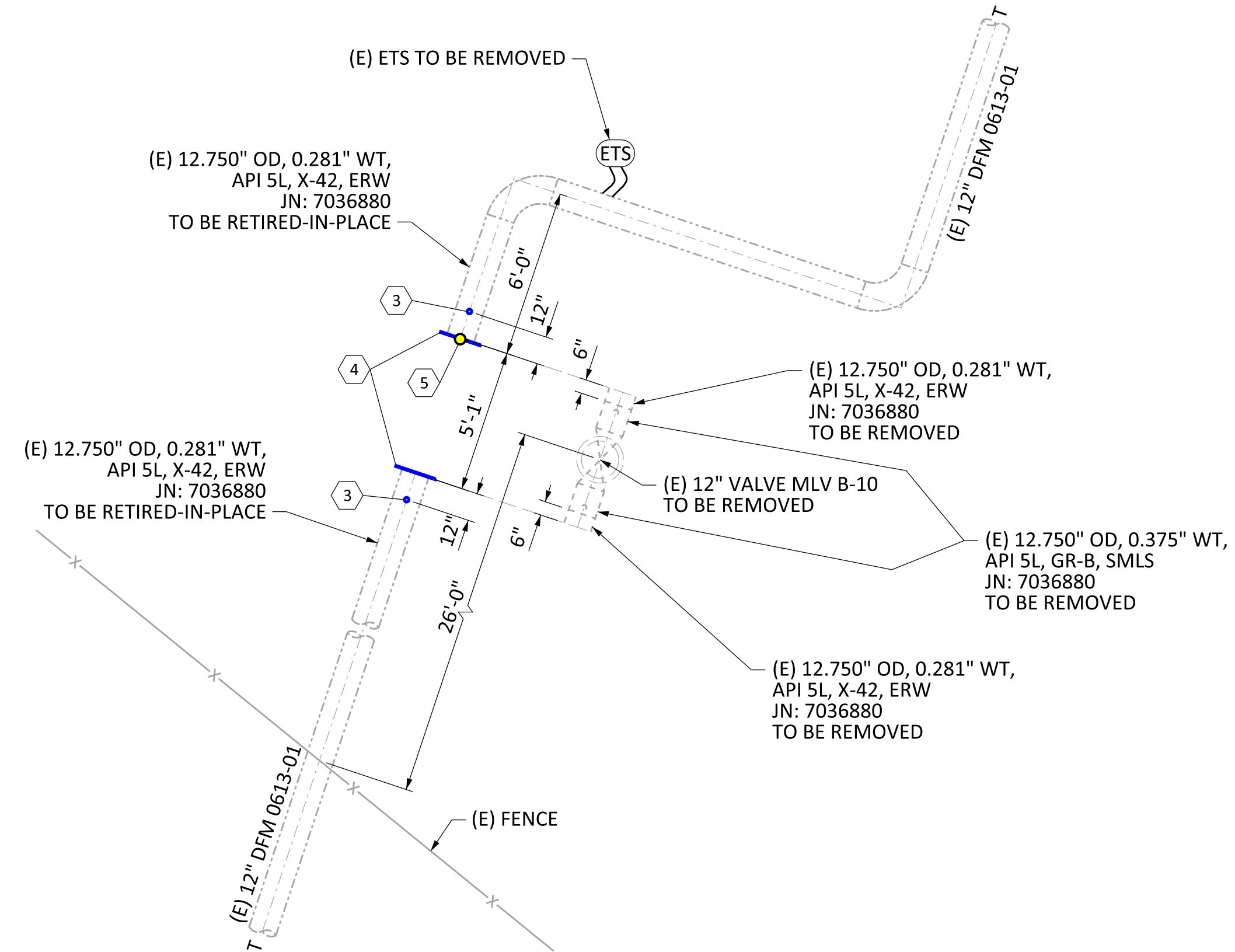
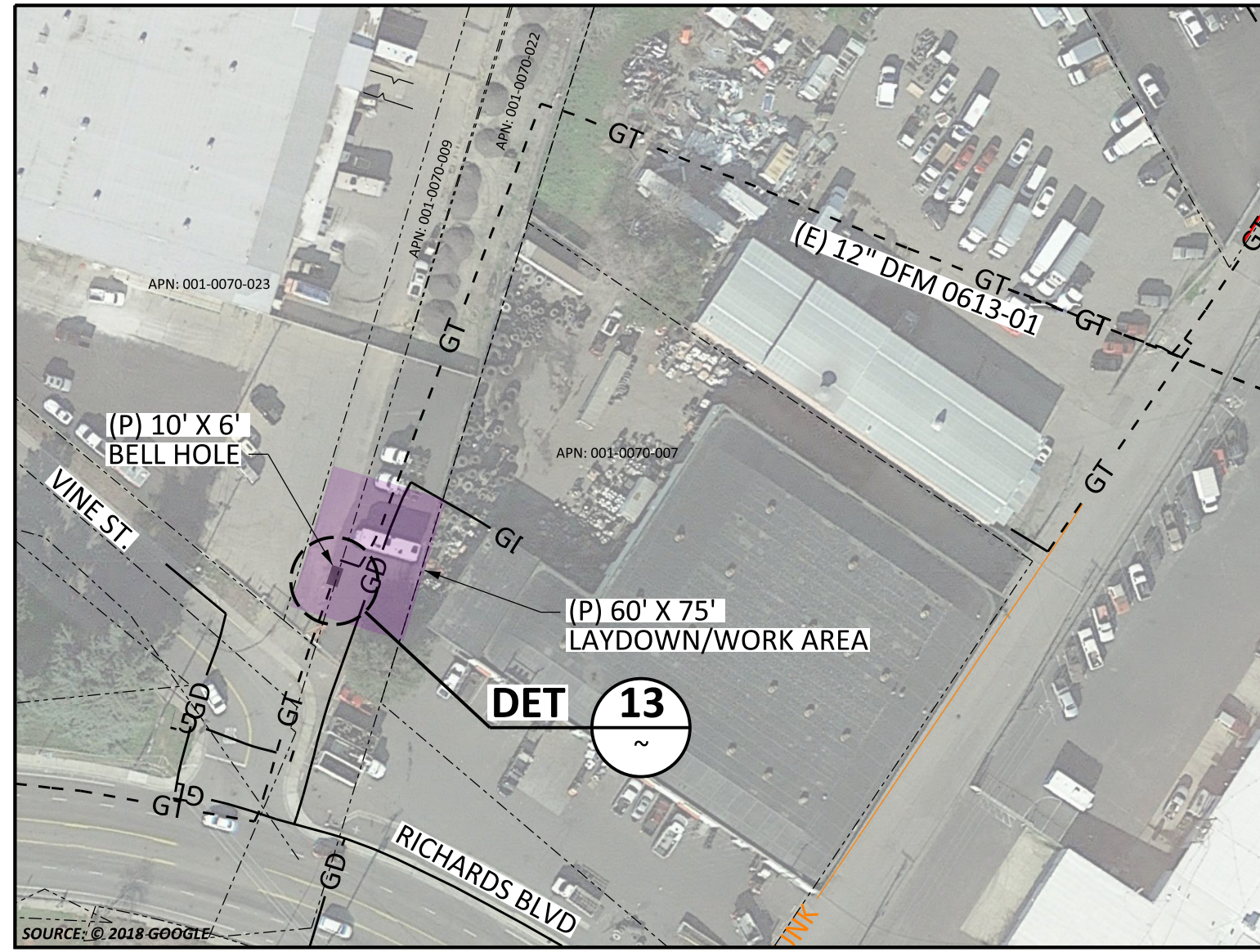
JOB ID **R-582**

SHEET NO. 11 OF 15 SHEETS

74004048 0

Estimating.pgn

LOCATION I
 3401 AMERICAN RIVER DR
 WALL MAP - 2525; PLAT - F6; DFM 0613-01, MP 3.19
 (SCALE: 1" = 80')



DETAIL 13 REMOVE MLV B-10
 SCALE: 1/4" = 1'-0"
 3401 AMERICAN RIVER DR

HEADER PIPE SPECS	
HEADER SIZE:	12.750" WALL THICKNESS: 0.281"
PIPE SPECS:	API 5L, X-42, ERW
PRESENT MAOP:	260 PSIG
% SMYS @ MAOP:	14.04%
INSTALL JN:	7036880 YEAR: 2001
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)	
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.	
A) (260 PSIG)	WHEN WELDING ON BODY OF THE PIPE, UNLESS:
B) (260 PSIG)	WHEN WELDING WITHIN 3":
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GOUGES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.	

WARNING:
 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
 © PG&E CO.

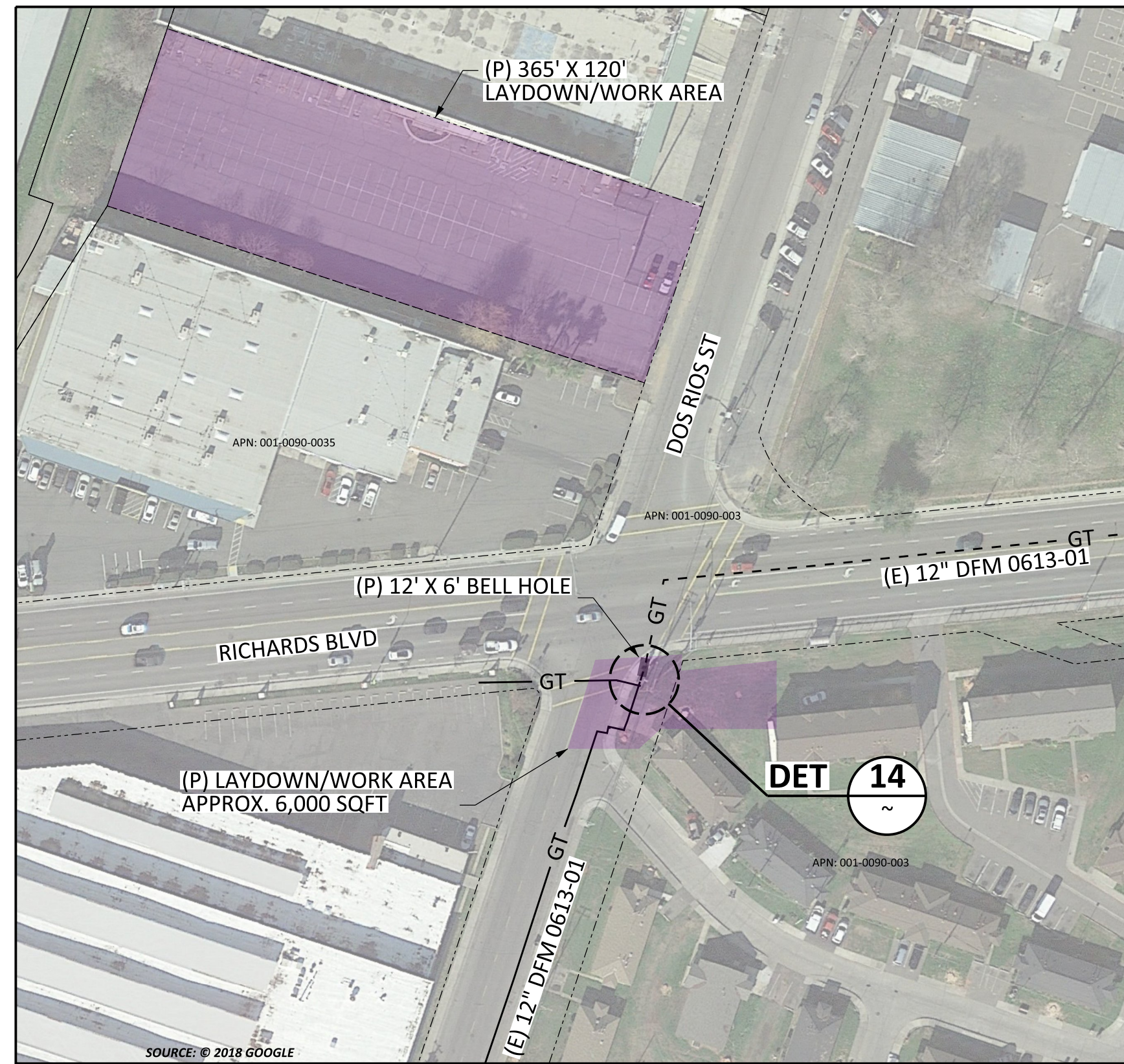


REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

PIPELINE - DETAILS
 DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

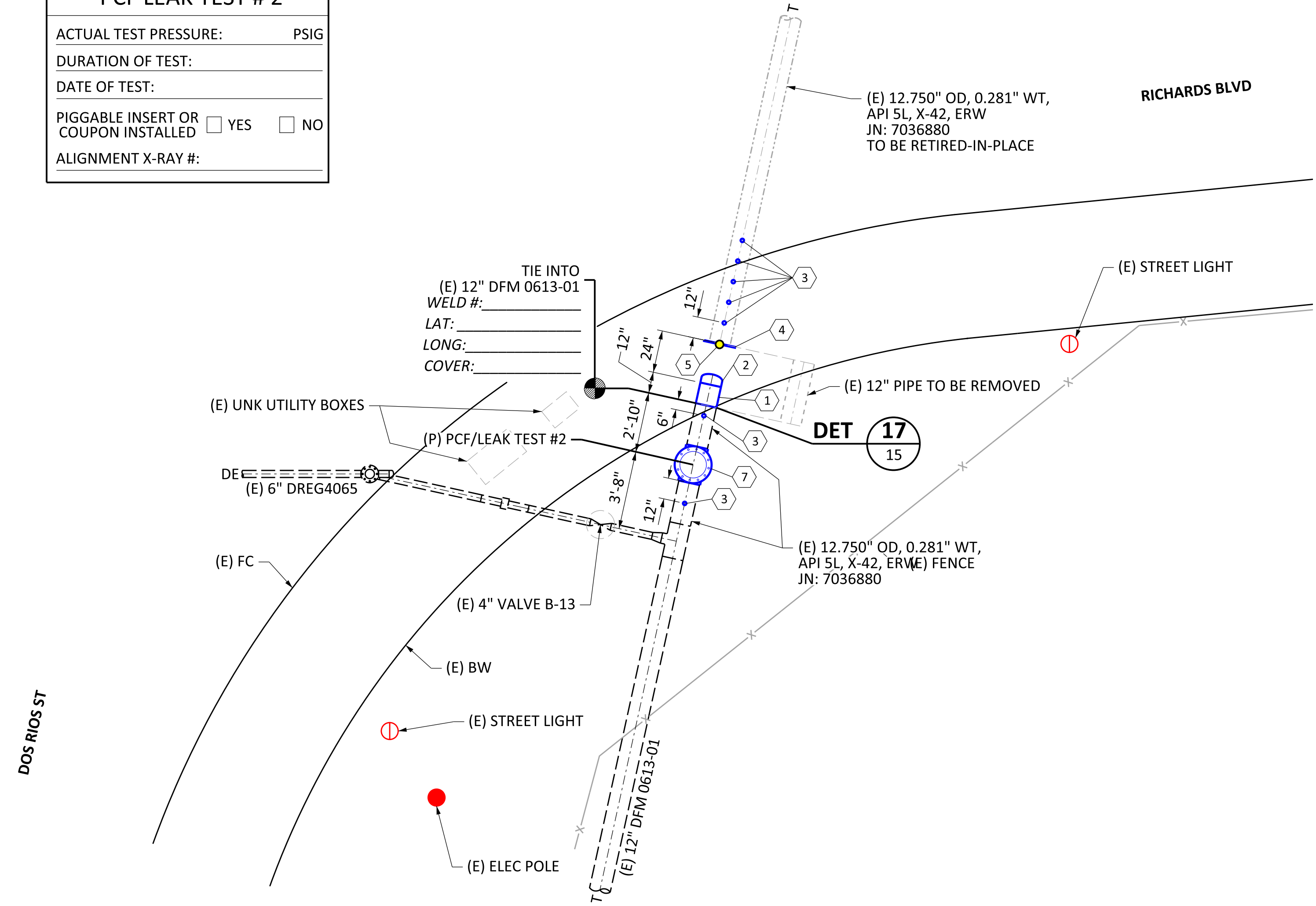
PG&E
 GAS TRANSMISSION ESTIMATING & DESIGN
90% DESIGN REVIEW
 PACIFIC GAS AND ELECTRIC COMPANY
 BILL OF MATL SHEET 15
 JOB ID **R-582**
 SHEET NO. 13 OF 15 SHEETS
74004048 0

LOCATION J
 RICHARDS BLVD & DOS RIOS ST
 WALL MAP - 2525; PLAT - F6; DFM 0613-01, MP 2.94
 (SCALE: 1" = 80')



*** PCF LEAK TEST # 2***

ACTUAL TEST PRESSURE:	PSIG
DURATION OF TEST:	
DATE OF TEST:	
PIGGABLE INSERT OR COUPON INSTALLED	<input type="checkbox"/> YES <input type="checkbox"/> NO
ALIGNMENT X-RAY #:	



DETAIL 14 CUT & CAP DFM 0613-01
 RICHARDS BLVD & DOS RIOS ST
 SCALE: 1/4" = 1'-0"

HEADER PIPE SPECS

HEADER SIZE: 12.750" WALL THICKNESS: 0.281"
PIPE SPECS: API 5L, X-42, ERW
PRESENT MAOP: 260 PSIG
% SMYS @ MAOP: 14.04%
INSTALL JN: 7036880 YEAR: 2001
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (GS&S D-22)
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.
A) (260 PSIG) WHEN WELDING ON BODY OF THE PIPE, UNLESS:
B) (260 PSIG) WHEN WELDING WITHIN 3":
OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE CIRCUMFERENTIAL, AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (GOUGES, CORROSION, LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/3 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.

WARNING:
 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
 © PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

PIPELINE - DETAILS
 DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15

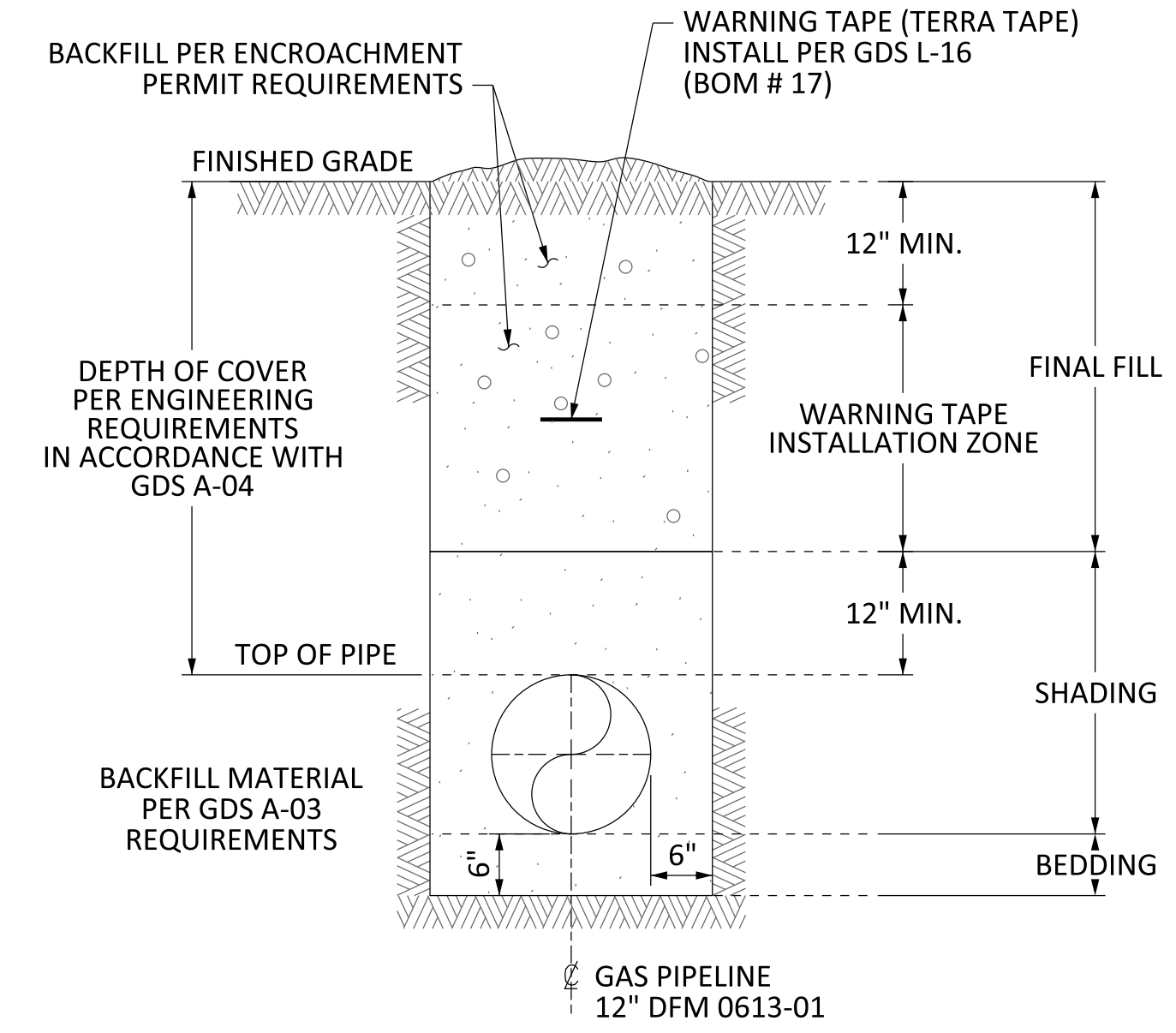
JOB ID **R-582**

SHEET NO. 14 OF 15 SHEETS

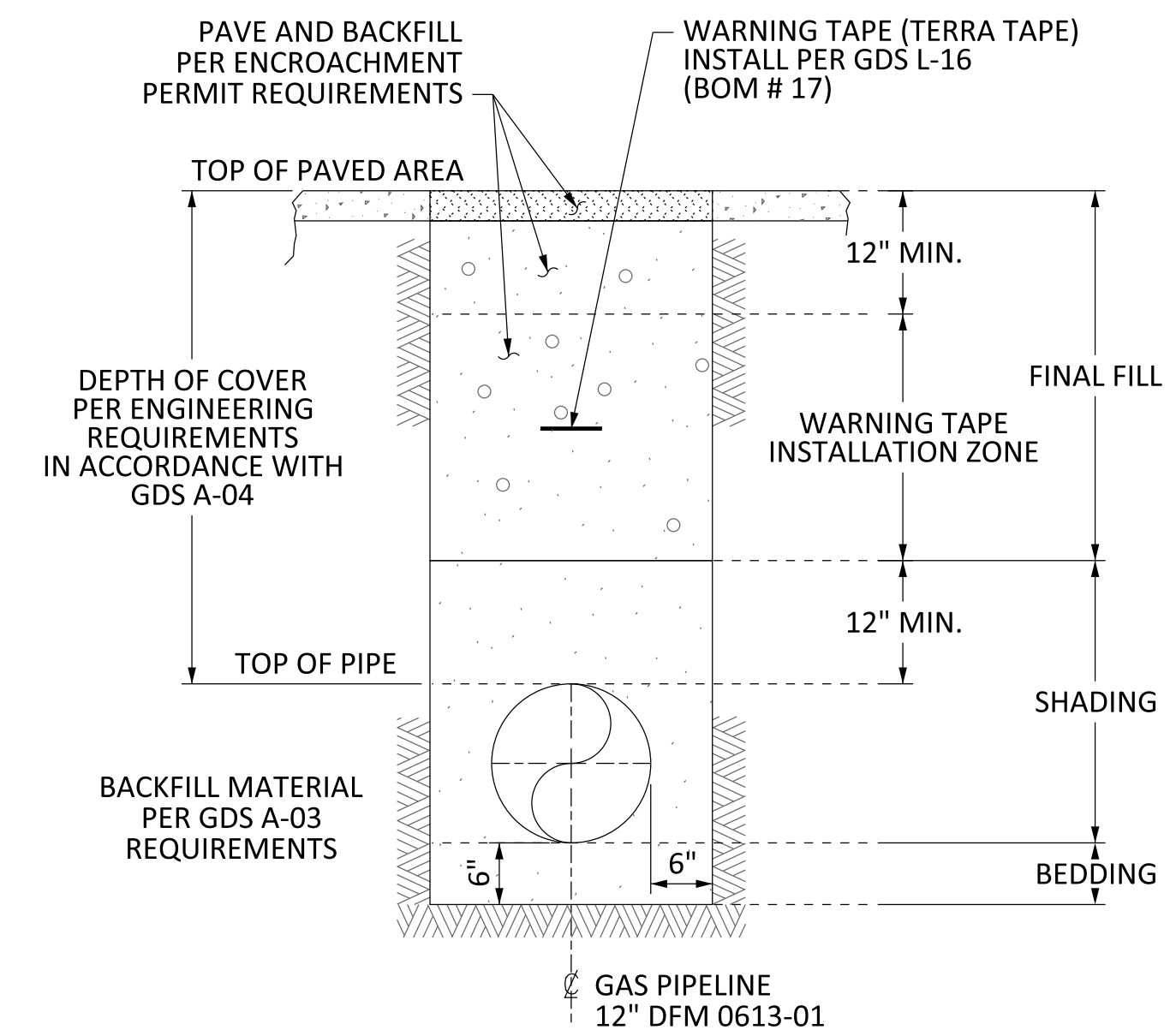
74004048 0

Estimating.dgn
 19-DEC-2018 12:00PM

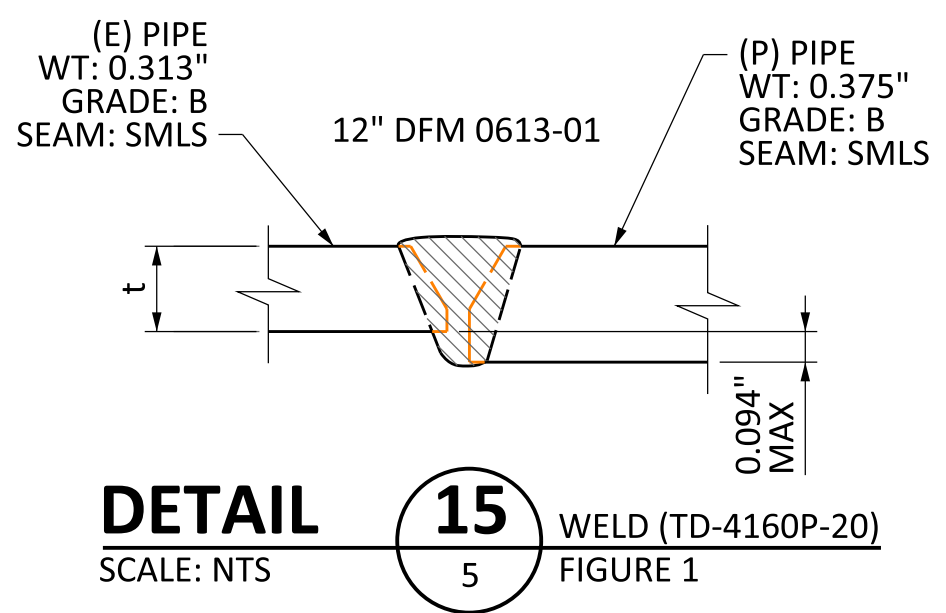
BILL OF MATERIALS (CAPITAL ORDER # 74004048)						
BOM #	MATERIAL DESCRIPTION	MATERIAL CODE #	UNIT	QTY	STANDARD	NOTES
1	PIPE, STEEL, 12", 0.375" WT, API 5L, GRADE B, SEAMLESS, BARE	M011948	FT	5	GS&S A-15	
2	CAP, CARBON STEEL, 12", BUTT WELD, 0.375" WT, ASTM A-234, GRADE B	M022081	EA	2	GS&S B-20	
3	NIPPLE, SAVE-A-VALVE, 2", WELD, STEEL, MUELLER # H-17491, STEEL CAP, DRILLING 1200 PSI MAXIMUM, 1440 PSI MAXIMUM	M022289	EA	30	GS&S C-14	
4	STEEL PLATE, 18" X 1/2" THICK	N/A	EA	20	-	
5	MARKER, EXTENDED RANGE BALL, EMS TYPE, YELLOW, 3M # 1405-XR, FOR MARKING BURIED GAS FACILITIES, MAXIMUM INSTALLED DEPTH IS 5'	M374944	EA	14	GS&S M-60	
6	STEEL PLATE, 18" X 1/2" THICK	N/A	EA	3	-	
7	STOPPER, LINE, 12", WELD, MUELLER # H-17257, FORGED STEEL, 960 PSI, STEEL CAP	M022844	EA	1	GS&S C-15.3	
8	PIPE, STEEL, 6", 0.280" WT, API 5L, GRADE B, SEAMLESS, BARE	M011688	FT	1	GS&S A-15	
9	CAP, CARBON STEEL, 6", BUTT WELD, 0.280" WT, ASTM A-234, GRADE B	M022038	EA	2	GS&S B-20	
10	FLANGE, BLIND, 6", ANSI CLASS 300, FORGED STEEL, 1/16" RAISED FACE, TAP FOR 1/2" NPT	M020865	EA	2	GS&S B-43.2	
11	GASKET, PYROX, ANSI CLASS 300, 6", PSI LINEBACKER, TYPE F, NITRILE SEALING ELEMENT, RING GASKET	M016689	EA	2	GS&S B-45.1	
12	BOLT, STUD, 3/4" X 5", WITH 2 NUTS, STEEL, ALL THREAD, ASTM A193-B7 HEX NUTS, A194-2H, ASSEMBLED	M192742	EA	24	GS&S B-46	
13	FLANGE, BLIND, 8", ANSI CLASS 600, FORGED STEEL, 1/4" RAISED FACE, TAP FOR 1/2" NPT	M020895	EA	2	GS&S B-43.2	
14	GASKET, PYROX, ANSI CLASS 600, 8", PSI LINEBACKER, TYPE F, NITRILE SEALING ELEMENT, RING GASKET	M016672	EA	2	GS&S B-45.1	
15	BOLT, STUD, STEEL, ALL THREAD, 1-1/8" X 7-3/4", WITH 2 NUTS, ASTM A193-B7 HEX NUTS, A194-2H, ASSEMBLED	M192749	EA	24	GS&S B-46	
16	PLUG, 1/2", HEX HEAD, VOGT # 2580 OR EQUAL, THREADED, FORGED STEEL, 6000 PSI	M021249	EA	4	GS&S B-10.1	
17	TAPE, WARNING, PIPELINE, GAS UNDERGROUND, REEF INDUSTRIES # 42-0084, YELLOW WITH BLACK WRITING, "CAUTION GAS LINE BURIED BELOW", 8 MILS THICK, 6" WIDE X 1000' LONG	M379947	EA	1	GS&S L-16	
18	STOPPER, LINE, 6", WELD, MUELLER # H-17275, FORGED STEEL, 275 PSI, THIN WALL, CAST IRON CAP	M022850	EA	1	GS&S C-15.4	



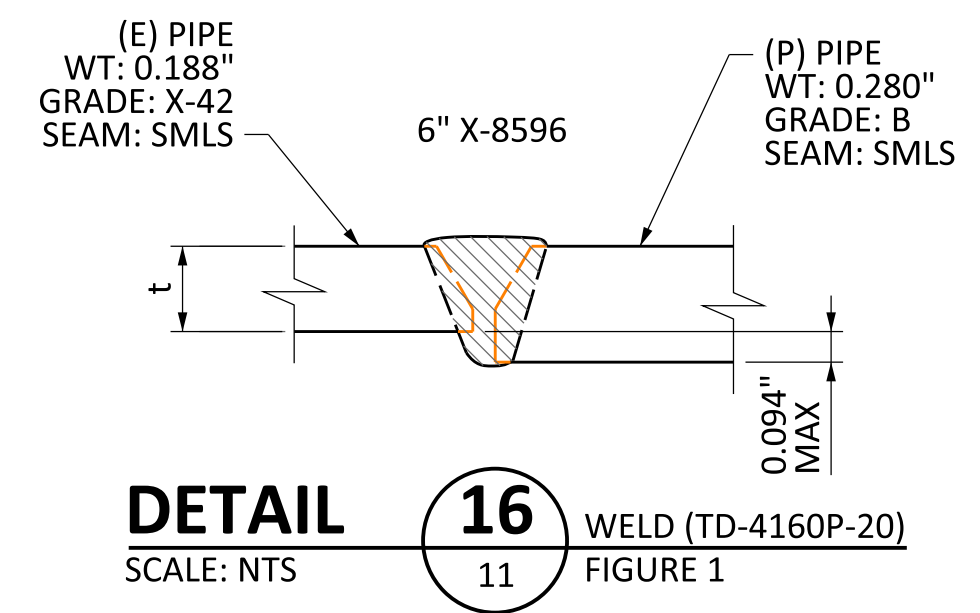
SEE TD-4621M FOR SHORING REQUIREMENTS
DETAIL TYP TRENCH NON-PAVED AREA
 SCALE: NTS



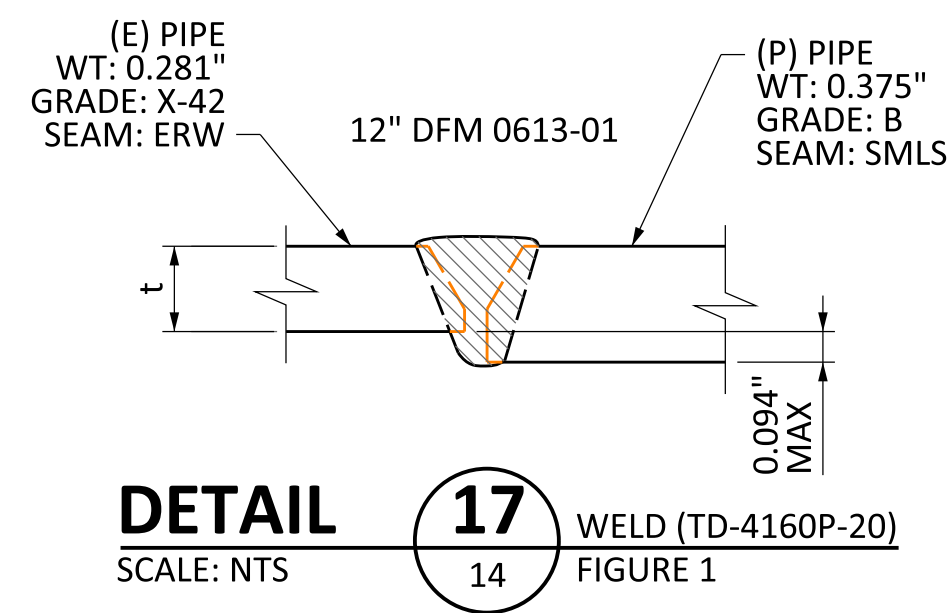
SEE TD-4621M FOR SHORING REQUIREMENTS
DETAIL TYP TRENCH PAVED AREA
 SCALE: NTS



DETAIL 15 WELD (TD-4160P-20) FIGURE 1
 SCALE: NTS



DETAIL 16 WELD (TD-4160P-20) FIGURE 1
 SCALE: NTS



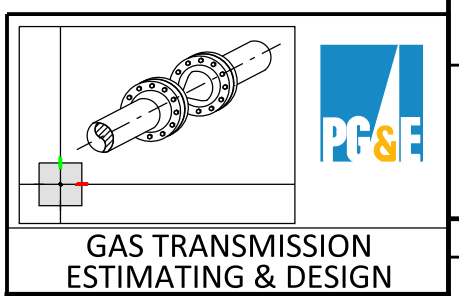
DETAIL 17 WELD (TD-4160P-20) FIGURE 1
 SCALE: NTS

WARNING:
 THIS DOCUMENT CONTAINS CONFIDENTIAL, PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF PACIFIC GAS AND ELECTRIC COMPANY AND IS INTENDED FOR USE ONLY BY AUTHORIZED PACIFIC GAS AND ELECTRIC COMPANY EMPLOYEES AND ITS AGENTS.
 © PG&E CO.



REV.	DATE	DESCRIPTION	ORDER	DWN	ADE	ENG	ENG APVD
0	12-19-18	ISSUED FOR CONSTRUCTION	74004048	KJT6	MDGR		

PIPELINE - BILL OF MATERIALS
 DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA



90% DESIGN REVIEW
 PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 15
 JOB ID **R-582**
 SHEET NO. 15 OF 15 SHEETS
74004048 0

Photo 1. American River and SR-160 with existing pipeline, looking north from south USACE levee



Photo 2. South USACE levee, north of HDD Cell-Crete catch point



Figure 4. Project Site Photographs

Photo 3. View of northern USACE levee looking southwest to floodgates and SR-160 bridge



Photo 4. South USACE levee looking southwest at proposed work area at SR-160 bridge



Appendix B Biological Memo



Biological Constraints Review for Pipeline Replacement Projects

Project Name: DFM 1613-01 American River Crossing Retirement Project	Date of Preparation: January 8, 2019
Project Location: Sacramento, Sacramento County, CA	Order Number: 31133771
Latitude/Longitude: 38.597683, -121.476419	PG&E Project Planner/Biologist: Chris Ellis / Rick Williams
Name of Preparer(s): Preparer: Andrew Sorci and Sara Viernum Stantec Biologists; Reviewers: Loni Cooper, Stantec Senior Biologist; Ryan Jolley, Senior Environmental Planner; Michelle Tovar, Stantec Principal Biologist	
Surveys/Monitoring Recommended	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Contingent upon AMMs and scope	
Summary/List of Biological Constraints	
<ul style="list-style-type: none"> • This Biological Constraints Review (BCR) addresses the project area in Sacramento, Sacramento County, CA. • There is a National Wetlands Inventory (NWI) mapped riverine feature between the two laydown areas at Location B, a freshwater forested/scrub wetland west of Location D, a freshwater forested/scrub wetland south of Location E, a freshwater forested/scrub wetland south of Location G, and a freshwater forested/scrub wetland northeast of Location H. The American River crosses near the project work areas. These wetlands and waterways are not within the project footprint and will be avoided by construction activities. • Critical habitat for Valley elderberry longhorn beetle (VELB) is located 0.1 mile southeast of the Location E; for Delta smelt is located 1.3 miles southwest of Location J in the Sacramento River; for steelhead is located 0.1 mile east of Location E in an American River tributary, 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River; and for chinook salmon is 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River. • Trees, shrubs, and herbaceous cover in the survey area provide potential habitat for nesting birds, including Swainson's hawks which are known to nest in the area. 	
Project Description	
<p>Pacific Gas & Electric Company (PG&E) is planning to retire a segment of pipeline crossing the American River and American River Parkway. The existing pipeline crosses the American River attached to the State Route (SR)-160 bridge and will primarily be abandoned in place and filled with slurry. The proposed retirement will include ten work areas (Locations A-J; see Figure 1). Location A will consist of two laydown areas that are approximately 12,950 sq ft and 56,000 sq ft, and an 8-ft by 6-ft excavation. Location B will consist of two laydown areas that are approximately 1,500 sq ft each and two 8-ft by 6-ft excavations. Location C will have a 14,215 sq ft laydown and a 12-ft by 8-ft excavation. Location D will have three laydown areas that are approximately 10,600 sq ft, 2,625 sq ft, and 3,500 sq ft, and two 8-ft by 6-ft excavations. Location E will have three laydown areas that are approximately 33,000 sq ft, 9,000 sq ft, and 2,612 sq ft, and an 8-ft by 6-ft and an 8-ft by 8-ft excavation. Location F will have a 4,000 sq ft laydown area and an 8-ft by 6-ft excavation. Location G will have two laydown areas that are approximately 12,350 sq ft and 900 sq ft. Location H will have two laydown areas that are approximately 14,000 sq ft and 3,000 sq ft, and an 8-ft by 6-ft excavation. Location I will have a 4,500 sq ft laydown area and a 10-ft by 6-ft excavation. Location J will have a 6,000 sq ft laydown area and a 12-ft by 6-ft excavation. No work will occur in the American River channel or adjacent riparian vegetation.</p>	
Project Schedule	
Construction is scheduled to begin August 2019 and last for approximately three-months.	
Access	
The project site will be accessed on existing paved and unpaved routes extending throughout the project area.	



Project Name: DFM 1613-01 American River Crossing Retirement Project			Date of Preparation: January 8, 2019				
Project Location: Sacramento, Sacramento County, CA			Order Number: 31133771				
Designed to Raptor Concentration Zone/Avian Protection Specifications							
<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input checked="" type="checkbox"/> N/A			
Land Use & Ownership							
<input checked="" type="checkbox"/> Agricultural		<input checked="" type="checkbox"/> Undeveloped		<input checked="" type="checkbox"/> Industrial		<input type="checkbox"/> Residential	<input checked="" type="checkbox"/> Public Land
Notes:							
Habitat Types							
<input type="checkbox"/> Grassland <input type="checkbox"/> Annual <input type="checkbox"/> Perennial <input type="checkbox"/> Oak Woodland <input checked="" type="checkbox"/> Urban Environment		<input type="checkbox"/> Mixed Conifer/Redwood <input type="checkbox"/> Chaparral <input type="checkbox"/> Lacustrine		<input checked="" type="checkbox"/> Riparian <input checked="" type="checkbox"/> Freshwater Wetland <input type="checkbox"/> Brackish/Saltmarsh		<input checked="" type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Ruderal or Landscaped <input checked="" type="checkbox"/> Other: (see notes)	
Notes: The project area south of the American River consists entirely of urban, developed landscape. The project area north of the American River consists of a mix of oak and walnut woodlands; open, ruderal grasslands; urban, developed areas; and some agricultural fields. There is a NWI-mapped riverine feature between the two laydown areas at Location B, a freshwater forested/scrub wetland west of Location D, a freshwater forested/scrub wetland south of Location E, a freshwater forested/scrub wetland south of Location G, and a freshwater forested/scrub wetland northeast of Location H. See Figure 1 for the project area and habitat types.							
Site Visit		<input checked="" type="checkbox"/> Yes, June 27, 2017 and January 7, 2019 <input type="checkbox"/> No					
Special Status Species¹			CNDDDB Records (3-mile radius)		Suitable Habitat		Not expected
Species Name	Scientific Name	Status	YES	NO	YES	NO	
woolly rose mallow	<i>Hibiscus lasiocarpus var. occidentalis</i>	CRPR 1B.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	CRPR 1B.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delta smelt	<i>Hypomesus transpacificus</i>	FT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
steelhead - Central Valley DPS	<i>Oncorhynchus mykiss irideus</i>	FT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	SSC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
longfin smelt	<i>Spirinchus thaleichthys</i>	FC/ST, SSC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
California tiger salamander	<i>Ambystoma californiense</i>	FT/ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
California red-legged frog	<i>Rana draytonii</i>	FT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
giant garter snake	<i>Thamnophis gigas</i>	FT/ST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
tricolored blackbird	<i>Agelaius tricolor</i>	ST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
burrowing owl	<i>Athene cunicularia</i>	SSC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Swainson's hawk	<i>Buteo swainsoni</i>	ST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
western yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT/SE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Project Name: DFM 1613-01 American River Crossing Retirement Project			Date of Preparation: January 8, 2019				
Project Location: Sacramento, Sacramento County, CA			Order Number: 31133771				
	<i>occidentalis</i>						
white-tailed kite	<i>Elanus leucurus</i>	FP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
song sparrow - Modesto population	<i>Melospiza molodia</i>	SSC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
bank swallow	<i>Riparia riparia</i>	ST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
purple martin	<i>Progne subis</i>	SSC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
least Bell's vireo	<i>Vireo bellii pusillus</i>	FE/SE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Nesting birds			N/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Evaluation of Resources & Potential Impacts:

Based on a review of the California Natural Diversity Database (CNDDDB), two special-status plant species and eighteen special-status wildlife species have been recorded within 3 miles of the project area. However, based on a review of habitat requirements for each species and the habitats identified within the project area, as well as the dates of the recorded occurrences (least Bell's vireo and western yellow billed cuckoo from 1877, and song sparrow from 1900) two special-status plant species and four special-status wildlife species have the potential to occur within the project area. In addition, the project area contains nesting habitat for some tree, shrub and ground nesting birds, including raptors, protected under the Migratory Bird Treaty Act and other regulations.

The USFWS IPaC list includes Delta smelt, giant garter snake, California red-legged frog, California tiger salamander, and VELB; habitat exists for these species, and they are therefore discussed further in this BCR. Critical habitat for VELB is located 0.1 mile southeast of the Location E; for Delta smelt is located 1.3 miles southwest of Location J in the Sacramento River; for steelhead is located 0.1 mile east of Location E in an American River tributary, 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River; and for chinook salmon is 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River.

Below is an evaluation of special-status plant species that could occupy the project area:

- **Sanford's arrowhead** is a perennial rhizomatous herb (emergent) that blooms May through October. CNDDDB lists two records within 3 miles of the project, with the nearest one approximately 0.4 mile northeast of Location A. Marshes and swamps, and assorted shallow freshwater features, are the preferred habitats of this species. No wetland habitat is expected to be impacted by the project, therefore this species is not likely to be impacted by the project, should it occur in the adjacent wetland habitat.
- **Woolly rose mallow** is a perennial rhizomatous herb (emergent) that blooms June through September. CNDDDB lists one record approximately 2.9 miles northwest of Location J. This species is typically found in freshwater marsh and swamp habitat and is even known to occur in riprap on the sides of levees. No wetland habitat is expected to be impacted by the project, therefore this species is not likely to be impacted by the project, should it occur in the adjacent wetland habitat.

The potential for impacts to special-status plants would be avoided or minimized through implementation of applicable standard best management practices (BMPs) listed in Attachment 1. Trimming and removal of vegetation would be limited to the amount required to allow for reliable access to the project area. Staging areas will be located on undeveloped lands, but outside any area containing special-status plant species identified prior to construction.

Below is an evaluation of special-status wildlife that could occupy the project area:

- **California red-legged frog:** There are no CNDDDB records for this species within 3 miles of the project, nor has it been recorded within the USGS quadrangle on which the project is located, or eight surrounding quads; however, an IPaC search identified this species as having potential to occur in the project area. The California red-legged frog occurs in quiet pools of streams, marshes and ponds, typically with extensive vegetation. While potential suitable habitat is present in and around the wetlands near the project area, the project is surrounded by urban development and is located outside of the

Project Name: DFM 1613-01 American River Crossing Retirement Project	Date of Preparation: January 8, 2019
Project Location: Sacramento, Sacramento County, CA	Order Number: 31133771
<p>known range for this species; therefore, California red-legged frog is not expected to occur.</p> <ul style="list-style-type: none"> • California tiger salamander: There are no CNDDDB records for this species within 3 miles of the project, nor has it been recorded within the USGS quadrangle on which the project is located, or eight surrounding quads; however, an IPaC search identified this species as having potential to occur in the project area, as it is within the known range of the species. California tiger salamander relies on grassland and low foothill habitats, with pools and ponds necessary for breeding. Marginal habitat is present within and around the wetlands near the project area, including associated upland habitat with suitable small mammal burrows; however, given that the project area is surrounded by urban development, restricting movement to the project area, and there are no recorded occurrences within three miles, this species is not expected to occur. • Giant garter snake: There is one CNDDDB record approximately 2.4 miles northwest of Location A. An IPaC search identified this species as having potential to occur in the project area, as it is within its known range. This species is considered to be highly aquatic, requiring slow moving or static water during its active period (April 1 – October 1). Giant garter snakes typically inhabit agricultural wetlands, sloughs and drainage canals, ponds, and small lakes all with vegetation around the margins of the feature for cover. The only perennial water source within the project area is the American River, which does not serve as suitable habitat for this species, and the riparian and oak woodlands north of the project area do not allow for basking sites. Due to the lack of suitable habitat, the urban development surrounding the project site, and the distance of historic CNDDDB occurrences from the site, this species is not expected to occur. • Valley elderberry longhorn beetle: There are fourteen CNDDDB records within 3 miles of the project for VELB. Critical habitat for this species occurs 0.1 mile to the southeast of Location E. This species is almost always found on or near its host plant, the red or blue elderberry shrub. Elderberry shrubs are commonly found in the remaining riparian forests and adjacent uplands of California's Central Valley. VELB require elderberry stems that are at least 1-in diameter (measured at the base) to lay their eggs upon. Larvae excavate passages into the elderberry shrub, where they may remain in larval form for as long as 2 years before they emerge as adults. During the 2017 site visit, 5 large elderberry shrubs (diameter greater than 1-inch) were observed near the project area and During the 2019, 3 large elderberry shrubs were observed. Given the proximity to CNDDDB records and critical habitat, and the presence of suitable habitat, VELB may occur within the project area. impacts to this species would be minimized with the implementation of AMM-2 requiring compliance with PG&E's VELB Conservation Program. • Swainson's hawk: There are twenty CNDDDB occurrences within 3 miles of the project, most of which are known nest sites. Swainson's hawks typically breed in stands with few trees in riparian areas, juniper sage flats, and oak savannah in the Central Valley; and typically forage in adjacent grasslands, suitable agricultural fields, and pastures. As evidenced by known nesting behavior in the surrounding area, the project area is assumed to have suitable nesting and foraging habitat for Swainson's hawks. Impacts to this species would be minimized with the implementation of AMM-3, requiring pre-activity surveys for Swainson's hawks during the breeding season, and compliance with the PG&E Avian Conservation Strategy. • Western yellow-billed cuckoo: There is one CNDDDB occurrence within 3 miles of the project, from 1877. This species uses wooded habitats with dense cover and water nearby. This could include woodlands with low, scrubby vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Their nests are flat, oblong platform nests made of loose sticks and twigs and lined with strips of bark or dried leaves. Nests are placed on horizontal branches or in the forks of trees from 3-90 ft above the ground. The project area is adjacent to riparian vegetation along the Americano River corridor; however, due to development this habitat is fragmented and is considered to be marginal. Due to the lack of any recent CNDDDB records, the declining range for this species, and the fragmented riparian habitat along this stretch of the American River, this species is not expected to occur. • White-tailed kite: There are three CNDDDB records for nest sites within 3 miles of the project area, with the most recent record from 2009. This species is a yearlong resident in the valley lowlands, and inhabits herbaceous, open habitats with variable tree growth. White-tailed kites forage in open grasslands, meadows, farmlands, and emergent wetlands, and 	



Project Name: DFM 1613-01 American River Crossing Retirement Project	Date of Preparation: January 8, 2019
Project Location: Sacramento, Sacramento County, CA	Order Number: 31133771
<p>typically prey mostly on voles and other small, diurnal mammals. There is suitable nesting and foraging habitat in and around the project area. Impacts to this species would be minimized with the implementation of BMP-12, requiring compliance with the PG&E Avian Conservation Strategy.</p> <ul style="list-style-type: none"> • Purple martin: There are seven CNDDDB records for purple martin nesting sites within 3 miles of the project site. All of these locations are associated with freeway and street overpasses. Purple martin is a cavity nester and can be found nesting in birdhouses, dead trees, cactuses, buildings, cliffs, and even traffic lights and street lamps. Suitable nesting habitat for purple martins is present under the Hwy-160 bridge and overpass. Impacts to this species would be minimized with the implementation of BMP-12, requiring compliance with the PG&E Avian Conservation Strategy. • Nesting Migratory Birds and Raptors: Grasslands, shrubs, trees in the vicinity of the project provide potential habitat for nesting birds. Pre-activity nesting bird surveys are recommended if work is implemented during the nesting season (February 1–August 31). <p>Below is an evaluation of special-status fish species that could occupy the American River, adjacent to the project area.</p> <ul style="list-style-type: none"> • Delta smelt: There are no CNDDDB records for this species within 3 miles of the project; however, an IPaC search identified this species as having a potential to occur in the project area. Critical habitat is designated for this species is located 1.3 miles southwest of Location J in the Sacramento River. • Longfin smelt: There is one CNDDDB record for this species within 3 miles of the project, in the Sacramento River. • Steelhead: There are three CNDDDB records within 3 miles of the project. Critical habitat is designated for this species is located 0.1 mile east of Location E in an American River tributary, 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River. • Sacramento splittail: There is a CNDDDB record within 3 miles of the project, in the Sacramento River. <p>As the project will not impact the American River or the Sacramento River these species are not expected to be impacted.</p>	
<p>¹Special Status is defined as Federally Endangered, Threatened, or a Candidate (FE, FT, FC), State Endangered, Threatened, Candidate for Endangered, or Candidate for Threatened (SE, ST, SCE, SCT), Fully Protected (FP), CDFW Species of Special Concern (SSC), and California Rare Plant Rank (CRPR) List 1 or 2.</p>	
<p>Are there any aquatic resources (seasonal or permanent) and/or riparian corridors within 250 feet?</p> <p><input checked="" type="checkbox"/> Yes American River Corridor runs through the middle of the project area. Based on a review of the NWI, and the results of a site visit, there is a NWI-mapped riverine feature between the two laydown areas at Location B, a freshwater forested/scrub wetland west of Location D, a freshwater forested/scrub wetland south of Location E, a freshwater forested/scrub wetland south of Location G, and a freshwater forested/scrub wetland northeast of Location H.</p> <p><input type="checkbox"/> No</p>	
<p>If you answered yes to previous question, will the project directly impact any of the above aquatic resources?</p> <p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No. This analysis assumes that no work will be required within waterways and wetland features in the project area.</p>	
Critical Habitat	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>Critical habitat for VELB is located 0.1 mile southeast of the Location E; for Delta smelt is located 1.3 miles southwest of Location J in the Sacramento River; for steelhead is located 0.1 mile east of Location E in an American River tributary, 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River; and for chinook salmon is 0.3 mile north of Location H in the American River, and 1.3 miles southwest of Location J in the Sacramento River.</p>	



Project Name: DFM 1613-01 American River Crossing Retirement Project	Date of Preparation: January 8, 2019
Project Location: Sacramento, Sacramento County, CA	Order Number: 31133771
Permits Anticipated to be Required	
<input checked="" type="checkbox"/> None <input type="checkbox"/> None, with AMM Implementation <input type="checkbox"/> BO <input type="checkbox"/> ITP <input type="checkbox"/> 404 <input type="checkbox"/> 401 <input type="checkbox"/> LSAA <input checked="" type="checkbox"/> Other:	
Notes: No excavation/fill or other alteration to the American River, waterways, or wetlands is planned to occur with the project, therefore, no LSAA, 404 or 401 permits are expected to be required. PG&E would cover Section 7 compliance for potential take of VELB through their VELB Conservation Program (refer to AMM-2 below). Work impacting Swainson's hawks would be avoided with implementation of AMM-3. An encroachment permit may be required from the Central Valley Flood Protection Board for work within the American River Parkway and USACE levees on either side (including south of the American River).	
Avoidance and Minimization Measures	
Best Management Practices (BMPs) and Avoidance and Minimization Measures (AMMs) are included in Attachment 1 and are recommended to avoid impacts to biological resources in the project area that occurs in Sacramento County.	

Attachment 1

Standard Best Management Practices (BMPs)

BMP 1 – Speed Limit: Vehicles should not exceed 15 mph when traveling in the right-of-way or along unpaved roads in natural areas.

BMP 2 – Vehicle Access and Parking: When accessing work sites, limit travel and parking of vehicles and equipment to pavement, existing roads, and existing stream crossings.

BMP 3 – Vehicle Use Near Waterways/Waterbodies (Seasonal and Perennial): No vehicles may be refueled within 100 feet of waterways/waterbodies and vehicles operating adjacent to these areas must be inspected and maintained daily to prevent leaks. When possible, work near waterways/waterbodies should be conducted during the dry season (generally May 15 - October 15) or during dry spells. No substantial vegetation trimming will occur within the bed, bank, or channel of waterways without the approval of the PG&E project biologist.

BMP 5 – Dust Abatement: Abate dust through use of water trucks, vehicle speeds limits, or other methods that prevent generating significant dust that may affect wildlife, plants, and humans.

BMP 6 – Invasive Plant Species: When working in areas adjacent to natural habitats, thoroughly wash all equipment and vehicles prior to entering work sites to prevent the spread of noxious weeds.

BMP 7 – Disposal of Vegetation (Chipped, Clippings, or Limbs): Removed vegetation should be disposed of in accordance with job specific disposal plan. Generally, chipped vegetation should be placed in previously disturbed areas (or non-sensitive vegetated areas) and large limbs or cuttings should be left onsite (if approved by land owner/manager) or removed and properly disposed of.

BMP 8 – Fire Prevention: During designated fire season motorized equipment must have federal and state approved spark arrestors and must be equipped with standard firefighting tools (fire extinguishers or other appropriate tools). Construction managers are responsible for checking the fire adjective index rating prior to work. During fire adjective index ratings of Very High or Extreme, no vehicle travel is permitted off cleared roads and no smoking is allowed in vegetated areas (grasslands, forests, etc.).

BMP 9 – Avoid Hazards Associated with Open Trenches: All holes or trenches left open overnight will be thoroughly covered (ensuring coverage of gaps under boards) to prevent animals (and people) from becoming entrapped. For those areas that cannot be covered, the areas must be fenced and contain escape ramps for wildlife.

BMP 10 – General Site Use Standards: Trash dumping, firearms, open fires (such as barbecues) not required by the operations and maintenance O&M activity, hunting, and pets (except for safety in remote locations) will be prohibited in O&M work activity sites. All food-related waste must be removed daily from work sites to prevent attracting wildlife.

BMP 11 – Vehicles Emissions/Noise: Vehicles idling, noise, and odor must be minimized to the extent practicable when working near residences or human populated areas. Diesel-fueled work



vehicles must not stand idling for more than five minutes at any location unless needed for work purposes.

BMP 12 – Nesting Birds: For work proposed to occur during the bird nesting season (February 1 - August 31), contact the PG&E project biologist to determine if a pre-activity nesting bird survey is needed. If during the course of work an active bird nest (defined as a nest with eggs or young) is detected, stop work and contact the PG&E project biologist. The biologist will ensure that work proceeds in compliance with PG&E's Avian Conservation Strategy and the Bird Nest Process specified in Work Procedure 2321-01.

BMP 13 – Protected Species: If a plant or animal is discovered at the work site which is thought to be a protected species, and which is in danger of harm from construction, stop work and call the supervisor and the PG&E project biologist.

BMP 14 – Environmental Spills: If an environmental protection incident occurs, such as accidental introduction of substances into waterways or wetlands, accidental taking of an endangered species, or hazardous material spills, etc., call the Environmental Field Specialist (EFS) or PG&E contact immediately. If the EFS or PG&E contact cannot be reached call the Environmental Hotline at 800-874-4043.

Species Specific Avoidance and Minimization Measures (AMMs)

AMM 1 – Special-Status Special Environmental Training and General Impacts Avoidances

- All construction personnel are to receive worker environmental awareness training. This training instructs workers to recognize the special-status species, their habitat(s), and nature and purpose of protection measures.
- Where possible, confine movement of equipment to existing roadways to minimize habitat disturbance.
- Confine clearing to the minimum area necessary to facilitate construction activities.
- Unattended and open trenches are to be properly fenced or covered to prevent wildlife entrapment. Soil escape ramps are to be used to facilitate the escape of any trapped wildlife.
- All construction personnel will visually check for wildlife under vehicles and equipment prior to moving them.
- Open ends of pipes, conduits, and similar materials will be covered to exclude wildlife.
- After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions.
 - Excavated soil and chipped vegetation will either be removed from the work site, backfilled into excavations, or distributed over the existing work site to pre-activity conditions in areas that do not contain specific habitat for the species.
 - Erosion control materials must be made of tightly woven natural fibers. Materials containing synthetic monofilament netting shall not be used. Acceptable materials include coconut coir matting or tackified hydroseeding compounds.



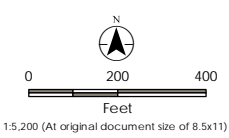
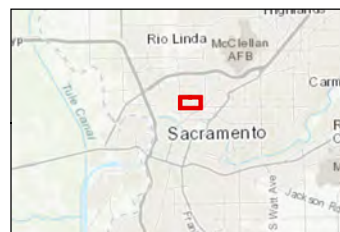
AMM 2 – VELB

PG&E's Valley Elderberry Longhorn Beetle (VELB) Conservation Program allows PG&E to perform routine operations and maintenance activities and new construction, subject to certain terms and conditions as specified in the USFWS Biological Opinion (BO) (File 1-1-01-F-0114). The VELB BO provides for 30 years of incidental take coverage and was issued on June 27, 2003. It defines reasonable and prudent measures required to avoid and minimize impacts on habitat for the federally listed VELB. PG&E will implement the surveying, avoidance, and any necessary compensation measures required for the Conservation Program as authorized by USFWS. These measures may include:

- (1) surveying for and flagging all elderberry plants with one or more stems measuring 1 inch or more in diameter at ground level that are within 20 feet of work sites;
- (2) avoiding all such elderberry plants to the extent feasible; and
- (3) reporting unavoidable impacts on elderberry shrubs to USFWS for coverage under the Conservation Program's funding of VELB habitat acquisition, development, and protection.

AMM 3 – Swainson's hawk

Potentially suitable Swainson's hawk nesting habitat is present within and adjacent to the project area. During the breeding period (February 15–August 31), surveys should be conducted to ensure no Swainson's hawk, or other raptors are nesting in proximity to the project area. If an active nest is present, the PG&E avian conservation strategy should be implemented. If work occurs outside the breeding period, no impacts are expected.



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

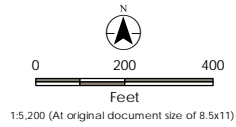
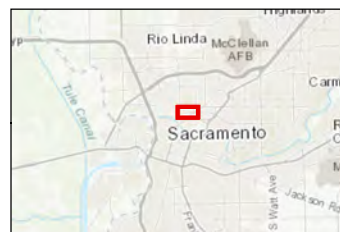
- Survey Area
- Work Areas
- DFM 0613-01 Alignment
- Work Activity
- Floodgate
- USACE Levee

- Habitats
- Oak-Walnut Woodland
 - Residential
 - Riparian
 - Trail
 - Urban - Developed/Paved
 - Urban - Undeveloped
 - Wild Oats Grassland
 - Elderberry shrub

Pacific Gas and Electric Company

Distribution Feeder Main 0613-01
American River Crossing Retirement Project

Figure 1. Habitats
Page 1 of 3



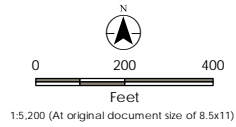
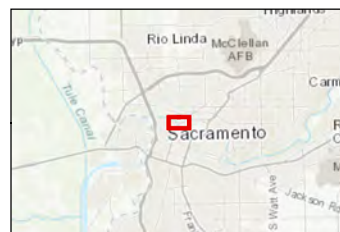
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

- | | |
|-----------------------|-------------------------|
| Survey Area | Oak-Walnut Woodland |
| Work Areas | Residential |
| DFM 0613-01 Alignment | Riparian |
| Work Activity | Trail |
| Floodgate | Urban - Developed/Paved |
| USACE Levee | Urban - Undeveloped |
| | Wild Oats Grassland |
| | Elderberry shrub |

Pacific Gas and Electric Company

Distribution Feeder Main 0613-01
American River Crossing Retirement Project

Figure 1. Habitats
Page 2 of 3



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

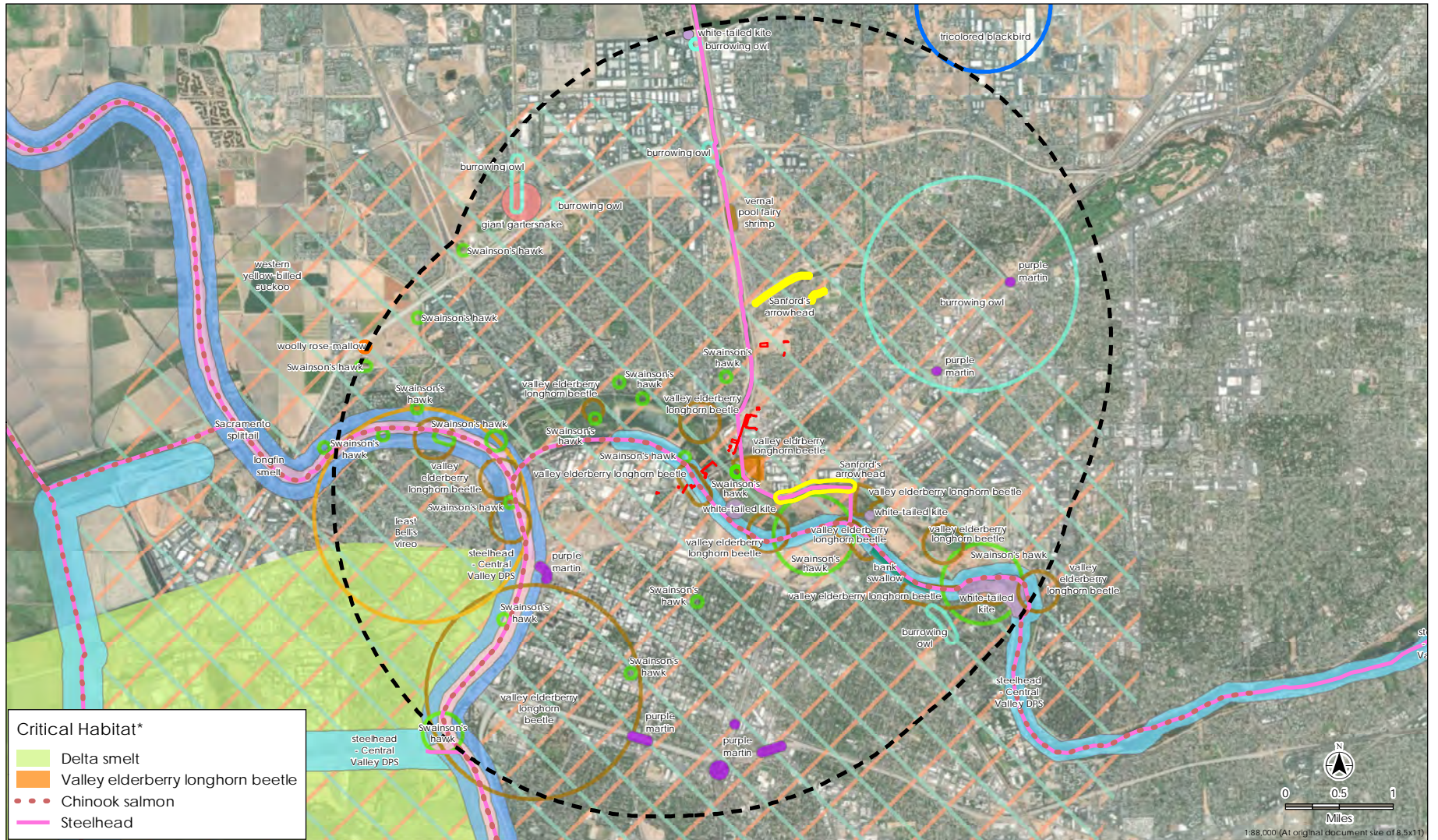
- Survey Area
- Work Areas
- DFM 0613-01 Alignment
- Work Activity
- Floodgate
- USACE Levee

- Habitats
- Oak-Walnut Woodland
 - Residential
 - Riparian
 - Trail
 - Urban - Developed/Paved
 - Urban - Undeveloped
 - Wild Oats Grassland
 - ✱ Elderberry shrub

Pacific Gas and Electric Company

Distribution Feeder Main 0613-01
American River Crossing Retirement Project

Figure 1. Habitats
Page 3 of 3



Critical Habitat*

- Delta smelt
- Valley elderberry longhorn beetle
- Chinook salmon
- Steelhead

<ul style="list-style-type: none"> Project Work and Laydown Areas 3-mile project radius 	<p>CNDDDB Plant Occurrences**</p> <ul style="list-style-type: none"> woolly rose-mallow Sanford's arrowhead 	<p>CNDDDB Wildlife Occurrences**</p> <ul style="list-style-type: none"> Sacramento splittail Swainson's hawk bank swallow burrowing owl giant garter snake least Bell's vireo longfin smelt 	<ul style="list-style-type: none"> purple martin song sparrow ("Modesto" population) steelhead - Central Valley DPS valley elderberry longhorn beetle vernal pool fairy shrimp western yellow-billed cuckoo white-tailed kite tricolored blackbird
--	--	--	---

Pacific Gas and Electric Company

DFM 0613-01 American River Crossing Capacity Upgrade Retirement Project



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

* U.S. Fish & Wildlife Service Critical Habitat Data, September 2017
 ** California Dept. of Fish and Wildlife, California Natural Diversity Database (CNDDDB), December 2018

Figure 2. CNDDB

Appendix C

Best Management Practices

**PG&E R-528 DFM 0613-01 American River Crossing Replacement Project
Best Management Practices (BMPs)**

Water Quality 1: Geotextile fabrics, plastic sheeting and/or jute mats will be installed as appropriate to protect soil stockpiles from impacts of rain and stormwater flows.

Water Quality 2: Sediment controls will be used as appropriate to filter stormwater and trap soil particles before they move offsite. This could include silt fence, straw wattles, gravel bag berms, or other similar materials.

Water Quality 3: Concrete waste will be contained, concrete washout and cutting operations will be conducted offsite or within a contained area onsite to minimize contact with site runoff.

Water Quality 4: Concrete and other debris will be disposed of offsite at an appropriate facility.

Water Quality 5: Vehicular/equipment refueling and use of chemicals are prohibited within 100 feet of a wetland or drainage, unless secondary containment is constructed (e.g. a berm and lined refueling area). Proper spill prevention and cleanup equipment will be maintained in all refueling areas.

BMP 1 – Speed Limit: Vehicles should not exceed 15 mph when traveling in the right-of-way or along unpaved roads in natural areas.

BMP 2 – Vehicle Access and Parking: When accessing work sites, limit travel and parking of vehicles and equipment to pavement, existing roads, and existing stream crossings.

BMP 3 – Vehicle Use Near Waterways/Waterbodies (Seasonal and Perennial): No vehicles may be refueled within 100 feet of waterways/waterbodies and vehicles operating adjacent to these areas must be inspected and maintained daily to prevent leaks. When possible, work near waterways/waterbodies should be conducted during the dry season (generally May 15 - October 15) or during dry spells. No substantial vegetation trimming will occur within the bed, bank, or channel of waterways without the approval of the PG&E Project biologist.

BMP 5 – Dust Abatement: Abate dust through use of water trucks, vehicle speeds limits, or other methods that prevent generating significant dust that may affect wildlife, plants, and humans.

BMP 6 – Invasive Plant Species: When working in areas adjacent to natural habitats, thoroughly wash all equipment and vehicles prior to entering work sites to prevent the spread of noxious weeds.

BMP 7 – Disposal of Vegetation (Chipped, Clippings, or Limbs): Removed vegetation should be disposed of in accordance with job specific disposal plan. Generally, chipped vegetation should be placed in previously disturbed areas (or non-sensitive vegetated areas) and large limbs or cuttings should be left onsite (if approved by land owner/manager) or removed and properly disposed of.

BMP 8 – Fire Prevention: During designated fire season motorized equipment must have federal and state approved spark arrestors and must be equipped with standard firefighting tools (fire extinguishers or other appropriate tools). Construction managers are responsible for checking the fire adjective index rating prior to work. During fire adjective index ratings of Very High or Extreme, no vehicle travel is permitted off cleared roads and no smoking is allowed in vegetated areas (grasslands, forests, etc.).

BMP 9 – Avoid Hazards Associated with Open Trenches: All holes or trenches left open overnight will be thoroughly covered (ensuring coverage of gaps under boards) to prevent animals (and people) from becoming entrapped. For those areas that cannot be covered, the areas must be fenced and contain escape ramps for wildlife.

BMP 10 – General Site Use Standards: Trash dumping, firearms, open fires (such as barbecues) not required by the operations and maintenance O&M activity, hunting, and pets (except for safety in remote locations) will be prohibited in O&M work activity sites. All food-related waste must be removed daily from work sites to prevent attracting wildlife.

BMP 11 – Vehicles Emissions/Noise: Vehicles idling, noise, and odor must be minimized to the extent practicable when working near residences or human populated areas. Diesel-fueled work vehicles must not stand idling for more than five minutes at any location unless needed for work purposes.

BMP 12 – Nesting Birds: For work proposed to occur during the bird nesting season (February 1 - August 31), contact the PG&E Project biologist to determine if a pre-activity nesting bird survey is needed. If during the course of work an active bird nest (defined as a nest with eggs or young) is detected, stop work and contact the PG&E Project biologist. The biologist will ensure that work proceeds in compliance with PG&E's Avian Conservation Strategy and the Bird Nest Process specified in Work Procedure 2321-01.

BMP 13 – Protected Species: If you discover a plant or animal at the work site which you believe may be a protected species, and which is in danger of harm from construction, stop work and call your supervisor and the PG&E Project biologist.

BMP 14 – Environmental Spills: If an environmental protection incident occurs, such as accidental introduction of substances into waterways or wetlands, accidental taking of an endangered species, or hazardous material spills, etc., call your Environmental Field Specialist (EFS) or PG&E contact immediately. If the EFS or PG&E contact cannot be reached call the Environmental Hotline at 800-874-4043.

Appendix D Arborist Report



Prepared by: **Scott Shaw**, Consulting Utility Forester
ISA Certified Arborist WE-12224A

Arborist Report For: **R-582 American River Sacramento
Retirement (L-0613-01)
Project Order# 74004048**

Date: **February 13th 2019**

For: **Pacific Gas & Electric Co. (PG&E)**
Land Consultant: **Kevin Ventura**
Land / Environmental Planner: **Chris Ellis**
Project Manager: **Christine Mier**

Per: This report is based on the construction workspace drawings, email correspondence with the project team, and a site visit that took place February 11th, 2019.

- **If construction plans change as they relate to tree work then the site should be re-assessed by an arborist to maintain the integrity of these recommendations.**
- **See associated tables & figures for further tree work and location information**
- **Tree protection recommendations are based on the International Society of Arboriculture Best Management Practices (BMP) for Managing Trees During Construction. Tree trimming & protection recommendations are also based on ANSI a300 Standards (parts 1 & 5). Any work performed outside of these BMPs & Standards is solely the decision of construction management. Any work in reference to the gas line right-of-way (ROW) is based on PG&E utility standard TD-4490S.**

Executive Summary of Vegetation Recommendations

- Trim 2 Valley Oak: *Quercus lobata*
- Remove 2 Walnut: *Juglans*
- Remove 2 Almond: *Prunus dulcis*
- **Property Owners to be Notified:** According to PG&E's Land Parcels data layer, vegetation management work appears as if it will be conducted on the following properties:
 - APN# 263-0110-026-0000
 - APN# 274-0190-003-0000
 - APN# 274-0120-010-0000
- **All impacted property owners should be properly notified prior to work.**
- **Project Location / Relevant tree ordinances:** Referencing PG&E's City County Boundaries data layer, the project area falls within Sacramento county.

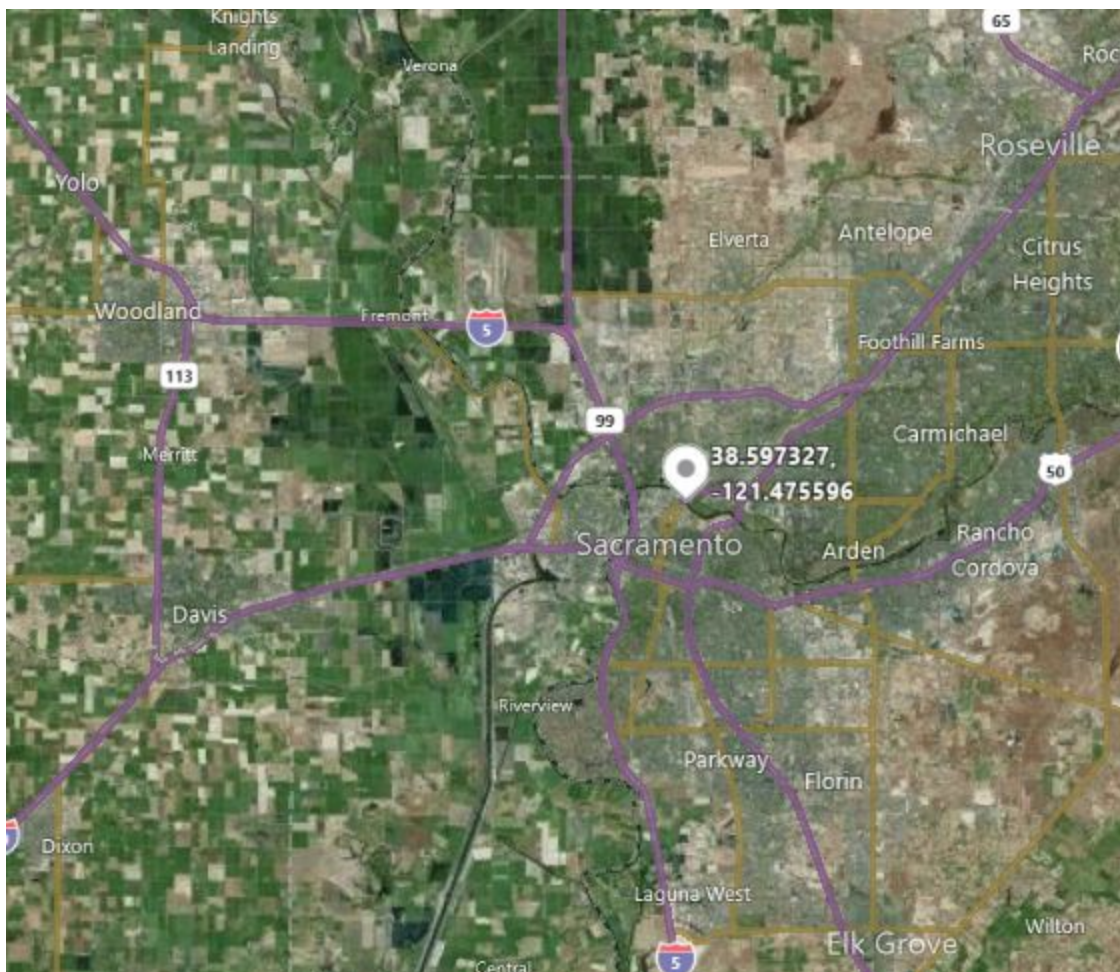
- There do not appear to be any applicable tree ordinances in Sacramento County that relate to this project's scope of work.

Introduction

Request for arborist support was received February 6th, 2019. Project referred to as R-582 American River Sacramento was evaluated February 11th, 2019 during a site assessment based off of the construction workspace drawing "DFM 0613-01 MP 2.94-5.29". Vegetation management was requested in order to provide a safe and clear workspace for pipeline retirement work.

The following recommendations are made to avoid irreparable damage to vegetation in the area during construction. This report goes into further detail identifying the issues and scope of vegetation work at location. In the event of any changes in scope of work and/or location of construction activities, the site will need to be reassessed by the Project Arborist to maintain the integrity of these recommendations.

Vicinity Map: Project areas are located in Sacramento, CA (38.597327, -121.475596)



Scope of Work:

There are six trees recommended to be worked spread across three different locations. Referencing the workspace drawings, at location B there is one Valley Oak which needs to be trimmed for a 15' vertical clearance to allow construction equipment space to excavate in the roadway. There is one Valley Oak in an alley which is recommended for a 15' vertical clearance trim to provide access to location D. At location G, there are two Almond trees and two Walnut trees recommended for removal to give adequate space for excavation and construction work. All residual stumps will be cut flush to grade.

All debris will be hauled off site. Work is expected to take one day to complete. A 4 man crew, chainsaws, one chipper, one bucket/chip truck, leaf blowers, rakes, safety cones, and work ahead signs will be required to safely and effectively conduct this work.

Figure 1: Vegetation Inventory Map Overview

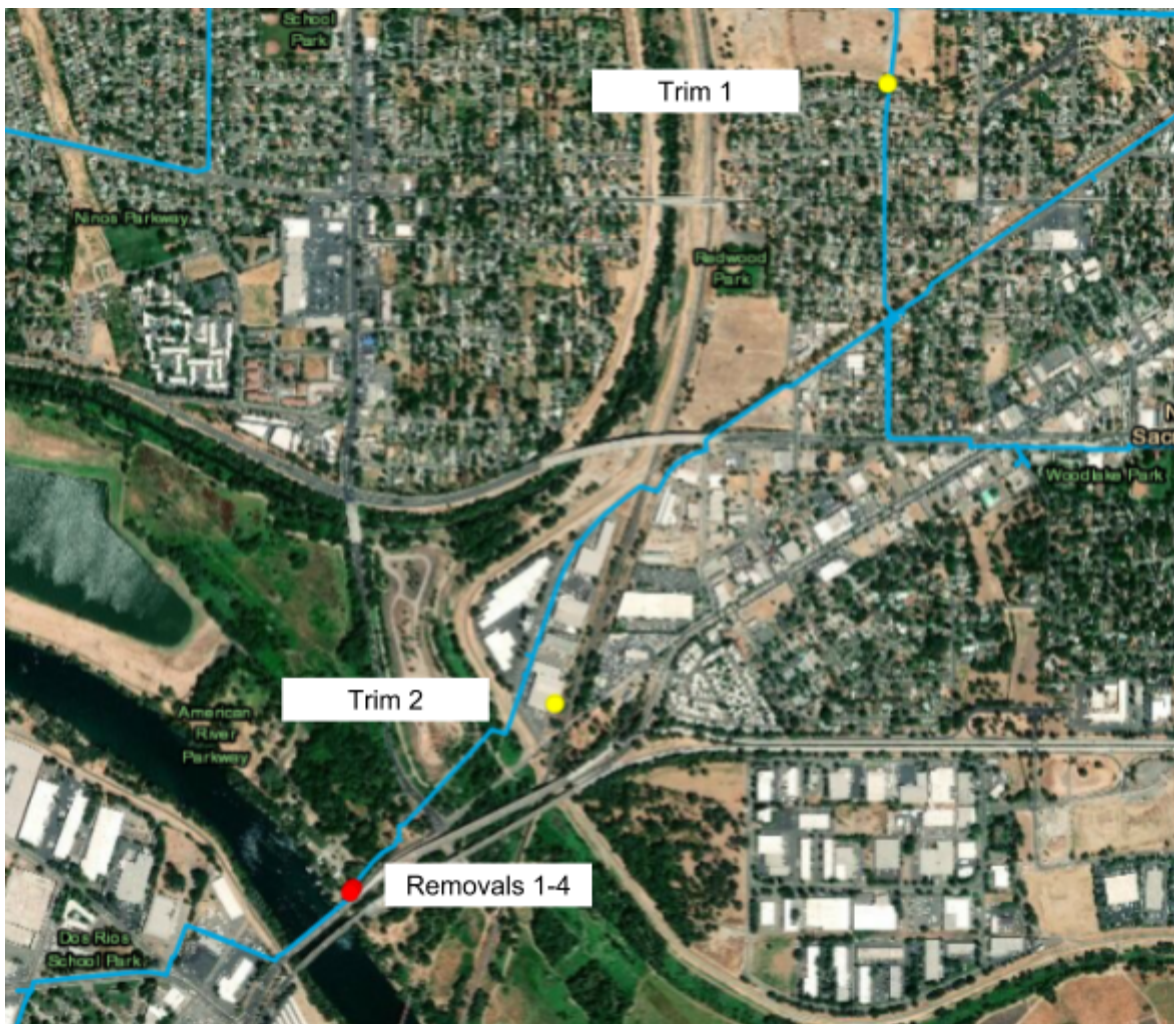


Figure 2: Workspace Drawing:

DFM 0613-01 MP 2.94 - 5.29
 RETIRE APPROX 12,250' OF 12" PIPE
 SACRAMENTO, SACRAMENTO COUNTY

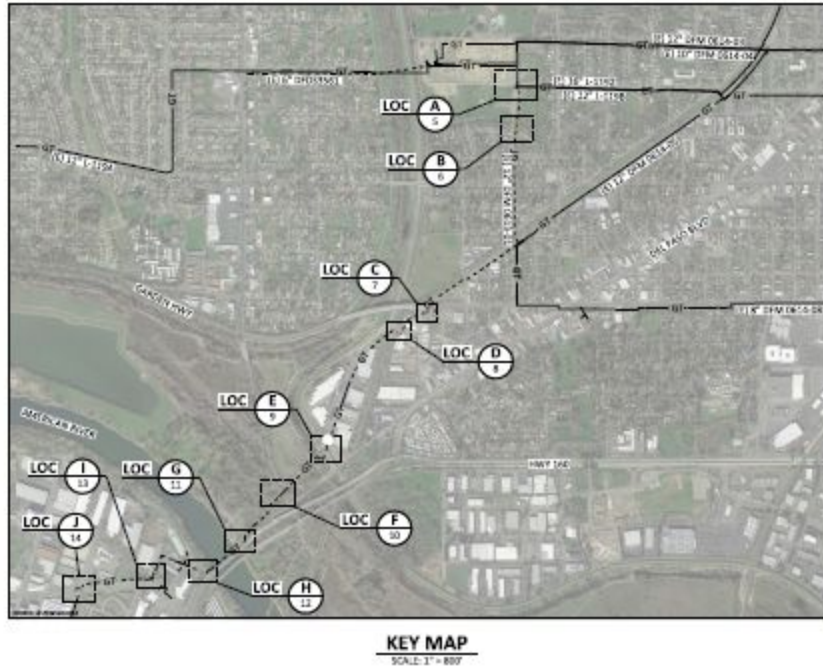


Table 1. Tree Inventory Data

Tree ID	Species	DBH (in)	Height (ft)	Work	Reason for Work	Location	Notes
Trim 1	Valley Oak: <i>Quercus lobata</i>	23	25	Trim	Construction	B	15' vertical clearance over road.
Trim 2	Valley Oak: <i>Quercus lobata</i>	32	55	Trim	Construction	D	15' vertical clearance. Access.
Removal 1	Almond: <i>Prunus dulcis</i>	22	10	Remove	Construction	G	Multi stemmed

Removal 2	Almond: <i>Prunus dulcis</i>	16	10	Remove	Construction	G	Multi stemmed
Removal 3	Walnut: <i>Juglans</i>	32	18	Remove	Construction	G	Multi stemmed
Removal 4	Walnut: <i>Juglans</i>	24	19	Remove	Construction	G	Flush cut to grade

Photos of Recommended Vegetation Work

Figure 3: Trim 1



Figure 4: Trim 2



Figure 5: Removal 1

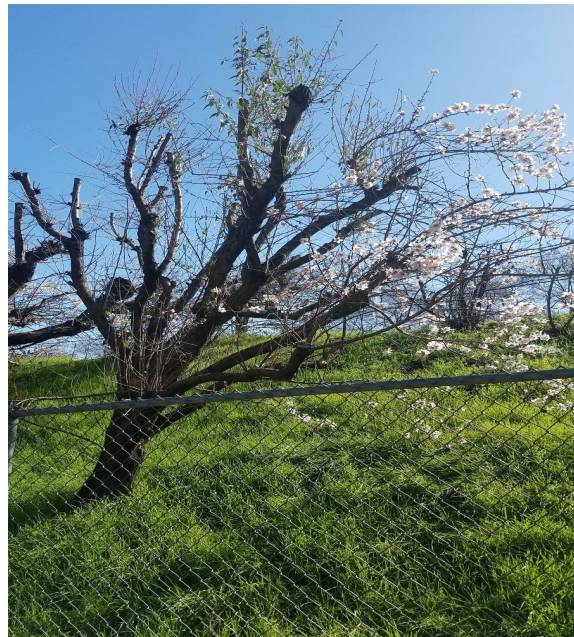


Figure 6: Removal 2



Figure 7: Removal 3



Figure 8: Removal 4



Definitions

Critical Root Zone (CRZ): area of soil around a tree where the minimum amount of roots considered critical to the structural stability or health of the tree are located. CRZ determination could be based on the **Drip-line** or a multiple of **DBH**, but because root growth can be asymmetric due to site conditions, on-site investigation may be required.

Crown (Canopy) Raising: in pruning, the selective removal of lower limbs from a tree crown to provide clearance.

Diameter at Breast Height or DBH: an arborist standard of measure for a tree. The trunk(s) diameter is measured at 4.5ft above natural grade. If there are multiple trunks, they are measured individually and added together.

Drip-line: imaginary line defined by the branch spread of a single tree or group of trees.

Project Arborist: PG&E assigned Arborist to the project. Duties may include but not limited to assessing and providing recommendations on tree issues, tree permitting with agencies, scheduling and overseeing tree work, site monitoring, spot checking, etc.

Root Pruning: in tree conservation and preservation, the process of cutting roots cleanly behind the line of a planned excavation to prevent tearing and splintering of remaining roots.

Tree Protection Zone (TPZ): defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development.

Reference

Vegetation prescriptions and recommendations are based on:

- International Society of Arboriculture Best Management Practices for “Managing Trees During Construction.”
- ANSI A300 Standards (part 5) Management of Trees and Shrubs During Site Planning, Site Development, and Construction.
- ANSI A300 Standards (part 1) Standard Practices Pruning.
- Any work in reference to the gas line right-of-way is based on PG&E utility standard TD-4490S.

*** Any work performed outside of these BMPs & Standards is solely the decision of construction management.**