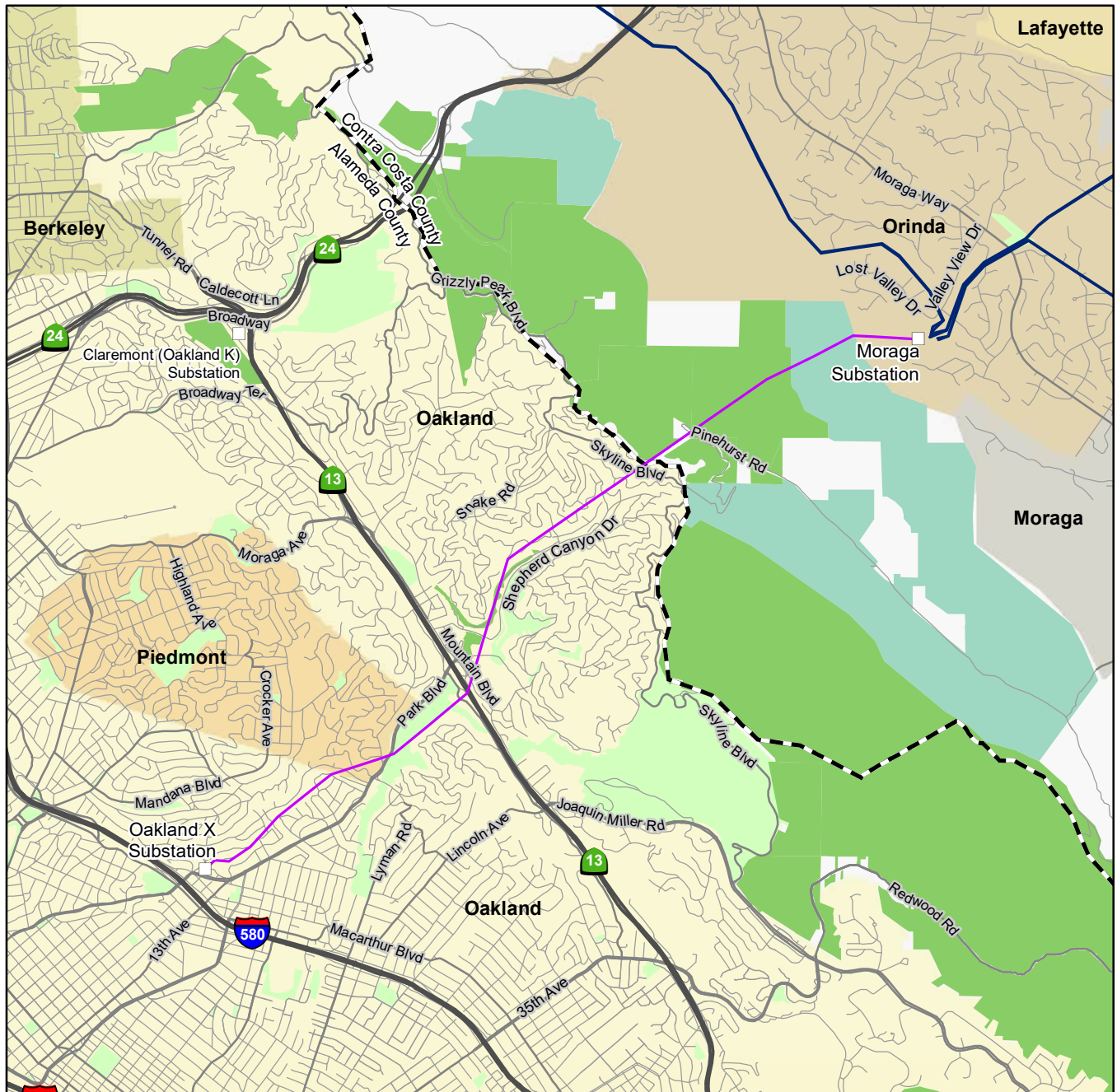


Figures



Legend

- Substation
- Four Existing Moraga-Oakland X 115 kV Lines to be Rebuilt
- Existing 230 kV Transmission Line
- State Route/Highway
- Arterial
- Local Street
- East Bay Regional Park District
- EBMUD Property
- Other Park or Recreation Area
- County Boundary
- City of Berkeley
- City of Moraga
- City of Lafayette
- City of Oakland
- City of Orinda
- City of Piedmont

Version: 10/30/2024

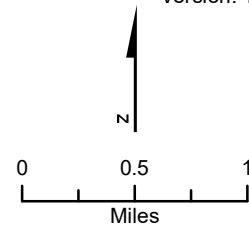


Figure 3.1-1
Overview with Existing Lines
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

*Preliminary and Subject to Change Based on CPUC
 Requirements, Final Engineering, and Other Factors*

Jacobs

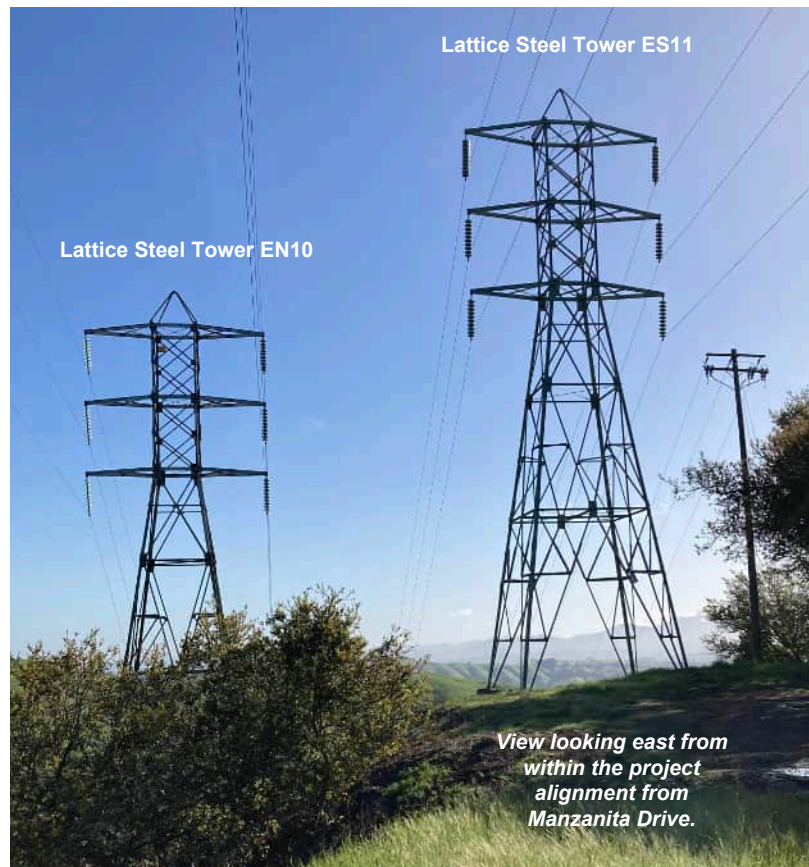


Figure 3.1-2a
Existing Lattice Steel Towers, Tubular Steel Pole and Lattice Steel Pole
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



View looking southwest from within the project alignment from Manzanita Drive.

Tubular steel pole in view is galvanized steel.

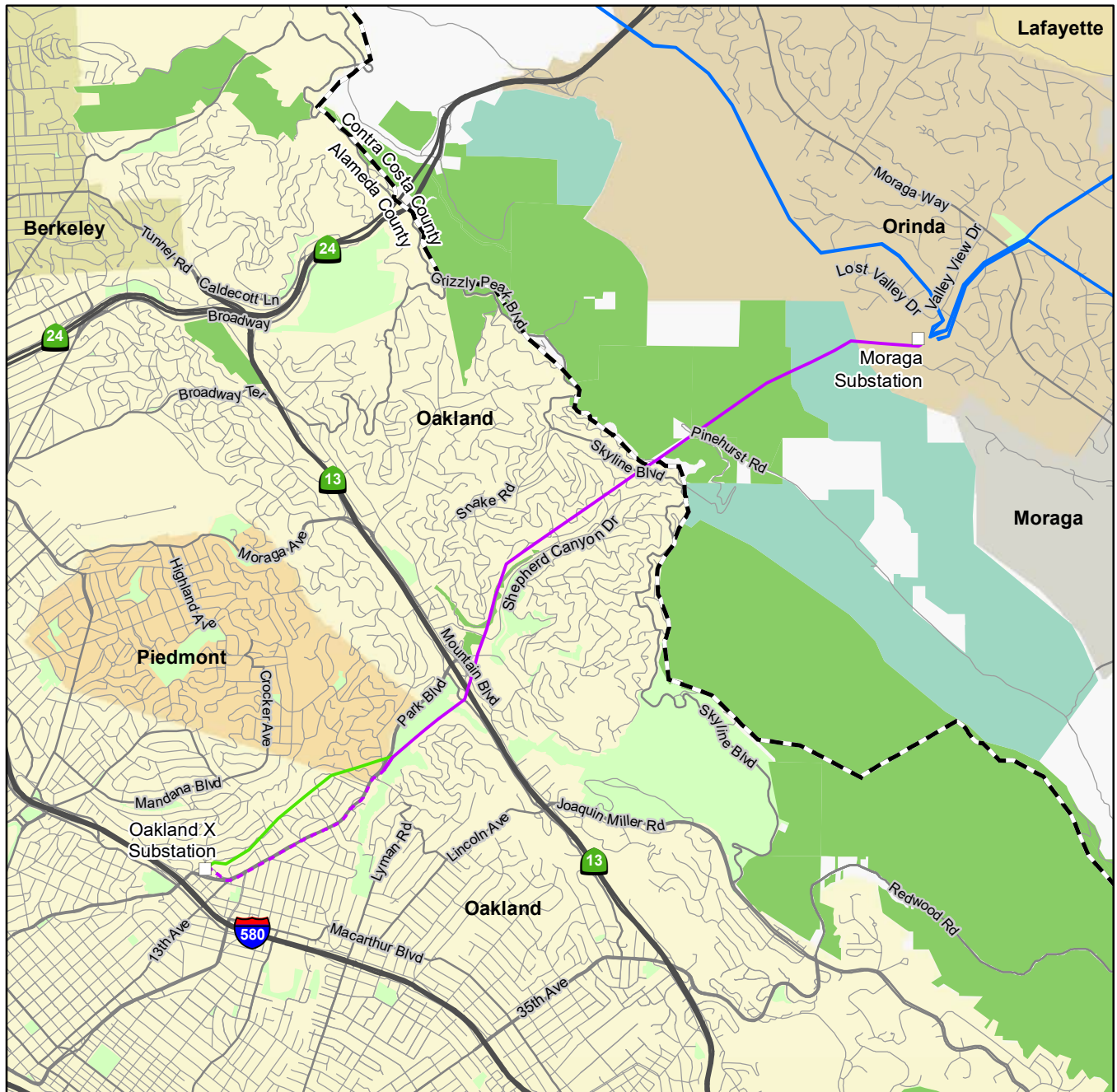


View looking southwest from within the project alignment from Montclair Railroad Trail.

Tubular steel poles in view are Corten steel.

Figure 3.1-2b
Existing Tubular Steel Pole Types
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 10/30/2024

Legend

- Substation
- Existing 230 kV Transmission Line
- State Route/Highway
- Arterial
- Local Street

Moraga-Oakland X 115 kV Rebuild Project

- Four Existing Overhead 115 kV Lines to be Rebuilt in Same Overhead Configuration
- Four New Underground 115 kV Lines
- Four Existing Overhead 115 kV Lines to be Removed

- East Bay Regional Park District
- EBMUD Property
- Other Park or Recreation Area
- County Boundary
- City of Berkeley
- City of Moraga
- City of Lafayette
- City of Oakland
- City of Orinda
- City of Piedmont

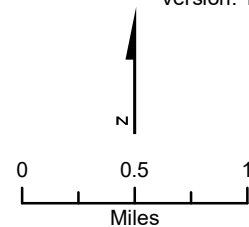
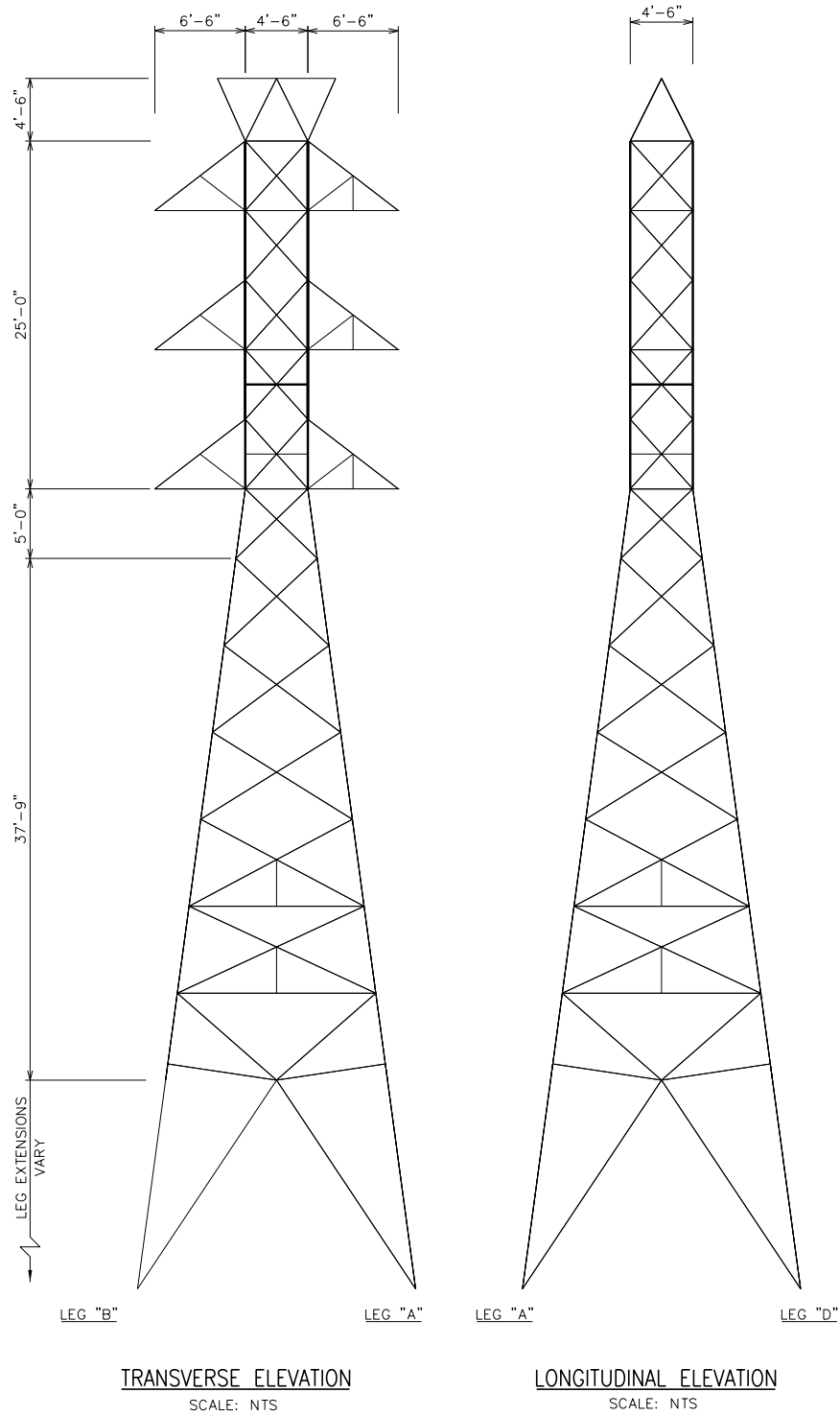


Figure 3.2-1
Overview with Proposed Lines Rebuild
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

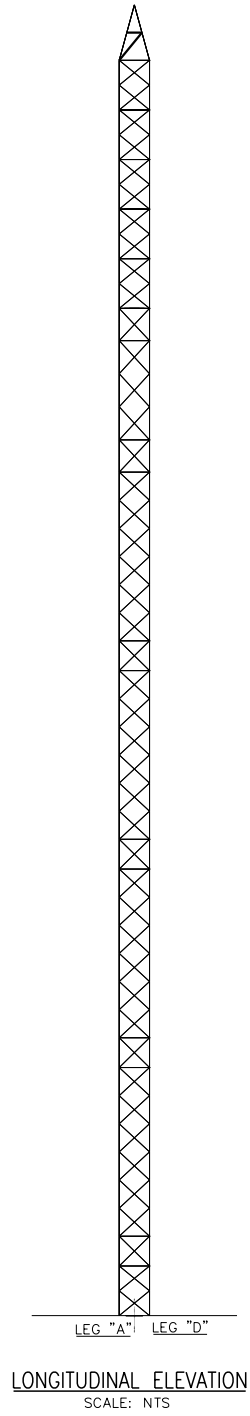
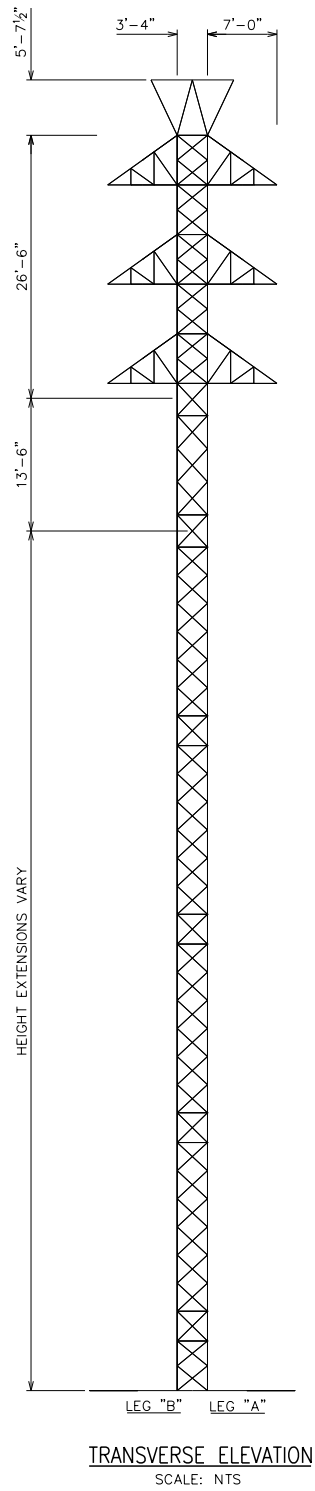
Jacobs



Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Figure 3.3-3a
Lattice Steel Tower (Typical)
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

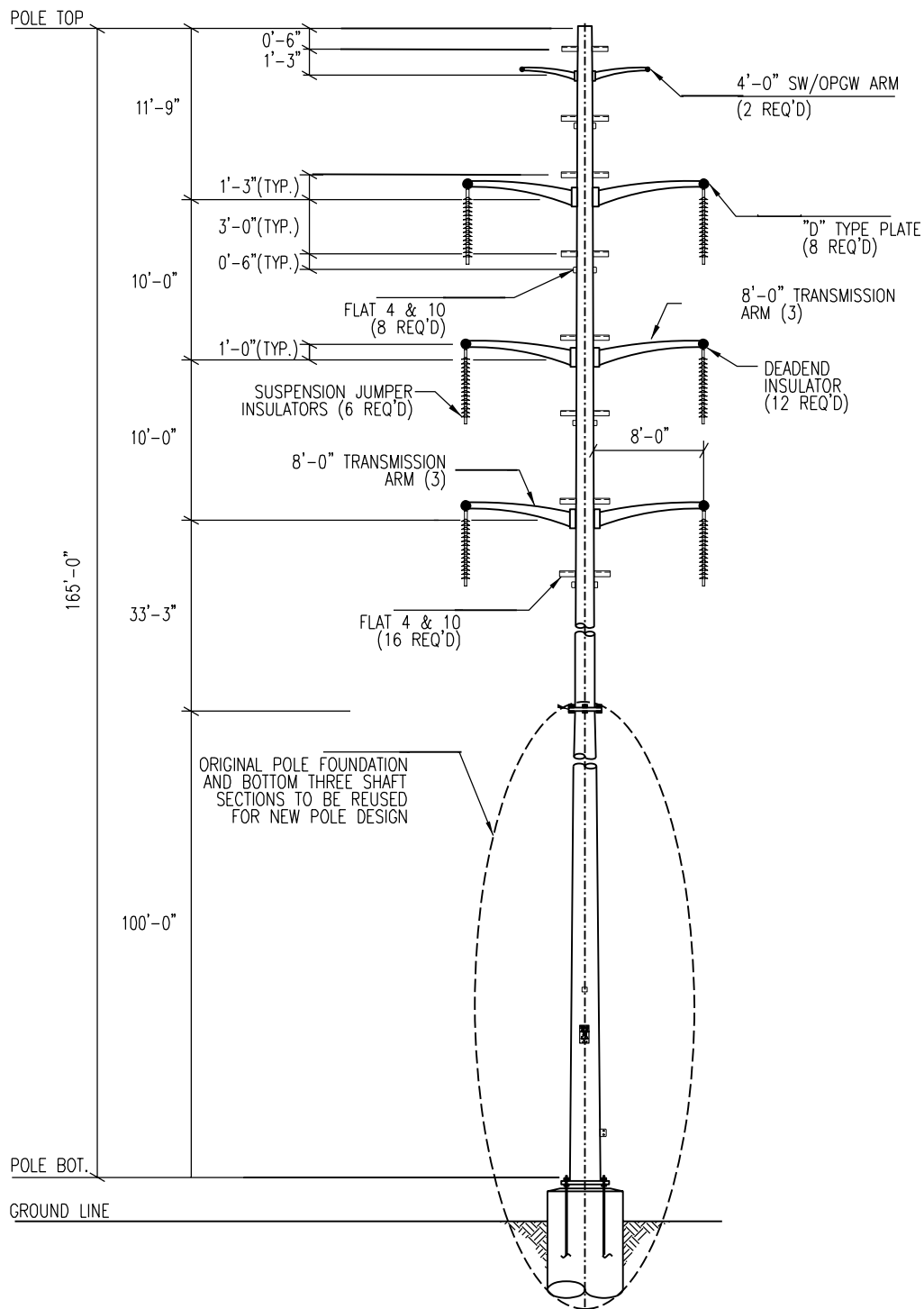
Jacobs



Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Figure 3.3-3b
Lattice Steel Pole (Typical)
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

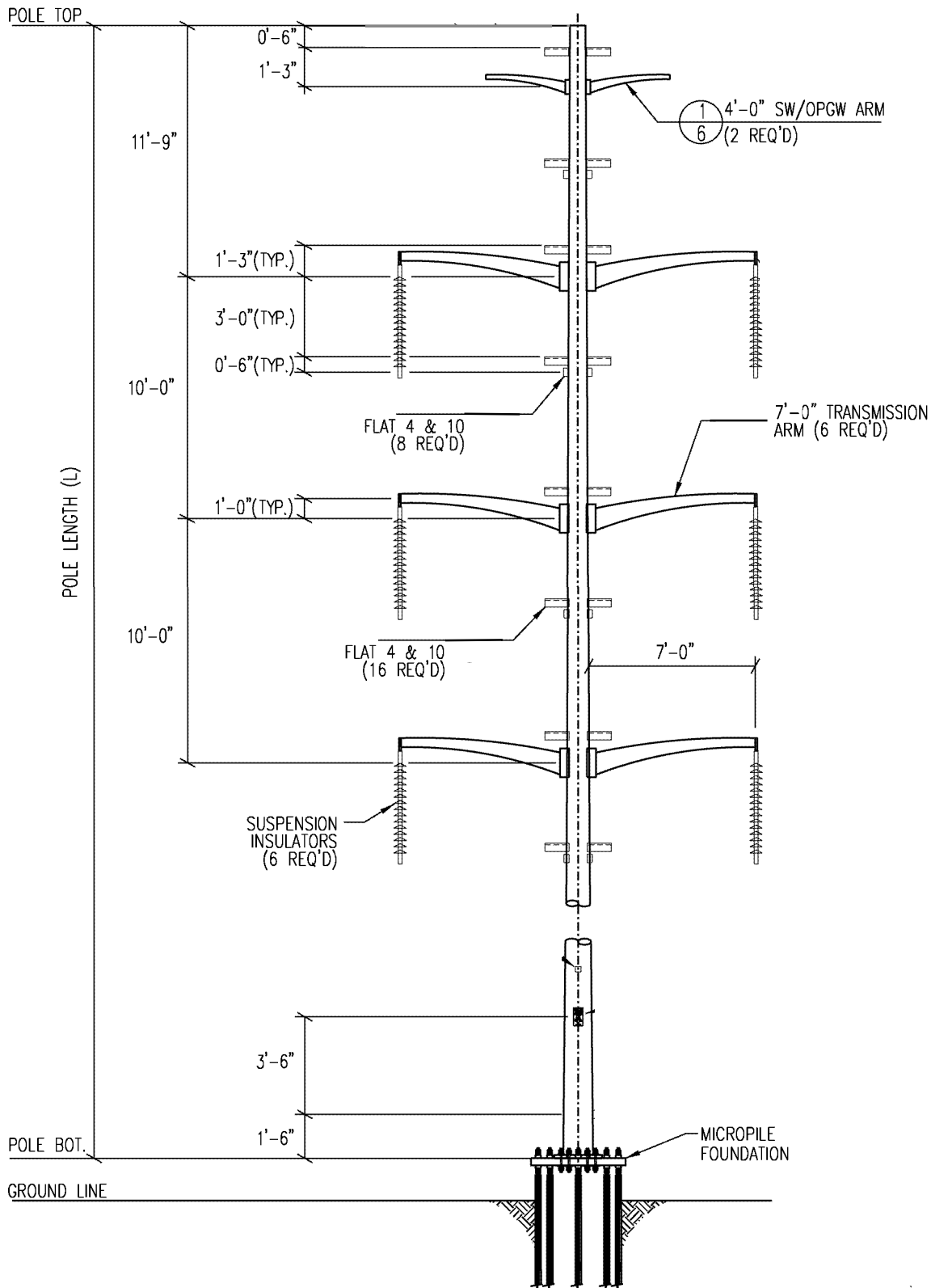
Jacobs



Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Figure 3.3-3c
Modified Tubular Steel Pole (Typical) with Drilled Pier Foundation
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

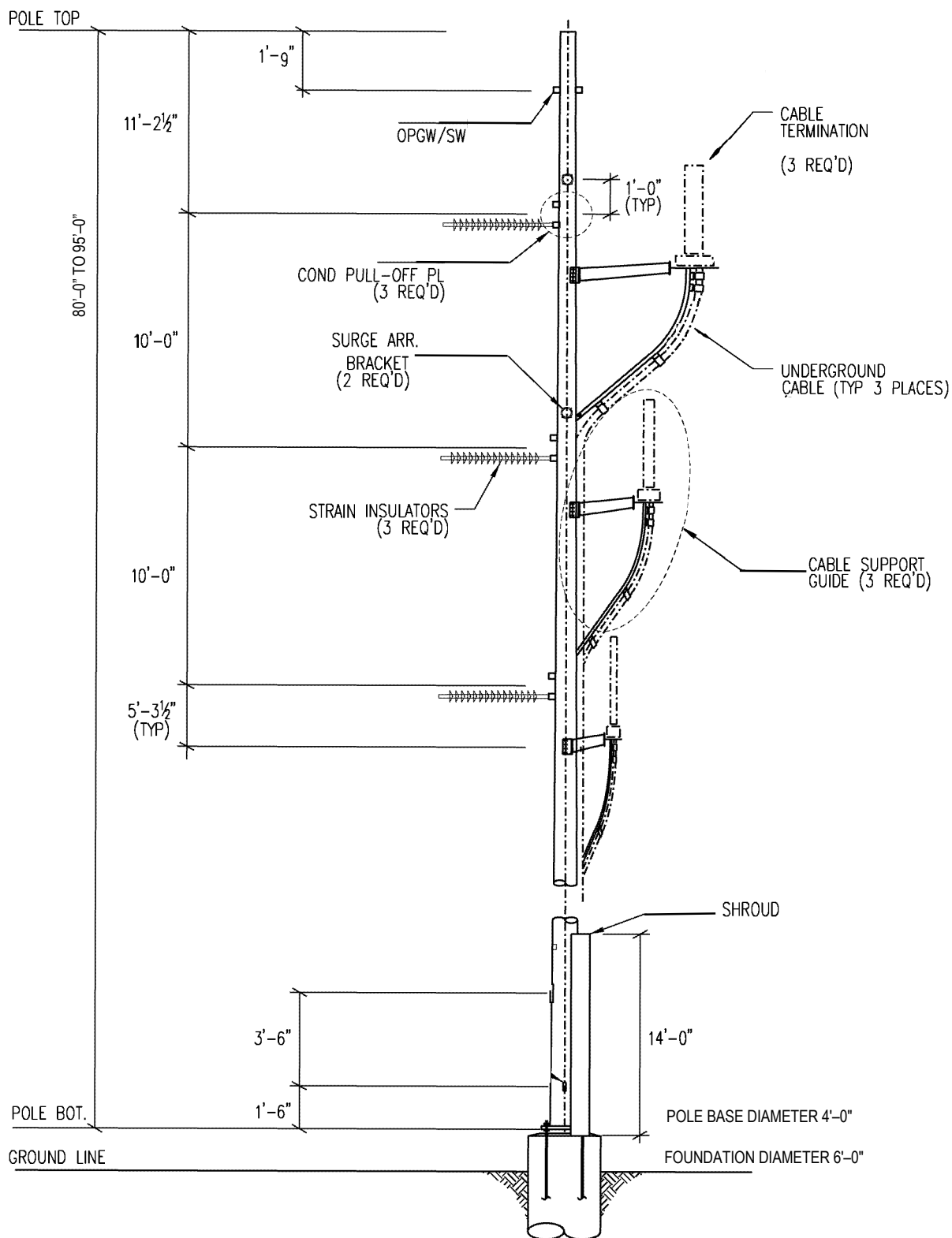
Jacobs



Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Figure 3.3-3d
Tubular Steel Pole (Typical) with a Micropile Foundation
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

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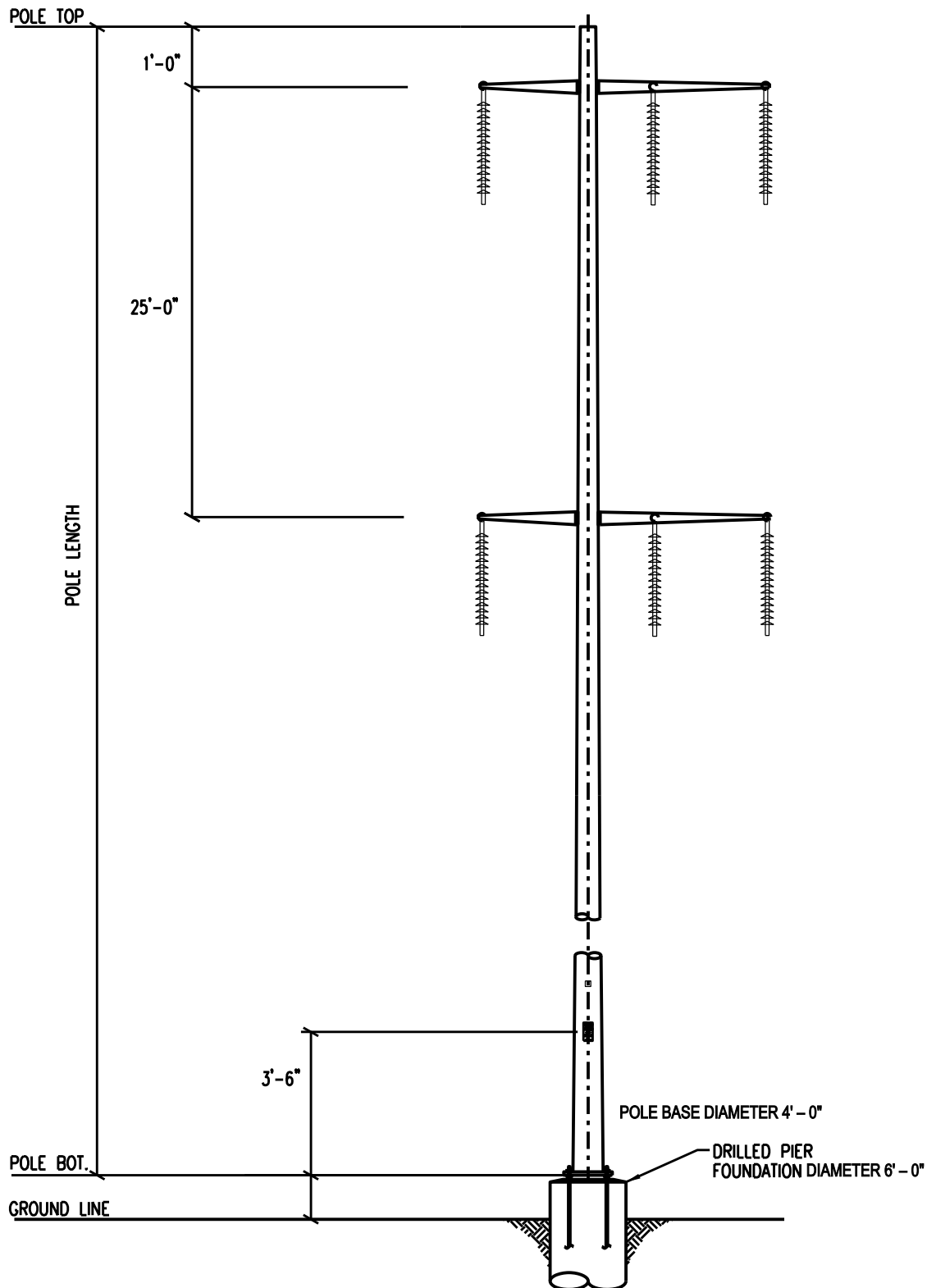
Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Anticipated to be used for TN27A, TN27B, TS27A and TS27B at the eastern end of the underground portion of the project near the intersection of Estates Drive and Park Boulevard.

Figure 3.3-4a
Vertical Single Circuit Transition Structure Tubular Steel Pole (Typical)

Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



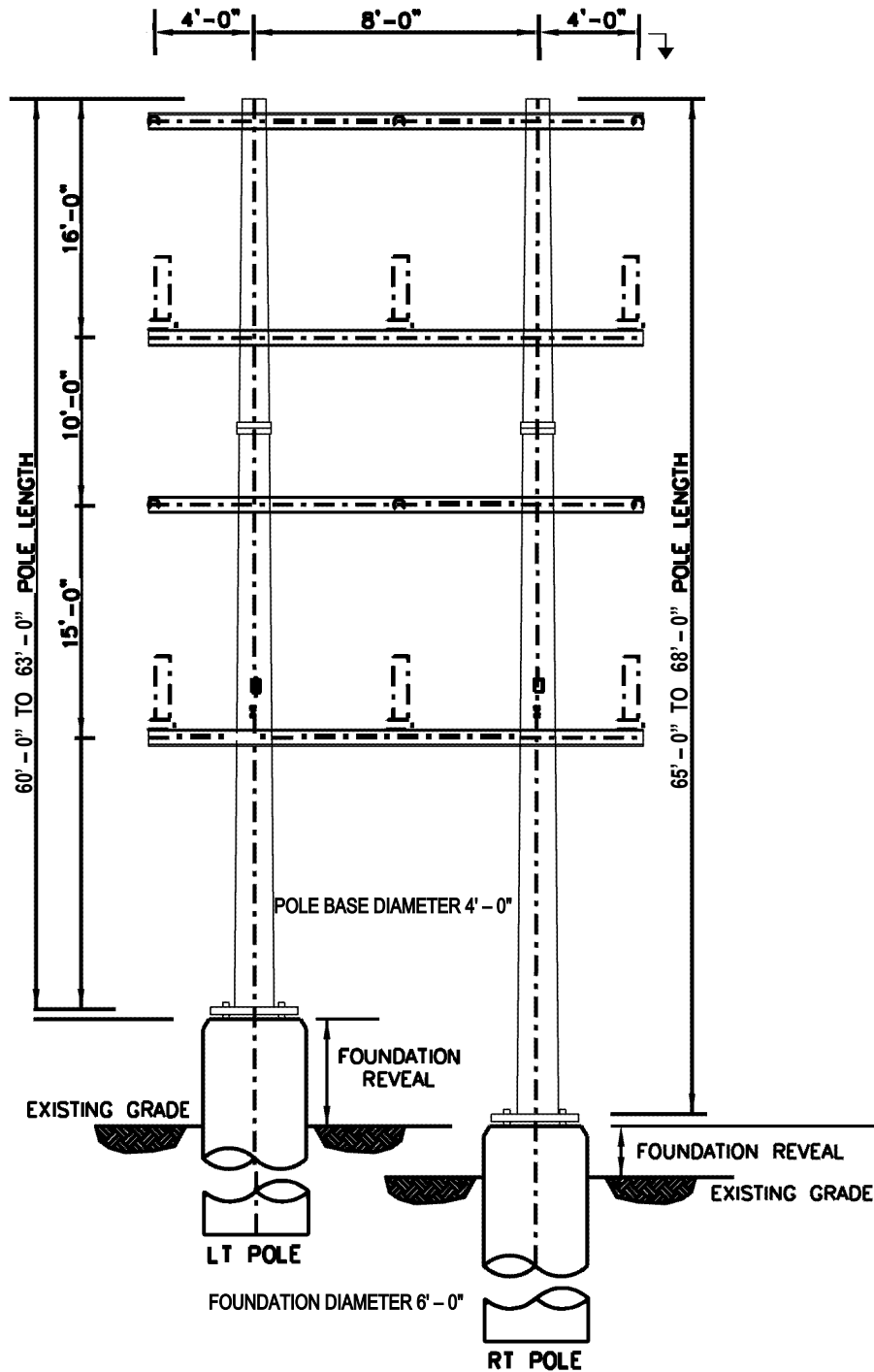
Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Anticipated to be used for TS28 at the western end of the underground portion of the project at Oakland X Substation.

Vertical Double Circuit Transition Structure Tubular Steel Pole (Typical)
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Figure 3.3-4b

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Typical Structure is 60% design. Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Anticipated to be used for TN28A and TN28B at the western end of the underground portion of the project at Oakland X Substation.

Figure 3.3-3c
H-Frame Double Circuit Transition Structure Tubular Steel Pole (Typical)
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

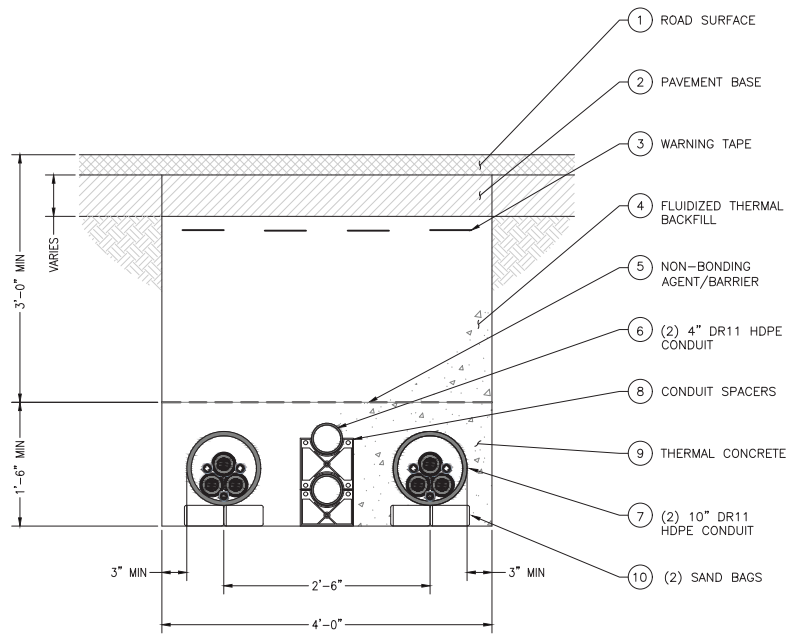
Jacobs



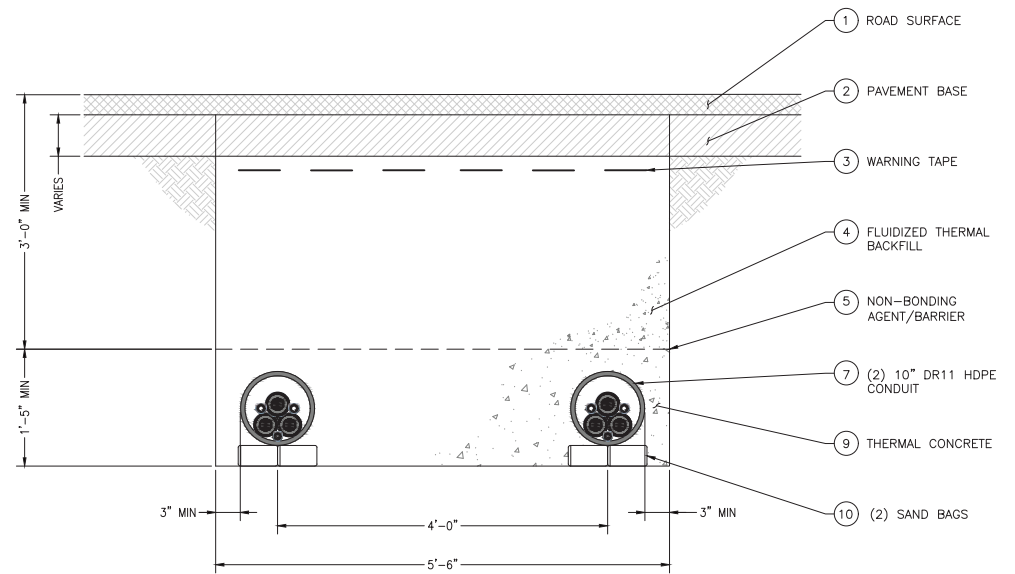
Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Figure 3.3-5
Example Single Circuit and Double Circuit Transition Structure Tubular Steel Poles
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

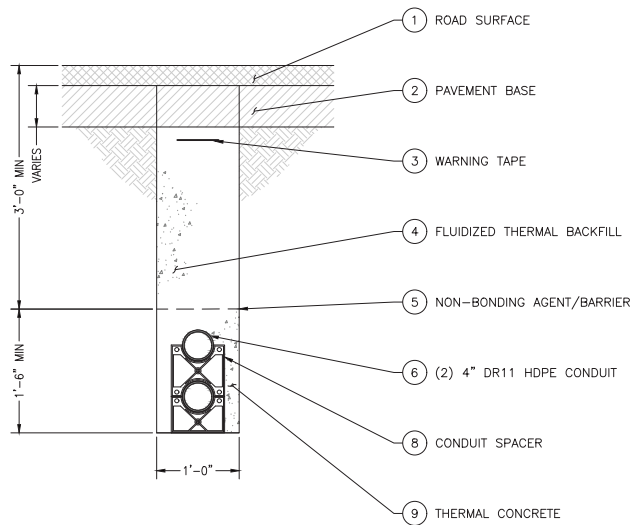
Jacobs



TYPICAL DUCT BANK



115 KV CONDUIT DUCT BANK
SPLICE MANHOLE APPROACH AND DEPARTURE



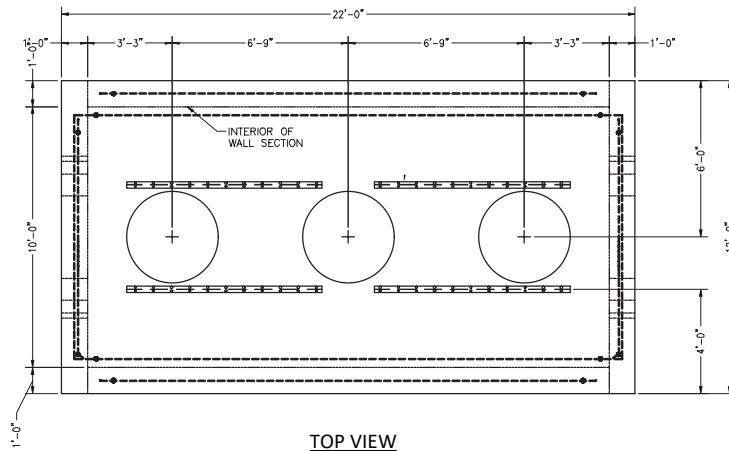
TELECOMMUNICATION CONDUIT DUCT BANK
TELECOMMUNICATIONS MH APPROACH AND DEPARTURE

Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

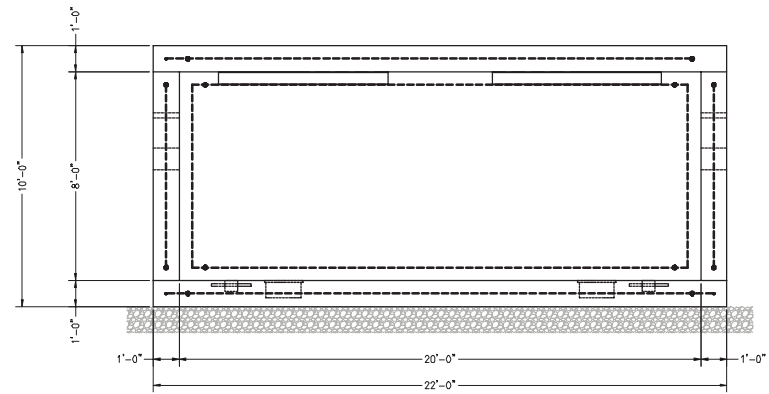
PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

Figure 3.3-6
Underground Duct Bank Cross Sections
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

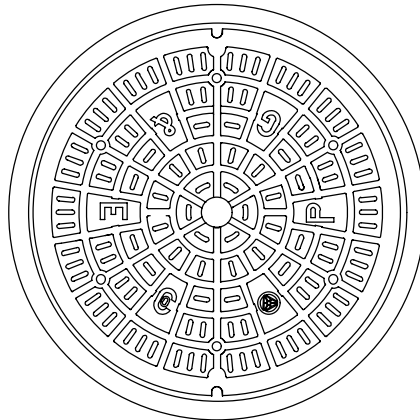
Jacobs



TOP VIEW

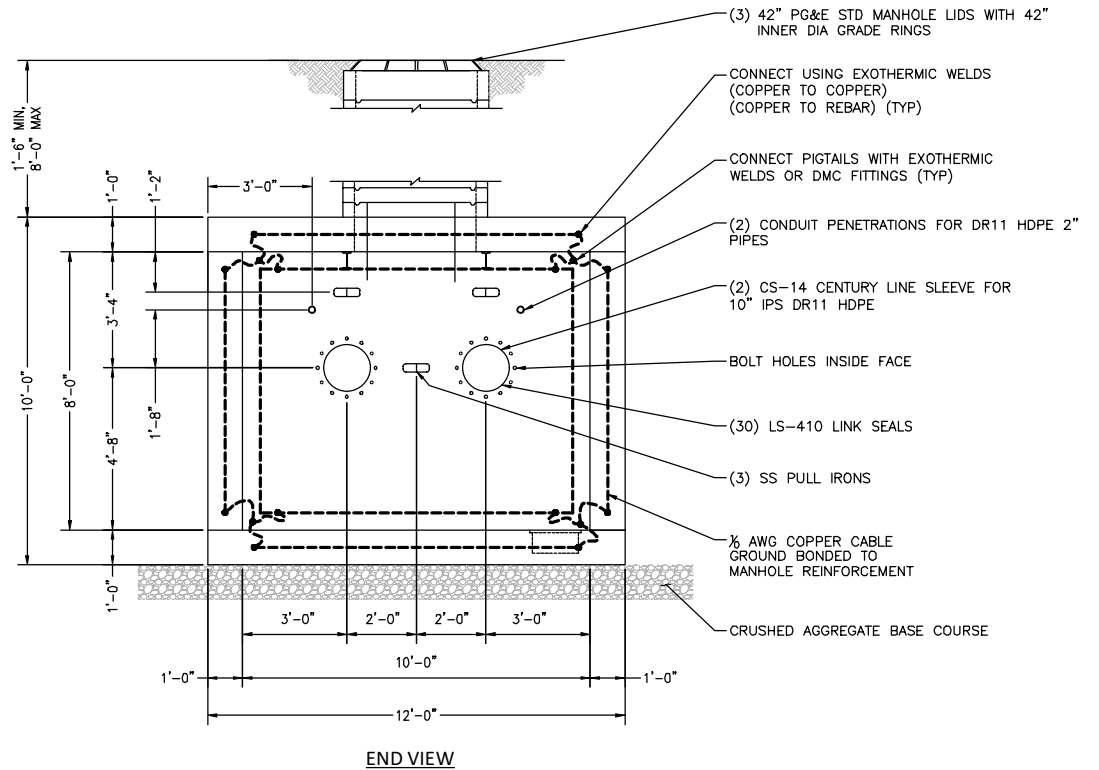


SIDE VIEW



39 INCH COVER

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

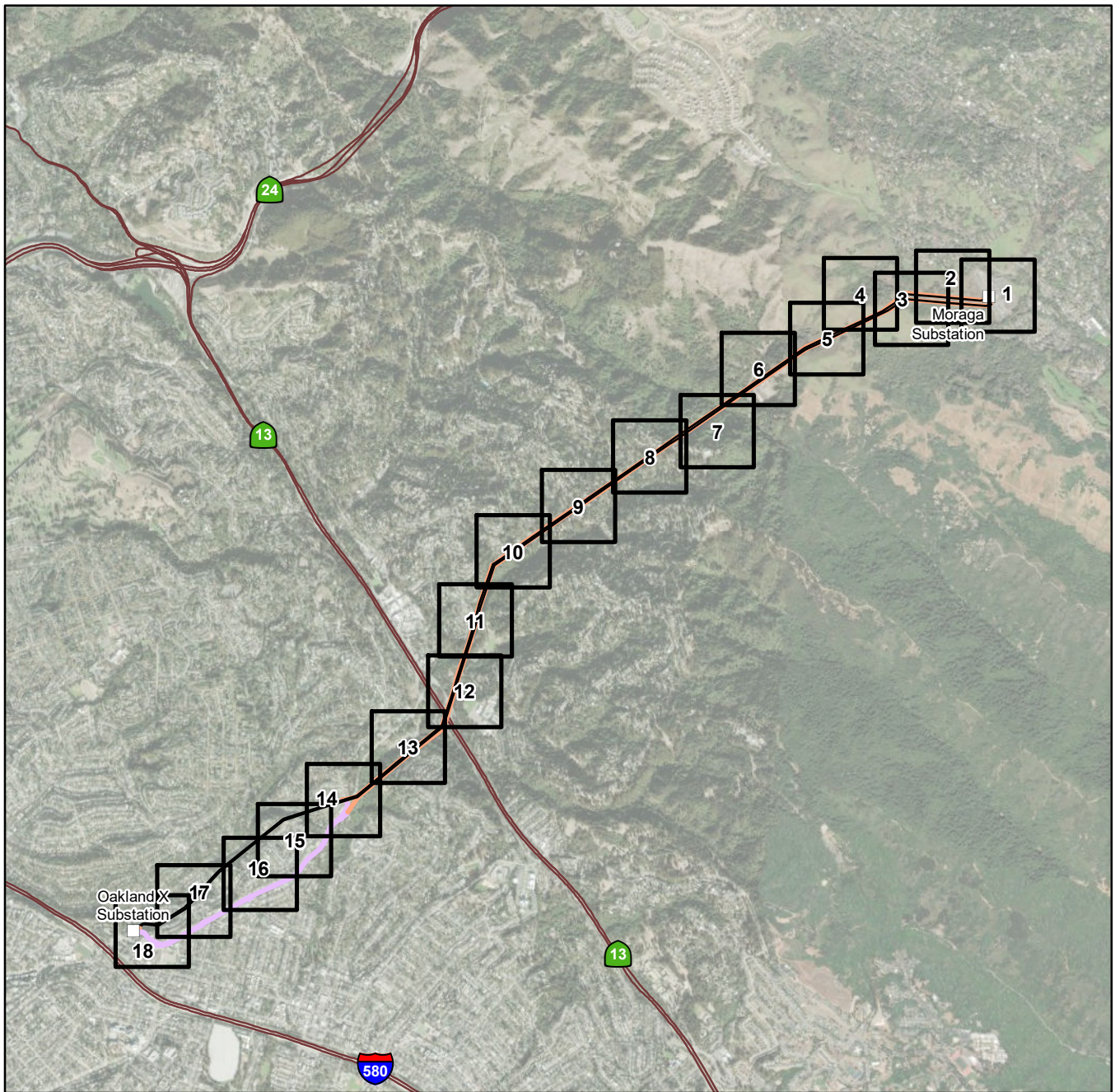


END VIEW

Exact structure type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

Figure 3.3-7
Underground Vault Details
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

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Legend

- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

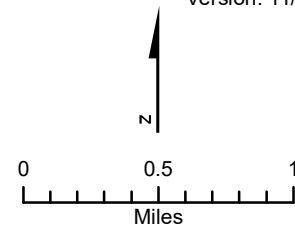
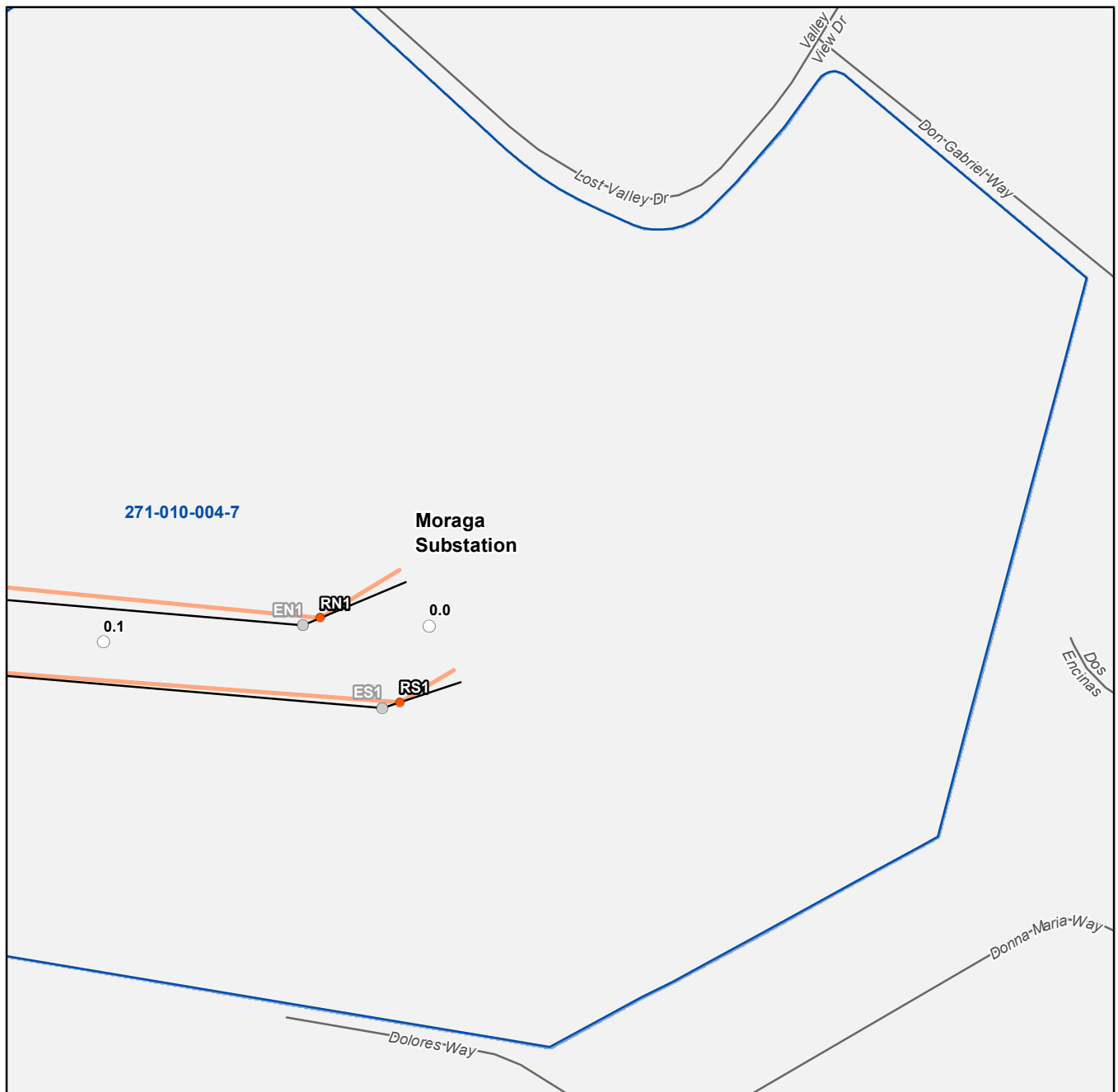


Figure 3.4-1
Existing Alignment with Anticipated New or
Modified Easements - Overview
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

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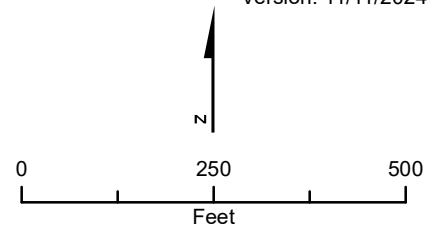
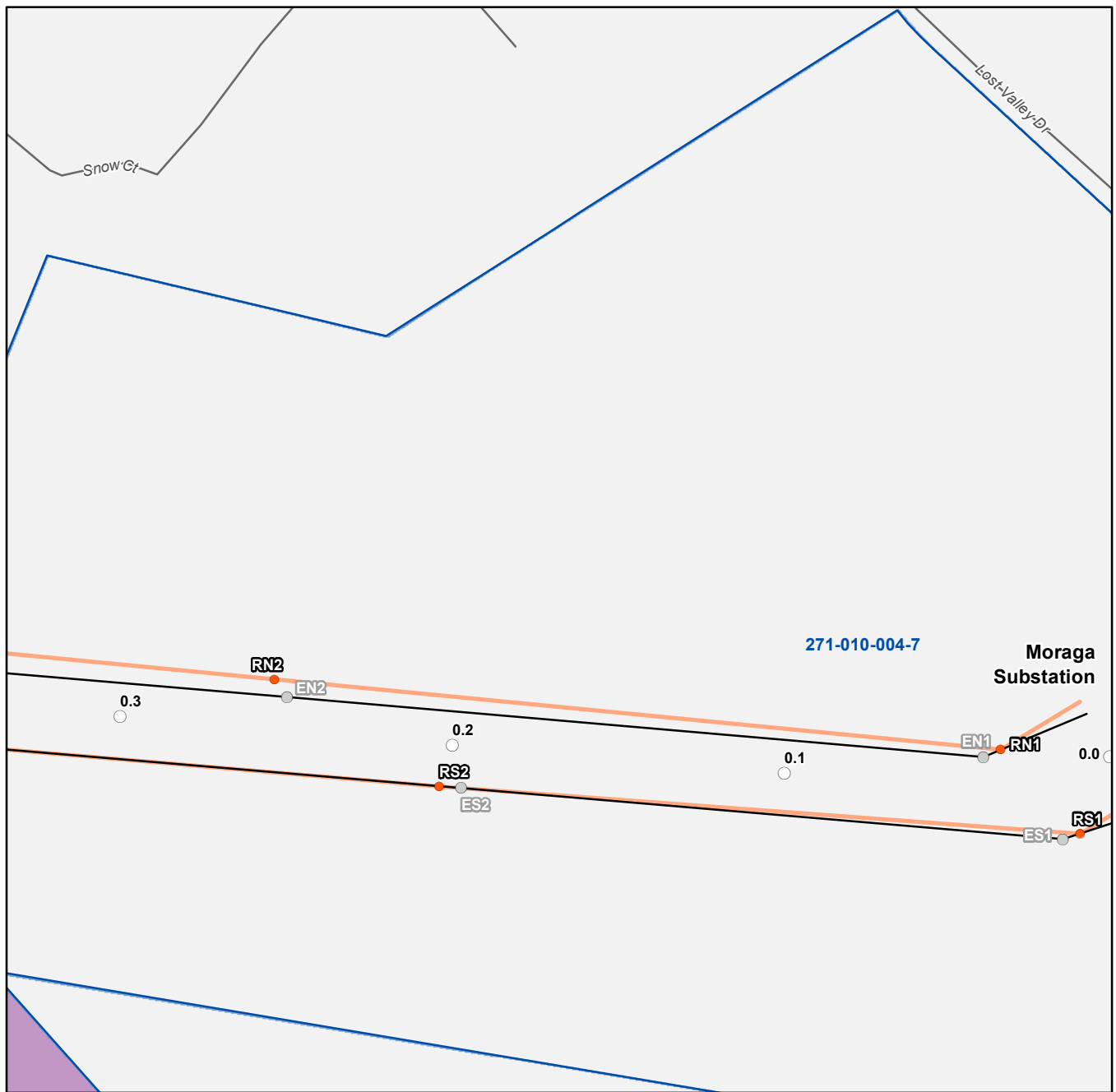


Figure 3.4-1 Page 1 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

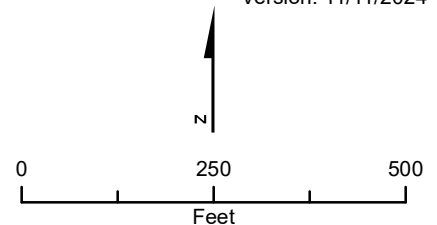
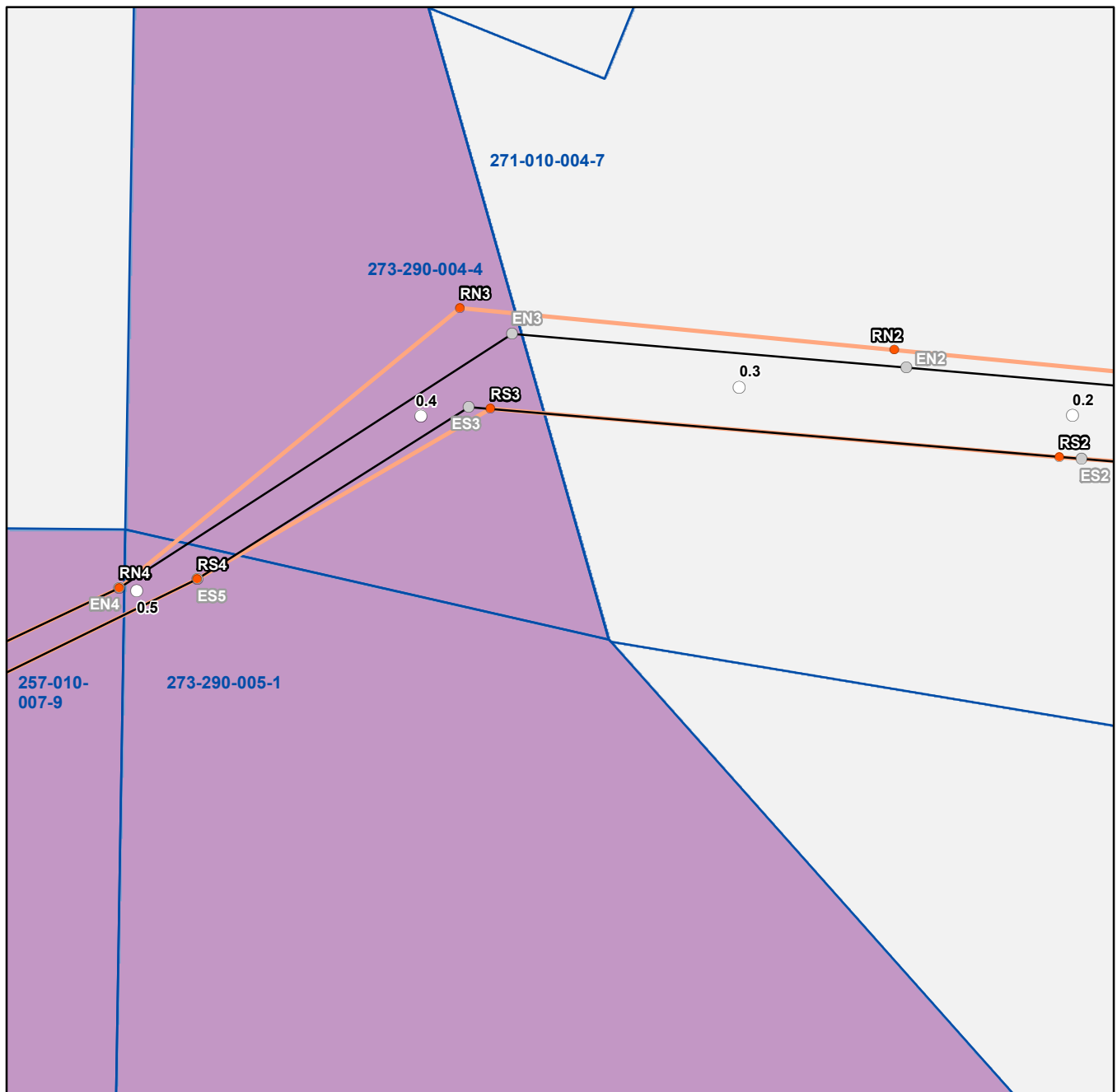


Figure 3.4-1 Page 2 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Legend

- | | |
|----------------------------|--|
| ○ Milepost | Parcel Status |
| Overhead Structures | Existing Easement Modification Anticipated |
| ● Existing | |
| ● Proposed | |
| Overhead Routes | |
| — Existing | |
| — Proposed | |
| Underground Routes | |
| — Proposed | |

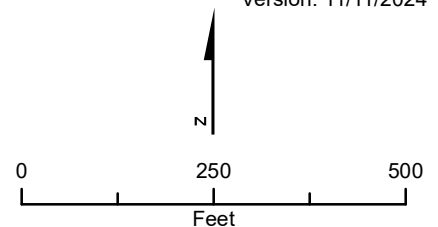
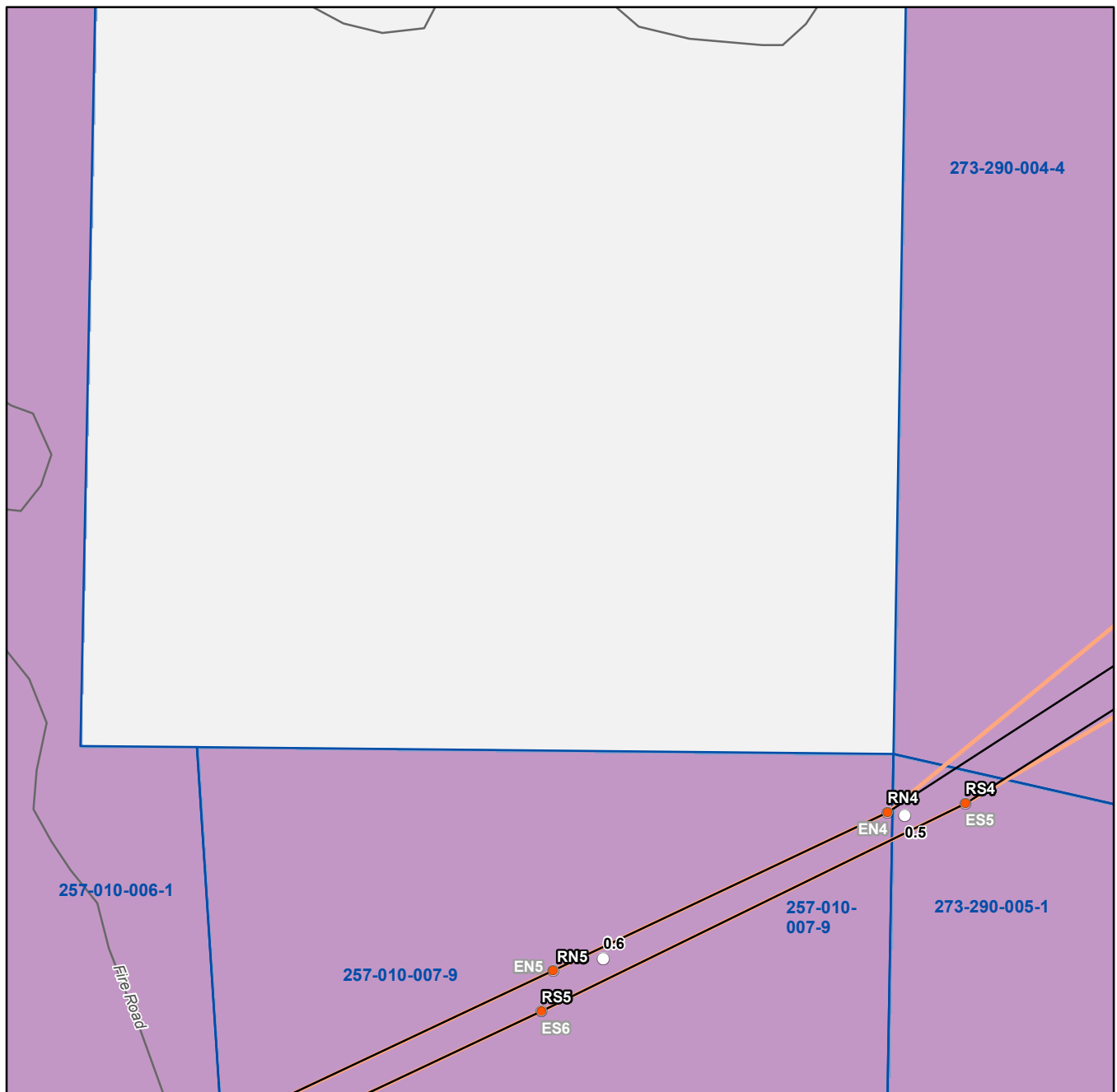


Figure 3.4-1 Page 3 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

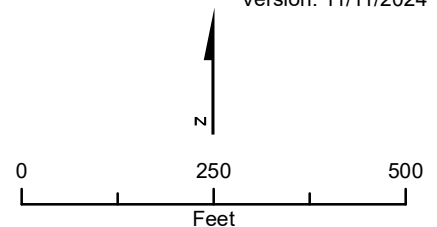
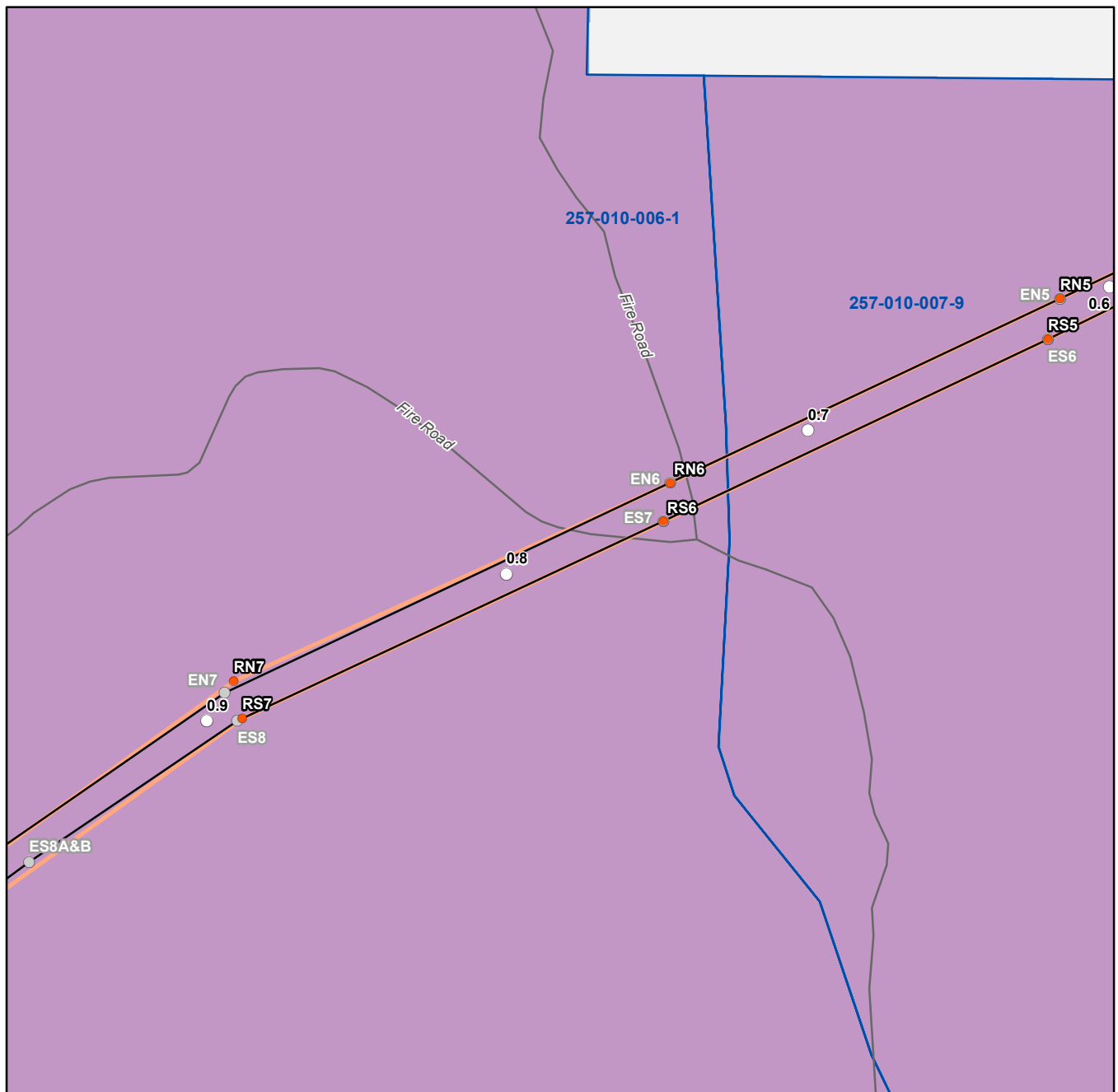


Figure 3.4-1 Page 4 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/11/2024

Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

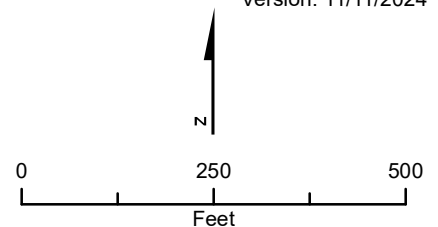


Figure 3.4-1 Page 5 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

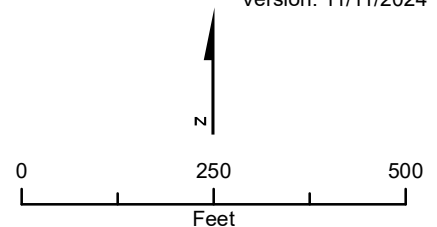
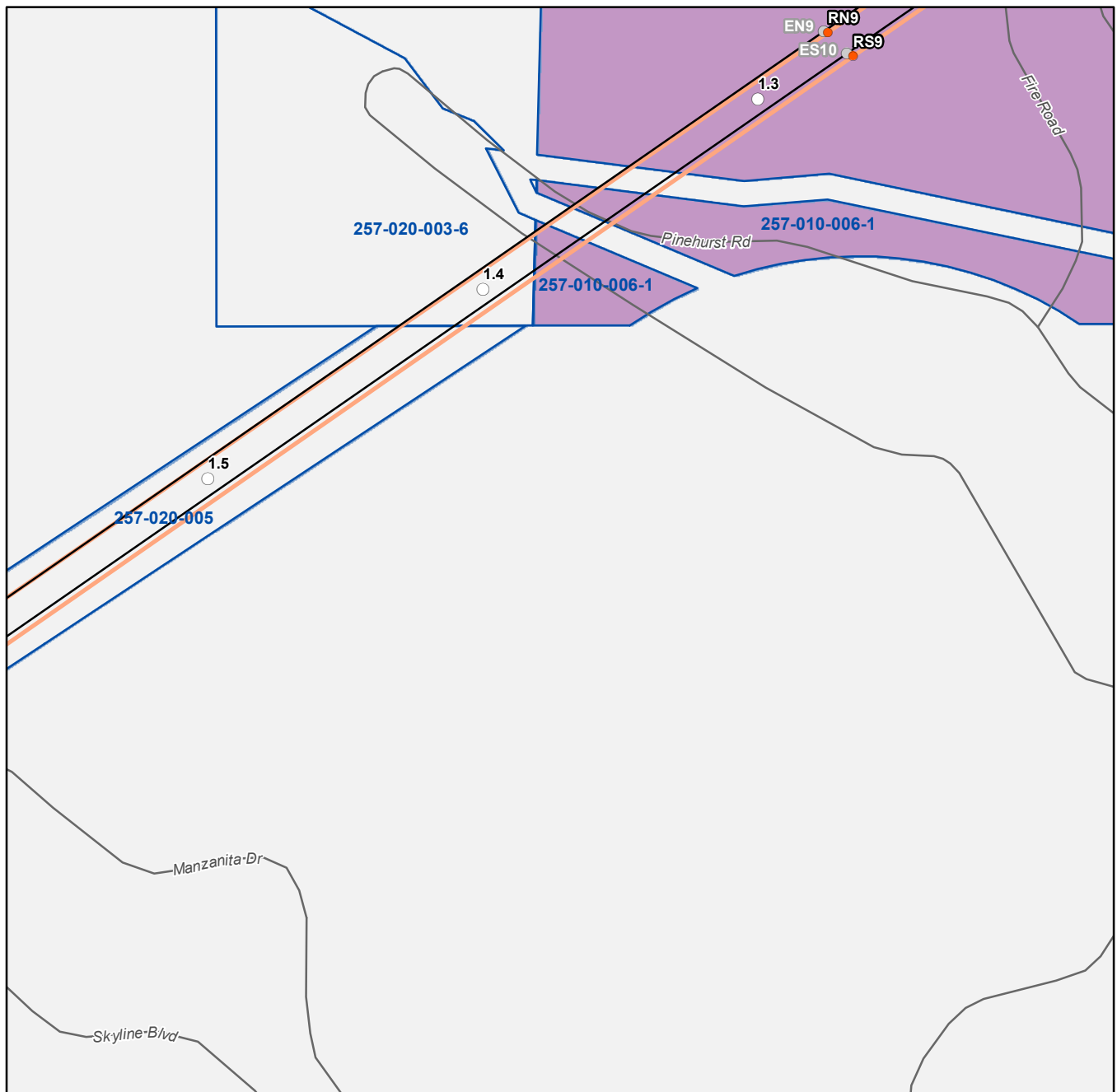


Figure 3.4-1 Page 6 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

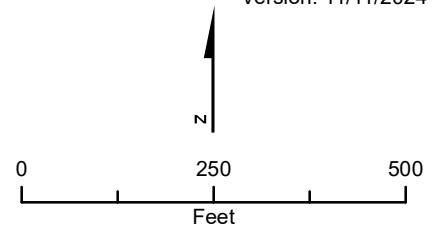
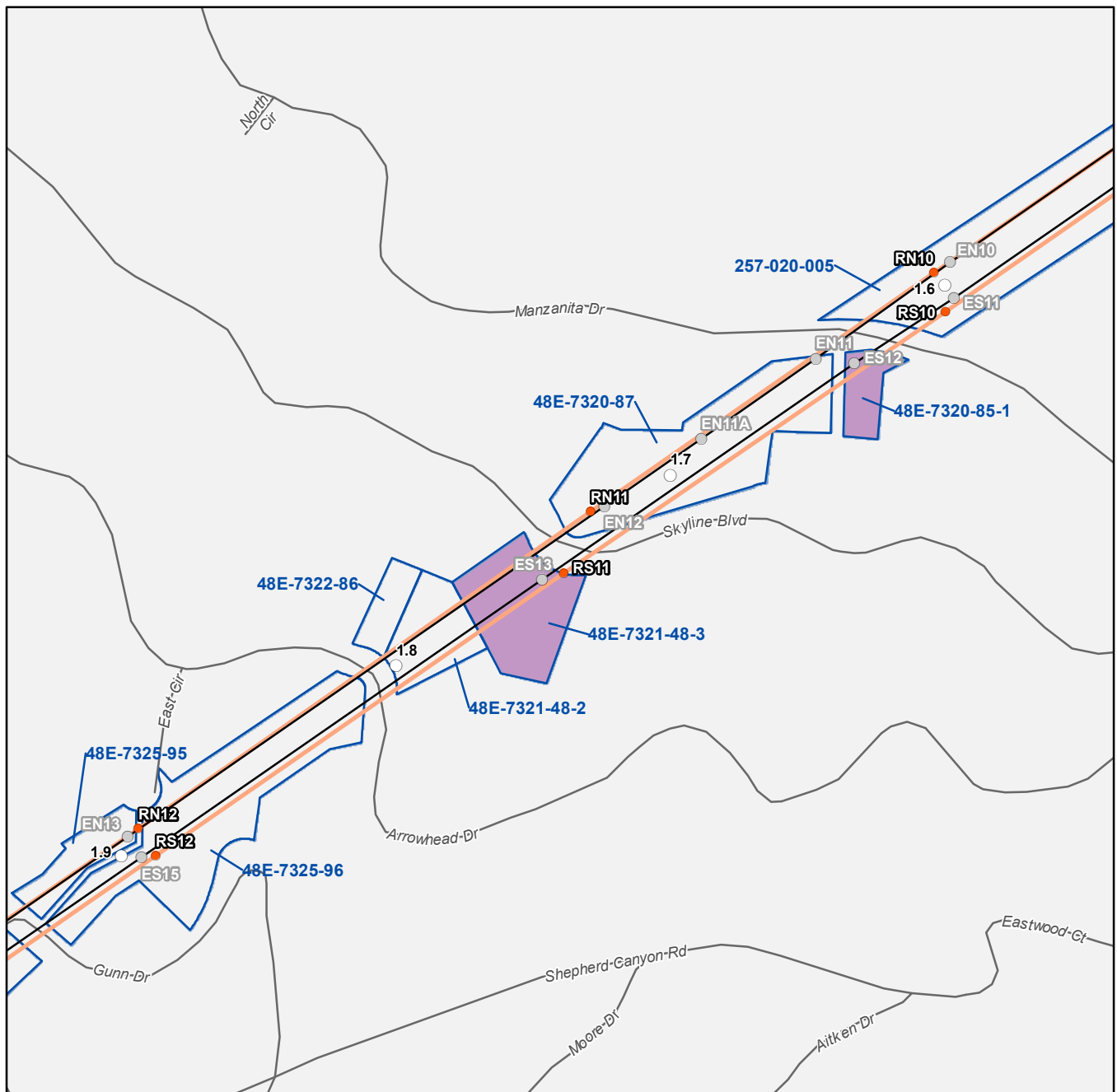


Figure 3.4-1 Page 7 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

Parcel Status

- Existing Easement Modification Anticipated

Version: 11/11/2024

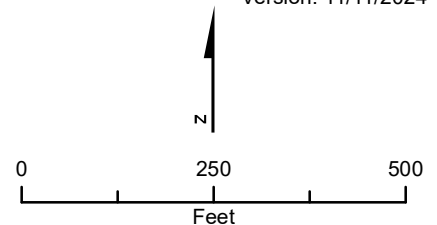
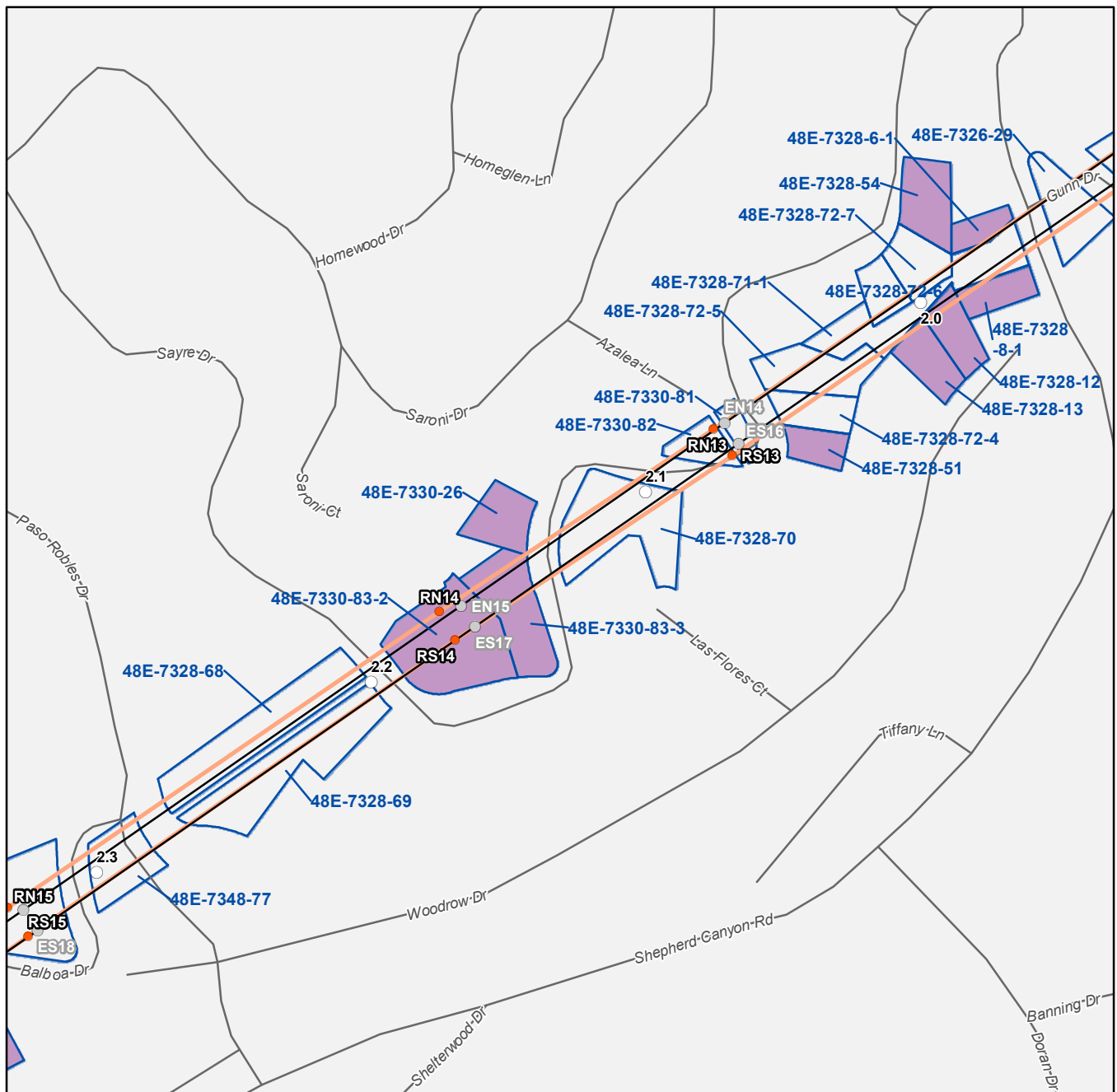


Figure 3.4-1 Page 8 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

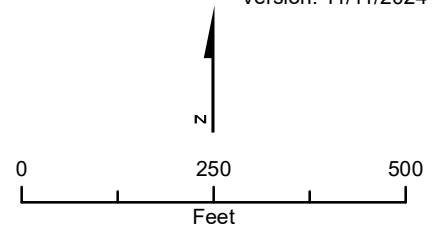
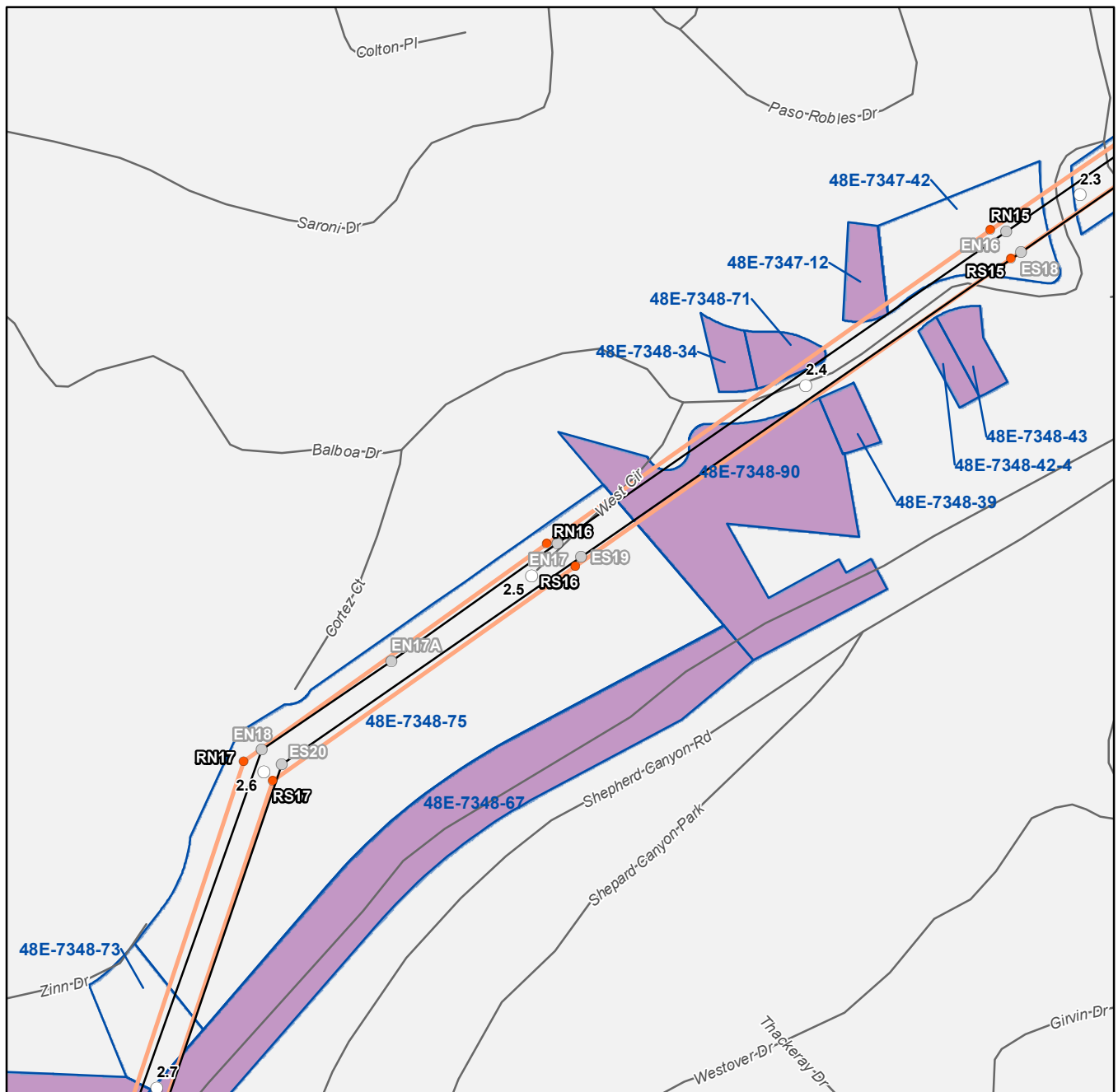


Figure 3.4-1 Page 9 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

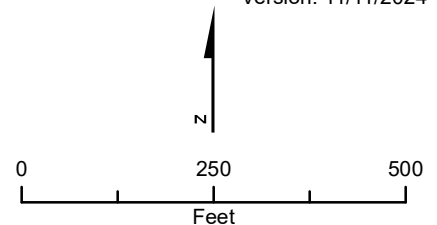
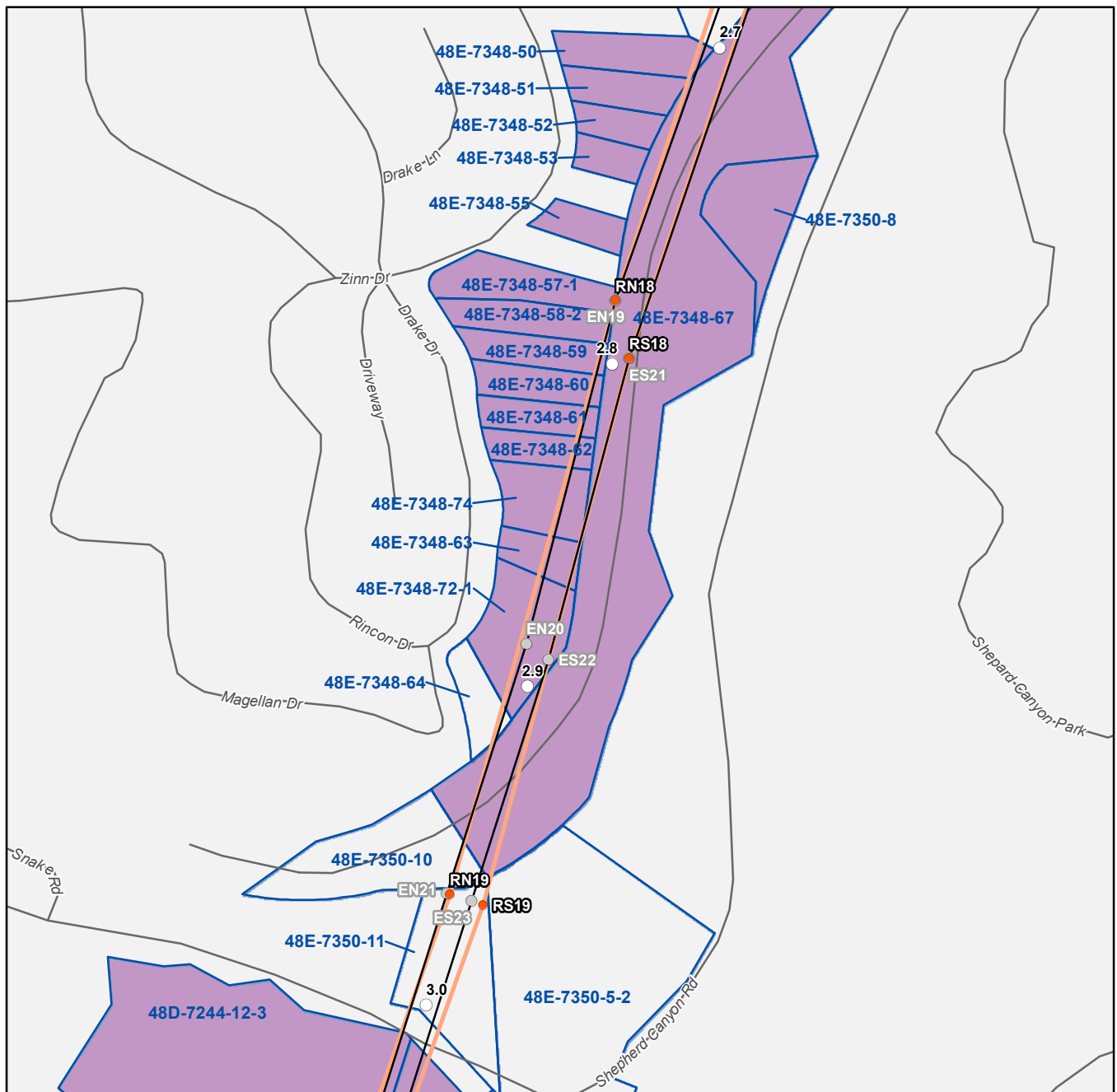


Figure 3.4-1 Page 10 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

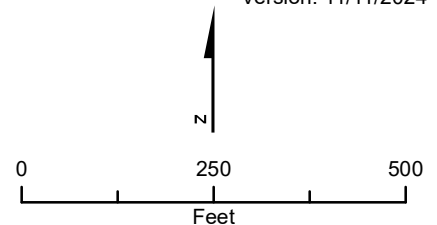
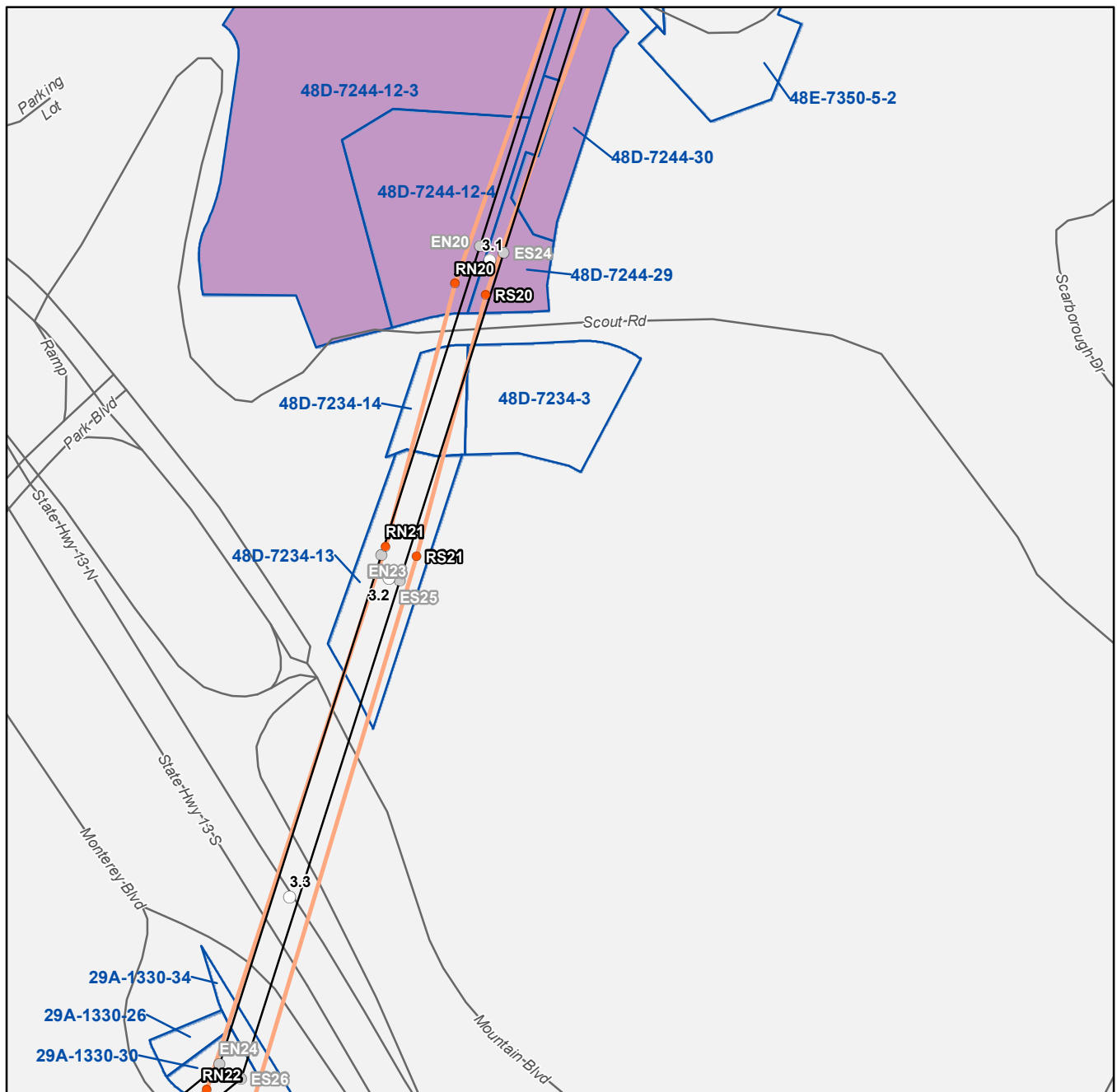


Figure 3.4-1 Page 11 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated

Version: 11/11/2024

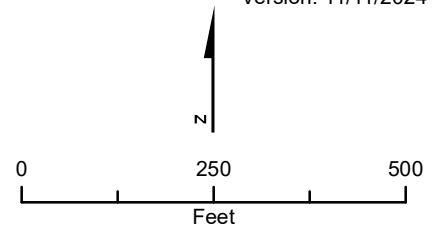
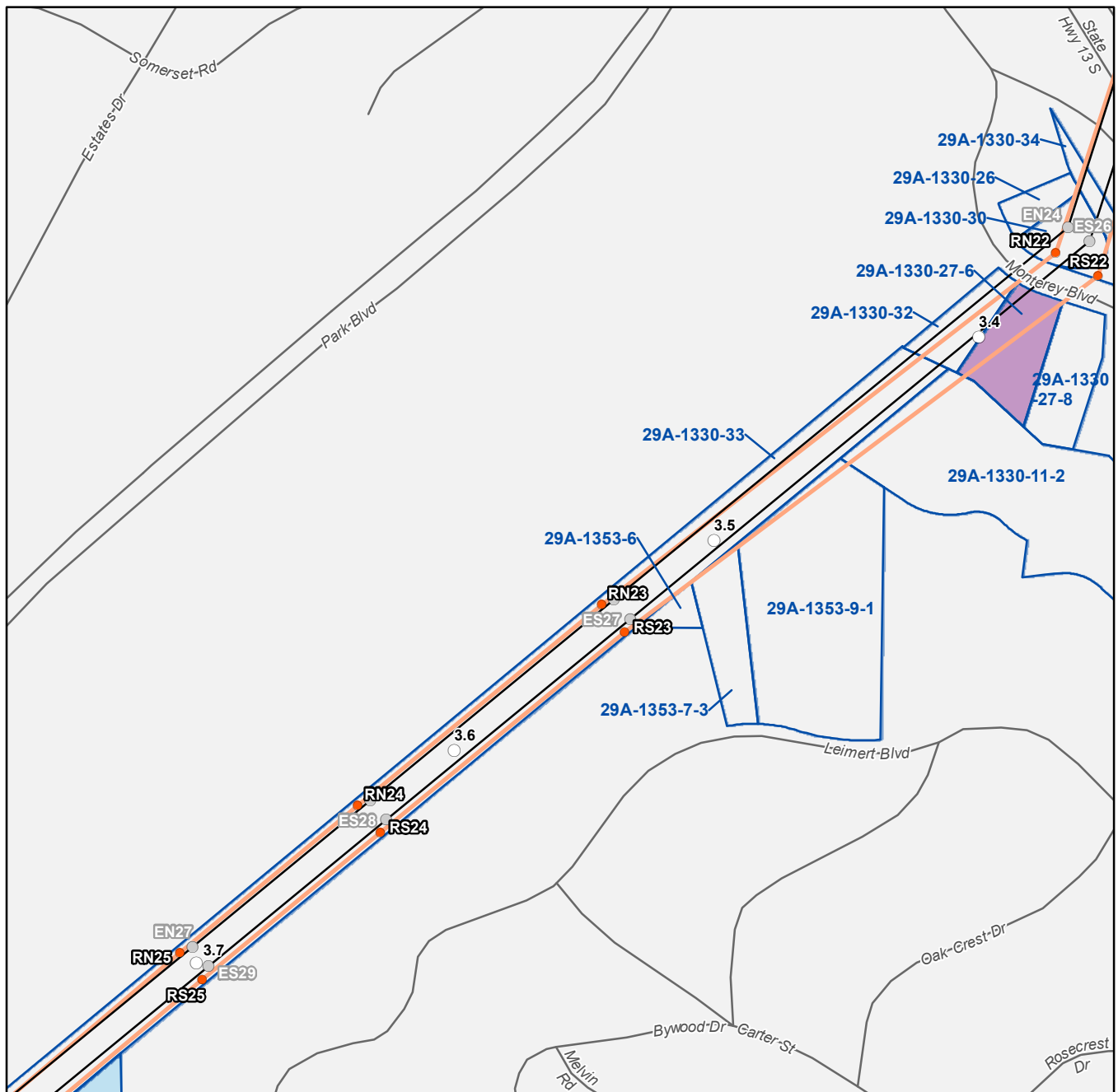


Figure 3.4-1 Page 12 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - Existing Easement Modification Anticipated
 - New Easement Anticipated

Version: 11/11/2024

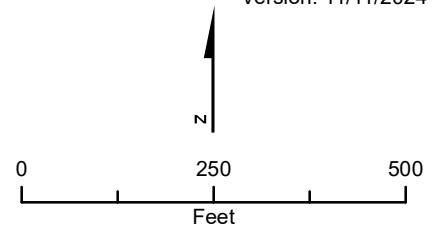
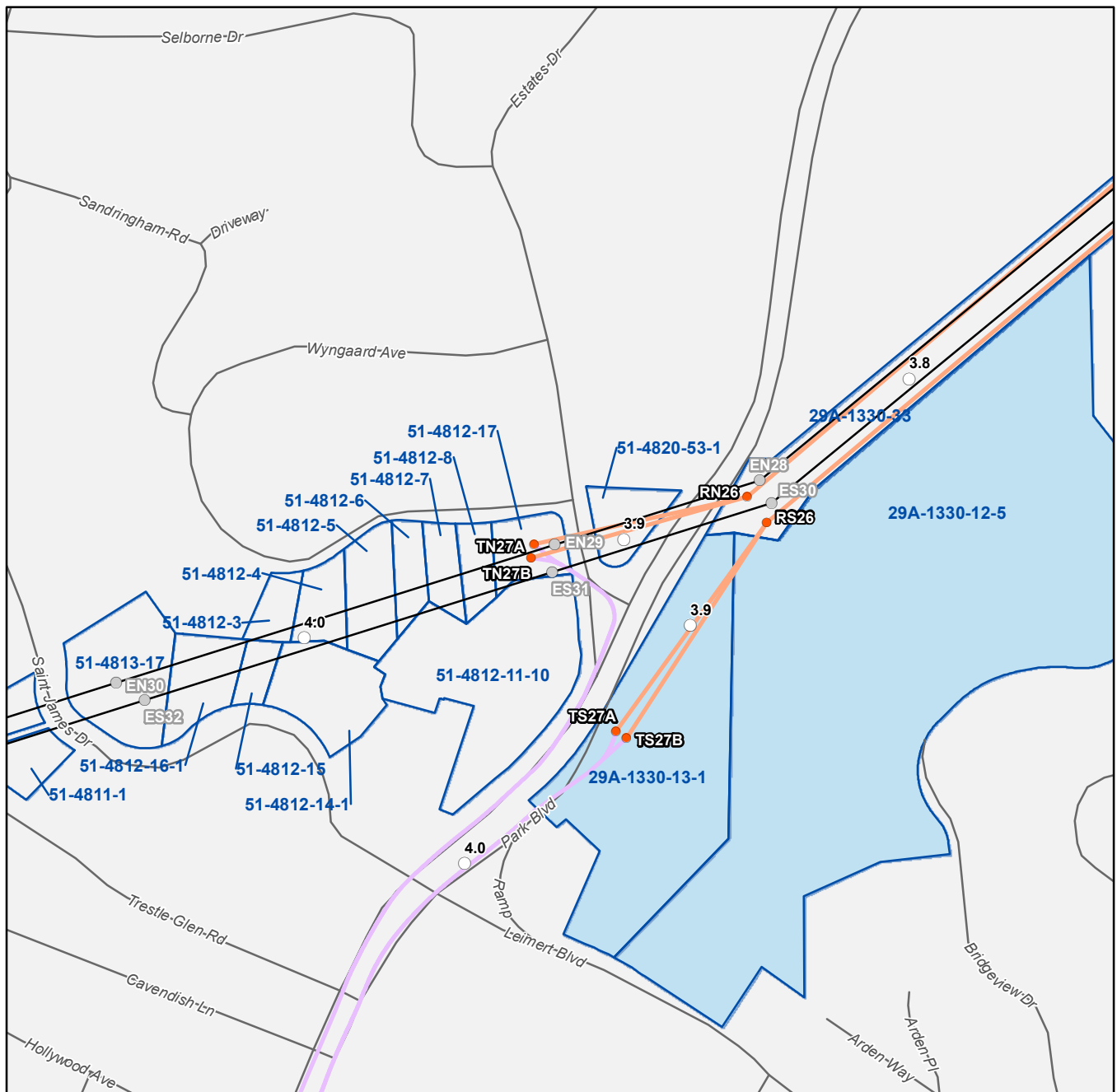


Figure 3.4-1 Page 13 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Parcel Status**
 - New Easement Anticipated

Version: 11/11/2024

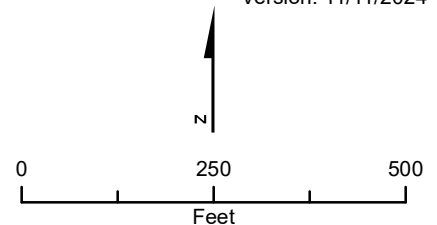
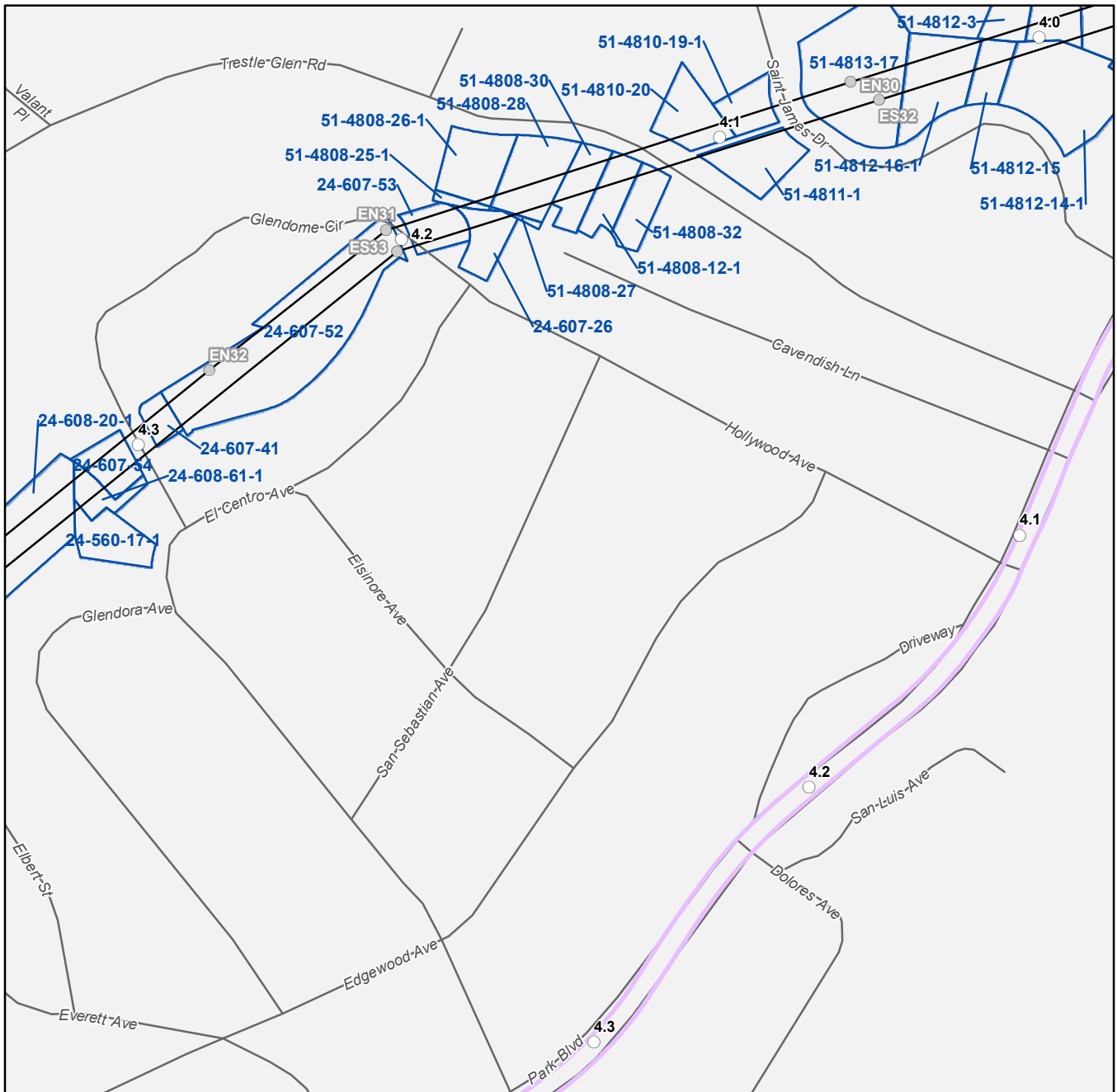


Figure 3.4-1 Page 14 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

Version: 11/11/2024

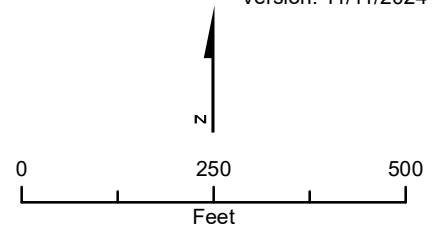
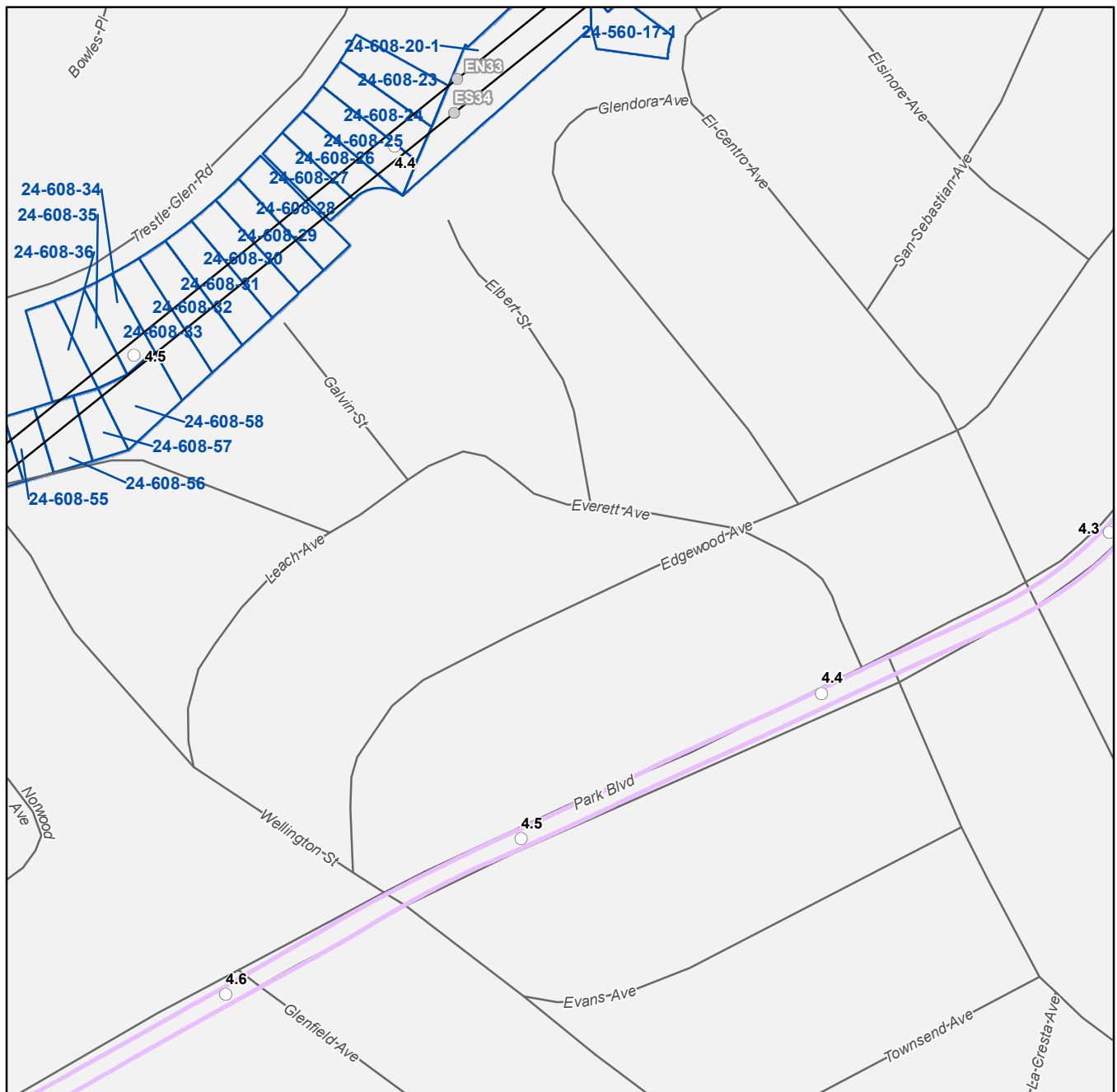


Figure 3.4-1 Page 15 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

\\dc1vs01\GISProj\IPGE\Moraga\31321AV_MOX\MapFiles\PEA\Figure_3.4-1_241109.mxd kgrant1 11/11/2024 9:00:24 PM



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

Version: 11/11/2024

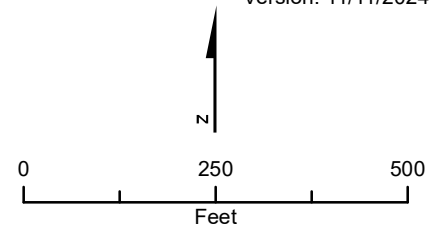
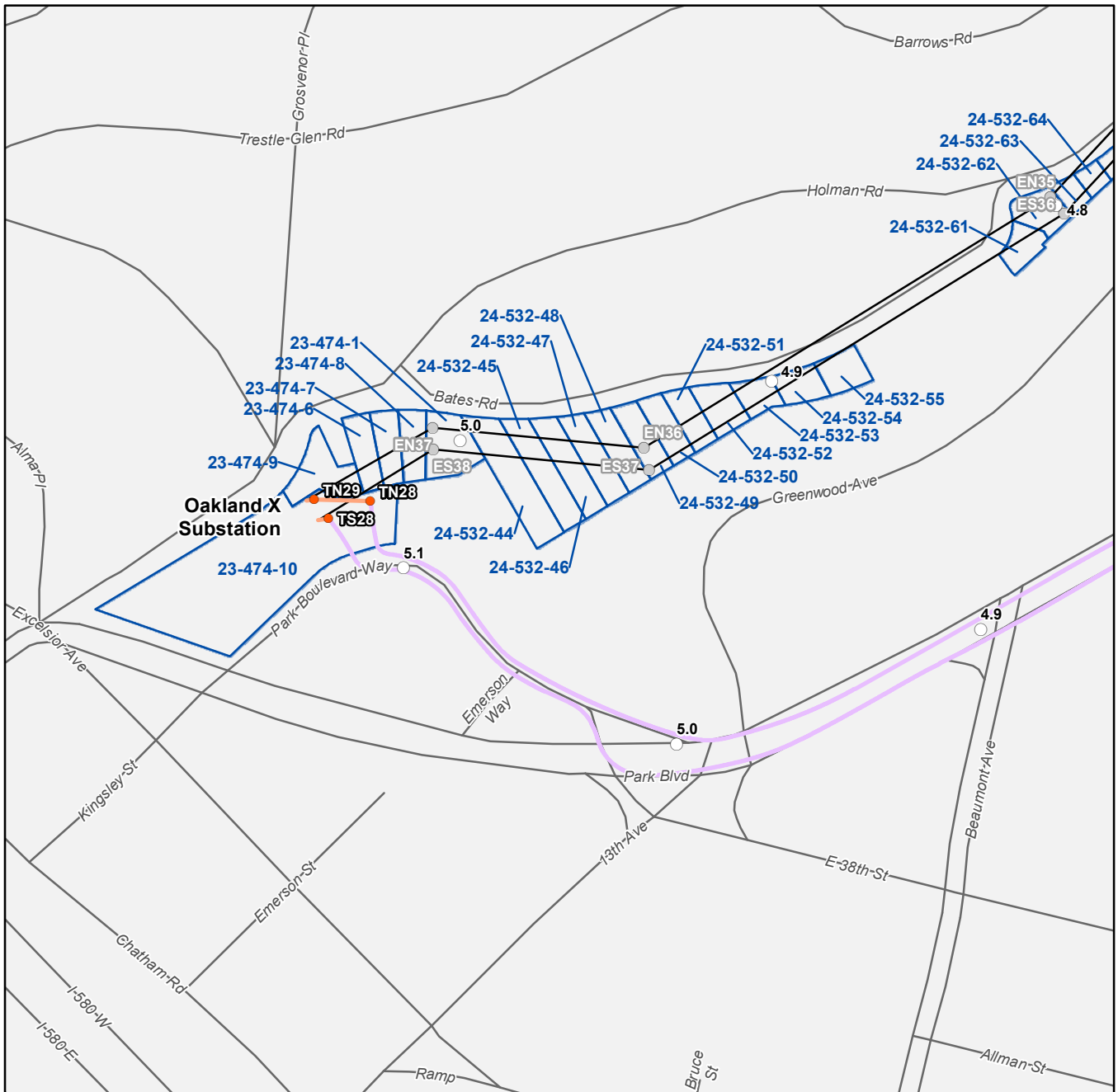


Figure 3.4-1 Page 16 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

Version: 11/11/2024

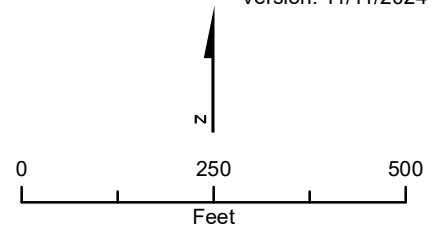
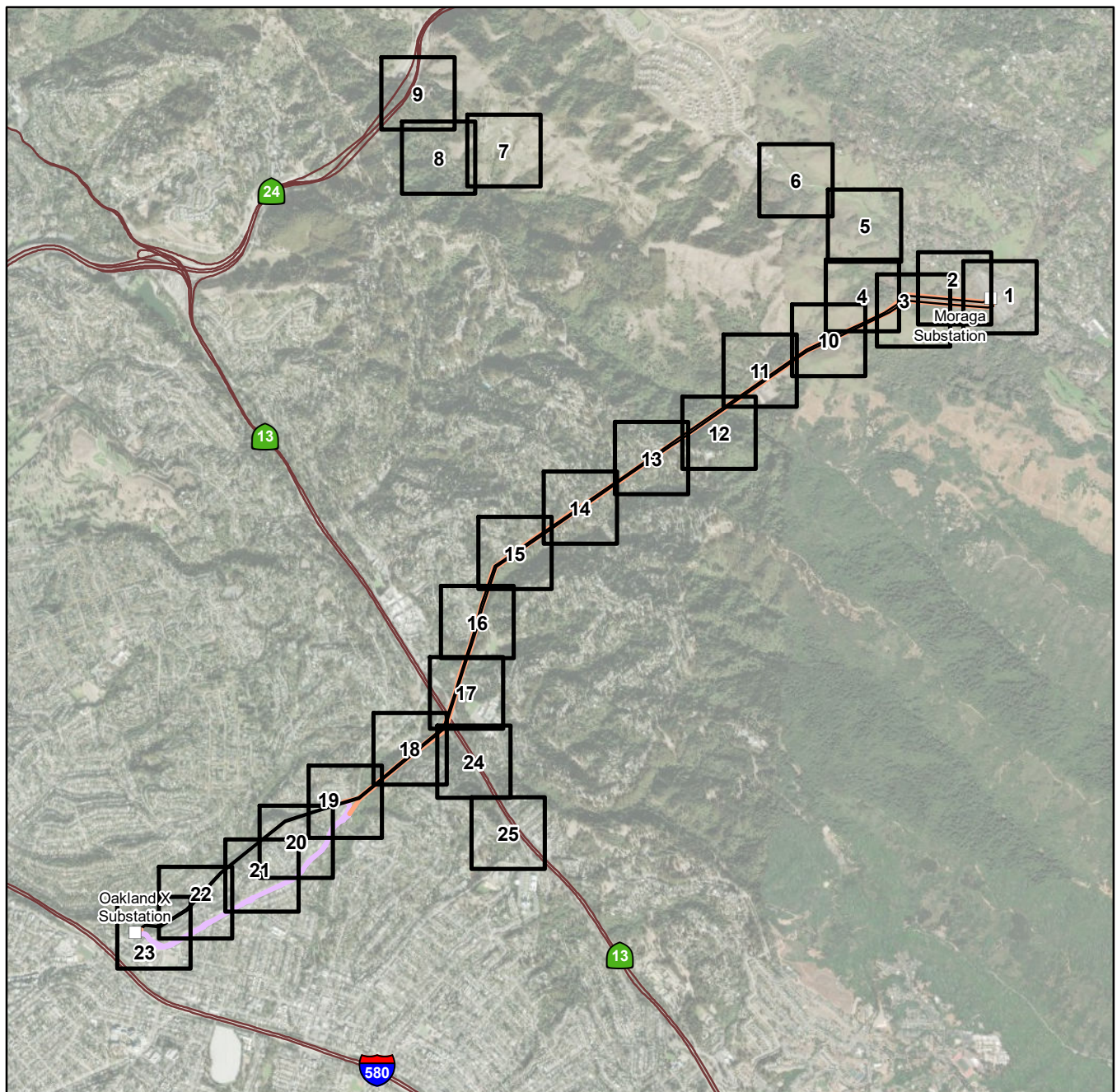


Figure 3.4-1 Page 18 of 18
Existing Alignment with Anticipated
New or Modified Easements
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 4/23/2024

Legend

- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

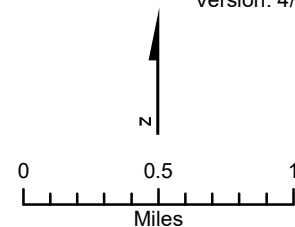
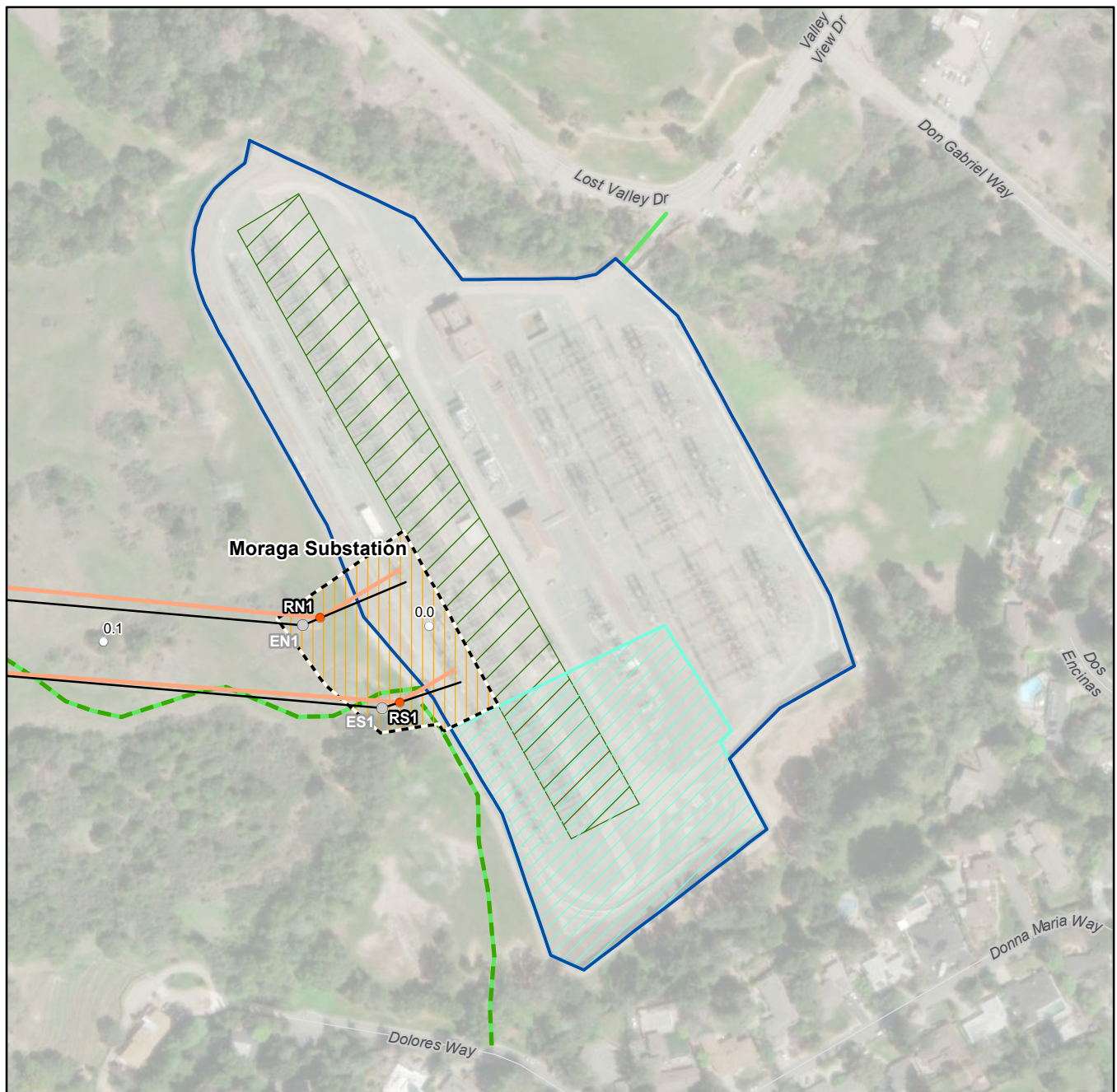


Figure 3.5-1
Proposed Project - Overview
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Improvement

Temporary Work Areas

- ▨ Moraga Substation 115 kV Breaker Work Area
- ▨ Staging Area
- ▨ Substation Work Area
- ▨ Tension Pull Site
- ▨ Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

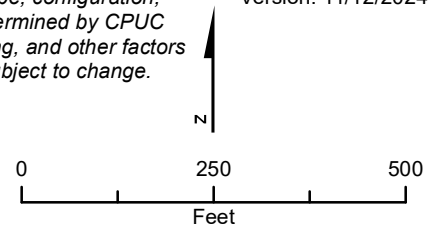
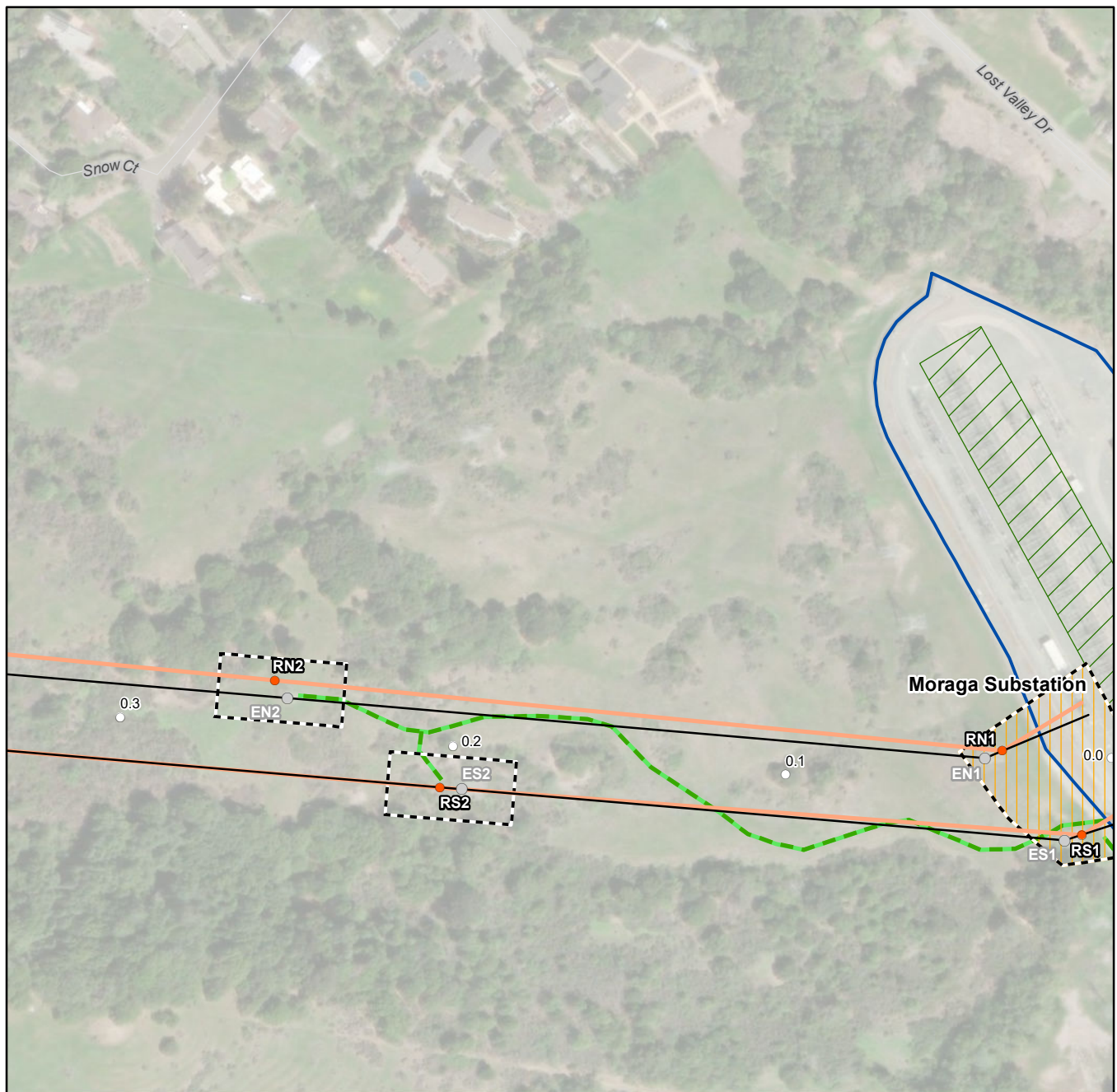


Figure 3.5-1 Page 1 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Improvement
- Temporary Work Areas**
 - ▨ Moraga Substation 115 kV Breaker Work Area
 - ▭ Substation Work Area
 - ▨ Tension Pull Site
 - ▭ Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

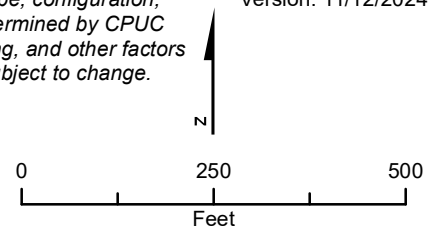
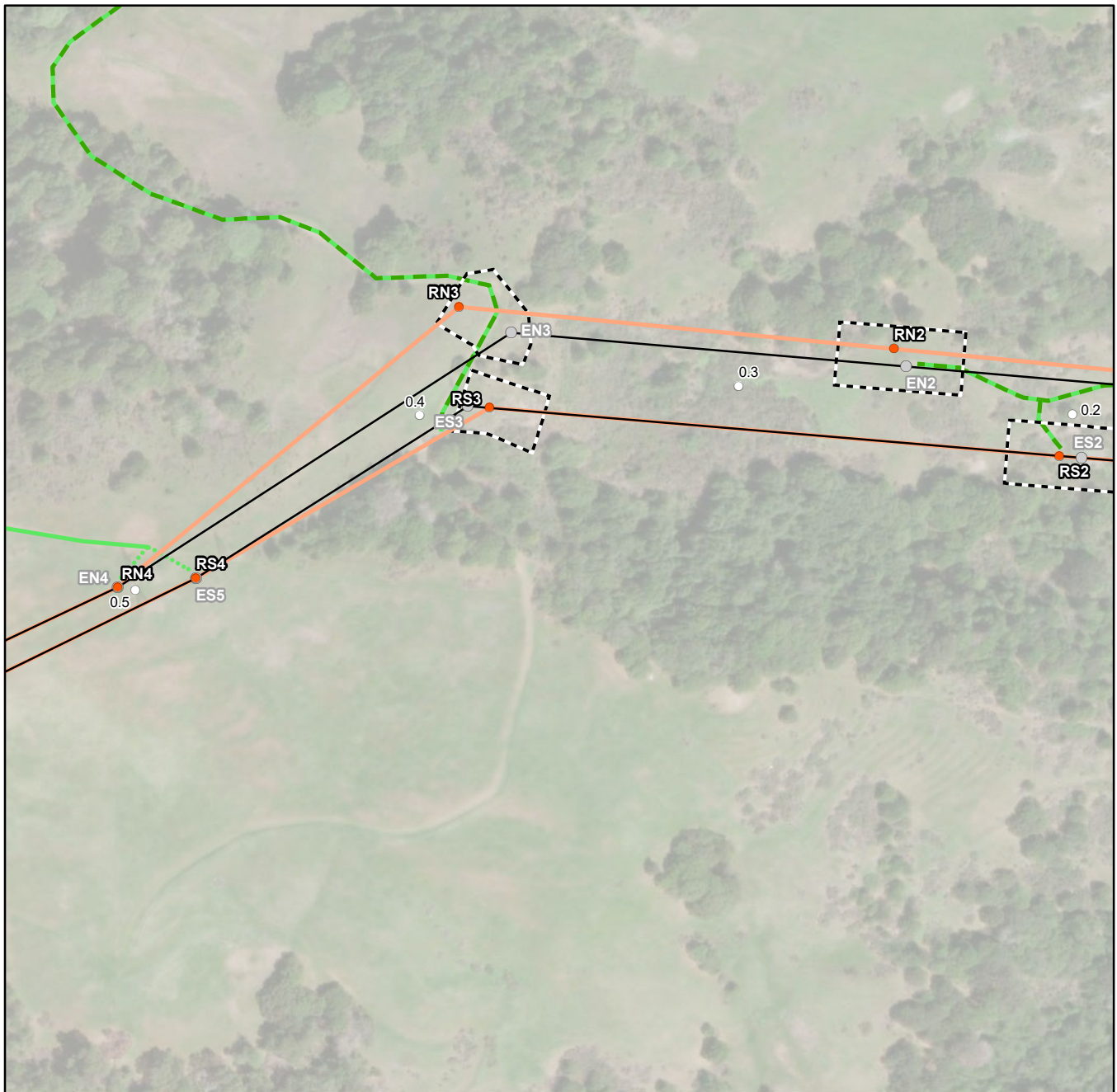


Figure 3.5-1 Page 2 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

- Access**
 - Existing
 - Improvement
 - ... Walk-In
- Temporary Work Areas**
 - Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

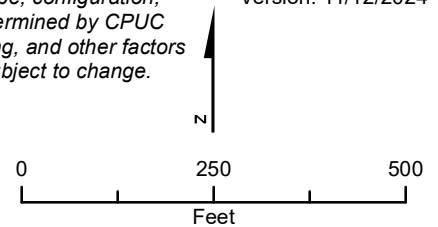
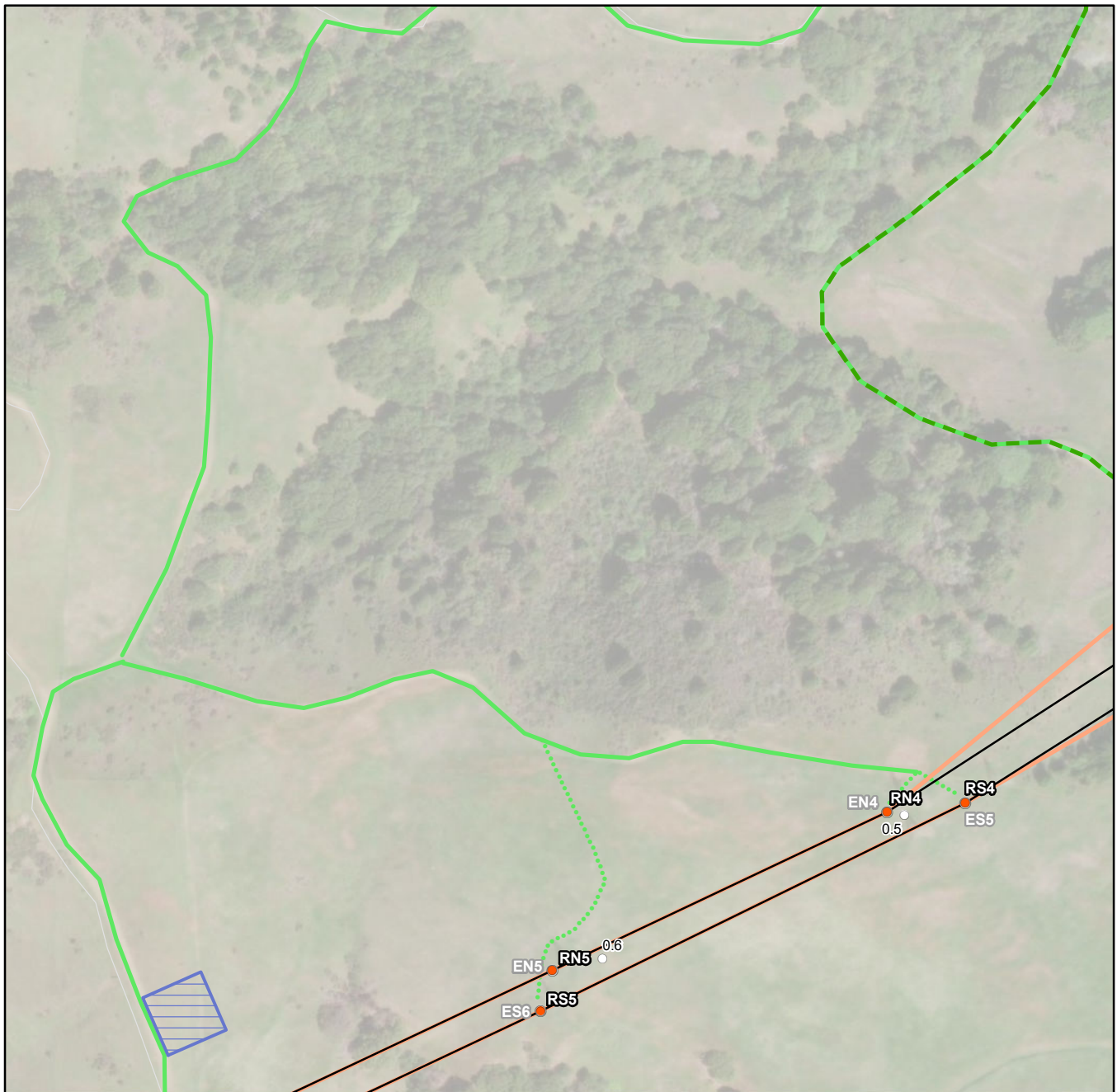


Figure 3.5-1 Page 3 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Improvement
- ... Walk-In

Temporary Work Areas

- ▭ Landing Zone/ Staging Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

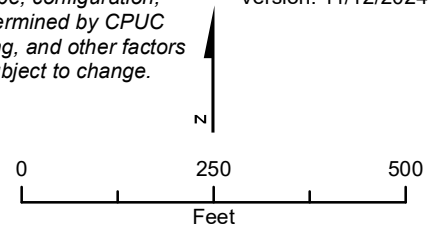


Figure 3.5-1 Page 4 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Improvement

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

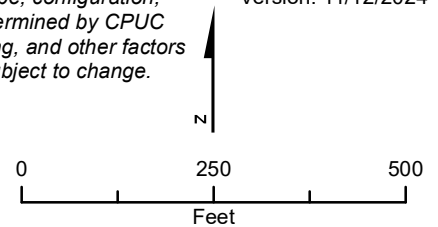


Figure 3.5-1 Page 5 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing

Temporary Work Areas

- ▨ Landing Zone/ Staging Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

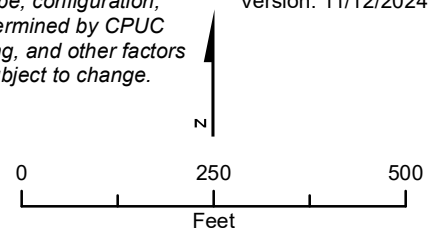
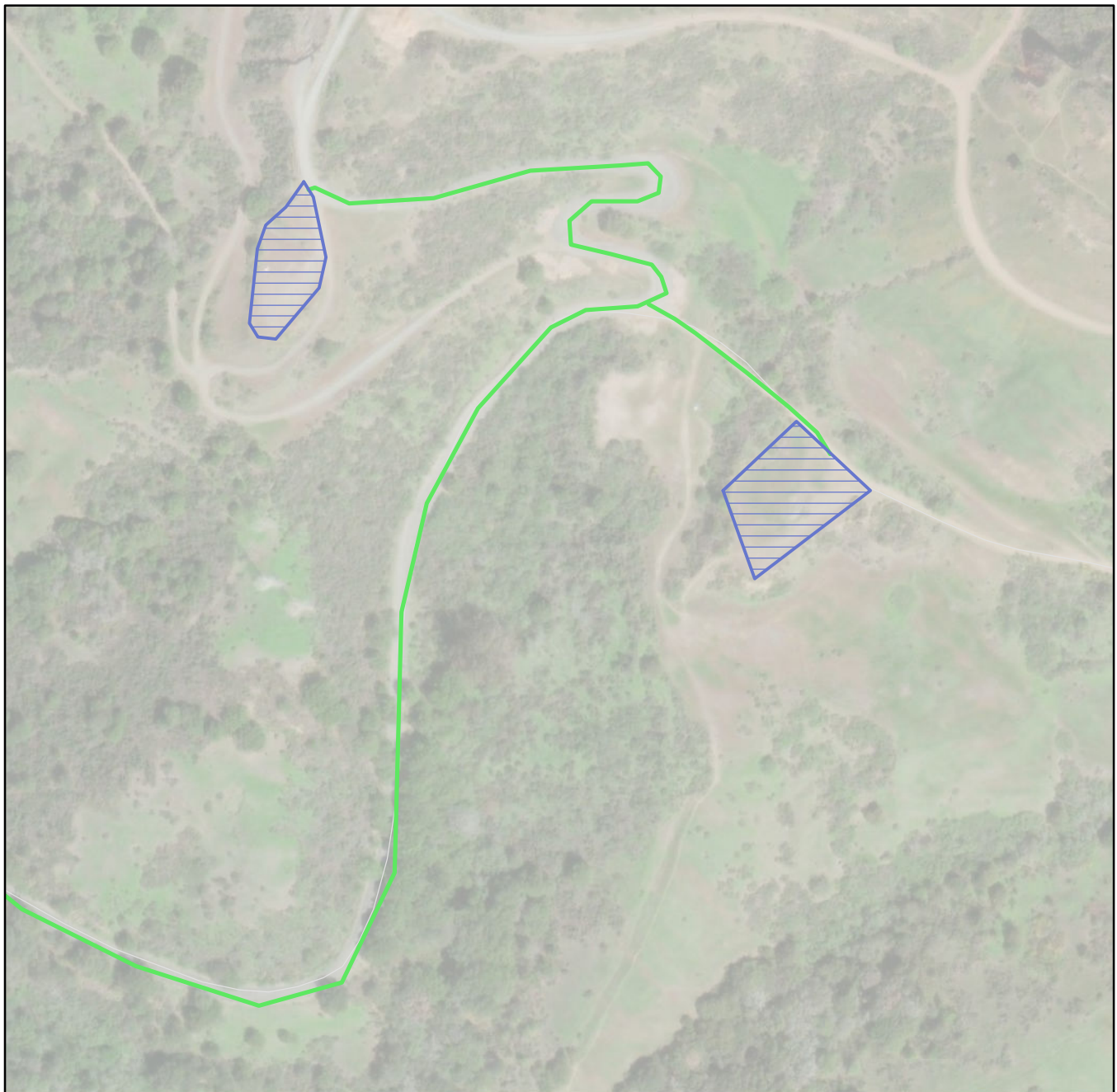


Figure 3.5-1 Page 6 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

○ Milepost

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes

- Proposed

Access

- Existing

Temporary Work Areas

- ▨ Landing Zone/ Staging Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

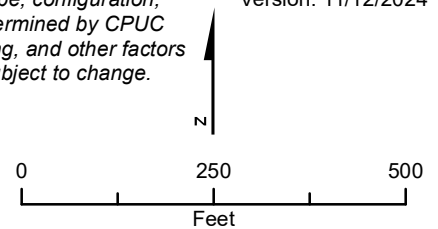


Figure 3.5-1 Page 7 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes

- Proposed

Access

- Existing

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

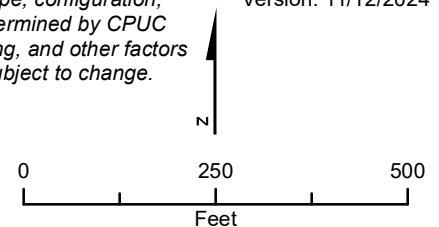


Figure 3.5-1 Page 8 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

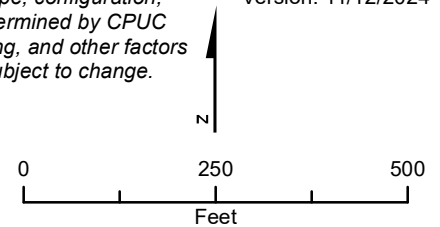
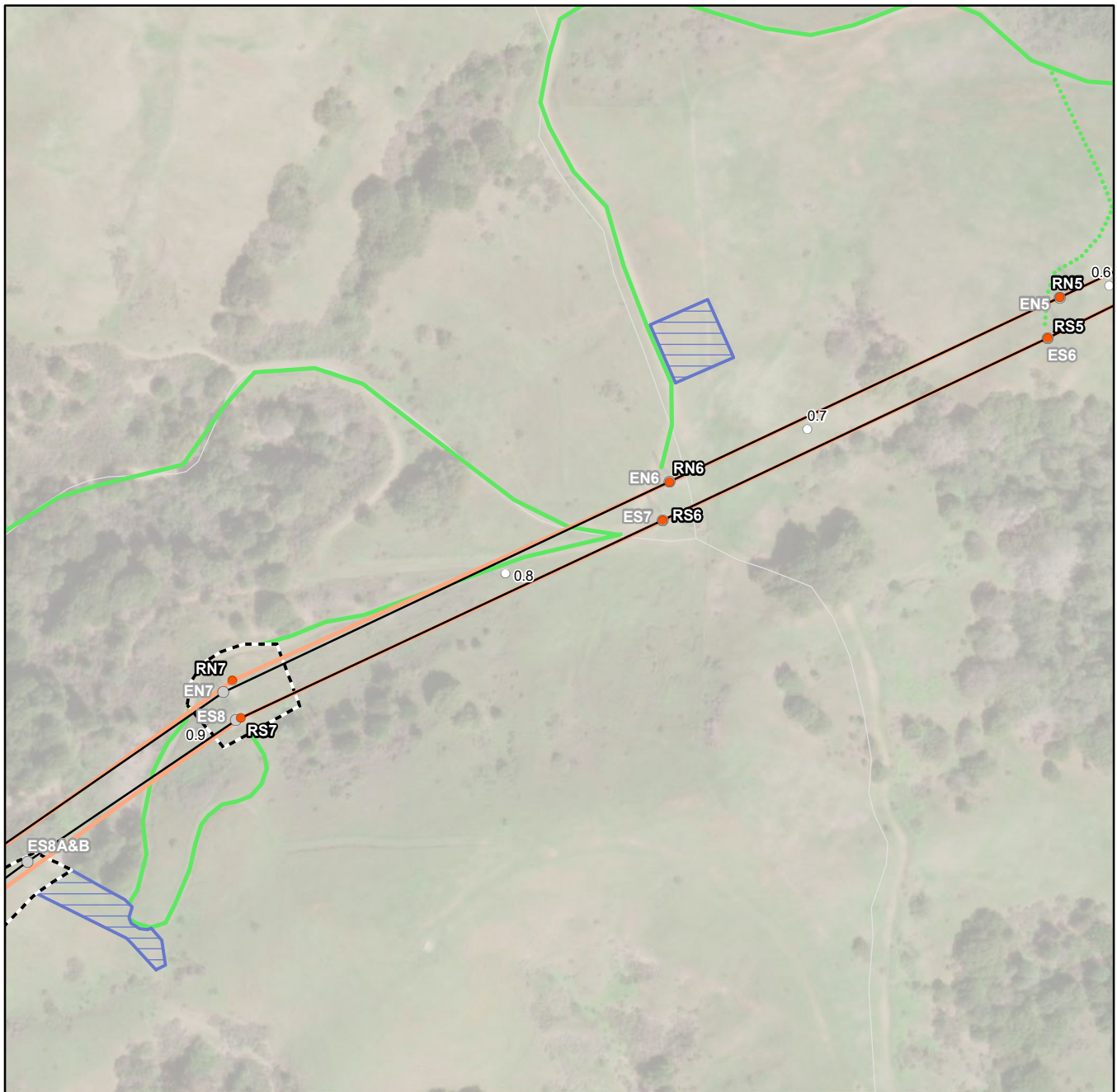


Figure 3.5-1 Page 9 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Walk-In

Temporary Work Areas

- Landing Zone/ Staging Area
- Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

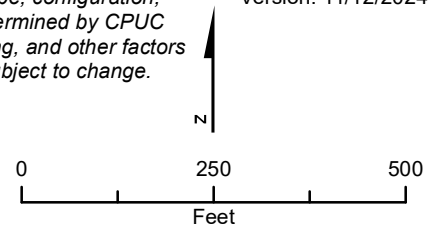
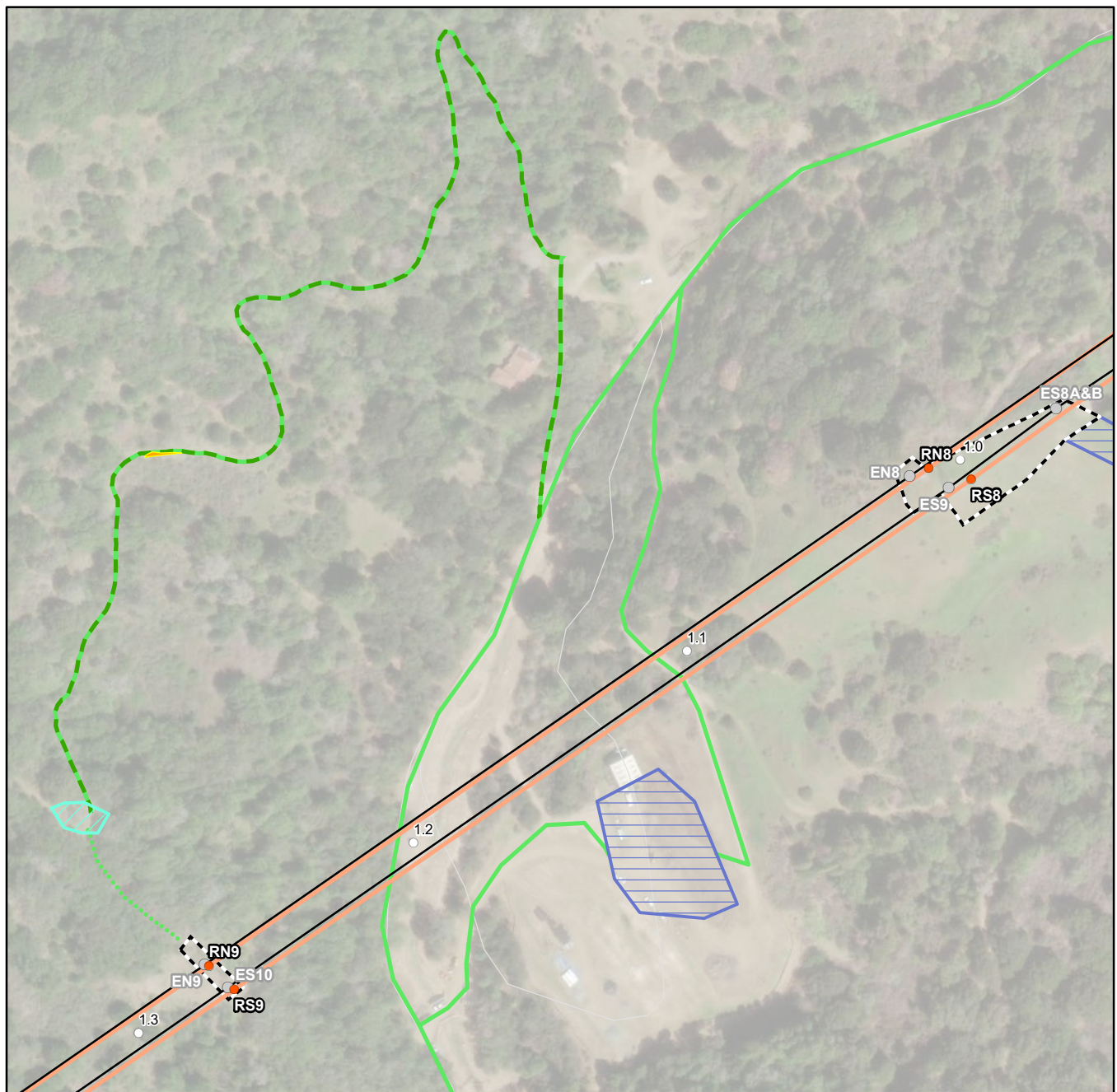


Figure 3.5-1 Page 10 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Improvement
- ... Walk-In

Temporary Work Areas

- ▭ Landing Zone/ Staging Area
- ▭ Road Repair
- ▭ Staging Area
- ▭ Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

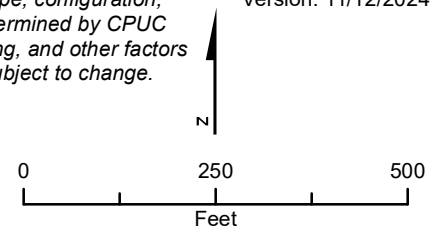


Figure 3.5-1 Page 11 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Temporary Work Areas**
 - ▨ Staging Area
 - ▤ Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

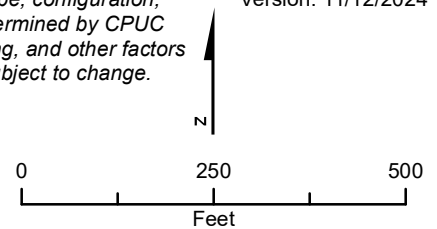
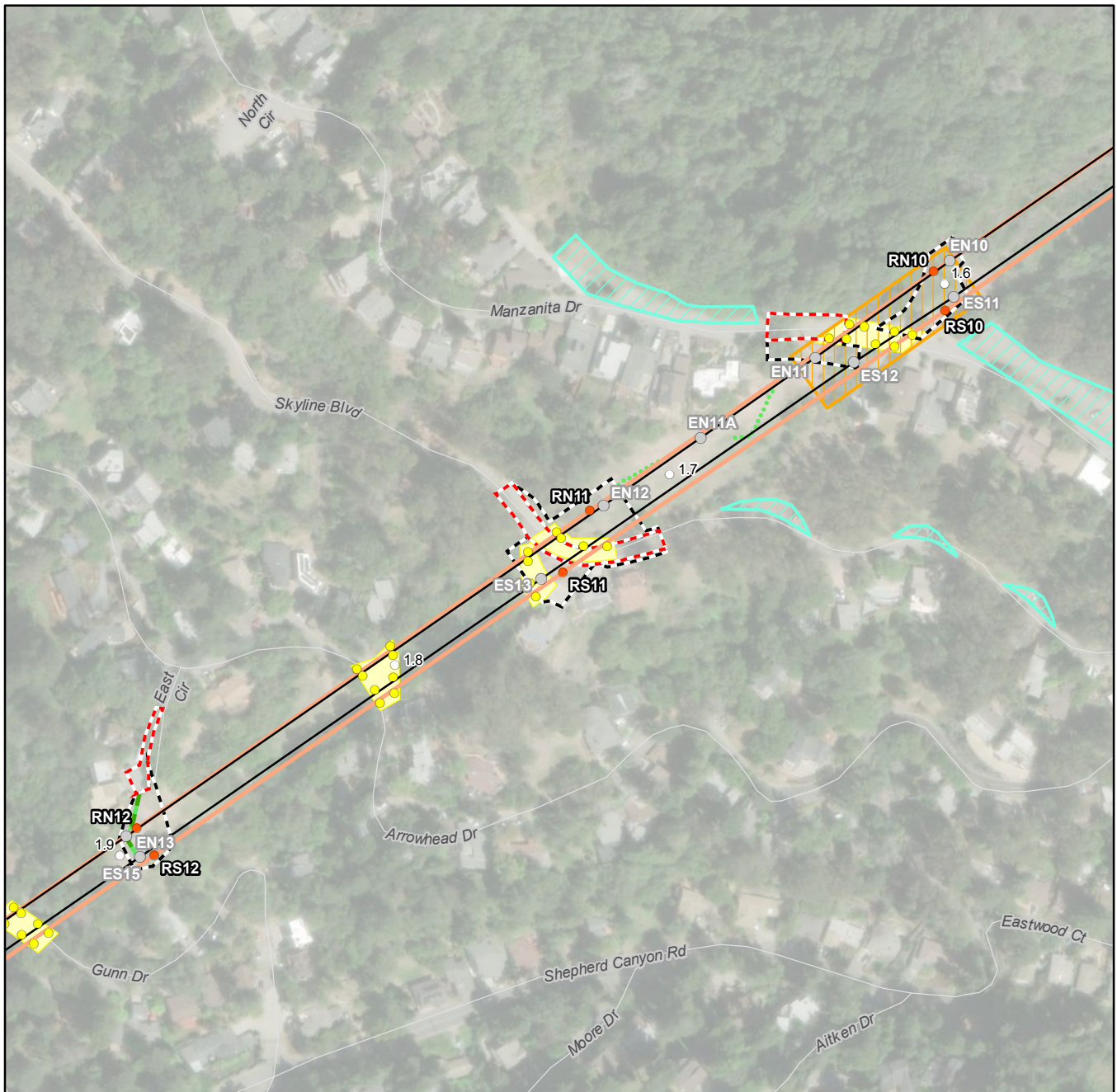


Figure 3.5-1 Page 12 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed
- Access**
 - Improvement
 - Walk-In
- Temporary Work Areas**
 - Guard Poles
 - Staging Area
 - Tension Pull Site
 - Work Area
 - Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

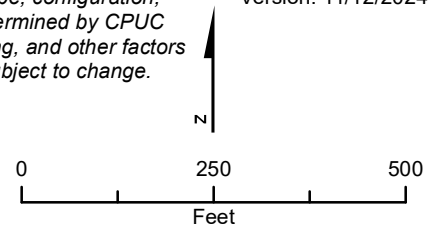
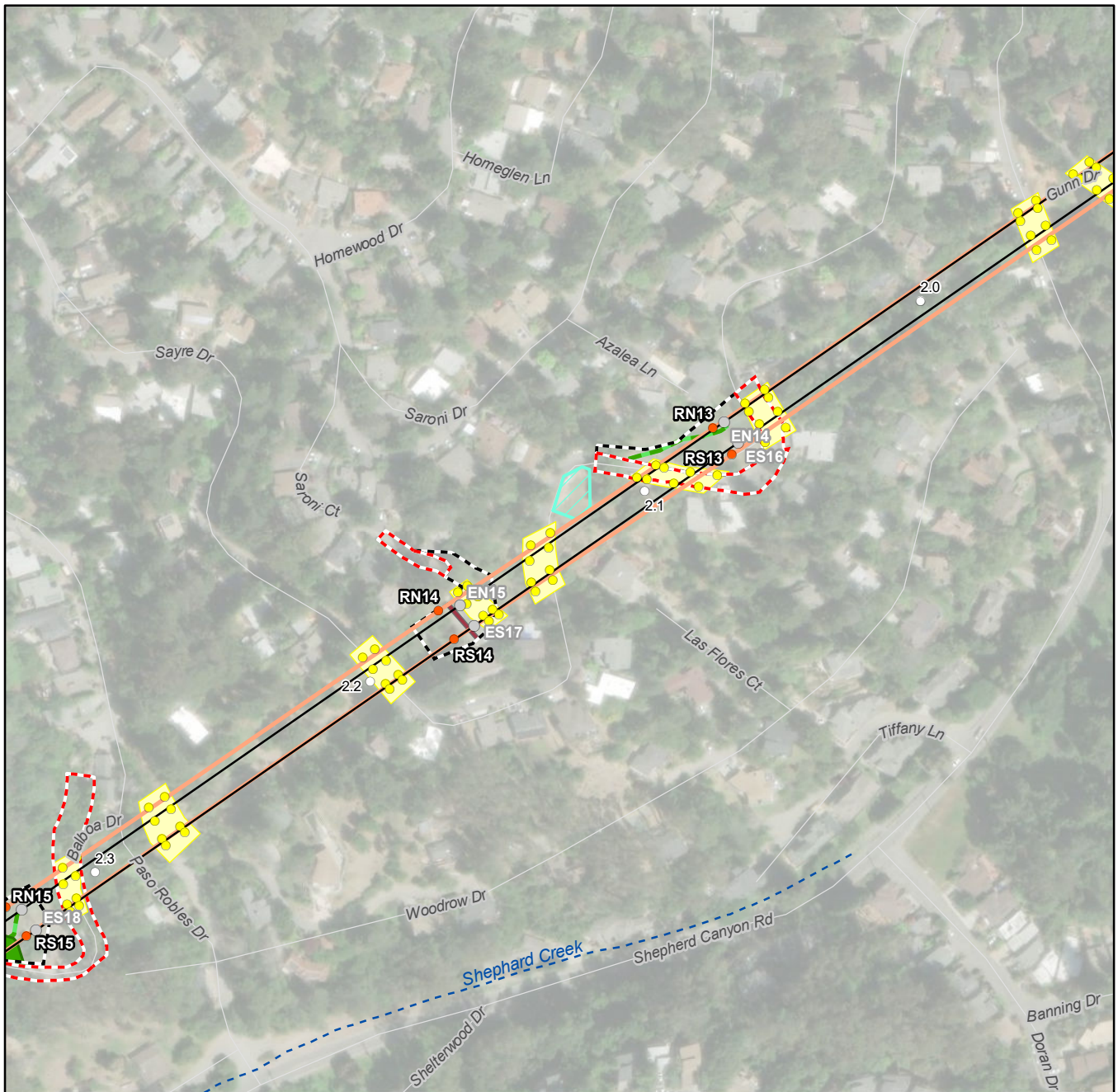


Figure 3.5-1 Page 13 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Improvement
- Temporary Work Areas**
 - Fence Removal/Replacement
 - Guard Poles
 - Staging Area
 - Work Area
 - Work Area, Temporary Closure
 - Veg Work/Tree Removal

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

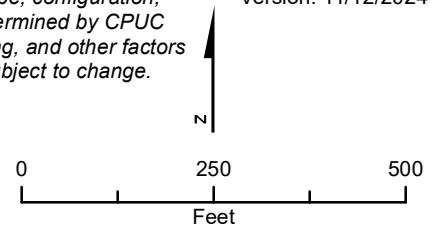
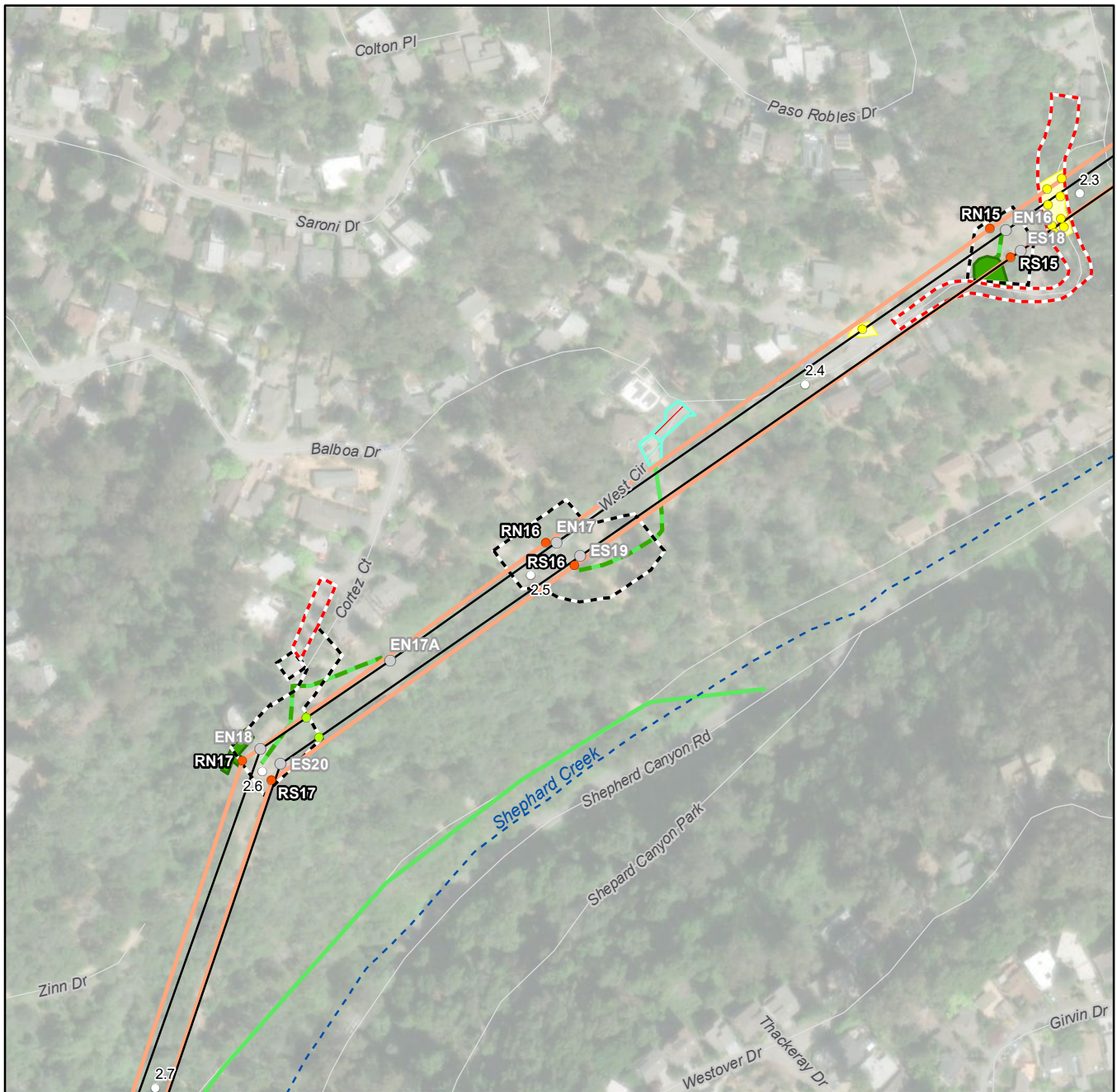


Figure 3.5-1 Page 14 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Improvement

Temporary Work Areas

- Guard Poles
- Staging Area
- Staging Area, Temporary Closure
- Work Area
- Work Area, Temporary Closure
- Veg Work/Tree Removal

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

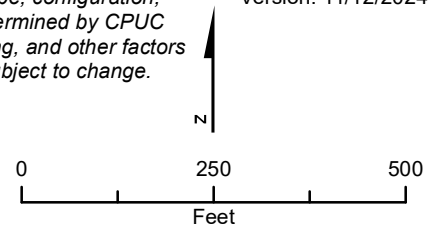
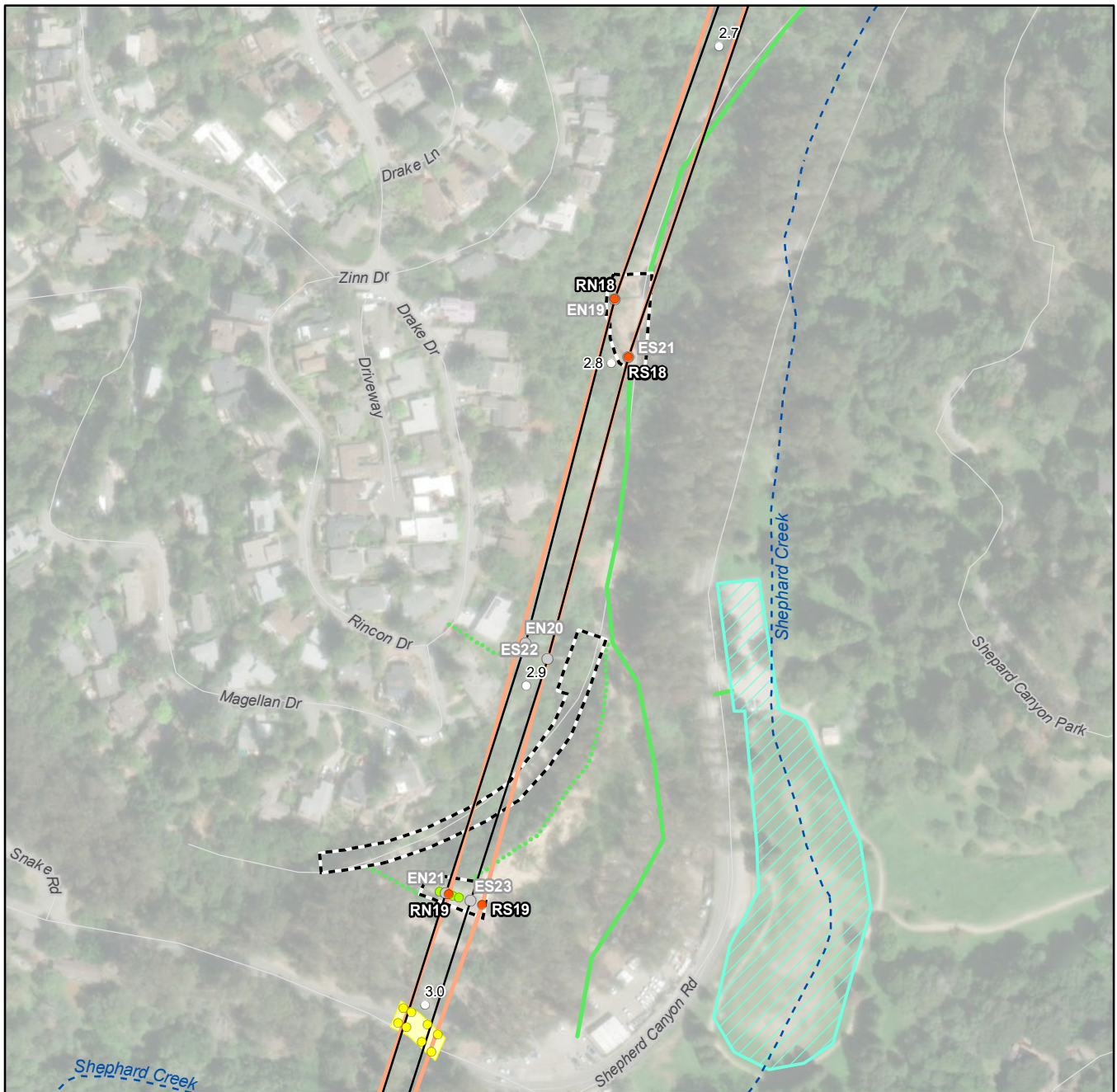


Figure 3.5-1 Page 15 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- ... Walk-In
- Temporary Work Areas**
 - Guard Poles
 - Staging Area
 - Work Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

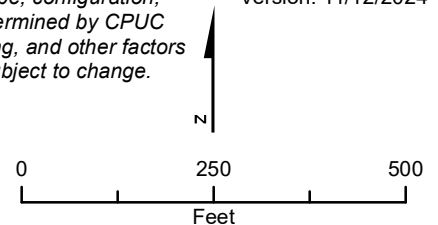
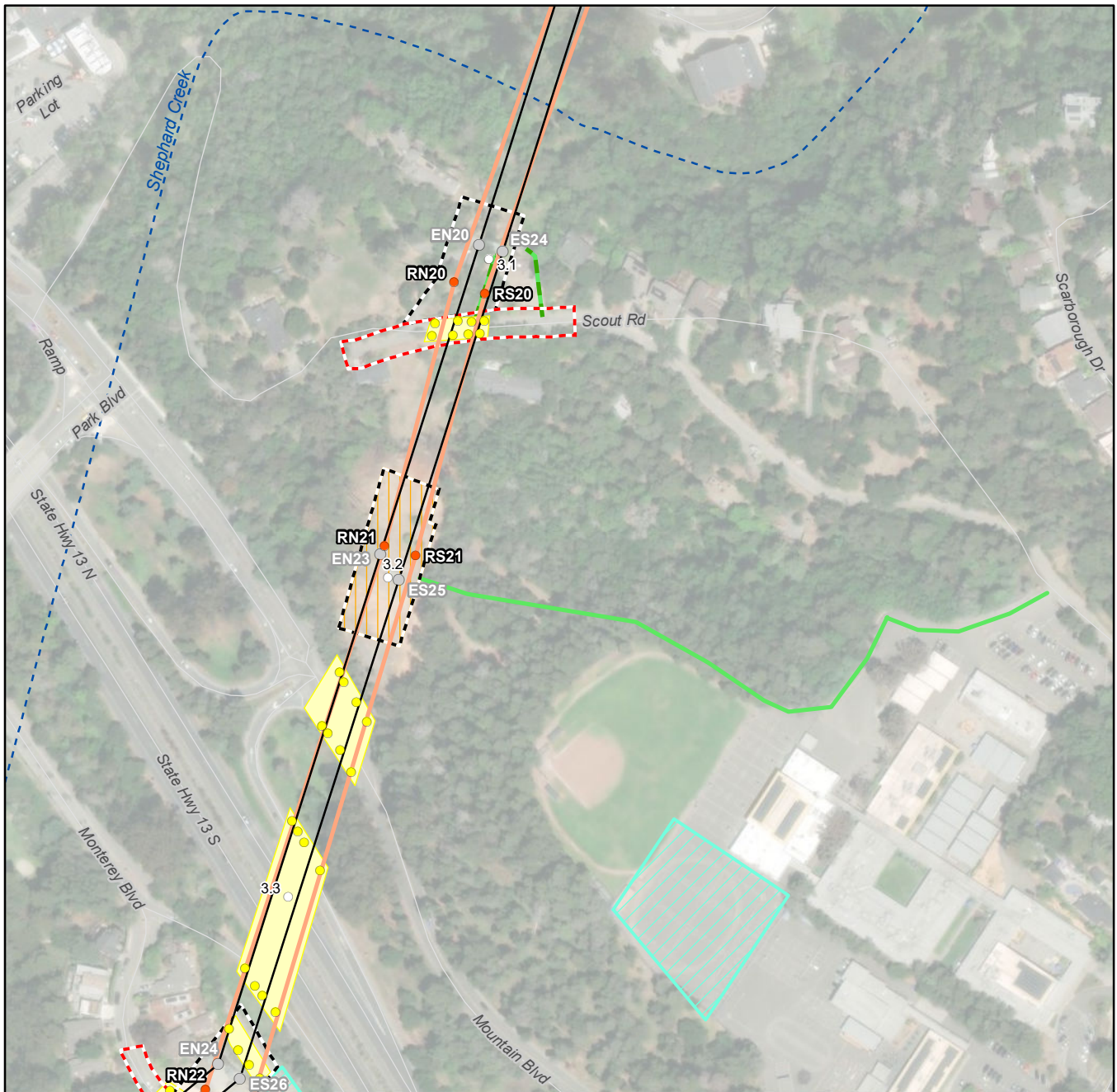


Figure 3.5-1 Page 16 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed
- Access**
 - Existing
 - Improvement
- Temporary Work Areas**
 - Guard Poles
 - Staging Area
 - Tension Pull Site
 - Work Area
 - Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

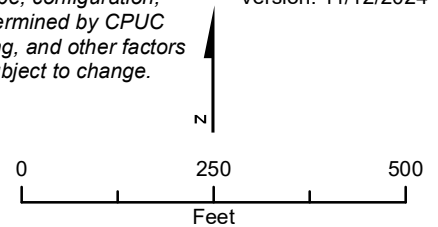
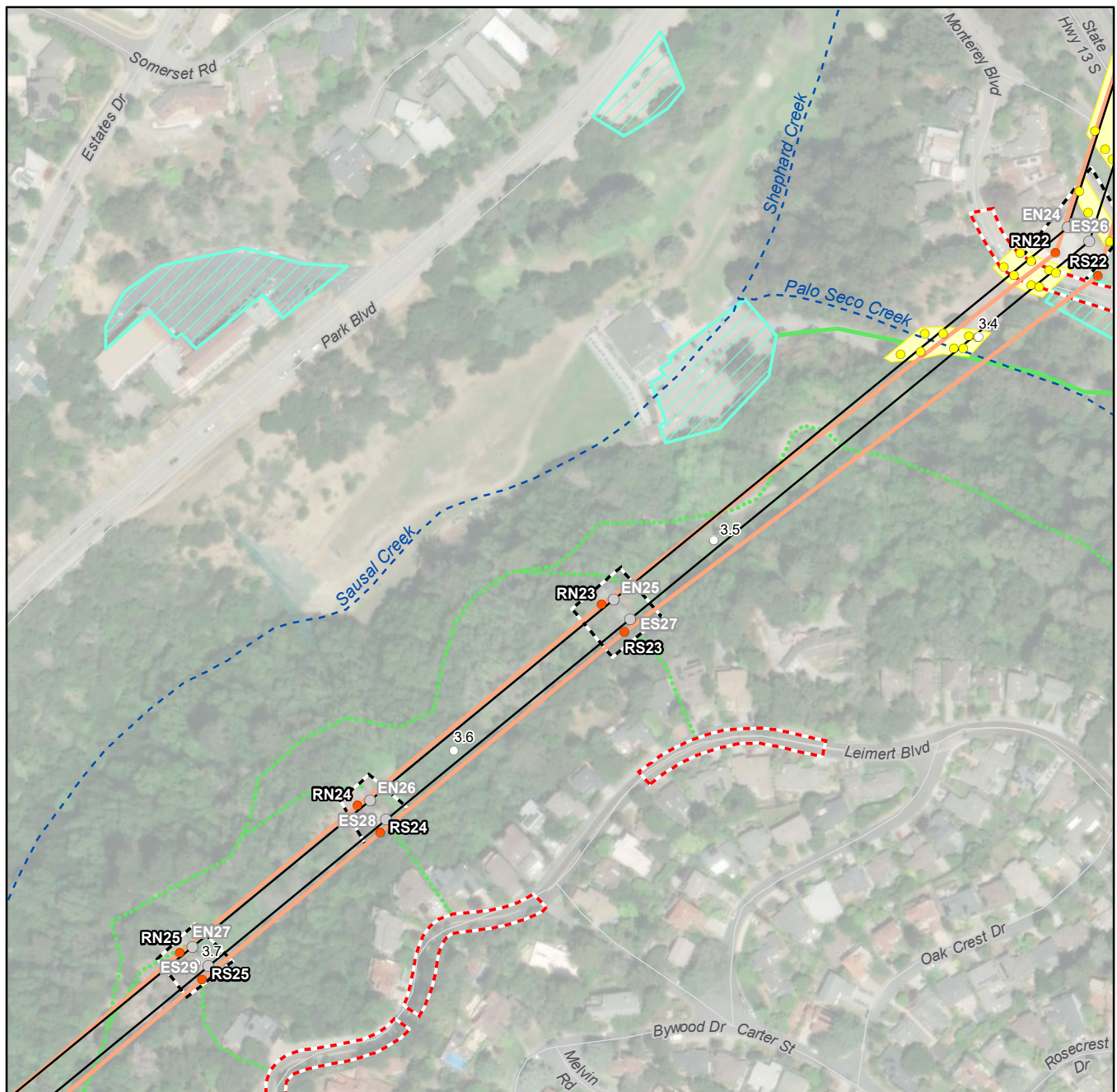


Figure 3.5-1 Page 17 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Walk-In

Temporary Work Areas

- Guard Poles
- Staging Area
- Work Area
- Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

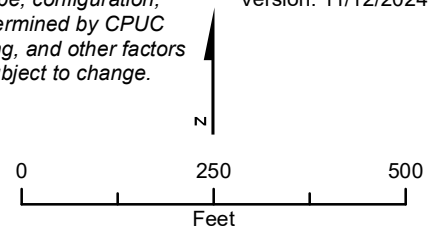
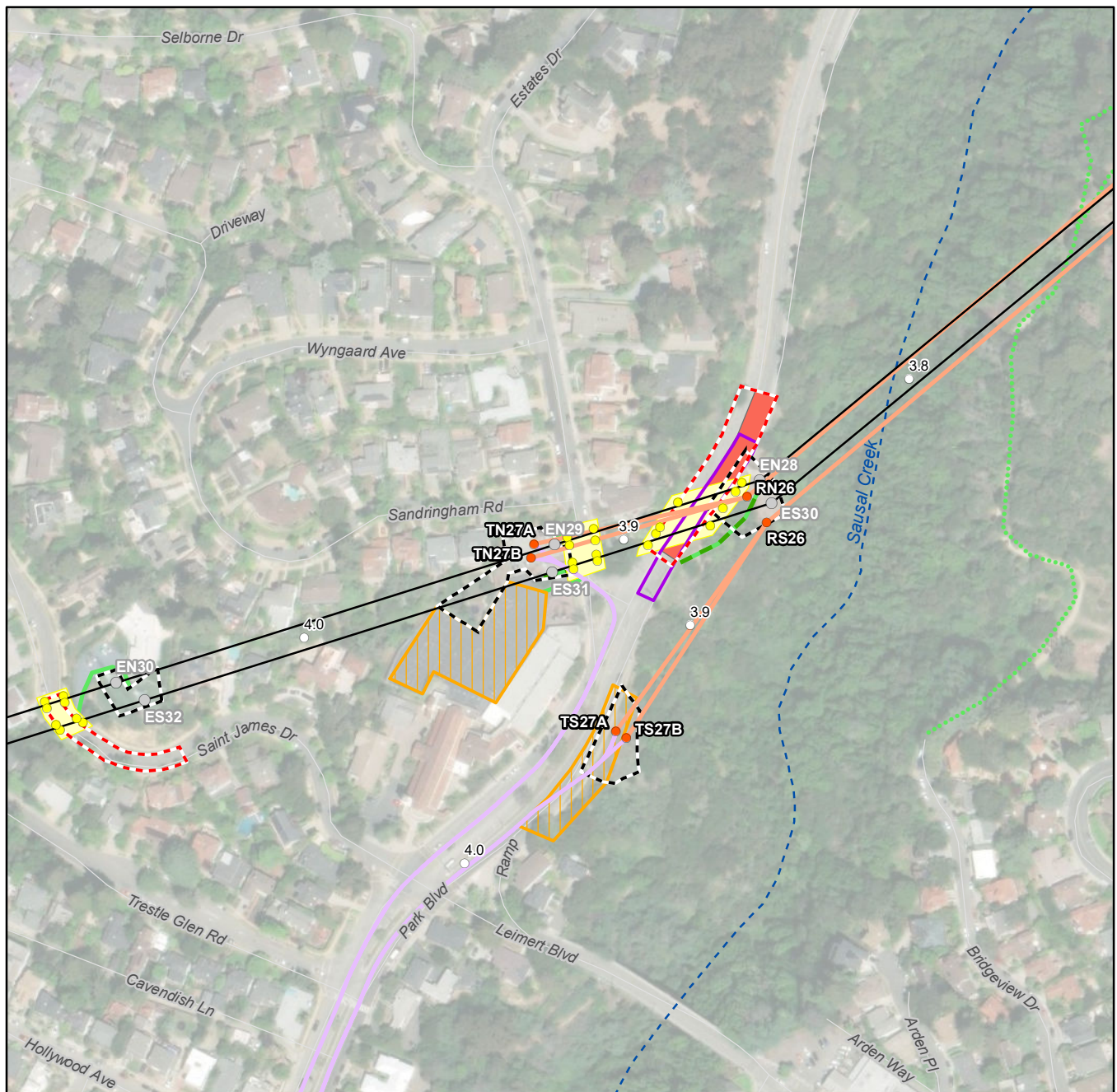


Figure 3.5-1 Page 18 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Improvement
- ... Walk-In

Temporary Work Areas

- Guard Poles
- Tension Pull Site
- Work Area
- Work Area, Temporary Closure
- EB Work Area Option
- Move Distribution Pole Option

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

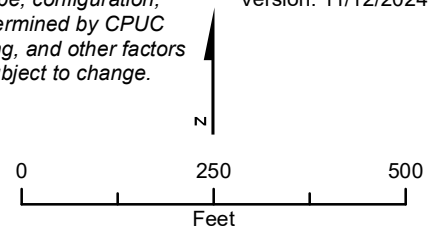


Figure 3.5-1 Page 19 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- Walk-In

Temporary Work Areas

- Guard Poles
- Work Area
- Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

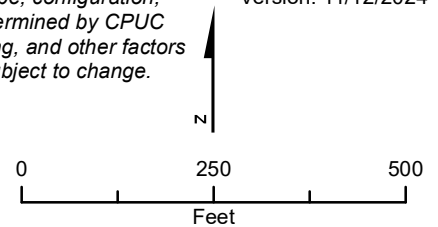
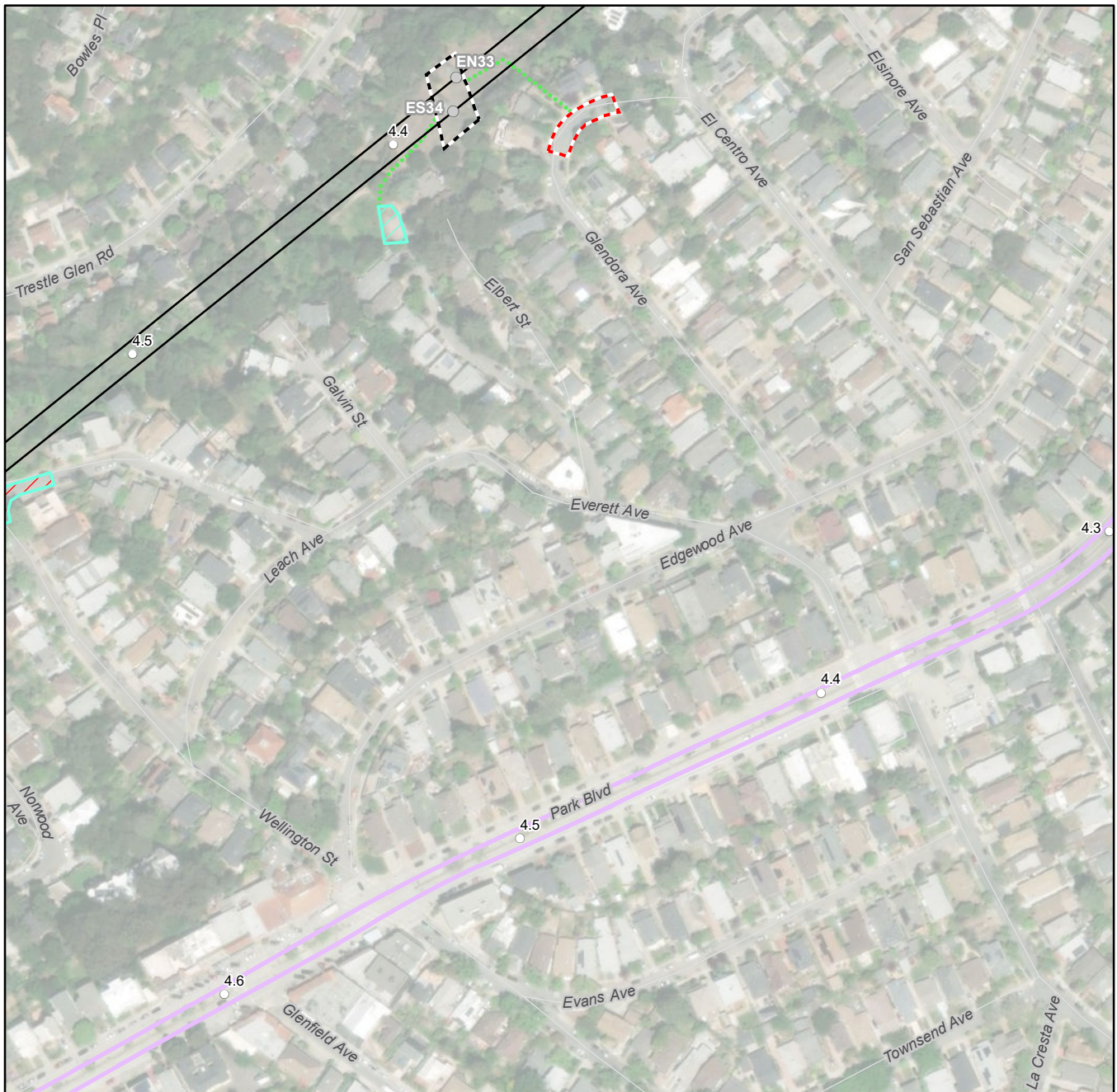


Figure 3.5-1 Page 20 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Walk-In
- Temporary Work Areas**
 - Staging Area
 - Staging Area, Temporary Closure
 - Work Area
 - Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

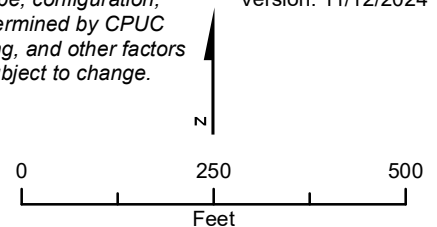
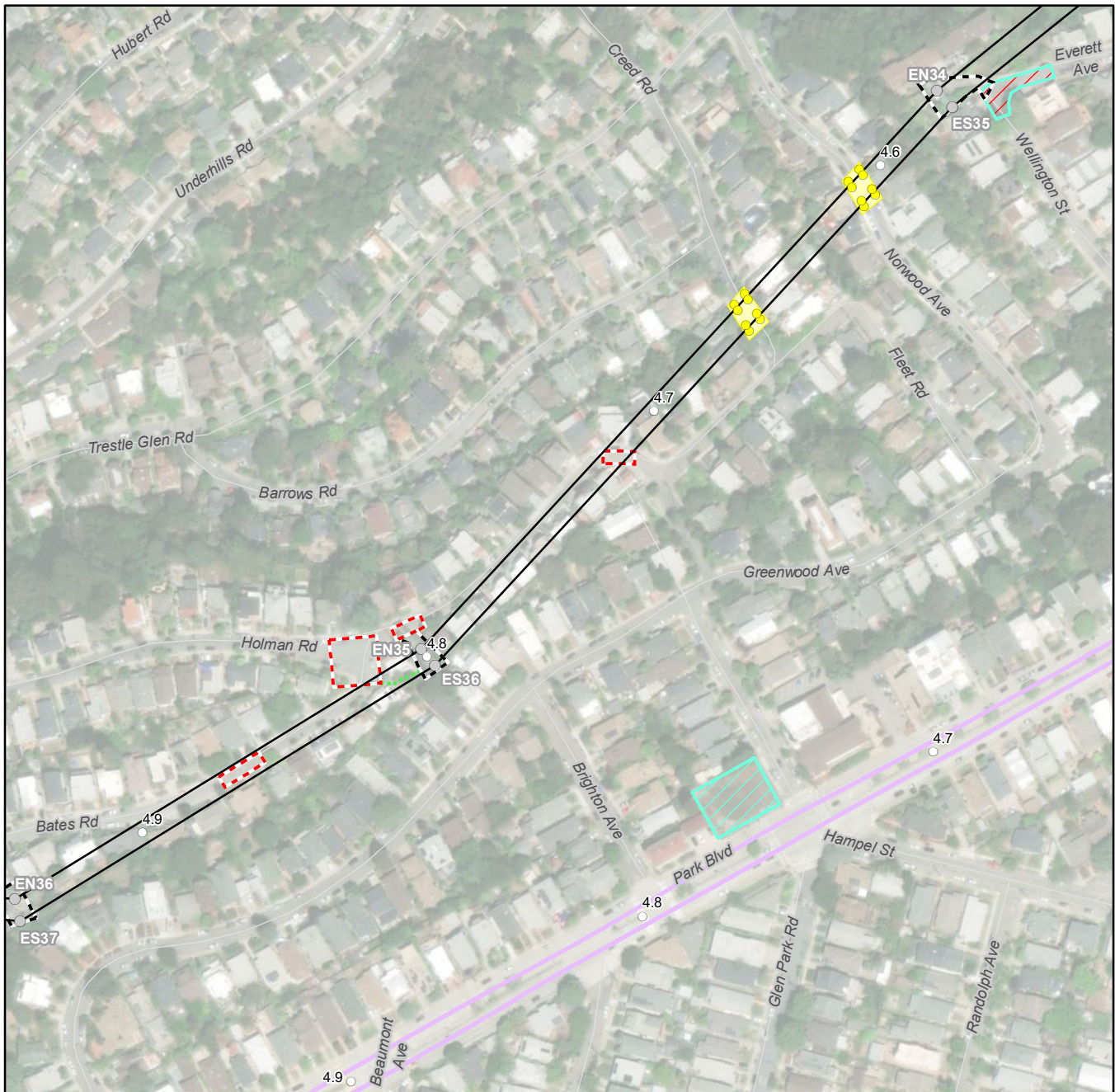


Figure 3.5-1 Page 21 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Walk-In

Temporary Work Areas

- Guard Poles
- Staging Area
- Staging Area, Temporary Closure
- Work Area
- Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

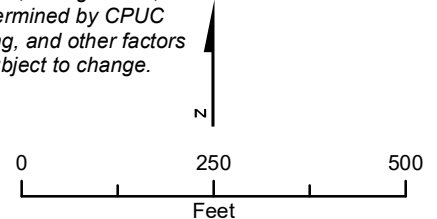
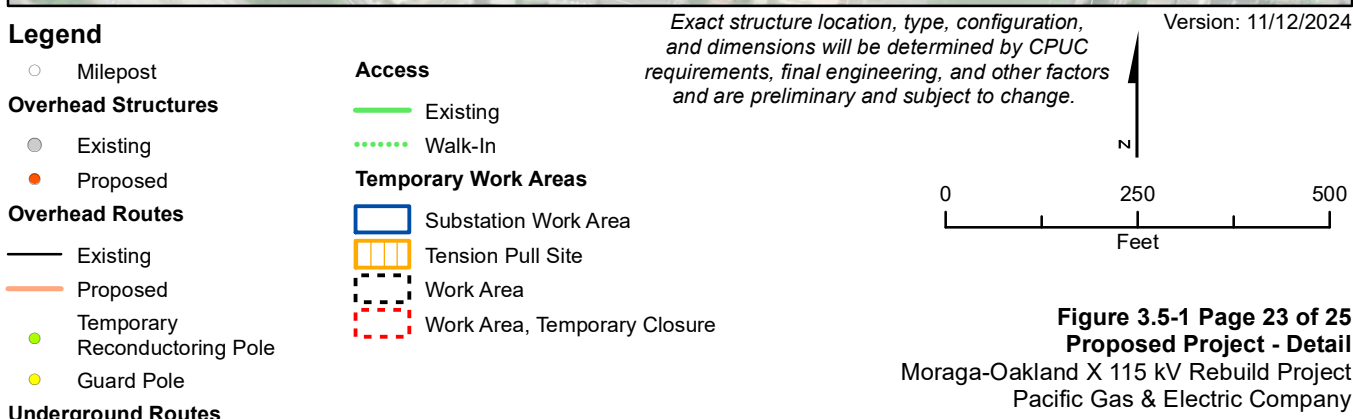


Figure 3.5-1 Page 22 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs





Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Access

- Existing
- ... Walk-In

Temporary Work Areas

- Guard Poles
- Staging Area
- Work Area
- Work Area, Temporary Closure

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

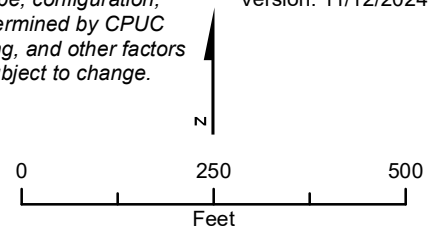


Figure 3.5-1 Page 24 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- Milepost
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
 - Temporary Reconductoring Pole
 - Guard Pole
- Underground Routes**
 - Proposed

Temporary Work Areas

- ▨ Staging Area

Exact structure location, type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are preliminary and subject to change.

Version: 11/12/2024

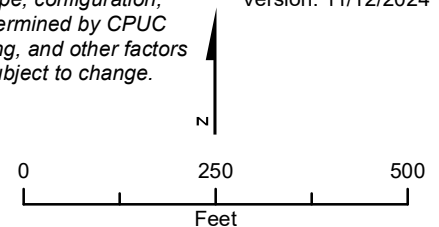


Figure 3.5-1 Page 25 of 25
Proposed Project - Detail
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs

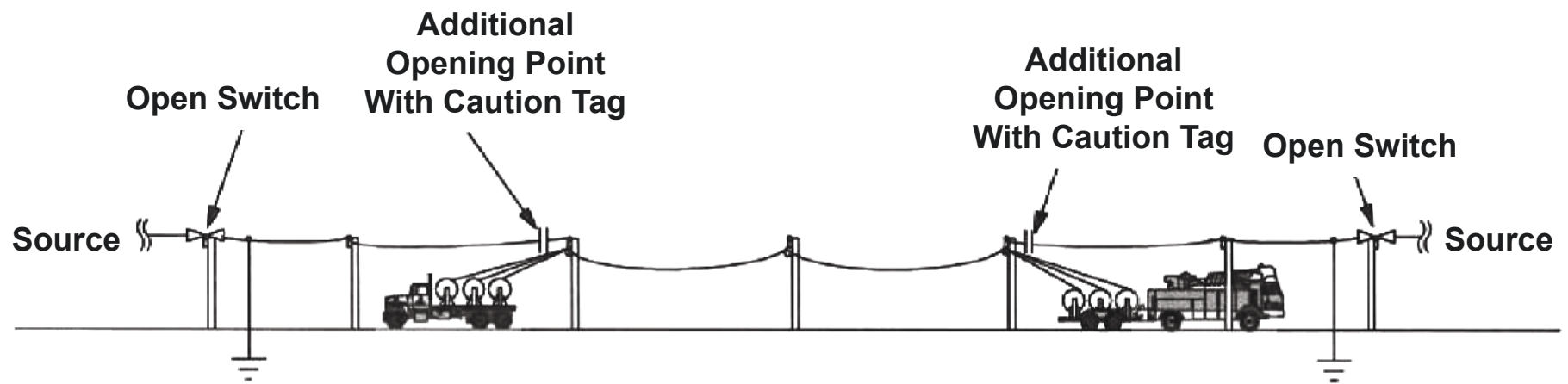


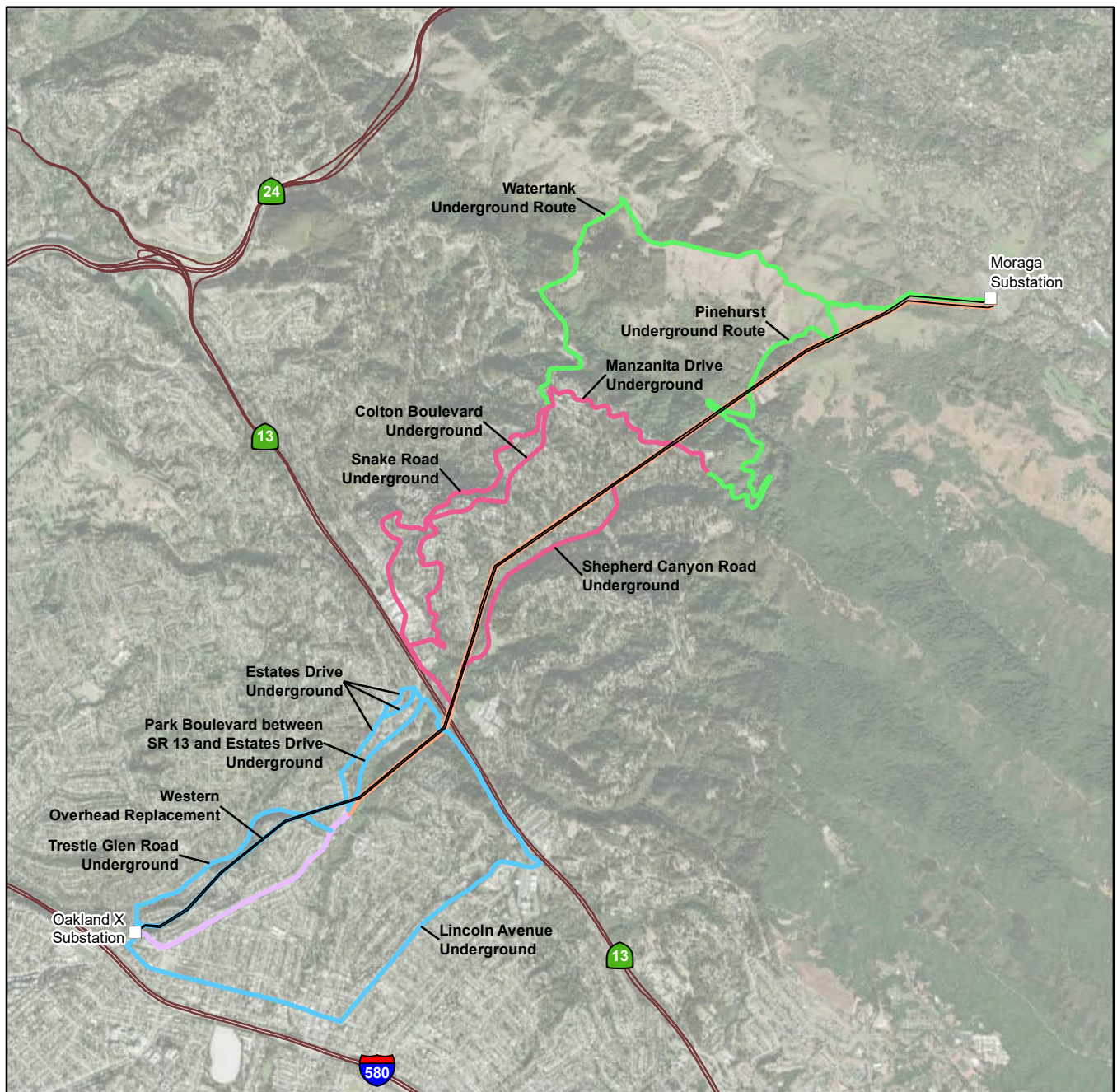
Figure 3.5-2
Typical Conductor Stringing Diagram (including typical equipment)
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Figure 3.5-3
Example Guard Structures
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 10/24/2024

Legend

- Substation
- Existing Overhead Route

Proposed Project

- Proposed Overhead
- Proposed Underground

Replacement Route (Overhead and Underground) Options

- Eastern Section
- Central Section
- Western Section

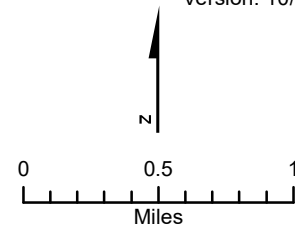
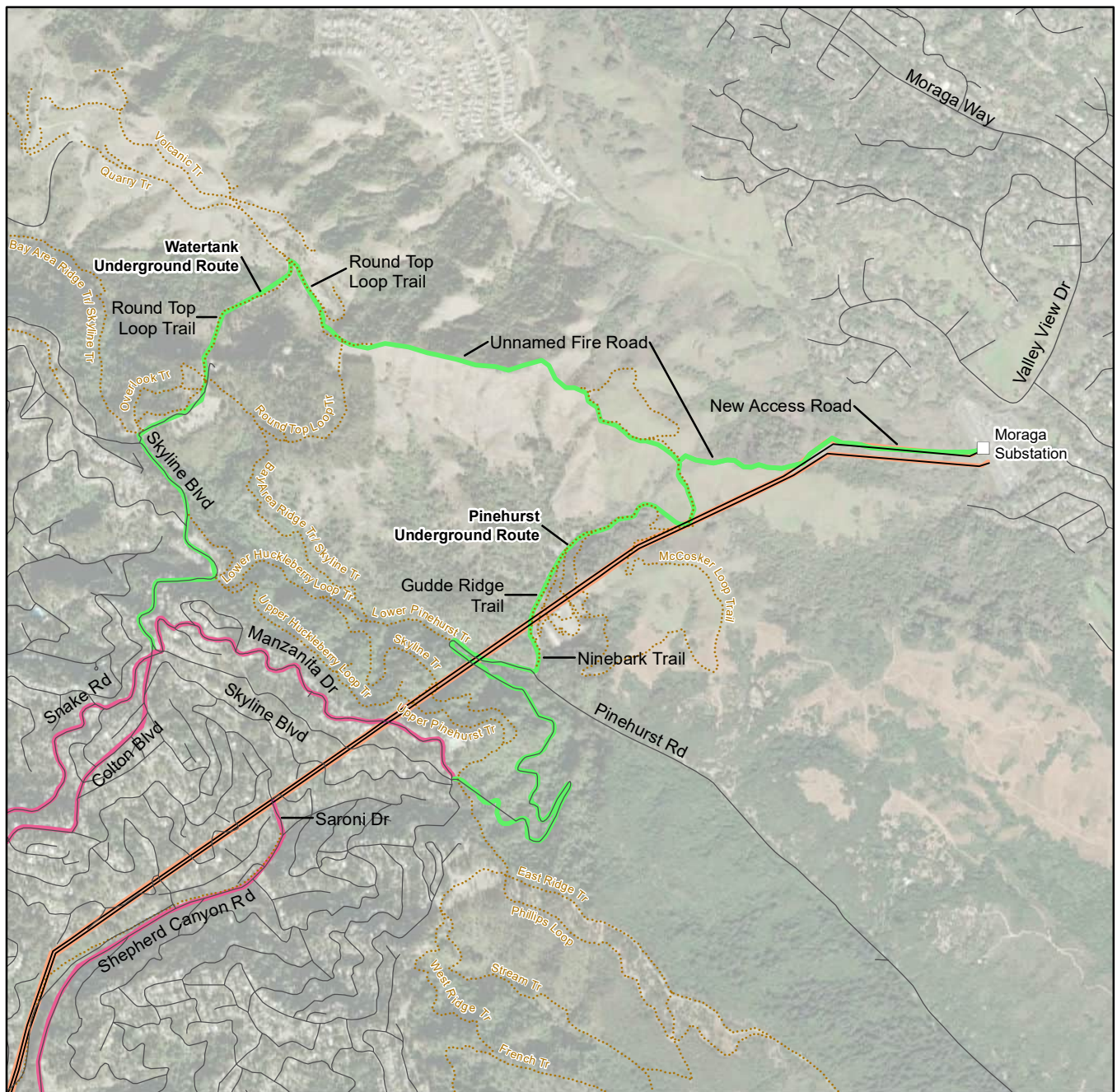


Figure 4.2-1a
Replacement Route (Overhead and Underground) Options
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 10/24/2024

Legend

- Substation
- Trail
- Existing Overhead Route
- Proposed Project**
- Proposed Overhead

Replacement Route (Overhead and Underground) Options

- Eastern Section
- Central Section

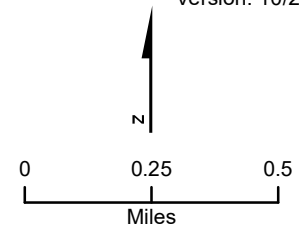
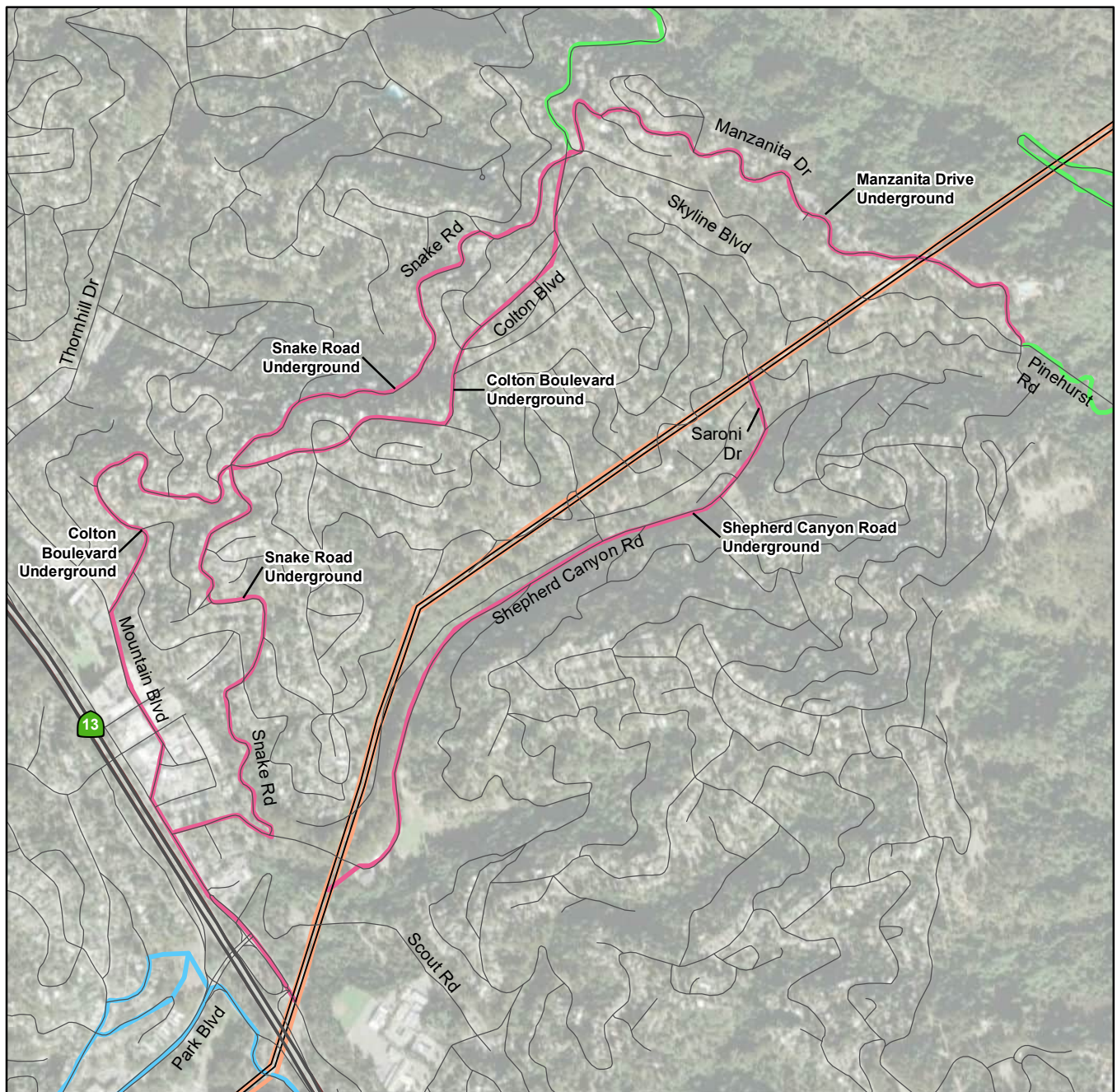


Figure 4.2-1b
Replacement Route (Overhead and Underground) Options
Eastern Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 10/24/2024

Legend

- Substation
- Existing Overhead Route

Proposed Project

- Proposed Overhead

Replacement Route (Overhead and Underground) Options

- Eastern Section
- Central Section
- Western Section

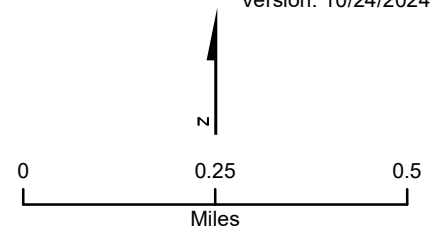
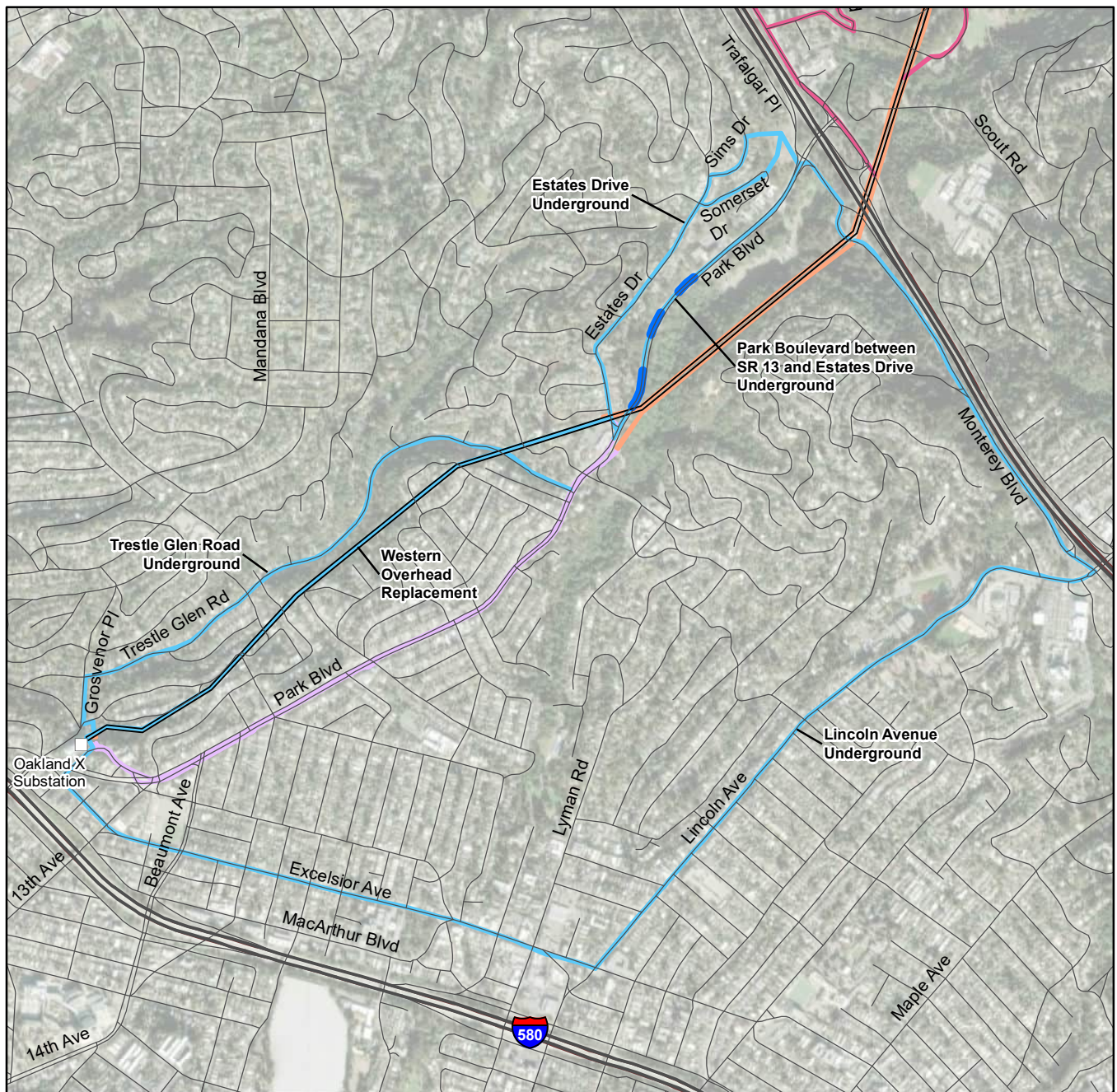


Figure 4.2-1c
Replacement Route (Overhead and Underground) Options
Central Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 10/24/2024

Legend

- Substation
- Existing Overhead Route

Proposed Project

- Proposed Overhead
- Proposed Underground

Replacement Route (Overhead and Underground) Options

- Central Section
- Western Section
- Park Boulevard Viaduct

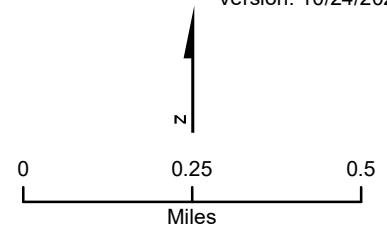
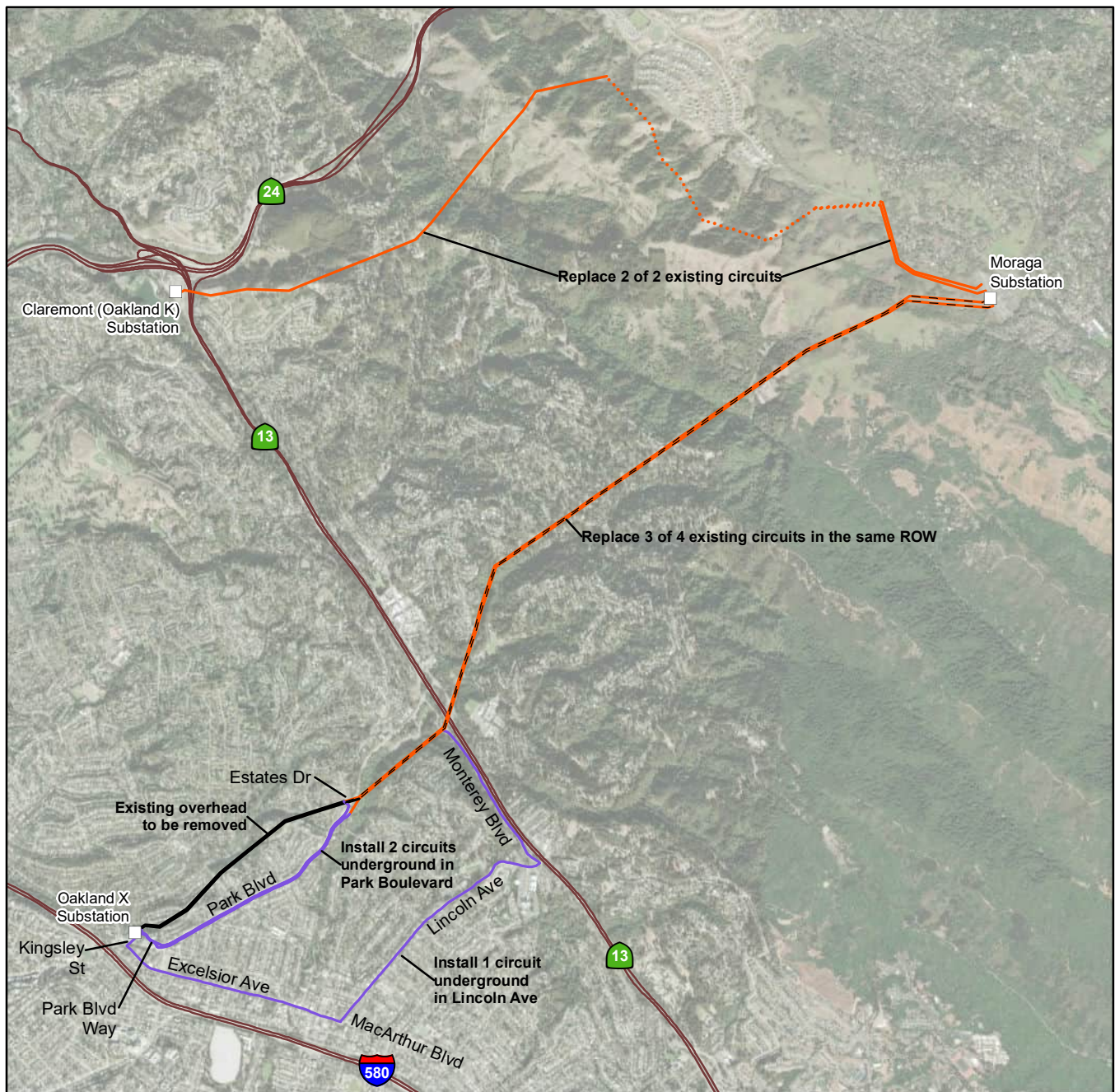


Figure 4.2-1d
Replacement Route (Overhead and Underground) Options
Western Section

Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 6/11/2024

Legend

- Substation
- - - Existing Overhead Route

Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground

- Overhead Reconductor
- Existing Overhead to be Removed
- Underground
- Overhead (no work)

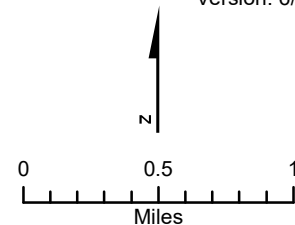
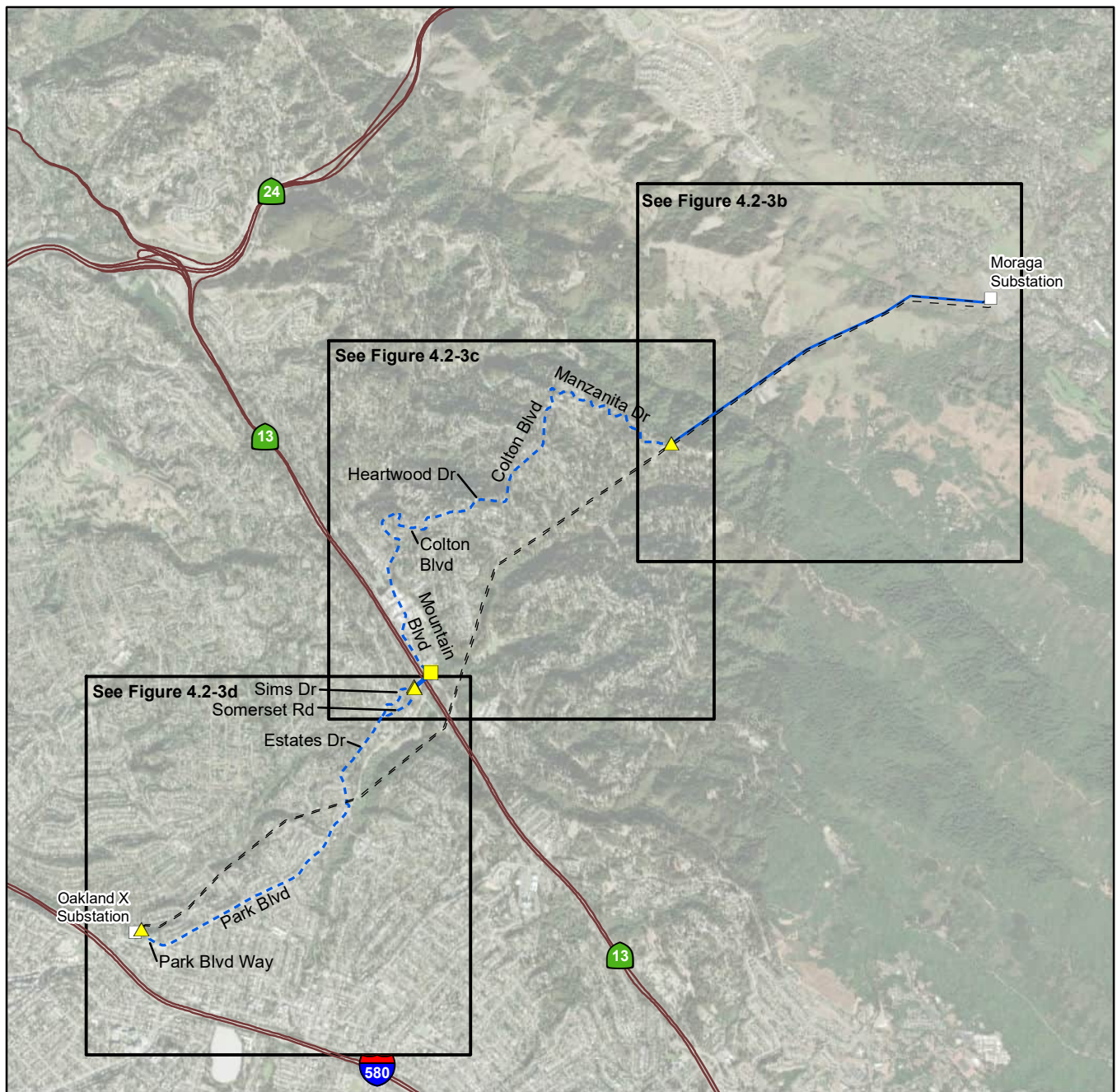


Figure 4.2-2
Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/7/2024

Legend

Detail Map Sheet

Substation

- - - Existing Overhead Route

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

— Overhead

- - - Underground

Transition Station

▲ Transition Poles

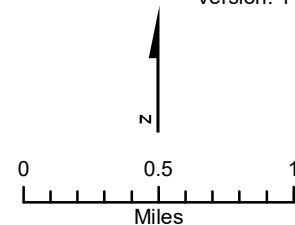
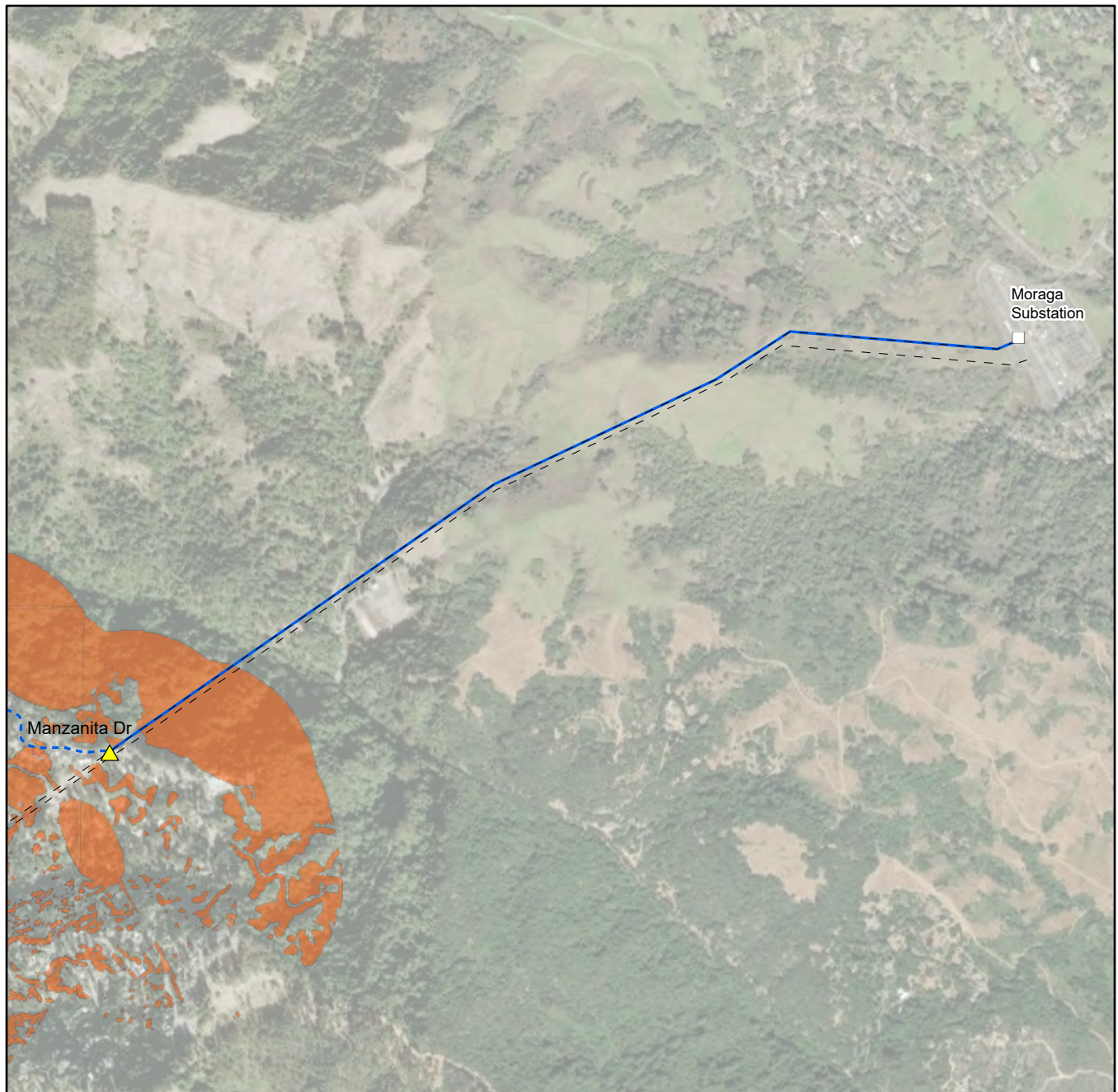


Figure 4.2-3a
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Substation
- - - Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- - - Underground
- △ Transition Poles

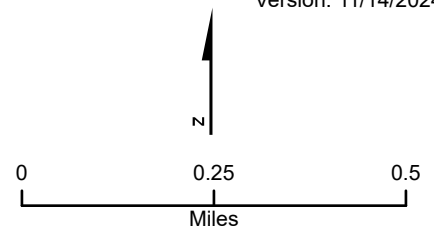
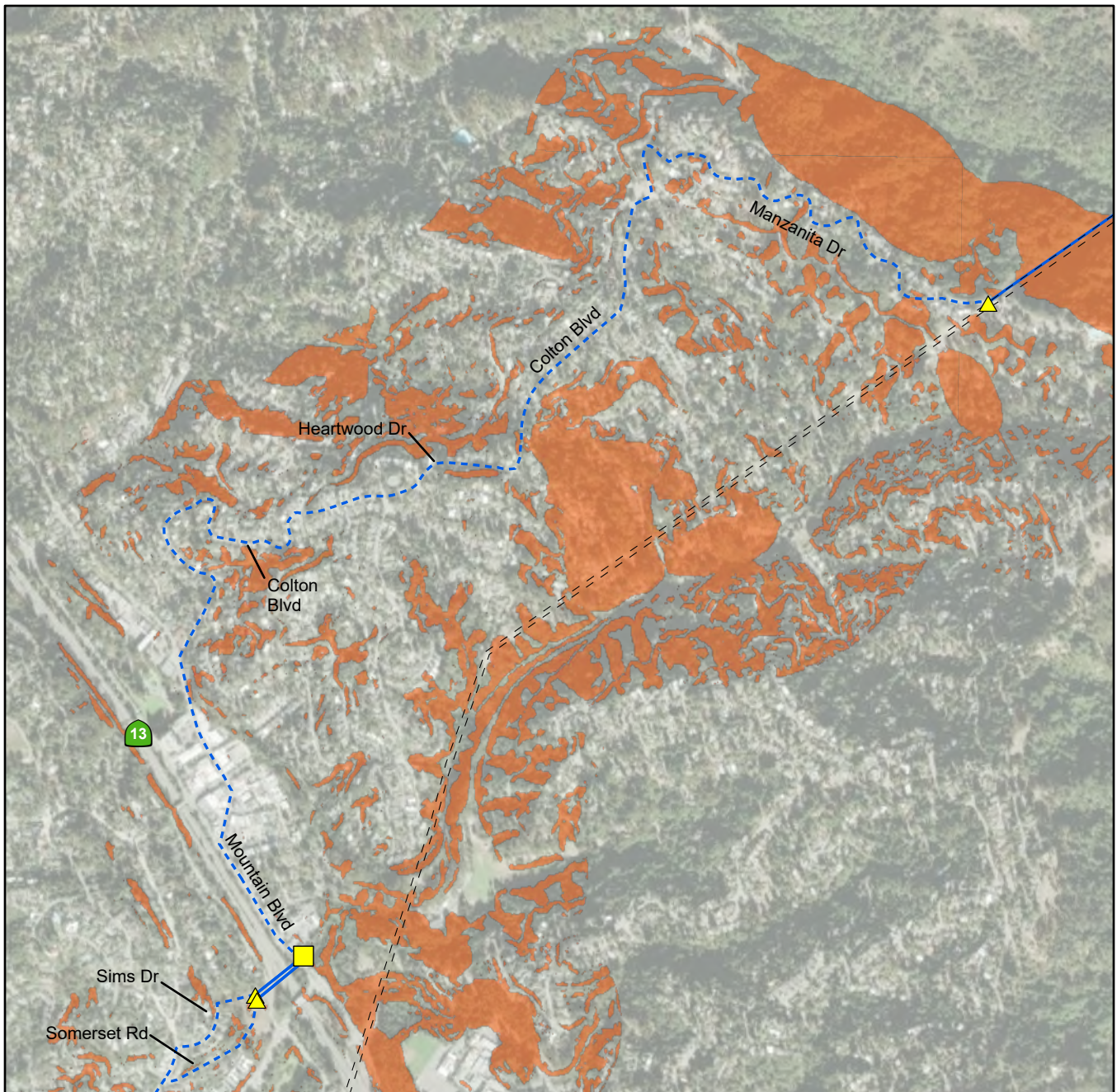


Figure 4.2-3b
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Eastern Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Station (approximate location)
- Transition Poles

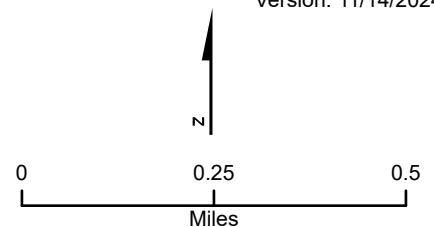
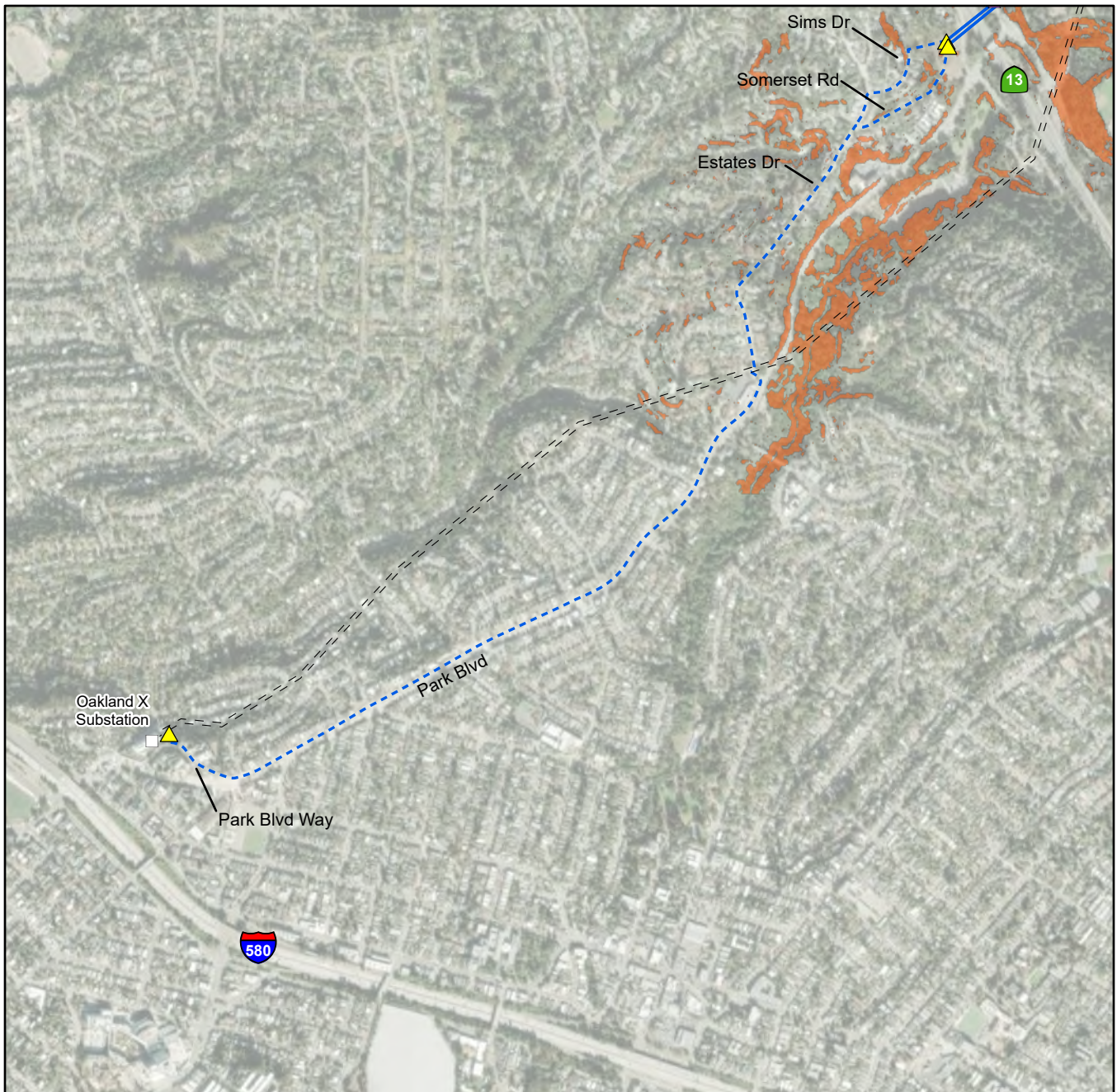


Figure 4.2-3c
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Central Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Poles

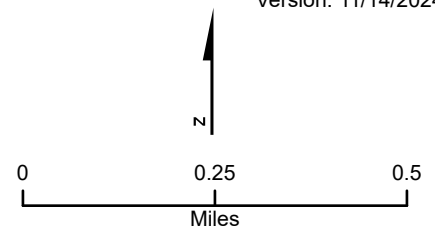
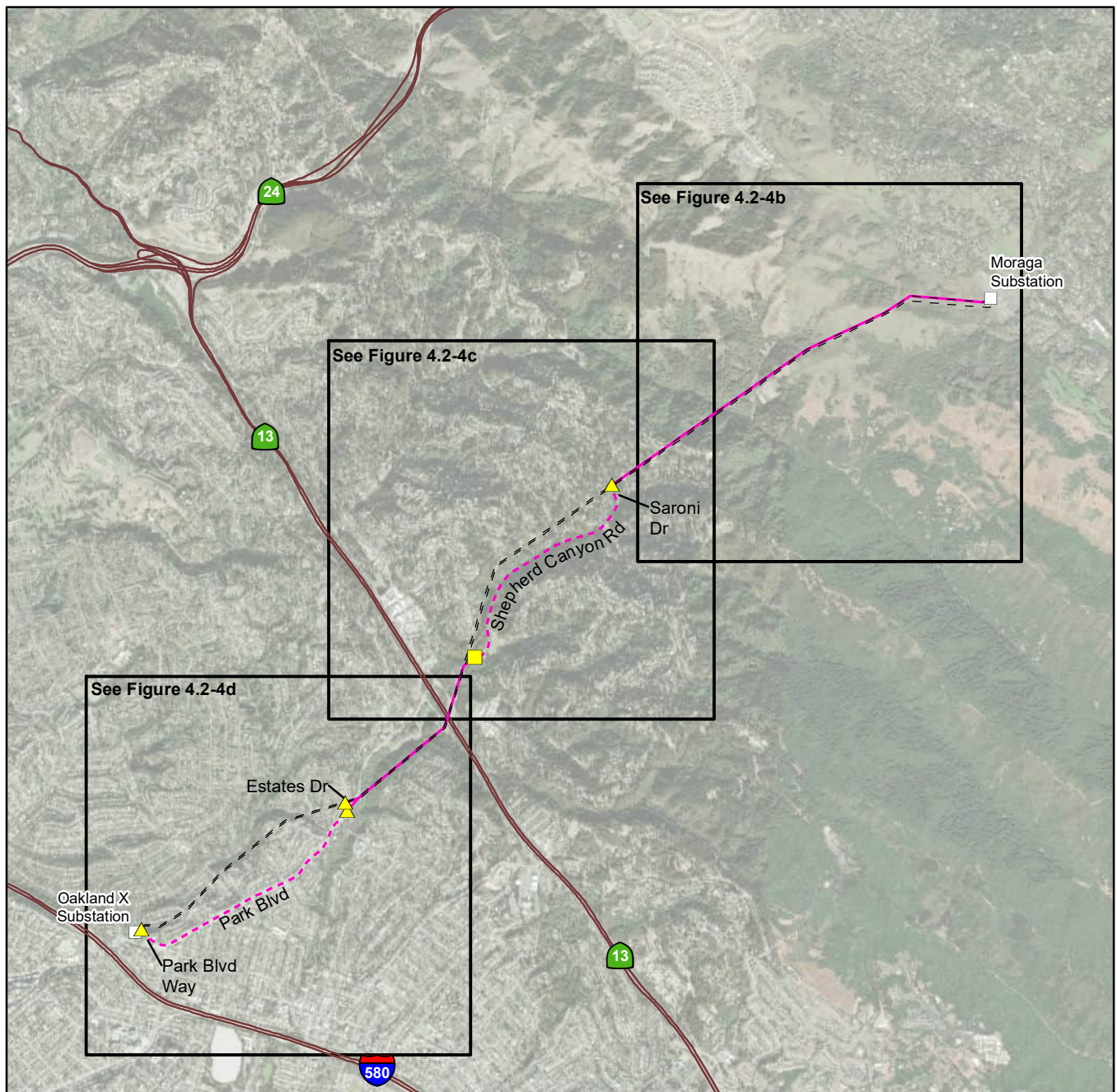


Figure 4.2-3d
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Western Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/7/2024

Legend

Detail Map Sheet

Substation

Existing Overhead Route

Alternative C: Shepherd Canyon Road Underground

Overhead

Underground

Transition Station

Transition Poles

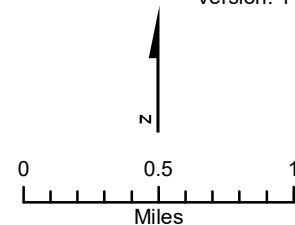


Figure 4.2-4a
Alternative C: Shepherd Canyon Road Underground
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/14/2024

Legend

- Substation
- - - Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative C: Shepherd Canyon

Road Underground

- Overhead
- - - Underground

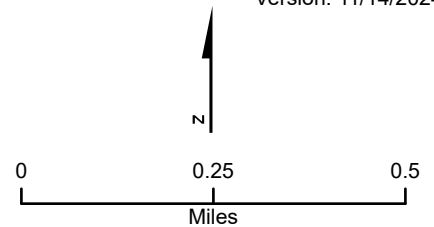
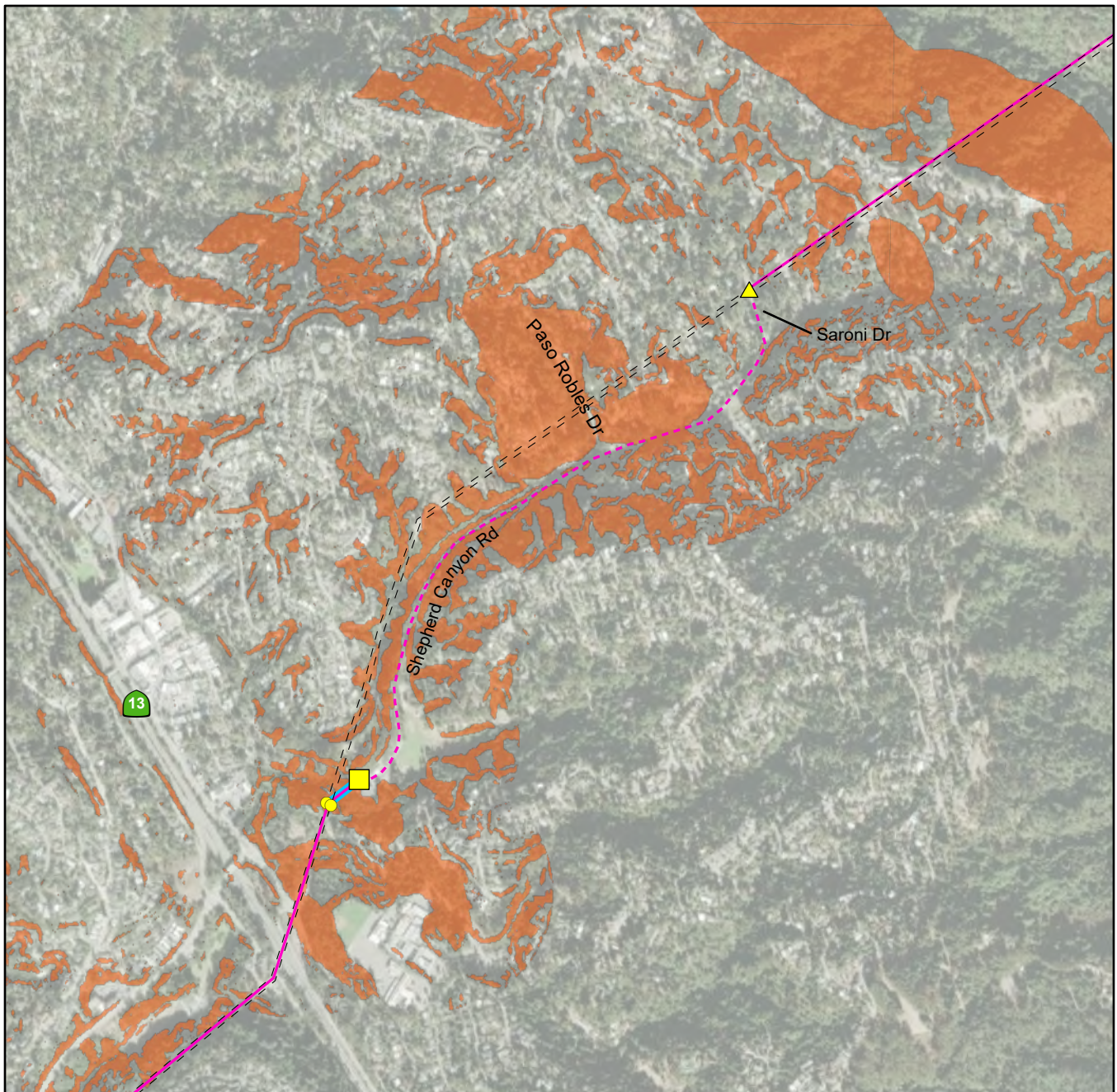


Figure 4.2-4b
Alternative C: Shepherd Canyon
Road Underground - Eastern Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative C: Shepherd Canyon

Road Underground

- Overhead
- Underground
- Transition Station (approximate location)
- New Alternative C Structure
- New Alternative C Overhead Span
- Transition Poles

**Preliminary and Subject to Change
Based on CPUC Requirements, Final
Engineering, and Other Factors**

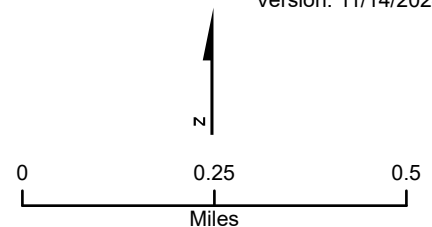


Figure 4.2-4c
Alternative C: Shepherd Canyon
Road Underground - Central Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/14/2024

Legend

- Substation
- - - Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative C: Shepherd Canyon

Road Underground

- Overhead
- Underground
- Transition Poles

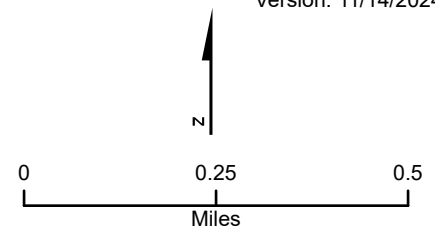
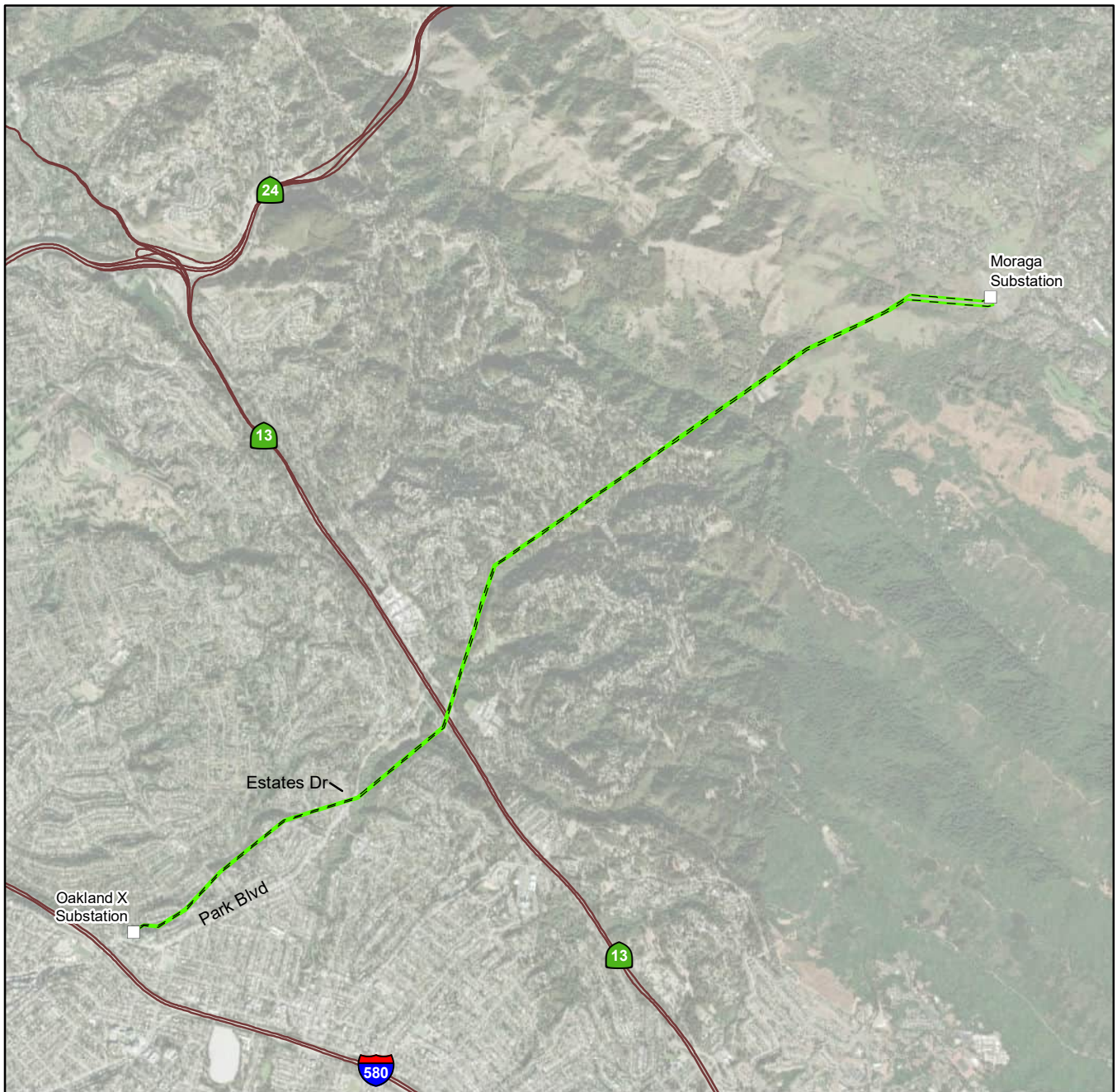


Figure 4.2-4d
Alternative C: Shepherd Canyon
Road Underground - Western Section
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 6/11/2024

Legend

- Substation
- - - Existing Overhead Route

Alternative D: All Overhead Replacement in Existing Alignment
 — Overhead

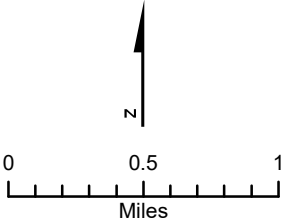
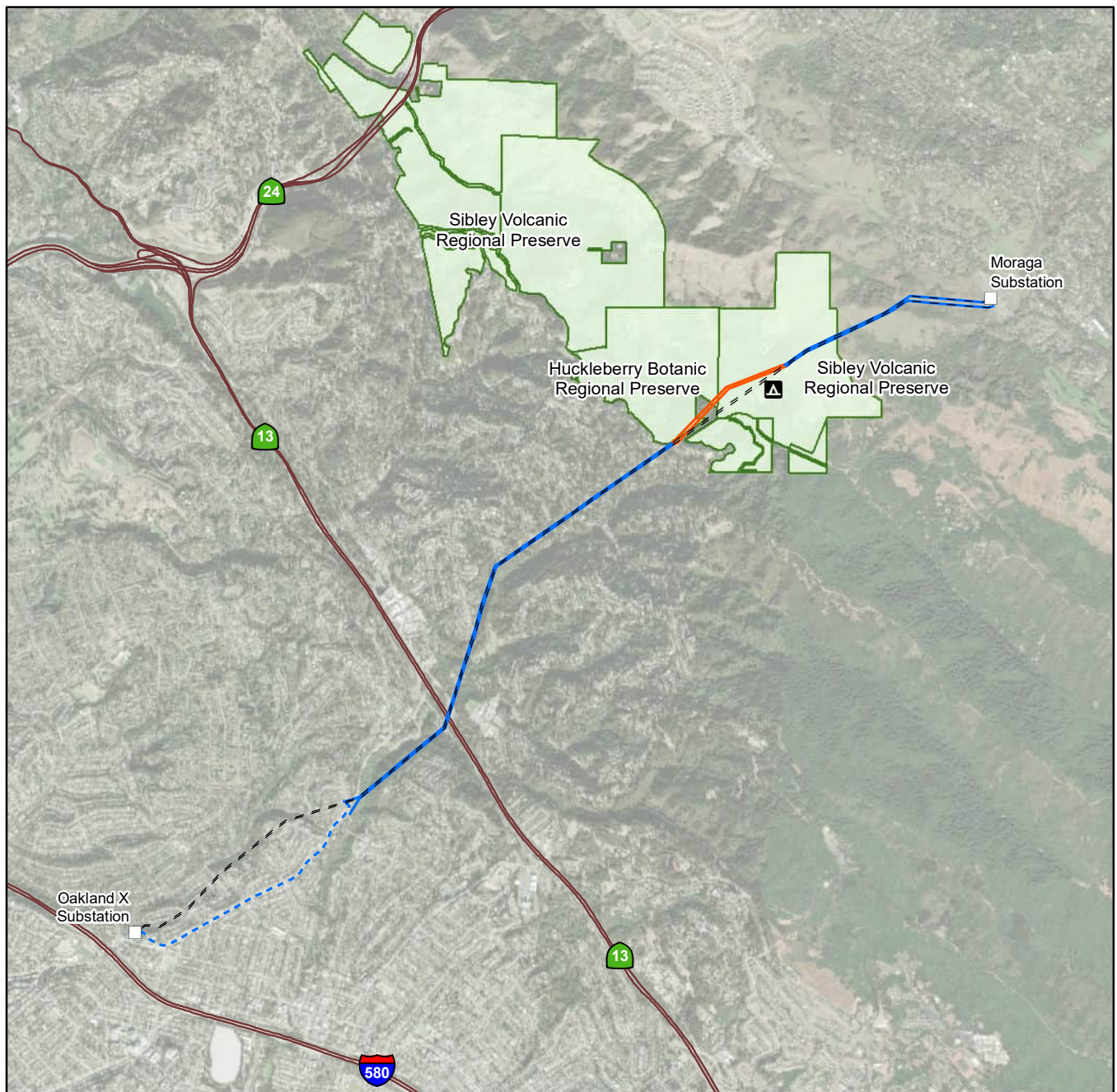


Figure 4.2-5
Alternative D: All Overhead Replacement in Existing Alignment
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Version: 6/11/2024

Legend

- Substation
- Existing Overhead Route
- East Bay Regional Park District (EBRPD): Huckleberry Botanic Regional Preserve and Sibley Volcanic Regional Preserve
- Planned Campground

Alternative E: Proposed Project with Campground Overhead Option

- Overhead - Campground
- Overhead
- Underground

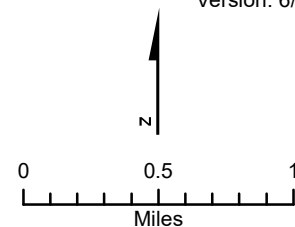
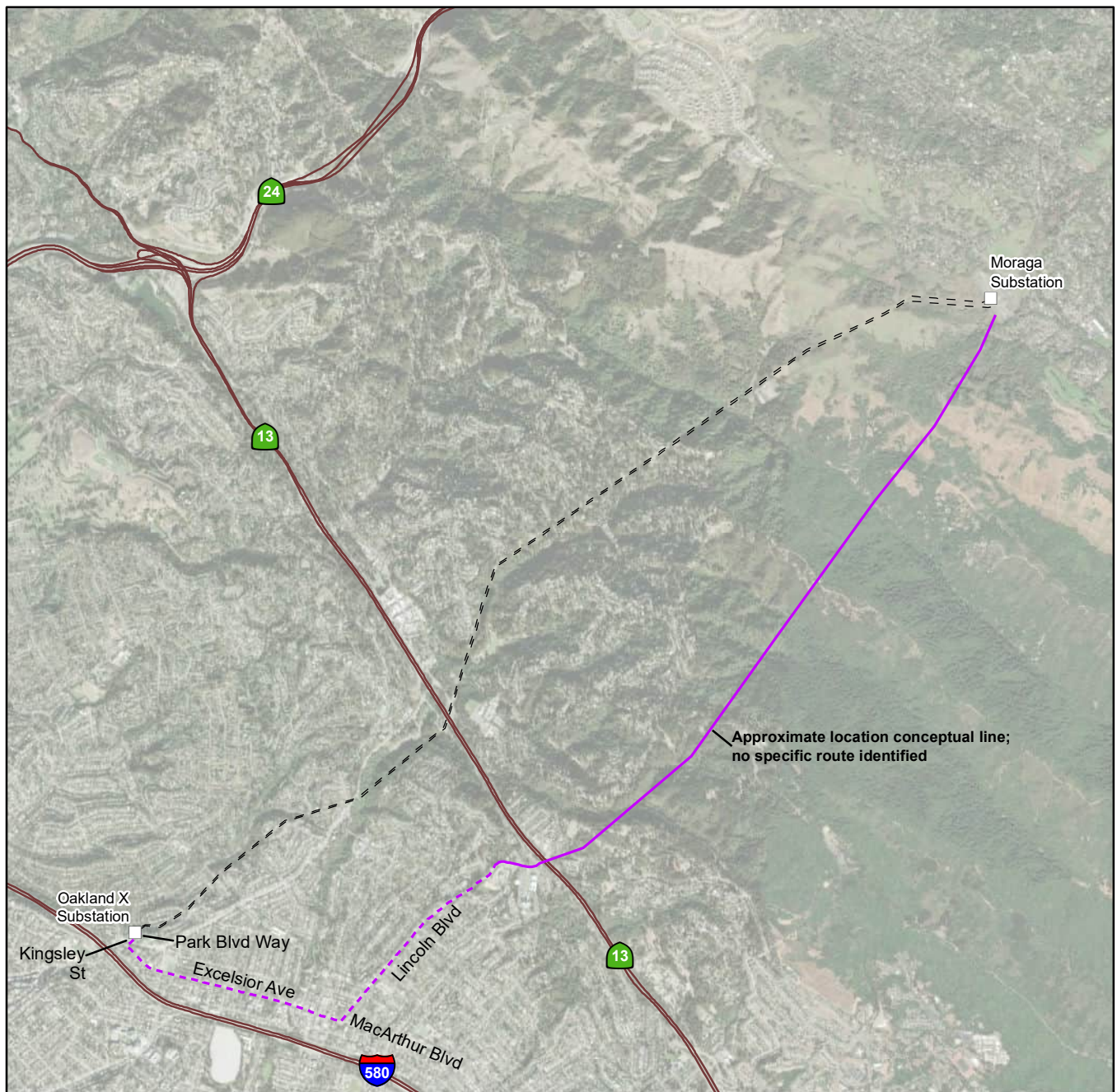


Figure 4.2-6
Alternative E: Proposed Project with
Campground Overhead Option
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 6/11/2024

Legend

- Substation
- - - Existing Overhead Route

Alternative F: Conceptual South Overhead Alignment

- Overhead
- - - Underground

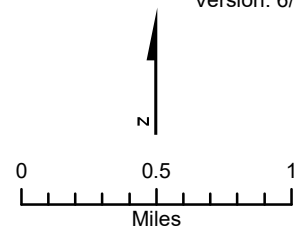


Figure 4.2-7
Alternative F: Conceptual South
Overhead Alignment
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

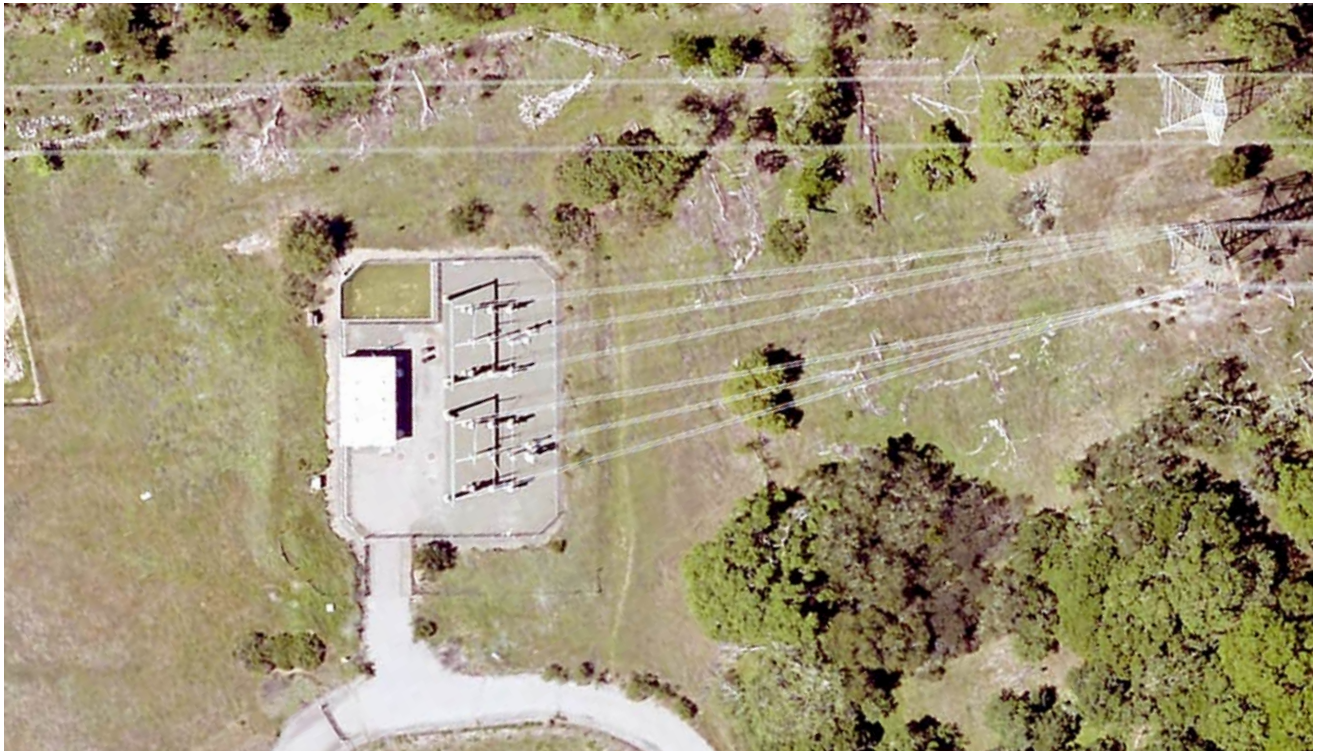
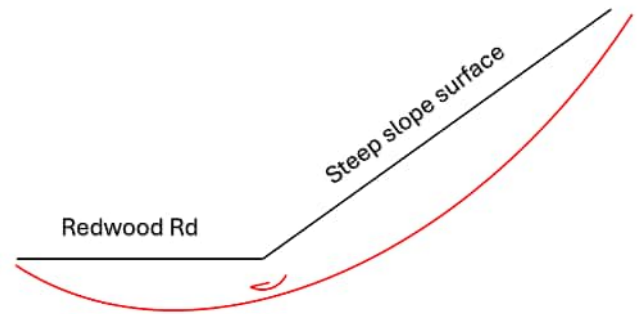


Figure 4.2-8
Example Transition Station with Two 230 kV Circuits in an Approximately 0.3-acre Yard
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



View of the approximate 3 to 4 feet of vertical displacement.

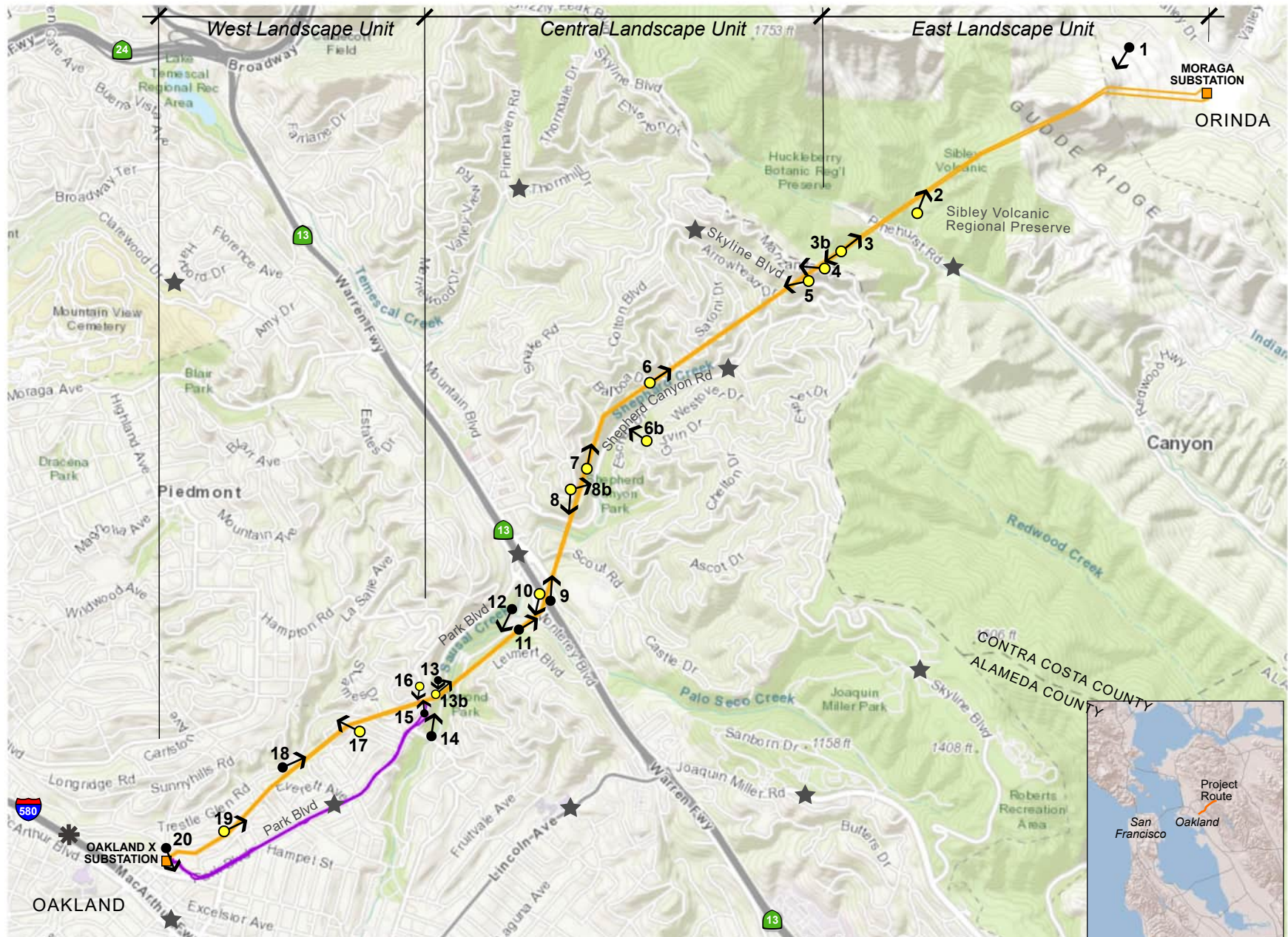


Landslide profile showing a failure plane under roadway.



A deep-seated landslide with a failure plane extending under roadway.

Figure 4.2-9
Example Landslide Failure Plane and Roadway Uplift of Redwood Road in Novato, California
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Basemap Source: Esri 2023

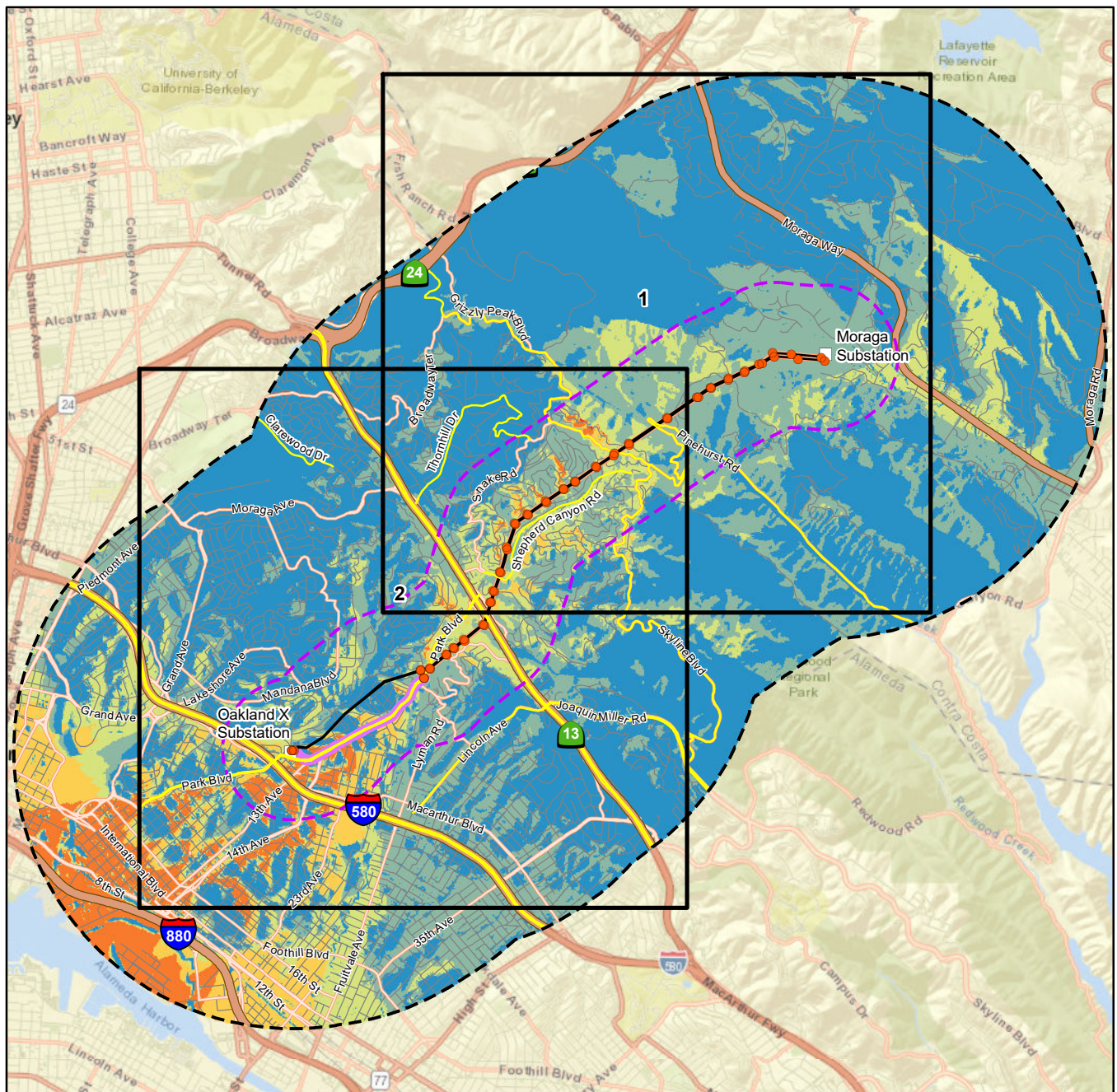


- 1 ●→ Photograph Viewpoint Location and Direction
- 2 ○→ Simulation Viewpoint Location and Direction
- * Designated State Scenic Highway
- ★ Alameda County Scenic Route

- Existing Project Route
- Proposed Underground Segment
- Existing Substation

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Figure 5.1-1a
Photograph Viewpoint Locations
Moraga–Oakland X 115 kV Rebuild Project



Version: 11/5/2024

Legend

- Detail Map Sheet
- 0.5-mile Project Buffer
- 2-mile Project Buffer
- Substation

Overhead Structures

- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Potential Project Visibility

Number of Structures Visible

- 0
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- >40

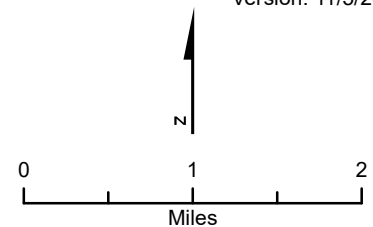
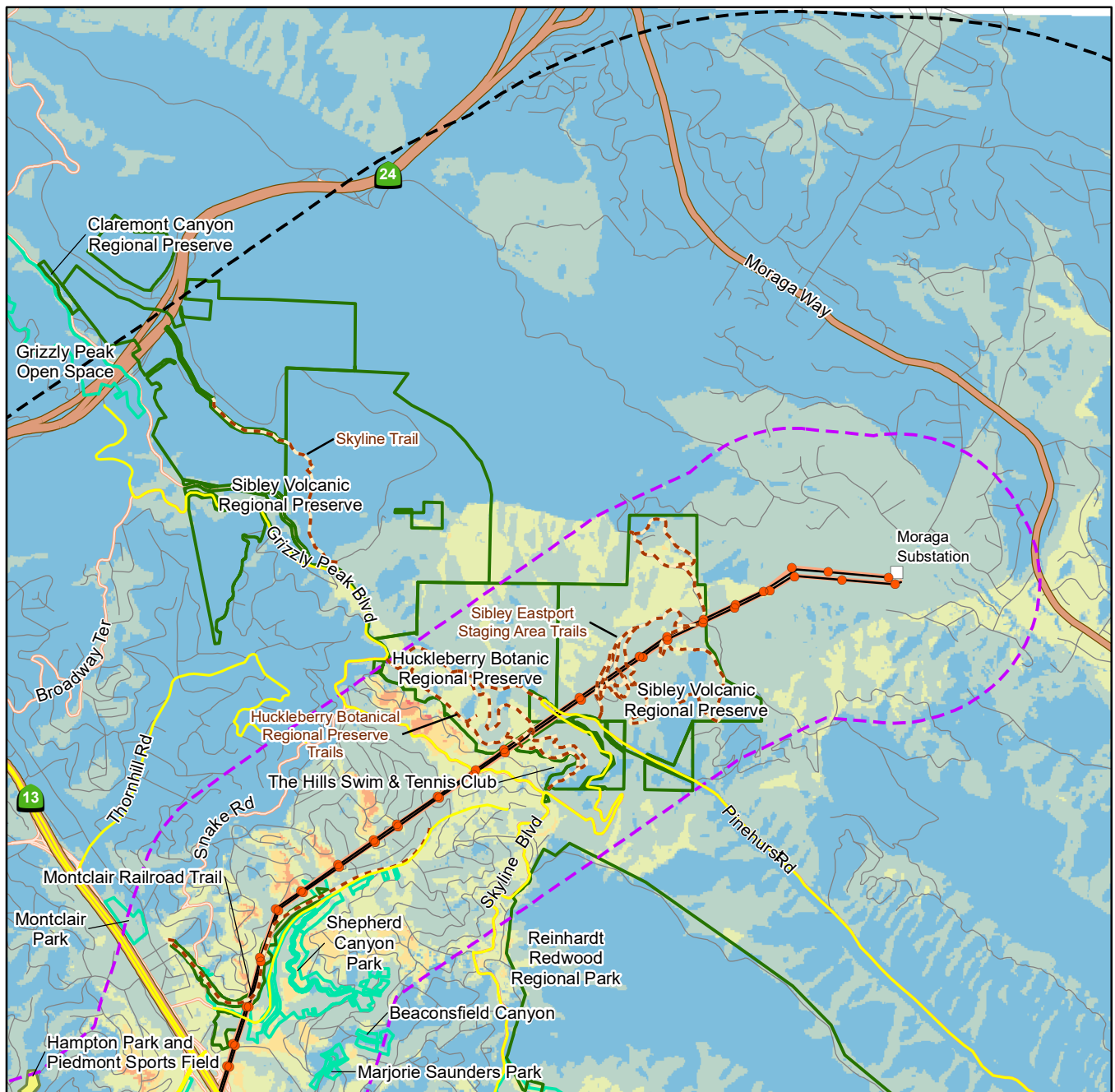


Figure 5.1-1b Overview Viewshed Analysis
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- 0.5-mile Project Buffer
- 2-mile Project Buffer
- Scenic Roadway
- Hiking Trail
- Substation

Overhead Structures

- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Parks in the Proposed Project Vicinity

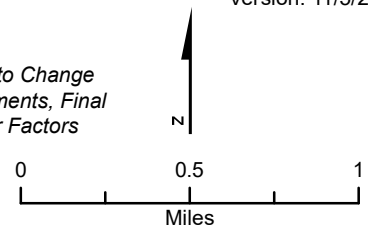
- East Bay Regional Park District (EBRPD)
- City of Oakland
- City of Piedmont

Potential Project Visibility

Number of Structures Visible

- 0
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- >40

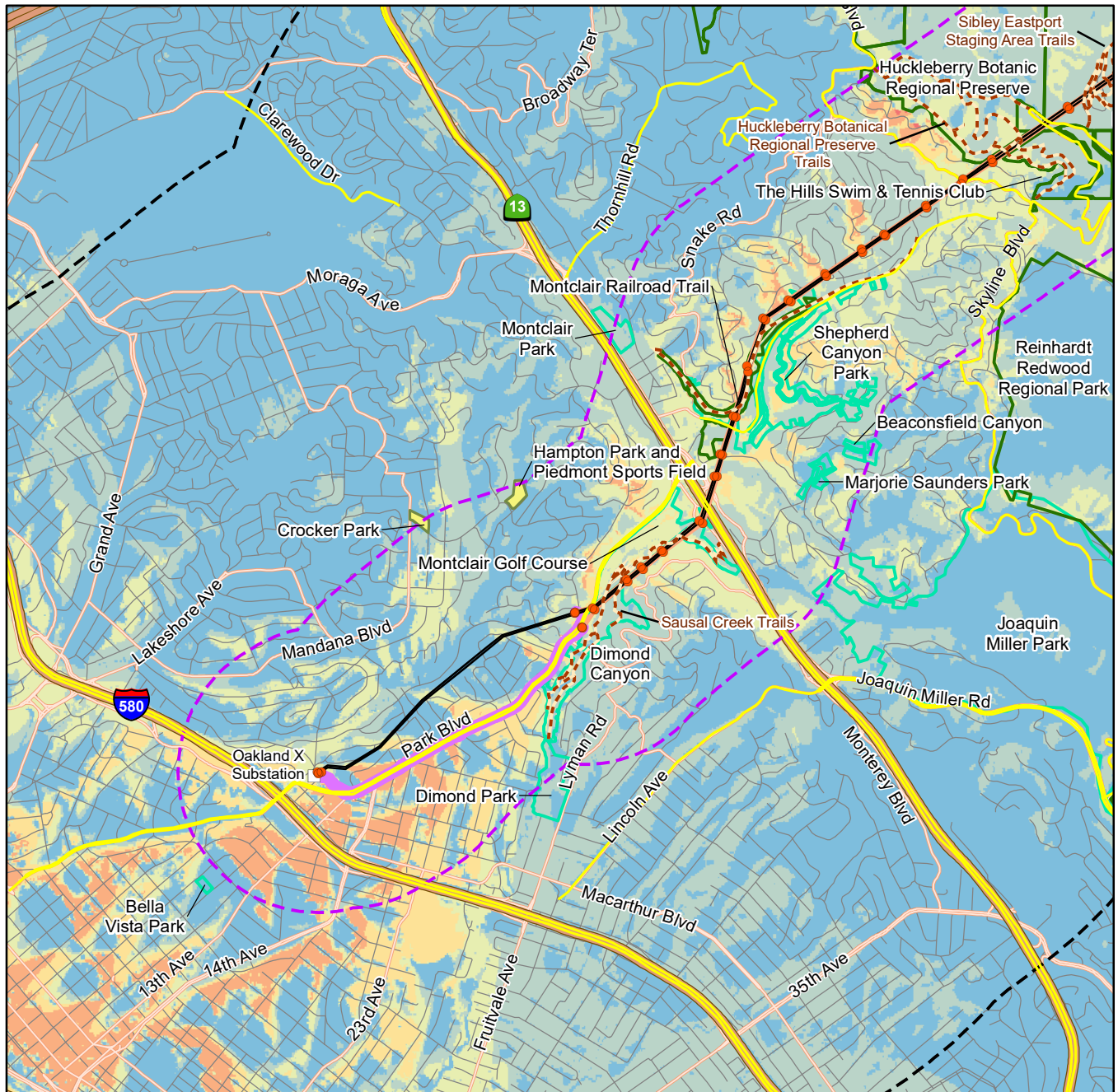
*Preliminary and Subject to Change
Based on CPUC Requirements, Final
Engineering, and Other Factors*



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Figure 5.1-1b Page 1 of 2
Viewshed Analysis
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

- 0.5-mile Project Buffer
- 2-mile Project Buffer
- Scenic Roadway
- Hiking Trail
- Substation

Overhead Structures

- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Parks in the Proposed Project Vicinity

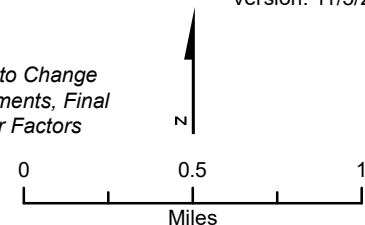
- East Bay Regional Park District (EBRPD)
- City of Oakland
- City of Piedmont

Potential Project Visibility

Number of Structures Visible

- 0
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- >40

*Preliminary and Subject to Change
Based on CPUC Requirements, Final
Engineering, and Other Factors*



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Figure 5.1-1b Page 2 of 2
Viewshed Analysis
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



1. Snow Court in Moraga looking southwest
Structures EN2, EN3, ES3



2. McCosker Loop Trail in Robert Sibley Volcanic Regional Preserve looking northeast*
Structures EN8, ES8A, ES8B, ES9

* KOP; see Figure 5.1-3 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



3. East Bay Skyline Trail (Bay Area Ridge Trail) looking northeast*
Structures EN4, EB5, EN6, EN7, EN8, EN9, ES5, ES6, ES7, ES8, ES8A, ES8B, ES9, ES10



3b. East Bay Skyline Trail (Bay Area Ridge Trail) looking southwest*
Structures EN10, ES11

* KOP; see Figures 5.1-4 and 5.1-5 for visual simulations
Refer to Figure 5.1-1a for photograph viewpoint locations



4. Manzanita Drive near The Hills Swim and Tennis Club looking west*
Structures EN11, ES12



5. Skyline Boulevard looking west*
Structures EN12, ES13

* KOP; see Figures 5.1-6 and 5.1-7 for visual simulations
Refer to Figure 5.1-1a for photograph viewpoint locations



6. Balboa Drive at West Circle looking northeast*
Structures EN16, EN15, EN14, EN13, EN12, ES18, ES17, ES16, ES15, ES13



6b. Thackeray Drive at Westover Drive looking northwest*
Structures EN18, EN17A, ES20

* KOP; see Figures 5.1-8 and 5.1-9 for visual simulations
Refer to Figure 5.1-1a for photograph viewpoint locations



7. Montclair Railroad Trail in Shepherd Canyon Park looking north*
Structures EN19, ES21



8. Drake Drive at Rincon Drive looking south*
Structures EN21, ES23

* KOP; see Figure 5.1-10 and 5.1-11 for visual simulations
Refer to Figure 5.1-1a for photograph viewpoint locations



8b. Drake Drive at Magellan Drive looking northeast*
Structures EN20, ES22



9. State Route 13 (Warren Freeway) looking north
Structures EN23, ES25

* KOP; see Figure 5.1-12 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



10. State Route 13 (Warren Freeway) looking southwest*
Structures EN24, ES26



11. Bridgeview Trail in Dimond Canyon looking northeast
Structures EN24, ES26

* KOP; see Figure 5.1-13 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



12. Montclair Golf Course looking southwest
Structures EN25, ES27



13. Park Boulevard looking south
Structures EN28, ES30



13b. Park Boulevard looking northeast*
Structures EN27, EN26 , EN25, ES29, ES28, ES27



14. Leimert Bridge looking north
Structures EN28, ES30
* KOP; see Figure 5.1-14 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



15. Park Boulevard at Estates Drive looking north
Structures EN29, ES31



16. Estates Drive near Sandringham Road looking south*
Structures EN29, ES31

* KOP; see Figure 5.1-15 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



17. Hollywood Avenue near San Sebastian Avenue looking northwest*
Structures EN31, ES33



18. Trestle Glen Road near Humphrey Place looking northeast
Structures EN33, ES34

* KOP; see Figure 5.1-16 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



19. Holman Road near Bates Road looking northeast*
Structures EN35, ES36



20. Holman Road near Grosvenor Place looking east
Oakland X Substation

* KOP; see Figure 5.1-17 for visual simulation
Refer to Figure 5.1-1a for photograph viewpoint locations



Existing view from Sibley Volcanic Regional Preserve McCosker Loop Trail looking northeast (KOP 2)
Structures EN8, ES8A, 8B, 9

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Sibley Volcanic Regional Preserve McCosker Loop Trail looking northeast (KOP 2)
Structures RN8, RS8

Refer to Figure 5.1-1a for viewpoint location

ENVIRONMENTAL VISION
241104

*Preliminary and Subject to Change Based on
CPUC Requirements, Final Engineering, and
Other Factors*

Figure 5.1-3b
Visual Simulation - Sibley Volcanic Regional Preserve
Moraga–Oakland X 115 kV Rebuild Project



Existing view from East Bay Skyline Trail (Bay Area Ridge Trail) looking northeast (KOP 3)
Structures EN9,8,7,6,5,4, ES10,9,8A,8B,8,7,6,5

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from East Bay Skyline Trail (Bay Area Ridge Trail) looking northeast (KOP 3)
Structures RN9,8,7,6,5,4, RS9,8,7,6,5,4

Refer to Figure 5.1-1a for viewpoint location

*Preliminary and Subject to Change Based on
CPUC Requirements, Final Engineering, and
Other Factors*

ENVIRONMENTAL VISION
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Figure 5.1-4b
Visual Simulation - East Bay Skyline Trail
Moraga–Oakland X 115 kV Rebuild Project



Existing view from East Bay Skyline Trail (Bay Area Ridge Trail) looking southwest (KOP 3b)
Structures EN10, ES11

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from East Bay Skyline Trail (Bay Area Ridge Trail) looking southwest (KOP 3b)
Structures RN10, RS10

Refer to Figure 5.1-1a for viewpoint location



Existing view from Manzanita Drive near The Hills Swim and Tennis Club looking west (KOP 4)
Structures EN11, ES12

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Manzanita Drive near The Hills Swim and Tennis Club looking west (KOP 4)

Refer to Figure 5.1-1a for viewpoint location



Existing view from Skyline Boulevard looking west (KOP 5)
Structures EN12, ES13

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Skyline Boulevard looking west (KOP 5)
Structures RN11, RS11

Refer to Figure 5.1-1a for viewpoint location

ENVIRONMENTAL VISION
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*Preliminary and Subject to Change Based
on CPUC Requirements, Final Engineering,
and Other Factors*

Figure 5.1-7b
Visual Simulation - Skyline Boulevard
Moraga–Oakland X 115 kV Rebuild Project



Existing view from Balboa Drive at West Circle looking northeast (KOP6)
Structures EN16,15,14,13,12, ES18,17,16,15,13

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Balboa Drive at West Circle looking northeast (KOP6)
Structures RN15,14,13,12,11, RS15,14,13,12,11

Refer to Figure 5.1-1a for viewpoint location

*Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors*

Figure 5.1-8b
Visual Simulation - Balboa Drive
Moraga–Oakland X 115 kV Rebuild Project



Existing view from Thackeray Drive at Westover Drive looking northwest (KOP6b)
Structures EN18,17A, ES20

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Thackeray Drive at Westover Drive looking northwest (KOP6b)
Structures RN17, RS17

Refer to Figure 5.1-1a for viewpoint location

*Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors*

Figure 5.1-9b
Visual Simulation - Thackeray Drive
Moraga–Oakland X 115 kV Rebuild Project



Existing view from Montclair Railroad Trail in Shepherd Canyon Park looking north (KOP7)
Structures EN19, ES21

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Montclair Railroad Trail in Shepherd Canyon Park looking north (KOP7)
Structures RN18, RS18

Refer to Figure 5.1-1a for viewpoint location



Existing view from Drake Drive at Rincon Drive looking south (KOP 8)
Structures EN21, ES23

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Drake Drive at Rincon Drive looking south (KOP 8)
Structures RN19, RS19

Refer to Figure 5.1-1a for viewpoint location



Existing view from Drake Drive at Magellan Drive looking northeast (KOP 8b)
Structures EN20, ES22

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Drake Drive at Magellan Drive looking northeast (KOP 8b)

Refer to Figure 5.1-1a for viewpoint location

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*Preliminary and Subject to Change Based on
CPUC Requirements, Final Engineering, and
Other Factors*

Figure 5.1-12b
Visual Simulation - Drake Drive NE
Moraga–Oakland X 115 kV Rebuild Project



Existing view from State Route 13 (Warren Freeway) looking southwest (KOP 10)
Structures EN24, ES26

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from State Route 13 (Warren Freeway) looking southwest (KOP 10)
Structures RN22, RS22

Refer to Figure 5.1-1a for viewpoint location

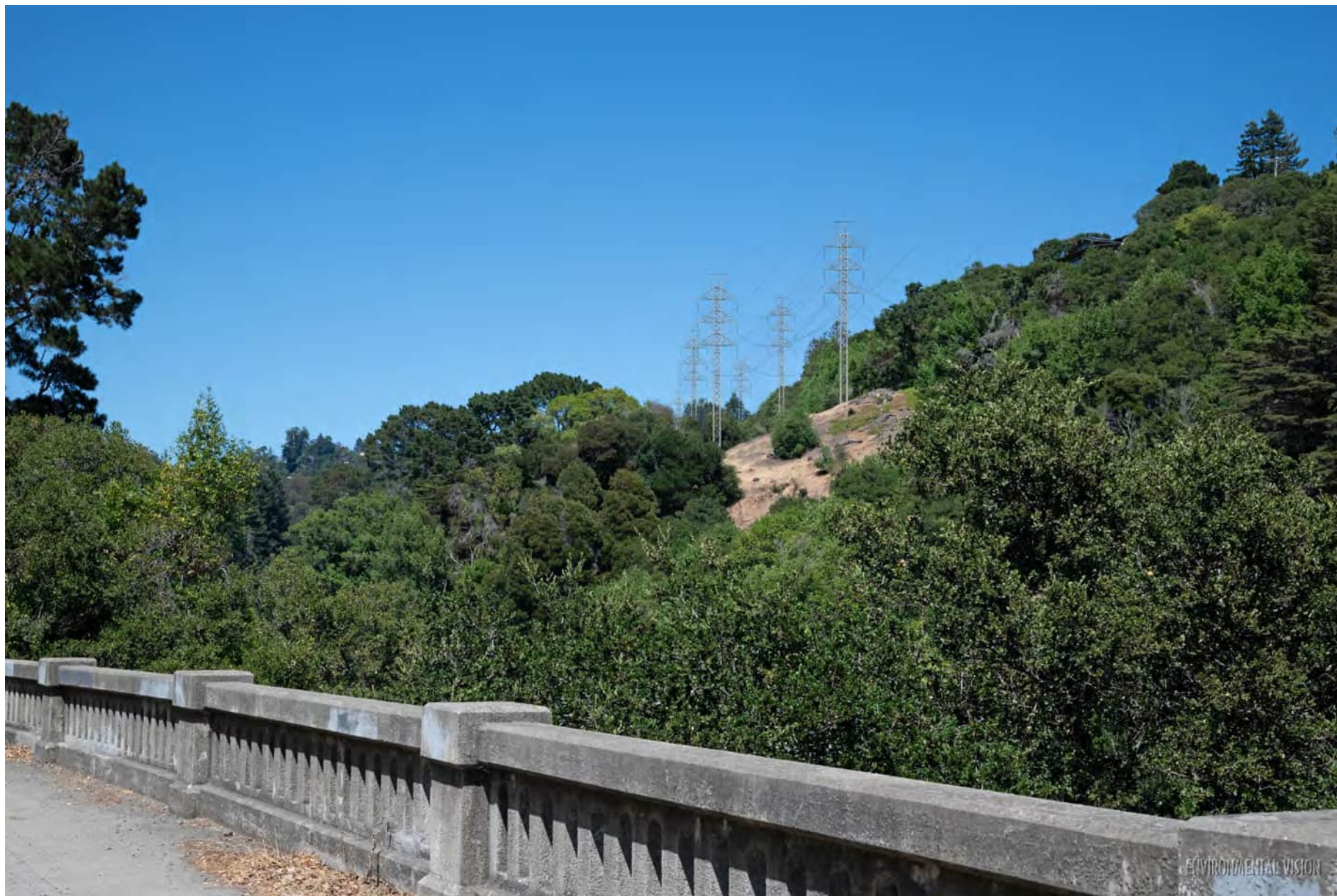
*Preliminary and Subject to Change Based on
CPUC Requirements, Final Engineering, and
Other Factors*

Figure 5.1-13b
Visual Simulation - State Route 13
Moraga–Oakland X 115 kV Rebuild Project



Existing view from Park Boulevard looking northeast (KOP 13b)
Structures EN27,26,25, ES29,28,27

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Park Boulevard looking northeast (KOP 13b)
Structures RN24,24,23, RS25,24,23

Refer to Figure 5.1-1a for viewpoint location

*Preliminary and Subject to Change Based on
CPUC Requirements, Final Engineering, and
Other Factors*

Figure 5.1-14b
Visual Simulation - Park Boulevard
Moraga–Oakland X 115 kV Rebuild Project



Existing view from Estates Drive near Sandringham Road looking south (KOP 16)
 Structures EN29, ES31
 Refer to Figure 5.1-1a for viewpoint location
 ENVIRONMENTAL VISION
 241104

Figure 5.1-15a
Existing View - Estates Drive
 Moraga–Oakland X 115 kV Rebuild Project



Visual simulation of proposed project from Estates Drive near Sandringham Road looking south (KOP 16)
 Structures RN27A,B, RS27A,B
 Refer to Figure 5.1-1a for viewpoint location
 ENVIRONMENTAL VISION
 241104

*Preliminary and Subject to Change Based on
 CPUC Requirements, Final Engineering, and
 Other Factors*

Figure 5.1-15b
Visual Simulation - Estates Drive
 Moraga–Oakland X 115 kV Rebuild Project



Existing view from Hollywood Avenue near San Sebastian Avenue looking northwest (KOP 17)
Structures EN31, ES33

Refer to Figure 5.1-1a for viewpoint location



Visual simulation of proposed project from Hollywood Avenue near San Sebastian Avenue looking northwest (KOP 17)

Refer to Figure 5.1-1a for viewpoint location



Existing view from Holman Road near Bates Road looking northeast (KOP 19)
Structures EN35, ES36

Refer to Figure 5.1-1a for viewpoint location

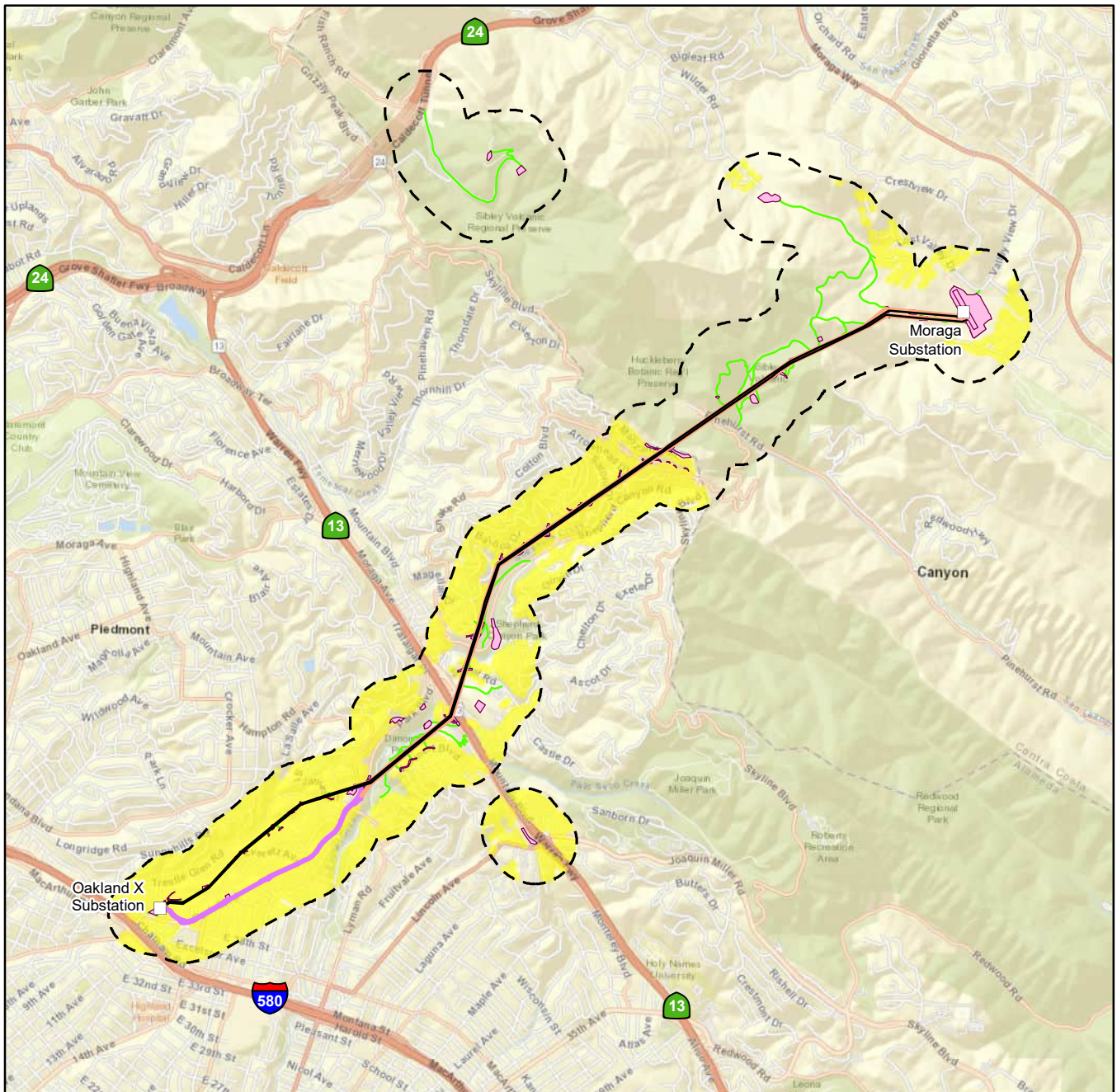


Visual simulation of proposed project from Holman Road near Bates Road looking northeast (KOP 19)

Refer to Figure 5.1-1a for viewpoint location

*Preliminary and Subject to Change Based on
CPUC Requirements, Final Engineering, and
Other Factors*

Figure 5.1-17b
Visual Simulation - Holman Road
Moraga–Oakland X 115 kV Rebuild Project



Version: 2/17/2024

Legend

- 1000-foot Project Buffer
- Residential Area
- Substation

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

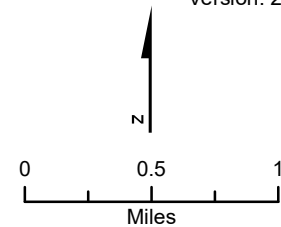
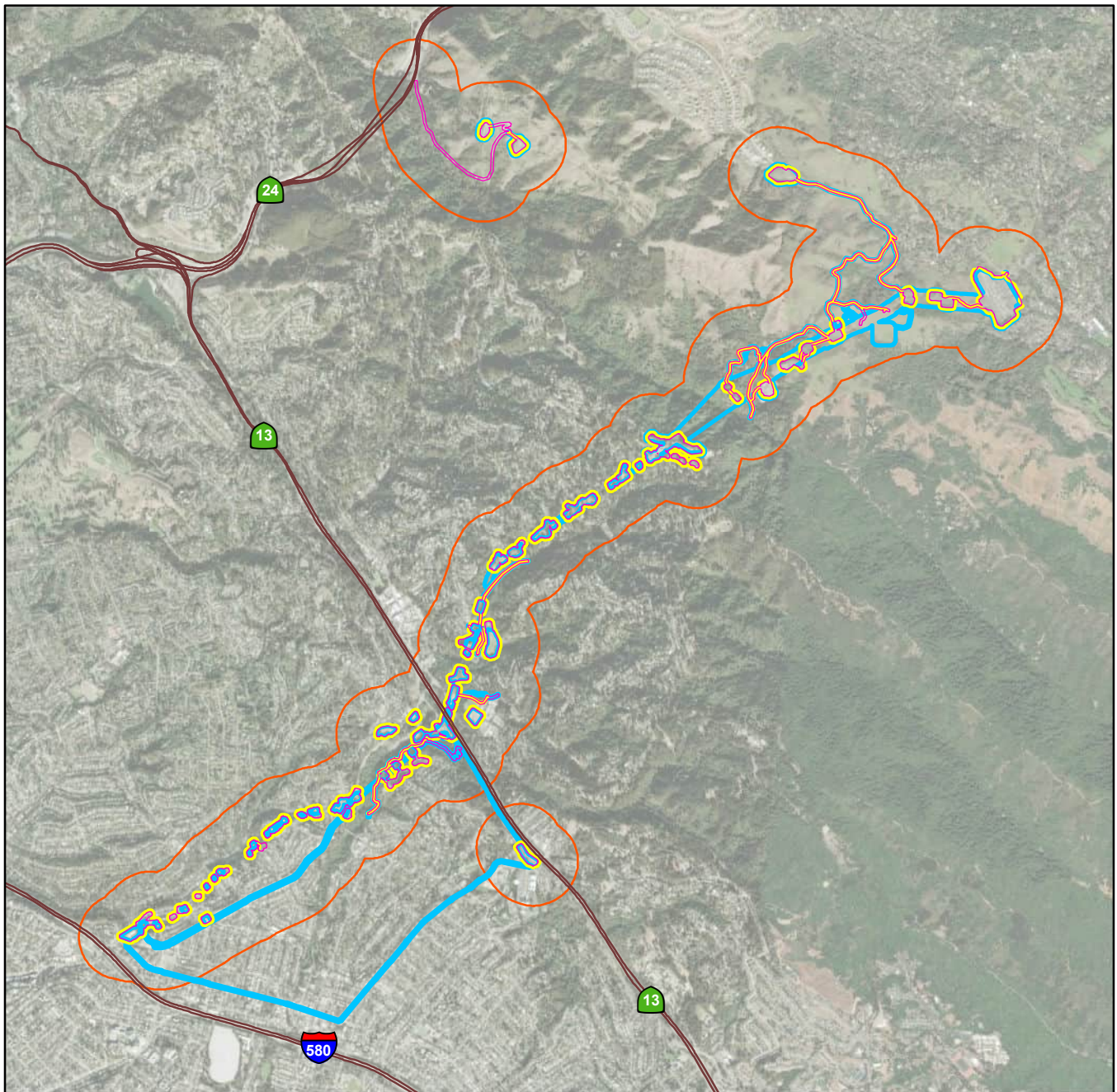


Figure 5.3-1
Residential Receptors
Near Project Features
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs

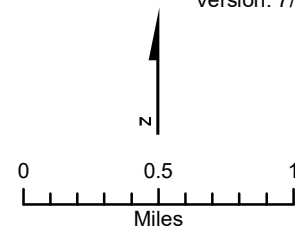


Version: 7/24/2024

Legend

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

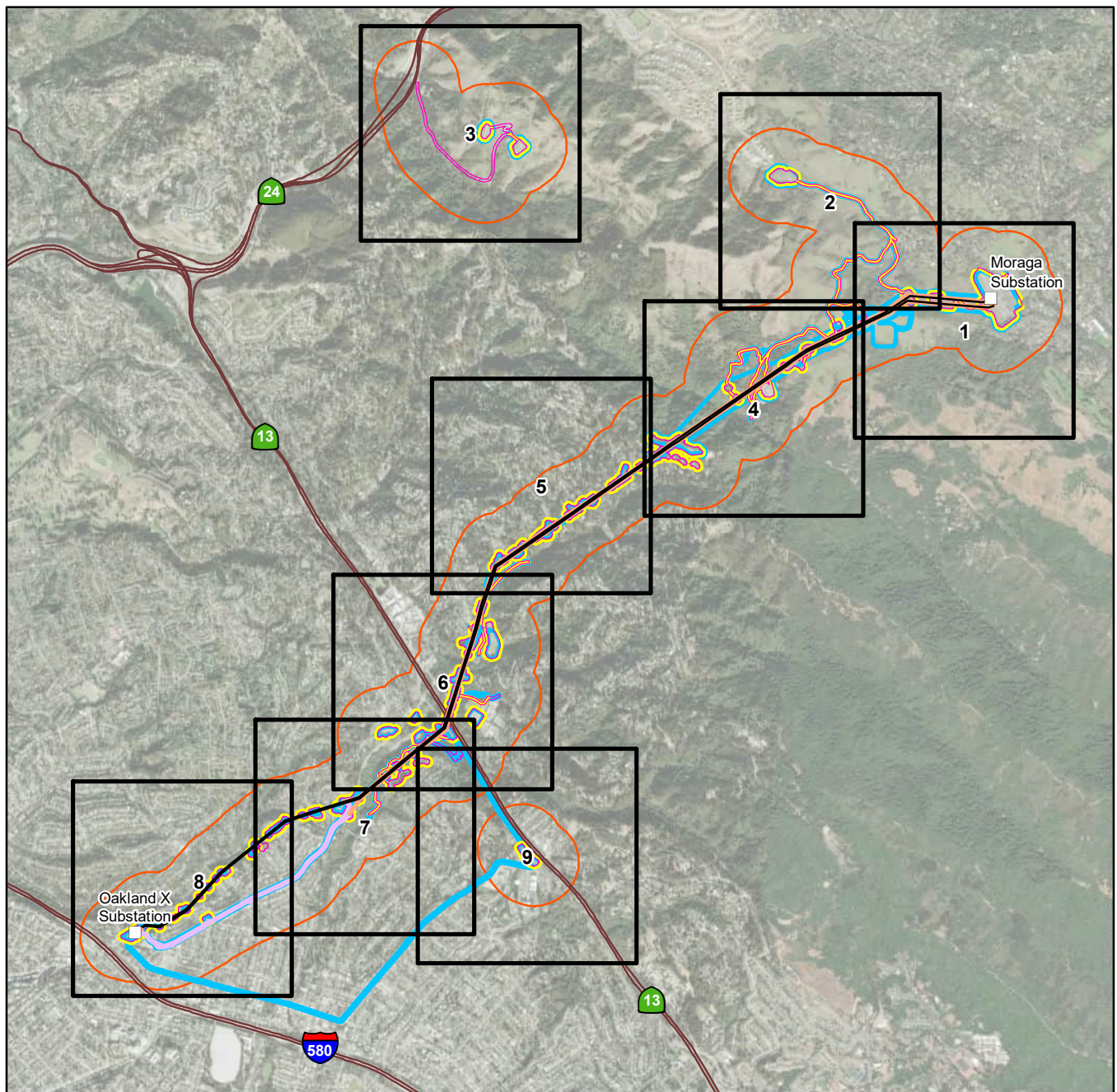
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.



**Figure 5.4-1 Overview
Biological Study/Survey Areas**
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Version: 7/25/2024

Legend

- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

Note: The detail map sheets cover the proposed project routes and construction work areas and access.

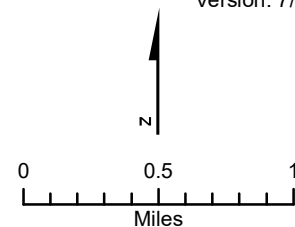
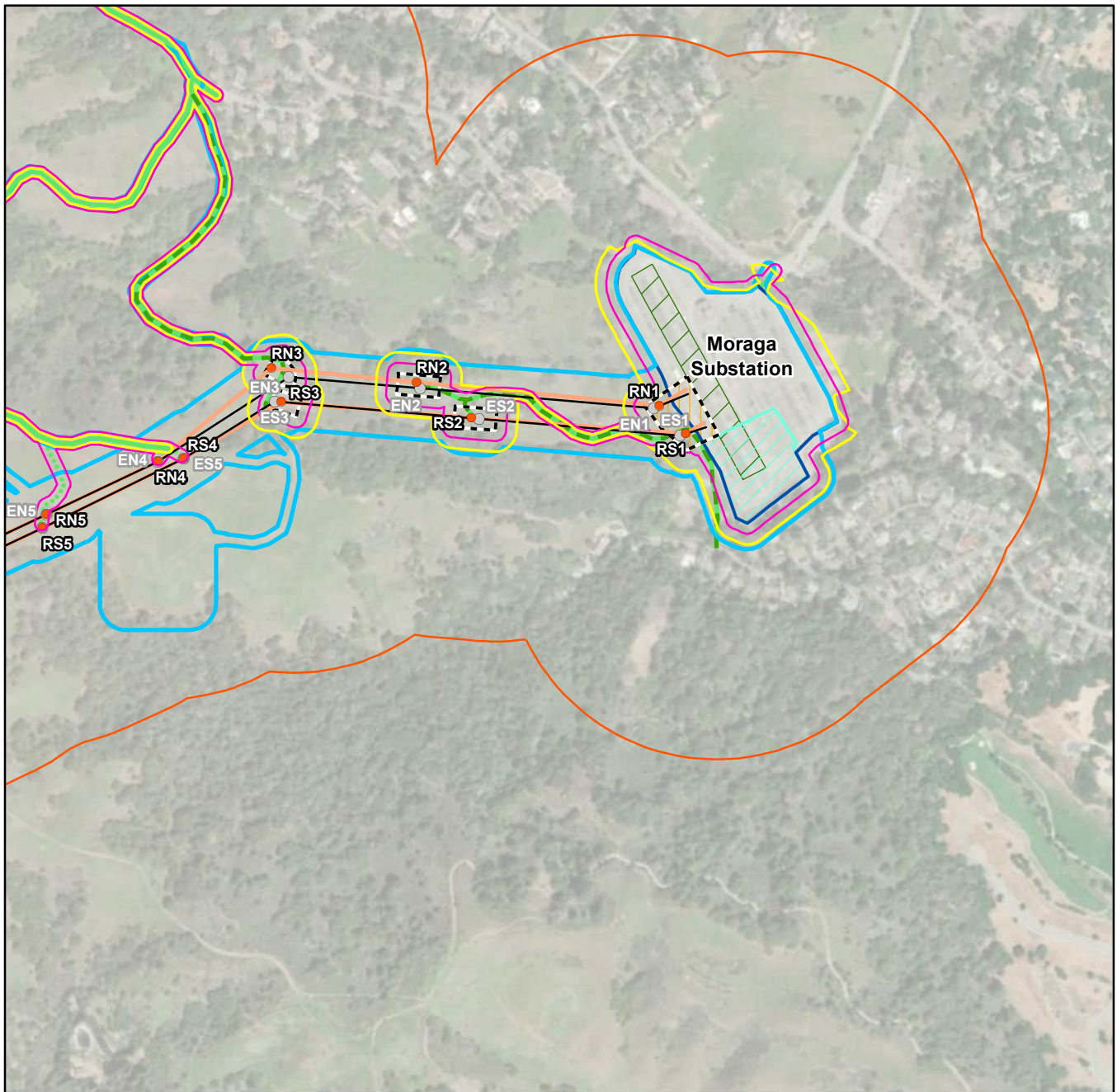


Figure 5.4-2 Overview Project Components and Biological Study/Survey Areas
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

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Version: 7/25/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Access

- Existing
- Improvement
- Walk-In

Temporary Work Areas

- Moraga Substation 115 kV Breaker Work Area
- Staging Area
- Substation Work Area
- Tension Pull Site
- Work Area

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

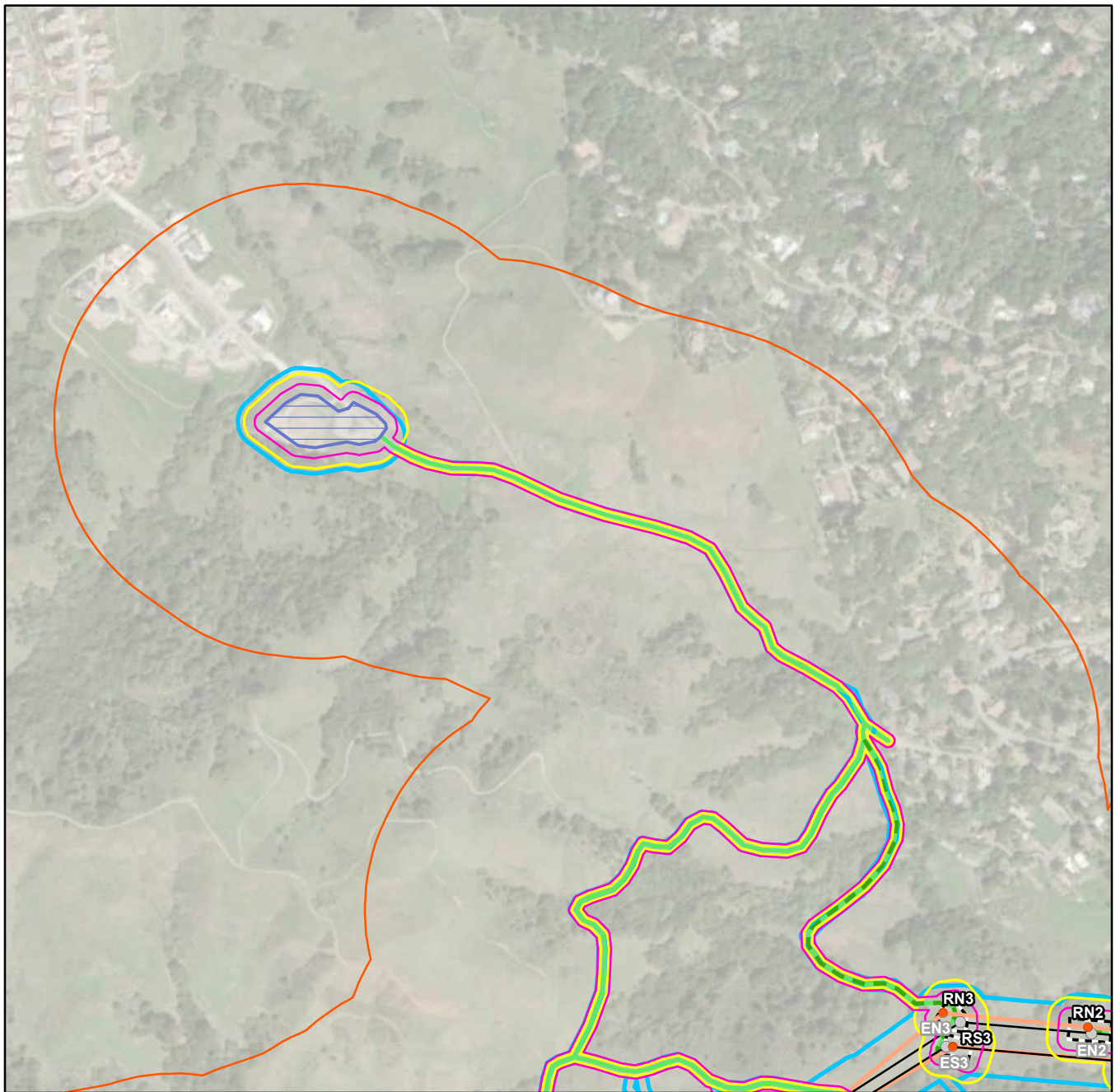
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.



Figure 5.4-2 Page 1 of 9
Project Components and
Biological Study/Survey Areas
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 7/25/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Access

- Existing
- Improvement
- Walk-In

Temporary Work Areas

- Landing Zone/ Staging Area
- Work Area

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

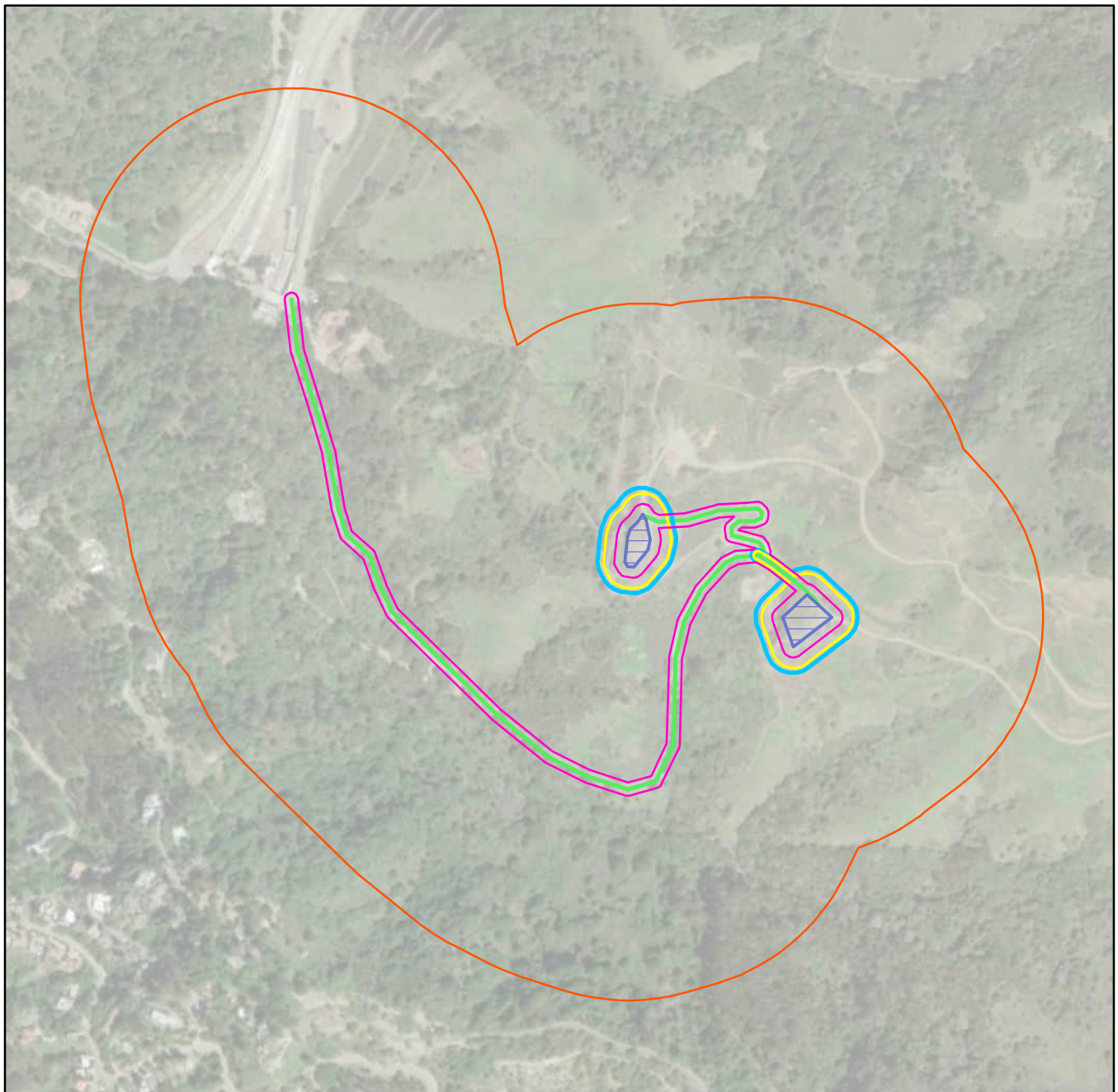
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

Figure 5.4-2 Page 2 of 9
Project Components and
Biological Study/Survey Areas
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 7/25/2024

Legend

Access

Existing

Temporary Work Areas

Landing Zone/ Staging Area

Botanical Study and Survey Area

Aquatic Study and Survey Area

Wildlife Study Area*

Wildlife Survey Area

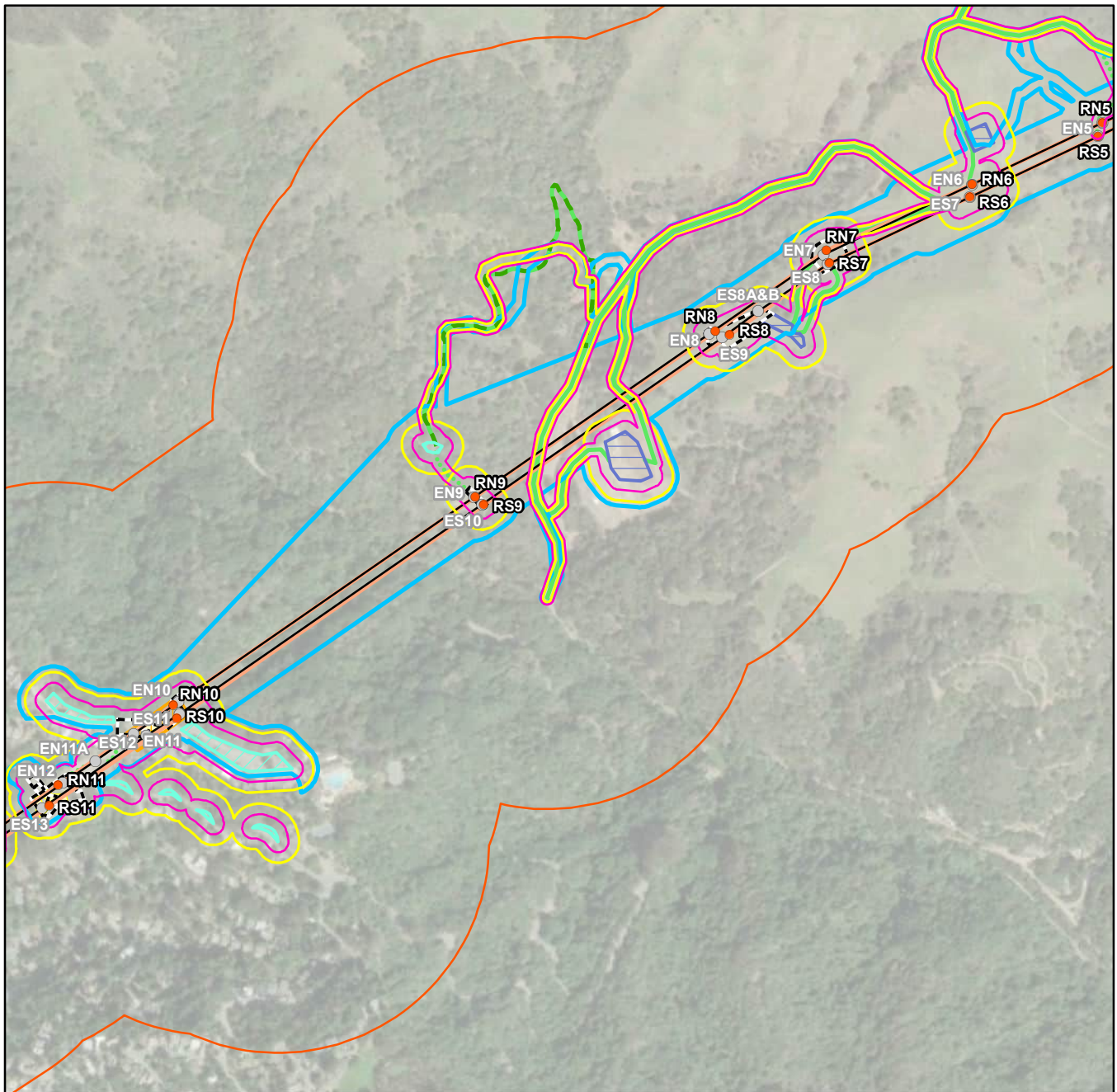
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

Figure 5.4-2 Page 3 of 9
Project Components and
Biological Study/Survey Areas
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 7/25/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Access

- Existing
- Improvement
- Walk-In

Temporary Work Areas

- Guard Poles
- Landing Zone/ Staging Area
- Staging Area
- Tension Pull Site
- Work Area

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

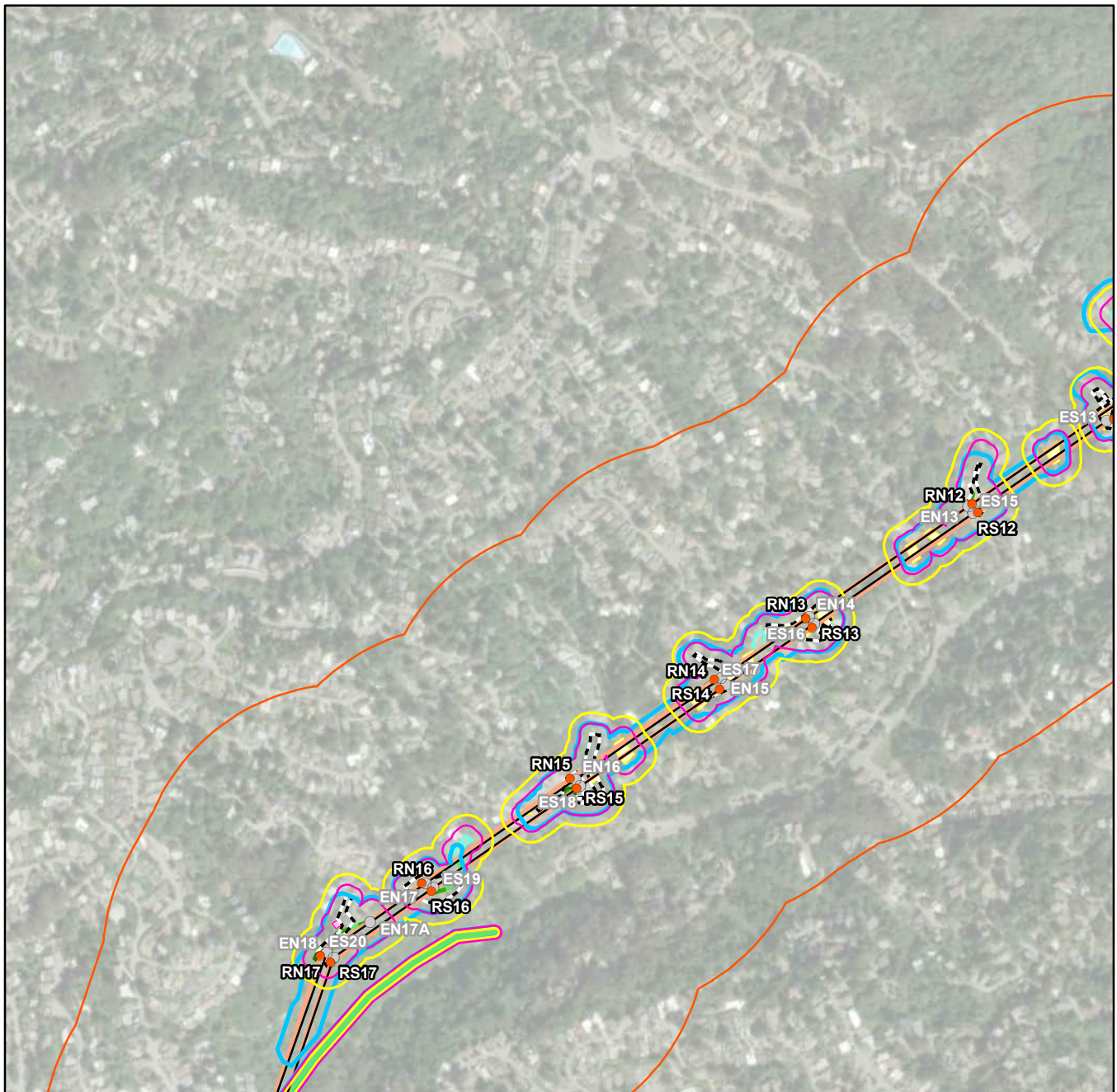
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

Figure 5.4-2 Page 4 of 9
Project Components and
Biological Study/Survey Areas
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Version: 7/25/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Access

- Existing
- Improvement

Temporary Work Areas

- Fence Removal/Replacement
- Guard Poles
- Staging Area
- Work Area
- Veg Work/Tree Removal

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

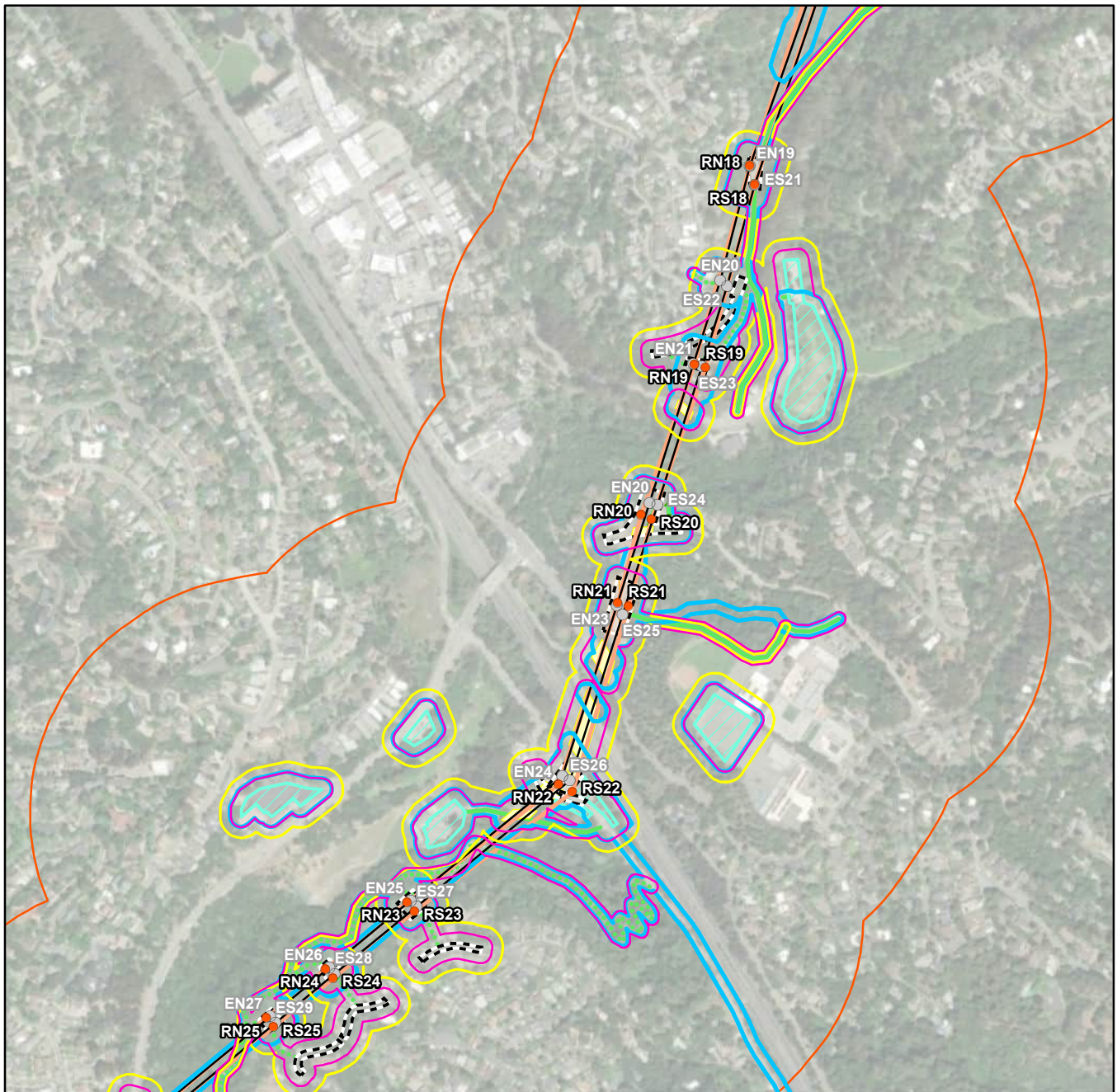
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

Figure 5.4-2 Page 5 of 9
Project Components and
Biological Study/Survey Areas
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Access

- Existing
- Improvement
- Walk-In

Temporary Work Areas

- Guard Poles
- Staging Area
- Tension Pull Site
- Work Area

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

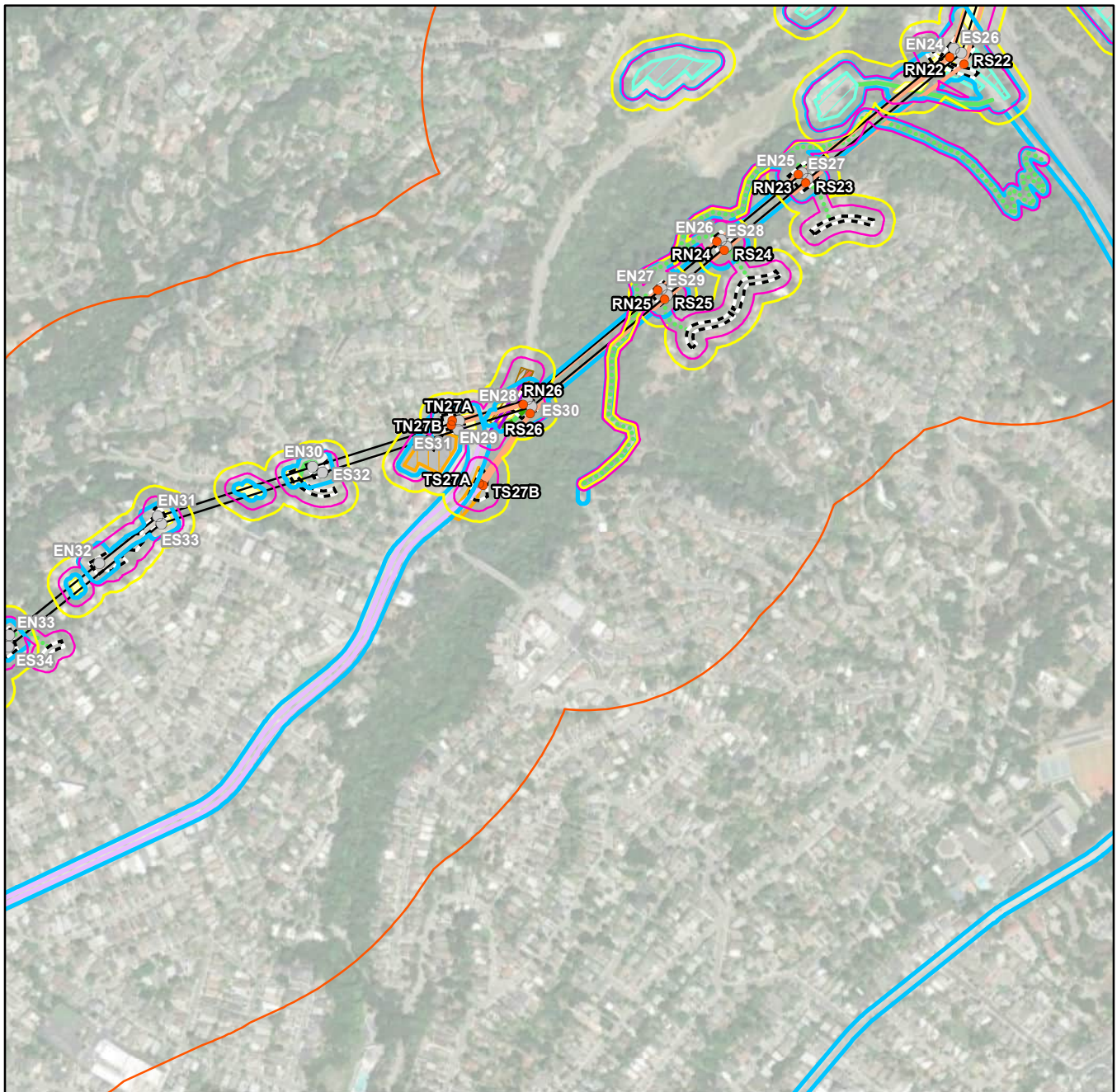
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

Figure 5.4-2 Page 6 of 9
Project Components and
Biological Study/Survey Areas
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Version: 7/25/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Access

- Existing
- Improvement
- ... Walk-In

Temporary Work Areas

- Guard Poles
- Staging Area
- Tension Pull Site
- Work Area
- 4 Lane Work Area Option
- EB Work Area Option
- Move Distribution Pole Option

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

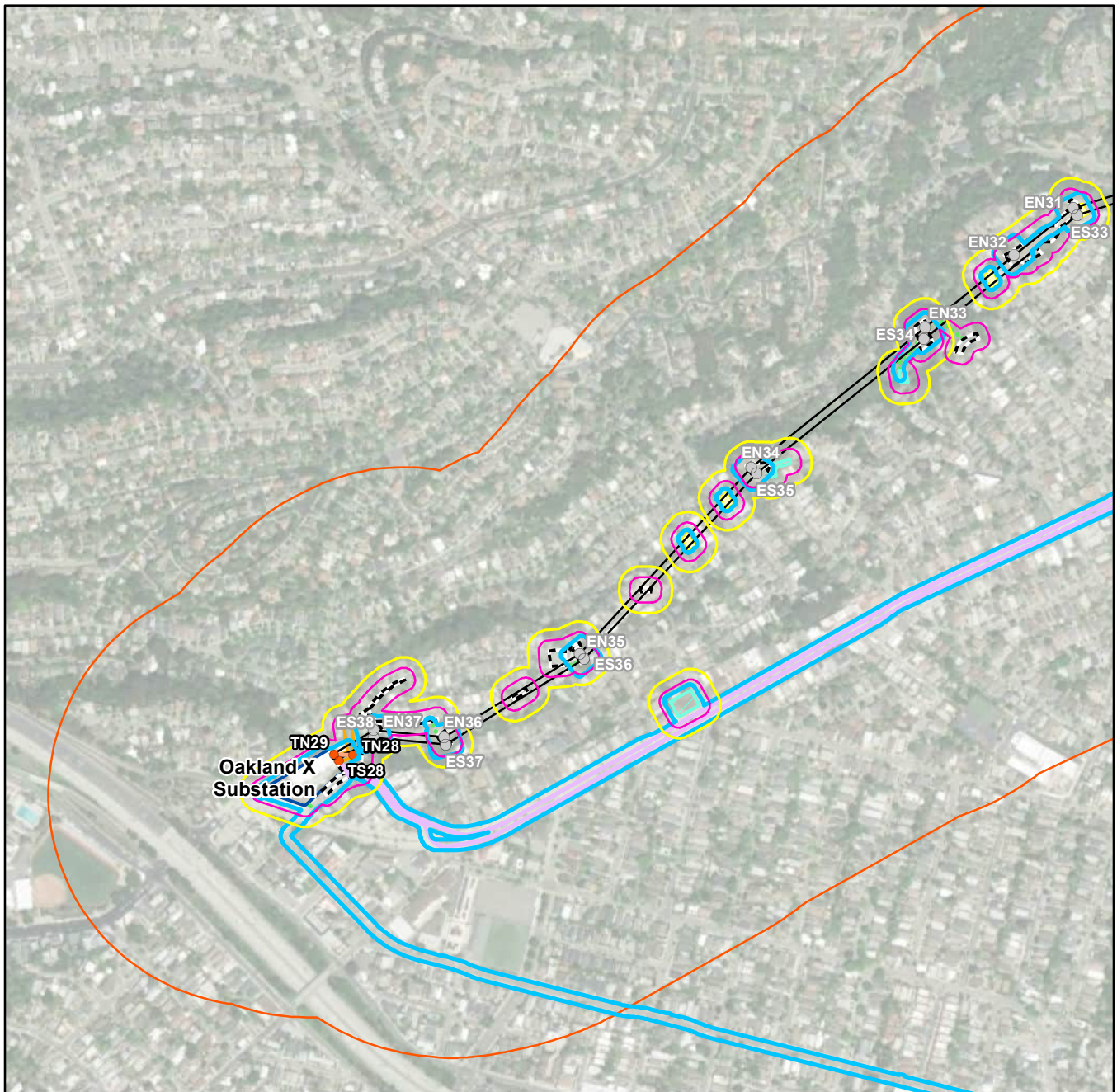
*Preliminary and Subject to Change
Based on CPUC Requirements, Final
Engineering, and Other Factors*

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

**Figure 5.4-2 Page 7 of 9
Project Components and
Biological Study/Survey Areas**
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

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Version: 7/25/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Access

- Existing
- Walk-In

Temporary Work Areas

- Guard Poles
- Staging Area
- Substation Work Area
- Tension Pull Site
- Work Area

- Botanical Study and Survey Area
- Aquatic Study and Survey Area
- Wildlife Study Area*
- Wildlife Survey Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet

Figure 5.4-2 Page 8 of 9
Project Components and
Biological Study/Survey Areas
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Legend

Overhead Routes

- Existing
- Proposed

Access

- Walk-In

Temporary Work Areas

- ▨ Staging Area
- - - Work Area

- ▭ Botanical Study and Survey Area
- ▭ Aquatic Study and Survey Area
- ▭ Wildlife Study Area*
- ▭ Wildlife Survey Area

Version: 7/25/2024

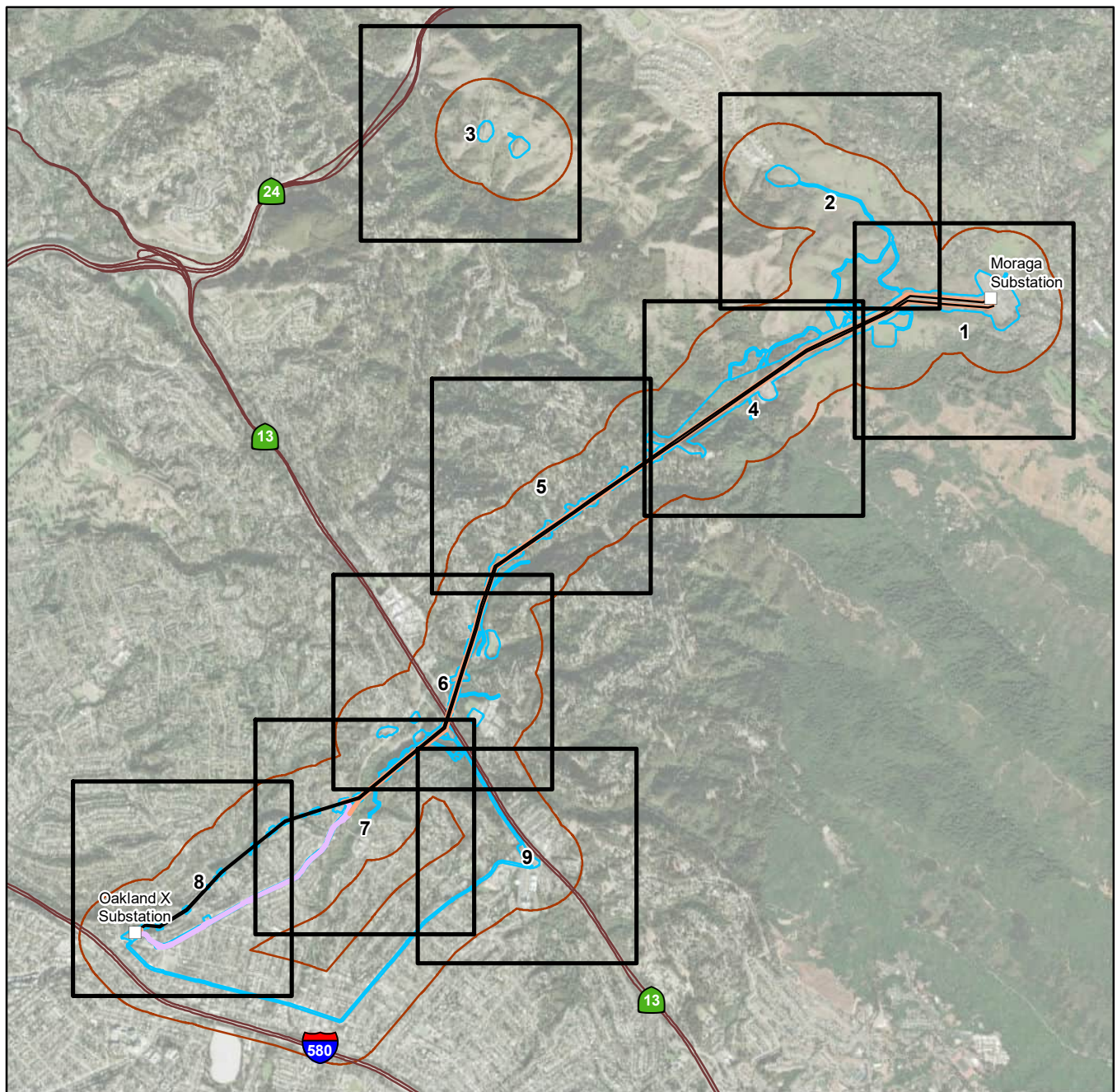
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.



Figure 5.4-2 Page 9 of 9
Project Components and
Biological Study/Survey Areas
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

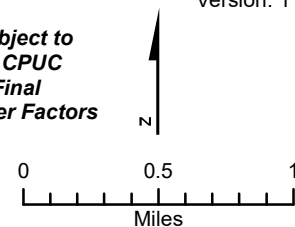
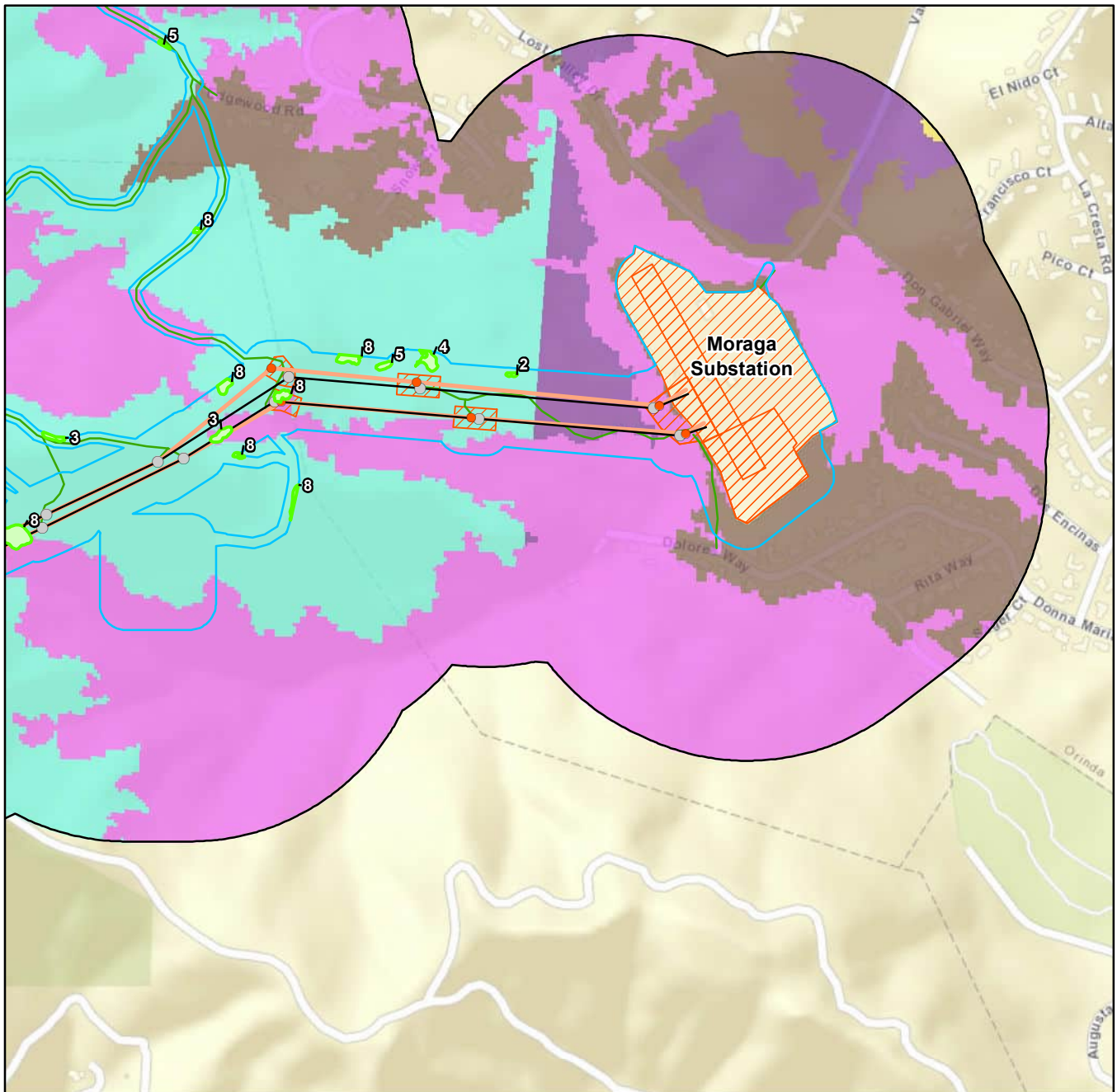


Figure 5.4-3 Overview Vegetation Communities
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Note: The detail map sheets cover the proposed project routes and construction work areas and access.

Jacobs



Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

Sensitive Natural Community*

Conservation Lands Network

- Coast Live Oak
- Coyote Brush
- Moderate Grasslands
- Urban/Developed (General)
- Warm Grasslands

*Sensitive Natural Communities (Nomad 2022)

1. *Arctostaphylos crustacea* Shrubland Alliance
2. *Carex densa* Provisional Herbaceous Alliance
3. *Elymus glaucus* Herbaceous Alliance
4. *Elymus triticoides* Herbaceous Alliance
5. *Erythranthe guttata* Herbaceous Alliance
6. *Salix lasiolepis* Shrubland Association
7. *Sequoia sempervirens* Forest Alliance
8. *Stipa* spp. Herbaceous Alliance
9. *Umbellularia californica* Forest Alliance

Version: 11/5/2024

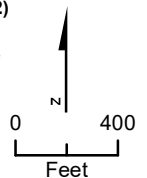
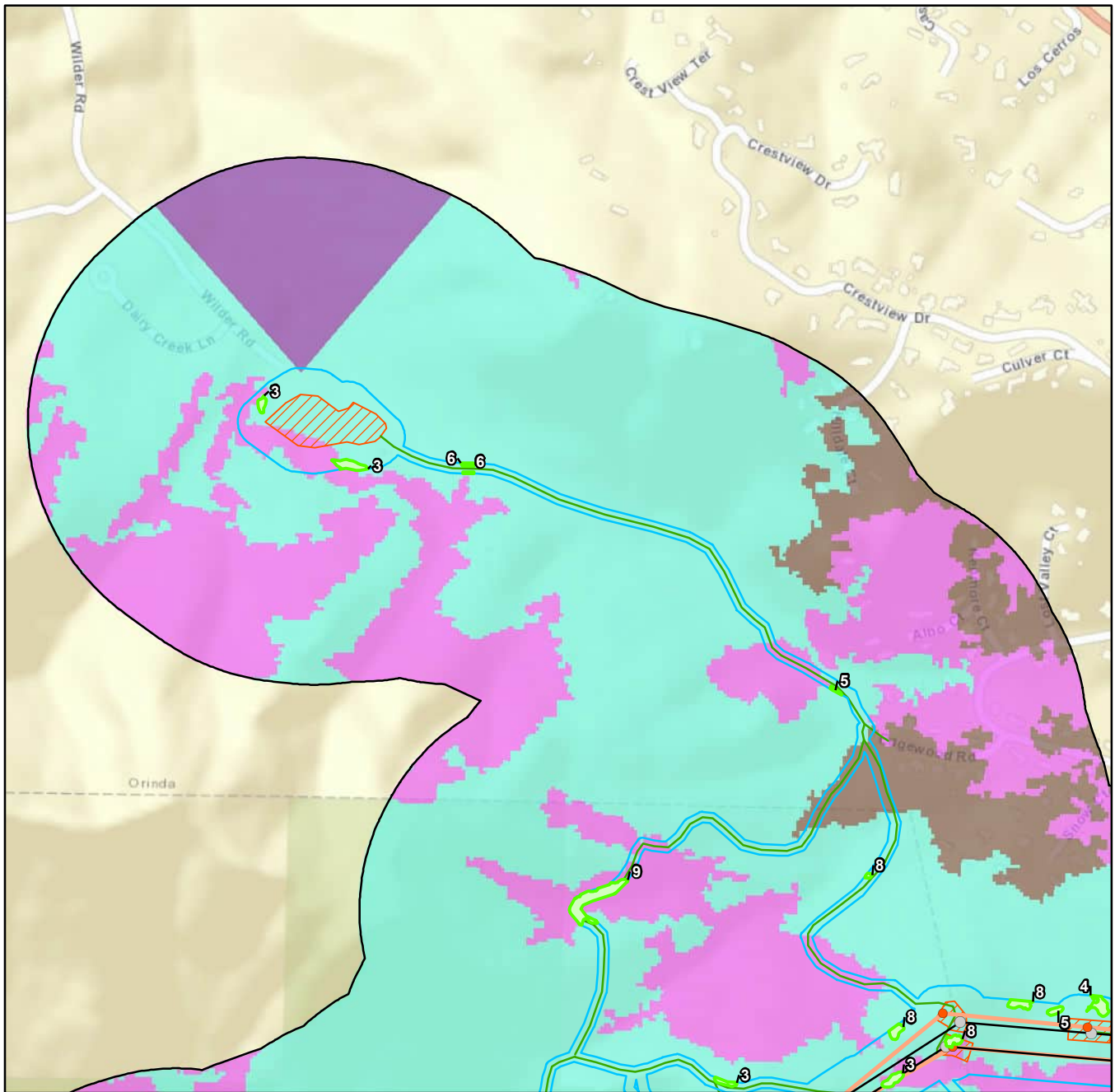


Figure 5.4-3 Page 1 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Coast Live Oak
- Moderate Grasslands
- Urban/Developed (General)
- Warm Grasslands

*Sensitive Natural Communities (Nomad 2022)

1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

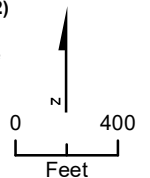
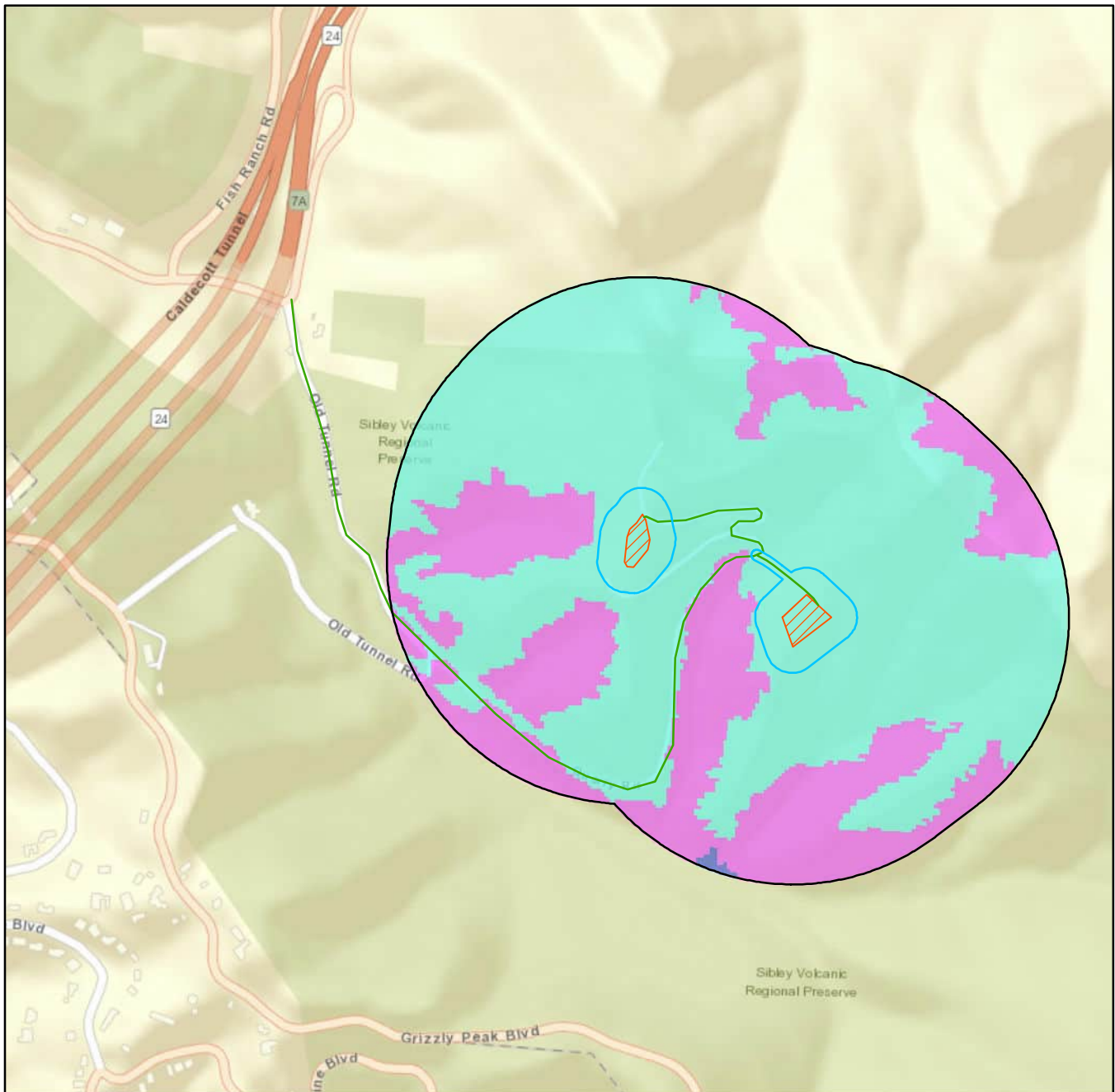


Figure 5.4-3 Page 2 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access
- Temporary Impact Areas**
- Work Area

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Coast Live Oak
- Eucalyptus
- Moderate Grasslands

*Sensitive Natural Communities (Nomad 2022)

1. *Arctostaphylos crustacea* Shrubland Alliance
2. *Carex densa* Provisional Herbaceous Alliance
3. *Elymus glaucus* Herbaceous Alliance
4. *Elymus triticoides* Herbaceous Alliance
5. *Erythranthe guttata* Herbaceous Alliance
6. *Salix lasiolepis* Shrubland Association
7. *Sequoia sempervirens* Forest Alliance
8. *Stipa* spp. Herbaceous Alliance
9. *Umbellularia californica* Forest Alliance

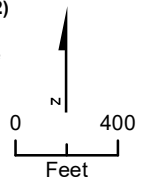
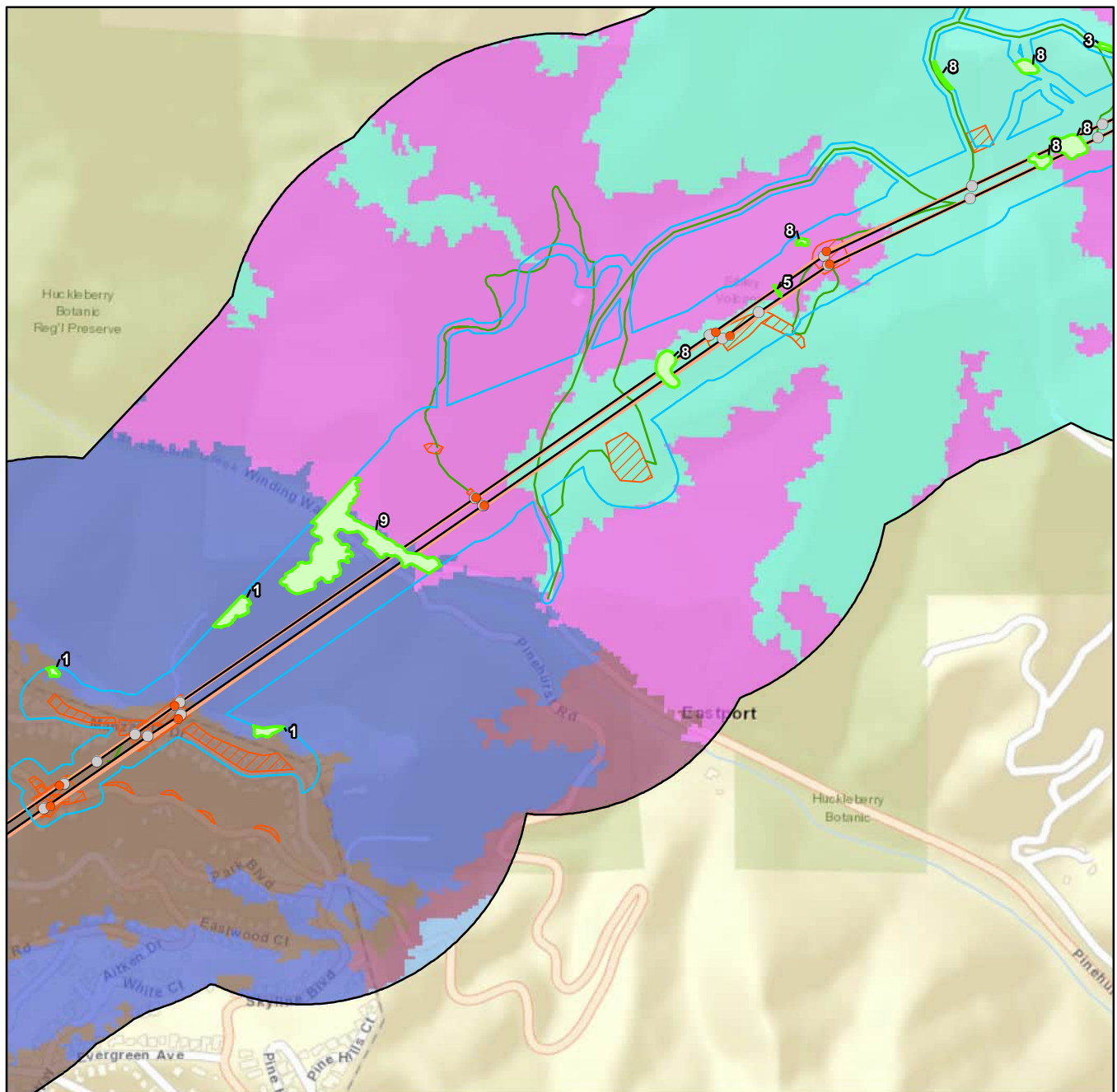


Figure 5.4-3 Page 3 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Coast Live Oak
- Eucalyptus
- Moderate Grasslands
- Non-Native/Ornamental Conifer/Hardwood
- Redwood
- Urban/Developed (General)

*Sensitive Natural Communities (Nomad 2022)

1. *Arctostaphylos crustacea* Shrubland Alliance
2. *Carex densa* Provisional Herbaceous Alliance
3. *Elymus glaucus* Herbaceous Alliance
4. *Elymus triticoides* Herbaceous Alliance
5. *Erythranthe guttata* Herbaceous Alliance
6. *Salix lasiolepis* Shrubland Association
7. *Sequoia sempervirens* Forest Alliance
8. *Stipa* spp. Herbaceous Alliance
9. *Umbellularia californica* Forest Alliance

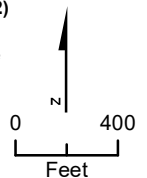
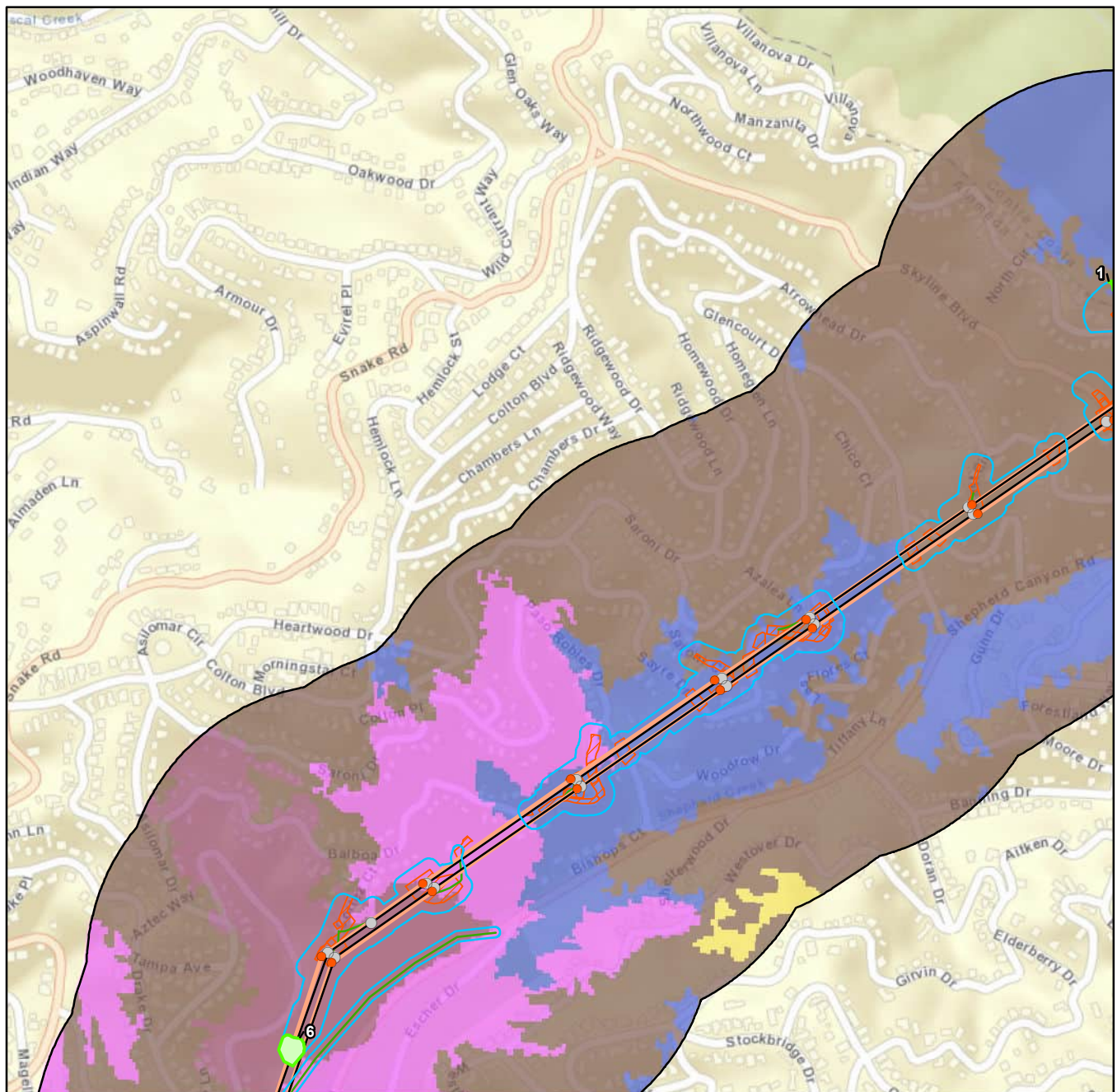


Figure 5.4-3 Page 4 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

- Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Coast Live Oak
- Coyote Brush
- Eucalyptus
- Non-Native/Ornamental Conifer/Hardwood
- Urban/Developed (General)

*Sensitive Natural Communities (Nomad 2022)

1. *Arctostaphylos crustacea* Shrubland Alliance
2. *Carex densa* Provisional Herbaceous Alliance
3. *Elymus glaucus* Herbaceous Alliance
4. *Elymus triticoides* Herbaceous Alliance
5. *Erythranthe guttata* Herbaceous Alliance
6. *Salix lasiolepis* Shrubland Association
7. *Sequoia sempervirens* Forest Alliance
8. *Stipa* spp. Herbaceous Alliance
9. *Umbellularia californica* Forest Alliance

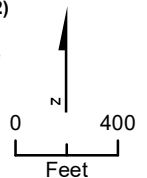
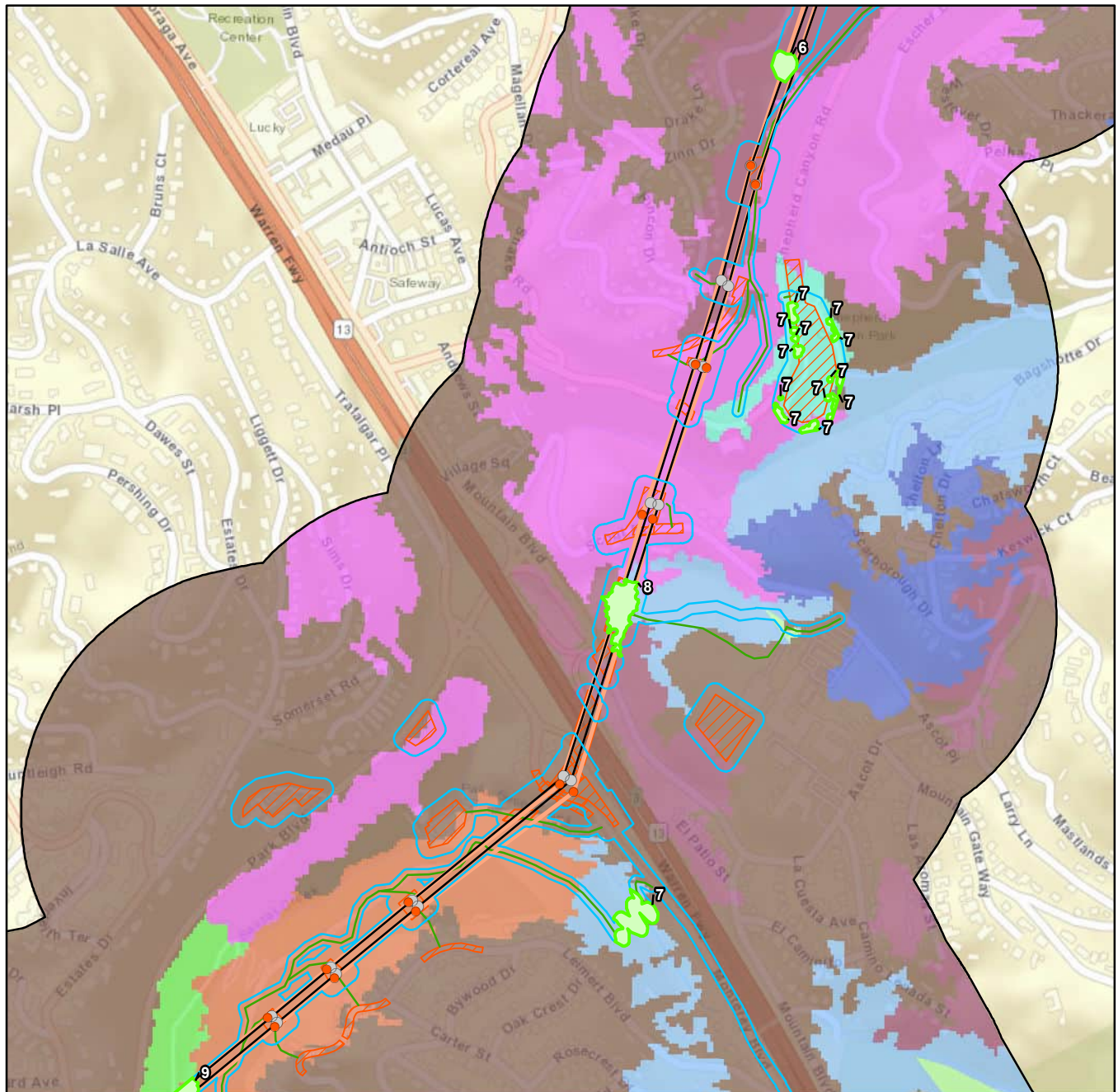


Figure 5.4-3 Page 5 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- California Bay
- Coast Live Oak
- Coastal Mixed Hardwood
- Eucalyptus
- Moderate Grasslands
- Non-Native/Ornamental Conifer/Hardwood
- Redwood
- Serpentine Conifer
- Urban/Developed (General)

*Sensitive Natural Communities (Nomad 2022)

1. *Arctostaphylos crustacea* Shrubland Alliance
2. *Carex densa* Provisional Herbaceous Alliance
3. *Elymus glaucus* Herbaceous Alliance
4. *Elymus triticoides* Herbaceous Alliance
5. *Erythranthe guttata* Herbaceous Alliance
6. *Salix lasiolepis* Shrubland Association
7. *Sequoia sempervirens* Forest Alliance
8. *Stipa* spp. Herbaceous Alliance
9. *Umbellularia californica* Forest Alliance

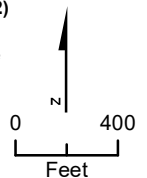
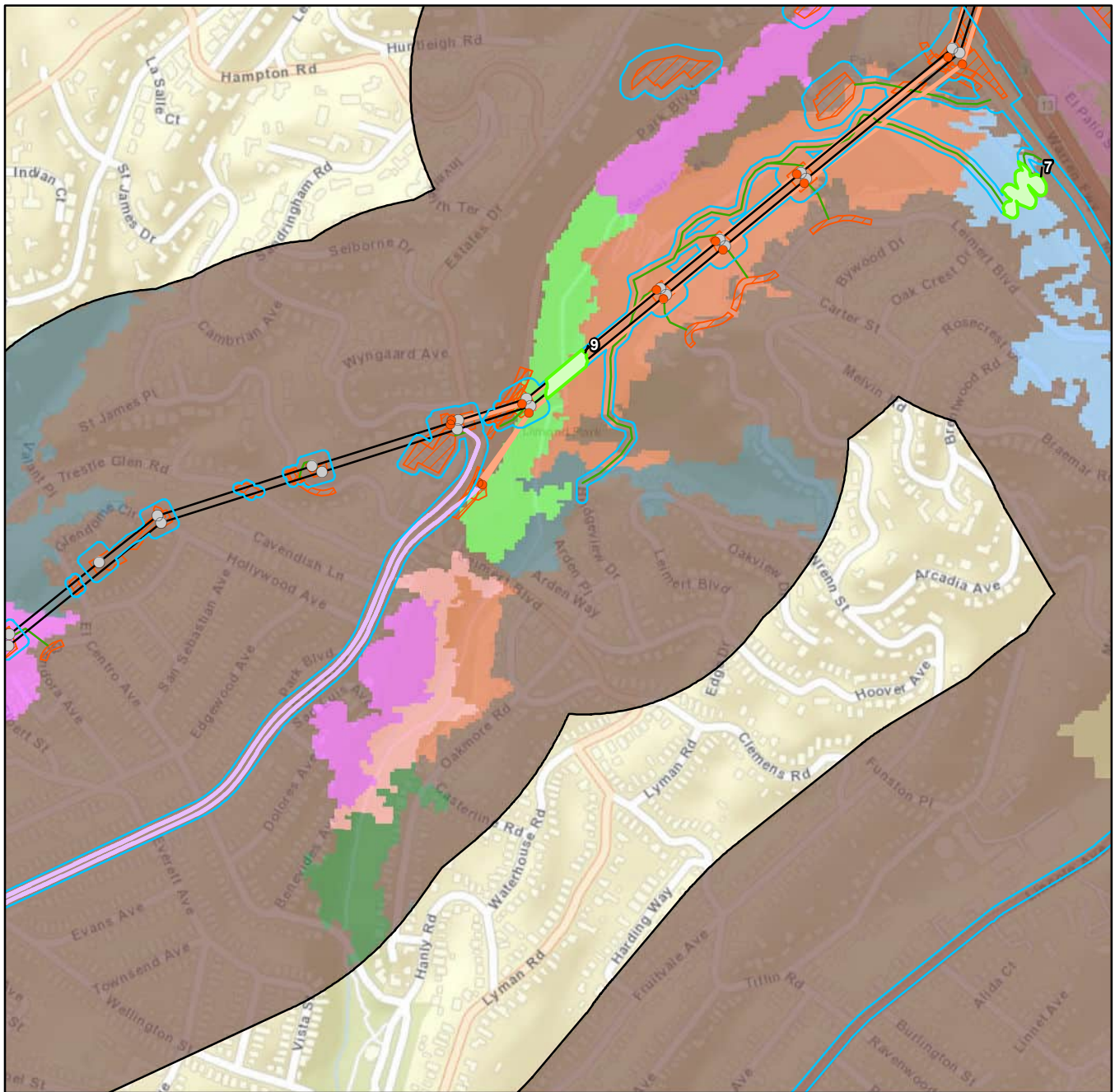


Figure 5.4-3 Page 6 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Blue Oak
- California Bay
- Coast Live Oak
- Coastal Mixed Hardwood
- Interior Mixed Hardwood
- Non-Native/Ornamental Conifer/Hardwood
- Non-Native/Ornamental Grass
- Redwood
- Riparian Mixed Hardwood
- Urban/Developed (General)

*Sensitive Natural Communities (Nomad 2022)

1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
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6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

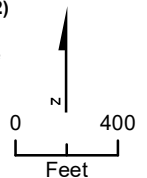
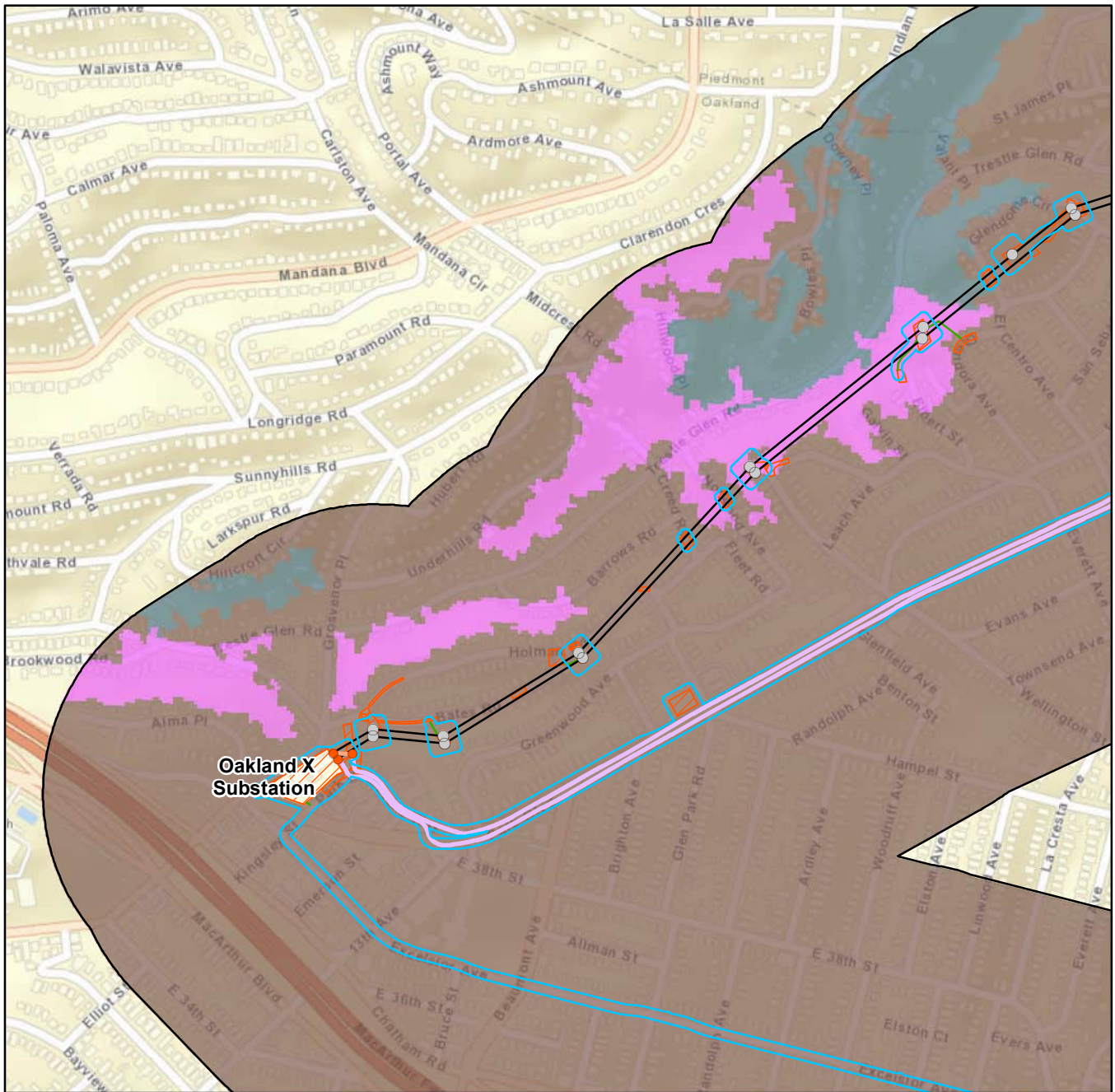


Figure 5.4-3 Page 7 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Structures

- Existing Overhead Structure

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Blue Oak
- Coast Live Oak
- Urban/Developed (General)

*Sensitive Natural Communities (Nomad 2022)

1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

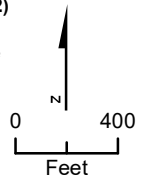
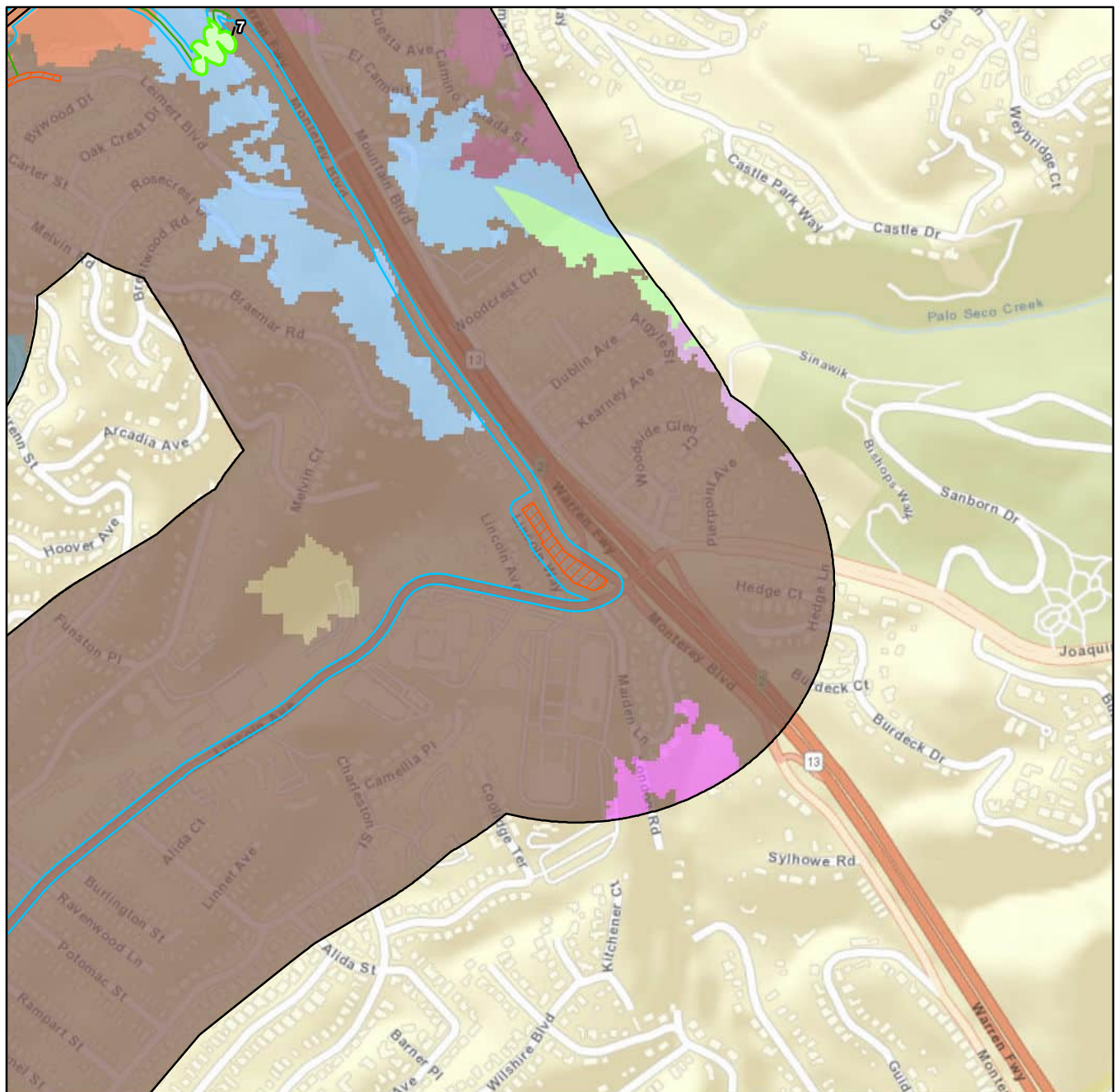


Figure 5.4-3 Page 8 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access
- Temporary Impact Areas**
- Work Area
- Overhead Routes**
- Existing
- Proposed

Sensitive Natural Community*

Conservation Lands Network

2.0 Vegetation Types

- Blue Oak
- Coast Live Oak
- Coastal Mixed Hardwood
- Non-Native/Ornamental Conifer/Hardwood
- Non-Native/Ornamental Grass
- Redwood
- Serpentine Conifer
- Serpentine Hardwood
- Urban/Developed (General)

*Sensitive Natural Communities (Nomad 2022)

1. *Arctostaphylos crustacea* Shrubland Alliance
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4. *Elymus triticoides* Herbaceous Alliance
5. *Erythranthe guttata* Herbaceous Alliance
6. *Salix lasiolepis* Shrubland Association
7. *Sequoia sempervirens* Forest Alliance
8. *Stipa* spp. Herbaceous Alliance
9. *Umbellularia californica* Forest Alliance

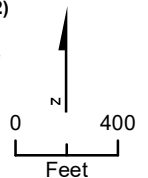
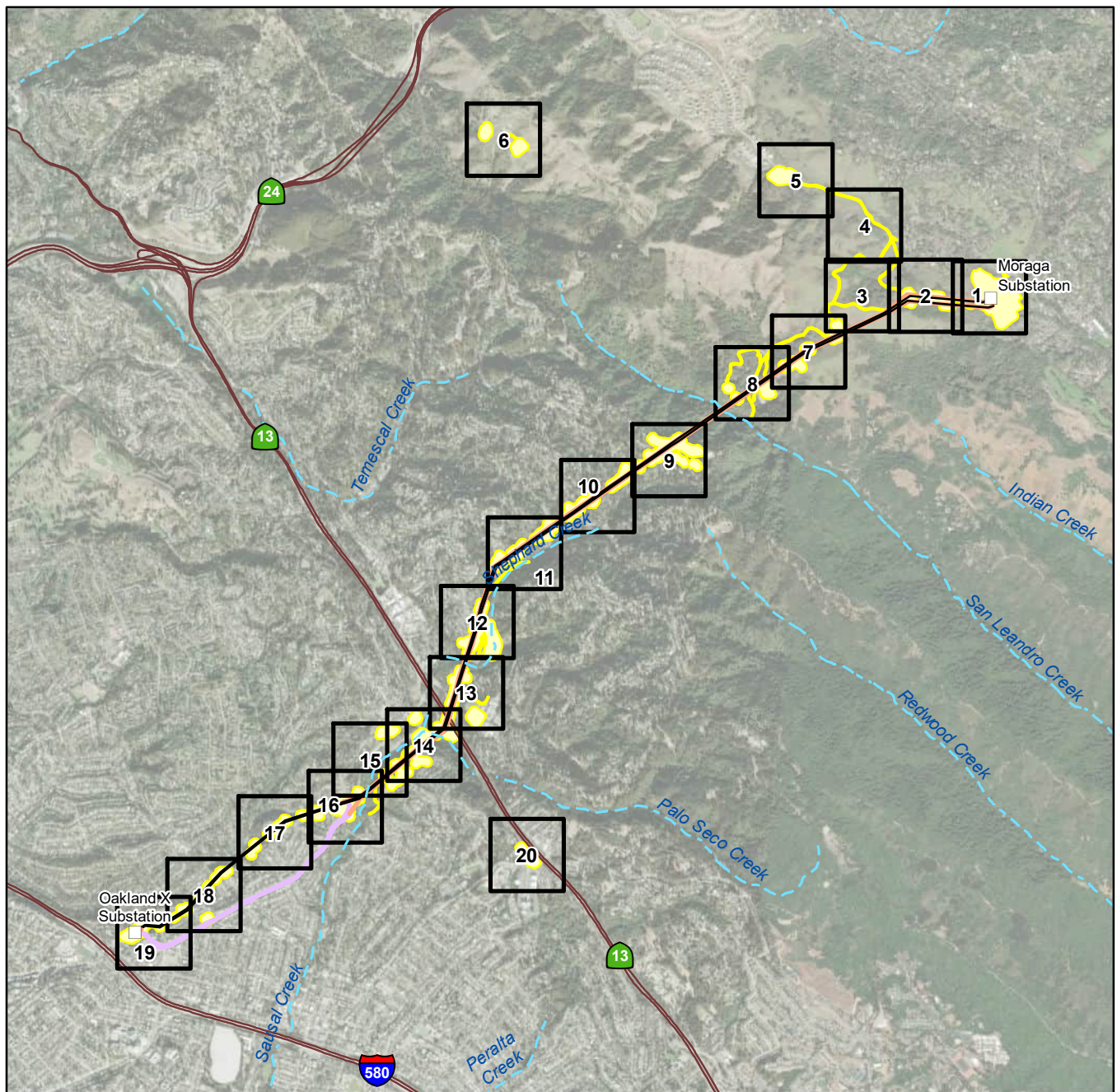


Figure 5.4-3 Page 9 of 9
Vegetation Communities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Detail Map Sheet
- Aquatic Resources Study Area (226.3 acres)
- Substation
- Creek (National Hydrography Dataset)

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

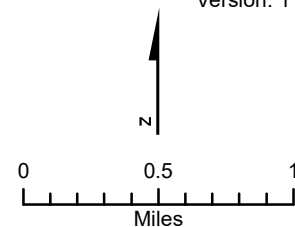
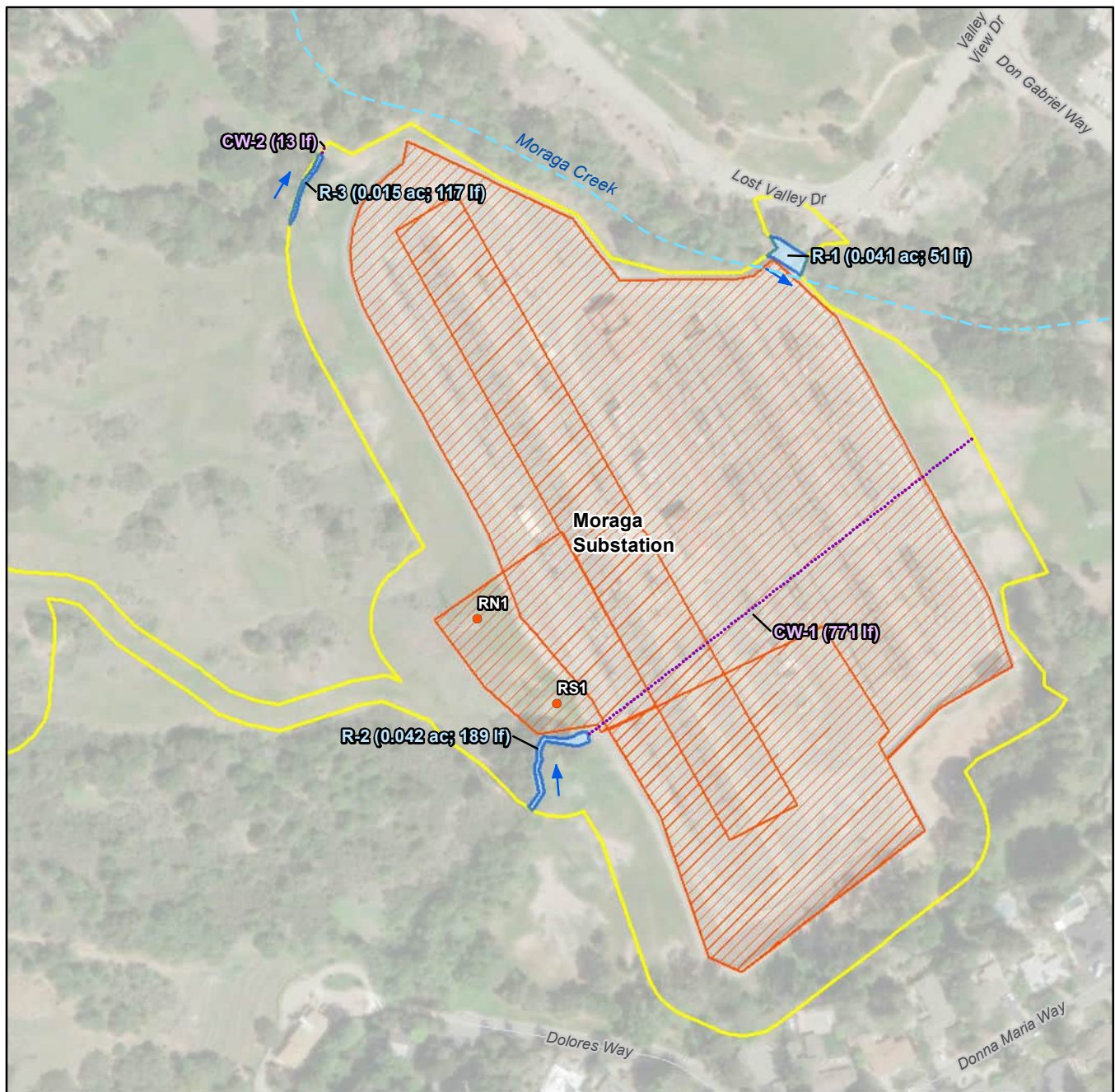


Figure 5.4-4 Overview
Aquatic Resources Delineation Map
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

 Aquatic Resources
Study Area (226.3 ac)

Creek (National
Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

Constructed Wetland/
Stormwater Bioswale

Aquatic Resources

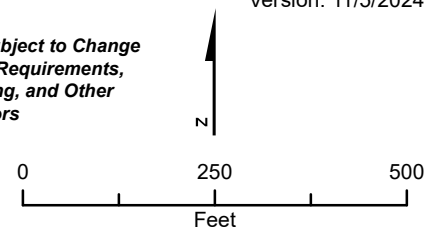
Other Waters
(0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

➔ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

ac = acres

lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 1 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

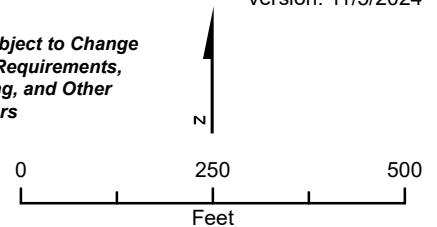
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

ac = acres

lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 2 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

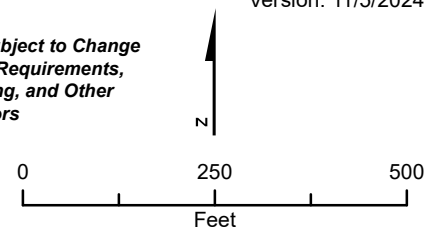
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

➔ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

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Figure 5.4-4 Page 3 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

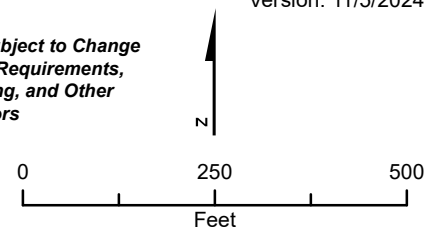
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

➔ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



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Figure 5.4-4 Page 4 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

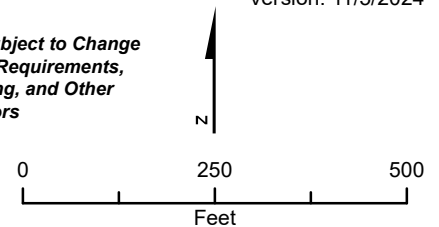
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

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lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 5 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

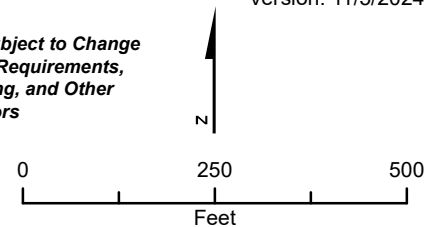
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

ac = acres

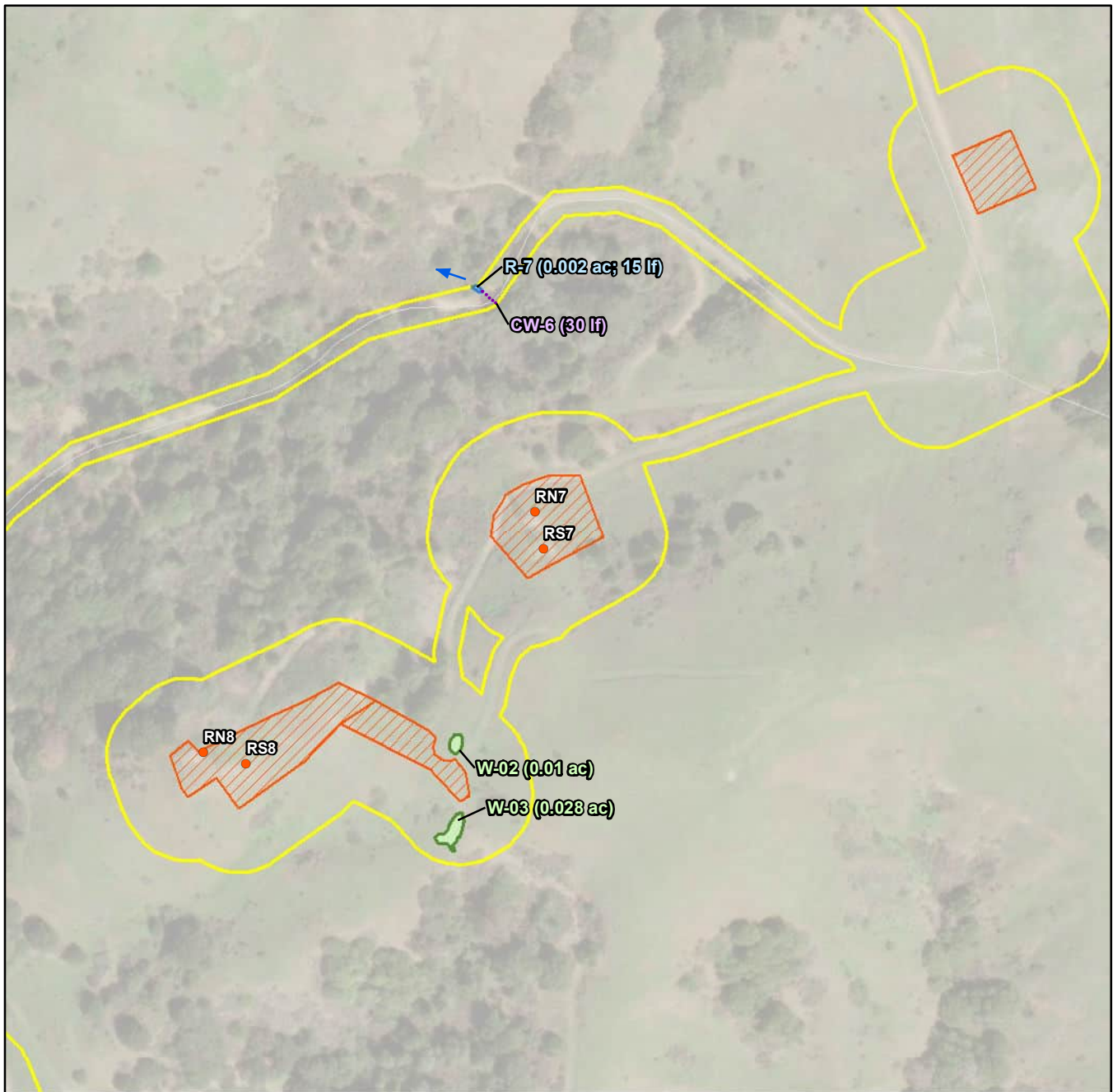
lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 6 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources
Study Area (226.3 ac)

Permanent Impact Areas

• Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/
Stormwater Bioswale

Aquatic Resources

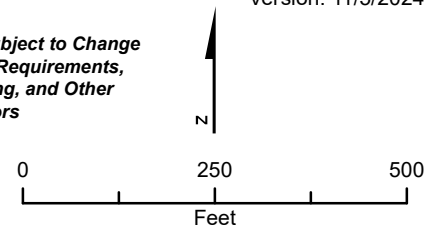
 Other Waters
(0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

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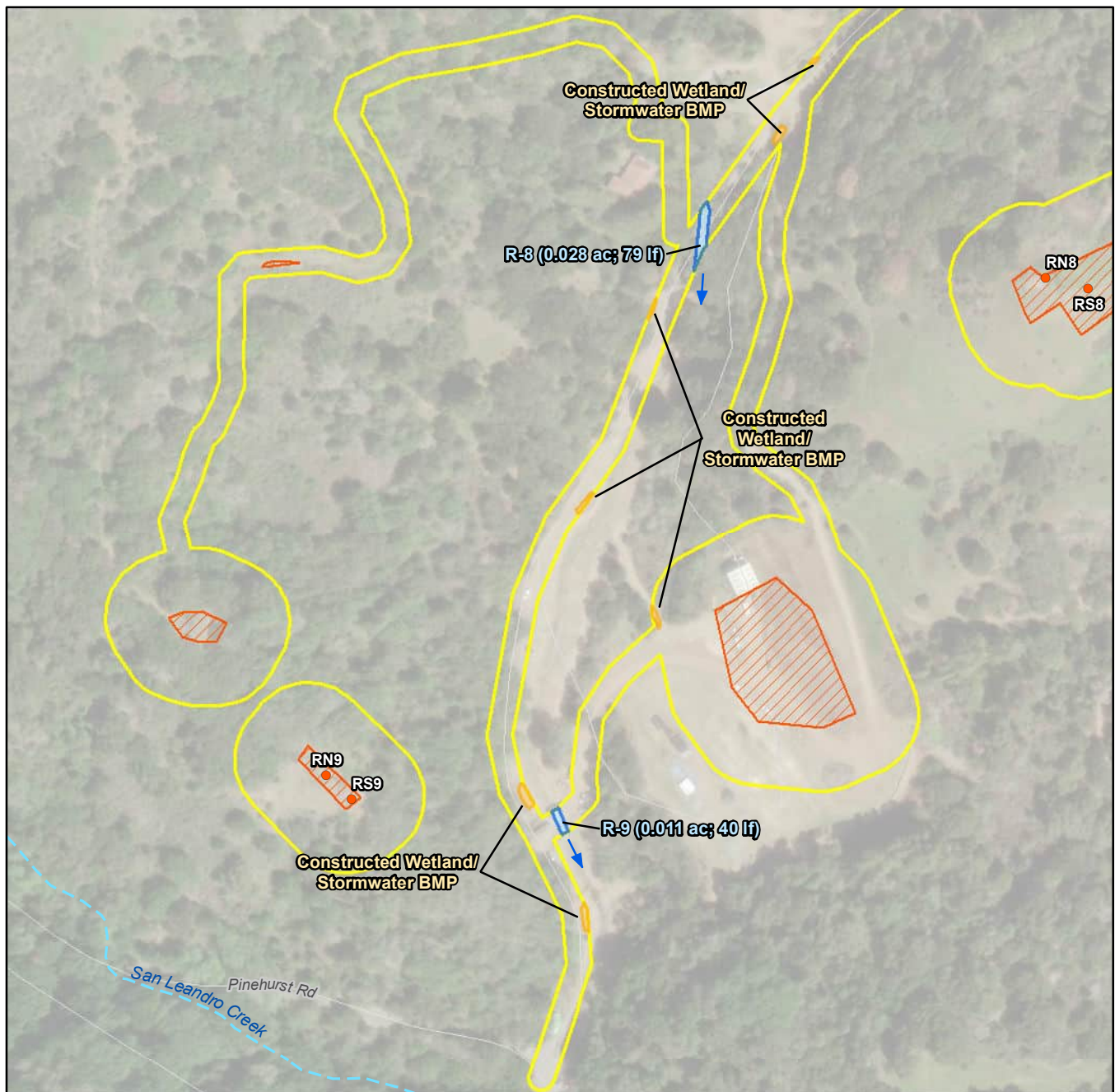
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Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 7 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

 Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

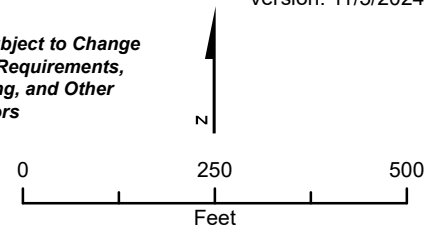
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

ac = acres

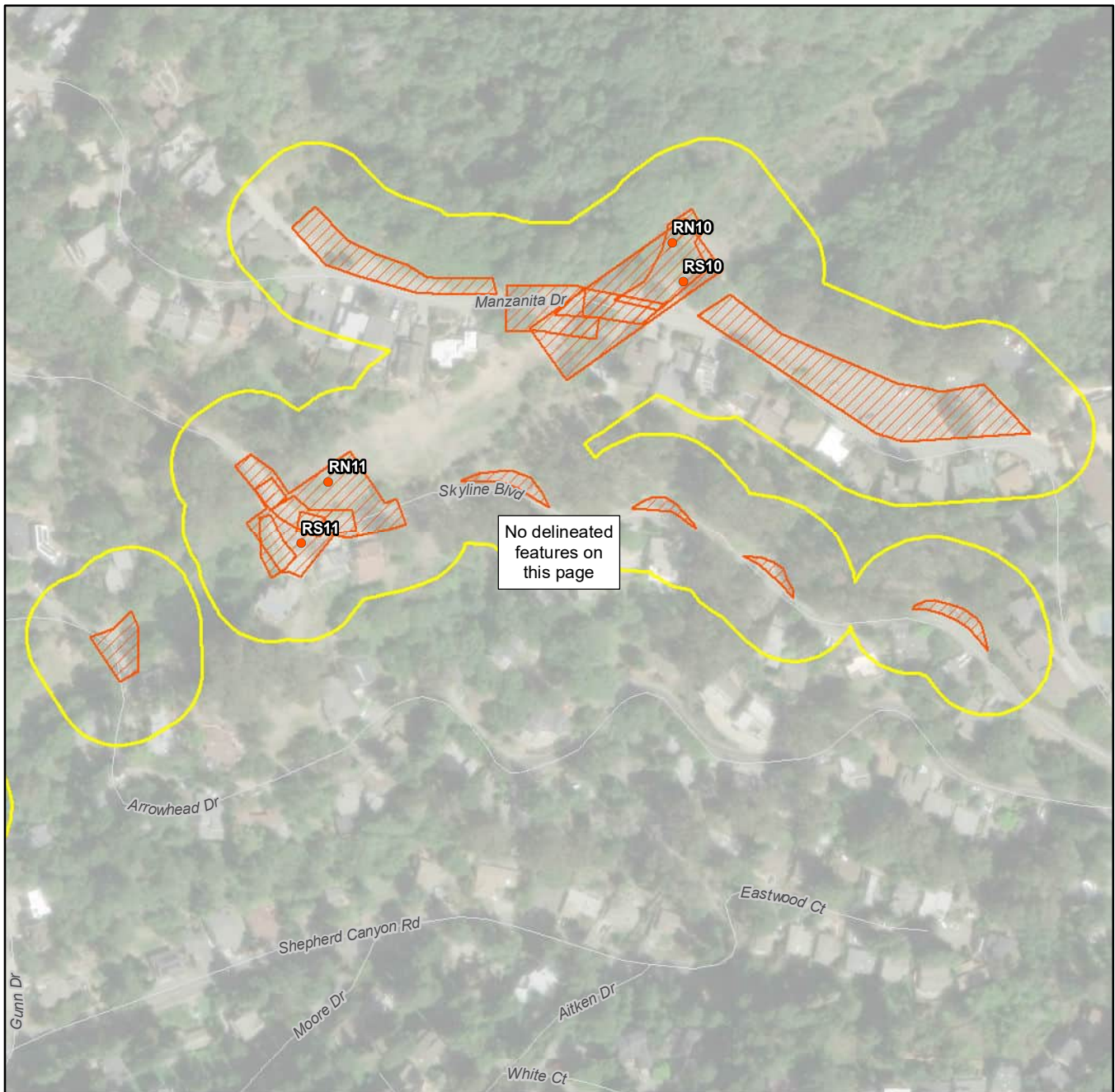
lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 8 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

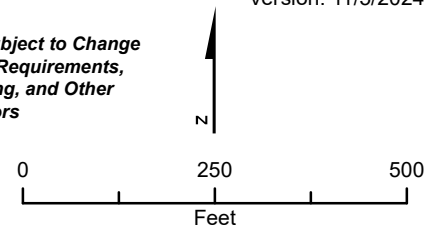
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

ac = acres

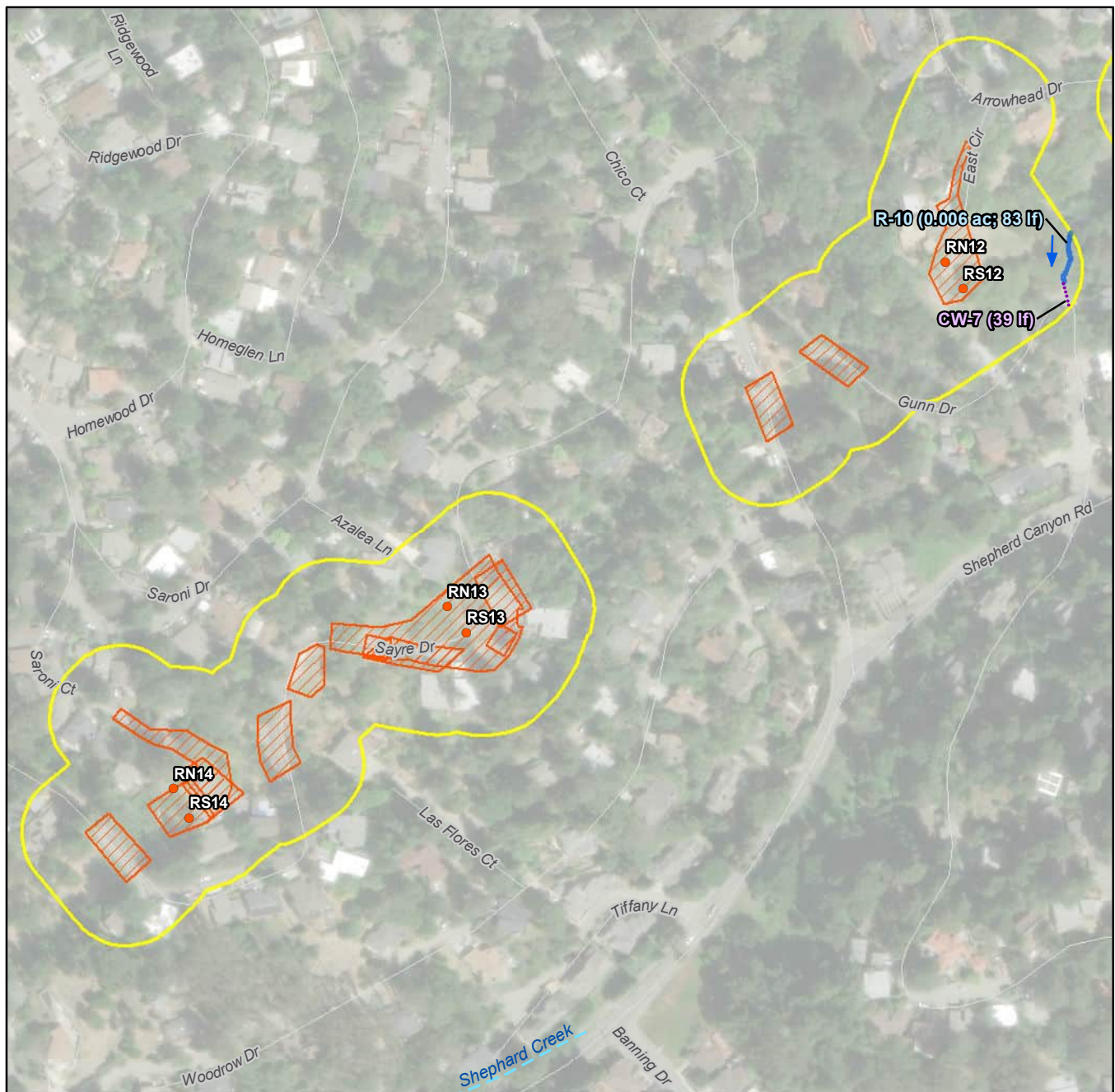
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Figure 5.4-4 Page 9 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

--- Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

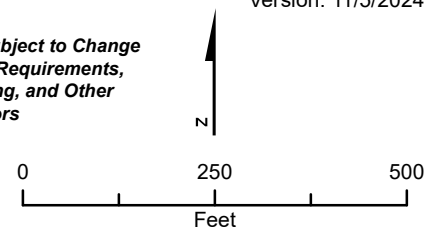
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

ac = acres

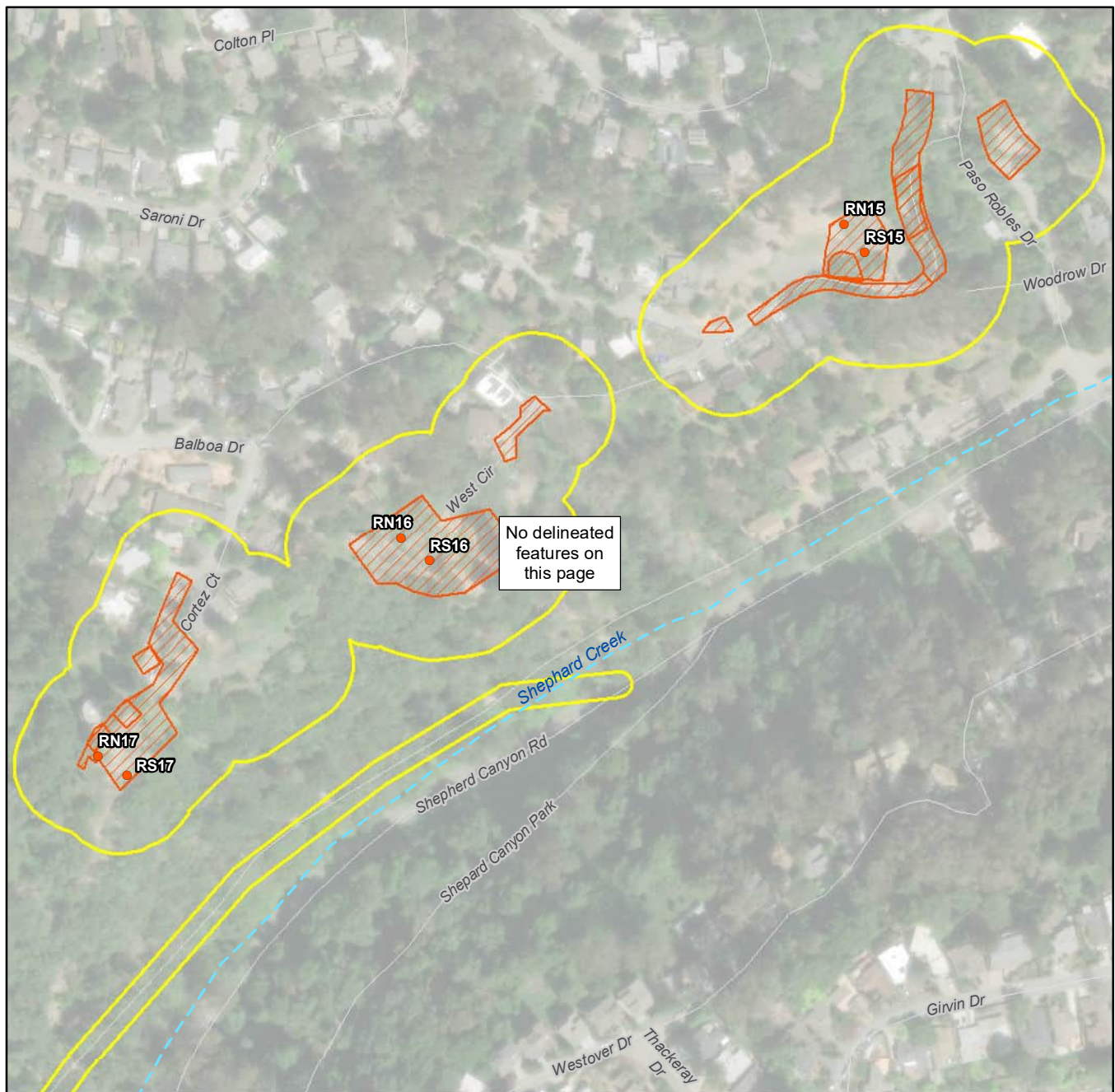
lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 10 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

--- Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

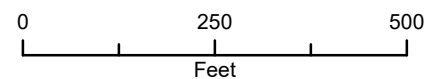
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

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Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

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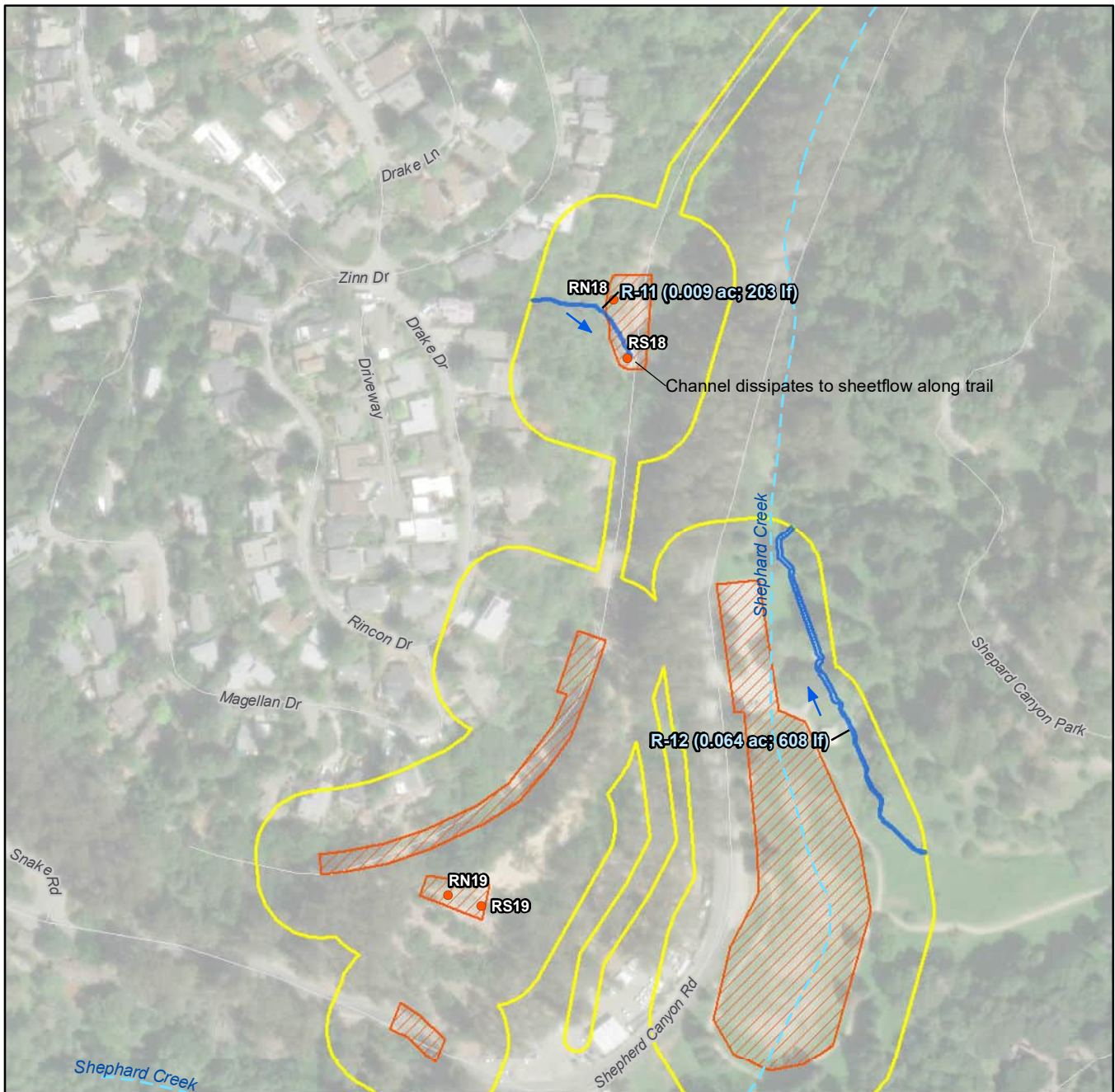
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Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 11 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

--- Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

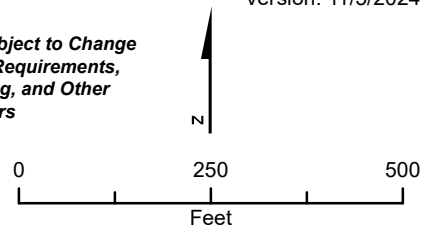
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

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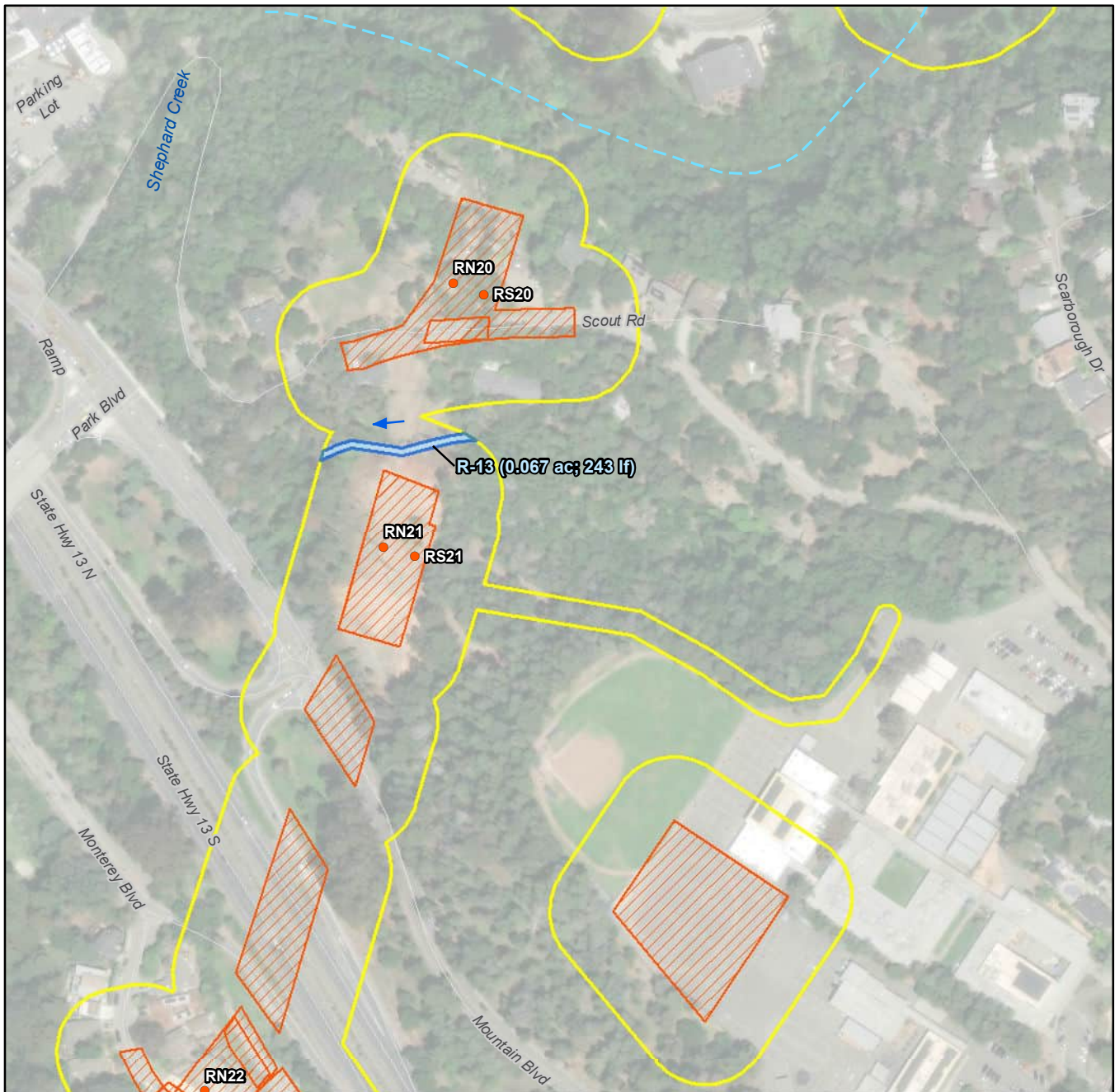
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Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 12 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

— Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

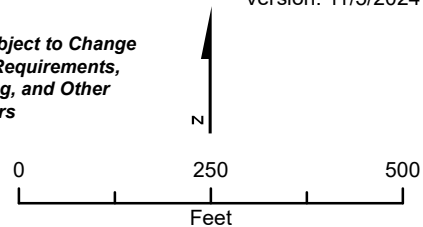
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

— Culverted Waters (1,514 lf)

→ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

ac = acres

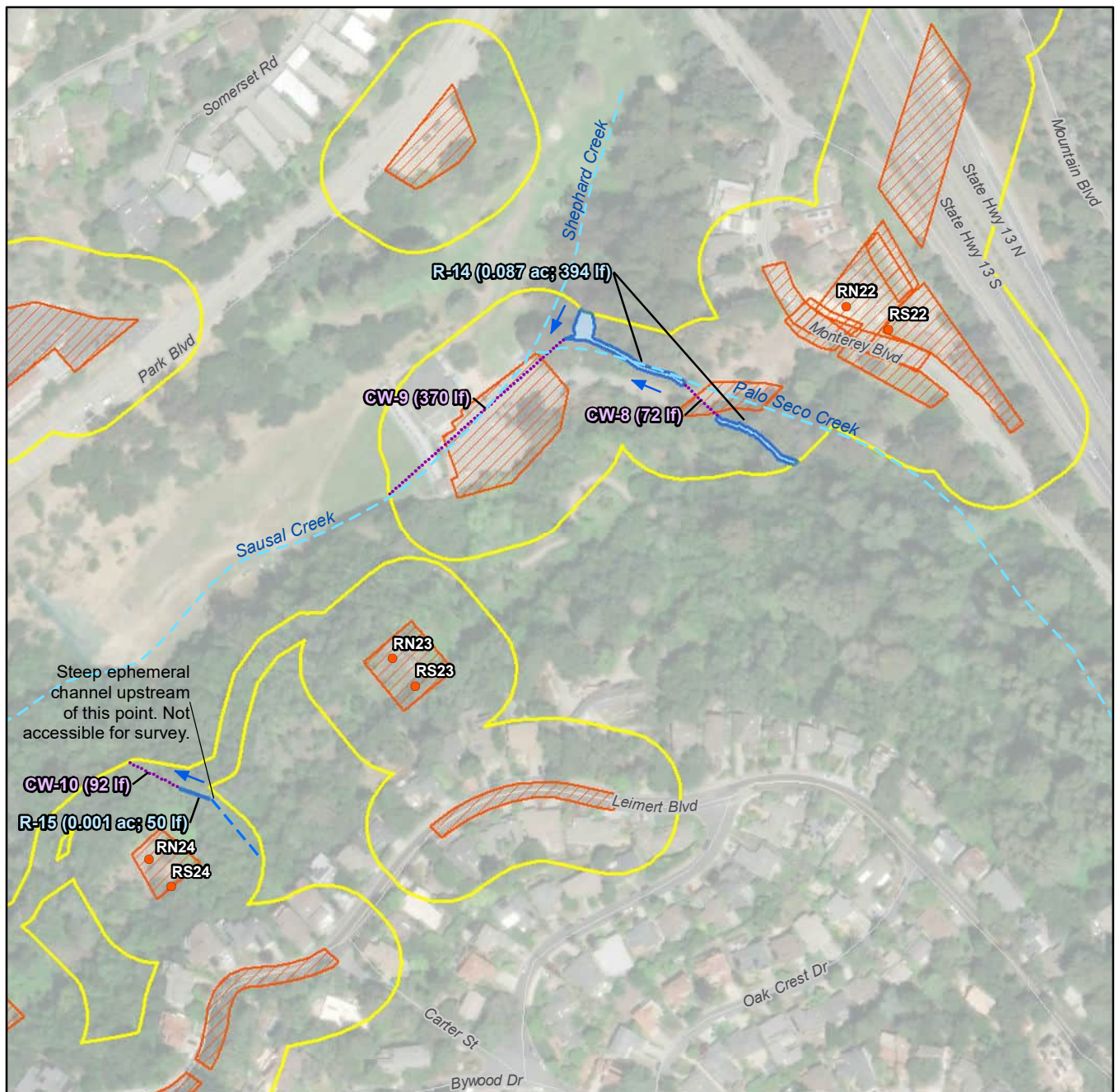
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Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 13 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

— Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

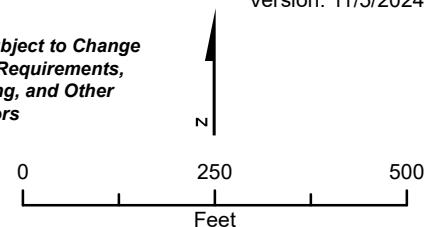
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— Culverted Waters (1,514 lf)

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Figure 5.4-4 Page 14 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

— Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

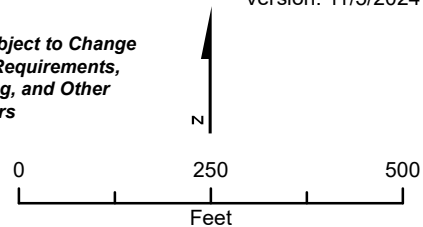
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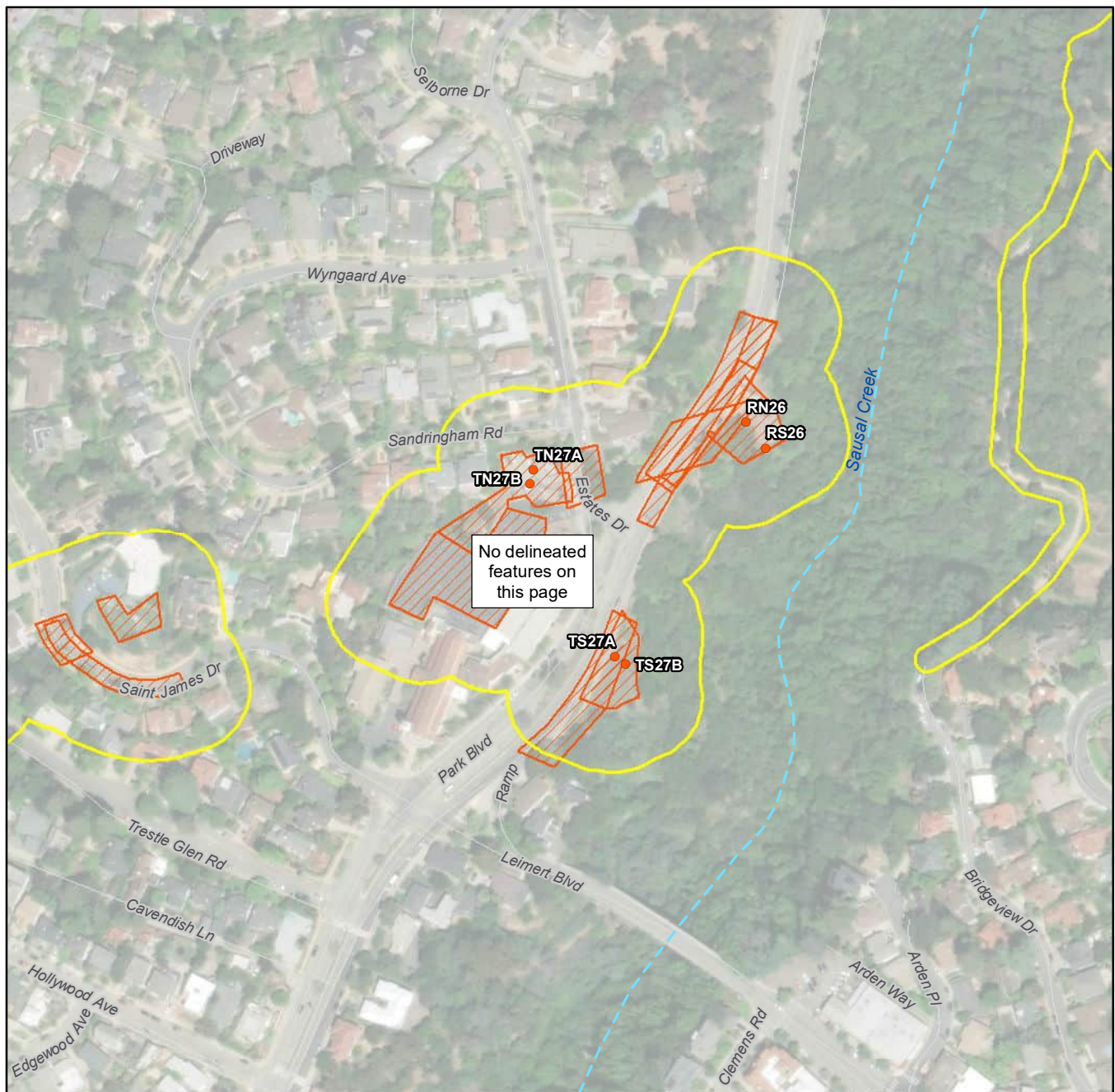
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Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 15 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

— Creek (National Hydrography Dataset)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

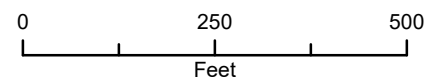
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 Wetlands (0.133 ac)

— Culverted Waters (1,514 lf)

→ Flow Direction

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Based on CPUC Requirements,
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Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 16 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

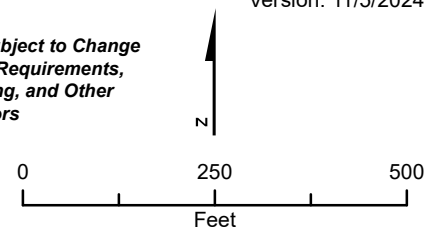
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

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Based on CPUC Requirements,
Final Engineering, and Other
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Version: 11/5/2024



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Figure 5.4-4 Page 17 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

 Other Waters (0.387 ac; 2,159 lf)

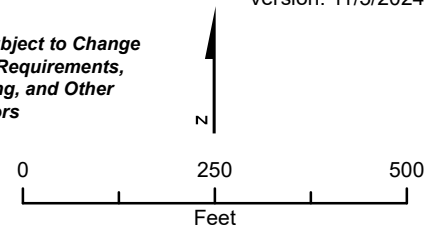
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

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Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

ac = acres

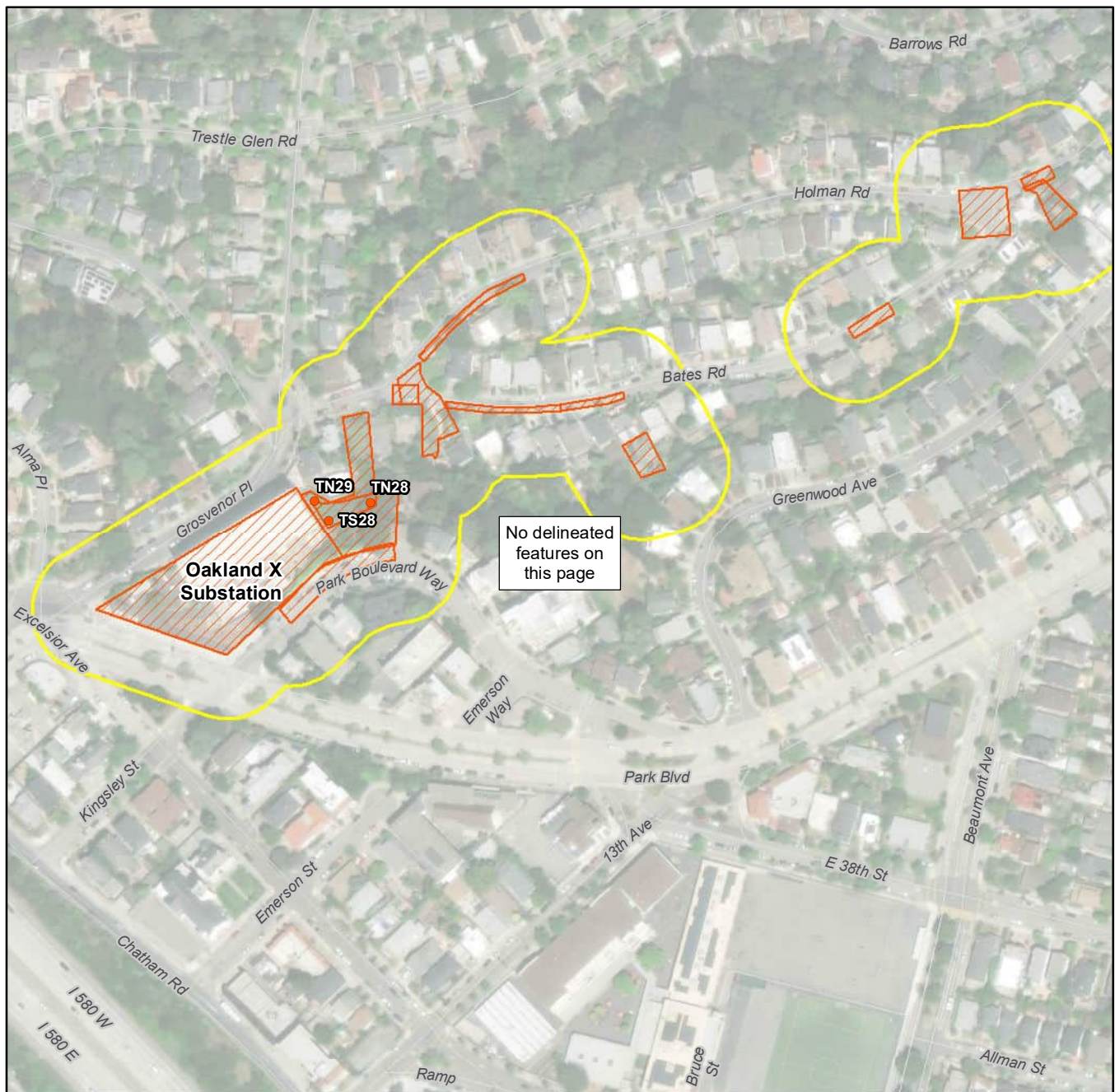
lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 18 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

 Aquatic Resources
Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/
Stormwater Bioswale

Aquatic Resources

 Other Waters
(0.387 ac; 2,159 lf)

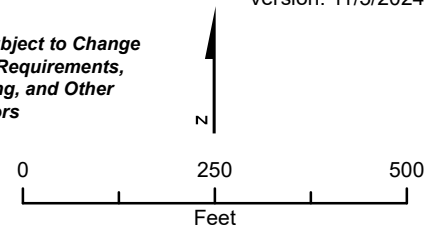
 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

→ Flow Direction

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Based on CPUC Requirements,
Final Engineering, and Other
Factors*

Version: 11/5/2024



Notes:

ac = acres

lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 19 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 11/5/2024

Legend

 Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

● Proposed Overhead Structure

Temporary Impact Areas

 Work Area

 Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

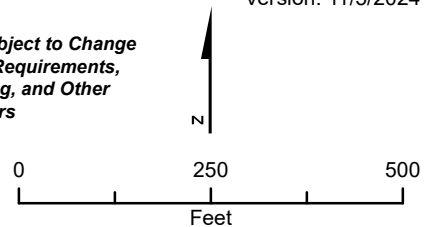
 Other Waters (0.387 ac; 2,159 lf)

 Wetlands (0.133 ac)

..... Culverted Waters (1,514 lf)

➔ Flow Direction

*Preliminary and Subject to Change
Based on CPUC Requirements,
Final Engineering, and Other
Factors*



Notes:

ac = acres

lf = linear feet

Source: Jacobs, Aquatic Resources Delineation Report, July, 2024

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Figure 5.4-4 Page 20 of 20
Aquatic Resources Delineation Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs

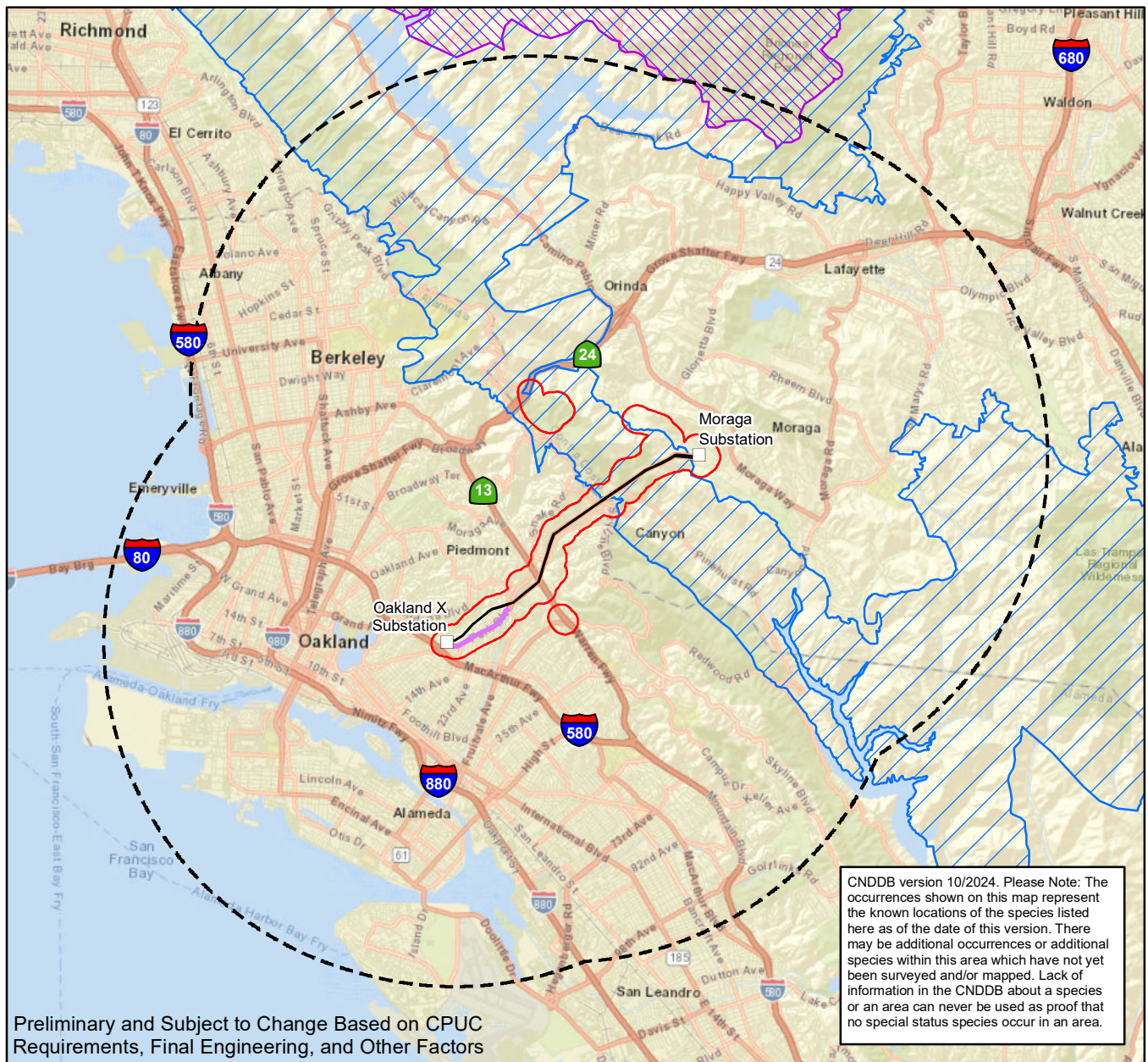
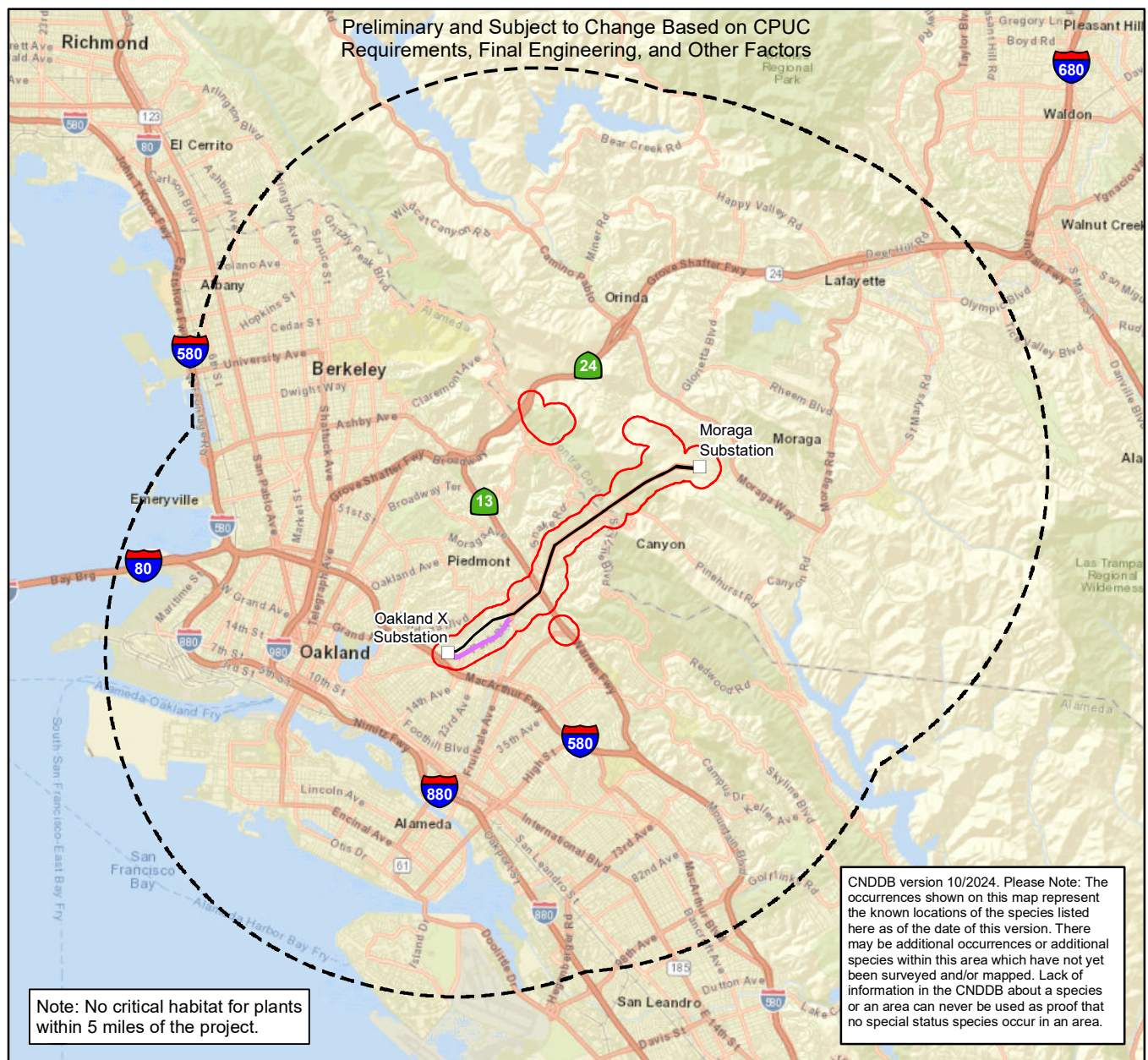


Figure 5.4-5a
Animals: CNRDB Occurrences and
USFWS Critical Habitat
Within 5 Miles of the
Biological Study Area
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

-  Biological Study Area
 5-mile Project Buffer
 Substation

Overhead Routes

- Existing
— Proposed

Underground Routes

- Proposed

Rare Plant Observations (Nomad 2022)

1. Jepson's button thistle
2. pallid manzanita
3. Oakland star-tulip

Sensitive Natural Communities (CNDDDB October 2024)

The following sensitive natural communities are known to occur within the 5 mile project buffer:

1. Northern Coastal Salt Marsh
2. Northern Maritime Chaparral
3. Serpentine Bunchgrass

A horizontal number line with tick marks at 0, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, and 2. The word "Miles" is written below the line.



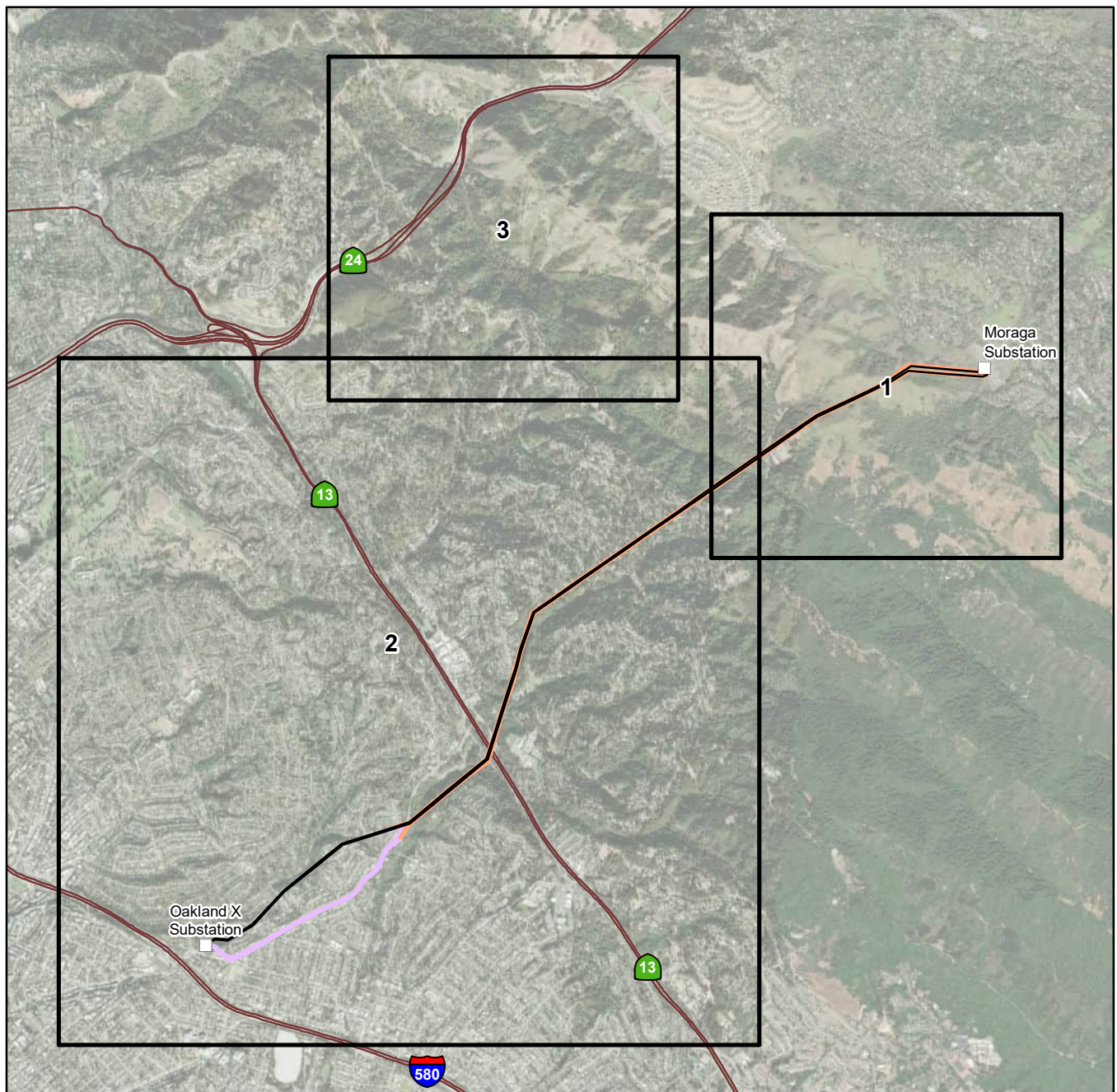
CNDDDB Occurrences

The following species are known to occur within the 5 mile project buffer:

- | | | |
|-----------------------------|-----------------------------------|-----------------------------------|
| 1. adobe sanicle | 12. Loma Prieta hoita | 23. Presidio clarkia |
| 2. alkali milk-vetch | 13. long-styled sand-surrey | 24. robust spineflower |
| 3. bent-flowered fiddleneck | 14. Marin knotweed | 25. saline clover |
| 4. California seablite | 15. minute pocket moss | 26. San Francisco Bay spineflower |
| 5. Choris' popcornflower | 16. most beautiful jewelflower | 27. San Francisco popcornflower |
| 6. dark-eyed gilia | 17. Mt. Diablo fairy-lantern | 28. San Joaquin spearscale |
| 7. Diablo helianthella | 18. northern slender pondweed | 29. Santa Clara red ribbons |
| 8. fragrant fritillary | 19. Oregon meconella | 30. Santa Cruz tarplant |
| 9. Franciscan thistle | 20. oval-leaved viburnum | 31. Tiburon buckwheat |
| 10. Jepson's coyote-thistle | 21. pallid manzanita | 32. western leatherwood |
| 11. Kellogg's horkelia | 22. Point Reyes salty bird's-beak | 33. woodland woollythreads |

**Figure 5.4-5b
Plants: CNDDDB Occurrences and
USFWS Critical Habitat Within 5 Miles
of the Biological Study Area;
and Project Survey Rare Plant Observations**
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 5/13/2024

Legend

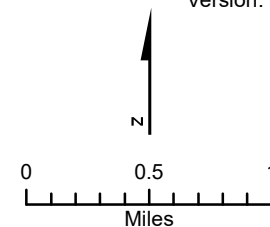
- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

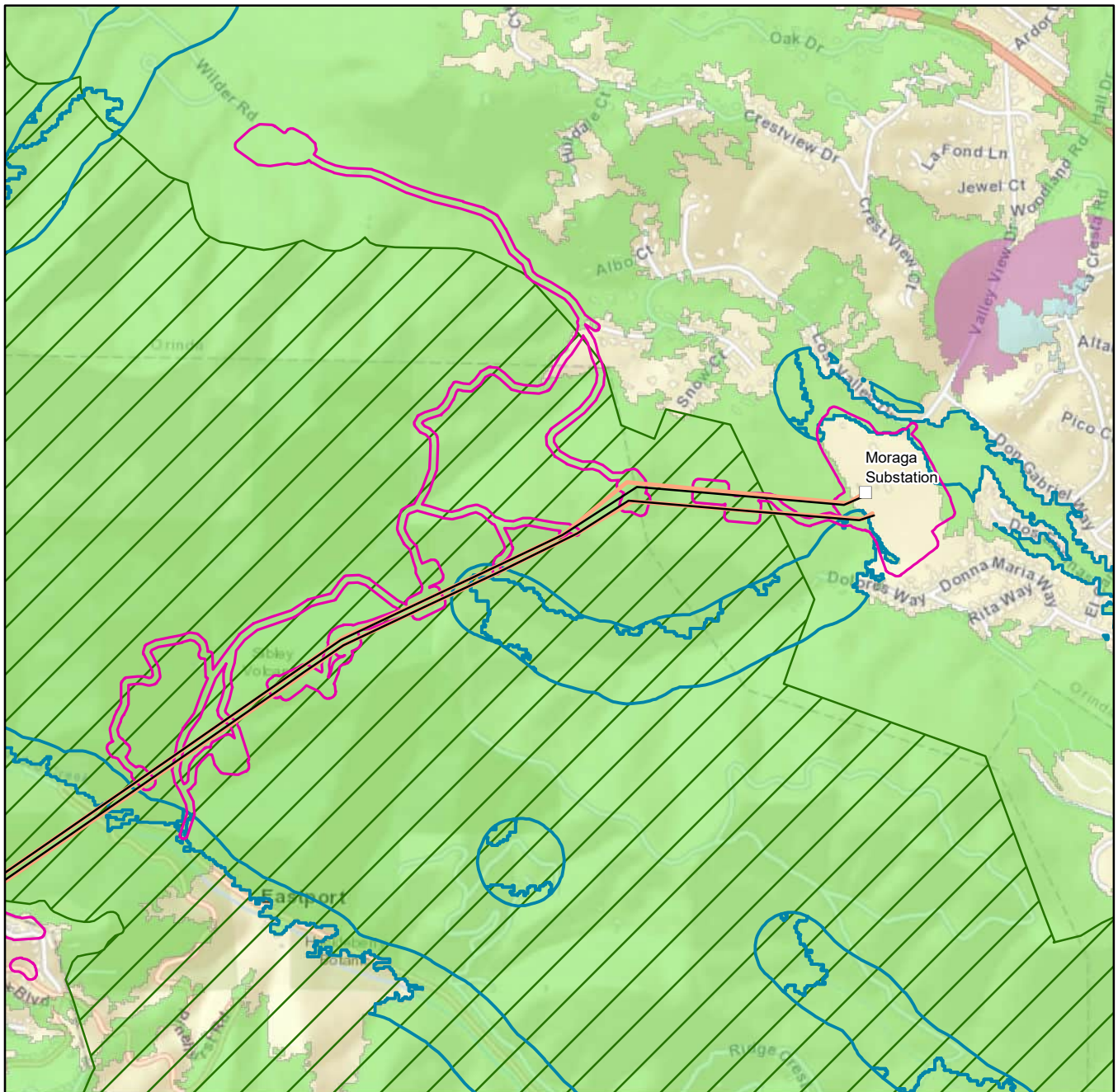
- Proposed



**Figure 5.4-6 Overview
BAHCP Modeled Habitats and
USFWS Critical Habitat in the
Wildlife Assessment Field Survey Area
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company**

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 5/13/2024

Legend

- ☐ Substation
- Overhead Routes**
 - Existing
 - Proposed
- Wildlife Survey Area
- Critical Habitat - Alameda Whipsnake
- BAHCP Modeled Habitats**
- California Red-legged Frog**
 - Potential Breeding
- Alameda Whipsnake**
 - Core
 - Perimeter Core
 - Movement

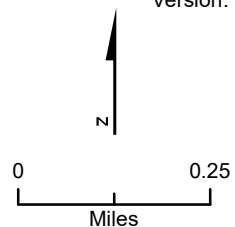
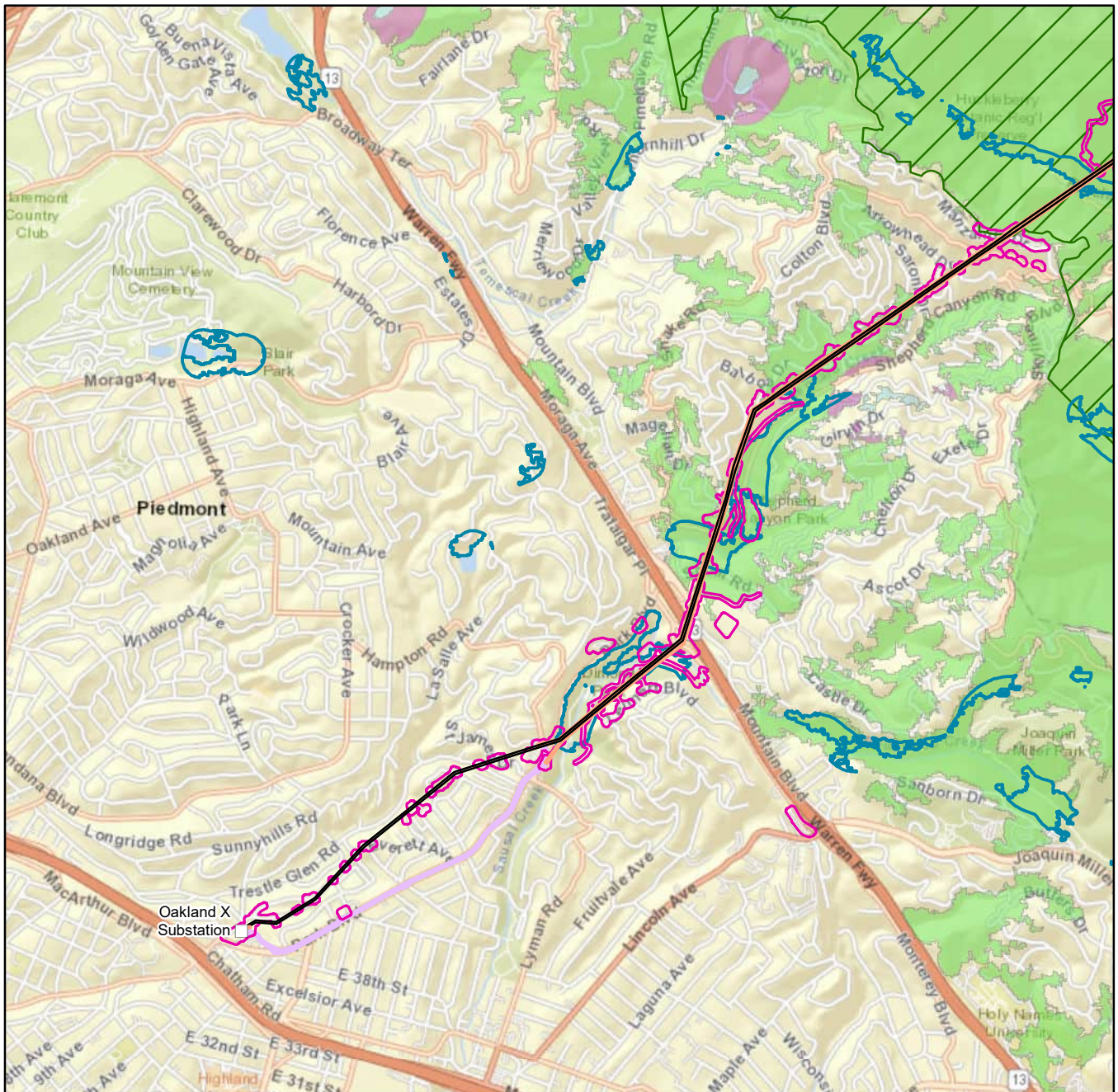


Figure 5.4-6 Page 1 of 3
BAHCP Modeled Habitats and
USFWS Critical Habitat in the
Wildlife Assessment Field Survey Area
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 5/13/2024

Legend

- Substation
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Wildlife Survey Area
- Critical Habitat - Alameda Whipsnake
- BAHCP Modeled Habitats**
- California Red-legged Frog**
 - Potential Breeding
- Alameda Whipsnake**
 - Core
 - Perimeter Core
 - Movement

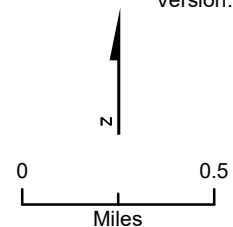
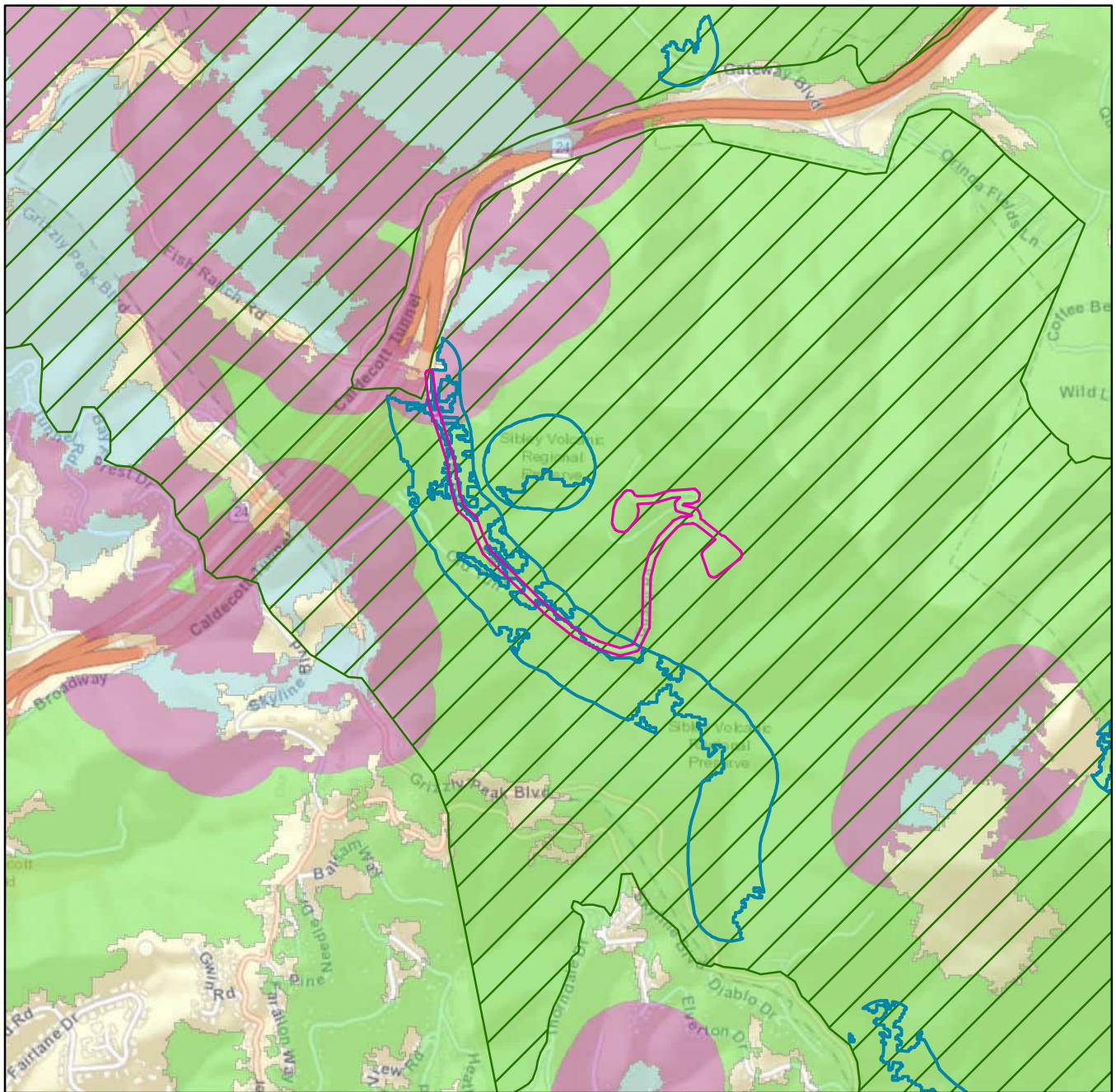


Figure 5.4-6 Page 2 of 3
BAHCP Modeled Habitats and
USFWS Critical Habitat in the
Wildlife Assessment Field Survey Area
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Wildlife Survey Area
- Critical Habitat - Alameda Whipsnake

BAHCP Modeled Habitats

California Red-legged Frog

- Potential Breeding

Alameda Whipsnake

- Core
- Perimeter Core
- Movement

Version: 5/13/2024

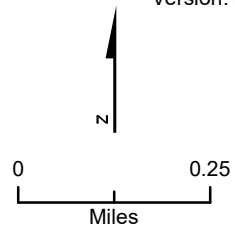
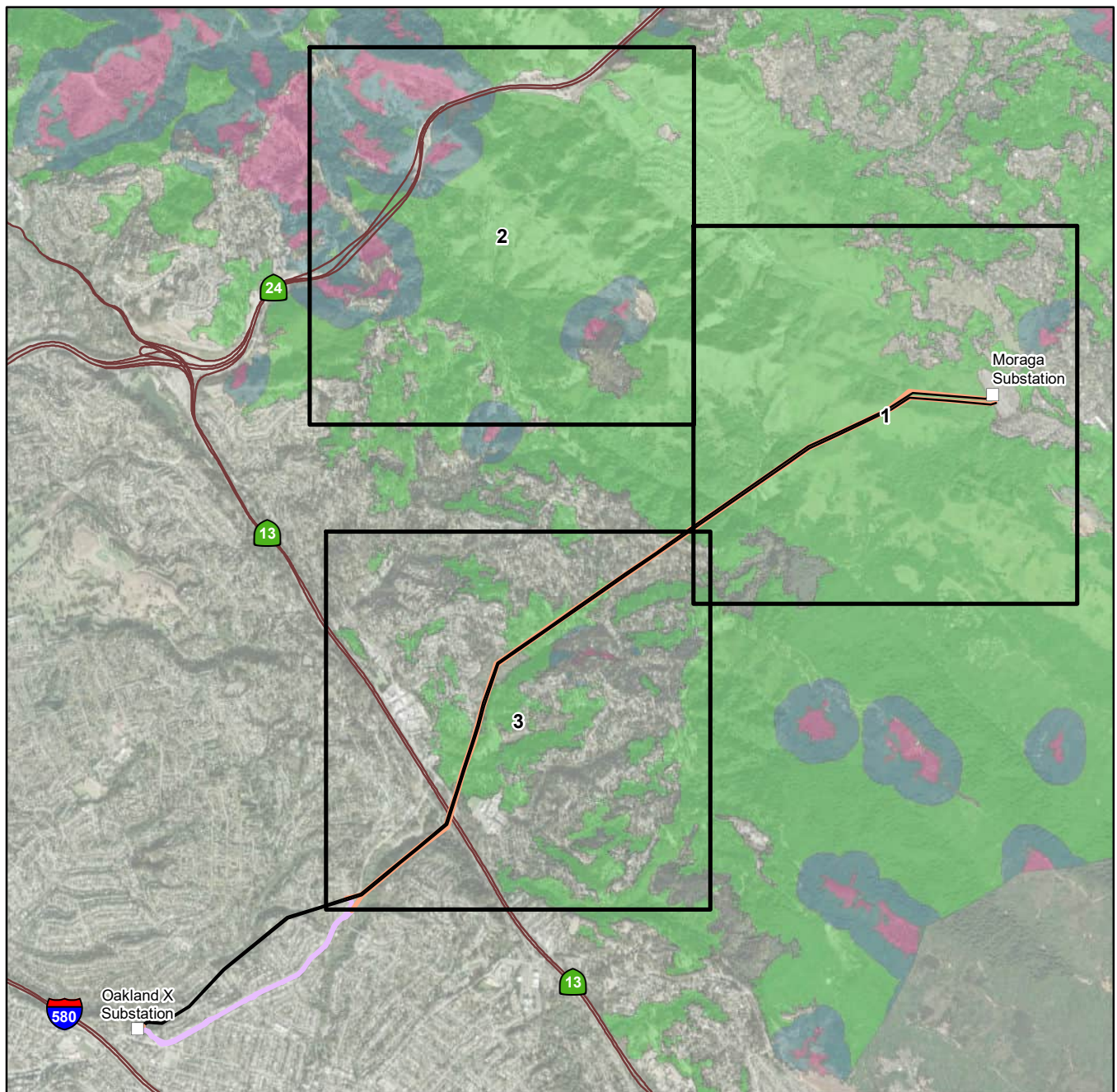


Figure 5.4-6 Page 3 of 3
BAHCP Modeled Habitats and
USFWS Critical Habitat in the
Wildlife Assessment Field Survey Area
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

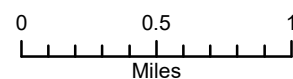
Proposed

Alameda Whipsnake Habitat

Core

Movement

Perimeter Core



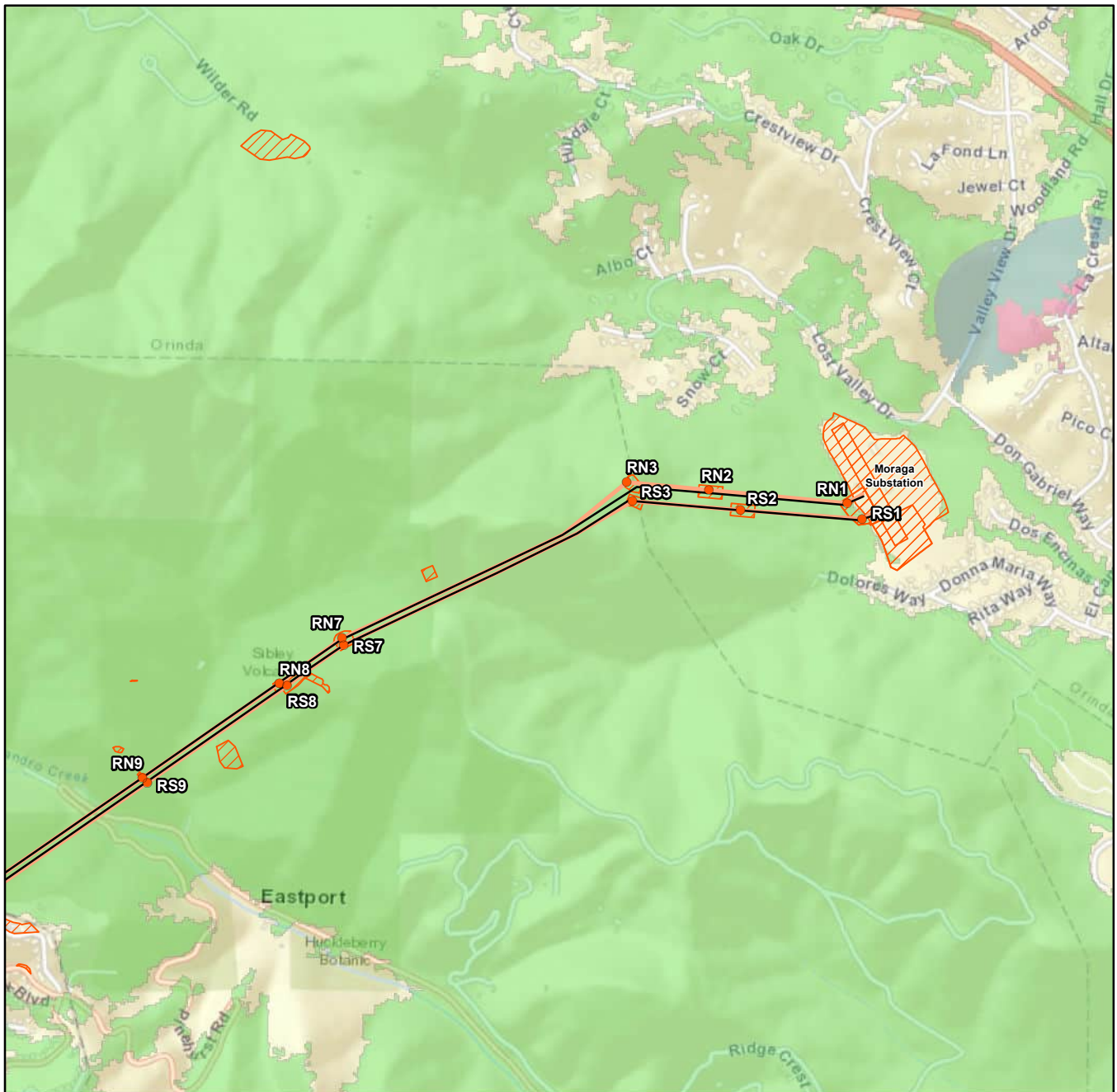
**Figure 5.4-7 Overview
Alameda Whipsnake HCP
Modeled Habitat and Impacts**
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Jacobs



Legend

Permanent Impact Areas
 ● Proposed Overhead Structure

Temporary Impact Areas
 Work Area

Overhead Routes
 — Existing
 — Proposed

Alameda Whipsnake Habitat
 Core
 Movement
 Perimeter Core

Version: 11/5/2024

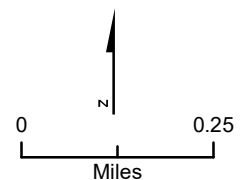


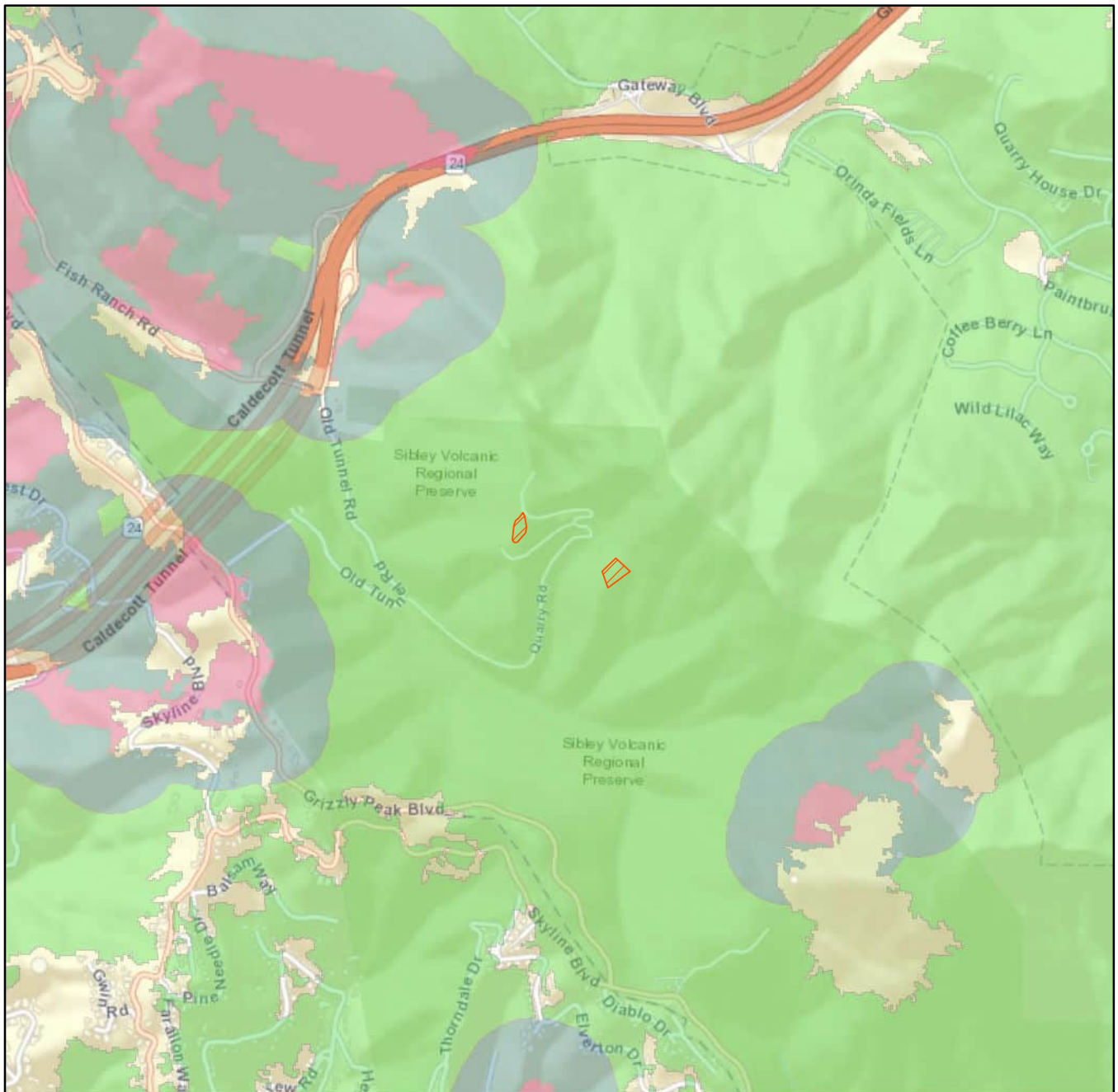
Figure 5.4-7 Page 1 of 3
Alameda Whipsnake HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Jacobs



Legend

Temporary Impact Areas

Work Area

Alameda Whipsnake Habitat

Core
 Movement
 Perimeter Core

Version: 11/5/2024

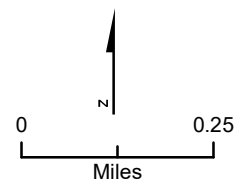


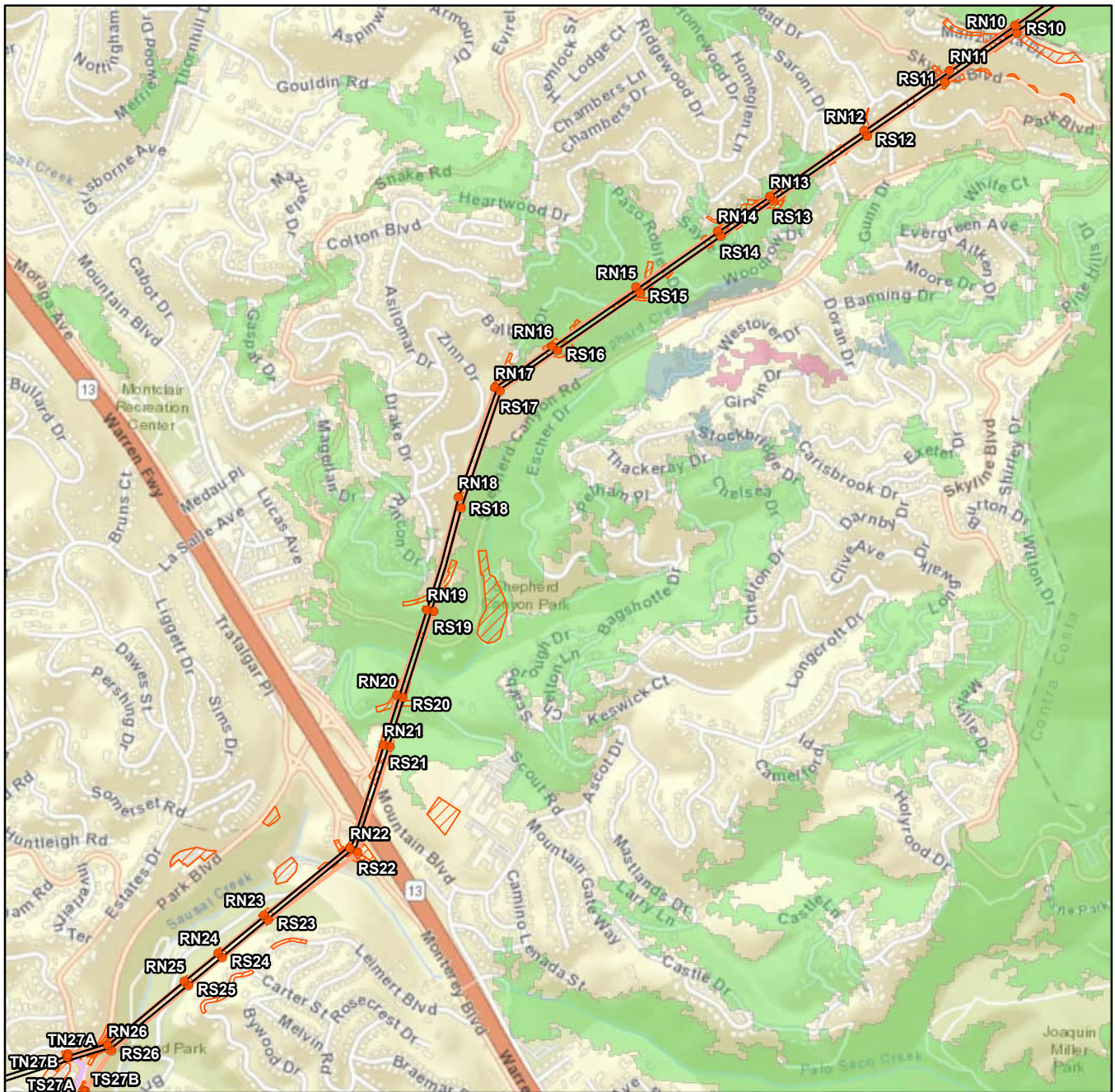
Figure 5.4-7 Page 2 of 3
Alameda Whipsnake HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Jacobs



Version: 11/5/2024

Legend

Permanent Impact Areas
 ● Proposed Overhead Structure

Temporary Impact Areas
 Work Area

Overhead Routes

— Existing
 — Proposed

Underground Routes

— Proposed

Alameda Whipsnake Habitat

Core
 Movement
 Perimeter Core

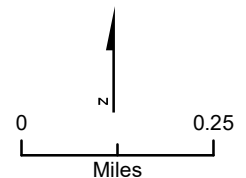


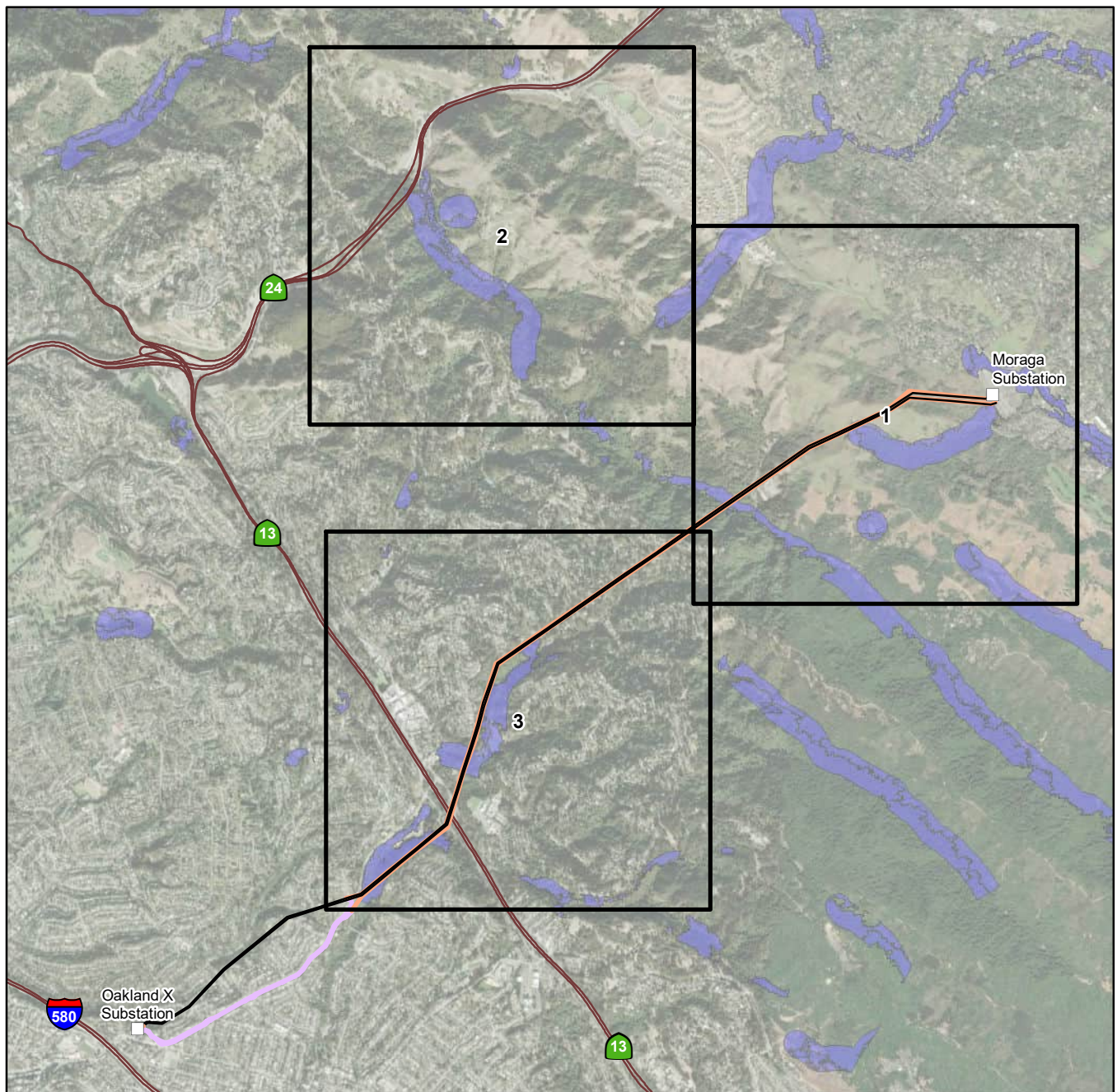
Figure 5.4-7 Page 3 of 3
Alameda Whipsnake HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Jacobs



Version: 11/5/2024

Legend

- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

California Red-legged Frog Habitat

- Potential Breeding

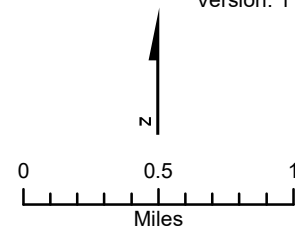


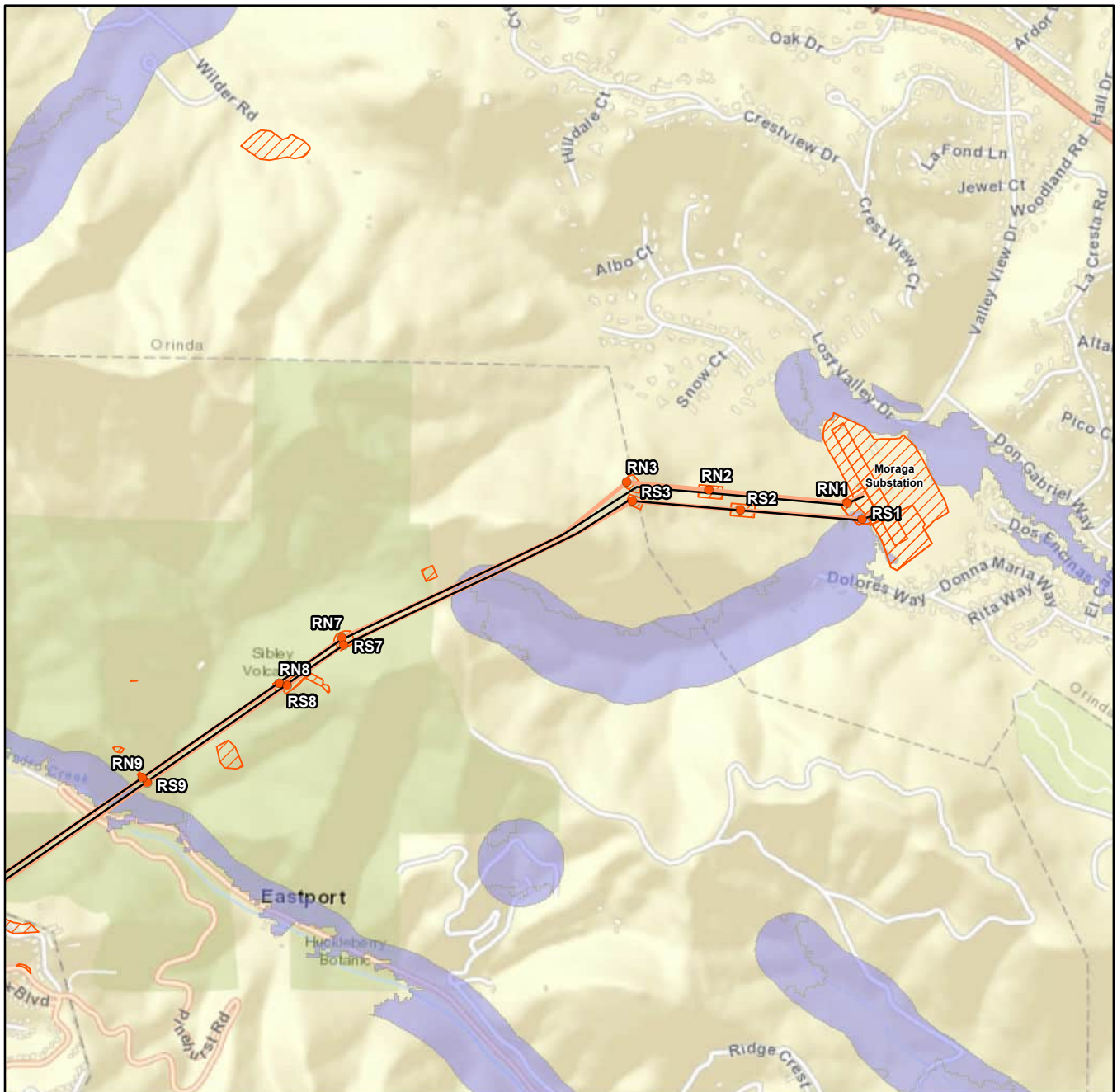
Figure 5.4-8 Overview
California Red-Legged Frog HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Jacobs



Legend

Permanent Impact Areas
 ● Proposed Overhead Structure

Temporary Impact Areas
 Work Area

Overhead Routes
 — Existing
 — Proposed

California Red-legged Frog Habitat
 Potential Breeding

Version: 11/5/2024

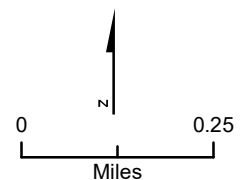


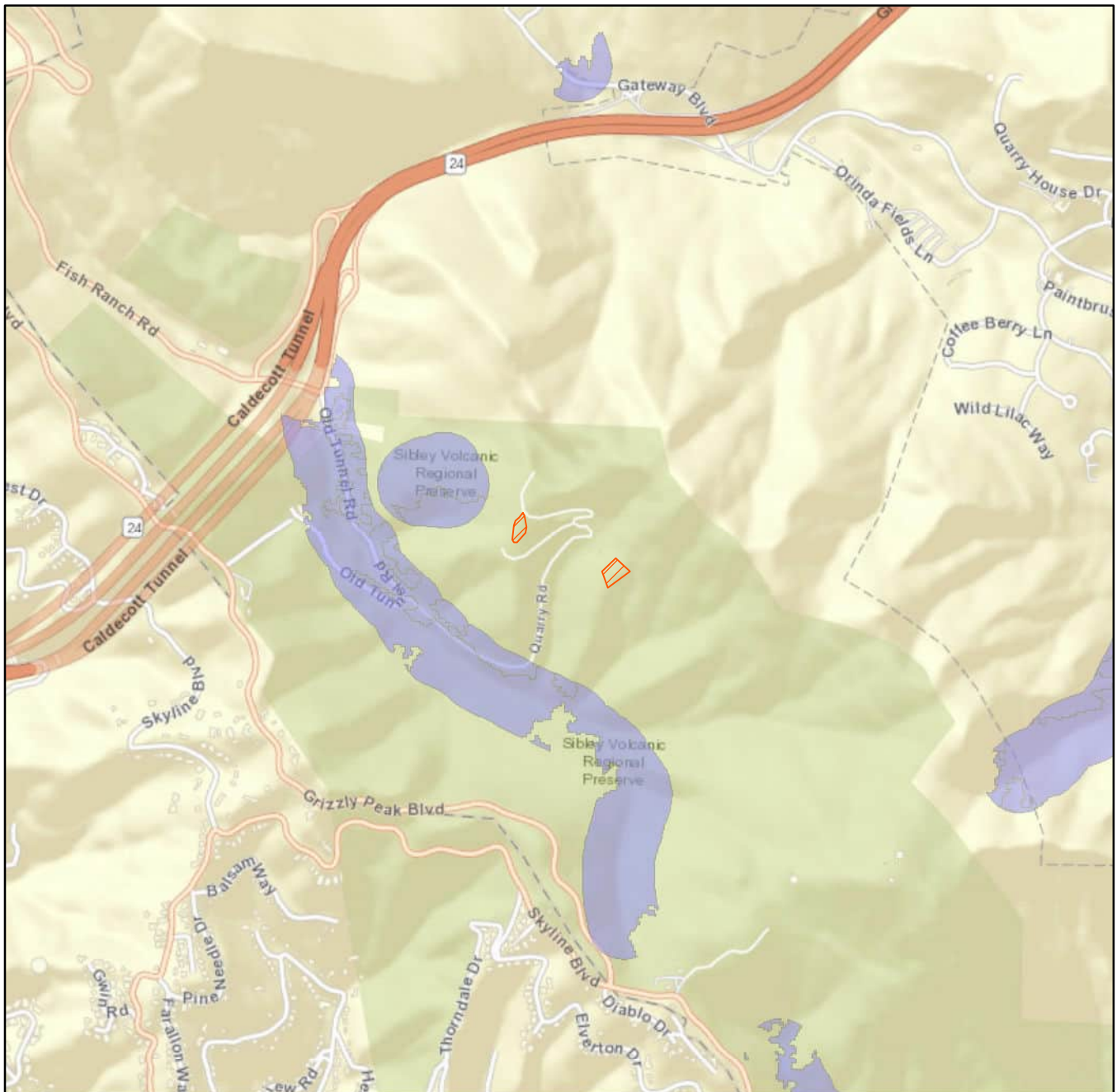
Figure 5.4-8 Page 1 of 3
California Red-Legged Frog HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Jacobs



Legend

Temporary Impact Areas

 Work Area

California Red-legged Frog Habitat

 Potential Breeding

Version: 11/5/2024

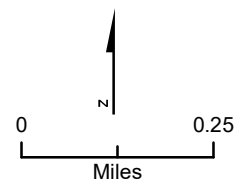


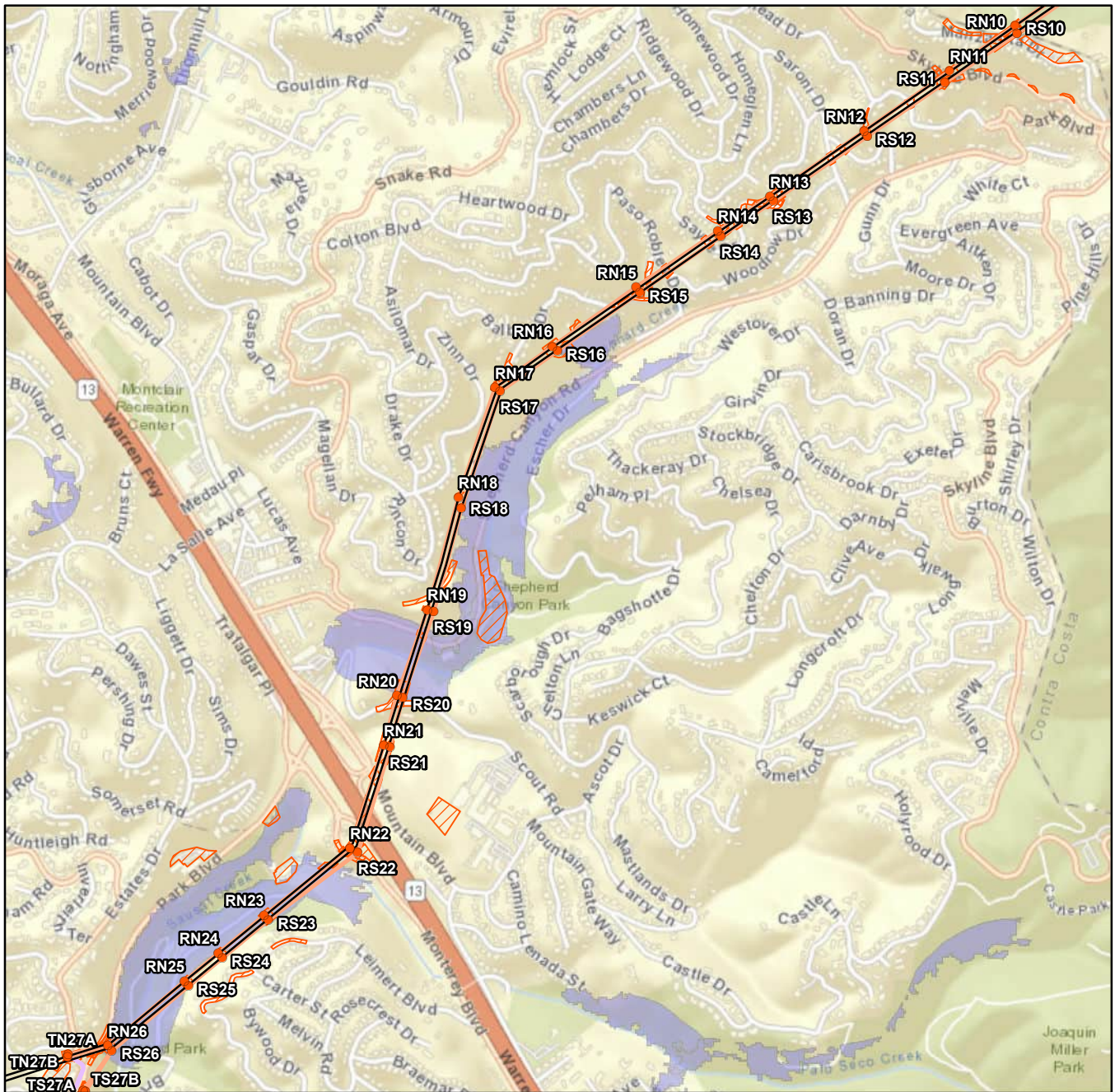
Figure 5.4-8 Page 2 of 3
California Red-Legged Frog HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Legend

Permanent Impact Areas
 ● Proposed Overhead Structure

Temporary Impact Areas
 Work Area

Overhead Routes

— Existing
 — Proposed

Underground Routes

— Proposed

California Red-legged Frog Habitat
 Potential Breeding

Version: 11/5/2024

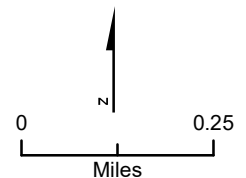


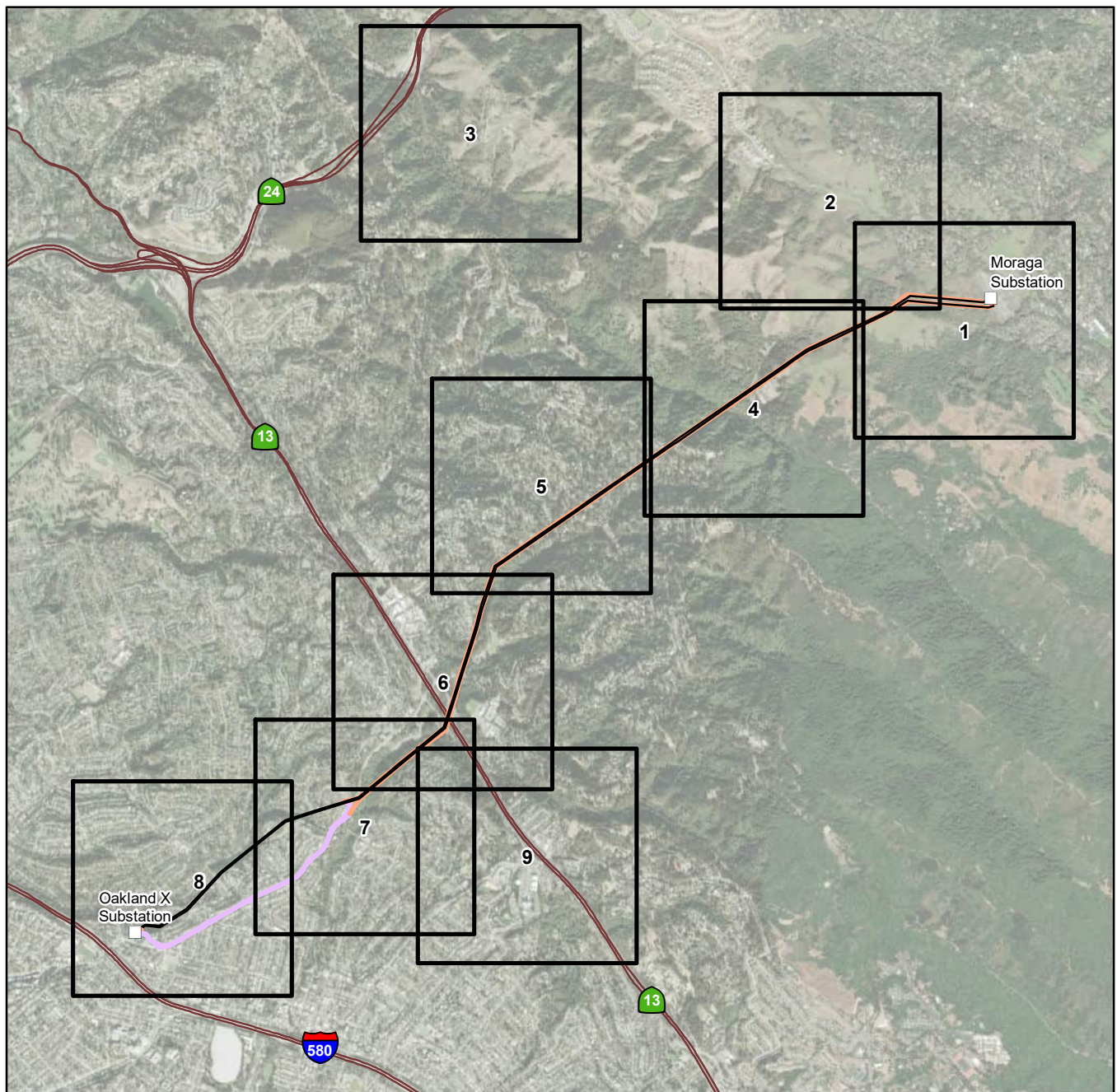
Figure 5.4-8 Page 3 of 3
California Red-Legged Frog HCP
Modeled Habitat and Impacts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Source: PG&E Bay Area O&M HCP

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Version: 11/5/2024

Legend

- Detail Map Sheet
- Substation

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

*Preliminary and Subject to
Change Based on CPUC
Requirements, Final
Engineering, and Other Factors*

Note: The detail map sheets cover
the proposed project routes and
construction work areas and access.

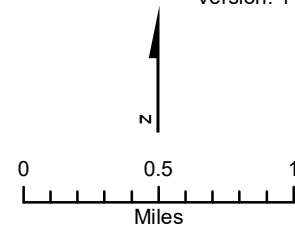
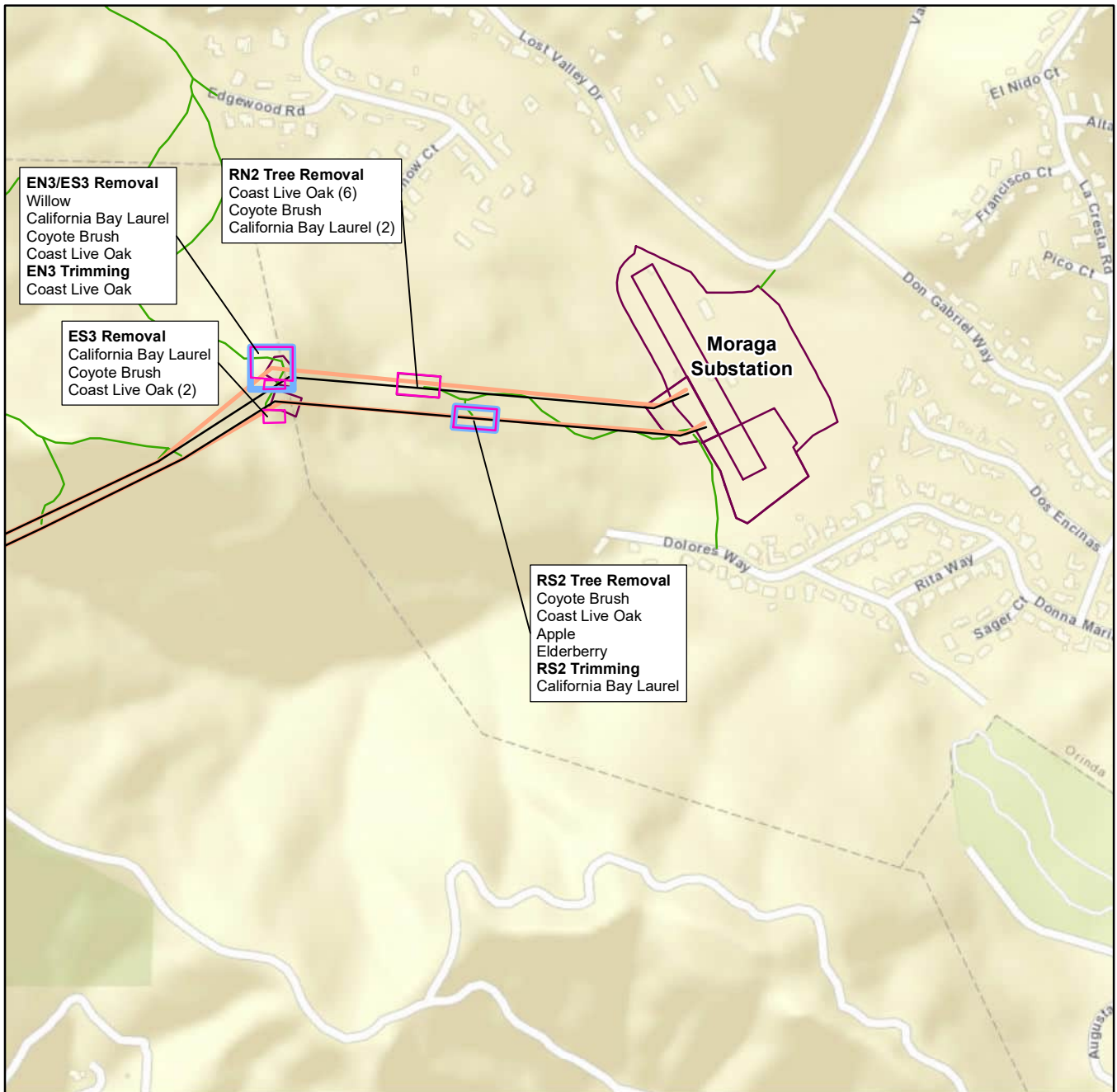


Figure 5.4-9 Overview
Potential Tree Trimming and Removal
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Legend

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Potential Vegetation Management Areas

- Removal
- Trimming

Version: 11/5/2024

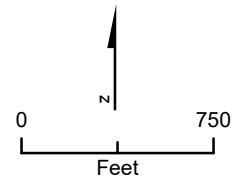
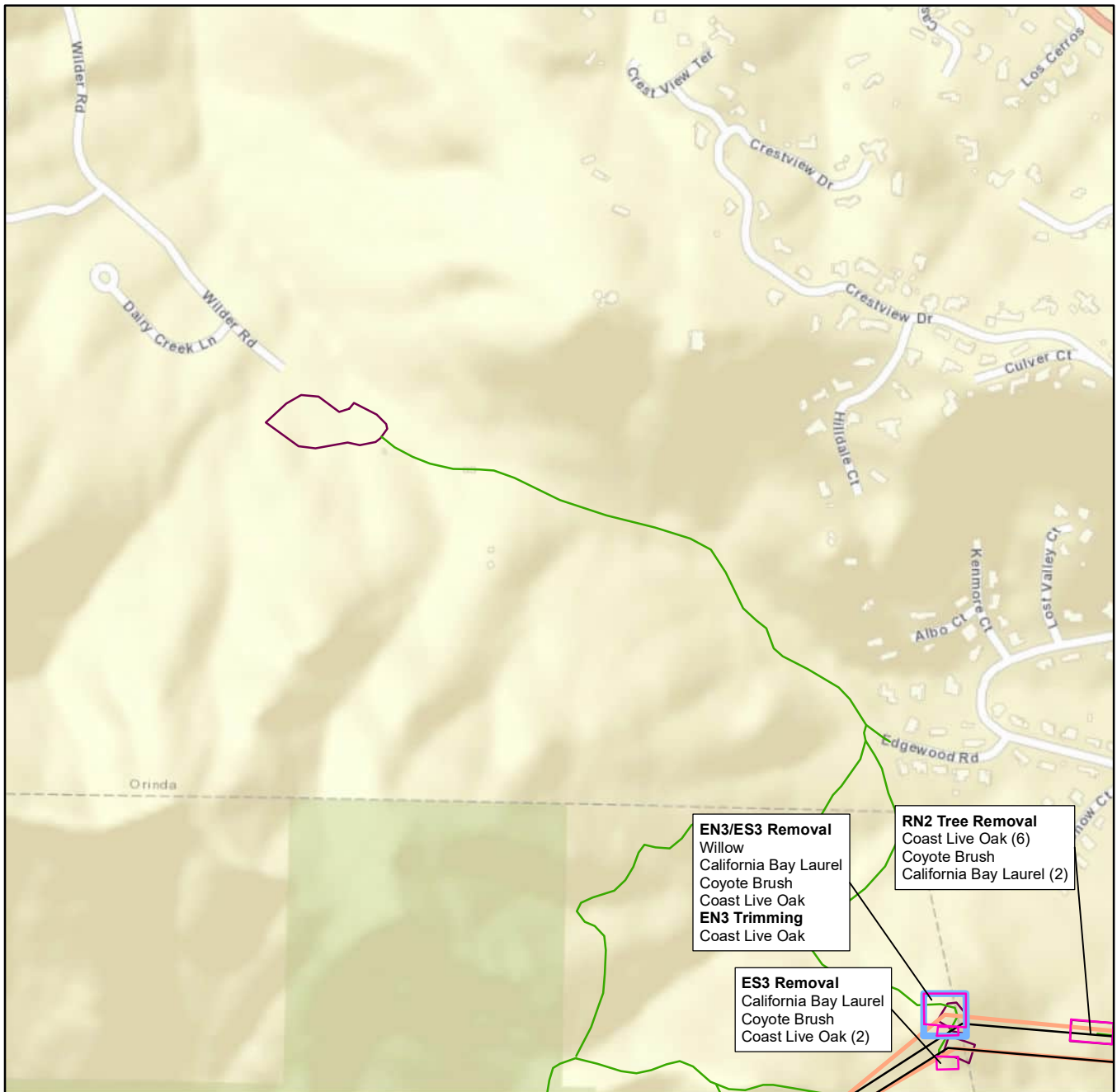


Figure 5.4-9 Page 1 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Potential Vegetation Management Areas

- Removal
- Trimming

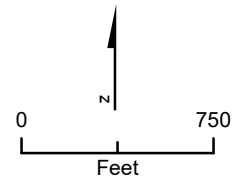
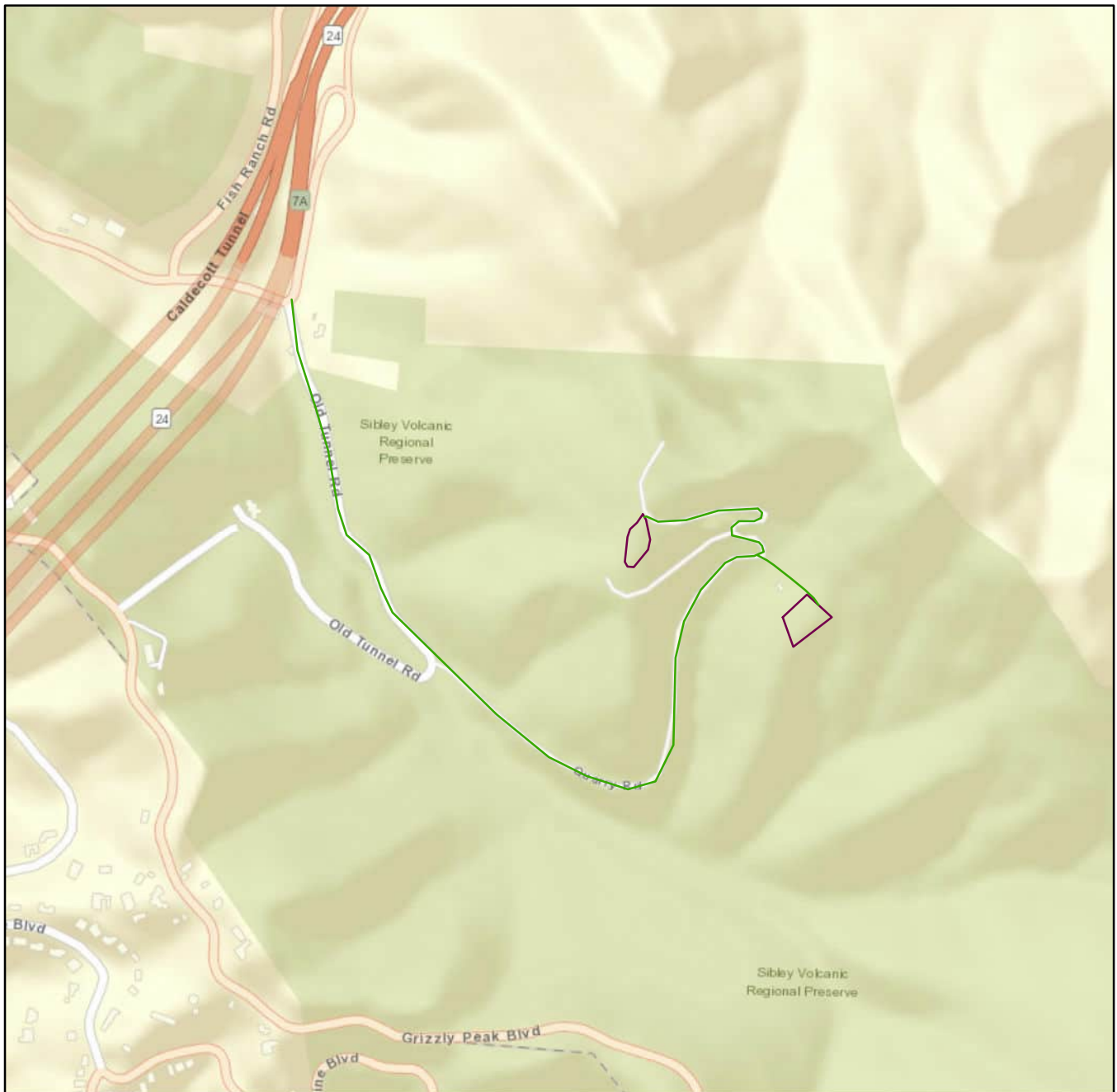


Figure 5.4-9 Page 2 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- Project Access
- Temporary Work Area

Version: 11/5/2024

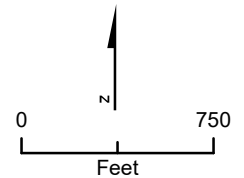
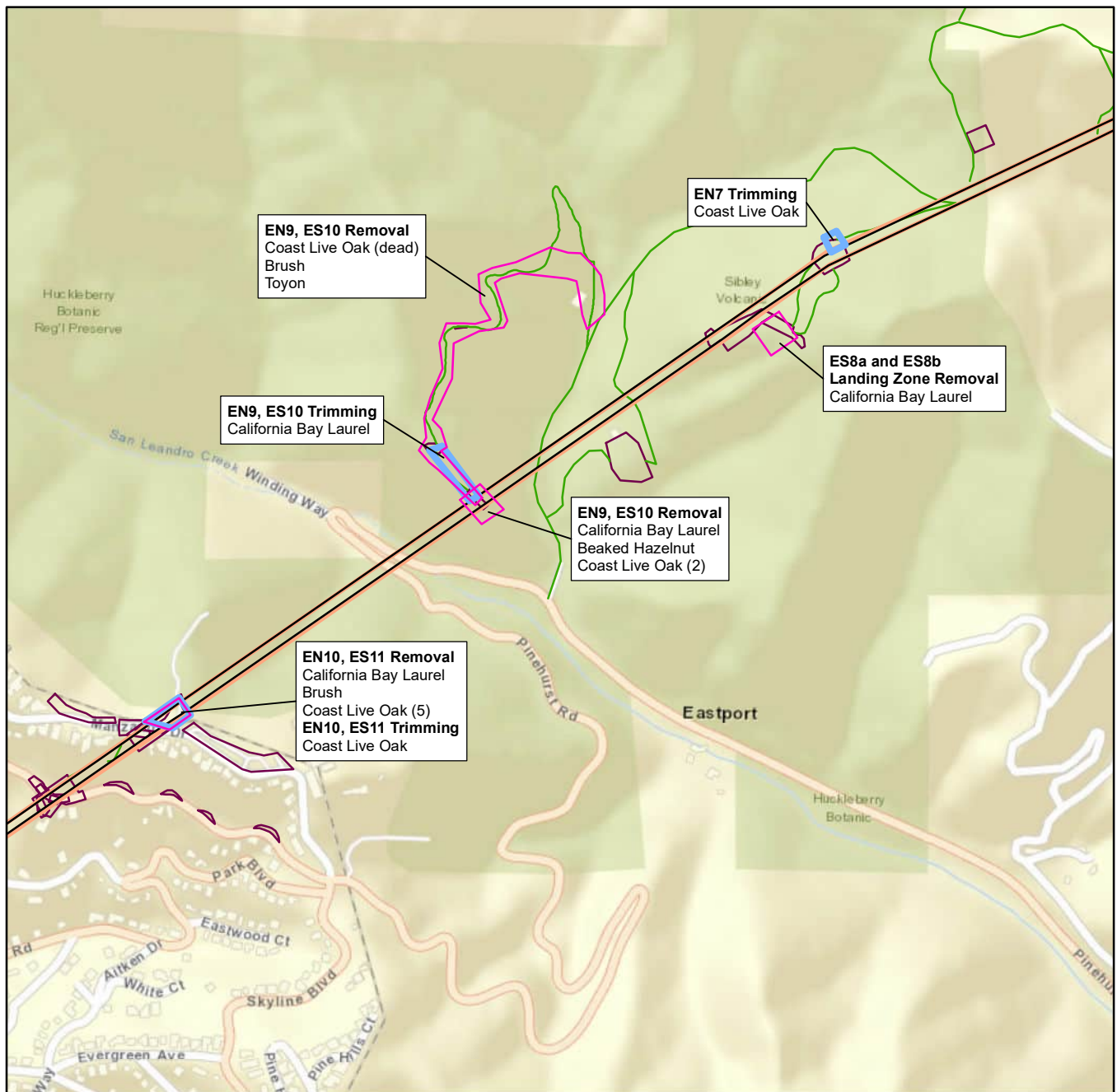


Figure 5.4-9 Page 3 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Potential Vegetation Management Areas

- Removal
- Trimming

Version: 11/5/2024

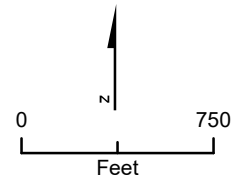
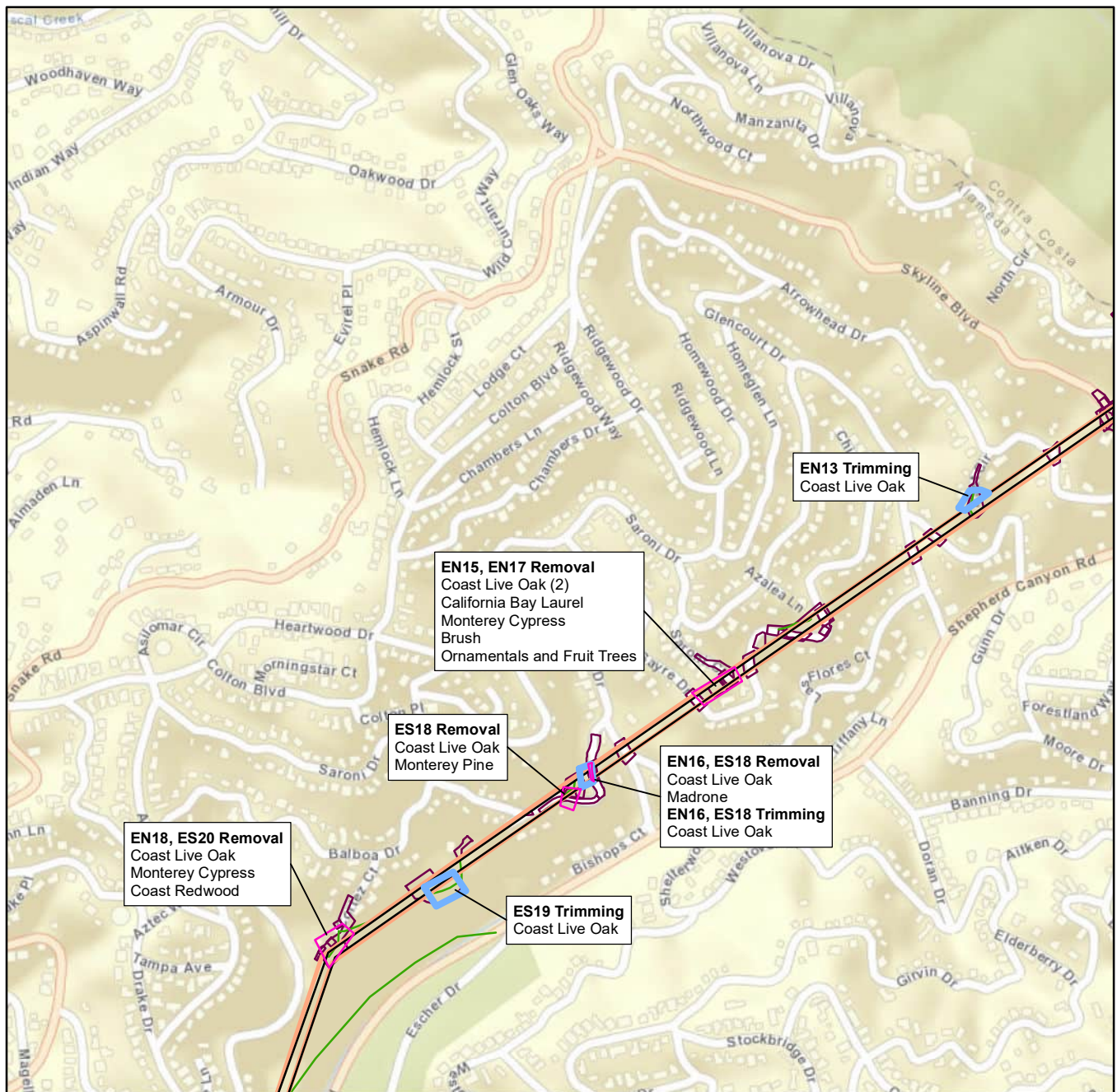


Figure 5.4-9 Page 4 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Project Access
- Temporary Work Area
- Overhead Routes**
 - Existing
 - Proposed
- Potential Vegetation Management Areas**
 - Removal
 - Trimming

Version: 11/5/2024

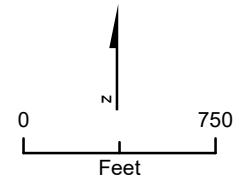
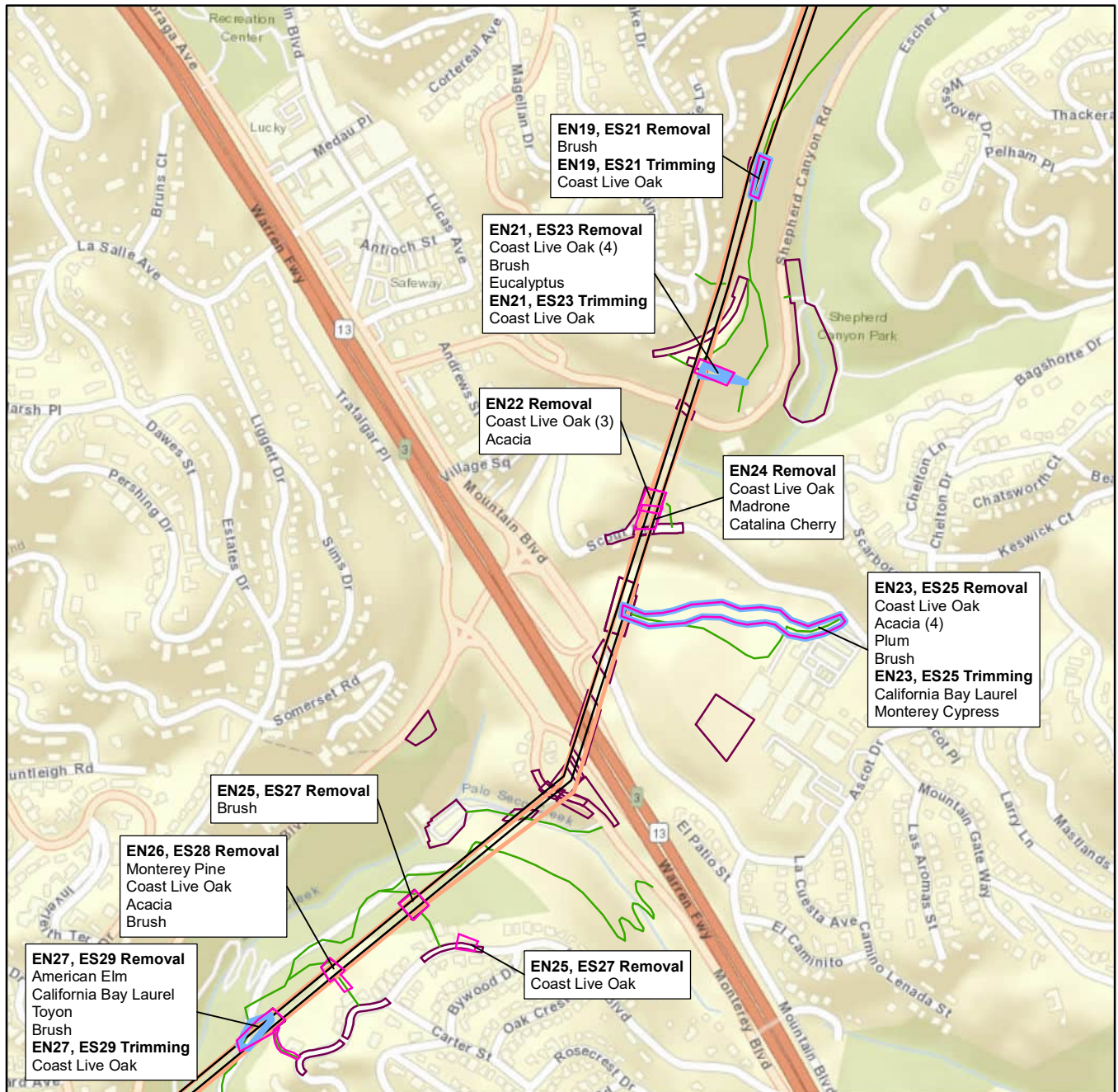


Figure 5.4-9 Page 5 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Project Access
- Temporary Work Area
- Overhead Routes**
 - Existing
 - Proposed
- Potential Vegetation Management Areas**
 - Removal
 - Trimming

Version: 11/5/2024

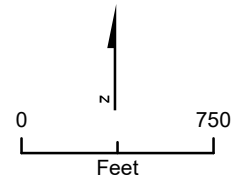
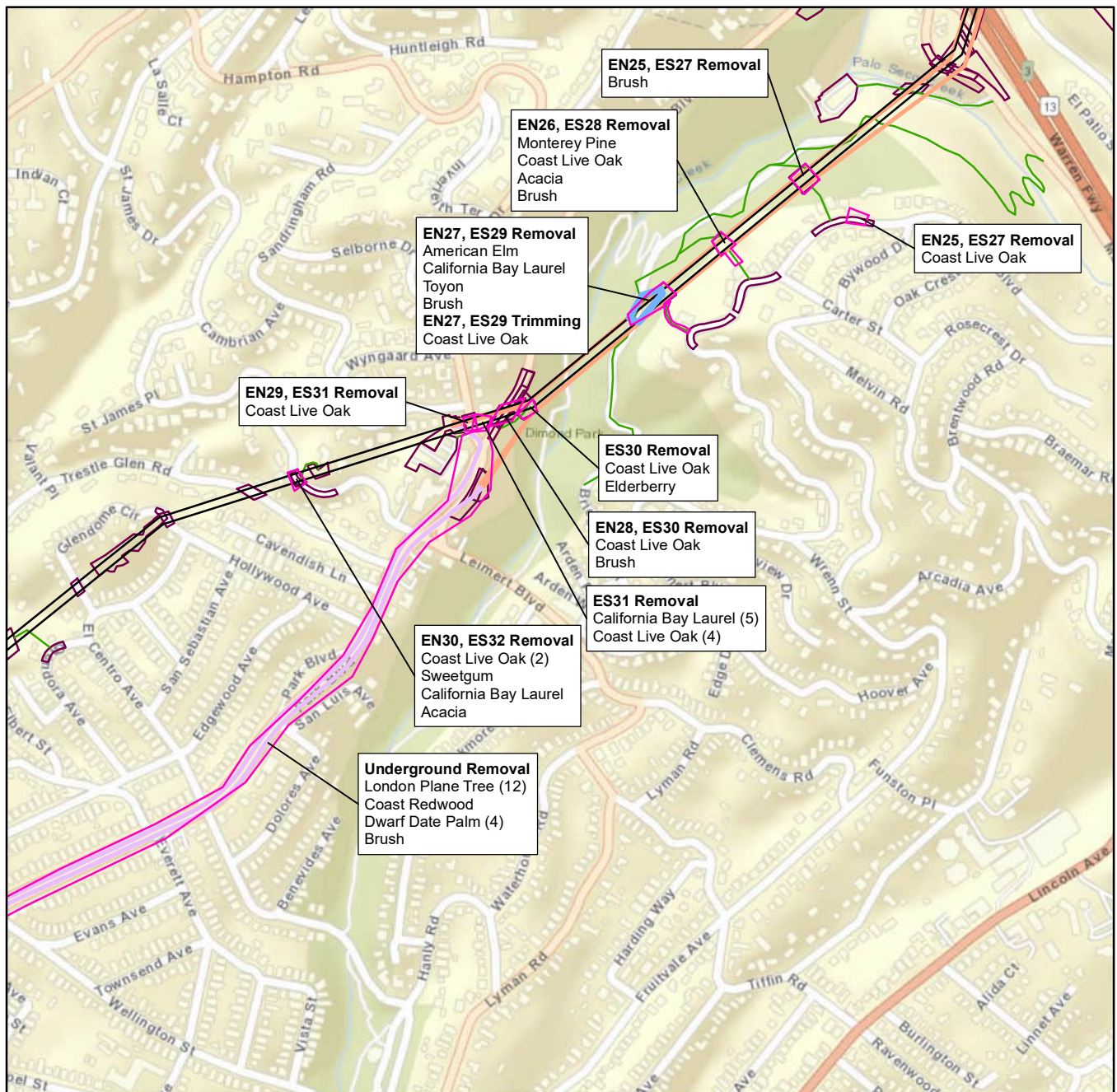


Figure 5.4-9 Page 6 of 9
Potential Tree Trimming and Removal
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/5/2024

Legend

- Project Access
- Temporary Work Area
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Potential Vegetation Management Areas**
 - Removal
 - Trimming

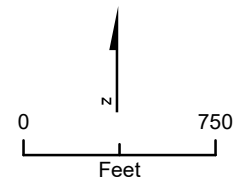
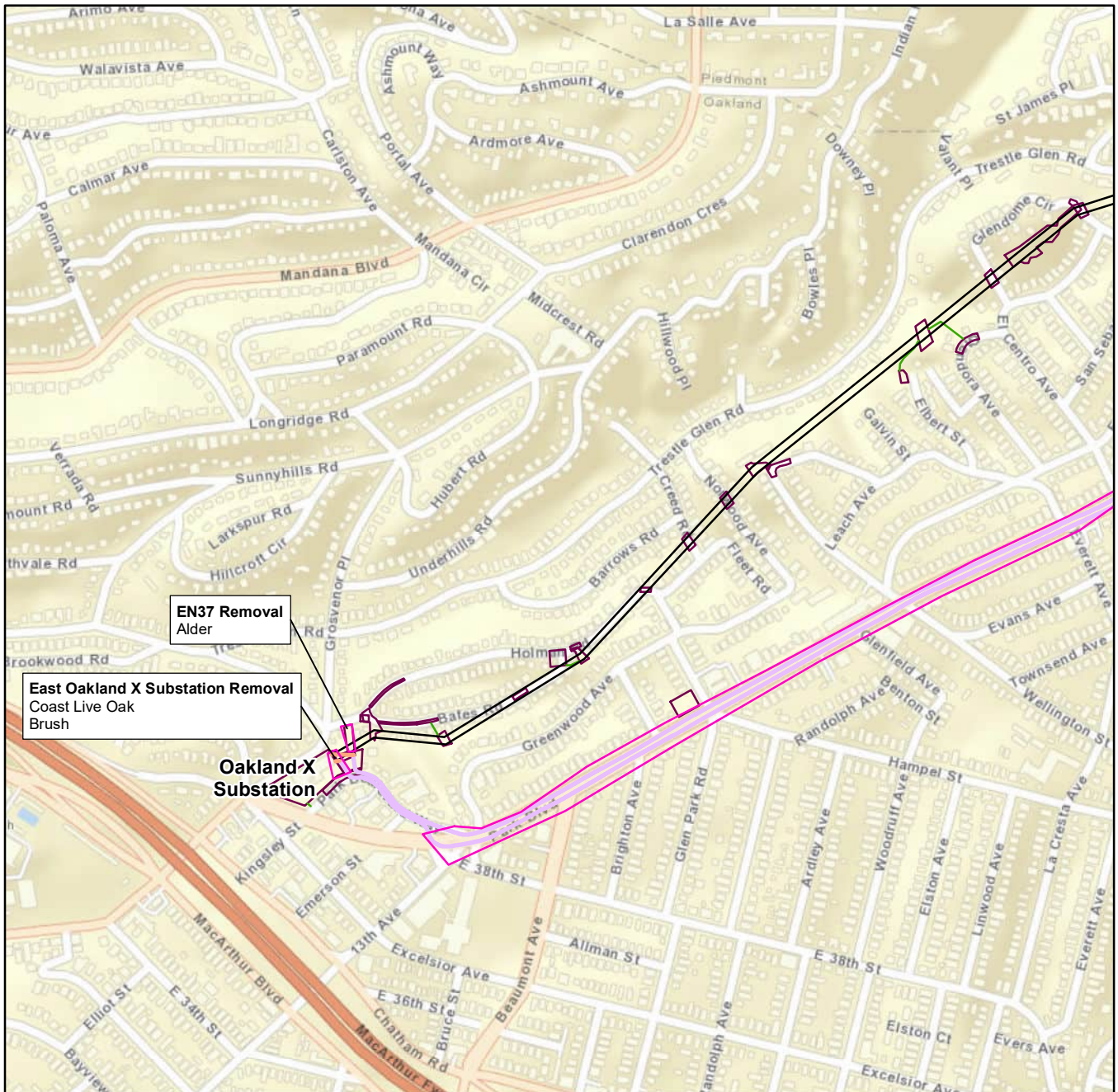


Figure 5.4-9 Page 7 of 9
Potential Tree Trimming and Removal
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Project Access
- Temporary Work Area
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- Potential Vegetation Management Areas**
 - Removal

Version: 11/5/2024

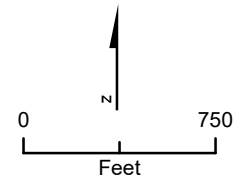
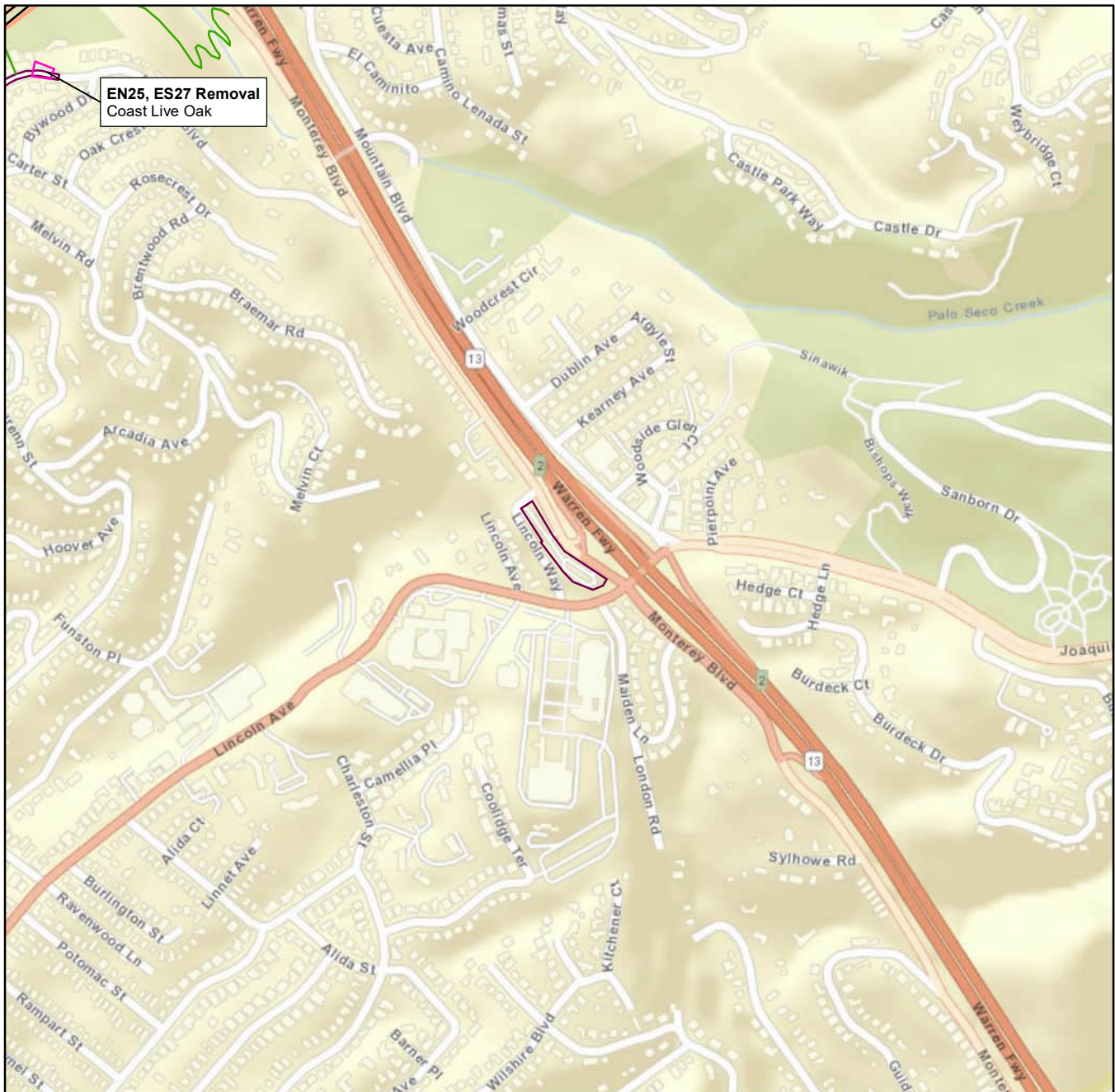


Figure 5.4-9 Page 8 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- Project Access
- Temporary Work Area
- Overhead Routes**
 - Existing
 - Proposed
- Potential Vegetation Management Areas**
 - Removal

Version: 11/5/2024

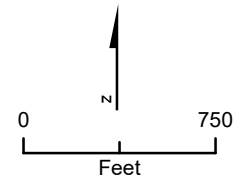
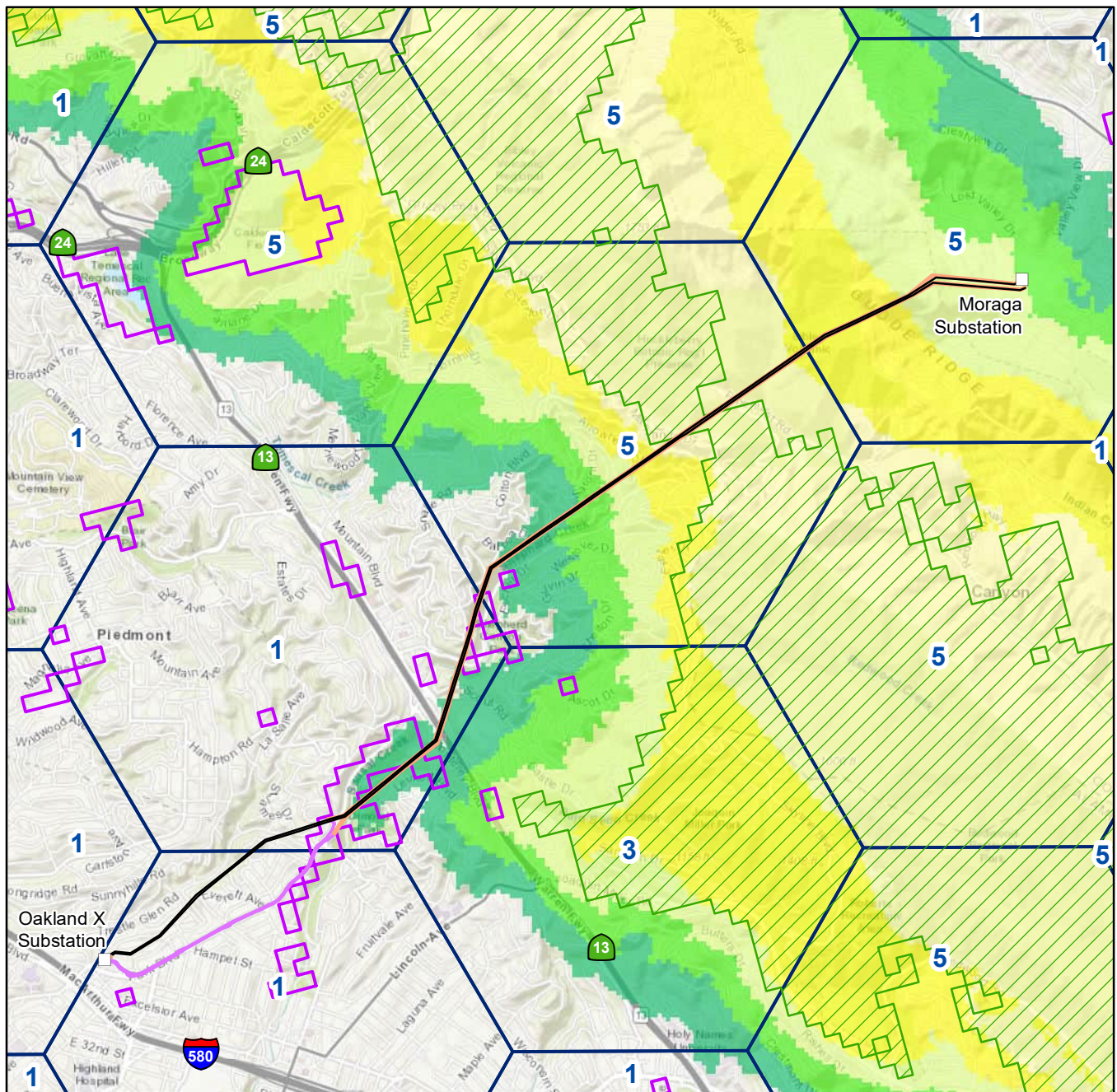


Figure 5.4-9 Page 9 of 9
Potential Tree Trimming and Removal
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Sources: CDFW Conservation Analysis Unit, February, 2024
Caltrans and CDFW

Version: 11/5/2024

Legend

- Substation
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

- Natural Landscape Block
- Natural Areas Small

Terrestrial Connectivity - Areas of Conservation Emphasis

- 1 Limited Connectivity Opportunity
- 3 Connections with Implementation Flexibility
- 5 Irreplaceable and Essential Corridors

Essential Connectivity Areas

- More Permeable
-
-
- Less Permeable

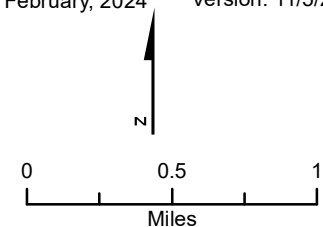
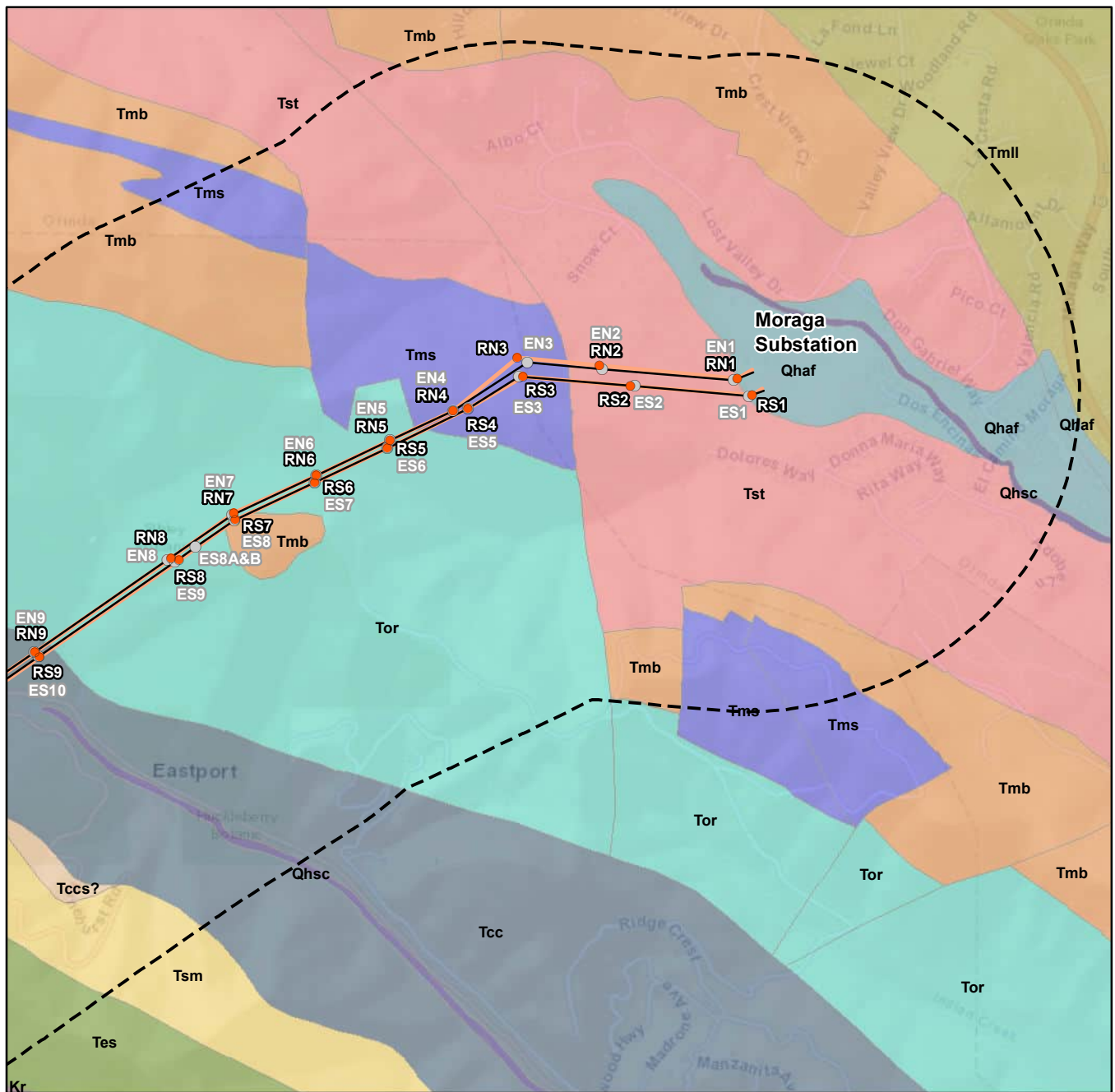


Figure 5.4-10
CDFW Terrestrial Connectivity
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 6/6/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits

- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)

Assemblage I

- Tst - Siesta Formation
- Tms - Interflow Sedimentary Rocks
- Tmb - Moraga Formation
- Tor - Orinda Formation

- Tcc - Claremont chert

- Tccs?

- Tsm - Glaucconitic mudstone

- Tes - Mudstone

Assemblage II

- TmII - Mulholland Formation

Great Valley Sequence

- Kr - Redwood Canyon Formation

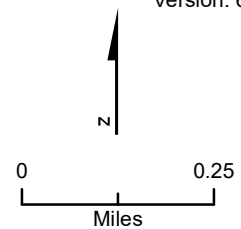


Figure 5.7-1. Page 1 of 4
Geologic Map

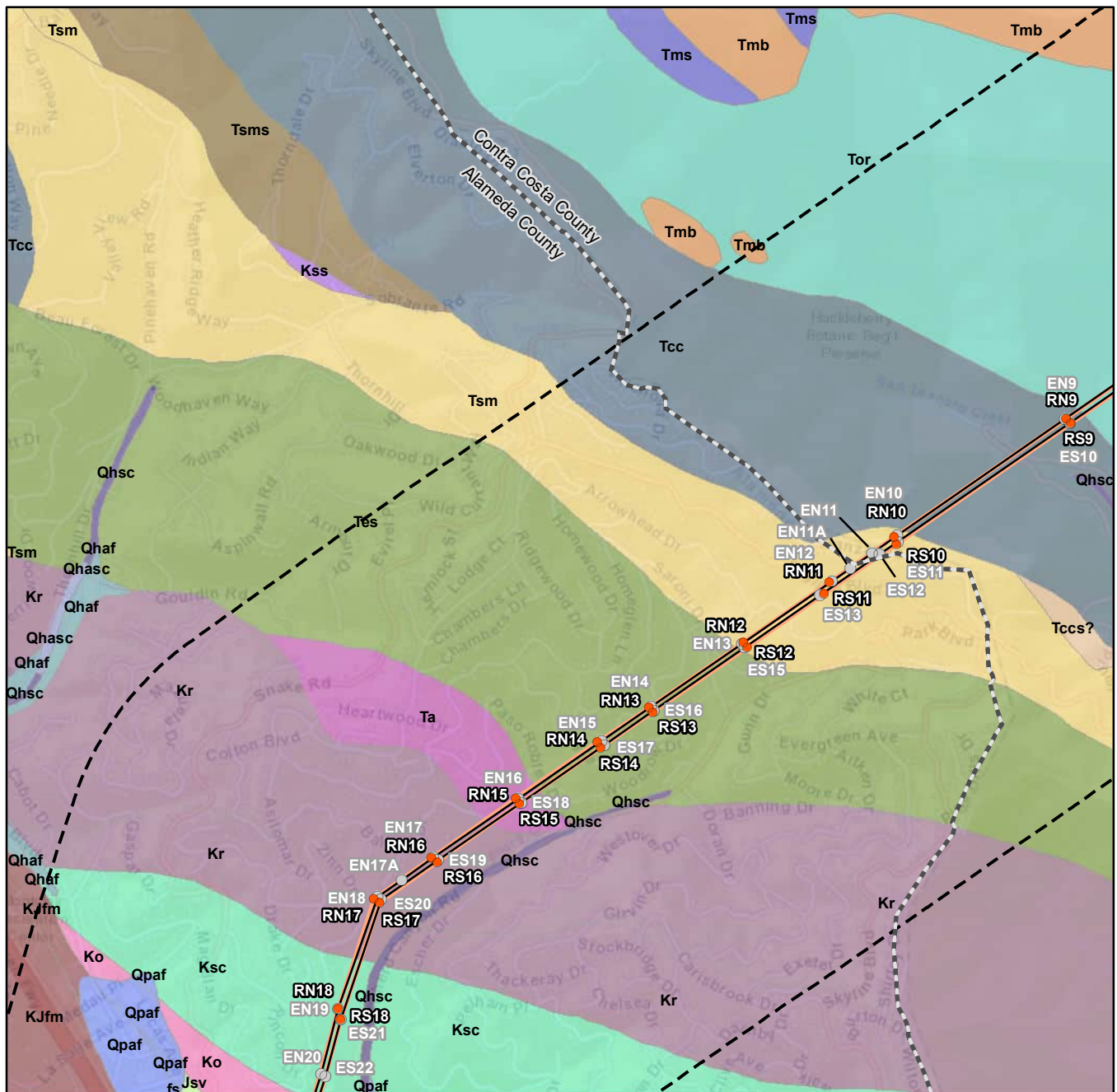
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

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Version: 6/6/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits

- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)

Assemblage I

- Tsms - interbedded sandstone
- Tms - Interflow Sedimentary Rocks
- Tmb - Moraga Formation
- Tor - Orinda Formation
- Tcc - Claremont chert
- Tccs?

- Tsm - Glauconitic mudstone

- Tes - Mudstone

- Ta - Glauconitic sandstone

Great Valley Sequence

- Kss - lithic sandstone
- Kr - Redwood Canyon Formation
- Ksc - Shepard Creek Formation
- Ko - Oakland Conglomerate
- Jsv - Keratophyre

Franciscan Complex

- KJfm - Franciscan Complex
- fs - Graywacke

Figure 5.7-1. Page 2 of 4
Geologic Map

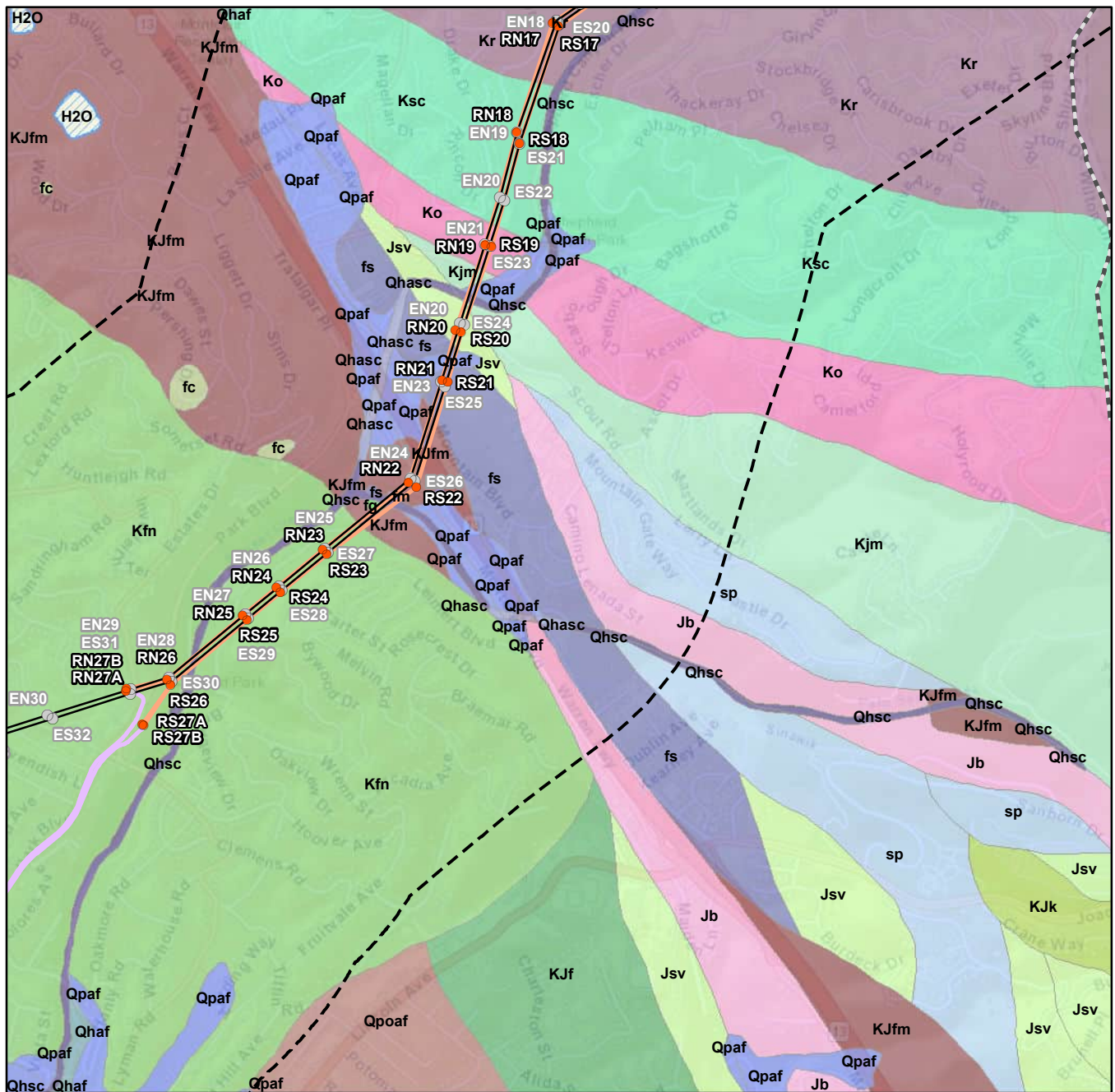
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

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Version: 6/6/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits

- Qhsc - artificial stream channels
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)
- Qpoaf - alluvial terrace (Pleistocene)

Great Valley Sequence

- Kr - Redwood Canyon Formation
- Ksc - Shepard Creek Formation
- Ko - Oakland Conglomerate
- Kjm - Joaquin Miller Formation
- KJk - Knoxville Formation
- Jsv - Keratophyre

Coast Range Ophiolite

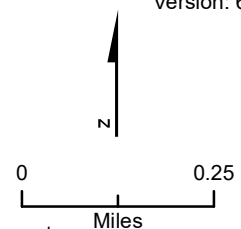
- Jb - Massive basalt and diabase
- sp - Serpentinite

Franciscan Complex

- Fm - glaucophane schist
- Fg - greenstone
- Fc - chert
- KJf - undivided Franciscan Complex rocks
- Kfn - Sandstone Novato Quarry
- KJfm - Franciscan Complex
- fs - Graywacke

Other

- H2O - Water



**Figure 5.7-1. Page 3 of 4
Geologic Map**

Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Geology Data Source: Graymer, 2000

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

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Version: 6/6/2024

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits

- Qhsc - artificial stream channels
- Qhsc - stream channel deposits
- af - artificial fill
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)

- Qpoaf - alluvial terrace (Pleistocene)

Franciscan Complex

- Fc - chert
- Kfn - Sandstone Novato Quarry
- KJfm - Franciscan Complex

Other

- H2O - Water

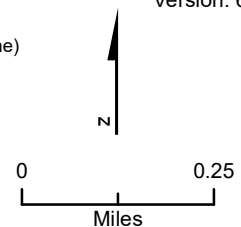


Figure 5.7-1. Page 4 of 4
Geologic Map

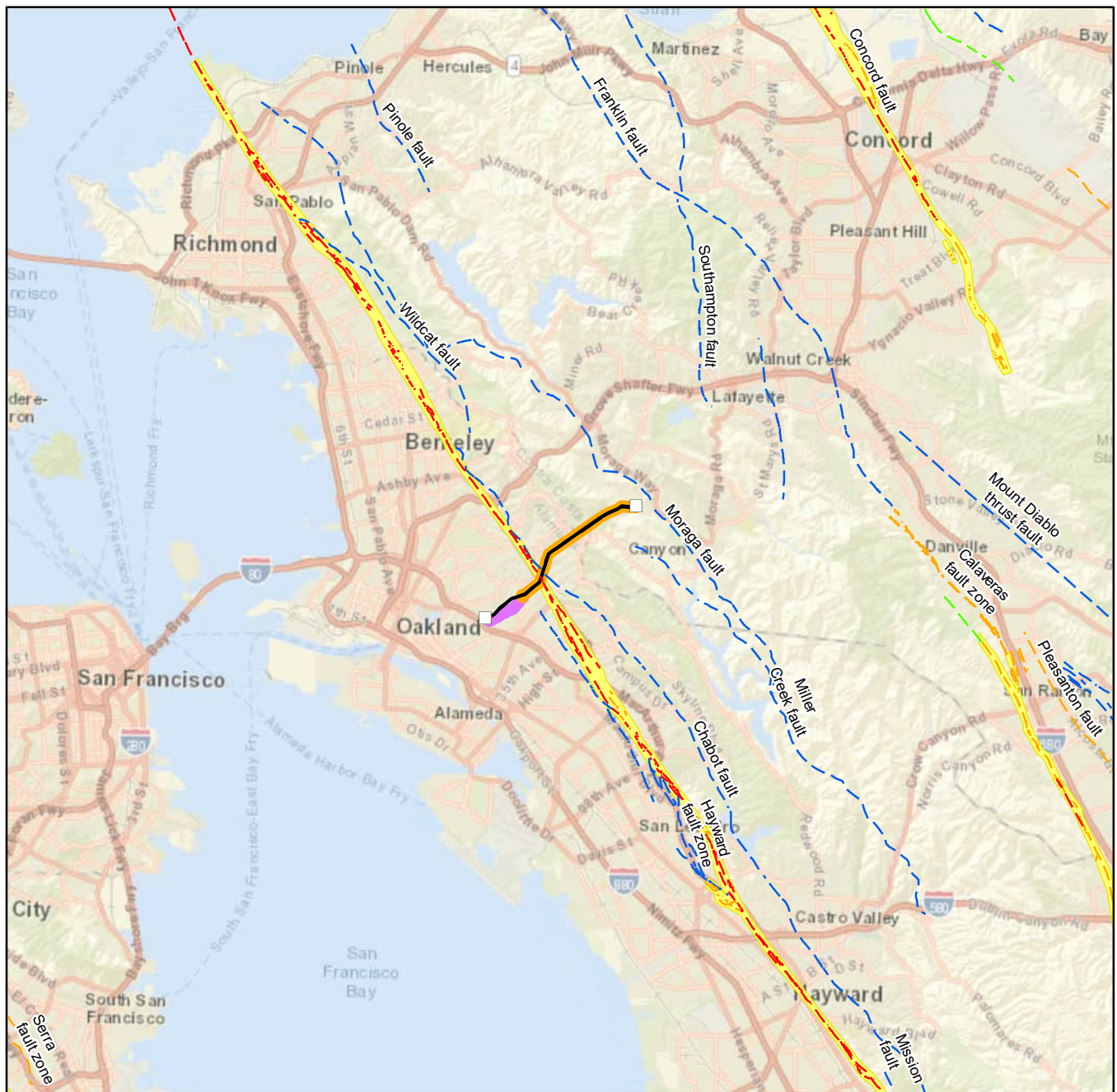
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

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Jacobs



Version: 5/3/2024

Legend

Substation	Alquist-Priolo Fault Hazard Zone
Overhead Routes	Fault Age
Existing	Historic (<150 years)
Proposed	Latest Quaternary (<130,000 years)
Underground Routes	Late Quaternary (<750,000 years)
Proposed	Undifferentiated Quaternary (<1,600,000 years)

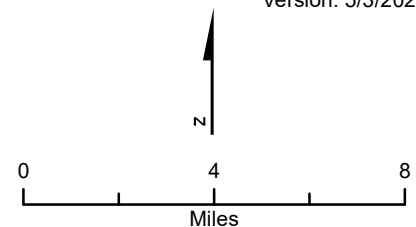


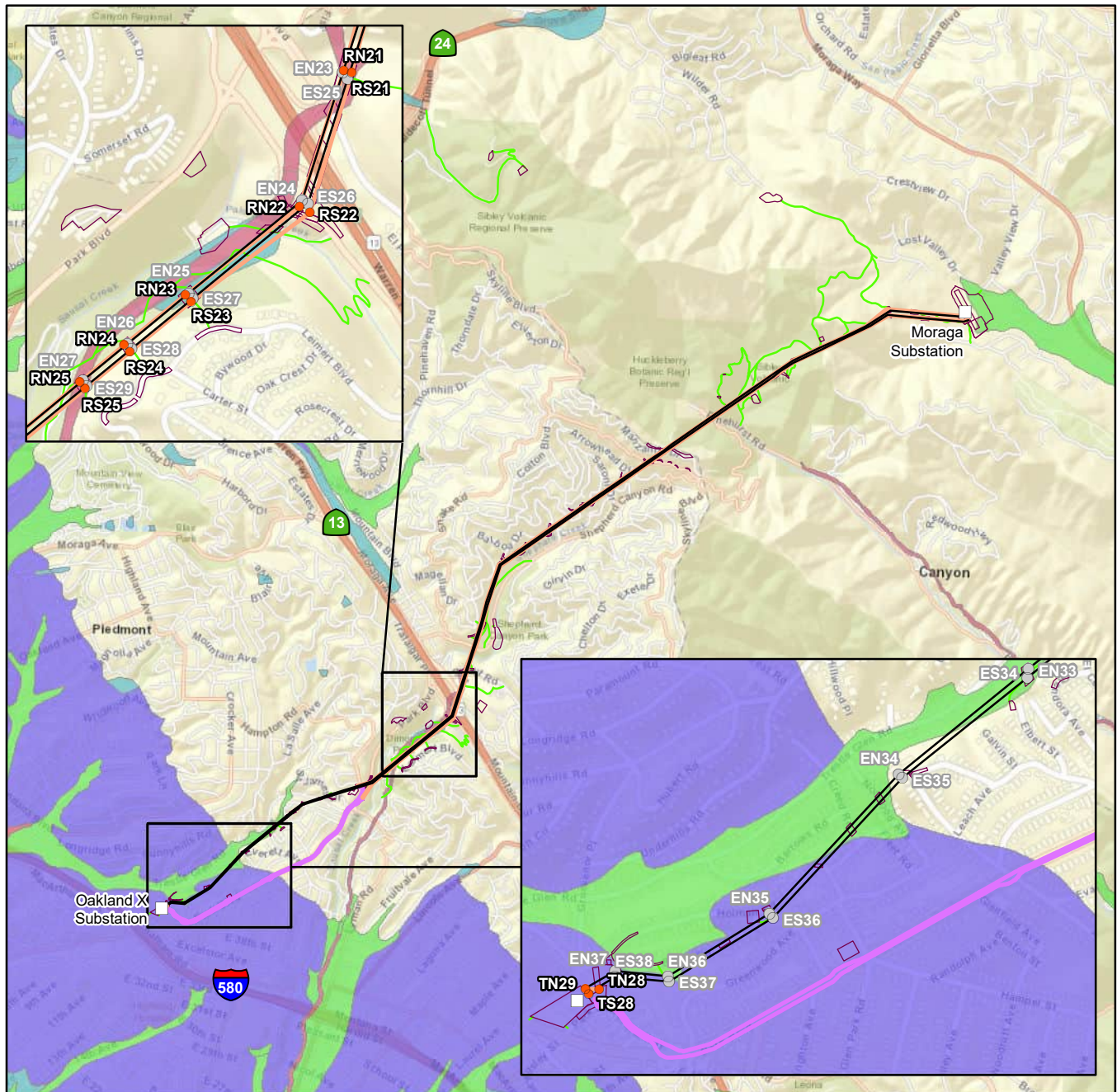
Figure 5.7-2
Fault Map
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

Source: U.S. Geological Survey and California Geological Survey

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Version: 6/17/2024

Legend

- Substation
- Project Access
- Temporary Work Area

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Liquefaction Potential

- Very High
- Moderate
- Low
- Very Low

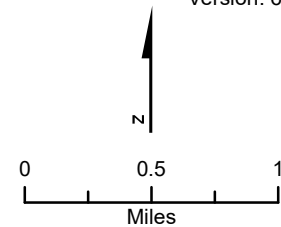
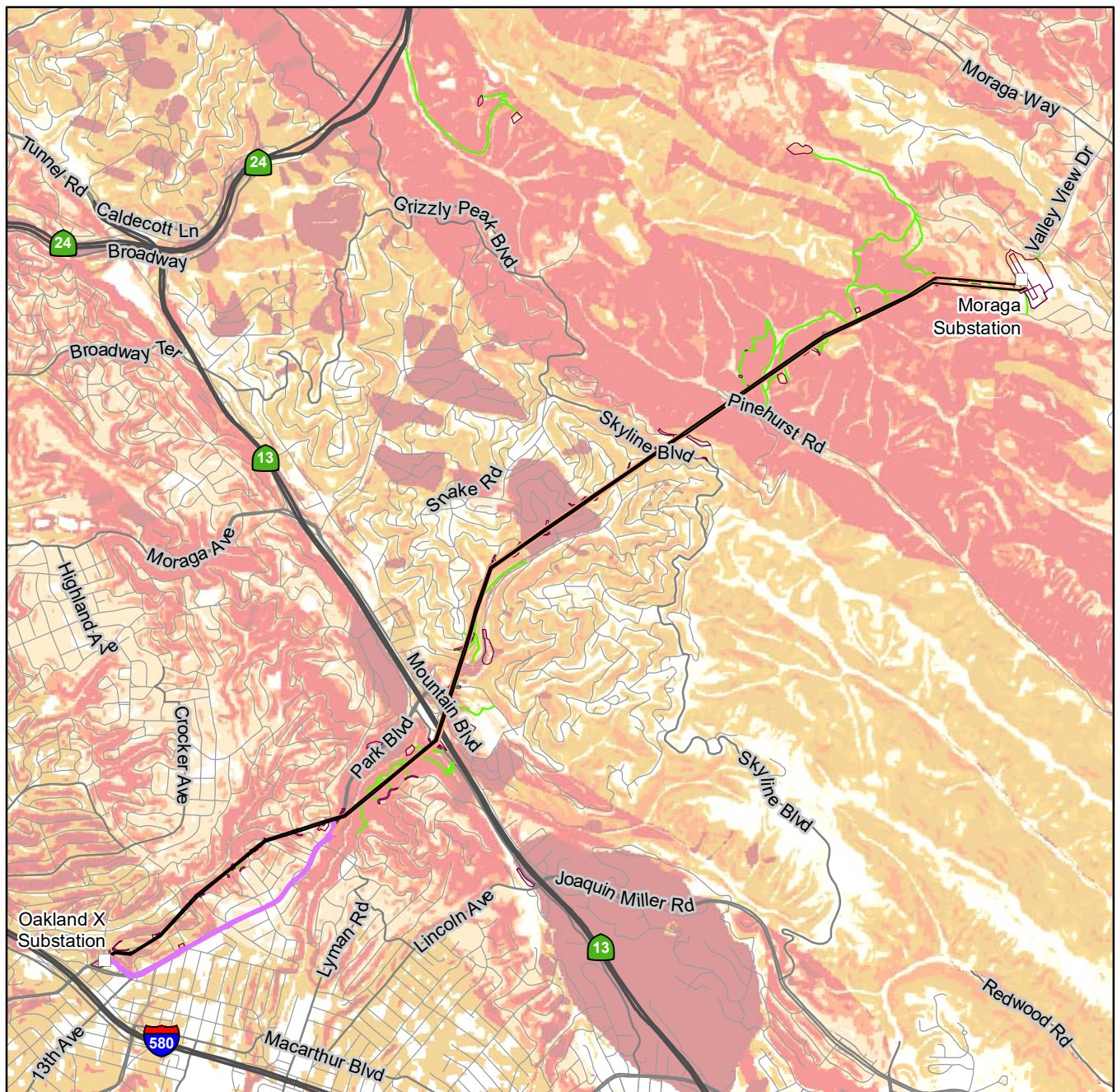


Figure 5.7-3
Liquefaction Potential
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

**Preliminary and Subject to Change Based on CPUC
 Requirements, Final Engineering, and Other Factors**

Source: U.S. Geological Survey

Jacobs



Version: 4/23/2024

Legend

- Substation
- Project Access
- Temporary Work Area
- Overhead Routes**
- Existing
- Proposed
- Underground Routes**
- Proposed

Landslide Susceptibility Classes

- 0
- III
- V
- VI
- VII
- VIII
- IX
- X

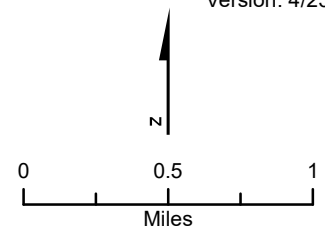


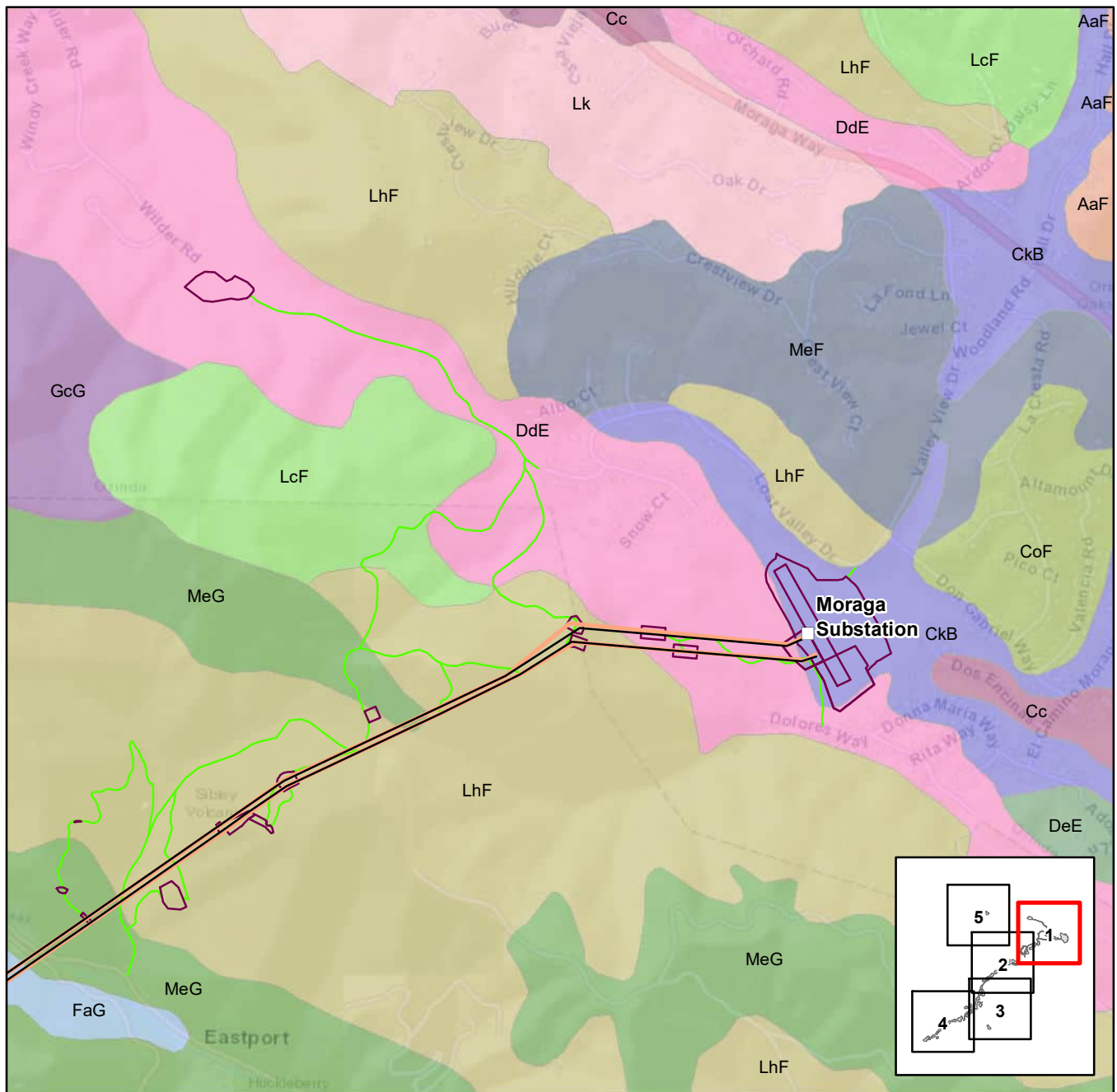
Figure 5.7-4
Landslide Susceptibility
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

**Preliminary and Subject to Change Based on CPUC
 Requirements, Final Engineering, and Other Factors**

Source: California Geological Survey

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Jacobs



Legend

- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Soils

- AaF: Alo clay, 30 to 50 percent slopes, MLRA 15
- Cc: Clear Lake clay, 0 to 15 percent slopes, MLRA 15
- CkB: Cropley clay, 2 to 5 percent slopes
- CoF: Cut and fill land-Millsholm complex, 30 to 50 percent slopes

- DdE: Diablo clay, 15 to 30 percent slopes, MLRA 15
- DeE: Dibble silty clay loam, 15 to 30 percent slopes
- FaG: Felton loam, 50 to 75 percent slopes
- GcG: Gilroy clay loam, 50 to 75 percent slopes, MLRA 15
- LcF: Lodo clay loam, 30 to 50 percent slopes, very rocky, MLRA 15
- LhF: Los Osos clay loam, 30 to 50 percent slopes
- Lk: Los Osos-Los Gatos complex
- MeF: Millsholm loam, 15 to 50 percent slopes, moist, MLRA 15
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15

Version: 4/23/2024

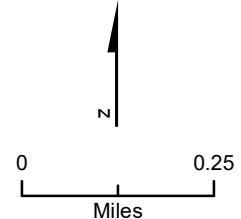


Figure 5.7-5. Page 1 of 5
Soil Map

Moraga-Oakland X
115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs

Source: U.S. Department of Agriculture,
Natural Resources Conservation Service

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

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Legend

- Temporary Work Area
- Project Access

Overhead Routes

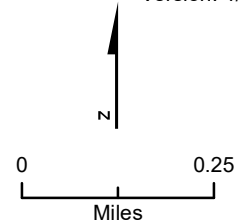
- Existing
- Proposed

Soils

- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15

- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- FaG: Felton loam, 50 to 75 percent slopes
- GaB: Garretson loam, 2 to 5 percent slopes
- LcF: Lodo clay loam, 30 to 50 percent slopes, very rocky, MLRA 15
- LhF: Los Osos clay loam, 30 to 50 percent slopes
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- MeGcc: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15

Version: 4/23/2024



**Figure 5.7-5. Page 2 of 5
Soil Map**

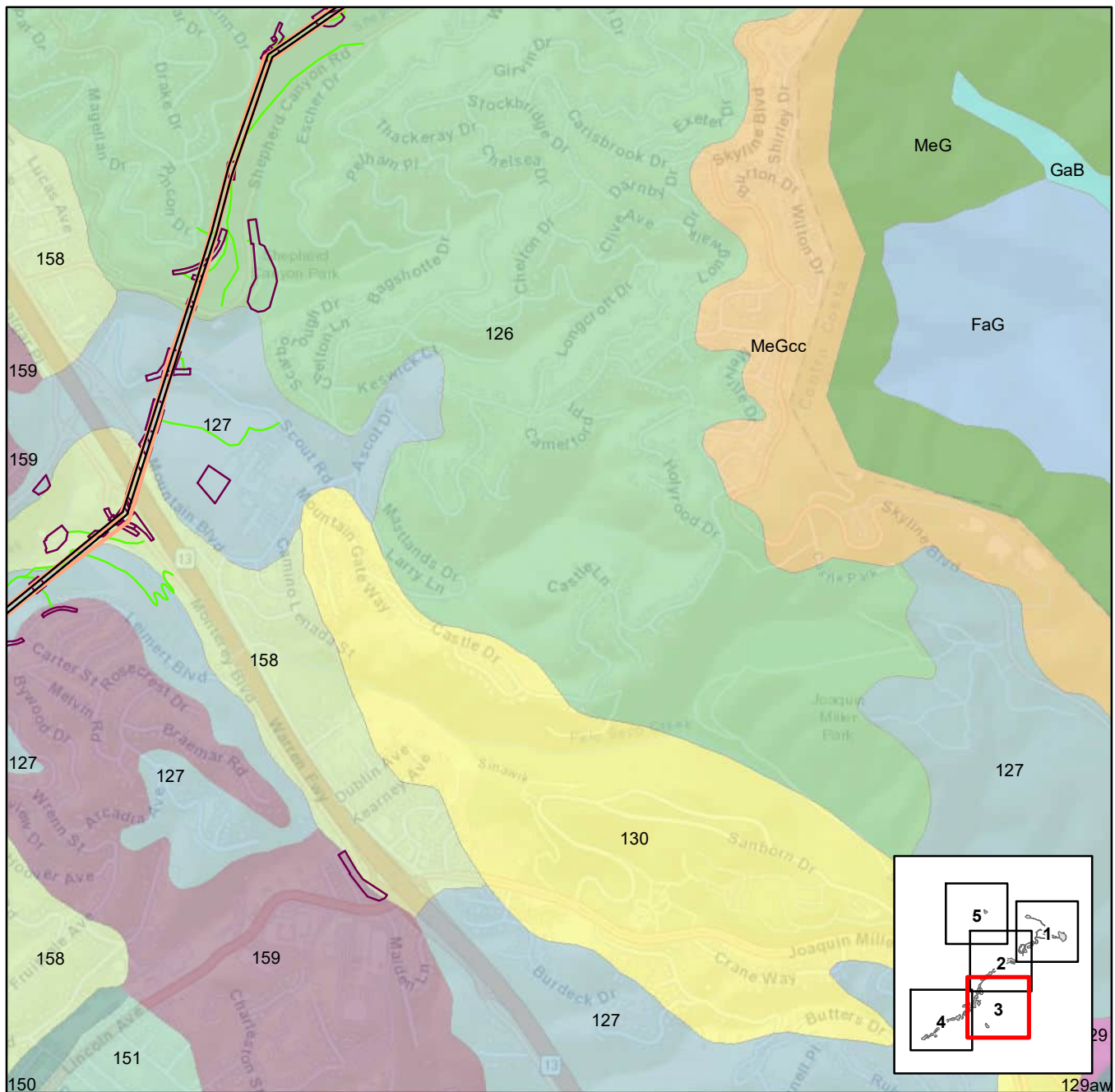
Moraga-Oakland X
115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs

Source: U.S. Department of Agriculture,
Natural Resources Conservation Service

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

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Legend

- Temporary Work Area
- Project Access

Overhead Routes

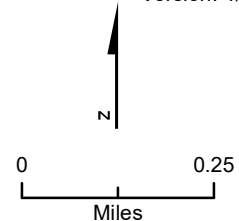
- Existing
- Proposed

Soils

- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15
- 129: Millsholm silt loam, 50 to 75 percent slopes
- 129aw: Millsholm silt loam, 50 to 75 percent slopes
- 130: Montara-Rock outcrop complex, 30 to 75 percent slopes

- 150: Urban land-Tierra complex, 2 to 5 percent slopes
- 151: Urban land-Tierra complex, 5 to 15 percent slopes
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 159: Xerorthents-Millsholm complex, 30 to 50 percent slopes
- FaG: Felton loam, 50 to 75 percent slopes
- GaB: Garretson loam, 2 to 5 percent slopes
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- MeGcc: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15

Version: 4/23/2024



**Figure 5.7-5. Page 3 of 5
Soil Map**

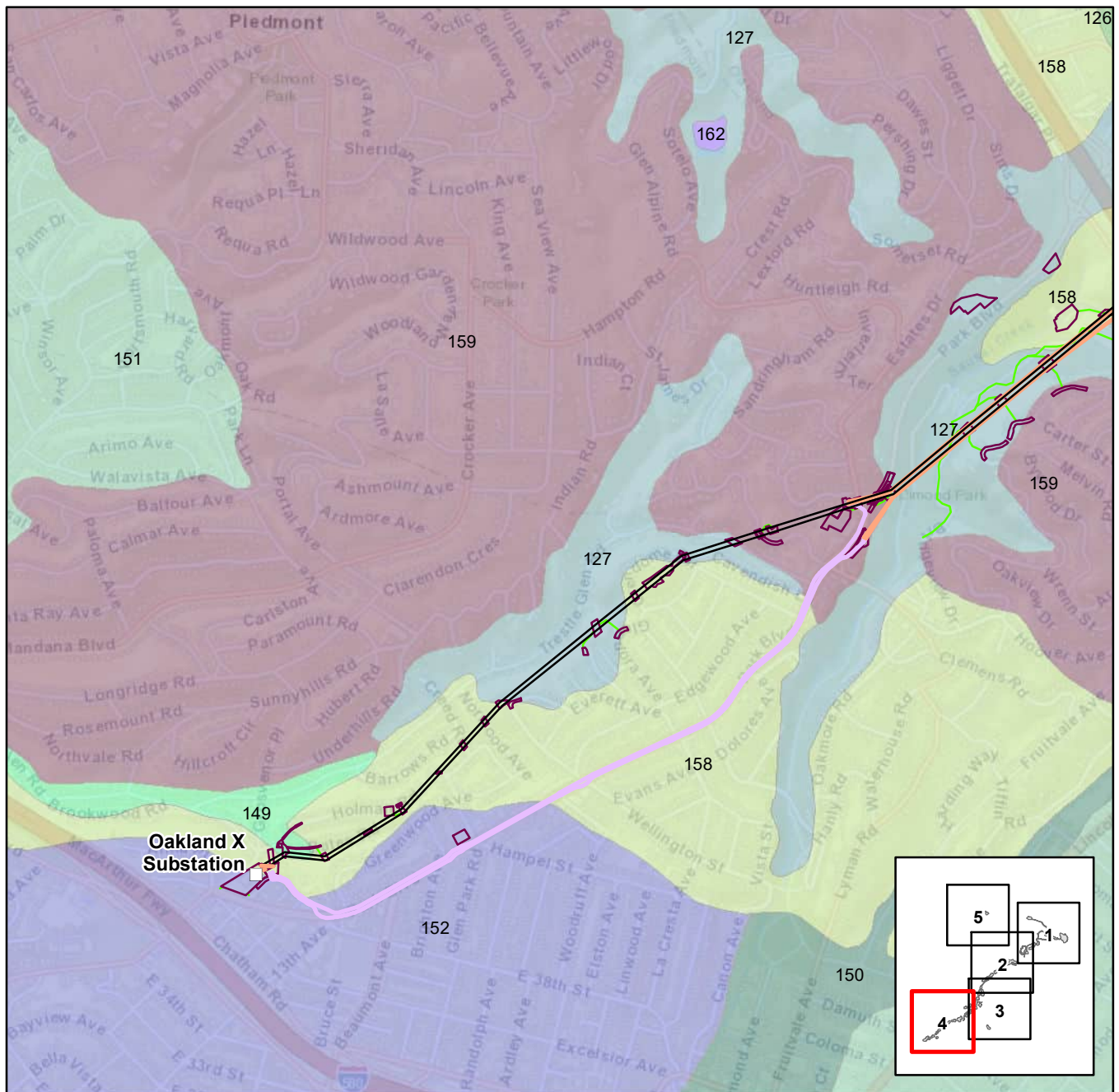
Moraga-Oakland X
115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs

Source: U.S. Department of Agriculture,
Natural Resources Conservation Service

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

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Legend

- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Soils

- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15

- 149: Urban land-Danville complex
- 150: Urban land-Tierra complex, 2 to 5 percent slopes
- 151: Urban land-Tierra complex, 5 to 15 percent slopes
- 152: Urban land-Tierra complex, 15 to 30 percent slopes
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 159: Xerorthents-Millsholm complex, 30 to 50 percent slopes
- 162: Water

Version: 4/23/2024

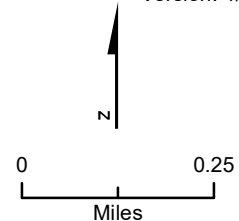


Figure 5.7-5. Page 4 of 5
Soil Map

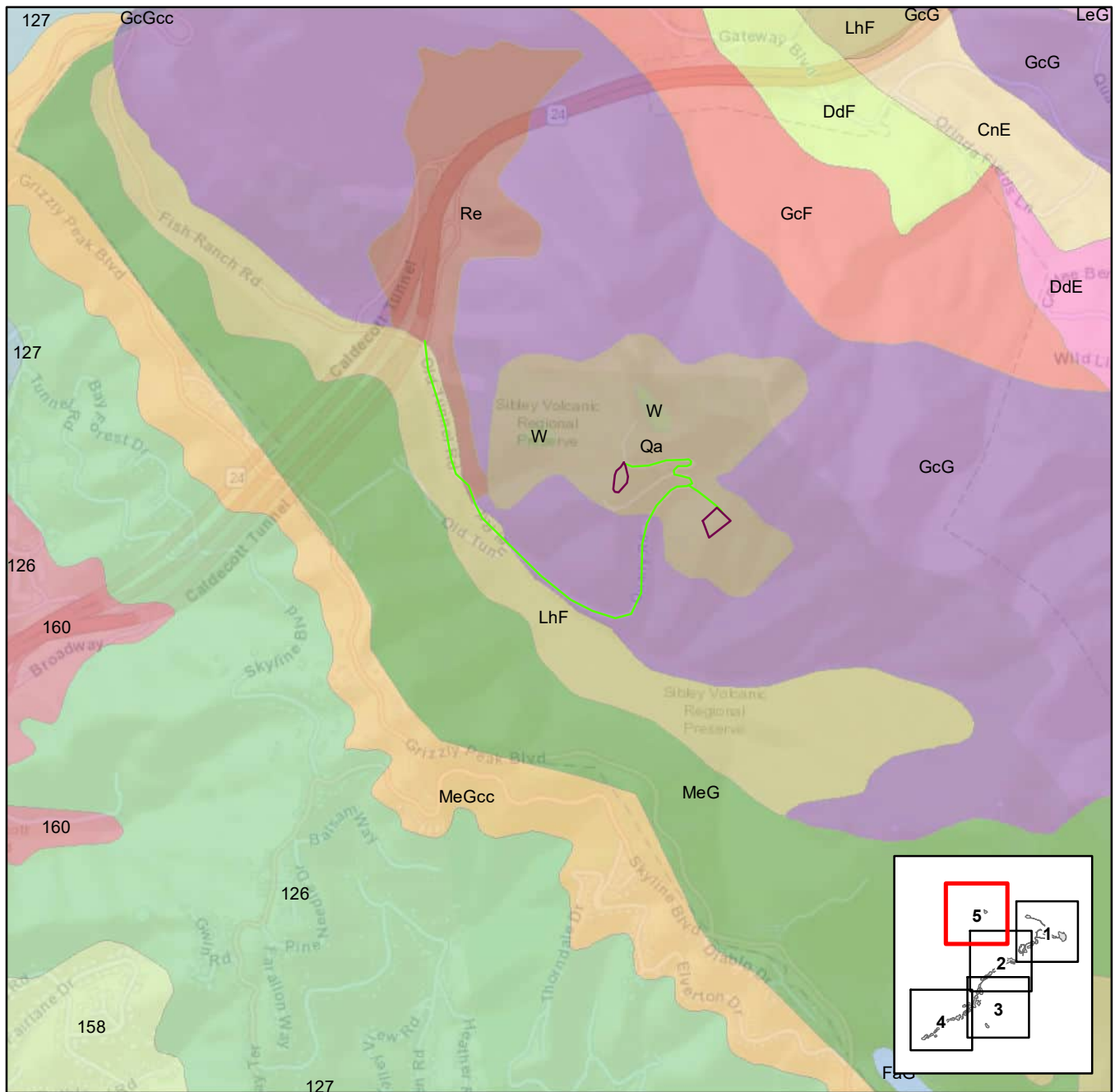
Moraga-Oakland X
115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs

Source: U.S. Department of Agriculture,
Natural Resources Conservation Service

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

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Legend

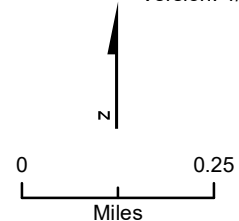
- Temporary Work Area
- Project Access

Soils

- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 160: Xerorthents-Millsholm complex, 50 to 75 percent slopes
- CnE: Cut and fill land-Los Osos complex, 9 to 30 percent slopes
- DdE: Diablo clay, 15 to 30 percent slopes, MLRA 15
- DdF: Diablo clay, 30 to 50 percent slopes, MLRA 15

- FaG: Felton loam, 50 to 75 percent slopes
- GcF: Gilroy clay loam, 30 to 50 percent slopes, MLRA 15
- GcG: Gilroy clay loam, 50 to 75 percent slopes, MLRA 15
- GcGcc: Gilroy clay loam, 50 to 75 percent slopes, MLRA 15
- LeG: Los Gatos loam, 50 to 75 percent slopes
- LhF: Los Osos clay loam, 30 to 50 percent slopes
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- MeGcc: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- Qa: Quarry
- Re: Rock outcrop-Xerorthents association
- W: Water

Version: 4/23/2024



**Figure 5.7-5. Page 5 of 5
Soil Map**

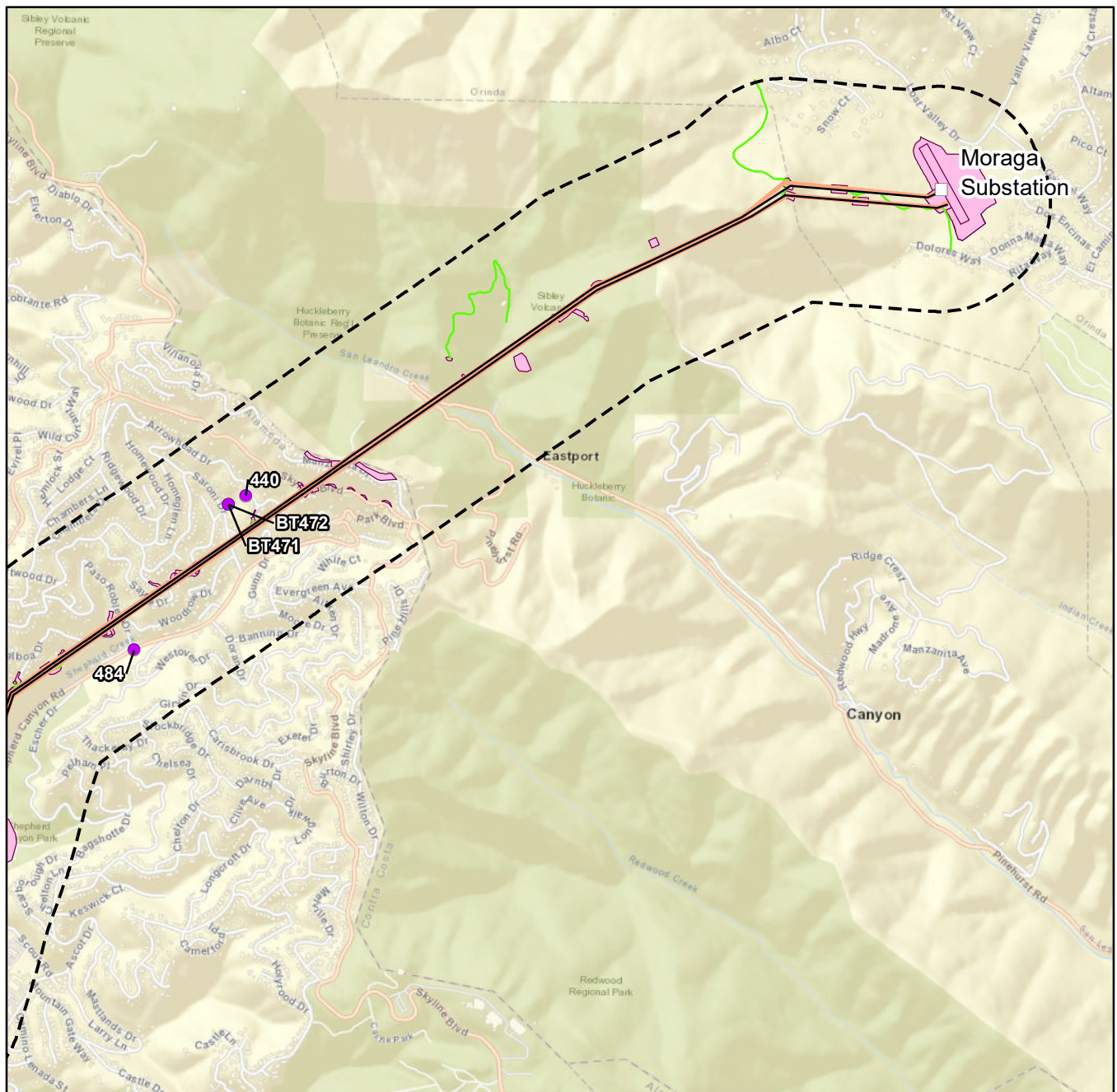
Moraga-Oakland X
115 kV Rebuild Project
Pacific Gas & Electric Company

Source: U.S. Department of Agriculture,
Natural Resources Conservation Service

**Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors**

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Jacobs



Version: 3/15/2024

Legend

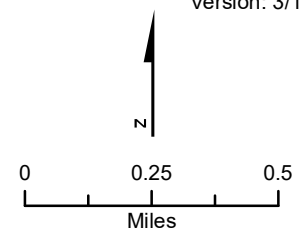
- 0.25-mile Project Buffer
- Substation
- Existing Overhead Route
- Proposed Overhead Route
- Proposed Underground Route
- Project Access (Improvement Only)
- Temporary Work Area

Hazardous Materials Sites

- Closed LUST Site
- Historical Auto Service
- Historical Dry Cleaner
- Spill Location

Notes: All hazardous materials sites located within a 0.25 mile buffer of the rebuilt project site were evaluated. Only sites located within 500 feet of planned project excavation areas are shown. Site identification numbers are defined in the EDR Area/Corridor Report (EDR, 2024) and Section 5.9.1.7.

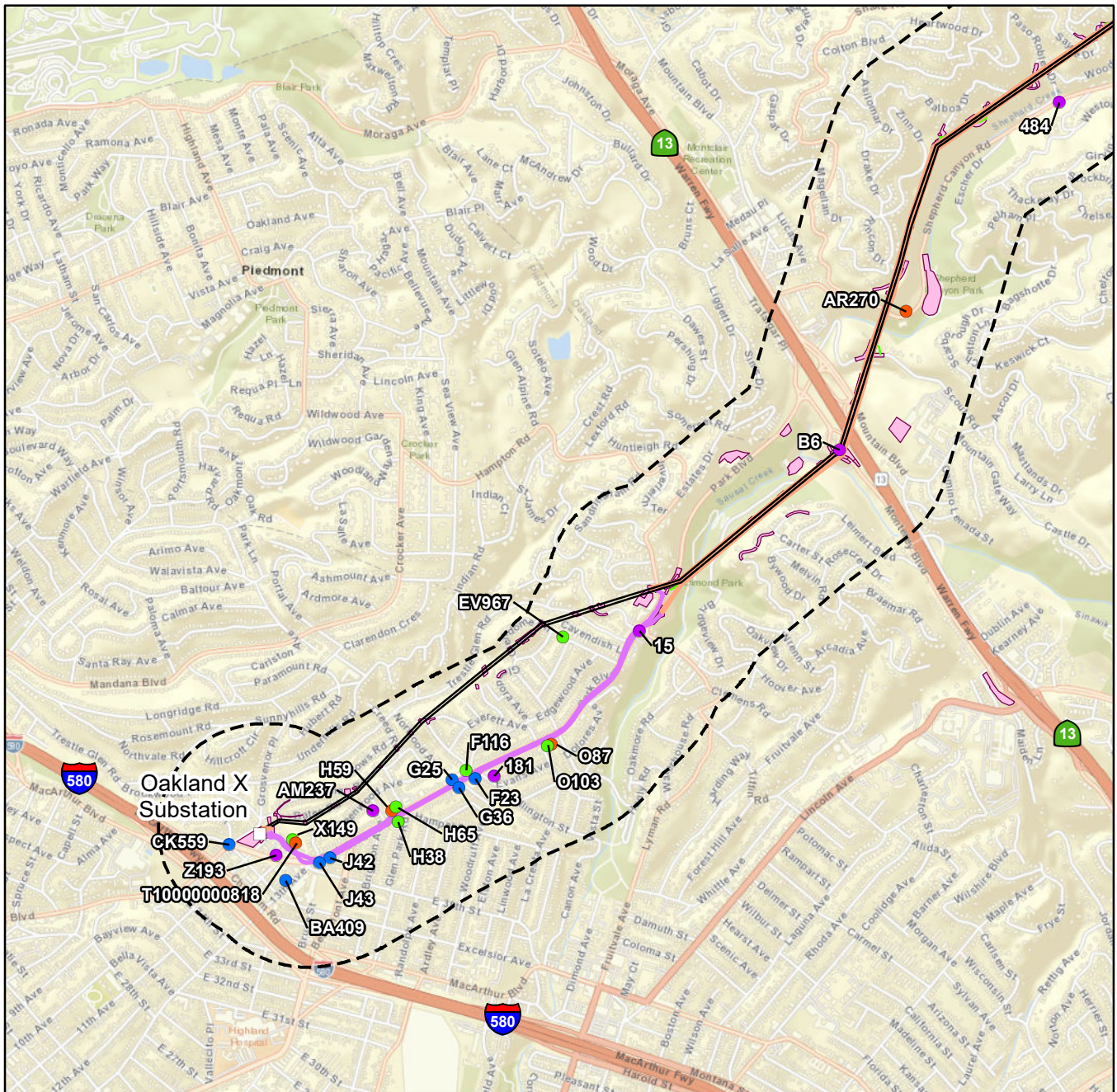
Source: EDR Area/Corridor Report (EDR, 2024) and SWRCB GeoTracker database (SWRCB, 2024)



Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Figure 5.9-1 Page 1 of 2
Hazardous Materials Sites Located within
500 Feet of Project Excavation Areas
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- 0.25-mile Project Buffer
- Substation
- Existing Overhead Route
- Proposed Overhead Route
- Proposed Underground Route
- Project Access (Improvement Only)
- Temporary Work Area

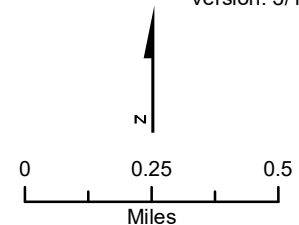
Hazardous Materials Sites

- Closed LUST Site
- Historical Auto Service
- Historical Dry Cleaner
- Spill Location

Notes: All hazardous materials sites located within a 0.25 mile buffer of the rebuilt project site were evaluated. Only sites located within 500 feet of planned project excavation areas are shown. Site identification numbers are defined in the EDR Area/Corridor Report (EDR, 2024) and Section 5.9.1.7.

Source: EDR Area/Corridor Report (EDR, 2024) and SWRCB GeoTracker database (SWRCB, 2024)

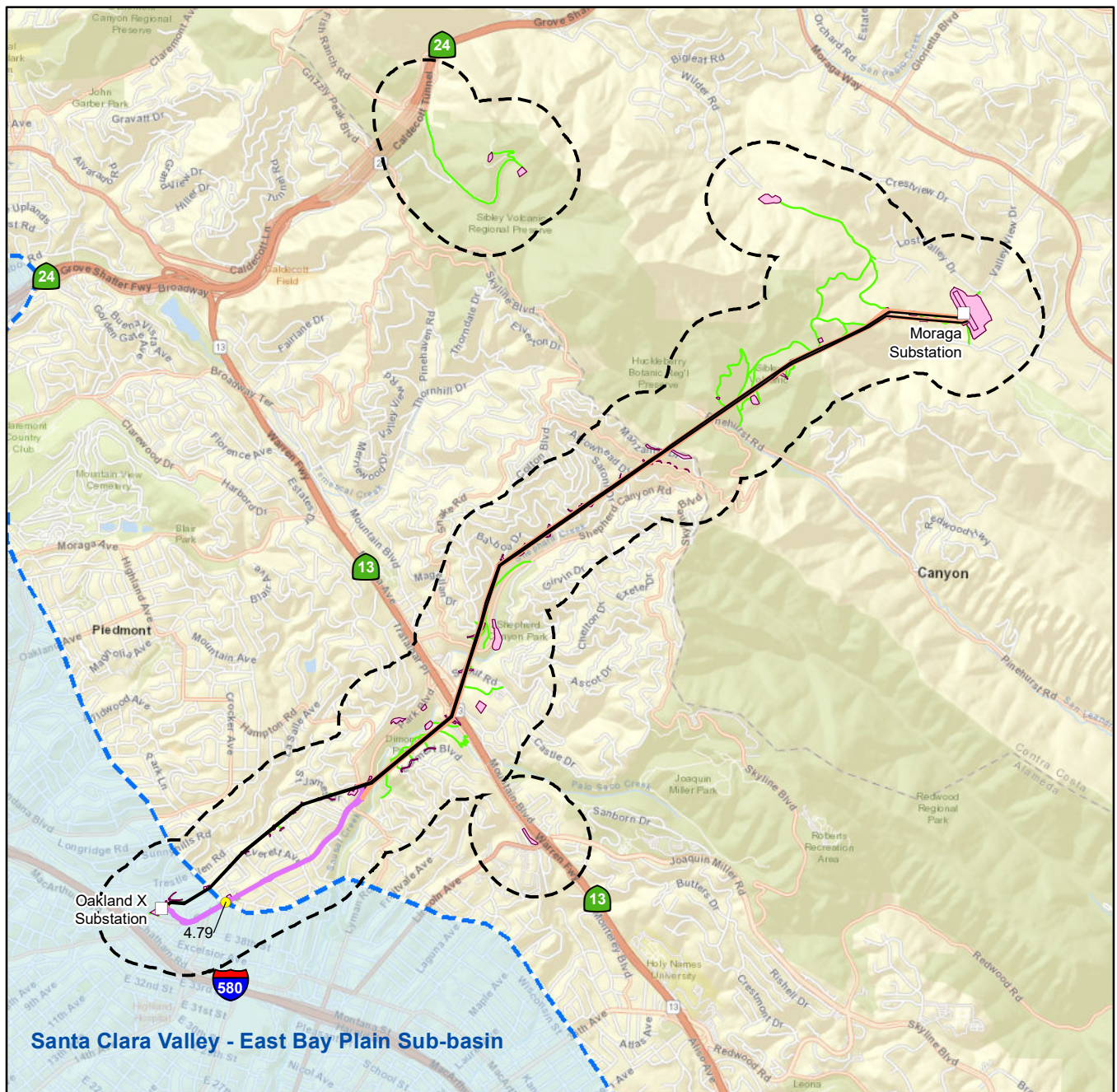
Version: 3/15/2024



Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Figure 5.9-1 Page 2 of 2
Hazardous Materials Sites Located within
500 Feet of Project Excavation Areas
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 3/15/2024

Legend

- 0.25-mile Project Buffer
- Substation

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

- Milepost*
- Groundwater Basin Boundary**
- Santa Clara Valley

*Milepost numbering begins at Moraga Substation and ends at Oakland X Substation

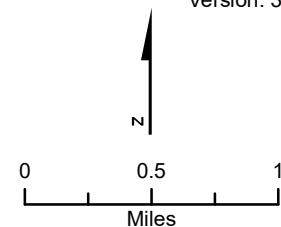
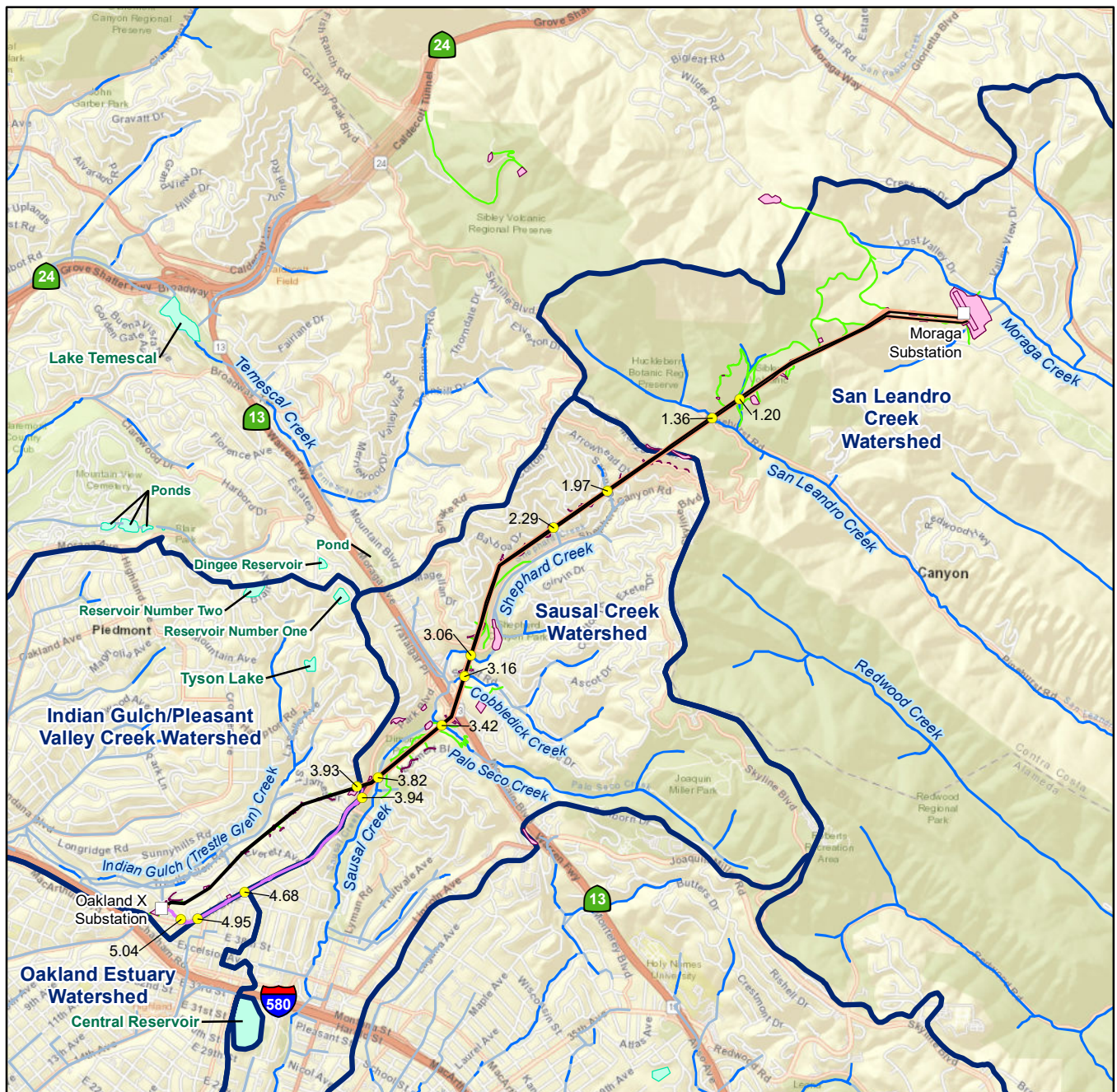


Figure 5.10-1
Groundwater Basins
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 5/14/2024

Legend

- | | |
|---------------------------|------------------------------------|
| Substation | Milepost* |
| Project Access | Watershed Boundary |
| Temporary Work Area | Creek |
| Overhead Routes | Underground Culvert or Storm Drain |
| Existing | Reservoir/Lake/Pond |
| Proposed | |
| Underground Routes | |
| Proposed | |

*Milepost numbering begins at Moraga Substation and ends at Oakland X Substation

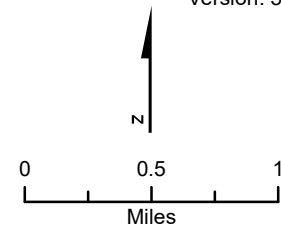
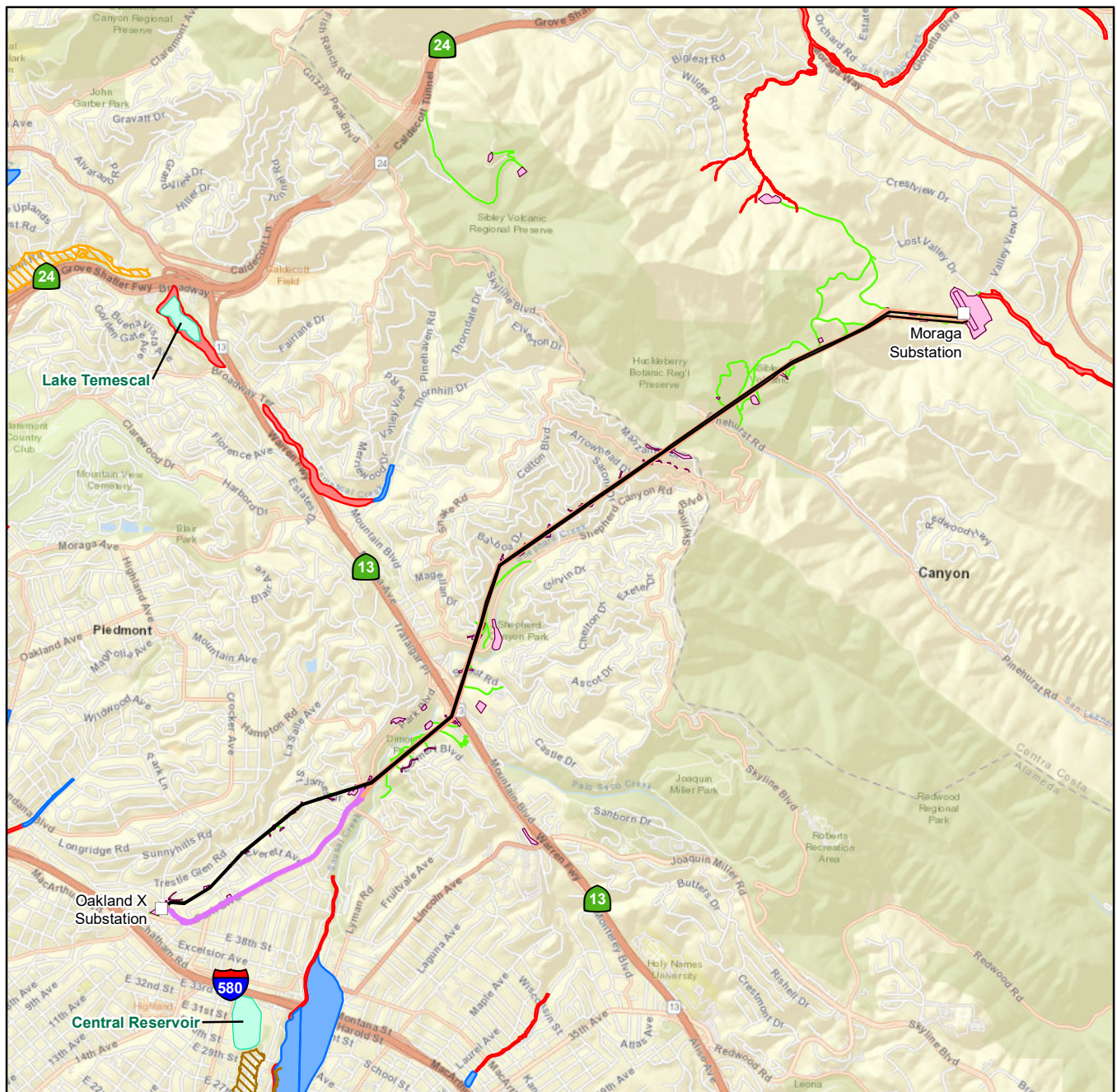


Figure 5.10-2
Surface Water and Watersheds
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

**Preliminary and Subject to Change Based on CPUC
 Requirements, Final Engineering, and Other Factors**

Jacobs



Version: 2/10/2024

Legend

- Substation
- Project Access
- Temporary Work Area
- Overhead Routes**
- Existing
- Proposed
- Underground Routes**
- Proposed

FEMA Flood Zones

- Areas of 1% Annual Chance Flood
- Areas of 0.2% Annual Chance Flood

Potential Inundation Area Due to Dam/Reservoir Failure

- Lake Temescal
- Central Reservoir

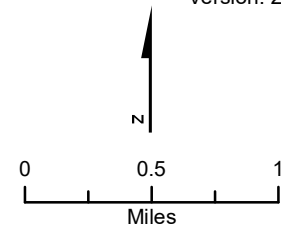


Figure 5.10-3
Potential Flood Zones and Inundation Areas
Due to Dam/Reservoir Failure
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC
Requirements, Final Engineering, and Other Factors

Jacobs

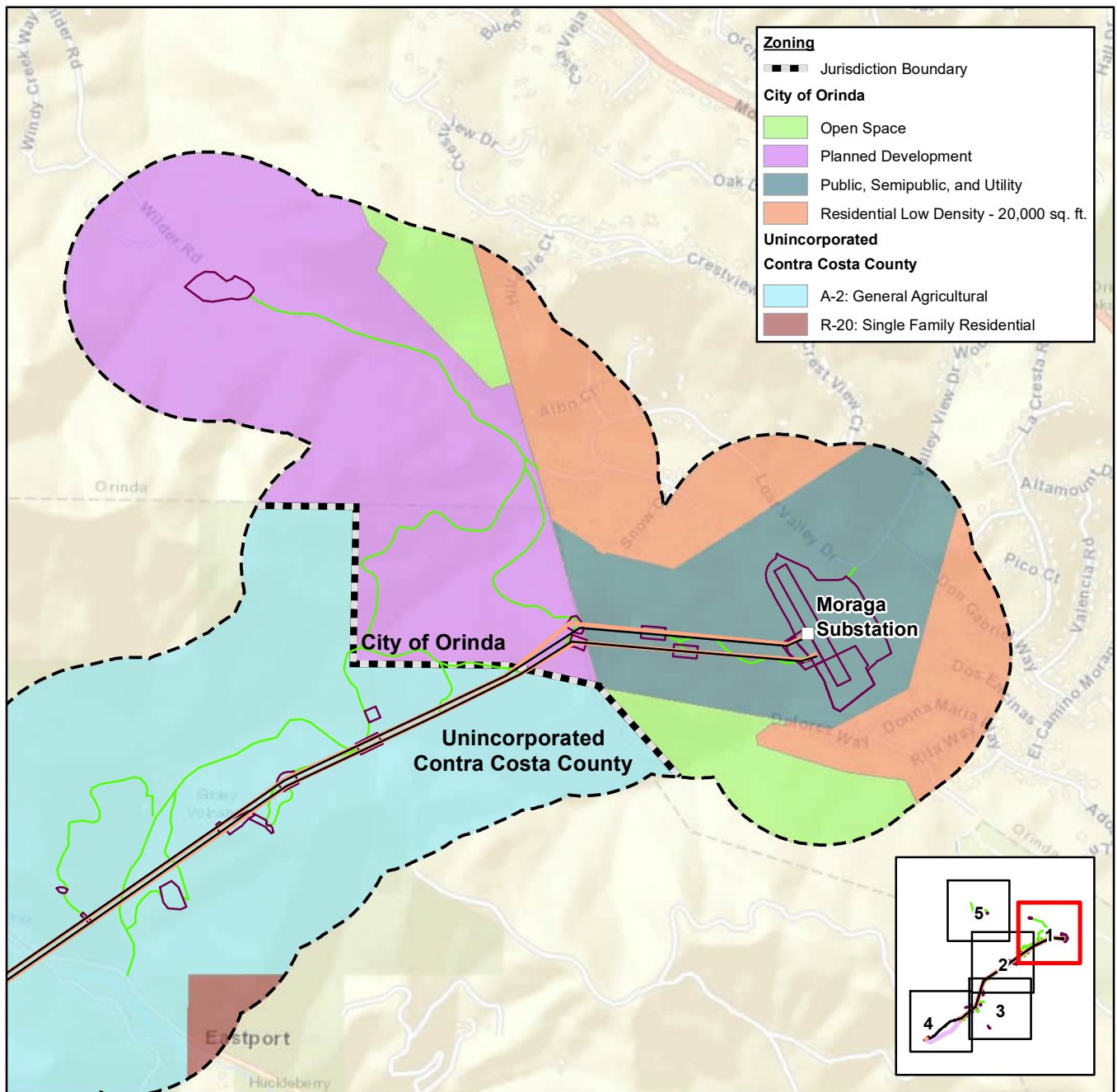


Figure 5.11-1. Page 1 of 5
Zoning Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

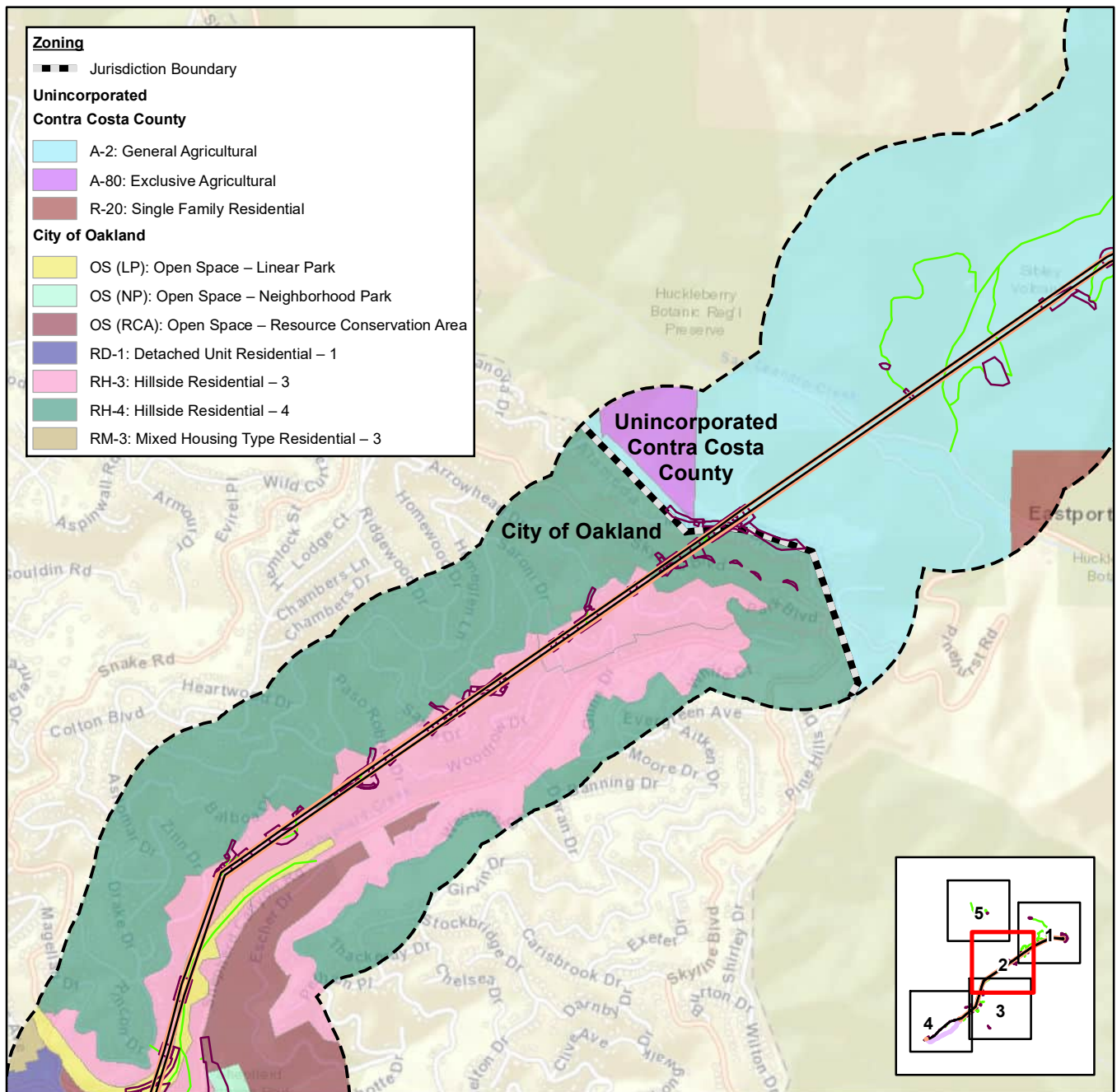


Figure 5.11-1. Page 2 of 5
Zoning Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

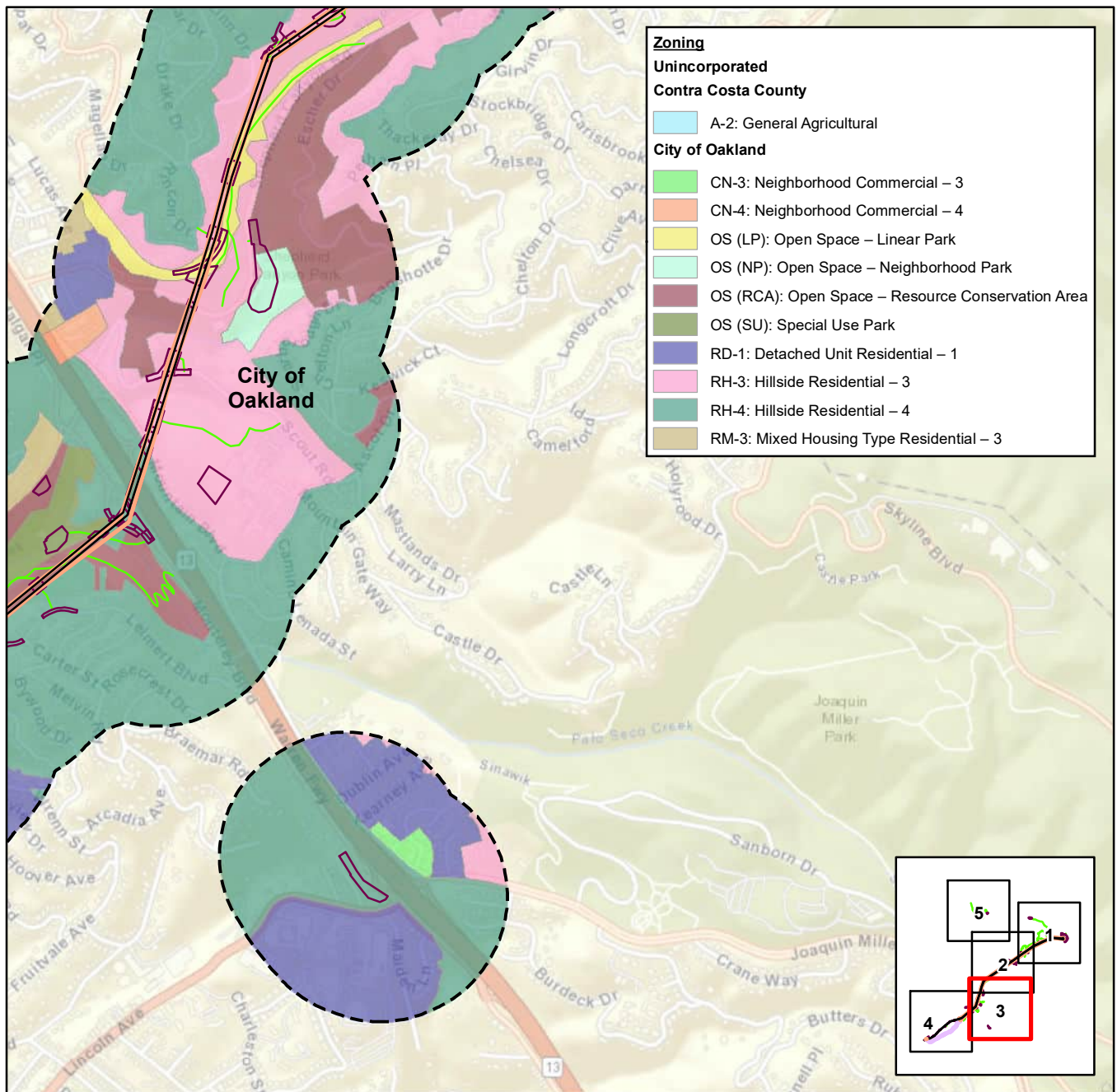


Figure 5.11-1. Page 3 of 5
Zoning Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

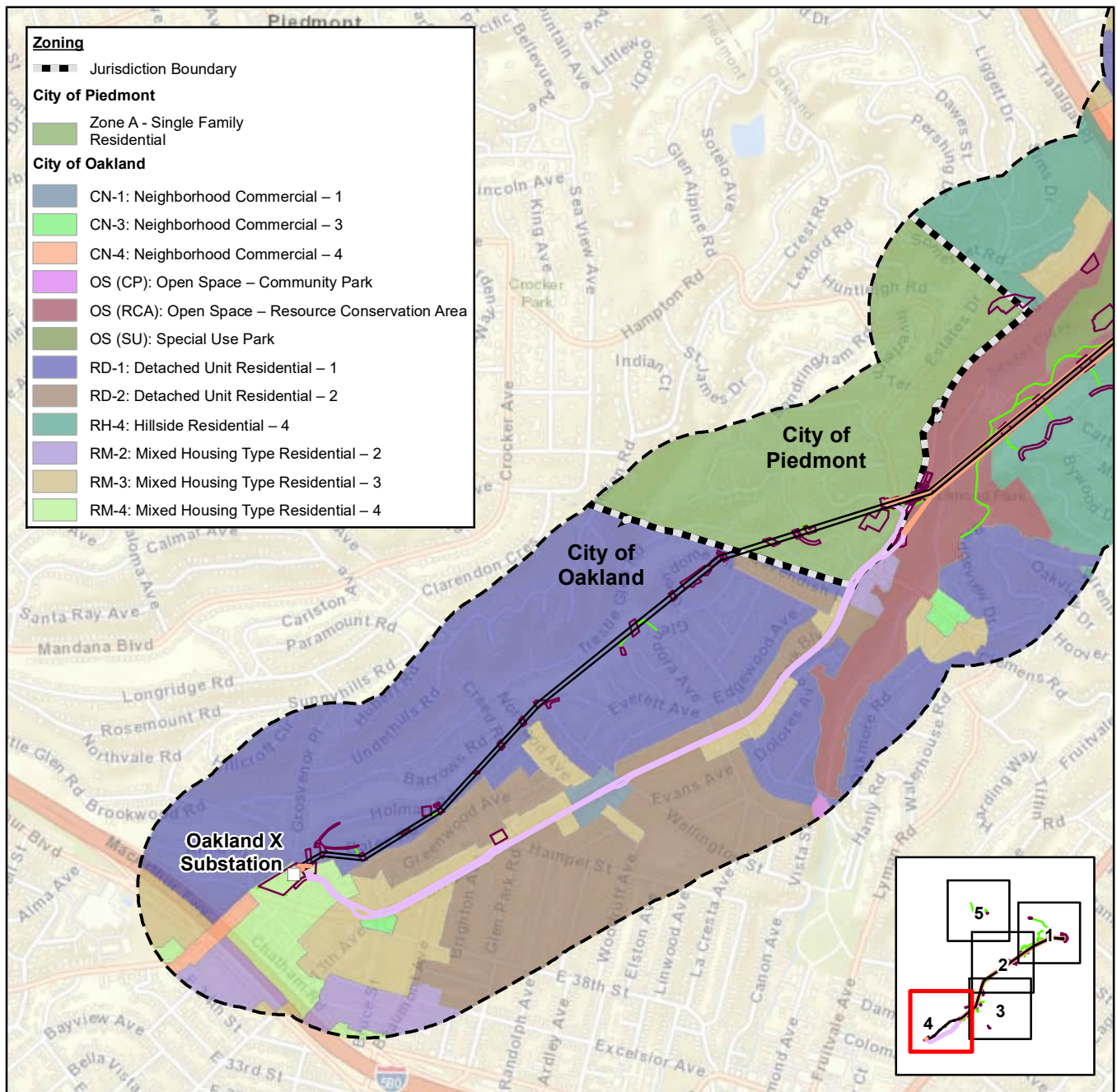
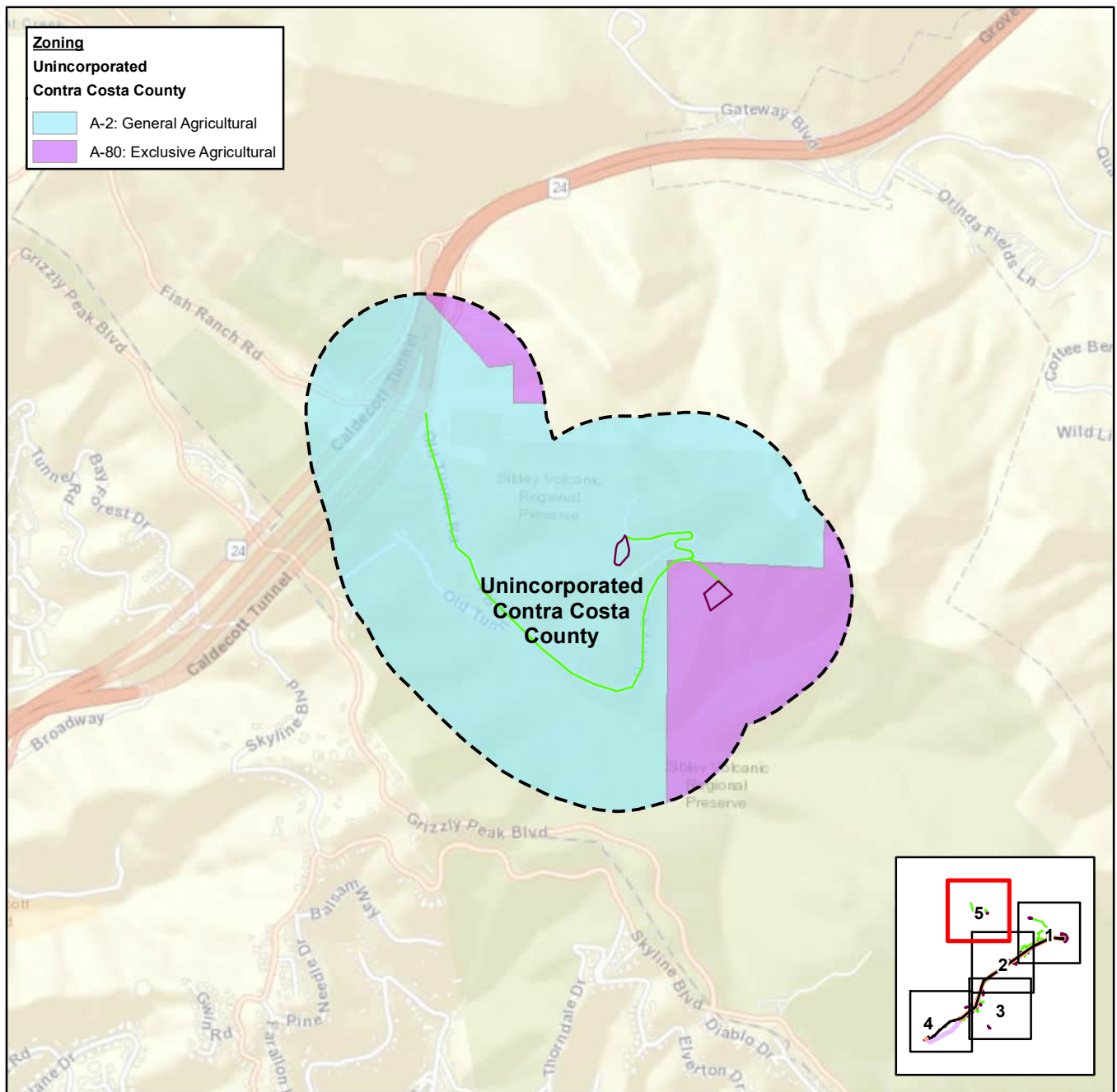


Figure 5.11-1. Page 4 of 5
Zoning Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Legend

- 1,000-foot Project Buffer
- Temporary Work Area
- Project Access

Version: 1/2/2024

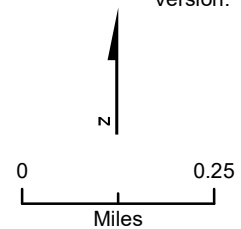
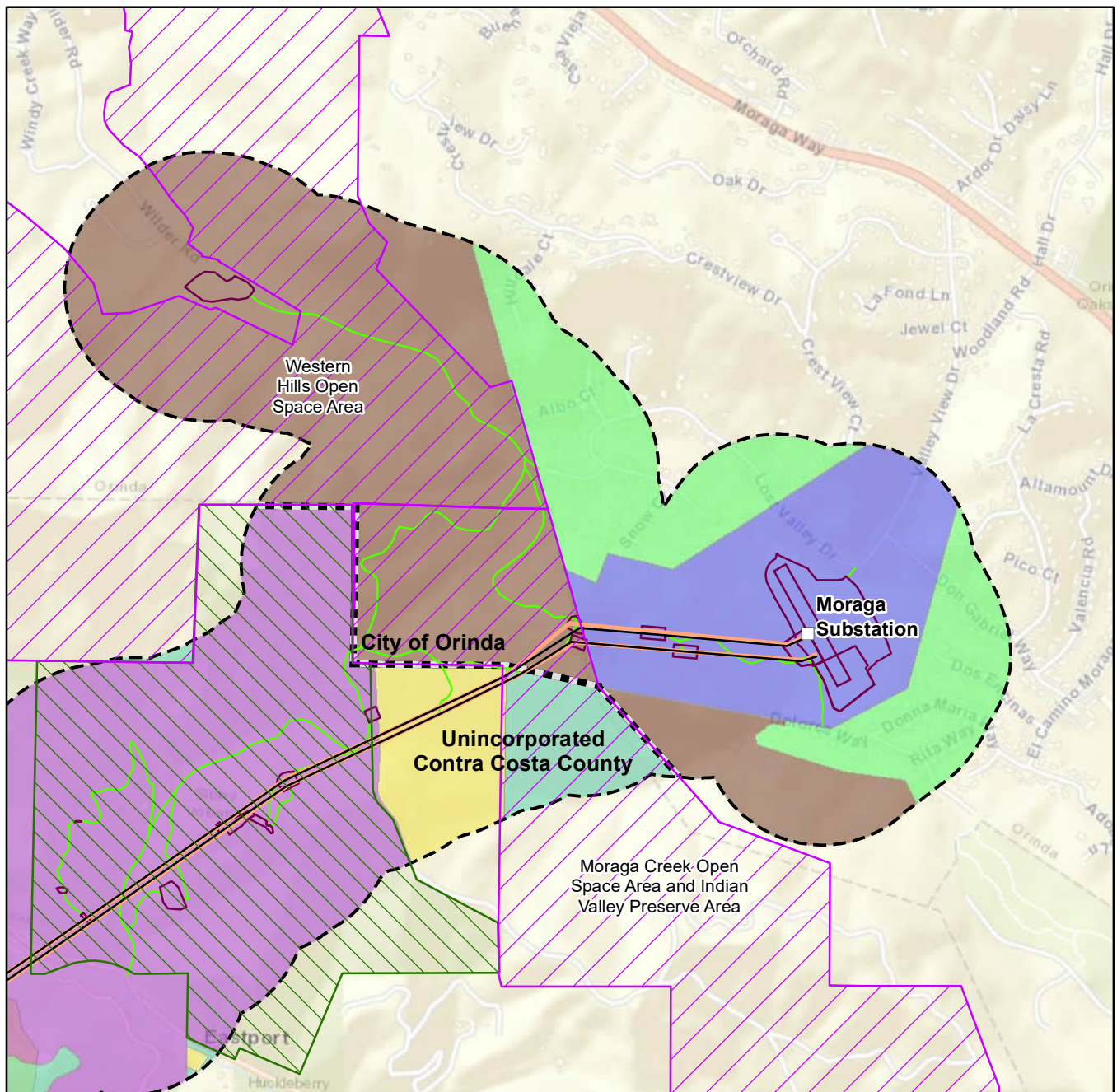


Figure 5.11-1. Page 5 of 5
Zoning Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

1000-foot Project Buffer

Temporary Work Area

Project Access

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

Land Use

Jurisdiction Boundary

East Bay Regional Park District

Sibley Volcanic Regional Preserve -

Seasonal Cattle Grazing

Conservation Easement

City of Orinda

Gateway Valley

Planning Area

Residential: Single

Family Low Density

Utility

Unincorporated Contra

Costa County

Agricultural Lands

Parks and Recreation

Watershed

Version: 11/3/2024

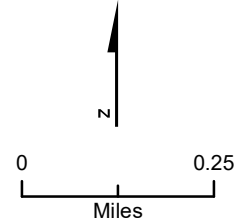
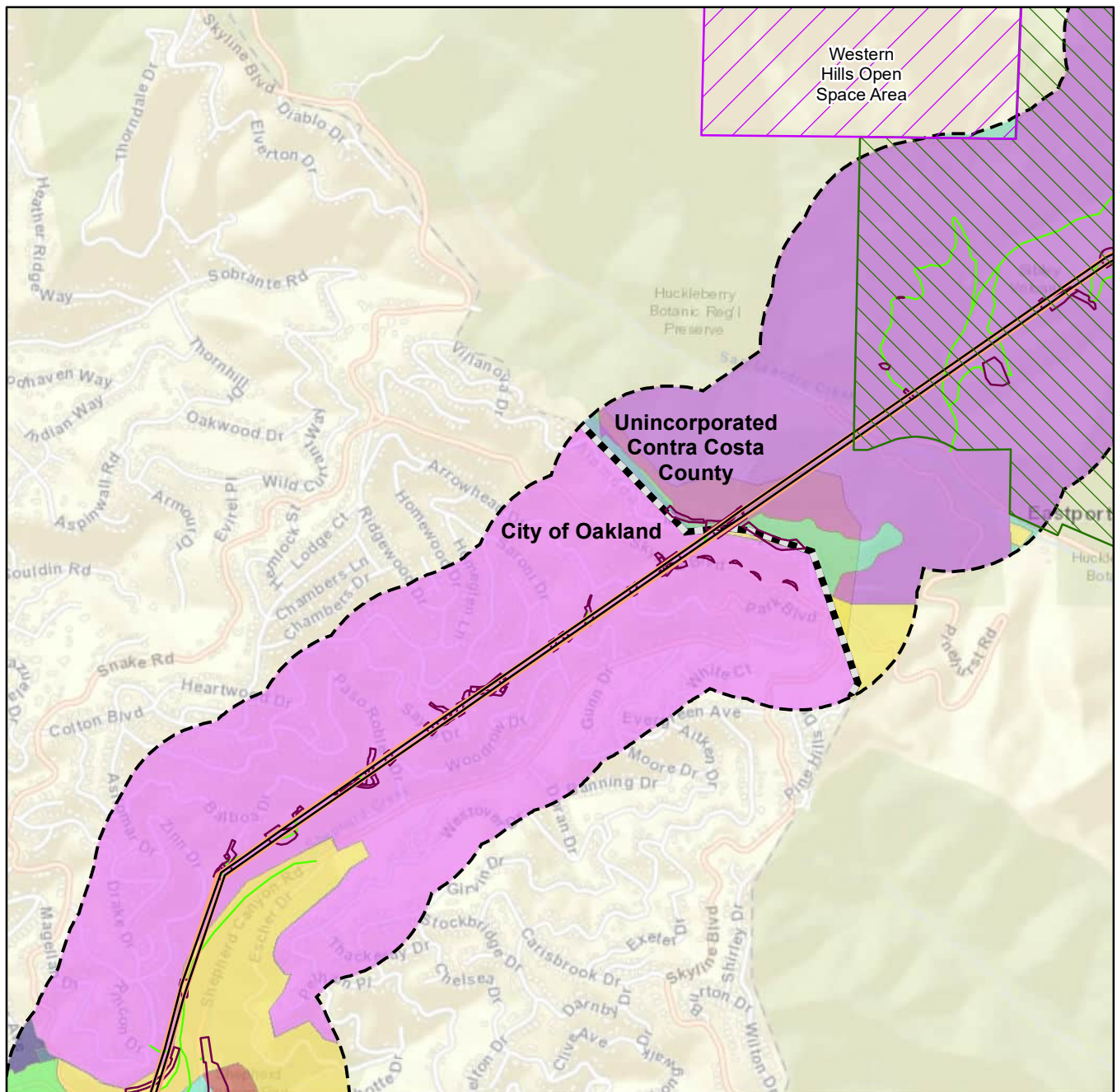


Figure 5.11-2. Page 1 of 5
General Plan Land Use Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- 1000-foot Project Buffer
- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Land Use

- Jurisdiction Boundary
- East Bay Regional Park District
- Sibley Volcanic Regional Preserve - Seasonal Cattle Grazing
- Conservation Easement
- City of Oakland**
 - Detached Unit Residential
 - Hillside Residential
 - Institutional
 - Mixed Housing Type Residential
 - Neighborhood Center Mixed Use
 - Resource Conservation
 - Urban Park and Open Space

Unincorporated Contra Costa County

- Agricultural Lands
- Parks and Recreation
- Watershed

Version: 11/3/2024

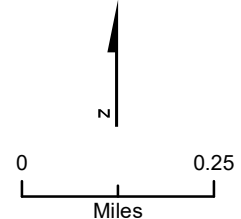
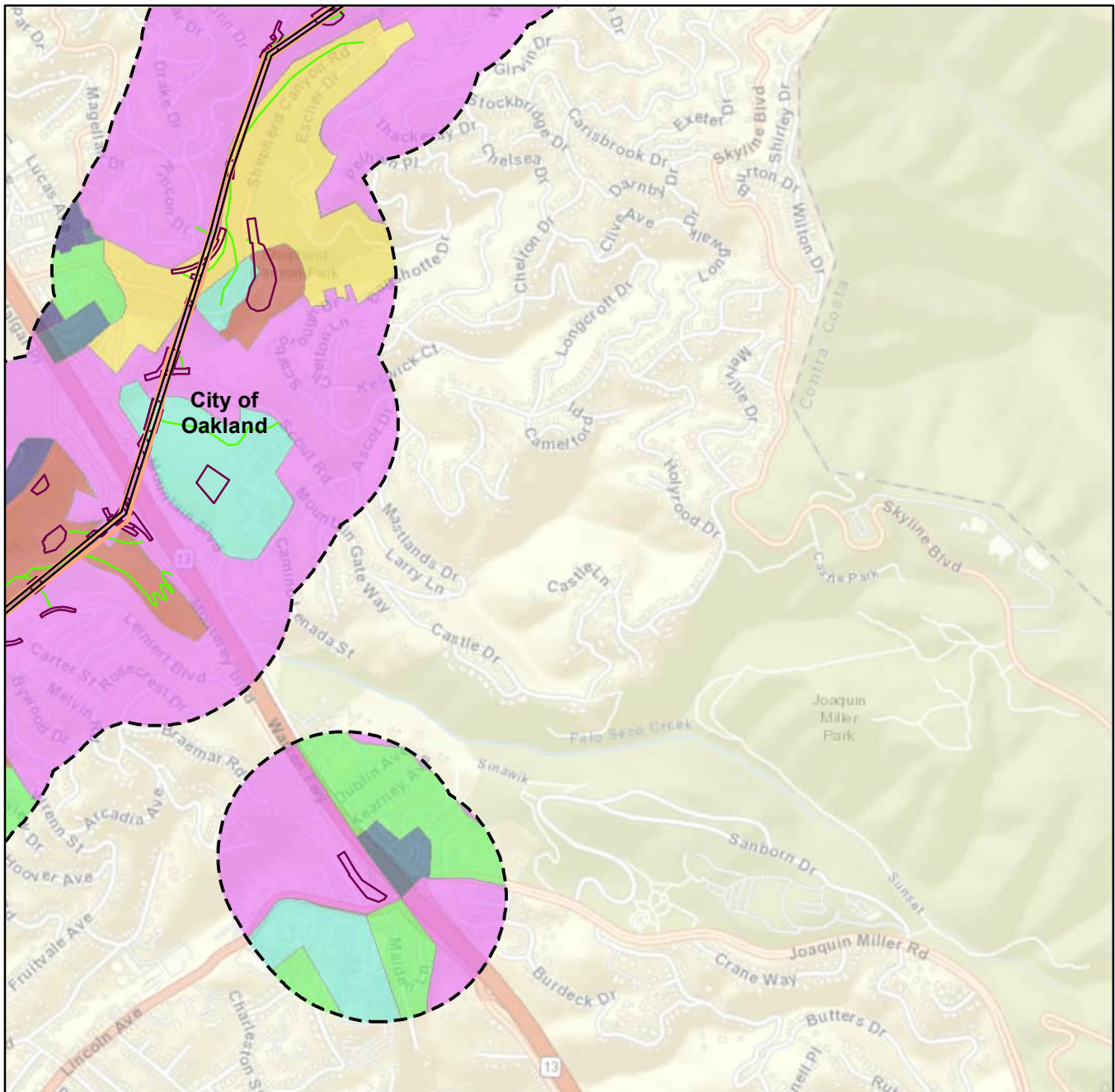


Figure 5.11-2. Page 2 of 5
General Plan Land Use Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Legend

- 1000-foot Project Buffer
- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Land Use

City of Oakland

- Detached Unit Residential
- Hillside Residential
- Institutional
- Mixed Housing Type Residential
- Neighborhood Center Mixed Use
- Resource Conservation
- Urban Park and Open Space

Version: 11/3/2024

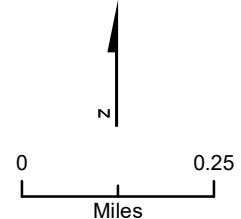
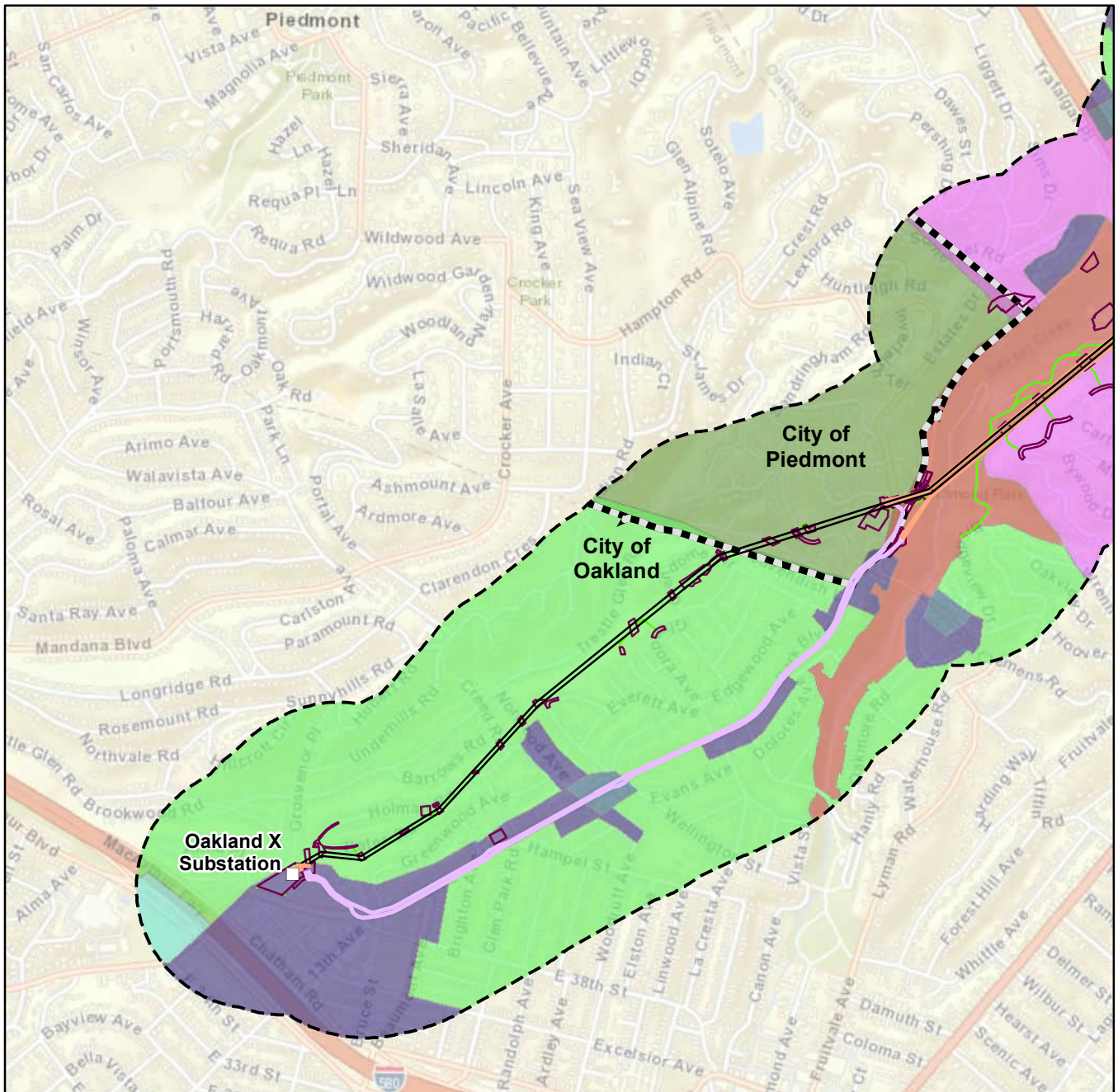


Figure 5.11-2. Page 3 of 5
General Plan Land Use Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- 1000-foot Project Buffer
- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Land Use

- Jurisdiction Boundary

City of Oakland

- Detached Unit Residential
- Hillside Residential
- Institutional
- Mixed Housing Type Residential
- Neighborhood Center Mixed Use
- Urban Park and Open Space

City of Piedmont

- Low Density Residential

Version: 11/3/2024

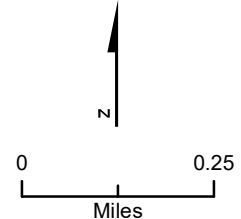
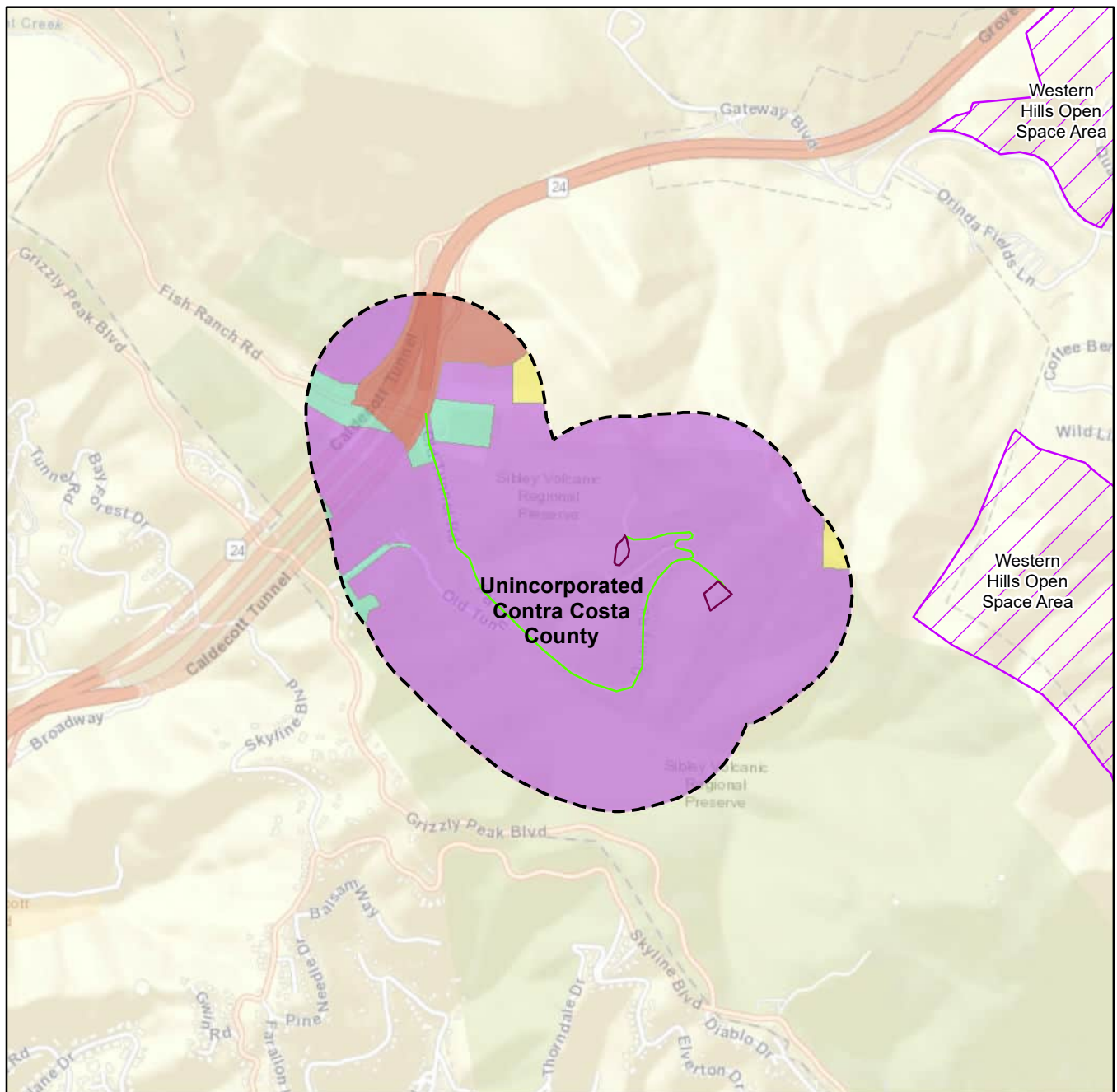


Figure 5.11-2. Page 4 of 5
General Plan Land Use Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Legend

- 1000-foot Project Buffer
- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Land Use

- Conservation Easement

Unincorporated Contra Costa County

- Agricultural Lands
- Parks and Recreation
- Public and Semi-Public
- Watershed

Version: 11/3/2024

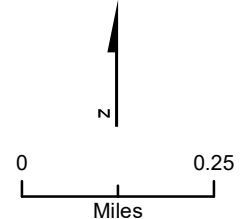
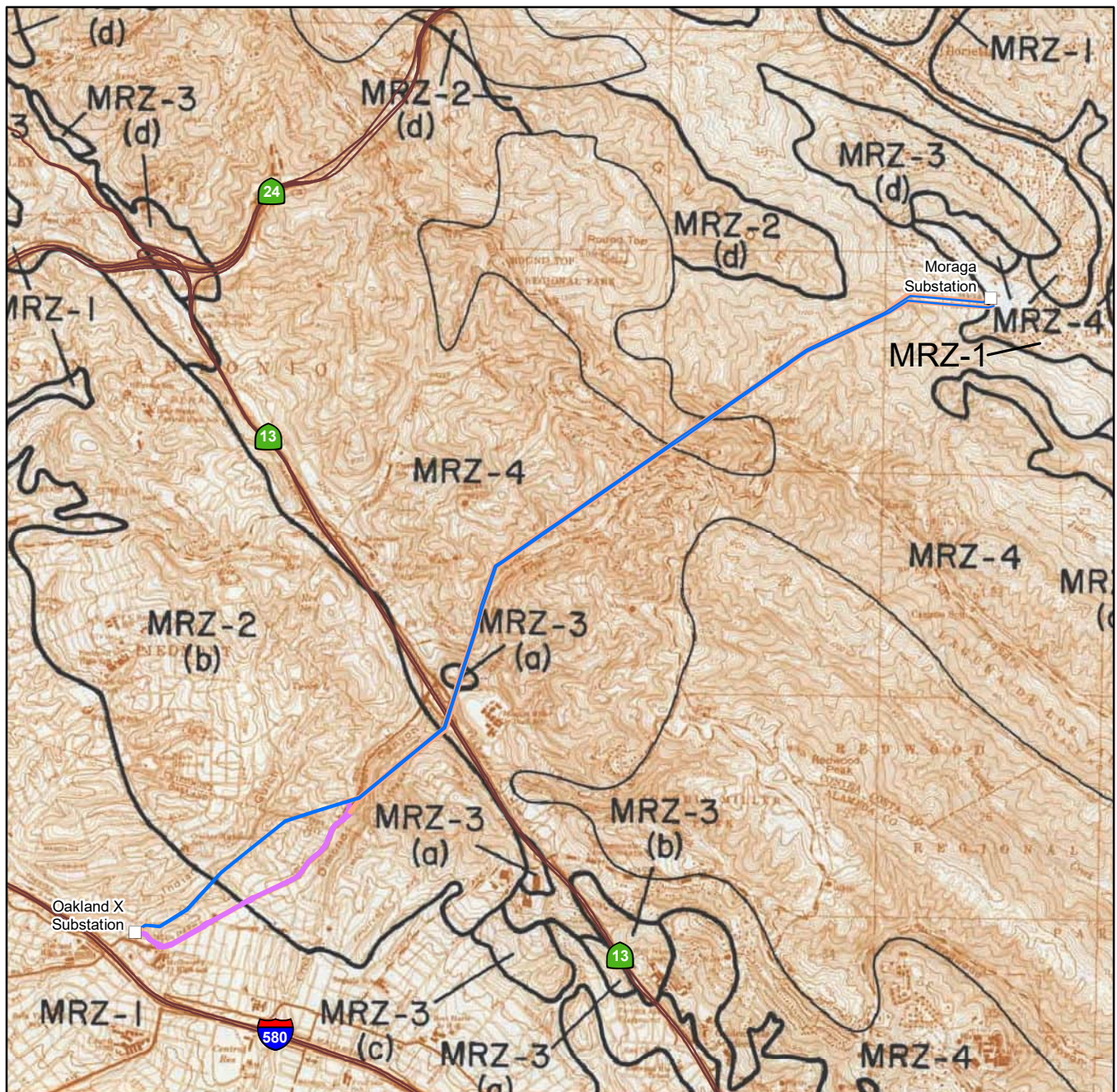


Figure 5.11-2. Page 5 of 5
General Plan Land Use Designations
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



Version: 11/28/2023

Legend

Mineral Resource Zone

Substation

Overhead Routes

— Existing

— Proposed

Underground Routes

— Proposed

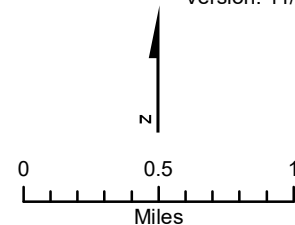
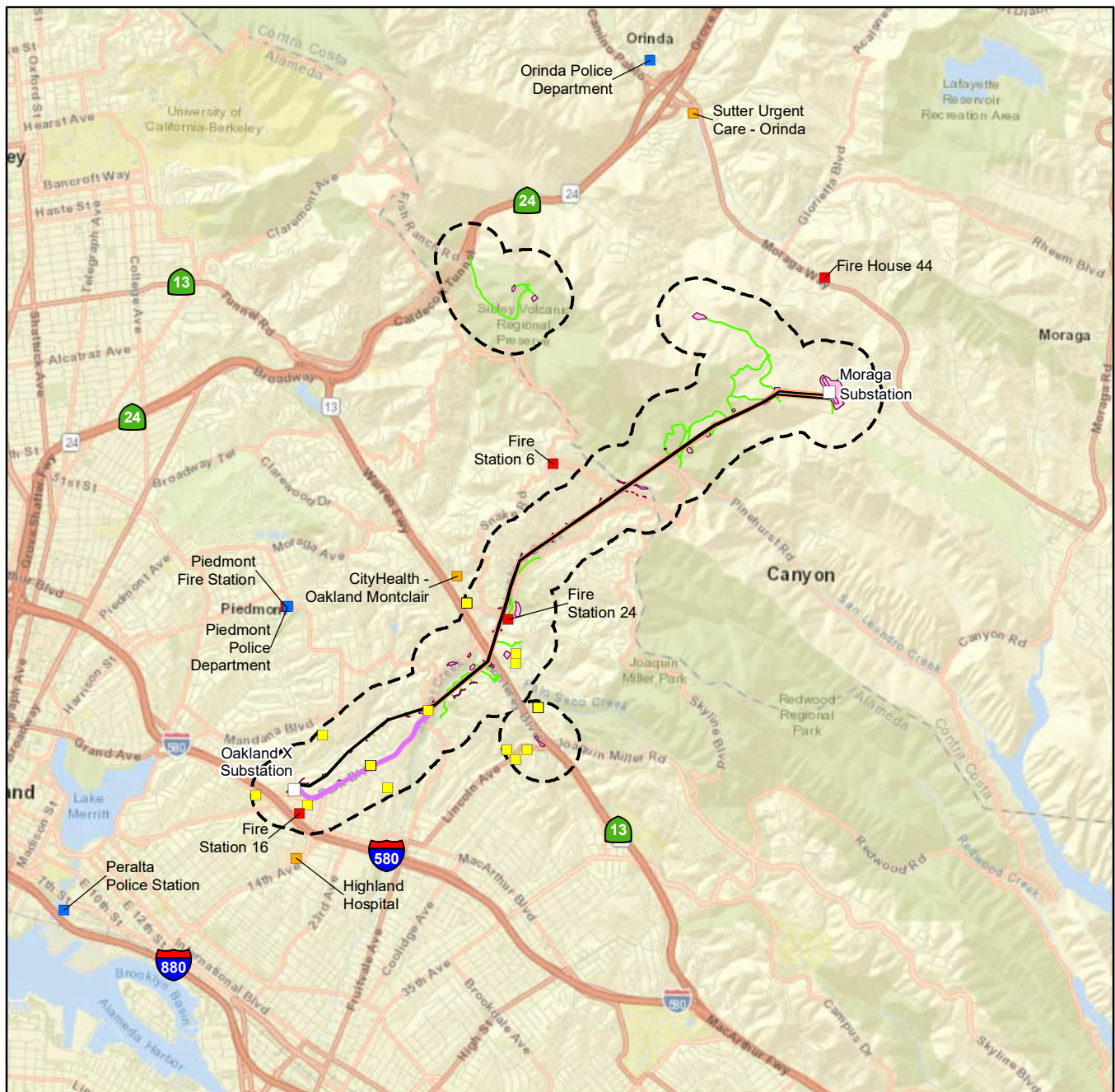


Figure 5.12-1
Mineral Resource Zones
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/28/2023

Legend

- 0.25-mile Project Buffer
- Fire Station
- Hospital/Urgent Care
- Police Station
- School within 0.25 Mile of the Proposed Project
- Substation
- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

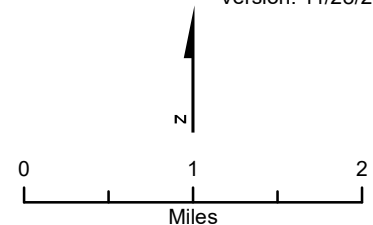
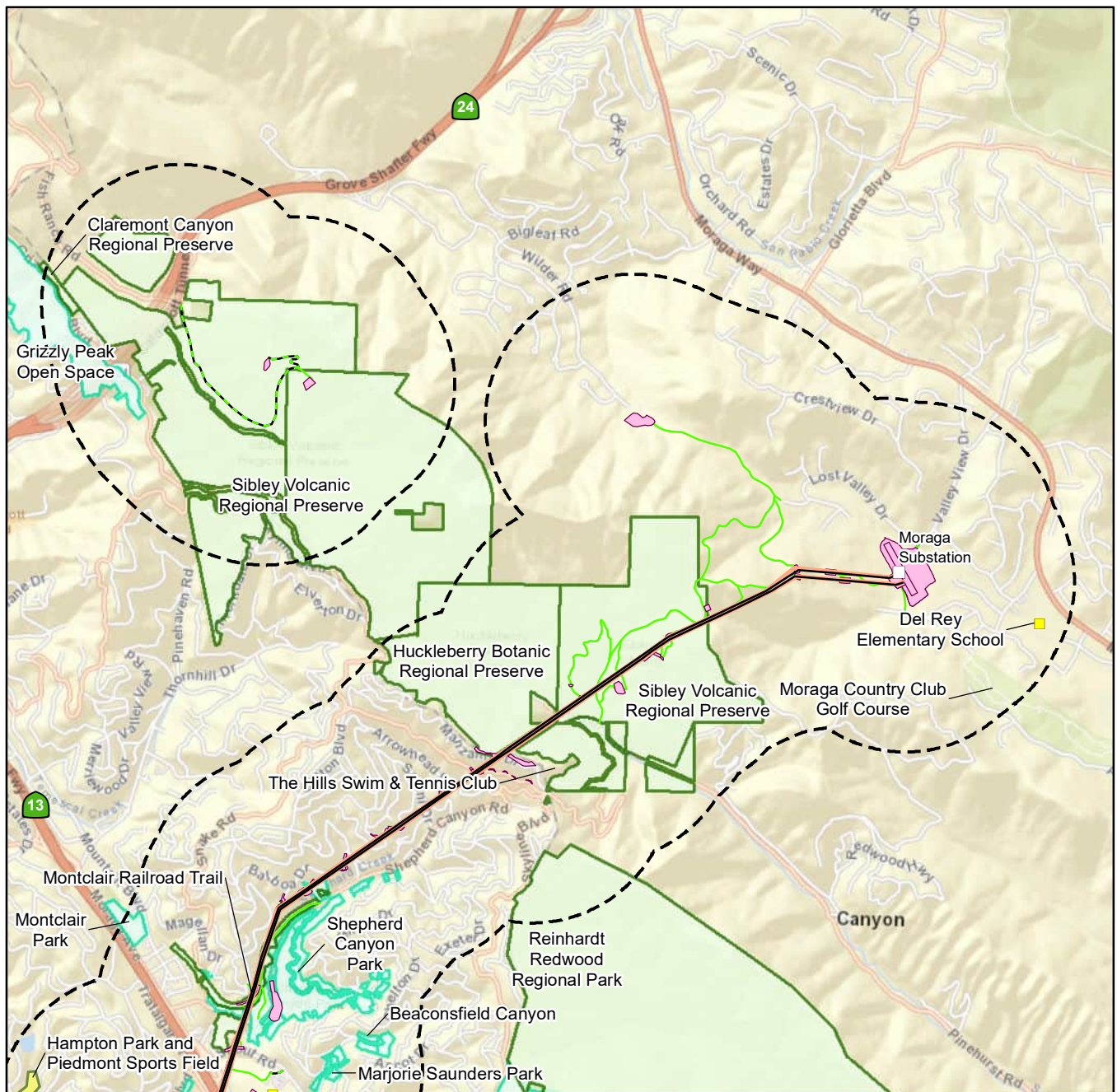


Figure 5.15-1
Service Providers and Facilities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 4/15/2024

Legend

0.5-mile Project Buffer

School

Substation

Project Access (unpaved)

Project Access (paved)

Temporary Work Area

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

Parks within 0.5 Mile of the Proposed Project

East Bay Regional Park District (EBRPD)

City of Oakland

City of Piedmont

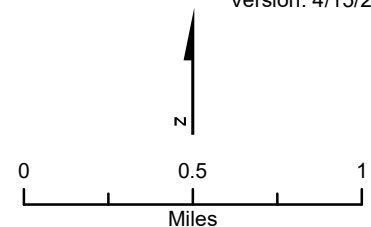
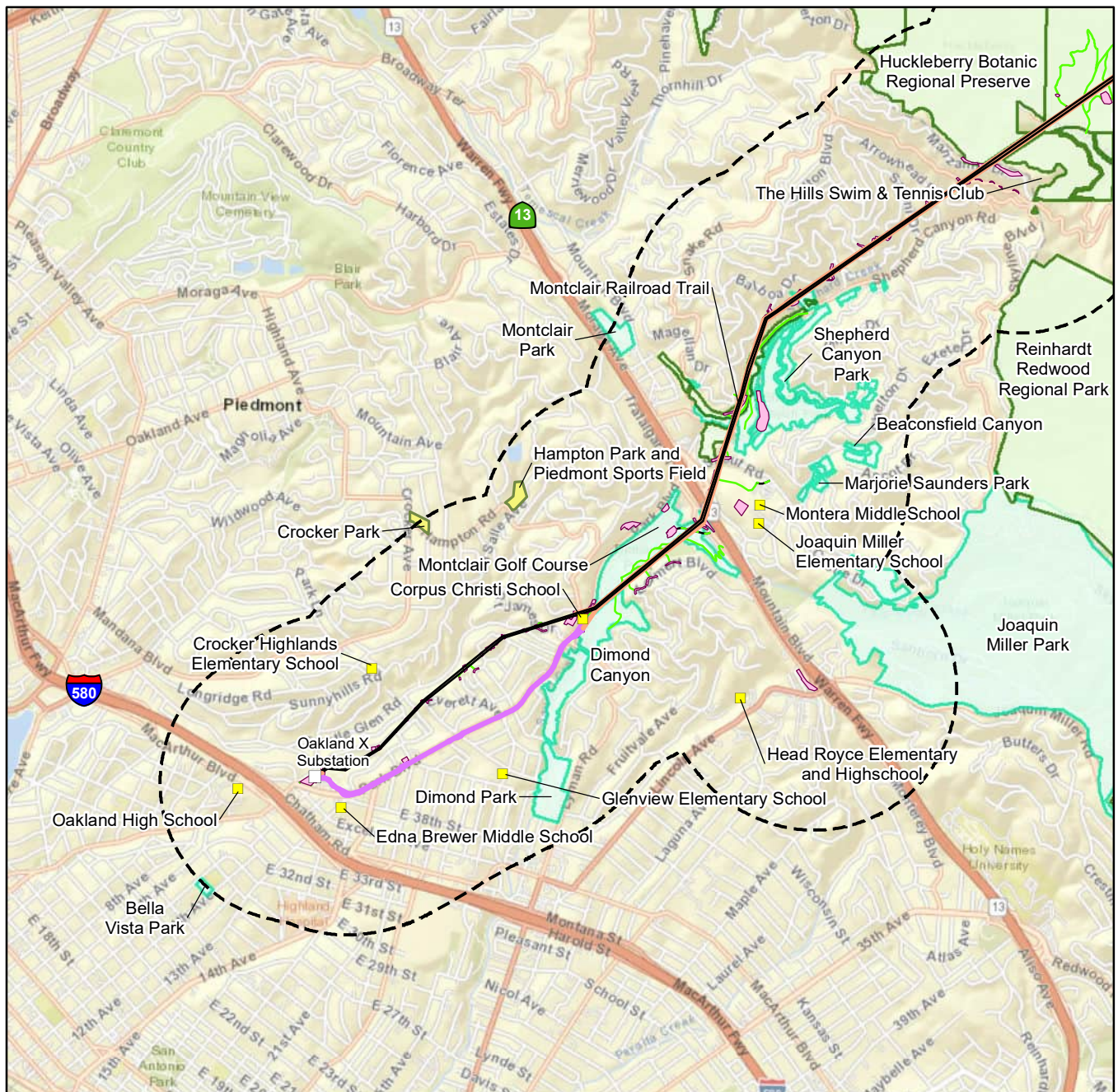


Figure 5.16-1 Page 1 of 2
Park and Recreation Facilities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 4/15/2024

Legend

0.5-mile Project Buffer

School

Substation

Project Access (unpaved)

Project Access (paved)

Temporary Work Area

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

Parks within 0.5 Mile of the Proposed Project

East Bay Regional Park District (EBRPD)

City of Oakland

City of Piedmont

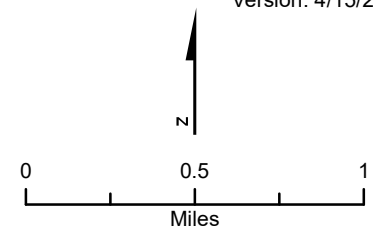
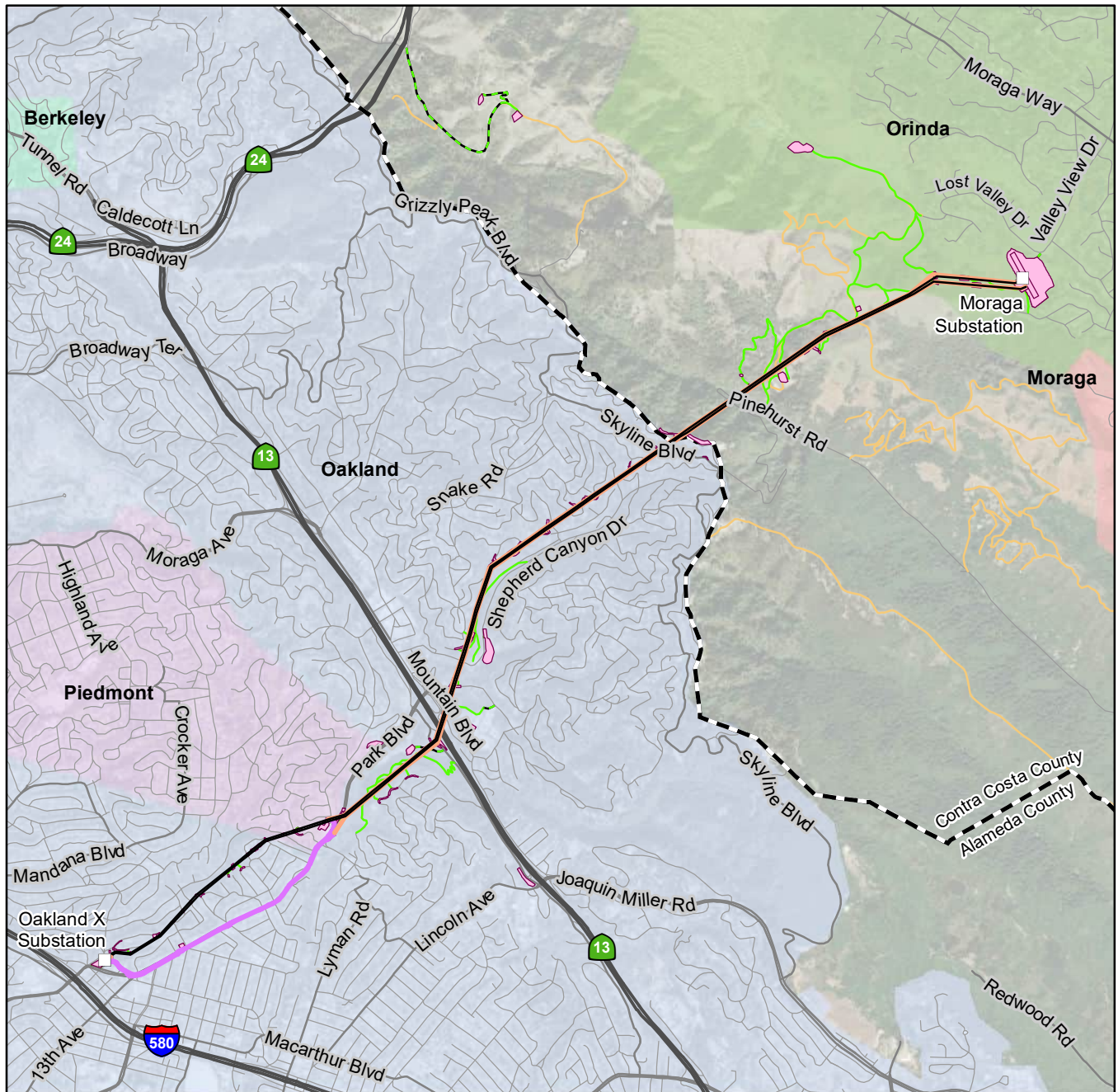


Figure 5.16-1 Page 2 of 2
Park and Recreation Facilities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



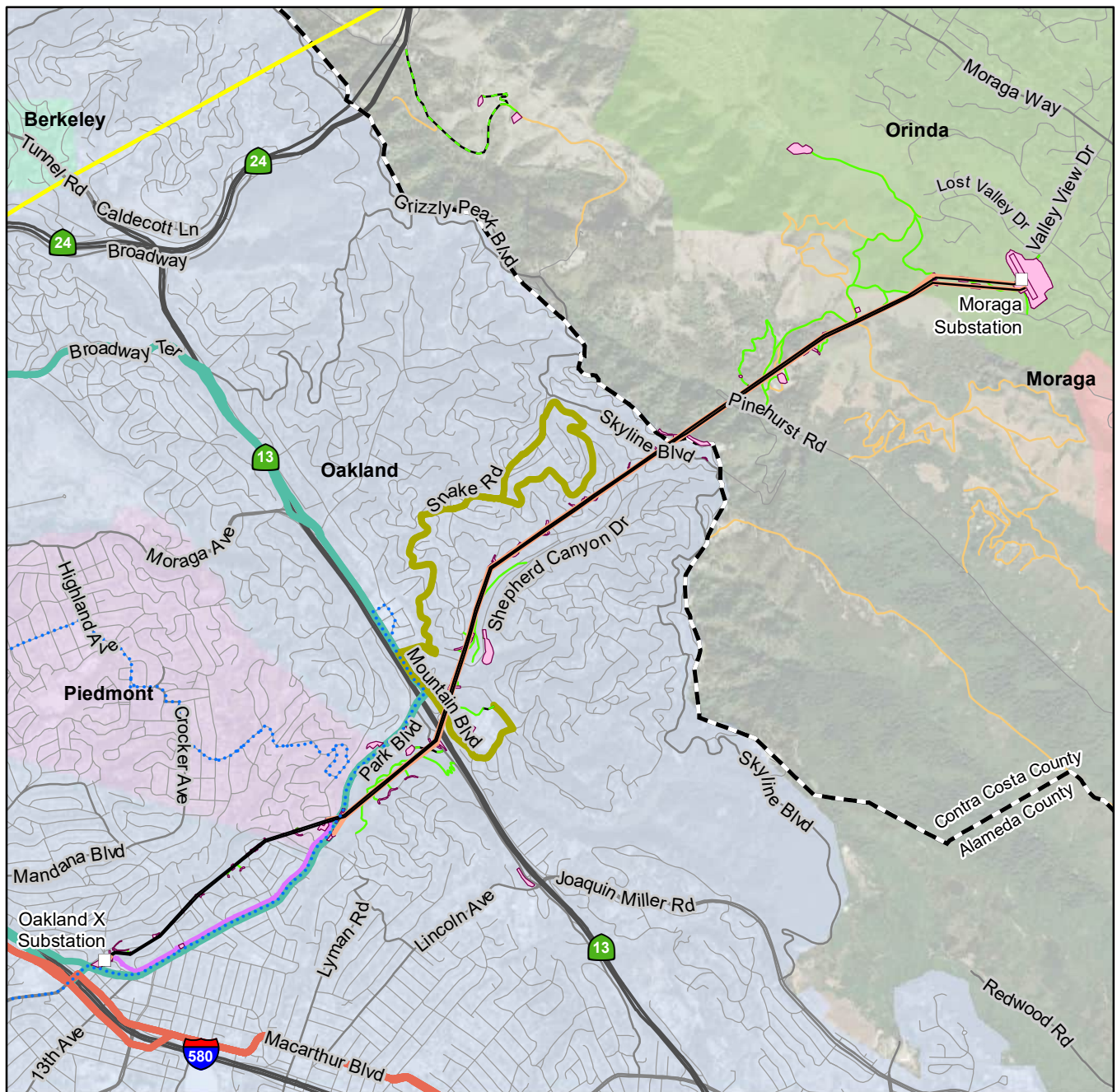
Version: 4/15/2024

Legend

- | | |
|---------------------------|---------------------|
| Substation | State Route/Highway |
| Project Access (unpaved) | Arterial |
| Project Access (paved) | Local Street |
| Temporary Work Area | Unpaved Road |
| Overhead Routes | County Boundary |
| Existing | City of Berkeley |
| Proposed | City of Moraga |
| Underground Routes | City of Oakland |
| Proposed | City of Orinda |
| | City of Piedmont |

Figure 5.17-1
Existing Roadway Network
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 4/15/2024

Legend

- | | | |
|---------------------------|---------------------|------------------------------|
| Substation | State Route/Highway | BART Yellow Line |
| Project Access (unpaved) | Arterial | AC Transit Bus Routes |
| Project Access (paved) | Local Street | 33 |
| Temporary Work Area | Unpaved Road | 57, 805, NL, NX |
| Overhead Routes | County Boundary | 642 |
| Existing | City of Berkeley | V |
| Proposed | City of Moraga | |
| Underground Routes | City of Oakland | |
| Proposed | City of Orinda | |
| | City of Piedmont | |

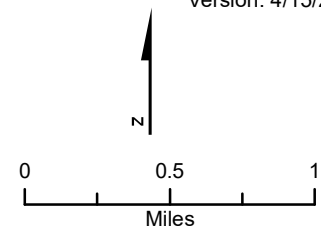
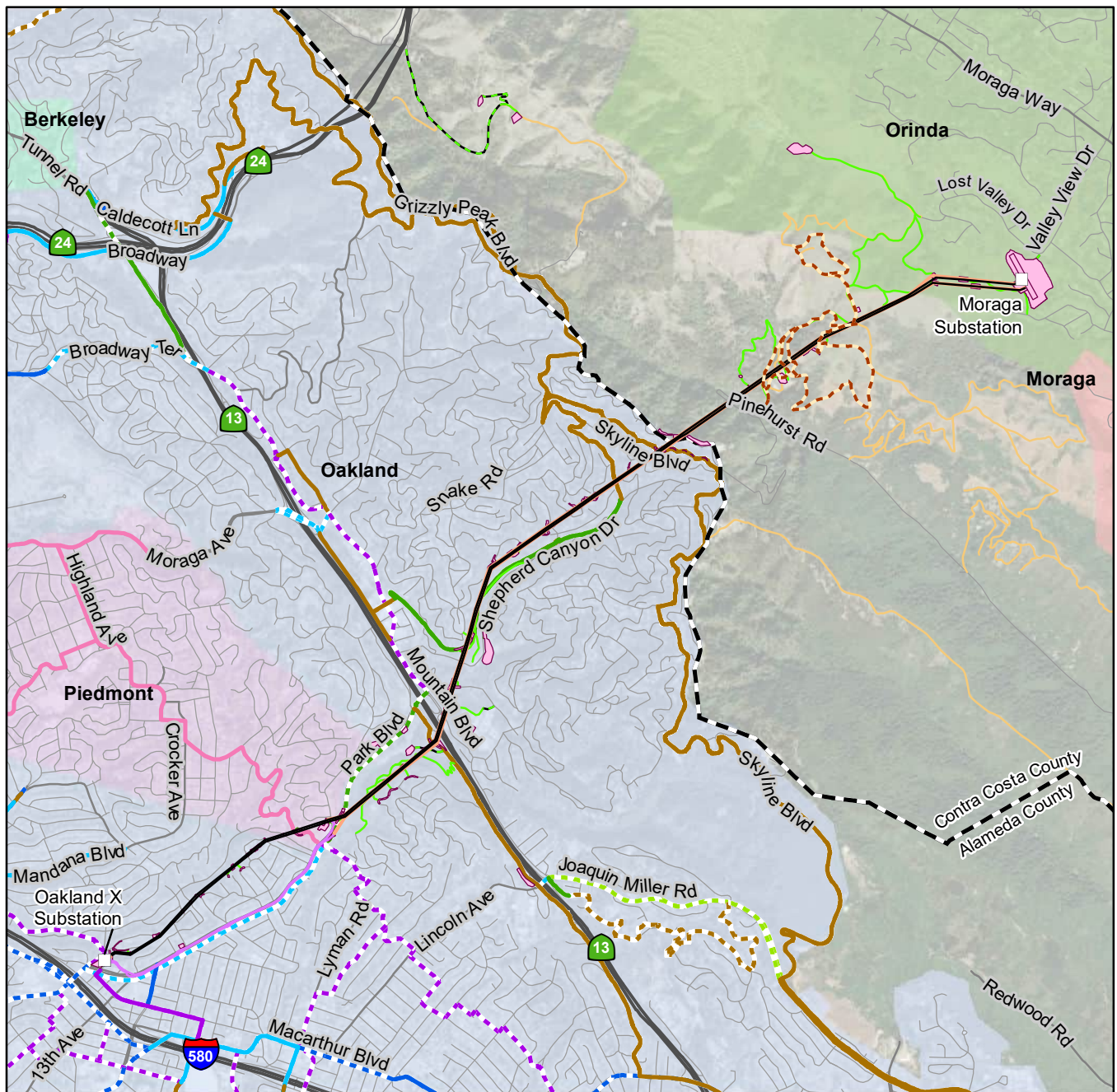


Figure 5.17-2
Existing Transit Services
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Version: 4/15/2024

Legend

- Substation
- Project Access (unpaved)
- Project Access (paved)
- Temporary Work Area
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed
- East Bay Regional Park District**
 - Bike Path
- State Route/Highway**
 - State Route/Highway
 - Arterial
 - Local Street
 - Unpaved Road
- County Boundary**
 - County Boundary
- City of Berkeley**
 - City of Berkeley
- City of Moraga**
 - City of Moraga
- City of Oakland**
 - City of Oakland
- City of Orinda**
 - City of Orinda
- City of Piedmont**
 - City of Piedmont

City of Oakland Existing Bicycle Network (Dashed where Recommended)

- Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Neighborhood Bike Route
- Bike Route

City of Piedmont Existing Bicycle Network

- Class 3 (Bike Route)

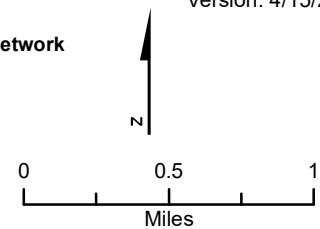
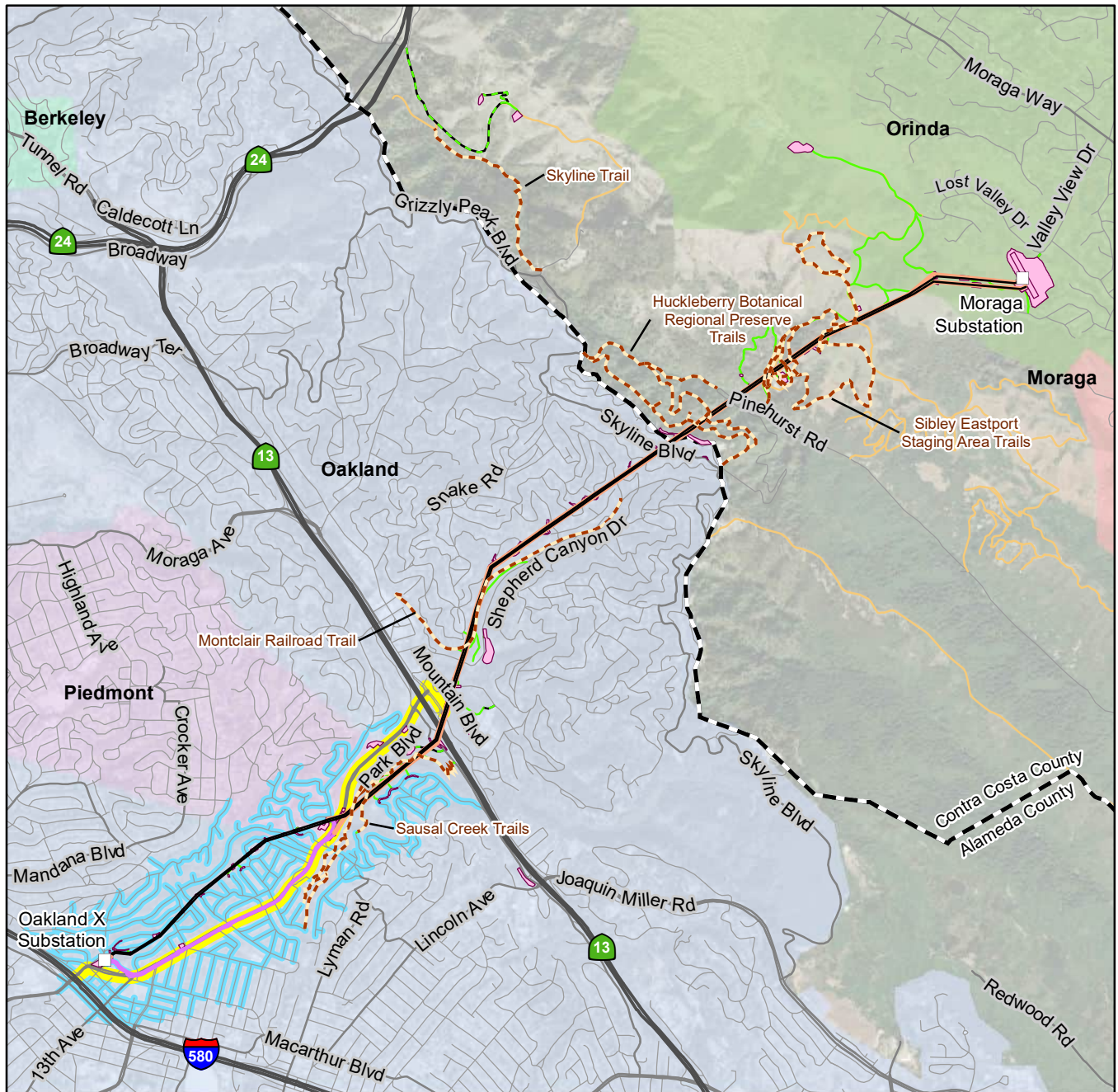


Figure 5.17-3
Existing and Planned Bicycle Facilities
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 4/15/2024

Legend

- | | | |
|---------------------------|---------------------|--|
| Substation | State Route/Highway | Important Pedestrian Sidewalk |
| Project Access (unpaved) | Arterial | Local Streets with Pedestrian Sidewalk |
| Project Access (paved) | Local Street | Hiking Trail |
| Temporary Work Area | Unpaved Road | |
| Overhead Routes | County Boundary | |
| Existing | City of Berkeley | |
| Proposed | City of Moraga | |
| Underground Routes | City of Oakland | |
| Proposed | City of Orinda | |
| | City of Piedmont | |

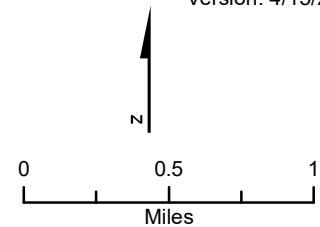
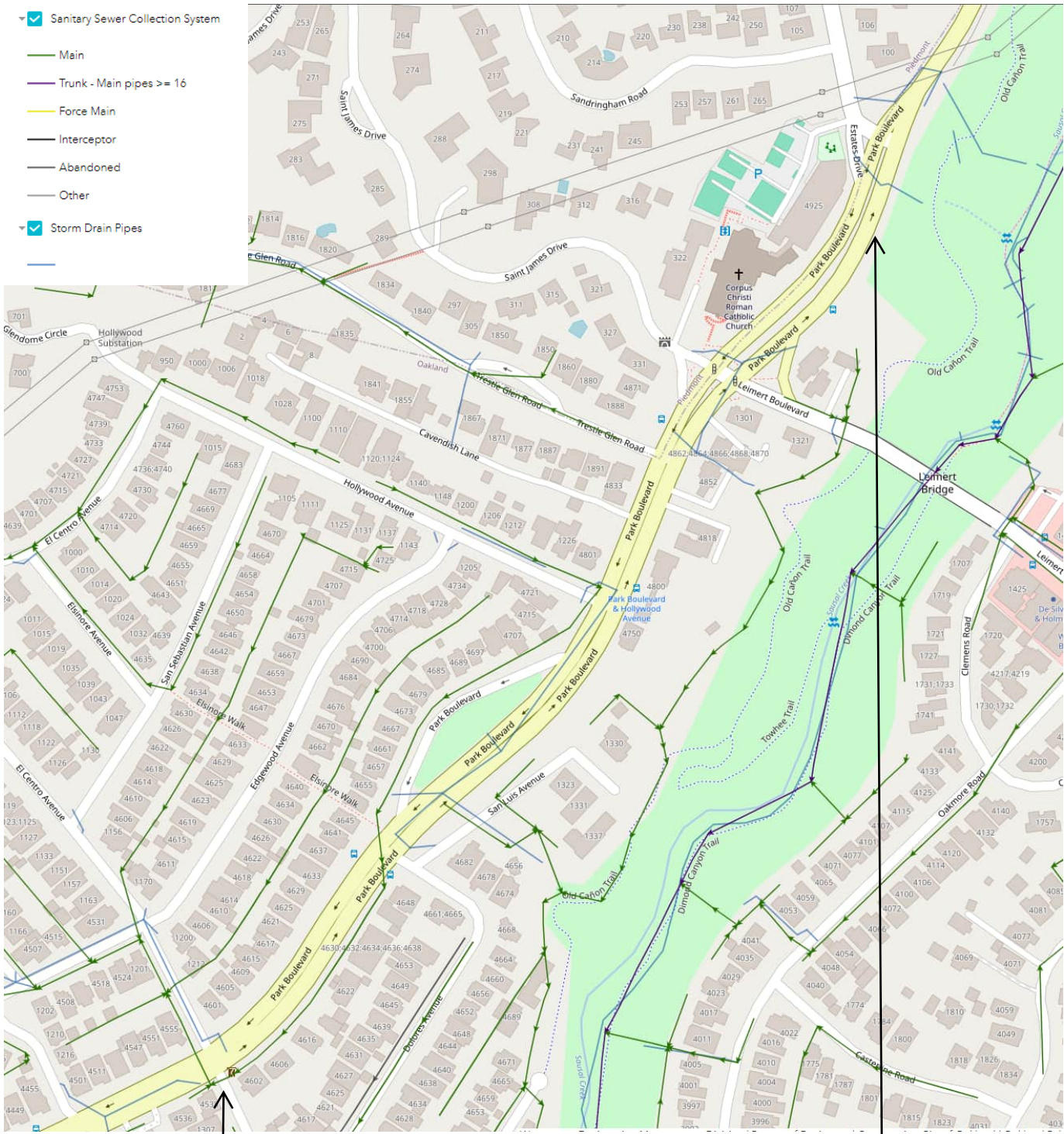


Figure 5.17-4
Existing Pedestrian Facilities
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company



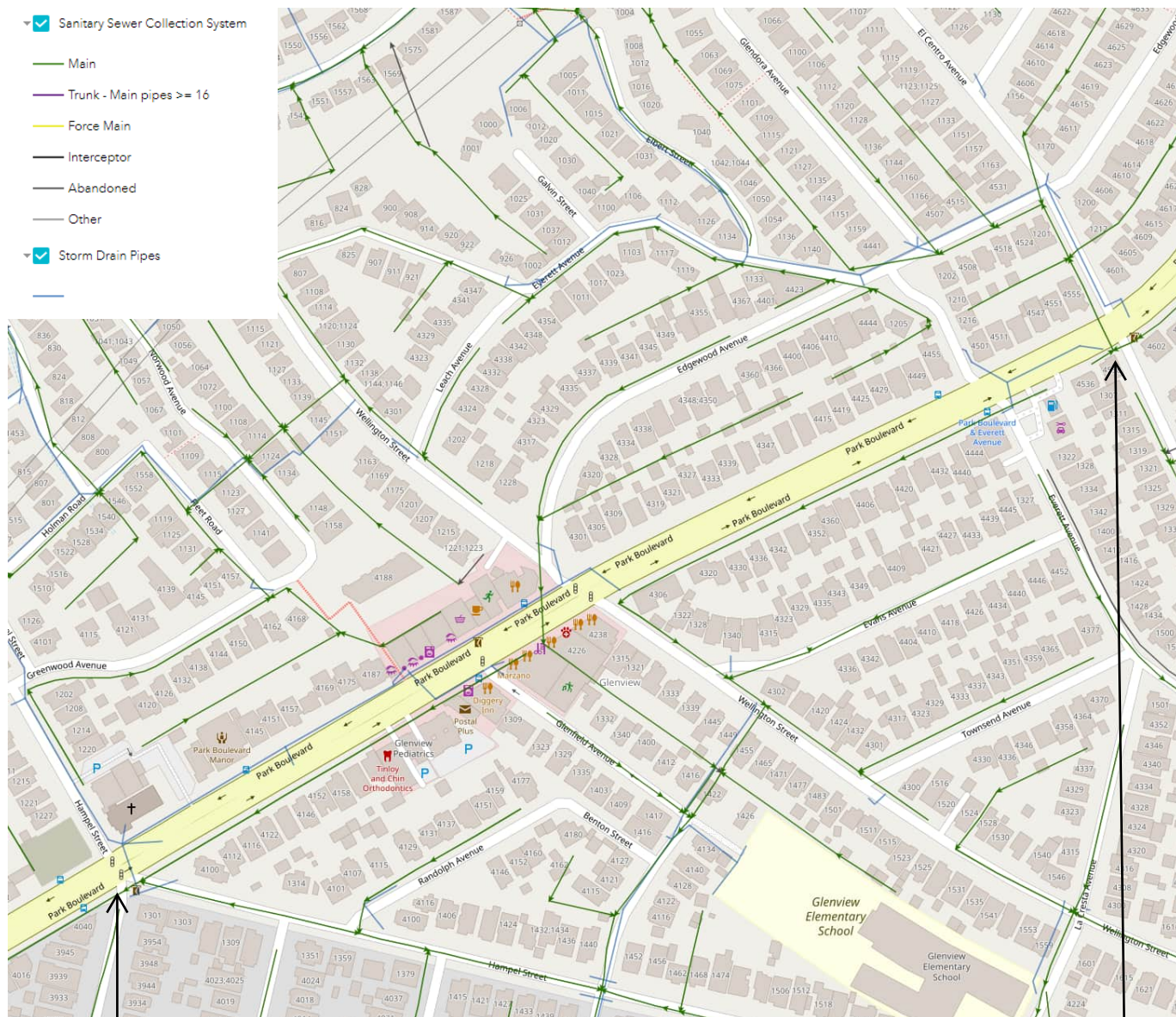
Source: City of Oakland Sewer Dashboard, 2024

El Centro Avenue and Park Boulevard Intersection

Estates Avenue and Park Boulevard Intersection

Figure 5.19-1, Image 1 of 3
City of Oakland Sewer and Storm Drain Facilities
Underground Portion of Proposed Project
Estates Drive and Park Boulevard to Park Boulevard at El Centro Avenue
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs



Source: City of Oakland Sewer Dashboard, 2024

Hempel Street and
Park Boulevard Intersection

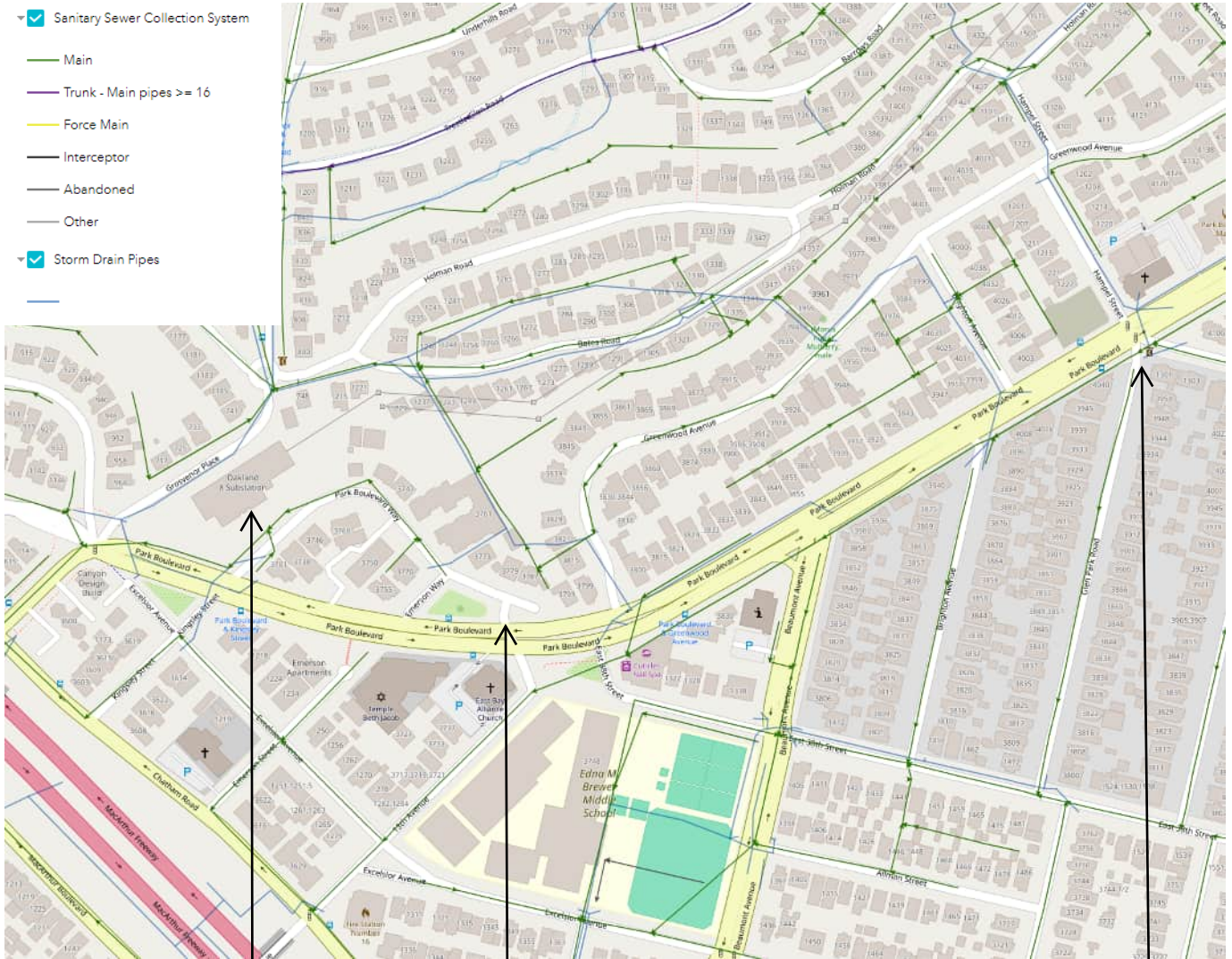
El Centro Avenue and
Park Boulevard Intersection

Figure 5.19-1, Image 2 of 3
City of Oakland Sewer and Storm Drain Facilities
Underground Portion of Proposed Project
Park Boulevard at El Centro Avenue to Park Boulevard at Hempel Street
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Jacobs

Sanitary Sewer Collection System

- Main
 - Trunk - Main pipes ≥ 16
 - Force Main
 - Interceptor
 - Abandoned
 - Other
- Storm Drain Pipes



Source: City of Oakland Sewer Dashboard, 2024

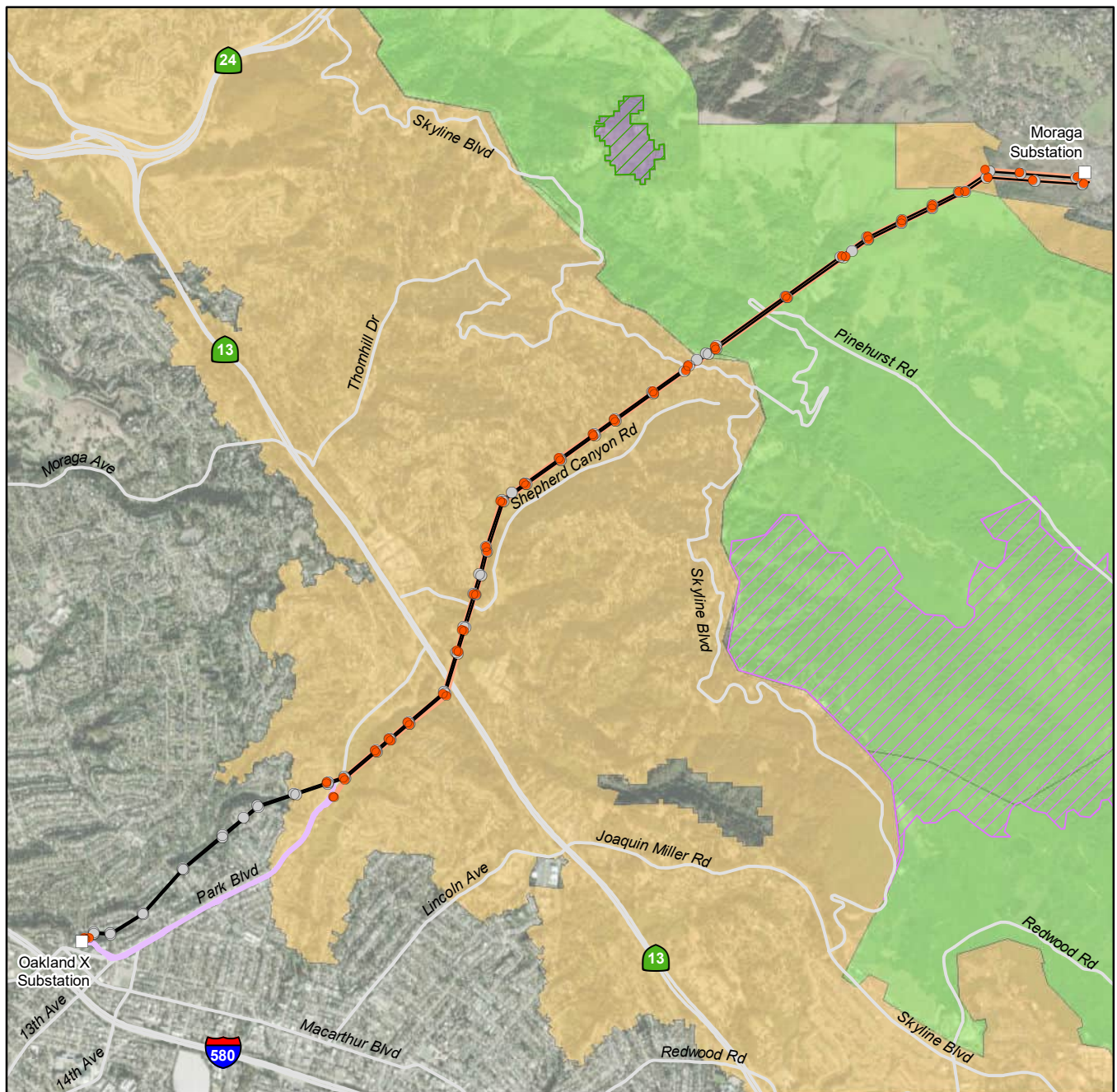
Oakland X Substation

Park Boulevard Way and
Park Boulevard Intersection

Hempel Street and
Park Boulevard Intersection

Figure 5.19-1, Image 3 of 3
City of Oakland Sewer and Storm Drain Facilities
Underground Portion of Proposed Project
Park Boulevard at Hempel Street to Park Way Boulevard at Oakland X Substation
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 10/21/2024

Legend

- Substation
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

CAL FIRE Fire Hazard Severity Zones

State Responsibility Area (SRA)

- Very High
- High

2022 Changes to SRA (Currently in Regulatory Review)

- To Very High
- To High

Local Responsibility Area (LRA)

- Very High

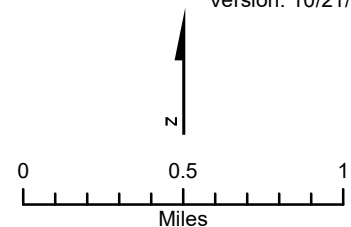


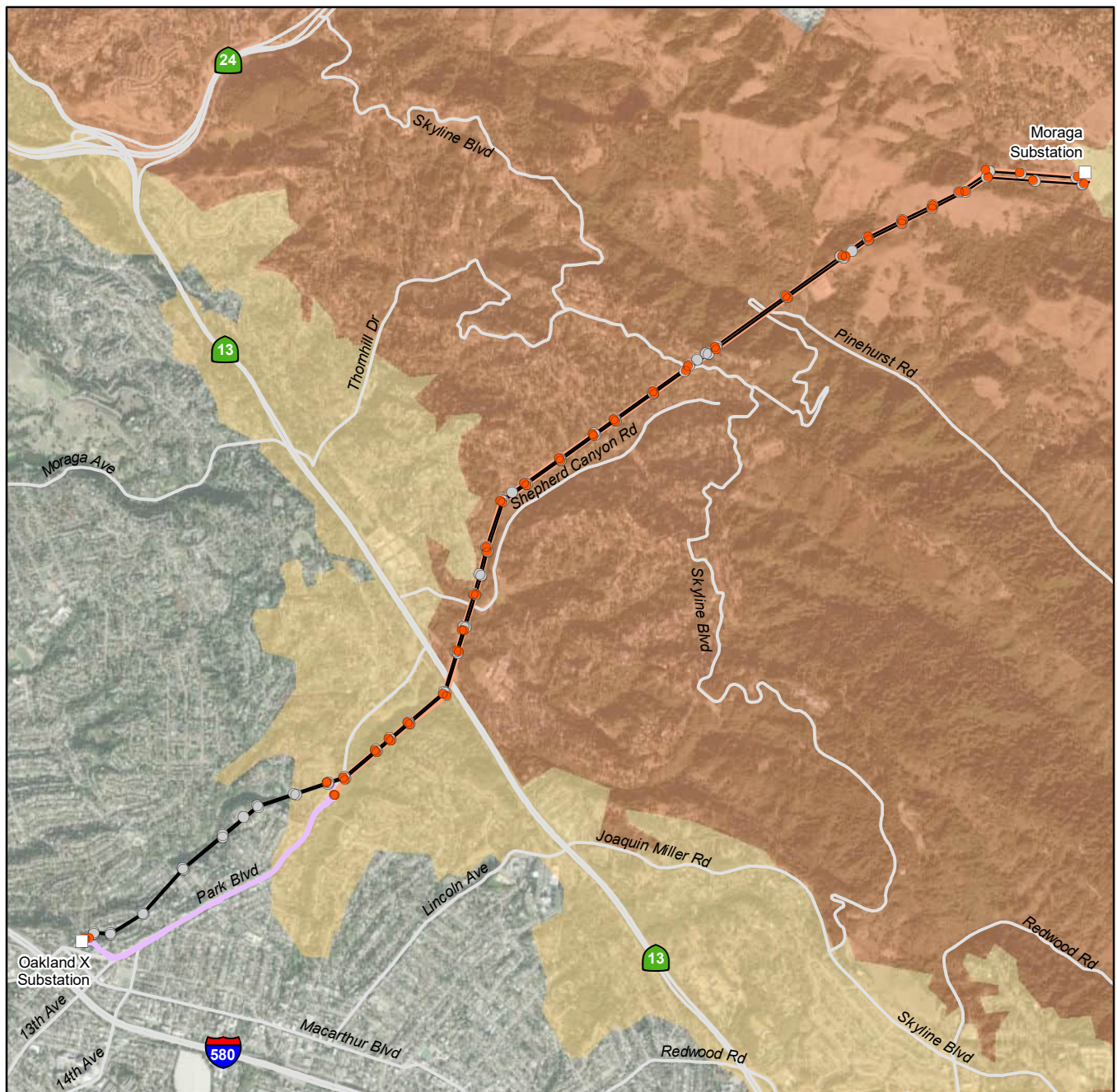
Figure 5.20-1
CAL FIRE Fire Hazard Severity Zones
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Basemap Source:
1) ESRI World Imagery

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Version: 1/24/2024

Legend

- | | |
|----------------------------|--|
| □ Substation | CPUC High Fire Threat Districts |
| Overhead Structures | |
| ● Existing | ■ Tier 3 - Extreme |
| ● Proposed | ■ Tier 2 - Elevated |
| Overhead Routes | |
| — Existing | |
| — Proposed | |
| Underground Routes | |
| — Proposed | |

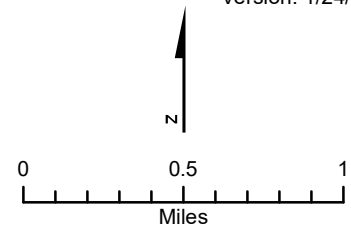


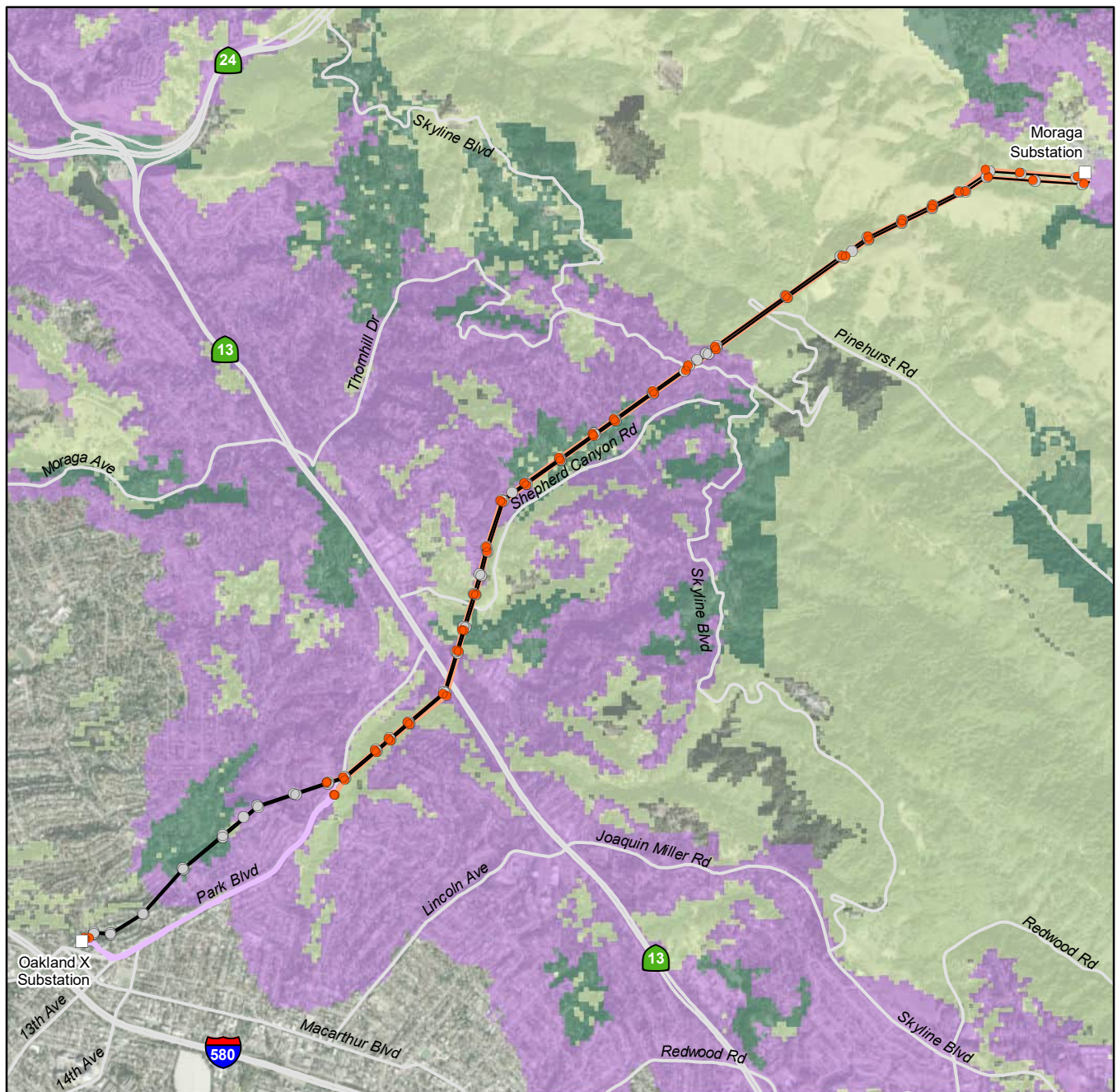
Figure 5.20-2
CPUC High Fire Threat Districts
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Basemap Source:
 1) ESRI World Imagery

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Jacobs



Version: 1/24/2024

Legend

- | | |
|----------------------------|--|
| □ Substation | Wildland Urban Interface (WUI) |
| Overhead Structures | <div style="display: flex; justify-content: space-between;"> <div> <p>● Existing</p> <p>● Proposed</p> </div> <div> <p>Wildfire Influence Zone</p> <p>Wildland Urban Interface</p> <p>Wildland Urban Intermix</p> <p>Not WUI</p> </div> </div> |
| Overhead Routes | |
| — Existing | |
| — Proposed | |
| Underground Routes | |
| — Proposed | |

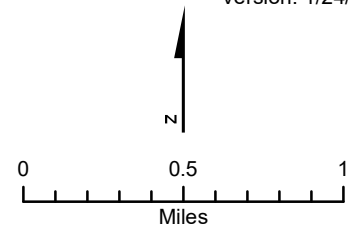


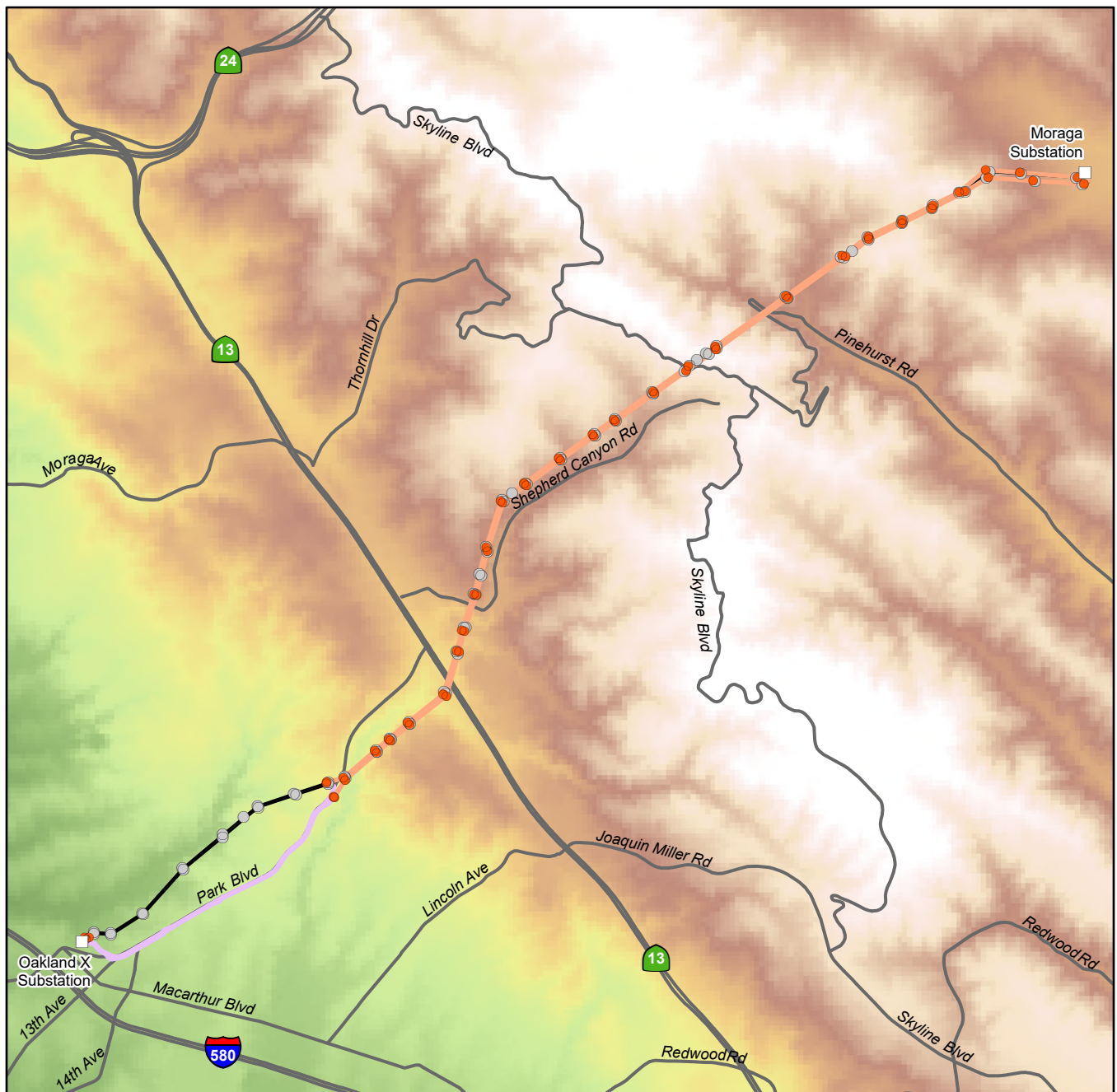
Figure 5.20-3
Wildland Urban Interface
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Basemap Source:
 1) ESRI World Imagery

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Jacobs



Version: 11/6/2024

Legend

- Substation
- Overhead Structures**
 - Existing
 - Proposed
- Overhead Routes**
 - Existing
 - Proposed
- Underground Routes**
 - Proposed

Elevation (meters)

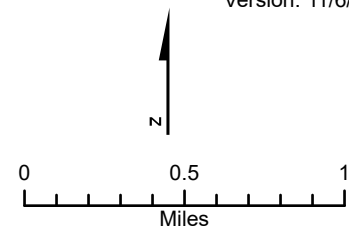
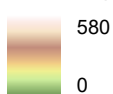
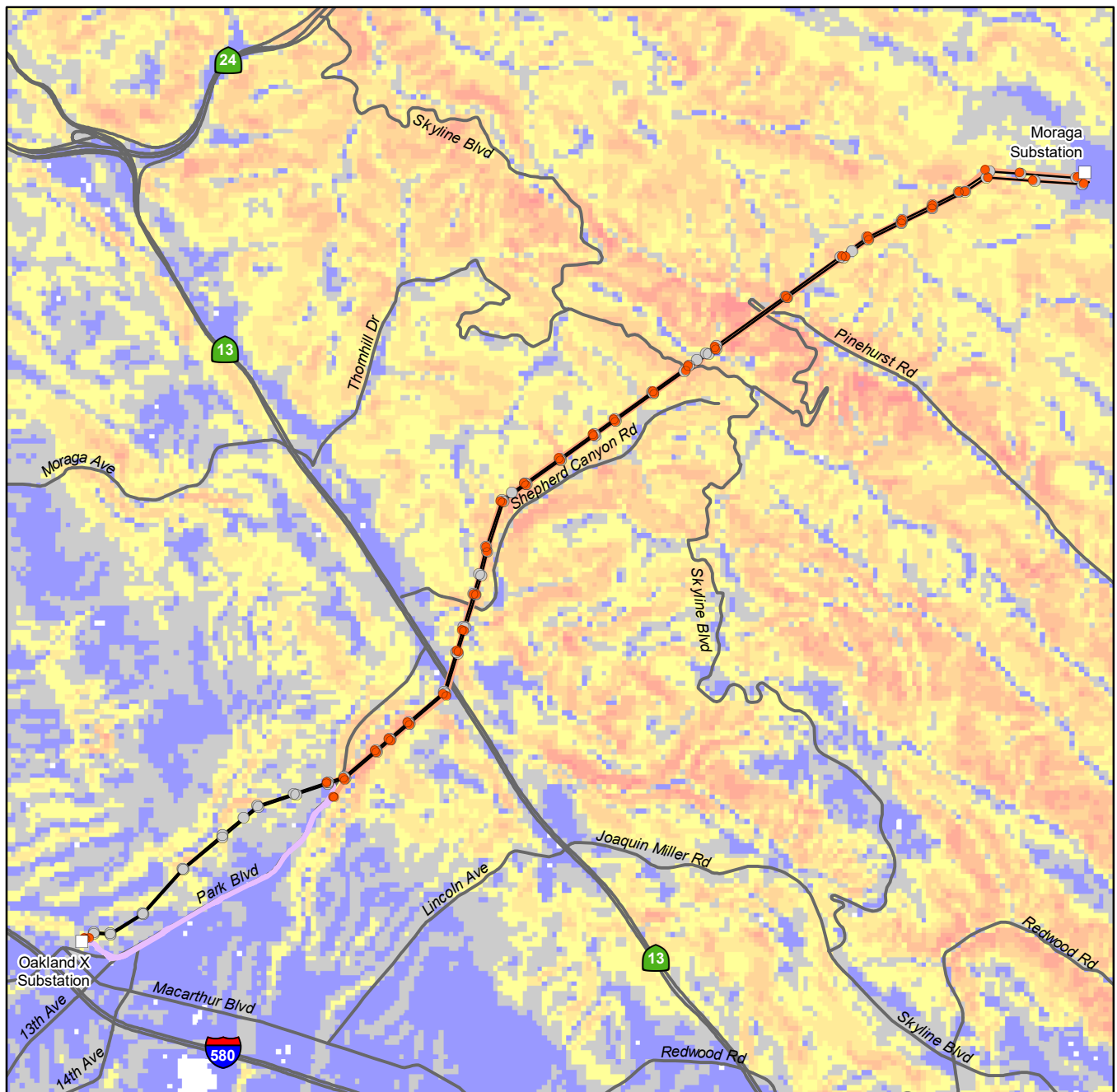


Figure 5.20-4
Project Area Elevation
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/6/2024

Legend

Substation	Slope (Degrees)
Overhead Structures	0
Existing	>0 - 5
Proposed	>5 - 10
Overhead Routes	>10 - 15
Existing	>15 - 20
Proposed	>20 - 25
Underground Routes	>25 - 30
Proposed	>30 - 35
	>35 - 40
	>40 - 45

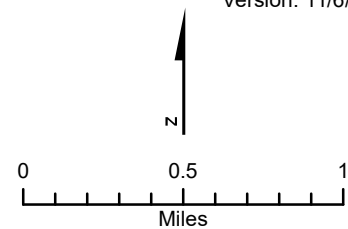
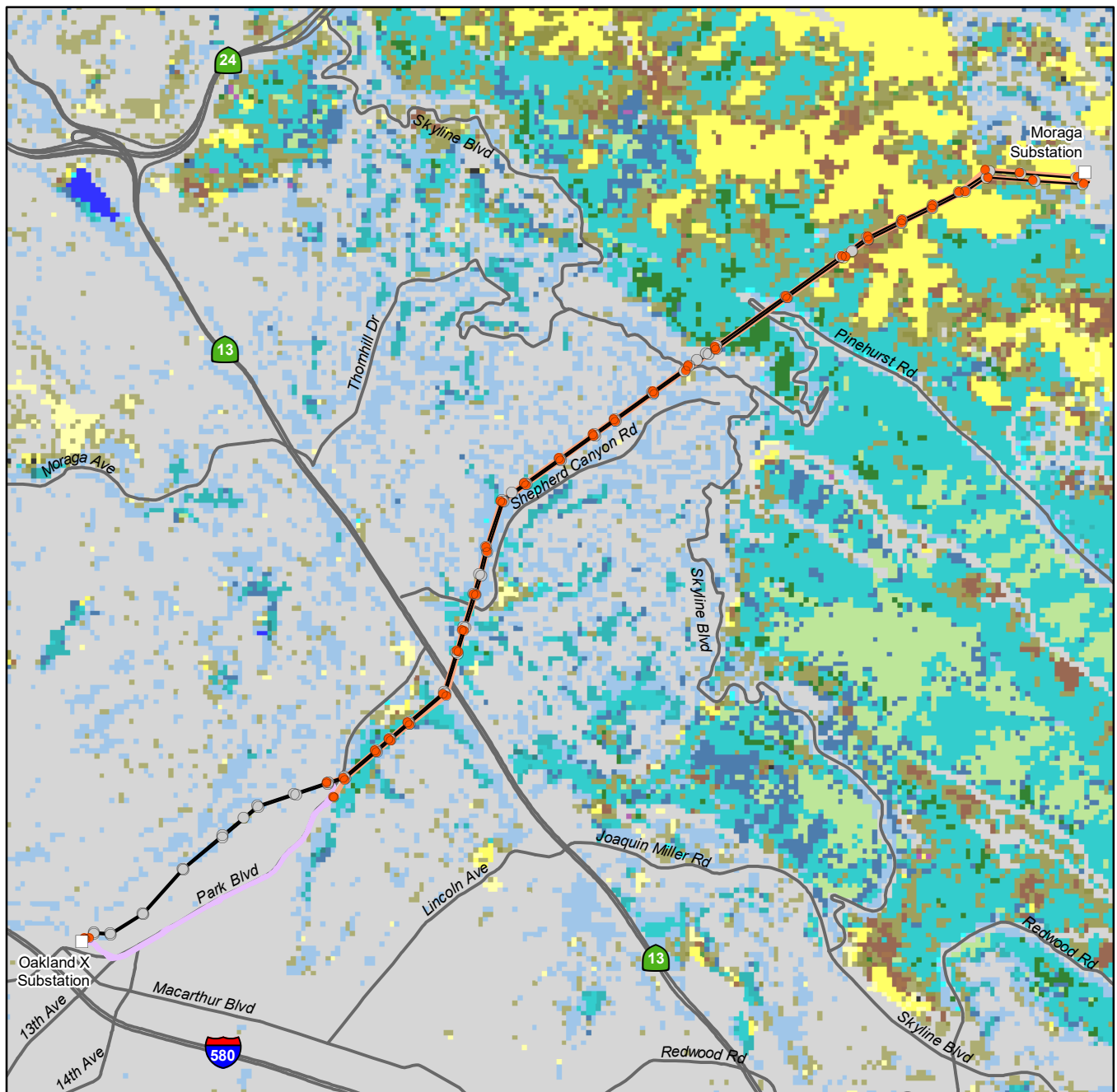


Figure 5.20-5
Project Area Slope
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs



Version: 11/6/2024

Legend

□ Substation

Overhead Structures

● Existing

● Proposed

Overhead Routes

— Existing

— Proposed

Underground Routes

— Proposed

Vegetation Fuels

NB1

NB8

NB9

GR1

GR2

GR3

GS1

GS2

GS3

SH4

SH5

SH7

TU2

TU3

TU5

TL2

TL3

TL4

TL5

TL6

TL8

TL9

SB2

**Preliminary and Subject to
Change Based on CPUC
Requirements, Final Engineering,
and Other Factors**

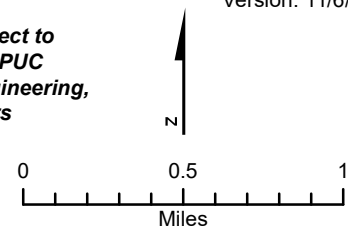
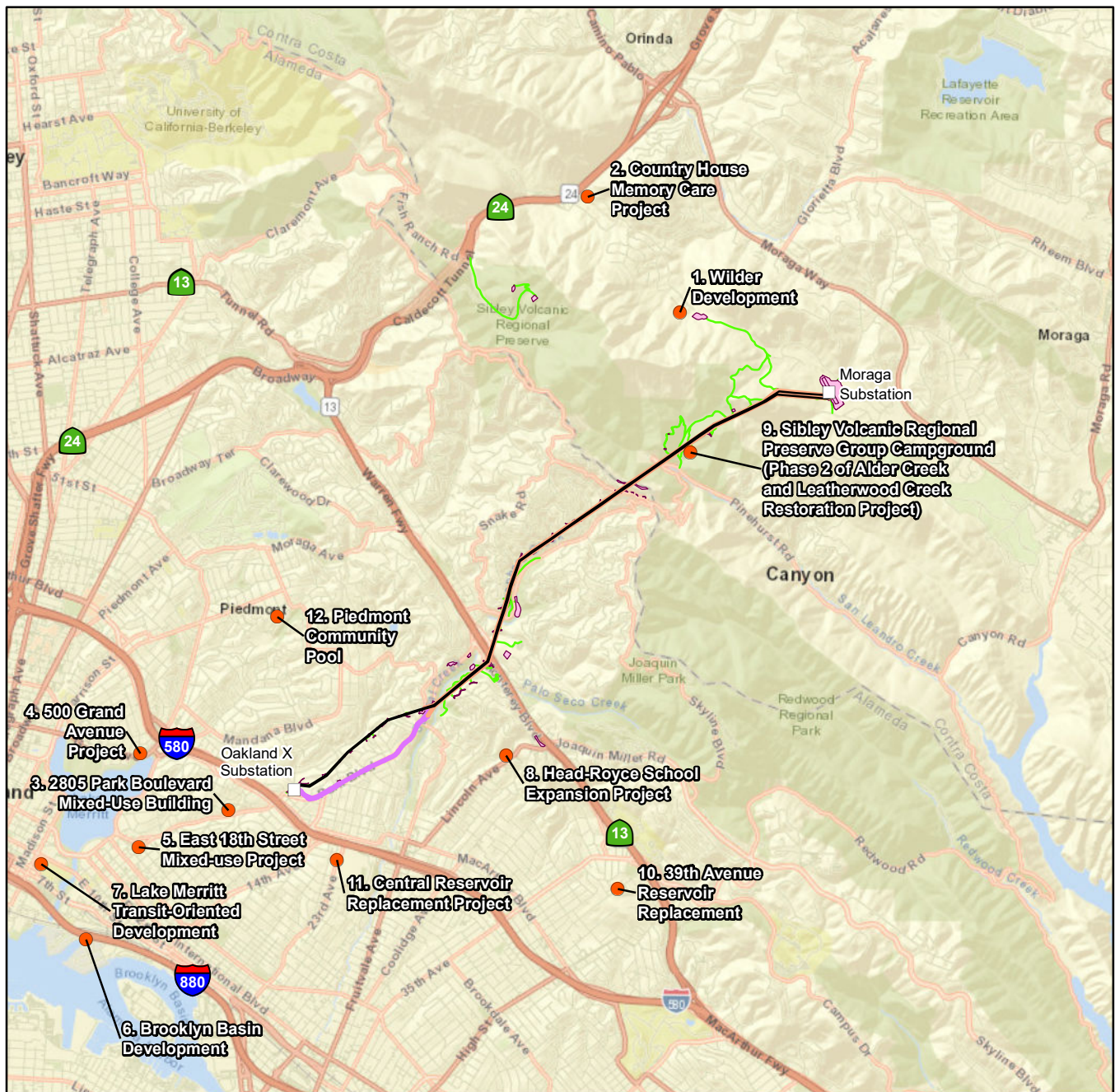


Figure 5.20-6
Project Area Vegetation Fuels
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Jacobs



Version: 6/26/2024

Legend

- Substation
- Cumulative Project Location
- Project Access
- Temporary Work Area
- Overhead Routes**
- Existing
- Proposed
- Underground Routes**
- Proposed

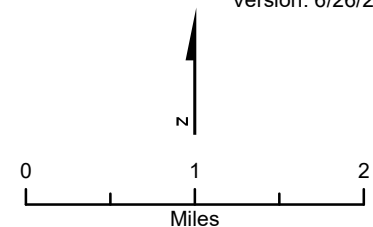


Figure 7.1-1
Cumulative Projects
 Moraga-Oakland X 115 kV Rebuild Project
 Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs