City Manager Comments and Presentations from the

January 22, 2019

City Council Meeting

CITY MANAGER COMMENTS
1/22/19

Topic: PG&E Gas Pipeline Work – January through June 2019
Submitted by: Utilities
Starting soon and continuing through June, PG&E will be replacing parts of its gas transmission pipeline that runs through Palo Alto. Construction will occur in several locations and is expected to begin as early as the end of January at the first site. The initial construction start date is still to be determined, as PG&E is awaiting permit approval. The City is attempting to communicate project details with all affected stakeholders, including residents, schools and businesses.

A few of the construction sites are along routes that students, parents, faculty and other commuters travel to and from some schools in Palo Alto. We have stressed to PG&E the importance of maintaining safe routes around the construction areas for bicyclists, pedestrians and motorists. Project details are posted in a news item on the Utilities home page. Information for all upcoming projects will be updated online as it becomes available and communicated to stakeholders.

Two Cubberley related items:

Topic: Third Cubberley Community Co-Design meeting
Submitted by: CSD
The third Cubberley Community Co-Design meeting is this **Thursday January 24th** from 7 to 9 p.m. at the Cubberley Community Center Pavilion. There will be a presentation summarizing the outcomes of the first two meetings, followed by group activities focused on program organization and massing; and site circulation. Spanish and Mandarin-speaking table-hosts will be on hand and translated activity materials will be provided. For more information about this project, including details on the co-design process and timeline, please visit the project website at: www.pausd.org/cubberleycodesign

A council study session to obtain feedback on the progress of the master planning effort is planned for February 11th.

Topic: Cubberley Artists Studio Program
Submitted by: CSD
Please join the Palo Alto Public Art Program and the artists of Cubberley Artist Studio Program this **Thursday, January 24,** from 5:30 to 7:30 p.m. to celebrate new acquisitions to the City collection and learn more about the talented artists of CASP. Several CASP artists will share fast-paced presentations about their work, and recent CASP artwork donations to the City collection will be on view in the Palo Alto Art Center Meeting Room. The event and reception are free and open to the public. For more information, please contact the Public Art Program at 650.329.2227.

CITY MANAGER COMMENTS
1/22/19

Topic: Council Priorities
Submitted by: CMO
We are asking the community for input into the Council's priorities for 2019, which will be discussed at the Council's annual retreat on February 2. We have posted asked the community to weigh in through a question posted on Open City Hall. We've received more than 100 responses already, and would like to encourage members of the community to share their ideas. The survey will be open until January 28. There is a story on the City's website homepage with a link to the Open City Hall question where you can post your suggestions. We'll collect all of the ideas and suggestions and provide them to Council in preparation for the retreat.

Upcoming events:

Topic: Mayor's Annual Tree Planting
Submitted by: CMO
Join Canopy and the City of Palo Alto this **Thursday, January 24** for the 23rd Annual Mayor's Tree Planting and Awards Ceremony at **Mitchell Park Community Center**. Following the planting ceremony, join Canopy and friends for a reception and presentation of the 2019 Canopy Awards. The event is free, but RSVP is required.
RSVP here: www.eventbrite.com/e/canopys-23rd-annual-palo-alto-mayors-tree-planting-awards-ceremony-tickets-52917049319 If that url is too long to remember, click on the calendar listing on the website homepage for more information.

Topic: Friday Night at the Art Center
Submitted by: CSD
Mark your calendar for the Palo Alto Art Center's free Friday Night at the Art Center celebration this **Friday, January 25 from 7 to 10 p.m.** The event will provide a chance to experience the new exhibition, *The Sheltering Sky*, in a fun and festive atmosphere and will feature artmaking activities, music, a cash bar provided by the Palo Alto Art Center Foundation, a guided planetarium experience, and more! See you there!

Topic: First Community Workshop for North Ventura
Submitted by: Planning
The first Community Workshop for the North Ventura Coordinated Area Plan will be held on **Tuesday, February 5** at the El Palo Alto Room in the Mitchell Park Community Center. The workshop will be held from 6:00 PM to 9:00 PM and will be the first of two workshops planned for the NVCAP project. The workshop is an opportunity for the public to provide input to help inform the development of this Plan.

Groundwater Flows Presentation to Palo Alto City Council

January 22, 2019

Keith Bennett, Ph.D.
Save Palo Alto's Groundwater

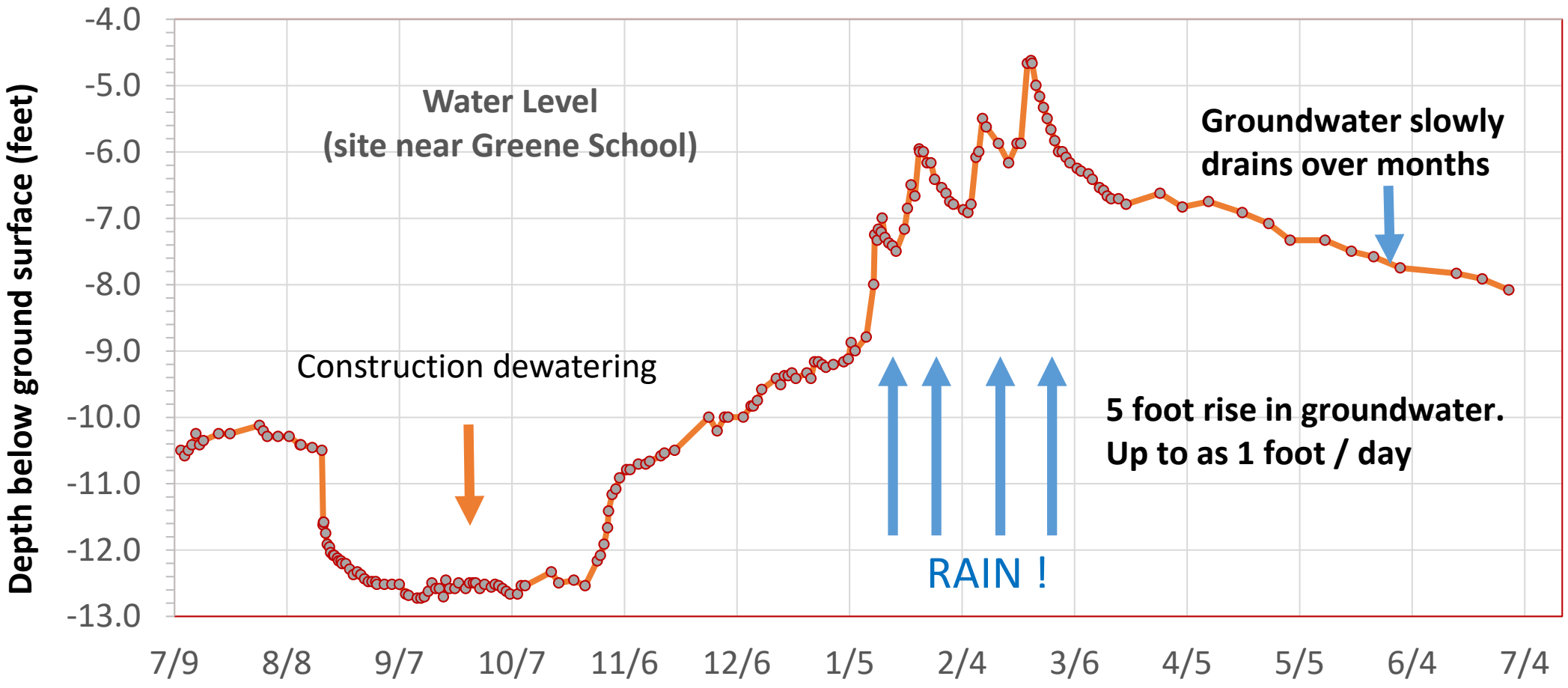
https://savepaloaltosgroundwater.org

Save Palo Alto's Groundwater concerns:

1. interaction of below grade structures (including basements) with groundwater and
2. associated impacts on resources, public safety and infrastructure

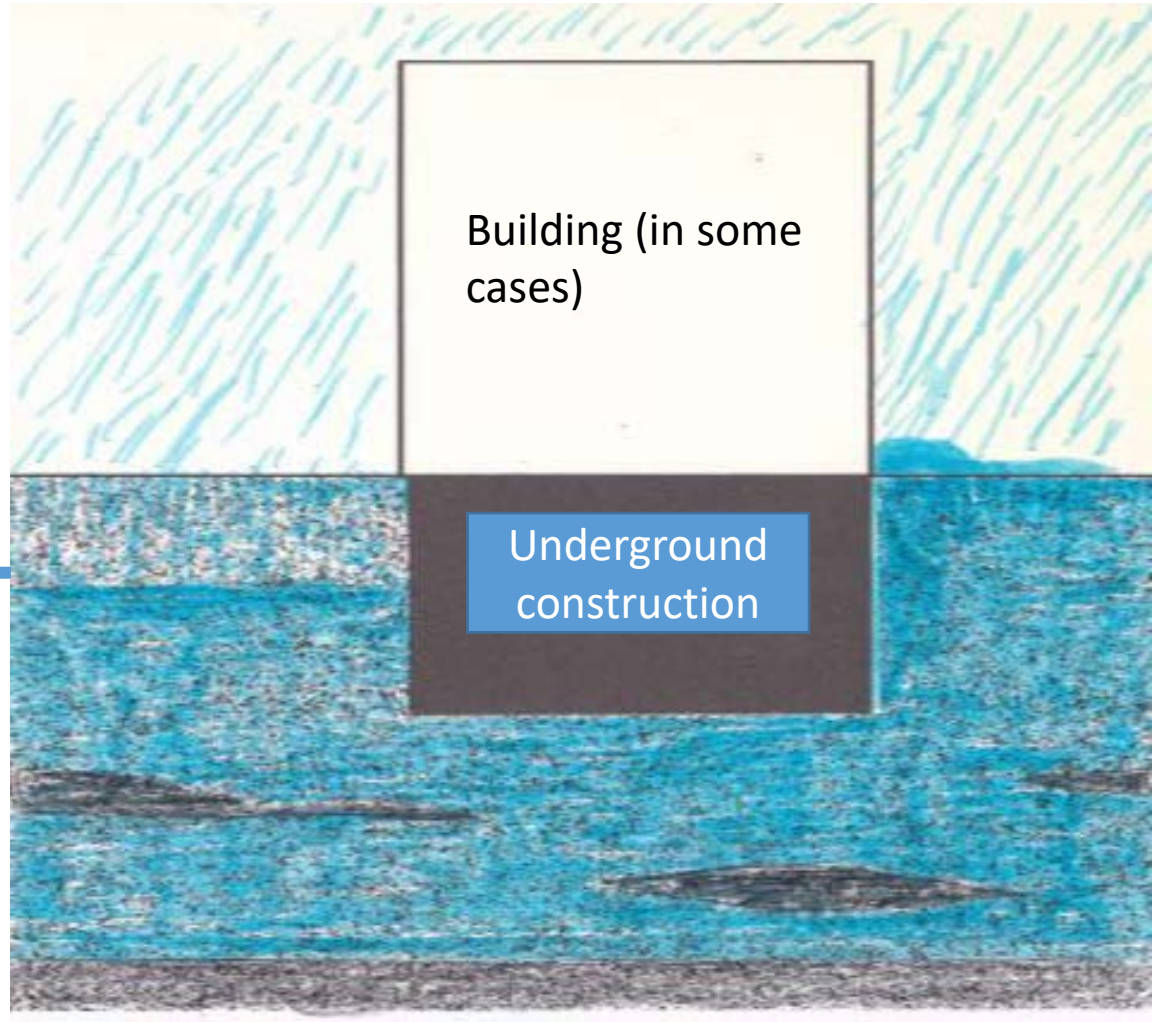
Implementing practical, proven, cost-effective, best-practice design and construction methods minimizes the impacts during and after construction.

Groundwater FLOWS
are an important part of Palo Alto's Stormwater Management System



2016 - 2017

Underground construction blocks groundwater flows



Groundwater higher upstream (possible surface flooding)

Groundwater lower downstream

Groundwater Flow

Underground construction permanently affects groundwater and groundwater flows and needs to be carefully considered at the design stage

- Cumulative impacts of multiple projects
- Larger commercial projects
- Caltrain grade separation design

https://savepaloaltosgroundwater.org/

GreenWaste Contract Amendment Approval & CEQA Action Approval

City Council Meeting

January 22, 2019

CITY OF PALO ALTO

zero WASTE PALO ALTO
Achieving zero waste together

Background

- S/CAP (2016)
- New Zero Waste Plan (August 27, 2018)
- **Council direction – August 27, 2018**

"Direct staff to develop a contract amendment to add scope and extend the term of the current contract with GreenWaste of Palo Alto, Inc. (GreenWaste) for collection of all refuse containers, processing recyclable and compostable materials (contents of blue and green containers), and implementation of key Zero Waste Plan initiatives;"

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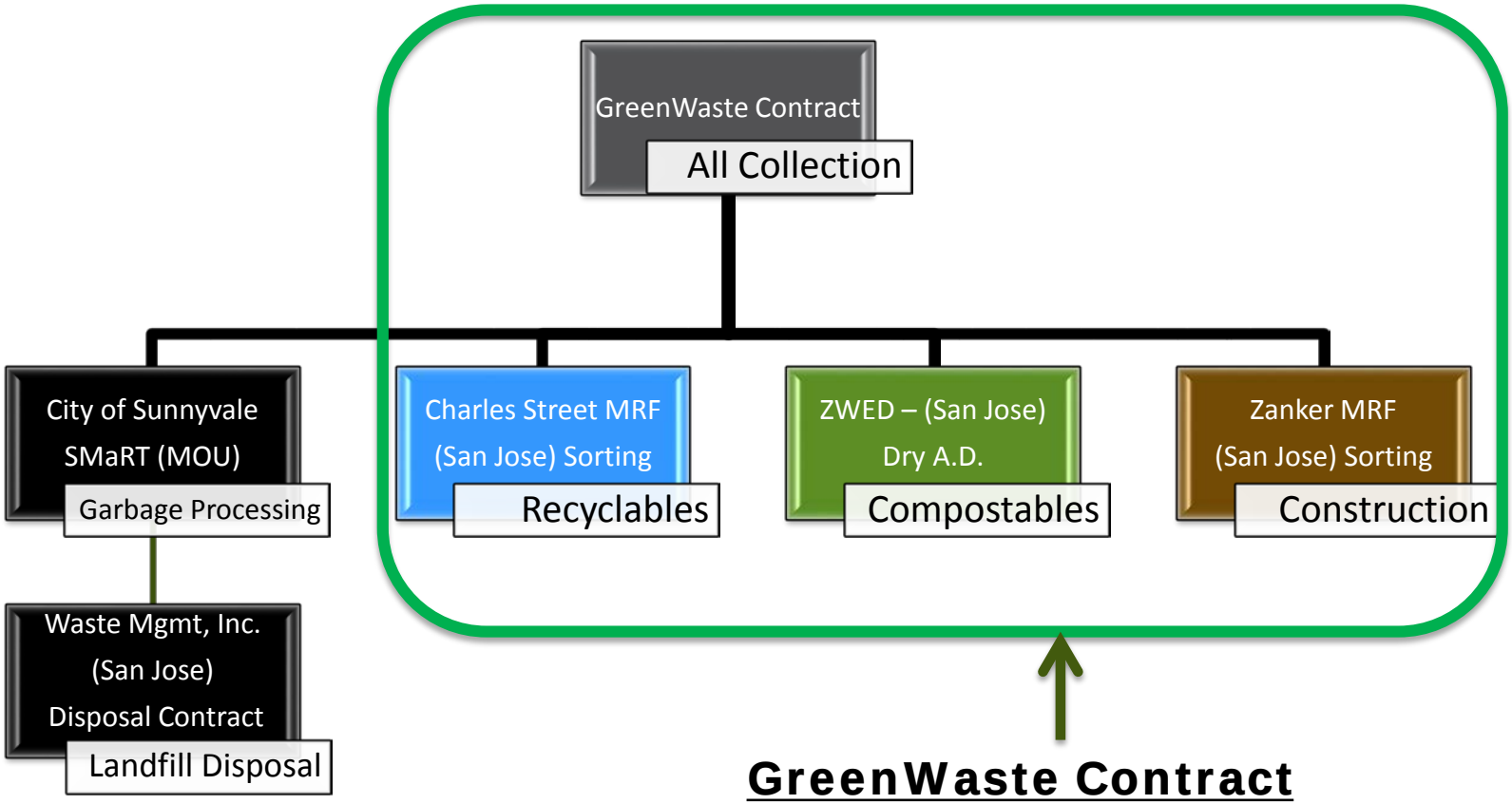
Background-Waste Flows



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GreenWaste Amendment What's New?

- New Vehicles
- Construction Materials Management
- Cleaner Recyclables
- More outreach/enforcement (including new foodware packaging)
- Expanded Clean Up Day (focusing on reusables)
- Extend 5 years (2021-2026)

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“One-Time” Costs

Item	Cost
New Vehicles – Replace 57% of fleet	$9.132 m
Other One-Time Costs	$ 0.643 m
Total Cost	**$9.775 m**

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Ongoing Program Related Costs (Beginning in FY20)

Item	Cost
Construction Materials Mgmt (Only if approved by Council)	$567 k
Recyclables Clean-up	$469 k
Expanded Clean Up Day	$222 k
Other	$165 k
Total	**$1,423 k**

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Refuse Fund Operating Expenses

Operating Expenses (In Millions) per Fiscal Year

FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
$30.3	$31.0	$27.9	$27.8	$27.5	$29.7	$30.1	$28.3	$29.7	$39.3	$34.8

New GreenWaste Vehicles

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Rate Impacts and Goals

Financial

- No rate increases in FY20
- Use rate stabilization reserves for new vehicles

Zero Waste Goals

- More diversion
- Less GHG generation

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Why Extend 5 Years?

- Good value from GreenWaste
- Continuity of new programs
- GreenWaste has positive feedback from Public
- Ensure collection and local processing capacity
- Replace and fully utilize older vehicles

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Overseas Recyclables Markets

- New restrictions on “contamination” are forcing use of new countries and vendors
- Raises concern that new countries and vendors may have environmental/social issues
- Additions made to GreenWaste Contract to address concerns:
  1) Annual reporting on locations/vendors
  2) The City may redirect materials if environmental/social issues arise

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Recommendations:

1) Approve the Second Amended and Restated Agreement for Solid Waste, Recyclable Materials and Compostable Materials Collection and Processing Services with GreenWaste of Palo Alto, Inc.; and

2) Approve the Addendum to the 2008 Mitigated Negative Declaration for City-wide Waste Hauling Service as Adequate and Complete under CEQA.

GreenWaste Contract Amendment Approval & CEQA Action Approval

City Council Meeting

January 22, 2019

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FINAL SLIDE

zero WASTE PALO ALTO
Achieving zero waste together

Additional Slides Presented

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PALO ALTO

Fiscal Year	GreenWaste Contract Estimate	Notes
FY 19	$16.25 M	FY 19 Budget Amount
FY 20	$25.09 M	FY 19 amount + $1.42M ongoing + $7.42M One-time
FY 21	$20.04 M	FY 20 amount less $7.42M + 3% cpi + $1.84M one -time
FY 22	$20.75 M	FY 21 amount less $1.84M + 3% cpi + $2M in recycling cost
FY 23	$21.37 M	FY 22 amount + 3% cpi
FY 24	$22.01 M	FY 23 amount + 3% cpi
FY 25	$22.67 M	FY 24 amount + 3% cpi
FY 26	$23.35 M	FY 25 amount + 3% cpi
FY 20-21	**$45.13 M**	**Current Term**
FY 22-26	**$110.15 M**	**5 year extension**
FY 20-26	**$155.28 M**	**Total**

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Refuse Fund Budget (in Millions)

Budget Category In Millions	FY18 (CAFR)	FY19 (Budget)	FY20 (Estimate)	FY21 (Estimate)
Revenues	$34.6	$33.1	$34.1	$34.1
Expenses	$28.3	$29.7	$39.3	$34.8
Operating Income	$6.4	$3.4	<$5.2>	<$0.7>
Rate Stabilization Reserves	$14.7	$18.1	$12.9	$12.2

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GreenWaste Collection Costs Benchmarked

City	Cost Per Ton
Palo Alto	$136
San Francisco	$282
Menlo Park	$135
Redwood City	$143
Milpitas	$109
SBWMA	$156
Santa Cruz	$172
Average	$195

CITY OF PALO ALTO

COUNCIL MEETING
01/22/2019
☑Received Before Meeting
7

CITY COUNCIL MEETING

January 22, 2018

CITY OF PALO ALTO
WRECO
TJKM
alta PLANNING + DESIGN
apex STRATEGIES
AECOM

Agenda

1. Objectives of Today's Discussion
2. Project Background & Purpose
3. Recommendations

   Council Questions (15 minutes)

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4. Overview of Charleston / Meadow Alternatives
5. Community Feedback
6. Public Comment

   Council Action

Objective for Today's Discussion – Staff Recommendation

A. Separate from study all alternatives for the Palo Alto Avenue crossing (closure and hybrid) and include Palo Alto Avenue in a separate comprehensive planning effort

B. Separate from study the bicycle and pedestrian crossing of the Caltrain corridor in the vicinity of the Loma Verde Avenue and assess feasibility in a future study

C. Address the Rail Committee's recommendation regarding a tunnel by modifying the alternative to be South of Oregon Expressway only and further explore the Scope and Budget for an alternative with freight trains on the surface and passenger trains underground for the Meadow and Charleston crossings

Objective for Today's Discussion – Staff Recommendation

D. Adopt a Modified List of the Grade Separation Alternatives:

1. SOUTH PALO ALTO | Rail Tunnel
2. CHURCHILL AVE | Full or Partial Closure and Add Improvements (CAX)
3. MEADOW DR & CHARLESTON RD | Hybrid (MCL)
4. MEADOW DR & CHARLESTON RD | Rail Trench (MCT)
5. MEADOW DR & CHARLESTON RD | Viaduct (MCV)

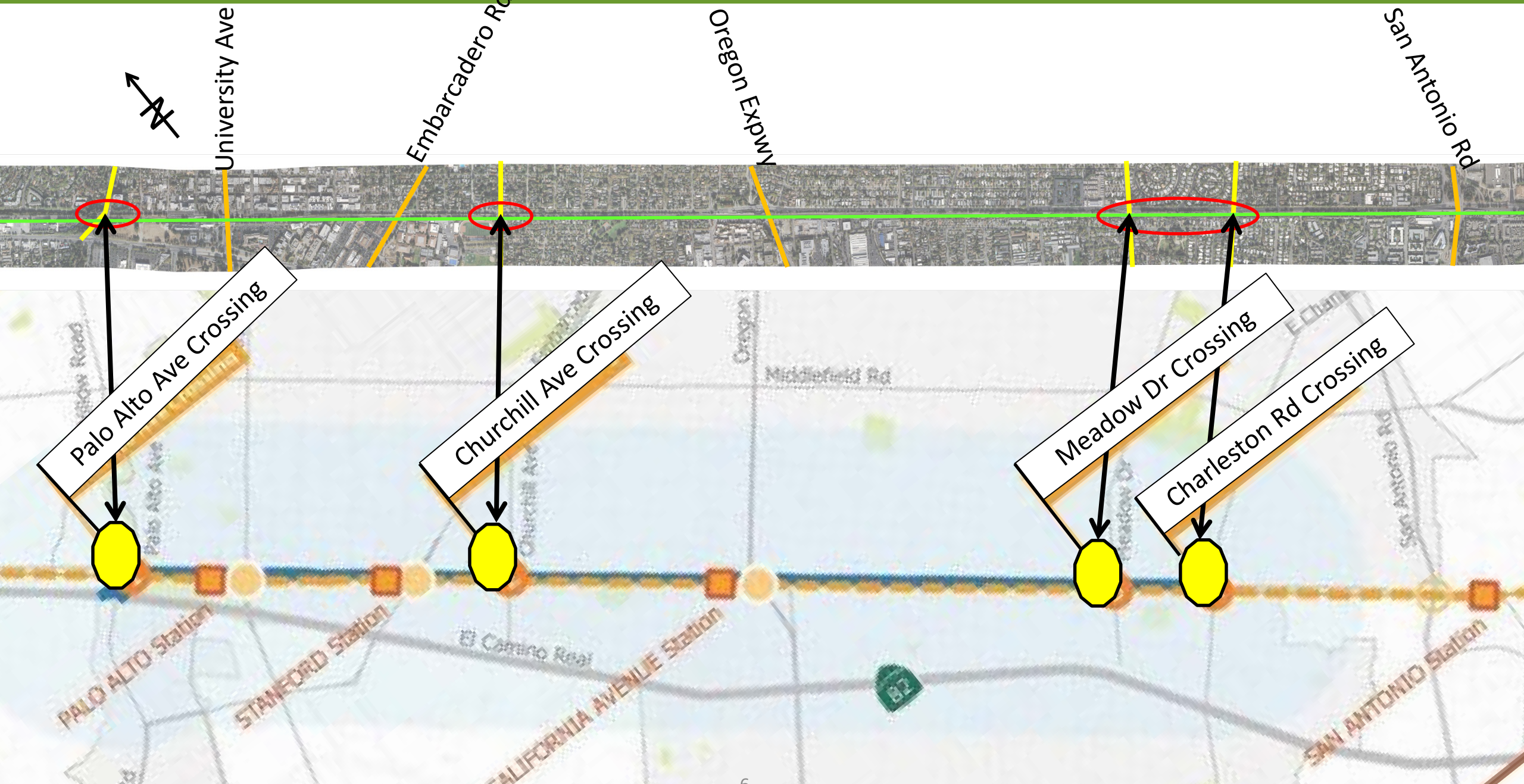
What is an at-grade crossing?

Also known as a “railroad crossing”… a location where a roadway and sidewalk cross railroad tracks at grade (same level as the street).

Drop-down gates and red flashing lights are used to stop traffic when a train approaches.

At-Grade Crossing
Meadow Drive and Caltrain Tracks

Palo Alto Existing At-Grade Crossings



Why is the City undertaking this effort?

Problem Statement

"While enhanced rail transit service is important to the City of Palo Alto, the Caltrain corridor creates a physical and visual barrier and is also the source of safety concerns at existing at-grade crossings. The rail corridor also creates issues in surrounding neighborhoods, such as noise, vibration, traffic and visual impacts. While the City of Palo Alto benefits from Caltrain service and supports Caltrain modernization, issues experienced will continue to get worse in the future with increases in Caltrain service and the probable addition of high speed rail."

Objectives

- Build off of previous rail corridor planning work
- Improve safety
- Reduce traffic congestion
- Minimize right-of-way acquisitions and local road closures
- Improve circulation and access (east-west) for all modes
- Separate bicyclist and pedestrians from automobile traffic
- Deliver improvements in a timely manner
- Reduce noise and vibration and minimize visual changes
- Support Caltrain service enhancements

Weekday Train Traffic

Total Number of Trains (per Weekday)

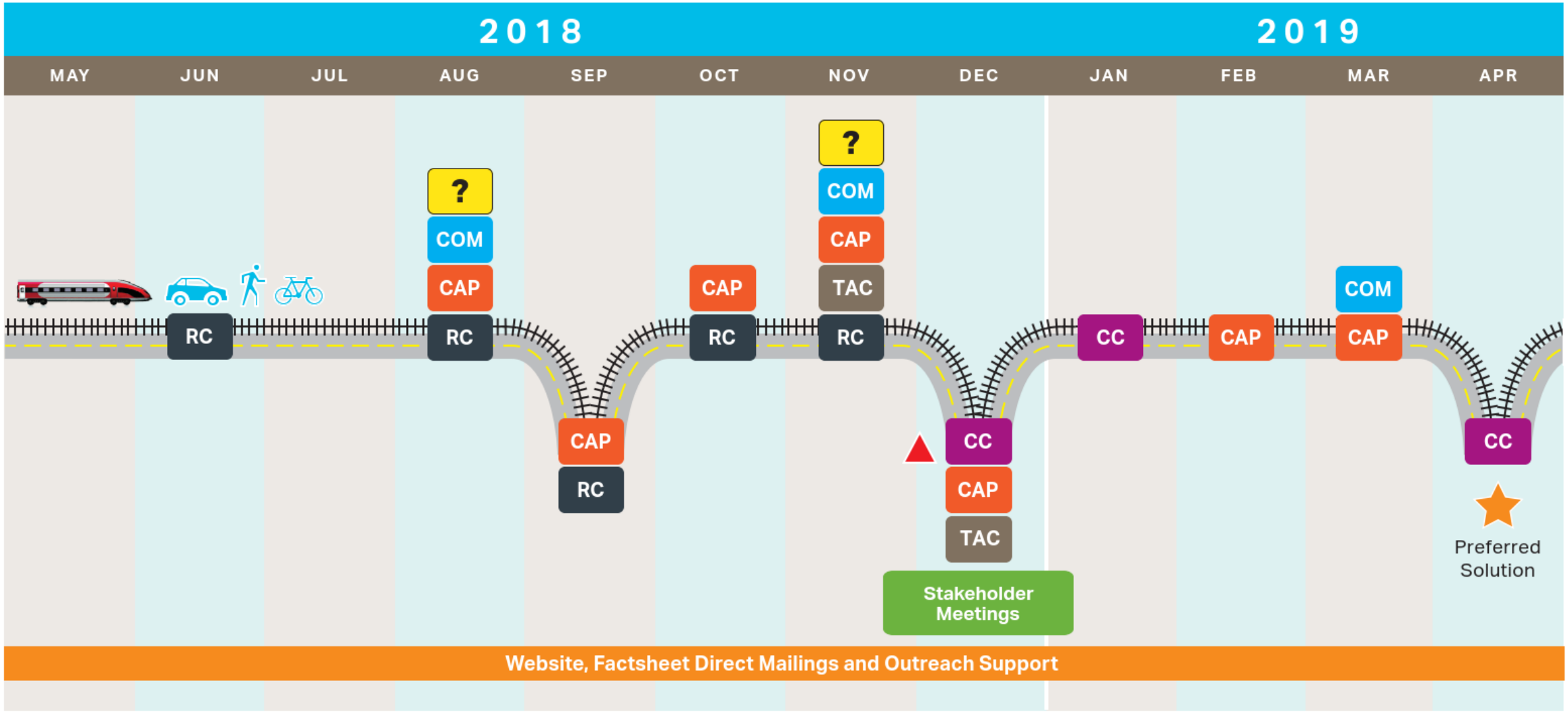
	Northbound (NB)	Southbound (SB)	Total
Caltrain (2018)	AM: 20 PM: 26 Total: 46	AM: 20 PM: 26 Total: 46	AM: 40 PM: 52 Total: 92
Caltrain (2022 Projection #)	57	57	114
High Speed Rail (2029 Projection +)	128 trains per day to/from San Francisco with an additional 24 trains starting at San Jose		
Union Pacific	3	3	6

2022 Projected Values based on Completion of the Peninsula Corridor Electrification Project (from FEIR, December 2014) (Prototypical Schedule)
+ 2029 Projected Values based on Blended Service and Completion of the High Speed Rail Project and 2014 CHSRA Business Plan

Key Dates Related to Grade Separation Alternatives

- **May 29:** Council selected 10 Grade Separation Alternatives
- **June 19:** Council removed the Churchill Ave. Hybrid and Reverse Hybrid Alternatives; thus, leaving 8 alternatives. Council also removed from study the widening of Embarcadero and instead requested a comprehensive traffic study to assess the impact of closing the Churchill Ave. crossing
- **August 15:** Rail Committee recommended combining the reverse hybrid with the full trench alternative due to only minor differences
- **October 2018:** Staff and Consultant met with Caltrain and SCVWD
- **November 27:** Rail Committee recommended study of a modified tunnel with freight on surface and passenger train below
- **November 28:** Community Meeting discussion of Meadow and Charleston

Community Engagement Schedule



COM City Community Meeting

CAP Community Advisory Panel Meeting

TAC Technical Advisory Committee

RC Rail Committee Meeting

CC City Council Meeting

? Community Questionnaire

Preferred Solution — Advance to Environmental Clearance

Narrow Master List of Ideas to Alternatives of Study

Community Outreach Summary

General themes we are hearing:

- Interest in getting Caltrain to commit to design exceptions
- Many think of these projects as something Caltrain should be funding and not the City
- Lack of understanding that this is a traffic congestion relief project for local streets
- Desire to tax businesses and not residences (homes) for funding
- Many questions on how various project ideas have been screened out and when

Recommendation A: Downtown Coordinated Area Plan

Staff recommends Council separate from study all alternatives for the Palo Alto Avenue crossing (closure and hybrid) and include Palo Alto Avenue in a separate comprehensive planning effort due to the crossing's proximity to:

- Downtown
- Downtown North
- Transit Center & Caltrain Station
- El Palo Alto Tree
- Historic rail bridge spanning San Francisquito Creek

Given these characteristics, and in keeping with the Comprehensive Plan 2030, completing a separate parallel planning effort as part of a Downtown Coordinated Area Plan is recommended. See **Attachment F** for a defined problem statement and recommendation.

Of note: The two remaining alternatives for Palo Alto Avenue: Closure (PCX) and Hybrid (PAH)

Recommendation B: Modification to East Meadow and Charleston Alternatives

Remove Loma Verde bicycle and pedestrian undercrossing

- Presently included as part of the hybrid (Alternative MCL). This is outside the construction limits for Alternative MCL and involves design challenges which would benefit from analysis in a future study.

Recommendation C: Modifications to Rail Tunnel Alternative

The AECOM team has begun the analysis of a citywide tunnel concept and identified several key constraints:

- Cost
- Station impacts at University Avenue and California Avenue
- Property impacts of bore pits
- Property impacts for shoofly construction and rail realignments

The Rail Committee recommended that staff bring back information to further evaluate a South Palo Alto passenger rail-only tunnel alternative with freight trains at surface level.

This variation raises some of the same issues as other below grade options for both passenger and freight rail, but potentially avoids station impacts.

Recommendation C: Modifications to Rail Tunnel Alternative, cont.

Staff requests that Council consider modifying the limits of the tunnel alternative to be South of Oregon Expressway only, and further explore the Scope and Budget for an alternative with freight trains on the surface and passenger trains underground for the Meadow and Charleston crossings

Citywide Tunnel Animation

DISCLAIMER:

The following animation is a Concept for Discussion Only. It is not a specific proposal.

Tunnel Animation

Animation Link: https://vimeo.com/312275948

Current List of Grade Separation Alternatives

Citywide Deep Bore Tunnel

- Lower the railroad below the roadways in a tunnel

Churchill Ave Closure

- At-grade crossing to be fully or partially closed at Churchill Ave with a grade separation for Bike/Ped connectivity

Palo Alto Ave Hybrid

- Partially lower the roads and partially elevate the tracks at Palo Alto Ave

Palo Alto Ave Closure

- At-grade crossing to be fully or partially closed at Palo Alto Ave

Meadow / Charleston Reverse Hybrid

- Partially lower the tracks and partially elevate the roads at Meadow and Charleston

Meadow / Charleston Trench or Tunnel

- Lower the railroad below the roadways at Meadow and Charleston

Meadow / Charleston Hybrid

- Partially lower the roads and partially elevate the tracks at Meadow and Charleston

Meadow / Charleston Viaduct

- Raise the railroad above the roadways at Meadow and Charleston on structure

Recommended D: Modified List of Grade Separation Alternatives

South Palo Alto Rail Tunnel

- Tunnel south of Oregon Expressway under Meadow and Charleston

Churchill Ave Closure

- At-grade crossing to be fully or partially closed at Churchill Avenue

Meadow / Charleston Trench

- Lower the railroad below the roadways at Meadow and Charleston

Meadow / Charleston Hybrid

- Partially lower the roads and partially elevate the tracks at Meadow and Charleston

Meadow / Charleston Viaduct

- Raise the railroad above the roadways at Meadow and Charleston on structure

Council Questions?

Meadow / Charleston Alternatives to Review

Meadow / Charleston Trench

- Lower the railroad below the roadways at Meadow and Charleston

Meadow / Charleston Hybrid

- Partially lower the roads and partially elevate the tracks at Meadow and Charleston

Meadow / Charleston Viaduct

- Raise the railroad above the roadways at Meadow and Charleston on structure

Design Criteria

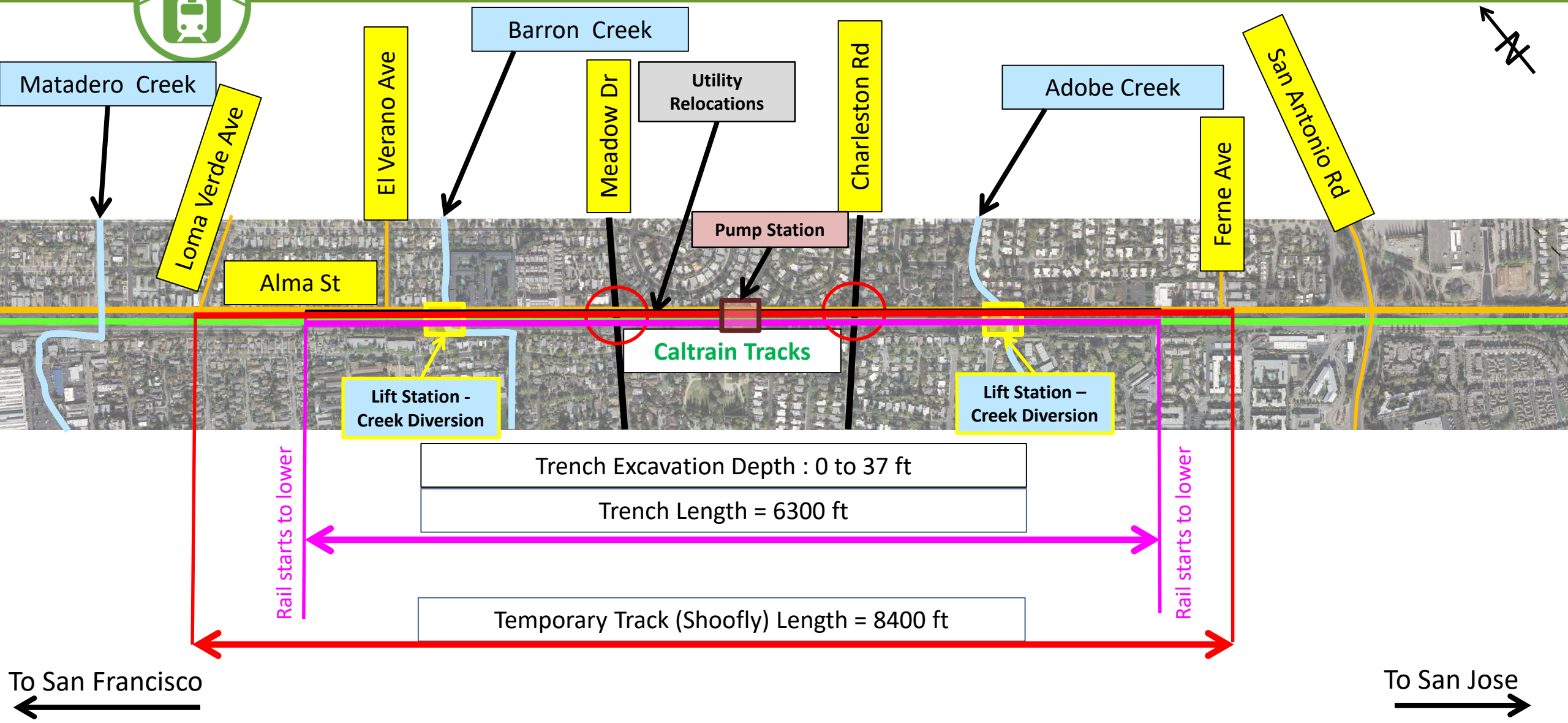
Design

- Based on published design criteria and regulations

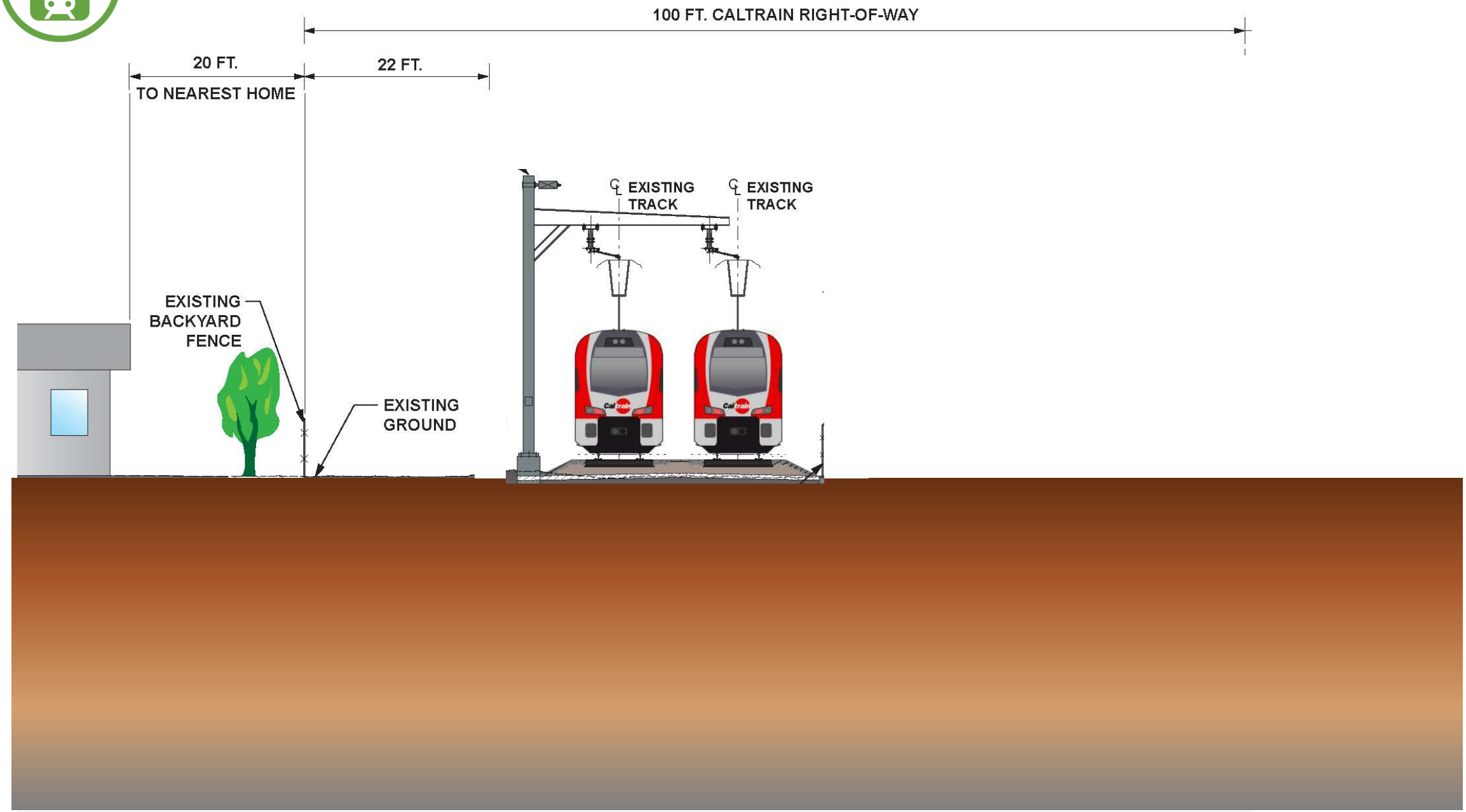
❑ **Identify Design Exceptions Where Design Criteria Cannot Be Met:**

- Railroad Profile Grade = 1% maximum
- Minimum Vertical Clearance = 24.5 feet for Trains
- Minimum Vertical Clearance = 15.5 feet for Roadways

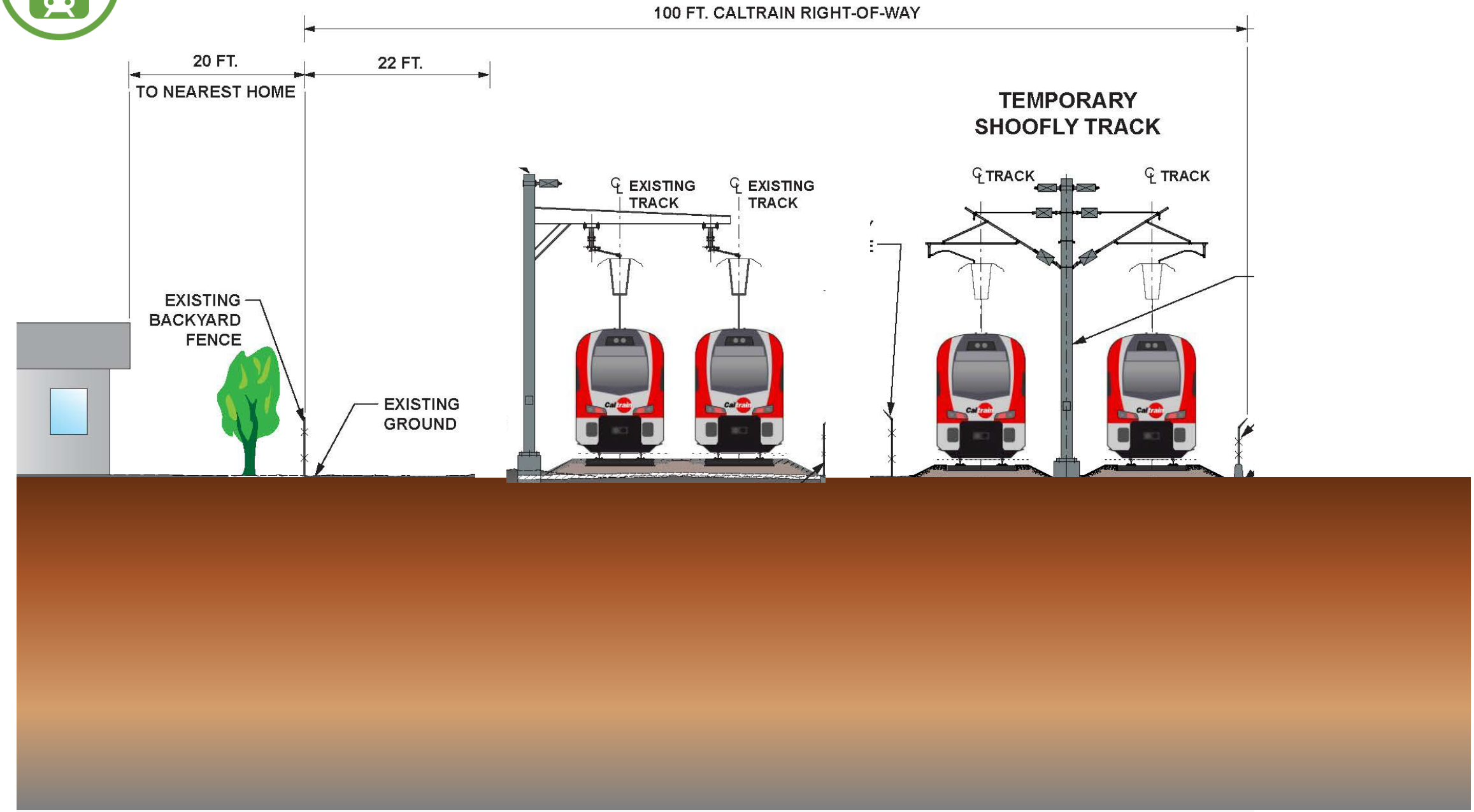
Meadow / Charleston Trench



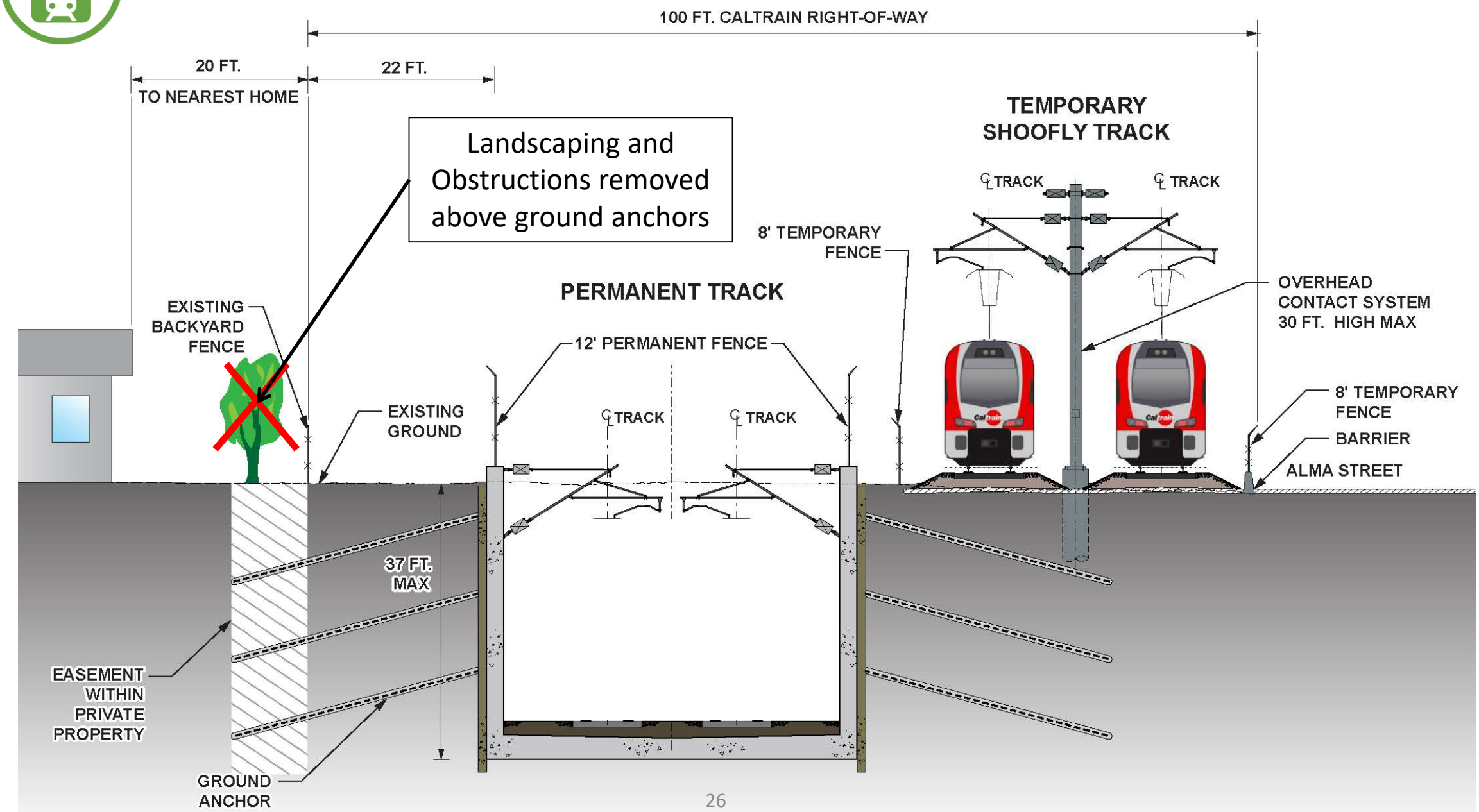
Trench Example Section - Existing



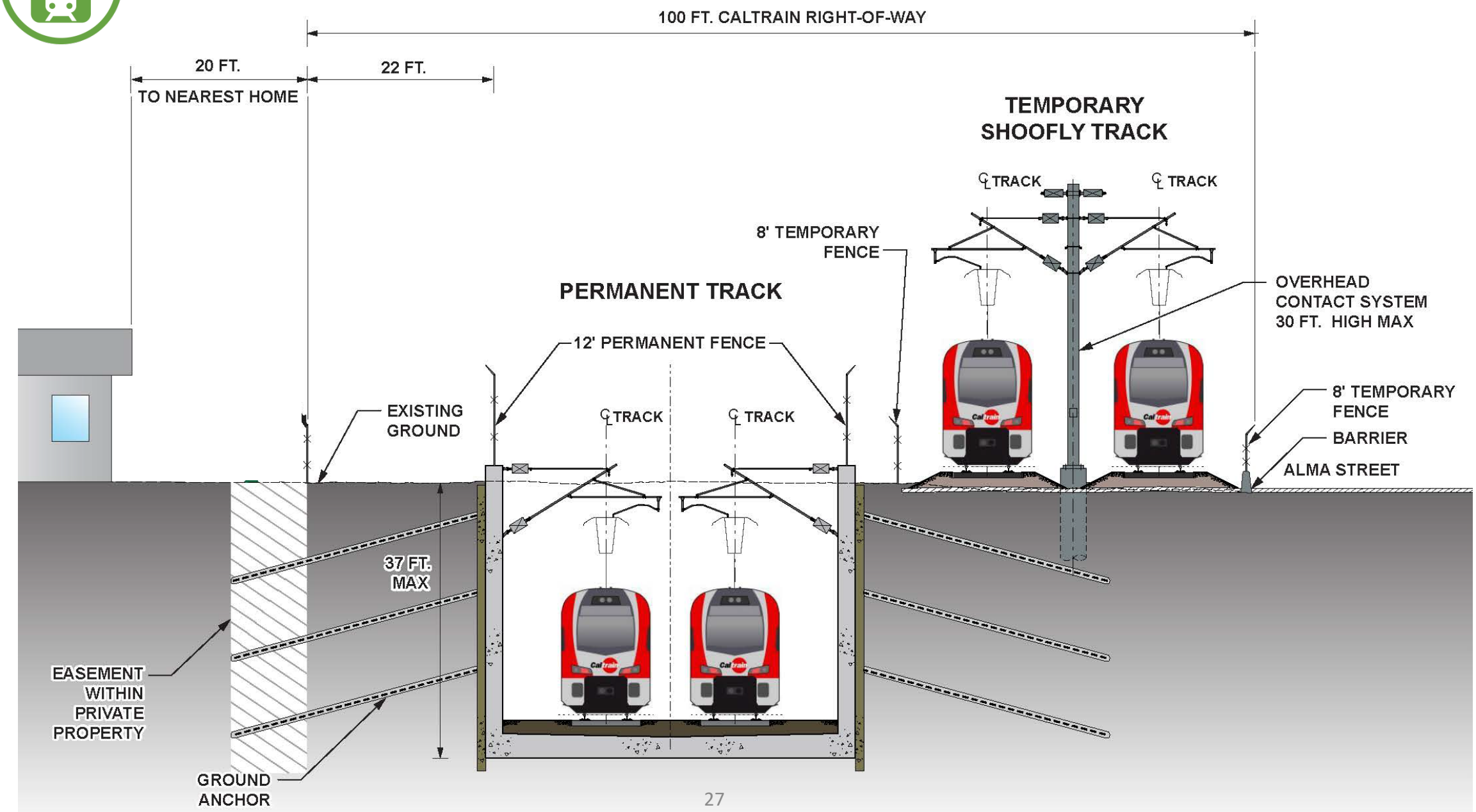
Trench Example Section with Temporary Track – Phase 1



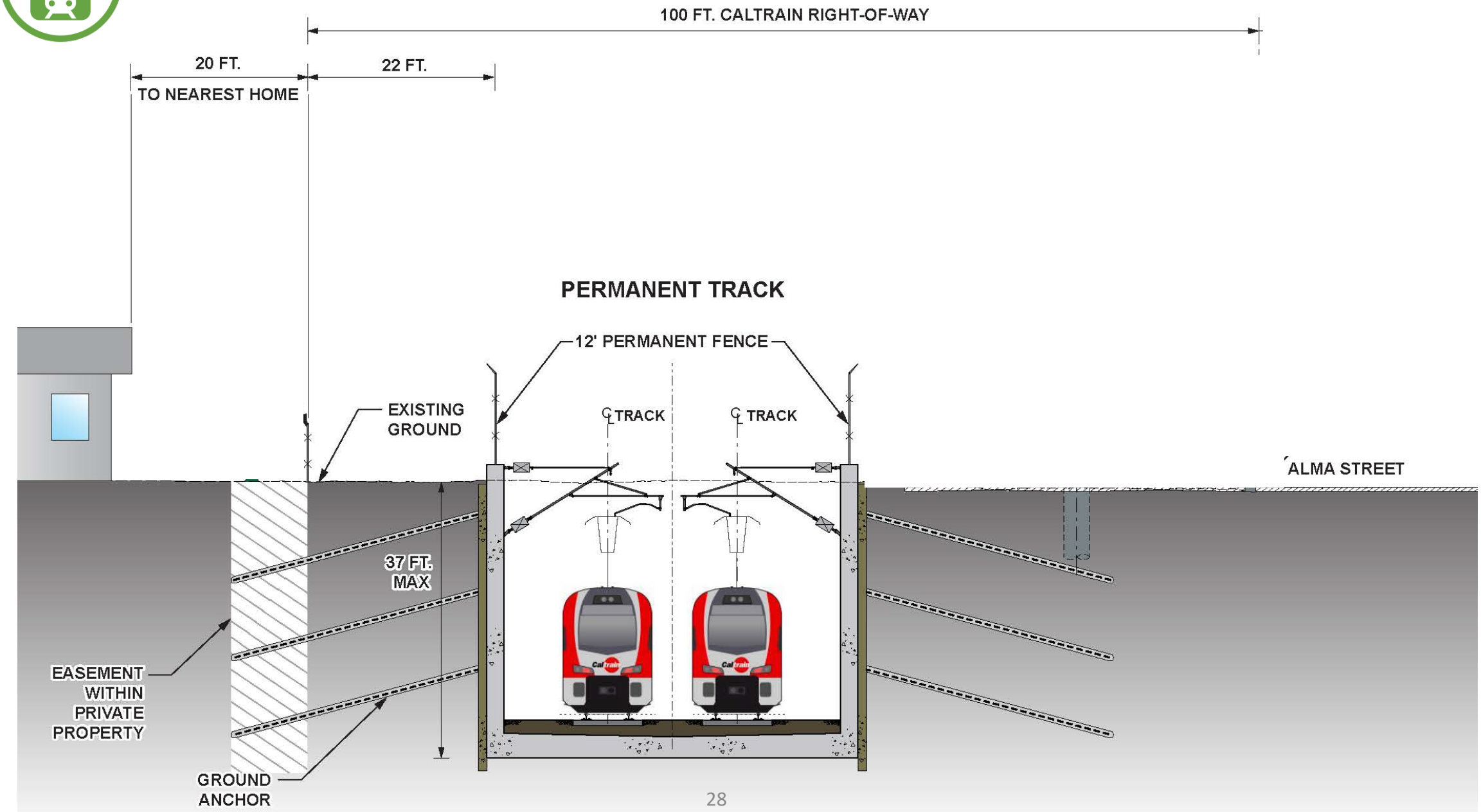
Trench Example Section with Temporary Track – Phase 2



Trench Example Section with Temporary Track – Phase 3



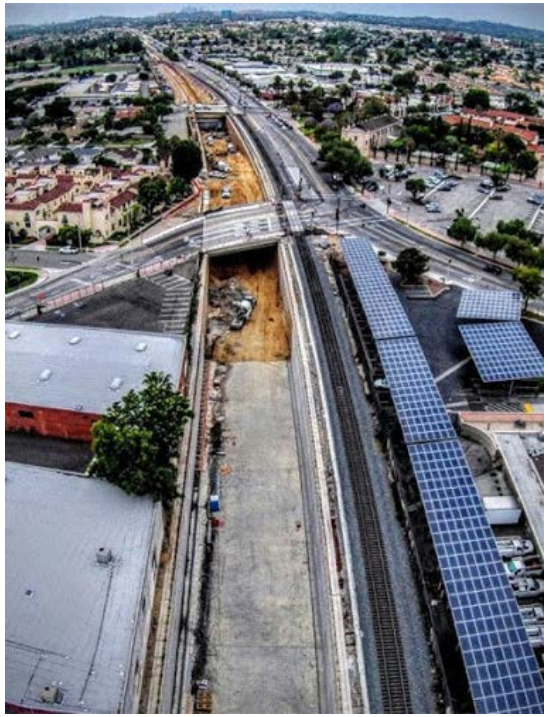
Trench Example Section with Temporary Track – Phase 4



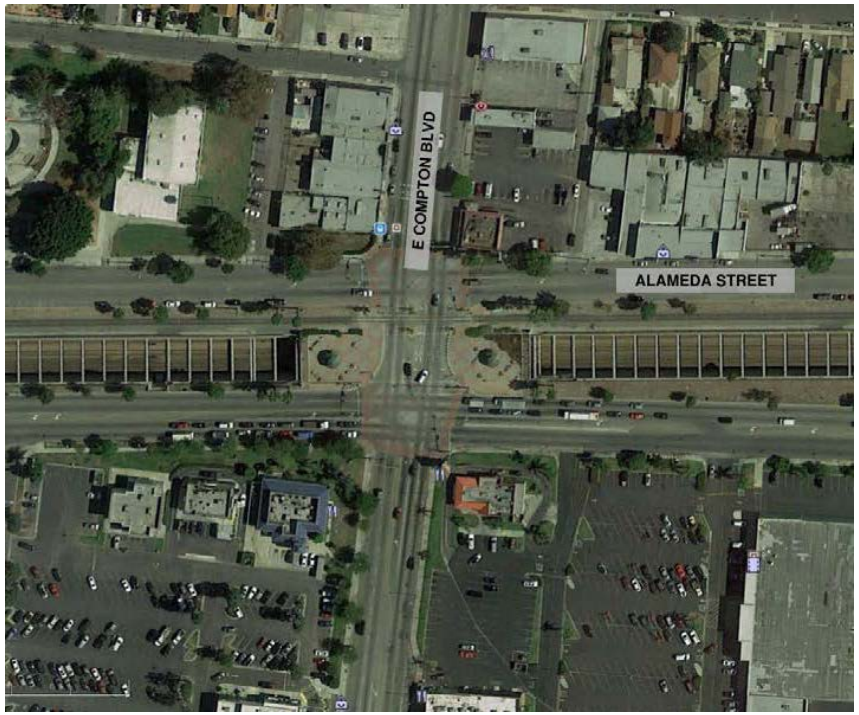
Trench Animation

Animation Link: https://vimeo.com/305137732

Example Trench Grade Separations



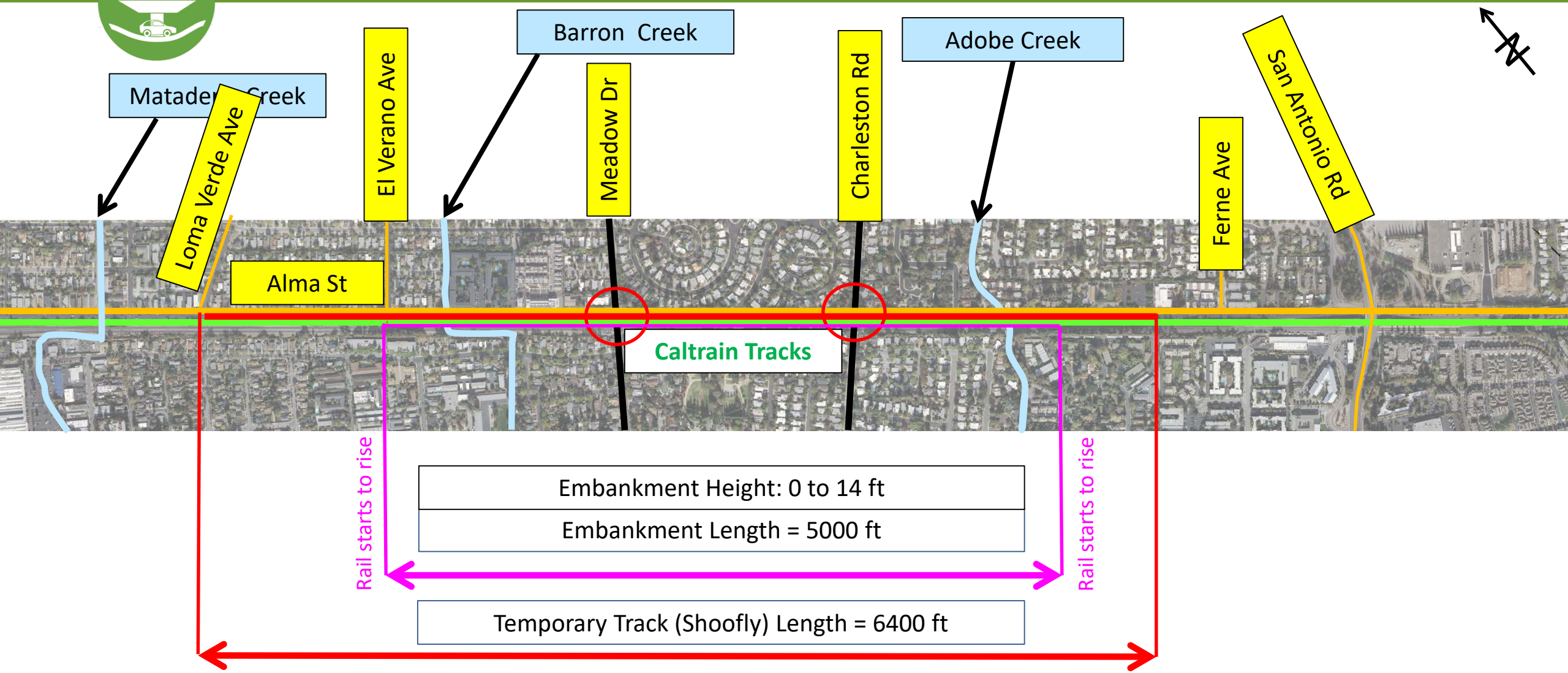
Alameda Corridor East
(ACE) Project
San Gabriel, CA



Alameda Corridor East (ACE) Project
Compton, CA

Reno Trench
Reno, NV

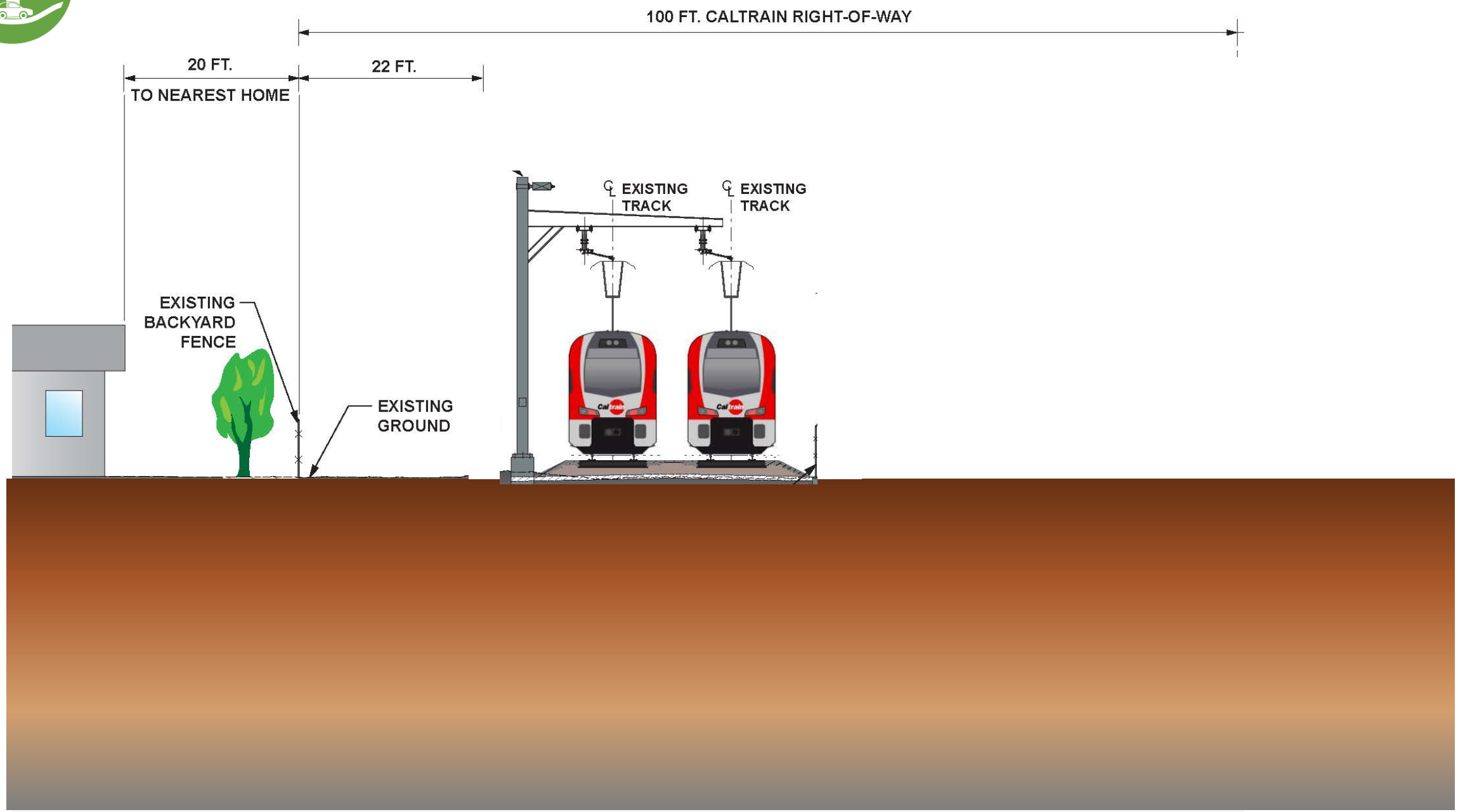
Meadow / Charleston Hybrid



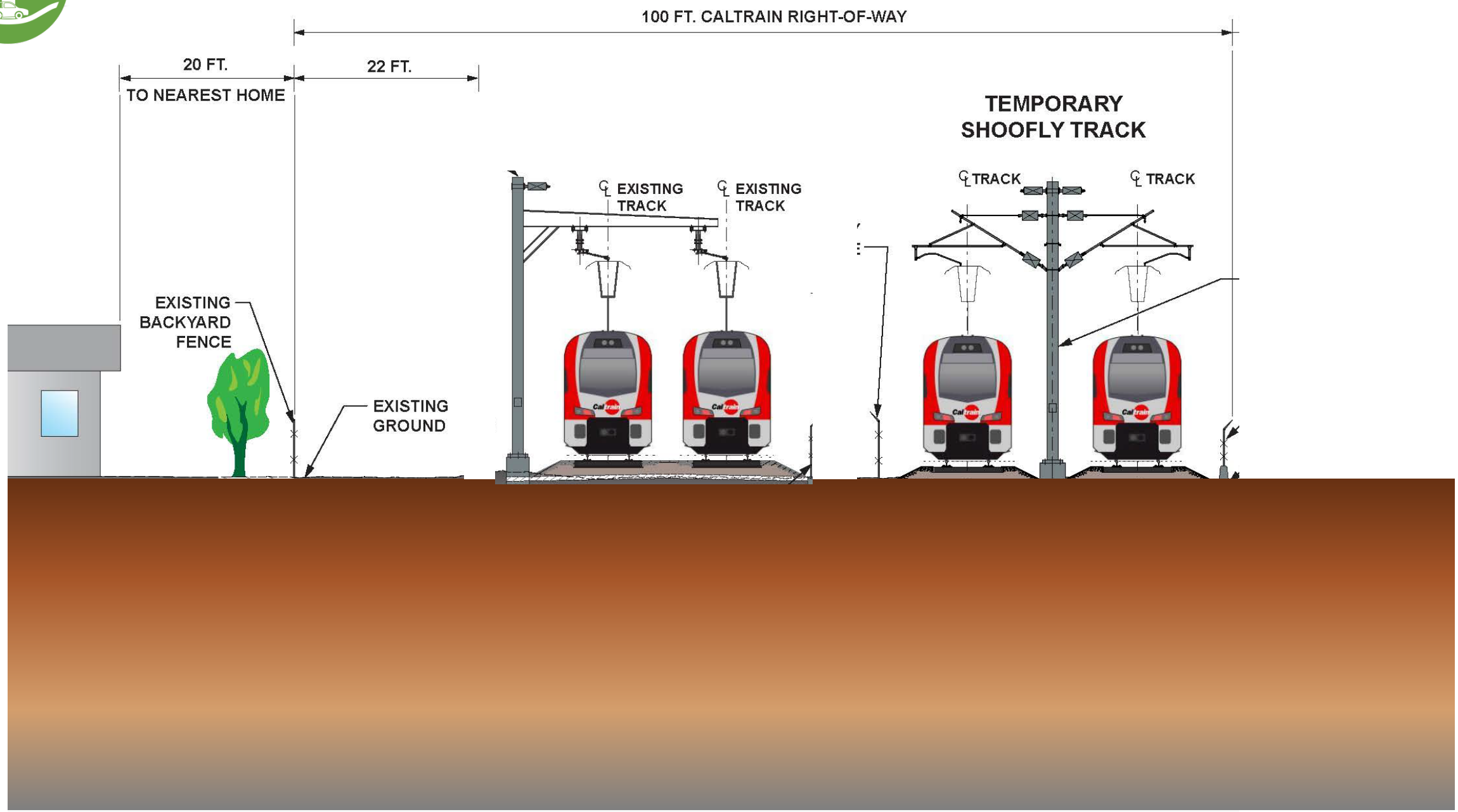
To San Francisco

To San Jose

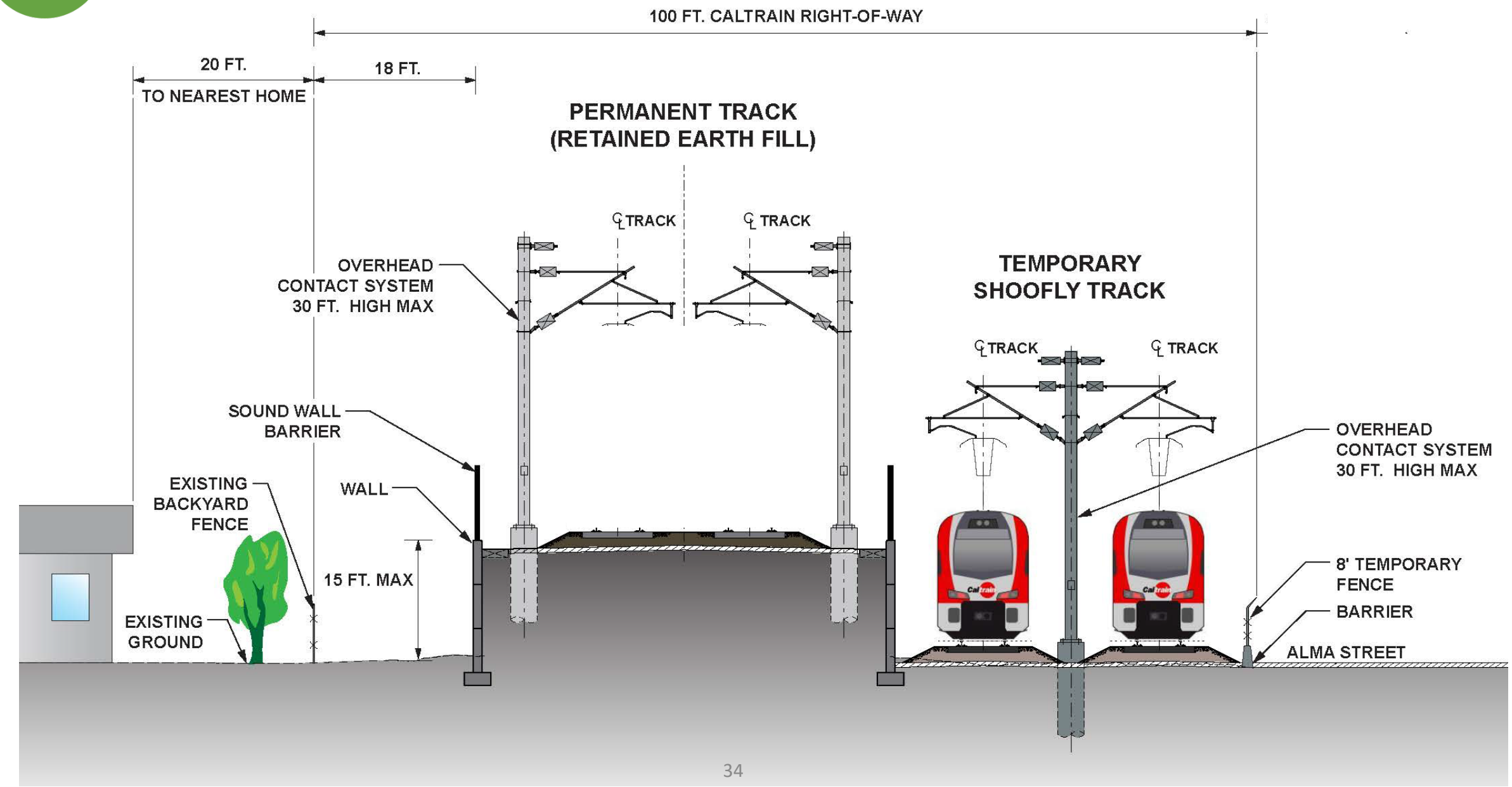
Hybrid Example Section - Existing



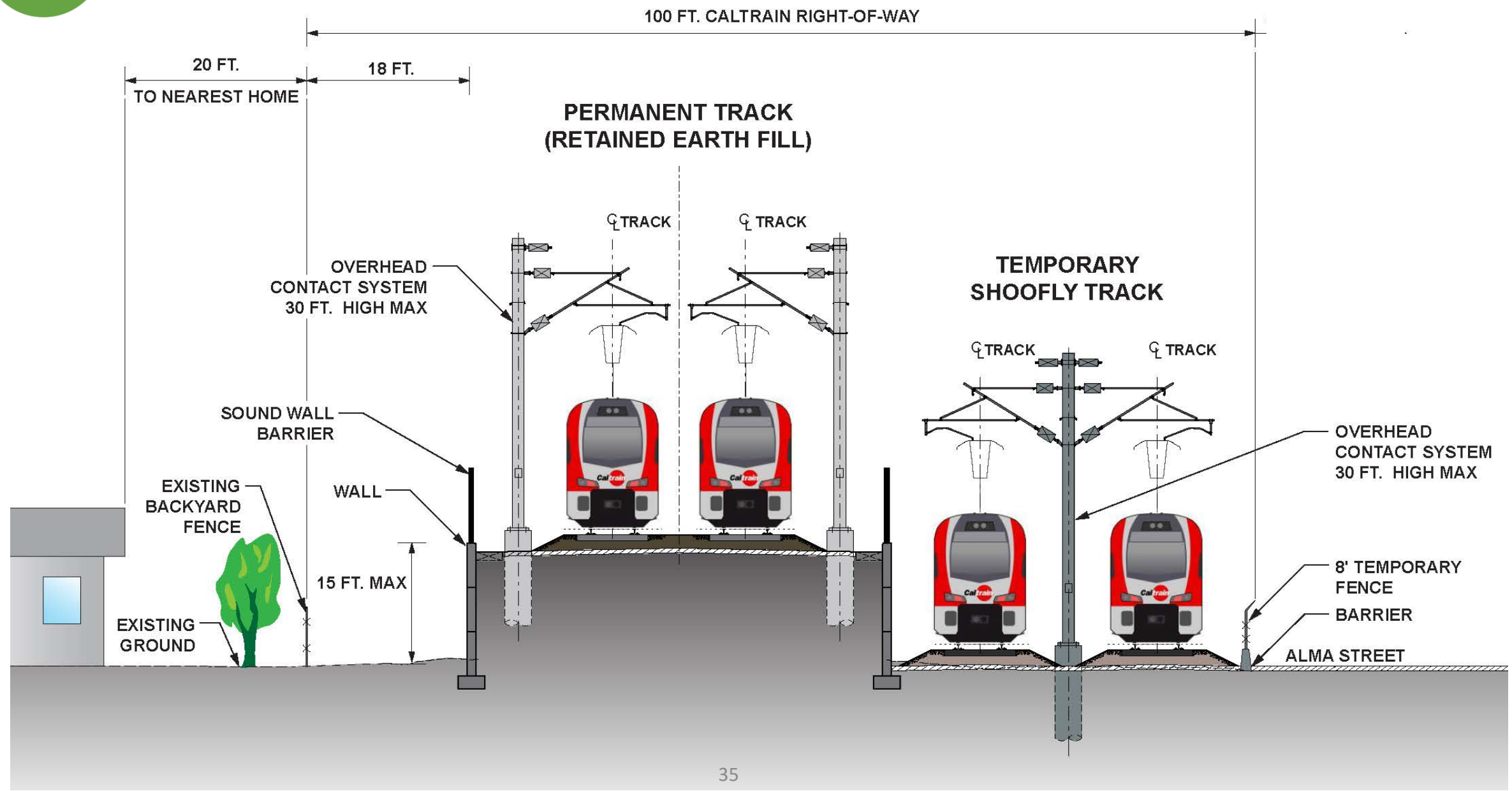
Hybrid Example Section with Temporary Track – Phase 1



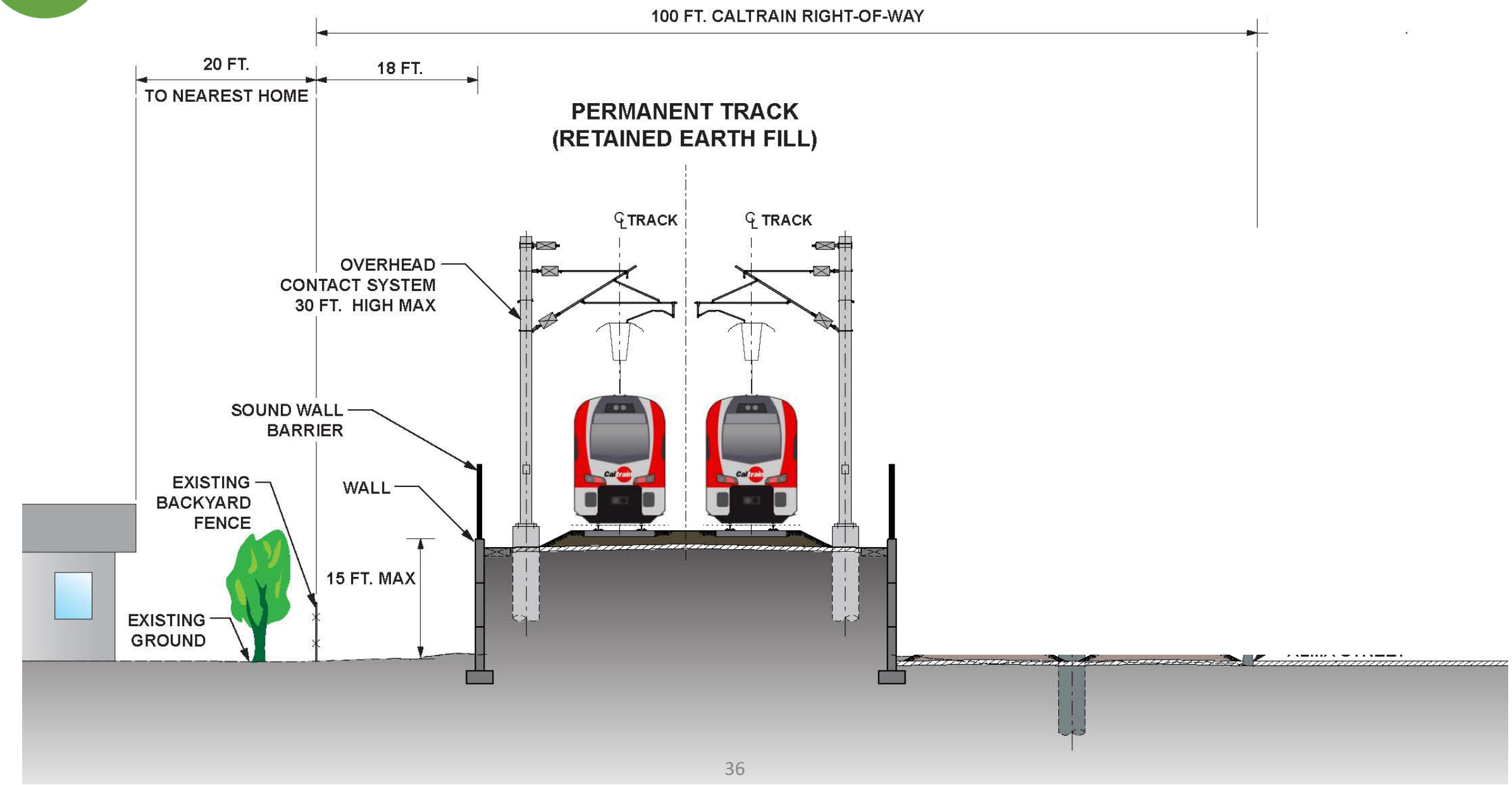
Hybrid Example Section with Temporary Track – Phase 2



Hybrid Example Section with Temporary Track – Phase 3



Hybrid Example Section with Temporary Track – Phase 4



Hybrid Animation

Animation Link: https://vimeo.com/305134819

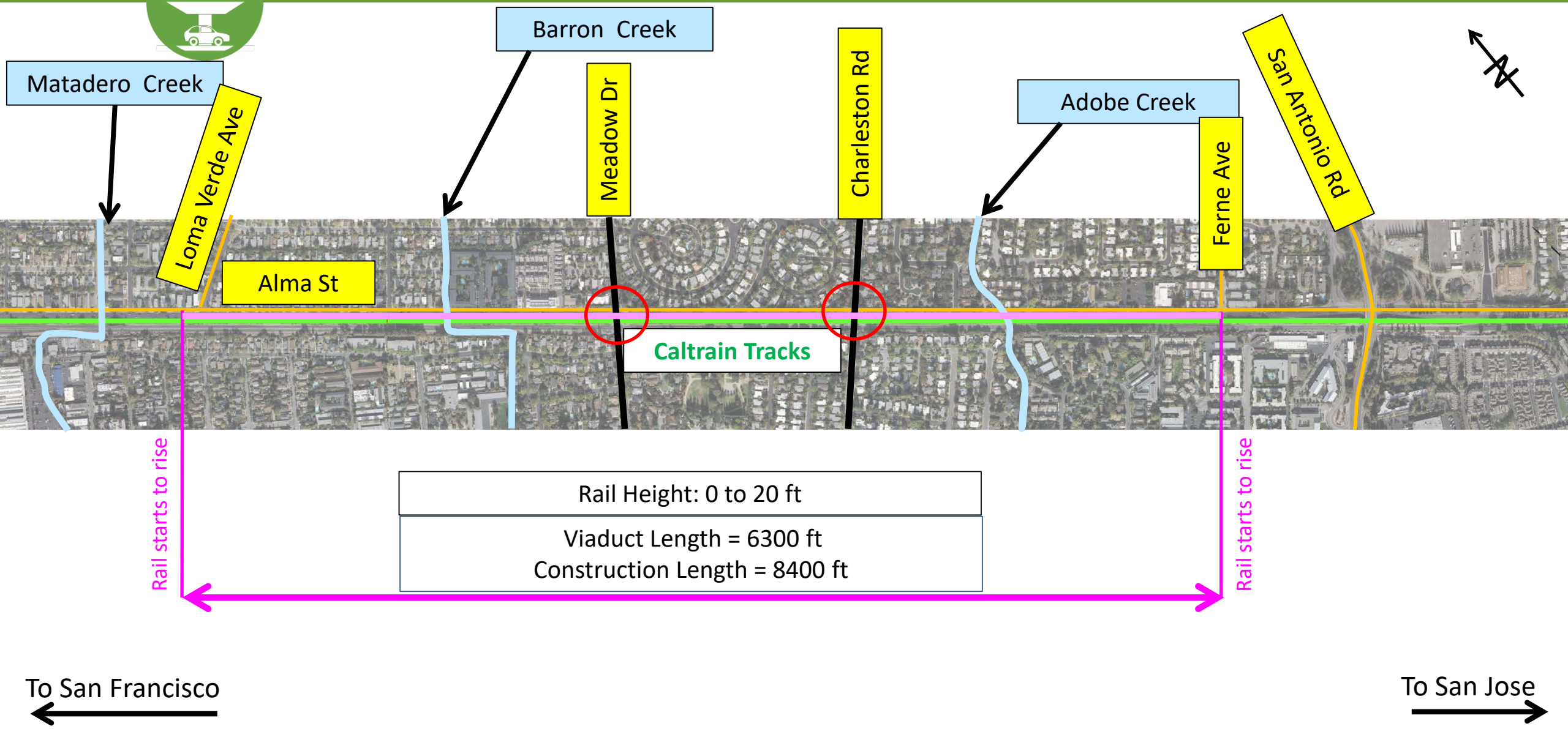
Example Hybrid Grade Separations

Holly Street, San Carlos

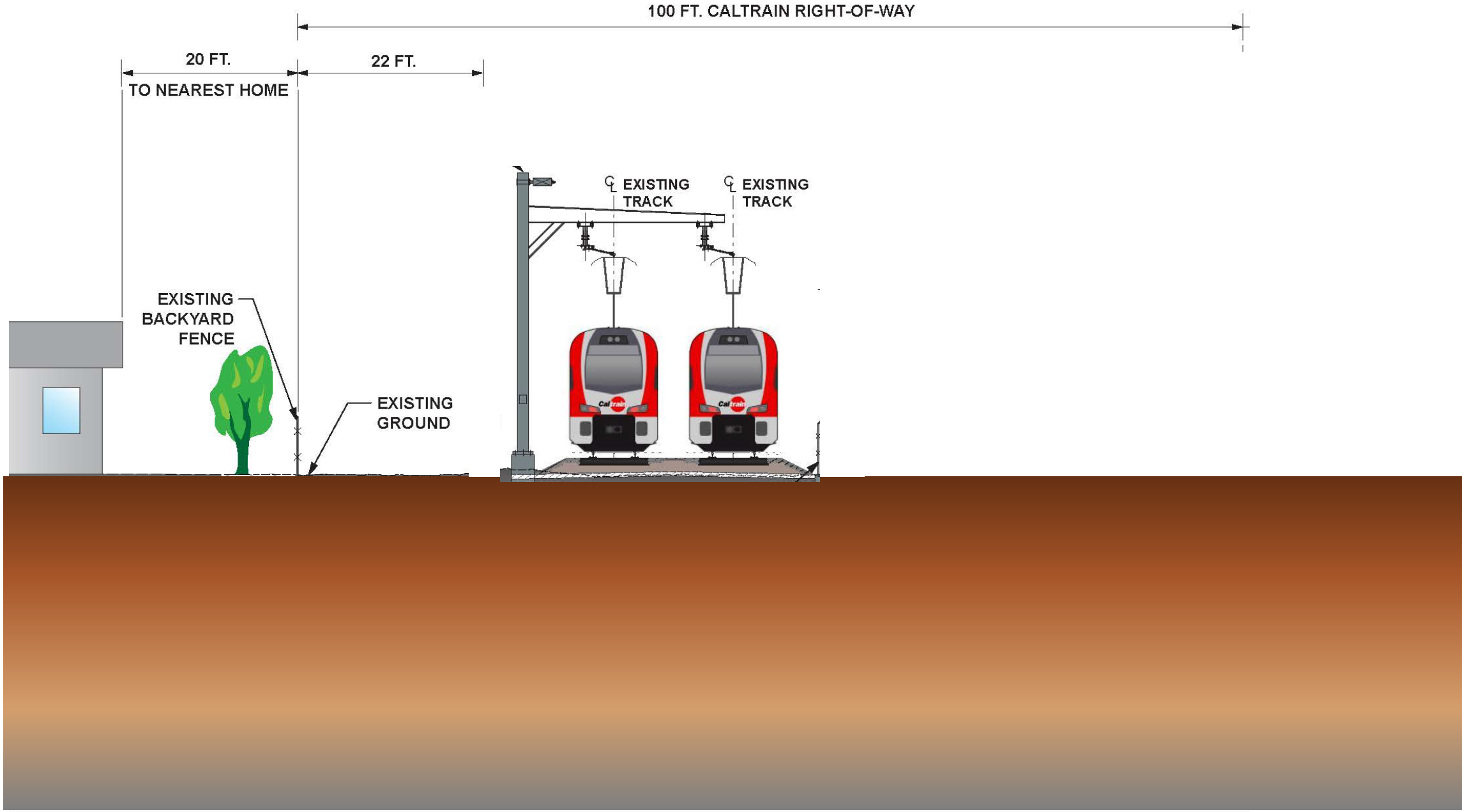
Ralston Ave, Belmont

42nd Ave, San Mateo

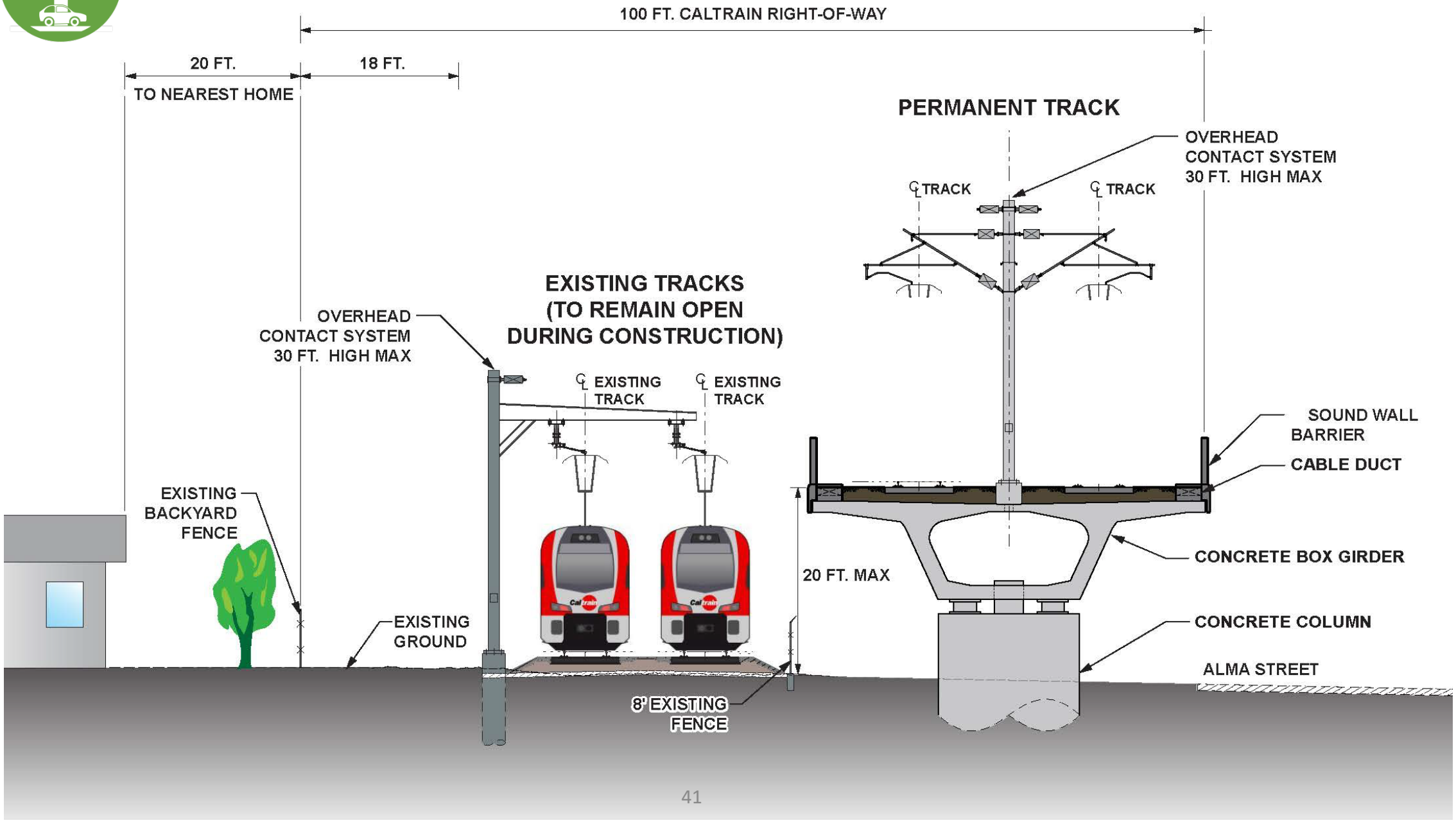
Meadow / Charleston Viaduct



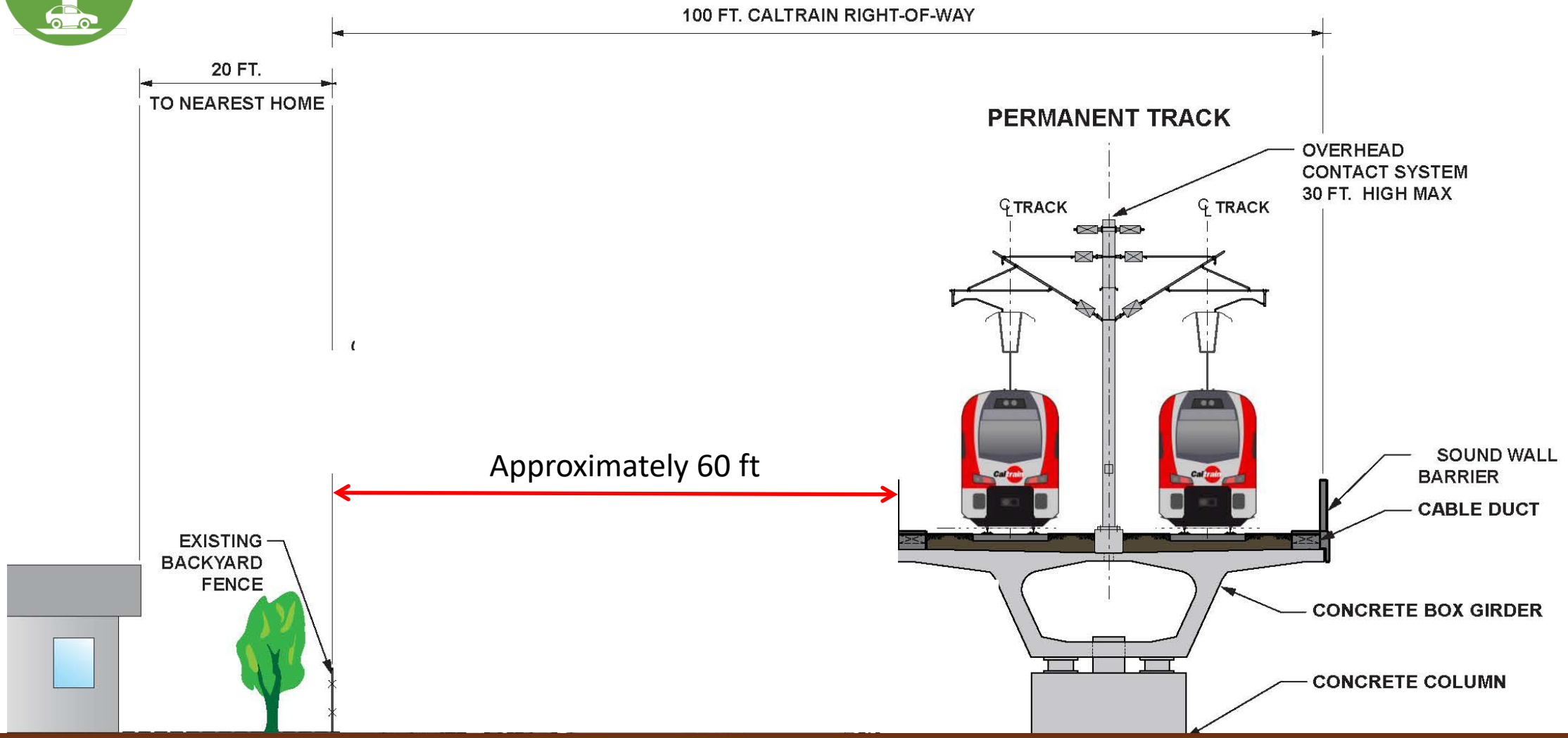
Viaduct Example Section - Existing



Viaduct Example Section – Phase 1



Viaduct Example Section – Phase 2

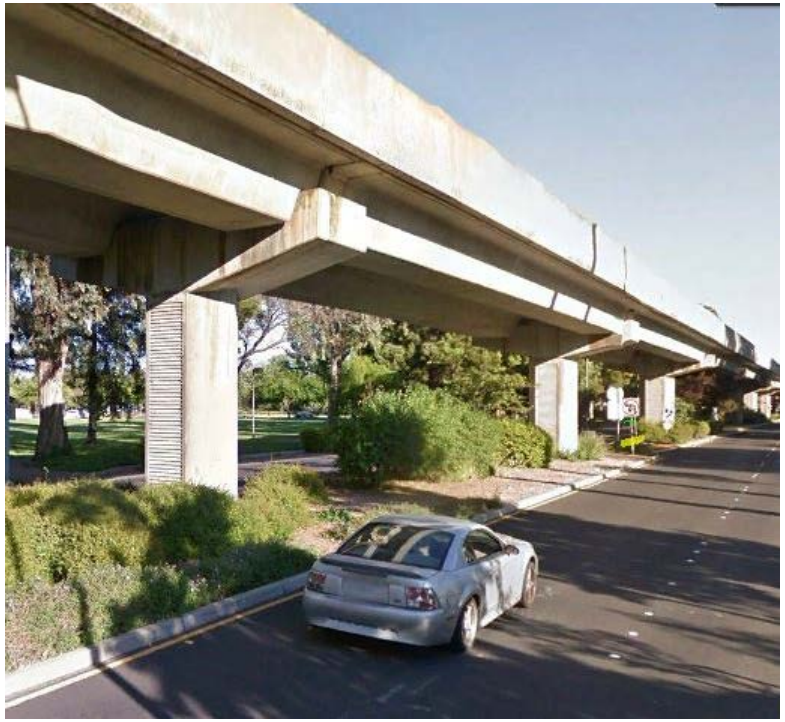


Viaduct Animation

Animation Link: https://vimeo.com/305138181

Example Viaduct Grade Separations

BART Viaduct, El Cerrito, CA



BART Viaduct, Concord, CA

Seattle Sound Transit, Tukwila, WA

Evaluation Criteria

Refining Process for Decisions

Tier 1 Criteria: Most Important

Technical

- East-West connectivity: facilitate movement across the corridor for all modes of transportation
- Traffic congestion: reduce delay and congestion for automobile traffic at rail crossings
- Ped/Bike circulation: provide clear and safe routes for pedestrians and bicyclists seeking to cross the rail corridor, separate from automobile traffic
- Rail operations: support continued rail operations and Caltrain service improvements

Financial

- Cost: finance with feasible funding sources

Tier 2 Criteria: Also Important

- Environmental impacts: reduce rail noise and vibration along the corridor
- Environmental impacts: minimize visual changes along the rail corridor
- Local access: maintain or improve access to neighborhoods, parks, schools and other destinations along the corridor while reducing regional traffic on neighborhood streets

Property

- Cost: minimize right-of-way acquisition by eminent domain

Construc-tion

- Construction: minimize disruption and the duration of construction

CITY OF PALO ALTO

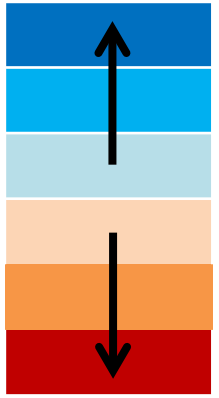
Adopted by City Council September 6, 2017

Meadow + Charleston Evaluation Matrix

	Criteria	Trench (MCT)	Hybrid (MCL)	Viaduct (MCV)	Comments
A	Improve East-West Connectivity				❑ Same connectivity for all three in final configuration
B	Reduce traffic congestion and delays				❑ Same traffic improvements for all three in final configuration
C	Provide clear, safe routes for pedestrians and bikes				❑ Reduced conflicts for bikes/peds for all three in final configuration
D	Support continued rail operations				❑ Viaduct can be built without a temporary railroad track (shoofly) ❑ Viaduct and Hybrid do not increase long-term maintenance or risk to operations ❑ Trench will have high maintenance costs and risks to train operations
E	Finance with feasible funding sources				❑ Based on estimated range of construction costs (K)
F	Minimize right-of-way acquisition				❑ Trench requires subsurface acquisition for structural elements and impacts to creeks will require right of way to construct pumps ❑ Hybrid requires driveway modifications ❑ Viaduct does not impact private properties
G	Reduce rail noise and vibration				❑ All alternatives eliminate train horn noise and warning bells ❑ All options have some degree of noise impact/improvement, such as: • In a trench, noise could reflect off walls and impact properties farther away – can be mitigated • In a viaduct and hybrid, wheel noise could radiate out – can be mitigated
H	Maintain or improve local access				❑ Same improvement for all three in final configuration
I	Minimize visual changes along the corridor				❑ Trench has train below grade – landscaping option limited to bushes or plants with shallow root systems ❑ Hybrid has train approximately 15 feet above grade – landscaping with trees for screening feasible ❑ Viaduct has train approximately 20 feet above grade – landscaping with trees for screening feasible
J	Minimize disruption and duration of construction	6 years	4 years	2 years	❑ Trench has extended road closures at Meadow and Charleston during construction ❑ Hybrid has extended road reductions at Alma, Meadow and Charleston during construction ❑ Viaduct has minimal road closures (weekend / nights only)
K	Order of Magnitude Cost	$800M to 950M*	$200M to $250M*	$400M to 500M*	*** Total Preliminary Construction Costs in 2018 dollars (Subject to Change)**

Legend:

Improvement



Impact

Meadow + Charleston Engineering Impacts

Engineering Impacts		Trench (MCT)	Hybrid (MCL)	Viaduct (MCV)
J	Creek/Drainage Impacts	❑ Requires diversion of Adobe and Barron creeks resulting in the need for pump stations. ❑ Numerous regulatory agency approvals required for creek diversion. ❑ Pump stations also required to dewater the trench. ❑ Increased risk of flooding due to pump stations.	❑ Pump stations required for lowered roadways. ❑ Increased risk of flooding due to pump stations.	❑ No significant creek or drainage impacts.
K	Long Term Maintenance	❑ Increased maintenance costs due to: •Pump stations for creek diversions •Pump stations for trench dewatering •Below ground railroad alignment.	❑ Increased maintenance costs due to: •Pump stations for trench dewatering •Above ground railroad alignment with embankments and undercrossing structures.	❑ Increased maintenance costs due to: •Above ground railroad alignment with embankments and viaduct structures.
L	Utility Relocations	❑ Major utility relocations for lowered railroad.	❑ Major utility relocations for lowered roadways.	❑ No major utility relocations.
M	Railroad Operations Impacts during Construction	❑ Temporary track (shoofly) is required.	❑ Temporary track (shoofly) required, but a bit shorter than the trench shoofly.	❑ No temporary track (shoofly) required.
N	Local Street Circulation Impacts during Construction	❑ Removal of right turn lanes on Alma St at Meadow and Charleston; however, movements still allowed. ❑ Closes Meadow while Charleston roadway bridges are constructed and visa versa.	❑ Removal of right turn lanes on Alma St at Meadow and Charleston; however, movements still allowed. ❑ Alma, Charleston, and Meadow reduced to 2 lanes.	❑ Reduced lane widths on Alma St, north of Meadow and south of Charleston. ❑ Possible nighttime closures of Meadow and Charleston.
O	Caltrain Design Exceptions Needed	2% grade on track required. Maximum allowed by Caltrain is 1%.	Temporary vertical clearance of 12 feet at undercrossing structures during construction. Minimum allowed by Caltrain is 15.5 feet.	1.4% grade on track required. Maximum allowed by Caltrain is 1%.

Meadow + Charleston – Trench

Community Identified Likes

- Bike/pedestrian patterns remain similar to existing (at-grade)
- May reduce rail noise
- Less visual impact with trains below existing grade between Charleston and Meadow

Community Identified Dislikes

- Easements required to support trench retaining walls (ground anchors)
- Limitations on landscaping (no trees)
- Possible flooding and noise impacts related to pumping stations for creek diversions
- Closures of Charleston while Meadow roadway bridges are constructed and vice versa

Meadow + Charleston – Hybrid

Community Identified Likes

- Minimal right-of-way impacts with only minor driveway modifications
- Opportunity to restore landscaping with trees at completion of construction

Community Identified Dislikes

- May increase rail noise
- Visual impact with raised railroad
- Severe impacts traffic during construction (2 lanes on Alma, Charleston, and Meadow)

Meadow + Charleston – Viaduct

Community Identified Likes

- No private property right-of-way impacts
- Minimal impact to traffic circulation during construction
- Opportunities for landscaping and other uses of land under viaduct

Community Identified Dislikes

- May increase rail noise
- Visual impact with raised railroad

Staff Recommendation

A. Separate from study all alternatives for the Palo Alto Avenue crossing (closure and hybrid) and include Palo Alto Avenue in a separate comprehensive planning effort

B. Separate from study the bicycle and pedestrian crossing of the Caltrain corridor in the vicinity of the Loma Verde Avenue and assess feasibility in a future study

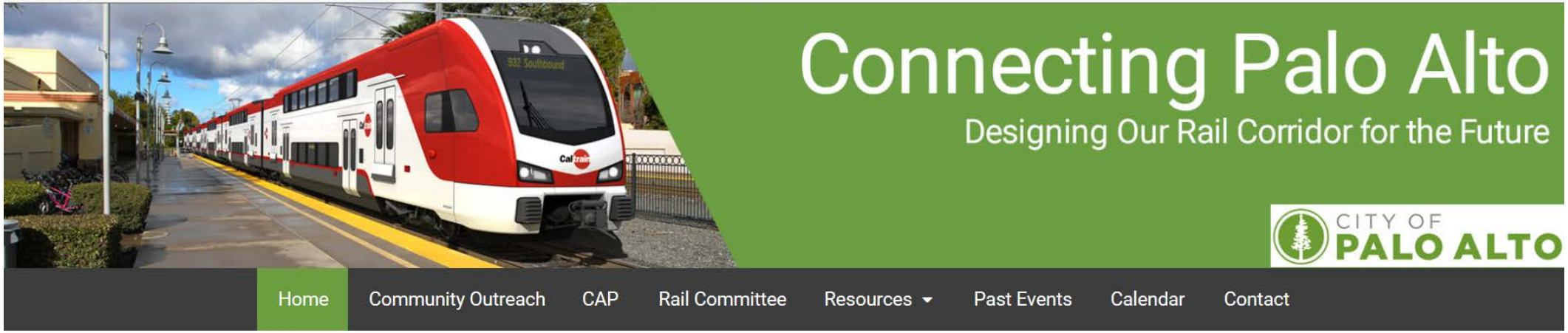
C. Address the Rail Committee's recommendation regarding a tunnel by modifying the alternative to be South of Oregon Expressway only and further explore the Scope and Budget for an alternative with freight trains on the surface and passenger trains underground for the Meadow and Charleston crossings

Staff Recommendation

D. Adopt a Modified List of the Grade Separation Alternatives:

1. SOUTH PALO ALTO | Rail Tunnel
2. CHURCHILL AVE | Full or Partial Closure and Add Improvements (CAX)
3. MEADOW DR & CHARLESTON RD | Hybrid (MCL)
4. MEADOW DR & CHARLESTON RD | Rail Trench (MCT)
5. MEADOW DR & CHARLESTON RD | Viaduct (MCV)

Stay Engaged



Visit our website at: www.cityofpaloalto.org/ConnectingPaloAlto

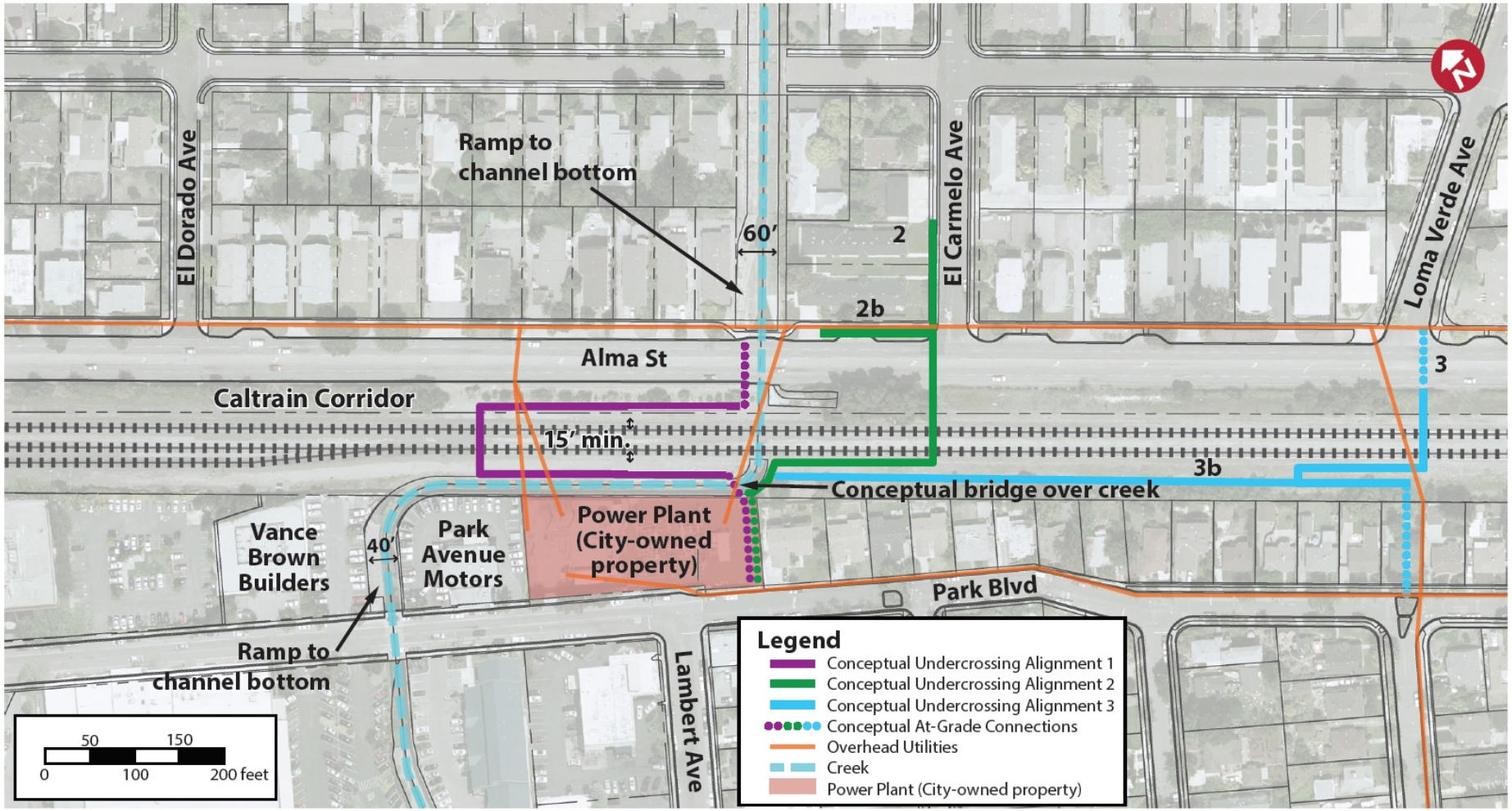
Contact us at:

transportation@cityofpaloalto.org

(650) 329-2520

Thank You

Loma Verde Ave. Bicycle/Pedestrian Undercrossing Options



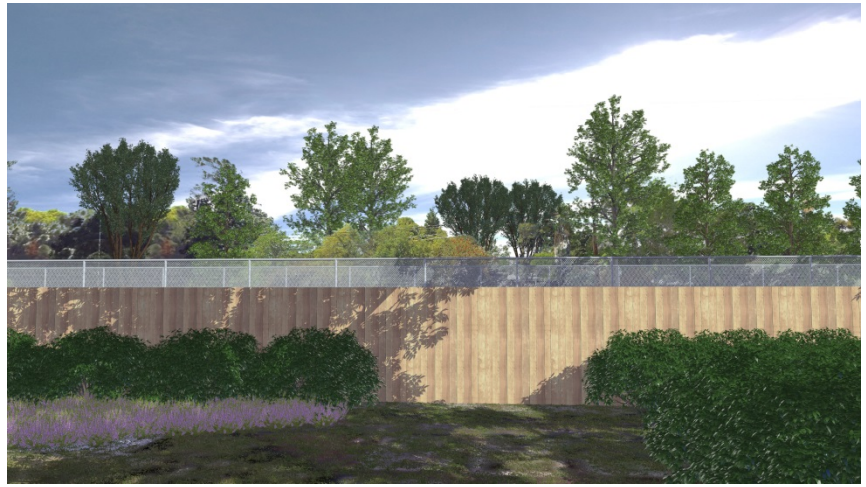
Source: Midtown Connector Feasibility Study, 2016

Meadow + Charleston - Trench

Meadow + Charleston - Hybrid

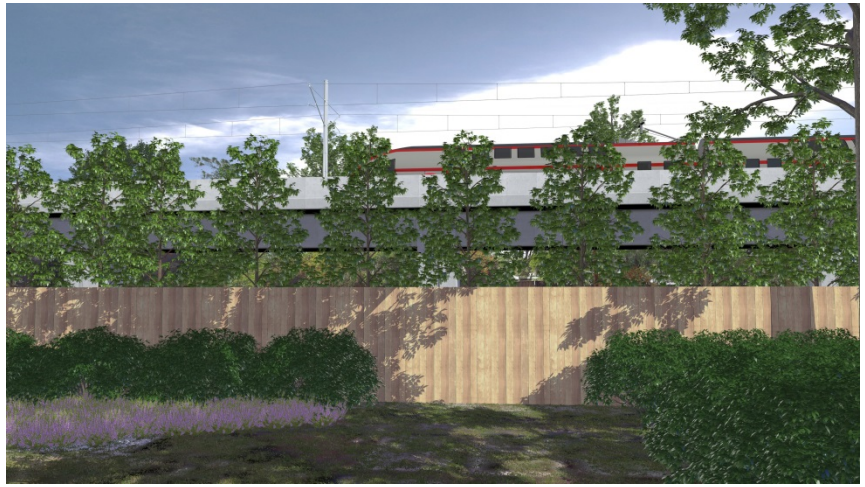
Meadow + Charleston - Viaduct

Renderings from Backyards



Meadow/Charleston Trench

Meadow/Charleston Hybrid



Meadow/Charleston Viaduct