



# SAN PABLO AVENUE BRIDGE REPLACEMENT PROJECT



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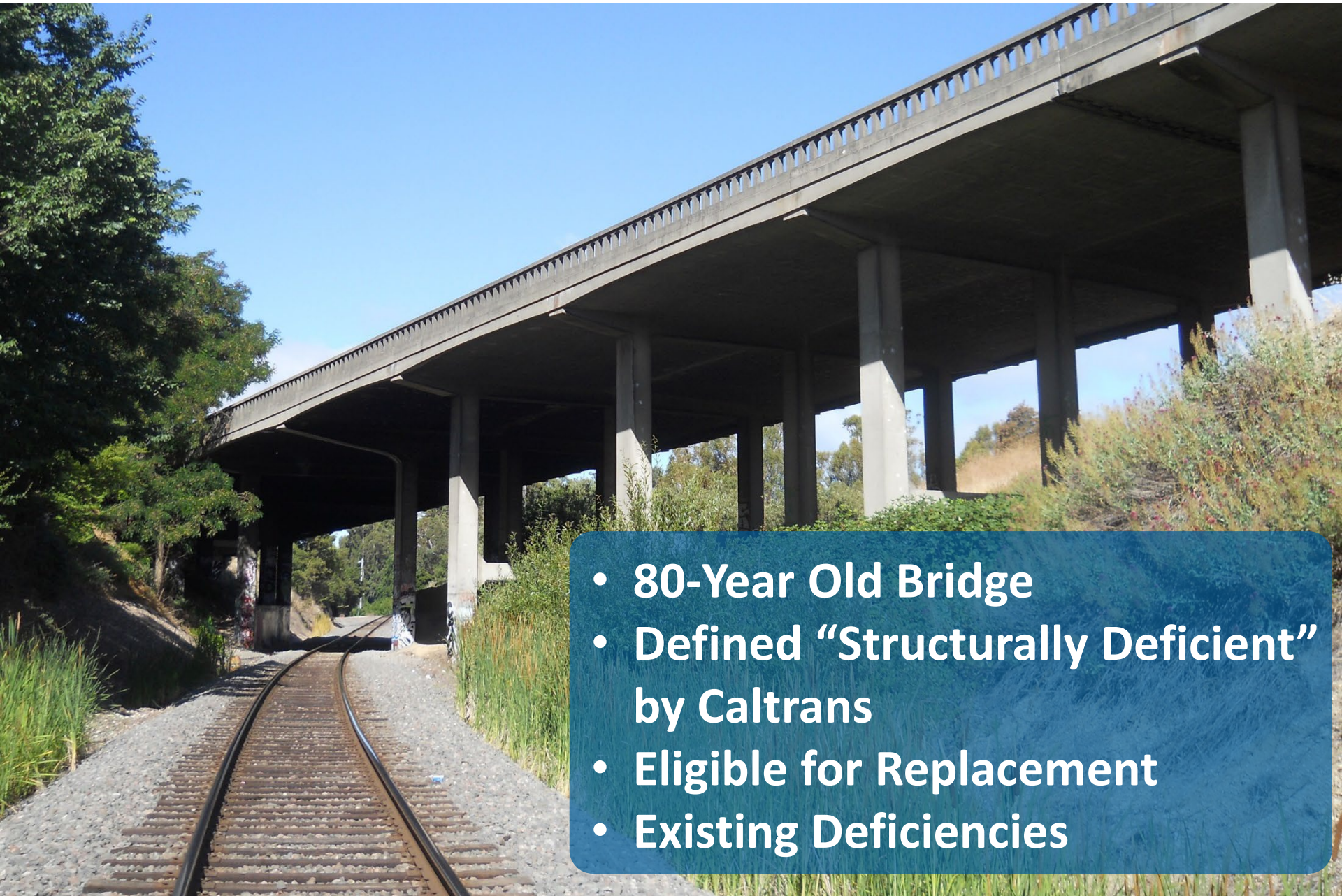
Provide a Safe, Modern  
Bridge and Roadway That  
Enhances and Supports  
Multi-Modal Transportation

Maintain four vehicular lanes  
Bike/pedestrian facilities to current standards





# Existing Bridge



- 80-Year Old Bridge
- Defined “Structurally Deficient” by Caltrans
- Eligible for Replacement
- Existing Deficiencies

# History

- **Project Study Report Completed in 2015**
  - ✓ Documented the “structural deficiencies” of the bridge
- **Highway Bridge Program (HBP) Funding Approved**
  - ✓ Safety program that provides federal funds to local agencies to replace and rehabilitate deficient locally owned public highway bridges
- **Matching Fund Sources Secured Through CCTA and WCCTAC**



- **Funding Package Includes Federal Funds**
  - ✓ Requires formal consultant procurements
  - ✓ Requires NEPA clearance
- **Quincy Engineering Team Selected to Develop the Project**
- **Started Environmental and Preliminary Engineering Work in Spring 2020**
  - ✓ Working on initial tasks that will be the basis for starting the environmental studies
  - ✓ Agreements with railroad for entry and review





# Project Considerations & Challenges

## Project Challenges & Considerations



**Potential City of Pinole Staging Area**  
Staging area needed for contractor equipment during construction.



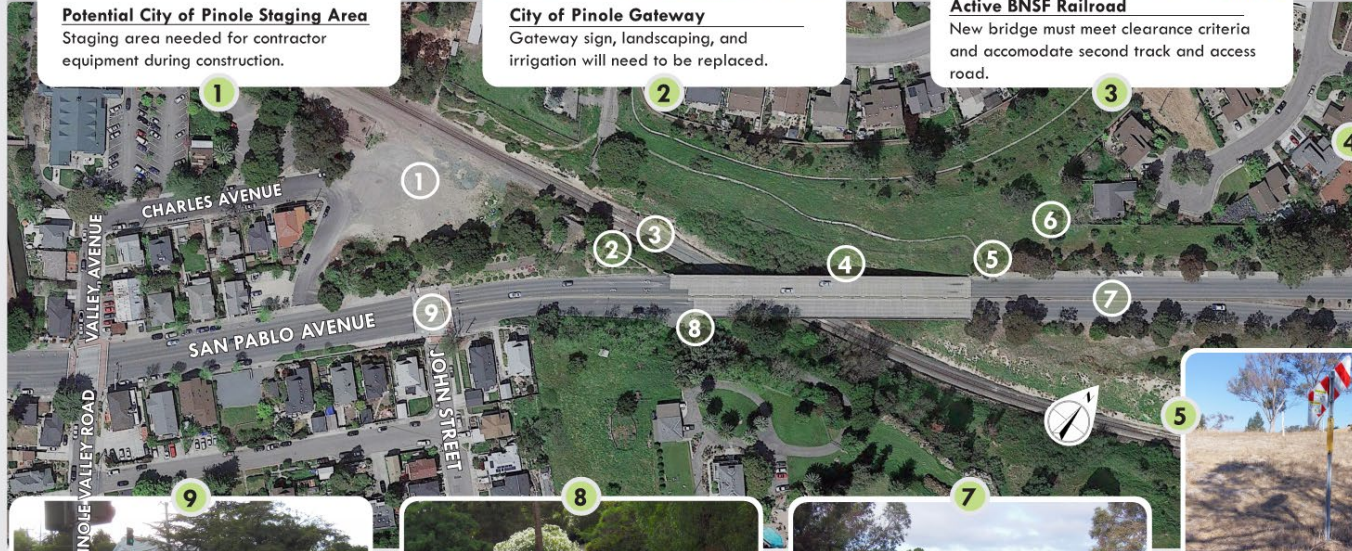
**City of Pinole Gateway**  
Gateway sign, landscaping, and irrigation will need to be replaced.



**Active BNSF Railroad**  
New bridge must meet clearance criteria and accommodate second track and access road.



**Telecommunications on North Side of Existing Bridge**  
Utilities must be protected in place or relocated (temporary or permanent).



**San Pablo Avenue/John Street Intersection & Charles Avenue**  
Modify intersection configuration with Charles Avenue and John Street to improve traffic operations.



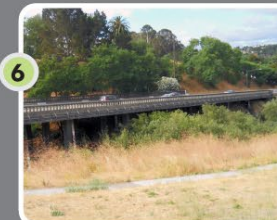
**Private Driveway at Southwest Corner of Existing Bridge**  
Driveway needs an improved access off San Pablo Avenue or needs to be relocated to John Street.



**San Pablo Avenue Traffic**  
Bridge construction is disruptive. Minimize disruptions using staged construction, intelligent transportation system (ITS), and/or Accelerated Bridge Construction (ABC).



**Underground Utilities**  
24" PG&E natural gas and 36" EBMUD water line located within City of Hercules parcel. New bridge and approach roadway should avoid these major utilities.



**Pedestrian Access**  
Project should be mindful of multimodal users. Existing trail will be connected to new sidewalk at northeast corner of the bridge.

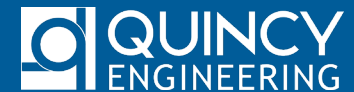




# Project Location

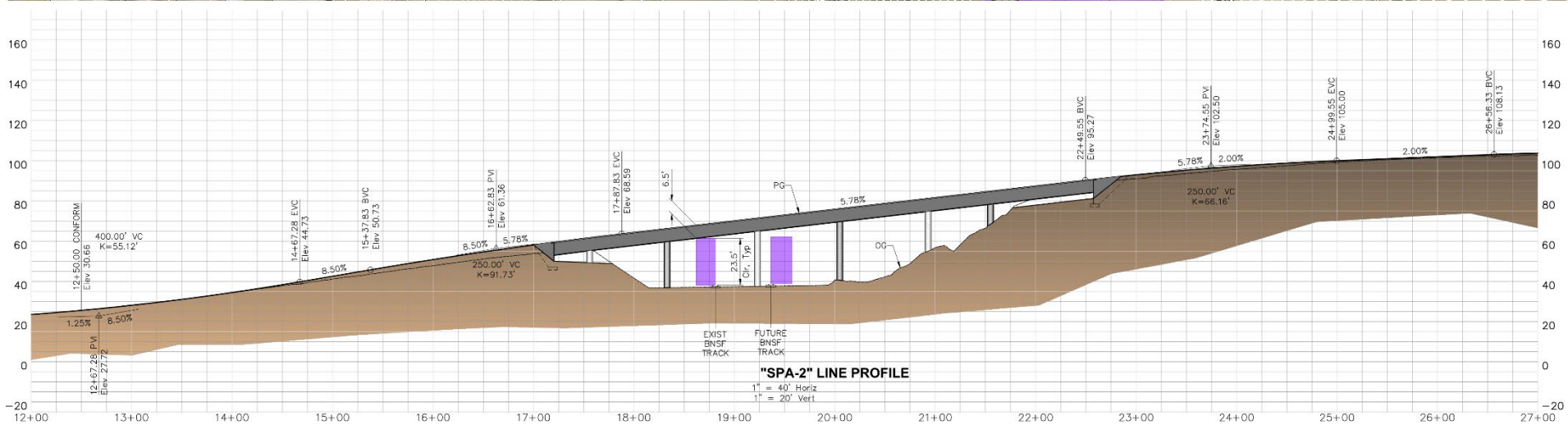
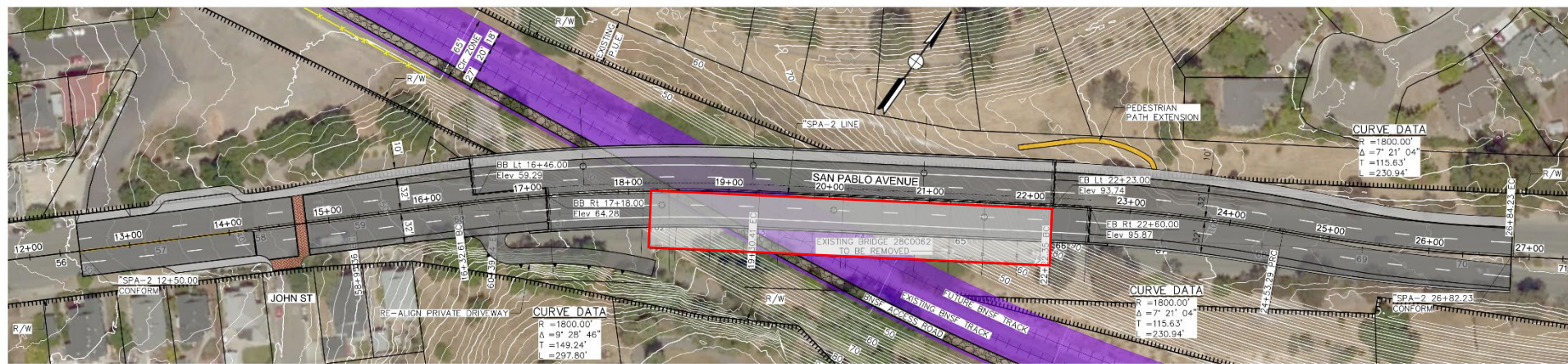


San Pablo Avenue Bridge Replacement Project





# Preliminary Alignment

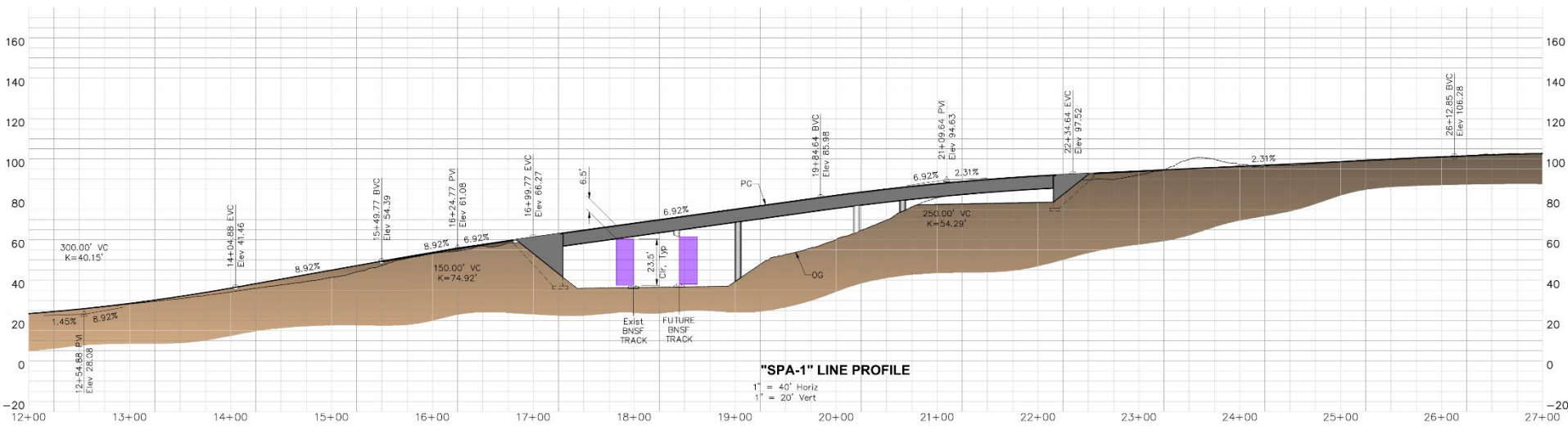
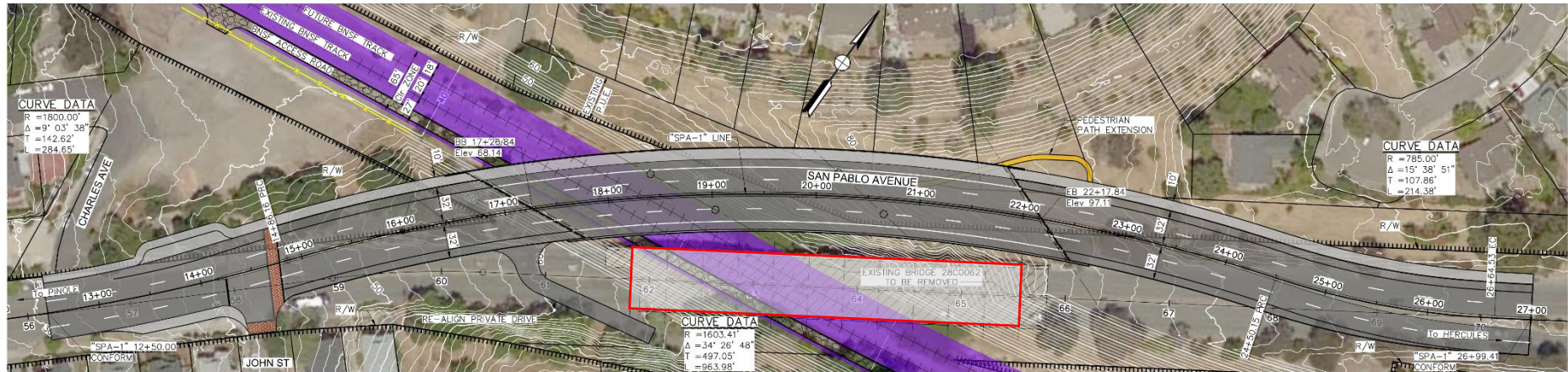


San Pablo Avenue Bridge Replacement Project



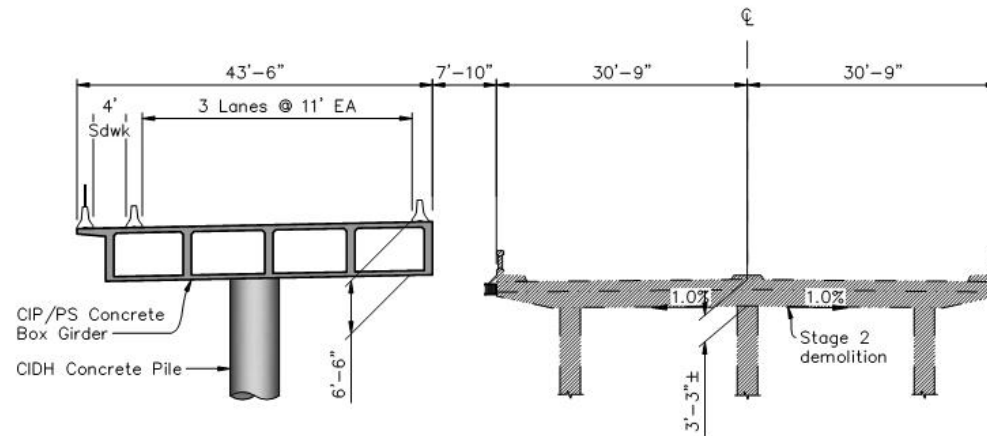


# Preliminary Alignment

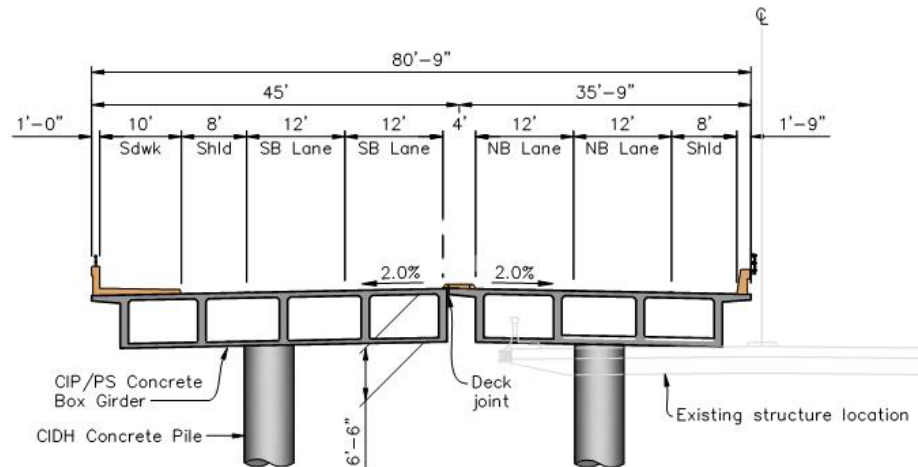




# Typical Construction Staging



SPANS 1, 3 & 4  
STAGING TYPICAL SECTION



SPANS 1, 3 & 4  
TYPICAL SECTION



# Bridge Types

ALT. #	# OF TRACKS	# ACCESS ROAD	S.S. TYPE	# OF CONST. STAGES	SKEW	S.S. Depth (ft.)	TEMP. VERT. CLR. (ft.)	IMPACT TO UTILITY CORRIDOR	IMPACT TO R/W	RDWY. SLOPE	COST	COMMENTS
1	2	1	Steel Girder	1	High	6	N/A	All to move	Biggest	Med. Raise	Very High	Highly skewed alt.
2	2	1	Steel Girder	2	High	6	N/A	Partial	Minor	Med. Raise	Very High	Highly skewed alt.
3	2	1	Steel or PC Girder	2	None	9	N/A	Partial	Minor	Steepest	Very High	Girders probably to long to erect
4	2	1	Steel Thru Girder	1	High	3	N/A	All to move	Biggest	Minor Raise	Extremely High	Due to rdwy. curve, bridge needs to be extra wide
5	2	1	Steel Thru Girder	2	High	3	N/A	Partial	Minor	Minor raise	Most Expensive	Due to rdwy. curve, bridge needs to be extra wide
6	1	0	CIP Slab	2	None	2.5	21.5	Partial	Minor	Minor Raise	Least Expensive	Difficult to get BNSF approval
7	2	1	CIP/PC Concrete	2	None	6.5	N/A	Partial	Minor	Med. Raise	High	<b>Likely Bridge Type</b>
8	2	1	Varies	1 or 2	High	Varies	N/A	Varies	Varies	Varies	Varies	Tall abut. eliminates span. Different str. types can be used





# Key Considerations During Construction

## Maintaining Traffic

- Signal modifications
- Pedestrian and bicycle access
- No disruption to bus service
- Maintain driveway access

## Timing of Utility Relocations (if needed)

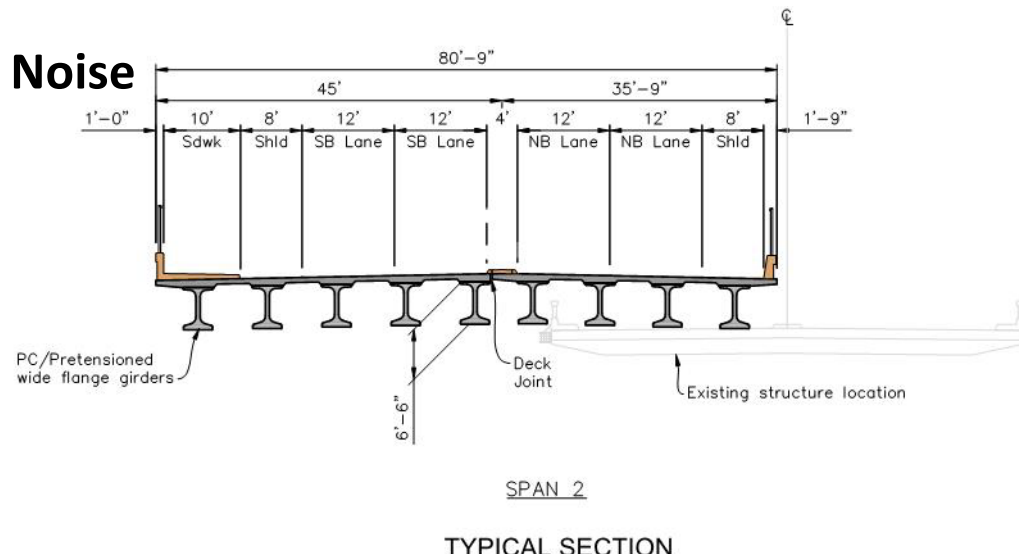
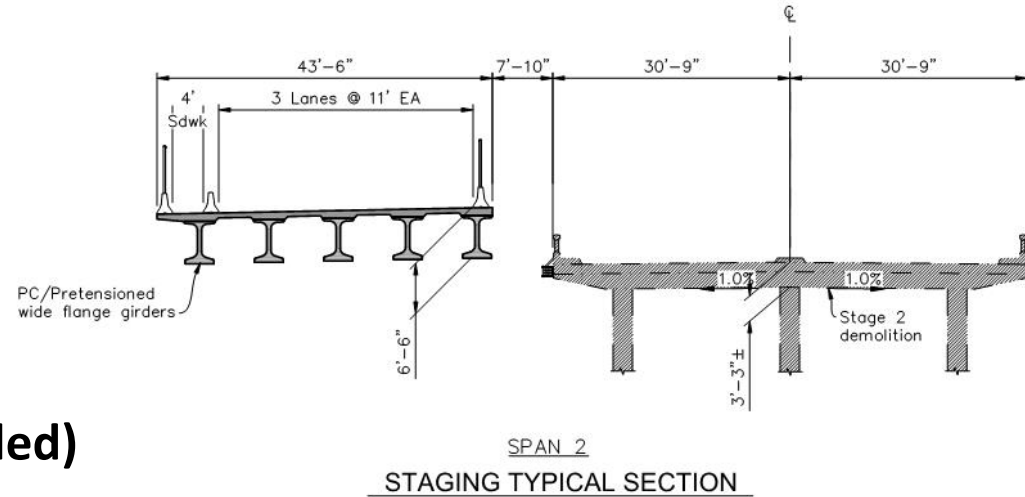
- Temporary relocation of lines on bridge

## Sensitive Receptors to Construction Noise

- Strict work windows

## Staging Area

- Use of BNSF and City parcels



- **Traffic Volumes Will Not Be Collected Due to COVID-Related Travel changes**
- **Historical Traffic Counts Will be Utilized**
- **Reliever Route for I-80**
- **Determine Traffic Impacts During Construction**
  - Five adjacent intersections to be evaluated
    - Four in Pinole
    - One in Hercules
  - Includes possible detours using adjacent roadway segments





# Potential Traffic Staging

## **Two-Lanes (One Lane in Each Direction)**

- Provide information to regional traffic to encourage alternate route (I-80)
- Maintains local traffic by encouraging regional traffic to stay on I-80

## **Two Lanes with Temporary Signals at Each End (Two Lanes in Each Direction)**

- Allow peak direction to have additional cycle time
- Additional delay for local traffic to provide for less impact to regional traffic

## **Three Lanes with Reversible Lane to Provide Two Lanes in Peak Direction (Outside the Box Alternative)**

- Maintains local traffic and provides for regional traffic



# Railroad Challenges & Considerations

**BNSF Requirements will  
Control Many Bridge  
Design Requirements**

- Updated BNSF Design Standards
- Temporary and Permanent Clearances
- Existing & Future Track Configurations
- Access to Tracks



**San Pablo Avenue Bridge Replacement Project**





# Environmental Considerations – Bridge Construction

## Cultural Resources

- Subsurface disturbance has potential to expose buried resources
- Tribal notification/consultation

## Hydrology

- Proximity to Pinole Creek
- Stormwater Treatment

## Noise

- Proximity of residences to the new bridge
- Noise from demolition

## Traffic

- Use of existing bridge during construction
- Delays and slower speeds due to staged construction





# Additional Issues & Considerations

- Complete Streets
  - Bicycle, Pedestrians, Vehicles
- Green Infrastructure
- ADA Compliance
- Aesthetics
- Outreach/Communications
- Funding & Value Engineering
- Landscape Architecture

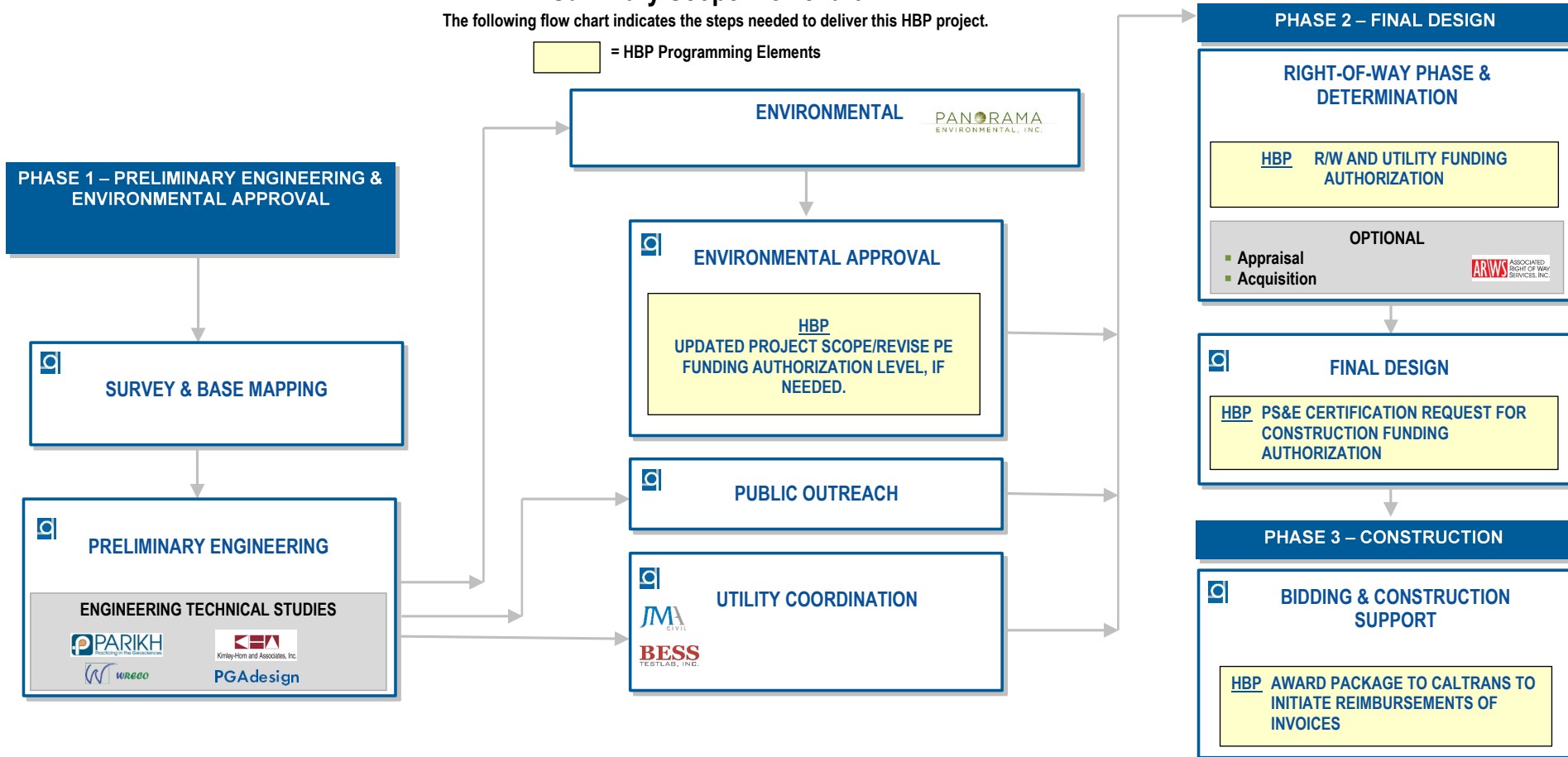


# HBP Process

## HBP Summary Scope Flowchart

The following flow chart indicates the steps needed to deliver this HBP project.

 = HBP Programming Elements





# Funding

- **Caltrans Highway Bridge Program Funding**
  - ✓ **\$15.78M**
  - ✓ Requires a funding match of a minimum of 11.5%
- **WCCTAC**
  - ✓ **\$1.6M** - Subregional Transportation Mitigation Program (STMP)
- **CCTA**
  - ✓ **\$387,000** - Measure J TLC



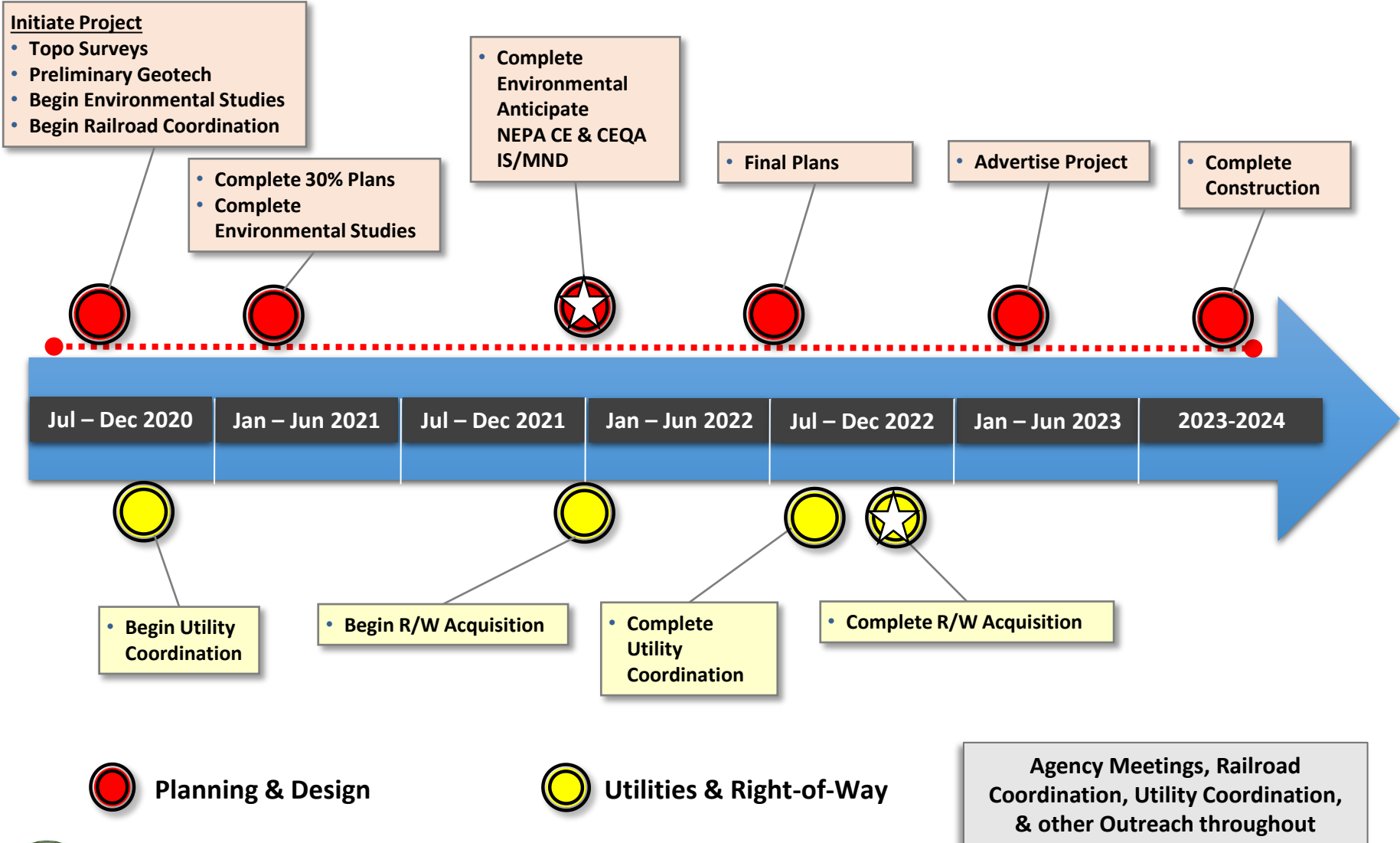


# Funding

- **Project Cost Estimate from Initial PSR - \$17 M – Since 2015:**
  - ✓ High speed rail project development – basing new assumptions on these project discussions
  - ✓ Through initial contact with railroad, assuming clearance for 2 tracks and access road
    - Initial assumption required doubling horizontal clearance, new assumption increases more than 400%
  - ✓ Cascading effect.....  
larger clearances – longer structure – deeper structures → **More \$**
  - ✓ Higher construction cost/Escalation – over 150% increase in cost per sq foot
- **Updated Project Cost Estimate - \$38 M**
  - ✓ Complete preliminary engineering work (i.e. 30% design) and further refine cost estimate
    - Pursue additional federal HBP funds
    - Continue to work with partners to identify matching funds (11.5%)



# Schedule





# Q & A

