Laguna Creek Restoration & Flood Control

Town of Moraga

BKF Engineers

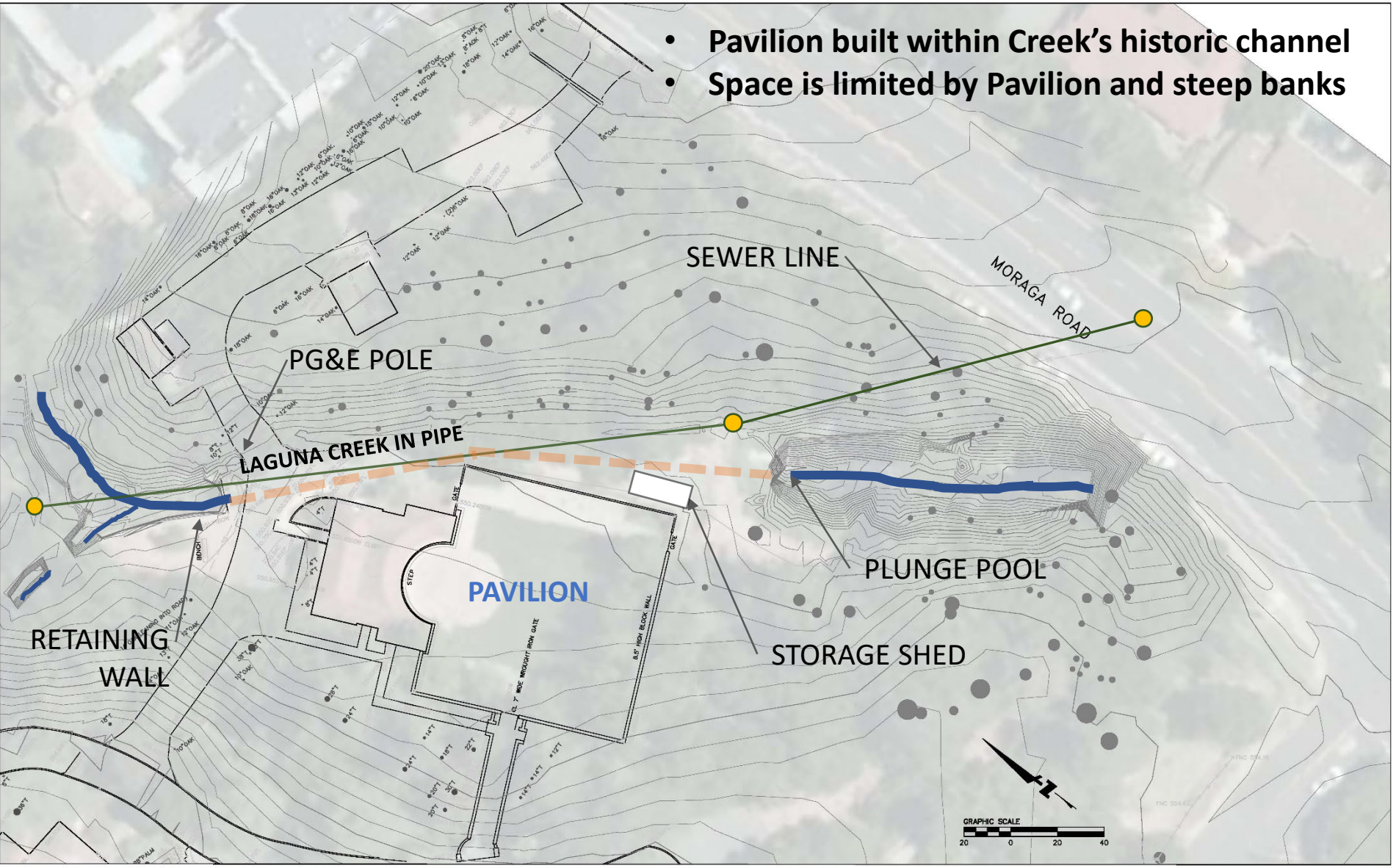
Restoration Design Group

Hydrology and Engineering Design

Dan Schaefer | BKF Engineers

Dayne Johnson | BKF Engineers

EXISTING SITE CONDITIONS

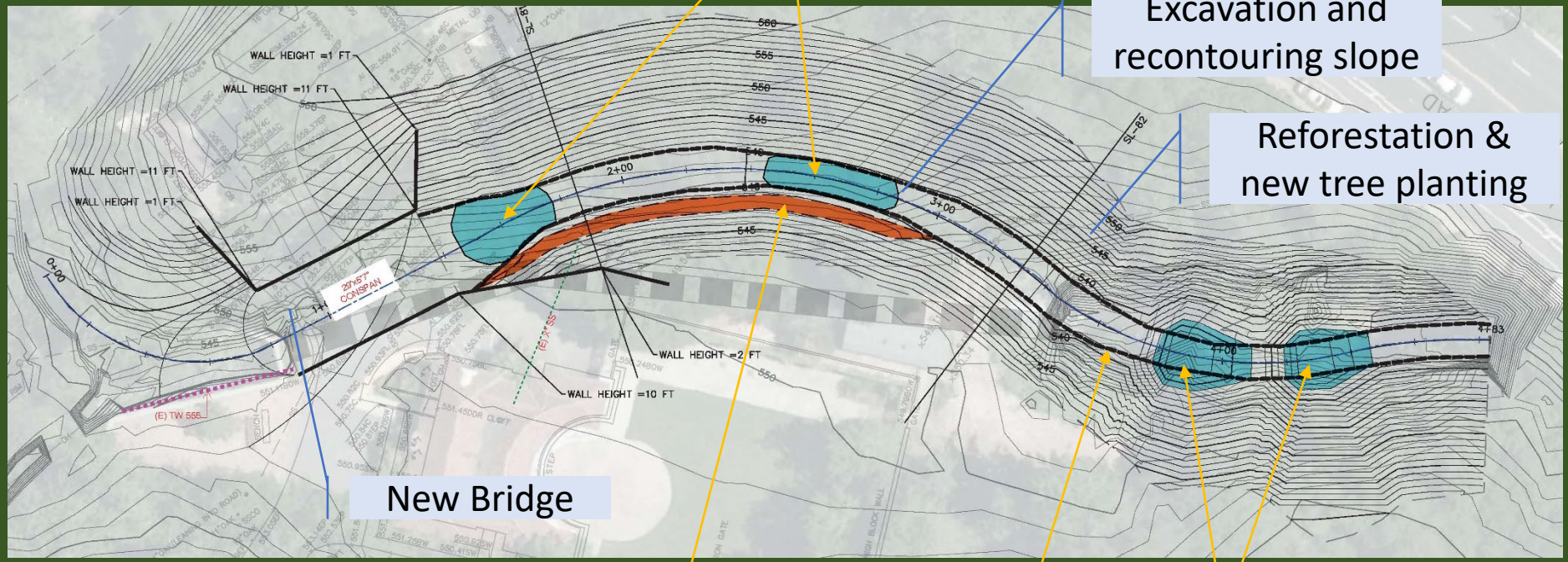


BASIS OF DESIGN

- FEMA 100 year (1% flood) = 1,300 cfs
  - *Grant Requirement to remove from Flood Zone*
  - *CCCFCD rate 1720 cfs assumes 1992 General Plan and beyond existing infrastructure capacity downstream*
- Existing Facilities currently can contain flows of 1,300 cfs when culvert removed
  - *Headwall height upstream*
  - *10x12 box culvert downstream*
- Sustainable Geomorphology– "shape of the creek"
  - *Serpentine – Mirror Natural Creek*
  - *Low Flow Channel – Reduce Erosion*
  - *Benches – Promote Vegetation*
  - *Shallow Step Pools – Reduce Velocities*
  - *Plunge Pools – Disperse Low Flow Energy*
- Elements:
  - *Conspan Bridge – 128 SF Opening (2.5 times that of the existing 50 SF 8-foot Culvert)*
  - *Rocks and walls will be necessary in places to allow for the widest and most natural channel possible*

CHANNEL DESIGN FOR HABITAT

In addition to excavating the creek bed and laying back the banks, FUNDING is tied to HABITAT CREATION



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Engineering & Design

Anneke Swinehart| Restoration Design Group

- Design Process
  - RDG – helping find opportunities in a constrained project
  - Alternatives presented to Public
  - Team revisions to public -preferred Alternative
  - Council approval and comments for advancement to 30% Design level
- Design Alternatives
  - Alternative 1
  - Alternative 2
  - Preferred Alternative 2
- Design Components
  - Pavilion amenities
  - Improved public path
  - View to and from Pavilion

15% Design Process

RDG's role was to advise BKF on geomorphology and site planning/design of public amenities in order to maximize opportunities for :

- Improved amenities at Pavilion
- Creekside trail
- Public Access connections
- Aesthetic consistency and future improvements at Pavilion

15% Design Progress

Two Concept Designs developed and presented to the public.

Consistent across alternatives:

NEW CREEKSIDE TRAIL
NEW CREEK OVERLOOK

Primary differences:

WIDTH AND SCALE OF THE BRIDGE
LOCATION OF ADA PARKING SPACE

Strong preference for the concept that moved the parking space

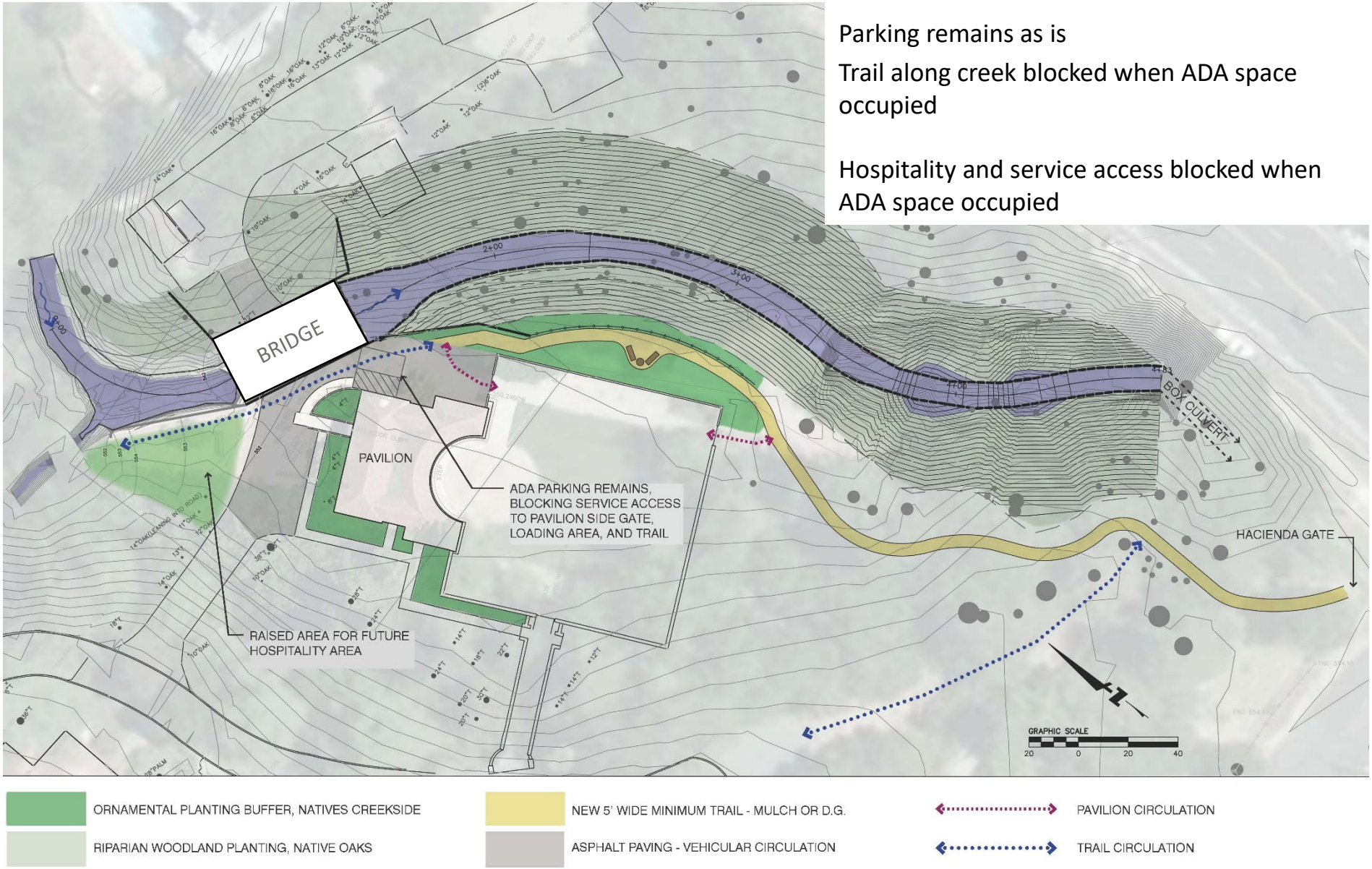
Alternative: No changes

55’ wide ConSpan bridge

Parking remains as is

Trail along creek blocked when ADA space occupied

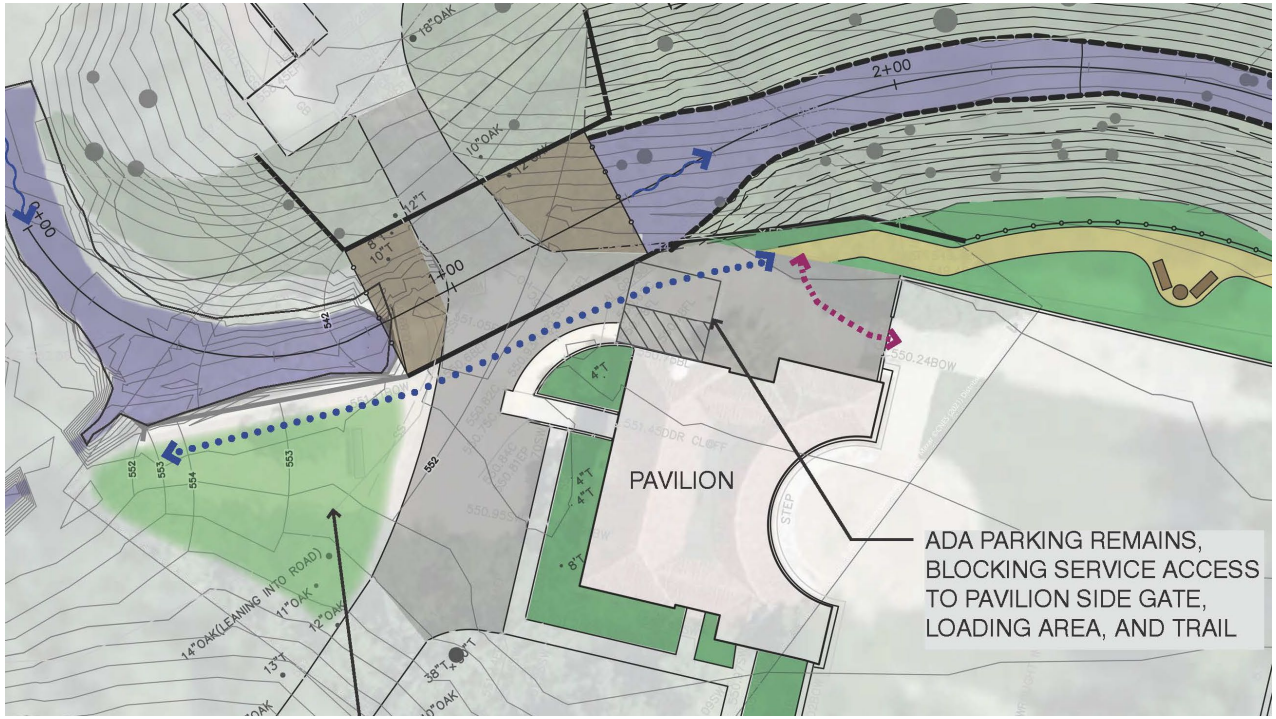
Hospitality and service access blocked when ADA space occupied



Existing ADA parking at service entrance side of Pavilion.

Larger Bridge required to provide back-up space for ADA spot onto bridge

No change to front of pavilion



Trail and Service access blocked when ADA space occupied

Alternative: Move parking

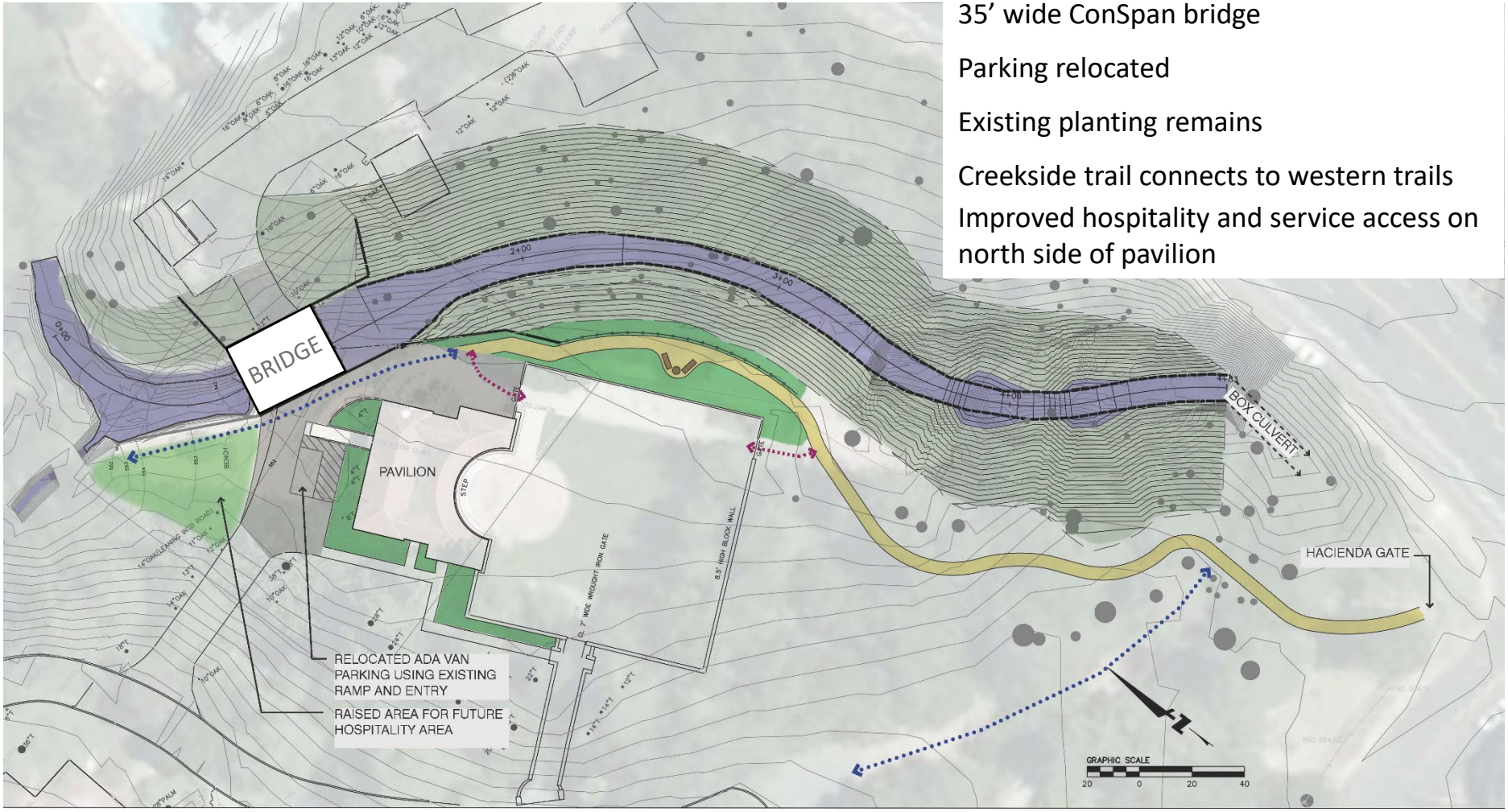
35’ wide ConSpan bridge

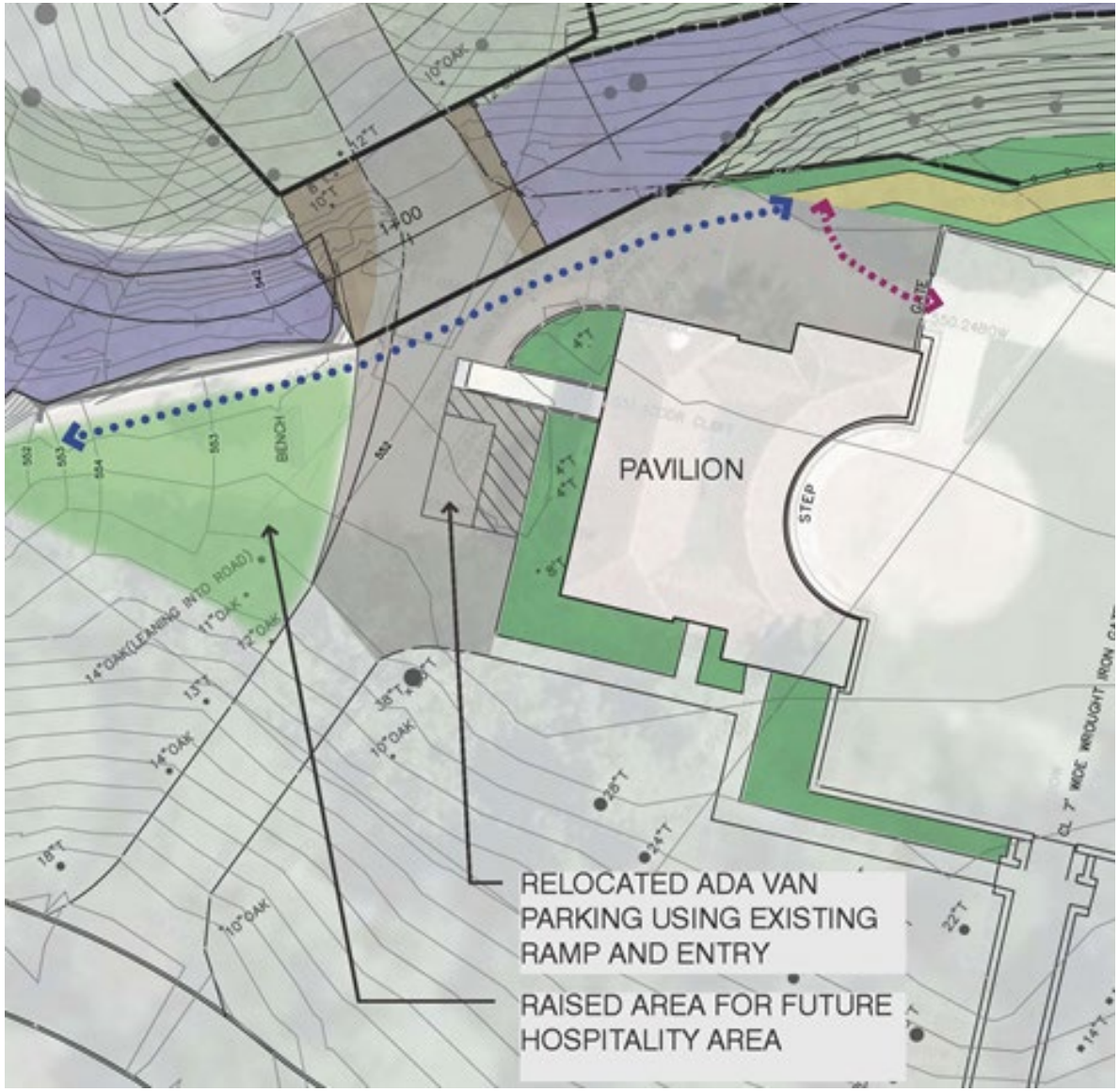
Parking relocated

Existing planting remains

Creekside trail connects to western trails

Improved hospitality and service access on north side of pavilion





ADA parking moves to front, using existing ramp and entrance.

Sidewalk that dead ends into retaining curb for ramp removed.

Regrading/paving needed to accommodate accessible grades

Updated Preferred Alternative

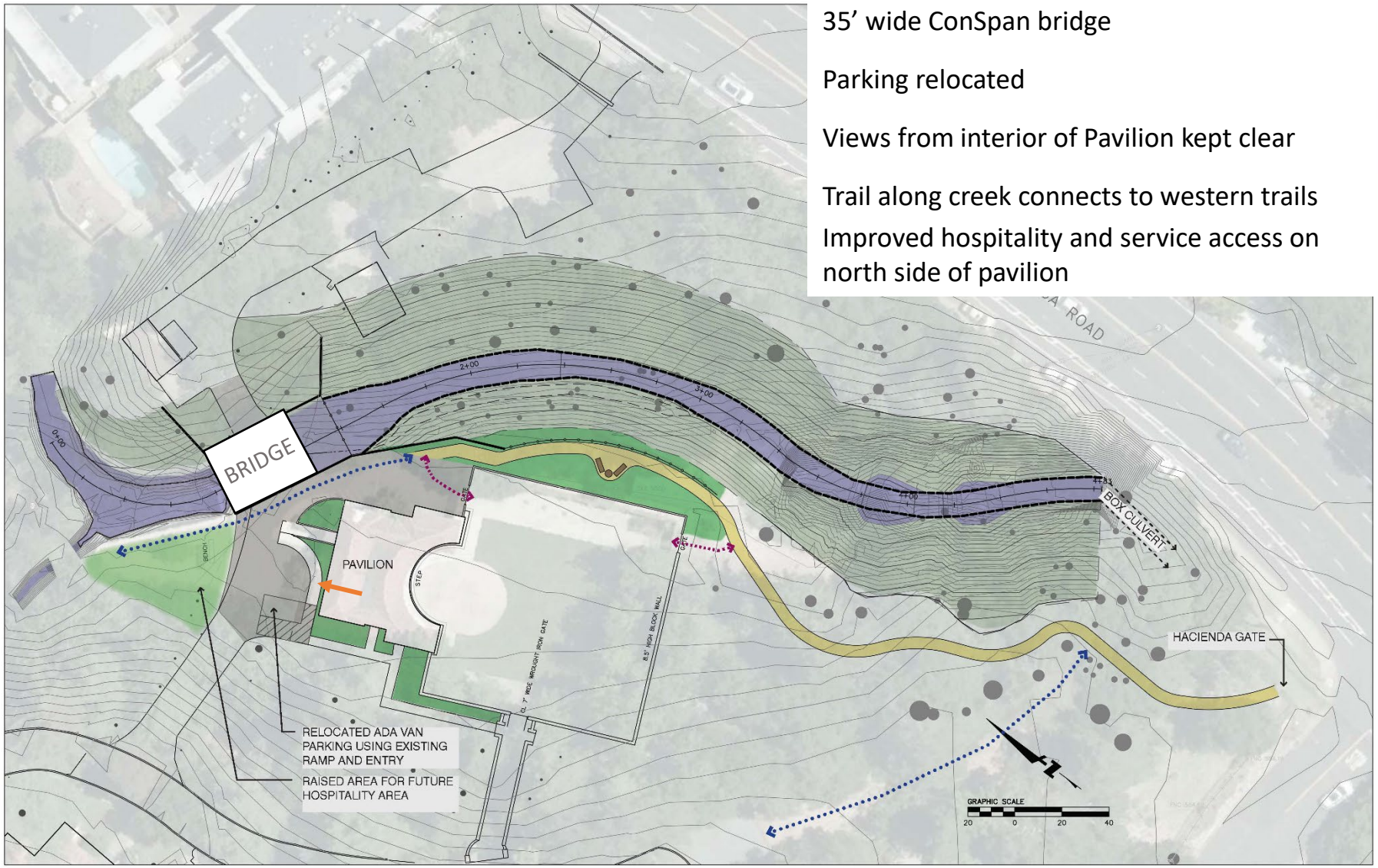
35’ wide ConSpan bridge

Parking relocated

Views from interior of Pavilion kept clear

Trail along creek connects to western trails

Improved hospitality and service access on north side of pavilion

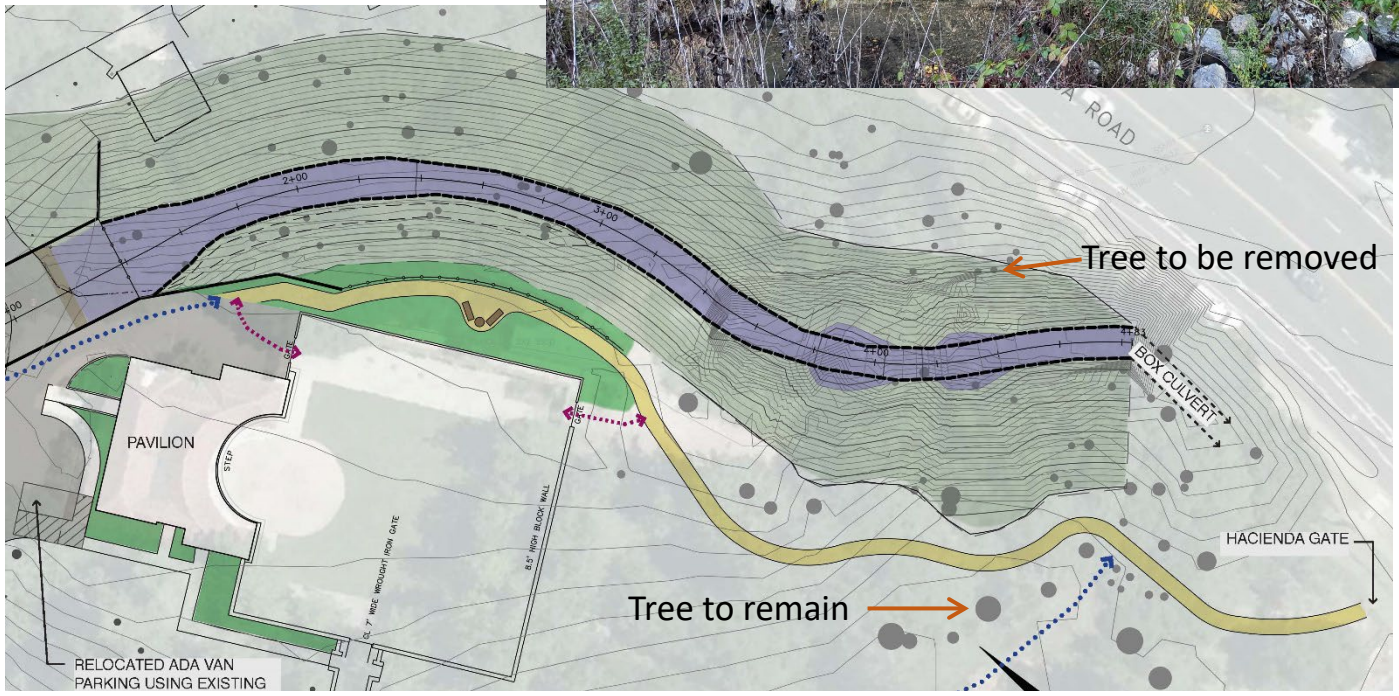


Design Components

- Riparian restoration plantings
- Public access path
- Creekside overlook
- Ornamental planting & screening at Pavilion
- Wall and guardrail aesthetics

Tree Removals

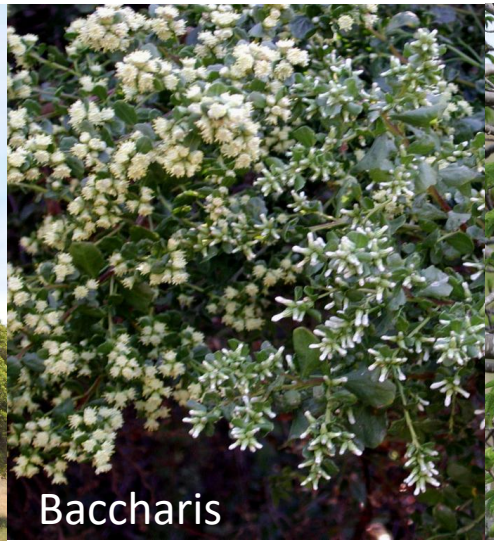
Current conditions put many existing trees at risk for failure/falling from incised banks, erosion.



Trees inside grading envelope will be removed, along with invasives, and planted with a native California riparian palette

Restoration Planting


Oak


Baccharis

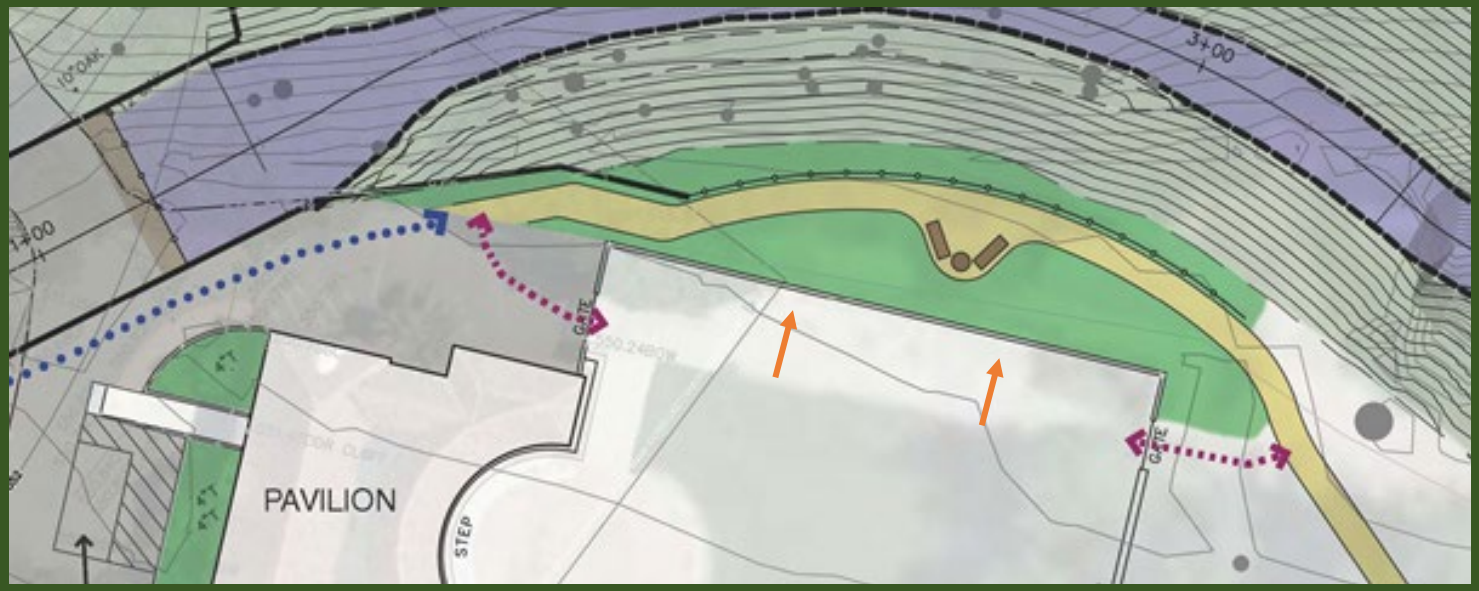

Buckeye


Ceanothus


Carpenteria


Cercis

Creek Overlook



Ornamental planting buffer between latticed pavilion wall and creek trail

Shed no longer in view lines of outdoor terrace

Trail Surfacing

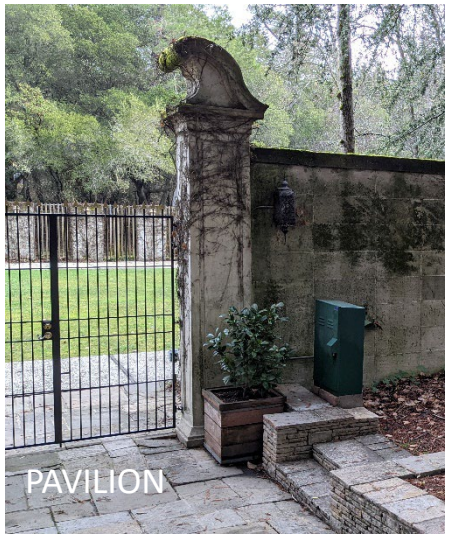
Stabilized Decomposed Granite (above)
Upgrade with minor cost impact

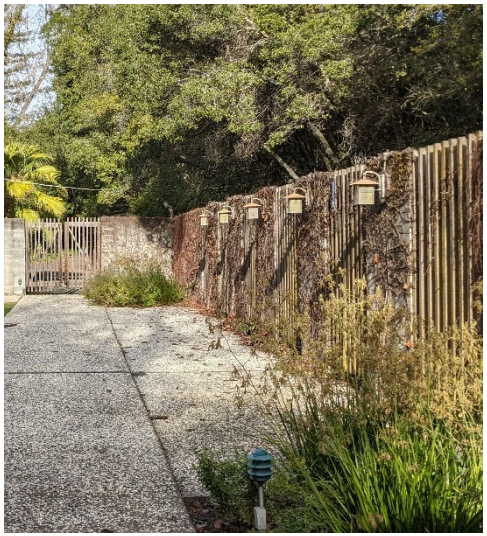
Existing trail network informal, mulched

ConSpan Bridge

NEW OPEN BOTTOMED BRIDGE AND WING WALLS CAN BE SURFACED TO MATCH EXISTING WALLS ON SITE

PAVILION AREA ELEMENTS - CONTEXT


PAVILION




HACIENDA GATE


EXISTING FENCES

Both metal and wood are present in existing gates and fences.

Overlook Railing

PUBLIC MEETING FEEDBACK WAS A STRONG PREFERENCE FOR WOOD

Railing design will be included for review in 30% Concept plans

Guardrail or trail edging at overlook should blend with pavilion elements and feel connected to that space.

CLOSING COMMENTS