



LEVEE PROTECTION PLANNING AND IMPROVEMENTS PROJECT

Improving Today and Preparing for Tomorrow

Foster City Planning Commission Meeting
May 3, 2018



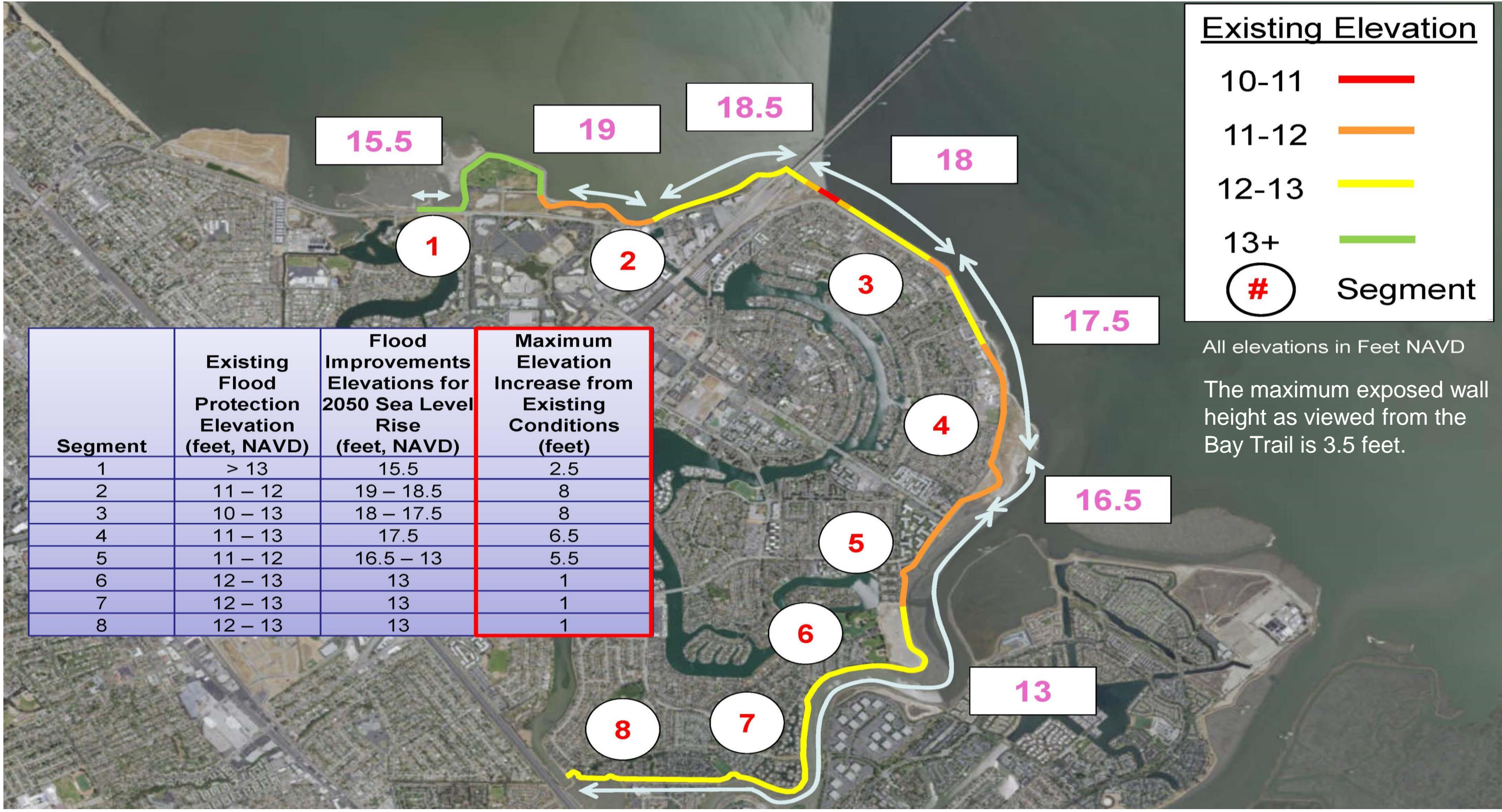
Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS



Presentation

- Proposed Levee Elevations
- Levee and Trail Improvements
- Sheet Pile Wall Treatment Options
- Trail Renderings
- Planting Concept
- Access Point Improvements

Design Flood Protection Elevations (feet, NAVD)



Typical Sections Key

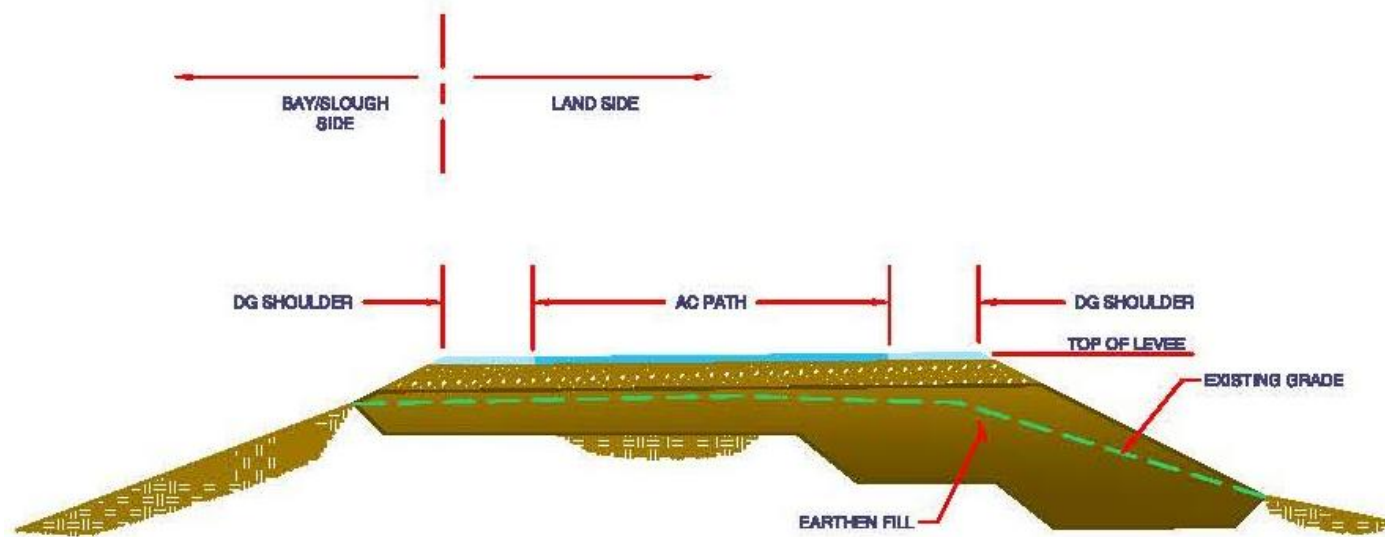


- Typical sections are consistent with the levee improvement types described in the EIR.
- Sections have been selected based on the location of wetlands and available right-of-way.
- The exposed wall height as viewed from street level is no greater than 3.5 feet except for sections indicated as “Double Wall”.

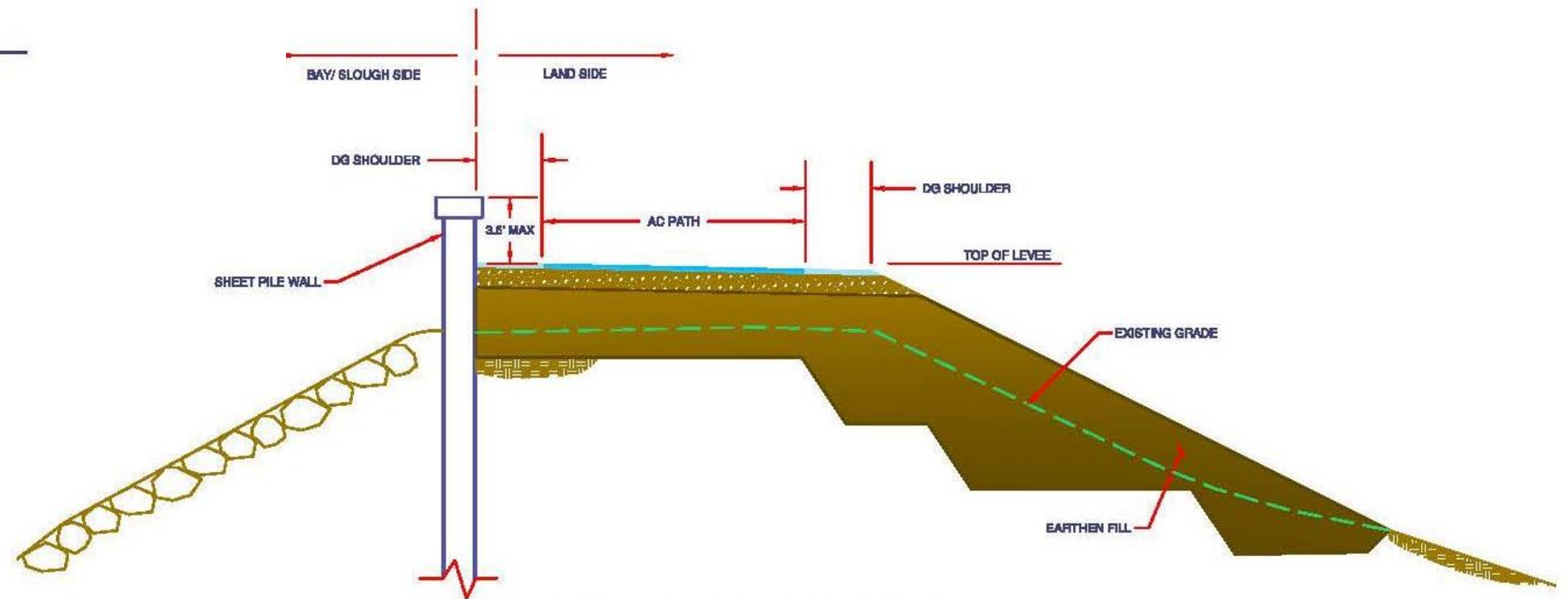


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Typical Sections

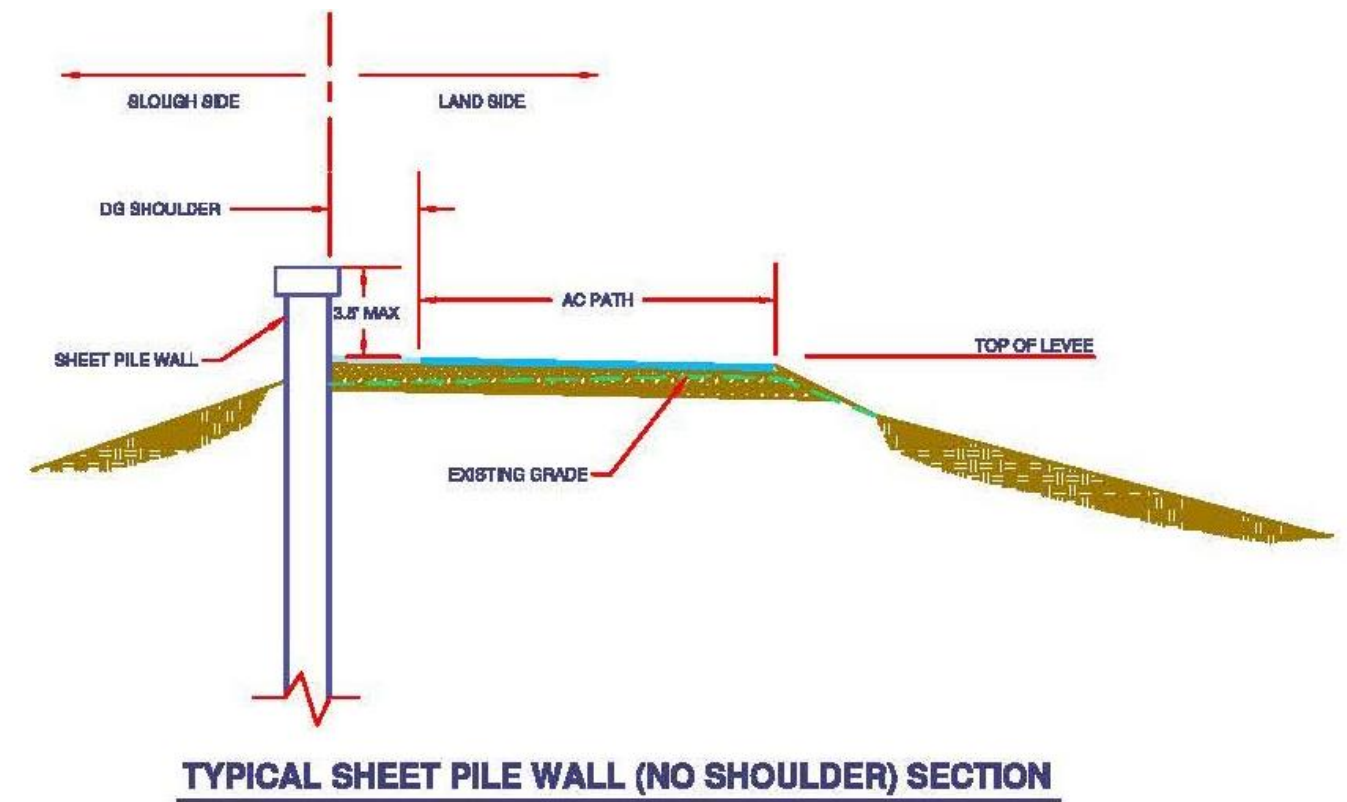
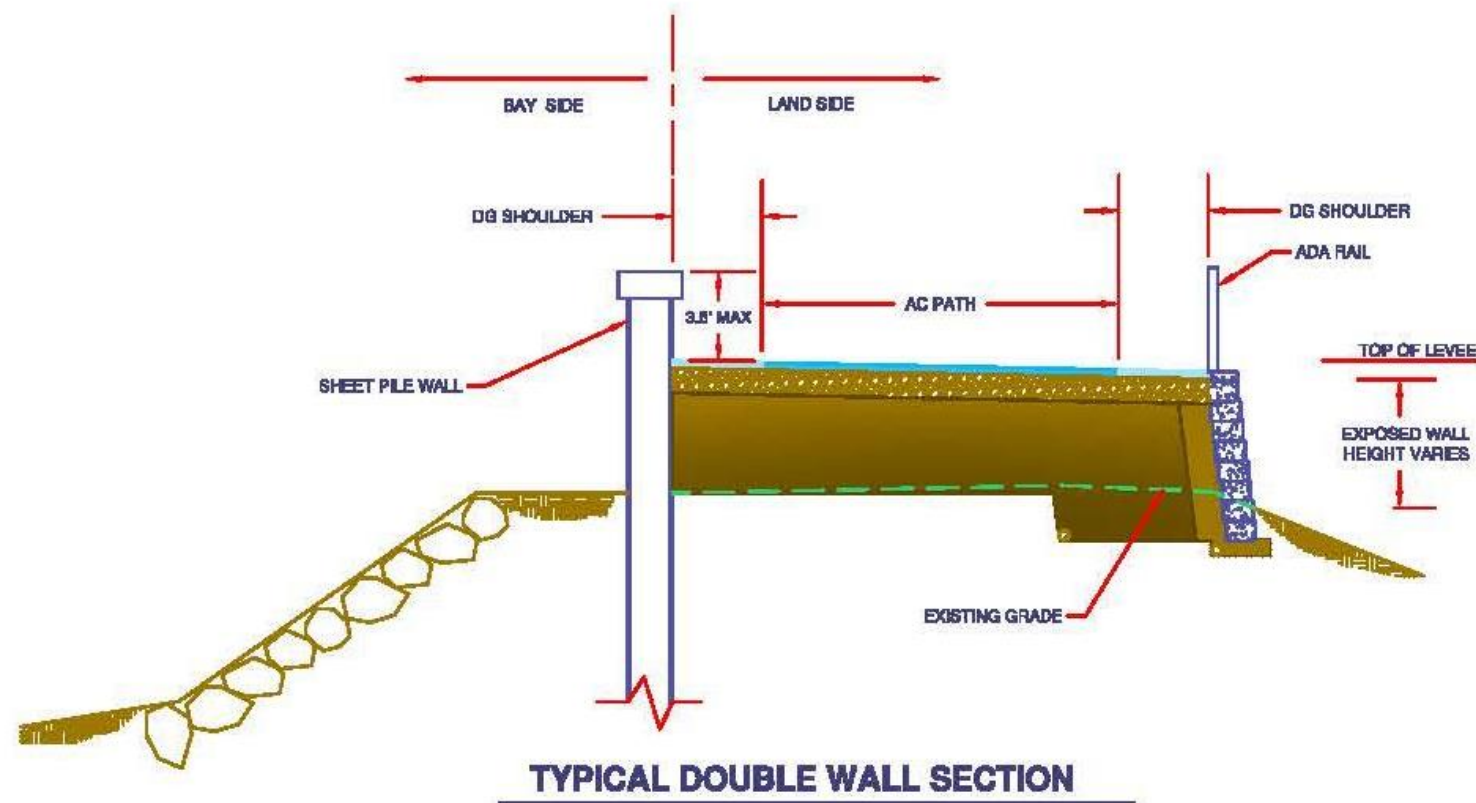


TYPICAL EARTHEN LEVEE SECTION



TYPICAL SHEET PILE WALL SECTION

Typical Sections







Bay Trail Improvement Key



Legend

Type

-  10-FT AC Path with 4-FT DG Shoulder (18-FT Total)
-  12-FT AC Path with 3-FT DG Shoulder (18-FT Total)
-  12-FT Path, No DG Shoulder Inboard Side (15-FT Total)
-  No Improvements

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Sheet Pile Wall Upgraded Treatment Options and Cost

Bay/Slough Side Wall Treatment Options:

1. Painted steel and cap
2. Painted steel and concrete cap

Trail Side Wall Treatment Options:

1. Painted steel and cap
2. Painted steel and concrete cap
3. Concrete fascia with concrete cap



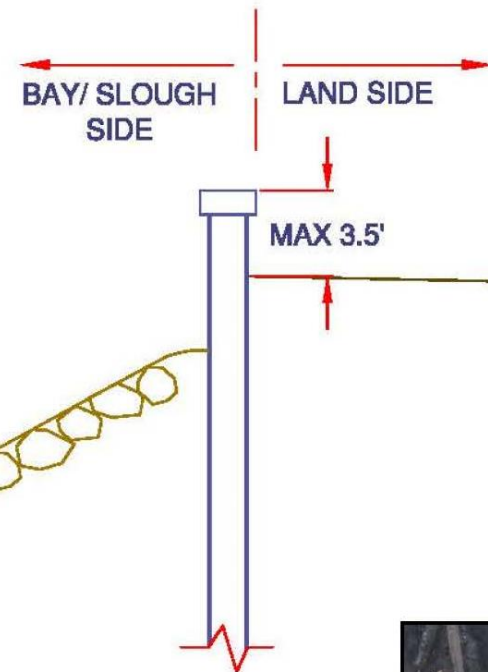
1.

~\$3 Million



2.

~\$3.5 Million



3.

\$5 Million or More



Typical View between Mariner's Point and San Mateo Bridge



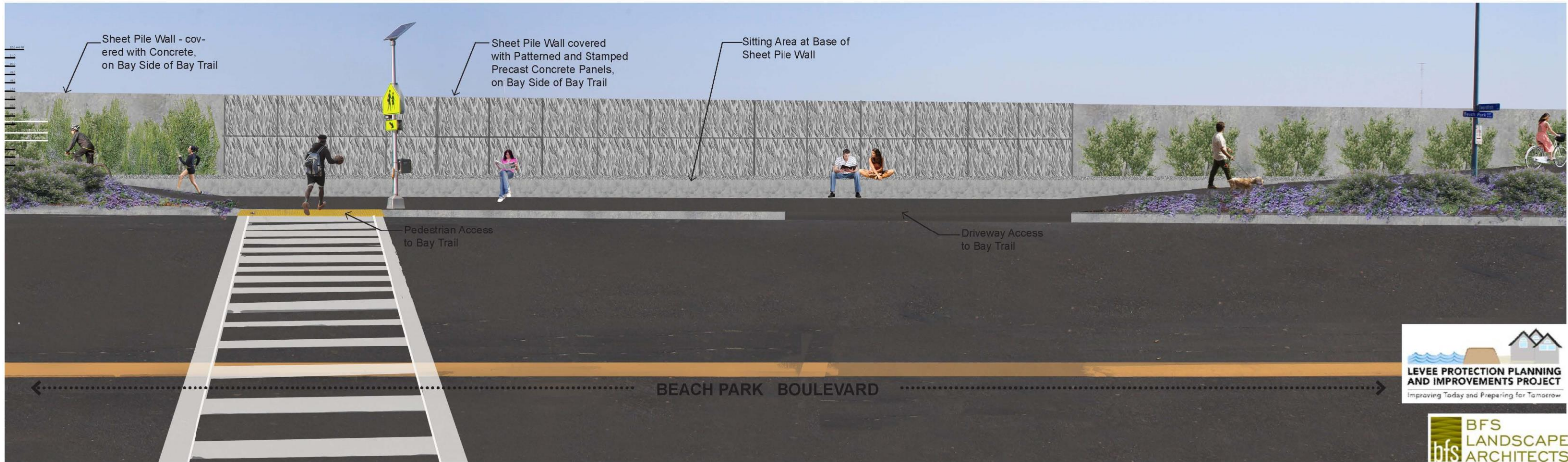
Improved



Existing



Levee Access at Beach Park Blvd. and Swordfish St.



Improved



Typical View between Mariner's Point and San Mateo Bridge



- Flood protection wall transitions from Bay side to land side of Trail.
- Unobstructed views to Bay from Trail at San Mateo Bridge.



Typical View of Access along Beach Park Blvd.



Typical View of Access along Beachpark Boulevard
 Levee Wall - Concrete Wall with Concrete Cap and 10'-0" Wide Glass Openings at Access Points



Typical View of Access along Beachpark Boulevard
 Levee Wall - Grey Sheetpile Wall with Steel Cap and 10'-0" Wide Glass Openings at Access Points



View from Port Royal Park



View from Port Royal Park



Planting Concept Plant Types



Bolboschoenus maritimus
(Alkali Bulrush)



Sisyrinchium bellum
(Blue-eyed Grass)



Solidago californica
(California Goldenrod)



Stipa lepida
(foothill needle grass)



Achillea millefolium
(Common Yarrow)



Ambrosia psilostachya
(Western Ragweed)



Artemisia californica
(California Sagebrush)



Artemisia douglasiana
(Mugwort)



Aster chilensis
(California Aster)



Baccharis pilularis
(Coyote Brush)



Deschamsia caespitosa
'Holciformis'
(Pacific hairgrass)



Stipa pulchra
(Purple Needle Grass)



Vulpia microstachys
(Small Fescue)



Wyethia angustifolia
(Mule's Ears)



Carex praegracilis
(Meadow Sedge)



Carpobrotus edulis
(Ice Plant)



Ceanothus gloriosus
(Ceanothus)



Ceanothus griseus 'Horizontalis'
(Yankee Point Ceanothus)



Ceanothus thyrsiflorus
(Creeping Blue Blossom)



Clarkia rubicunda
(Farewell to Spring)



Eriogonum latifolium
(Coastal Eriogonum)



Eriogonum nudum
(Naked Buckwheat)



Eschscholzia californica 'Maritima'
(California Coastal Poppy)



Festuca idahoensis
(Fescue Bunchgrass)



Festuca rubra 'Molate'
(Molate Red Fescue)



Frankenia salina
(Alkali Heath)



Grindelia stricta 'Angustifolia'
(Pacific Gumplant)



Hordeum brachyantherum
(Salt Meadow Barley)



Juncus patens
(Wire Grass)



Limonium californicum
(Marsh Rosemary)



Mimulus aurantiacus
(Sticky Monkey Flower)



Penstemon centranthifolius
(Scarlet Bugler)



Ranunculus californicus
(California Buttercup)



Salvia mellifera 'Repens'
(Creeping Black Sage)



Salvia spathacea
(Hummingbird Sage)



Sarcocornia pacifica
(Pickleweed)



Schoenoplectus californicus
(California Bulrush)



Sidalcea malviflora
(Checkerbloom)

Planting types chosen based on considerations for:

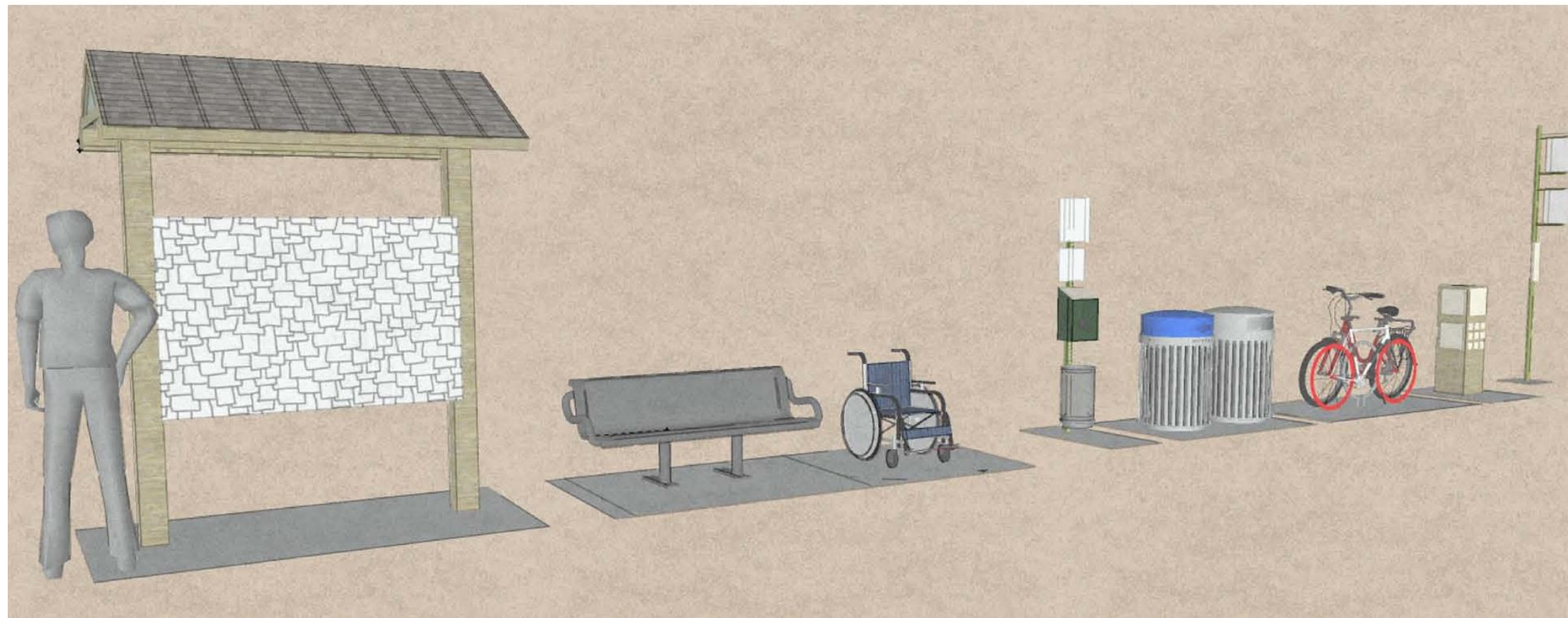
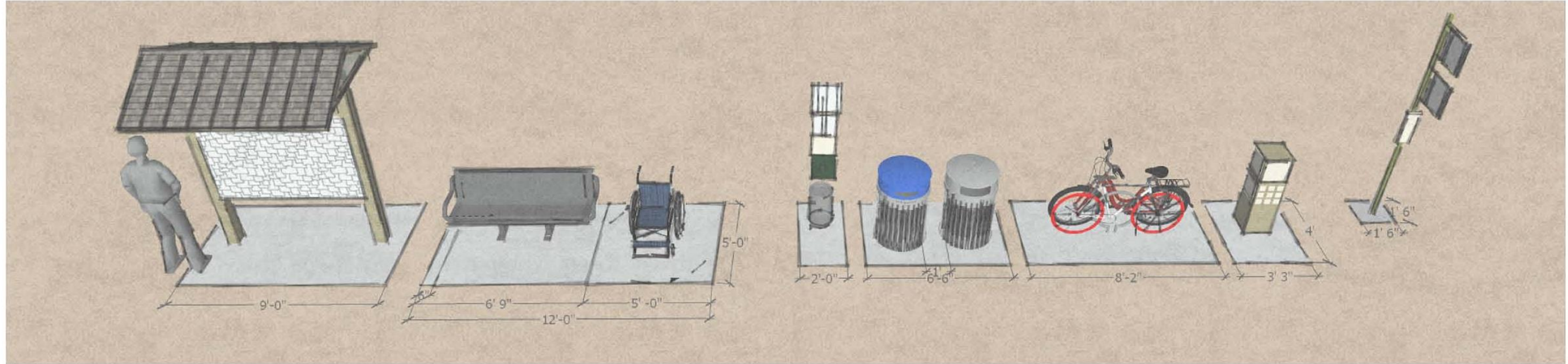
1. Drought tolerance
2. Aesthetic appeal
3. Practical maintenance and cost

Planting Concept Key



Genus	Species	Common Name	BCDC Page	BCDC Native	Plant Type	Planting Method*	PCS Seed Source**
Areas along E 3rd Ave: Non-irrigated Levee Slopes							
Achillea	millefolium	Common Yarrow	18	BAY	Perennial	Hydroseed	San Mateo
Deschampsia	cespitosa ssp. Holciformis	Pacific Hairgrass	22	BAY	Grass		Monterey
Eschscholzia	californica 'Maritima'	California Poppy	25	BAY	Annual		Monterey
Mimulus	auranticus	Sticky Monkey Flower	28	BAY	Perennial		Santa Clara
Sisyrinchium	bellum	Blue-eyed Grass	32	BAY	Perennial		San Mateo
Stipa	lepida	Foothill Needle Grass	29	BAY	Grass		San Mateo
Stipa	pulchra	Purple Needle Grass	29	BAY	Grass		San Mateo
Vulpia	microstachys	small fescue		n/a	Annual	Santa Clara	
Environmental Areas along E 3rd Ave: Irrigated Levee Slope Base							
Baccharis	pilularis	Coyote Brush	20	CA	Shrub	Container w/ Drip Irrigation	n/a
Ceanothus	gloriosus	Ceanothus	21	CA	Groundcover		
Ceanothus	griseus var. horizontalis	Ceanothus Yankee Point	21	CA	Groundcover		
Ceanothus	thyrsiflorus	Blue Blossom	22	BAY	Shrub		
Salvia	mellifera var. Repens	Creeping Black Sage	31	CA	Groundcover		
Beach Park Boulevard: Non-Irrigated Levee Slopes							
Carpobrotus	edulis	Ice Plant		N/A	Perennial	Cuttings	N/A
Beach Park Boulevard & Other Locations - Access Points: Irrigated Levee Slopes							
Aster	chilensis	California Aster	20	BAY	Perennial	Hand seeding or plugs	n/a
Eriogonum	nudum	Naked Buckwheat	24	BAY	Perennial		
Penstemon	centranthifolius	Scarlet Bugler		CA	Perennial		
Ranunculus	californicus	California Buttercup	30	BAY	Perennial		
Salvia	spathacea	Hummingbird Sage		CA	Perennial		
Solidago	californica	California Goldenrod	32	BAY	Perennial		
Sidalcea	malviflora	Checkerbloom	32	BAY	Perennial		
Ceanothus	griseus var. horizontalis	Ceanothus Yankee Point	21	CA	Groundcover		
J-Site: Non-Irrigated Inland Side (Dry) Slopes							
Artemisia	californica	California Sagebrush	19	BAY	Shrub	Hydroseed	Alameda
Artemisia	douglasiana	Mugwort	20	BAY	Perennial	Hydroseed	TBD
Eriogonum	latifolium	Coastal Eriogonum	24	BAY	Perennial	Hydroseed	San Mateo
Hordeum	brachyantherum	Salt Meadow Barley	26	BAY	Grass	Hydroseed	Napa / Sonoma
J-Site: Non-Irrigated Slough Side (Seasonally wet) Slopes							
Ambrosia	psilostachya	Western Ragweed		n/a	Perennial	Hydroseed	Santa Clara
Bolboschoenus	maritimus	Alkali Bulrush	20	BAY	Perennial	Hydroseed	Alameda
Frankenia	salina	Alkali Heath	25	BAY	Perennial	Hydroseed	San Mateo
Grindellia	stricta var. angustifolia	Pacific Gumplant	26	BAY			Alameda / Santa Clara
Hordeum	brachyantherum	Salt Meadow Barley	26	BAY	Grass	Hydroseed	Napa / Sonoma
Juncus	patens	Wire Grass	27	BAY	Perennial	Hydroseed	TBD
Limonium	californicum	Marsh Rosemary	27	BAY	Perennial	Hydroseed	San Mateo
Sarcocornia	pacifica	Pickleweed	31	BAY	Perennial	Hydroseed	Alameda
Schoenoplectus	californicus	California Bulrush	31	BAY	Perennial	Hydroseed	Alameda
Slough-edge Terrace: Non-irrigated							
Deschampsia	cespitosa ssp. Holciformis	Pacific Hairgrass	22	BAY	Grass	Hydroseed	Monterey
Hordeum	brachyantherum	Salt Meadow Barley	26	BAY	Grass	Hydroseed	Napa / Sonoma
Bay Winds Park: Synthetic Turf							
LEGEND							
BCDC = Shoreline Plants - A Landscape Guide for the San Francisco Bay, published by the San Francisco Bay Conservation and Development Commission, March 2007							
PCS = Pacific Coast Seed, Livermore CA: seed suppliers for Northern California							
DW - Driwater, Santa Rosa CA: manufacturers of time released watering gel packs							
* Planting method to be finalized after further discussions with native grass specialists, parks and rec staff, and seed / plant suppliers							
** Seed sources, seed availability, and seed viability vary from year to year							

Signage and Amenities



- Information Kiosk
- Bench & wheelchair pad
- Pet litter station
- Trash & recycling bin
- Bike rack for 2 bikes
- Informational signs



Access Points and Amenities



- Forty-nine improved access points:
 - Nine from Trail to Bay
 - Forty from street level to Trail
- Public access will be ADA-compliant:
 - Ramps; and/or
 - Stairs with handrail

Legend

	ADA Accessible Ramp
	Stairs
	Bench
	Bike Rack
	Pet Litter Station
	Picnic Table
	Trash Recycle
	Boat Access Ramp
	Public Parking
	Trail Access Point
	Bay Access Point

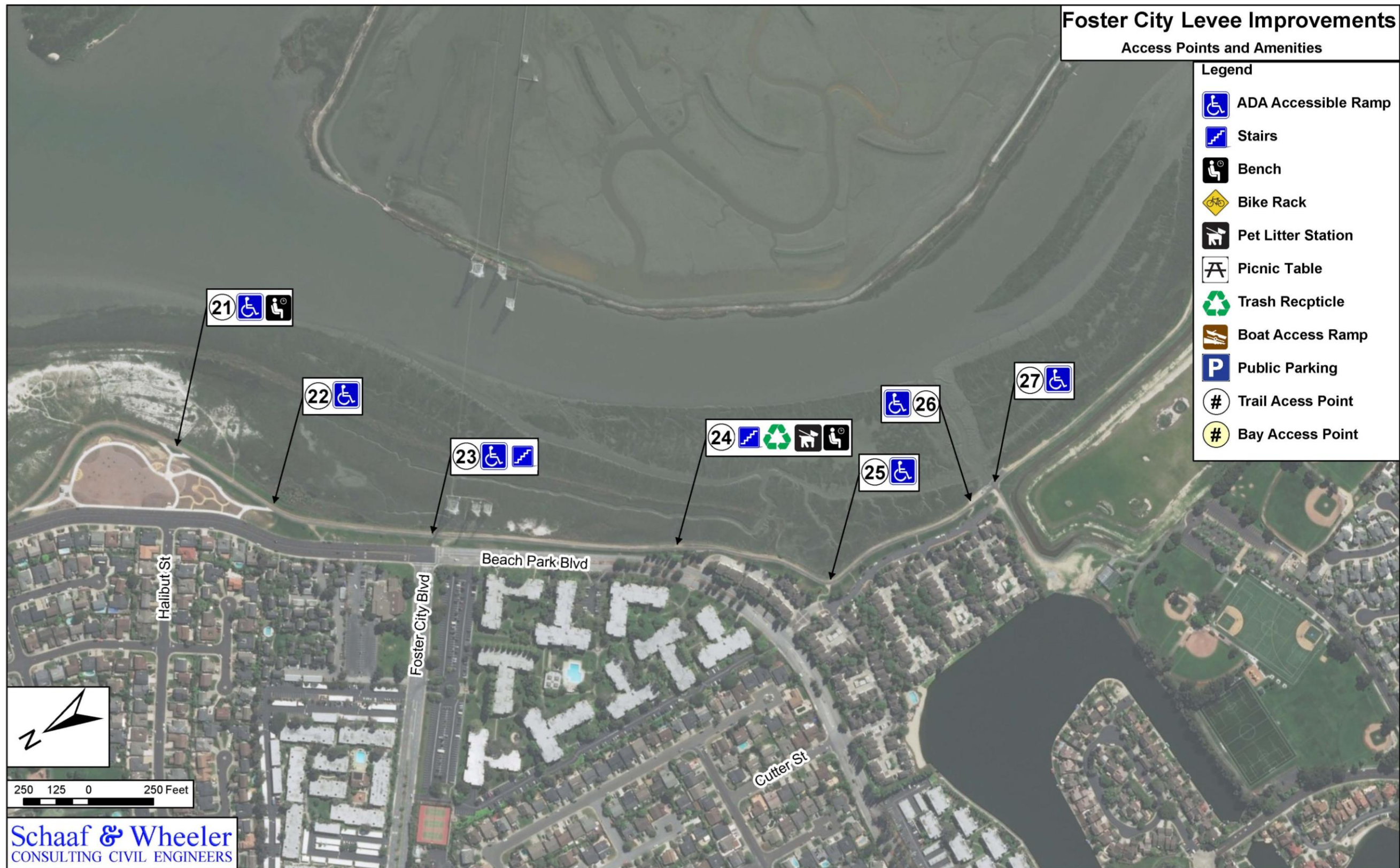
Access Points and Amenities



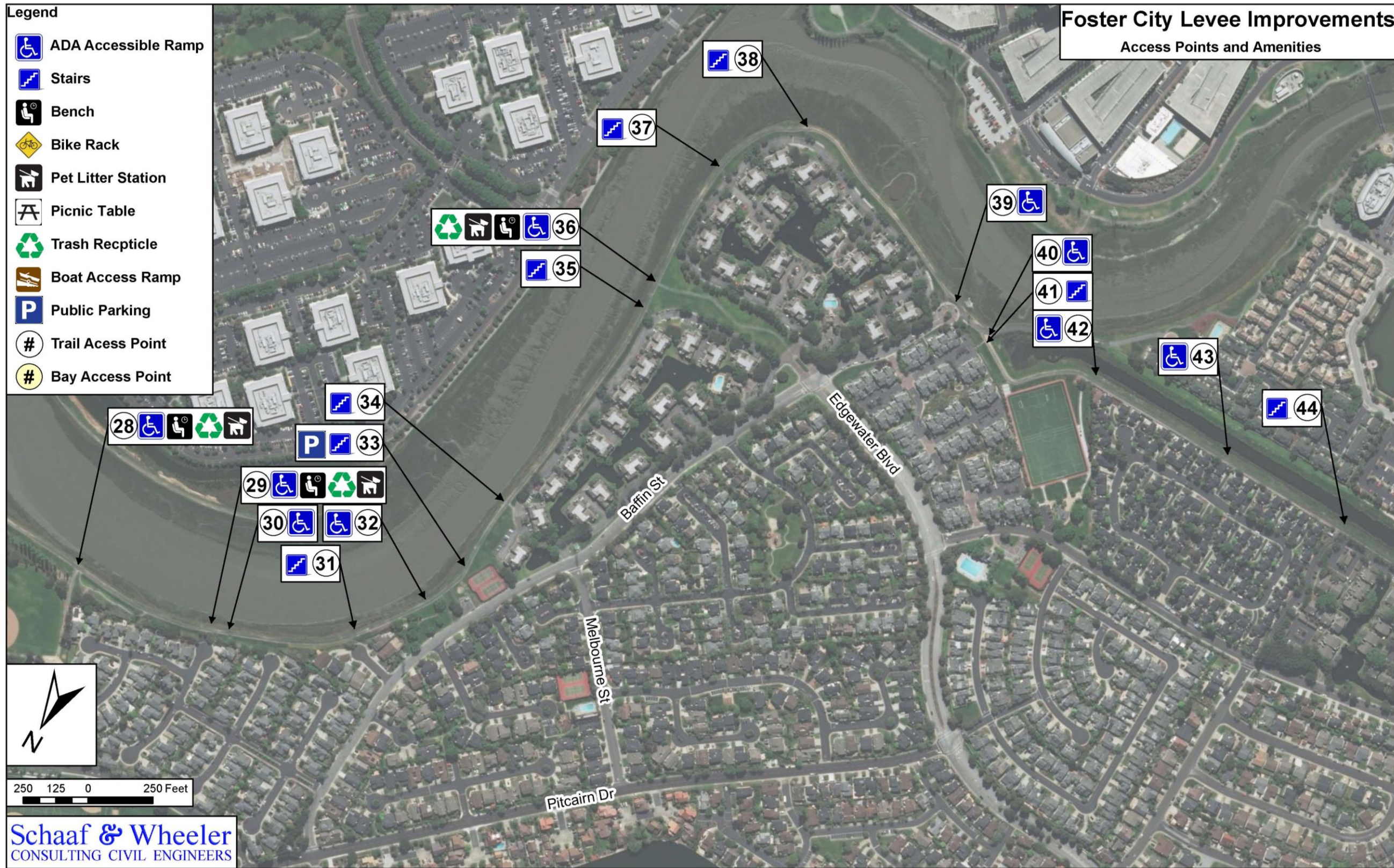
Access Points and Amenities



Access Points and Amenities



Access Points and Amenities



Access Points and Amenities



Next Step

Planning Commission comments and feedback will be relayed to City Council, who will provide direction regarding final levee design features.





LEEVE PROTECTION PLANNING AND IMPROVEMENTS PROJECT

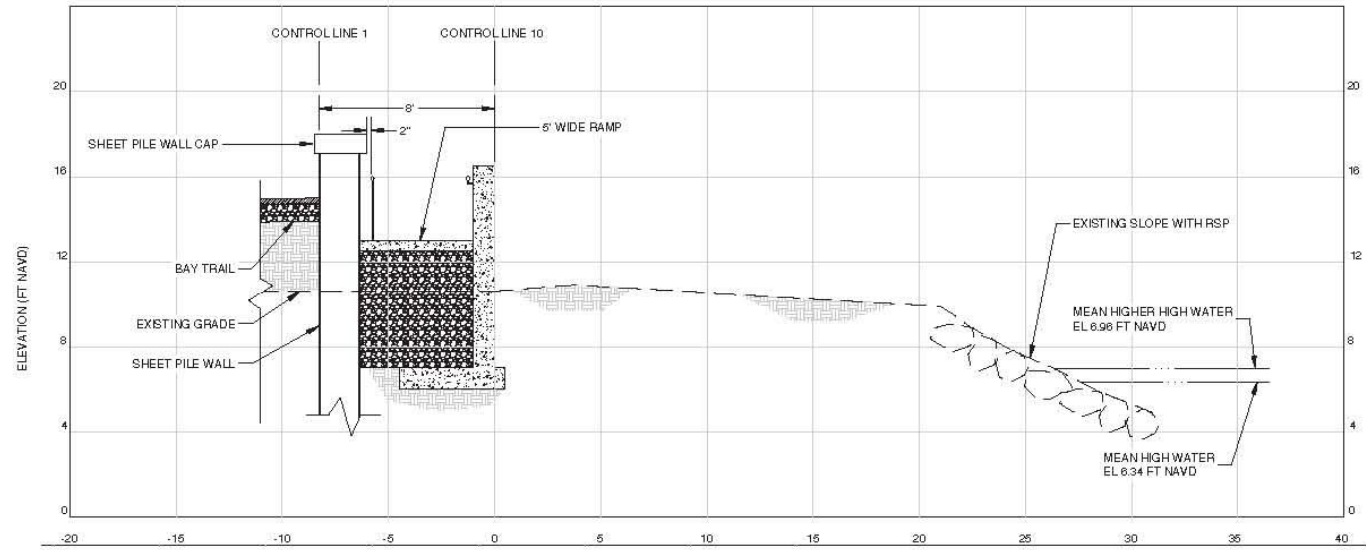
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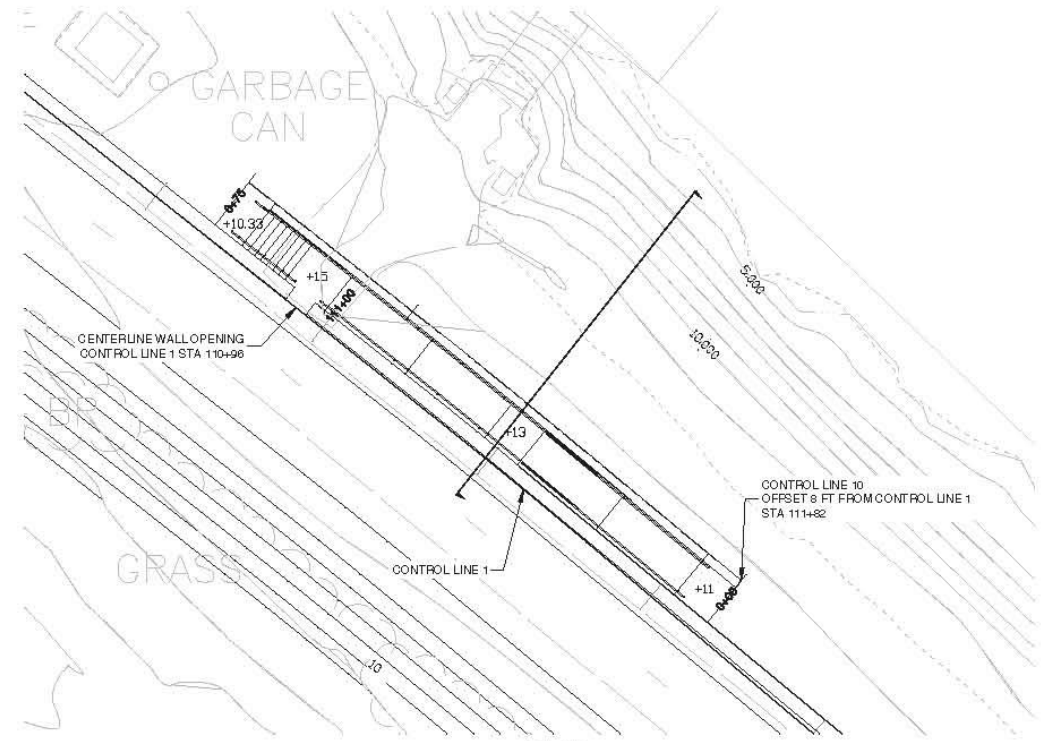


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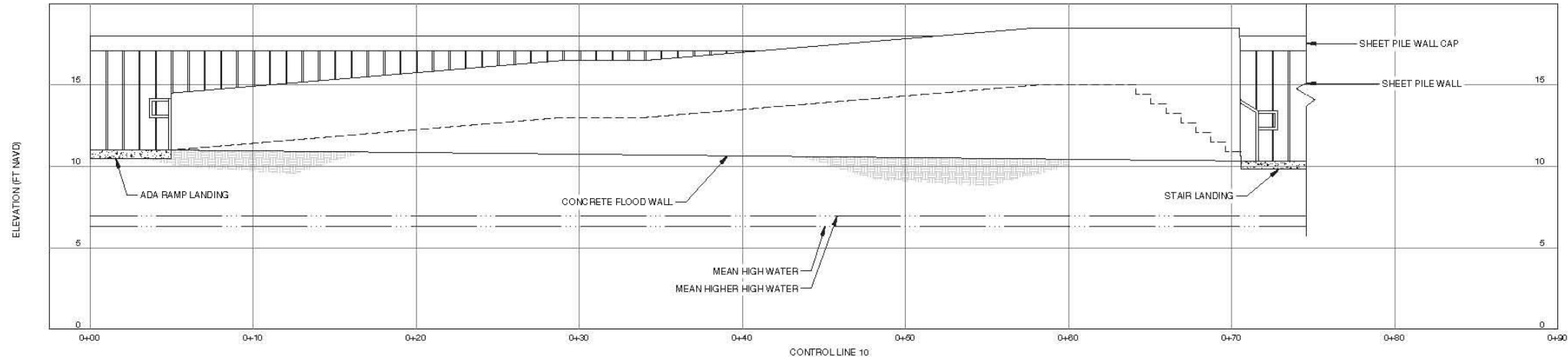




CROSS SECTION
 OFFSET AT CONTROL LINE 10 STA 0+32
 HOR. SCALE: 1" = 4'
 VERT. SCALE: 1" = 4'



PLAN
 SCALE: 1" = 10'



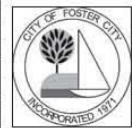
PROFILE
 HOR. SCALE: 1" = 4'
 VERT. SCALE: 1" = 4'

BAY ACCESS
 CONTROL LINE 1 STA 111+82

SCALE VERIFICATION
 THE BAR BELOW IS 1" ON THE ORIGINAL DRAWING. IF THIS DRAWING SCALES OTHERWISE, ADJUST THE SCALE ACCORDINGLY.

DATE: 08/10/2017	APPROVED:
SCALE: AS SHOWN	JEFF C. MONEDA, PUBLIC WORKS DIRECTOR/CITY ENGINEER
DRAWN BY: MER	CITY OF FOSTER CITY
DRAWING NAME:	DATE: 60944 12/13/2018
DESIGNED BY: MER	R.C.E. #
CHECKED BY: CDA	EXPIRES
SURVEYED BY:	

NO.	BY	DATE	REVISIONS



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FOSTER CITY LEVEE IMPROVEMENTS
 CIP 301-657
 ACCESS POINT DETAILS
 STA 111+82

60% PROGRESS SET - NOT FOR CONSTRUCTION

SHEET XXX OF
 PROJ. NUMBER
 FOST.12.16