

**LEVEE PROTECTION PLANNING
AND IMPROVEMENTS PROJECT**

Improving Today and Preparing for Tomorrow

Foster City Levee Improvements Project

CIP 301-657

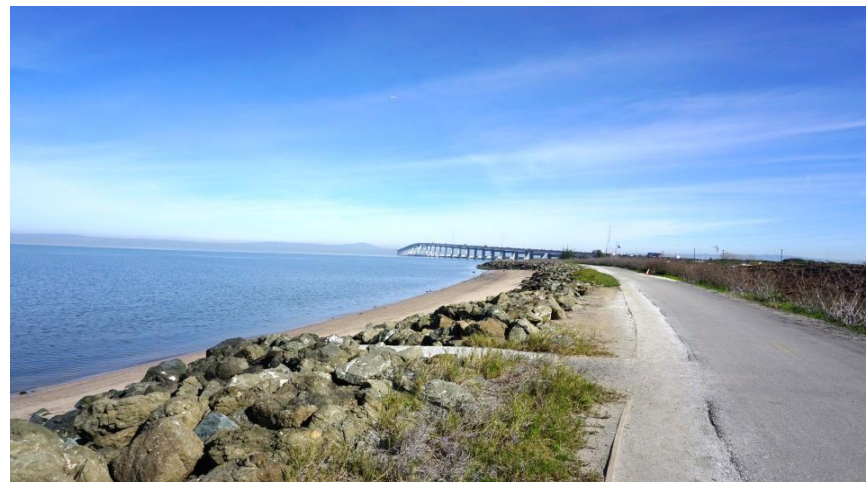


City of Foster City
Department of Public Works

Planning Commission Submittal

May 3, 2018

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS



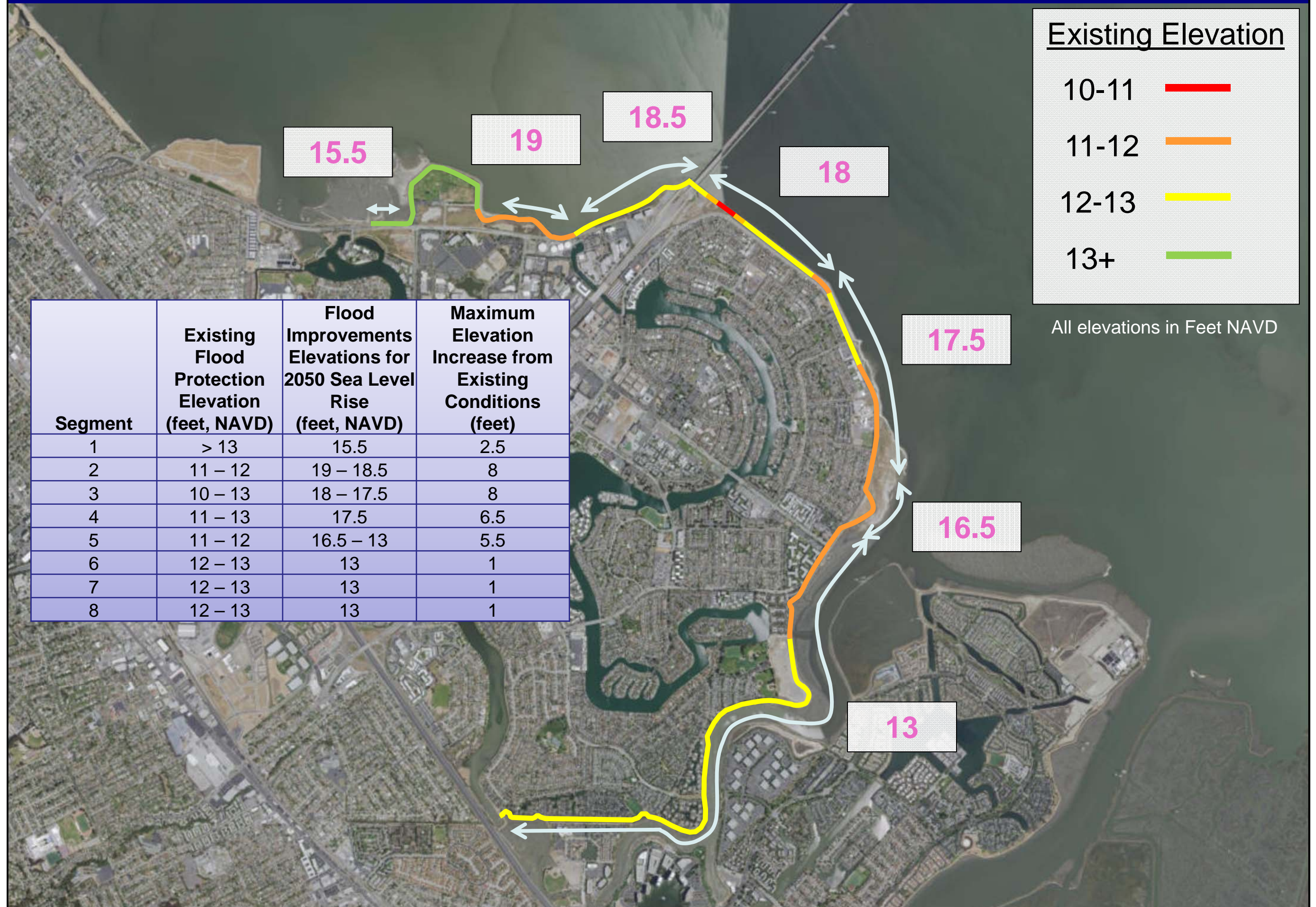
Foster City Design Flood Protection Elevations

Existing Elevation

- 10-11 █
- 11-12 █
- 12-13 █
- 13+ █

All elevations in Feet NAVD

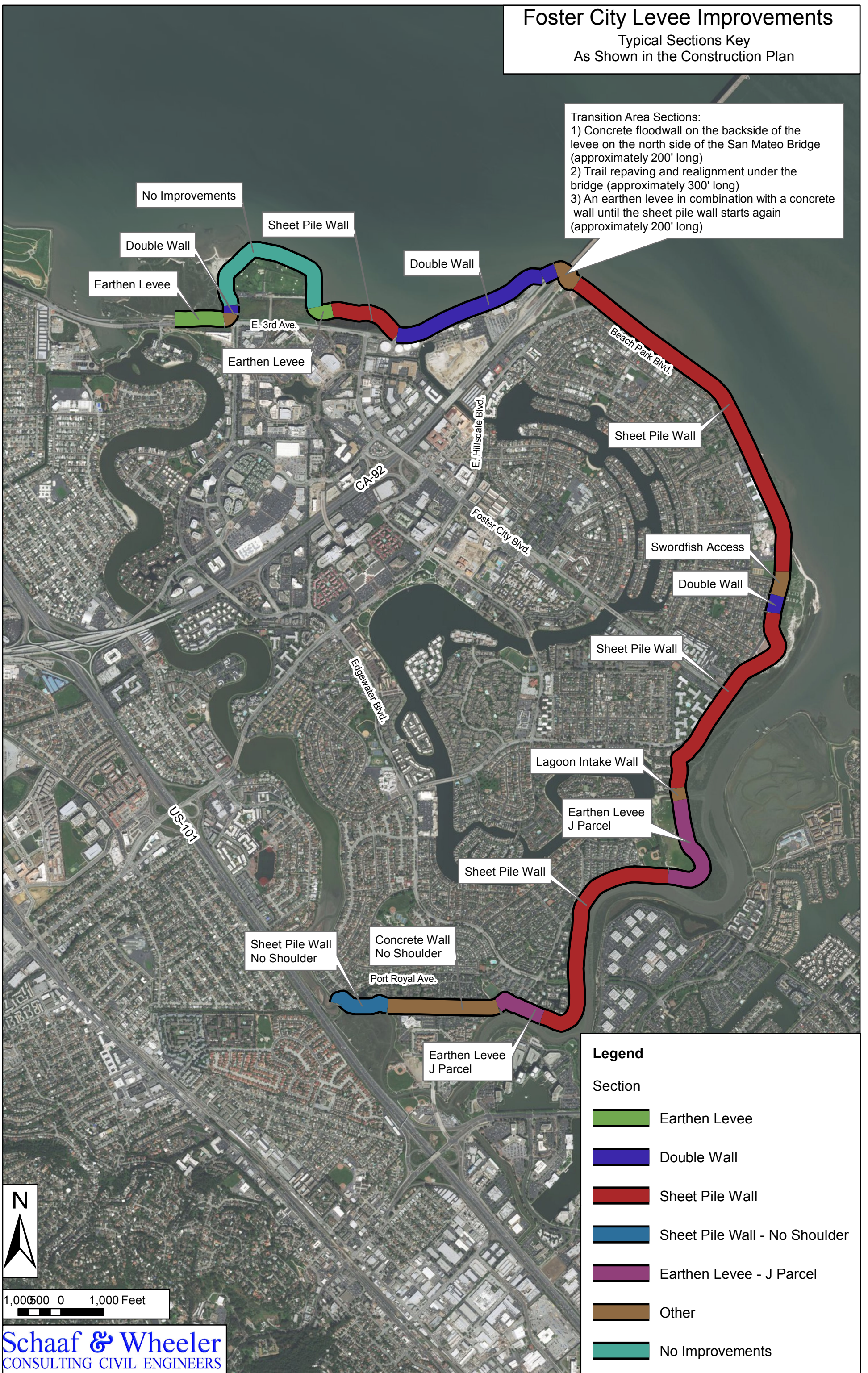
Segment	Existing Flood Protection Elevation (feet, NAVD)	Flood Improvements Elevations for 2050 Sea Level Rise (feet, NAVD)	Maximum Elevation Increase from Existing Conditions (feet)
1	> 13	15.5	2.5
2	11 – 12	19 – 18.5	8
3	10 – 13	18 – 17.5	8
4	11 – 13	17.5	6.5
5	11 – 12	16.5 – 13	5.5
6	12 – 13	13	1
7	12 – 13	13	1
8	12 – 13	13	1



Foster City Levee Improvements

Typical Sections Key
As Shown in the Construction Plan

Transition Area Sections:
 1) Concrete floodwall on the backside of the levee on the north side of the San Mateo Bridge (approximately 200' long)
 2) Trail repaving and realignment under the bridge (approximately 300' long)
 3) An earthen levee in combination with a concrete wall until the sheet pile wall starts again (approximately 200' long)



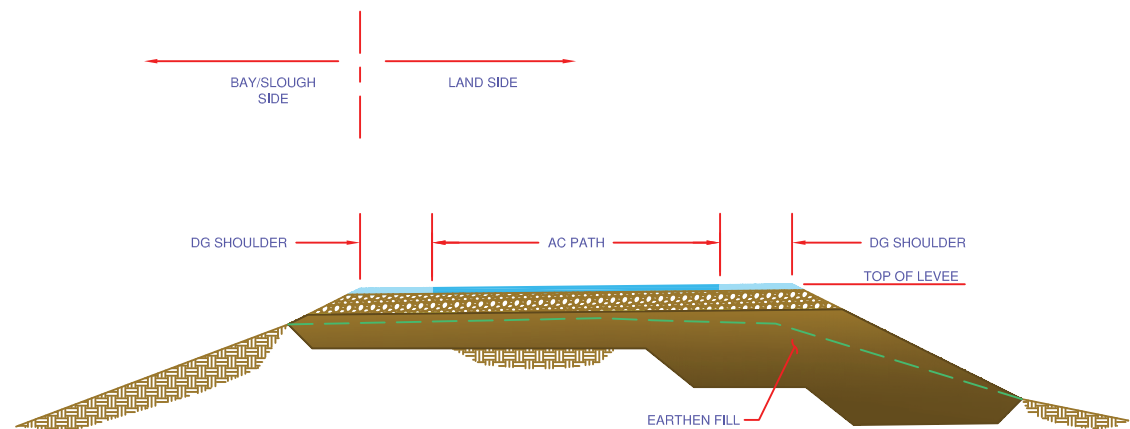
Legend

Section

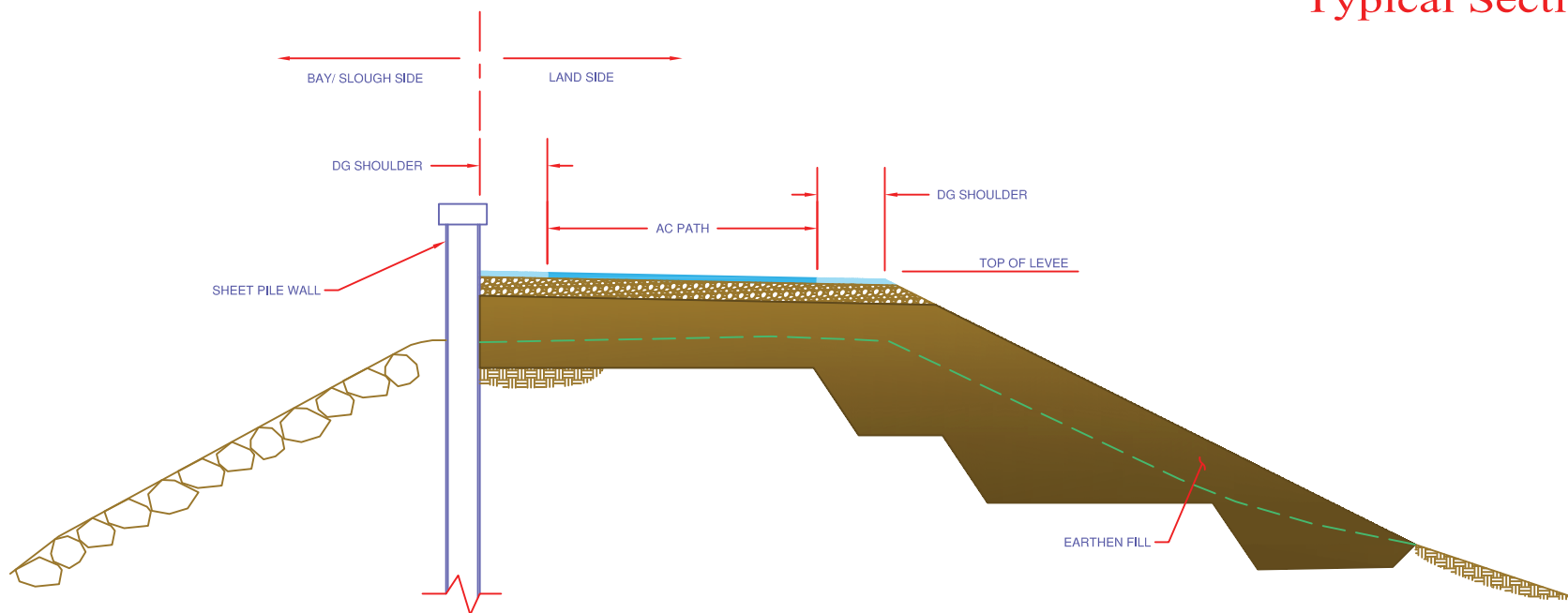
- Earthen Levee
- Double Wall
- Sheet Pile Wall
- Sheet Pile Wall - No Shoulder
- Earthen Levee - J Parcel
- Other
- No Improvements



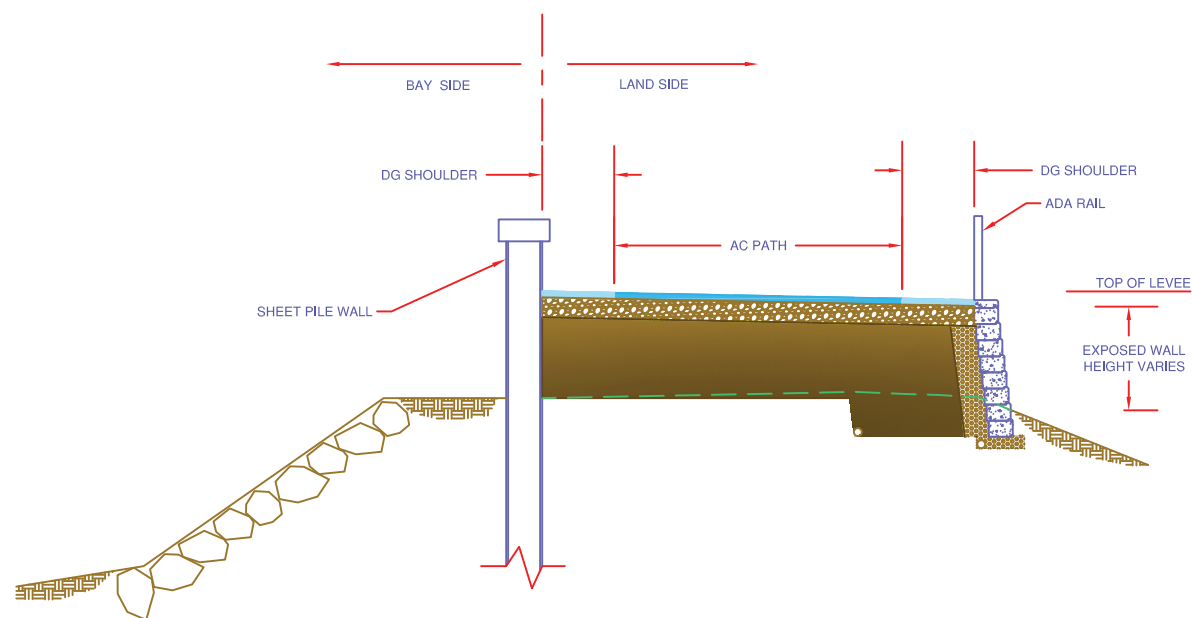
1,000 500 0 1,000 Feet



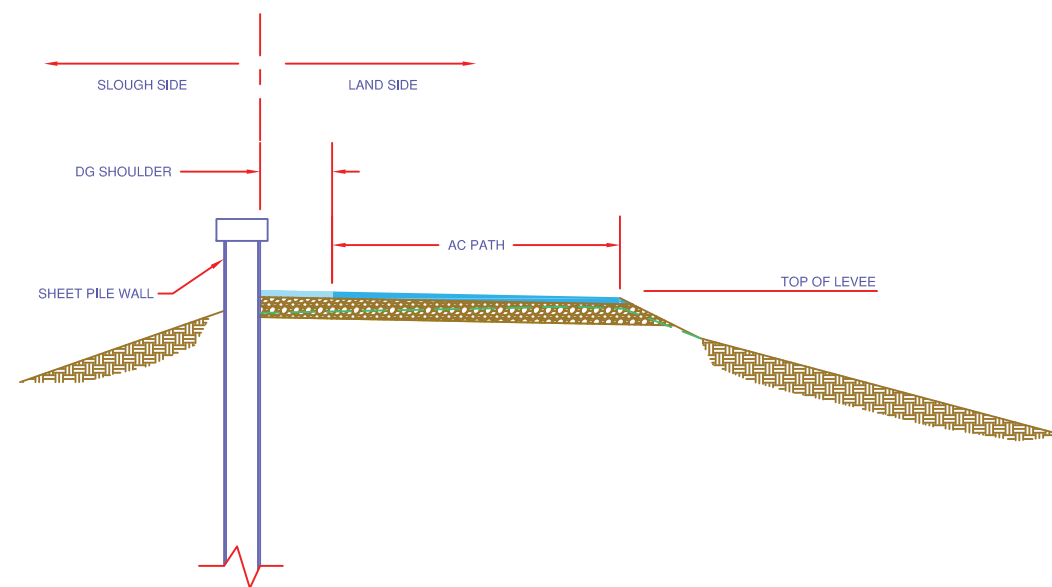
TYPICAL EARTHEN LEVEE SECTION



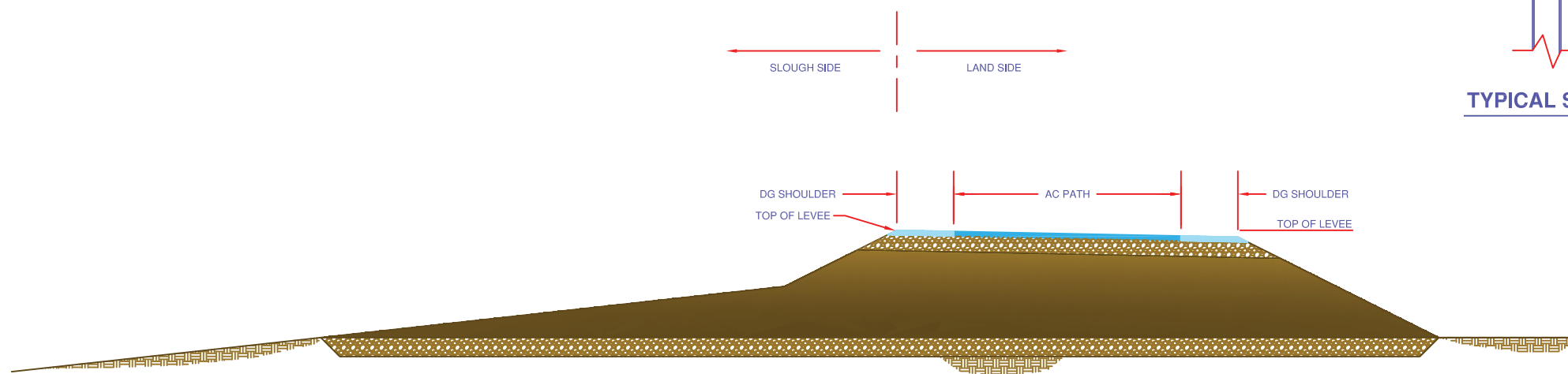
TYPICAL SHEET PILE WALL SECTION



TYPICAL DOUBLE WALL SECTION



TYPICAL SHEET PILE WALL (NO SHOULDER) SECTION



TYPICAL EARTHEN LEVEE (J PARCEL) SECTION

Foster City Levee Improvements

Bay Trail Improvement Key

Typical Sections

As Shown in the Construction Plan







1,000 500 0 1,000 Feet

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Legend

Type

-  10-FT Path with Shoulder
-  12-FT Path with Shoulder
-  12-FT Path, No Shoulder Inboard Side
-  No Improvements

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
4. Concrete panels with concrete cap



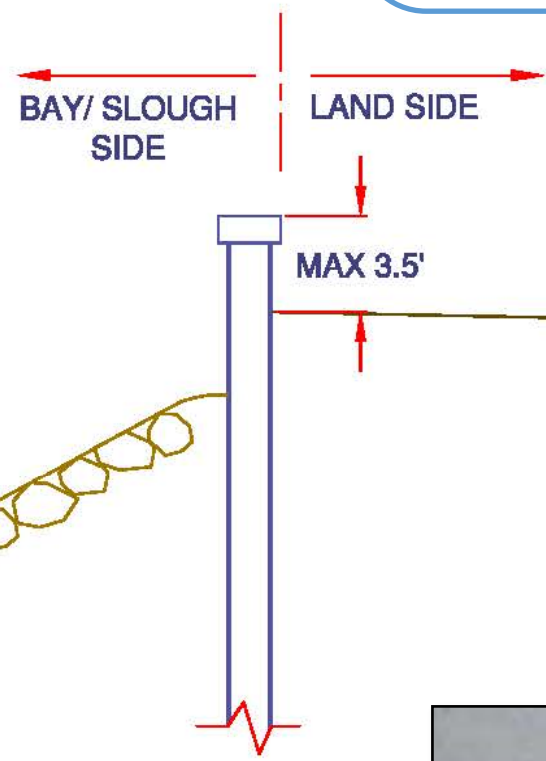
1.

~\$3 Million



2.

~\$3.5 Million



3.

~\$5 Million

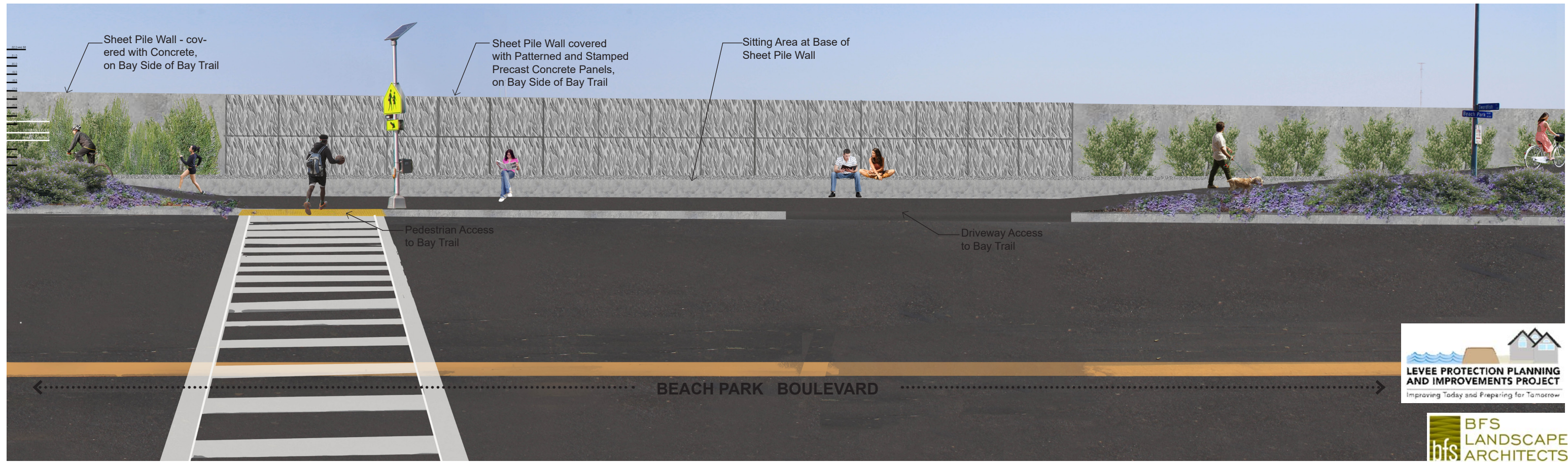


4.

~\$5 Million



Typical View between Mariner's Point and San Mateo Bridge



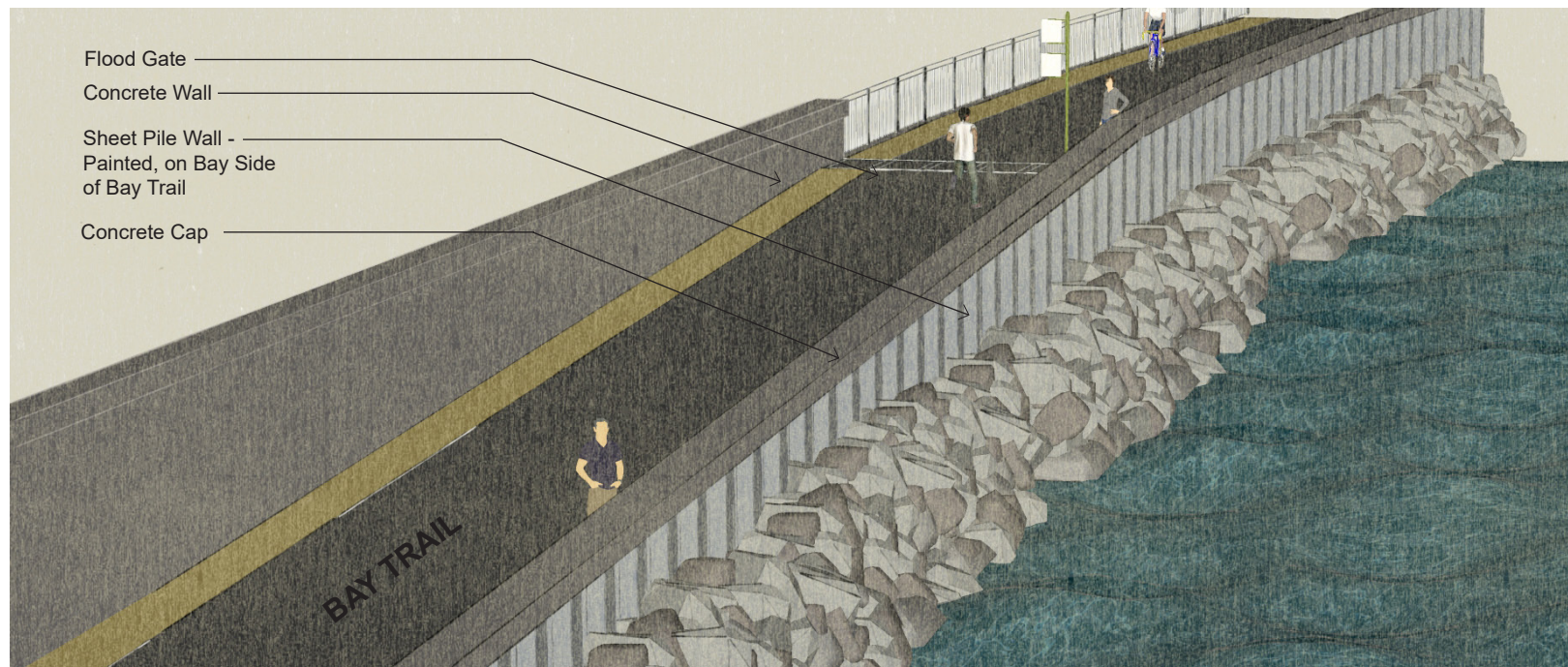
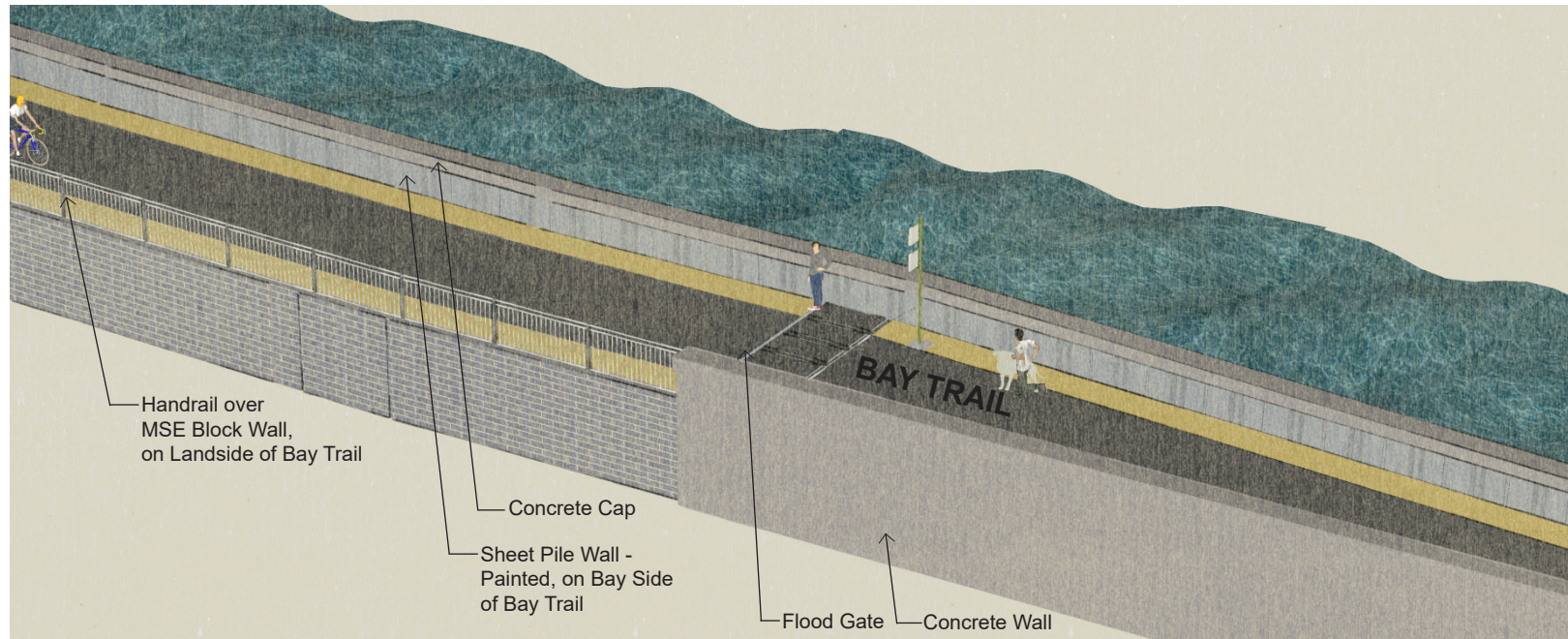
Levee Access at Beachpark Boulevard and Swordfish Street



Key Plan



View B- Looking East Beneath the San Mateo Bridge/ SR92



View A- Transition at Floodbreak adjacent to San Mateo Bridge



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


LEVEL PROTECTION PLANNING
AND IMPROVEMENTS PROJECT
Improving Today and Preparing for Tomorrow

 BFS
LANDSCAPE
ARCHITECTS

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	lepidula	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
Grindelia	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							



Achillea millefolium (Common Yarrow)



Ambrosia psilostachya (Western Ragweed)



Artemisia californica (California Sagebrush)



Artemisia douglasiana (Mugwort)



Aster chilensis (California Aster)



Baccharis pilularis (Coyote Brush)



Bolboschoenus maritimus (Alkali Bulrush)



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)



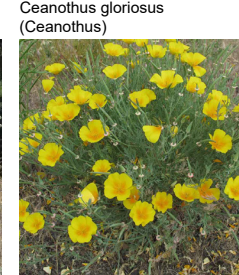
Deschampsia caespitosa 'Holciformis' (Pacific hairgrass)



Eriogonum latifolium (Coastal Eriogonum)



Eriogonum nudum (Naked Buckwheat)



Eschscholzia californica 'Maritima' (California Coastal Poppy)



Festuca idahoensis (Fescue Bunchgrass)



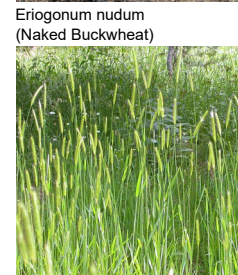
Festuca rubra 'Molate' (Molate Red Fescue)



Frankenia salina (Alkali Heath)



Grindelia stricta 'Angustifolia' (Pacific Gumplant)



Hordeum brachyantherum (Salt Meadow Barley)



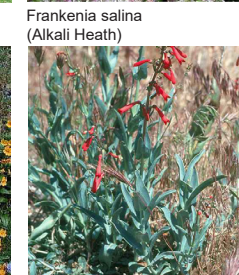
Juncus patens (Wire Grass)



Limonium californicum (Marsh Rosemary)



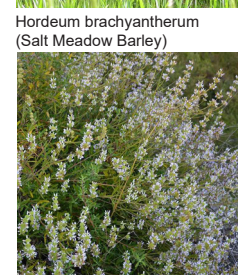
Mimulus aurantiacus (Sticky Monkey Flower)



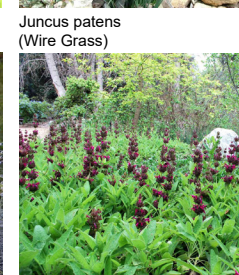
Penstemon centranthifolius (Scarlet Bugler)



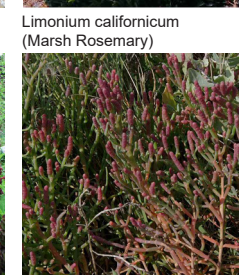
Ranunculus californicus (California Buttercup)



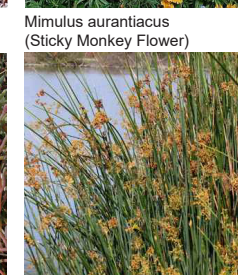
Salvia mellifera 'Repens' (Creeping Black Sage)



Salvia spathacea (Hummingbird Sage)



Sarcocornia pacifica (Pickleweed)



Schoenoplectus californicus (California Bulrush)



Sidalcea malviflora (Checkerbloom)



Sisyrinchium bellum (Blue-eyed Grass)



Solidago californica (California Goldenrod)



Stipa lepidula (Foothill needle grass)



Stipa pulchra (Purple Needle Grass)

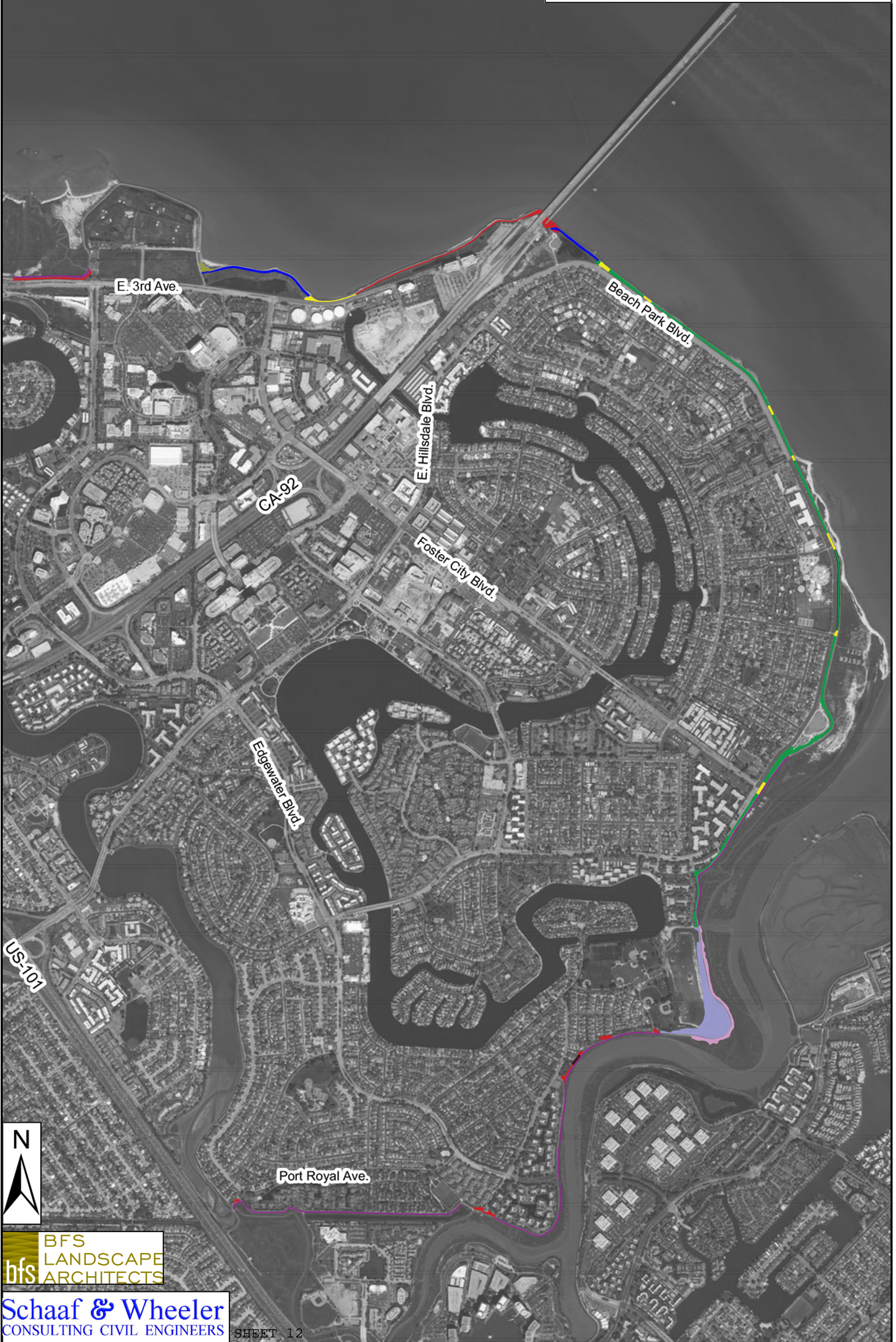


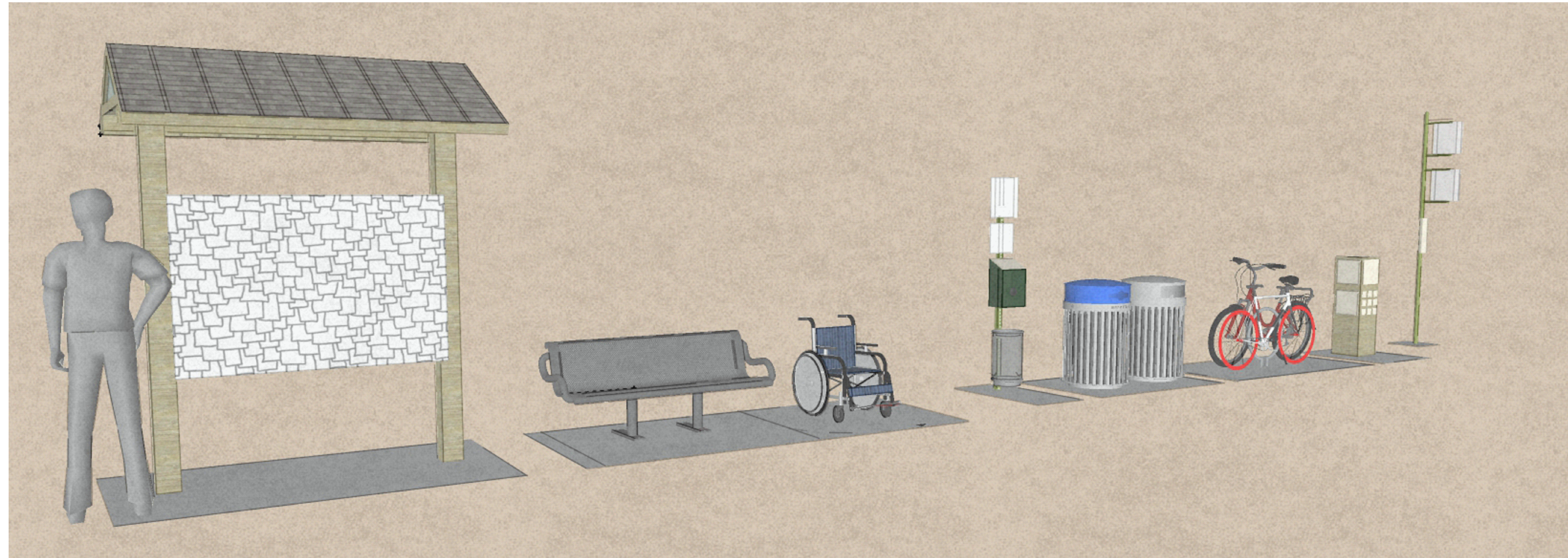
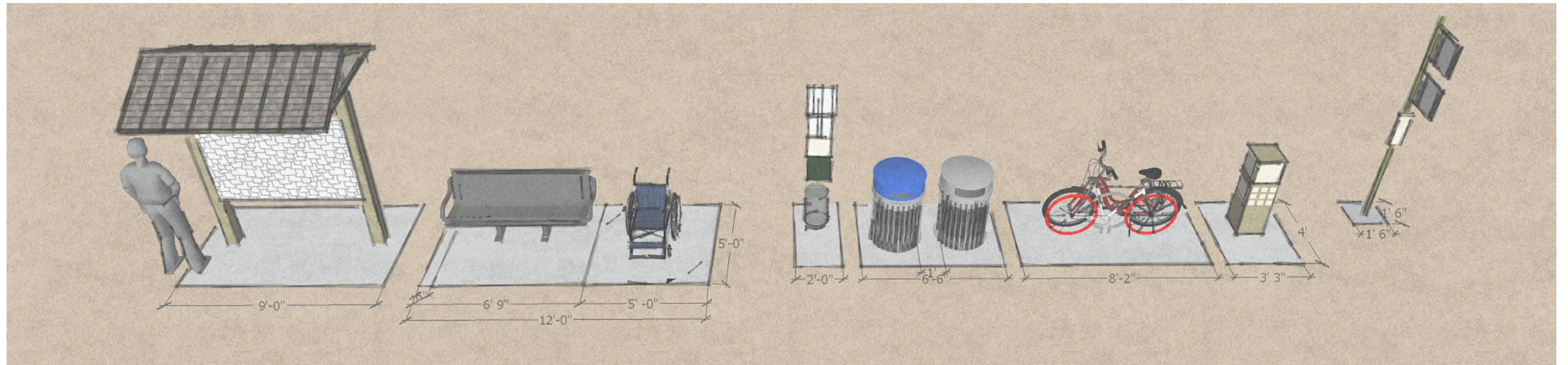
Vulpia microstachys (Small Fescue)



Wyethia angustifolia (Mule's Ears)


















Foster City Levee Improvements

Access Points and Amenities

Legend

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














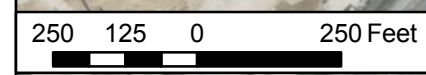
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21  

22 

23  

24    

25 

26 

27 














250 125 0 250 Feet

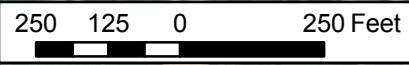
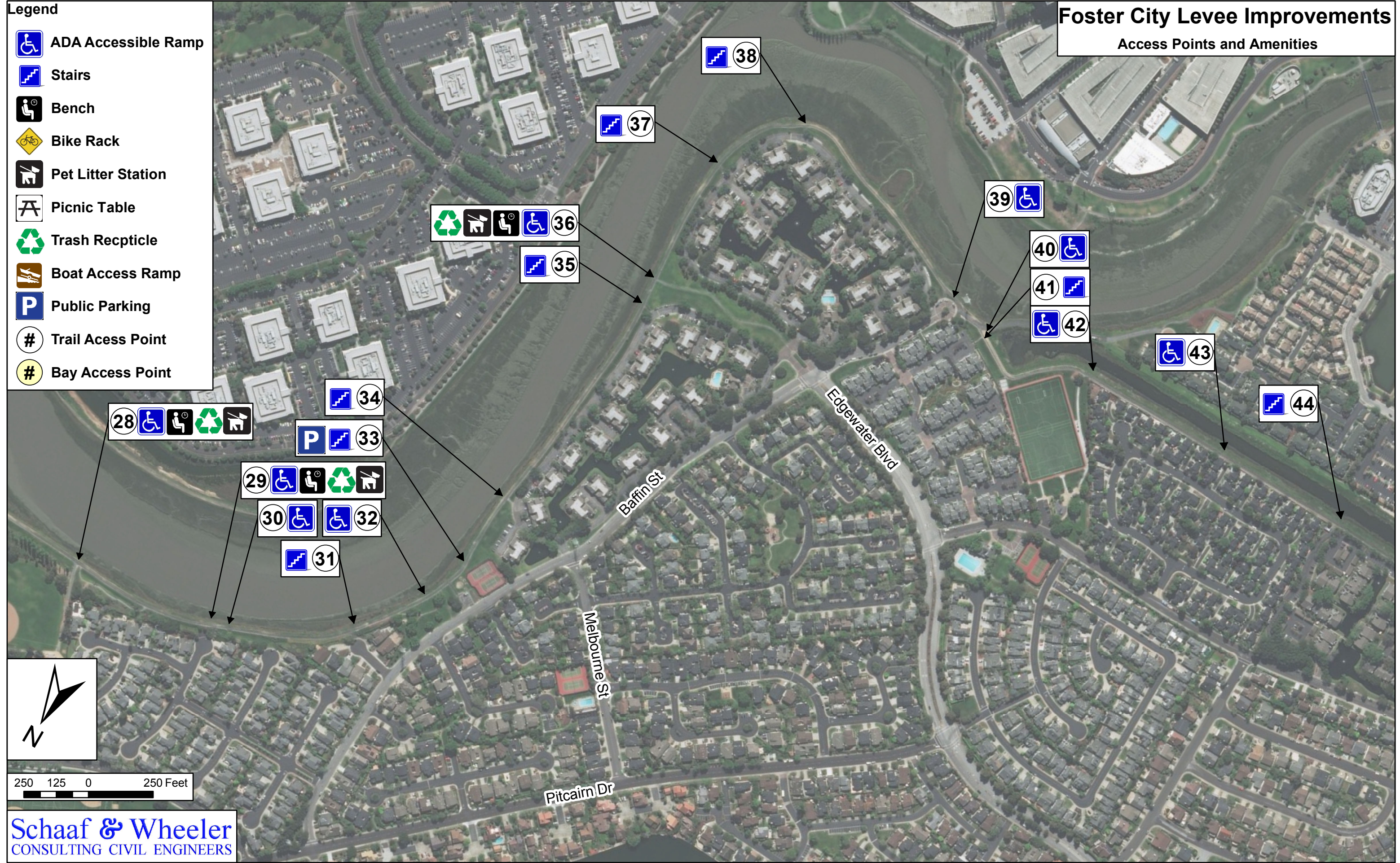
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45 

46  49 

47  P  48 

Port Royal Ave

Chesapeake Ave

Boothbay Ave

Port Royal Ave

US-101



250 125 0 250 Feet

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