

CALIFORNIA COASTAL COMMISSION

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Th14a

5-21-0907 (ORANGE COUNTY PUBLIC WORKS)
JULY 28, 2022

EXHIBITS

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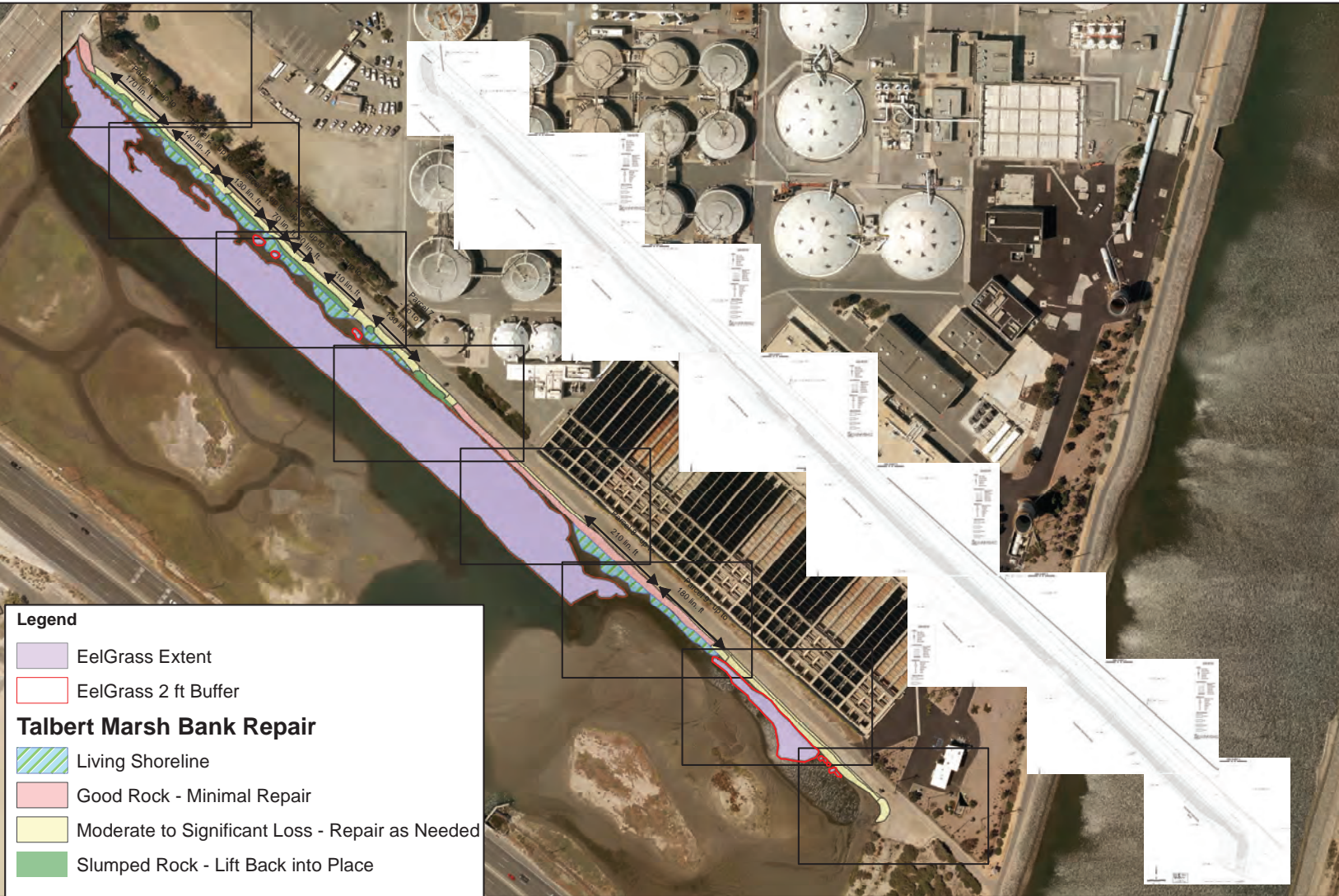
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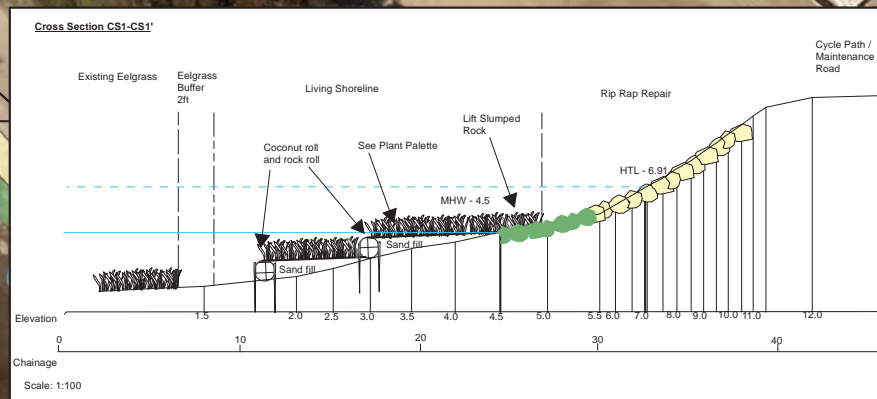
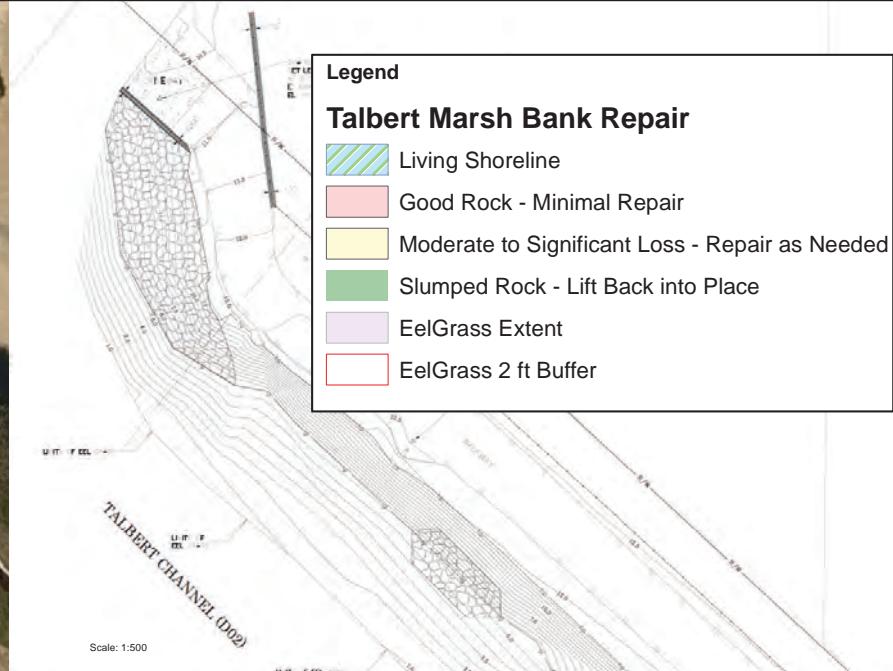
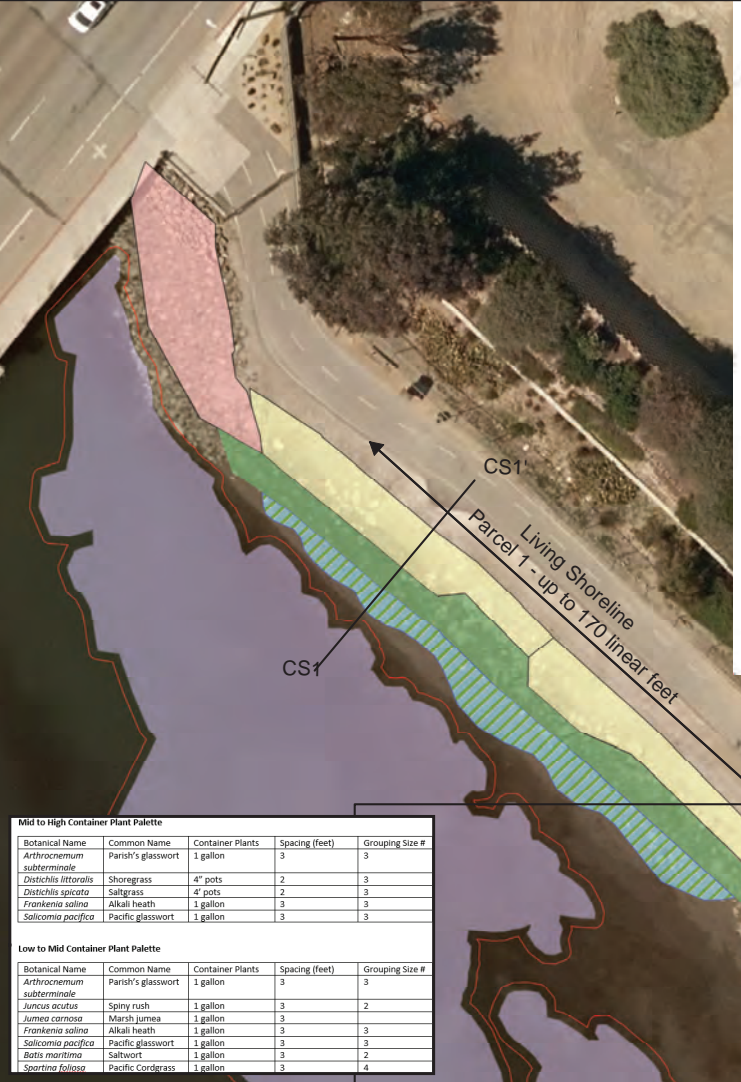
Exhibit 1 – Vicinity Map



Exhibit 2 – Project Plans



Notes: See subsequent exhibits for further detail.		Prepared by:	Giles Matthews		Project: Talbert Marsh Slope Repair and Living Shoreline Project Description: Site Plan Exhibit No. TM SP 01 v2
		Date:	03/21/2022 update		
		Elevation:			
		Scale:	1:3000		



Mid to High Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Distichlis littoralis</i>	Shoregrass	4" pots	2	3
<i>Distichlis spicata</i>	Saltgrass	4" pots	2	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3

Low to Mid Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Juncus acutus</i>	Spiny rush	1 gallon	3	2
<i>Juncus carnosus</i>	Marsh juncos	1 gallon	3	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3
<i>Batis maritima</i>	Saltwort	1 gallon	3	2
<i>Spartina foliosa</i>	Pacific Cordgrass	1 gallon	3	4

- Notes:
- Parcel 1 Living Shoreline up to 170 linear feet and 0.031 acre.
 - Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
 - Concrete blocks to be removed from site and replaced with clean rip rap.
 - Missing Rock to be replaced

Prepared by:	Giles Matthews
Date:	0./21/22 update
Elevation:	
Scale:	See inset

Public Works

Integrity, Accountability, Service, Trust

James Treadaway, Director

Project: Talbert Marsh Slope Repair and Living Shoreline Project

Description:







Site Plan

Exhibit No.

TM SP 01a v2

Legend

Talbert Marsh Bank Repair

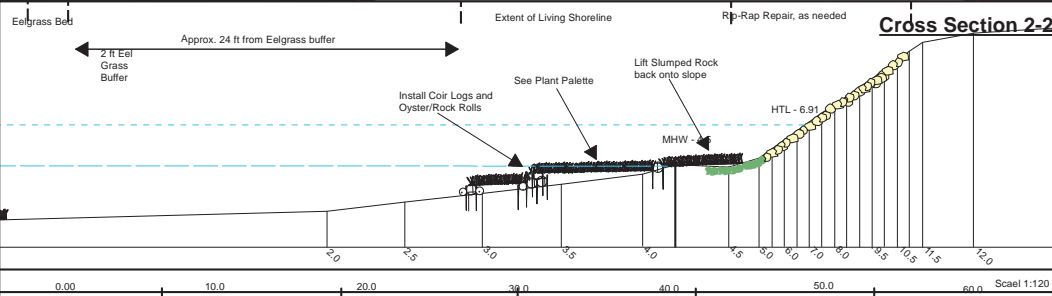
-  Living Shoreline
-  Good Rock - Minimal Repair
-  Moderate to Significant Loss - Repair as Needed
-  Slumped Rock - Lift Back into Place
-  EelGrass Extent
-  EelGrass 2 ft Buffer

Mid to High Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Distichlis littoralis</i>	Shoregrass	4" pots	2	3
<i>Distichlis spicata</i>	Saltgrass	4" pots	2	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3

Low to Mid Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Juncus acutus</i>	Spiny rush	1 gallon	3	2
<i>Juncus carnea</i>	Marsh juncos	1 gallon	3	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3
<i>Batis maritima</i>	Saltwort	1 gallon	3	2
<i>Spartina foliosa</i>	Pacific Cordgrass	1 gallon	3	4



- Parcel 4 Living Shoreline up to 70 linear feet and 0.014 acre.
- Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
- Concrete blocks to be removed from site and replaced with clean rip rap.
- No work would be permitted within 2 ft of eelgrass. Temp. fencing would be installed to protect eelgrass.
- All rock work carried out from top of slope.

Prepared by:

Giles Matthews

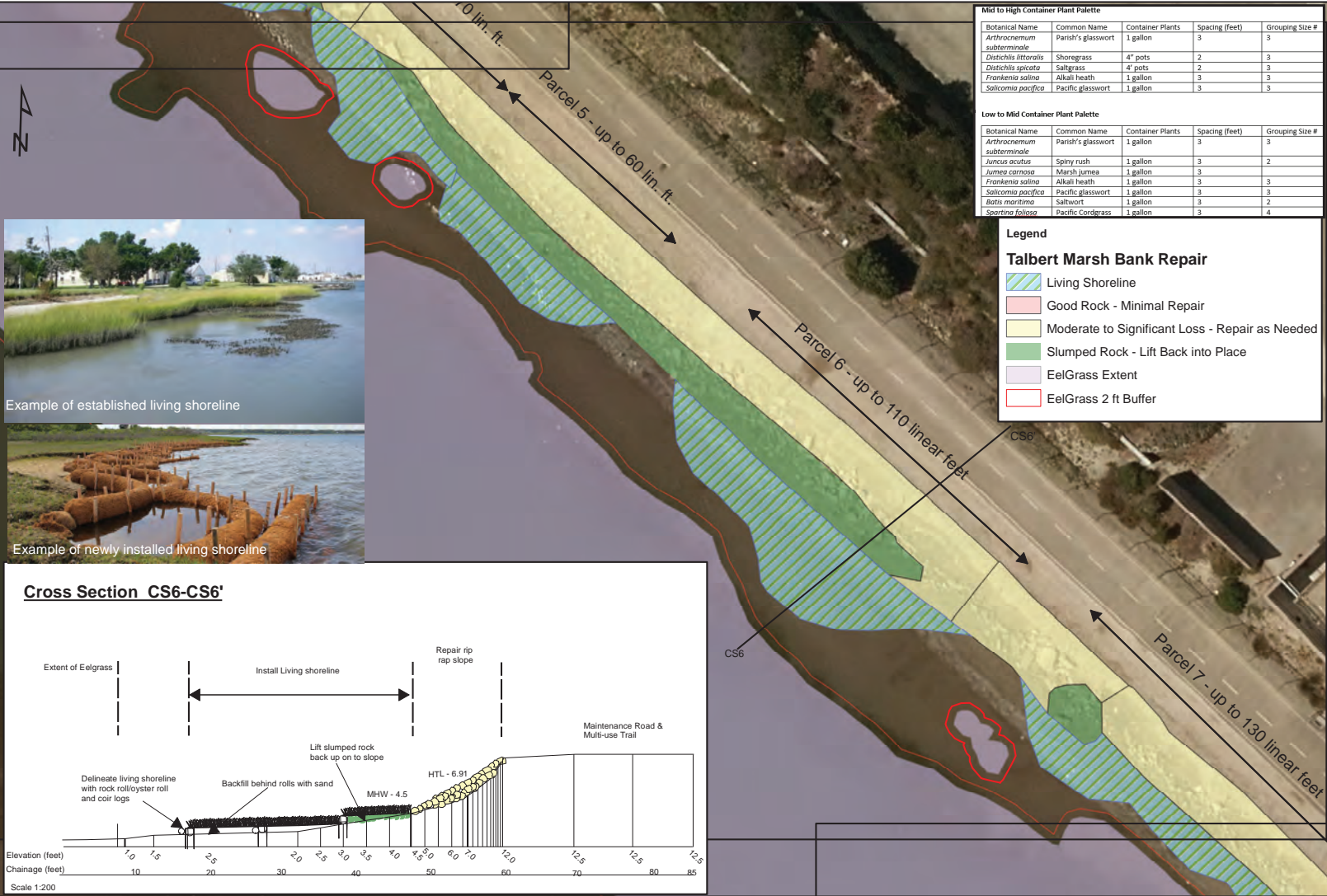
Date:

03/21/22 update

Elevation:

See Inset

Scale:



Mid to High Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Distichlis littoralis</i>	Shoregrass	4" pots	2	3
<i>Distichlis spicata</i>	Saltgrass	4" pots	2	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3

Low to Mid Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Juncus acutus</i>	Spiry rush	1 gallon	3	2
<i>Jumea carnea</i>	Marsh jumea	1 gallon	3	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3
<i>Batis maritima</i>	Saltwort	1 gallon	3	2
<i>Spartina foliosa</i>	Pacific Cordgrass	1 gallon	3	4

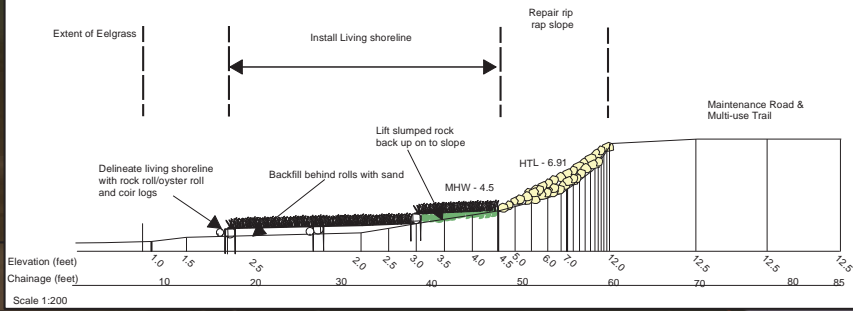
Legend

Talbert Marsh Bank Repair

- Living Shoreline
- Good Rock - Minimal Repair
- Moderate to Significant Loss - Repair as Needed
- Slumped Rock - Lift Back into Place
- EelGrass Extent
- EelGrass 2 ft Buffer



Cross Section CS6-CS6'



Notes:

- Parcel 5 Living Shoreline up to 60 linear feet and 0.016acre.
- Parcel 6 Living Shoreline up to 110 linear feet and 0.042 acre.
- Parcel 7 Living Shoreline up to 130 linear feet and 0.029 acre.
- Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
- Concrete blocks to be removed from site and replaced with clean rip rap.
- Actual living shoreline profile would be determined on site to avoid all eelgrass beds

Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	1:3000

Public Works

Integrity, Accountability, Service, Trust

James Treadaway, Director

COUNTY OF ORANGE

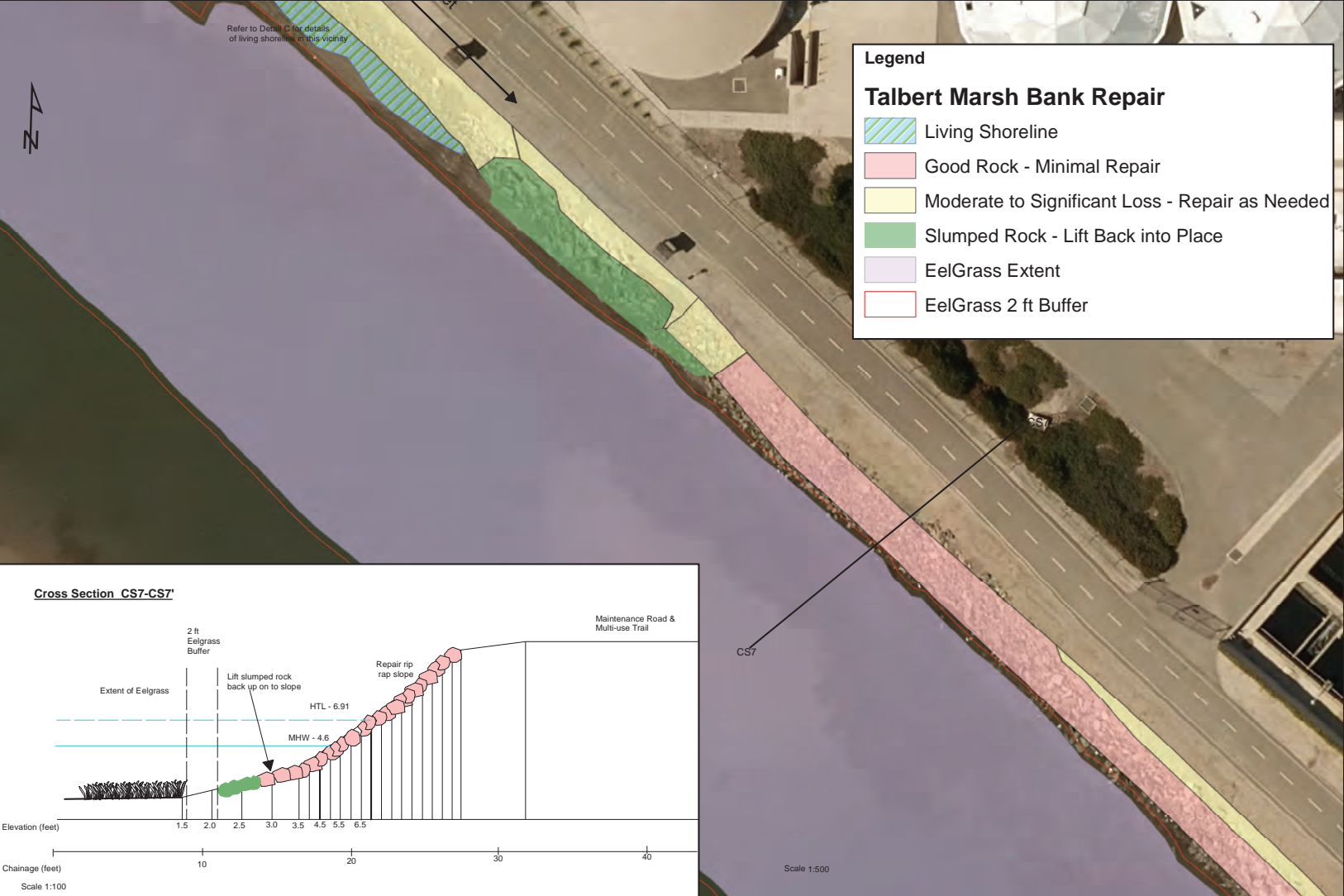
Project: Talbert Marsh Slope Repair and Living Shoreline Project

Description:

Detail Section C

Exhibit No.

TM Detail c v2

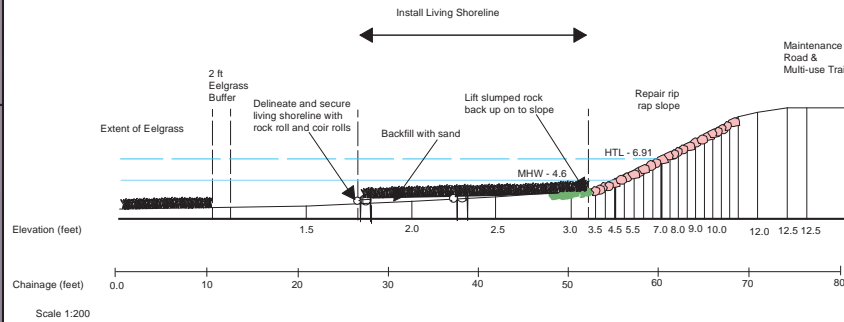


Notes:

- No living shoreline within this reach due to close proximity of existing eelgrass beds to the edge of the marsh and existing rip rap.
- Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
- Concrete blocks to be removed from site and replaced with clean rip rap.
- No work would be permitted within 2 ft of eelgrass. Temp. fencing would be installed to protect eelgrass.
- All rock work carried out from top of slope.

Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	See inset

Cross Section CS8-CS8'



Legend

Talbert Marsh Bank Repair

- Living Shoreline
- Good Rock - Minimal Repair
- Moderate to Significant Loss - Repair as Needed
- Slumped Rock - Lift Back into Place
- EelGrass Extent
- EelGrass 2 ft Buffer

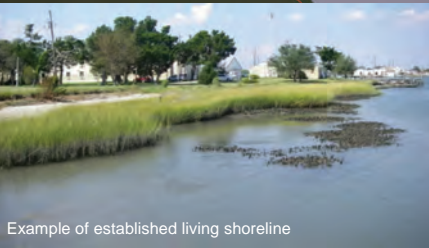
For details of non-living shoreline reaches refer to Exhibit TM Detail D

Mid to High Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Distichlis littoralis</i>	Shoregrass	4" pots	2	3
<i>Distichlis spicata</i>	Saltgrass	4" pots	2	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3

Low to Mid Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Juncus acutus</i>	Spiny rush	1 gallon	3	2
<i>Juncus carnosus</i>	Marsh juncus	1 gallon	3	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3
<i>Batis maritima</i>	Saltwort	1 gallon	3	2
<i>Spartina foliosa</i>	Pacific Cordgrass	1 gallon	3	4



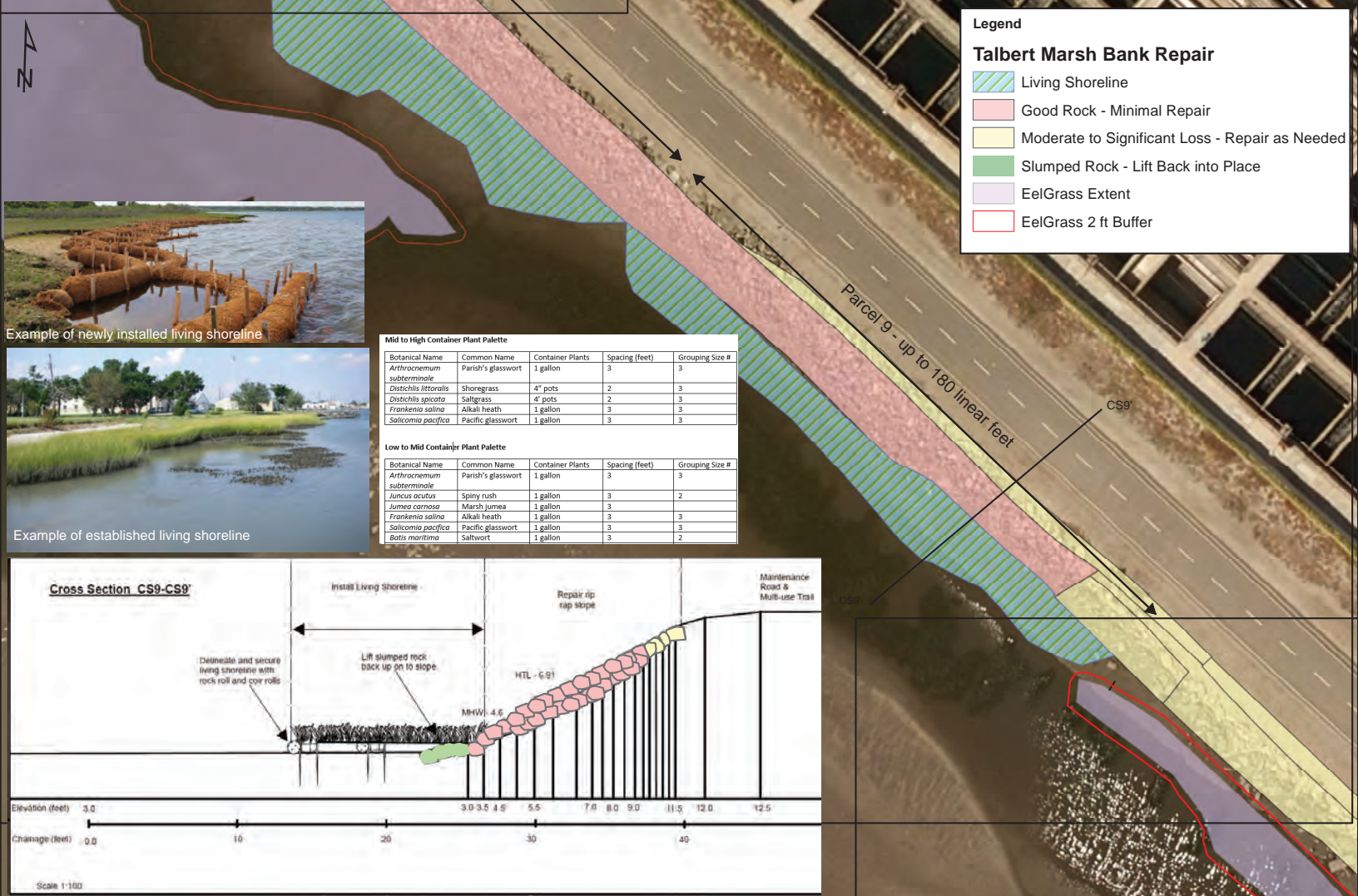
Example of established living shoreline



Example of newly installed living shoreline

- Notes:**
- Parcel 8 Living Shoreline up to 210 linear feet and 0.092 acre.
 - Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
 - Concrete blocks to be removed from site and replaced with clean rip rap.
 - No work would be permitted within 2 ft of eelgrass. Temp. fencing would be installed to protect eelgrass.
 - All rock work carried out from top of slope.

Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	See Inset



Legend

Talbert Marsh Bank Repair

- Living Shoreline
- Good Rock - Minimal Repair
- Moderate to Significant Loss - Repair as Needed
- Slumped Rock - Lift Back into Place
- EelGrass Extent
- EelGrass 2 ft Buffer

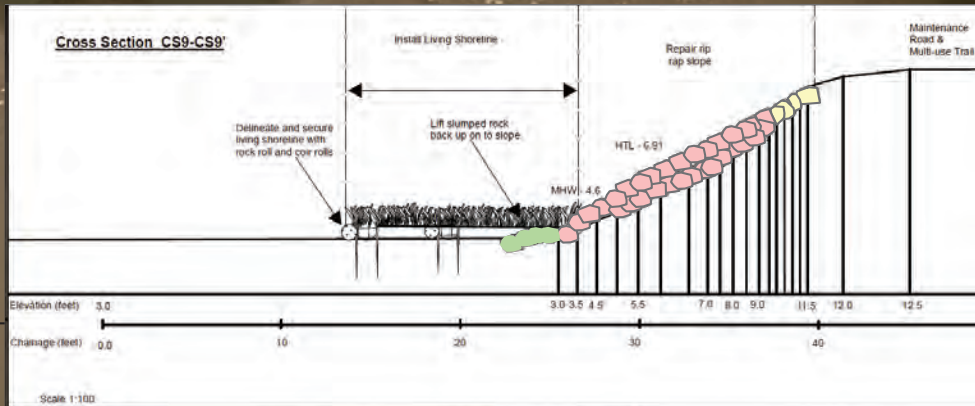
Mid to High Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Distichlis spicata</i>	Shoregrass	4" pots	2	3
<i>Distichlis spicata</i>	Shoregrass	4" pots	2	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3

Low to Mid Container Plant Palette

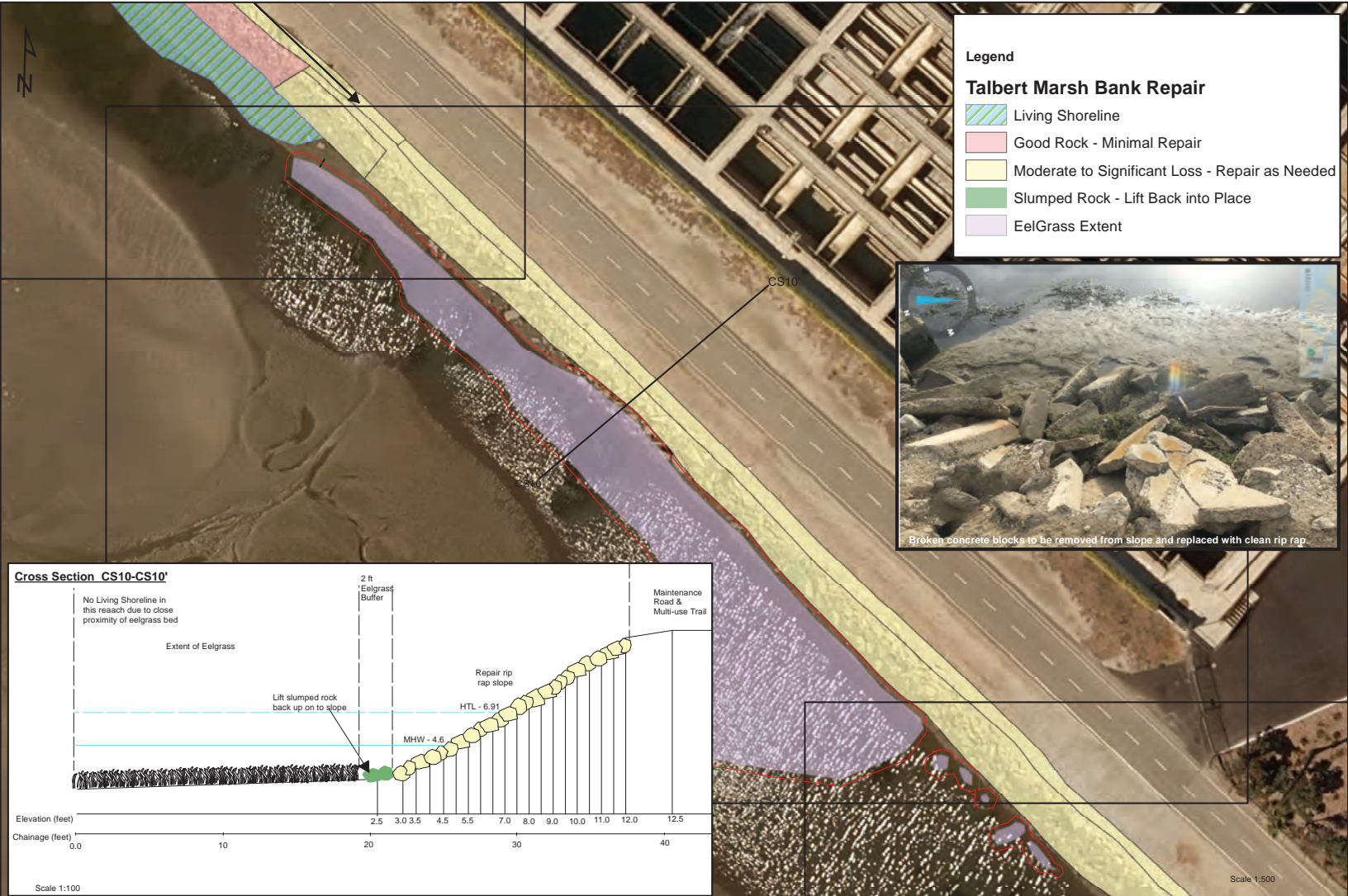
Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Juncus acutus</i>	Spiry rush	1 gallon	3	2
<i>Juncus acutus</i>	Marsh juncos	1 gallon	3	2
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3
<i>Batis maritima</i>	Saltwort	1 gallon	3	2

Cross Section CS9-CS9'








- Notes:
- Parcel 9 Living Shoreline up to 180 linear feet and 0.053 acre.
 - Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
 - Concrete blocks to be removed from site and replaced with clean rip rap.
 - No work would be permitted within 2 ft of eelgrass. Temp. fencing would be installed to protect eelgrass.
 - All rock work carried out from top of slope.

Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	See Inset



Legend

Talbert Marsh Bank Repair

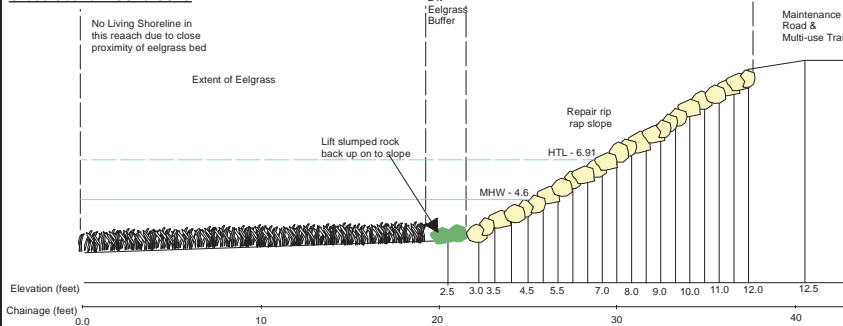
-  Living Shoreline
-  Good Rock - Minimal Repair
-  Moderate to Significant Loss - Repair as Needed
-  Slumped Rock - Lift Back into Place
-  EelGrass Extent



Broken concrete blocks to be removed from slope and replaced with clean rip rap.

Scale 1:500

Cross Section CS10-CS10'








- Notes:
- No Living Shoreline in this reach due to close proximity of existing eelgrass beds to the edge of the marsh and existing rip rap.
 - Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
 - Concrete blocks to be removed from site and replaced with clean rip rap.
 - No work would be permitted within 2 ft of eelgrass. Temp. fencing would be installed to protect eelgrass.
 - All rock work carried out from top of slope.

Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	See Inset



Legend

Talbert Marsh Bank Repair

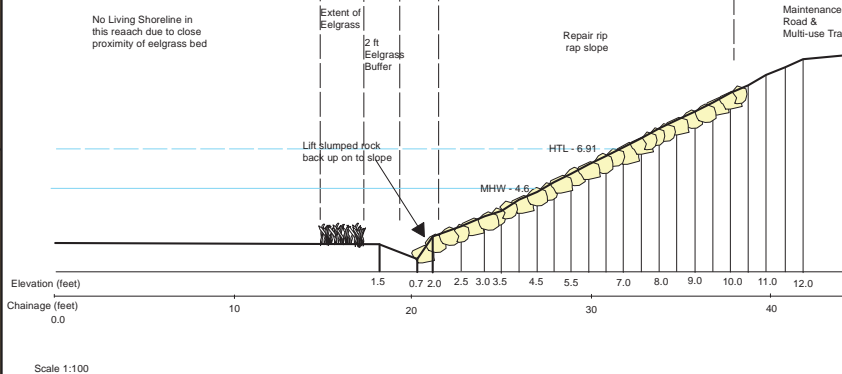
-  Living Shoreline
-  Good Rock - Minimal Repair
-  Moderate to Significant Loss - Repair as Needed
-  Slumped Rock - Lift Back into Place
-  EelGrass Extent



Broken concrete blocks to be removed from slope and replaced with clean rip rap.

Scale: 1:500

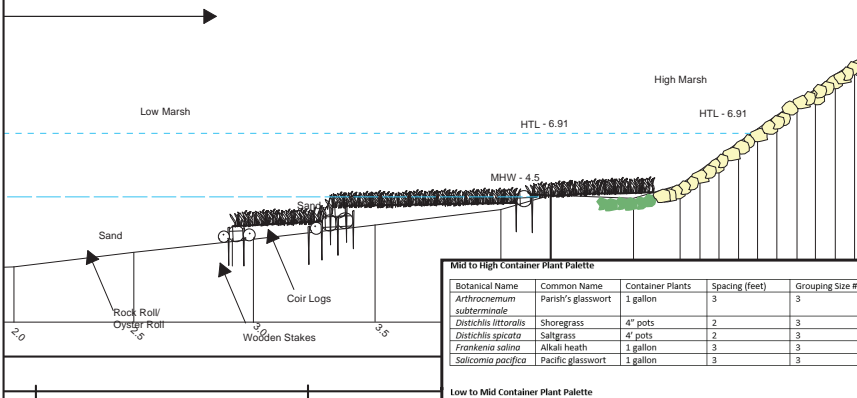
Cross Section CS11-CS11'



- Notes:**
- No Living Shoreline in this reach due to close proximity of existing eelgrass beds to the edge of the marsh and existing rip rap.
 - Slumped rip rap to be lifted from marsh and placed back on to rip rap slope.
 - Concrete blocks to be removed from site and replaced with clean rip rap.
 - No work would be permitted within 2 ft of eelgrass. Temp. fencing would be installed to protect eelgrass.
 - All rock work carried out from top of slope.

Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	See Inset

Typical Cross Section through Living Shoreline



Mid to High Container Plant Palette

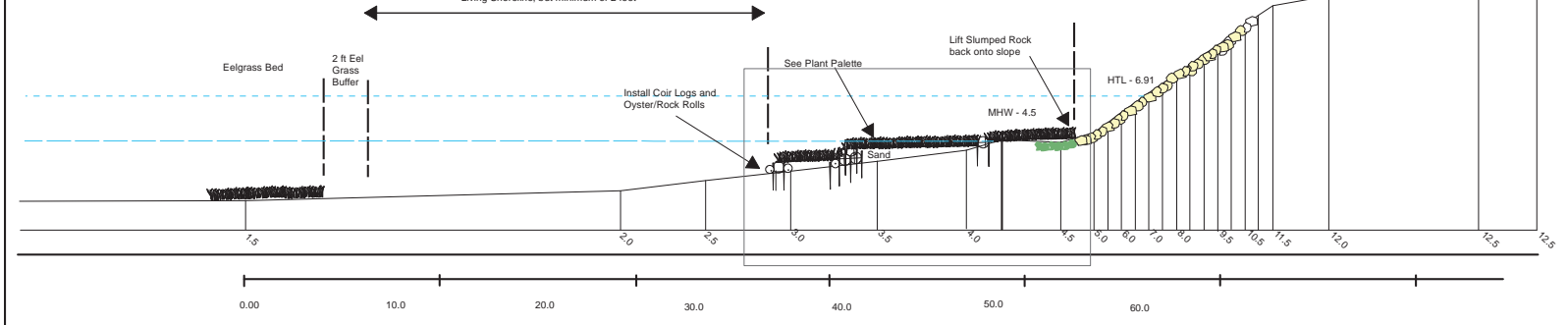
Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Distichlis littoralis</i>	Shoregrass	4" pots	2	3
<i>Distichlis spicata</i>	Saltgrass	4" pots	2	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3

Low to Mid Container Plant Palette

Botanical Name	Common Name	Container Plants	Spacing (feet)	Grouping Size #
<i>Arthrocnemum subterminale</i>	Parish's glasswort	1 gallon	3	3
<i>Juncus roemerianus</i>	Spiny rush	1 gallon	3	2
<i>Juncus roemerianus</i>	Marsh juncus	1 gallon	3	3
<i>Frankenia salina</i>	Alkali heath	1 gallon	3	3
<i>Salicornia pacifica</i>	Pacific glasswort	1 gallon	3	3
<i>Batis maritima</i>	Saltwort	1 gallon	3	2
<i>Spartina foliosa</i>	Pacific Cordgrass	1 gallon	3	4



Variable distance between eelgrass and Living Shoreline, but minimum of 2 feet



Typical Living Shoreline Layout



Prepared by:	Giles Matthews
Date:	03/21/22 update
Elevation:	
Scale:	NTS



Project: Talbert Marsh Slope Repair and Living Shoreline Project

Description:

Typical Cross Section

Exhibit No.

TM Detail T v2

Exhibit 3 – Examples of Living Shoreline Design



Figure 1. Photo of living shoreline at Sengekontacket Pond, Massachusetts.

Source: [Mass Audubon](#).

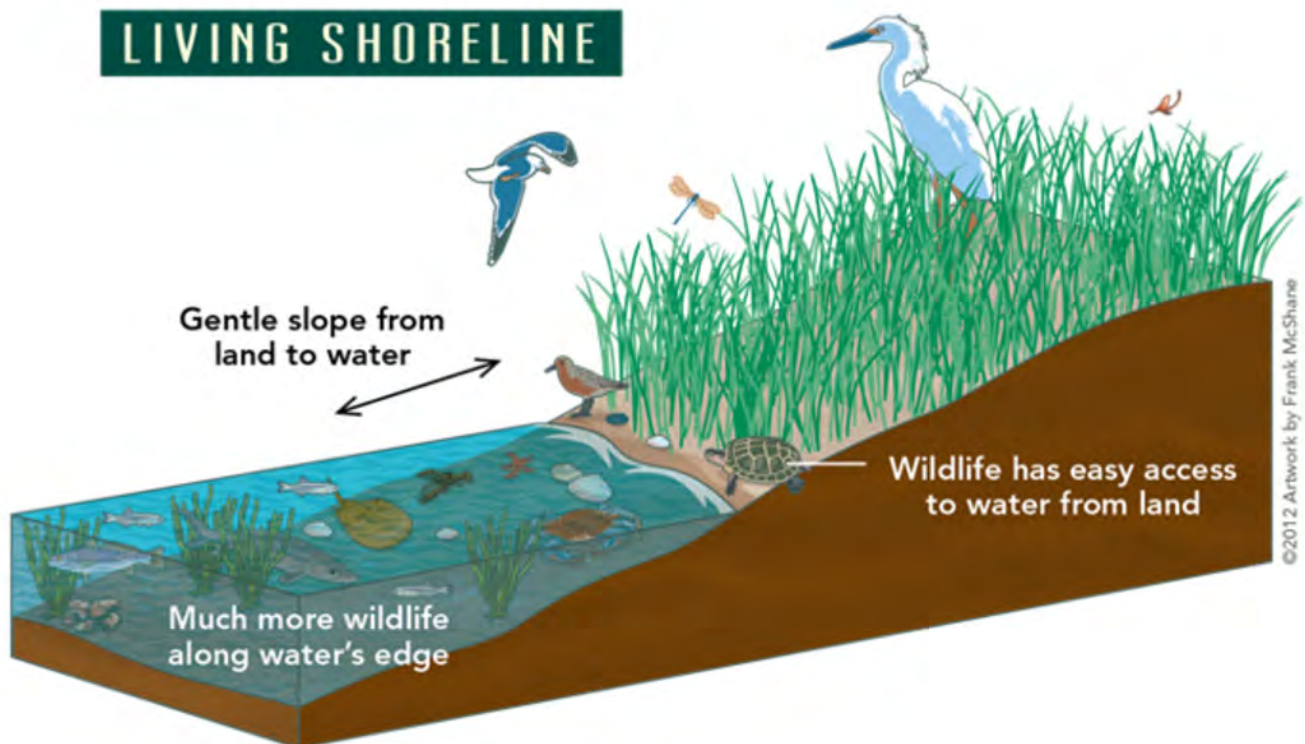


Figure 2. Rendering of living shoreline and marsh wildlife.

Source: Frank McShane, [Partnership for the Delaware Estuary Inc.](#)

Exhibit 4 – Site Photos



Figure 1. Portion of northeastern bank with sparse rip-rap and collapsed slope.



Figure 2. Northeastern mudflats with invertebrate burrows and algae.



Figure 3. Northeastern bank with concrete rubble.



Figure 4. View of southwestern slope from opposite bank during low-tide event.



Figure 5. Aerial east-facing photo of Talbert Channel.

Source: Ed Paige, [Huntington Beach Wetlands Conservancy](#).