ATTACHMENT 6

ELSIE ROEMER ENHANCEMENT CHANNEL CONSTRUCTION PLAN

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This document provides construction plans for the project titled "Elsie Roemer Bird Sanctuary Spartina Control Program California Clapper Rail Habitat Enhancement – Phase 1" ("Habitat Enhancement Project"). The Habitat Enhancement Project is a component of work ongoing at Elsie Roemer Marsh to control and eradicate non-native, invasive Spartina. The Spartina control work is, in turn, a component of a regional Spartina control effort being headed by the State Coastal Conservancy's San Francisco Estuary Invasive Spartina Project ("Spartina Project"). The Spartina control plan for the Elsie Roemer site was developed by the Spartina Project, and implemented by contractors for the City of Alameda. The plan for the Habitat Enhancement Project was developed by the Spartina Project, and will be implemented by contractors for the California Wildlife Foundation (a non-profit corporation). All Spartina *control and habitat enhancement plans have been developed with oversight of U.S. Fish and Wildlife Service under formal Section 7 Consultation.*

Plan: Construct 1-3 shallow channels within the Elsie Roemer Bird Sanctuary tidal marsh (**Plan Sheet 1**), sidecasting the excavated material in berms along the channel edges to create suitable elevations for planting *Grindelia* (gumplant) and other native salt marsh plants (approximately 5.3 ft. NGVD, **Plan Sheet 2**). The channels will be constructed with an excavator mounted on an amphibious undercarriage, or with a conventional excavator moving through the marsh on top of 4' x 22' wooden mats designed for this purpose. The channel width and invert will be sufficient to construct the required berms, one on each side of the channel, to +/- 5.3 ft. NGVD, with approximate 3:1 side slopes (**Plan Sheet 3**). In areas where the berm will be placed on very soft soils, a bed of fibrous vegetation and/or side forms of fibrous vegetation, collected from the construction area, will be placed beneath the fill material to improve the berm's integrity and minimize subsidence (**Plan Sheet 2**). Because of the soft soils and irregular surface, the channel configurations may need to be revised somewhat during construction. All excavated material will be used on site for construction of berms – no material will be imported or removed from the site. Final construction plans ("as-builts") will be provided upon completion.

Schedule: Construction will occur in low-tide daylight hours during the months of November 2006 through January 2007, as dictated by weather. Suitable low tide windows occur in the afternoons of November 15-19, November 29 - December 3, December 16-20, December 29- January 2, and January 14-18. Construction of Channels 2 and 3 is expected to require 4-8 hours each, depending on conditions encountered in the field. Construction of Channel 1 is expected to take up to 12 hours. Any construction that cannot be completed in November or December 2006, due to weather or other factors, will be completed in September 2007, after clapper rail nesting season.

Access and Staging: The construction zone will be accessed via a gate in the chain link fence east of the marsh-viewing platform on Shoreline Avenue. The equipment staging

area will be set up just outside this gate, in a flat upland area between the fence and the pedestrian walkway adjacent to Shoreline Drive. Blocks will be placed at curbs to allow equipment to access the staging area without damaging the curbs. Equipment will be kept off of the pedestrian pathway when not in transport, and pedestrian traffic controls will be implemented when required to assure worker and public safety.

Site Safety: A suitable site safety plan, including location of nearby medical facilities/hospitals, will be prepared by the contractor, and will be available on site during operation.

Spill Prevention: The contractor will provide a suitable spill prevention and containment plan, which will be implemented during construction. Equipment fueling and maintenance will occur only in the staging area or a remote location – no fueling or equipment maintenance will occur within the marsh or in any location where fuel or other hazardous material could be spilled into the marsh.

Water Quality: All channel construction will be done during low tide events, when the excavation and fill area is exposed above the tide line. No silt-curtains or other water control structures will be needed. Normal tidal inundation of the channels and berms after construction will result in minimal sediment disturbance and distribution.

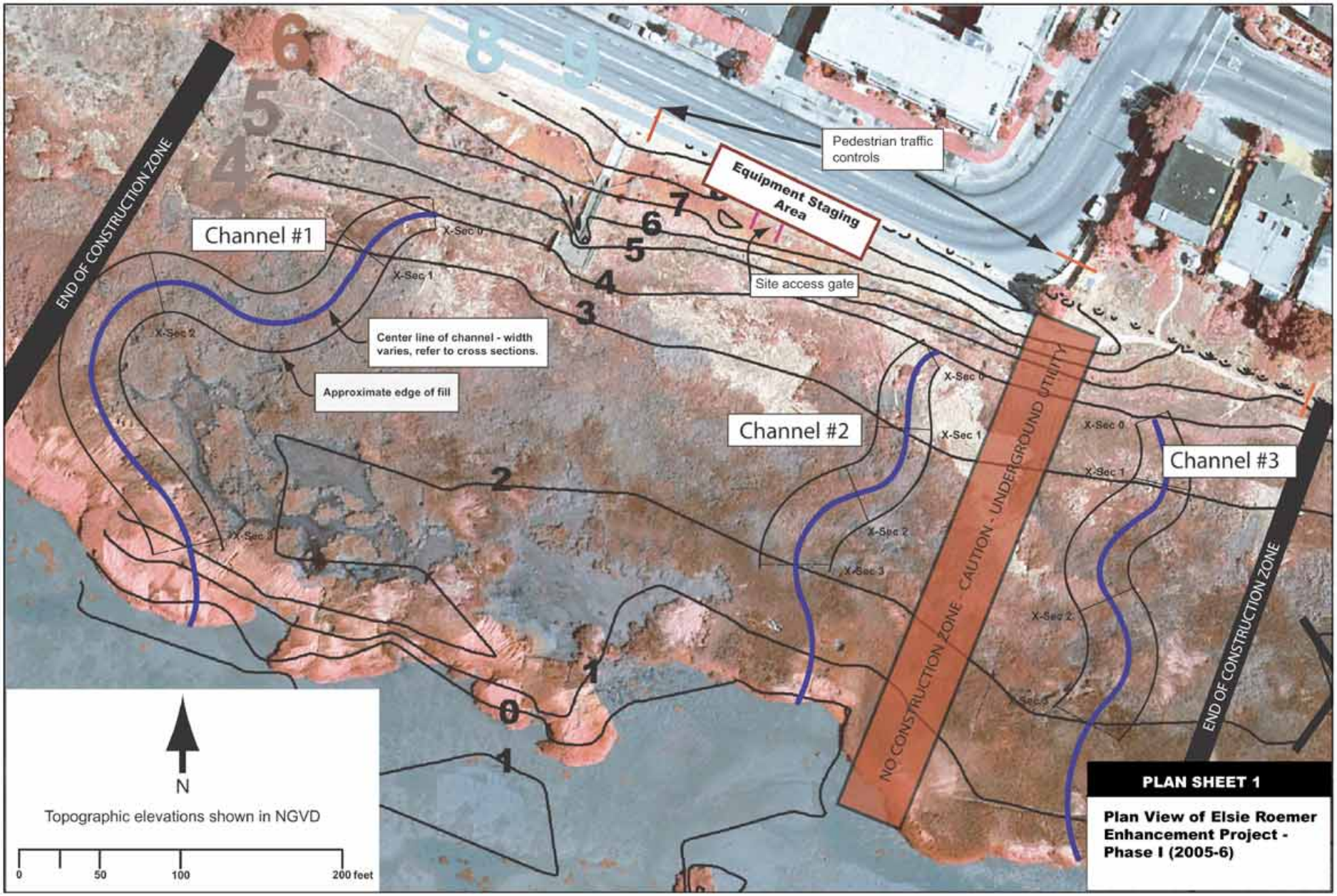
CEQA: Environmental review of the Habitat Enhancement Project under the California Environmental Quality Act (CEQA) was provided in the *Spartina* Project's Final Programmatic Environmental Impact Report/Statement for the San Francisco Estuary Invasive *Spartina* Project (State Coastal Conservancy & U.S. Fish and Wildlife Service, 2003) and Addendum (State Coastal Conservancy, 2005), both of which are available at www.*Spartina*.org/project.htm. The State Clearinghouse Number for the *Spartina* Project EIS/R is #2001042058. The City of Alameda adopted CEQA compliance findings on July 19, 2005 (Resolution #13875).

Additional Information:

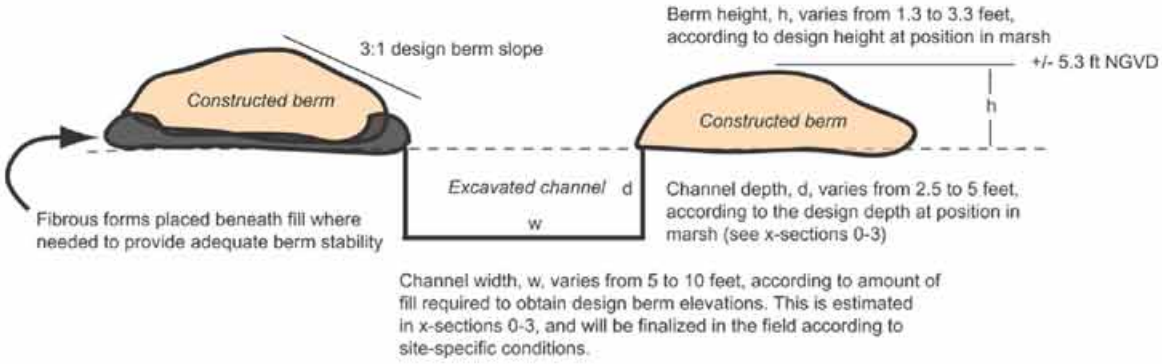
Relevant background regarding *Spartina* control and the Habitat Enhancement Project are contained in the "Invasive *Spartina* Control Plan for Alameda Island & San Leandro Bay Complex," (ISP 2005), available at http://www.spartina.org/control/site-detail.php?site_idref=49. The Elsie Roemer Enhancement Project is contained in the plan for Sub-Area 17a (page 5) of that document.

A hydrologic analysis for the project was performed by Robert Coats, Hydroikos, Ltd., and is available by calling the Project Director, Peggy Olofson, at 510-548-2361.

Additional information specific to the Habitat Enhancement Project is contained in the report "Elsie Roemer Bird Sanctuary Spartina Control Program California Clapper Rail Habitat Enhancement – Phase 1," prepared by the Invasive *Spartina* Project, which is also available by calling Peggy Olofson at 510-548-2361.


END OF CONSTRUCTION ZONE
Channel #1
X-Sec 0
X-Sec 1
X-Sec 2
X-Sec 3
Center line of channel - width varies, refer to cross sections.
Approximate edge of fill
Pedestrian traffic controls
Equipment Staging Area
Site access gate
Channel #2
NO CONSTRUCTION ZONE - CAUTION - UNDERGROUND UTILITY
Channel #3
END OF CONSTRUCTION ZONE
N
Topographic elevations shown in NGVD
0
50
100
200 feet
PLAN SHEET 1
Plan View of Elsie Roemer Enhancement Project - Phase I (2005-6)

TYPICAL CHANNEL X SECTION SPECIFICATIONS



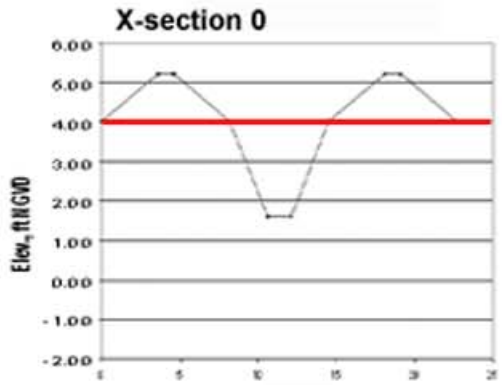
Estimated Cut and Fill Volumes

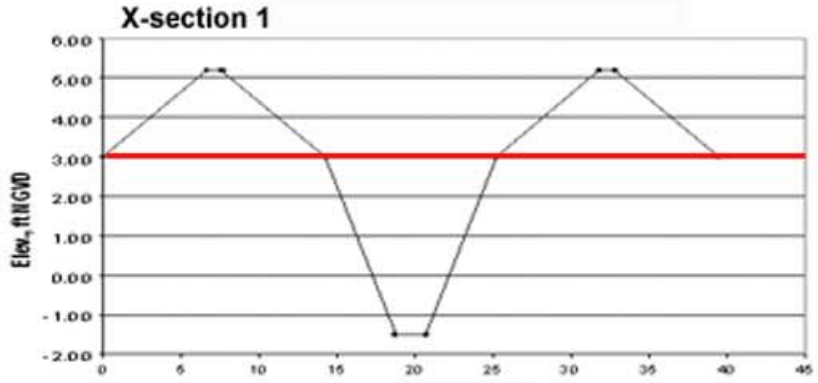
	Channel 1			Channel 2			Channel 3		
	section length (ft)	excavated volume (CY)	berm fill volume (CY)	section length (ft)	excavated volume (CY)	berm fill volume (CY)	section length (ft)	excavated volume (CY)	berm fill volume (CY)
X-Sec 0									
	51.5	35.07	35.81	54.5	37.11	37.9	43	29.28	29.9
X-Sec 1									
	154	204.12	215.01	55	72.9	76.79	89	117.97	124.26
X-Sec 2									
	198.5	314.29	399.19	63.5	100.54	127.7	86.5	136.96	173.95
X-Sec 3 (end of berm)									
	49	65.43	0	88	117.51	0	88	117.51	0
X-Sec 4 (end of channel)									
Total 0-3	404	553.48	650.01	173	210.55	242.39	218.5	284.21	328.11
Total 0-4	453	618.91		261	328.06		306.5	401.72	
Estimated excess/deficit (CY)*		(31.10)			85.67			73.61	

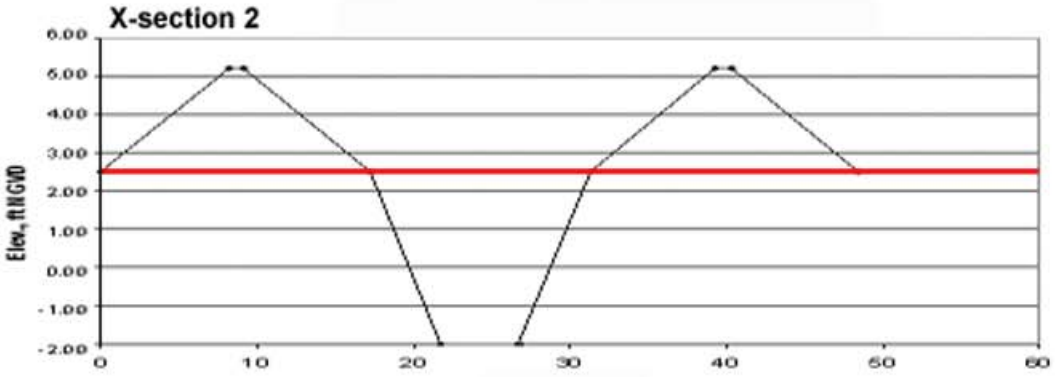
* Excess excavated material will be used to reinforce channel berms beyond minimum design specifications.

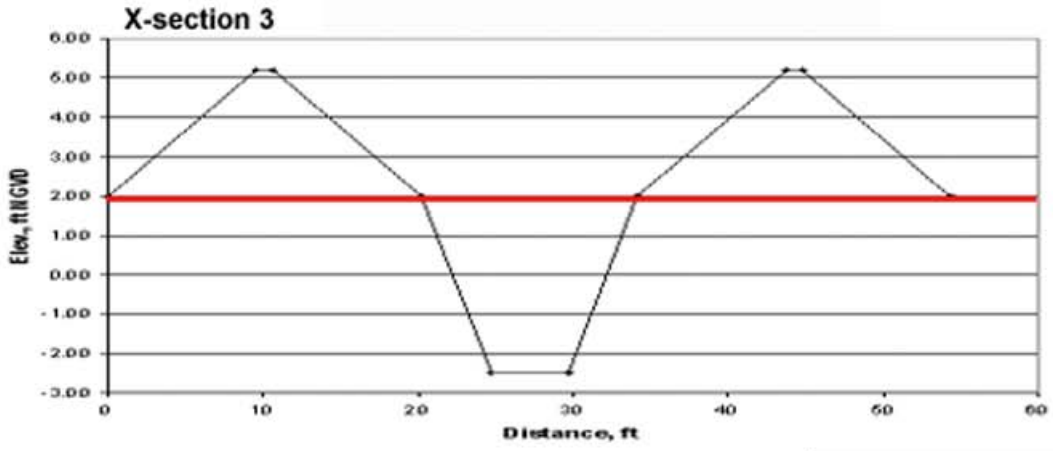
PLAN SHEET 2

Typical X-section and summary of cut and fill volumes









= Approximate existing ground elevation

PLAN SHEET 3

X-sections 0 through 3