Attachment B:
Supplemental Tables Dealing with Construction Activities and Summarizing Cut and Fill Volumes for the Phase I Marsh Restoration and Management Actions.

Table B-1: South Bay Salt Pond Restoration Project: Proposed Construction Activities (July 2008)

	Construction Activity	Pond System					
		A6 Tidal Habitat Restoration	A8 Reversible Muted Tidal Habitat	A16 Reconfiguration (including public access features)	SF2 Reconfiguration (including public access features)	E8A, E8X, & E9 Tidal Habitat Restoration	E12 & E13 Reconfiguration (including public access features)
1	Drain site for land-based equipment.	X	X	X	X	X	X
2	Transport equipment to site via levees or sloughs.	X	X	X	X	X	X
3	Install sheet piles and dewater area with portable pumps		X	X	X	X	X
4	PG&E work to raise platforms.	X					
5	Lower outboard levees.	X				X	
6	Lower inboard levees.	X				X	
7	Construct borrow ditch blocks with on-site material.	X				X	
8	Excavate pilot channels through fringe marsh.	X	X	X	X	X	X
9	Breach outboard levees.	4 locations				8 locations	
10	Breach inboard levees.	11 locations				5 locations	
11	Improve & raise levee to limit tidal action.				X	X	X
12	Use material from outboard levee breaches for borrow ditch blocks.	X				X	
13	Use BMPs such as silt fences; ESA fences; Fiber rolls.	X	X	X	X	X	X
14	Follow Invasive Spartina Project's *Best Management Practices to Prevent Invasive Cordgrass* (10/25/08).	X	X	X	X	X	X

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15	Avoid Impacts to special-status and sensitive species.	X	X	X	X	X	X
16	Construct notch up to 40 ft with 8 5-ft bays, 1 ft above bed elevation.		X				
17	Modify existing water control structures.		X			X	X
18	Install new water control structures.		X	X	X	X	X
19	Improve levees for vehicle access.		X		X		X
20	Extend levees.					X	
21	Remove wooden poles & electrical lines.		X				
22	Install new power lines if necessary.		X				
23	Decommission pump and storage area.		X				
24	Inspect & maintain infrastructure, e.g., water control structures & pond levees.		X				
25	Inspect water levels & water quality.		X				
26	Construct low check berms to create cells using on-site fill.			X	X		X
27	Create intake and outlet channels around the perimeter of the cells in portions of the deep existing borrow ditch and remnant tidal channels to convey flow.			X	X		X
28	Install fish screens.			X			

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29	Construct nesting islands using fill from on-site construction.			50 islands	36 islands		6 islands
30	Manage water depths in each cell to provide bird habitat.			X	X		X
31	Install pump to supplement gravity flows.				X		
32	Reconfigure existing siphon to connect flows.				X		
33	Re-vegetate perimeter.				X		
34	Upgrade Bay Trail spur.				X	X	X
35	Provide interpretative stations.				X	X	X
36	Construct marsh ponds/panes.					X	
37	Remove or abandon existing water control structures.			X		X	X
38	Mechanically break up gypsum layer.					X	
39	Construct discharge mixing basin & new water control structure.						X
40	Replace existing culverts.						X
41	Excavate gaps through wood fences to improve circulation.						X
42	Construct a loop trail.						X
43	Construct viewing platforms.			X	X		X
44	Grade trails.			X	X		X
45	Construct boat launch.						X
46	Remove 4 existing islands.			X			

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47	Mt. Eden Creek channel widening.					X	
48	Rip Rap reinforcement of levees.		X	X	***X***		
49	Land-based construction equipment.	X	X	X	X	X	X
50	Water truck for dust control.	X	X	X	X	X	X
51	Low pressure equipment and/or mats for pond interiors.	X	X	X	X	X	X
52	Water-based equipment will require manipulating water levels for optimal depths for floating equipment.	X	X	X	X	X	X
53	Diesel-powered barges with excavators or cranes.	X	X	X	X	X	X
54	Pumps	X	X	X	X	X	X
55	Dredge locks or coffer dams.	X	X	X	X	X	X
56	Diesel generator, water pump, pile driver.	X	X	X	X	X	X
57	Construction team = 5-10 people.	X	X	X	X	X	X
58	Heavy equipment will avoid water control structures in levees.	X	X	X	X	X	X
59	Mobilization of equipment will take 2-3 days.	X	X	X	X	X	X
60	2-4 weekly deliveries of supplies and material are estimated.	X	X	X	X	X	X

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61	Cranes to install water control structures.		X	X	X	X	X
62	Concrete delivery.		X				

Table B-2. Pond A6 Phase I Action Cut and Fill Volumes

Feature	Cut Volume (cubic yards)	Fill Volume (cubic yards)
Ditch Blocks (DB)		**19,370**
DB-GN1		6,800
DB-GN2		6,800
DB-AN1		2,930
DB-AN2		3,200
Levee Breaches (LB)	**8,950**	**3,930**
LB-GN	2,300	
LB-GS	2,510	2,510
LB-AN	2,720	
LB-AS	1,420	1,420
Pilot Channels (PC)	**14,240**	**14,240**
PC-GN	2,130	2,130
PC-GS	950	950
PC-AN	10,210	10,210
PC-AS	950	950
Levee Lowering	**20,200**	**5,490**
Guadalupe Slough	15,000	3,700
Alviso Slough at LB-AN	4,700	1,290
Alviso Slough at LB-AS	500	500
Dredging for water-based construction access at levee breaches/pilot channels	**24,000**	**24,000**
Totals Pond A6	**67,390**	**67,390**

Table B-3. Pond A8 Phase I Action Cut and Fill Volumes

Feature	Cut Volume (cubic yards)	Fill Volume (cubic yards)
Armored Notch	**1,316**	**713**
Excavation	1,316	
Backfill		713
Pilot Channel	**24,404**	**51,930**
Excavation	24,404	
Fill placement elsewhere on-site as foundation material		25,930
Imported material to cap placed fill		26,000
Access Road Grading	**516**	
Pond A4 Donut Berm	**103**	**522**
Excavation elsewhere on-site then used to raise berm	103	
Raise berm		522
Totals Pond A8	**26,339**	**53,165**

Table B-4. Pond A16 Phase I Action Cut and Fill Volumes

Feature	Cut Volume (cubic yards)	Fill Volume (cubic yards)
Cell Intake/Outlet Structures	**703**	**844**
Dredge relic channel and place sediment on-site	**1,320**	**1,320**
Construct earth berms with material on-site	**98,620**	**98,620**
Islands – excavate and place material	**89,517**	**89,517**
Pond Intake/Outlet Structures	**5,322**	**6,441**
Backfill		1,466
Excavation – control structures	3,644	
Excavation – pilot channel	1,625	
Excavation – structural	22	
Fill – excavation materials spread on-site		4,975
Trench excavation	31	
Dredging for water-based construction access at intake/outlet structures and dredge locks	**70,000**	**70,000**
Totals Pond A16	**265,482**	**266,742**

Note: In the future an additional 450,000 cubic yards of fill from other sources may be used to fill in the Pond A16 borrow ditches to reduce hydraulic residence time and improve water quality.

Table B-5. Pond SF2 Phase I Action Cut and Fill Volumes

Feature	Cut Volume (cubic yards)	Fill Volume (cubic yards)
Maintain Bayfront levee with imported material		**2,300**
Construct earth berms with material on-site	**87,100**	**87,100**
North Berm	66,900	66,900
South Berm	10,300	10,300
West Berm	5,200	5,200
East Berm	4,700	4,700
Excavate Ditch	**5,300**	**5,300**
Pilot Channels	**10,490**	**10,490**
Intake Canal	5,590	5,590
Outlet Canal	4,900	4,900
Islands – excavate and place material	**70,100**	**70,100**
Circular Islands	47,900	47,900
Linear Islands	22,200	22,200
Excavation – control structures	**5,000**	**5,000**
Erosion Protection		**1,400**
3-6" Spalls		1,000
150 lb rock		400
Temporary Fill for Construction Access		**1,000**
Totals Pond SF2	**177,990**	**182,690**

Table B-6. Ponds E8A/E9/E8X Phase I Action Cut and Fill Volumes (2 pages)

Feature	Cut Volume (cubic yards)	Fill Volume (cubic yards)
Levee Breaches (LB) and placement of material on-site	**38,300**	**34,350**
LB-E9-Mt. Eden Creek (MEC)	5,100	5,100
LB-E8X-North Creek (NC)	2,300	2,300
LB-E8A-NC North	2,300	2,300
LB-E8A-NC South	2,300	2,300
LB-E8A-Old Alameda Creek (OAC) East	2,300	2,300
LB-E8A-OAC Mid East	6,200	6,200
LB-E8A-OAC Mid West	4,200	4,200
LB-E8A-OAC West	6,200	6,200
Internal LB - Large (1 total)	2,800	
Internal LB - Small (4 total)	4,600	3,450
Pilot Channels (PC) – excavation or dredging and placement of material on-site	**11,370**	**9,530**
PC-E9-MEC	8,400	6,560
PC-E8X-NC	110	110
PC-E8A-NC	110	110
PC-E8A-NC	110	110
PC-E8A-OAC East	110	110
PC-E8A-OAC Mid East	950	950
PC-E8A-OAC Mid West	630	630
PC-E8A-OAC West	950	950
Internal Channels	**17,000**	**17,000**
Internal Connector Channels	15,000	15,000
E8A Starter Channel – excavation and place fill on pond bed	2,000	2,000
Borrow Ditch Blocks (DB)		**7,260**

Table B-6. Ponds E8A/E9/E8X Phase I Action Cut and Fill Volumes (2 pages)

DB1-E8A/E9 South		1,330
DB2-E8A/E9 South		1,330
DB3-E8A/E9 North		920
DB4-E8A/E9 North		920
DB5-E8A/E9 North		920
DB6-E9/WT Borrow Ditch		1,840
Tidal Marsh Ponds (Fine grading for depressions)	**3,600**	**3,600**
Levee Lowering	**118,790**	**39,640**
E8A/OAC	44,030	39,640
E8A/E8X/NC	36,670	
E8A/E9	34,160	
E9/E8X	3,930	
E9-E8X/E14 Levee Improvement		**37,200**
E10 Levee Realignment and MEC Channel Widening	**34,000**	**34,000**
Levee lowering	20,300	6,295
MEC breach enlargement	7,300	
New E10 levee		21,305
Breach existing E10 levee	2,000	2,000
MEC channel widening	4,400	4,400
E12 and E13 Phase 1 Action Restoration Components	**10,950**	**51,430**
E14/E13 Levee Improvement		40,480
E12/E13 Earth Berm	10,950	10,950
MEC Channel Dredging and dredged material placement in ponds	**17,610**	**17,610**
Mudflat and MEC channel dredging for water-based construction access	**93,000**	**93,000**
Totals Ponds E8A/E9/E8X	**344,620**	**344,620**

Table B-7. Ponds E12/E13 Phase I Action Cut and Fill Volumes

Feature	Cut Volume (cubic yards)	Fill Volume (cubic yards)
Pilot Channels	6,000	6,000
Distribution Canal	50,000	50,000
Construct earth berms with material on-site	80,000	80,000
Islands – excavate and place material	15,000	15,000
Excavation – control structures	17,000	17,000
Replacement pump / pump house	5,000	5,000
Totals Ponds E12/E13	173,000	173,000