FIGURES

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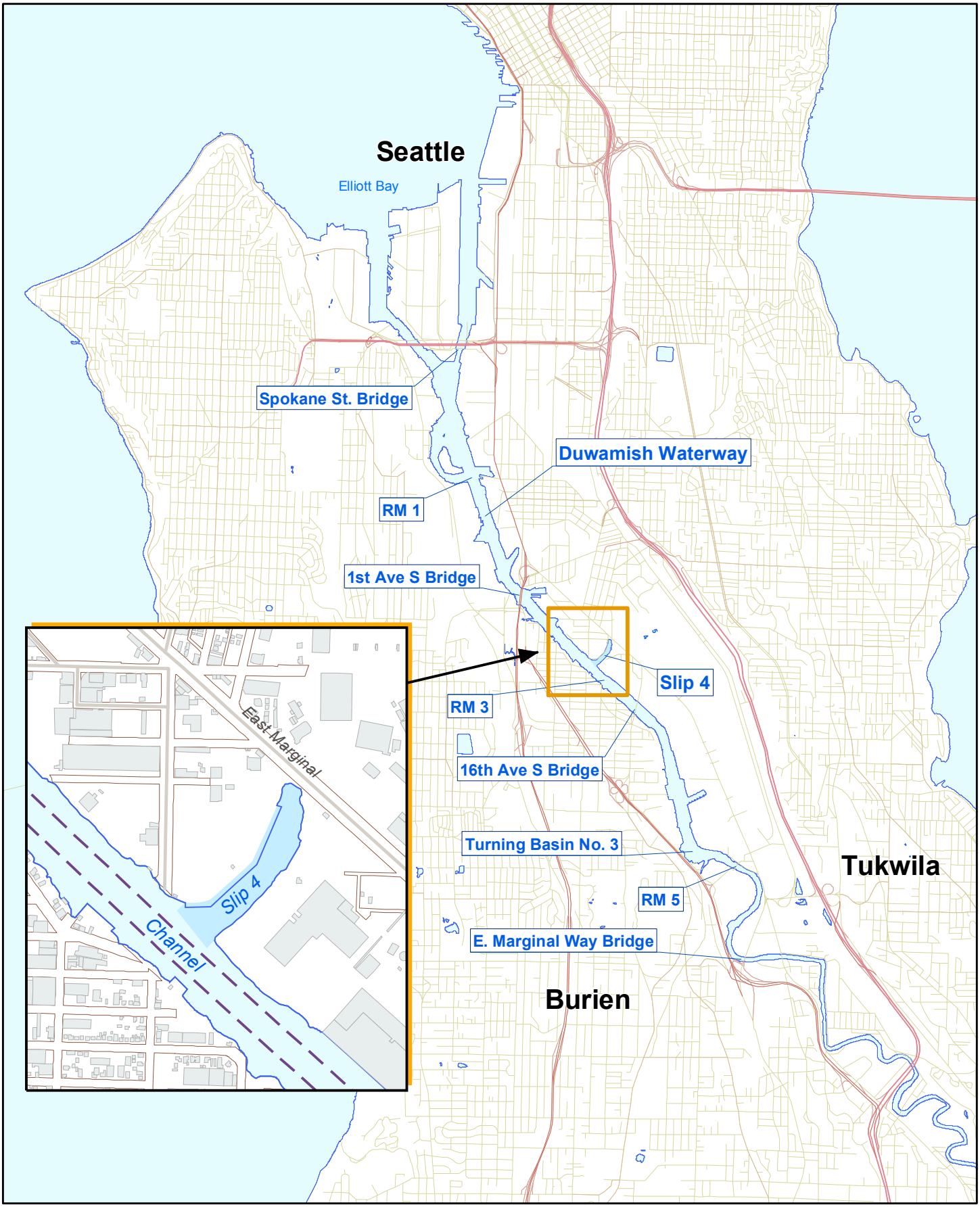

Map Document: (O:\Projects\Duwamish_OLY\Projects\Slip4_60%_DAR\SiteLocationMap.mxd)

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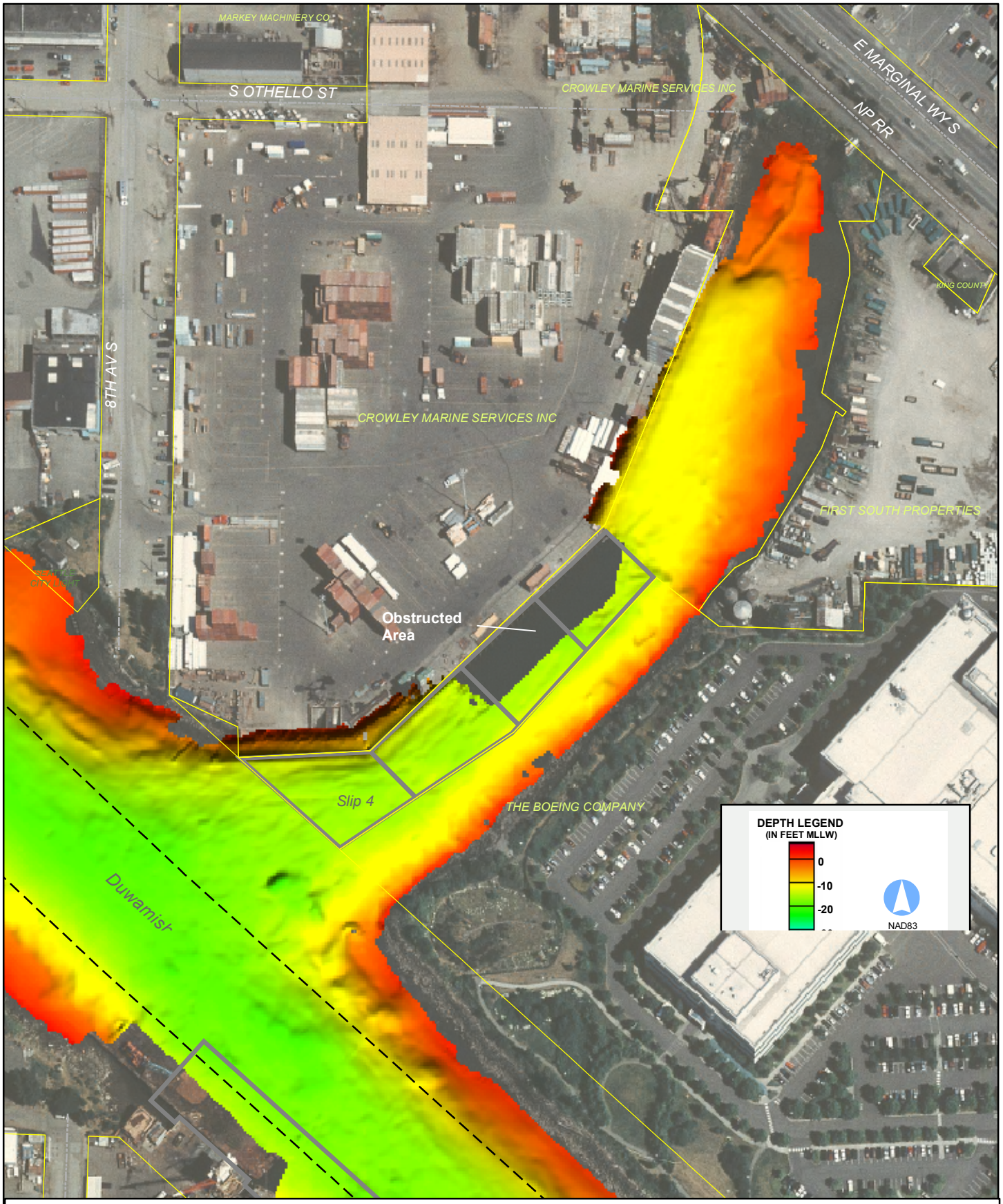
Map Feature Sources: King County GIS, Seattle Public Utilities, USACE, Ecology, and others.

Figure 1-1
Vicinity Map
Slip 4 Removal Design



Map Document: (O:\Projects\Duwamish_OL\Projects\Slip4_60%_DAR\Figure_1-02_2003_Bathymetry.mxd)

integral consulting inc.

Map Feature Sources: King County GIS, Seattle Public Utilities, USACE, Ecology, David Evans & Assoc., and others.

Figure 1-2
2003 Bathymetry
Slip 4 Removal Design

Map Document: (FG-Site Plans.dwg) - Layout: Project Site Plan
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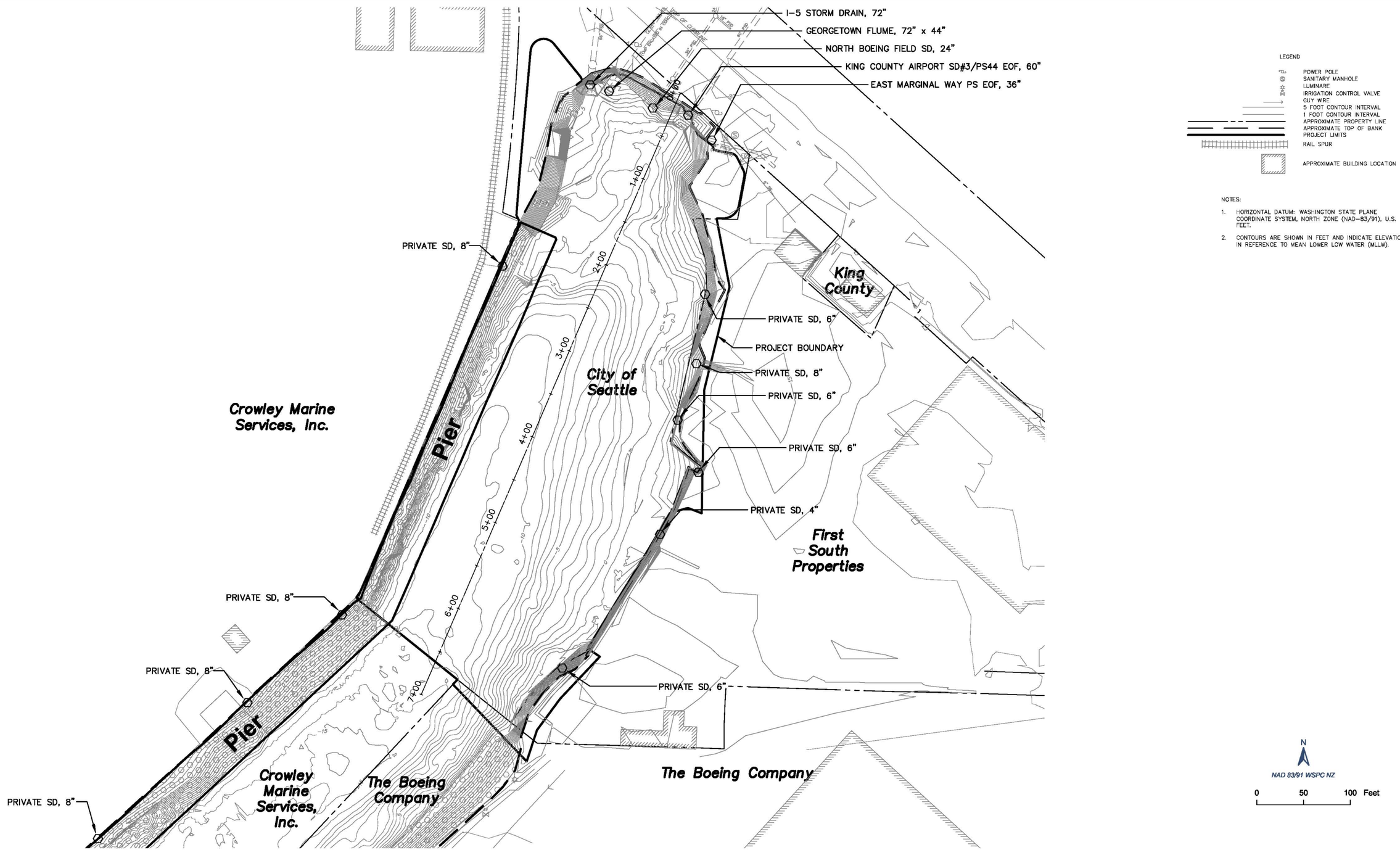

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Figure 1-3
Project Site Plan
Slip 4 Removal Design

Approximate Property Boundary

Former UST location (Secor, 1994)

Approximate monitoring well locations (Secor, 1994; Striplin, 2004)

Boring Locations

Map Document: (O:\Projects\Duwamish_OLY\Projects\Slip4_60%_DAR\BlankFrame_20060927.mxd)
9/27/2006 -- 10:14:2 PM

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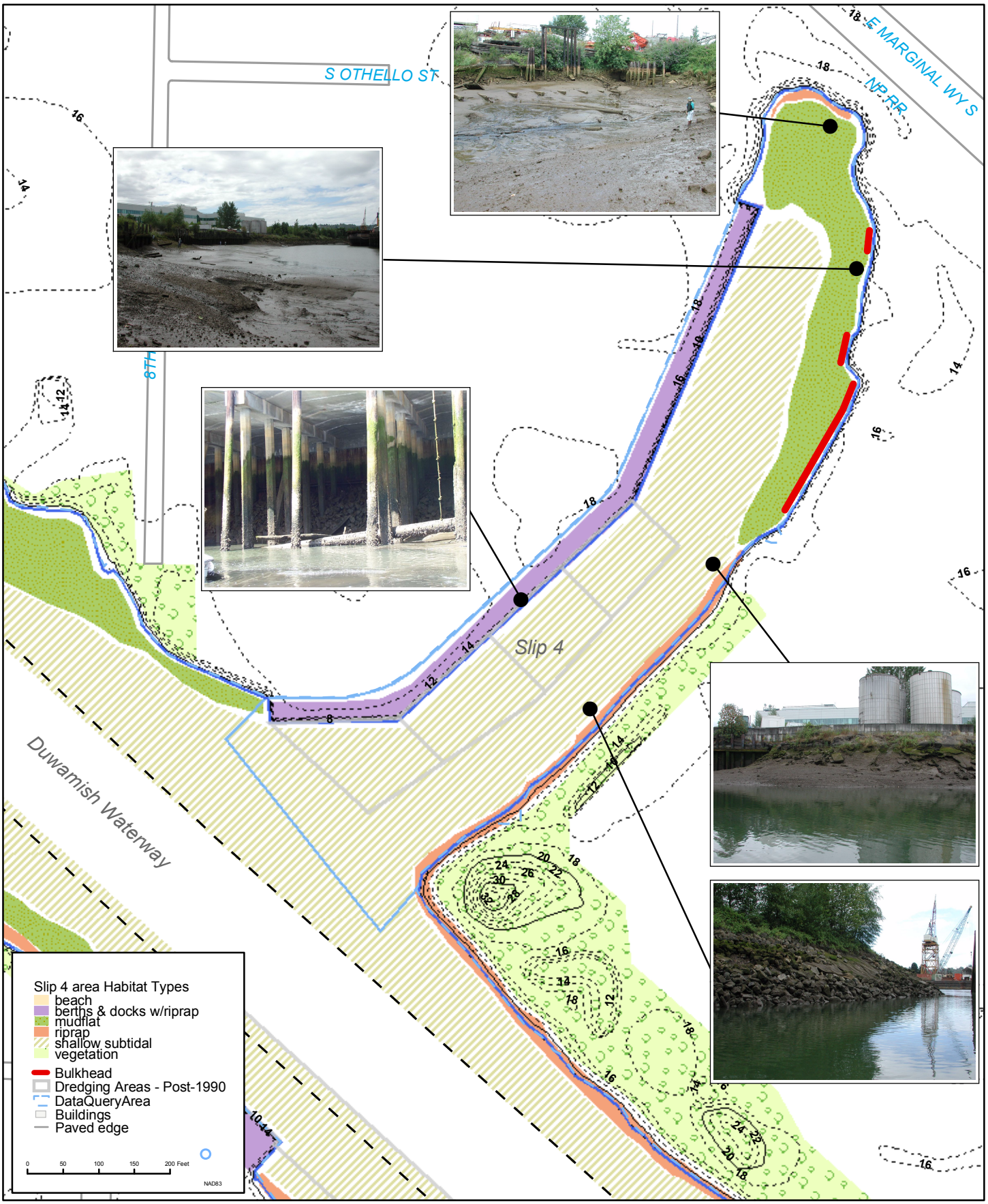
Source: HWA 2006

Figure 1-4
Phase II ESA Sampling Locations
Slip4 Removal Design



Map Document: (O:\Projects\Duwamish_OLY\Projects\Slip4_60%_DAR\Figure_1-5_Habitat_types.mxd)

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Figure 1-5
Habitat Types
Slip 4 Removal Design

Map Feature Sources: King County GIS, Seattle Public Utilities, USACE, Ecology, and others.

Map Document: (FG-Cross Sections.dwg) - Layout: Summary of the Selected Alternative
1/12/2007 - 2:39:31 PM

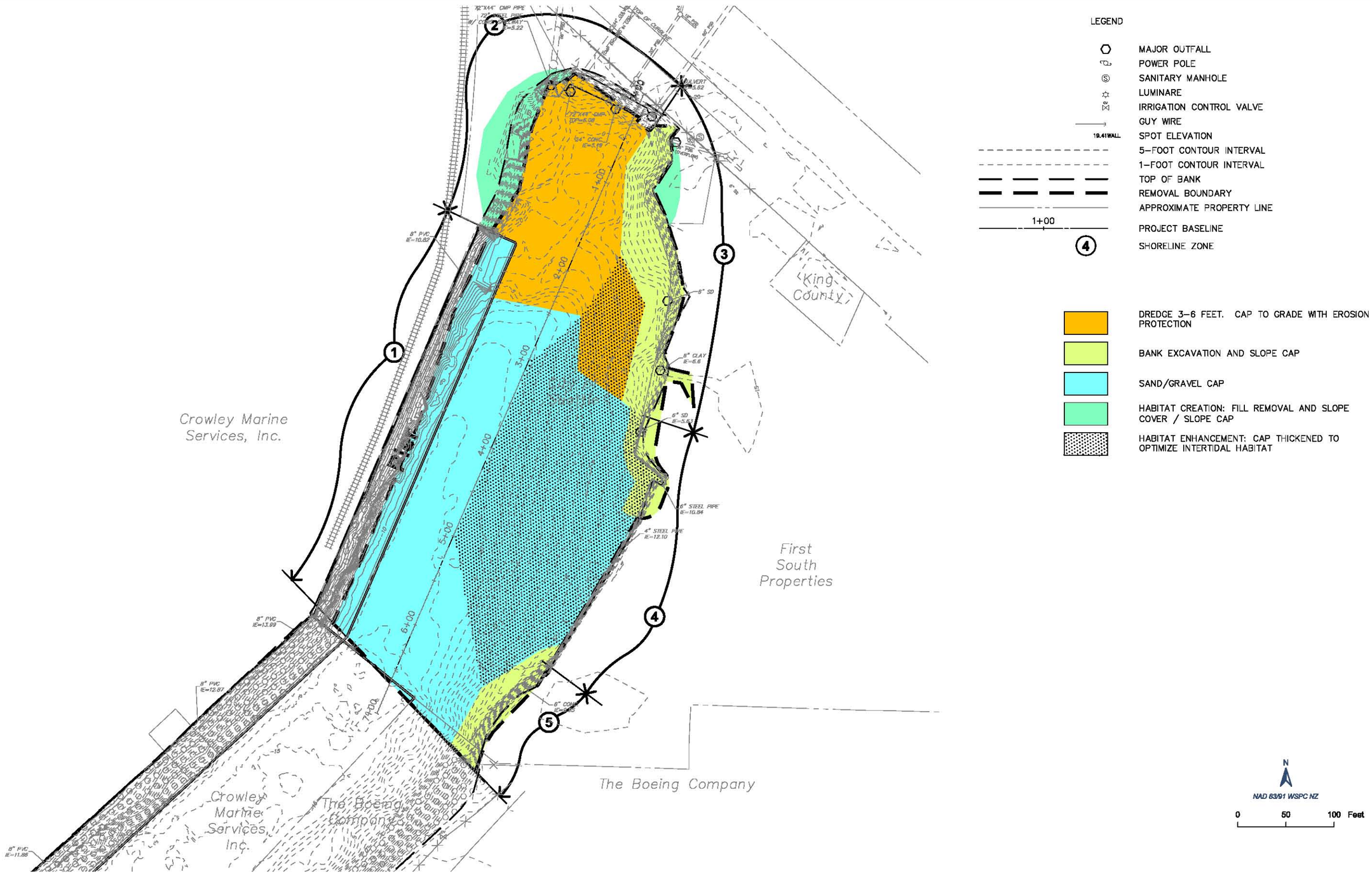

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Figure 1-6
Summary of the Selected Alternative
Slip 4 Removal Design

Map Document: (FG-Site Plans.dwg) - Layout: ELEVATION COMPARISON
4/3/2007 - 2:22:16 PM

LEGEND

- APPROXIMATE PROPERTY LINE
- PROJECT LIMITS
- RA4 LIMITS
- MINIMUM CAP THICKNESS (FEET)
- LIMITS OF UNARMORED CAP
- EXISTING CONCRETE PAD
- OUTFALL SCOUR PROTECTION
- SLOPE IMPROVEMENTS

Cap Thickness Range (feet)		
Minimum Thickness	Maximum Thickness	Color
0.000	2.499	
2.500	4.000	
4.000	4.999	
5.000	10.000	

NOTES:

1. RA4 CAP WILL BE CONSTRUCTED TO THE DESIGN LINES AND GRADES, TO ACHIEVE OR EXCEED THE DESIGN THICKNESS CRITERIA.

2. DESIGN THICKNESS CRITERIA FOR RA4 CAP: MINIMUM 30 INCHES (2.5 FEET) IN ARMORED AREAS, MINIMUM 60 INCHES (5 FEET) IN UNARMORED AREAS.

3. THICKNESS RANGES SHOWN WERE CALCULATED IN AUTODESK CIVIL3D BY COMPUTING THE ELEVATION DIFFERENCE BETWEEN THE POST-CAP SURFACE AND THE POST-DREDGE SURFACE IN RA4.

4. ACTUAL CONSTRUCTED CAP THICKNESSES MAY BE UP TO 2 FEET GREATER THAN SHOWN, CONSIDERING DREDGE OVERDEPTH AND CAP OVERPLACEMENT ALLOWANCES.

5. BASEMAP BATHYMETRY INCLUDES ARTIFACT FROM UNDER-PIER DEBRIS. DEBRIS TO BE REMOVED. CAP THICKNESS WILL EXCEED 5 FEET IN THIS LOCATION.

N
NAD 83/91 WSPC NZ
0 25 50 Feet

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Figure 5-1
Minimum Cap Thickness In RA4
Slip 4 Removal Design

Map Document: (\\192.168.1.11\gis\mi\A0006_Lower-Duwamish_Various\LDW_Slip4_Construction-Access_20060522.mxd) JP -- 7/22/2010

Legend

Construction Zones - Option 1 - Offsite Transloading

- Upland & Pier Areas — *City-Owned*
- Work Areas Estimated in Removal Design Documents — *Potential Access Requirements*
- Maximum Estimated Work Areas
- Haul Route / Access Route — *Potential Access Requirements*
- **Approximate Bank Cut-Back**
- **Rail Spur**
- **Revised Property Lines, 2006**
- **Approximate Lessee Areas Boundary (see note below)**

Zone	Use	Duration of Use
Work Area - Crowley	Pier Demolition	3 Weeks Dedicated
Work Area - First South	Bank Excavation / Capping	5 Weeks Dedicated
Access Routes	Intermittent Vehicle Access	3 weeks (pier demolition) 20 weeks (light intermittent)

Note: all areas, uses and durations of use are estimates; refer to design drawings for details

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N

0 50 100 200 Feet

Figure 8-1
Site Access and Staging
Option 1: Offsite Transloading
Slip 4 Removal Design

Map Document: (\\192.168.1.11\gis\mi\A0006_Lower-Duwamish_Various\LDW_Slip4_Construction-Access_20060522.mxd) JP -- 7/22/2010

Legend

Construction Zones - Option 2 - Onsite Transloading

- Upland & Pier Areas — *City-Owned*
- Work Areas Estimated in Removal Design Documents — *Potential Access Requirements*
- Maximum Estimated Work Areas
- Haul Route / Access Route — *Potential Access Requirements*
- **Approximate Bank Cut-Back**
- **Rail Spur**
- **Revised Property Lines, 2006**
- **Approximate Lessee Areas Boundary (see note below)**

Zone	Use	Duration of Use
Work Area - Crowley	Continuous Transloading	5 to 6 Weeks Dedicated
	Pier Demolition	3 Weeks Dedicated
Haul Route - Crowley	Continuous Transloading	5 to 6 Weeks Dedicated
Work Area - First South	Bank Excavation / Capping	5 Weeks Dedicated
Access Routes	Intermittent Vehicle Access	3 weeks (pier demolition) 20 weeks (light intermittent)

Note: all areas, uses and durations of use are estimates; refer to design drawings for details

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N

0 50 100 200 Feet

Figure 8-2
Site Access and Staging
Option 2: Onsite Transloading
Slip 4 Removal Design

Slip 4 Design

FIGURE 9-1
PRELIMINARY CONSTRUCTION SCHEDULE - Revised 8/30/2010

ID	Task Name	Duration	Start	Finish	Predecessors
1	2011 Fish Window	165 days	Mon 2/14/11	Sat 10/1/11	
2	2011-12 Construction Window	97 days	Mon 10/3/11	Tue 2/14/12	1
3	2012 Fish Window Starts (End of In-Water Construction)	0 days	Tue 2/14/12	Tue 2/14/12	2
4	**Source Control at NBF**	**0 days**	**Wed 12/1/10**	**Wed 12/1/10**	
5	EPA Treatment Decision	0 days	Wed 12/1/10	Wed 12/1/10	
6	**Final Design Updates**	**180 days**	**Mon 3/1/10**	**Fri 11/5/10**	
7	Revise Design for Access and other technical issues	180 edays	Mon 3/1/10	Sat 8/28/10	
8	Finalize City Project Team	1 day	Tue 6/1/10	Tue 6/1/10	
9	Develop Internal City PM Plan	14 days	Wed 6/2/10	Mon 6/21/10	8
10	Revise Div 0 requirements	60 edays	Mon 6/21/10	Fri 8/20/10	9
11	Draft Access Agreements	1 day	Wed 6/2/10	Wed 6/2/10	8
12	Finalize Access Agreements	1 day	Mon 8/30/10	Mon 8/30/10	7
13	Submit Design revisions to EPA	1 day	Mon 8/30/10	Mon 8/30/10	7,10
14	EPA review	21 days	Tue 8/31/10	Tue 9/28/10	13
15	Submit Revised Final Design to EPA	21 days	Wed 9/29/10	Wed 10/27/10	14
16	EPA Approval of Design Revisions	7 days	Thu 10/28/10	Fri 11/5/10	15
17	**City Procurement of Contractor**	**160 days**	**Fri 11/5/10**	**Sat 6/18/11**	
18	Complete Final Bid Documents	120 edays	Fri 11/5/10	Sat 3/5/11	16
19	Advertise Project	0 days	Sat 3/5/11	Sat 3/5/11	18
20	Community Meeting #1	1 day	Thu 4/7/11	Thu 4/7/11	
21	Bid Evaluation and Award	105 edays	Sat 3/5/11	Sat 6/18/11	19
22	**Contract Work Duration**	**201 days**	**Sat 6/18/11**	**Mon 3/26/12**	
23	City Notice-to-Proceed on submittals	0 days	Sat 6/18/11	Sat 6/18/11	21
24	City / Contrator RAWP coordination meeting	1 day	Fri 6/24/11	Fri 6/24/11	21FS+4 days
25	City/Contractor Project Startup Meeting	0 days	Fri 7/8/11	Fri 7/8/11	21FS+20 edays
26	Draft RAWP & Integral HASP	30 edays	Sat 6/18/11	Mon 7/18/11	21
27	EPA Review of Draft RAWP	15 days	Tue 7/19/11	Mon 8/8/11	26
28	Community Meeting #2	1 day	Fri 8/19/11	Fri 8/19/11	27FS+10 edays
29	Preconstruction Meeting with EPA	0 days	Sat 7/23/11	Sat 7/23/11	26FS+5 edays
30	Final RAWP & Integral HASP	21 edays	Mon 8/8/11	Mon 8/29/11	27
31	EPA review / approve Final RAWP	10 days	Tue 8/30/11	Mon 9/12/11	30
32	City Notice to Proceed for Mobilization	1 day	Mon 8/15/11	Mon 8/15/11	27FS+5 edays
33	City / EPA Notice-to-Proceed for Site Work	1 day	Tue 9/13/11	Tue 9/13/11	31
34	City / EPA Notice-to-Proceed for In-Water Work	0 days	Sat 9/17/11	Sat 9/17/11	31FS+5 edays
35	**RA Construction**	**135 days**	**Tue 8/16/11**	**Mon 2/20/12**	
36	Mobilization and Transloading Setup	10 days	Tue 8/16/11	Mon 8/29/11	32
37	Preconstruction Survey	10 days	Tue 8/16/11	Mon 8/29/11	36SS
38	Boundary Area Documentation	14 edays	Tue 8/16/11	Tue 8/30/11	36SS
39	Construction (in-the-dry)	8 days	Wed 9/14/11	Fri 9/23/11	36,37,33
40	**In-Water Work**	**95 days**	**Mon 10/3/11**	**Fri 2/10/12**	**38,1,34**
41	Removal of Piling and Debris	5 days	Mon 10/3/11	Fri 10/7/11	1
42	Placement of Boundary Berm	2 days	Mon 10/10/11	Tue 10/11/11	41
43	Dredging	7 days	Wed 10/12/11	Thu 10/20/11	42
44	Bank Excavation	16 days	Fri 10/21/11	Fri 11/11/11	43
45	Bank Documentation Sampling	0 edays	Fri 11/11/11	Fri 11/11/11	44
46	Acceptance survey	5 days	Mon 11/14/11	Fri 11/18/11	44
47	Bank Capping	12 days	Mon 11/14/11	Tue 11/29/11	45
48	Outfall Area Capping	9 days	Mon 11/21/11	Thu 12/1/11	46
49	Habitat Area Soil Cover / Large Woody Debris	5 days	Fri 12/2/11	Thu 12/8/11	48
50	Pier Demolition	15 days	Fri 12/2/11	Thu 12/22/11	48
51	Southern Armored Capping; Habitat mix under pier	8 days	Fri 12/23/11	Tue 1/3/12	50
52	Waterway Capping	19 days	Wed 1/4/12	Mon 1/30/12	51
53	Acceptance Survey	5 days	Tue 1/31/12	Mon 2/6/12	52
54	Prefinal Inspection	1 day	Tue 2/7/12	Tue 2/7/12	53
55	Cap Verification and Boundary Area Documentation	7 edays	Mon 1/30/12	Mon 2/6/12	52
56	Corrective Measures (If needed)	4 days	Tue 2/7/12	Fri 2/10/12	55
57	Final Inspection	1 day	Mon 2/13/12	Mon 2/13/12	56,55
58	Demobilization and Cleanup	5 days	Tue 2/14/12	Mon 2/20/12	57
59	Construction Complete	0 days	Mon 2/20/12	Mon 2/20/12	58
60	Final Contractor Submittals	15 days	Tue 2/21/12	Mon 3/12/12	59
61	Contract Closeout	10 days	Tue 3/13/12	Mon 3/26/12	60

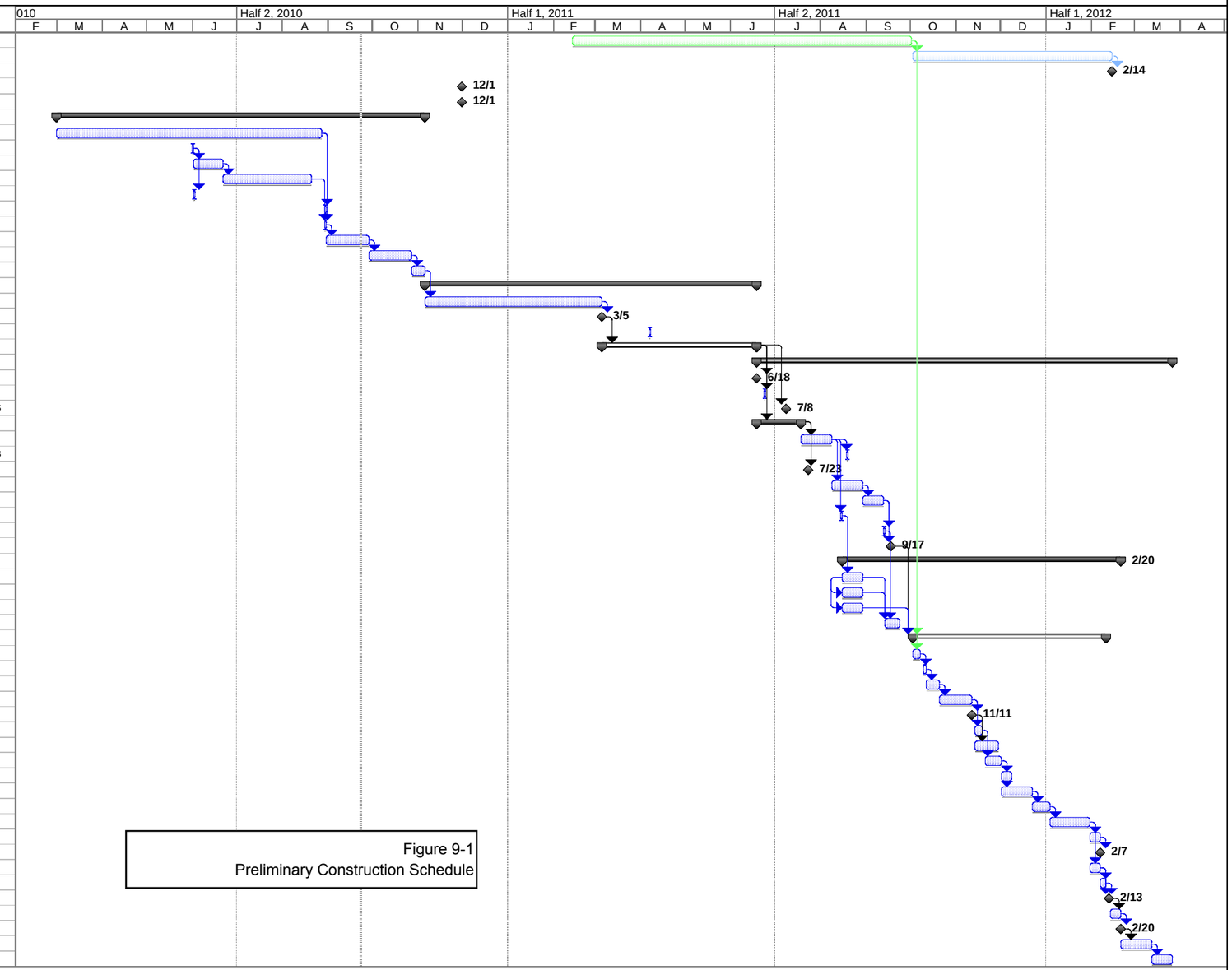
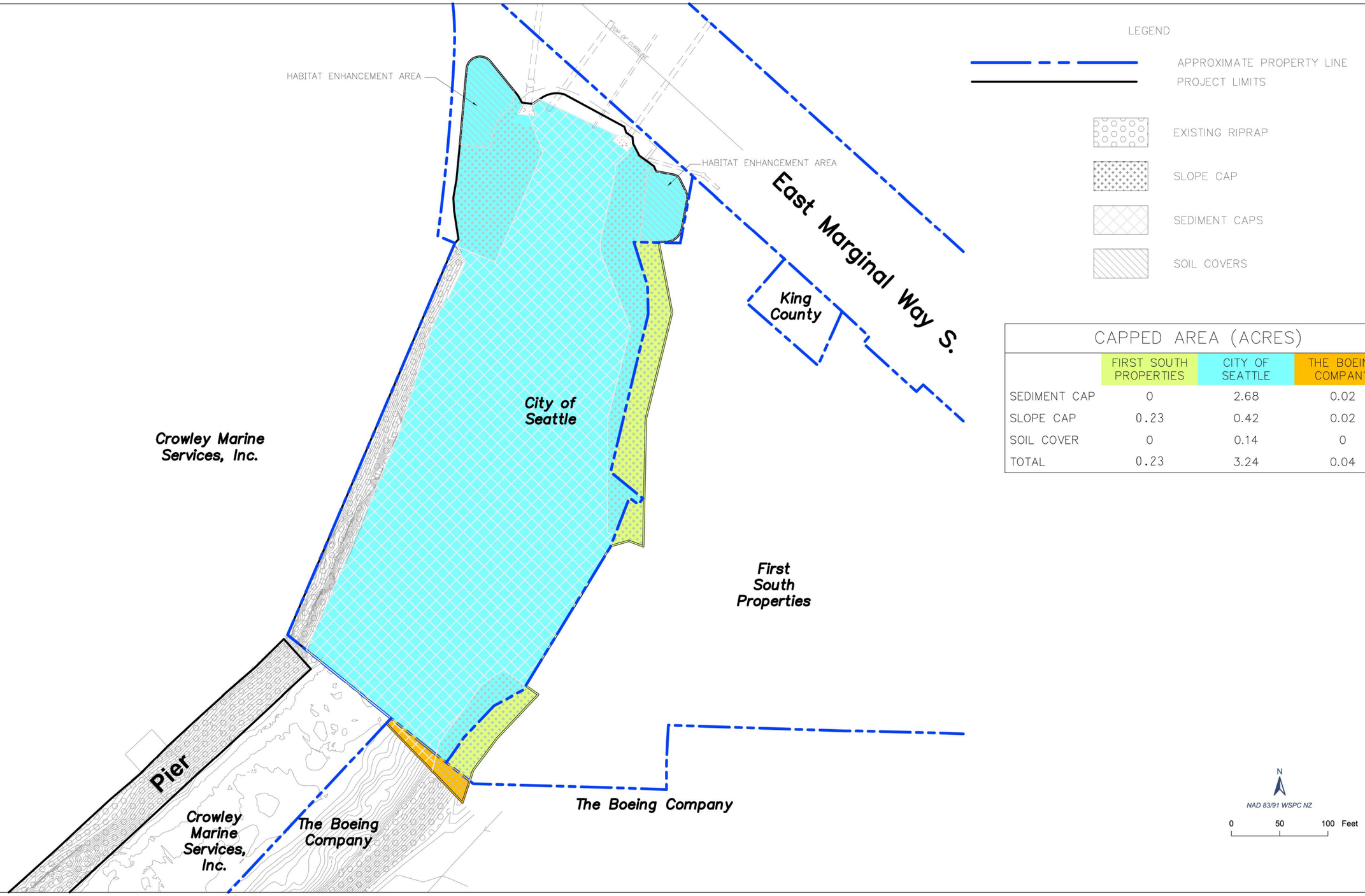


Figure 9-1
Preliminary Construction Schedule

Project: Figure 9-1 schedule Revised 0
Date: Thu 9/23/10

Task | Milestone | Summary | Window

Map Document: (FG-Site Plans.dwg) - Layout: Property Boundaries and Ownership
2/5/2007 - 10:55:40 AM



CAPPED AREA (ACRES)

	FIRST SOUTH PROPERTIES	CITY OF SEATTLE	THE BOEING COMPANY
SEDIMENT CAP	0	2.68	0.02
SLOPE CAP	0.23	0.42	0.02
SOIL COVER	0	0.14	0
TOTAL	0.23	3.24	0.04

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Figure 10-1
Property Boundaries and Ownership
Slip 4 Removal Design