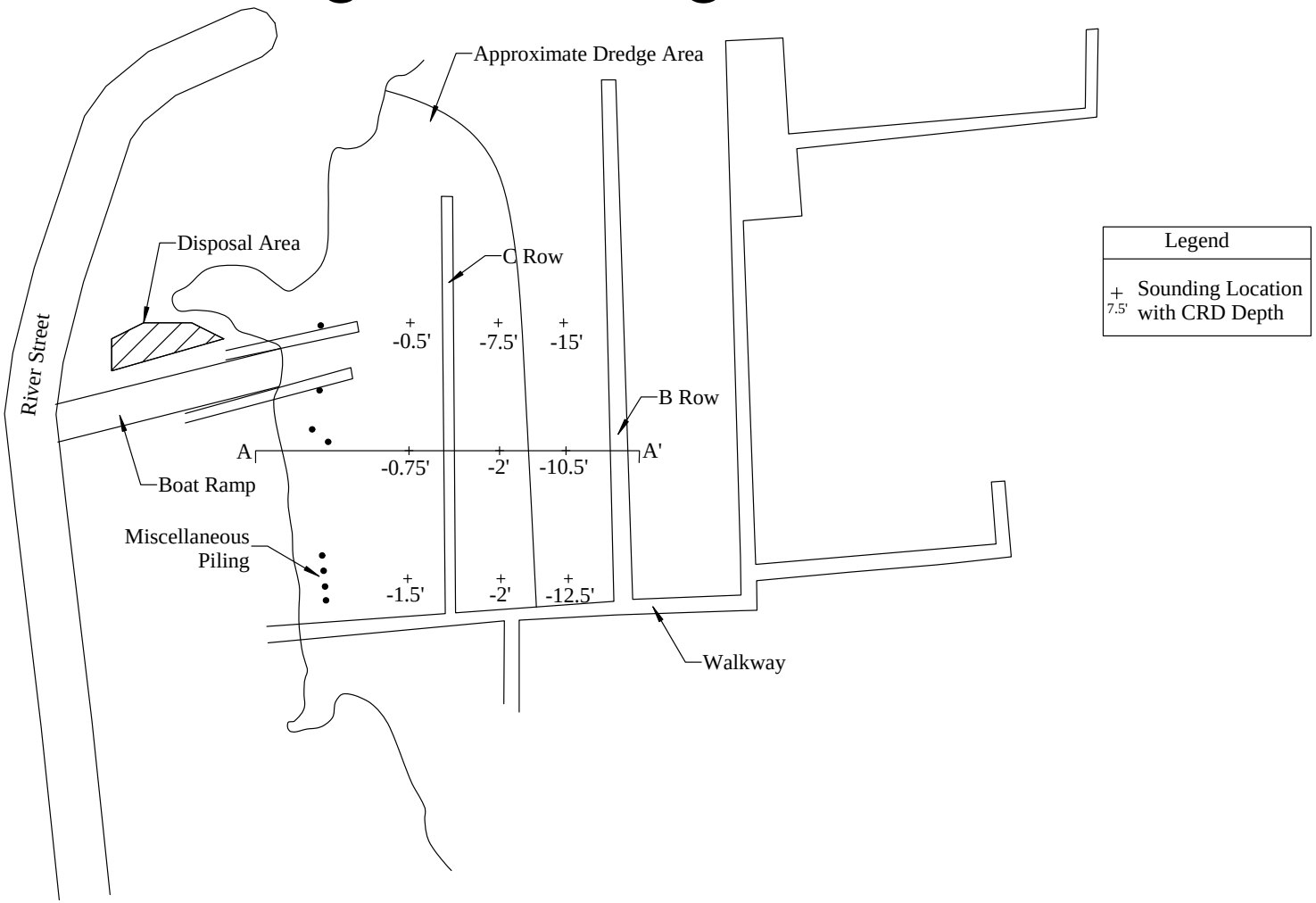
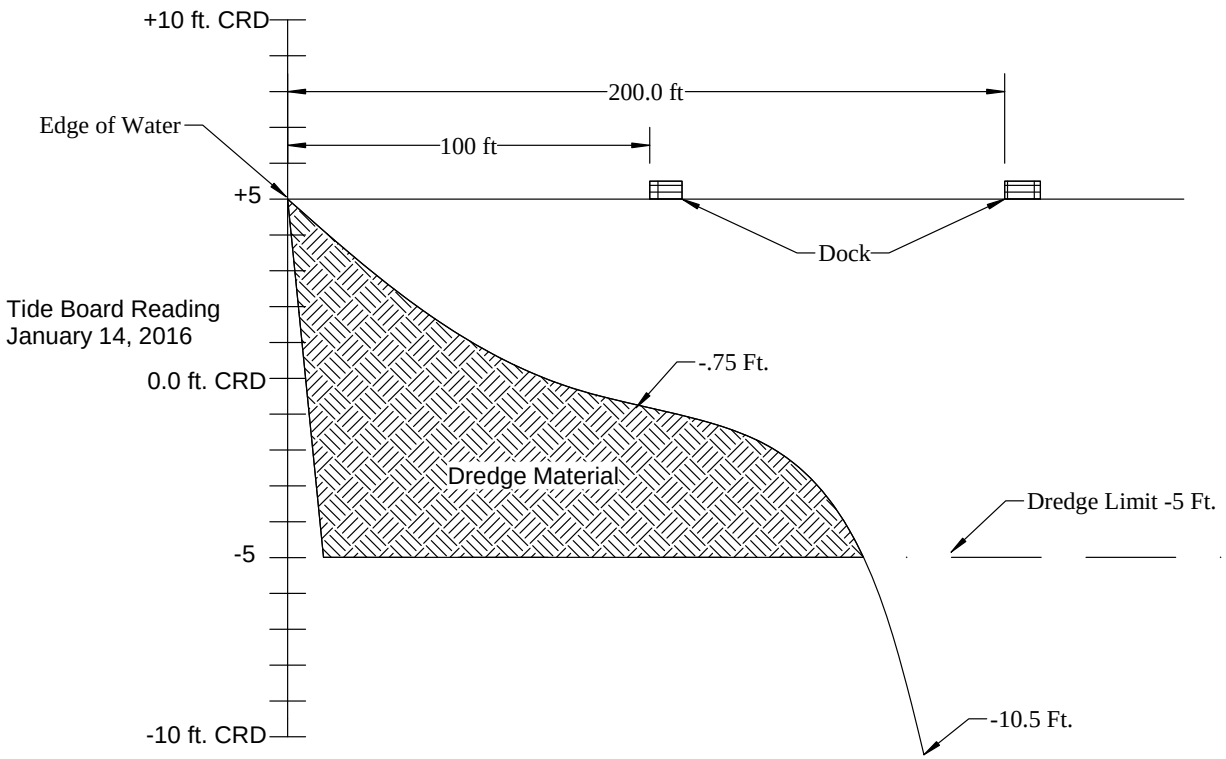
Figure 1. Dredge Site



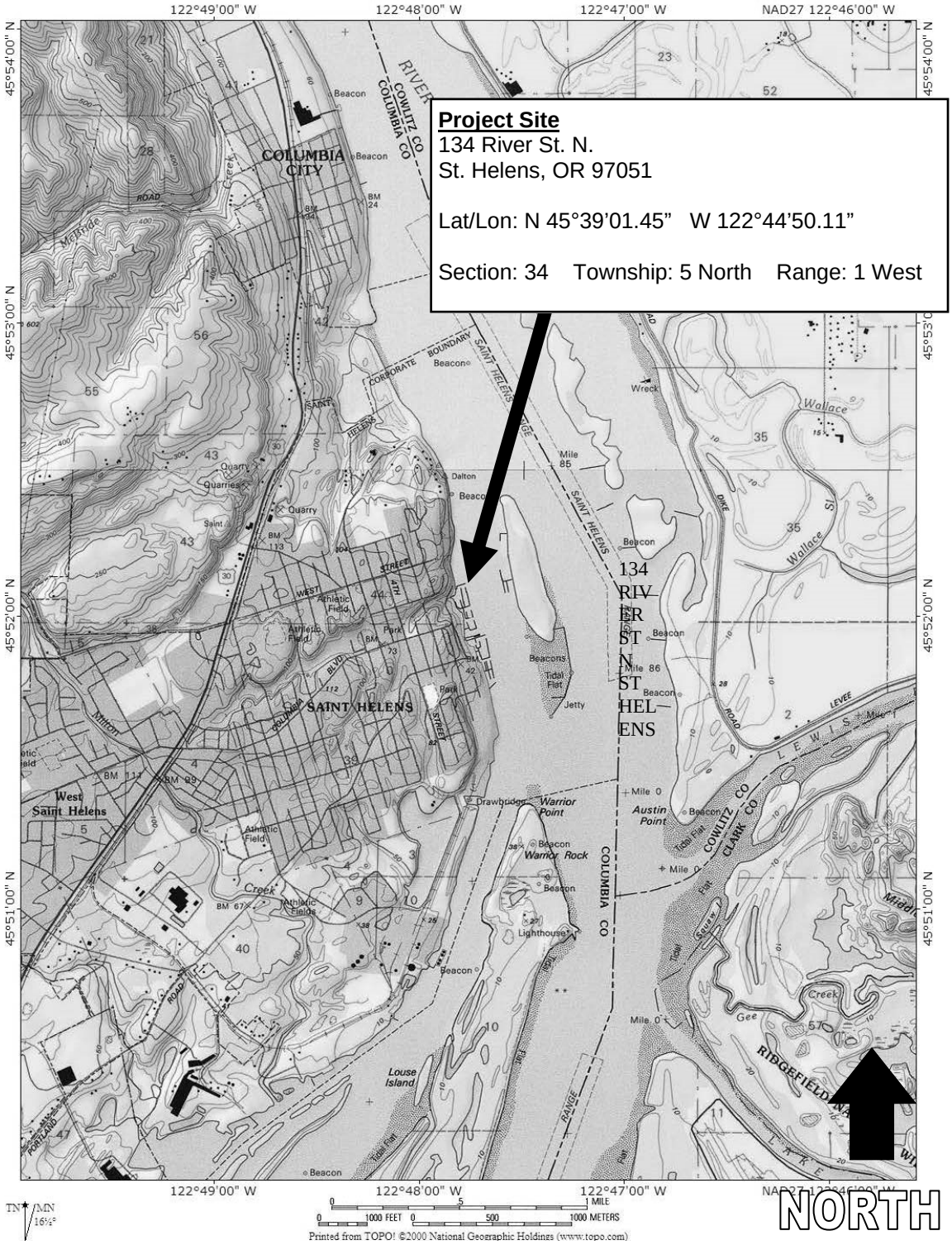
Northern Resource Consulting, Inc. ENVIRONMENTAL SERVICES 1339 Commerce Ave. Suite 309B Longview, WA 98632 (360) 414-5239	Reference Number: Applicant: St. Helens Marina Adjacent Property Owners: Proposed Project: Maintenance Dredging In: Columbia River Near: St. Helens County: Columbia State: OR Date: August 31, 2016	NOT TO SCALE Typical	Notes: Location of sounds is approximated. Water depths were taken on January 14, 2016 by owner and compared against on site tide board reading +5ft CRD.	Sheet **1** Of **2**

Figure 2. Cross Section, A - A'



Northern Resource Consulting, Inc. ENVIRONMENTAL SERVICES 1339 Commerce Ave. Suite 309B Longview, WA 98632 (360) 414-5239	Reference Number: Applicant: St. Helens Marina Adjacent Property Owners: Proposed Project: Maintenance Dredging In: Columbia River Near: St. Helens County: Columbia State: OR Date: August 31, 2016	Scale as Shown	Notes: Side slopes from the bank to -8 Ft. at a 1:1 slope. Depths taken on site by owner on a +5 Ft. tide board reading on January 14, see Figure 1. Dredging will extend approximately 150-feet from the shoreline.	Sheet **2** Of **2**

Map 1. Vicinity Map



Application Name: St. Helens Marina LLC
Adjacent Property Owners: St. Helens Marina LLC
Proposed Project: Maintenance Dredging
Location: St. Helens, Oregon
In: Multnomah Channel Near: St. Helens
County: Columbia State: OR
Page: 1 of 5 Date: 9/1/2016

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Map 2. Satellite Image

Application Name: St. Helens Marina LLC **Proposed Project: Maintenance Dredging** **Location: St. Helens, Oregon** **Page: 2 of 5 Date: 9/1/2016**	**Northern Resource Consulting, Inc.** **ENVIRONMENTAL SERVICES** **1339 Commerce Ave., Suite 309B** **Longview, Washington 98632** **Phone: (360) 414-5239**

Map 3. USDA Soil Survey

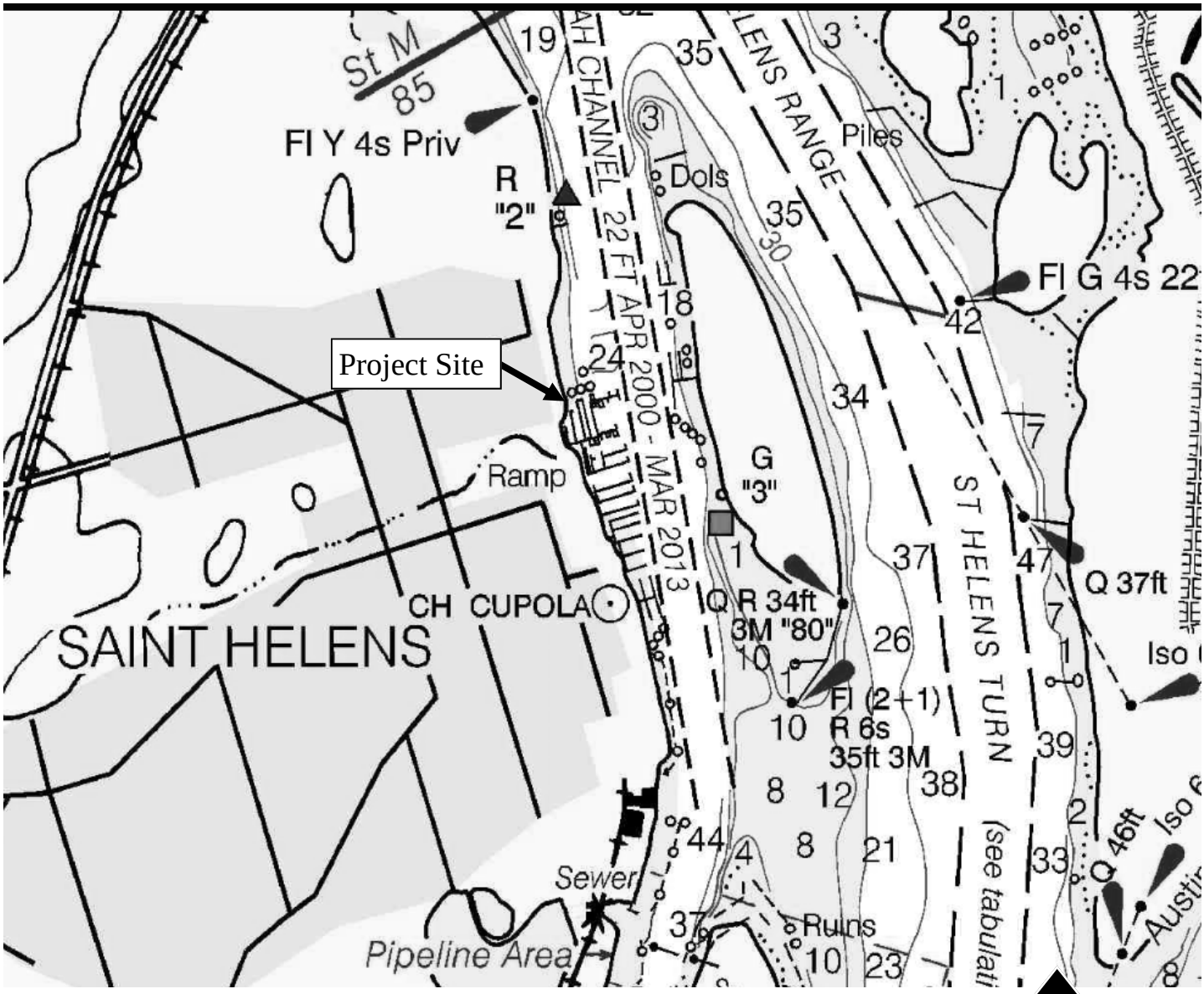
Columbia County, Oregon (OR009)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
45	Rock outcrop-Xerumbrepts complex, undulating	0.1	2.6%
46	Sauvie silt loam	2.3	40.2%
W	Water	3.2	57.3%
Totals for Area of Interest		**5.6**	**100.0%**

Application Name: St. Helens Marina LLC **Proposed Project: Maintenance Dredging** **Location: St. Helens, Oregon** **Page: 3 of 5 Date: 9/1/2016**	**Northern Resource Consulting, Inc.** **ENVIRONMENTAL SERVICES** **1339 Commerce Ave., Suite 309B** **Longview, Washington 98632** **Phone: (360) 414-5239** **Fax: (360) 414-4021**

Map 4. Tax Parcels

Application Name: St. Helens Marina LLC **Proposed Project: Maintenance Dredging** **Location: St. Helens, Oregon** **Page: 4 of 5 Date: 9/1/2016**	**Northern Resource Consulting, Inc.** **ENVIRONMENTAL SERVICES** **1339 Commerce Ave., Suite 309B** **Longview, Washington 98632** **Phone: (360) 414-5239** **Fax: (360) 414-4021**

Map 5. NOAA Navigation Chart, Chart No. 18524



NORTH

Application Name: St. Helens Marina LLC **Proposed Project: Maintenance Dredging** **Location: St. Helens, Oregon** **Page: 5 of 5 Date: 9/1/2016**	**Northern Resource Consulting, Inc.** **ENVIRONMENTAL SERVICES** **1339 Commerce Ave., Suite 309B** **Longview, Washington 98632** **Phone: (360) 414-5239** **Fax: (360) 414-4021**