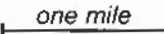
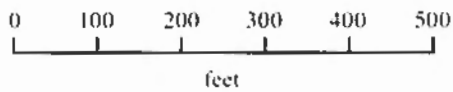
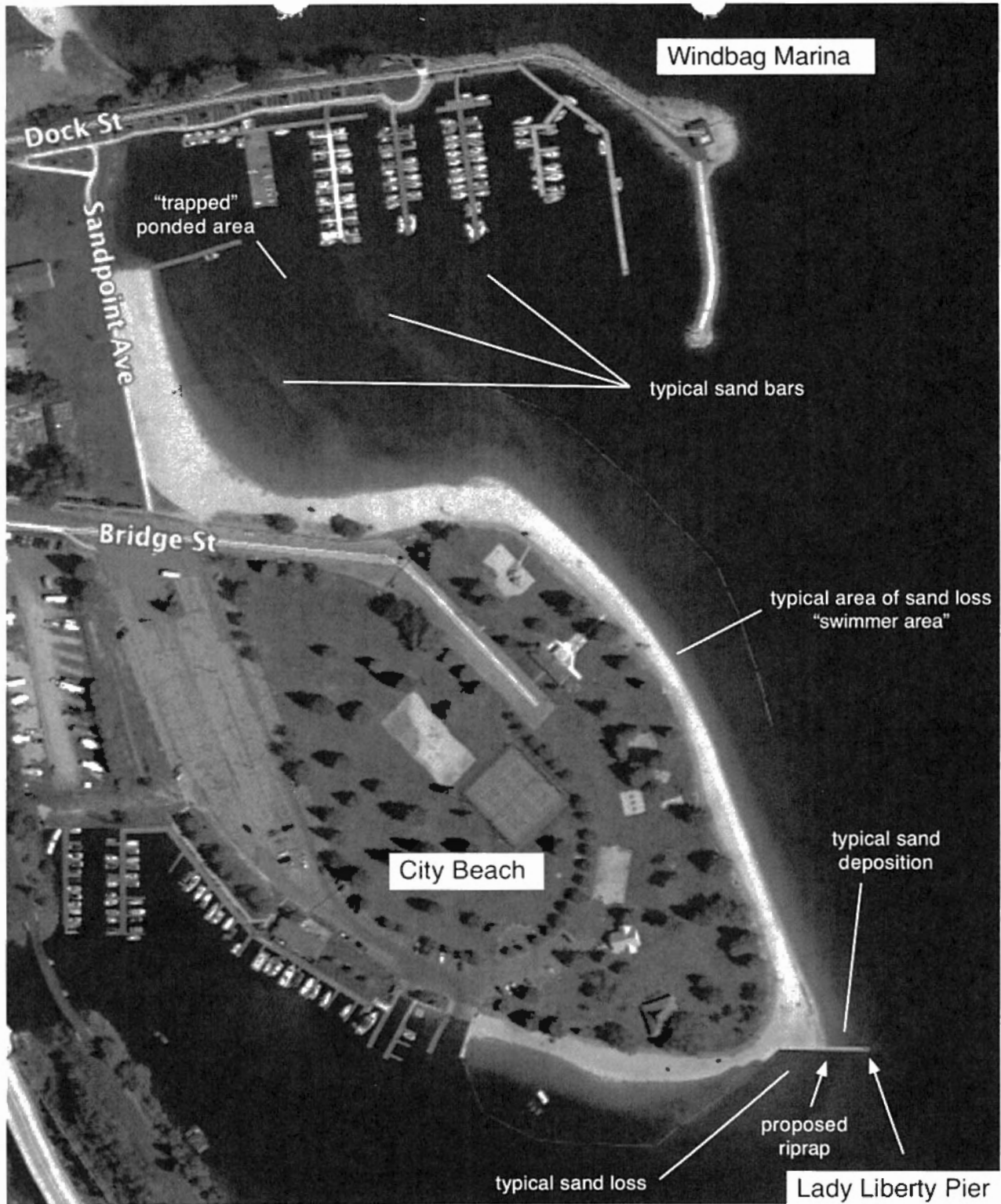


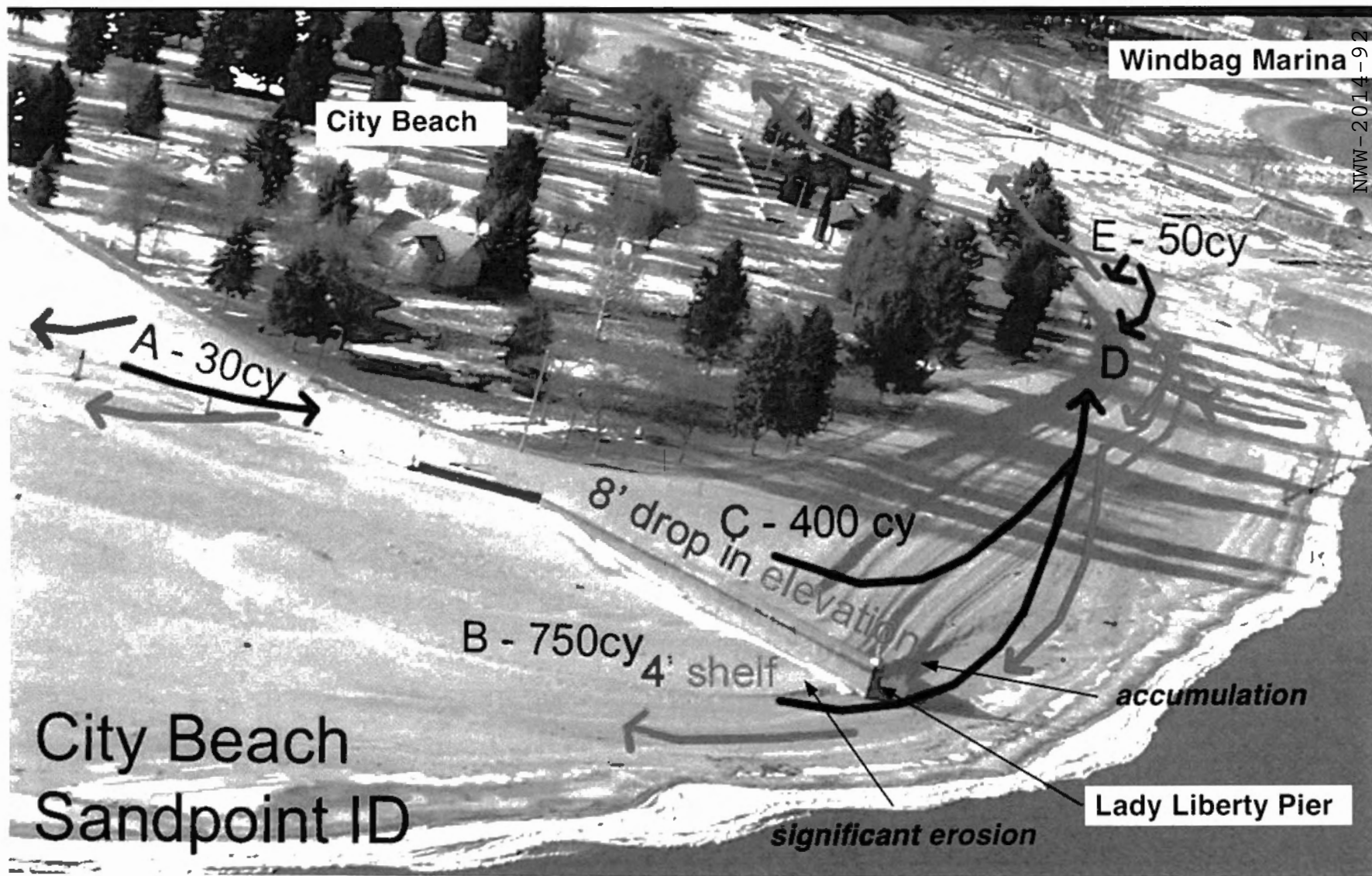
Figure: 1 of 10
 Map: Vicinity Map
 Project: Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
 Corps Ref #: NWW-2014-92
 Applicant: City of Sandpoint
 Parks and Recreation Department
 Date Prepared: 1/30/14

scale:  one mile
 source: DeLorme
 Township 57 N, Range 2 W,
 SW 1/4 of the NW 1/4 Section 23



source: GoogleEarth: Imagery Date 7/14/13

Figure:	2 of 10
Map:	Aerial Photograph
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14



Red lines and arrows represent sand movement and direction.

Black lines and arrows represent intended sand re-distribution efforts by the City.

Approximately 1230 cy of sand is proposed for re-distribution

source: Jerry Luther photography; City of Sandpoint determination of sand loss / gain areas. No scale.

Figure:	3 of 10
Map:	Sand Movement Photograph
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14



NW-2014-92

Sand "excavation"
 (re-distributed to shoreline)
 (very shallow < 1' removal)
 (total cy yards removed ~ 50)

Sand "deposition / fill"
 (shoreline to receive sand,
 feathered to regain slope
 appropriate for swimmer's use)
 (approx. placement = 50 cy)

Total this northern section:

- sand "excavation / removal" 2,526 sf (0.06 ac): ~ 50 cy
- sand re-deposition 1,514 sf (0.03 ac): ~ 50 cy

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Figure:	3A of 10
Map:	Sand Movement North Section
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	
Applicant:	City of Sandpoint Parks and Recreation Department
Date Revised Drawing:	2/25/14



Total this southern section:

sand "excavation / removal" 60,297 sf (1.38 ac) (approx. 1,150 cy)

sand re-deposition 29,482 sf (0.67 ac) (approx. 1,150 cy)

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Figure: 3B of 10
Map: Sand Movement North Section
Project: Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #: NWW-2014-92
Applicant: City of Sandpoint Parks and Recreation Department
Date Revised Drawing: 2/25/14

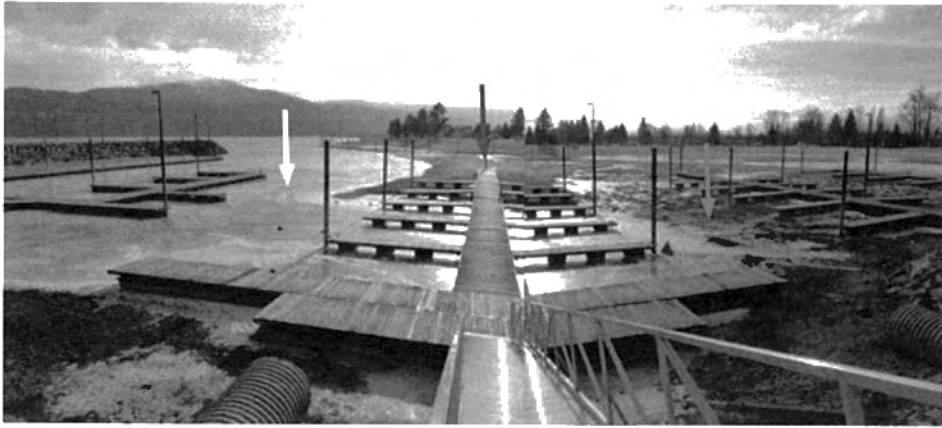


Photo 1. View south from 2nd dock (from east). Open water visible on left (arrow), 1st sandbar visible at end of dock (blue arrow); shallow muddy substrate (red arrow).

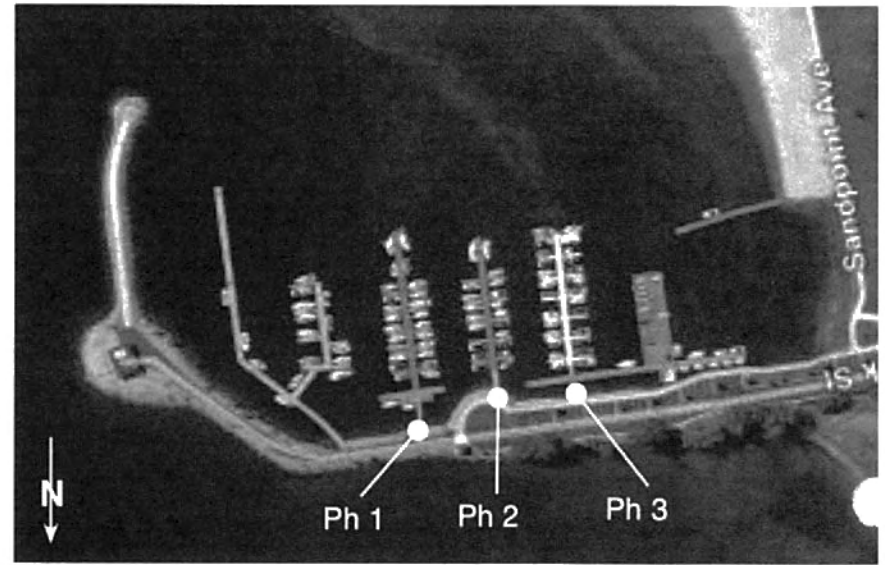


Photo 2. View south from 3rd dock (from east). Open water visible on left (arrow), 2nd sandbar visible at end of dock (blue arrow); "trapped" ponded area / shallow muddy substrate (red arrow). It is this area that contains milfoil.



Photo 3. View south from 4th dock (from east). Open water visible on left (arrow), 2nd sandbar visible at end of dock (blue arrow); "trapped" ponded area / shallow muddy substrate (red arrow). It is this area that contains milfoil.

Photographs taken Jan 21, 2014

Figure:	4 of 10
Map:	Photographs 1 to 3
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14

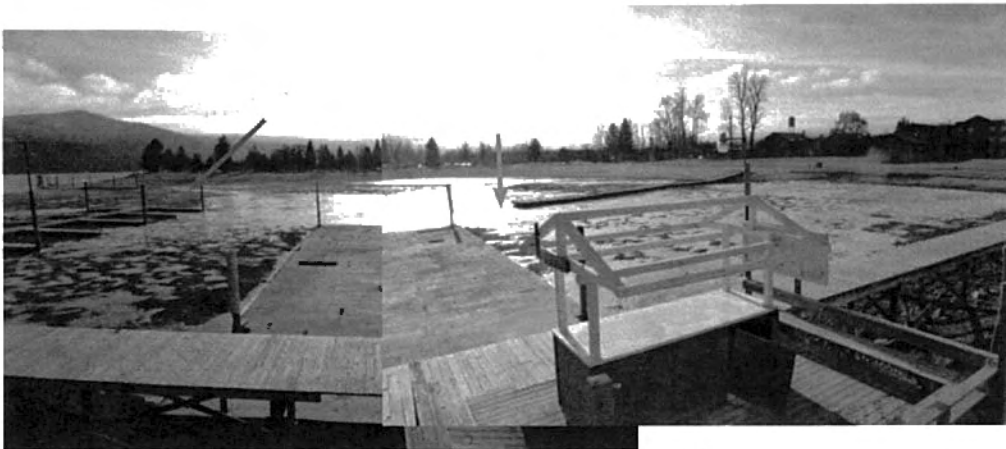


Photo 4. View south from westernmost dock. Open trapped and ponded water area shown as red arrow. General area of intended "breach" of sandbar indicated as blue arrow.

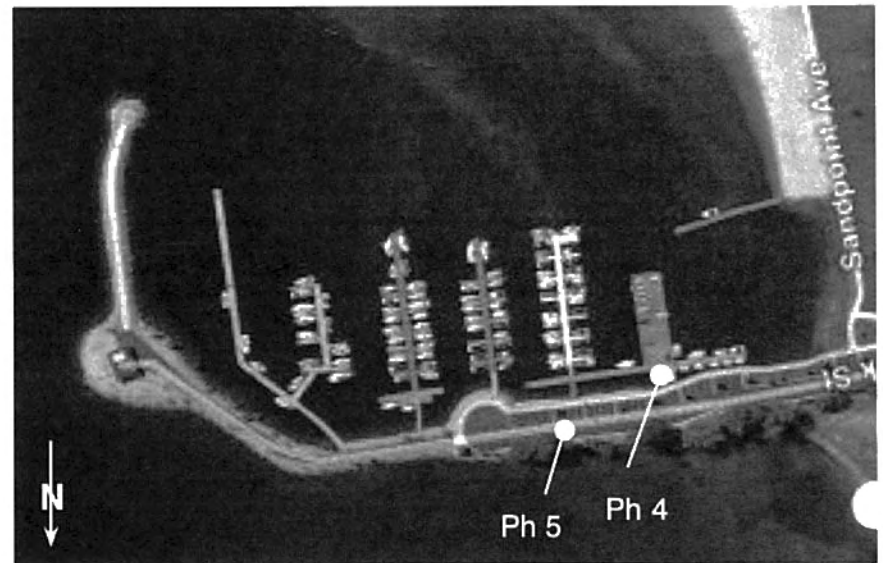


Photo 5. View south from 4th dock (from east). Image zoomed across marina to far shore. Visible is the steep slope at the shoreline (swimmer's area). General area of intended "breach" of sandbar indicated as blue arrow. Trapped ponded milfoil area indicated by red arrow.

Photographs taken Jan 21, 2014

Figure:	5 of 10
Map:	Photographs 4, 5
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14



Photo 6. View east from south end City Beach. Shows erosion in bands, likely due to wave action and lake level fluctuation.



Photo 7. View south from south end City Beach). Lady Liberty pier on left. Photo pans east, southeast to east (left to right). Sand loss at shoreline — deposition visible out beyond swimmer area.

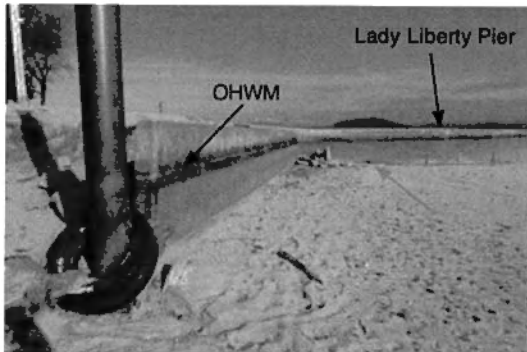


Photo 8. View of south side of shoreline (angled portion) of the pier to main pier (view northeast). OHWM evident (black arrow). Angled wall leaning waterward (though piling is also leaning in opposite direction). Erosion at red arrow.

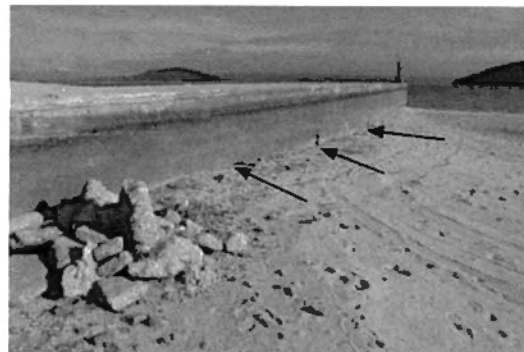


Photo 9. View east along southside of Lady Liberty pier. Erosion clearly visible (cf. Photo 10 which shows accumulation of sands along the north wall of pier). Undermined areas shown by arrows.

Figure:	6 of 10
Map:	Photographs 6 to 9
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint
	Parks and Recreation Department
Date Prepared:	1/30/14

Lady Liberty Pier

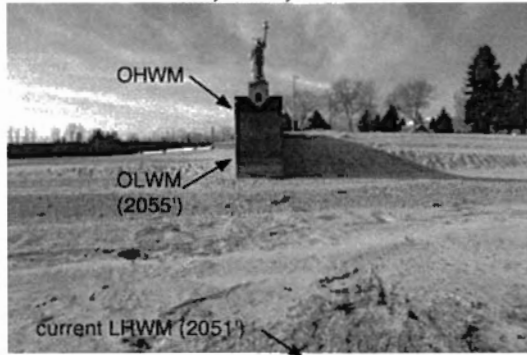


Photo 10. View west at end of Lady Liberty pier. Clear signs of considerable accumulation north (right in photo), and loss along south side (left in photo). Note photo location appears to be "in water" on reference aerial on right →; however Photo taken Jan 21, 2014 when water level low (i.e., dot on reference aerial is where the photo was taken).

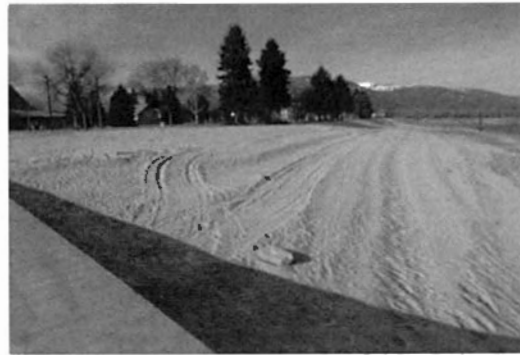


Photo 11. View north from end of Lady Liberty pier. Clear signs of considerable sand loss along shoreline. Windbag marina in far background.

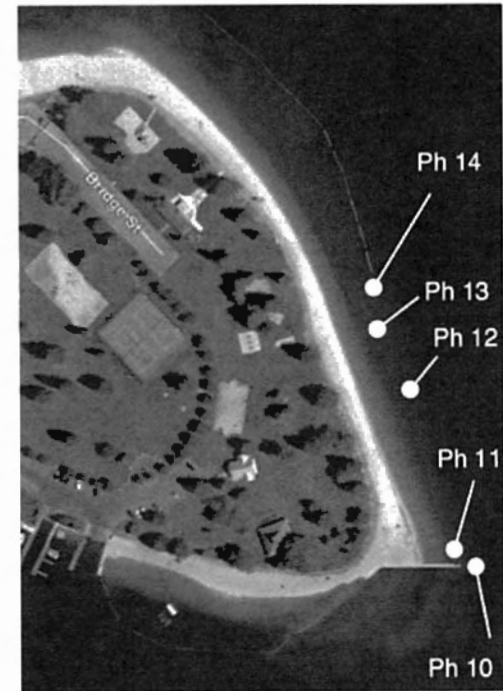


Photo 12. View north along beach between Lady Liberty pier and swimmer's area. Steeply sloping shoreline due to sand erosion.



Photo 13. View north along beach between Lady Liberty pier and swimmer's area. Steeply sloping shoreline due to sand erosion.

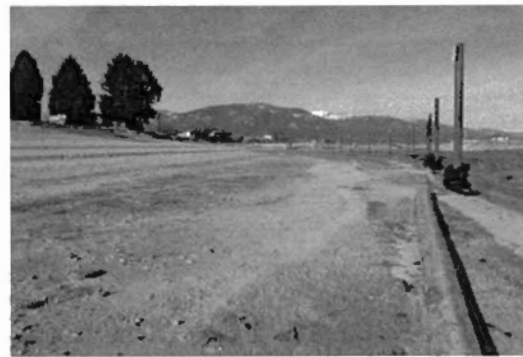


Photo 14. View north along beach from end of floating log breakwater (swimmer's area). OLWM just at floating log breakwater.

Figure:	7 of 10
Map:	Photographs 10 to 14
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14

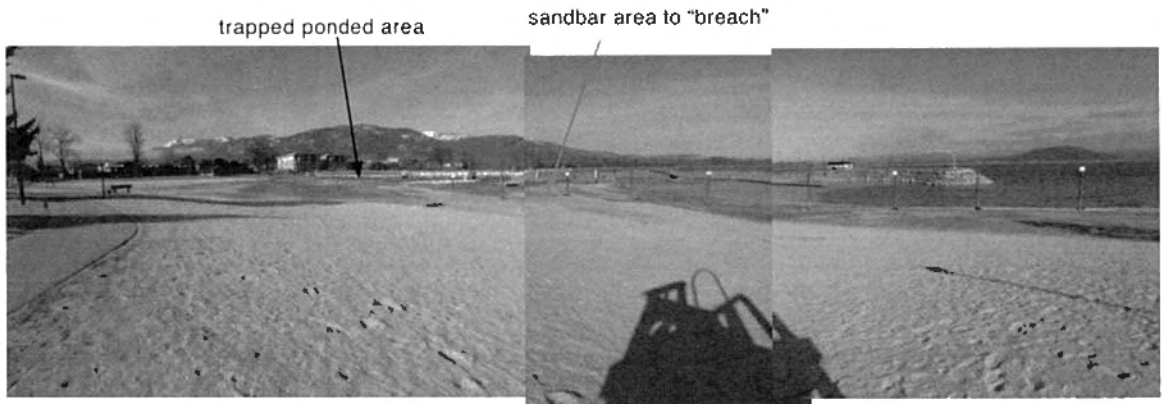


Photo 15. View northwest, panning (left to right) to northeast at north end of City Beach lower peninsula. Sandbar to be breached is indicated by red arrow. Windbag marina in background.



Photographs taken January 21, 2014

Figure:	8 of 10
Map:	Photograph 15
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14

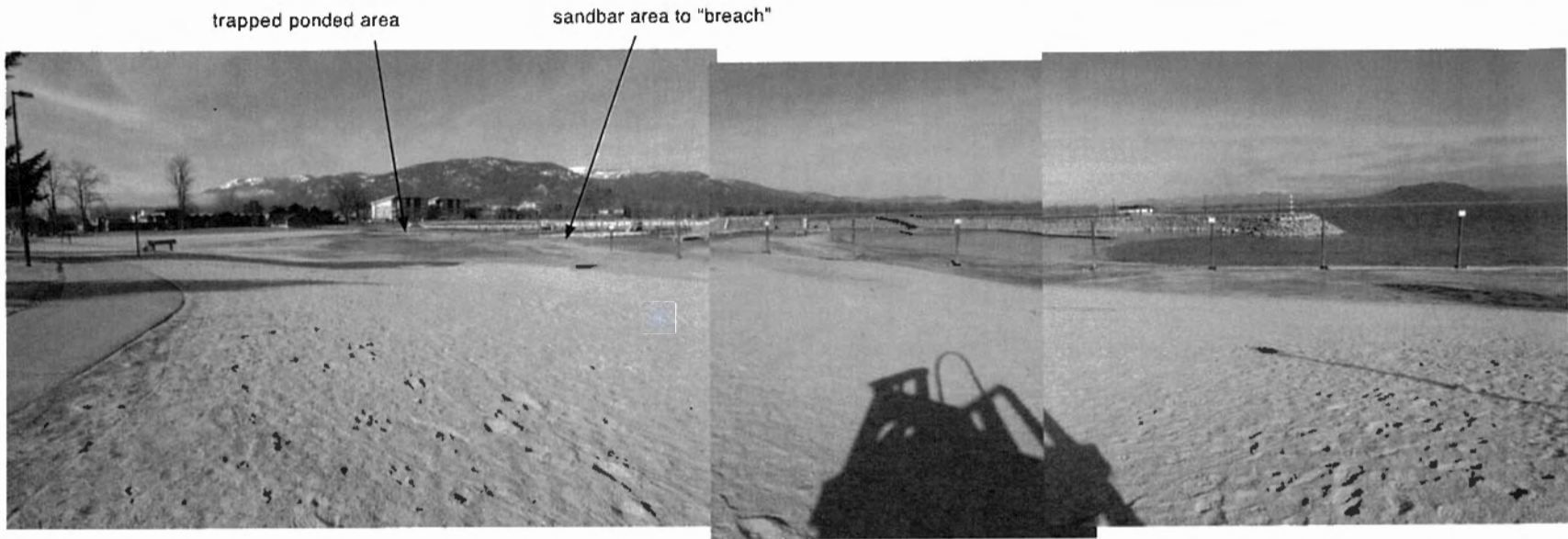


Photo 15. View northwest, panning (left to right) to northeast at north end of City Beach lower peninsula. Sandbar to be breached is indicated by arrow. Windbag marina in background.

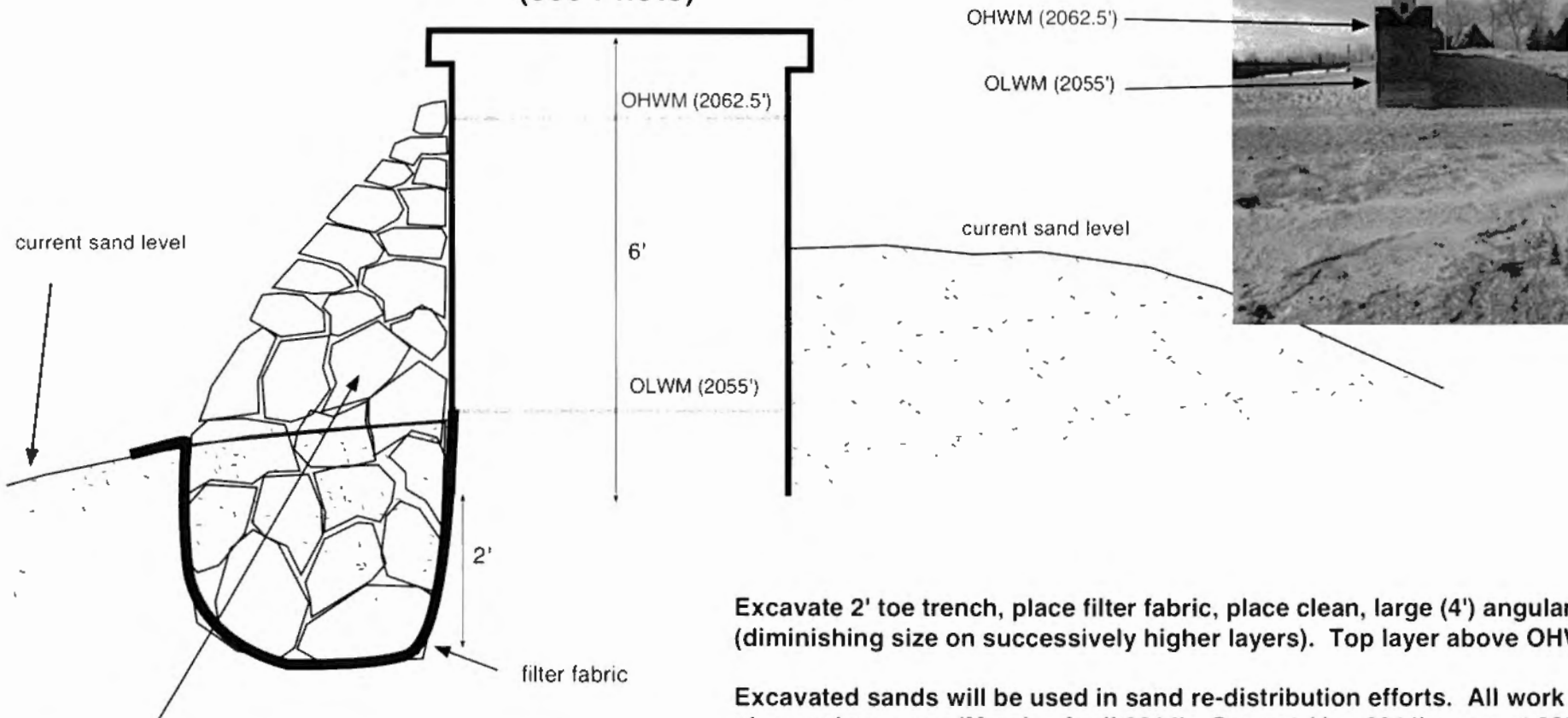


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Photographs taken January 21, 2014

Figure:	8a of 10 (revised 2/25/14)
Map:	Photograph 15a
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared (revised):	2/25/14

**Lady Liberty Pier
(see Photo)**



Total riprap area: 22.75 sf (including 2' x 2' toe trench) x 1' = 22.75 cf / 27 = .84 cy / lf x 177 lf = 148.7 cy below OHWM + ~6.5 cy above OHWM for a grand total of 155.2 cy material needed.

Total trench excavation:
 $4 \text{ sf} \times 1 = 4 \text{ cf} \div 27 = 0.15 \text{ cy} / \text{lf} \times 177' = 26.5 \text{ cy}$

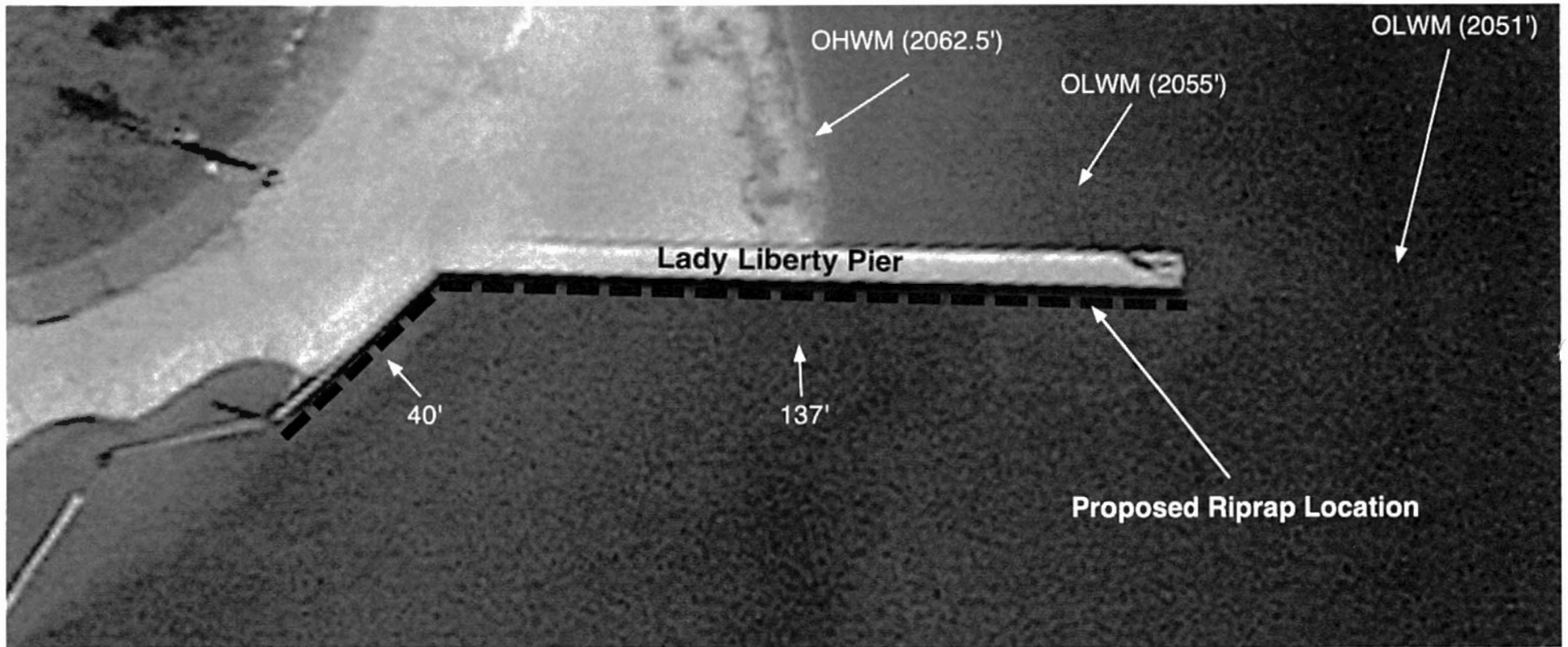
Excavate 2' toe trench, place filter fabric, place clean, large (4') angular riprap (diminishing size on successively higher layers). Top layer above OHWM.

Excavated sands will be used in sand re-distribution efforts. All work to take place at low water (March - April 2014). Current (Jan 2014) water at 2051'.

Toe trench may be saturated at time of toe trench excavation. Silt fence will be placed outside toe trench excavation area.

dimensions as shown; view from end of pier westward

Figure:	9 of 10
Map:	Riprap Construction - Cross-Section
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14



TOTAL LENGTH OF RIPRAP 177'

Approximately 26.5 cy of sands will be excavated for the toe trench; 148.7 cy total riprap placed below the OHWM, and approximately 6.5 of the smaller rock above the OHWM. Thus total riprap placed will be about 155.2 cy.

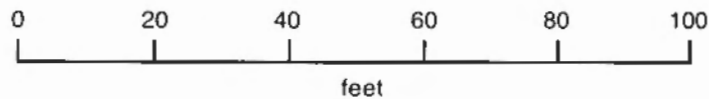


Figure:	10 of 10
Map:	Riprap Construction - Plan View
Project:	Sandpoint Parks and Recreation Sand Re-distribution and Riprap Project
Corps Ref #:	NWW-2014-92
Applicant:	City of Sandpoint Parks and Recreation Department
Date Prepared:	1/30/14