

Figure 98. Graphical overlay of fine-scale magnetism and side scan data on A77 and A79 (courtesy CRE).

**Anomaly 78: Iron Wire**

Anomaly 78 Summary Table	
Anomaly Identification	Iron Wire
Remedial Impact	Cap and Dredge
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	267
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/27/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 78 was investigated by a diver in 2011 and determined to be several feet (approximately 1m) of corroded iron wire, similar to fence wire.

**Recommendations**

LCMM recommends no further work for A78.

**Anomaly 79: Unidentified**

Anomaly 79 Summary Table	
Anomaly Identification	Unidentified
Remedial Impact	Dredge and Cap
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	634
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/27/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 79 was co-located with 2005 magnetic anomaly #634, a 144nT dipole at a depth of approximately 5ft (2m) (see Figure 98). The ferrous mass estimate for this feature would range from 50 to 793lb (23 to 360kg) at an assumed range of 7 to 16ft (2 to 5m). The lakebed was obscured by aquatic vegetation in 2005 side scan sonar data. Anomaly 79 was not located despite extensive visual diver examination and metal detecting in 2011.

Although the specific origin of the magnetic anomaly is unknown, its signature lacks the complexity, intensity and spatial extent expected of a larger cultural resource. LCMM believes the collective data suggests that it is likely isolated ferrous debris.

**Recommendations**

LCMM recommends no further work for A79.

**Anomaly 80: Unidentified**

Anomaly 80 Summary Table	
Anomaly Identification	Unidentified
Remedial Impact	Dredge and Cap
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	984, 992, 1249
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/28/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 80 was investigated by a diver in 2011. The area is filled with metallic trash which hindered the diver’s ability to pinpoint the original anomaly. There is a clear depression in the lake bottom. This location is in the approach to the Syracuse Inner Harbor, and is likely a place where navigation aids would be placed. It is very likely that the bottom depression was caused by a mooring from a former navigational marker. The metallic signature is likely from debris associated with the marker.

**Recommendations**

LCMM recommends no further work for A80.

**Anomaly 81: Motorcycle**

Anomaly 81 Summary Table	
Anomaly Identification	Motorcycle
Remedial Impact	Dredge and Cap
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	995
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/28/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 81 was investigated by a diver in 2011 and found to be heavily corroded fragments of a motorcycle. The seat was recovered, photographed and re-deposited (Figure 99).

**Recommendations**

LCMM recommends no further work for A81.



Figure 99. Seat from a motorcycle - Anomaly 81 (LCMM Collection).

**Anomaly 82: 55-Gallon Drum**

Anomaly 82 Summary Table	
Anomaly Identification	55-Gallon Drum
Remedial Impact	Dredge and Cap
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	1012
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/28/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 82 was investigated by a diver in 2011. A82 is a 55-gallon drum.

**Recommendations**

LCMM recommends no further work on A82.

**Anomaly 83: Wood and Metal Debris**

Anomaly 83 Summary Table	
Anomaly Identification	Wood and Metal Debris
Remedial Impact	Dredge and Cap
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	No
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/28/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 83 was investigated by a diver in 2011. The anomaly consists of a series of disarticulated wood and metal debris. A section of wooden debris was recovered and documented. It consisted of an 8ft (2.4m) sheet of plywood, one side of which has paint on it. There were many fasteners, including two ringbolts and two pipe fittings; it was fastened to adjacent pieces with sheetrock screws. It is likely a fragment from an ice shanty or shed.



Figure 100. LCMC archaeologist documents Anomaly 83 (left). Detail of Anomaly 83 showing a pipe fitting and a ring bolt (LCMM Collection) (right).

A second smaller, stout piece of wood was recovered, containing three fasteners. This timber is 37in (94cm) long and 3in (8cm) in width and thickness, and probably oak. This timber appears historic in nature, but is an isolated find.

**Recommendations**

LCMM recommends no further work on A83.

**Anomaly 84: Paint Cans and Bottles**

Anomaly 84 Summary Table	
Anomaly Identification	Paint Cans and Bottles
Remedial Impact	Dredge and Cap
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	239
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/28/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly 84 was dive verified in 2011 to be a pile of paint cans and bottles.

**Recommendations**

LCMM recommends no further work on A84.

**RECOMMEND AVOIDANCE****Anomaly 17-1 and 17-2: Spud Barges**

Anomaly 54 Summary Table	
Anomaly Identification	Spud Barges; NY Site Number 06740.012297
Remedial Impact	Shoreline riprap installation
NRHP Eligibility Recommendation	Eligible
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	No
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	6/27/11
Diver Videography	No
Maps/Charts	No
Aerial Imagery	Yes
Historic Accounts	No

**Historic Context<sup>145</sup>**

Lake View Point was long a popular vantage point on Onondaga Lake, the scene for chowder parties after the Civil War. The land was acquired by Fred Ganier who immediately began running a small steamer and providing temporary accommodations in 1871. That winter he used a pile driver to erect a pier and constructed an ice house and the two-story Lake View Hotel. By July 1872, the steamer *Sperry* began running regularly to Lake View Point from Clinton Square and Geddes Pier. Lake View Point was the first resort along Onondaga Lake.

In addition to the hotel, the resort included an icehouse, bar, casino, shooting gallery, and a pier and landing. The resort's low terrain was regularly inundated during high lake levels, particularly in the spring (*Post Standard* 8/18/1899) By 1874, Ganier's developing physical problems led him to sell the lease to the hotel, which then transferred to several others. The resort and grounds were popular among tourists through the 1880s and 1890s. The 1892 Sanborn map identifies the resort buildings as located within 250ft (75m) of the shore. By the 1890s, the resort was accessible by boat, an access road from the State Fair Boulevard, and from the DL&W Railroad.

In 1899, the resort was sold to Frank Heberle, who transformed it into a private family resort. However, this proved unprofitable, and upon Heberle's death in 1916, the resort closed and the City of Syracuse acquired the property for a proposed sewage disposal plant. When the city plans changed, the city made an agreement with the Solvay Process Company to allow the company to place its wastes on Lake View Point. The point was partially covered by 1929 (*Post Standard* 9/29/29) and fully covered by 1938; placement continued until 1943. Much of the former resort area was covered with 20-80ft (6-24m) of waste.

The historic maps show that the resort was located near the shore of Lake View Point. The surrounding land has been inundated with up to 80 feet (24 m) of waste. In addition, a pier may have been built along the shoreline or perpendicular to it. It was noted that a pier had been visible approximately 0.25mi (0.4km) north of the present boat launch near the area to the south of Lake View Point.<sup>146</sup>

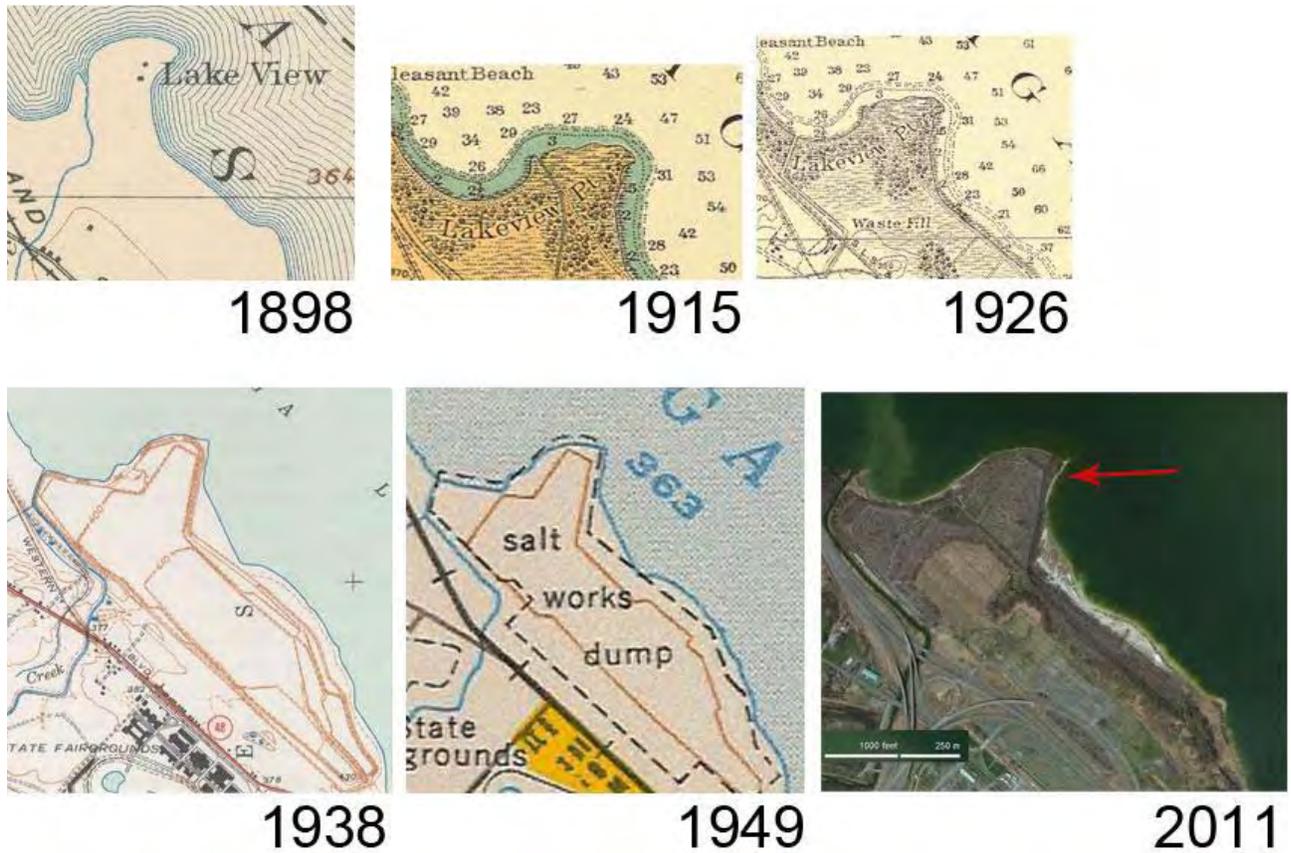


Figure 101. Lake View Point on selected maps from 1898, 1915, 1926, 1938, 1949, and 2011<sup>147</sup> with the latter showing the location of A17.



Figure 102. Lake View Point in 1878 (Smith, *Syracuse and Its Surroundings*, p115).

**Research Results**

A17-2 (inshore) and A17-1 (outer) are two identical spud barges in 1 to 3 ft (0.3 to 0.9m) of water. The barges' sides, ends, bottom and internal structural members are present, while its deck and deck features are no longer extant. Approximately eighty percent of the original fabric of the barges remains. Plans for shoreline improvement include placing riprap in the area of A17-2.

The focus of the field work at the A17 barges was on A17-2 because the plans for shoreline stabilization had the most potential to adversely impact that resource. Approximately one half of the barge could be examined in shallow water; the western half is buried under the shoreline and covered with phragmites. A17-1 was also photo-documented during this investigation; its identical construction to A17-1 and complete exposure allows for data extrapolation.

A17-1 is 97ft (29.6m) in length and 34ft (10.4m) in beam. The length on A17-2 is also 97ft (29.6m), and the beam is assumed to be identical to A17-1 at 34ft (10.4m). Each vessel contains two outboard spud holders opposite one another, approximately 36in (91cm) square (Figure 105). The eastern ends of the barges are vertical with vertical planking. The sides are vertical, built plank-on-frame. The western end, opposite the spud holders, is raked with transverse planking. The hull structures consisted of planking, floors, and stringers; these three, all connected, made up the entire depth of hull. The flywheel and other machinery are evident in A17-1, and the mounting brackets for the flywheel are visible on A17-2 (Figure 104).

The western end of A17-1 had a mound of concrete immediately adjacent to it (Figure 106). Inspection of the concrete suggested that it was formed by pouring it into that end of the barge as a counterweight for the spuds and machinery on the other end. It was likely pulled out and dumped so that the vessel could be pulled into shallow water next to A17-2.

The two barges at A17 are part of a larger, more complex site. Immediately north and east of A17-1 and A17-2 there are at minimum two additional sunken barges. These sites are almost entirely obscured by extremely dense aquatic vegetation. Additionally, there are a series of pilings located offshore to the east of A17-1 and A17-2. It remains unclear whether the deposition of the offshore barges and A17 correspond to the pilings, or if they are related to one another.

There is no evidence to suggest that spud barges of this type were constructed on Onondaga Lake; the barges were likely constructed elsewhere and brought to the lake. No boat of this size could get to Onondaga Lake until the opening of the enlarged Barge Canal in 1918. With the closure of the Lake View Point resort two years' prior in 1916, it is improbable that the barges were connected to the resort.

It is unclear the purpose of these barges' deposition, though we know that they were intentionally run into shallow water at the end of their working life. Although there is no historical information to confirm it, the barges may have been brought to this area to aid in the solvay waste deposition on shore, perhaps to provide structural support for the material placement. What is certain is that since A17-2 is buried in the material, the barge deposition occurred before the end of the solvay waste deposits in 1943. This limits the barges' sinking to between 1918 and 1943.

**Significance Evaluation for A17**

National Register Evaluation		
Integrity of:	Location	The two spud barges comprising A17 remain their original location, thus LCMM recommends that they retain integrity of location.
	Design	A17 retains design elements such as spatial organization, technology and materials that are reflective of the boatbuilders’ original activities. LCMM recommends that A17 retains integrity of design.
	Setting	Although A17’s location in Onondaga Lake remains the same as when it was intentionally sunk, its specific surroundings have changed significantly. Sedimentation around and over the site has changed the adjacent lake bottom, vegetation and topography. LCMM recommends that A17 does not retain integrity of setting.
	Materials	Most of the barges’ structure is present. LCMM recommends that A17 retains integrity of materials.
	Workmanship	A17 has potential to yield information about the boatbuilders’ skill and techniques. LCMM recommends that A17 has integrity of workmanship.
	Feeling	A17 retains significant physical characteristics, particularly the spud holders and raked ends, that convey her historic qualities. LCMM recommends that A17 retains integrity of feeling.
	Association	A17 remains in the place where the sinking occurred and it is sufficiently intact to convey its nature as a spud barge. From an information potential perspective, integrity of association is measured in terms of the strength of the relationship between the site’s data and important research questions. The site could answer important questions about spud barge construction materials and techniques. LCMM recommends that A17 retains integrity of association.
Criterion:	A: Event	A17 has an association with pattern of events comprising the commercial use of the New York State Barge Canal. Areas of significance include commerce and transportation. LCMM recommends that A17 is eligible under Criterion A.
	B: Person	No known individually significant persons are associated with the A17. LCMM recommends that A17 is ineligible under Criterion B.
	C: Design/ Construction	Although the upper portions of the wreck are deteriorated, the bottom hull of A17 displays the details of the spud barge’s method of construction and design. LCMM recommends that A17 is eligible under Criterion C.
	D: Information Potential	The study of A17 is likely to yield information about spud barge construction techniques. LCMM recommends that A17 is eligible under Criterion D.

**Recommendations**

LCMM recommends that the shoreline stabilization plan be revised to avoid any adverse effect to the spud barges A17-1 and A17-2.

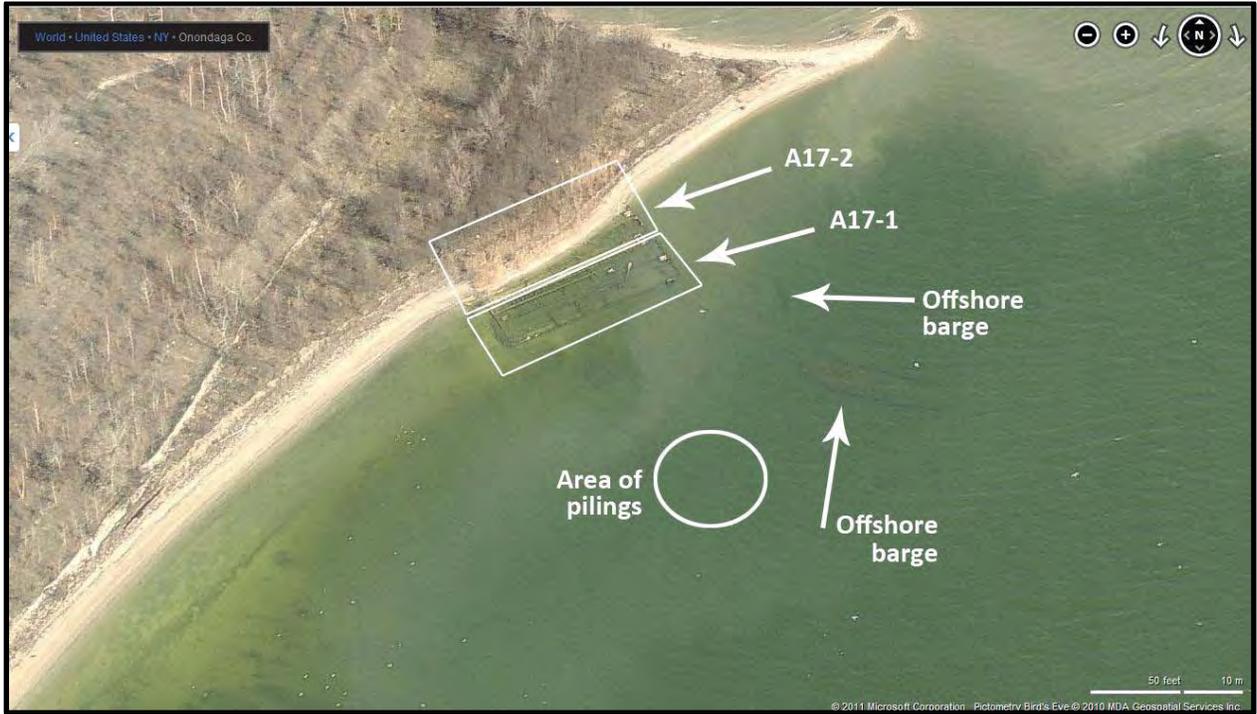


Figure 103. Aerial photograph of A17 spud barges (courtesy Microsoft® Virtual Earth).



Figure 104. Flywheel mounting brackets from spud barge A17-2 (LCMM Collection).

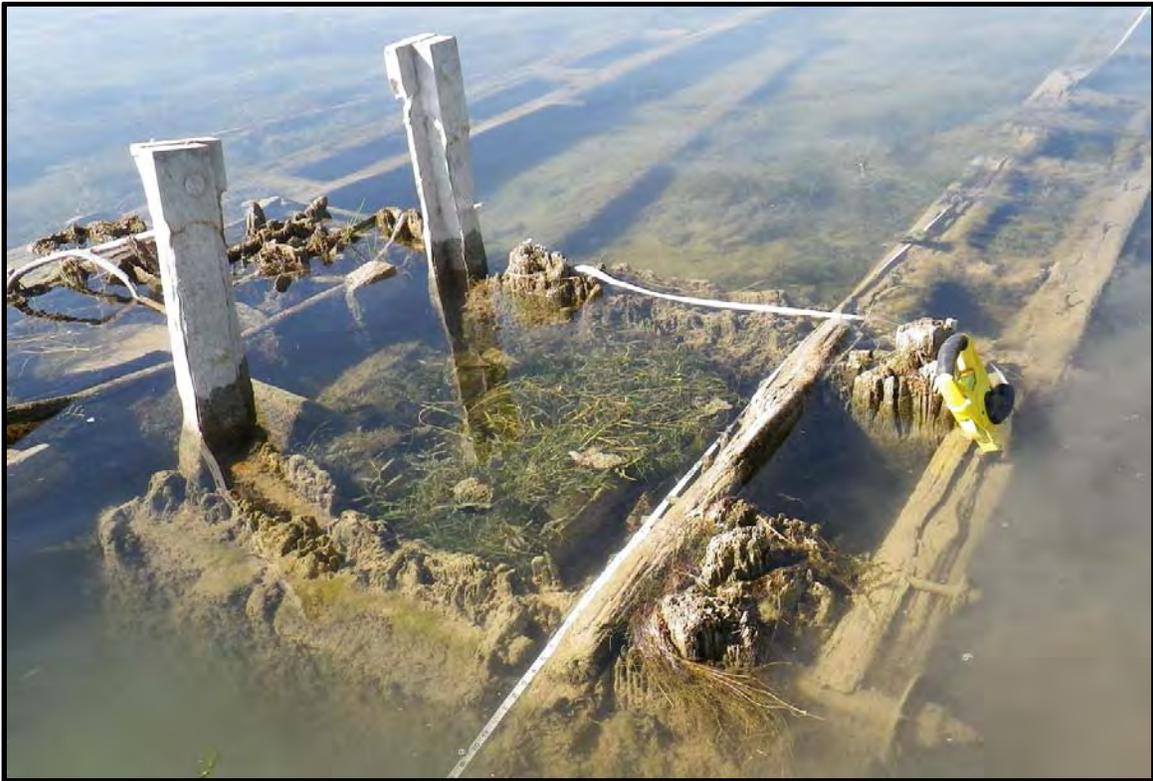


Figure 105. Spud holders on barge A17-2 (LCMM Collection).



Figure 106. LCMM archaeologist wears waders to document the shallow site A17. Note the pile of concrete blocks outside A17-2 (LCMM Collection).

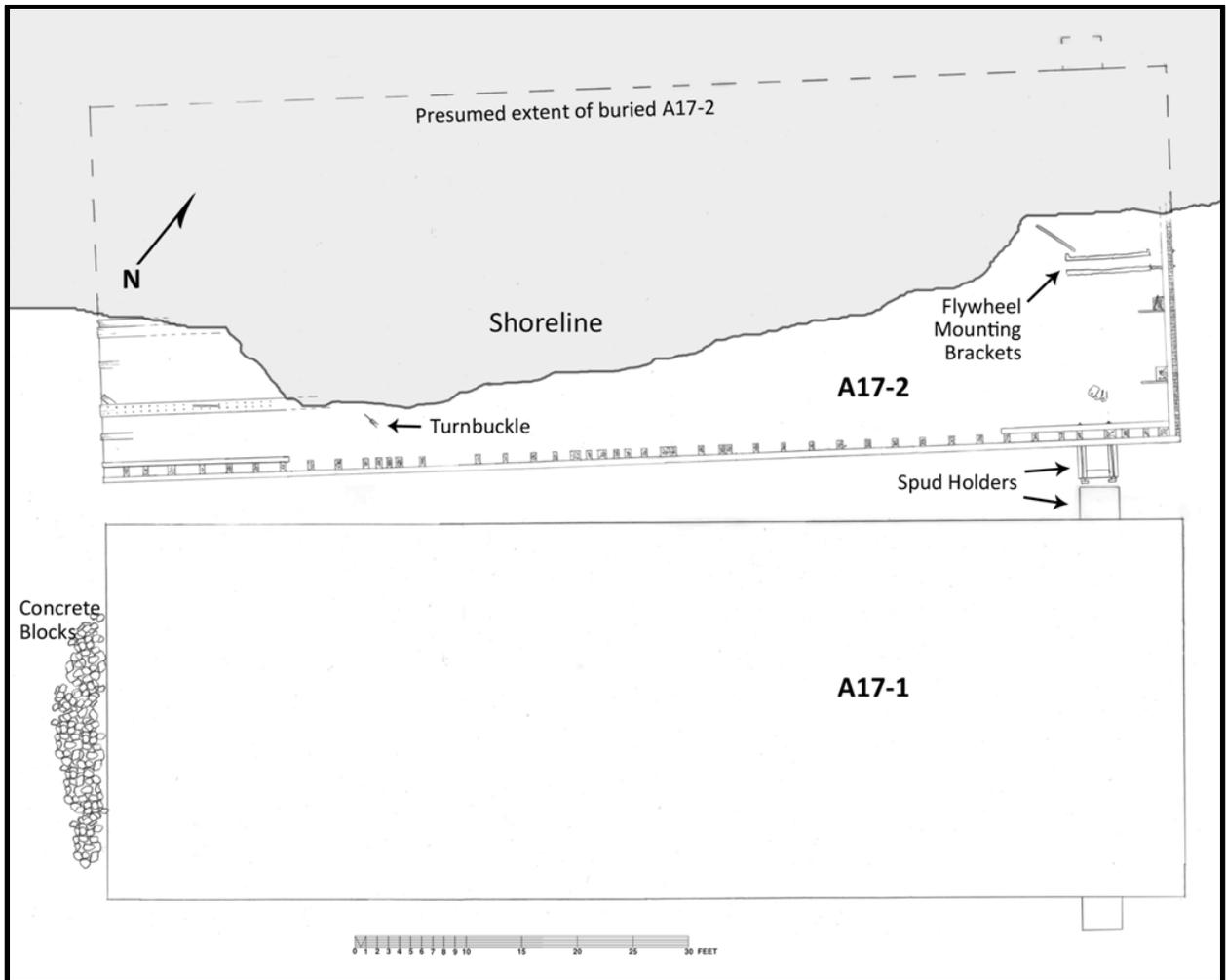


Figure 107. Scale drawing of spud barges A17-1 and A17-2 (Sarah L. Tichonuk, LCMM Collection).

**Anomaly 20: Rock Scow**

Anomaly 20 Summary Table	
Anomaly Identification	Wooden Rock Scow; NY Site Number 06740.012298
Remedial Impact	None
NRHP Eligibility Recommendation	Eligible, Criteria C and D
Anomaly Dataset	
Side Scan (2005)	501
Magnetometer (2005)	170, 178, 1066, 1065
Side Scan (2010)	6/2/10
Sector Scan (2010)	6/4/10
ROV (2010)	6/11/10
Diver Observations	No
Diver Videography	No
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

A20 is a well-preserved early twentieth century wooden rock scow resting in approximately 20 feet (6.1m) of water on a hard bottom, with nearly the entire structure exposed above the lake bed. The site was examined with side scan sonar, sector scan sonar and ROV (Figure 108 and Figure 109). The archaeological data, although not conclusive, suggests that A20 is a rock scow. This once commonplace vessel type was used to transport stone and sand throughout the canal system and beyond (Figure 110). Rock scows were similar to flat deck scows; however, the vessels were equipped with high-deck end bulkheads at the bow and stern, and lower longitudinal bulkheads along the side of the hull. The bulkheads served to retain the deck-loaded cargo.

A20 is 91½ feet (27.89m) long by 32½ feet (9.91m) wide, with most of its principal members still extant including the sides, ends, deck beams, hanging and standing knees, stringers, and framing. The vessel also retains some decking and the high deck-end bulkheads and longitudinal retaining bulkheads are displaced, but lying near or on the wreck. The hull is characterized by vertical edge-fastened sides and scow ends. The ends are framed with rake timbers. Most of A20's deck beams are still in place with most still retaining vertical knees at the outboard ends for longitudinal retaining bulkheads. The high deck-end bulkheads are believed to be lying against the side of the hull at the scow's eastern end and on the bottom adjacent to the western end (Figure 111). A20 has a small section of intact decking amidships along its southern side. Overall the site retains approximately 90% of the vessel's original structure.

The circumstances of A20's loss are unclear. Unlike the vessels in the Syracuse Maritime Historic District, which circumstantial evidence strongly suggests were abandoned, A20's location north of Lakeview Point does not provide any such compelling evidence. Scuttled vessels tend to be let go at the nearest possible point where they can be left without any hindrance to navigation. A20's mid-lake location suggests the possibility that the scow was lost in distress. Additional archaeological study would be needed to clarify the circumstances of its loss.

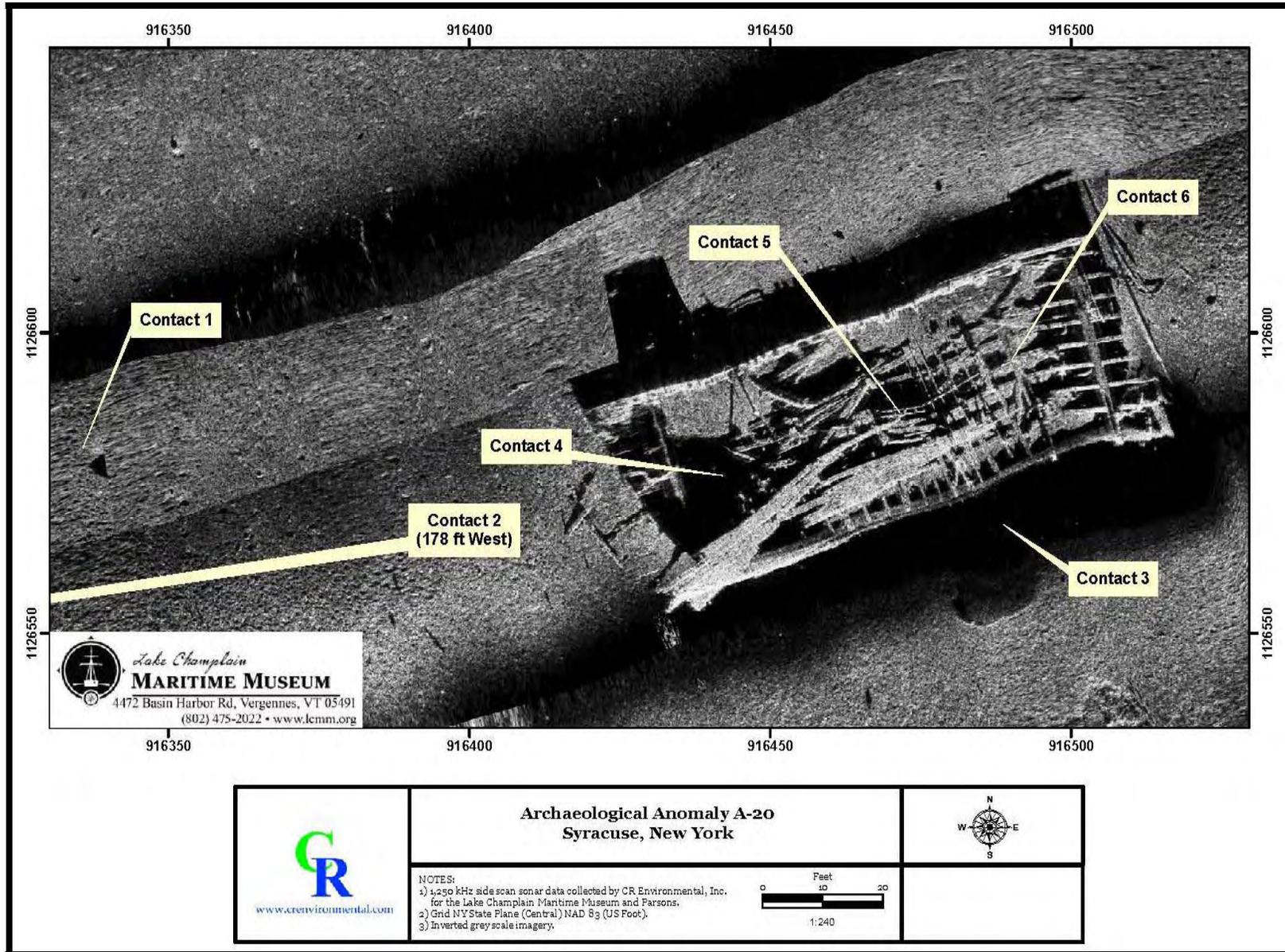


Figure 108. Side scan sonar mosaic showing A20.

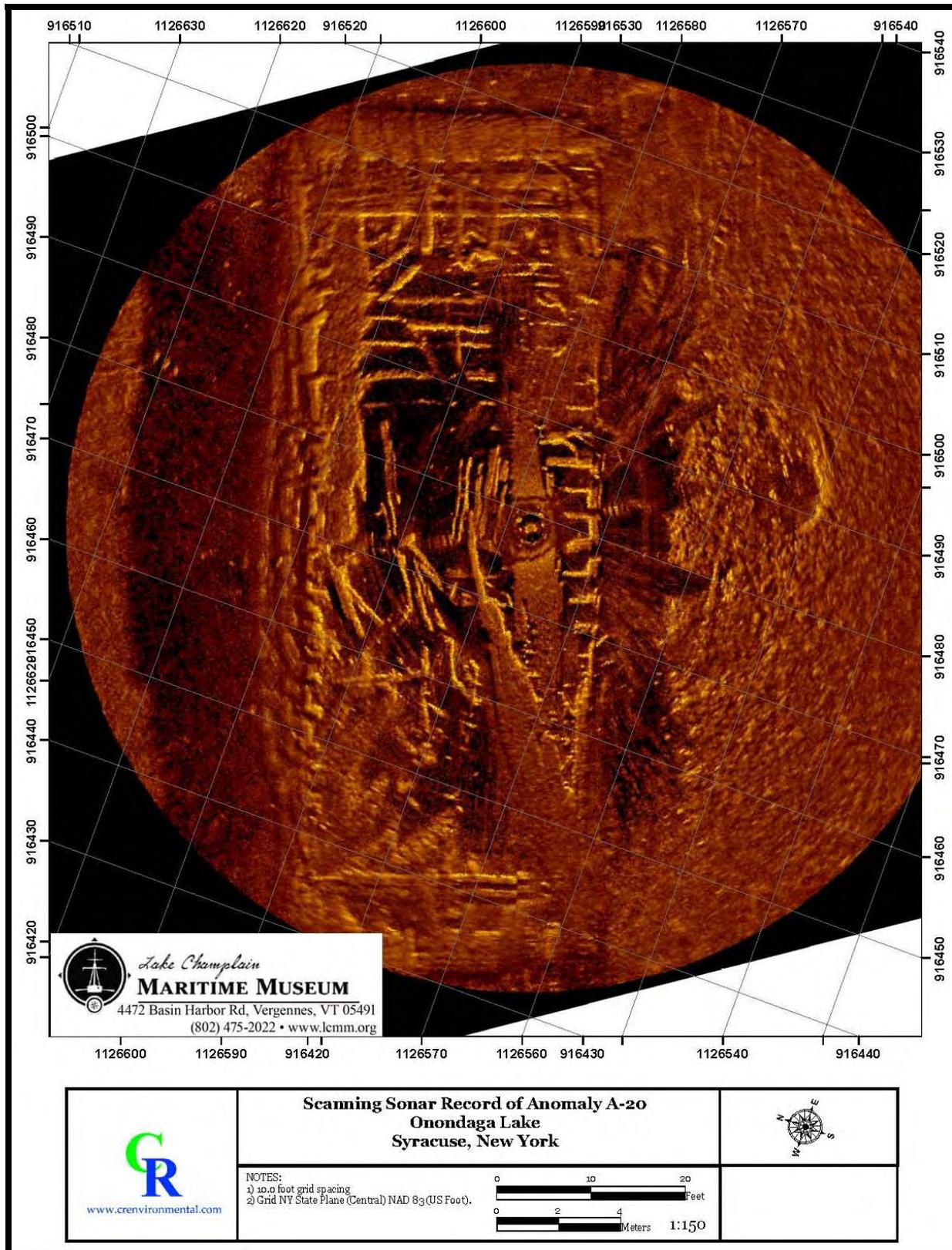


Figure 109. Scanning sonar image of A20.

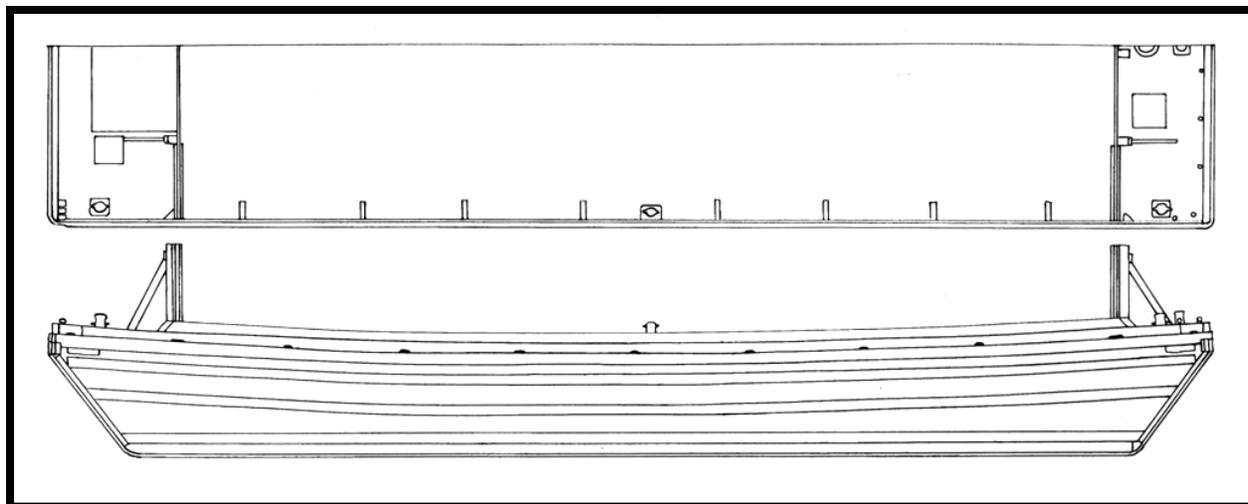


Figure 110. Plan view and profile of a rock scow (from the Feeney Collection at the Hudson River Maritime Museum in Kingston, New York, inked by Adam Kane).<sup>148</sup>

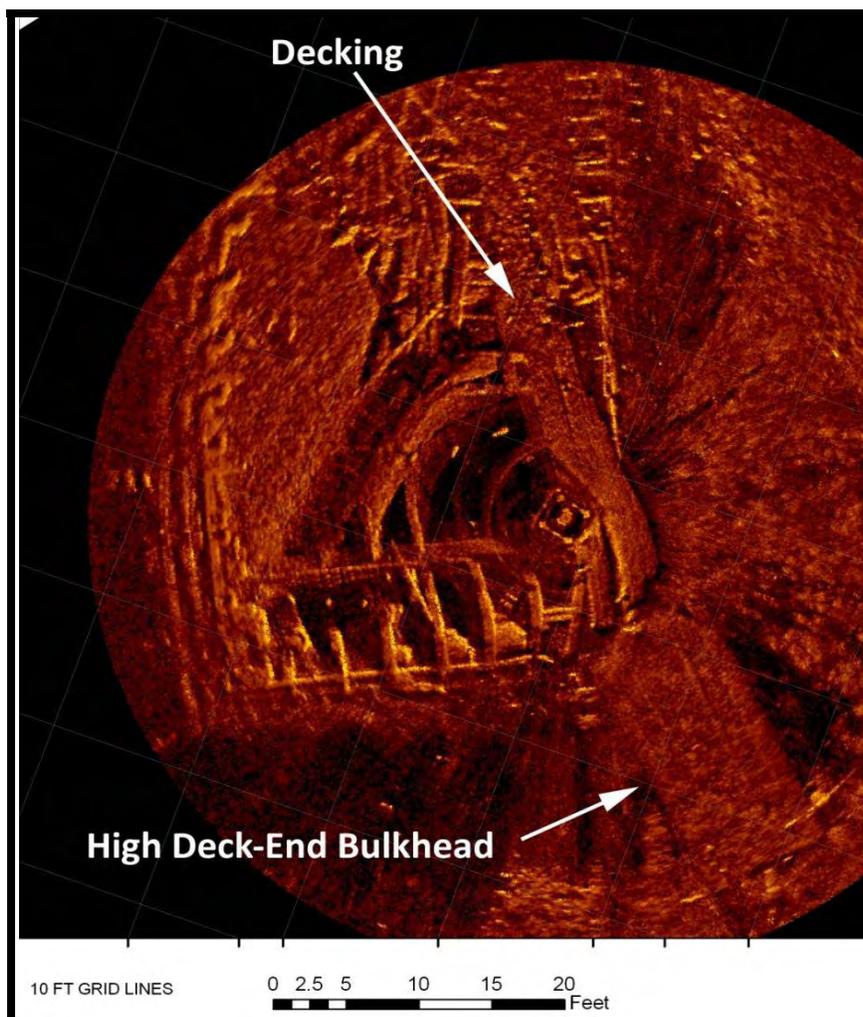


Figure 111. Sector scan sonar detail showing the displaced high deck-end bulkhead and the decking.

**Significance Evaluation**

National Register Evaluation		
Integrity of:	Location	A20 remains at its original location, thus LCMM recommends it retains integrity of location.
	Design	A20 retains design elements such as spatial organization, technology and materials that are reflective of the boatbuilders’ original shipbuilding activities. LCMM recommends A20 retains integrity of design.
	Setting	The area of lake in proximity to A20 retains a similar character to that when the vessel was lost some 60 to 80 years ago. LCMM recommends A20 retains integrity of setting.
	Materials	Approximately 90% of the fabric of the site remains either intact or adjacent to the scow. The hull construction can reveal the boatbuilders’ construction preferences and (potentially) regional boatbuilding traditions. LCMM recommends A20 retains integrity of materials.
	Workmanship	A20 has significant potential to yield information about the boatbuilders’ skill and techniques, thus LCMM recommends it retains integrity of workmanship.
	Feeling	The historic character of A20 in its largely intact as its exposed condition evidences. LCMM recommends A20 retains integrity of feeling.
	Association	A20 is sufficiently intact to convey to an observer its nature as a rock scow. From an information potential perspective, integrity of association is measured in terms of the strength of the relationship between the site’s data and important research questions. The archaeological data gathered from A20 indicates the site has the potential to answer questions about the engineering considerations for building this specific vessel type and vessels designed to carry large deck loads. LCMM recommends A20 retains integrity of association.
Criterion:	A: Event	The circumstances of A20’s loss and its association with the New York State Canal system are unclear, thus LCMM recommends A20 is ineligible under Criterion A.
	B: Person	No known individually significant persons are associated A20. LCMM recommends A20 is ineligible under Criterion B.
	C: Design/ Construction	A20 embodies the distinctive characteristics of rock scows, and can be considered representative of the type. LCMM recommends A20 is eligible under Criterion C.
	D: Information Potential	A20 is likely to yield information about early twentieth century boatbuilding techniques, their operational history and the specific construction characteristics of rock scows. LCMM recommends A20 is eligible under Criterion D.

***Recommendations***

LCMM's analysis suggests that A20 retains integrity and is eligible for the National Register of Historic Places under Criteria C and D. The remedial design for the area calls for capping. As per the Section 106 process, LCMM has recommended avoiding adverse impacts to A20. In response, the remedial design has been altered to avoid depositing cap materials on the site.

A20 should be marked during remedial activities to ensure that no adverse impacts occur via the inadvertent anchoring of work vessels.

**Anomaly 22: Pleasant Beach Pier**

Anomaly 22 Summary Table	
Anomaly Identification	Pleasant Beach Resort Pier; NY Site Number 06740.012299
Remedial Impact	Capping
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	314
Side Scan (2010)	6/2/10
Sector Scan (2010)	No
ROV (2010)	6/8/10
Diver Observations	No
Diver Videography	No
Maps/Charts	Yes
Aerial Imagery	Yes
Historic Accounts	Yes

**Historic Context<sup>149</sup>**

The Pleasant Beach Resort was located on a cove approximately 4000 feet (1220m) north of Lake View Point and north of the mouth of Nine Mile Creek. The resort, which was originally known as Cowan's Grove, was opened in 1874.<sup>150</sup> The resort mainly consisted of a beach within the bay, but drew a lower number of tourists in the 1870s compared to Lake View Point. However, in 1885, Willis Barnum and Alfred Aldridge took possession of the resort and renovated it. They cleared the grove, leveled the beach, built restaurants (dining hall), a bowling alley, a dance pavilion, and bathing houses. The new owners also constructed a great stone pier for steamboats. By 1887, the resort was reopened under the new name of Pleasant Beach.<sup>151</sup> During the 1890s and into the early twentieth century, the resort thrived. Improvements included a shooting range, a midway with games of chance, a photo studio and a children's zoo. In 1892, the Sanborn map noted that a chowder house was 100 feet (30m) from the water; a pavilion and a dining hall were 150 feet (45m) from the water; the bar was approximately 175 feet (52m) from the water; the bowling alley and bar room were 250 feet (75m) from the water; cottages were 200 feet (60m) from the water; and a hotel was located on the west side of the railroad tracks and north of an old wooden bridge.

Between 1890 and 1900, the original hotel on the resort, the Lackawanna Hotel, burned to the ground, and a new hotel was constructed (Reichert's Hotel). Reichert's hotel catered to annual outings and picnics through the 1910s. In 1912, a new hotel was under construction to replace Reichert's. With the construction of the Barge Canal and a new dam at Phoenix, it became clear that Reichert's would no longer be above the elevated water line of the lake. In 1915, Reichert's was demolished. The new hotel, Bob Johnson's Pleasant Beach Hotel, was constructed on the side of a hill on land 300 feet (90m) farther from Onondaga Lake. Through the 1950s, the hotel and resort thrived and was especially popular for weekend clambakes. However, in 1954, the hotel and resort were removed by New York State for the construction of I-690.

**Research Results**

A22 was confirmed as the pier associated with the Pleasant Beach Resort. The site was investigated with side scan sonar, visually from the surface and with the ROV. The investigations were generally hampered by dense aquatic vegetation which covered the pier and surrounding bottomlands.

The pier 150 feet (45.7m) long and 20 feet (96.1m) wide with a 50 foot (15.2m) long T at the end (Figure 112). The pier was built using timber cribbing and rock fill. The structure is well preserved, with the portions of the end T retaining an original stone or concrete decking surface.



Figure 112. Aerial view showing pier remnants at Anomaly 22 (courtesy Microsoft® Virtual Earth).

### **Significance Evaluation**

The Pleasant Beach pier was one structure within the larger Pleasant Beach Resort, which included attractions such as restaurants, a bowling alley, a dance pavilion, bathing houses, a shooting range, a midway, a photo studio and a children's zoo. These standing structures are no longer extant, however, it is highly likely that the associated archaeological remains still exist. The absence of data from the presumed terrestrial portion of the site makes the property problematic to evaluate. Although the pier retains its integrity, the integrity of this one site component alone is not sufficient to determine that the terrestrial site also retains integrity. The Pleasant Beach Resort at present remains an unevaluated site in terms of its eligibility for the NRHP.

### **Recommendations**

The remedial design calls for capping in the area adjacent to the end of Pleasant Beach Pier with 2½ feet (76cm) of sand. This capping is unlikely to have an adverse effect on the pier remnants if capping material is not dropped specifically on the pier. LCMM recommends that capping be undertaken on the bottomlands surrounding the pier, with a 50-foot (15m) buffer around the pier buoyed during the remedial action and left uncapped.

**Anomaly 33: Canal Boat**

Anomaly 33 Summary Table	
Anomaly Identification	Canal Boat; NY Site Number 06740.012300
Remedial Impact	Capping
NRHP Eligibility Recommendation	Eligible
Anomaly Dataset	
Side Scan (2005)	321, 326
Magnetometer (2005)	947, 59, 949, 951, 953, 60, 955, 959,
Side Scan (2010)	6/3/10
Sector Scan (2010)	6/5/10
ROV (2010)	6/9/10
Diver Observations	Yes
Diver Videography	Yes
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

A33 is an intact, buried nineteenth century canal boat. The site was identified in the *Underwater Workplan* based on a complex magnetic signature and several small sonar returns. The site was investigated in June 2010, with the side scan sonar, sector scan sonar and a remotely operated vehicle. The site was dive verified in October 2010.

The initial side scan and sector scan sonar data from A33 did not yield any targets which seemed likely to be a submerged cultural resource. The remotely operated vehicle survey located several upright timbers protruding from the bottom, however, the extremely silty bottom conditions and associated poor underwater visibility lead to inconclusive results. The timbers that could be seen had enough potential that A33 was recommended for dive verification, which was undertaken on October 27 and 28, 2010. This fieldwork lead to the discovery that A33 was an intact, almost entirely buried wooden canal boat.

The upright timbers initially seen during the ROV work were determined to be the boat’s bitt posts and stem (Figure 113). The exposed portions of the stem, bitt posts and gunwale, although very limited, contained features diagnostic of a wooden nineteenth century canal boat. The vessel had a distinctively canal boat shaped bow with iron bands along the forward face of the stem, a rub strake in the bow and an iron traveler on the after face of the stem. The gunwale had fair leads, used to guide the boat’s towline, cut into it. The bitt posts were found immediately aft of the stem, with a buried windlass attached just below the sediment.

The run of the boat’s hull contained no structural elements exposed above the lake bottom, however, structure was encountered with a probe 2 to 3 feet (.61 to .3m) below the sediment in numerous locations. Dive verification did eventually yield the very end of a wooden tiller bar and buried rudderpost located 95 feet 5 inches (29.1m) aft of the stem. The tiller had a tiller bar extender, another diagnostic canal boat feature, which is an iron band and loop around the tiller used to insert a long steering pole so that the boat could be steered from on top of the cabin.

The length of the vessel from stem to rudder post (95 feet 5 inches [29.1m]) is consistent with canal boats built between 1862 and 1915.

The archaeological data collected from A33, although limited due to the sediment deposition, conclusively illustrates that the site is a buried canal boat. The remains that are visible (stem, tiller) represent the highest points on the vessel, with the exception of the cabin trunk and roof. The preservation of these elements indicates that the buried portion of the site is intact. A canal boat the size of A33 was 8 to 10 feet (2.4 to 3.1m) tall, suggesting the bottom of the vessel rests below 10 to 12 feet (3.1 to 3.7m) of sediment (Figure 114).

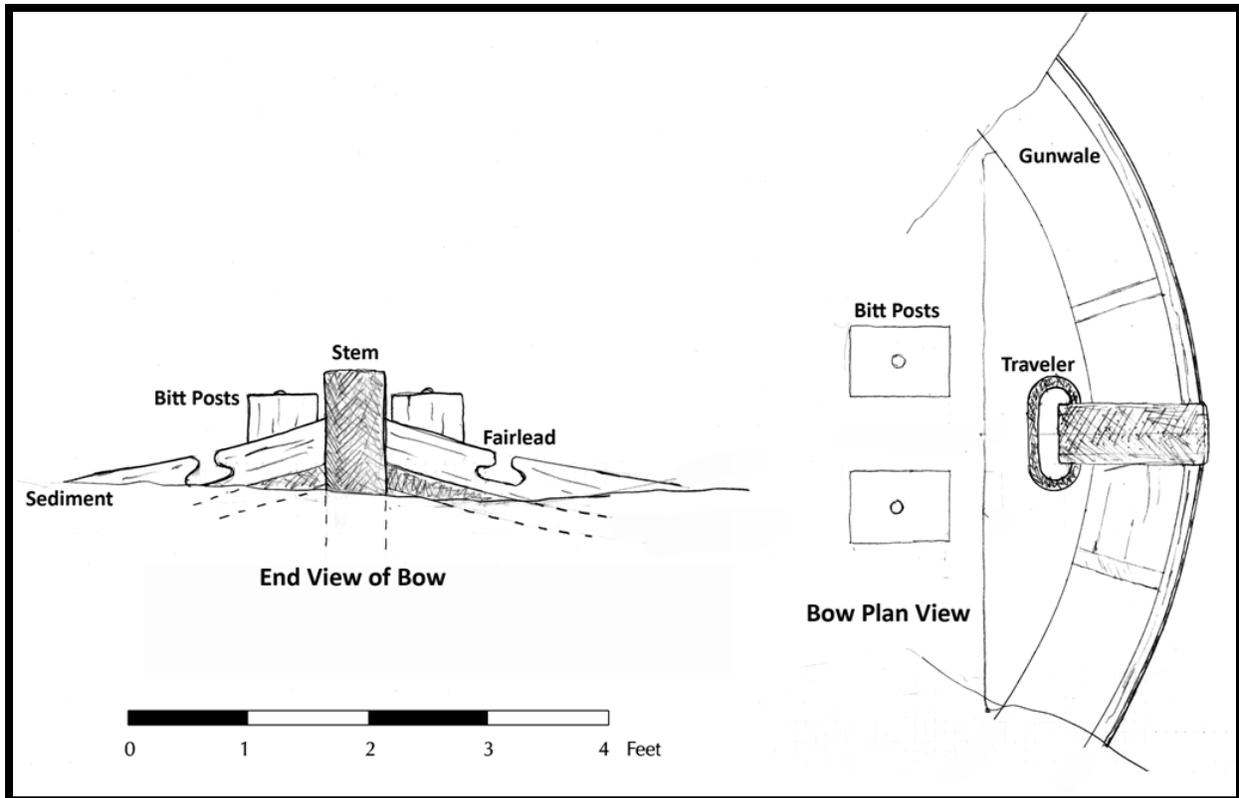


Figure 113. Scale drawing of A33 showing the visible bow remains (Adam Kane, LCMM Collection).

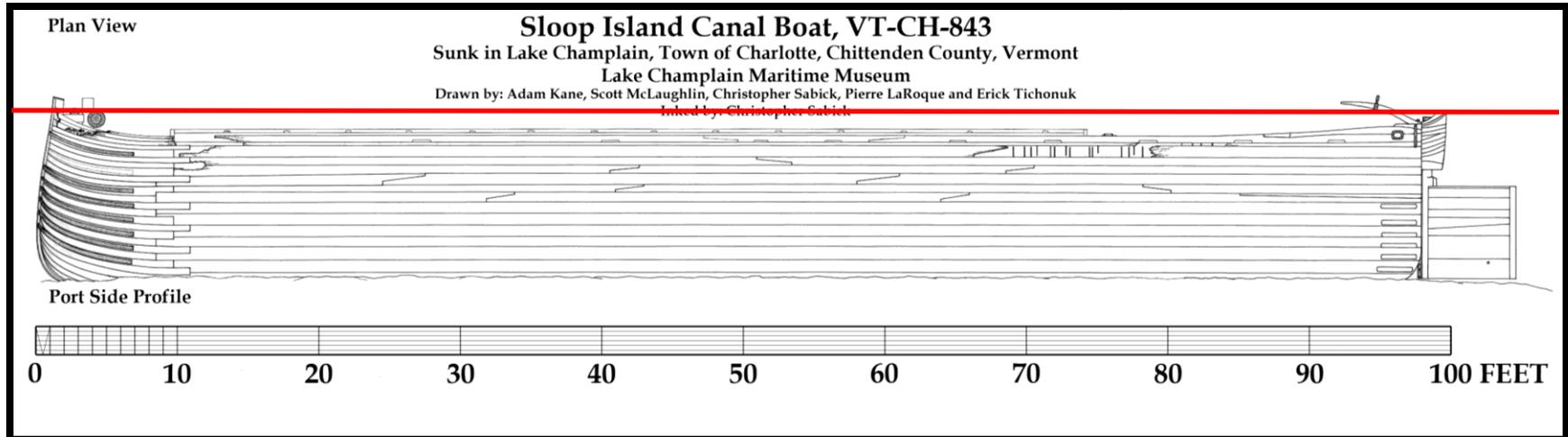


Figure 114. Profile of a Lake Champlain canal boat similar in size to A33 with the red line illustrating the level of siltation over A33 (LCMM Collection).

**Significance Evaluation**

National Register Evaluation		
Integrity of:	Location	A33 remains at its original location, thus LCMM recommends that it retains integrity of location.
	Design	A33 is likely to retain design elements such as spatial organization, technology and materials that are reflective of the boatbuilders’ original activities. LCMM recommends that A33 retains integrity of design.
	Setting	Although A33’s location in Onondaga Lake remains the same as when it sank, its specific surroundings have changed significantly. Sedimentation around and over the site has changed the adjacent lake bottom, vegetation and topography. LCMM recommends that A33 does not retain integrity of setting.
	Materials	Nearly all of A33 is buried beneath the lake bed. Although this makes the assessment of the configuration of the site difficult, if not impossible, it is safe to conclude that those materials remain intact. Moreover, those buried materials will be in a better state of preservation than those exposed above the lakebed. LCMM recommends that A33 retains integrity of materials.
	Workmanship	A33 may have significant potential to yield information about the boatbuilders’ skill and techniques; however this aspect of integrity cannot be concluded with the current data set. LCMM recommends that A33 may have integrity of workmanship.
	Feeling	The historic character of A33 is limited by the buried nature of the archaeological remains. LCMM recommends that A33 does not retain integrity of feeling.
	Association	A33 remains in the place where the sinking occurred and it is sufficiently intact to convey its nature as a canal boat. From an information potential perspective, integrity of association is measured in terms of the strength of the relationship between the site’s data and important research questions. The known archaeological data, although extremely limited due to the buried nature of the property, indicates that the site could answer important questions about canal boat construction materials and techniques, and, if the boat sank in distress, canaller culture and the operational use of an Erie Canal Boat. LCMM recommends that A33 retains integrity of association.
Criterion:	A: Event	A33 has an association with pattern of events comprising the commercial use of the New York State Barge Canal. Areas of significance include commerce and transportation. LCMM recommends that A33 is eligible under Criterion A.
	B: Person	No known individually significant persons are associated with the A33. LCMM recommends that A33 is ineligible under Criterion B.
	C: Design/ Construction	A33 may be eligible under Criterion C, but the lack of archaeological data makes this conclusion difficult to reach. LCMM recommends that A33 is currently ineligible under Criterion C.
	D: Information Potential	The study of A33 is likely to yield information about nineteenth century boatbuilding techniques and, if the vessel sank in distress, information

		about the reason for its loss, its cargo, and the culture of canalers. LCMM recommends that A33 is eligible under Criterion D.
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**Recommendations**

LCMM’s analysis suggests that A33 retains integrity and is eligible for the National Register of Historic Places under Criteria A and D. The remedial design for the area around A33 calls for capping, the impact of which is impossible to determine given the lack of information regarding the site’s structural composition. LCMM recommends that the remedial design be altered so that any potential adverse impacts to the site are avoided. Consultation with Parsons indicates that A33 is in an area where concentrations are relatively low. The area is net depositional, so concentrations will continue to decrease over time.

The depth of sediment over the site makes the archaeological study of the vessel impossible with current technologies. A33 should be marked during remedial activities to ensure that no adverse impacts occur via the inadvertent anchoring of work vessels.

**RECOMMEND OTHER**

**Anomaly 13: Canal Boat**

Anomaly 13 Summary Table	
Anomaly Identification	Canal Boat
Remedial Impact	Outside of Remediation Area
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	264, 269, 267
Magnetometer (2005)	202, 471, 472, 1232, 76, 477
Side Scan (2010)	No
Sector Scan (2010)	No
ROV Video Footage (2010)	No
Diver Observations	No
Diver Videography	Yes, Hunt Diving 2005
Maps/Charts	No
Aerial Imagery	No
Historic Accounts	No

**Research Results**

Anomaly A13 is 250 feet (76.2m) outside of a remediation area, thus it was not evaluated as part of the Phase 1B survey. However, given the property’s proximity to the remediation areas, it is included in this report for informational purposes should there be an adjustment in the remediation areas. A13 is an intact late nineteenth/early twentieth century canal boat (Figure 115). This vessel was examined by divers from Hunt Diving of Clayton, New York in October 2005. The video showed the vessel to be intact up to gunwales standing at least 6 feet (1.83 m) proud of the bottom. The boat was built using edge fastening construction; a common canal boat building technique that used iron pins driven vertically into the planking to create a rigid longitudinal structure. The bow is stave built, another commonly used late nineteenth/early twentieth century canal boat building technique where the bow was constructed of vertically oriented planks.

**Recommendations**

The eligibility of A13 for the NRHP remains unevaluated; however, given its intact nature it is likely eligible. Although the site is outside the remediation areas, LCMM recommends that additional steps be taken during the remediation to prevent any inadvertent impact to the site. A 50-foot (15m) buffer around the wreck site should be marked with seasonal buoys as a no anchorage site during the remediation, and watercraft operators on site should be informed of the site’s location and protocols.

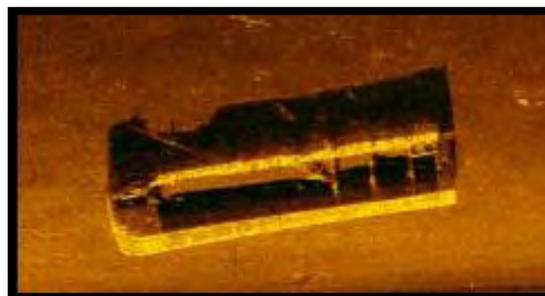


Figure 115. Sonar image from 2005 showing Anomaly 13 (courtesy CRE).

**Anomaly 54: Wooden Bulkhead**

Anomaly 54 Summary Table	
Anomaly Identification	Wooden Bulkhead
Remedial Impact	Dredging and Capping
NRHP Eligibility Recommendation	Unevaluated
Anomaly Dataset	
Side Scan (2005)	No
Magnetometer (2005)	No
Side Scan (2010)	No
Sector Scan (2010)	No
ROV (2010)	No
Diver Observations	Yes (above water photographs)
Diver Videography	No
Maps/Charts	Yes
Aerial Imagery	No
Historic Accounts	Yes

**Research Results**

During the June 2010 fieldwork, an inspection of the shoreline near Harbor Brook revealed the presence of wooden structural remains (Figure 116). This structure, lying immediately west of the mouth of Harbor Brook, was designated A54.

In consultations with Parsons and Public Archaeology Facility this anomaly was assigned to the Harbor Brook archaeological study being undertaken by PAF.<sup>152</sup>



Figure 116. Photograph of A54 with the mouth of Harbor Brook to the left (LCMM Collection).

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## CONCLUSIONS

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Lake Champlain Maritime Museum (LCMM) concluded that the Phase 1B underwater archaeological research undertaken in Onondaga Lake demonstrated that several archaeological remains still lie on the lake bottom. Overall, these properties tend to be well-preserved, although many lie partly or largely buried below the lake bottom. The Phase 1B survey examined 60 anomalies of which 20 are recommended as eligible for the NRHP, while 18 were culturally derived features which are recommended as ineligible for the NRHP. Three of the anomalies were non-cultural, 15 remain unidentified, and four are identified but their NRHP status remains unevaluated.

LCMM recommends the following approach and sequence of activities to comply with Section 106 of the *National Historic Preservation Act*.

1. Develop the remedial design for the sites in the Syracuse Maritime Historic District to minimize adverse effects (Fall 2011).
2. Develop the remedial design for A33 (buried canal boat) to avoid adverse impacts (Fall 2011).
3. Data Recovery on anomalies A1/A2 (Salina Pier), A4-1 (dump scow), A7 (pilings), A12 (spud barge derrick lighter), A45 (concrete breakwater), and A53 (canal boat) (summer 2012).
4. Mark anomalies A22 (Pleasant View Resort pier), A33 (buried canal boat), A20 (rock scow), and A13 (canal boat outside of remediation area) with seasonal float balls to assist in avoiding adverse impacts during the remedial work (prior to start of debris removal).
5. Tailor shoreline stabilization design to avoid adverse impact to A17-1 and A17-2 (spud barges) (Fall 2011).

Table 4. Summary of anomalies, findings and LCMM recommendations.

Anomaly No.	Identification	NRHP Eligible	Adverse Effect	Recommendation
1 and 2	Salina Pier	Eligible (Syracuse Maritime Historic District)	Yes	Data Recovery
3	Wooden Barge	Eligible (Syracuse Maritime Historic District)	No	No Further Work
4-1	Dump Scow	Eligible (Syracuse Maritime Historic District)	Yes	Data Recovery
4-2	Dump Scow	Eligible (Syracuse Maritime Historic District)	Yes	No Further Work
5	Isolated Debris	Ineligible	N/A	No Further Work
6	Solvay Waste Shelf	Unevaluated	N/A	No Further Work
7	Piling Clumps	Eligible (Syracuse Maritime Historic District)	N/A	Data Recovery
8	Aquatic Vegetation	Non-cultural	N/A	No Further Work
9	Tree Branch	Non-cultural	N/A	No Further Work
10	Aquatic Vegetation	Non-cultural	N/A	No Further Work
11	Pipes	Ineligible	N/A	No Further Work
12	Derrick Lighter Spud Barge	Eligible (Syracuse Maritime Historic District)	Yes	Data Recovery
13	Canal Boat	Unevaluated	No	Mark During Remediation
17-1	Spud Barge	Eligible	To be determined	Alter Shoreline Stabilization
17-2	Spud Barge	Eligible	To be determined	Alter Shoreline Stabilization
19	Unidentified	Unevaluated	N/A	No Further Work
20	Wooden Rock Scow	Eligible	No	Alter Remedial Design
22	Pleasant Beach Resort Pier	Unevaluated	No	Alter Remedial Design
33	Buried Wooden Canal Boat	Eligible	To be determined	Alter Remedial Design
34	Rock Mound	Eligible (Syracuse Maritime Historic District)	N/A	No Further Work
35	Watercraft of Unknown Type	Eligible (Syracuse Maritime Historic District)	Yes	No Further Work
36	Wire Rope	Ineligible	N/A	No Further Work
37	Unidentified	Unevaluated	N/A	No Further Work
38	Iron Pier Marine Infrastructure	Eligible (Syracuse Maritime Historic District)	Yes	No Further Work
43	Pipe	Ineligible	N/A	No Further Work
45	Concrete Breakwater	Eligible (Syracuse Maritime Historic District)	Yes	Data Recovery
47	Pipeline	Ineligible	N/A	No Further Work
48	Pipeline	Ineligible	N/A	No Further Work
51	Solvay Intake	Ineligible	N/A	No Further Work
52	Syracuse Yacht Club	Ineligible	N/A	No Further Work
53	Canal Boat	Eligible (Syracuse Maritime Historic District)	Yes	Data Recovery
54	Wooden Bulkhead	Unevaluated	Yes	See PAF <i>Harbor Brook Report</i>
55	Canal Scow	Eligible (Syracuse Maritime Historic District)	Yes	No Further Work

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56	Unidentified	Unevaluated	N/A	No Further Work
57	Wooden Barrel	Ineligible	N/A	No Further Work
58	55-Gallon Drum	Ineligible	N/A	No Further Work
59	Wire Rope	Ineligible	N/A	No Further Work
60	Unidentified	Unevaluated	N/A	No Further Work
61	Unidentified	Unevaluated	N/A	No Further Work
62	Unidentified	Unevaluated	N/A	No Further Work
63	Unidentified	Unevaluated	N/A	No Further Work
64	Unidentified	Unevaluated	N/A	No Further Work
65	Unidentified	Unevaluated	N/A	No Further Work
66	Unidentified	Unevaluated	N/A	No Further Work
67	Unidentified	Unevaluated	N/A	No Further Work
69	Iron Debris – Ladder, Sheet Iron, Slag	Ineligible	N/A	No Further Work
70	Unidentified	Unevaluated	N/A	No Further Work
72	Wood Pilings	Eligible (Syracuse Maritime Historic District)	N/A	No Further Work
73	Bulkhead	Eligible (Syracuse Maritime Historic District)	Yes	No Further Work
74	Isolated Piling	Ineligible	N/A	No Further Work
75	Rock Pile	Eligible (Syracuse Maritime Historic District)	Yes	No Further Work
76	Rock Pile	Eligible (Syracuse Maritime Historic District)	No	No Further Work
77	Unidentified	Unevaluated	N/A	No Further Work
78	Iron Wire	Ineligible	N/A	No Further Work
79	Unidentified	Unevaluated	N/A	No Further Work
80	Unidentified	Unevaluated	N/A	No Further Work
81	Motorcycle	Ineligible	N/A	No Further Work
82	55-Gallon Drum	Ineligible	N/A	No Further Work
83	Wood and Metal Debris	Ineligible	N/A	No Further Work
84	Paint Cans and Bottles	Ineligible	N/A	No Further Work

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## **APPENDIX 1: FIELD LOGS**

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Field logs recorded by Adam Kane, LCMM Archaeological Director, during the 2010 and 2011 fieldwork.  
Transcribed by Chris McClain, LCMM Education Assistant.

<b>6/1/2010 Onondaga Phase 1B Mobilization</b>		
	900	Depart Vermont-just AK
	1430	Arrive Liverpool at Marina. Meet with CR Environmental crew (Chip Ryther, Chris Wright, Shipherd Densmore) and Parsons Safety person Dale Dolph.
	1530	Depart Marina for drug testing facility
	1600-1630	Drug testing/ breathalyzer
	1700	Arrive back at marina for continuation of set up
	1800	Set up completed. Crew has discussion of project requirements, logistics and safety
	1815	Depart Marina

<b>6/2/2010 Phase 1B Onondaga Side Scan Sonar</b>		
	0600	Depart hotel with crew for breakfast: AK, CR, DD, SD
	0700	At the dock
	0705	Depart Marina for Parson's dock
	0730	At Parson's dock
	0740	At Parson's trailer for safety briefing. Briefing by DD, Pete Petrone in attendance; sign secrecy forms, safety acknowledgement forms, float plan
	0830	Depart trailer for boat
	0845	Depart Parson's dock for marina
	0900	At marina for set up
	0945	Depart marina for side scan survey work
A30	0955	Maple Bay Pier
	1005	Sonar into the water. Visual inspection of pier shows it to be heavily covered in milfoil. Pier outline is defined by collection of milfoil on the surface. Construction looks to be vertical planks (+/- 1' wide) making up the exterior wall. One pass off SS along southern face (going EW) showed SS to be ineffective through milfoil. Did pass along eastern face (going S-N) and picked up faint image of dock.
	1023	Depart Anomaly 30
A22	1030	At Anomaly 22. Pleasant Beach Resort dock. Visual inspection shows it to be very shallow and generally well preserved. Again, lots of milfoil-like A30. Looks to be timber crib with rock fill. Outline of dock was very clearly visible from the surface. Excellent integrity.
	1041	Depart Anomaly 22

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A19	1045	Arrive Anomaly 19 Unknown target-possible wreck. Could not find visually, Site is in about 6' with good visibility (6'-8') but lots of weeds.
	1055	Depart Anomaly 19. No visual or sonar evidence of anomaly
A47	1100	Arrive Anomaly 47. Could not locate visually. Did not show up.
	1105	Depart Anomaly 47
A48	1107	Arrive Anomaly 48 Did not show up visually with about 2' visibility. Nothing on SS
	1115	Depart Anomaly 48
A43 & 20	1120	Arrive Anomaly 43 & 20. Anomaly 20 is a barge. Anomaly 43 is a magnetometer anomaly in proximity. Caught a brief visual glimpse of barge from surface. Barge had scow end; wooden structure. SS sonar image is very good. First sonar pass also showed a sonar anomaly in the area of Anomaly 43. Barge appears to be plank-on-frame. Passes @ 1200 KHz showed lots of detail.
	1150	Depart Anomaly 43 & 20. Head to marina for lunch.
	1200	Lunch
A52	1235	Arrive Anomaly 52. Syracuse Yacht Club. Sonar clearly shows car, but no evidence of pilings or other club related structures. Pilings are visible just above lake surface at the SW corner of the Yacht club peninsula
	1250	Depart Anomaly 52
A51 A13	1305	Arrive Anomaly 51. Suction intakes for Solvay Process. Sonar also showed excellent view of adjacent canal boat (Anomaly 13). Sonar data show only one intake. Capture very good image of Anomaly 13
	1400	Finished with Anomaly 51
A10	1405	Arrive at Anomaly 10. Not significant.
	1410	Depart Anomaly 10
A8 & 9	1415	Arrive Anomaly 8 & 9. Inconclusive anomalies that will be surveyed together. Sonar of images suggests muddy logs, but is not conclusive.
	1425	Depart Anomaly 8 & 9
A6	1430	Arrive Anomaly 6. Messy sonar image-origin unclear.
	1440	Depart Anomaly 6
A37	1445	Arrive Anomaly 37. Magnetometer anomaly without sonar. Nothing at all showed up on sonar.
	1450	Depart Anomaly 37
A5	1455	Arrive Anomaly 5. Geddes Pier. Sonar shows nothing conclusive. Runs toward the shore are very weedy.
	1535	Depart Anomaly 5
A36	1545	Arrive Anomaly 36. Magnetometer anomaly with no sonar. SS shows a mound. Unclear if it is just weeds. Nothing conclusive.
	1600	Depart Anomaly 36

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A45	1605	Arrive Anomaly 45. Can see Anomaly 45 from surface. Linear, breakwater composed of a mound of cobbles +/- 20' wide. Possibly a breakwater associated with the entrance to the canal. While surveying Anomaly 45, another site was found which appears to be a barge or canal boat. Wooden in very shallow water just SE of Anomaly 45. Brief glimpse suggested a plank-on-frame built vessel-could have some curvature, but not clear at this point. Gave this new site the designation of A53
	1620	Done with Anomaly 45 Finished surveying for the day.
	1640	Back at marina
	1700	Depart for hotel
	1710	At hotel

<b>6/3/2010 Phase 1B Onondaga Side Scan Sonar</b>		
	00700	Arrive at marina. Crew AK, DD, CW, CR, SD. Safety briefing by Dale. Beginning of second, presumably last day of side scan work.
	0730	Depart marina for southern end of Onondaga
A7	0750	Arrive at Anomaly 7. Dolphins at canal entrance. Very shallow at the entrance into the canal. Clumps are probably less than 50 years old.
	0820	Done with Anomaly 7
A12 & 34	0830	Arrive Anomaly 12 & 34. Anomaly 12 has parts showing above water. It looks like there are structures to hold a spud on either side. A chain plate is clearly visible on the northern exposed structure. Barge is edge fastened with thick planks and framing every +/- 6'. Anomaly 12 & 34 appear to be the same with 34 being a magnetic anomaly associated with the barge.
	0850	Done with Anomaly 12 & 34
A11	0900	Arrive Anomaly 11. Tried to get in to look at this linear anomaly. Could not get sonar image because we had to abort line as we approached to avoid hitting the objects/anomaly. Anomaly looked like a series of concrete or metal pipes.
	0905	Done with Anomaly 11
A33	0910	Arrive Anomaly 33. Inconclusive sonar with magnetometer. Sonar of this anomaly is unclear. Sonar showed two clearly visible but indistinct anomalies. Sector sonar may be able to better define these.
	0930	Done with Anomaly 33
A35	0935	Arrive at Anomaly 35. Magnetic anomaly without any sonar. Anomaly was completely obscured by weeds. Anomaly seemed to be some type of mound, but character is unclear.
	0940	Done with Anomaly 35
A4	0945	Arrive at Anomaly 4. Two barges. Barge A4-1 is the one furthest out in the lake. It is an edge fastened barge with two longitudinal edge fastened bulkheads. Framing is placed every +/- 4'. Barge A4-2 (shallower) is less visible. Longitudinals were visible but could not get in close due to shallow water.

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A38	0955	Magnetometer anomaly without sonar. Side scan showed lots of tires and other debris but nothing historic. Water was very shallow for this near shore target. Visibility in the water was not good due to waves and poor sun. Some glimpses of possible structure but nothing conclusive.
	1005	Done with Anomaly 38
A1 , 2 & 3	1010	Arrive anomalies A1-3. A1 is a barge; A2 Salina Pier; A3 is a possible barge. A1 is visible just above the surface. A3 really unclear-need john boat for these.
	1030	Done with A1-3Done with all official Side Scan sites
	1045	Arrive Tug <i>Stillwater</i> to collect some nice images.
	1100	Done with <i>Stillwater</i>
A15	1105	Arrive at Anomaly 15 to collect nice images.
	1120	Back at marina for lunch. Spoke with Pete Petrone about the metro outfall and mystery bulkhead to be imaged. A change order has been issued for that work, so we will proceed with those anomalies.
	1200	Prep for scanning sonar work and CW works on side scan mosaics.
	1245	Depart marina for Parson's docks.
	1255	Arrive at dock to pick up map of additional anomalies to investigate.
	1315	Arrive at Metro outfall for engineering survey. Thoughts on barges/sites in the southern end. The sites individually may lack significance, but as a whole may constitute a maritime industrial district.
	1420	Done with Metro Outfall
	1425	At dock to discuss outfall and wooden bulkhead feature of wastebed B.
	1430	Depart dock to go to wooden wall feature. The area is too shallow to get ROV into, so operation is postponed until john boat is operational.
	1440	Depart wall feature
A48	1445	Arrive at Anomaly 48. Navigation was not functioning for this one when it was done on 6/2, so we have to resurvey it.
	1455	Done with Anomaly 48
A19	1455	Re-look visually for Anomaly 19. Still nothing. Excellent visibility but 100% weed over rising about 3' above the bottom
	1505	Done with SS survey. Going back to marina to set up sector scan.
	1510	At marina. Set up and testing sector scan sonar.
	1700	Depart Marina
	1720	Back at hotel

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6/4/2010 Phase 1B Onondaga Sector Scan Sonar		
	0700	Arrive Marina Crew: AK, CW, CR, SD, Eli Perrone (EP), Kelly Miller (KM). Pete Petrone here in AM for safety inspection. Continued set up of sector sonar including addition of a second GPS because the sonar does not have a compass and the second GPS will give orientation
	0815	Depart marina heading toward A20 to figure out the best techniques for the sector scan.
A20	0820	Arrive Anomaly 20. Undertake sector scan. Dropped sonar at each end and amidships. Image has tremendous detail. Image suggests barge is scow ended with rake beams. Part of the deck or side has dropped into the wreck. The frequency of framing suggests the barge is plank-on-frame.
A20	1010	Done with A20. Heading back to dock to pick up EP after his breathalyzer.
	1025	Chip Ryther departs. Enroute to A12
A12	1030	Arrive A12. Excellent topside visibility – over 10'. Barge details: edge fastened every +/- 18"; sides are about +/- 4" thick with framing every 3-4'; there are 4 bulkheads, also edge fastened. Framing system consists of futtocks with clamp holding the joint between futtock/floor. The shoreward end has a step for a derrick. The structures above the surface are for holding spuds. The ends are vertical-not raked. Bulkheads are edge fastened. The shoreward end is sheathed in iron (sheet). Good scanning sonar image. Deck is gone, but the frames/bulkheads are preserved up to just below deck level.
A12	1130	Depart A12
A 4	1140	Arrive A4. Notes on western barge: sides are edge fastened, although infrequently. Most strength from framing frames are about 6x6. Bulkheads about 6" wide. The northern end is raked. The middle section at the northern end has two parallel longitudinal beams with sheaves or them. Purpose unknown, but key to knowing purpose of the barge. The long bulkheads are about 8" wide, trans 6", and sides about 4" suggesting there was a lot of stress in the middle of hull, less so at the sides. Longitudinal bulkheads edge fastened about every 2'; sides have 2 edge fasteners between every frame, spaced about 6" apart. Looks like a shallow barge-perhaps depth of hold 5'. Both ends are scow raked.
	1215	Done with 1 <sup>st</sup> barge. Lunch
	1245	Move onto shoreward barge. Ends are raked. Preserved up to just below deck level-site is largely buried. Has 2 longitudinal bulkheads and 11 (?) transverse-only 3 of which go entirely athwartship. The rest do not go through the central section of the longitudinal bulkheads. No framing in the barge. Edge fastening is not apparent, but the lack of visible fasteners is likely because the bulkheads/side are preserved up to just below deck level.
A4	1320	Done with A4
A1 – 3	1330	Arrive A 1-3. Salina Pier. could not get a good image of the pier rises to within 3' of the surface. Appears to have a rock/stone center with wooden sheathing. Mapping was not possible due to very heavy aquatic weeds.
	1400	Arrive at A3. This is the barge that shows up on the aerial. It is misidentified as A1 in the workplan. Excellent sonar image. A3 appears from the sonar image to be longer than the other barges. Heavily built with sporadic framing. Each

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		area between bulkheads has two bilge stringers. Preserved up to just below the deck. Apparently edge fastened, but preservation is such that fasteners are not evident. Image of pier shows up in the view of the eastern end of the barge. After imaging the barge, we got a good look at the shallow end of the pier-at least 50'wide near its intersection with the shore.
	1445	Done with A3. Moving on to the northern side of the pier for another shot at imaging it.
	1500	Arrive at Salina pier about 100 yards from shore and dropped sonar in between wooden structure of pier. Pier consists of vertical planking with rubble fill.
A 1 -3	1525	Done with A 1 -3. Salina pier and one barge showed up very clearly. However, on anomaly in the location of A2 did not show anything on sonar but parallel planks were visible from the surface. Must return here with ROV or drop camera to sort out.
	1530	At Parson's dock for bathrooms.
A53	1545	Arrive A53 which is newly located wreck just south of pier adjacent to canal entrance. Wreck has flat floors with cocked hat construction at the turn of the bilge. Wreck is just the very bottom of the hull. Room and space of about 1' with floors +/- 3" sided. Bow is at the shore end, appears to be rounded. Looks like a canal boat. Plank on frame construction. Only the very bottom of the hull is left -floors, cocked hats, bottom planking. Ceiling is completely gone.
	1630	End A53
	1635	Back at Marina
	1700	Depart Marina

<b>6/5/2010 Phase 1B Onondaga Sector Scanning Sonar</b>		
	0700	Arrive Marina. Set up gear. Safety briefing. Crew: AK. EP. KM. SD, CW
A9	0810	Arrive A9 for sector scan. Sonar shows nothing at the location of the mag anom. An undefined anom showed up about 40m from the center of the mag hit-too far to be A9.
	0825	Depart A9
A8	0830	Arrive A8. Sonar shows a small sonar anomaly in the location. Not able to tell what it is, but looks like debris.
	0840	Done with A8
A33	0845	Arrive A33. Sonar shows two anomalies similar to those on side scan. More akin to a pile of rocks. Need ROV to verify origin.
	0915	Done with A33
A7	0920	Arrive A7 to image pilings
	1000	Depart A7. Recorded good images of pilings. Didn't find anything else. Need to come back here to look for obstruction next to rock wall.
A52	1020	Arrive A52. Syracuse Yacht Club (and car). Too deep to spud, so will scan on the fly. Did not see any evidence of pilings etc. Good images of car.

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	1035	Done with A52
A6	1050	Arrive A6. Some inconclusive-some debris, but nothing characteristic of a cultural resource.
	1100	Done A6
A37	1110	At A37 too deep to spud and too rough to survey on the fly.
	1125	Leave A37 and this part of the lake for more protected area off Nine Mile Creek.
A43	1135	Arrive A43. Extensive search for target. Located but sonar is inconclusive and main sonar target is about 50' from the highest amplitude mag target.
	1225	Done with A43
	1230	At marina for lunch
	1315	Call off field work for the day due to impending thunderstorm. CW to head home
	1330	Back at the hotel

**6/7/2010 Onondaga Phase 1B Sector Scanning Sonar Day**

	0650	Arrive Marina. Crew: EP, SD, Bill Campbell, AK, Xiaodong Huang (Parsons). Safety briefing by XH. BC departs to get breathalyzer
	0830	Off the dock to A5
A5	0845	Arrive A5. Very weedy, nothing apparent on sonar, but the weeds really hamper the sonar's utility at this site.
	0915	Moved on from scanning out in the lake at A5 to a timber structure at the shoreline approximately in the location where Geddes Pier should be. Looks to be timber crib with central longitudinal bulkhead. Remains are about 40' wide. Transverse timber is about 10" x 12". Seems odd that the central bulkhead of this pier sticks out into the lake, but there are no remnants out in the lake. Designed this timber bulkhead A54.
	0940	Done with A5
A45	0955	Arrive A45. Stone pier next to canal entrance. Constructed of rounded cobbles, densely packed on the north and south sides (along the exterior walls of the pier) with an open gap with only sporadic cobbles in between. Good sonar images. No visible evidence of wooden structure at all-only stones averaging about 1-2' in diameter. Lack of timber structure suggests that this feature may have functioned only as a breakwater, not a pier.
	1045	Depart A45
A11	1055	Arrive A11. Good images of pipes. Good sized tree is located just southeast of pipes.
A35	1130	Arrive A35. Too weedy for sonar to work well
	1140	Depart A35
A38	1140	Arrive A38. Nothing on sonar, pretty weedy
	1155	Done with A38
	1210	Back at marina for lunch

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A19	1310	Leave dock to re-survey A19. Quite rough; not very good data., but apparently sufficient to rectify compass issues.
	1345	Done with A19
	1355	Back at Marina. Break down scanning sonar and gear up for ROV
	1500	ROV up and running
	1630	Depart marina for the day.
	1700	Back at hotel

<b>6/08/2010 Onondaga Phase 1B ROV Survey</b>		
	0650	At the marina. Crew: AK, EP, BC, SD, KM
	0735	Leaving Marina
A3	0805	Arrive A3 Barge next to Salina Pier for ROV work.
	0810	ROV into the water. Barge is scow ended-interesting framing with transverse beams running in the middle of the hold. Quite a bit of timber stacked inside the hull suggesting a heavily built boat. Barge has a wale along the exterior of the side. Could not get any interior information from the end- just too hard to get into. Edge fastened. Boat is built with transverse beams set on the chine log and longitudinal stringers. There are two stringers in each side of the hull.
	0925	Done with A3
A2	0930	Arrive A2. Inspection of "thumb pier" area. Some brief views of rocks and a few vertical planks and timbers. Very weedy and difficult to discern any patterns
	1030	Move onto A2 area called "ROV Spot" where we viewed some planks on the bottom on 6/04/2010. Saw at least 4 vertical posts (4x4 or 6x6) in a row. They could denote the end of the pier. Viewed several more vertical planking pieces, but could not make out anything coherent due to extremely heavy weed growth. There is some concern here that the pier would have been made out of boats and nothing seen so far would disprove that.
	1130	Done with A2
	1145	Docked at Parson's dock for lunch
A51	1215	Depart dock for A51. Make several attempts to anchor, but wind (15-20 knots with gusts to 25) makes it impossible.
A51 A30	1245	Leave A51 for A30
A30	1315	Arrive A30 Maple Bay Pier
	1320	ROV into the water. A30 incredibly dense weeds, especially on the pier itself. ROV was able to get a good look along the southeastern face in very shallow water, too shallow for milfoil. Constructed with vertical planks and stone fill.
	1405	Done with A30

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A22	1425	Arrive A22. Pleasant Beach Resort Pier. Good underwater visibility (7-8') but many weeds. Pier appears to be constructed on top of rubble fill. Did not get a good look at the wooden structure. Visual on the first day was the best look. The top of the pier is covered with either stone or concrete slabs.
	1500	Done with A22
A20	1515	Start A20. Fair visibility. Barge has significant wreckage. Possibly the deck is lying off the northeastern side of the boat. Barge has a scow end. Got ROV hung up on a beam. Spent considerable time in freeing it. Only looked at one end of the barge. Will need to come back here.
	1615	Depart A20. End of the day.
	1630	Back at the marina. Repairing spud holder, which was damaged during ROV work on A20.
	1730	Depart Marina
	1745	Back at hotel

**6/9/2010 Onondaga Phase 1B ROV survey**

	0650	At the marina. Crew: AK, BC, SD, EP, DD
	0730	Depart Marina
A33	0740	At A33. Large mag, inconclusive sonar.
	0755	ROV into the water at A33
	0825	Done with A33. ROV showed 3 metal box shaped objects. ID is not clear, but definitely a significant sized object/series of objects. Will need to dive to verify.
A51	0840	At A51 Solvay Intake Anchoring, with drop buoy. Could not anchor, bottom too soupy.
	0900	ROV into the water. Live boating. Intake looks to be cast iron, large, heavily corroded. Lifting loop on top.
	0915	Done with A51
A9	0930	At A9. Inconclusive sonar with no mag. Found a pile of weeds, probably is hanging up on some structure, but there was no way to tell what it was. Very soupy bottom. ROV constantly silted out.
	0950	Done with A9
A8	1000	At A8. Inconclusive sonar without mag. ROV showed nothing but patches of weeds. Very silty. The weeds could have been hung up on structure, but impossible to tell.
	1015	Done with A8
A6	1030	At A6. Mag with sonar. Tried ROV at sonar location-nothing. Moved ROV to mag location. Flat bottom, no weeds with layer of green algae. Fine silt, easily disturbed. Bottom is really soft. Mag target must be buried. Should monitor here while dredging.
	1115	A6 done

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A37	1130	Tried a ROV run, but drifted off too far. Re-anchor to try again. Nothing on ROV, either try. Target must be buried.
	1210	Done A37
	1215	Head back to marina for lunch
	1230	Back at marina for lunch
	1330	Marina. Back out
A1	1345	At A1. Got a good look at the end of the pier. Appears to be made out of stone blocks. One area had an iron bar coming out of the stone. Very weedy. Difficult to make out shape, but there is a lot of structure there.
	1415	Done with A1
A38	1420	At A38. Wooden remains visible from the surface. Difficult to tell what they are, best guess is that it's the deck to a barge. Remains consist of two coaming-like features, two box-like metal features, several thick wood planks. One plank was clearly edge fastened. No weeds- too shallow with sandy bottom. Site is about 3' deep.
A4	1515	Did NW (farther out barge 1 <sup>st</sup> ) Good images of loops 'S' turning mechanism.
	1550	A4 NW barge done
	1555	A4 SE barge. Barge is beat up, especially the shore side end which is quite broken up. Scow barge.
	1615	Done A4
A12	1620	Arrive A12. Good ROV conditions. Vertical ends. Metal reinforcement for holding the spud.
A4	1650	Done A4
	1710	ROV into the water at the Metro Outfall
	1750	Done with Outfall inspection
	1805	Back at marina.

**06/10/2010 Onondaga Phase 1B ROV survey**

	0645	At marina Crew: AK, Peter Petrone, EP, BC, SD
	0745	Depart Marina
A53	0800	At A53. Canal boat next to canal entrance. ROV inspection showed several cocked hats at the ends of floors. Bow is towards the shore. It appears to be traditional plank-on-frame. Floors are completely flat. The video showed what might have been a transverse bottom plank at the stern as if the boat had a rounded or scow stern. However, the stern was very difficult to define. Most of the remains are buried. In its entirety there is perhaps 25% of the original hull left. Did not see any side planks, just the very bottom of the hull
	0855	Done with A53

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A45	0900	At A45. Stone pier next to canal. Pier appears to be made entirely of stones (1-2' in diameter). Stones piled 1 to 2 high (visible) but could be significantly more buried. Tire and a tree at the shore end. One piece of vertical wood seen, but probably didn't have anything to do with the construction.
	0920	Done with A45
A36	0940	Arrive A36. Mag without sonar. One spud hit something solid. Very weedy. Took a good look around. Found one object, perhaps a tree, very difficult to tell under these conditions. Source of anomaly is either buried or hidden in weeds.
	1005	Done with A36
A35	1020	At A35. Mag with inconclusive sonar. Tremendous volume of wooden wreckage. Very difficult to tell what this is. It could be an entire barge, largely buried or a substantial piece of wreckage (deck of a nearby barge). Nothing was evident that showed specific construction techniques. Very weedy.
	1110	Done with A35
	1120	Back at marina for lunch
	1215	Depart Marina
A5	1235	At A5. Scattered, low intensity mag with no sonar.
	1245	Done with A5. This site is far too weedy for the ROV to be effective. The mag anomalies here don't look very promising (low intensity, spread out), so this can probably be written off as an isolated modern debris.
	1305	At Solvay waste wooden wall (SMU 1) near Parson's trailer. Water is too shallow with too much algae (which clogged both boat outboard and ROV thruster). Never saw the wall.
	1215	Leave wooden wall area
A52	1325	At A52. Syracuse Yacht Club. Very dense weeds along shore. Shoreline is all slag and scrap metal, presumably fill from Crucible Steel. This slag is visible in shallow water along the shoreline. No evidence of pilings or other Yacht Club features. The slag fill looks like it has been pushed out well past the original Yacht Club location. Recorded some good video of the car, a sedan, heavily covered in zebra mussels.
	1500	Done with A52
A43	1520	ROV in at A43. Mag anomaly next to A20 barge. Two targets to find; a sonar target from the high frequency side scan and a mag anomaly. The A43 "ROV Here" anomaly (linear anomaly on side scan) was a tree. The mag anomaly at A43 was a metal pipe about 20' long. Bottom here was weed-free with scattered rock and heavily encrusted with zebra mussels. Excellent underwater visibility (+/- 10')
	1620	Back at the marina

<b>06/11/2010 Onondaga Phase 1B ROV survey</b>		
	0645	Arrive Marina
	0715	Crew: AK, DD, EP, SD, BC with Pete Petrone for project update, but not fieldwork. Safety briefing by Dale.
	0730	Depart marina for A19

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A19	0735	At A19 for yet another look from the surface. Excellent surface conditions- calm, no wind, glassy surface – visibility about 4-5'. Water is about 4 ½ - 5' deep with 3' of weed. Did not ROV because of the dense weed would have made it useless. Source of mag must be below the vegetation level.
	0750	Done with A19
A47	0755	Arrive A47. Linear anomaly with no sonar. Excellent surface conditions allowed for ID of target as a pipeline. Pipeline is lying at the bottom surface. Hard to figure out the material, but probably cast iron. Diameter of about 1', runs perpendicular from the shore.
	0805	Done with A47
A48	0810	At. A48. Ran all along A48 from start toward shore. Good conditions, calm, 2-3' visibility. Did not see anything. Went to the spot of max amplitude and probed. Could not find anything solid. Near shore, there was an iron ring, not sure if related, but outside of shallow water limit of mag anomalies. Adjacent to the anomaly on shore there is an upwelling monitoring station. Need to contact Tim Johnson at Parson's to figure out if that mag anomaly could be from the line (material unknown) that comes out into the lake.
	0830	Done with A48
A20	0845	Arrive at A20. Barge. Barge has an intact foredeck on the western side. ROV did a good pass along the southern side. Intact up to the deck beams, although it looks like a 2-3 plank wide section of the side has peeled off and is sitting along side it. One shot of a deck beam showed a large standing knee as if the barge had a very large coaming like a rock scow. At the western side, there was a very tall vertical member, perhaps metal, that stood a full 7-8' taller than the deck. Eastern side is scow ended-standing quite tall off the bottom. Quite a bit of wreckage off the southern side- probably all from either the torn off side or tall hatch coaming. Everything is heavily covered with zebra mussels except for the undersides of beam and the scow end. Lots of fish: carp, bass, sunnies, yellow perch. There is a wale running along the south side. 1 <sup>st</sup> ROV effort was several passes along the south side with looks into the barge along the length Not a great look along the northern face. We got the ROV temporarily snagged when we flew underneath an iron strap. Northern side had a whole series of knees- not quite sure how they fit into the structure, but the review of sonar data should provide enough data to figure it out.
	1020	Done with A20
	1030	At Parson's dock to pick up Mike Broschart for inspection of wooden wall feature in SMU 1.
	1045	At wall feature. Visibility is excellent (8') but weeds are bad. This area has a lot of low growing algae that tends to foul the thrusters. Pulled ROV due to fouled thrusters. Poled in as far as we could (about 2' of water) but still could not find it. Abandoned effort.
	1120	Depart wooden wall area. Dropped Mike B. off at the Parson's dock.
A17 A18	1140	Did a tour by A17 and A18 as a final field effort, just to get a sense of what type of barge A17 is relative to the others. The site was clearly visible in shallow water, consisting of the entire barge except for the deck. The barge is plank-on frame, unlike the others seen. It is a spud barge with the spud holder on the northern end. There is a flywheel at the

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		center of the northern end for lifting the spuds, and a second flywheel amidships. The floors are braced with diagonal bracing lying flat. Some stone piled in the southern end of the barge suggesting it could have been used as a dock. When heading into A17, we went over another barge, or possibly large wooden dock structure, located just off shore and southeast of A17. This site was tremendously weedy so an exact ID was impossible.
	1150	Depart A17
	1155	Back at Marina. Fieldwork complete. Breakdown gear. Wash boat, put it on the trailer. Receive 11 DVDs from BC with all ROV video on it.
	1340	Depart Liverpool for Vermont
	1815	At Middlebury returning car
	1905	At Vergennes.

<b>Onondaga Phase 1B Diving</b>		
<b>October 24, 2010</b>		
	1330	Arrive PAL's in Ferrisburgh. AK & AC load gear
	1410	Depart Ferrisburgh for Crown Point
	1440	Pick up SL at Crown Point
	1915	Arrive Liverpool, NY. Go out to dinner
	2020	Arrive Hotel
		Project Phone #'s Shipherd Densmore (508)317-8188 Ken Thomson (781)929-1203 Pete Petrone (315) 430-0156 Kelly Miller (315) 569-6477 Industrial Medical Associates (315) 458-1335 151 Lawrence Road East North Syracuse, NY 13212

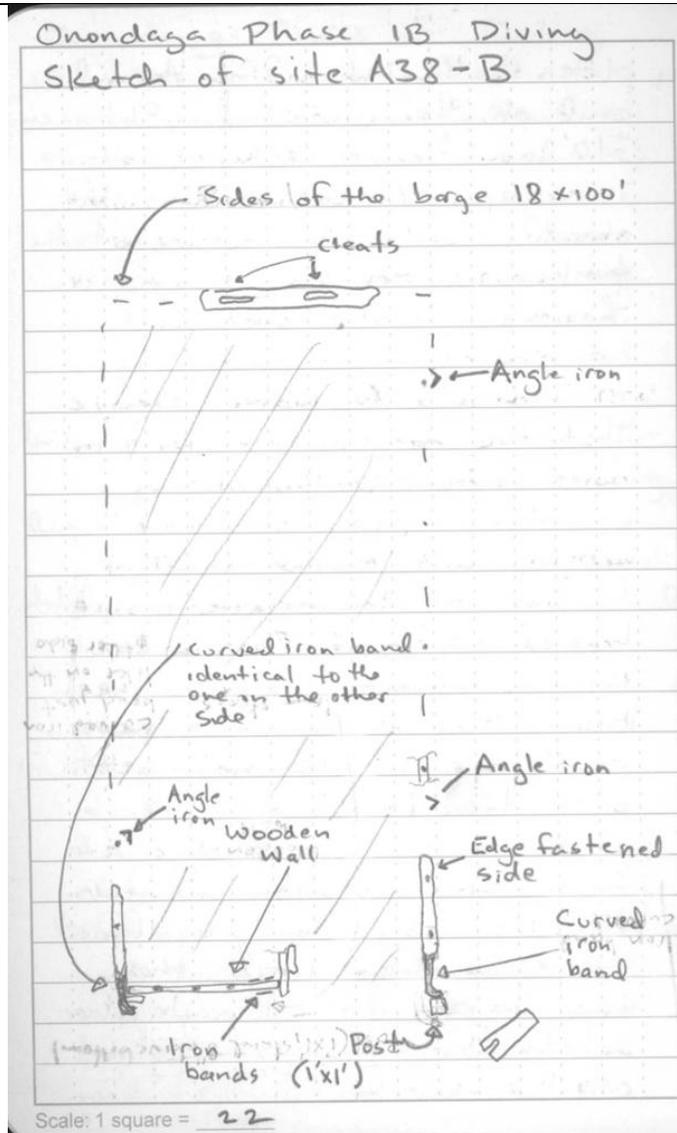
<b>October 25, 2010</b>		
	0745	Depart hotel. Crew: Pierre LaRocque, Art Cohn, Sarah Tichonuk, Adam Kane
	0755	Arrive Liverpool Marina
	0800	Depart Liverpool Marina. Drop trailer.
	0815	Arrive IMA for drug testing/breathalyzer for SL. AC & PAL.
	0845	Depart IMA for hardware store for supplies

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	0930	Arrive Onondaga Yacht Club. CRE was in the parking lot. CRE launches boat & LCMM team gears up for dive ops.
	1000	CRE crew leaves for drug testing.
	1030	Dale Dolph, Kelly Miller and Pete Petrone arrive for kick off and safety briefing. All gear was switched over to AGA masks & dry gloves/hoods.
	1200	Safety briefing by Dale Dolph & Kelly Miller
	1300	Geared up on boat ready to go. Weather is warm 70F , light winds with light rain showers.
	1315	Depart Marina
A38	1320	Arrive at A38. Visibility look fair (3-4'). No visual on the site from the surface.
	1402	AK into the water. Extensive search of area eventually yields an area of wooden structure, but it is different from the A38 wreckage recorded during the ROV survey. The site consists of a vertical (or near vertical) wooden wall constructed of a single run of planks. The wall of planks is edge fastened and stand s+/- 1' above the bottom sediments. The wooden end wall is +/- 9' wide, however this represents only ½ of (+/-_ of the width of the vessel. The wooden wall feature also has iron plates both inboard, outboard and on the one end. Between +/- 10' and +/- 16' there is a longitudinal timber and vertical post. The longitudinal timber has an iron rub strake with is curved on the outboard end. The direction of the longitudinal timber was followed with a tape measure. This turned up sporadic vertical edge fasteners tied into the completely buried side of the vessel. At approximately 85' on the BL the end of the barge was reached consisting of a vertical end of a barge with 2 cleats. No measurements taken down at that end due to lack of time. At at least three separate spots, there were large pieces of angle iron noted standing vertically out of the bottom.

A55



The site located during AK's dive is designated A55. This is almost certainly an almost completely buried, edge fastened barge. The nature of the curved strapping is completely unknown at this point

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	1320	AK out of the water
A38 A4 A55	1600	PAL into the water. Decided that the best strategy was to have PAL visually survey a larger area to make sure nothing was missed between A55 and the original site found at A38 (during ROV survey) which could be seen from the dive boat now that the waves had settled out. PAL looked at A38, believes it is part of a barge, but identification is unclear due to box features which can't be explained yet. PAL then did a shoreline survey starting +/- 100' from the barges at A4 +/- 100' from the shoreline and parallel to shoreline. 1 <sup>st</sup> pass was from +/- 100' A4 running about 400'. Sweep was then stepped 50' out and survey back toward A4. PAL then came back to the boat, got the camera and filmed A38 and A55.
	1700	PAL out of the water. Done diving for today. Heavy rain.
	1730	Back at the Marina. Break down gear.
	1800	Depart Marina for the day.

<b>October 26, 2010</b>		
	0715	Depart hotel. Get lunch.
	0730	Arrive at Marina. LCMM crew: AK, ST, AC & PAL. Safety briefing with KM, PP, & Drew Falder, Shipherd Densmore & Ken Thomson. Gear up for dive operations. Dive plan is to finish documentation of A38 & A55 then move onto A 33 or A35 depending on conditions, Weather is clear. 65F, light winds out of the south.
	0845	Depart Marina for A38/A55.
A38 A55	0920	AK into the water at A55. A55 (barge) documentation of completed. No significant new observations. Barge is almost completely buried. Both ends are exposed. The shoreward side has some remnants exposed above the bottom in the form of edge fasteners and angle iron. The side away from the shore has much less exposed. One piece of angle iron was observed with a tire around it. A38 (original site) was looked at after the barge. A38 was documented. The site appears to be a dock or some part of marine infrastructure. The side is not a barge based upon lack of appropriate fastenings at corners and presence of framing on both sides of planks. Most likely a bulkhead dock/pier. The site has two 2' x 2' rectangular wooden boxes constructed of vertical planks. The use of the features is unclear, but likely critical to the identification of the site. At one end of the feature, there is also a mortise. The mortise suggests that the exposed timbers are at the top of the original structure. A turnbuckle was noted near one of the box features.

<p>A38 A55</p>			
<p>A35</p>	<p>1056</p>	<p>PAL into the water to look at A35. The site was easily found visually from the surface. PAL takes a while sorting the site out. He reports that it is a boat. Type unknown-possibly a canal boat . Very little is exposed above the bottom. He did a measured sketch of the site.</p>	
	<p>1145</p>	<p>PAL out of the water. After some discussion of the site, AK stages in.</p>	

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A35	1211	AK into the water. Site lies in approximately 4' of water. Very little of the site is actually showing. The end farther from shore is likely the stern. The stern is the best preserved portion of the boat consisting of a sternpost, frames and planking. The shape of the stern seems to be scow-like. An iron rub rail was noted on the exterior of the port side. The planking goes from outboard of the frames to on top (interior) of the sternpost. The stern post is vertical with an iron plate on the side and what might have been a gudgeon, however, it was too buried to tell with certainty. The frames are arranged in a scow-like pattern. There are also a pair of lodging knees(?). The starboard side of the stern does not have any frames preserved. The boat amidships had two longitudinal beams. The beams were angled downward toward the stern with the bow end about 1' above the bottom. Their nature is unclear-perhaps cylinder timber. There is a large coil of wire rope amidships. The bow seems to be largely buried. The keelson is visible along most of the forward half of the boat. Probing inside the vessel revealed hull structure buried from 6" to 3' deep.
	1257	AK out of the water
	1320	Boat GPS takes bow/stern locations for A35
	1430	Depart Marina for A33
A33	1500	AC into the water at A33. AC quickly finds the anomaly source fairly quickly. Described as iron post sticking out of an otherwise non-descript soft bottom. The posts were 8" long x 6" wide with 6" gap between them. Standing 12" above the bottom. Probed around and hit structure immediately around, but nothing 8' away. Did not find anywhere else further away. Art did circle searches at 20 & 30 feet. Did not locate anything else. The identification of the iron objects is unknown, however, their mass is certainly the source of the anomaly.
	1533	AC out of the water. Extensive discussion about A33 and how to proceed. Decided to come back with metal detector to more clearly define boundaries.
	1600	Depart A33 for Marina
	1615	Arrive Marina. Breakdown gear for the day. Forecast for tomorrow looks bad.
	1630	Depart Marina
	1645	Arrive hotel

<b>October 27, 2010</b>		
	0720	Depart hotel. AK,ST, PAL, AC
	0735	Arrive Marina
	0815	Safety briefing. AK, PAL, AC, St, Kelly Miller, Shipherd Densmore & Alex Costa. Dive plan is to go to A1 & A2 with PAL and AC to do dives 1 & 2 to do first look at A1 & 2 (Salina Pier).
	0835	Depart Marina for A1 & 2.
A1 & 2	0840	Arrive A1 & 2. Visibility is very poor +/- 2'. Decide based on poor condition to move onto A33.
	0855	Depart A1 & 2 for A33

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*Phase IB Underwater Archaeological Resources Report for Onondaga Lake Superfund Site*

A33	0900	Arrive A33
	0925	PAL into the water at A33 with video camera. PAL reports that A33 is a boat. The iron pieces sticking up were bitt posts. There is chain strewn around them. There is a bow/sternpost. The wreck is very buried. A sweep 70' off the bitt posts did not turn up anything in that visual survey.
	0943	PAL comes to surface drops off camera.
	0948	PAL back down to document exposed remains.
	1013	PAL out of the water. PAL notes suggest the boat is a canal boat-possibly all iron. Extensive discussion of process for A33. Decide the A33 will require supplies not currently on the boat (probes & metal detector) to properly assess. Instead of A33, we will stage a dive on A38 to mark A38 and A55, so that good coordinates can be recorded. Winds are also picking up out of the SW.
	1045	Depart A33 for A38
A38	1055	Arrive A38. Surface conditions suggest no visibility at the sites.
	1109	AK into the water. A38 is marked with 2 buoys as A55. For mapping locations, see pg. 28 for A38 & page 27 for A55 (referencing original field log, not transcribed log). A= Post on westernmost extent of remains of A38: N-43, 04'20.7211; W 76-10'38.5978 B= Post on eastern side of remains of A38: N-43-04'20.6225; W-76-10'38.8942 C= Post adjacent to southeastern corner of A55: N-43-04'21.2517; W-76 10'38.9880 D= Cleat at northeastern corner of A55: N 43-04'22.0594; W-76-10'38.5154
	1149	AK out of the water. Finished with A38 & A55
	1200	Look at A1 & 2 again. Still no visibility and the silt plume has moved out over A33. Head for Marina
	1215	Arrive Marina for lunch. Wind picks up to 20-25 SW. Eat lunch and end dive operations due to wind.
	1300	Depart Marina
	1330	Arrive Lowes to pick up probes for A33
	1440	Arrive hotel
	1445	Go to pool to get ST trained on Aga.

<b>October 28, 2010</b>		
	0720	Depart hotel. LCMM crew; AC, AK, PAL, ST
	0740	Arrive Marina. Safety briefing with Kelly Miller, Peter Petrone, Shipherd Densmore & Alex Costa. Prep gear, load boat. Dive plan is to look at A1 & 2, assess visibility. If visibility is reasonable, put AC & PAL in to do preliminary work on site. If visibility is bad, go to A33 and have AC find the stern.
	0820	Depart Marina for A1 & 2.
A1&2	0830	Arrive A1 & 2. Visibility is 18". Move on to A33

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*Phase IB Underwater Archaeological Resources Report for Onondaga Lake Superfund Site*

A33	0845	Arrive A33. Prep AC for dive-specifically rig probes with tools attached so that the diver can stay off the bottom. The goal of the dive is to determine the boat's beam and see if there is any part of the stern protruding above the bottom.
	0915	AC into the water. AC reports that the boat is wooden. Attempt to measure beam was problematic due to difficulty in telling hatches from walkways from side of boat due to buried nature of vessel. Beam was taken 18' aft of the forward end of the stem. Measurement on the beam BL was 19', although AC doesn't have a lot of confidence in that number. With slope, the beam could be 17 ½ '. AC ran BL out 100' west, which was the orientation based on the alignment of the stem and bitt posts. No remains found visually in the area. AC hit solid structure at 97' on the BL buried+/- 3'. Site continues to be very difficult to work on due to extraordinarily silty conditions.
	0952	AC out of the water. Discussion of PAL's dive plan. Strategy is to probe along one gunwale as far as possible to try to locate the stern.
	1020	PAL into the water. PAL probes along port side. Difficulty in probing due to layer of hard sediment (Solvay waste?) just below surface. Once this layer is punched through, the boat below could be located. PAL worked along the port side at about 95'. He intersected AC's BL tape. At this point he found the tiller & tiller bar extender standing above the bottom. The rudder post was buried, but easily found just below the sediments. The length from the forward face of the stem to the after face of the rudder post was 95'5". The tiller is typical canal boat type-graceful curve with iron tiller bar extended. No other part of the stern was visible. PAL then left the stern to work on the beam measurement. New measurement is 17'6". Surface conditions continue to deteriorate during this dive with 25-30 mph gust SW. Anchor drags and we have to live boat PAL.
	1104	PAL out of the water
	1120	Depart site for the day due to bad weather.
	1145	Back at the marina. Break down gear.
	1200	Depart Marina for Hotel
	1210	Arrive hotel. Lunch
	1330	Go to Parson's office. Meet with Pete Petrone. Discuss project status.
	1400	Return to hotel. Work on notes. AK drafts A33, ST drafts A38.

<b>October 29, 2010</b>		
	0715	Depart hotel: ST, AK, AC & PAL
	0730	Arrive Marina
	0745	Safety briefing with Pete Petrone, Kelly Miller, Alex Costa & Shipherd Densmore. Gear up for dive ops. Weather conditions marginal with SW wind 15-20, rain showers 50F.
	0815	Take forecast for the day. Weather is predicted to deteriorate with wind building to 25 mph. Call off dive

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		operations. Off load gear.
	0845	SD, KM, & AK depart marina to retrieve A33 buoy.
	0910	Return to marina with buoy. Pull RV Lophious.
	0945	Depart Marina for Vermont.
A35 A33	Onondaga Lake Coordinates	
		A35 Bow: N 43 4' 16.2913 W 76 10' 43.2593 (? 2513?) A35 Stern: N 43 4' 16.6700 W 76 10'43.9498 A33 Bow: N 43 04' 21.8310 W 76 10' 55.9361
	1500	Arrive Vergennes, VT. End of Diving Fieldwork

## Onondaga Phase 1B Diving - 2011

June 20, 2011		
	0900	Arrive LCMM, prep for Onondaga Phase 1B diving survey. Pull inflatable from North Harbor, clean and go through equipment. Multiple discussions today with ST and PAL about project logistics.
	0430	Depart LCMM. PAL with truck and trailer departed a bit earlier.
	0445	Arrive Crown Point ferry.
	0510	Arrive Crown Point park and ride to pick up ST.
	2130	Arrive Liverpool, NY. Check in hotel. End of day.
June 21, 2011		
	0600	Meet in hotel lobby: Sarah Tichonuk, Pierre LaRocque, Adam Kane.
	0630	Depart hotel.
	0645	Arrive Liverpool Marina. Gear up, set up inflatable.
	0700	CRE crew arrives: Chris Wright, Ship Densmore.
	0730	Parsons crew arrives: Kelly Miller, Dale Dolph, and Pete Petrone. Also Bob Edwards (NYSDEC).
	0830	Safety briefing/site orientation with entire crew. Discussion of safety procedures, boat operations, dive safety and project goals.
	0915	Continue to gear up for dive ops - plan will be to dive verify potential archaeological targets.
	1030	Done with gear prep - <i>Lophius</i> is loaded.
	1115	Lunch.
	1140	Depart Liverpool Marina en route to A36 for target verification.
A36	1200	Arrive at A36 buoy location. AK to suit up for first dive.
	1247	AK into the water at A36. Water depth +/- 7', weeds stand 2' above the bottom. Initial search at the down line did not reveal anything. Visibility approximately 1½'. AK returned to boat to get metal detector. Anomaly was located in about 2 minutes of metal detecting. Anomaly source was an isolated 10' length of wire rope.
	1258	AK out of the water.
	1305	Depart A36 for A34.
A34	1325	AK into the water at A34. Located a rock mound near A12 (Spud barge). The extent of the mound was recorded with 4 GPS points. The anomaly consists of a pile of stones-varying sizes from baseball to basketball size. In the middle, the mound stood 1' to 1½' above the surrounding bottom tapering at the edges. Metal detecting in the mound located several iron artifacts including a 2' long section of iron railroad rail and an unidentified iron circular object. The site conditions were marginal with 1' visibility and moderate aquatic vegetation, making documentation more difficult. The mound is cultural in origin, most likely the result of a barge clearing its deck load. Looked extensively for any evidence of wooden structure

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		<p>which might suggest an underlying wreck or that the mound is some type of pier, but nothing of that nature was apparent anywhere. The magnetic signature was certainly the result of the ferrous debris mixed in the mound. The pieces of iron debris found with the detector were within the mound and partially buried, indicating their deposition was contemporaneous with the stone pile formation.</p> <p>GPS locations for A34:  A34-A 928190.48 1118625.36  A34-B 928228.86 1118605.64  A34-C 928202.01 1118607.95  A34-D 928212.10 1118628.93</p> <p>The dimensions of the rock pile are 42½' x 23½'.</p>
	1416	AK out of the water.
	1430	Head back to marina to pick up 6 volt batteries for the comms unit.
	1530	Depart Liverpool Marina for A6.
A6	1606	ST into the water to verify A6. After a few minutes of searching, ST returns to the boat for metal detector. Patches of aquatic vegetation with open areas of solvay waste. Some weed very high; others relatively low. No cultural objects seen. CW looked at sonar data and believes that the original acoustic anomaly was a solvay waste shelf.
	1649	ST out of the water.
	1710	Depart worksite for marina.
	1720	Arrive marina. Break down gear.
	1750	Depart Marina. End of day.
<b>June 22, 2011</b>		
	0600	Meet with ST & PAL for breakfast. Weather looks bad with scattered T-storms all day. Kelly Miller calls. We discuss weather outlook and call it a weather day.
	0700	AK, ST & PAL meet to discuss survey methodology for Syracuse Maritime Historic District (SMHD).
	0830	Depart hotel for marina. Inventory necessary gear for SMHD survey.
	1000	Depart marina for supply shopping. West Marine and Home Depot for survey supplies.
	1200	Lunch.
	1300	<p>Back at marina. Set up four reels, each with 1000' of poly line. The survey strategy for the Syracuse Maritime Historic District is to set up transects at set intervals using the reel and travel lines with mushroom anchors at either end to hold the line in place on the bottom. The survey transect will be placed in a pre-determined location by putting drop weights without markers at either end of the transects. [drawing of transects]</p> <p>Transects are 1000' long, running perpendicular to the shoreline.</p>
	1500	Arrive back at hotel. End of day.
<b>June 23, 2011</b>		

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	0600	ST, AK & PAL meet for breakfast.
	0645	Discuss weather outlook with Kelly Miller. T-storms associated with a front are moving through this morning. Delay start until 0730.
	0730	Arrive on site. ST, AK, & PAL. SD & CW of CRE and KM of Parsons already on site. Prep gear for the day. Issues with the inflatable outboard. Fuel line will not keep pressure. Pulled the outboard off and will send it back to Vermont with PAL tonight. Parsons has an outboard that we are trying to acquire. The plan today is to do the visual survey of the SMHD, but this is dependent on the inflatable being up and running.
	0915	Depart Marina.
	0930	At DOT Turnaround to pick up 25 hp outboard from Dale Dolph. Hook up motor to inflatable.
	0945	Depart turnaround. Inflatable outboard cuts out. Extensive time spent trying to get outboard to run.
	1100	Abandon inflatable. Put it out at anchor. Start laying out transects with just <i>Lophius</i> . Takes about an hour to lay out two lines.
	1200	Done laying out two lines. Gear up to survey these lines. PAL to dive. ST as safety diver.
	1215	PAL into the water. Examined lines 3 & 4.
	1240	PAL out of the water. He reports near zero visibility in waters deeper than 10' and 1-2' visibility in shallow water. The entire survey area was very weedy. No cultural resources or other notable features were observed.
	1255	Pull both survey transects.
	1330	Done pulling transect lines. Head back to marina to drop off inflatable and get a new dry glove for PAL. The survey methodology designed for the SMHD has proven ineffective. The low visibility and complicated nature of the reel system are serious impediments. The low visibility in particular, greatly diminishes the effectiveness of a diver survey. The dive would need to run into a resource to find it. New methodology for the SMHD: Diver survey of shallow areas where there is no magnetic data and a re-examination of the extant CRE magnetic data. CW and AK looked at the data during the return trip to the marina. There are no large complex anomalies left that have not been examined, but there are numerous smaller, lower intensity anomalies that could be looked at. We marked 25 magnetic targets for verification.
	1400	Back at Marina.
	1420	Depart Marina.
A56 A59	1430	Arrive southern SMHD to deploy four marker buoys. A56-A59.
A56	1531	PAL into the water with metal detector. A56, which was a low amplitude mag anomaly, remains unresolved. PAL located small modern trash (soda can) and several buried anomalies, but nothing that could be conclusively identified. The buried metallic anomalies could not be found with modest hand probing, so they were left unresolved.
A57 A58	1555	PAL back into the water with metal detector on A57. A57 was determined to be a wooden barrel with iron hoops. The barrel lid was brought to the surface for documentation and redeposited.

		<p>After A57, PAL swam over to A58 which was determined to be a disintegrating 55 gallon drum. The sheet iron was falling to pieces. Two parts were brought to the surface and photographed.</p>
A59	1630	PAL back into the water at A59, verified to be a long coil of wire rope.
	1640	PAL out of the water. End of dive operations for the day.
	1700	Depart dive site.
	1710	Arrive Marina
	1730	Depart Marina. PAL departs for Vermont.
	1945	Chris Sabick arrives in Liverpool.
<b>June 24, 2011</b>		
	0600	Meet for Breakfast. AK, ST, and CS.
	0645	Depart hotel.
	0700	Arrive marina. CW & SD from CRE are here already as well as KM from Parsons. CS gets safety overview from KM. Gear up for the day. The plan is to dive verify magnetic anomalies in the SMHD. The weather looks marginal with scattered T-storms all day.
	0815	Safety briefing. AK, ST, CS, CW SD & KM. T-storms approaching.
	0900	Still waiting for T-storms to pass.
	0905	Depart Marina.
A60-A64	0915	Arrive dive site. Deploy five marker buoys at magnetic anomalies. A60 – A64.
	0950	ST into the water. First target is A60. A60 too buried to be conclusively identified; however, a ferrous target was located in the correct spot. ST moved the buoy so that we could take an exact coordinate on the feature.
	1023	ST move on to A61.
	1040	ST moves from A61 to A62. Comms have gone out, so no information on A61.
	1055	ST out of the water. A60 is an anomaly with 3' diameter signature. ST could not find 3' down. ST could not locate A61 or A62.
	1122	AK into the water. Examined A60. Located anomaly. Hit something hard 4' down. The object was not large, but considerably

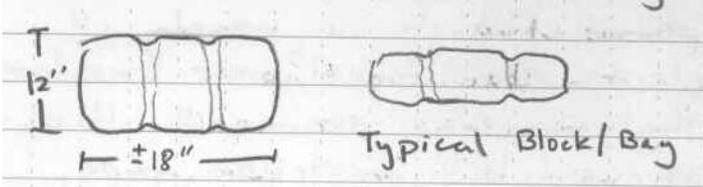
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		buried. A61 & A62 – could not find. A63 was located. Probing suggested it was buried approximately 3'. The anomaly based on the detector was quite large. A64 could not be located. Markers for A63 & A60 were moved and will have new coordinates taken.
	1245	Pulling buoys for A60-64. A61 when being pulled is determined to be 30' off the original mark.
	1250	Moving onto new set of anomalies. Deploy five marker buoys.
	1310	Head back to marina to avoid T-storm.
	1320	Arrive Marina. T-storm visible in Syracuse. Break for lunch.
	1410	Depart marina. Going back to SMHD.
	1420	Arrive dive site.
A11	1430	CS into the water at A11 to reinvestigate 2010 target. All confirmed as two pieces of cast iron pipe, approximately 15' long with a 9' long piece of solid iron stock resting on top of them.
	1440	CS out of the water. Boat moved over to A65.
A65	1449	CS into the water at A65. Could not locate A65 with metal detector.
A66	1510	CS into the water at A66. Could not locate. Unresolved.
	1527	CS out of the water.
A67	1535	CS into the water at A67. Storm comes up 15-20 mph winds with higher gusts. Recall CS.
	1555	CS out of the water. Head back to marina. CS did not locate anything at A67
	1615	Back at marina. Break down gear for the day.
	1650	Back at hotel. End of day.
<b>June 25, 2011</b>		
	0600	ST, AK & CS meet. Go out to breakfast.
	0700	Arrive Liverpool Marina. Prep gear for the day. The forecast if for scattered T-storms. The plan for the day is to dive verify mag targets in the SMHD. Other crew: SD, & CW from CRE and Dale Dolph from Parsons.
	0800	Depart Marina
A69-71	0810	Arrive SMHD and pull markers left out from yesterday. Drop 3 markers in shallow area between A12 and A-4-1 & A4-2. Marked A69-71.
	0900	ST into the water at A69. Metal detecting at A69 yielded several fragments of slag, an iron step to a ladder, and several other smaller pieces of sheet iron.
	0925	ST moves onto A70. The metal detector battery died after completing most of A70, without finding anything. While moving between A708 & A69, ST located series of pilings. ST documented the pilings now labeled as A72.
	1105	ST out of the water.
A73	1123	AK into the water for a visual survey of the shallow water bottomlands between A70 and A4-1 & A4-2. The entire area was very shallow, maximum depth of 4'. Underwater visibility was 1 to 1½' with aquatic vegetation covering about 50% of the

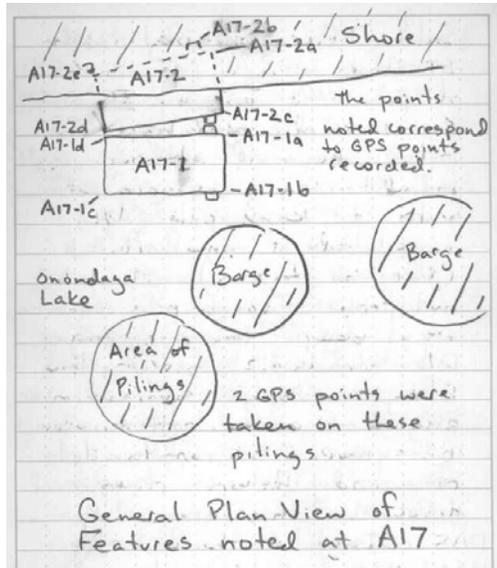
		survey area. A pier feature was located in the northern corner of the survey area. This pier feature is designated A73. The pier consists of seven pilings with each standing approximately six inches above the bottom. The tops of the pilings were flat, i.e. cut, meaning that the upper surfaces are the tops of the pilings as exposed during its use life. There is a linear arrangement of vertically oriented planks paralleling the pilings, but located 4" south of the line of pilings. The interior of the piling behind the bulkhead is filled with stones (based on probing). The structures (pilings and bulkhead) stand 2 to 8" above the bottom. A GPS point was taken at the piling farthest from the shore and the orientation was 130.
	1305	AK out of the water.
A71	1329	CS into the water to dive verify A71 and visually survey the area from A71 south. At A71, nothing was found with the metal detector CS visually surveyed the shallow water area along the shoreline (shore to 150' out) from A70 to a point +/- 200' north of the inner harbor entrance. Nothing found in this area.
	1500	CS out of the water.
	1510	Head over to A72 to take GPS measurements.
	1520	Depart dive site for marina.
	1527	Arrive marina. Breakdown gear.
	1600	Depart marina.
	1610	Arrive hotel. End of day.
<b>June 26, 2011</b>		
	0600	ST, AK & CS depart hotel for breakfast.
	0705	Arrive Marina. CW & SD from CRE here as is KM from Parsons.
	0755	Safety briefing.
	0805	Depart marina. Dive plan is to continue surveying shallow water SMHD. ST first diver working from point a bit north of the

		inner harbor entrance down to the dredged channel. Some concern today as there is a carp fishing tournament and no license fishing day.
	0820	Arrive dive site.
A74 A75	0838	<p>ST into the water, shallow water survey starting along the northern edge of the inner harbor channel working north.</p> <p>ST reports locating an isolated piling A74, section of iron pipe A75, and jumble of timbers A75. 1005 ST out of the water 1023 AK into the water to look at features found during</p>
	1015	ST out of the water.
	1023	AK into the water to look at features found during ST's dive. The isolated piling is exactly that (A74). It is likely a piling from one of the adjacent dolphins that has torn loose and is now standing out of the bottom at a 45 degree angle. The piling has a diameter of approximately 12" and stands 12" above the bottom. A75 was determined to be a pile of rocks. The pile was one layer deep. It could be probed through in nearly all places. The stones were limestone. The pipe was examined. It was an isolated cast iron pipe, 12" in diameter approximately 10' long. It was located 50' immediately in shore of A75. It was not given a number designation due to the isolated nature of the find.
	1057	AK out of the water so that the boat can move over to the shallow water survey area south of the inner harbor channel.
A53	1113	AK back into the water to survey the bottomlands (in the area of A53 & A45). A45 (breakwater) was located. Examination

A45		<p>showed the site to be constructed of bags of concrete. Each concrete block was pillow shaped with two indentations from band that went around the bags.</p>  <p>The breakwater was clearly built by throwing bags of concrete into the water. A53 was found during the survey. The remains were consistent with what was shown during ROV/sonar work and what was stated in the report. Numerous pieces of A53 were located around the wreck, particularly to the southeast. Disarticulated pieces included several frame sections, which were of cocked hat construction like the wreck itself. Each disarticulated piece was examined in detail to make sure it was not a larger section or a new wreck.</p>
	1211	AK swaps out tanks so that this area can be completed.
	1217	AK back into the water. AK finishes the southeastern portion of the SMHD.
	1300	AK out of the water.
A74 A75	1310	Depart and go back to area of A74 & A75 to record locations. Three points taken for A75.
	1320	Depart A74 & A75 area.
A55 A38	1335	CS into the water for the shallow water survey of the area immediately north of A4-1 & A4-2. CS relocates A55 and A38. No other finds in this area. CS surveys from A4-1 to A55.
	1515	CS out of the water. End of dive ops for today.
	1525	Pull dive flags from survey area.

		<p>A hand-drawn sketch on lined paper titled 'Sketch of A75'. At the top, a wavy line represents the 'Shore'. Below it, a horizontal rectangle is labeled 'Iron Pipe'. A vertical line with an arrow points from the pipe down to a point labeled 'A'. Below 'A' is a shaded, roughly circular area labeled 'Rock Pile'. Three points are marked on the rock pile: 'A' at the top, 'B' on the right, and 'C' at the bottom. Dimensions are indicated with arrows: a vertical line on the left is labeled '3m', a vertical line on the right is labeled '2 1/2'', and a horizontal line at the bottom is labeled '14''. To the right of the sketch, the text 'Entrance to Inner Harbor' is written vertically with an upward-pointing arrow. The title 'Sketch of A75' is written in the upper right of the sketch area.</p>
A17	1535	Arrive at A17 for inspection to determine documentation approach. Inspection shows the site to be two barges resting side by side. The inshore barge is about 50% buried. The approach will be to document the inside barge with chest waders and the outside one on scuba.
	1550	Arrive at marina.
	1600	AK departs to go out to buy chest waders.
	1640	AK returns to marina with waders.
	1650	Depart marina.
	1705	Arrive hotel. End of day.
<b>June 27, 2011</b>		
	0700	Arrive marina. ST, AK & CS. Already at marina, SD & CW of CRE and KM & Pete Petrone of Parsons. Load gear. The plan for today is to document the barges at A17, followed by more shallow water survey in the afternoon.
	0745	Safety briefing.
	0820	Depart marina for A17.
A17	0830	Arrive A17. Proceed to document A17-2 (inshore barge) and A17-1 (outer barge). The barges are identical spud barges. The ends closest to the spud holders are vertical with vertical planking. The sides are vertical sides, built plank-on-frame. Approximately half of A17-2 is buried below the shore. Much of the machinery is not visible and/or gone, as opposed to A17-1, where the flywheel and other machinery is evident. The non-spud holder end of the barge is raked with transverse planking. Phragmites cover about 1/2 of A17-2. A17-1 was not documented in as much detail as A17-2 because it will not be impacted by the proposed shoreline improvements. Much of the interior structure of A17-1 is clearly visible, all the way down to the stringers and floors. The barges are both very shallow with a depth of +/- 3'. The hull structures consisted of planking, floors, and stringers. Those three, all connected, made up the entire depth of hull. The non-spud end of A17-1 had a mound of concrete immediately adjacent to it. Inspection of the concrete suggested that it was formed by pouring it into

that end of the barge, likely as ballast for the spuds and machinery on the other end. It was likely pulled out and dumped so that the vessel could be pulled into shallow water next to A17-2. While departing A17, a series of pilings were seen from the boat with tops about 4' from the surface. Visual examination elsewhere around A17 showed that there were at least two other offshore barges, however, extremely dense vegetation (particularly inside the barges) make it impossible to conclusively determine the extent of the barge remains. The pilings appear to correspond with the two barges onshore indicating that the barges formed the shore end of a pier structure.



	1045	Depart A17.
	1100	Arrive at the northern end of the SMHD. Spud boat immediately south of the Salina Pier.
A76	1124	ST into the water for shallow water survey from Salina Pier working south. ST finds a rock pile south of pier. 41' long by 24' wide. The rock pile also has one piling near it, although it is not clearly associated with it. Rock pile A76 consisted of small rocks (8" or so typical). ST could not probe through pile suggesting it is deeper than one layer. Pile stands +/- 12" above bottom. Piling is a single square timber angled from the bottom, about 10" square. ST reports lots of woody debris, tires and trash in the area.
	1305	ST out of the water.
	1320	Taking coordinates of A76.
	1335	AK into the water to survey last remaining bit of SMHD. Extremely dense collection of tires and woody debris. Visibility about 1 foot. No sites found.