Robinson Terminal South

City of Alexandria, Virginia
WSSI #22335.01

Archival Research and Cultural Resources Study

Prepared for:
EYA
4800 Hampden Lane, Suite 300
Bethesda, Maryland 20814

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Introduction

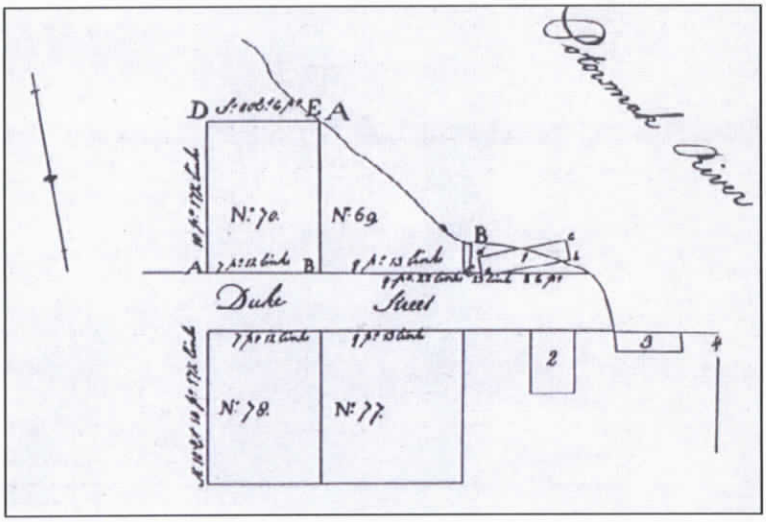
Thunderbird Archeology, a division of Wetland Studies and Solutions Inc.(WSSI) of Gainesville, Virginia conducted Archival Research and an Archeological Assessment on the ± 3-acre Robinson Terminal South property on behalf of EYA of Bethesda, Maryland. The study area general consists of the block bounded by Union Street, Duke Street, Wolfe Street and the Potomac River in Alexandria, Virginia.

The study was conducted in support of EYA's due diligence investigation and in anticipation of the planned development of the property. The goal of the study was to identify the potential locations of cultural resources within the project area based on archival research and to evaluate the potential for locating intact archeological sites within the property.

John P. Mullen, M.A., RPA served as Principal Investigator on this project and conducted the archival research with the assistance of Edward Johnson. Archival research was conducted at the offices of Alexandria Archaeology and the Barrett Branch of the Alexandria Library (Special Collections). We would like to acknowledge the assistance of Francine Bromberg, Acting Alexandria Archaeologist and especially Ted Pullium, author and historian, who has conducted extensive research into the history of the Alexandria waterfront.

Early Buildings

Three buildings are shown on a circa 1788 plat map (*Richard Arrell vs. James Kirk, Mayor of Alexandria*) of Lots 69, 70, 77 and 78 on Point Lumley. Building 1 is the John Carlyle Warehouse, shown as approximately 100 feet by 24 feet. Building 2 is Hooe's stone warehouse, which measured 72 by 44 feet. Building 3 measures roughly 19 by 76 feet and was constructed in 1786 by Hartshorne on land he leased from Hooe and Harrison.



1. Old Warehouse (Carlyle)
2. Col. Hooe's Store
3. Mr. Hartshorne's Store
4. End of the wharf

Point E = the top of the River bank
Point "c" = NE corner of warehouse below high water mark
Point "d" = SW corner of warehouse below high water mark

Mid-19th – Early-20th Century

- Circa 1851 – Railroad tracks laid down Union Street
- 1853/1854 – Pioneer Mill constructed at the end of Duke Street- six stories high
- 1885 – Sanborn map shows the Old Pioneer Mill being used as a grain warehouse, 4 ½ stories high and measuring 130 by 110 feet
- 1896 – Old Pioneer Mill- vacant
- 1897 – Fire destroyed the mill - "a mass of smoldering ruins" (Alexandria Gazette 3 June 1897)
- 1902 – Eastern end of the mill survived the fire and was used to store fertilizer
- 1912 –Emerson Engine Company machine shop proposed over old mill footprint
- Post 1912 - A building measuring roughly 130 by 125 feet is shown in that location through 1959 on the Sanborn maps (and persists today)

20th Century

Six buildings are currently standing on the property: three warehouses, two storage buildings and an office building

- 1937-1939 – Wolfe Street warehouse constructed
- 1940s – Storage building (truck repair shop in 2007) was constructed
- 1940s – Small storage building at the end of Wolfe Street was built in stages
- 1960s – Middle warehouse constructed

- Office Building at 2 Duke Street - The office building may be over 100 years old, according to Ted Pulliam's research, based on historic maps and personal communication with a Robinson Terminal employee. The 1877 Hopkins map and an earlier Civil War map show a building of the same size in this location.

  The late 18th century Hooe and Harrison stone warehouse also stood in this location (an 1802 lease indicates that Hooe's warehouse bordered the western portion of the Strand, which ran across the block from Duke to Wolfe until 1948), however it was a different size and orientation of the current building. The current building is 30 feet wide and is constructed of brick; Hooe's building was approximately 45 feet in width and was constructed of stone. It was described in 1796: "Warehouse built of Stone – the first two Stories and the second and third of wood". It is possible that the current building is resting on the older stone foundation.

Potential Archeological Signature

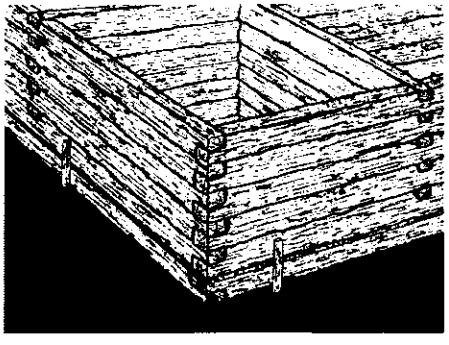
Construction of New Land - Several techniques were at Fleming's disposal to construct a wharf and extend new land out into the river. Beginning in 1749 and up to the early 19th century, the land around Point Lumley was altered, as the cliffs were cut and "banked out" to create new land. A circa 1788 map shows the wharf extending 341 feet from the edge of Union Street into the Potomac River but does not show how far to the south it extends. However, based on court depositions (*Richard Arrell vs. James Kirk, Mayor of Alexandria*), the wharf at Point Lumley was 121 feet in width in 1788.

As few descriptions exist describing 18th and 19th century wharf construction, the archeological record becomes even more important to complement the documentary record. Four general types of retaining structures used in wharf construction are recognized: cob/crib; bulkhead; grillage; and piling (Engineering Science 1993: 97). Grillage wharfs consisted of rafts or logs layered alternately and weighed with stones (only two wharves of this type have been found in the archeological record). Piles are a type of bulkhead wharf that used a pile driver to place the supports and became more common in the 19th century with the advent of steam powered pile drivers.

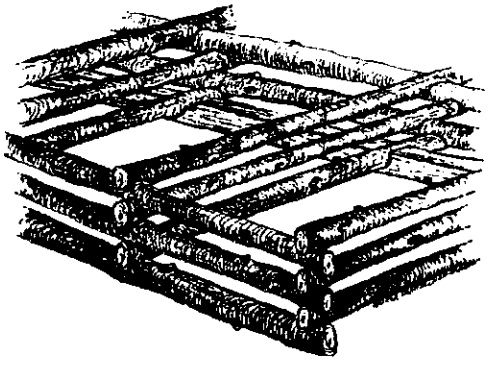
Based on these previous archeological investigations in Alexandria, the two former wharf construction techniques (discussed above) are expected under the Robinson South terminal:

1. Bulkhead Construction – consisted of "stacking and interlocking long timbers" to form a three sided structure. The walls were often braced with struts, or back braces, "that attached to the wall and projected back into the wharf fill". Pilings may have been added at a later time to support the bulkhead walls.

2. Cob or Crib Wharf Construction – consists of stacking timbers to form a square framework that sank to the bottom of the water when filled with stone or soil. The crib technique used tightly packed timbers or planks that were notched in the corners and often pinned with wooden spikes or "trunnels". Cob frameworks were more loosely constructed with gaps and therefore filled with stone (the name may have derived from cobblestones). A wharf measuring 25 feet wide may have been constructed of only one crib.



Crib Wharf Structure (Alexandria Archaeology)



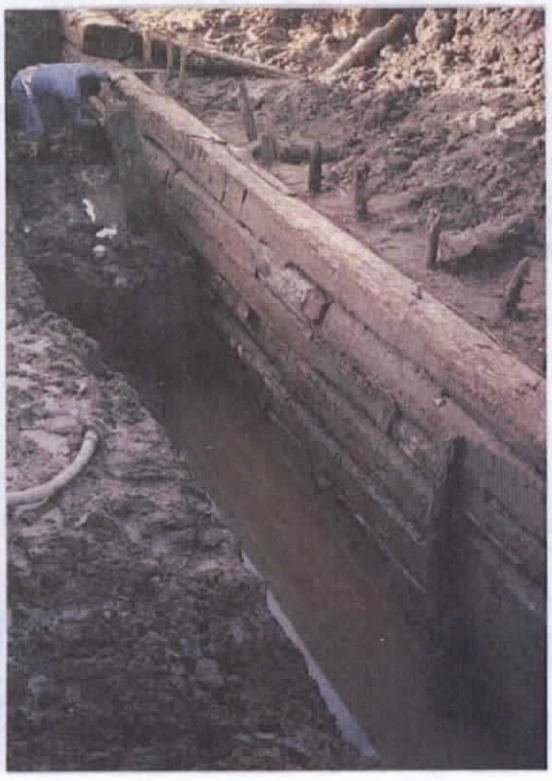
Cobb Wharf Structure (Heintzelman-Muego 1983)

Previous Archeological Investigations in the Vicinity

Excavations in 1989 for the adjacent Harborside Development exposed the surface of Roberdeau's wharf at the end of Wolfe Street. Much of the surface appeared to be covered with wooden planks, while other portions were covered with a mixture of wood, sawdust, pine tar and sand.

Archeological investigations were also conducted prior to the development of the Ford's Landing site (base of Franklin Street). They identified the well preserved and intact remains of Keith's Wharf bulkhead, along with "a 350 foot-long shipway, nine derelict vessel hulls, [and] a marine railway". The archeologists at Ford's Landing expected Keith's Wharf to be of cob/crib construction, but found a bulkhead wharf measuring 400 by 500 foot (Engineering Science 1989). Because the bay was shallow and located away from the fast flowing Potomac River channel, a cob/crib structure containing vast quantities of earthen fill wasn't necessary. The archeologists also theorized that this method may have been an expedient and inexpensive investment for a speculative venture.

The remains of Keith's Wharf were found 6-13 feet below the modern surface. The 18th century wharf timber measured 10-17 inches in diameter were connected by "half-lap scarf joints reinforced with iron dowels or drift pins" Tie back braces were dovetailed and pinned to the bulkhead, extended up to 30 feet into the fill and were anchored in such a manner that the fill would not "push out" on the bulkhead.



Keith's Wharf Bulkhead (Engineering Science 1993)

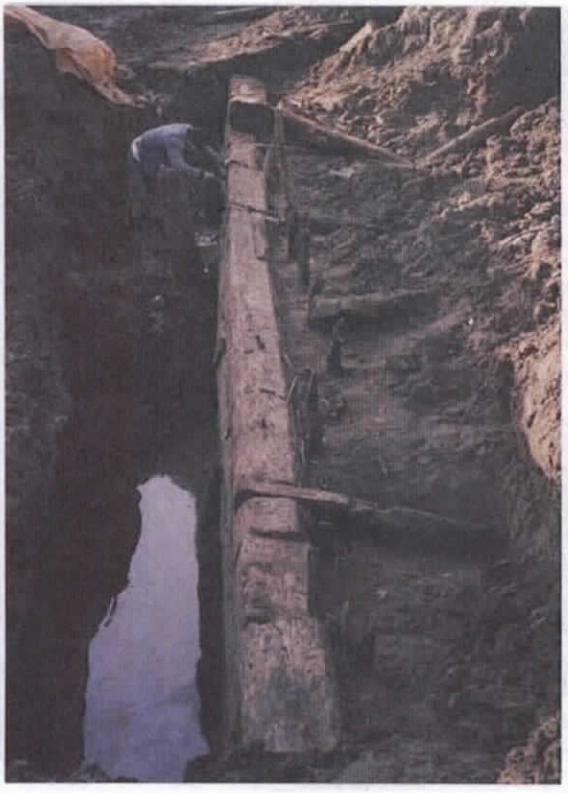
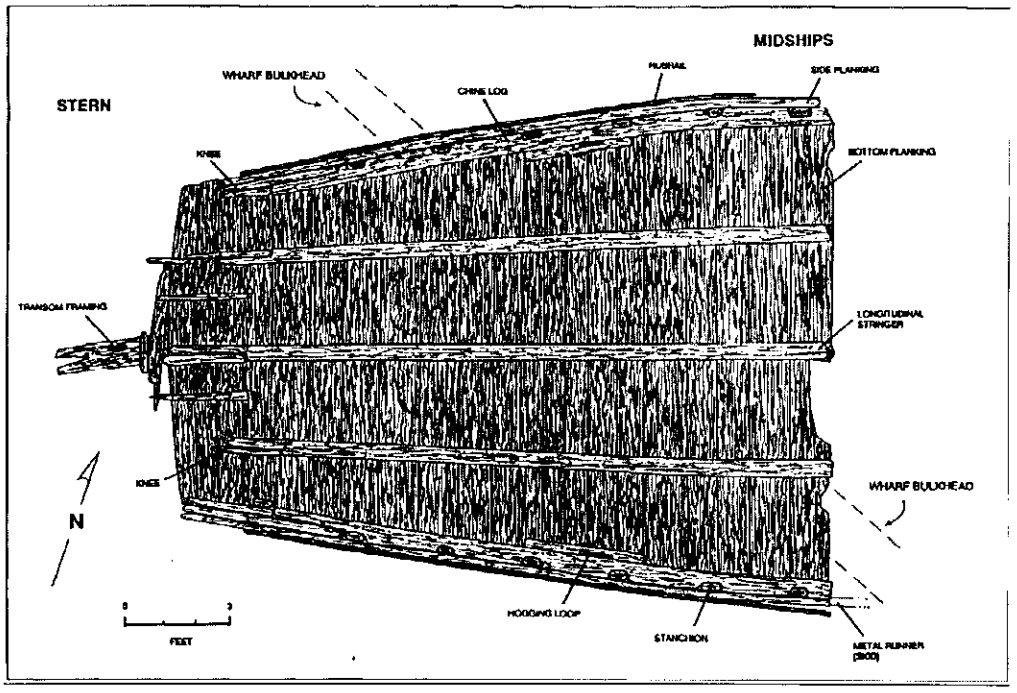
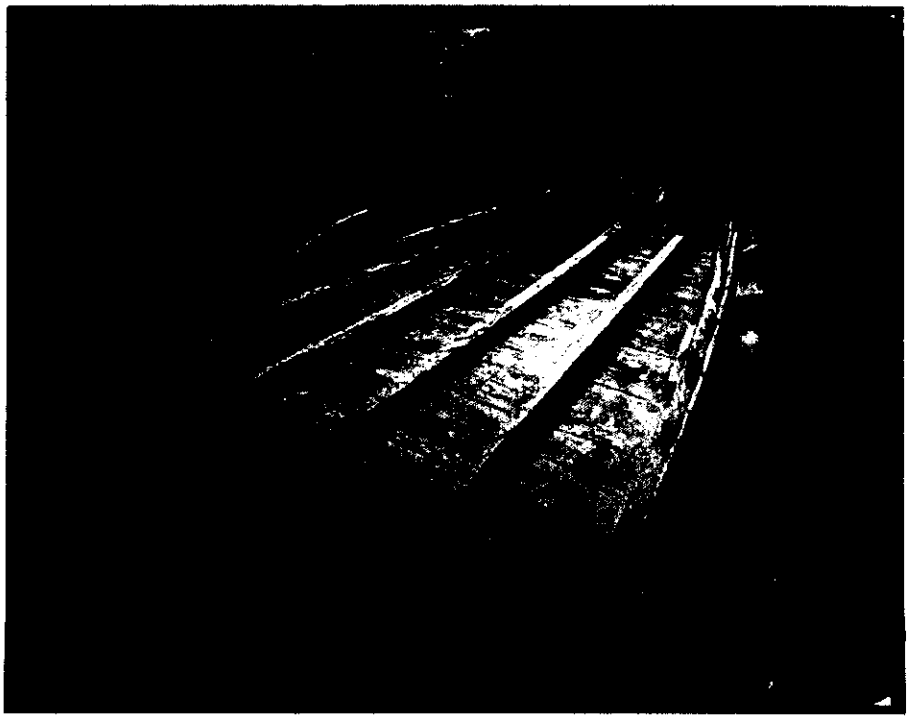


Photo Showing Tie-Back Braces





Plan View and Photo of Feature 27: A Scow, or flat bottomed vessel (Engineering Science 1993)

Anticipated Archeological Resources

Based on our review of the history and archeology of Alexandria's waterfront, it is likely that portions of the 19th century Hooe's wharf bulkhead and possibly vessel hulls will be located during archeological investigations at the Robinson South Terminal. Additionally, the foundations of the Hooe warehouse may still exist under Robinson Terminal.

Anticipated Costs

Archeological investigations are required under Alexandria city ordinance; however, we do not anticipate that Section 106 will be triggered, because no proposed impacts to Water of the United States are planned. However, it is possible that if the architectural historians find the office building at 2 Duke Street to be eligible to the National Register of Historic Places, alteration of relocation of the building elsewhere on the premises may be considered an adverse effect, and a MOA with the City of Alexandria and the Department of Historic Resources will be necessary to mitigate these costs. The revised anticipated costs for cultural resource investigations at Robinson South Terminal follow. The costs are not binding.

1. **Documentary Study - $18,000 - $30,000**
   Based on the amount of research completed by Ted Pulliam on the waterfront history for most of the project area, we have reduced the upper end of costs.

2. **Archeological Evaluation (Phase I Investigation) - $35,000- $100,000**
   No change to anticipated range for the Phase I Fieldwork, Phase I Laboratory Analysis, Phase I Report, and Response to Agencies

3. **Additional Archeological Evaluation (Phase II Investigation) - $75,000 - $250,000**
   Based on the level of effort for archeological evaluation at Fords Landing, we have increased the Phase II costs.

4. **Additional Archeological Evaluation (Phase III Investigation) - $75,000 - $375,000**
   Again, using the level of effort and results of the Phase III data recovery at Fords Landing as a basis, we have increased the Phase III costs. The costs for completion of the final technical report may be somewhat reduced if produced with the Phase II results.

5. **Conservation - $100,000 - $300,000**
   The anticipated cost of conservation for an oak and pine bateau for an average size of 28 feet in length and 5 feet in width (including labor, polyethylene glycol (PEG) impregnation and vacuum freeze drying[i]) would cost nearly $100,000. The long term care and associated costs for such as large vessel would be prohibitive.

   Therefore consultation with historic ship experts and other maritime experts on the bulkhead or shipway features if encountered, will be necessary to determine if diagnostic elements of the wooden artifacts should be can be selected for preservation. If only 10% of the vessel mentioned above underwent conservation treatment, the estimate would be closer to $40,000.

6. **Consultation and Special studies - $35,000 – $100,000**
   Includes consultation with Maritime/Ship Experts [i.e. Warren Riess at the University of Maine (riess@maine.edu)], analytic studies would include wood identification and dendrochronology and would need to be completed prior to any conservation. Also photogrammetry or laser capture could be used to record the structure of any vessel or large wooden feature exposed during the excavation. Once all information is recorded, the features may be best preserved in another undisturbed location.

7. **Phase I Architectural Reconnaissance Survey- $5,000 - $9,000**
8. **Phase II Intensive Architectural Reconnaissance - $11,000 - $18,000**
9. **Preparation of MOA and Data Recovery Plan - $5,000 - $15,000**

Our previous budget estimate for potential future cultural resource work dated October 10, 2013, ranged between $200,000 and $550,000. Based on our investigation described herein, our budget range estimate for potential future cultural resource work has now changed to $359,000 to $1,197,000.

References

Engineering-Science, Inc.
1993 *Maritime Archaeology at Keith's Wharf and Battery Cove (44Ax119): Ford's Landing, Alexandria, Virginia.* Washington, D.C.

Heintzelman-Muego, Andrea
1983 *Construction Materials and Design of 19th Century and Earlier Wharves: An Urban Archaeological Concern.* Paper presented at the Society for Historical Archaeology Conference, January 6-9. Manuscript on file at Alexandria Archaeology.

Shephard, Steven J., Ph.D., RPA

2006 Reaching for the Channel: Some Documentary and Archaeological Evidence of Extending Alexandria's Waterfront. The *Alexandria Chronicle*, Spring 2006. Alexandria Historical Society, Alexandria, Virginia.

[i] "The method of conservation (PEG impregnation and freeze drying) is a very common treatment for the preservation of waterlogged wood. The structure of degraded wood required the application of a bulking agent (in this case, PEG) which provides additional structural support when the wood is dried. Vacuum freeze drying is a method of removing water from porous materials in such a way that the capillary forces of water do no destroy the cellular structure of the wood, which would result in cracking, warping, shrinkage and the general destruction of the object's dimensional information. Under low temperatures and low pressures, water transitions from a solid to vapor without passing through the liquid phase. This allows water to be removed from the object as a gas which exerts far less pressure on the cellular structure of the wood. Once the water is removed, the polyethylene glycol remains to support the cell walls and the object is prepared for display and/or storage" (Maryland Archeological Conservation Laboratory).