

MEMORANDUM OF AGREEMENT

**BETWEEN THE NATIONAL PARK SERVICE,
BOSTON NATIONAL HISTORICAL PARK**

AND THE

**COMMONWEALTH OF MASSACHUSETTS,
MASSACHUSETTS HISTORICAL COMMISSION**

(add ACHP, BRA, BPA and BLC if appropriate)

REGARDING THE

**DEACCESSIONING AND ABANDONMENT OF HISTORIC CHAIN FORGE
EQUIPMENT,
CHAIN FORGE, BUILDING 105,
CHARLESTOWN NAVY YARD,
BOSTON, MASSACHUSETTS**

WHEREAS, the equipment located within the Chain Forge (Building 105) at the Charlestown Navy Yard was declared surplus by the United States Navy; and

WHEREAS, the surplus equipment remaining within the building was transferred to the National Park Service and accessioned into the museum collection of Boston National Historical Park (BOST); and

WHEREAS, the Boston Redevelopment Authority (BRA) manages the Chain Forge at the Charlestown Navy Yard on behalf of the City of Boston and is currently negotiating a rehabilitation of the building and its parcel into a hotel utilizing the Federal Historic Preservation Tax Incentives Program; and

WHEREAS, BOST recognizes that the presence of the chain forge equipment within the building conflicts with such rehabilitation plans and has agreed to deaccession and abandon portions of the equipment as part of the rehabilitation; and

WHEREAS, the Chain Forge was included within BOST because of its significance in the development and manufacture of die-lock chain for the United States Navy; and

WHEREAS, BOST has determined that the equipment remaining in the building is closely associated with that process and thus contributes to the National Register significance of the Chain Forge; and

WHEREAS, BOST has identified which pieces of chain forge equipment have the highest historic significance and integrity which must remain within the Chain Forge, either in situ or in other locations in the building, in order to interpret the significance of the Chain Forge to the public; and

WHEREAS, BOST has determined that deaccessioning and abandonment of the remaining chain forge equipment will result in an adverse effect to historic properties; and

WHEREAS, BOST has consulted with the Massachusetts Historical Commission (MA SHPO) pursuant to 36 C.F.R. part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (now codified as 54 U.S.C. § 306108); and

WHEREAS, BOST has consulted with the Boston Redevelopment Authority, Boston Preservation Alliance, and the Boston Landmarks Commission regarding the effects of the undertaking on historic properties and has invited them to participate in consultations and sign this MOA as a concurring party and they have **(agreed/declined)**; and

WHEREAS, in accordance with 36 C.F.R. Part 800.6(a)(1), BOST has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation and the ACHP has chosen **[“to” or “not to”]** participate in the consultation pursuant to 36 CFR Part 800.6(a)(1)(iii); and

NOW, THEREFORE, BOST and the MA SHPO **(and BRA, BPA, BLC, ACHP?)** agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

I. DOCUMENTATION OF THE CHAIN FORGE EQUIPMENT:

- A. The Chain Forge and its equipment have been extensively documented through the following efforts by BOST, NPS Historic American Engineering Record (HAER), NPS Northeast Museum Services Center (NMSC), and Boston Preservation Alliance via Raber Associates, which measures mitigate the adverse effects:
1. Chain Forge Machinery Cataloging Project (2006, NPS NMSC)
 2. *Charlestown Navy Yard Historic Resource Study* (2010)
 3. Historic Structures Report *Chain Forge (Building 105)* (2012)
 4. HAER Documentation (MASS-90-3, 2013-2014)
 5. Special Resource Study, *Chain Forge Machinery in Building 105* (2014, Raber Associates, sponsored by the Boston Preservation Alliance).
 6. Chain Forge Machinery Deaccession and Retention List (2016)
 7. Justification for Retention and Deaccession of Chain Forge Machinery (2016)

Through these efforts the equipment has been documented and the historical significance analyzed. The Special Resource Study, in particular, calls out the significant pieces of machinery for retention in situ, those for retention in a different location within the building, as well as outside the building, and also those to document if retention on site is not feasible.

The Special Resource Study records these findings in its Table 2 (p. 38) and graphically on a floor plan in its Figure 2 (after p. 45 and Figure 1).

- B. BOST shall provide the full HAER documentation to the Library of Congress and the MA SHPO, and shall provide copies of all other documentation to the MA SHPO and shall also archive the documentation at BOST.

II. TREATMENT AND DISPOSITION OF EQUIPMENT:

BOST will ensure that the following measures will be carried out to complete mitigation of the adverse effect:

- A. With few exceptions, the significant pieces of machinery are identified for retention in place, in a new location inside the building or in a new location outside the building (see the accompanying Appendix for Chain Forge Machinery Deaccession and Retention List and Justification for Retention and Deaccession of Chain Forge Machinery). Those pieces of machinery identified as not being retained are to be deaccessioned by abandonment, which the NPS *Museum Handbook* defines as “relinquishing title to and possession of an object without vesting it in another institution or person.” (NPS *Museum Handbook*, Part II: Museum Records, Chapter 6, p. 22 [<https://www.nps.gov/museum/publications/MHII/mh2ch6.pdf>]). Therefore, the NPS is deaccessioning those pieces of machinery not being retained in the Chain Forge in place with no further responsibilities for them. Disposition responsibility for those objects not being retained will fall to the developer.
- B. All pieces of machinery to be retained will remain NPS property as part of the BOST museum collection and will be loaned to the developer in accordance with NPS standards of museum object long-term loans (NPS *Museum Handbook*, Part II: Museum Records, Chapter 5: Outgoing Loans [<https://www.nps.gov/museum/publications/MHII/mh2ch5.pdf>]).
- C. Interpretation of the objects of machinery to be retained will be in accordance with NPS standards of exhibition of museum objects (NPS *Museum Handbook*, Part III: Museum Collection Use, Chapter 7: Using Museum Collections in Exhibits [<https://www.nps.gov/museum/publications/MHIII/mh3ch7.pdf>]).
- D. Maintenance of the objects of machinery retained and loaned to the developer will be in accordance with NPS standards of curatorial care, preservation and protection (NPS *Museum Handbook*, Part I: Museum Collections [<https://www.nps.gov/museum/publications/MHI/mushbkI.html>]).

III. DURATION

This MOA will expire if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, BOST may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulations VII below.

IV. POST-REVIEW DISCOVERIES

If potential historic properties are discovered or unanticipated effects on historic properties occur, BOST shall reinstate consultation with the signatories to this MOA to determine how to proceed.

V. MONITORING AND REPORTING

Each year following the execution of this MOA until it expires, all measures are completed or the MOA is terminated, BOST shall provide all parties to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in BOST's efforts to carry out the terms of this MOA.

VI. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, BOST shall consult with such party to resolve the objection. If BOST determines that such objection cannot be resolved, BOST will:

- A. Forward all documentation relevant to the dispute, including BOST's proposed resolution, to the ACHP. The ACHP shall provide BOST with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, BOST shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and signatories, and provide them with a copy of this written response. BOST will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, BOST may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, BOST shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories to the MOA, and provide them and the ACHP with a copy of such written response.
- C. BOST's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

VII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

VIII. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VII, above. If within thirty (30) days an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, BOST must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. BOST shall notify the signatories as to the course of action it will pursue.

IX. ANTI-DEFICIENCY

All actions taken by BOST in accordance with this MOA are subject to the availability of funds, and nothing in this MOA shall be interpreted as constituting a violation of the Anti-Deficiency Act.

Execution of this MOA by the BOST and implementation of its terms evidence that BOST has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

**National Park Service
Boston National Historical Park**

_____ Date
Michael Creasey, Superintendent

**Commonwealth of Massachusetts
Massachusetts Historical Commission**

_____ Date
Brona Simon, Executive Director

Advisory Council on Historic Preservation

_____ Date
John Fowler, Executive Director

Boston Redevelopment Authority

_____ Date
[insert name and title]

Boston Preservation Alliance

_____ Date
[insert name and title]

Boston Landmarks Commission

_____ Date
[insert name and title]

APPENDIX

CHAIN FORGE MACHINERY RETENTION AND DEACCESSION LIST

**JUSTIFICATION FOR RETENTION AND DEACCESSION OF CHAIN FORGE
MACHINERY**

Chain Forge Machinery Deaccession and Retention List

Most Pieces without
manufacturer name were
made at the Navy Yard

For Retention

F Furnaces	Catalog BOSTS#	Description	Manufacturer Name	Location	
F14	17935	Oil-Fired, 1944	-	Move inside bldg.	
F17	17942	-	-	Move inside bldg.	
F24	17948	Oil-Fired, Slot, 1953	The Lithium Co.	Move inside bldg.	
F28	17964	Oil-Fired, for anchors, 1919	-	In situ	
F31	17956	Oil-Fired, 1936	-	In situ	
F34	17885	Oil-Fired, 1915	Quigley Anneling Furnace Co.	In situ	
F36	17886	Electric, Heat Treat, 1942	Lindberg Engineer Co.	In situ	
F53	17876	Oil-Fired, Heat Treat, 1919	-	Move inside bldg.	
F58	Not cataloged	Oil Fired, Smiths Fires	-	Move inside bldg.	See deaccession F55-57, F59

P Presses	Catalog BOSTS#	Description	Manufacturer Name	Location
P7	17931	Pneumatic, Bender, 1944	-	Move inside bldg.
P15	17922	Forge, Model 2 Upsetter, 1943	The Ajax Mfg. Co.	Move inside bldg.
P16	17904	Trim, 1941	-	In situ
P25	17839	Hydraulic, Model 8006, 1951	A.B. Farquhar Co.	In situ
P26	17841	Hydraulic, Trim, 1941	A.B. Farquhar Co.	In situ
P27	17842	Hydraulic, Model HS-200-H Trim, 1944	E.W. Bliss Co.	In situ
P28	17845	Mechanical, Model 208 Trim, 1942	E.W. Bliss Co.	In situ

H Hammers	Catalog BOSTS#	Description	Manufacturer Name	Location
H5	17908	1,500 lb, Model E, 1952	Chambersburg Eng. Co.	Move inside bldg.
H7	17947	25,000 lb, 1951	Erie Foundry Co.	Move outside bldg.
H11	17840	10,000 lb, 1941	Erie Foundry Co.	In situ
H12	17842	12,000 lb, 1941	Erie Foundry Co.	In situ
H13	17844	10,000, 1936	Erie Foundry Co.	In situ
H26	uncataloged	300 lb, Model 1700	Chambersburg Eng. Co.	Move inside bldg.
H27	uncataloged	300 lb, Model 10165-1 with bilt-in compressor	Chambersburg Eng. Co.	Move inside bldg.

C Jib Cranes and Hoists	Catalog BOSTS#	Description	Manufacturer Name	Location
------------------------------------	-----------------------	--------------------	--------------------------	-----------------

C1	17949	Jib, 1954	-	Move inside bldg.
C4	17846	Jib, 1917	-	In situ
C7	17976	Jib	Niles, Bemet & Pond Co.	In situ
C8	17882	Boom	-	In situ

M Miscellaneous	Catalog BOSTS#	Description	Manufacturer Name	Location
M5	17848	Chain End Test Crushing Machine, 1938	-	In situ
M10	17977	Cut-off Machine, 1941	Armstrong-Blum Mfg Co.	Move inside bldg.
M12	17898	Shearing Machine, 1935	Buffalo Forge Co.	Move inside bldg.
M21	uncataloged	15-Ton, Traveling Crane	-	In situ
M26-M29	17881	Chain Testing Machine, 1918	Tinius Olsen Testing Machine Co.	In situ
M31	17847	Tensile Impact Testing Machine, 1938	-	In situ
M33	17883	Quenching Tanks	-	
M34	uncataloged	5'-dia steel quench tank	-	Move inside bldg.
M35	17880	Pumps, 1940	Worthington Pump Machine Co.	In situ
M36	uncataloged	25-Ton, Traveling Crane	-	In situ

Chain Forge Machinery Deaccession and Retention List

Most Pieces without manufacturer name were made at the Navy Yard

For Deaccession

F Furnaces

	Catalog BOSTS#	Description	Manufacturer Name
F1	17979	Oil Fired	-
F2	17924	Oil Fired, 1944	-
F3	17915	Oil Fired, 1942	-
F4	17927	Oil Fired,1941	-
F5	17929	Oil Fired, 1944	-
F6	17914	Oil Fired, 1944	-
F7	17926	Oil Fired, 1944	-
F8	17933	Oil Fired, 1943	-
F9	17913	Oil Fired, 1944	-
F10	17938	Oil Fired,1944	-
F11	17981	Oil Fired	-
F12	17937	Oil Fired, 1944	-
F13	17934	Electric, 1952	-
F15	17935	-	-
F16	17940	-	-
F18	17909	-	-
F19	17932	Oil Fired, 1900	Rockwell Engineering Co.

F20	17944	Oil Fired, 1944	-
F21	17946	Oil Fired, 1944	-
F22	17970	Oil Fired, 1943	-
F23	17952	Slot, Oil Fired, 1953	The Lithium Co.
F25	17945	Oil Fired, for anchors, 1944	-
F26	17969	Oil Fired,1944	-
F27	17966	Oil Fired, 1906	Rockwell Engineering Co.
F29	17962	Oil Fired, 1919	
F30	17961	Oil Fired, 1942	Gas Machinery Co.
F32	17953	Oil Fired,1941	
F33	17884	Electric, 1952	Hevi-Duty Electric Co.
F35	NO F35	-	-
F37	17887	Electric, Heat Treat, 1942	Lindberg Engineer Co.
F38	17888	Electric, Heat Treat, 1943	Lindberg Engineer Co.
F39	17974	Oil Fired,1944	-
F40	17965	Oil Fired, 1921	-
F41	17899	Oil Fired, 1942	-
F42	17867	Oil Fired,1944	-
F43	17868	-	-
F44	17869	Oil Fired, 1939	-
F45	17854	Oil Fired, 1942	-
F46	17853	Electric, 1952	General Electric Co.
F47	17852	Gas-Fired, Heat Treat, 1953	Lithium Co.
F48	17871	Electric, 1940	Lindberg Engineer Co.
F49	17872	Electric, 1938	Lindberg Engineer Co.
F50	17873	Electric, Heat Treat, 1952	Lindberg Engineer Co.
F51	17874	Electric, 1930	Electric Furnace Co.
F52	17875	Oil Fired, Heat Treat, 1917	-
F54	17878	Electric, Heat Treat, 1942	Lindberg Engineer Co.

F55-57, F59
F60

uncataloged
17879

Oil Fired, Smiths Fires
Electric, Salt Baths, 1952

-
The Ajax Mfg. Co.

Chain Forge Machinery Deaccession and Retention List

Most Pieces without manufacturer name were made at the Navy Yard

For Deaccession

P Presses

	Catalog BOSTS#	Description	Manufacturer Name
P1	17925	Pneumatic, Bender, 1943 Forge, Model 2 Upsetter,	-
P2	17918	1943 Mechanical, Model 205	The Ajax Mfg. Co.
P3	17900	Trim, 1943	E.W. Bliss Co.
P4	17928	Pneumatic, Bender, 1943 Forge, Model 2 Upsetter,	-
P5	17919	1943 Mechanical, Model 205	The Ajax Mfg. Co.
P6	17901	Trim, 1943 Forge, Model 4 Upsetter,	E.W. Bliss Co.
P8	17920	1939	The Ajax Mfg. Co.
P9	17902	Mechanical, 1952	E.W. Bliss Co.
P10	17936	Pneumatic, Bender, 1943 Forge, Model 2 Upsetter,	-
P11	17921	1943 Mechanical, Model 205	The Ajax Mfg. Co.
P12	17903	Trim, 1941	E.W. Bliss Co.

P13	17910	Mechanical, Model 205 Trim, 1943	E.W. Bliss Co.
P14	17941	Pneumatic, Bender, 1944	-
P17	17943	Pneumatic, Bender, 1943	-
P18	17923	Forge, Model 2 Upsetter, 1943	The Ajax Mfg. Co.
P19	17906	Mechanical, Model 205 Trim, 1943	E.W. Bliss Co.
P20	17951	Forge, Model 6 Upsetter, 1936	The Ajax Mfg. Co.
P21	17950	Forge, Model 8 Upsetter, 1950	The Ajax Mfg. Co.
P22	17968	Mechanical, Model 205 Trim, 1942	E.W. Bliss Co.
P23	17973	Mechanical, Model 7C, 1943	The Ajax Mfg. Co.
P24	17972	Mechanical, Model 10, 1937	Erie Foundry Co.
P29	17861	Mechanical, 1933	Erie Foundry Co.
P30	17864	Mechanical, Model 205 Trim, 1941	E.W. Bliss Co.
P31	17866	-	E.W. Bliss Co.
P32	17850	Mechanical, 1944	E.W. Bliss Co.
P33	17860	Mechanical, Model 205 Trim, 1942	E.W. Bliss Co.
P34	17855	Mechanical, Trim, 1937	Erie Foundry Co.

Chain Forge Machinery Deaccession and Retention List

Most Pieces without manufacturer name were made at the Navy Yard

For Deaccession

H Hammers

	Catalog BOSTS#	Description	Manufacturer Name
H1	17917	2,000 lb., 1943	Erie Foundry Co.
H2	17916	2,000 lb., 1943	Erie Foundry Co.
H3	17912	3,000 lb., 1951	Chambersburg Engineering Co.
H4	17911	2,000 lb., 1943	Erie Foundry Co.
H6	17907	1,500 lb., 1952	Chambersburg Engineering Co.
H8	17971	1,500 lb., 1942	Chambersburg Engineering Co.
H9	17967	1,000 lb., 1942	Erie Foundry Co.
H10	17963	2,500 lb., 1941	Erie Foundry Co.
H14	17862	1,000 lb., 1943	Chambersburg Engineering Co.
H15	17863	1,500 lb., 1942	Alliance Machine Co.
H16	17865	1,500 lb., 1939	Alliance Machine Co.
H17	17851	3,000 lb., 1939	Chambersburg Engineering Co.
H18	17849	3,500 lb., 1943	Erie Foundry Co.
H19	17859	1,500 lb., 1941	Erie Foundry Co.
H20	17858	2,000 lb., 1952	Chambersburg Engineering Co.
H21	17857	2,000 lb., 1952	Chambersburg Engineering Co.
H22	17856	2,000 lb., 1936	Erie Foundry Co.
H23	uncataloged	1,500 lb., 1941	Erie Foundry Co.
H24	uncataloged	1,500 lb., 1941	Erie Foundry Co.

H25

uncataloged

1,500 lb., 1941

Erie Foundry Co.

Chain Forge Machinery Deaccession and Retention List

Most Pieces without manufacturer name were made at the Navy Yard

For Deaccession

C Jib Cranes and Hoists

	Catalog BOSTS#	Description	Manufacturer Name
C2	17957	Mono-Rail,1953	-
C3	17897	Jib	Cleveland Crane & Engine Co.
C5	17905	Jib, 1904	Shepard Electric Crane Co.
C6	uncataloged	Jib	-
C9	uncataloged	Monorail/Conveyor	-
C10	17980?	Trolley/Hoist	-
C11	17877	Travelling, 1941	-
C12	17980?	Crane/Hoist	-

Chain Forge Machinery Deaccession and Retention List

Most Pieces without manufacturer name were made at the Navy Yard

For Deaccession

M Miscellaneous

	Catalog BOSTS#	Description	Manufacturer Name
M1	uncataloged	Forging Roll Machine, Ajax Model 2	-
M2	17955	15-ton, Traveling Crane	-
M3	17893-17894	Two 7.5' steel tanks, 1961	-
M4	17891-17892	Two 30" dia. furnace baskets	-
M6	uncataloged	Paint pit	-
M7	NO M7	-	-
M8	17975	Band Saw, 1959	Coall Co.
M9	uncataloged	Base of removed furnace	-
M11	17978	Shearing Machine, 1935	Buffalo Forge Co.
M13	uncataloged	Pump	-
M14	uncataloged	Small generator	-
M15-M20	uncataloged	Compressor, pump, Motors for P25, 1951	-
M22	NO M22	-	-
M23	uncataloged	Electrical power box?	-
M24-M25	17889-17890	Two 24" dia. Furnace baskets	-

M30	NO M30	-	-
M32	17870	Magnetic Particle Inspection Machine, 1945	Magna Flux Corp.
M37	uncataloged	Wheelabrator, [Removed- Depression in floor]	American Foundry Equipment Co.
M38	uncataloged	3.5' dia. Steel quench tanks with water pipe	-

Justification for Retention and Deaccession of Boston National Historical Park Museum Collection Equipment from the Chain Forge

The Chain Forge (Bldg. 105) has been unoccupied with the barest maintenance since 1974, when the Charlestown Navy Yard closed as an operating U.S. naval shipyard, so the building is in degraded condition. The museum objects in the Chain Forge are extremely large and heavy, in fair condition, and not available to the public. There is no funding to preserve it as a museum. The best option to stabilize the building and ensure its future maintenance is to redevelop it. The current hotel proposal provides for retention of a high percentage of the most significant objects, which will be preserved and made available to the public. The objects selected for retention were chosen in order to retain the significance of the Chain Forge operation and its contribution to naval and American industrial history and innovation.

The redevelopment of the Chain Forge at the Charlestown Navy Yard unit of Boston National Historical Park necessarily put the National Park Service in the position of determining which of the machinery still extant in the building to retain and which to deaccession. Since the building is to be redeveloped into a hotel, not all of the equipment could be kept and managed as museum collections. The redevelopment, however, also provides the means by which the machinery that is retained can be preserved into the future by rehabilitating the building envelope.

The machinery came into National Park Service (NPS) possession in the late 1970s following an interim holding action by the Smithsonian Institution of the majority of it in response to the Advisory Council on Historic Preservation's intervention to halt Navy sale of the equipment inside the Chain Forge. In the early 2000s the Army Corps of Engineers remediated most of the equipment in the Chain Forge, removing hazardous materials, such as heavy metals. Following that, a project in 2006 cataloged 157 pieces of Chain Forge machinery into the NPS museum collections database.

Two recent studies assess the equipment's historical significance: the Historic American Engineering Record (HAER) Documentation assembled in 2013-2014 and also the Special Resource Study, *Chain Forge Machinery in Building 105*, completed in July 2014 by Raber Associates and sponsored by the Boston Preservation Alliance. The special resource study, in particular, calls out the significant pieces of machinery for retention in situ, those for retention in a different location within the building, as well as outside the building and also those to document if retention on site is not feasible. The study records these findings in its Table 2 (p. 38) and graphically on a floor plan in its Figure 2 (after p. 45 and Figure 1).

Overall, with few exceptions, the significant pieces of machinery are identified for retention. Machinery is discussed below by type, corresponding to the way that it is mapped and charted in the Special Resource Study. Park staff identified the machinery to be:

- Retained in situ
- Moved to a different location inside or outside the building
- Deaccessioned and not retained

In addition, the machinery pieces recommended for deaccession are compared to those chosen for retention. See the corresponding deaccession list for the individual pieces recommended for deaccession.

Furnaces (F)

Furnaces recommended for retention include those selected as best examples of their kind. All furnaces recommended in the Raber Associates' Special Resources Study to be retained in situ are being retained in place. These include the earliest extant heat treating furnace in the building, an oil-fired one built by the Quigley Annealing Furnace Company in 1915 (F34; BOSTS 17885), the largest slot furnace built at the Navy Yard in 1919 (F28; BOSTS 17964), an oil-fired heating furnace associated with the die-lock chain making process installed in 1936 (F31; BOSTS 17956) and an electric heat treating pit-style batch furnace built by the Lindberg Engineer Co. in 1942 (F36; BOSTS 17886) used during WWII.

Best examples also include furnaces to be moved into different locations in the building in order to be exhibited and to accommodate redevelopment. These include oil-fired furnace F14 (BOSTS 17935), furnace F17 (BOSTS 17942), oil-fired slot furnace F24 (BOSTS 17948), oil-fired heat treating furnace F53 (BOSTS 17876) and F58: an uncataloged Smith's Fire furnace in the Blacksmith's Shop.

Furnaces slated for deaccession represent lesser examples of those being retained, except for the rotary furnaces, which include the following two objects. Rotary furnaces F47 (BOSTS 17852) and F51 (BOSTS 17874), both of which are identified in the Special Resource Study as significant are not being retained, because they could not be accommodated into the redevelopment floor layout inside the building, and they also would be greatly compromised by being dismantled and moved outside of the building. However, according to the study, both furnaces are in the category of documenting (since retention on-site is not feasible: Special Resource Study, Table 2, p. 38).

Presses (P)

Presses recommended for retention include those selected as best examples of their kind. All presses recommended in the Raber Associates' Special Resources Study to be retained in situ are being retained in place. These include a 1941 Navy Yard-built trim press (P16; BOSTS 17904), a 1951 hydraulic press built by A. B. Farquhar Company (P25; BOSTS 17839), a 1941 hydraulic trim press also built by A. B. Farquhar Company (P26; BOSTS 17841), a 1944 hydraulic trim press built by E. W. Bliss Company (P27; BOSTS 17842) and also a 1942 mechanical trim press also built by E. W. Bliss Company (P28; BOSTS 17845).

Best examples also include two presses to be moved into different locations within the building in order to be exhibited and to accommodate redevelopment. These are a 1944 pneumatic bender (P7; BOSTS 17931) and a 1943 Model 2 Upsetter built by the Ajax Manufacturing Company (P15; BOSTS 17922).

Presses slated for deaccession represent lesser examples of those being retained, except for the large Ajax Manufacturing Company Model 8 Upsetter, c. 1950 (P21; BOSTS 17950). This machine, part of the

4 3/4-inch die lock chain line, could not be accommodated inside the building in situ and is too massive to be moved either elsewhere inside or outside.

Hammers (H)

Hammers recommended for retention include those selected as best examples of their kind. All hammers recommended in the Raber Associates' Special Resources Study to be retained in situ are being retained in place. These include 10,000 lb. 1941 hammer (H11; BOSTS 17840), 12,000 lb. 1941 hammer (H12; BOSTS 17842) and 10,000 lb. 1936 hammer (H13; BOSTS 17844). The Erie Foundry Company manufactured all three of these.

Best examples also include three hammers to be moved into different locations within the building in order both to be exhibited and to accommodate redevelopment. These are 1,500 lb. Model E 1952 hammer (H5; BOSTS 17908), 300 lb. Model 1700 hammer (H26; uncataloged) and 300 lb. Model 10165-1 hammer with built-in compressor (H27; uncataloged). Chambersburg Engineering Company manufactured all three of these.

One, the 25,000 lb. 1951 (H7; BOSTS 17947) hammer associated with the 4 ¾ inch die-lock chain making process, is planned to be moved outside, adjacent to the head house of the building. Unlike those other large hammers located in the middle of the atrium space of the building, this one cannot be accommodated inside,

Hammers slated for deaccession represent lesser examples of those being retained (see list for numerous examples).

Jib Cranes and Hoists (C)

Jib Cranes and Hoists recommended for retention include those selected as best examples of their kind. All jib cranes and hoists recommended in the Raber Associates' Special Resource Study to be retained in situ are being retained in place. These include a jib and boom associated with the highly significant Tinius Olsen chain testing machine (C7, BOSTS 17976 and C8, BOSTS 17882) as well as a 1917 jib crane (C4, BOSTS 17846) located as part of a group that includes associated hammer and press.

One jib crane is to be moved into a different location within the building in order both to be exhibited and also to accommodate redevelopment: a 1954 crane (C1, BOSTS 17949) associated with the 4 ¾ inch die-lock chain line.

Jib cranes and hoists slated for deaccession represent lesser examples of those being retained (see list for numerous examples).

Miscellaneous (M)

Chain Testing—

All three chain testing machines and associated elements are recommended for retention in situ by Raber Associates' Special Resource Study. The 1918 Tinius Olsen machine, together with its associated

trench (M26-29, BOSTS 17881), jib cranes (see above), and pumps (M35, BOSTS 17880) represents the largest such facility in the United States and the machine itself is one of only two ever built. The Chain Test Crushing Machine and Tensile Impact Testing Machine, both built by the Navy Yard in 1938 (M5, BOSTS 17848 and M31, BOSTS 17847), for tests between die-lock and cast steel chain are found to be among “the most innovative and unusual pieces of equipment built at the Chain Forge” (Special Resource Study, 27). All three are being retained in place.

Traveling Cranes—

Also to remain in situ are the 15-ton and 25-ton Traveling Cranes (M21, uncataloged and M36, uncataloged).

Quench Tanks—

Two quench tanks are also to be retained (M33, BOSTS 17883 and M34, uncataloged), but moved into a different location within the building in order both to be exhibited and also to accommodate redevelopment.

Shearing and Cut-off Machines—

Both a 1941 cut-off machine and a 1935 shearing machine are to be retained inside the building, but in different locations in order to be exhibited and also to accommodate redevelopment.