PICATINNY ARSENAL, BUILDING 617D
South of Twentieth Avenue
Morris County
New Jersey

HAER No. NJ-0036-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Philadelphia, Pennsylvania

HISTORIC AMERICAN ENGINEERING RECORD

PICATINNY ARSENAL, BUILDING 617D
HAER No. NJ-0036-XX

Location: South of Twentieth Avenue in 600 Explosives Testing Area, Picatinny Arsenal, near Dover, Morris County, New Jersey

Universal Transverse Mercator (UTM) coordinates:
NAD 27 Zone 18.537421.4533231
USGS Dover, New Jersey, 7.5-minute quadrangle map

Significance: Building 617D was constructed by 1932 for paint storage to support testing activities in the 600 area. The small building originally was used for paint storage and later as a fuse and detonator magazine. The 600 area was established on the ridge along the western boundary of the installation in 1928. The 600 area historically was used to test guns, shells, powders, and explosives. Building 617D is located in a complex comprising 26 buildings and structures, which were constructed to contain or support indoor explosives testing activities.

The 600 area was documented and identified as a historic district in 1982-1983 by a summer team funded through the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) (Thurber et al. 1984). In 1999, Panamerican Consultants, Inc., reviewed the National Register evaluations of 500 previously-identified buildings located on the installation. As a result of these investigations, three historic districts, including the 600 Ordnance Testing Area Historic District, and two individual buildings were identified as possessing the qualities of significance for listing in the National Register of Historic Places (Nolte et al. 1999). The New Jersey Historic Preservation Office concurred that the 600 Ordnance Testing Area Historic District possessed the qualities of significance for listing in the National Register of Historic Places under Criteria A and C.

Description: Building 617D is a small, one-story structure that measures 5’-0” x 6’-0”. The building occupies a rectangular footprint and has a concrete foundation. The side and rear walls are constructed of poured concrete approximately 6” thick. The concrete walls have vertical lines suggesting that the forms were placed vertically. The front wall is clad in corrugated asbestos protected metal with a centrally placed door. The single door is constructed of vertical wood panels and set into a wood door frame; most of the door is missing. The shed roof is sheathed with corrugated asbestos protected metal. The roof is supported on an interior wood beam and is strengthened on the exterior by sheet metal that spans the center of the roof between the front and rear walls. A metal stove pipe with a conical cap projects from the center of the roof to vent the building.

The interior of the building has a plain concrete floor. The walls also are finished in plain concrete. Two sets of wood shelves span the side and rear interior walls.

History: Building 617D was constructed by 1932. No original drawings were located for this building in the drawing files maintained in the Directorate of Public Works (DPW) (USAG Picatinny DPW drawing files). A real property record for the building was located in the "Historical Record of Ordnance Buildings at Picatinny Arsenal" for the years 1922-1941 ("Historical Record" 1922-1941). Real property record keeping on Building 617D, then numbered 627, began in 1932. The real property record described the building as a paint house measuring 4'0" x 6'0" and costing $60.00 to construct. The construction materials were noted as concrete foundation, asbestos protected metal roof, and hollow tile walls. Although the construction date for the building was not entered on the real property form, handwritten records on Building 617D began in 1932 and continued through 1941. The prior years (1922-1931) printed on the real property form were crossed out. No additional expenditures for the building were recorded from 1933 through 1939. An additional expenditure of approximately $20.00 was noted in ca. 1940-1941. A photograph of Building 617D presumed to date from the same time period as the real property record was attached to the back of form. It appears from the photograph that the walls of the structure are concrete ("Historical Record" 1922-1941). A digital copy of this image is included as a graphic in this documentation.

By 1956, the building was renumbered as 617D and was used as a fuse and detonator magazine. The 1956 real property records reported the original building construction date as 1948 and valued the building at $160.00. No additional changes to the building were noted in the real property records from 1956 through 1991 (USAG, Picatinny real property record card 1956). A photograph of water tanks taken in 1958 showed Building 617D in the foreground ("Plant Engineering and Maintenance Office" 1958:70). In 1969 and 1971, the use of the building was recorded as a fuse and detonator magazine (Picatinny Arsenal Facilities Directory 1969; Building Information Schedule 1971).

Building 617D was constructed as a support building for the explosives testing program at the Picatinny Arsenal proving ground. Picatinny Arsenal initially was established in 1880 as a powder depot. The arsenal's primary function between 1880 and 1907 was to store powder in above-ground magazines. In 1907, the role of the powder depot changed dramatically when the Army constructed a powder manufacturing plant on the installation. By January 1908, the factory was operational and had the capacity to produce 3,000 pounds of cannon powder daily (Rogers 1931:55-56).

During the early twentieth century, Picatinny Arsenal also became a center for Army research and development pertaining to the chemistry and properties of explosives and propellants. In 1911, the Army established a school to instruct personnel in chemistry, explosives, and interior ballistics. New chemistry and physical laboratories were constructed to test materials produced in the manufacturing processes (Rogers 1931:55-56).

Testing was conducted for the products produced along the manufacturing lines and during the experimental development phases of explosives research. Small-scale testing activities often occurred in areas near the laboratories and production facilities located all over the arsenal. After the 1926 explosion that devastated the Naval Ammunition Depot, Lake Denmark, and damaged many buildings at Picatinny Arsenal, testing activities at the arsenal were concentrated on a small peninsula on the south shore of Picatinny Lake. After an explosion and fire in the 500 area in 1928, testing activities involving the ignition or detonation of explosives were removed from the built-up areas of the arsenal to the plateau on the ridge along the west side of the installation (Thurber et al. 1984:116-117, 121).

The relocation of the Testing Station had several advantages. The new location allowed sufficient area to spread out the potentially dangerous explosives testing activities over a relatively large area of the installation that previously was undeveloped. The new location separated testing activities from ammunition storage areas on the extreme northern end of the installation, and test firing across Lake Picatinny ceased ("Plant Design" ca. 1942:15). The 600 area accommodated both outdoor firing and indoor testing facilities. In ca. 1942, the new Testing Station or Proving Ground was described as follows:

> …well suited for practically all activities and tests which are usually assigned to a small proving ground. The principal installation is the firing range. It consists of gun emplacements, velocity screens, and a recovery butt or tunnel into which all shell are fired and recovered for examination. This range permits the testing of pilot lots of smokeless powder for velocity and pressure as well as other experiments that would otherwise have to be conducted at Aberdeen Proving Ground. Another range, which is located within a building, provides facilities for the similar testing of small arms ammunition. Other installations provide for the safe exploding of high explosive shell in order to determine the efficiency of bursting charges. A tower for conducting drop tests and a friction pendulum for sensitivity investigations were constructed ("Plant Design" ca. 1942:15-16).

The indoor testing buildings in the 600 area were grouped near Twentieth Street. The testing buildings specifically were designed to withstand shock and blast effects and to be repaired easily in case of damage. The buildings were utilitarian in appearance and constructed of a variety of materials, including wood, brick, concrete, galvanized steel, and structural clay tile (Nolte et al. 1999:82-83; Thurber et al. 1984: 116-127). Some of the earliest indoor testing buildings in the area included an ammunition conditioning building (Building 604 constructed in 1928), a detonator chamber (Building 604B constructed in 1931), a sectioning chamber (Building 604C constructed in 1928), and a drop tower (Building 604D constructed in 1928). The main indoor testing buildings were supported by a variety of small-scale, short-term storage buildings. Items requiring short-term storage comprised explosives, oil and grease, paint, primer, fuses, and detonators. Building 617D is an example of one of the small-scale storage buildings used for multi-purpose storage of paint and, later, detonators. As a support building, it served in a minor role in the testing activities that occurred in the indoor testing facilities in the 600 area (Nolte et al. 1999:79-99; Thurber et al. 1984:117-118).

Sources:

Building Information Schedule
1971 February. On file in Real Property Office at Directorate of Public Works, USAG Picatinny, New Jersey.

"Historical Record of Ordnance Buildings at Picatinny Arsenal"
1922-1941 In the collection of the Armament Research, Development and Engineering Center (ARDEC) Historian, USAG Picatinny, New Jersey.

Nolte, Kelly, Mark A. Steinback, Michael A. Cinquino
1999 *Definition of Historic Districts for Picatinny Arsenal, Morris County, New Jersey*. Final report prepared by Panamerican Consultants, Inc. for New York District, U.S. Army Corps of Engineers. September.

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1931 *The History of Picatinny Arsenal 1880-1931*. War Plans Division, Plant Engineering Department, Picatinny Arsenal, New Jersey.

Thurber, Pamela, Sandy Norman, Donald C. Jackson, and Robie S. Lange
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Thurber, Pamela, and Sandy Norman
1985 *Historic Properties Report: Picatinny Arsenal, Dover, New Jersey*. Final Report. Prepared by the Historic American Buildings Survey/Historic American Engineering Record, National Park Service, U.S. Department of the Interior. On file in the HABS/HAER collections at the Library of Congress.

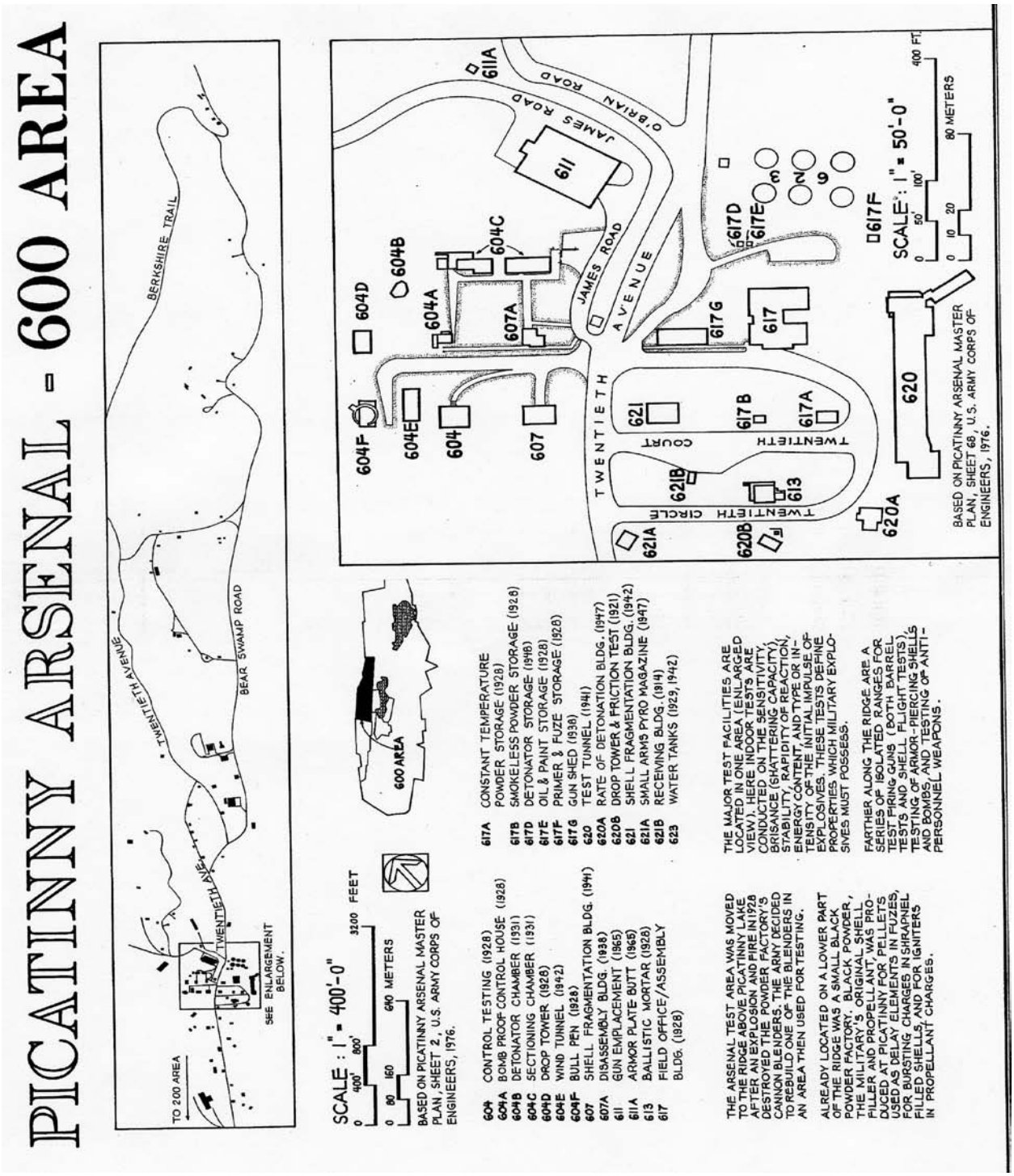
U.S. Army Garrison, Picatinny
Var. Real property records on file at Directorate of Public Works.
Var. Drawing files maintained by Directorate of Public Works.

Historian: Katherine Grandine, Senior Historian, and Benjamin Riggle, Historian
R. Christopher Goodwin & Associates, Inc., December 2009

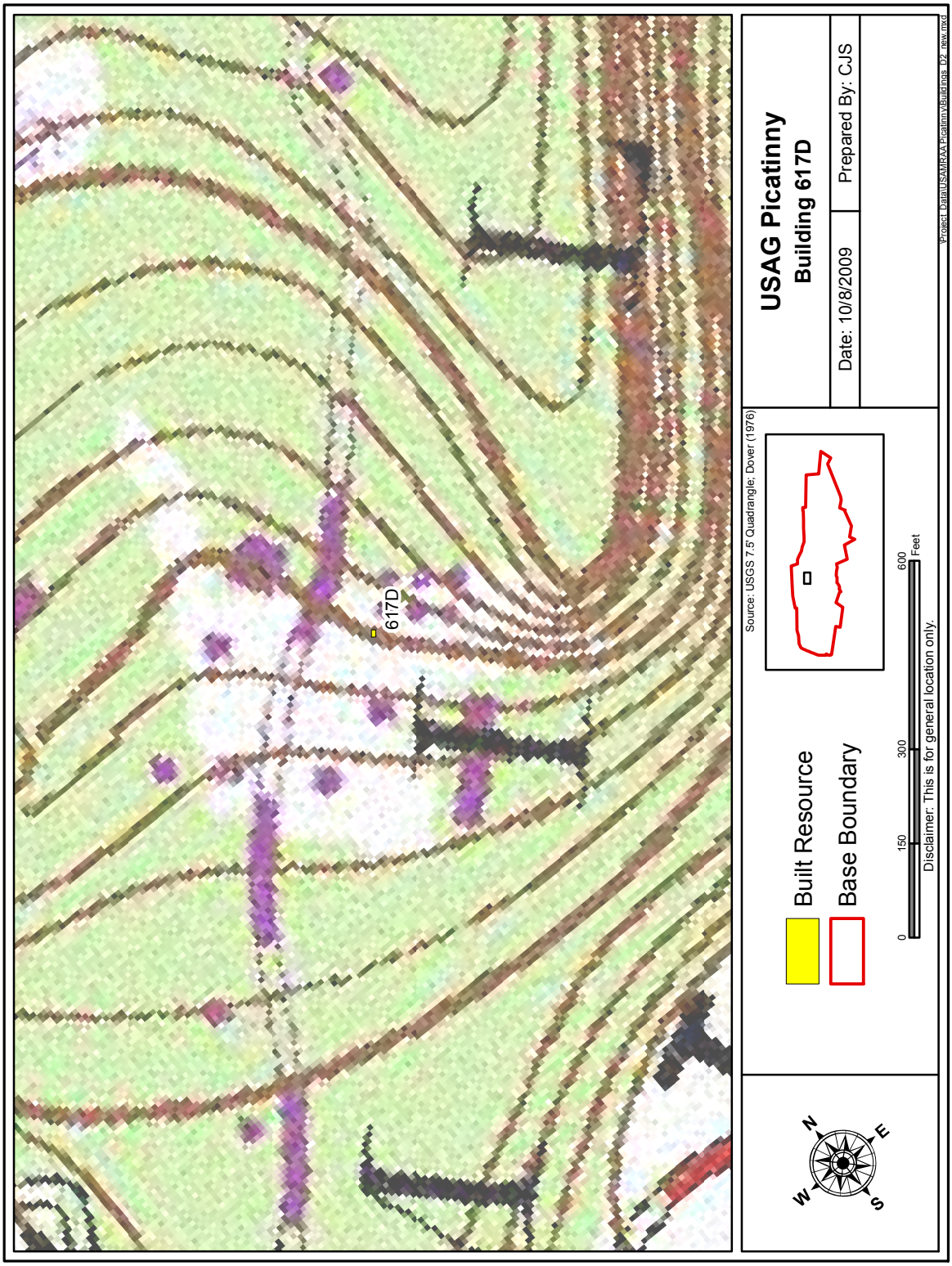
Project Information: This HAER documentation package was prepared for the Cultural Resources Program, USAG Picatinny, through the U.S. Army Environmental Center, Aberdeen Proving Ground, by R. Christopher Goodwin & Associates, Inc., under a Cooperative Agreement administered by the U.S. Army Medical Research Acquisition Activity, Fort Detrick, Maryland.

Ca. 1940 photograph for Building 617D, then numbered 627. Photograph is attached to the 1922-1941 real property record contained in the "Historical Record of Ordnance Buildings at Picatinny Arsenal" in the collection of the ARDEC Historian, USAG Picatinny, New Jersey.

1958 photograph of water tanks showing Building 617D in the foreground. Photograph is published in "Plant Engineering and Maintenance Office" (1958:70) in the collection of the ARDEC Historian, USAG Picatinny, New Jersey.



Source: Historic American Buildings Survey/Historic American Engineering Record (Thurber and Norman 1985).



Excerpt of USGS Dover 7.5-minute quadrangle map showing location of Building 617D

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South of Twentieth Avenue in 600 Area
USAG Picatinny
Dover, Morris County
New Jersey

Photographer: Harriet Wise Photography, Frederick, Maryland

NJ-0036-XX -1 FRONT (SOUTHWEST) WALL AND INTERIOR OF BUILDING 617D, VIEW LOOKING NORTHEAST

NJ-0036-XX -2 FRONT (SOUTHWEST) AND SIDE (NORTHWEST) WALLS OF BUILDING 617D, VIEW LOOKING EAST-NORTHEAST SHOWING CONTEXT

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PICATINNY ARSENAL, BUILDING 617E
South of Twentieth Avenue
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HAER No. NJ-0036-

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National Park Service
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PICATINNY ARSENAL, BUILDING 617E
HAER No. NJ-0036-XX

Location: South of Twentieth Avenue in 600 Area
Picatinny Arsenal, near Dover, Morris County, New Jersey

Universal Transverse Mercator (UTM) coordinates:
NAD 27 Zone 18.537435.4533212
USGS Dover, New Jersey, 7.5-minute quadrangle map

Significance: Building 617E was constructed by 1928 for oil and paint storage to support testing activities in the 600 area. The 600 area was established on the ridge along the western boundary of the installation in 1928. The 600 area historically was used to test guns, shells, powders, and explosives. Building 617E is located in a complex comprising 26 buildings and structures, which were constructed to contain or support indoor explosives testing activities.

The 600 area was documented and identified as a historic district in 1982-1983 by a summer team funded through the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) (Thurber et al. 1984). In 1999, Panamerican Consultants, Inc., reviewed the National Register evaluations of 500 previously-identified buildings located on the installation. As a result of these investigations, three historic districts, including the 600 Ordnance Testing Area Historic District, and two individual buildings were identified as possessing the qualities of significance for listing in the National Register of Historic Places (Nolte et al. 1999). The New Jersey Historic Preservation Office concurred that the 600 Ordnance Testing Area Historic District possessed the qualities of significance for listing in the National Register of Historic Places under Criteria A and C.

Description: Building 617E is a small structure measuring 4’-0” x 5’-6” that rests on a thick concrete base abutting an upward slope. The rectangular structure has a floor and walls of poured concrete. The thickness of the walls is approximately 16”. The lines on the walls suggest that wood boards of the form into which the concrete was poured were laid horizontally. The height of the front wall is approximately 3’-0” tall. Access to the structure was through the top. The roof currently on the building is a hinged shed roof constructed of wood; the roof folds back to allow access to the interior. The wood in the roof is deteriorating. As depicted in a ca. 1940 photograph, the original roof was flat and clad with a sheet of corrugated asbestos protected metal. The shed roof was in place by 1958. The interior of the structure has straight-sided concrete walls and a concrete floor. Two triangular holes were noted in the back wall under the current roof.

History: Building 617E was constructed in 1928 according to the real property records (USAG Picatinny real property records). No original drawings were located for this building in the drawing files maintained in the Directorate of Public Works (DPW) (USAG Picatinny DPW drawings files). The earliest record located for the building was found in the "Historical Record of Ordnance Buildings at Picatinny Arsenal" for the years 1922-1941 ("Historical Record" 1922-1941). No individual real property record form for Building 617E was contained in this volume. However, Building 617E was depicted in a photograph of nearby Building 617D, then numbered 627. That photograph showed the short, concrete structure with a flat, corrugated-metal roof. A digital image of this photograph is included as a graphic in this documentation.

By 1956, Building 617E was classified as flammable materials storage. The value assigned to the building was $325.00. No additional changes to the building were noted in the real property records from 1956 through 1991 (USAG, Picatinny real property card 1956). In 1969, the building was used for oil and paint storage (Picatinny Arsenal Facilities Directory 1969). By 1971, the use of the building was classified as flammable materials storage (Building Information Schedule 1971).

Building 617E was constructed as a support building for the explosives testing program at the Picatinny Arsenal proving ground. Picatinny Arsenal initially was established in 1880 as a powder depot. The arsenal's primary function between 1880 and 1907 was to store powder in above-ground magazines. In 1907, the role of the powder depot changed dramatically when the Army constructed a powder manufacturing plant on the installation. By January 1908, the factory was operational and had the capacity to produce 3,000 pounds of cannon powder daily (Rogers 1931:55-56).

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Building 617E is an example of one of the small-scale storage buildings used for multi-purpose storage of paint and grease. As a support building, it served in a minor role in the testing activities that occurred in the indoor testing facilities in the 600 area (Nolte et al. 1999:79-99; Thurber et al. 1984:117-118).

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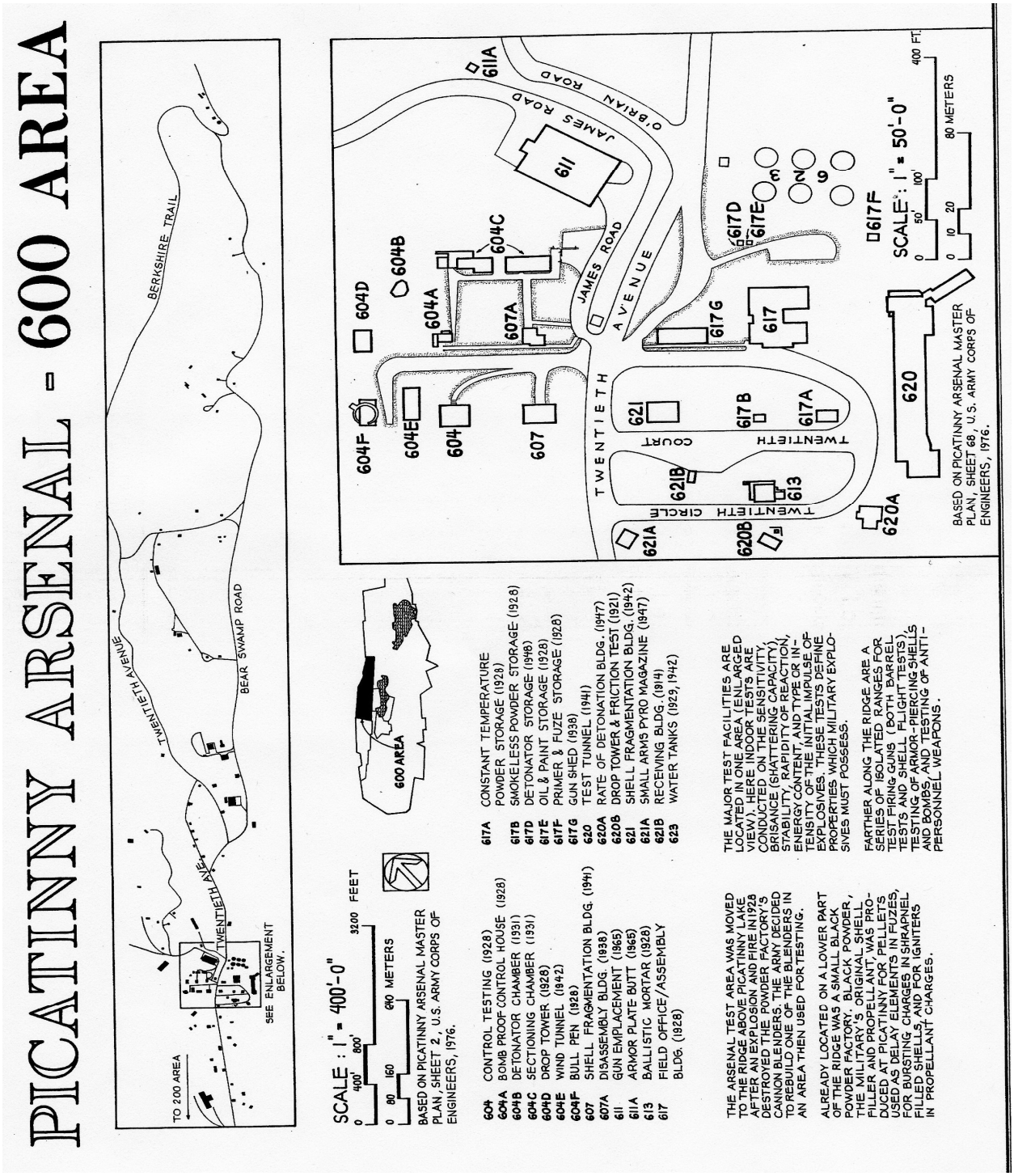
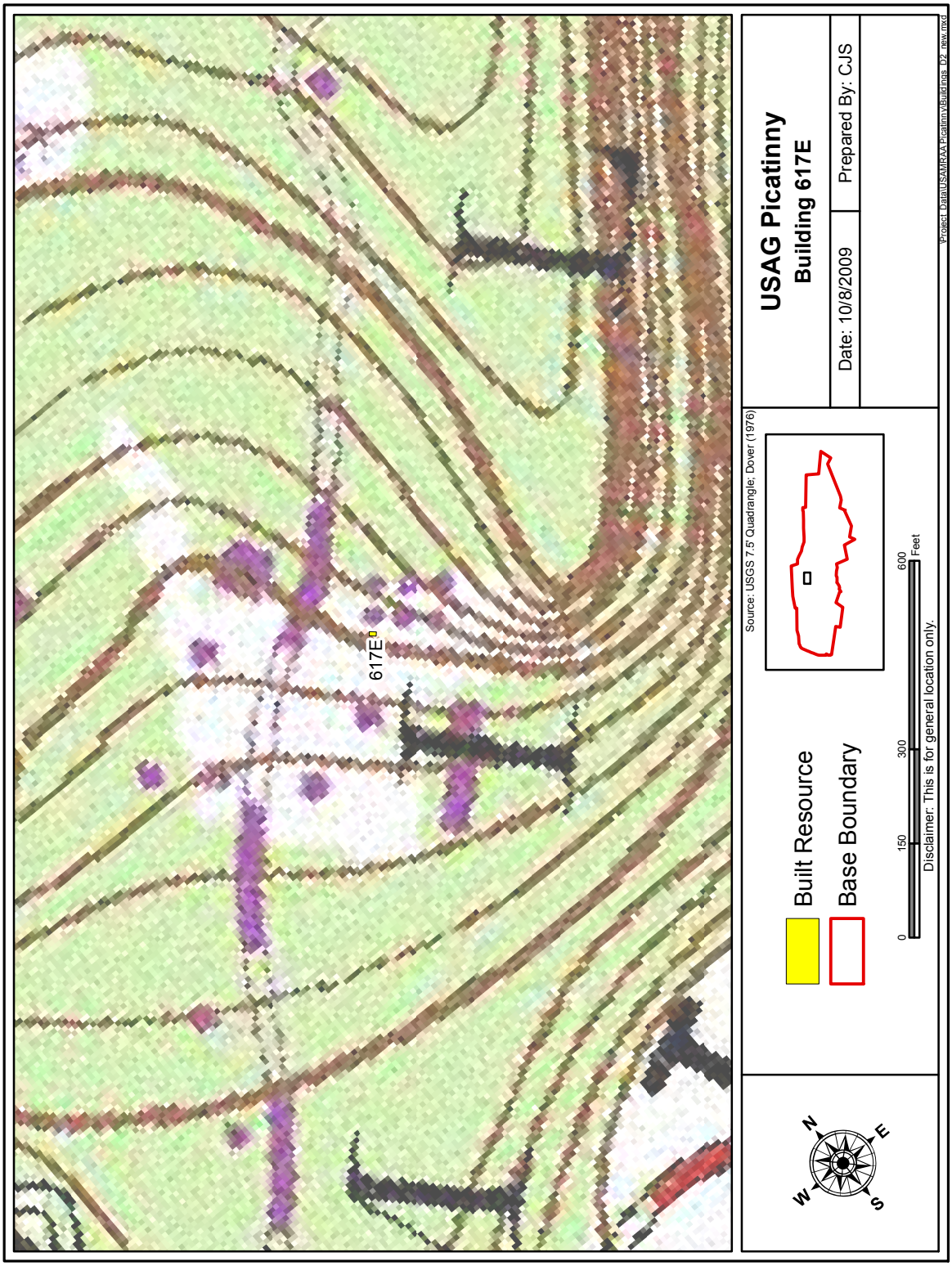
Ca. 1940 photograph for Building 617E next to 617D, then numbered 627. Photograph is attached to the 1922-1941 real property record contained in the "Historical Record of Ordnance Buildings at Picatinny Arsenal" in the collection of the ARDEC Historian, USAG Picatinny, New Jersey.

1958 photograph of water tanks showing Building 617E in the foreground behind a tree. Photograph is published in "Plant Engineering and Maintenance Office" (1958:70) in the collection of the ARDEC Historian, USAG Picatinny, New Jersey.



Source: Historic American Buildings Survey/Historic American Engineering Record (Thurber and Norman 1985).



Excerpt of USGS Dover7.5-minute quadrangle map showing location of Building 617E

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Photographer: Harriet Wise Photography, Frederick, Maryland

NJ-0036-XX-1 FRONT (SOUTHWEST) WALL OF BUILDING 617E, VIEW LOOKING NORTHEAST

NJ-0036-XX-2 FRONT (SOUTHWEST) AND SIDE (SOUTHEAST) WALLS OF BUILDING 617E, VIEW LOOKING NORTH-NORTHWEST SHOWING CONTEXT

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