

CONTRIBUTING RESOURCE
MARYLAND HISTORICAL TRUST
INTERNAL NR-ELIGIBILITY REVIEW FORM

Property Name: Building 11 Greenhouse Range 1 Survey Number: PG:61-19

Property Address: Beltsville Agricultural Research Center

Project: Proposed Controlled Environmental Facility Agency: USDA

Site visit by MHT Staff: no yes Name L. Bowlin Date Jan. 9, 1995

District Name: North Farm historic district Survey Number: not yet assigned

 Listed Eligible appears elig based on prelim docum survey ongoing Comment

Criteria: A B C D E F G None

The resource contributes/ does not contribute to the historic significance of this historic district in:

Location Design Setting Materials

Workmanship Feeling Association

Justification for decision: (Use continuation sheet if necessary and attach map)

Building 11 or Range 1 is composed of two adjacent headhouses of a long 1 1/2 story height with multiple greenhouses attached to the rear of the greenhouses. Facing North Drive, the headhouses date from two periods of construction but were designed to be identical. The eastern headhouse was constructed in the first wave of building at the North Farm of the Bureau of Plant Industry during 1933-1935. This building has served as the model for range and 3 greenhouses (buildings 9 and 10). The second headhouse to the west was built in phases between 1934 and 1967. Both greenhouses depict similar Georgian Revival detailing. The Bureau of Plant Industry was a precursor of the USDA which conducted plant related research and development. The agency directed scientific research that focused on crop research and production. The North Farm facility illustrates a cohesive design in its Georgian Revival offices, laboratories and greenhouses. An intensive architectural survey is currently being conducted of the North Farm. However, preliminary documentation indicates that the Farm is an NR eligible historic district under Criterion A and C for its association with government-sponsored plant research and development and for its representation as a cohesive Georgian Revival governmental complex. Building 11 is a contributing resource of this historic district.

Documentation on the property is presented in: Maryland Inventory Form and Determination of Eligibility Report in compliance file (BARC-CEF)

Prepared by: Robinson and Associates

L. Bowlin
Reviewer, Office of Preservation Services

May 30, 1995
Date

NR program concurrence: yes no not applicable

Quilley Redant
Reviewer, NR program

June 27, 1995
Date

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA - HISTORIC CONTEXT

I. Geographic Region:

- Eastern Shore (all Eastern Shore counties, and Cecil)
- Western Shore (Anne Arundel, Calvert, Charles, Prince George's and St. Mary's)
- Piedmont (Baltimore City, Baltimore, Carroll, Frederick, Harford, Howard, Montgomery)
- Western Maryland (Allegany, Garrett and Washington)

II. Chronological/Developmental Periods:

- Paleo-Indian 10000-7500 B.C.
- Early Archaic 7500-6000 B.C.
- Middle Archaic 6000-4000 B.C.
- Late Archaic 4000-2000 B.C.
- Early Woodland 2000-500 B.C.
- Middle Woodland 500 B.C. - A.D. 900
- Late Woodland/Archaic A.D. 900-1600
- Contact and Settlement A.D. 1570-1750
- Rural Agrarian Intensification A.D. 1680-1815
- Agricultural-Industrial Transition A.D. 1815-1870
- Industrial/Urban Dominance A.D. 1870-1930
- Modern Period A.D. 1930-Present
- Unknown Period (prehistoric historic)

III. Prehistoric Period Themes:

- Subsistence
- Settlement
- Political
- Demographic
- Religion
- Technology
- Environmental Adaption

IV. Historic Period Themes:

- Agriculture
- Architecture, Landscape Architecture, and Community Planning
- Economic (Commercial and Industrial)
- Government/Law
- Military
- Religion
- Social/Educational/Cultural
- Transportation

V. Resource Type:

Category: building

Historic Environment: suburban

Historic Function(s) and Use(s): agricultural/greenhouse

Known Design Source: USDA Bureau of Agricultural Engineering, Division of Plans

PG: 61-19

RANGE 1, BELTSVILLE AGRICULTURAL RESEARCH CENTER
BELTSVILLE, PRINCE GEORGES COUNTY, MD

Located at the North Farm of the U.S. Department of Agriculture's Beltsville Agricultural Research Station, Range 1 consists of two adjacent buildings each consisting of a long 1-1/2-story headhouse and multiple greenhouses attached to the rear of the headhouse. The fronts of the two buildings are aligned in a row facing northeast onto North Drive. The two headhouses, although not constructed simultaneously, were designed to be virtually identical on the front (main) facade. Both buildings use similar Georgian Revival decorative motifs. Both are of concrete block construction with brick veneer walls and concrete foundations. The more easterly of the two structures was constructed in 1933-35. It was constructed in the first wave of construction at the Bureau of Plant Industry/North Farm, and it has served as the architectural model for the greenhouse Ranges 2 and 3 on the North Farm. The more westerly structure was constructed in multiple pieces between 1934 and 1967. Both buildings have been in continuous use as greenhouses and associated laboratory, office, and potting space for the United States Department of Agriculture. The older (eastern) structure is now in use for citrus research conducted in coordination with the University of Florida; it has also been used for research relating to apples, beans, potatoes, and tomatoes.

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REGISTRATION FORM

1. Name of Property

historic name Range 1, Beltsville Agricultural Research Center
other names/site number Building 011

2. Location

street & number Beltsville Agricultural Research Center - West
Not for publication _____
city or town Beltsville vicinity N/A
state Maryland code MD county Prince Georges code 033
zip code 20705-2350

3. State/Federal Agency Certification

4. National Park Service Certification

5. Classification

Ownership of Property (Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property (Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

Contributing	Noncontributing
<u> 2 </u>	<u> </u> buildings
<u> </u>	<u> </u> sites
<u> </u>	<u> </u> structures
<u> </u>	<u> </u> objects
<u> 2 </u>	<u> 0 </u> Total

DSDI/NPS NRHP Registration Form
Range 1, Beltsville Agricultural Research Center)
(Beltsville, MD)

Number of contributing resources previously listed in the National Register 0

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.) N/A

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat:	Sub:
AGRICULTURE/SUBSISTENCE	horticulture facility
EDUCATION	research facility

Current Functions (Enter categories from instructions)

Cat:	Sub:
AGRICULTURE/SUBSISTENCE	horticulture facility
EDUCATION	research facility

7. Description

Architectural Classification (Enter categories from instructions)

OTHER: Colonial Revival

Materials (Enter categories from instructions)

foundation concrete
 roof slate
 walls concrete block with brick veneer
 other copper gutters and downspouts, wood and stone trim.

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.) See continuation sheet.

8. Statement of Significance See continuation sheet.

Areas of Significance (Enter categories from instructions)

Agriculture

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Range 1, Beltsville Agricultural Research Center)
(Beltsville, MD)

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Period of Significance

1935-1944

Significant Dates 1935

Significant Person (Complete if Criterion B is marked above)

Cultural Affiliation N/A

Architect/Builder Division of Plans & Service, Bureau of Agricultural Engineering, U.S. Department of Agriculture

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.) See continuation sheet.

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9. Major Bibliographical References See continuation sheet.
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10. Geographical Data
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Acreage of Property

Less than one acre.

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CONTINUATION SHEET

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Range 1, Beltsville Agricultural
Research Center
name of property
Prince Georges, Maryland
county and StateDESCRIPTION

Located at the North Farm of the U.S. Department of Agriculture's Beltsville Agricultural Research Station, Range 1 consists of two adjacent buildings each consisting of a long horizontal headhouse with multiple attached greenhouses. The buildings are sited on a sloped area, and both are stepped to both avoid shading the greenhouses and to follow the contours of the topography. The two buildings are not generally referred to individually; instead, reference is made to specific greenhouses or headhouses in each building. Thus the more easterly building is known as headhouses (and greenhouses) 1-8 and the more westerly building is generally referred to as headhouses 9-19 and greenhouses 9-11 and 14-18. (See site plan).

Each of the buildings has a similar configuration, consisting of a 1-1/2-story brick headhouse which faces North Drive, and multiple single-story greenhouses, attached either at right angles (in the case of the west building) or at more acute angles (for the east building) to the rear of the headhouse.

The two headhouses, although not constructed at the same time, were designed to be virtually identical on the front (main) facade. Both buildings use the same Georgian Revival decorative motifs and the same materials including brick veneer walls (over concrete block construction), concrete foundations, copper downspouts and gutters, slate roofs, and metal windows. Windows and doors are also consistent for the two buildings. The casement-style windows consist of twelve panes, the central four of which pivot from the top. Doors are half-glass with a single wood panel below and nine panes above. The ventilators/dormers on both buildings are half round.

Headhouses 1-8 (East Building)

Completed in 1934, the building incorporating headhouses 1-8 is 528 feet long and 30 feet wide. It is separated into eight stepped sections, each of which leads to separate greenhouses. With the exception of the two end sections, each of the sections was originally identical. Each of the middle six sections of the building has five bays, with three windows to the east side, then a door, and a single window to the west. Downspouts located between the second and third bays and after the fifth bay subdivide the units into equal

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sections. This central portion of the building has a gabled roof with dormer/ventilators located over the first, third, and fifth bays of each section. The entrances to the building in this section have projecting pediments with supporting decorative brackets.

The slightly more elaborate end-sections of the building frame the central section. The east end is developed as a separate pavilion with a hipped roof and a central, projecting gabled section. Its central projecting section has stone quoining with stone keystones above the door, and a single round ventilator delineated with stone to match the quoining. The west section is longer than the other sections and includes a section similar to the six middle sections and a pavilion constructed as the power house at its end. The power house section has a cross gable and three bays all of which are windows. Decorative stone is also used for quoining at the flat arch above the windows and surrounding the single round ventilator that is centered in the middle of the section of the building. The window openings in this section are longer than those on the rest of the facade; they originally consist of 24 panes in a fixed metal window, but are now bricked in. The side elevations of the two end sections are simpler but largely similar to the front facade.

The visible section of the rear facade of the building consists almost exclusively of the greenhouses. Each greenhouse is roughly 125 feet long and 35 1/2 feet wide with eaves roughly 6 feet above the floor of the house. The houses are attached to the headhouses at a 60-degree angle. The greenhouses are of the "half-iron" type of frame construction -- meaning all doors, frames, sash, sills, ridges, etc. used in the building are of tidewater red cypress, while all other fittings are of galvanized metal. The buildings are gabled roofed with eaves, of the "angle iron" type. Glass is double-strength A-quality glass cut in 16" x 24" panels. Panels on the side walls and the ridge open for ventilation. These sash are operated by an arm-and-rod type of vent gear with a hand wheel.

Interior

The interiors of the headhouses are utilitarian, with simple wood molding, exposed piping, and concrete floors. In general, their floor plan consists of an entrance way, with storage or laboratory space to either side. Leading off the entrance way is the "work space," an area that acts as a hallway

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connecting the headhouses as well as an area for potting, or equipment storage. Stairs to the upper story, which is used for storage space, are also located in the work space. Access to the greenhouse is through a door in the work space aligned with the entrance door.

The interior of the greenhouses are large open spaces generally divided into three or four rooms by glass partitions with doors. Each is set up with a number of benches. A variety of non-original pipes and HVAC equipment are present on the ceiling and walls of the greenhouses.

Alterations

Alterations to the east section of Range 1 are, in general, fairly minor. They consist of the insertion of a number of window-unit air conditioners, security lights at the entrances, the filling in of the dormer/vents, and a few patches in the brick where alterations (or other openings) have been filled in. The most severe example of this is the filling in of the window openings in the powerhouse. The greenhouses have been altered by the introduction of various modern mechanical systems including air conditioning units and various revamped heating systems. Certain portions of the headhouses, such as those that house laboratory facilities, have been significantly altered over time.

Headhouses 9-19 (West Section)

Headhouses 9-19 were completed in sections between the 1930s and 1960s. For the most part, each section was designed to match the others and to match the east section of the Range. The headhouse is 672 feet long and 22 feet wide (in some sections 27 feet wide). It is separated into six stepped sections of unequal lengths. There are ten greenhouses attached to the headhouse, which are often referred to as headhouses 9-19. Because this building has been constructed in such a disparate fashion, a number of the sections differ in, for instance, the appearance of the brick. The east end of the building consists of a pavilion with a central projecting cross-gabled section. The middle sections of the building have a varying number of bays. Each, however, is subdivided by downspouts. This central portion of the building has a gabled roof with dormers/ventilators located over (usually) the first, third, and fifth bays of each section. The entrances to the building in this center section have projecting pediments with supporting decorative brackets.

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Both ends of the rear facade of the building consist largely of greenhouses. The greenhouses, because they were built at a variety of times, vary in their length and width (they average approximately 120 feet long and 35 feet wide). The greenhouses are attached to the headhouses at a 90-degree angle. Doors, frames, sash, sills, etc., used in the greenhouses are of wood, while other fittings are of galvanized metal. All have gabled roofs and panels on the side walls and ridge that open for ventilation. These sash are operated by an arm-and-rod type of vent gear with a hand wheel. Each greenhouse is separated into three or four segments of varying lengths.

Interior

In general, the headhouses follow the same plan as those in the eastern section, with an entrance corridor flanked on either side by offices or labs, then a workspace that acts both as a hall communicating between the headhouses, and an entrance to the greenhouses. However, not all of the workspaces are open to adjoining headhouses.

The greenhouses were built at different times and thus vary somewhat. The interior of the greenhouses are basically large open spaces generally divided into three or four rooms by glass partitions with doors. Each is set up with a number of benches. A variety of non-original pipes and HVAC equipment are present on the ceiling and walls of the greenhouses.

Alterations

Because of its extended period of construction, headhouses 9-19 vary in a number of details, although the basic materials and Georgian Revival stylistic vocabulary are consistent throughout. In some cases, it is impossible to determine whether variations represent subsequent alterations or minor differences in the original construction. For instance, it is not clear whether headhouse 12 is missing its entrance gable or whether it was constructed without one. Similarly, variations in windows could be attributable to either cause. For the most part the windows are similar to those used in headhouses 1-8, i.e., metal twelve-pane windows the central four of which pivot open from the top. In headhouses 11 and 12, the windows change to six-pane windows, the lower two of which pivot upward. Headhouse 16 employs bronze glass Pella-type replacement windows. At headhouse 17, the windows consist of three horizontal sections, the lowest of which pivots

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open. At headhouse 19, the windows are vertical six-pane units in which the bottom two panes pivot open.

The most significant clearly original difference between sections of the building relates to brick. The brick used for part of headhouse 16 and for headhouse 17A and 18 differs significantly from that used in the other sections of the building.

Greenhouses have been altered by the introduction of various modern mechanical systems including air-conditioning units and various revamped heating systems. Certain portions of the headhouses, such as those that house laboratory facilities, have been significantly altered over time.

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HISTORIC CONTEXT

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA

Geographical Organization: Western Shore

Chronological/Developmental Periods: Modern Period

Prehistoric/Historic Period Theme(s): Agriculture

Resource Type:

Category: Building

Historic Environment: Rural

Historic Function(s) and Use(s): AGRICULTURE/horticulture facility
EDUCATION/research facility

Known Design Source: Division of Plans & Service, Bureau of
Agricultural Engineering, U.S. Department of Agriculture

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Range 1, Beltsville Agricultural
Research Center
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Summary

Range 1 was one of the first two buildings constructed at the Plant Industry Station.¹ Since 1934, it has been in continuous use for plant experimentation. As such, it has served as the site of important experiments relating to fruits and vegetables, in particular, potatoes, tomatoes, and, currently, citrus fruit.

Creation of the North Farm

In 1900, the Department of Agriculture acquired a 400-acre tract of land from the Department of War in Arlington, Virginia; this tract was to become the Arlington Farm. The farm was the major experimentation site of (and was administered by) the Bureau of Plant Industry. Beginning as early as 1911, however, the Army realized the utility of the site and began to lobby to have the Arlington site returned to its jurisdiction.²

Given the uncertain future of the Arlington site, the Department hedged its bets. Around 1930, the Division of Fruit and Vegetable Crops and Diseases needed land for longtime experiments with tree fruits, nuts, grapes, etc., Given the "recurring agitation" as to the future of the Arlington Farm lands, the Division began searching for land for another field station. A study with soil type as one major criteria, was made of land areas in the suburban Washington area. The study isolated two adjacent farms in the Beltsville area that were to become the Horticultural Research Station, and, working through a middleman, the Division secured options for the lease and eventual purchase of the farms.

¹Building 4 (the Horticulture Building) was constructed roughly contemporaneously, and it is not clear which building was actually completed first.

²"Background for Plenty: A National Center for Agricultural Research," Maryland Historical Magazine, V. 61, No. 4; December, 1966, Vivian Wiser and Wayne D. Rasmussen, p. 292.

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In February 1932, the land was divided between the different projects and planting of apple, peach, nut and other fruit trees was completed in the spring of the year. The next year, on October 1, the Government exercised its option to purchase the properties. Funding for the purchase came through a Public Works Administration allotment. The total purchase cost was \$80,793.15 and the site officially became the "U.S. Horticultural Field Station at Beltsville, Maryland." In addition to paying for the acquisition of the land, PWA funds for the same year were used to construct the Range 1 greenhouses and headhouses.

Construction of Range 1

Plans for Range 1, headhouses 1-8, were drawn up by the USDA's Bureau of Agricultural Engineering, Division of Plans and Service, and signed off on by December 1933. The Division of Plans and Services was the USDA's in-house design office and was responsible for the design of virtually all of the buildings at Beltsville. They also designed USDA buildings throughout the country, including the USDA's four regional labs.³ A total of \$124,833.57 was spent on the greenhouses with funding coming from the PWA. The building was completed by 1935. It was to become the model for later greenhouses on the site. Although very little information about the building and its construction has been uncovered, one interesting aspect of its design is the angled layout of the greenhouses. This likely was done as a way of maximizing light coming into the greenhouses. In general, however, the angled layout is one not usually seen. It is interesting to note that this was one of the few aspects of the Range 1 design that were not copied in the Range 2 and Range 3 designs.

The west half of the range was completed in segments spanning over thirty years. Certain greenhouses in the west half of Range 1 were completed by 1933, but it seems likely that these were greenhouses which were later replaced. The "two hotbeds, six cold frames, a tomato seed house and a sash

³So far, little information on how the Division operated or who the major designers in the Division were has been uncovered. It appears, however, that during the late 1930s the Division was designing literally dozens of buildings at one time, and must have employed a substantial number of designers.

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storage house" completed in 1933 with PWA funds, however, likely included some of the cold frames currently associated with the building. Photographs taken around 1938 show a number of freestanding greenhouses; none of these appear to correspond to existing greenhouses. The first of the existing greenhouses and headhouses -- headhouses 14, 15, and, possibly part of 16 -- were constructed around 1937. Based on fragmentary information, it appears that headhouses 9 and 10 (greenhouses 9-12) were constructed between 1937 and 1939 and greenhouse and headhouses 15 and 17 likely were completed in 1939. The other headhouses were completed between 1957 and 1967 in a number of sections.

Since their construction, Range 1 has been used largely for fruit and vegetable research. The older section of Range 1 however, was also used for significant work, conducted by Dr. Harry Borthwick, on photoperiod. Dr. Borthwick was an early pioneer in research related to photoperiod and phytochrome. Today, the east section of Range 1 is being used mostly for citrus research. (It was formerly used for apple, bean, potato, and tomato research.) The west section is currently used for potato, soybean, and alfalfa research.

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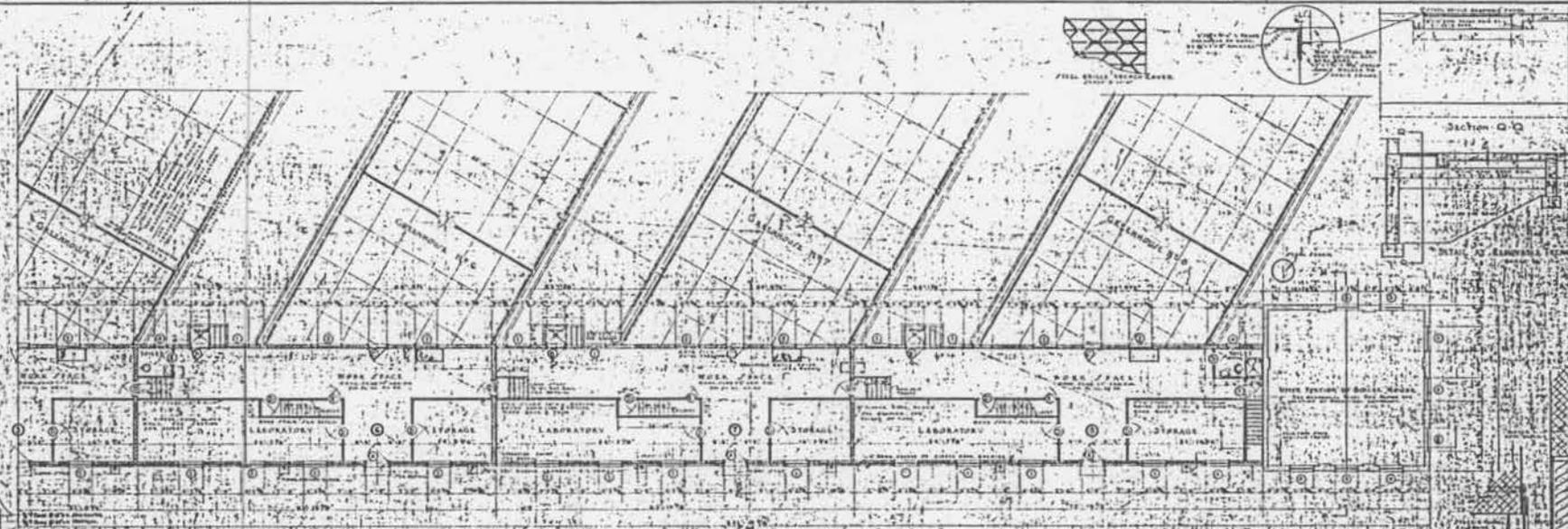
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4 (December 1966), p. 292.



PG: 61-19 Range 1 (Building 011)
Beltsville Agricultural Research Center
Beltsville, Prince Georges County, MD.
Photo, Undated
Engineering & Planning Branch, BARC

Plan (1933) Range 1 (Building 011)
Beltsville Agricultural Research Center
Beltsville, Prince Georges County, MD.



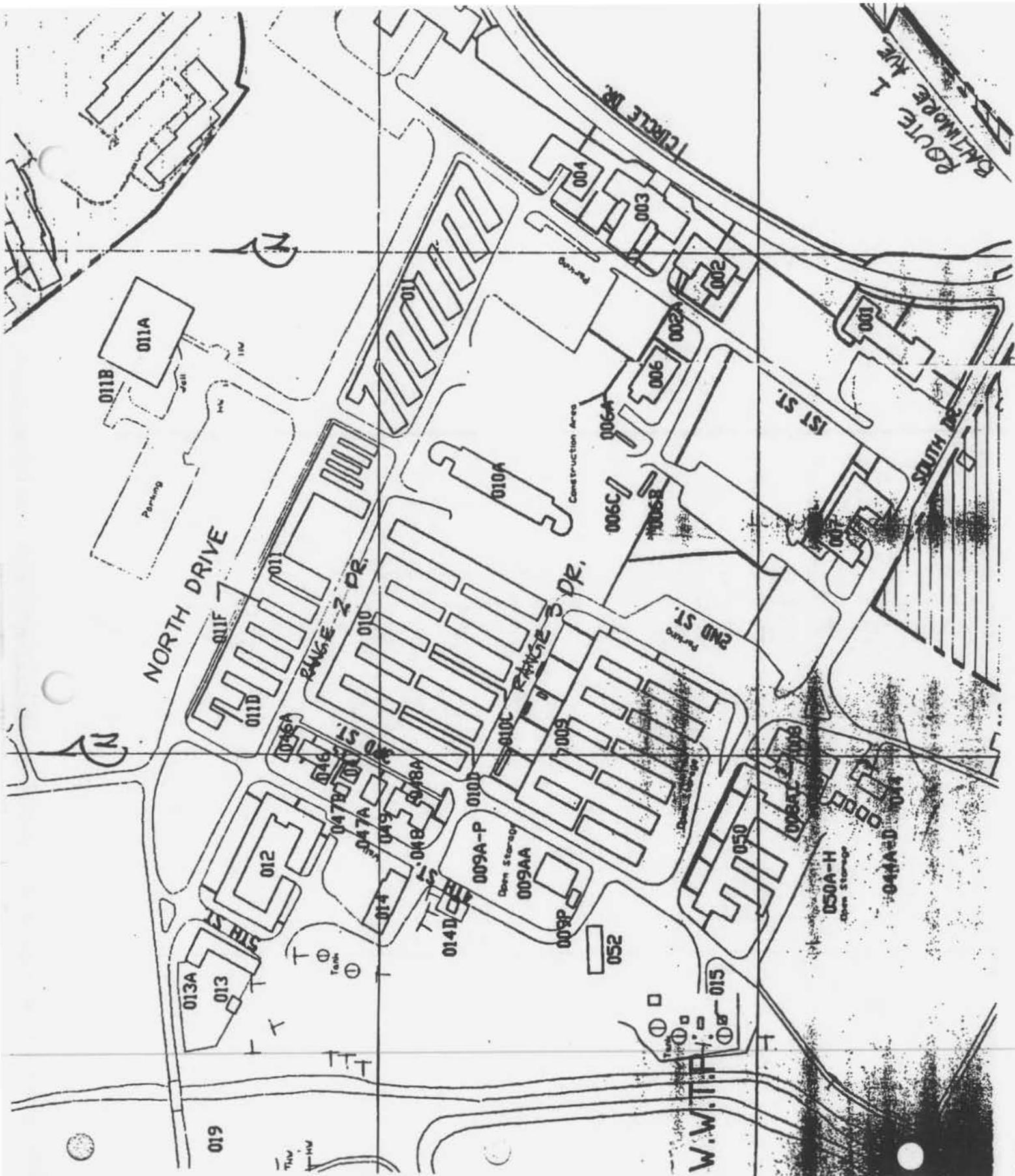
RIGHT HALF FLOOR PLAN



LEFT HALF FLOOR PLAN

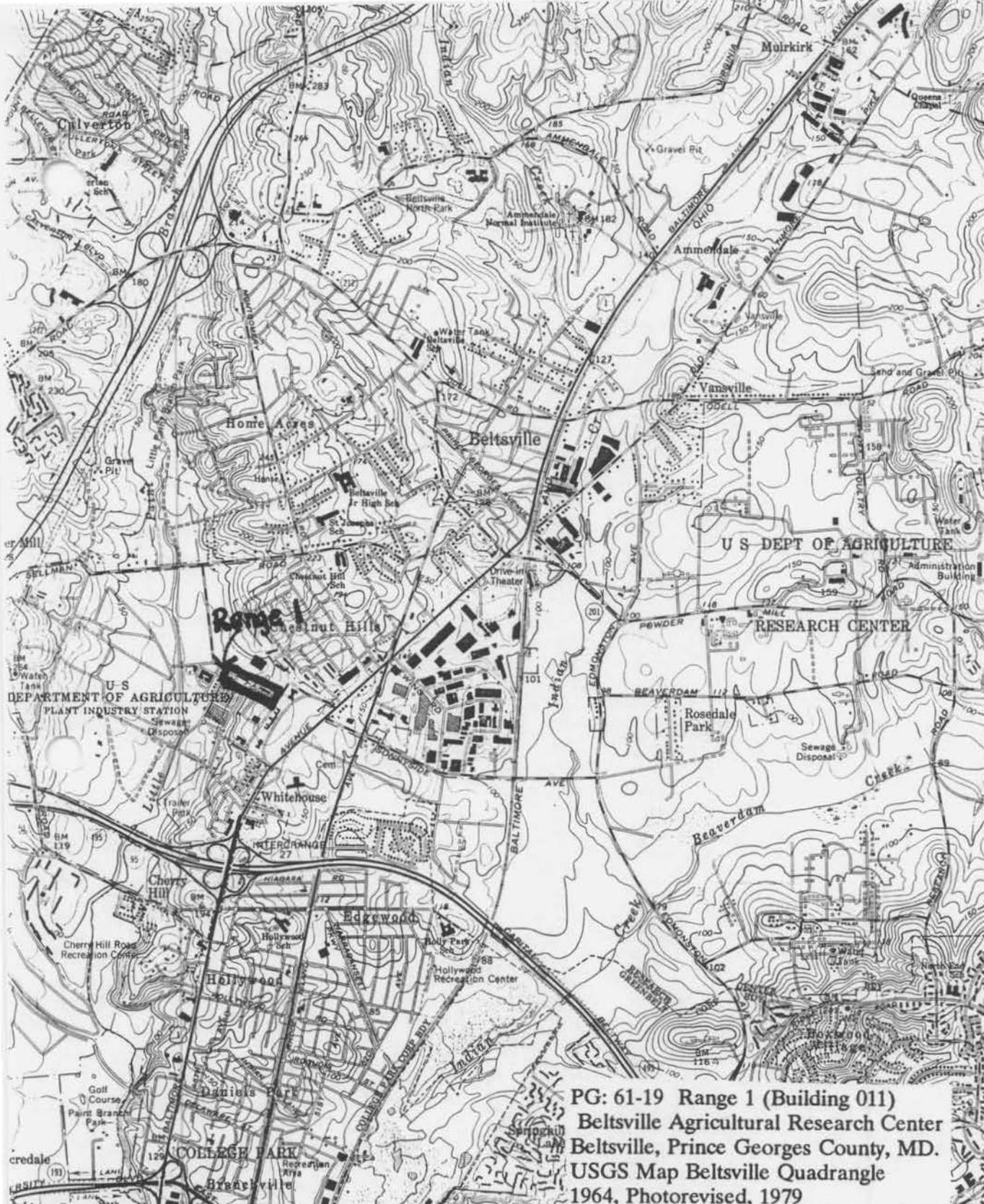


PREPARED FOR
BUREAU OF PLANT INDUSTRY
U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ENGINEERING
DIVISION OF PLANS & SERVICE
HEADHOUSE & GREENHOUSES
HORTICULTURAL FARM
BELTSVILLE, MARYLAND
MAY 22-1933 P. 10

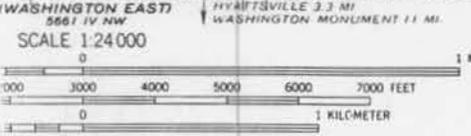


Beltsville Agricultural Research Center
Site Plan

PG: 61-19



PG: 61-19 Range 1 (Building 011)
 Beltsville Agricultural Research Center
 Beltsville, Prince Georges County, MD.
 USGS Map Beltsville Quadrangle
 1964, Photorevised, 1979



ROAD CLASSIFICATION

Heavy-duty	Light-duty
Medium-duty	Unimproved dirt
Interstate Route	U.S. Route
	State Route



QUADRANGLE LOCATION
 Boundary lines shown in purple compiled from latest information available from the controlling authority.
 Purple text indicates information not available.

WITH NATIONAL MAP ACCURACY STANDARDS
 BY U. S. GEOLOGICAL SURVEY
 BOX 80225, OR RESTON, VIRGINIA 22092
 PHOTOCOPYING AND SYMBOLS IS AVAILABLE ON REQUEST

BELTSVILLE, MD.
 SW/4 LAUREL 15' QUADRANGLE
 39076-A8-TF-024
 1964
 PHOTOREVISED 1979
 DMA 5662 III SW-SERIES V833



PG: 61-19

Range 1 (Building 11), Beltsville Agricultural Research
Prince Georges County, MD Center

Carol Hooper, 9/1994

Maryland SHPO

Front (Northeast) Facade, View from East

1/6



PG: 61-19

Range 1 (Building 11), Beltsville Agricultural Research Center
Prince Georges County, MD

Carol Hooper, 9/1994

Maryland SHPO

Front (north east) Facade, View From West

2/6

PG:61-19

Range 1 (Building 11), Beltsville Agricultural Research Center

Prince Georges County, MD

Carol Hooper, 9/1994

Maryland SHPO

Headhouse 1

3/0



PG: 61-19

Range 1 (Building 11) Beltsville Agricultural Research Center

Prince Georges County, MD

Carol Hooper, 9/1994

Maryland SHAD

Greenhouse 3

416



PG: 61-19

Range 1 (Building 11) Beltsville Agricultural Research
Center

Prince Georges County, MD

Carol Hooper, 9/1994

Maryland SHPO

Interior of Headhouse

5/6



PG: 61-19

Range 1 (Building 11) Beltsville Agricultural Research Center
Prince Georges County, MD

Carol Hooper, 9/1994

Maryland SHPO

Interior of Greenhouse

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