THE BLUE BALL DAIRY PERIOD (POST-1914)

This portion of the report addresses the period of the Blue Ball site history during which it was under the ownership of Alfred I. du Pont and is known to have functioned as a large farm and dairy operation. This phase of the site's occupancy falls completely within what has been defined as the period of Urbanization and Suburbanization in the Delaware Statewide Comprehensive Historic Preservation Plan. During this period internal transportation, especially intra-state highways, continued to be improved and connected Delaware with the larger Middle Atlantic region. One of the most important of these highways was the Du Pont Highway, or Route 113, which upon completion in 1923 connected the northern and southern portions of the state. Following this trend, Concord Pike became a public road in 1911 and was paved in 1919 (Hoffecker 1977; HABS 1993). Dominant trends throughout most of the state were the development of commercial agriculture, urbanism, and light manufacturing (DeCunzo and Catts 1990:83-85). Farm tenancy was also a central feature of the agriculturally focused socioeconomic context of most of the state, and by 1900 six classes of farmers were distinguished in census reports. These included "owners," "cash tenants," "share tenants," "part owners," "owners and tenants," and "managers" (DeCunzo and Garcia 1992:188-191). The tenancy trend, however, gradually shifted, and by the 1930's over 60% of farm labor was composed of wage workers (DeCunzo and Garcia 1992:197). Research pertaining to this last phase of the Blue Ball site occupation/operation may provide information on one or more of these trends. Specific attention will be granted to the status of tenancy and wage labor and the development of commercial agriculture.

Blue Ball Dairy History

New Castle County was the largest dairy producer in the state from the 1850's until 1945 (Michael 1985). Dairy farming grew first in the southern part of the County to provide butter to Baltimore (Hoffecker 1977:45). It has been estimated that two cows could produce approximately 60 pounds of butter (Michael 1985:28) and that anyone with more than two milk cows was engaged in some facet of commercial dairy production (Grettler 1992). One to two milk cows may still be considered production for home use. By 1847 dairy operations ranging from 15 to 100 cows were common in New Castle County (Bidwell and Falconer 1941:427), and by 1900 New Castle County was referred to as a "dairy county" (Reed 1947). During its operation the Blue Ball Dairy could accommodate up to 36 cows (Bizzolara 1989) and had four cow stalls. A 1937 land classification map (University of Delaware special collections, #02116) indicates that this property was "somewhat less intensively used," or what Bausman (1941) considers a Class III agricultural soil type (Class IV is considered to be the most productive).

The peak years for dairying in the Delaware Piedmont were between 1914 and 1928 (Hoffecker 1982). Just prior to this, from 1900 to 1910, the value of farm property increased 55.2% statewide, the greatest gain since 1860. In the following decades, 1919-1940, the farm land in New Castle County decreased by 15%, but the number of farms showed a 5.7% increase (Michael 1985). In the overall regional pattern for the time at least 50% of the population of Delaware were tenant farmers. During this time new and

innovative farming techniques were being introduced throughout the county, and the importance of sanitation in larger dairy operations was apparent. For example, two articles that appeared in 1914 editions of the *Evening Journal*, one entitled "Concrete on the Farm" (January 8) and another entitled "To Pasteurize Milk" (January 10), present some of these new ideas and techniques. Given Alfred I. du Pont's wealth, it is likely the A. I. Du Pont Dairy was one of the first in the county to employ such ideas. The Dairy was one of the first to have concrete and glass blocks incorporated into the barn and auxiliary structure construction. Correspondences in which animal husbandmen and bacterial testing labs in Wilmington outline the specifications for the "safe" production of dairy products also attests to the new hygienic standards that were required for large scale production of 'perishables.'

An Historic American Buildings Survey (HABS 1993) document for the Nemours Estate was written in 1994 by the architectural firm of Kise Franks and Straw of Philadelphia. The Blue Ball Dairy and the Blue Ball Tavern site were part of Alfred I. du Pont's Nemours Estate, and the standing dairy buildings were documented during that survey. In 1909-1910, du Pont built the Nemours Estate. In 1914, he had the dairy barn and milk house (sometimes referred to as the dairy) built on the Blue Ball property. These appear on the Price and Price 1917 map of the Nemours Estate (see Figure 26). The dairy served the Nemours Estate from its construction in 1914 probably until du Pont's death in 1935 and perhaps until as late as 1943. After that year it was leased to Harvey and Ruthford Gooden, father and son, who ran the dairy and sold its produce on the market. Ruthford Gooden left the dairy in 1977, shortly after which the house (the old Blue Ball Tavern) and most of the outbuildings were torn down. During the Goodens tenure on the property they paid rent to the St. Joe Paper Company, managed by A. I. du Pont's brother-in-law, Edward Ball, used their own livestock, and sold their dairy produce on the market to companies such as the Delmore Dairy in Wilmington (HABS 1993).

The barn, milk house, and stone wall remain today; while they and the tavern/house site are included within the Nemours Historic District, they are no longer part of the Estate (HABS 1993). The extant barn and milk house are considered valuable historical symbols, as they are examples of the changes in dairying that characterized the twentieth century (HABS 1993). These include principles of modernization, such as cleanliness and hygienics. The structures further depict what is known as the country house -- or stately homes -- movement, defined as the outgrowth of a milieu in which wealthy individuals produced a public image of themselves as gentlemen farmers, highlighting their wealth, status, and sense of culture. This movement was represented through the principles of the 'Ecole des Beaux Arts' ostensibly opulent French design technology (HABS 1993).

Included with the HABS documentation are aerial photographs spanning the years 1932 to 1992 that show the Nemours Estate and the Blue Ball Dairy. In the photo dating from 1926 (Dallin collection, Hagley Museum), a view from the west, the building layout appears to be very similar to that shown on the 1917 map except that the northern extension of the barn is gone and the lane had been extended along that side of the barn. The area thought to be the orchard appears to be a grove of mature trees instead. Photos

taken from similar positions in 1932 and 1935 (Dallin Collection) appear to be the same. By 1944, in a photo taken from almost directly overhead (Aero Service Corporation), the building marked as a sheep shed on the Price and Price map has been demolished, but the others still appear to be standing. A small square structure, possibly a foundation, appears near the center of the lane and to its east. Photographs from DelDOT taken in 1992 show the land in conditions similar to the present.

Although extensive research has been carried out at several archives and institutions where other documents about the Nemours Estate were found, the architect of the Blue Ball Dairy buildings has not been identified. Even a search of the papers of Carrere and Hastings, architects of the Nemours mansion and still in the employ of du Pont in 1914, failed to reveal any drawings of the dairy buildings. Another possibility is that his contractor, James M. Smyth & Son of Wilmington, helped du Pont design the structures and then to build them. Again, no documentation has been found to prove this hypothesis. It has been speculated by Brizzolara (1989) that many of the structural elements are modeled after the specifications of Alfred Hopkins, a preeminent early twentieth-century architect, that were published in his book *Modern Farm Buildings* in 1916. Hopkins' work represents the most modern construction techniques of that time. Brizzolara's speculation is based on the apparent application of features recommended in the Hopkins publication, such as use of stucco, plans for refrigerators, the use of concrete and galvanized iron sinks, the elimination of projections and moldings, and the installation of iron window and door frames.

A.E. Whittington, du Pont's chief farmer, managed the dairy during its first years of operation (HABS 1993). As of 1920, the farm, as well as some of du Pont's other properties, were under the management of E. M. Davis, whose office was located in Wilmington. Davis, an ex-railroad brakeman, was active in gaining support for A. I. du Pont from local labor unions and eventually gained ownership of one of du Pont's newspapers, the Newark *Ledger* (James 1941). He is reported to have formed the Non Partisan League and become one of du Pont's chief political advisors (Wall 1990).

A group of letters from 1920 indicates that the Blue Ball Farm, in addition to owning the 21 cows listed for the dairy operation, had 11 horses, 45 sheep, 12 turkeys and 311 chickens and other poultry. Farming equipment such as plows, harrows, planters, machinery to harvest and process grain, wagons, tractors and smaller tools are also listed. Other correspondences from 1920 between Davis and du Pont refer to the "Blue Ball boarding house," discuss a request to use the porch of the Blue Ball Farm house for registering voters, as well as clerks for the New Castle County Republican Committee, and refer to the land between the boarding house and Rock Manor as being planted in wheat, some of which was to be used for chicken feed. Additional arrangements were made to thresh the wheat of neighbors at a cost of ten cents per bushel. Several of the correspondences between du Pont and Davis refer to a sawmill and seem to suggest that a staff of carpenters was kept in the employ of the farm. Mention is also made of pig pens, a poultry house, a horse stable, a cow stable, and a lunch room. The 'Sweeney property No. 1' is also mentioned with reference to carpentry repair work and fodder storage.

A man by the name of Bishop supervised the farm under Davis in 1920. In the spring of 1921, Bishop was relieved of his responsibility for the dairy and poultry operations, which were turned over to a Mr. Thurber and an unnamed helper. From that point on the poultry and dairy operation were to be "carried on as a separate business from Blue Ball Farm." The letter from du Pont to Davis in which this change was discussed indicates that much, but not all, of the produce was used by the Nemours estate. In the fall of that year, Bishop was replaced by a superintendent named Andrew Fullarton, who was permitted to plant alfalfa and Hungarian millet on the grounds. Letters dating to that time indicate that Bishop was residing in the house prior to his discharge. Two other letters, dated August 1921, concerning the price of eggs charged to Nemours and to other purchasers also suggests that some of the farm produce was sold to other parties. In another correspondence of the same year, du Pont advises that it would be more profitable to buy poultry than to raise their own. The correspondence further indicates that the farm was not self-supporting and that none of the milk was to be sold, as it was to be made into butter.

Subsequent records show that Maxey Bland was superintendent of the Blue Ball Farm from 1926 until about 1935, when du Pont died. Du Pont had moved to Florida in 1926, although he returned to Nemours frequently. A letter to A. I. du Pont dated January 10, 1927 includes a financial report for the farm for the year 1926 and an inventory of equipment listed by building, including the furniture in the house and a list of crops in the ground. The report indicates that $2475.40 was spent on wages for the farm operation. Bland and du Pont shared the profit of $1,739.95 equally, and Bland paid $5.00 rent for the farm. Under the list of products sold totaling $5944.47, dairy products (milk, buttermilk, cream and butter) brought in $2,216.11, while wheat accounts for the second largest receipts at $1,787.24. Other farm products included poultry and eggs, corn, potatoes, hay, straw, calves and hogs. Separate inventories were made for the dairy, the cow stable, the horse stable, the feed room, the granary, the barn floor, the poultry house, a pumping station, the tractor shed, the oil house, sheds, the hay barracks, the corn crib, the sheep house, the pig pen, the house, the kitchen, and 'outside'. Aside from the dairy there were at least ten outbuildings. Crops in the ground included 34 acres in wheat, 54 acres in new hay, and 35 acres in pasture. The inventory for the house is as follows: four single cots with mattresses, five single beds complete, one single bed without covers, three mirrors, three bureaus, five bedroom chairs, four bedroom tables, six dining room chairs and a dining room table. The kitchen had a table, three chairs, a stove, two rockers, an ice box and a lard press. In the cellar were one ton of coal and two ash cans. The number of single beds and cots suggests that several people were occupying the house simultaneously and that these inhabitants may have been the farm workers. The structure may have functioned as a workers quarters rather than a family home. It is not known if Maxey Bland was one of those residing in the house.

A similar statement was prepared for 1928, and the farm figures and profit are similar. The report for the year 1931 showed a much lower profit of $297.99, and the need to replace a milking machine and a horse were discussed. The 1934 farm inventory indicates that the farm was still operating at a similar level, although no report or letter exists, and the 1935 record has no numbers for the categories in the inventory. After his

death in 1935, the property went to Almours Securities, Incorporated, a Florida-based corporation, and a year later it was transferred to the Florida National Building Company. This latter company merged with the St. Joe Paper company in 1942.

In an oral interview with Jim Meany (personal communication, Anderson 1997) at the High Point Dairy, near Talleyville, it was learned that the subsequent dairy operator was named Jones. No dates for his tenure at the dairy are known, however "the Jones property" is mentioned in a 1920 correspondence from Davis to du Pont. From 1943 until 1977, Harvey Gooden (died in 1974) and his son Ruthford ran the farm. The Goodens paid rent to the St. Joe Paper Company, and were not connected with the Nemours Estate. The crops they raised were used for cattle feed, the livestock belonged to them, and they sold the dairy products to independent businesses. After Ruthford Gooden was asked to cease operations by the paper company in 1977, he moved to another location, and the house and all the farm buildings except the dairy barn and milk house were torn down (HABS).

The Archaeology of Blue Ball Dairy

The following discussion is limited to the period in which the Blue Ball property was under the ownership of A. I. du Pont and operated as a dairy and farm. A rendering of the site's configuration at this time is illustrated in Figure 32. Features perceived as part of this phase of the site's use include the foundation remains of a large structure interpreted as part of the dairy operation; five posthole/molds; what has been interpreted as a stone conduit; a dry laid stone floor inside Feature 32; the remains of a barrel feature; the stone foundation remains of what may have been an animal pen; and the foundation remains of what was probably a structure that appears on both the 1917 and 1953 maps. It has been hypothesized that an archaeological trait of twentieth-century dairy farms is the size, variety, and number of outbuildings (Grettler 1992). This has been exhibited as an additive strategy through archaeological excavations at the Buchanan-Savin farm (7NC-J-175) in Blackbird Hundred (Scholl et al. 1994), where it was found that eight new outbuildings were constructed in the 1920s.

Feature 12 - Dairy structure

Feature 12 (N104-122, N93W67-80, N111W78, N112W68, N117W63) was the foundation remains of a plastered and white-washed stone, brick, and concrete structure presumably built as part of the Blue Ball Dairy. It was first identified in a five foot square excavation unit. A long rectangular structure is shown in this location on the 1917 Price and Price map of the Nemours Estate (see Figure 26), and from position, shape, and relative size it is considered to be the same as Feature 12. It appears again on the 1952 DelDOT Site Plan of the Blue Ball Dairy Area as a one story frame building (see Figure 13). Although three outbuildings are shown on Baist's 1893 Atlas of New Castle County (see Figure 25), none appear to be same as Feature 12. The entire foundation had been filled with demolition debris and mid-twentieth-century trash and was covered by fill soils similar to those found over the house foundation. The fills and debris were removed primarily by backhoe.

The foundation remains indicated a 24 foot long and 18 foot wide structure dug four feet into the subsoil. The east end was curved, while the west end was squared off (Figure 33 and Plate 42). Three brick steps at the west end formed a four foot wide bulkhead entrance down into the structure that landed at a cement floor. Two side-by-side cut-outs were located in the center of the floor, one of which retained a piece of timber (Plate 43). The cement floor was removed with a sledgehammer, revealing that it had been poured over a brick floor of the same pattern as that in the southern two rooms of the tavern/house foundation. Only one post-1899 manufactured dairy bottle fragment was recovered from between the cement and brick flooring. At the base of the brick steps, beneath the cement flooring, was a large cut stone lintel that spanned the width of the entranceway; this is the same material used for the basement steps and same style and size as the northwest basement steps. A portion of the brick steps was removed, revealing that it rested directly on a sandy subsoil. A two foot deep stone trough flanked the stairway on either side (Plate 44). Several dairy bottle fragments manufactured between 1910 and 1915 and canning jar fragments manufactured between 1910 and 1930 were found within the troughs. An asbestos wrapped pipe enters the southern side of the feature between the juncture of the stone trough at the entranceway and a raised plastered brick trough to the west. This is probably the same pipe found to run along the eastern side of Feature 33, a stone conduit to the west.

A series of four raised troughs along the inside of the north, east and south sides were constructed of plastered brick and formed the inner wall of the foundation (see Plate 42). Metal pipes at their bases connected these troughs, and the tops were approximately two feet above the level of the interior floor (Plate 45). The troughs varied in their bottom depths and the grade around the troughs from southwest to northwest was slightly pitched, presumably to circulate water through the metal pipes. The shallowest trough in the southeast corner was approximately half a foot deep and the deepest in the northwest corner was almost two feet deep. The trough at the northwest corner drained into a grate 0.5 feet in diameter in the concrete floor adjacent to the trough. A glazed ceramic pipe that extended to the west beyond the steps was connected to the grate beneath the cement and brick flooring (see Plate 44).

A 2.5 foot wide stone wall surrounded the exterior side of the plastered brick troughs. Remains of a sandy mortar were noted on some stones, but the wall did not appear to have been plastered. On the northern side the stone wall extended to the west two feet beyond the stone trough to a jog in the wall. A pipe trench oriented north-south underlay the wall just west of the jog. This section of wall, Feature 12W, extended another 38 feet to the west and was 1.25 feet wide and at least three courses of stone high (Plate 46). The soil profile at this end of the wall showed that its builder's trench was dug through a plowzone so that the wall rests on subsoil. This portion of the feature is presumed to be a later addition and may be part of the long structure that appears on the 1930s aerial photograph (Aero Services, Inc.) on file at the Historical Society of Delaware and the 1952 DelDOT map (see Figure 13). The west extension may have at one time been used as a chicken coop as recalled in an oral interview with James Meany of High Point Dairy (1997 Anderson, personal communication).

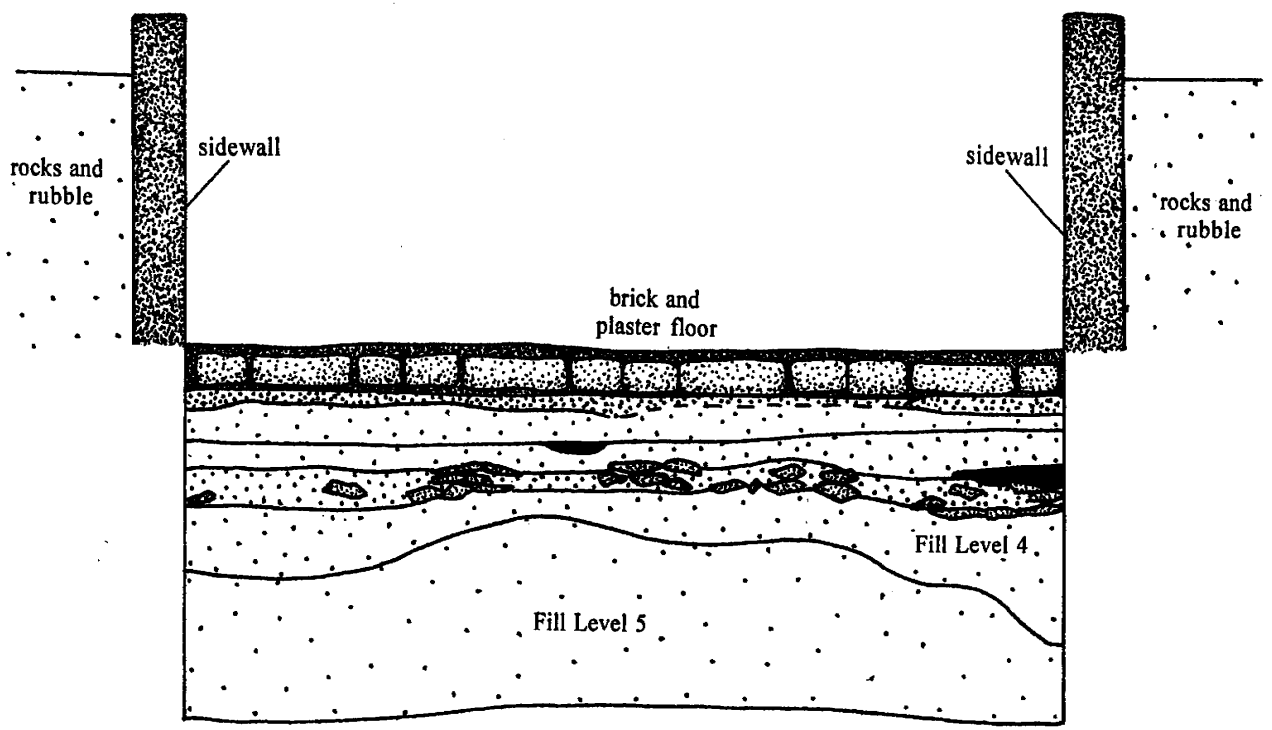
A backhoe trench cut across the feature showed that the brick troughs were also supported by stone rubble (Plate 47). The stone wall surrounding the troughs was constructed separately from this rubble. This trench also revealed five layers of coarse sand fill beneath the brick flooring extending 2.3 feet below the level of the cement flooring (Figure 34 and Plate 48). Levels 1 through 3 yielded post-1864 and post-1874 windowpane fragments and post-1870 and post-1908 bottle glass fragments. This dates the construction of this feature at sometime after 1908. Other materials recovered include a horseshoe fragment, a metal bolt, bone and oyster shell fragments, brick and mortar fragments, glass lantern fragments, and refined white earthenware and nail fragments. Small angular gravels were incorporated into level 3, which was a yellowish red (5YR 6/8), thin layer of sandy clay that sloped downward from the south wall to the north wall of the structure. Levels 4 and 5 yielded whiteware and redware sherds, bottle glass fragments, nail and bolt fragments, oyster shell, mortar fragments, and pre-1864 windowpane glass.

According to Halsted (1881:170-3), dairy spring houses require cool water, an even temperature, and good drainage. The first of these can be attained by conducting water through underground pipes. The spring should first be cleaned and the sides built up evenly with rough stone work. The top should be arched to provide shade from the sun. If the spring is sufficiently high, the interior water troughs may be elevated. This also eliminates the need for stooping. A spout from the spring carries water to the facility. The house should be smoothly plastered and frequently whitewashed with lime. An even temperature can be attained through stone or brick walls at least twelve inches thick. The troughs should be about eighteen inches wide and three inches deep to admit an eight to ten quart pan. An oak table located in the center of the structure may be used to keep cream jars and butter bowls. For a dairy of twenty cows there should be at least one hundred feet of water surface in the troughs.

Other Dairy-Related Features

Feature 33 - Stone conduit

Feature 33 (N43W80, N54W79) was the unmortared stone remains of what appears to have been constructed as an above ground drainage or conduit in the west field (Figure 35). It was located about 40 feet southwest of the tavern/house foundation. It was two feet wide with slightly upturned edges on both sides. The southern twenty feet were intact, although a pipe trench, running diagonally from northwest to southeast, had truncated the northern six feet of the feature. There was a 0.5 foot wide gravel-filled builder's trench on both sides of and beneath the feature. Excavation of these trenches yielded pearlware, whiteware and redware sherds, animal bone and teeth fragments, cut nail and strap iron fragments, sheet glass, pre-1864 manufactured windowpane glass, and bottle glass manufactured in the 1850s and between 1880 and 1930. The latter provides a TPQ of 1880. It cannot be said with certainty whether this feature was constructed during the Blue Ball Farm or Blue Ball Dairy era. However, given the amount of construction that took place in this portion of the site during the latter it has been included in this section of the report. The earlier ceramics (pearlware) were probably deposited in the builder's trench when the surrounding yard surface was dug into to construct the



Fill Level 1a: 10YR 5/4 yellowish brown sand

Fill Level 1b: 7.5YR 6/8 reddish yellow sand mottled with 10YR 5/6 yellowish brown sand with some clay

Fill Level 2: 10YR 5/6 yellowish brown silty clay mottled with 7.5YR 5/6 strong brown clayey sand

Fill Level 3: 10YR 5/3 brown loam with large rocks

Fill Level 4: 7.5YR 6/6 reddish yellow clayey sand with small pockets of 10YR 6/8 brownish yellow sand

Fill Level 5: 10YR 5/4 yellowish brown fine sandy clay mottled with 10YR 5/6 brown sandy clay and pockets of 10YR 6/8 brownish yellow sand

1 foot/.30 meter

FIGURE 34

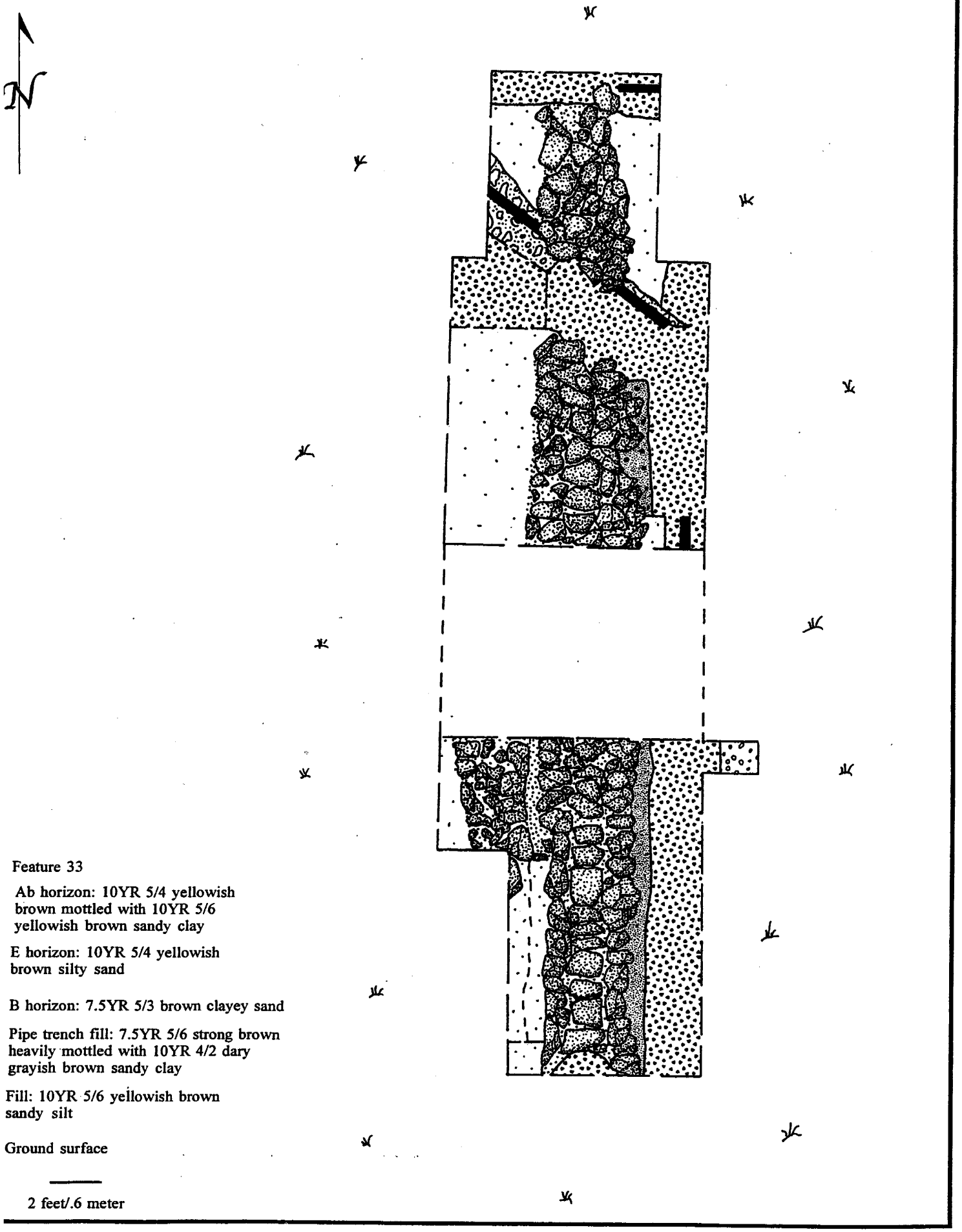


FIGURE 35
Plan View of Feature 33, Stone Conduit

feature. A narrow, asbestos-wrapped metal pipe, apparently laid at a later time, ran alongside the stone feature. This pipe appeared to be the same asbestos-wrapped metal pipe that enters Feature 12 along the south end.

Feature 45 - Stone floor

Feature 45 was a ten foot square dry-laid stone floor located within the east end of Feature 32, stone foundation remains (Figure 36 and Plate 49). It was located in the south yard about 45 feet off the southwest corner of the tavern/house foundation and was exposed when a backhoe removed a large section of asphalt drive that ran the periphery of the south yard and in front of the dairy barn. There was a 0.6 foot wide gap between this feature and Feature 32 in which four post holes formed a line parallel to the north wall of Feature 32. Two 1.5 foot square post molds, probably for support beams, were located within cut-out sections located four feet apart along the eastern edge of the floor. There was a large rectangular cut stone slab, similar to those used in the tavern/house foundation basement stairs, along the center of the southern edge of the floor that probably served as an entranceway. Excavations below the flooring yielded whiteware, redware, salt-glazed stoneware, tin-glazed earthenware, pre- and post-1864 windowpane glass, pre-1860 glass, unidentifiable and post-1790 nails, a spike, a .22 caliber cartridge case, bone, oyster, and clam shell remains, and post-1880 and post-1910 manufactured bottle glass. The latter provides a TPQ of 1910, the date after which the floor was laid.

Features 28, 35, 42, and 44

Features 28, 35, 42, and 44 are all post holes and/or molds that formed a line running parallel to the interior of Feature 32, between Feature 32 and Feature 45. Feature 28 was a 0.2 by 0.3 foot rectangular post mold filled with very dark grayish brown (2.5Y 3/2) silty sand and extending 0.5 feet into subsoil. Feature 35 was a 0.65 feet square post mold, filled with weak red(2.5Y 5/4) silty sand and angular gravel and extending 0.3 feet into subsoil. Feature 42 was a circular post mold filled with weak red (2.5Y 5/3) silty clay. Feature 44 was a 0.9 foot square post mold filled with weak red (2.5Y 5/4) silty clay that extended 0.4 feet into subsoil. Whiteware, ironstone, post-1864 windowpane glass, cut nails, shell, plaster, and pieces of a glass flask post-dating 1911 were recovered from Feature 42. The others did not yield artifacts; however, the similarity in soils suggests that they are roughly contemporaneous with Feature 42.

Feature 47 - Stone foundation remains

Feature 47 was the remains of a north-south trending stone wall found in backhoe Trench 1, Square 6 during exploratory trench excavations in the north field. The wall was approximately one foot wide and was dug through the buried Ap horizon into subsoil and subsequently buried under two feet of modern clay fill. A builder's trench approximately 0.1 feet wide was found on both sides of and beneath the wall. Whiteware sherds, nail and windowpane fragments, and fragments from a glass tumbler manufactured prior to 1860 were recovered. The post-1864 manufacture date on the windowpane glass provides a TPQ of 1864. The wall is probably the remnants of an outbuilding that appears on the 1917 Price and Price map and on the 1952 DelDOT map. It is marked as a one story frame building on the latter map. Local residents visiting the site recall that it was used as a garage when it was extant.

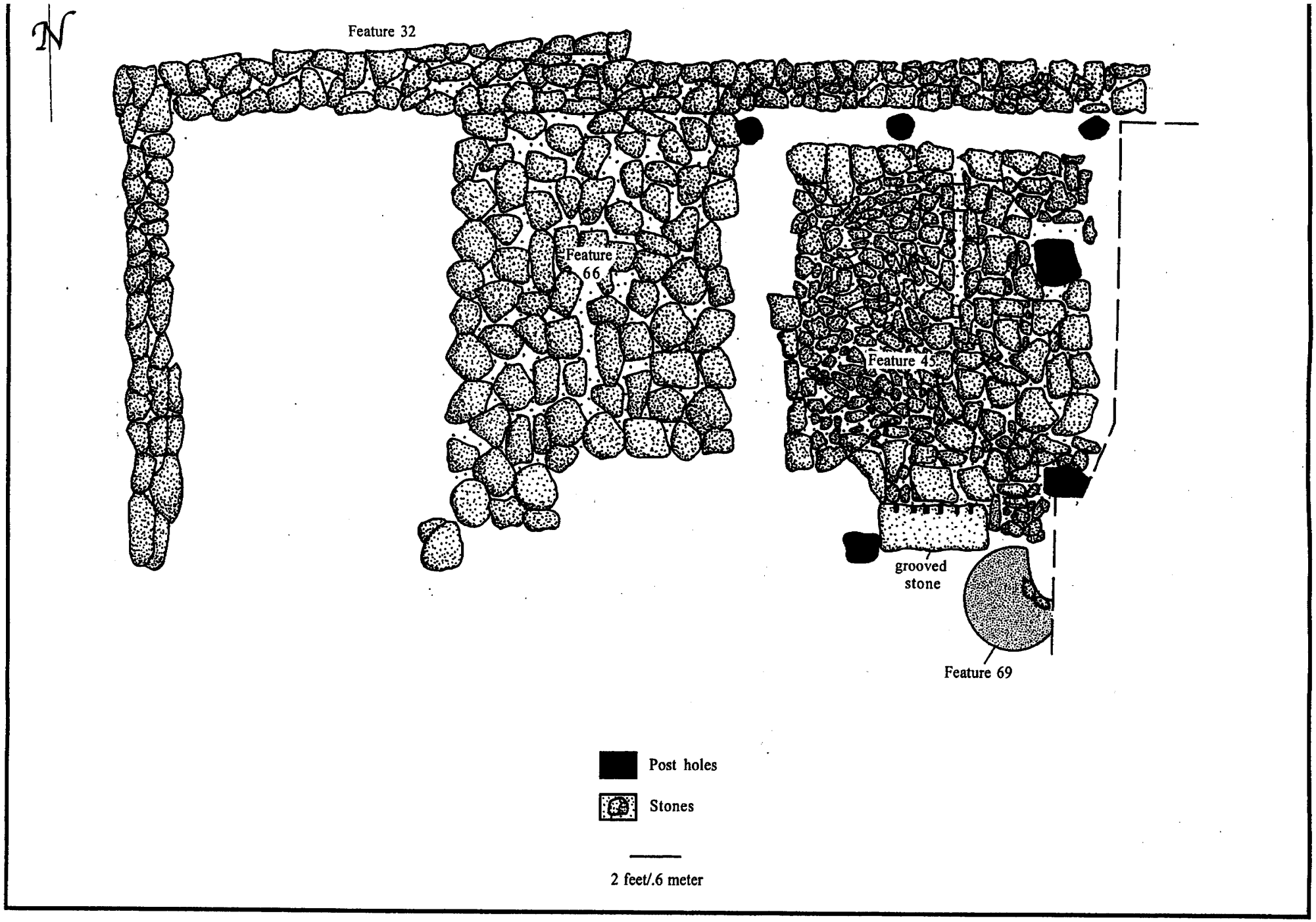


FIGURE 36
Plan View Showing Features 32, 45, 66, 69 and Post Holes

Features 64, 88, 89 - Possible animal pen

Feature 64 was the mortared stone remains of a small structure in the west field first identified in a five foot square excavation unit, but subsequently exposed through backhoe excavation. The area had been paved over by asphalt, above which a concrete pad had been constructed. The main wall ran east-west and was thirteen feet long and one foot wide. At either end, and seemingly associated, were the remains of two stone piers. Each pier was four feet long, north to south, and one foot wide. They were separated from the wall by a distance of four feet (Figure 37). The eastern pier was less than a foot west of Feature 33. The entire feature had been dug in through a buried A horizon and 0.3 feet into the subsoil. On either side of the wall was a 0.3 to 0.4 foot builder's trench. Several sherds from an undecorated octagonal ironstone platter, whiteware sherds, bone and oyster shell fragments, mortar, nail, metal, sheet glass fragments, and bottle glass fragments were recovered from the builder's trench. The TPQ from the builder's trench excavations, provided by a machine-made bottle glass fragment, is 1910. The feature and the area to its south were covered with a burned soil horizon over which lies a thin tan silt horizon. This feature may also be associated with features 88 and 89, remnants of stone walls or piers (see Figure 37 and Plate 50). Builder's trench excavations for these two features yielded redware, bone, oyster shell, windowpane glass, brass, brick, and sheet glass fragments. Post-1790 manufactured cut nails were also recovered. These stone segments may together comprise an agricultural feature, such as an animal pen. It is also possible that portions of this stone complex, Features 88 and 89, were already in place when Feature 64 was constructed, perhaps as an expansion or renovation of the former.

Features 71, 73, and 78

Features 71, 73, and 78 were triangular post molds forming a semi-circular pattern at the west end of Feature 64 and extending 0.4 feet into the subsoil. None of these features contained cultural material, although it is speculated that they were associated with the Feature 64 stone complex.

Feature 69 - Barrel feature

Feature 69 was a large, dark metal-lined circular stain measuring 2.6 feet in diameter and located 0.5 feet off the southeast corner of Feature 45 (see Figure 36 and Plate 51) in the south yard. It extended less than half a foot into the subsoil. The metal hoop was all that remained of what was probably an above ground wooden barrel. The bottom of the barrel had disintegrated, and the inner soil was comprised of a dark grayish brown (10YR 4/2) loam mixed with ash, cinders, and small gravel. A milk glass button, post-1864 windowpane glass, charred bone, brick, a fragment of glass tableware, and cut nails were recovered. The position of this feature in relation to Feature 45 suggests that they are either contemporaneous or that Feature 69 post-dates Feature 45. Similar such features have been found at the Thomas Williams Site (7NC-D-130) in New Castle County (Catts et al. 1990) and have been interpreted as devices for collecting rainwater. It is also possible that it was used for either liquid or dry storage.

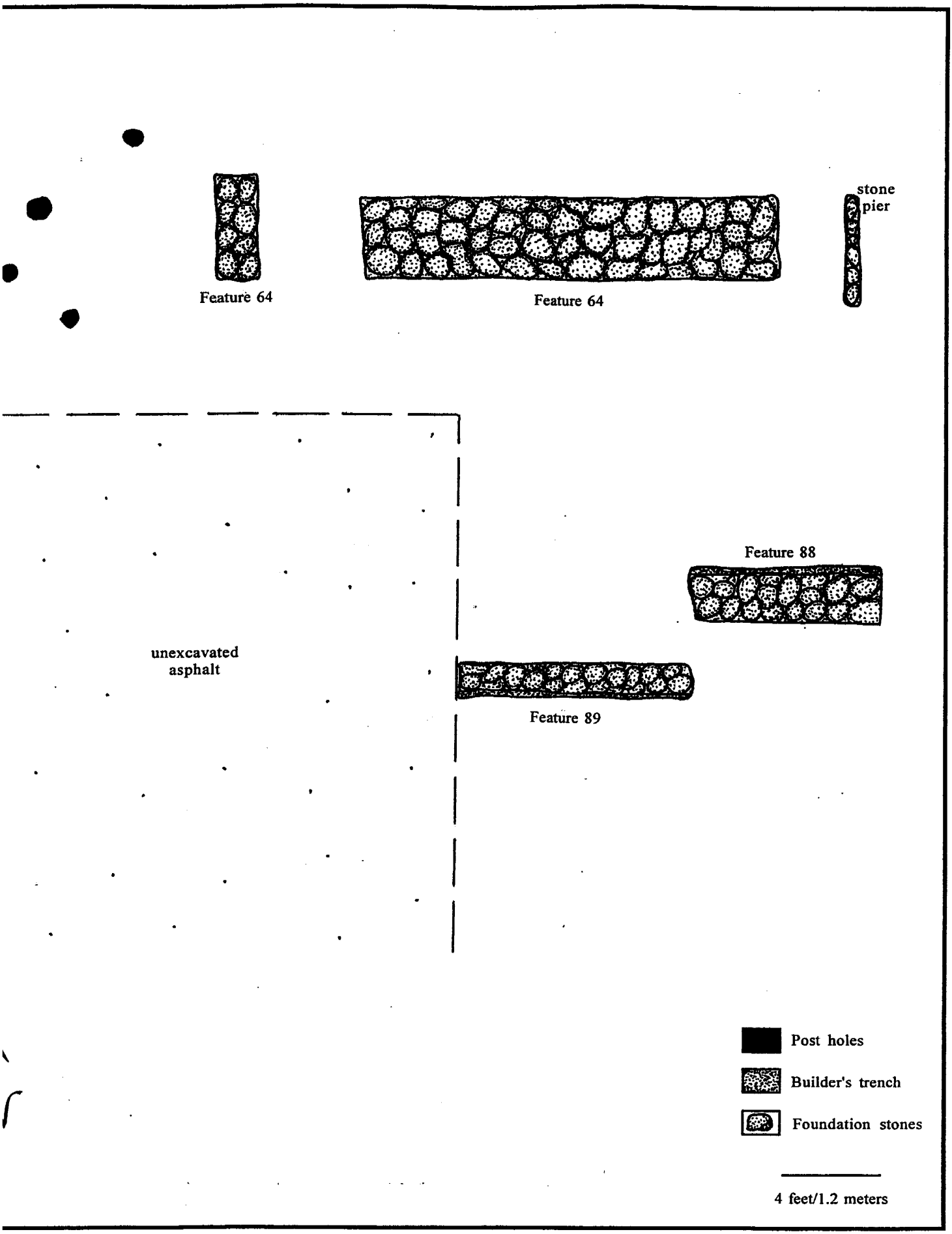


FIGURE 37
Plan View of Features 64, 88, and 89, Animal Pen and Piers

Features 18 and 19 - Postholes

An outbuilding is shown near the location of Features 18 and 19 (N130W80) on the 1917 Price and Price map and the 1952 DelDOT map that is probably Feature 47. These postholes may be related to this outbuilding or be part of former fence line, which appears on the 1917 map. Both features were rectangular postholes located about fifty feet northwest of the house foundation. They were spaced about half a foot apart and were identified at about two and a half feet below the surface beneath an Ap horizon, fill, and a buried plowzone. Feature 18 measured 1.1 feet across and extended 1.1 feet into the subsoil and consisted of yellowish brown (10YR 5/6) clay silt. Pre- and post-1864 windowpane fragments, cut (post-1790) and wire (post-1890) nails, whiteware and ironstone sherds, and glass fragments manufactured between 1880 and 1915 were recovered. This feature therefore post-dates 1890. Feature 19 measured 1.1 feet across and extended 1.7 feet into the subsoil. It produced glass manufactured between 1880 and 1930, metal, redware, whiteware, a post-1862 manufactured canning jar fragment, a barn spike, post-1790 and post-1890 nails, and oyster shell. This feature also post-dates 1890.