Storm Water Management Area and Portions of Road Alignments

Fifteen test units (TUs 19-33 and TUs 50 and 51) and thirteen shovel test pits (STPs A through I and 52 through 55) were excavated within this area which includes the land south of Rockland Road east of the Blue Ball Dairy barn and east of Alapocas Run (Figure 23). Within it is a portion of the proposed Augustine Cutoff alignment, a portion of the proposed Rockland Connector, and the Storm Water Management Area. Part of the Augustine Cutoff alignment was investigated in 1997 during work at the Blue Ball Tavern site (7NC-B-22/N-542) by TAA and the original ground surface was found to be covered in three to five feet of fill. Most of the area occupied a high terrace overlooking Alapocas Run to the east; the terrace was overgrown in chest high or taller grasses (Figure 24). This is the terrace on which the Blue Ball Dairy complex stood. Immediately to the east of the dairy barn was a wooded patch of land where large pieces of cement, appliances, soil, logs and dead trees had been dumped. This survey area also included the slope between the terrace and Alapocas Run, portions of the floodplain, and two low lying terraces adjacent to the floodplain. The remains of two stone piers, one of which was *in situ* , and very large granite boulders were found on the higher of these terraces and a cluster of cherry trees was located on the lower.

The Price and Price 1917 Map of the Nemours Estate (Figure 25) shows the location of several structures that would have been associated with the Blue Ball Dairy (the Du Pont Dairy) operation. These are all located on the northwest side of the Dairy Barn. Labeled structures include a barn, a tool shed, a sheep shed, and a cow shed; several unlabeled structures also are shown. A lane leading from Rockland Road to the rear of the Dairy Barn can still be found.

The Blue Ball Dairy appears on a circa 1930s aerial photo of the "Blue Ball Intersection of Foulk and Rockland Roads" (Aero Service 88.8.214). Eight structures appear to the west of the dairy in the same configuration shown on the 1917 Price and Price map of the A. I. Du Pont de Nemours estate. The farm entrance from Rockland Road shown in the photo is still partially in use. An unidentified square feature is located in the field to it east. What appears to be a fence line was visible along the west side of the farm buildings. A farm road that began at the west side of the Blue Ball Dairy is shown leading toward Alapocos Run. No structures are evident along Alapocas Run. In the area east and northeast of the dairy barn, the still extant milk house was visible on the photo, as was the Blue Ball Tavern building. Three other structures were shown in the vicinity of the tavern site. One of these is probably a dairy building that was located in recent excavations at the tavern site (Wholey et al. n. d.). Another is a smaller building on the north side of the dairy building. The third structure is very long and appears to be comprised of three connected portions. Local dairyman James Meany, at the High Point Dairy, believed that the long building west of the tavern building had been a chicken house. This may be related to a long stone wall found extending west of the tavern site.

This wall, oriented in an east-west direction, was located west of the lane (Figure 26). The intact portion of the wall is about 70 feet long, although the end portions are not intact, and it was one to two feet high with a concrete cap. It may have been part of an enclosure or it may have separated the outbuildings from the lane but, because of the concrete top, it was not thought to be part of a structure. The top of the wall is broken up in places. Between the wall and the lane, several concrete or stone and concrete chunks were noted, as well as a lamp post that had been dumped among the debris.

TUs 26, 32 and 33 and STPs F-I were excavated west of the stone wall in an area where remains of the structures indicated on the 1917 Price and Price map were expected to be found. No structural remains or intact deposits were discovered in these units. Soils from

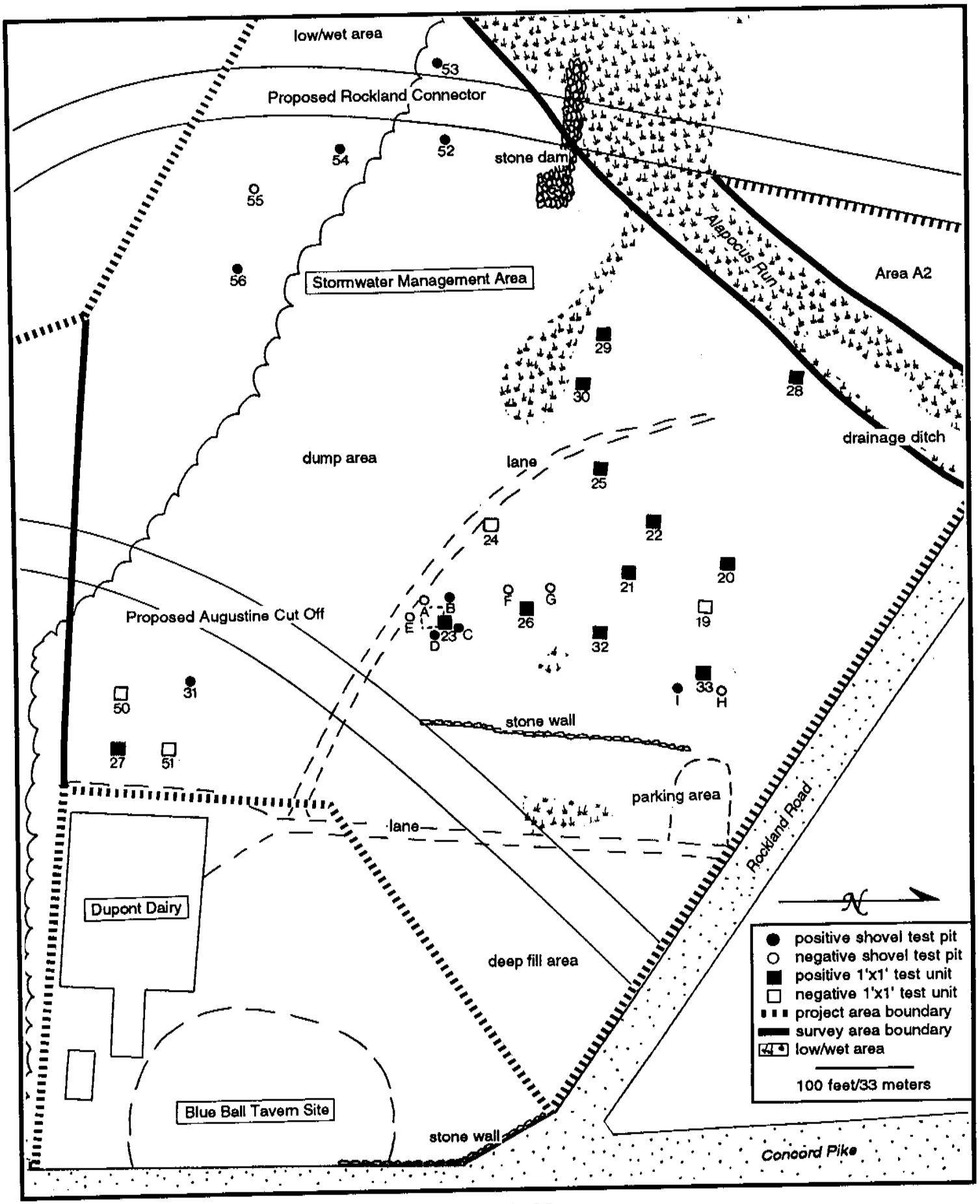


FIGURE 23
Portion of Project Map Showing Excavations Within the Stormwater Management Area and Proposed Roadways

FIGURE 24
Storm Water Management Area
Facing West, Looking Towards Alapocus Run

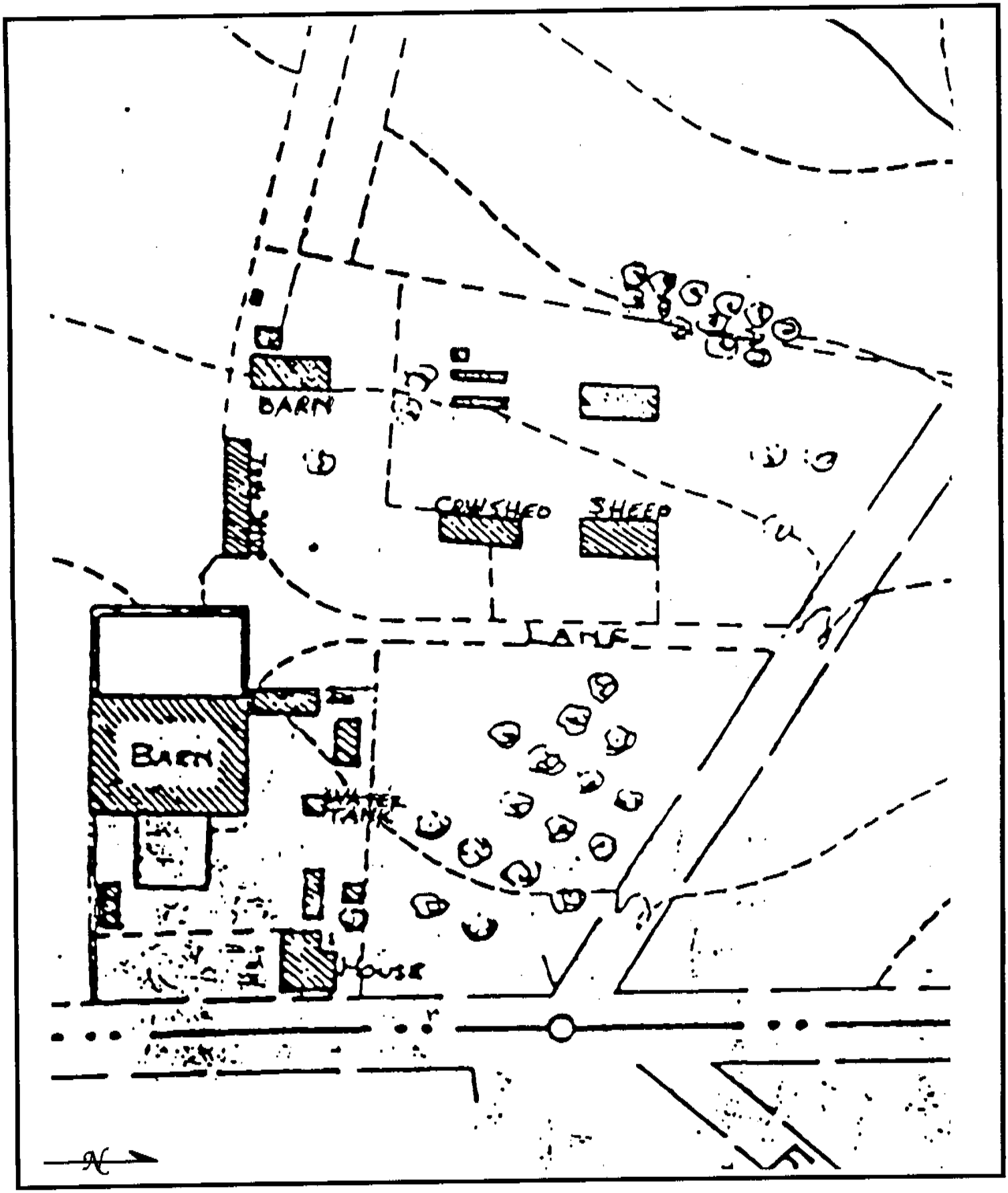


FIGURE 25
Portion of 1917 Price and Price Map of Nemours Showing Du Pont Dairy

FIGURE 26
Storm Water Management Area
Low Stone Wall Behind Blue Ball Dairy Complex

these excavations consisted of a one half foot thick plowed soil overlying the B horizon, except in STP I, where a half foot of fill overlay the plowzone. The plowzone was a yellowish brown [10YR 5/4] compact sandy loam and the B horizon was a strong brown [7.5YR 5/8] compact saprolitic silty clay. Artifacts recovered from this location include a post-1910 bottle glass fragment, a post-1790 cut nail fragment, plastic, asphalt/macadam fragments, a metal rivet, mortar fragments, a clay pigeon fragment, and a chalcedony flake. Two refined redware fragments were recovered from the fill in STP I.

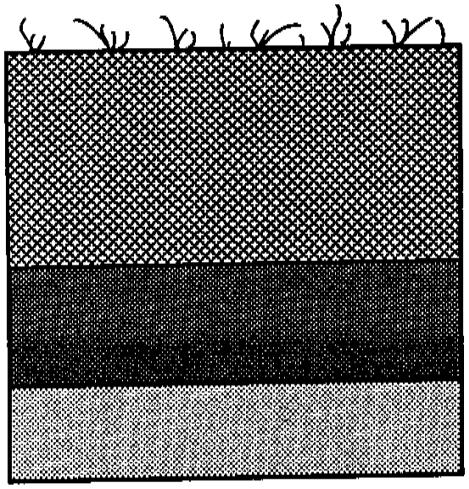
TUs 19 through 22 were excavated along and near the edge of the high terrace formation overlooking Alapocas Run on which the Blue Ball complex was built. The profiles showed extensive erosion, with only a thin Ao horizon overlying the B horizon. Artifacts recovered include a whiteware sherd (1820-1900), post-1940 bottle glass fragments, five quartz flakes, a redware sherd, an earthenware sherd, a post-1830 cut nail, and brick fragments.

TUs 25 and 28, 29 and 30 were excavated in the northwestern part of the Storm Water Management area, toward Alapocas Run. TUs 25, 29, and 30 exhibited a one half foot thick plowzone over the B horizon. The Ap horizon was a dark brown to brown [10YR 3/3-5/3] loam to clay loam; the B horizon was a yellowish brown [10YR 5/6] silty clay. TU 25 was excavated on the higher of two low terraces tested. Two redware fragments, a post-1864 windowpane fragment, and brick fragments were recovered here. TUs 28, 29 and 30 were excavated on the lower terrace. TU 28 exhibited a one half foot plow zone over a C horizon overlying the B horizon. The C horizon was a strong brown [7.5YR 5/6] clay sand and yielded no artifacts. These excavations produced three whiteware sherds (1820-1900), 19th century and modern bottle glass fragments, brick and mortar fragments, a coarse stoneware tile fragment, post-1864 windowpane fragments, unidentified nail fragments, and a jasper flake. The flake came from TU 29.

TUs 27, 50 and 51, and STP 31 were excavated in an area near west of the lane near where it meets the Dairy Barn. A slab of asphalt had been laid at the south end of the existing chain link fence along the lane. Each of these excavations revealed an one half foot thick plowzone (Apb) that had been buried under 0.5-1.0 feet of fill. The fill in TU 27 was a heavily mottled white and orange clay. The fill in TUs 50 and 51 and STP 31 appears to have been plowed and was a dark yellowish brown to brownish yellow [10YR 4/6-6/6] sandy clay. The B horizon in these units had also been plowed into to a depth of about 0.2 feet (Figure 27). The Apb in TU 51 yielded a high concentration (103 pieces) of post-1864 windowpane fragments, brick fragments, and pieces of tar paper roofing. Other artifacts recovered from the Apb in this unit included post-1890 wire roofing nails, two pieces of redware, and a whiteware sherd (1820-1900+). The high concentration of architectural items may be associated with the destruction of one of the structures on the 1917 Price and Price map. The structure nearest these excavations was labeled as a tool shed on that map. Whiteware and redware sherds and post-1910 bottle glass fragments were recovered from TUs 27 and 50 and from STP 31. Most of the land extending to the west of these units up to the creek has been used as a dumping ground for soil, trees and brush, appliances, old fencing, pieces of concrete and sewer pipe. The contours are irregular, indicating considerable disturbance; no excavations were conducted in this area. A low, capped stone wall oriented in an east-west direction was found in this area. At its west end, the wall turned north at an approximate 90 degree angle and headed toward Rockland Road.

Test Units 23 and 24 were excavated just north of an overgrown track road that leads west across the approximate center of the project area. The corner of a stone foundation was discovered in TU 23, northwest of the Dairy Barn (Figure 28). A narrow builder's trench was evident next to the foundation wall. The unit was excavated along the side of a large

Test Unit 27
East Wall Profile

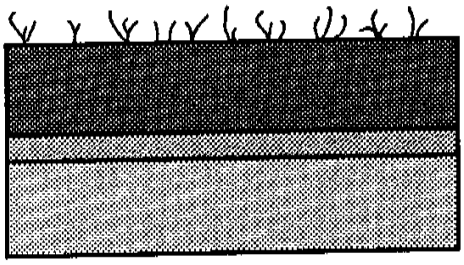


Light gray and orange mottled heavy clay fill

Apb Horizon - [2.5Y 4/2] dark grayish brown loamy sand

B Horizon - [10YR 5/6] yellowish brown clay loam

Test Unit 28
North Wall Profile

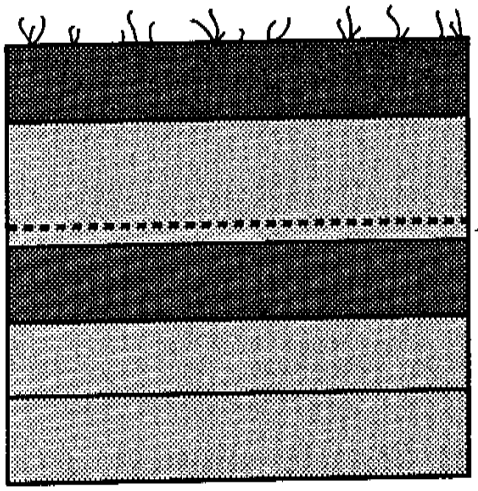


Ao/Ap Horizon- [10YR 3/3] dark brown clay loam

C Horizon - [7.5YR 5/6] strong brown clay sand

B Horizon - [10YR 5/6] yellowish brown silty clay

Test Unit 50
South Wall Profile



Ao Horizon - [10YR 3/3] dark brown coarse sandy loam

Plowed fill - [10YR 6/6] brownish yellow sandy clay

—— coarse sandy clay fill

Apb Horizon - [10YR 3/2] very dark grayish brown sandy loam

Plowed B Horizon - [10YR 5/4] yellowish brown sandy silt

B Horizon - [10YR 5/8] yellowish brown sandy silt

1 foot

FIGURE 27
Soil Profiles from Storm Water Management Area

FIGURE 28
Storm Water Management Area
Test Unit 23: Stone Foundation Remains behind Blue Ball Dairy Complex

mound of clinkers measuring approximately 24 feet square. STPs A through E were excavated around the unit, outside the clinkers, to determine the approximate size of the foundation and to locate artifacts related to the structure's function. The soils showed an Ao or shallow Ap to a depth of 0.5 feet overlying the B horizon. Artifacts recovered from these test units and shovel test pits included a post-1940 bottle glass fragment, a pre-1864 windowpane fragment, a contact mold bottle glass fragment (1810-1880), mortar fragments, leather fragments (including a glove finger), and some plastic rope. Artifacts from the clinkers capping the foundation include 1880-1915 bottle glass fragments and post-1890 wire roofing nails. The foundation in TU 23 is hypothesized to be one of the outbuildings shown on the 1917 Price and Price map, but which foundation cannot be determined with certainty.

Two stone and concrete piers were found near the overgrown road. One of these had been pushed over and possibly moved, as it was in an area of dumping; the other was still in its original position (Figure 29). The pier was a rectangular concrete block about one foot by two feet, faced with small pieces of cut stone on its west side. It stood about two feet above the surface, and shovel testing revealed that it extended 0.3 feet below ground. Its purpose is unknown, although it may have functioned as a base for a metal or wooden gate crossing this portion of the road.

About 75 feet west of the area of the piers the ground drops off sharply, and the resulting embankment has large pieces of square and rectangular shaped stone on its surface. These pieces are large and possibly have been shaped. An 1860 Lake and Beers map shows 'Stone Quarries' marked south of this location off to the west side of Concord Pike (see Figure 7). It is not certain, however, that the two are associated.

TU 24 was excavated 100 feet west of TU 23, near the *in situ* pier. TU 24 produced ironstone (1840-1900), whiteware (1820-1900), post-1934 and 1880-1930 bottle glass fragments. The units revealed a 0.5 foot thick Ao/Ap horizon overlying the B horizon. All artifacts were from the Ao/Ap.

STPs 52-56 were excavated in the floodplain of Alapocas Run and on two low terraces adjacent to the floodplain. They yielded a small quantity of oyster shell fragments, putty/caulking fragments, modern bottle glass, brick fragments, and a soda/lime windowpane fragment. The soils in these test pits indicate that the area is often wet, as the subsoil is slightly gleyed, and two alluvially deposited silt layers are visible in STP 52, indicating episodes of flooding.

No testing was done in the field north of the Dairy Barn and east of the lane, where what appears to be an orchard is shown on the 1917 Price and Price map, as this is the area where fill in excess of three feet was discovered during the Blue Ball Tavern excavations. Exploratory backhoe trenches excavated in the Blue Ball Tavern mitigation revealed that this fill overlay a plowzone that yielded artifacts from as late as the 1950s.

The area including the stone foundation (TU 23), the stone and concrete pier (TU 24), the low stone wall, and the architectural debris possibly associated with one of the foundations on the 1917 map (TUs 27 and 50 and STP 31) are all considered to be part of the Du Pont Dairy Site (7NC-B-50/N-4048).

FIGURE 29
Storm Water Management Area
Looking at *In Situ* Stone Pier

It is not likely that further archaeological investigations on the outbuilding complex behind the Blue Ball Dairy barn would be productive, since relatively few artifacts were recovered. As these structures were agricultural, and appear to have been specifically used for housing and maintaining livestock, archeological investigations would provide little information not already available in the documentary record. The primary type of information that could be gained would be information on construction and placement of the outbuildings. Construction monitoring might be the most cost effective way to find and record this type of information. Other investigations might better be focused on obtaining more detailed documentary records on the Blue Ball Dairy operation. The seven prehistoric artifacts recovered were widely scattered and do not constitute a site.