Feature 43

Feature 43 is a Cooling System for the Buffalo Blower (Figure 102). The system consists of a concrete pad, two wood tanks, and a power backboard. The concrete pad is 20 ft north-south by 10 ft east-west and is 6 inches thick. The tanks are made of wood and are 8 ft in diameter and 13 ft in height. The open top tanks are constructed of 5 inch wide by 1 1/2 inch thick wood slats. The edges of the slats are beveled allowing for the circular design. Round bar bands circle the tank forming a compressing ring clamp. Each end of the round bar is threaded and placed in a bracket that can be tightened, compressing and securing the slats. At 52 inches (132.1 cm) from the bottom of the tank are 24 x 24 inch openings (vents). Wood louvers set at 45 degrees and spaced 2 inches apart are secured in the openings. Attached to the outside of the tank around the openings are triangular metal basins. The top of the basin is open into the tank and the bottom is attached flush to the tank. The water level in the tank was controlled by a metal ball float. Attached to the top of the tank is a four bladed fan and electric motor. Embossed on a metal placard on the tanks is Johnson Tank & Tower Co., Los Angeles and Oakland, California, Tradition of Quality Since 1920. The two tanks are connected by a 6-inch pipe manifold that has been wrapped with insulation. The power backboard is 9 ft east-west and 90 inches (2.3 m) in height and along the north side of the concrete pad. It is constructed of 4 inch and 1 1/2 inch channel iron. Attached to the backboard are 12 various sized switch boxes. No artifacts were found near the feature.

Feature 44

Feature 44 is a pump station associated with the cooling system (Feature 43) (Figure 103). The feature consists of a concrete pad supporting two pumps and electric motors and a pipe manifold. The concrete pad is 12 ft east-west by 9 ft north-south. The pumps and electric motors are constructed as two units, attached to 36 x 16 x 3 inch metal frames, and elevated on a 7-inch high concrete pedestal. The centrifugal pumps are Weiman Model 707 with a 20-hp Lincoln 230/460 volt electric motor. The pump and motor unit was manufactured by Valley Pump Group, Conway Arkansas and distributed by Arizona Pump and Supply, Phoenix, Arizona. Connecting the pumps is a 6 inch pipe manifold with 6 inch gate valves and 4 inch check valves. It has been wrapped with insulating material and electric heating cord. Artifacts are pieces of insulation and concrete fragments.

Feature 45

Feature 45 is a concrete foundation for a Buffalo Blower (Figure 104). The feature consists of an L-shaped foundation and three concrete blocks. Gravel used in the concrete was probably obtained locally as it consists of various types and sized lithic material. The foundation is 24 ft north-south with the northern 13 ft 6 inch (4.1 m) being 12 ft east-west and the southern 10 ft 6 inches (3.2 m) being 18 ft east-west. A 164 inch (4.2 m) east-west by 42 inch north-south rust and oil stained impression from the blower assembly is on the southern end of the foundation. The concrete blocks north of the foundation are of various sizes and once supported a roof structure (see Feature 42). The east block is 40 x 24 inches, the center block is 18 x 18 inches, and the west bock is 24 x 24 inches.

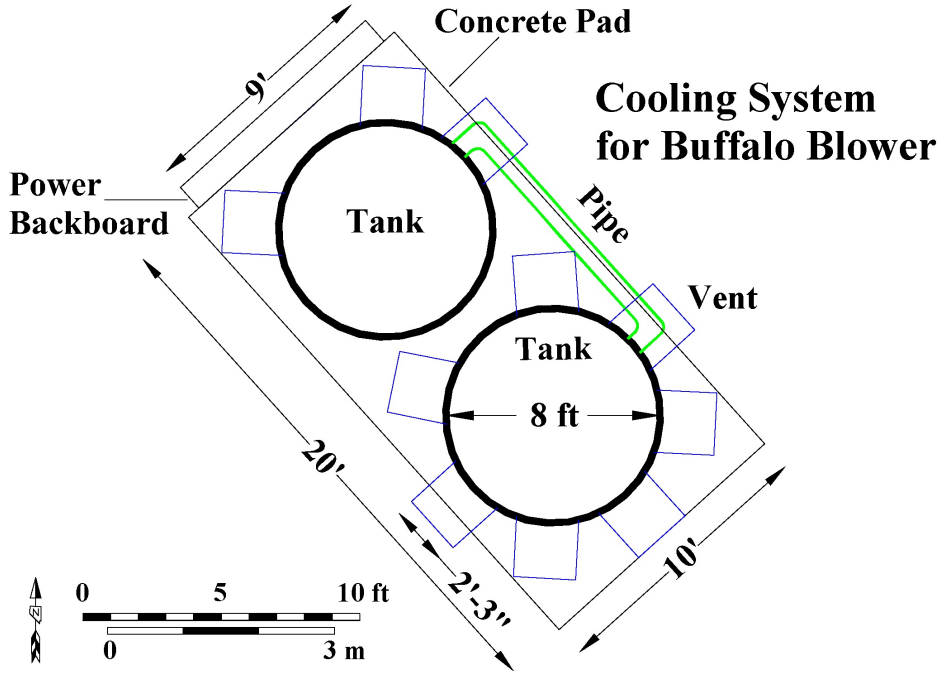

Figure 102. Plan map and photograph of Feature 43, U12t Tunnel, view northwest (2007).

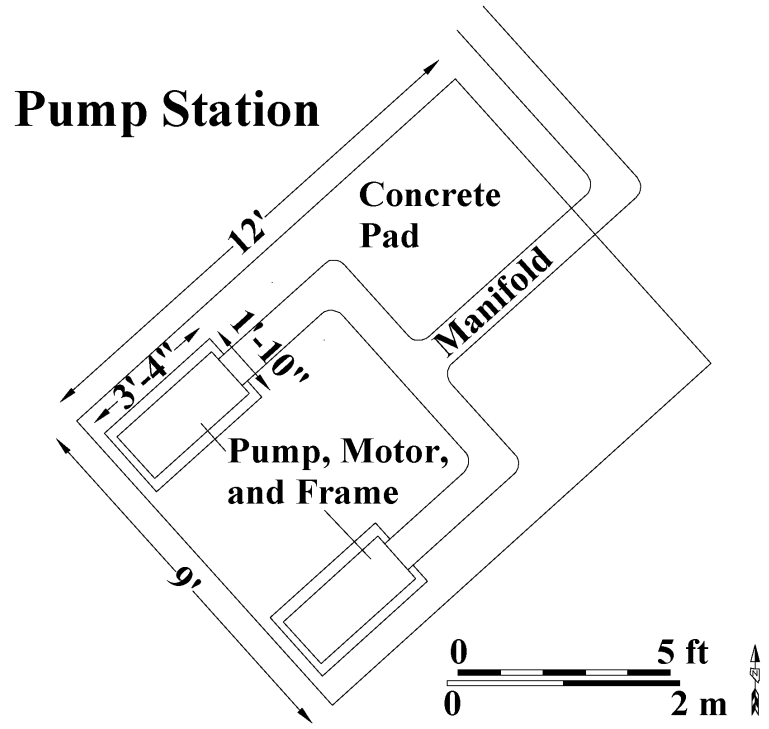

Figure 103. Plan map and photograph of Feature 44, U12t Tunnel, view north (2007).

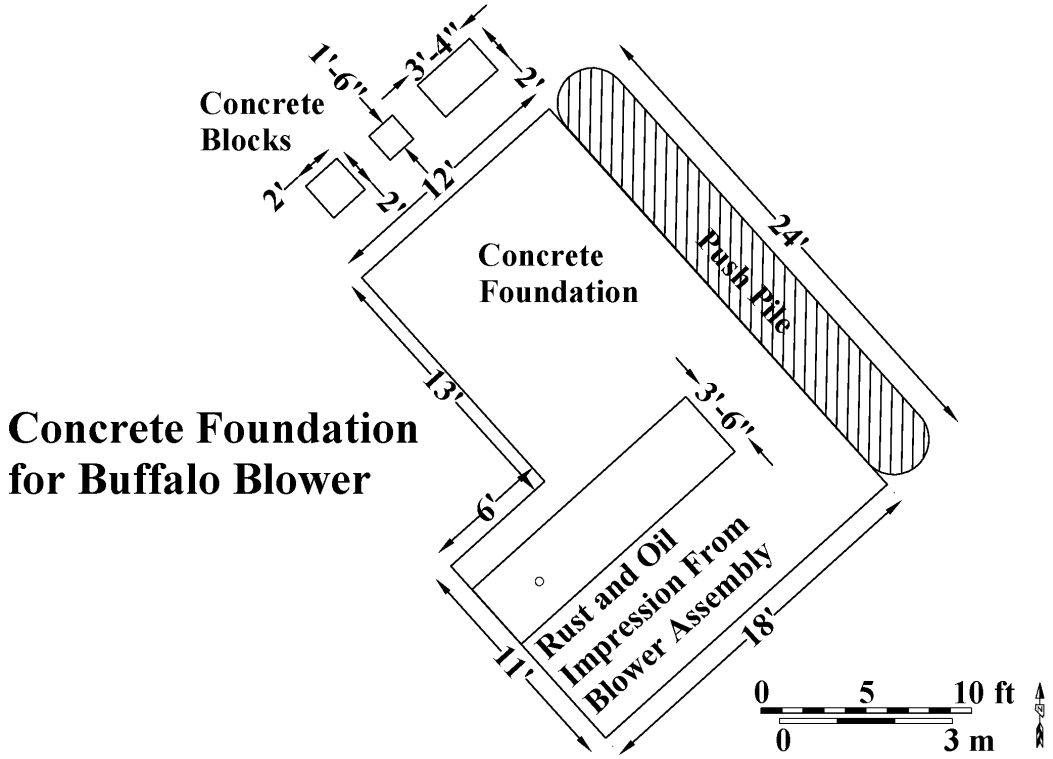

Figure 104. Plan map and photograph of Feature 45, U12t Tunnel, view northwest (2007).

Protruding through the surface of each block are 5/8 inch bolts. Artifacts near the feature are high pressure hose, bolts, metal plates, pipe, rebar, chain, insulated cable, three small crushed electrical panels. The artifacts are within a dirt push pile along the northwest side of the foundation.

Feature 46

Feature 46 is a concrete pad/vent raise (Figure 105). The pad is 23 ft north-south by 15 ft east-west. Extending north-south across the pad 48 inches from the east and west edges are two (one on each side) 5 inch wide channels. Metal pipe once protruded through the surface of the pad but has now been cut flush with the concrete. Centered on the pad is recently poured concrete. It extends 6 inches above the existing pad and is 180 inch (4.6 m) north-south by 86 inch (2.2 m) east-west. A 6 inch metal band forms the perimeter of the top of the new concrete. The concrete is the top of a plug, poured from the surface, to seal the U12t Tunnel that is directly below this location. Artifacts near the feature are two sandbags.

Feature 47

Feature 47 is a Comp Slab (Figure 106). The concrete slab (pad) is roughly L-shaped and is 35 ft east-west by 25 ft north-south with a 4 ft north-south by 6 ft east-west extension on the northeast corner. A fiberglass porta-potty is on the extension. Faint rust stains and bolts cut flush with the surface suggest equipment was attached to the pad. Also, 5 inch diameter conduit containing insulated cable has been cut flush with the surface near the northeast corner of the pad. Artifacts near the feature are milled lumber, channel iron, and pipe.

Feature 48

Feature 48 is Electrical Substation 12-8 (Figure 107). The feature consists of a chain-link fence surrounding a concrete pad, electrical transformers and switches, and a power backboard. The 8 ft tall chain-link fence is 30 x 30 ft and topped with three strands of barbed wire. The fence is locked and no entry was attempted. The concrete pad is approximately 24 ft east-west by 26 ft north-south. On the pad is a series of transformers and switches in an L-shaped area approximately 19 x 14 ft (5.8 x 4.3 m - long sides). Outside the fence at the northwest corner is a 7 ft long by 6 ft tall power backboard. On the backboard are six switch boxes and two automatic timers. Artifacts near the feature are a wood step ladder and insulated cable.

Feature 49

Feature 49 is the Emergency Generator and Transfer Switch Compound (Figure 108). The feature consists of a fenced area surrounding a concrete pad with electrical panels and a diesel fuel tank. The fenced area is irregular shaped with an 8 ft tall chain-link fence. The fence extends from the northwest corner 34 ft (10.4 m) east and turns 90 degrees and extends 18 ft south. The fence turns 45 degrees southwest and extends 18 ft and turns west at 45 degrees and extends 19 ft (5.8 m) to the southwest corner. The fence extends 39 ft (11.9 m) to the northwest corner. Two 9 ft wide gates are

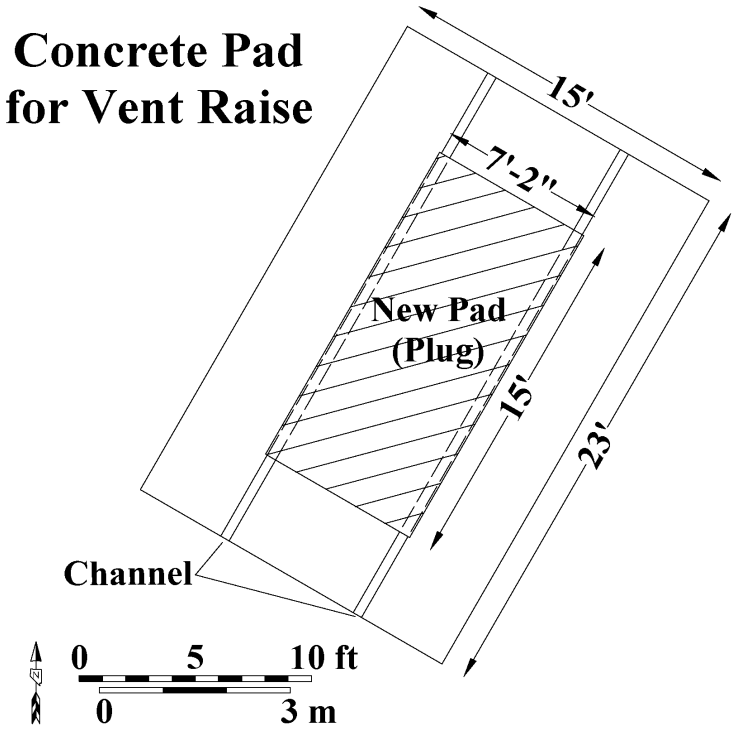

Figure 105. Plan map and photograph of Feature 46, U12t tunnel, view northwest (2007).

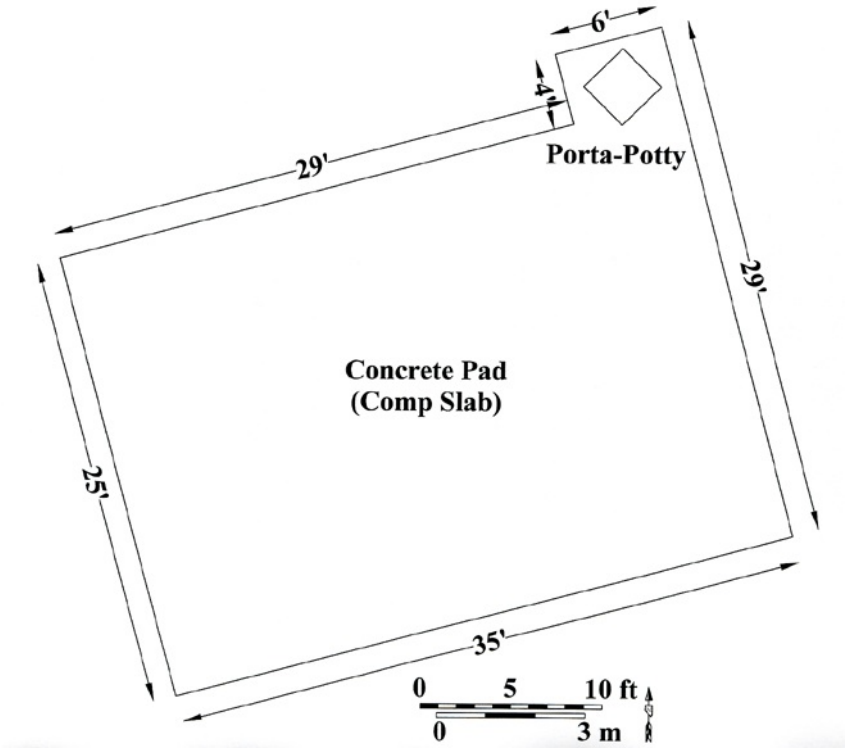

Figure 106. Plan map and photograph of Feature 47, U12t Tunnel, view northwest (2007).

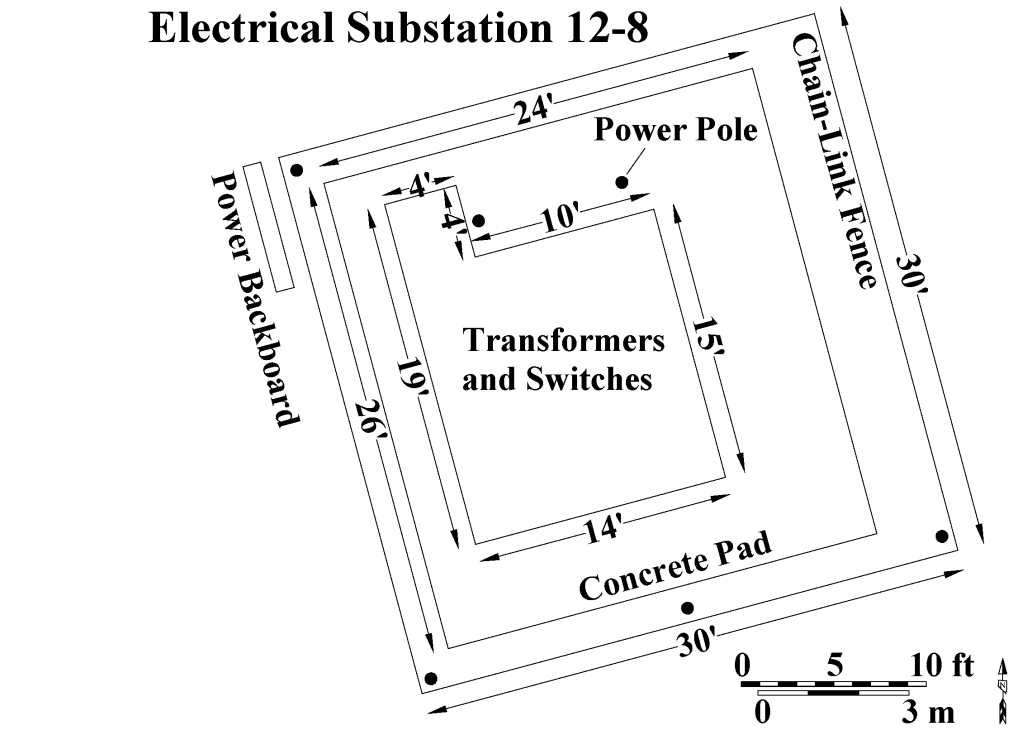

Figure 107. Plan map and photograph of Feature 48, U12t Tunnel, view north (2007).

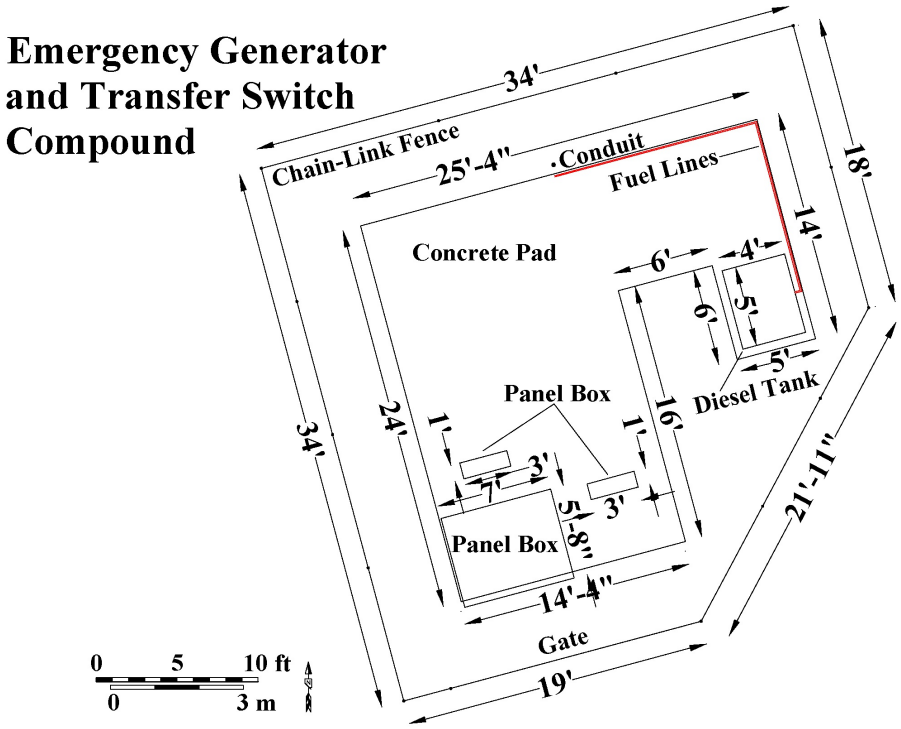

Figure 108. Plan map and photograph of Feature 49, U12t Tunnel, view northeast (2007).

on the south side of the fence at the southwest corner. Inside the fenced area is an irregular shaped concrete pad. The long dimensions of the pad are 25 ft 4 inches east-west by 24 ft north-south. Along the south side of the pad is a 7 ft wide by 68 inch (1.7 m) tall electrical panel box that extends over the edge of the concrete pad by 3 inches. North of this panel box (2 ft) is a 36 inch wide by 30 inch tall panel box. East of the large panel is a second 36 inch wide by 30 inch tall electrical panel box. On the east edge of the pad is a 5 ft diameter by 4 ft long diesel fuel tank. Attached to the tank is a Coker Model F4432 transfer pump that supplied fuel though two 1 inch pipes to a generator that was located (now removed) near the center of the north side of the pad. The location of the generator is indicated by oil and rust stains, the end of the fuel lines from the pump, and electrical conduit that is present on the north side of the pad. Artifacts are a 12 lb sledge hammer and a single bitted axe with DOE stamped into the handle.

Feature 50

Feature 50 is a high voltage supply conduit (Figure 109). The feature is a 3 inch galvanized electrical conduit that is 1,050 ft (320 m) in length. It extends north from electrical substation (12-8-47-1, Feature 21) on the Portal Terrace up slope to the Ventilation Terrace, turns east and extends along the south edge of the Ventilation Terrace, turns south and down the slope to the east end of the Portal Terrace and ends at the transformer station (Feature 39).

Water Supply Terrace

The Water Supply Terrace contains four tanks for the storage of water used at the U12t Tunnel (Figure 54). Water was hauled to the location and then piped down slope (gravity feed) producing the needed pressure for running hydraulic equipment (William Flangas 2007, personal communication).

Feature 51

Feature 51 is four metal water tanks that hold a total of 61,000 gallons (Figure 110). Each tank is 35 ft in length, 9 ft in diameter, and mounted horizontally to a metal frame (skid). The tanks are metal and constructed from expended line-of-sight pipe. The line-of-sight pipe is constructed of metal plates welded together and strengthened by 4 inch metal exterior ribs spaced 58 inches (147.3 cm) apart. Access is through a 24 inch diameter covered hatch centered on the tank top. The tanks are connected by a 6 inch pipe manifold that has been covered with a insulating material. The pipe reduces to 4 inches and extends underground to the U12t Tunnel. Artifacts near the tanks are milled lumber, galvanized metal, 3 inch rubber hose, electrical wire, and a 10 ft aluminum ladder.

Pond Area

The Pond Area contains at least six sediment ponds for the collection of water and sediments from the U12t Tunnel, two concrete pads, and one electrical panel backboard (Figure 54). Entry into the Pond Area for in-depth recording and mapping was not attempted because much of the area is fenced

Figure 109. Photograph of Feature 50, high voltage supply conduit, U12t Tunnel, view southeast (2007).

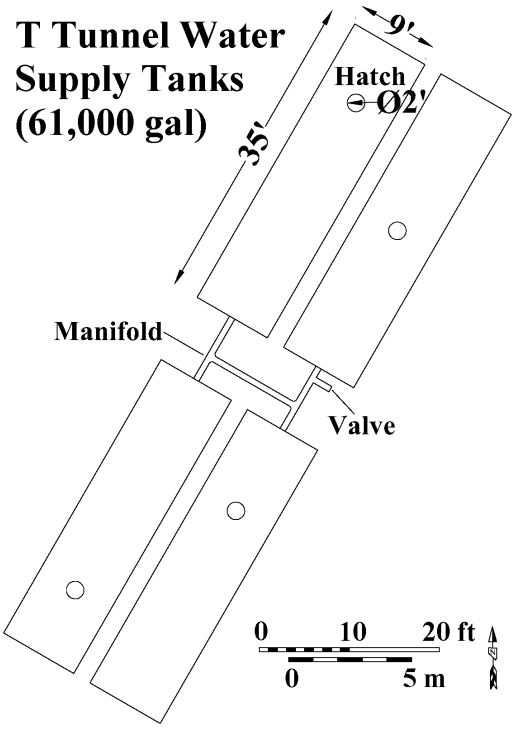

Figure 110. Plan map and photograph of Feature 51, U12t Tunnel, view southwest (2007).

with KEEP OUT signage. However, the estimated size of the six ponds range from 0.07 to 0.7 acres. The ponds are dug in a drainage with excavated soil forming the rims of the features. Fiberglass pipe (visible on the surface) transported water from the tunnel to the ponds. East of the fenced area is a dirt and gravel pad on which three features are accessible by a dirt road and through a locked gate. The three features were recorded.

Feature 52

Feature 52 is a concrete foundation (Figure 111). The foundation is 30 ft north-south by 20 ft east-west and is up to 16 inches thick. The surface of the concrete has been brushed leaving a rough texture and 5/8 inch bolts around the top perimeter edge have been cut flush with the surface. Artifacts near the feature are wire, glass, and milled lumber.

Feature 53

Feature 53 is a concrete foundation (Figure 112). The foundation is 49 ft (14.6 m) north-south by 32 ft (9.6 m) east-west and 3 inches thick. A set of parallel metal rails (two rails 36 inches apart) 68 inches from the west edge, extend the length of the foundation. The space between the rails is filled with sand and gravel (no concrete). A third metal rail, extending the length of the foundation, is 15 ft from the west edge. Adjacent to and spaced along the third rail are seven pairs of I beam embedded in the concrete and cut flush with the surface of the foundation. Visual inspection of cracks in the surface of the concrete revealed that no reinforcement was used in its construction. Artifacts near the feature are 4 x 6 and 6 x 6 milled lumber and sand bags.

Feature 54

Feature 54 is an electrical panel backboard (Figure 113). The frame is 80 inches wide and 80 inches in height and constructed of 4 inch channel iron. The frame is set in a 4 x 8 ft concrete pad. On the frame are eleven switch boxes and on the south end of the pad is a transformer. No artifacts were found near the feature.

U12t Tunnel Mesa Trailer Park

The U12t Tunnel Mesa Trailer Park is on top and near the southwest edge of Aqueduct Mesa (Figure 55). Trailers with various types of recording instruments were placed at the location for use during testing at U12t Tunnel. Nineteen features were recorded and include a concrete foundation, concrete pads and blocks, electrical equipment, monitoring equipment, a trench, core holes, a loading ramp, and drill holes.

Feature 55

Feature 55 is a loading ramp (Figure 114). The west vertical face of the ramp is 19 ft wide and 32 inches in height and constructed of horizontal 2 x 12 inch milled lumber planks attached to vertical

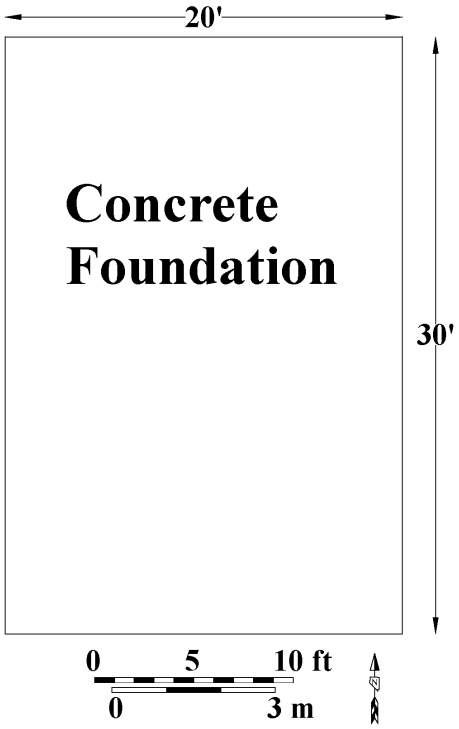

Figure 111. Plan map and photograph of Feature 52, U12t Tunnel, view west (2007).

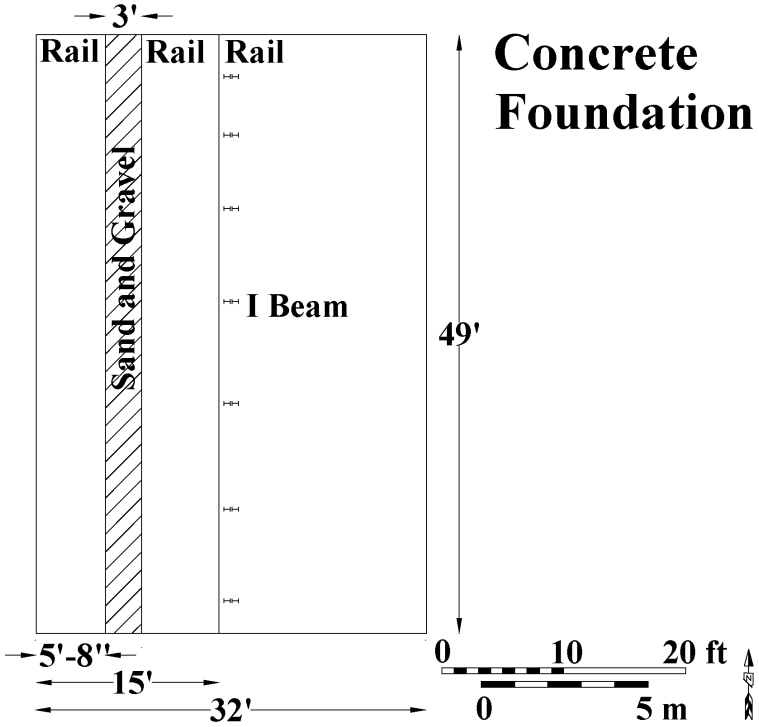

Figure 112. Plan map and photograph of Feature 53, U12t Tunnel, view south (2007).

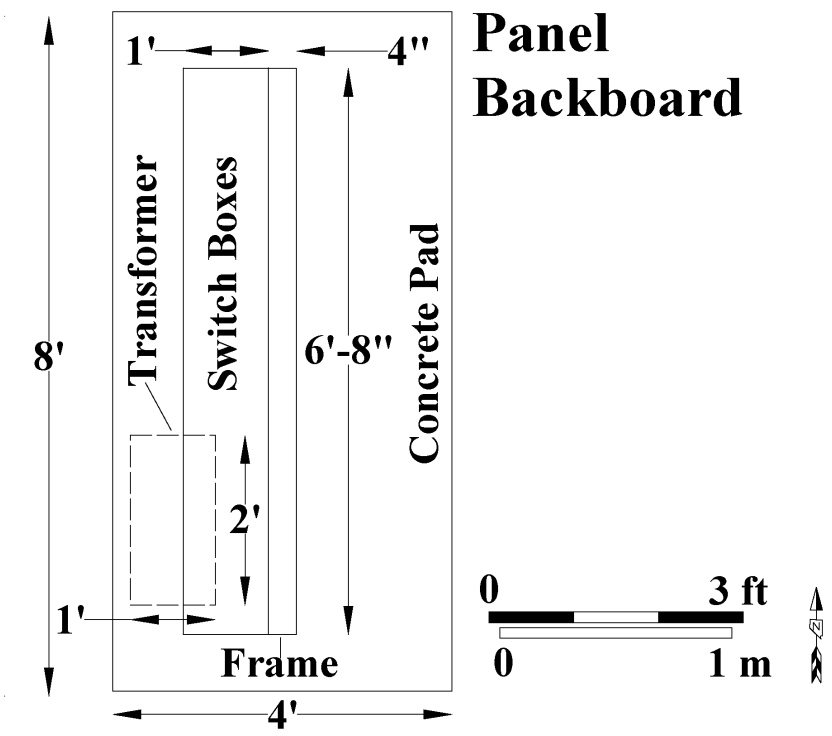

Figure 113. Plan map and photograph of Feature 54, U12t Tunnel, view east (2007).

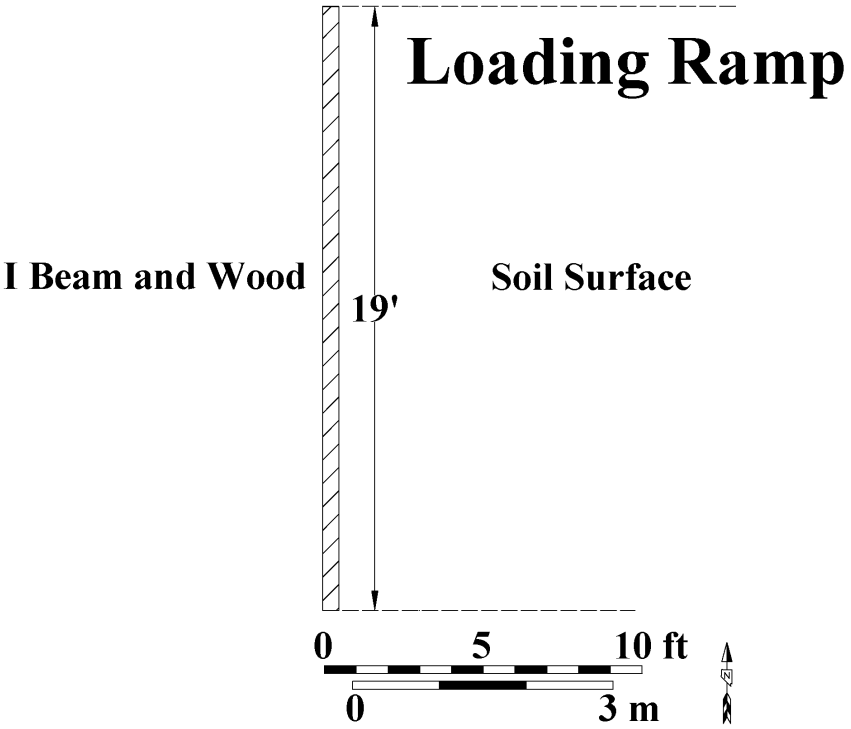

Figure 114. Plan map and photograph of Feature 55, U12t Tunnel, view east (2007).

6 inch metal I beam post. Behind the planks, soil forms the slope and surface of the ramp that extends approximately 10 ft to the east.

Feature 56

Feature 56 is a rough-poured concrete pad (Figure 115). It measures 2 x 2 ft with a 6-inch diameter metal pipe cut flush with the surface. It is 30 ft south of Feature 57. The concrete was poured without the use of forms, was not leveled, and the surface was left unfinished.

Feature 57

Feature 57 is a rough-poured concrete pad (Figure 116). It measures approximately 11 x 7 ft with a 6-inch diameter pipe cut flush with the surface. The concrete was poured without the use of forms, was not leveled, the surface was left unfinished, and is covered with soil and vegetation.

Feature 58

Feature 58 is a metal and concrete underground junction box (Figure 117). It consists of a 48 x 42 inch concrete box set flush with the surface and secured with a metal cover. The cover is two pieces of diamond plate hinged on each edge and inset 4 inches from the outer edge of the concrete box. The cover can be opened to access insulated cable within the box.

Feature 59

Feature 59 is a concrete pad with metal sign (Figure 118). The concrete pad is 18 x 10 ft (5.5 x 3 m) and is 8 inches thick. Lying on the pad is a galvanized metal post and sign (no lettering).

Feature 60

Feature 60 is a metal and concrete underground junction box (Figure 119). It consists of a 48 x 42 inch concrete box set flush with the surface and secured with a metal cover. The cover is two pieces of diamond plate hinged on each edge and inset 4 inches from the outer edge of the concrete box. The cover can be opened to access insulated cable within the box.

Feature 61

Feature 61 is a metal and concrete underground junction box (Figure 120). It consists of a 48 x 42 inch concrete box set flush with the surface and secured with a metal cover. The cover is two pieces of diamond plate hinged on each edge and inset 4 inches from the outer edge of the concrete box. The feature is covered with soil and vegetation (75 percent). The cover, which could previously be opened to access insulated cable within the box, is unaccessible.

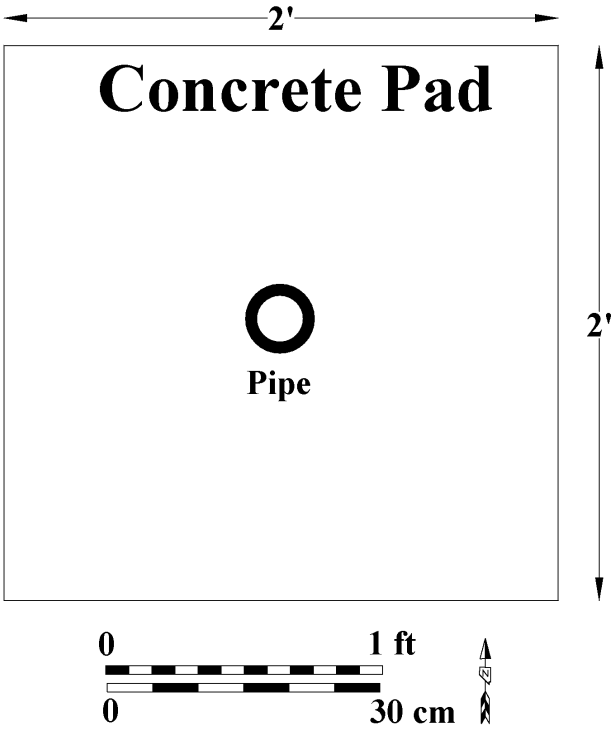

Figure 115. Plan map and photograph of Feature 56, U12t Tunnel, view southeast (2007).

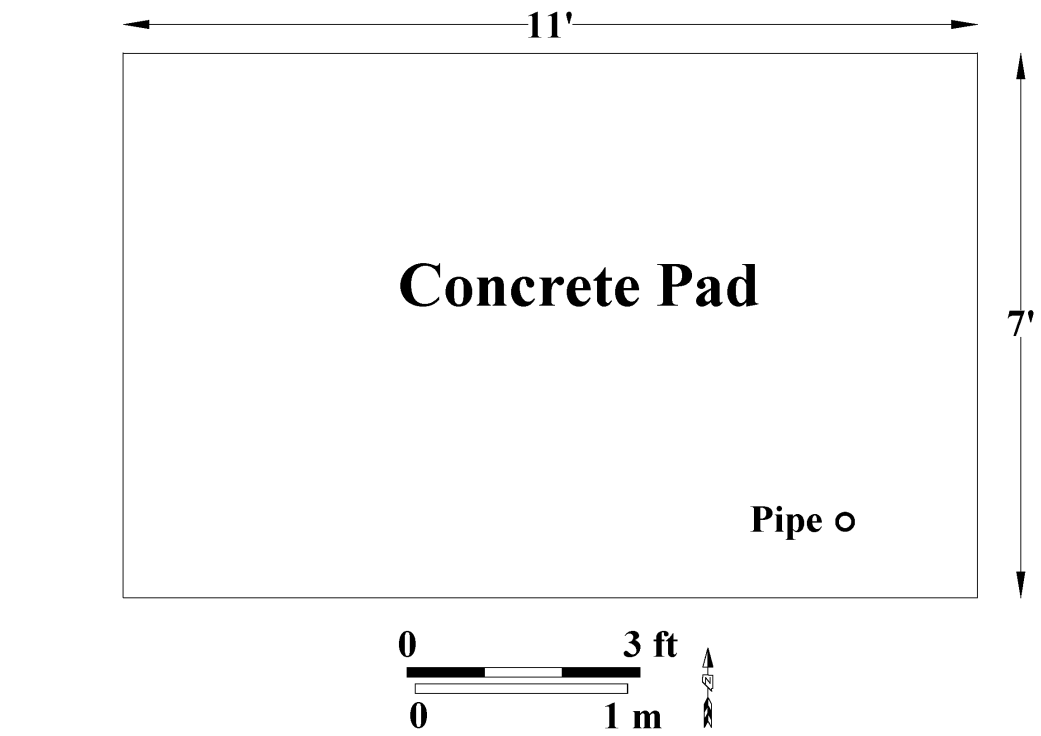

Figure 116. Plan map and photograph of Feature 57, U12t Tunnel, view northwest (2007).

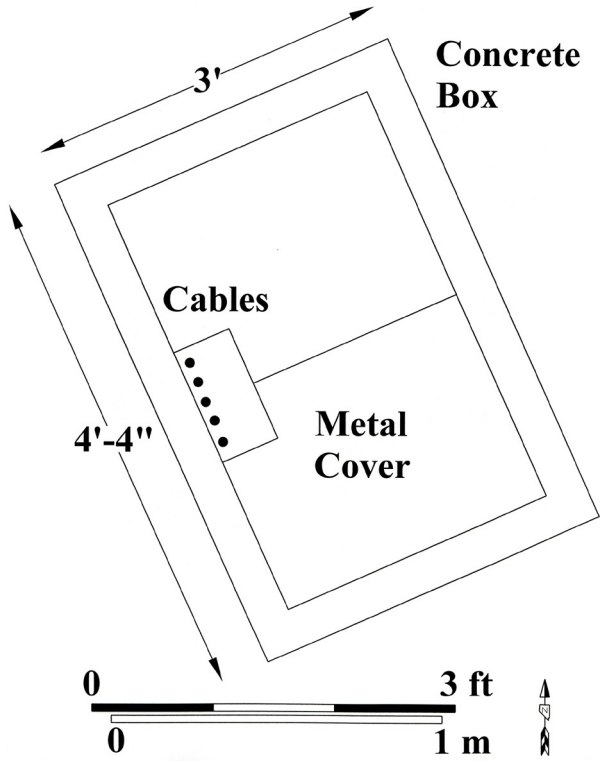

Figure 117. Plan map and photograph of Feature 58, U12t Tunnel, view southwest (2007).

Figure 118. Plan map and photograph of Feature 59, U12t Tunnel, view north (2007).

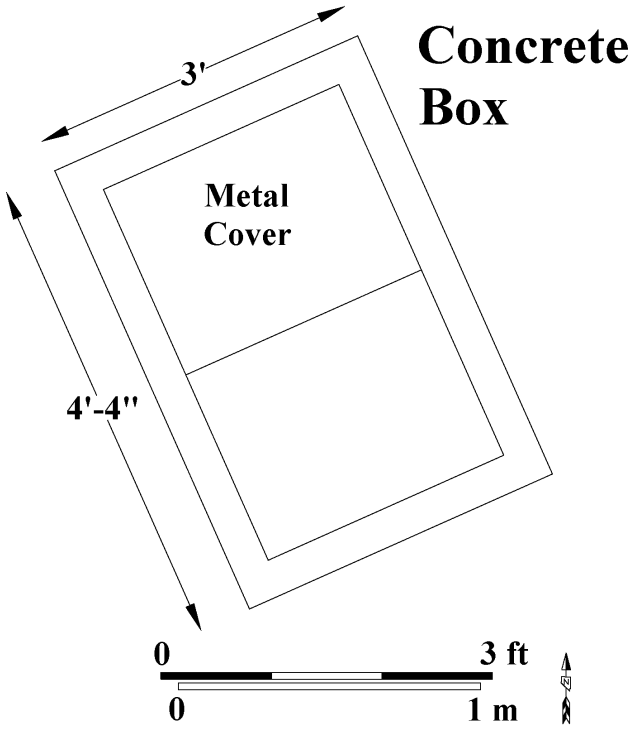

Figure 119. Plan map and photograph of Feature 60, U12t Tunnel, view northeast (2007).

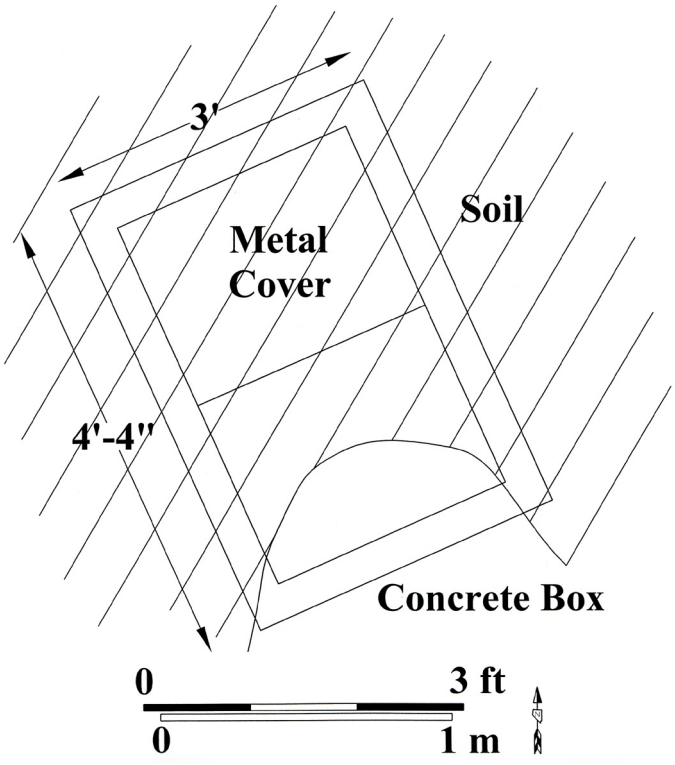

Figure 120. Plan map and photograph of Feature 61, U12t Tunnel, view northwest (2007).

Feature 62

Feature 62 is a metal and concrete underground junction box (Figure 121). It consists of a 52 x 36 inch (132 x 91 cm) concrete box set flush with the surface and secured with a metal cover. The cover is two pieces of diamond plate hinged on each edge and inset 4 inches from the outer edge of the concrete box. The cover can be opened to access insulated cable within the box.

Feature 63

Feature 63 is a metal and concrete underground junction box (Figure 122). It consists of a 48 x 42 inch concrete box set flush with the surface and secured with a metal cover. The cover is two pieces of diamond plate hinged on each edge (south hinges broken) and inset 4 inches from the outer edge of the concrete box. The cover can be opened to access insulated cable within the box.

Feature 64

Feature 64 is a rough poured concrete block (Figure 123). It is 36 inches in diameter with electrical conduit and insulated wire extending through the surface of the block. Also, four bolts extend above the surface of the concrete in a rectangular pattern that is similar to those that attach the base plate for a light pole (Features 67 and 71). The concrete was poured without the use of forms and using locally available gravel, was not leveled, the surface was left unfinished, and the edges are now covered with soil and vegetation. Artifacts near the feature are shims and insulated wire.

Feature 65

Feature 65 is a 24 x 24 inch concrete block that was probably the support base of a light pole (Figure 124). A form was used to pour the block but the surface was left unfinished. Extending through the surface of the block is an electrical conduit containing insulated wire. Four bolts protrude through the surface near each corner. Extending through the north side of the block near the base is a galvanized conduit. Insulated communication wire is near the feature.

Feature 66

Feature 66 is an electrical panel and junction box (Figure 125). The panel box is 36 x 24 inches with a junction box along the top edge that measures 32 x 8 inches. The boxes (now lying on the surface) are connected by two pieces of 4 inch channel iron legs that supported the boxes and were embedded in the surface. The panel, now lying on the surface, was supported by two 4 inch channel iron legs. Artifacts near the feature are insulated wire and cable.

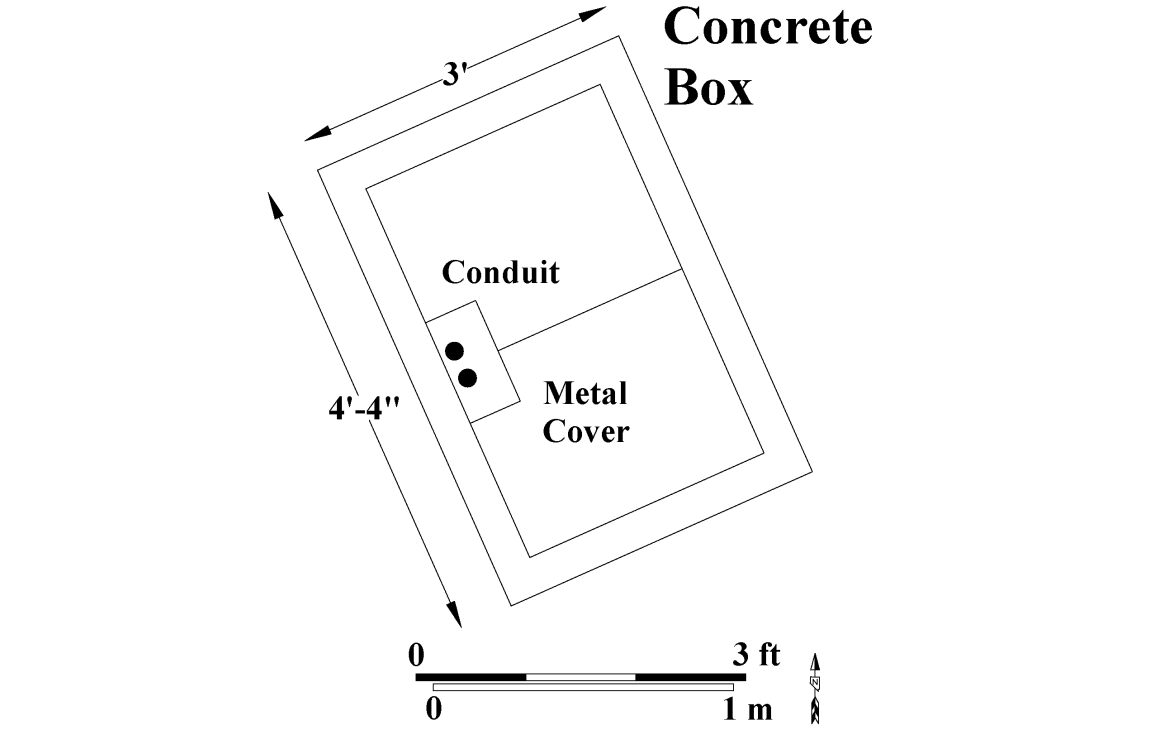

Figure 121. Plan map and photograph of Feature 62, U12t Tunnel, view northeast (2007).

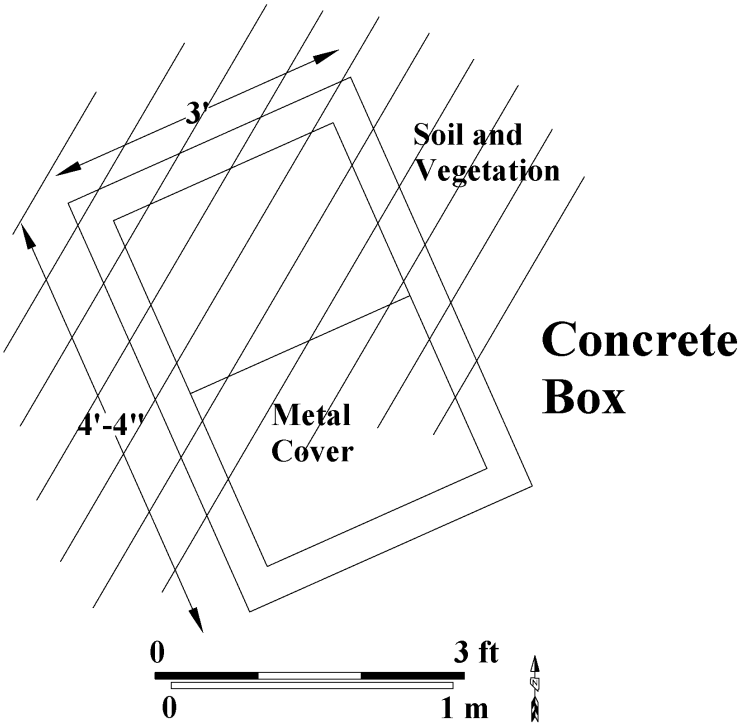

Figure 122. Plan map and photograph of Feature 63, U12t Tunnel, view northwest (2007).

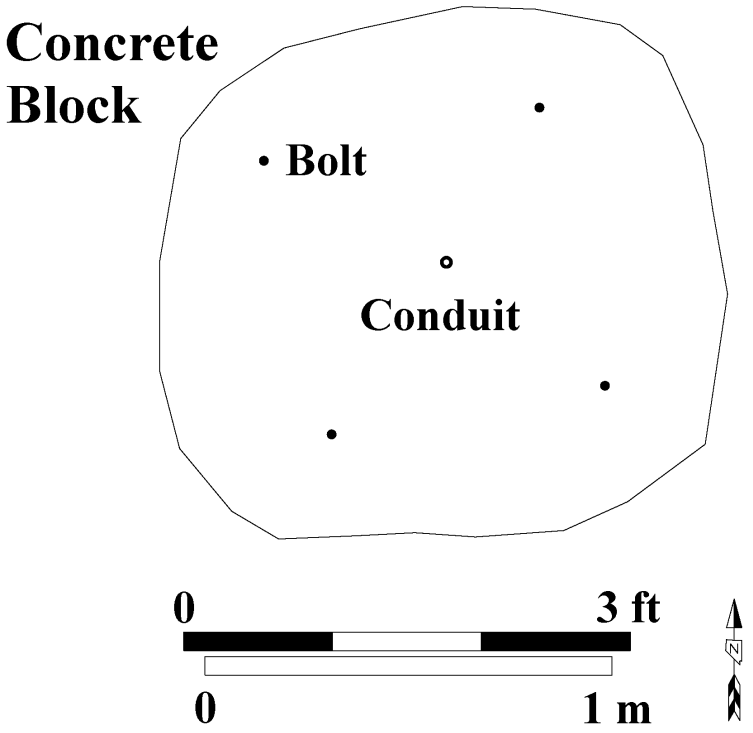

Figure 123. Plan map and photograph of Feature 64, U12t Tunnel, view south (2007).

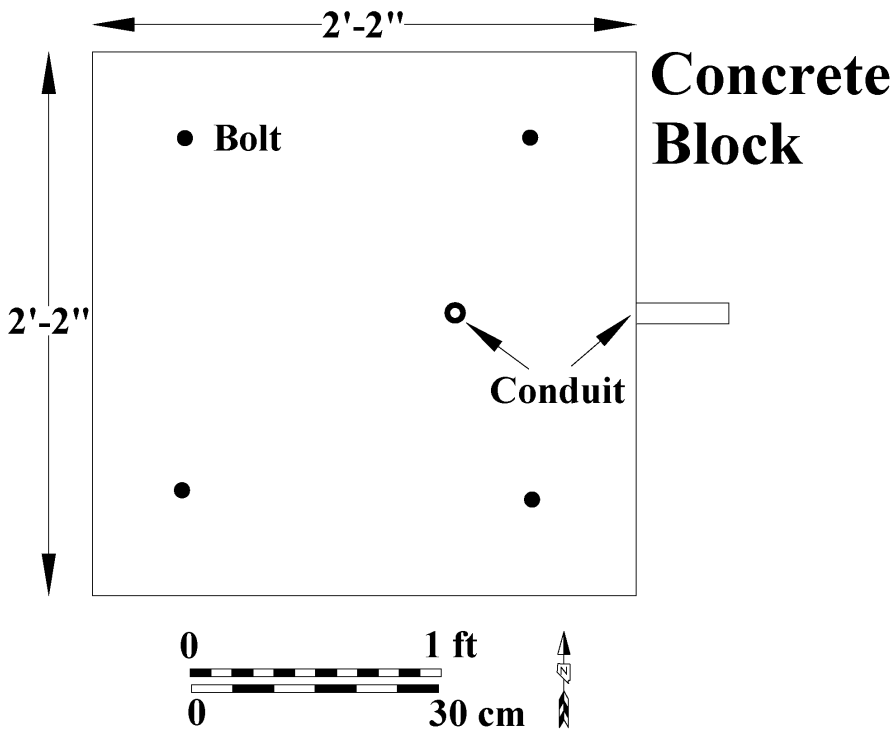

Figure 124. Plan map and photograph of Feature 65, U12t Tunnel, view west (2007).