

**ST. CROIX CROSSING LOOP TRAIL (PHASE 1)
ARCHAEOLOGICAL CONSTRUCTION MONITORING,
STILLWATER, WASHINGTON COUNTY, MINNESOTA**

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Minnesota Department of Transportation
Office of Environmental Stewardship
Cultural Resources Unit
395 John Ireland Blvd., Mail Stop 620
St. Paul, MN 55155-1899**

**Principal Investigator and
Report Author:
Michelle M. Terrell, Ph.D., RPA**

**Two Pines Resource Group, LLC
17711 260th Street
Shafer, MN 55074**

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Consultant's Report

MANAGEMENT SUMMARY

From August through October of 2015, Two Pines Resource Group, LLC (Two Pines) conducted archaeological construction monitoring for Phase 1 of the St. Croix Crossing Loop Trail (Loop Trail) Project in Stillwater, Washington County, Minnesota. This work was performed under contract with the Minnesota Department of Transportation (MnDOT) for the Cultural Resource Unit (CRU) of the department.

A portion of the Loop Trail Project passes through the Stillwater South Main Street Archaeological District (District) which is comprised of three archaeological sites: 21WA91 (Hersey & Bean Sawmill), 21WA92 (Hersey & Bean Planing Mill), and 21WA100 (Slab Alley). Among the mitigation measures outlined in the amended Section 106 Memorandum of Agreement (MOA) for the St. Croix Crossing Project is the avoidance and minimization of effects to the District during the design and construction of the Loop Trail. In order to assist in these measures, Dr. Michelle Terrell, author of the District's National Register nomination and Principal Investigator of past archaeological work within the District, provided consultation as Loop Trail project plans progressed; attended monthly project planning meetings; and prepared an Archaeological Resources Protection Plan for the District (Terrell 2015).

Because of the potential for previously undocumented archaeological resources to be encountered during the construction of the Loop Trail, the protection plan called for a qualified Level II: Historic Archaeological consultant to monitor all grading and subsurface excavations within the District boundary. Archaeological monitoring for the Loop Trail took place within the SW ¼ of Section 27 and the NW ¼ of Section 34 of Township 30N, Range 20W. The project area is located within the Central Lakes Deciduous - East archaeological sub-region. Dr. Michelle Terrell served as the archaeological monitor throughout the construction project.

During construction monitoring of Phase 1 of the Loop Trail Project, no significant archaeological features or deposits were encountered within the Stillwater South Main Street Archaeological District. Excavations revealed that much of the present riverfront within the District boundary is created land. As a result of the amount fill that has been introduced, deposits associated with the District's period of significance, while at or near the surface along the west edge of the District, are deeply buried along the riverfront where the deepest impacts from the construction of the Loop Trail occurred.

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INTRODUCTION

From August through October of 2015, Two Pines Resource Group, LLC (Two Pines) conducted archaeological construction monitoring for Phase 1 of the St. Croix Crossing Loop Trail (Loop Trail) Project in Stillwater, Washington County, Minnesota. This work was performed under contract with the Minnesota Department of Transportation (MnDOT) for the Cultural Resource Unit (CRU) of the department.

PROJECT DESCRIPTION

As part of the St. Croix Crossing Project, a 4.8-mile Loop Trail will be developed to join the new bridge with the Stillwater Lift Bridge via trail corridors on both the Minnesota and Wisconsin sides of the river (Figure 1). The trail routes connect and highlight several historical and cultural resources of the area including the Stillwater South Main Street Archaeological District (District) which is comprised of three archaeological sites: 21WA91 (Hersey & Bean Sawmill), 21WA92 (Hersey & Bean Planing Mill), and 21WA100 (Slab Alley). The Loop Trail Project is a phased undertaking. Phase 1 of the project, which is the subject of this report, consisted of the construction of the lower trail along the riverfront from Nelson Street on the north to the Sunnyside Marina entrance on the south; stabilization of historic walls; and the installation of site drainage.

MEMORANDUM OF AGREEMENT

In order to address the potential impact of the St. Croix Crossing Project on cultural resources and to satisfy the project's responsibilities under Section 106 of the National Historic Preservation Act, and its implementing regulations found in 36 CFR Part 800, a Memorandum of Agreement (MOA) for the project was developed and entered into by the Federal Highway Administration, the U.S. Army Corps of Engineers, the Advisory Council on Historic Preservation, and the Minnesota and Wisconsin State Historic Preservation Officers. Among the mitigation measures outlined in the amended MOA (2006) for the St. Croix Crossing Project is the avoidance and minimization of effects to the District during the design and construction of the Loop Trail. In order to assist in these measures, Dr. Michelle Terrell, author of the District's National Register nomination (Terrell 2007) and Principal Investigator of past archaeological investigations within the District (Terrell 2005), provided consultation as Loop Trail project plans progressed; attended monthly project planning meetings; and prepared an Archaeological Resources Protection Plan for the District (Terrell 2015). Because of the potential for previously undocumented archaeological resources to be encountered during the construction of the Loop Trail, the protection plan called for a qualified Level II: Historic Archaeological consultant to monitor all grading and subsurface excavations within the District boundary. A separate report addressing the condition and stabilization of the stone walls within the district, including portions of the planing mill (21WA92) ruin (Wall Complex D) was prepared by Olson & Nesvold Engineers (2013).

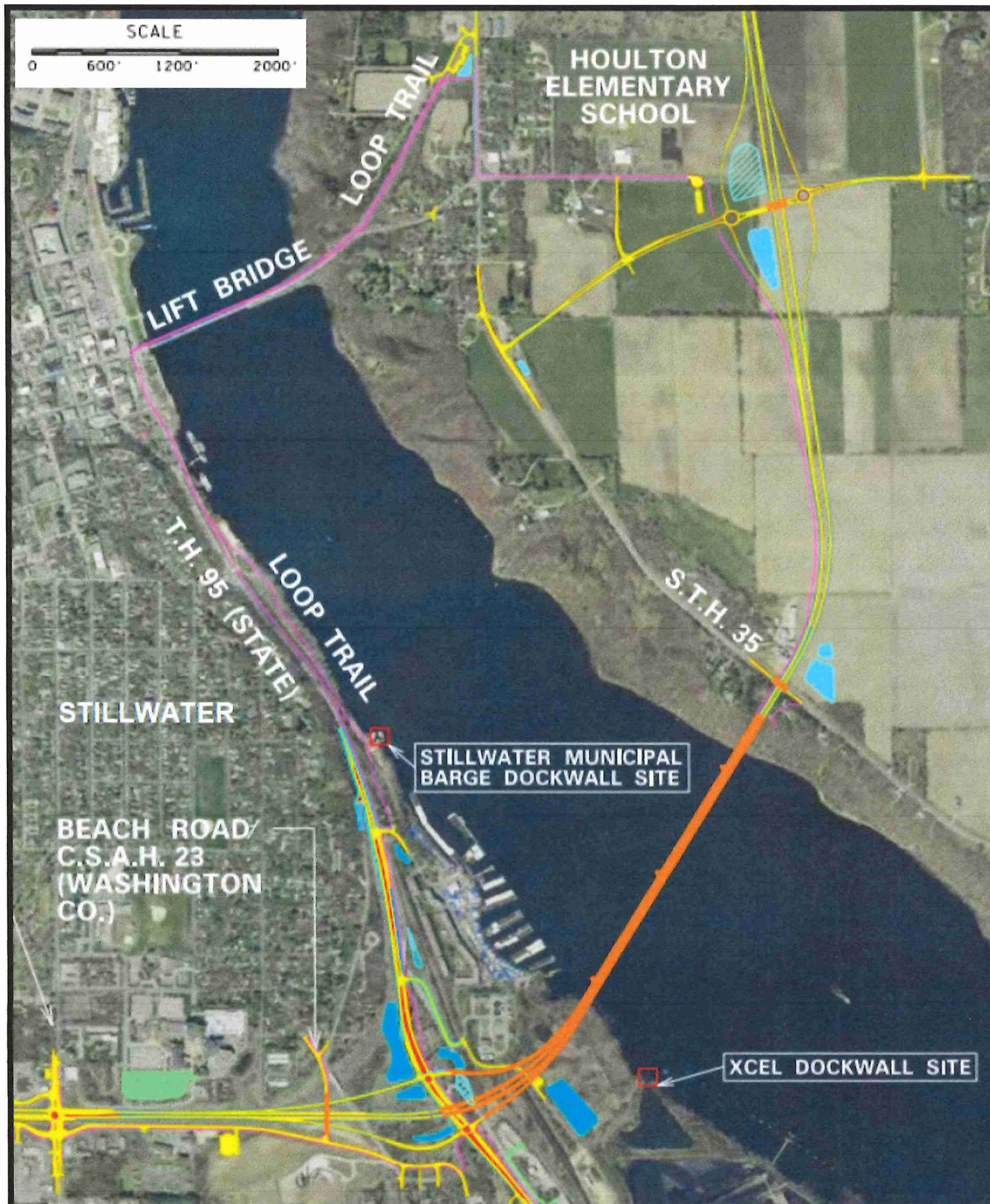


FIGURE 1. MAP OF THE LOOP TRAIL PORTION OF THE ST. CROIX CROSSING PROJECT

PROJECT LOCATION

Archaeological monitoring for the Loop Trail took place within the SW $\frac{1}{4}$ of Section 27 and the NW $\frac{1}{4}$ of Section 34 of Township 30N, Range 20W (Figure 2). The UTM (NAD 83, Zone 15) coordinates for the northernmost extent of the monitoring was 515626E 4988674N while the southernmost point was 516021E 4988111N.

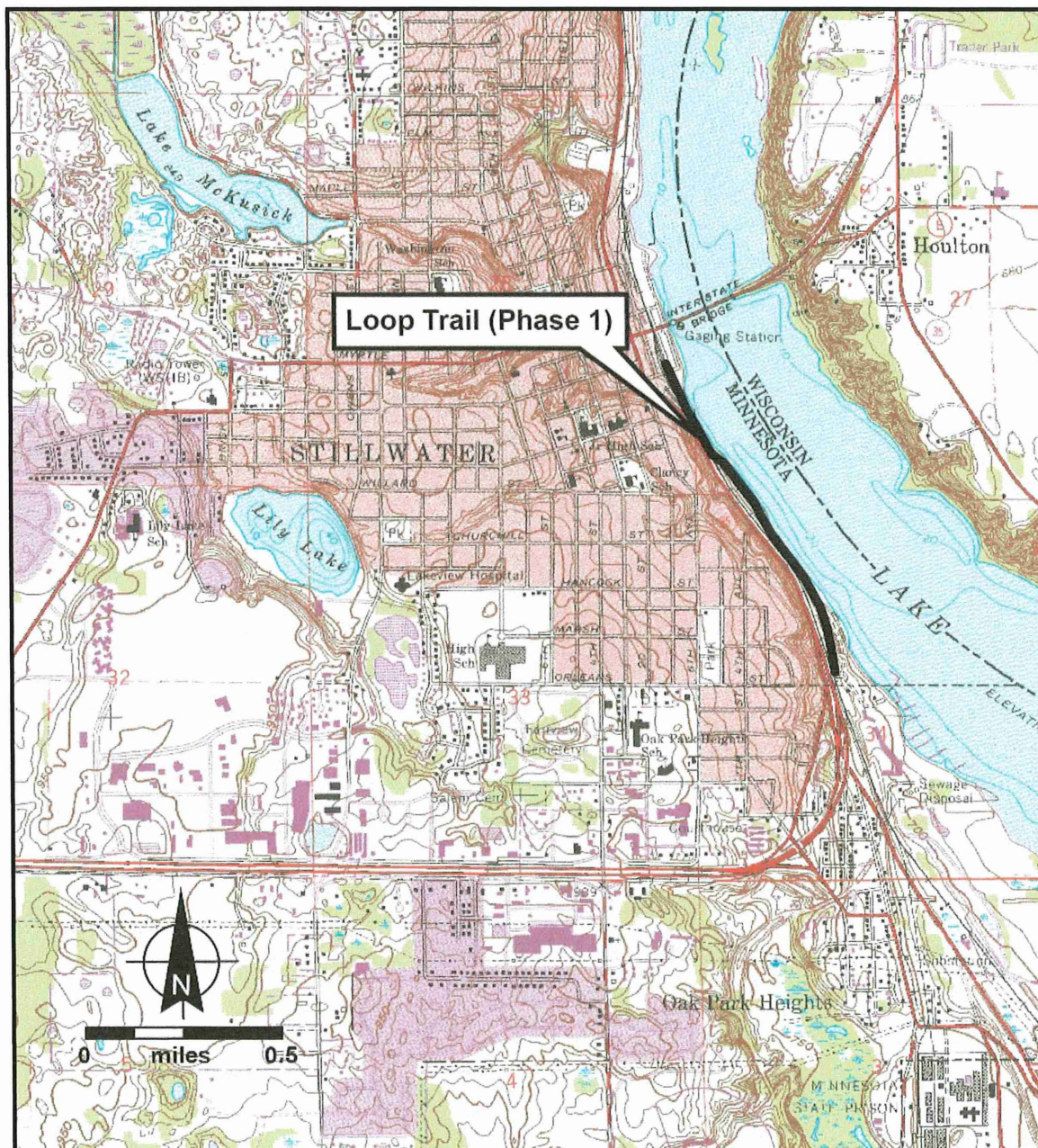


FIGURE 2. PROJECT LOCATION

Stillwater Quadrangle (1993), Minnesota USGS 7.5 Minute Series

WORK PLAN

All work was conducted in accordance with the *MnDOT's Cultural Resources Unit Project and Report Requirements* (MnDOT 2015), the *SHPO Manual for Archaeological Projects in Minnesota* (Anfinson 2005), the *State Archaeologist's Manual for Archaeological Projects in Minnesota* (Anfinson 2011), and the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (National Park Service 2002).

OBJECTIVES

The purpose of the archaeological construction monitoring was to ensure that contributing resources to the District were not impacted by the construction of the Loop Trail.

METHODS

All subsurface excavation work within the boundary of the District that had the potential to encounter intact archaeological resources was observed by the archaeological monitor including trail grading; drainage installation; and the excavation of the storm water retention pond. The archaeologist documented all monitoring activities with photos and field notes. A monitoring log was also completed for each work day detailing the work performed; descriptions of any potential or significant features; any relevant stratigraphy; and the presence of artifacts (Appendix A).

DATA RECOVERY PLAN

In the event that a potentially significant artifact-bearing deposit or archaeological feature was encountered during construction monitoring, a pre-agreed upon data recovery plan had been outlined, however, it was not necessary to implement this plan during the construction of Phase 1 of the Loop Trail.

1. The MnDOT CRU project manager will be notified immediately by the archaeologist. MnDOT will coordinate communication with SHPO and other interested parties.
2. The archaeologist will record the location and nature of the artifacts, foundations, or other feature(s).
3. Equipment operation will be suspended in the immediate area, with the exception of backhoe assistance necessary to define the foundation or feature(s).
4. The location will be spatially recorded using GPS mapping equipment and sketch maps, if appropriate.

5. The deposit or feature will be documented through photographs, measured drawings, and descriptive text.
6. Depending on the complexity of the encountered resources, the archaeologist will confer with the CRU (and SHPO if requested) and develop a treatment plan if needed and scope and budget amendment. No further construction activities will take place in the area of concern until the appropriate work plan and budget has been approved, and the data recovery work completed.

GEOGRAPHIC INFORMATION SYSTEM DATA

A geographic information system (GIS) data layer was created during the course of the archaeological monitoring. The locations of excavation areas and features were recorded using a Trimble GeoXT[®] GPS Unit. The data were differentially corrected using a National Geodetic Survey (NGS) continuously operating reference station (CORS).

LABORATORY ANALYSIS AND CURATION

As no artifacts were collected from undisturbed contexts, no materials were cataloged or curated.

BACKGROUND INFORMATION

Three archaeological sites are encompassed by the boundary of the Stillwater South Main Street Archaeological District: 21WA91 (Hersey & Bean Sawmill), 21WA92 (Hersey & Bean Planing Mill), and 21WA100 (Slab Alley). The Loop Trail project passes through sites 21WA91 and 21WA92, but not through 21WA100, which is located on the opposite (west) side of Trunk Highway 95 from the Loop Trail (Figure 3). A brief description of sites 21WA91 and 21WA92 is provided below.

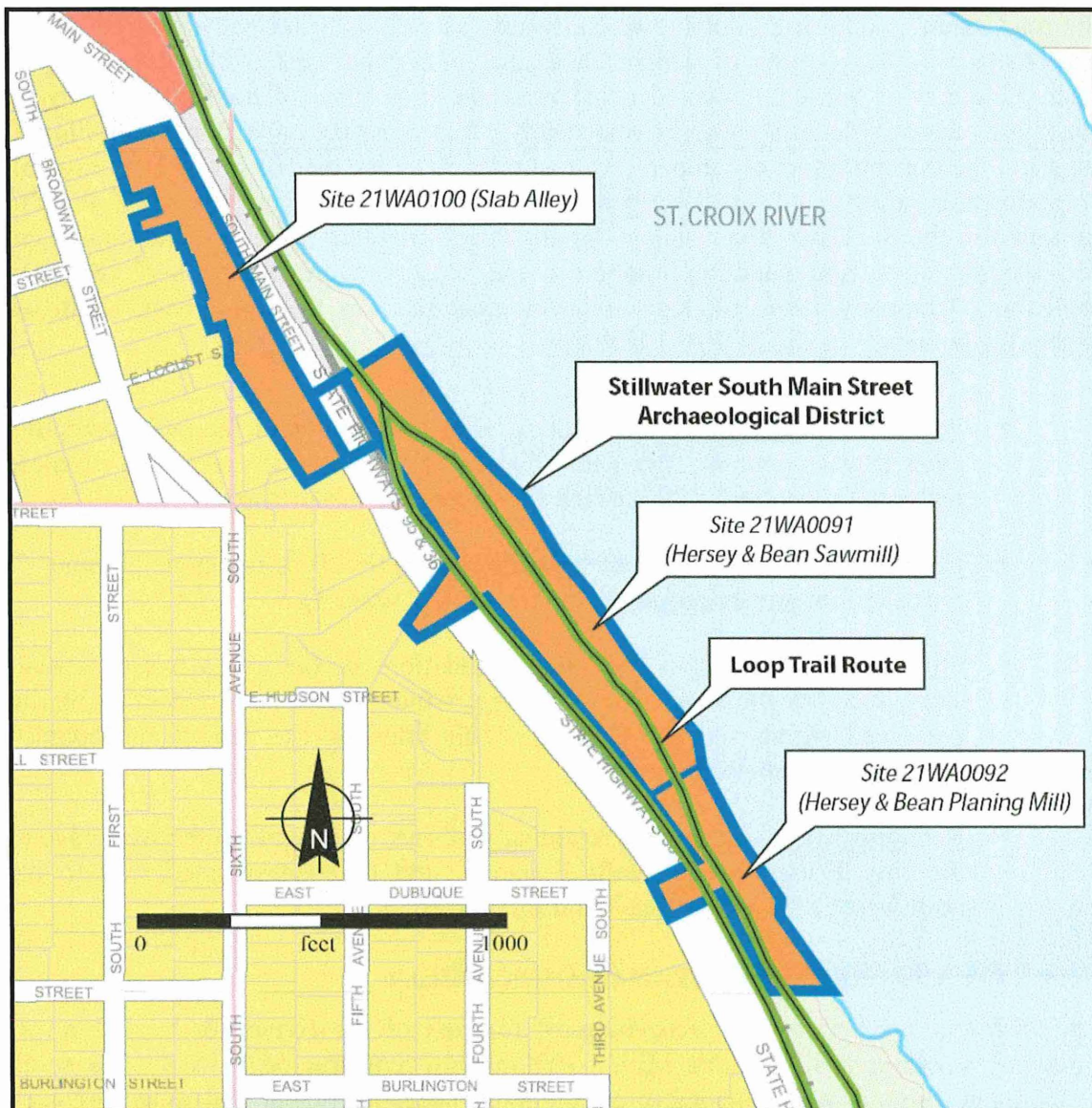


FIGURE 3. LOOP TRAIL ROUTE THROUGH THE STILLWATER SOUTH MAIN STREET
ARCHAEOLOGICAL DISTRICT

SITE 21WA91 (HERSEY & BEAN SAWMILL SITE)

Site 21WA91 consists of the archaeological remains of the Hersey & Bean Lumber Company's North Western mill complex. Constructed in 1854, this mill was the third sawmill to be built within the burgeoning lumber community of Stillwater, Minnesota. Sited on the southern edge of town, the main sawmill complex was erected on a half mile-long, level section of riverfront bound to the west by a steep wooded bluff and to the east by the bank of the St. Croix River. This location on the river flats provided ready access to logs floated down the river from a tributary network of streams in the pine forests of northern Minnesota and Wisconsin, while at the same time being convenient to the road leading south from downtown Stillwater, as well as to the railway when it was constructed in 1872 – both of which ran to the immediate west of the mill along an intermediate river terrace. Located adjacent to these avenues of transportation (river, road, and railway), the mill complex was ideally situated for the collection and milling of logs and the transportation of lumber. For just over 50 years, the Hersey & Bean sawmill was a leading industry and was described as being “the largest and most modern of any to be found in the St. Croix River valley” having “every modern appliance and equipment for manufacturing and handling lumber in the most economical manner” (Railway Publishing Company 1903:16). Key archaeological features that have been identified within the boundary of site 21WA91 include:

- Sawmill Power House - The footings and foundations of the main sawmill's gang saw (Figure 4), flywheel (Figure 5), and engine. Portions of these features are visible on the surface and others are subsurface.
- Chimney Base – The base of the mill's formerly 30-ft. tall stone chimney is preserved on private property atop the bluff (Figure 6).
- Store/Office Building – The stone foundations of the mill's two-and-a-half story, wood-frame store/office building, which was constructed in 1879, are preserved within a copse of trees. This building was reused and adapted during the twentieth century.
- Retaining Walls– Limestone retaining walls are present along the west edge of the site. These include Walls E and F, and the undesignated wall to the northwest of the store/office building (Figure 7).

SITE 21WA92 (HERSEY & BEAN PLANING MILL)

Site 21WA92 consists of the archaeological remains of the Hersey & Bean Lumber Company's planing mill or “Little Mill.” This mill was constructed in 1873 to the south of the main mill and was designed to cut the long pieces of lumber that were necessary for the construction of railroad bridges. The planing mill was damaged by fire in 1887 and rebuilt on the same location. The rebuilt planing mill was described as “without doubt the most perfect and complete mill of its kind in American, and which, like their saw mill, contains the latest and most approved machinery” (Barrett 1887). In 1906,



FIGURE 4. GANG SAW BASE IN 2004, HERSEY & BEAN LUMBER COMPANY SAWMILL, FACING NORTH



FIGURE 5. FLYWHEEL BASE IN 2004, HERSEY & BEAN LUMBER COMPANY SAWMILL, FACING SOUTH

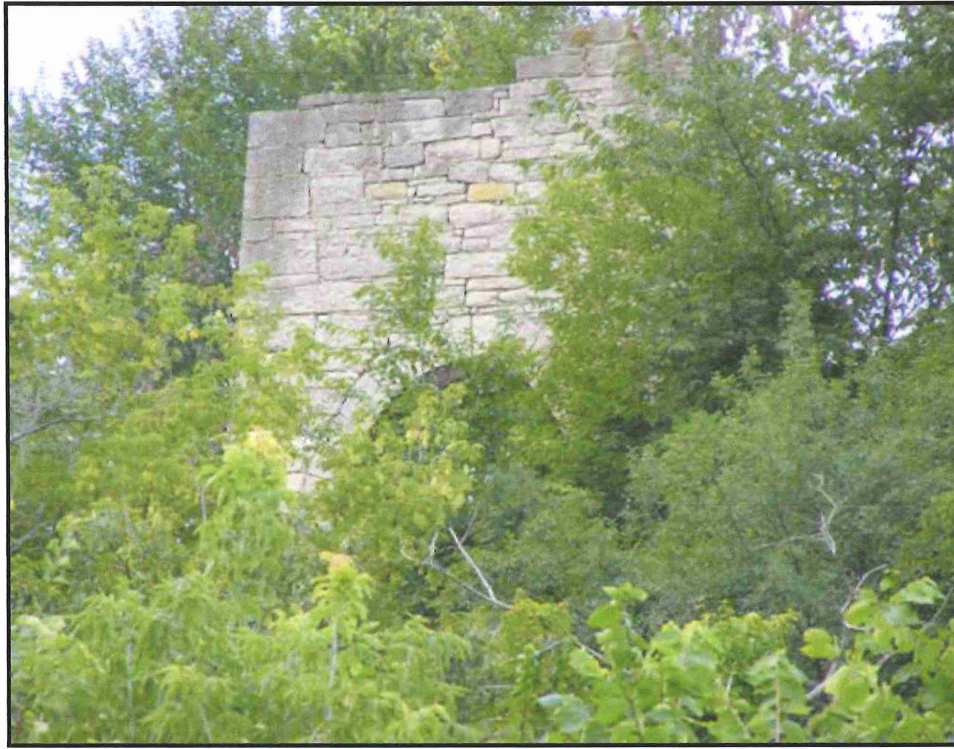


FIGURE 6. CHIMNEY BASE, HERSEY & BEAN LUMBER COMPANY SAWMILL, FACING WEST



FIGURE 7. SEGMENT OF RETAINING WALL E WITHIN 21WA91

when the Hersey & Bean mill ceased operation, the machinery of the planing mill was salvaged, but the power house, which was constructed primarily of stone, was allowed to fall into ruin.

The principal archaeological features of 21WA92 are associated with the planing mill's power house and include the extant limestone walls and foundations of the boiler room, which are partially cut into bedrock, and the west walls of the machine shop and engine room (identified in the wall assessment report as the Wall Complex D) (Figure 8). Within the extant interior wall segment are an approximately 4-ft. (1.2-m)-wide brick arch between the boiler room and engine room, and a doorway opening. Also present is an approximately 4-ft. (1.2-m) -wide brick arch that leads to an 82-ft. long section of the mill's brick flue, which formerly connected to a 70-ft.-high iron chimney. Excavations within 21WA92 documented intact, subsurface remains of the engine room under the existing access road.

ENVIRONMENTAL SETTING

The Loop Trail project is located within the Central Lakes Deciduous East archaeological sub-region. The following environmental history of this sub-region is based largely on information contained in Borchert and Gustafson's *Atlas of Minnesota Resources and Settlement* (1980) and an overview entitled "Minnesota's Environment and Native American Culture History" by Gibbon et al. (2002).

The Central Lakes Deciduous East archaeological sub-region includes much of east-central Minnesota including all or portions of Anoka, Aitkin, Benton, Chisago, Crow Wing, Dakota, Isanti, Mille Lacs, Morrison, Pine, Ramsey, Scott, Sherburne, and Washington counties. The sub-region is bound to the west by the Mississippi River and to the east by the St. Croix River. The area between these two rivers contains numerous lakes, streams, and wetlands.

The topography of the Central Lakes Deciduous East sub-region consists of glacial moraines, till plains, and outwash plains. As implied by the region's name, during the contact period much of the vegetation of the Central Lakes Deciduous East archaeological sub-region consisted of hardwood forests with a mix of deciduous-coniferous forest dominated by pine in the northern portion of the sub-region.

Soils within the Loop Trail project area are described as being of the Urban land-Chetek complex (Vinar 1980:82-84). Chetek soils are formed on outwash plains and where undisturbed they consist of a brown to dark brown sandy loam topsoil that gives way to reddish brown to brown sandy loam subsoil overlying a strong brown to reddish brown gravelly sand.



FIGURE 8. WALL D AS IT APPEARED IN 2004 (LEFT) AND AFTER STABILIZATION IN 2015 (RIGHT), VIEW TO SOUTHWEST

RESULTS OF CONSTRUCTION MONITORING

From August through October of 2015, Two Pines conducted archaeological construction monitoring for Phase 1 of the Loop Trail Project. Dr. Michelle Terrell served as the archaeological monitor throughout the construction project. Construction activities that were monitored included asbestos tile removal; trail grading; drainage installation; and the excavation of a storm water retention pond. The results of the monitoring of each of these activities are described in this section.

ASBESTOS TILE REMOVAL

During initial preparation of the project area, the removal with a backhoe of a surface pile of asbestos tile was monitored. This work took place approximately 10 m to the north of the north foundation of the office/store building located within 21WA91 (see Figure 11). Excavations related to the removal of this mounded pile were shallow and remained entirely within modern fill. No intact archaeological deposits or features were encountered during this work.

LOOP TRAIL GRADING

The lower trail of the Loop Trail passes through sites 21WA91 and 21WA92 (see Figure 3). Grading for the sub-base of the trail was monitored within the boundaries of these sites from Stations 21+00 to 44+00 (see Figure 11). Within the District, trail construction remained entirely within modern fill and no intact archaeological deposits or features were observed within or proximate to the trail's construction limits.

DRAINAGE INSTALLATION

Storm Sewers: 5890 to 5892 and 5893 to 5895

Two parallel storm sewers from Structures 5890 to 5892 and 5893 to 5895 were constructed just outside the south boundary of the District along a section of shoreline that would have been inundated during the operation of the mills (see Figures 9 and 11). The function of these pipes is to carry water from a ditch located at the foot of the exposed limestone bluff to the river. The City of Stillwater's existing 36-in. sanitation line runs north-south beneath these pipe alignments. Examination of the trenches for these approximately 90-ft. long pipe runs confirmed that they were excavated entirely within shoreline fill and no intact archaeological deposits or features were observed within or proximate to their construction limits.

Storm Sewer: 5896 to 5898

The storm sewer line between Structures 5896 and 5898 is located approximately 150 ft. to the east of the extant remains (Wall Complex D) of the Hersey & Bean planing mill (21WA92) (see Figure 11). This installation consisted of an approximately 108-ft. run of pipe and the creation of a swale at the pipe's west end (Figure 10). This pipe run allows an existing ditch to drain towards the river thus carrying water away from the base of the

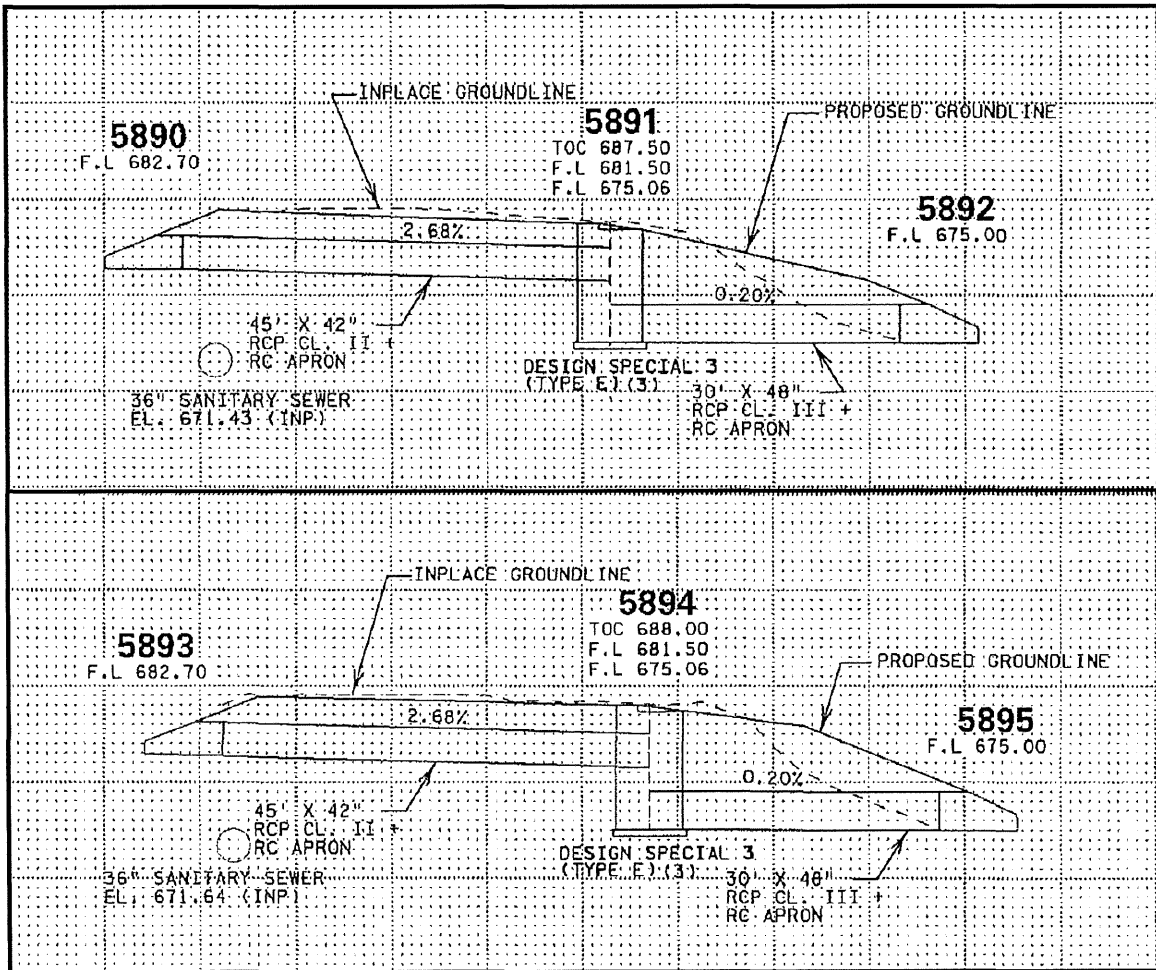


FIGURE 9. PRE-CONSTRUCTION PROFILES OF STORM SEWERS 5890 TO 5892 AND 5893 TO 5895

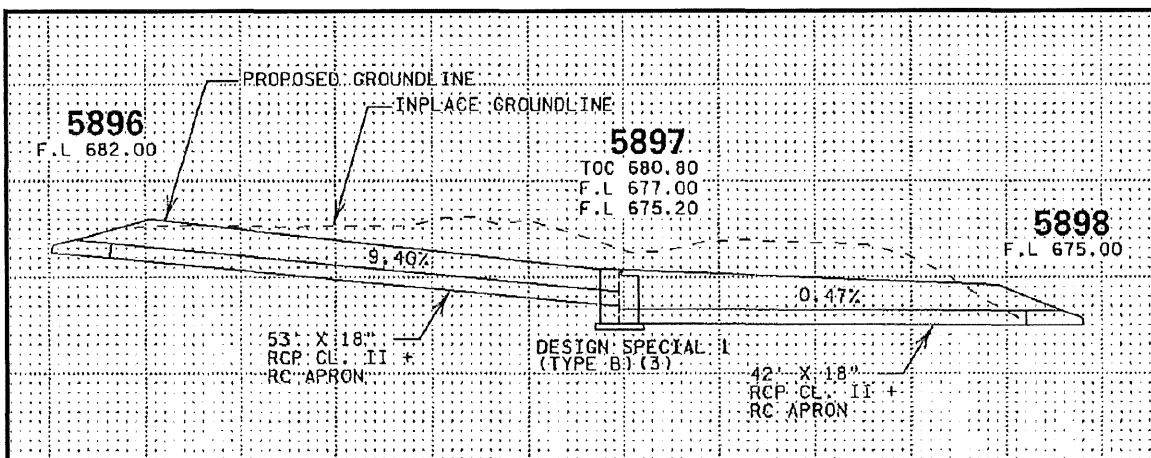


FIGURE 10. PRE-CONSTRUCTION PROFILE OF STORM SEWER 5896 TO 5898

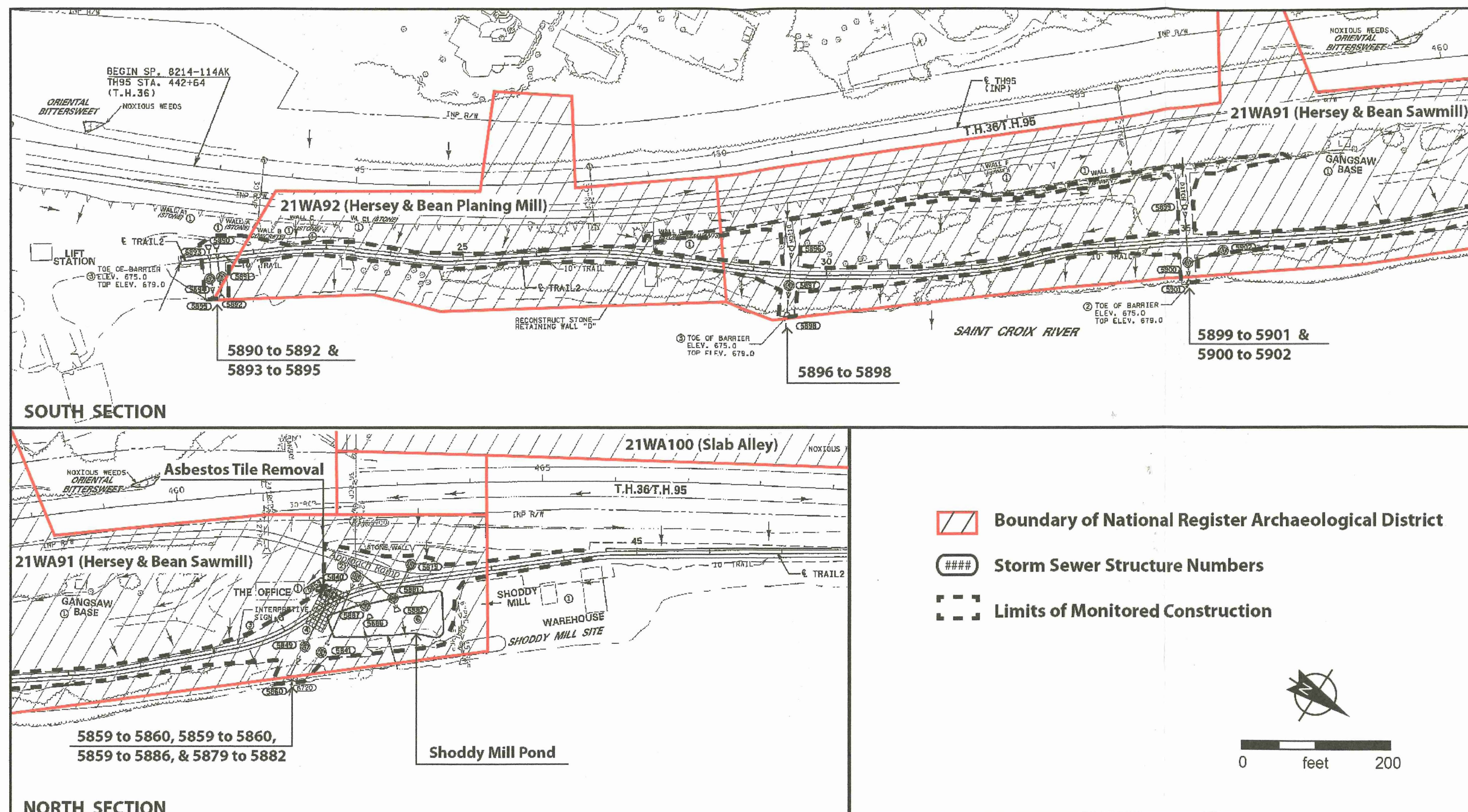


FIGURE 11. AREAS OF ARCHAEOLOGICAL CONSTRUCTION MONITORING ON LOOP TRAIL PROJECT DRAINAGE PLANS

historic walls. According to historic Sanborn fire insurance maps, during the mill's period of operation this then narrow (~50 ft.) segment of shoreline was augmented by a planked platform that extended out into the river an additional 50 feet beyond the present shoreline. Historically, this section of the site was referred to as the "Middle Yard" and was used for the storage of lumber.

Monitoring of the installation of this pipe run revealed deep deposits of introduced fill to the base of the excavation cut. Observed within the fill were road demolition debris (asphalt, granite and concrete curbing, and paving cobbles) as well as household demolition material (red brick, toilet tank fragments, and porcelain electrical resistors). Within the very west end of the cut for this pipe run and at a depth of approximately 110 cm below the surface (cmbs) a very dark grayish brown (10YR 3/2), silt loam containing numerous wood fragments and a section of an eight inch by ten inch diameter timber was encountered. The apron (Structure 5896) was set atop this horizon. During the subsequent excavation of the swale to the west of Structure 5896, the horizon containing the water-logged wood fragments was revealed to be both above and around the north-south running sanitary sewer line. It is unclear if this material is fill that was introduced to the site during the installation of the sanitary sewer line, or these wood fragments were generated during the mill's period of operation and disturbed and backfilled into the trench at the time the sanitary sewer line was constructed. In either case, the strata with wood fragments encountered within the cut for the storm sewer line between Structures 5896 and 5898 is not a primary deposition due to disturbance from the sanitary sewer installation.

The construction of the storm sewer line between Structures 5896 and 5898 and the excavation of an associated swale took place entirely within shoreline fill or disturbed soils and no intact archaeological deposits or features were observed within, or proximate to, the construction limits.

Storm Sewers: 5899 to 5901 and 5900 to 5902

The storm sewer line between Structures 5899 and 5901 is located approximately 200 ft. to the west of the extant gang saw base of the Hersey & Bean sawmill (21WA91) (see Figure 11). This installation consisted of an approximately 120-ft. run of pipe and the creation of a swale at the pipe's west end (Figure 12). This drainage allows an existing ditch to empty towards the St. Croix River thus carrying water away from the base of Wall E. A separate 50-ft run of pipe connecting Structure 5902 to 5900 collects run-off from the trail (see Figures 11 and 12). According to historic Sanborn fire insurance maps, during the period of significance mill operations within this portion of the site occurred on an elevated plank platform that extended out into the St. Croix River an additional 100 feet beyond the present shoreline. In the vicinity of the swale at the west end of this pipe run, the 1884 Sanborn map documents a steam dry house, while a blacksmith shop is indicated at this location on the 1888, 1898, and 1904 maps (Sanborn Map Company 1884, 1888, 1898, 1904).

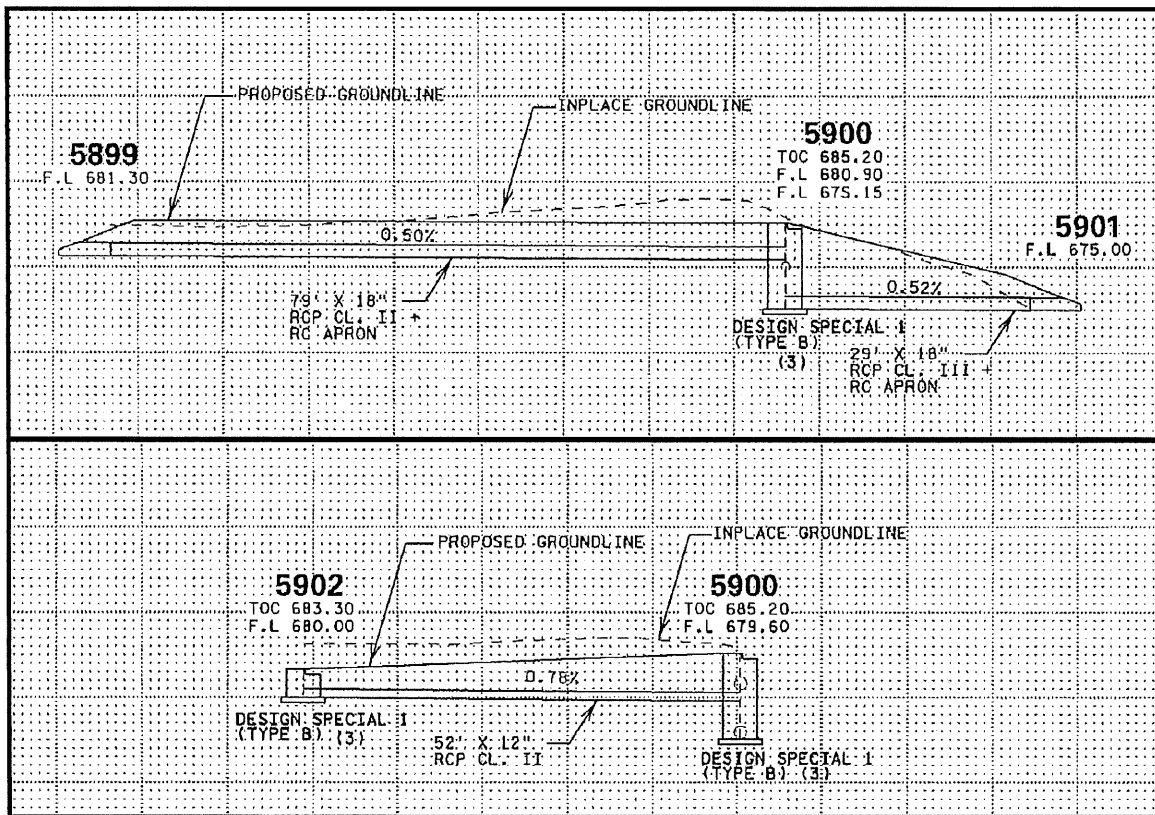


FIGURE 12. PRE-CONSTRUCTION PROFILES OF STORM SEWERS 5899 TO 5901 AND 5900 TO 5902

Monitoring of the installation of these segments of storm sewer revealed a general soil profile consisting of introduced fill overlying thick bands of coal resulting from the stockpiling of coal on the property when it was the Stillwater Municipal Barge Facility (Figure 13). These coal bands overlay earlier fill. Along the shore of the St. Croix River, the approximately 10-ft. deep cut for Structure 5901 was excavated entirely within modern rocky fill. A concrete slab for mooring barges was encountered along the south edge of the cut and left in place. At Structure 5900, where the cut was approximately 12 feet deep, the profile of the trench consisted of modern urban fill containing limestone rubble that capped bands of coal cinders encountered between two and four feet below the surface. These coal bands varied in thickness from 20 to 50 cm. Coal deposits were thicker towards the river than inland. Underlying the coal was additional fill deposits and/or crushed limestone which gave way to a gley subsoil at 7 feet below the current surface. The cut for the storm sewer line between structures 5900 and 5902 encountered the same stratigraphic profile. Three sherds of plain ironstone and two colorless pieces of glass that originated in the fill beneath the coal bands were observed on the backdirt pile.

The construction of the storm sewer lines between Structures 5899 and 5901 and 5900 and 5902, together with the excavation of an associated swale, took place entirely within modern deposits and fill. No intact archaeological deposits or features were observed within, or proximate to, the construction limits.



FIGURE 13. LOADING COAL AT THE STILLWATER MUNICIPAL BARGE FACILITY, 1939

(MNHS Collections: Runk 2096)

Storm Sewers: 5840 to 5841, 5859 to 5860, 5859 to 5886, and 5879 to 5882

A network of storm sewers and associated structures were installed to the north of the foundations of the Hersey & Bean Lumber Company's office building and to the south of the relocated Bergstein Shoddy Mill and Warehouse (see Figures 11 and 14-17). During Phase 2 of the Loop Trail project, these lines, which lead to the Shoddy Mill Pond and the St. Croix River, will be connected to a TH 95 drainage system. One segment of storm sewer line, between Structures 5840 and 5841, involved the replacement and realignment of an existing 36-in. clay tile storm sewer (see Figure 14).¹

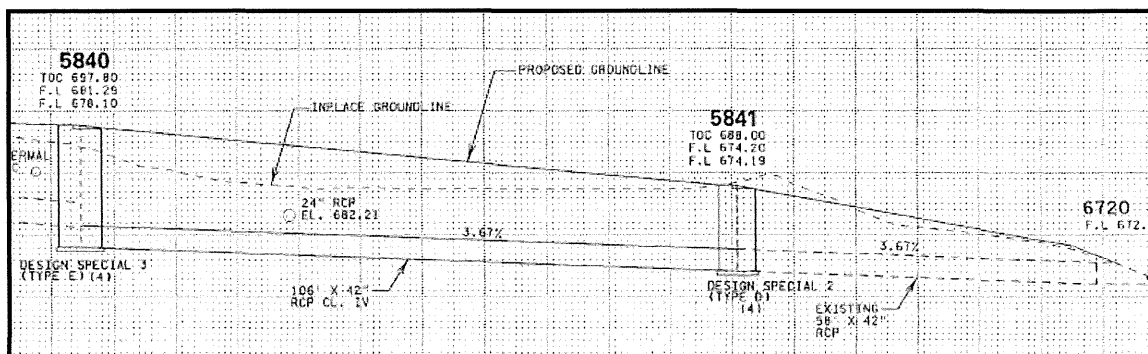


FIGURE 14. PRE-CONSTRUCTION PROFILE OF STORM SEWER 5840 TO 5841

¹ Pipe was marked "36 INCH / DOUBLE STRONG CULVERT PIPE / BLACKMER & POST CO. / ST. LOUIS, MO"

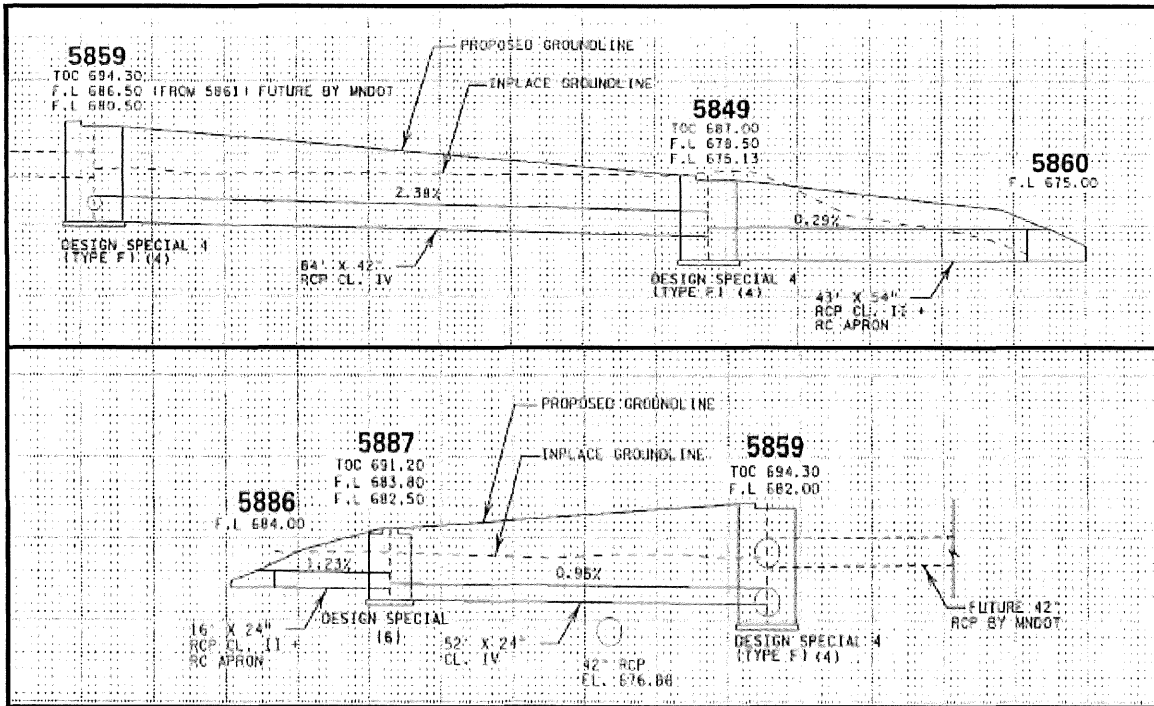


FIGURE 15. PRE-CONSTRUCTION PROFILES OF STORM SEWERS 5859 TO 5860 AND 5859 TO 5886

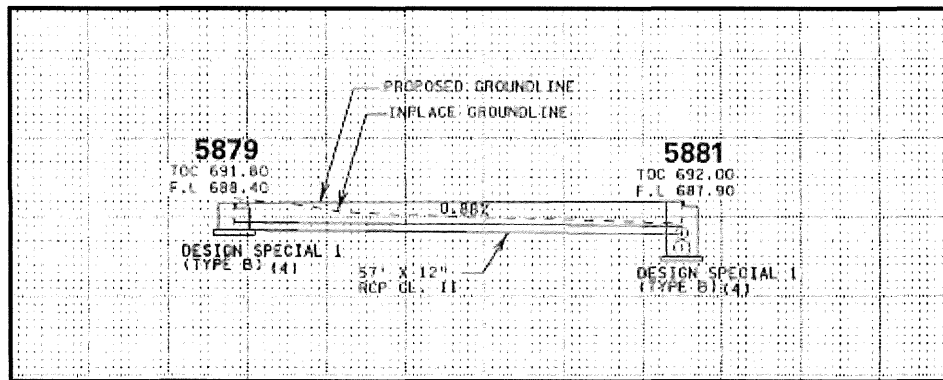


FIGURE 16. PRE-CONSTRUCTION PROFILE OF STORM SEWER 5879 TO 5881

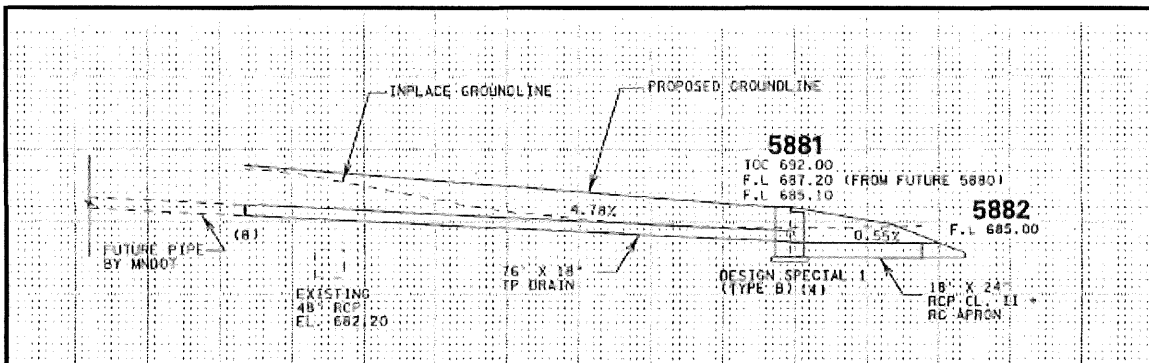


FIGURE 17. PRE-CONSTRUCTION PROFILE OF DRAIN AND STORM SEWER 5881 TO 5882

The construction of the storm sewer lines to the north of the foundations of the Hersey & Bean Lumber Company's office building encountered deep urban fill deposits along the shoreline to the base of the excavation trench. During the twentieth century, fill was introduced to the site, initially to increase the land area available for the rail yard of the Stillwater Municipal Barge Facility, and later to decrease the likelihood of flooding (Figure 18). Inland, approximately 14 m (46 ft) to the east of the east foundation of the office building, the natural shoreline was encountered at a depth of approximately 2.60 m (8.5 ft.). An accumulation of stumps and wood float like that seen along the river's present shoreline marked this transition. Further inland at approximately 5 m (16 ft.) east of the office building's east foundation a 40-50 cm thick layer of sawdust and slab wood was documented at approximate depths of 2.6 to 3 m (8.5 to 9.8 ft.) (Figure 19). The depth of this horizon of sawdust, which is associated with the operation of the Hersey & Bean Lumber Company, often corresponded to the base of the cut for the pipe installation and followed the natural profile of the shoreline being deeper towards the river (16-18 ft. [4.9-5.5. m] below the surface near Structure 5849) and shallow inland. A single sherd of stoneware was observed within the sawdust horizon. As the trench excavations approached the area to the immediate north of the office building's foundations, a shallow bedrock outcrop was encountered. The eastern edge of the bedrock was located approximately 1-2 m to the east of the alignment of the office's east foundation indicating the office building was constructed atop bedrock.



FIGURE 18. SHORELINE FILL IS EVIDENT IN THIS HISTORIC IMAGE OF THE SHODDY MILL SITE AND THE SHODDY MILL POND LOCATION, 1939, VIEW TO SOUTH-SOUTHEAST

Note: During this period the foundations of the former lumber company office building have been adapted to serve as switching tower and office (arrow) (MNHS Collections: Runk 2099)

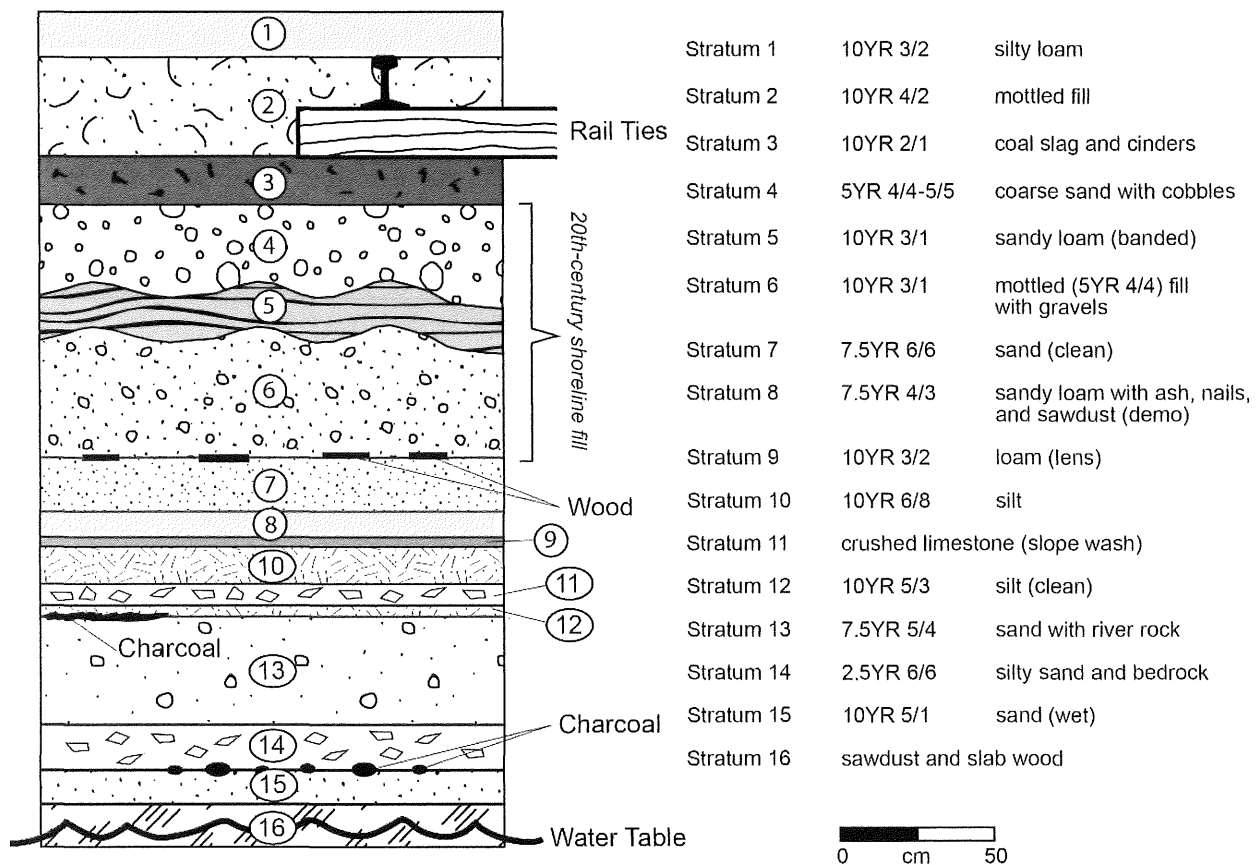


FIGURE 19. GENERAL STRATIGRAPHIC PROFILE 5 METERS EAST OF THE FOUNDATION OF THE OFFICE

The only feature encountered during the excavation of this drainage system was a concrete slab located to the immediate east of the planned location of Structure 5879. This slab, which was partially visible on the surface, was six inches thick and 12 ft. wide (north-south) by 13 ft. and seven inches long (east-west) (NAD 83, Zone 15, Southeast Corner: 515674.25 E 4988611.16 N; Southwest Corner: 515671.17 E, 4988608.99 N) (Figure 20). This slab was removed to make way for Structure 5879. To its immediate north, this slab abutted another concrete pad that had a thickness of one foot, but the dimensions of which were not exposed. The northernmost slab was left in place. Both slabs were covered by clean sand used to remediate the Terra Terminal site. These slabs were located in the vicinity of the Terra Terminal building's former fertilizer loading facility and apparently formed part of the driveway and/or foundation for that facility (Figure 21).

Artifacts noted during the installation of this portion of the drainage system were limited and associated with an apparent demolition layer (el. 682.00). When present, this mottled yellowish brown (10YR 5/4-5/6) to brown (7.5YR 4/3) sandy silt loam was approximately 10-20 cm thick. This stratum appears to be consistent with the artifact-yielding horizon (Stratum J) noted during the Phase I/II investigations (Terrell 2005:38). Two burned machine-cut nails, a few sherds of plain ironstone, and a single sherd of a stoneware ink bottle were observed within this horizon as well as ash and charcoal. No



FIGURE 20. CONCRETE SLAB AT LOCATION OF STRUCTURE 5879, VIEW TO NORTH



FIGURE 21. TERRA TERMINAL BUILDING IN 2004, LOADING FACILITY ASSOCIATED WITH CONCRETE SLABS AT LEFT, VIEW TO NORTHWEST

temporally diagnostic materials or concentrations of artifacts were present within the excavated portions of this horizon. Within the fill of the previously excavated storm sewer trench and the approach ramp and to the north of the office building were found a 1964 Minnesota license plate, a wheel hub, 1970s pull-tab beer cans, and other similar materials indicating the modern origin of the fill in that area.

SHODDY MILL POND

An approximately 60 ft. (east-west) by 160 ft. (north-south) storm water retention pond was created about 40 ft. to the northeast of the foundations of the Hersey & Bean Lumber Company's office building and 150 ft. to the south of the relocated Bergstein Shoddy Mill and Warehouse (see Figures 11 and 22). According to the 1884 Sanborn fire insurance map, the mill's blacksmith shop was located near the north end of the pond's footprint, however, by 1888 the blacksmith shop had been moved to the south side of the mill and the pond area became part of the "North Yard," which was used for the storage of lumber. During the first half of the twentieth-century, the site was used as the Stillwater Municipal Barge Terminal, and later it was the site of the Terra Terminal fertilizer warehouse. In 2012, in preparation of the site for the relocation of the Bergstein Shoddy Mill and Warehouse, a portion of the southern edge of the concrete slab of the former Terra Terminal building (c.1960) was removed and the remainder of the slab buried under approximately four feet of clean fill.

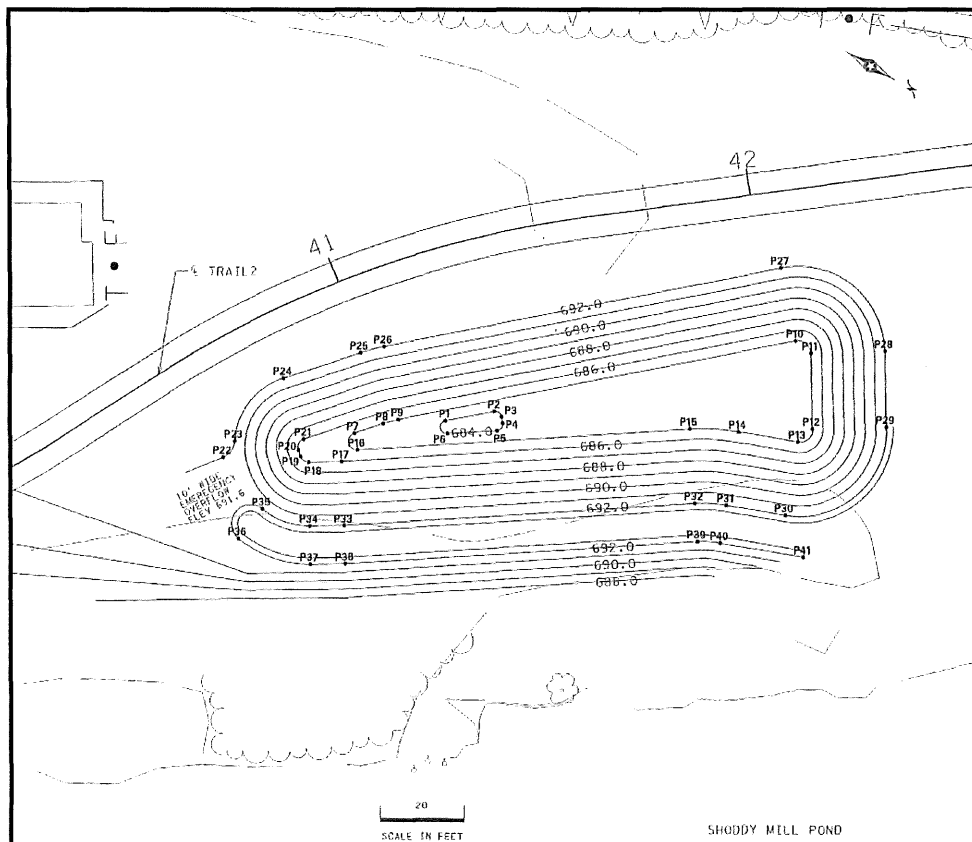


FIGURE 22. PRE-CONSTRUCTION PLAN OF THE SHODDY MILL POND

Monitoring of the construction of the Shoddy Mill Pond revealed the same deep, shoreline fill deposits encountered during the associated pipe work. Only during grading of the deepest point within the pond basin just south of inlet 5886 was a horizon containing burnt wood, brick fragments and mortar encountered (el. 682.00). Because the surface of this horizon, which is consistent with the previously discussed demolition layer, was at the base of the cut it was not excavated further and no temporally diagnostic materials were observed within the limited area exposed.

During the excavation of the pond, two twentieth-century concrete features that post-date the Hersey & Bean sawmill were documented. Along the north edge of the pond cut, the southernmost 3 feet of the broken edge of the 1-ft. thick concrete slab of the circa 1960 Terra Terminal building were exposed at a depth of 4 ft. below the surface (el. 690.10; NAD 83, Zone 15, Central Point: 515683.40 E 4999631.62 N) (Figure 23). A second concrete slab was also documented at the north end of the pond cut, but at a lower elevation (el. 684.40) (NAD 83, Zone 15, Southeast Corner: 515686.92 E 4988625.69 N; Southwest Corner: 515685.05 E, 4988624.33 N) (see Figures 23 and 24). This 14-inch thick slab measured 97 in. across (east-west). A slightly (0.5 in.) raised six-inch surround defined a seven-foot wide interior space. The concrete floor of the interior was stained with rust and coal. A single piece of flat glass was observed while the slab was being cleared. Only 10 ft. of the north-south extent of the slab was exposed. Based on the presence of rebar ties centered on the south side and eight feet from the southernmost

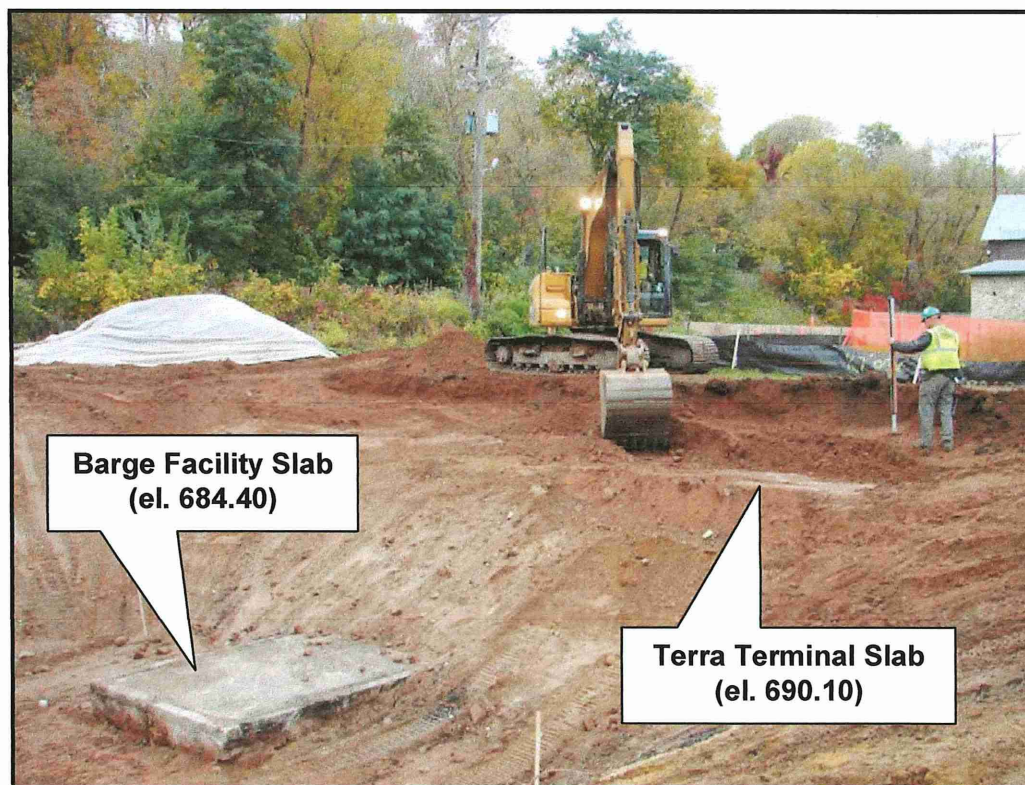


FIGURE 23. TERRA TERMINAL AND BARGE FACILITY CONCRETE SLABS, VIEW TO NORTHWEST



FIGURE 24. BARGE FACILITY CONCRETE SLAB, VIEW TO WEST-SOUTHWEST

edge on the east and west sides, it is surmised that the slab may measure eight by sixteen feet. This slab was constructed after the reddish brown (5YR 4/3) silty sand fill with river rock was introduced to create additional shoreline. The nature of the slab's construction and the accumulation of coal both adjacent to and above the feature suggest it was associated with the operations of the Stillwater Municipal Barge Facility. Both the Terra Terminal and barge facility slabs were left in place.

SUMMARY AND RECOMMENDATIONS

From August through October of 2015, Two Pines conducted archaeological construction monitoring for Phase 1 of the Loop Trail project in Stillwater, Washington County, Minnesota. A portion of the Loop Trail passes through the Stillwater South Main Street Archaeological District which is comprised of three archaeological sites: 21WA91 (Hersey & Bean Sawmill), 21WA92 (Hersey & Bean Planing Mill), and 21WA100 (Slab Alley). Among the mitigation measures outlined in the amended Section 106 MOA for the St. Croix Crossing Project is the avoidance and minimization of effects to the District during the design and construction of the Loop Trail. Because of the potential for previously undocumented archaeological resources to be encountered during the construction of the Loop Trail, the protection plan called for a qualified Level II: Historic Archaeological consultant to monitor all grading and subsurface excavations within the District boundary.

During construction monitoring of Phase 1 of the Loop Trail Project, no significant archaeological features or deposits associated with the Stillwater South Main Street Archaeological District were documented. Those features that were encountered included concrete barge moorings and concrete slabs associated with the operations of the Stillwater Municipal Barge Facility and the later Terra Terminal fertilizer warehouse. With the exception of a modern 12 ft. by 13.5 ft. concrete slab associated with the Terra Terminal building's former fertilizer loading facility, these concrete features were left in place.

Excavations during the construction of the Loop Trail revealed that much of the present riverfront within the District boundary is created land. As a result of the amount fill that has been introduced, deposits associated with the Stillwater South Main Street Archaeological District's period of significance, while at or near the surface within the west half of the District, are deeply buried along the riverfront. As a result, the deepest construction impacts, which were the drainage outfalls along the river, did not disturb intact archaeological deposits.

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**APPENDIX A:
MONITORING LOGS**

St. Croix Crossing Loop Trail Project (Phase 1)
Archaeological Construction Monitoring



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LOOP TRAIL
COUNTY WASHINGTON
SITE 21WA91
DATE 8-28-2015

Monitor(s) MICHELLE TENAGLE
Arrival at Site 9:30 ☒ AM ☐ PM Departure from Site 11:00 ☒ AM ☐ PM

ACTIVITIES MONITORED ASBESTOS TILE REMOVAL WITH
BACKHOE

LOCATION OF ACTIVITIES WITHIN SITE WITHIN CORSE OF TREES TO NORTH
OF OFFICE/STORE FOUNDATION N10M AND
NORTH OF FOUNDATION

DEPTH OF EXCAVATIONS 40-50 CM PHOTOGRAPH NOS. 1-2

SOIL DESCRIPTIONS (GENERAL)

LOOSE FILL OVER SILTY SAND
↑ COARSE SAND AND GRAVEL

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None _____

Flakes	Shatter	Lithic Tools	FCR	Precontact Ceramics
Shell	Charcoal	Bone	Bottle Glass	Window Glass
Nails	Metal <u>X</u>	Post-contact Ceramics	Brick/Mortar <u>X</u>	Concrete
Plastic	Other	Comments <u>LOOSE, MODERN ARTL.</u>		

GENERAL OBSERVATIONS

MOUNDED PILE OF DEBRIS
WHITE - REINFORCED STEEL LATE 19TH
OR EARLY 20TH C.
ANOTHER SHALLOW TEST AT ~70M NORTH
OF FOUNDN, ENTIRELY IN CLEAN SAND (25 CM)

Recorder M. TENAGLE Date 8-28-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LOGS TRAIL
COUNTY WASHINGTON
SITE 21 WA 91
DATE 9-10-15

Monitor(s) MICHAEL TENNELL

Arrival at Site 10:45 AM PM Departure from Site 3:00 AM PM

ACTIVITIES MONITORED CONTAMINATION, SOIL LOAD IN ALUMI-TRAIL
EQUIPMENT: SKIDSTEER - FRONT END LOADER

LOCATION OF ACTIVITIES WITHIN SITE STA. 31+50 EAST TO STA. 32+50

DEPTH OF EXCAVATIONS 30-40 CM (1 FT.) PHOTOGRAPH NOS. 1-2

SOIL DESCRIPTIONS (GENERAL)

10 YR 3/2 SILT CLAY OVER 10 YR 5/6 CLAY & SILT CLAY
W/ GRASS, LUMBER REMAINS, COAL, ETC.

FEATURES PRESENT? No Yes Describe: _____

CULTURAL MATERIAL None X

Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass _____
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar X Concrete X
Plastic _____ Other _____ Comments ASPHALT, CINDERS, DRAIN TILE

GENERAL OBSERVATIONS

ALL EXCAVATING IN MODERN FILL

Recorder M TENNELL Date 9-10-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CASSIN LOOP TRAIL
COUNTY WASHINGTON
SITE ZIWA91
DATE 9-14-15

Monitor(s) Michelle Tennell

Arrival at Site 6:45 AM PM 1:00 PM
Departure from Site 11:25 AM PM 3:00 PM

ACTIVITIES MONITORED CONTAMINATED SOIL LOOP 32+50 TO 35+50
NOISE FROM STA 32+50

LOCATION OF ACTIVITIES WITHIN SITE STA 32+50 TO 35+50

DEPTH OF EXCAVATIONS 30-40 INCHES (FILL) PHOTOGRAPH NOS. NA

SOIL DESCRIPTIONS (GENERAL)

100% 3/2 SIFT LOAM DIRT 100% FILL
FILL W/ GRAVELS, LIMESTONE, ASPHALT, CONCRETE, ETC.

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None ☒

Flakes	Shatter	Lithic Tools	FCR	Precontact Ceramics
Shell	Charcoal	Bone	Bottle Glass	Window Glass
Nails	Metal	Post-contact Ceramics	Brick/Mortar <input checked="" type="checkbox"/>	Concrete <input checked="" type="checkbox"/>
Plastic	Other	Comments	<u>ASPHALT, CINDERS, DIRT FILL</u>	

GENERAL OBSERVATIONS

ALL EXCAVATIONS IN MODERN FILL

Recorder M. Tennell

Date 9-14-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LOOP
COUNTY WASHINGTON
SITE 21111
DATE 9-15-15

Monitor(s) Michelle Teneau

Arrival at Site 6:45 ☒ AM ☐ PM Departure from Site 5:30 ☐ AM ☒ PM

ACTIVITIES MONITORED CONTAMINATED SOIL LOOPS 0.5' - 6' RADIAL
MINI STAKE STA 34+50 to 36+50 ; PIPE INSTALLATION
SB96 to SB98

LOCATION OF ACTIVITIES WITHIN SITE STA. 34+50 to 36+50
PIPE SB96 to SB98

DEPTH OF EXCAVATIONS 20-30cm (TRENCH)
3-10FT. (PIPE TRENCH) PHOTOGRAPH NOS. 1, 6-7

SOIL DESCRIPTIONS (GENERAL)

URBAN FILL 10" 4/5 to 10" 5/6 WITH CONCRETE, ASPHALT,
& GRANITE CORNERS + CURB; 10" 5/6 to 10" 6/6
to SB96

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None 8x10" (TRENCH)

Flakes	Shatter	Lithic Tools	FCR	Precontact Ceramics
Shell	Charcoal	Bone	Bottle Glass	Window Glass
Nails	Metal	Post-contact Ceramics	Brick/Mortar <u>X</u>	Concrete <u>X</u>
Plastic	Other	Comments	<u>ASPHALT - 10" 5/6 to 10" 6/6</u>	

GENERAL OBSERVATIONS

PIPE RUN & TIE-IN IN URBAN FILL CONSISTING
OF DENSE ROAD DEBRIS (ASPHALT, CORNERS
& CURB, 10" 5/6 to 10" 6/6) & DENSE DEBRIS
(TOILET TANK, 2" 4/5 to 2" 5/6) & DENSE DEBRIS
ONLY POSSIBLE IMPACTS SAW & 110 CM ONLY AT STAKE (SB96)

Recorder M. Teneau

Date 9-15-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT

S. Creek Loop Trail

COUNTY

WASHINGTON

SITE

21 WPA

DATE

7-16-15

Monitor(s)

Michelle Terrell

Arrival at Site

6:45

AM

Departure from Site

3:30

PM

ACTIVITIES MONITORED

Trail Grading, Pipe Installation;

Shale Run - East side of trail

LOCATION OF ACTIVITIES WITHIN SITE

Trail 26+50 North to 26+50

Pipe Run: 5900 to 5901; Shale: 26+50 South to 35+50

DEPTH OF EXCAVATIONS

10 - 12 FT.

PHOTOGRAPH NOS.

25-32

SOIL DESCRIPTIONS (GENERAL)

10423/2 Silt Loam; over 10423/6 coarse sand and gravel

with rounded gravel cinders; over fill (10423/6 + 10423/2); over silt.

FEATURES PRESENT?

No

Yes

Describe:

CULTURAL MATERIAL

None

Flakes

Shatter

Lithic Tools

FCR

Precontact Ceramics

Shell

Charcoal

Bone

Bottle Glass

Window Glass

Nails

Metal

Post-contact Ceramics

3

Brick/Mortar

Concrete

Plastic

Other

Comments

2 concrete blocks

GENERAL OBSERVATIONS

RECORDED AT THE SITE IN FILL BELOW CORN/CINDER HORIZON

SHALE EXCAVATION: 10423

Recorder

M. TERRELL

Date

7-16-15



PROJECT	ST. CROIX LOOP TR
COUNTY	WABASH CO
SITE	21 WAB
DATE	9-22-15

Monitor(s) 10:00 AM
Arrival at Site 6:45 AM PM Departure from Site 4:15 AM PM

ACTIVITIES MONITORED PIPE INSTALLATION - 100% PIP

LOCATION OF ACTIVITIES WITHIN SITE 5519 to 5521 11, 5519, 5521
5521
CLEARING OF 50' x 10' 5360 PINE RUN

DEPTH OF EXCAVATIONS _____ PHOTOGRAPH NOS. 35, 36, 38-42

[illegible]

FEATURES PRESENT? (No) Yes Describe: _____

CULTURAL MATERIAL	None _____				
Flakes _____	Shatter _____	Lithic Tools _____	FCR _____	Precontact Ceramics _____	
Shell _____	Charcoal _____	Bone _____	Bottle Glass _____	Window Glass _____	
Nails _____	Metal _____	Post-contact Ceramics _____	Brick/Mortar _____	Concrete _____	
Plastic _____	Other _____	Comments _____			

GENERAL OBSERVATIONS

FIRE TRENCH 11' WIDE, 1' DEEP

PLASTIC 2' UPBURNING FIRE; 500 - 575 1/2" WIDE

11' 2" ; REMOVED BACK & SPARKS FROM PLANT - 5845 TO

5850 FIRE GON.

Recorder M. T. K. F. L. Date 9-22-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST CROIX LAND TAIL
COUNTY WISCONSIN
SITE 21000
DATE 9-23-15

Monitor(s) MICHELLE TERRELL

Arrival at Site 6:40 ☒ AM ☐ PM Departure from Site 2:30 ☐ AM ☒ PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE PIPE 5849 TO 5860

DEPTH OF EXCAVATIONS 3'-12' PHOTOGRAPH NOS. 52

SOIL DESCRIPTIONS (GENERAL)

MIXED GRAIN SANDSTONE & L. SANDSTONE, BRICK IN
A 104032 SANDY LOAM & SAND MEDIUM

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None ☒

Flakes _____	Shatter _____	Lithic Tools _____	FCR _____	Precontact Ceramics _____
Shell _____	Charcoal _____	Bone _____	Bottle Glass _____	Window Glass _____
Nails _____	Metal _____	Post-contact Ceramics _____	Brick/Mortar _____	Concrete _____
Plastic _____	Other _____	Comments _____		

GENERAL OBSERVATIONS

WATER PUMP & RIGGING; SAME PROBLEMS FOR
FM 13 5899 TO 5900. RAINED AT 2:30.

Recorder M. TERRELL Date 9-23-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LOOP TRAIL
COUNTY WASHINGTON
SITE Z1W17
DATE 9-25-15

Monitor(s) MICHAEL TERRELL

Arrival at Site 6:45 ☒ AM ☐ PM Departure from Site 3:15 ☐ AM ☒ PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE PIPE 5843 - 5860; 5849 to 5859

DEPTH OF EXCAVATIONS 14' (5849) to 8' base of 5849 PHOTOGRAPH NOS. 53-58

SOIL DESCRIPTIONS (GENERAL)

70 CM VAPOR TILL; 10 CM RAIL VAPOR; 80-120/140
IS CAL - SLT - BANDS; 10 CM 100% S. SANDS
542413 S. SANDS AND 100% S. SANDS TO 6 CM

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None ☒

Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass _____
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar _____ Concrete _____
Plastic _____ Other _____ Comments _____

GENERAL OBSERVATIONS

CRUSHER SAND PILES ALONG ROAD IN
WET IN 20' DEEP AT 5849; BOTTOM SECTION
LEFT IN S. SANDS.

Recorder M. TERRELL Date 9-25-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT

ST. CROIX LOW TANK

COUNTY

WASHINGTON

SITE

ZIWA91

DATE

9-28-15

Monitor(s)

MICHELLE TENNELL

Arrival at Site

6:45

AM PM

Departure from Site

2:45

AM PM

ACTIVITIES MONITORED

PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE

PIPE: 5849 to 5859, PIPE TO

LOCATION OF STRUCTURE 5859

DEPTH OF EXCAVATIONS

9 ft. - 12 ft.

PHOTOGRAPH NOS.

1-14

SOIL DESCRIPTIONS (GENERAL)

SEE PROFILE DRAWING, SOIL TYPE PERIODS OF STRATIFICATION
VARIABLE IN COMPOSITION, FLOODS, & FLOOD DEPOSITS, SANDSTONE
AT 2.6-3.0 m.

FEATURES PRESENT?

No

Yes

Describe:

CULTURAL MATERIAL

None

Flakes

Shatter

Lithic Tools

FCR

Precontact Ceramics

Shell

Charcoal

Bone

Bottle Glass

Window Glass

Nails

X(3)

Metal

Post-contact Ceramics

Brick/Mortar

Concrete

Plastic

Other

Comments

GENERAL OBSERVATIONS

NAILS IN 10 CM THICK LAYER (160-170 CM)
WITH LIGN & SANDSTONE IN SUPERFICIAL DE STRATIFICATION
5859 IN 50 CM DEPTH OF STRATIFICATION. LAYER
OF SANDSTONE @ 2.6-3.0 m.

Recorder

M. TENNELL

Date

9-28-15



MONITORING LOG

PROJECT STANDARD MONITORING
COUNTY WYOMING
SITE ZIWA
DATE 9-29-15

Two Pines Resource Group, LLC

Monitor(s) MICHELLE TROTT
Arrival at Site 6:45 AM PM Departure from Site 4:00 AM PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE PIPE RUN SOUTH TO SOUTH STRUCTURE
SB411

DEPTH OF EXCAVATIONS 12'-20' PHOTOGRAPH NOS. 15-19

SOIL DESCRIPTIONS (GENERAL)

SAME AS SB49 to SB60 FILL; COAL/CINDERS; FILL; SANDYST

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL

None ☒

Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass _____
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar _____ Concrete _____
Plastic _____ Other _____ Comments _____

GENERAL OBSERVATIONS

SANDYST IN DEEPEST PORTION OF CUT 10'/20' —
BELOW BASE OF STRUCTURE SB411 — INNOVATIVE

Recorder M. TROTT Date 9-29-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LOOP TRAIL
COUNTY WASHINGTON
SITE 21WAG1
DATE 9-30-15

Monitor(s) Michelle Terrell
Arrival at Site 7:00 AM PM Departure from Site 10:15 AM PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE Sta. 5940 to 5941: ONE PIPE
NORTH FROM 5941

DEPTH OF EXCAVATIONS 22-24' PHOTOGRAPH NOS. _____

SOIL DESCRIPTIONS (GENERAL)

SAME AS PREVIOUS; FILL; COM; FILL; SANDY
CLAYS/SILTS

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None X

Flakes _____	Shatter _____	Lithic Tools _____	FCR _____	Precontact Ceramics _____
Shell _____	Charcoal _____	Bone _____	Bottle Glass _____	Window Glass _____
Nails _____	Metal _____	Post-contact Ceramics _____	Brick/Mortar _____	Concrete _____
Plastic _____	Other _____	Comments _____		

GENERAL OBSERVATIONS

BENEATH SANDWICH IS NATURAL FLOODPLAIN DEPOSITS
CONTAINING FLOAT LOGS & DECIDUOUS STUMPS,
ROOTS, ETC.

Recorder M. Terrell Date 9-30-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST CROIX LAND TREATMENT
COUNTY WASHINGTON
SITE ZIWAH
DATE 10-1-15

Monitor(s) MICHAEL T. JAMES

Arrival at Site 6:45 AM PM Departure from Site 2:45 AM PM

ACTIVITIES MONITORED PIPE INSPECTION

LOCATION OF ACTIVITIES WITHIN SITE PIPE RUN: SANDY TO SAND

DEPTH OF EXCAVATIONS 16.20' PHOTOGRAPH NOS. 31-32

SOIL DESCRIPTIONS (GENERAL)

SAME SANDY SILT CLAY WITH SOME LG SILT GRAINS
EXPOSED, SOME WHITE & CEMENTITE 'SAND' 250' x 50'

FEATURES PRESENT? No Yes Describe: _____

CULTURAL MATERIAL None _____
Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass _____
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar _____ Concrete _____
Plastic _____ Other _____ Comments _____

GENERAL OBSERVATIONS

STAKEHOLDERS IN SANDPIT 10' x 10' @ ~16-10' (SANDPIT 30')

Recorder M. JAMES Date 10-1-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CLOUD LAND TRAIL
COUNTY WASHINGTON
SITE 21 WA 91
DATE 10.2.15

Monitor(s) M. CHELLE TENNELL

Arrival at Site 645 AM PM Departure from Site 230 AM PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE PIPE RUN: 5040 TO 5041

DEPTH OF EXCAVATIONS 14'-20' (EMBANKMENT) PHOTOGRAPH NOS. 33-48

SOIL DESCRIPTIONS (GENERAL)

4-5' OF FILL OVER LINGSTON CORRIE GROUND
TO BEDROCK IN ESTIMATE 10' OF DIST

FEATURES PRESENT? No Yes Describe: _____

CULTURAL MATERIAL None IN FILL ONLY

Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass _____
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar _____ Concrete _____
Plastic _____ Other _____ Comments _____

GENERAL OBSERVATIONS

ARTIFACTS IN FILL & RUBBLE AROUND CURB
PIPE INCLUDED A 1967 MM. LENSE, PLATE, FULL
1/2" MICHELIN CAN, AN AOW ROSS BEER W/ (SPRINKLER)
WARRANTY - 1PC (STEEL); ALSO OTHER MISC. ARTIFACTS.
COLLECTED SHAPING TOOL, ASSOC. W/ RAILROAD CAR & PIPE

Recorder M. Tennell Date 10.2.15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LOOP TRAIL
COUNTY WASHINGTON
SITE ZUMA
DATE 10-5-15

Monitor(s) MICHELLE TEARELL
Arrival at Site 7:00 ☒ AM ☐ PM Departure from Site 10:00 ☒ AM ☐ PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE MP 3859

DEPTH OF EXCAVATIONS 2 1/4 FT. PHOTOGRAPH NOS. 1-3

SOIL DESCRIPTIONS (GENERAL)

FOR FILL OF THE OLD RUMBLE CUP TRAILS TO
BEHIND THE BAY HOUSE - THE ENTRANCE

FEATURES PRESENT? No ☒ Yes ☐ Describe: _____

CULTURAL MATERIAL None ☒

Flakes	Shatter	Lithic Tools	FCR	Precontact Ceramics
Shell	Charcoal	Bone	Bottle Glass	Window Glass
Nails	Metal	Post-contact Ceramics	Brick/Mortar	Concrete
Plastic	Other	Comments		

GENERAL OBSERVATIONS

ALL FILL WORK RESEARCH

Recorder M. TEARELL Date 10-5-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT

COUNTY

SITE

DATE

ST. CRAIG ROAD CO.
WASHINGTON
ZIWAQU
10-6-15

Monitor(s)

MICHAEL TENNEN

Arrival at Site

12:30

AM PM

Departure from Site

4:45

AM PM

ACTIVITIES MONITORED

PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE

5879 to 5881 ; 5881 TO 5882

DEPTH OF EXCAVATIONS

5-6'

PHOTOGRAPH NOS.

4-12

SOIL DESCRIPTIONS (GENERAL)

5879 to 5881

FILL LAYERS OVER CRIPPLE OCCUPATION / DEBRIS

OVER CRIPPLE SANDS TO BEDROCK; SHALLOW BEDROCK
TO WEST; 5881 TO 5882: FILL

FEATURES PRESENT?

No

Yes

Describe:

CONCRETE SLAB AT 5879 (12' X 13' 3") - 6" AT SURFACE & COVERED PARTIALLY W/ CRIPPLE FILL - SLAB REMOVED

CULTURAL MATERIAL

None

Flakes

Shatter

Lithic Tools

FCR

Precontact Ceramics

Shell

Charcoal

Bone

Bottle Glass

Window Glass

Nails

Metal

Post-contact Ceramics

9

Brick/Mortar

Concrete

Plastic

Other

Comments

GENERAL OBSERVATIONS

BOTTLE GLASS W/ CRIPPLE BEDROCK - SOME IN FILL LAYER; OCCASIONAL POTTERY SHARDS (NO IDENTIFIABLE TYPES) IN SANDS. COLLECTED ALL TRIFLE DEBRIS - MAXIMUM 1/4" IN SIZE - 1 DEBRIS

Recorder

M. TENNEN

Date

10-6-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LAY TRAIN
COUNTY WASHINGTON
SITE 21 WFO
DATE 10-7-15

Monitor(s) MICHELLE TEARELL
Arrival at Site 6:45 ☒ AM ☐ PM Departure from Site 12:15 ☐ AM ☒ PM

ACTIVITIES MONITORED PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE 5859; 5887; 5886

DEPTH OF EXCAVATIONS 5-10' (5887) PHOTOGRAPH NOS. 20-31

SOIL DESCRIPTIONS (GENERAL)

5887 TO 5886: TOPSOIL; CLAY; SAND; GRAVEL; ROCK; IRON
5859 TO 5887: DISTURBED

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None _____

Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass _____
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar _____ Concrete _____
Plastic _____ Other 1 Comments PIPE STATION/2000 - 5000 FEET

GENERAL OBSERVATIONS

EXCAVATIONS CROSSING THROUGH SITE - TOWER
DISTURBED IN PREVIOUSLY EXCAVATED STATE

Recorder M. TEARELL Date 10-7-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CHARLES LAMP TOWER
COUNTY WISCONSIN
SITE 21 WY 91
DATE 10-9-15

Monitor(s) MICHELLE TENNELL

Arrival at Site 6:45 AM PM Departure from Site 5:45 AM PM

ACTIVITIES MONITORED GRADING

LOCATION OF ACTIVITIES WITHIN SITE INLET 5899 - SWALE; HOLDING POND

DEPTH OF EXCAVATIONS 5899-1.5-4' POND-2-10' PHOTOGRAPH NOS. 35-36, 39-41, 48-46

SOIL DESCRIPTIONS (GENERAL)

5899: 30-40cm fill; 10-30cm, 20cm; 40-50cm fill +
Dense fill; coal; pipe fill; wood, brick, etc. (Pond)

FEATURES PRESENT? No Yes Describe: _____

CULTURAL MATERIAL None X

Flakes	Shatter	Lithic Tools	FCR	Precontact Ceramics
Shell	Charcoal	Bone	Bottle Glass	Window Glass
Nails	Metal	Post-contact Ceramics	Brick/Mortar	Concrete
Plastic	Other	Comments		

GENERAL OBSERVATIONS

ALL CUTS IN FILL; ONLY DEEPEST PART OF POND
AT TOP OF REMOVED DEBRIS LAYER BELOW
"LINE" CROWN FILL, WHICH IS OTHERWISE PRESENT
ACROSS THE BOTTOM OF THE POND CUT. THIS
IS TYPICAL OF EXISTING FILL ACROSS SITE AREA.

Recorder M. TENNELL Date 10-9-15



MONITORING LOG

PROJECT Gravel Wash Pond
COUNTY WASHINGTON
SITE 21 WP 9
DATE 10-12-15

Two Pines Resource Group, LLC

Monitor(s) Michelle Tennell

Arrival at Site 6:45 ☒ AM ☐ PM Departure from Site 3:45 ☐ AM ☒ PM

ACTIVITIES MONITORED Grading

LOCATION OF ACTIVITIES WITHIN SITE Pond

DEPTH OF EXCAVATIONS 3 FT. PHOTOGRAPH NOS. 47-63

SOIL DESCRIPTIONS (GENERAL)
FILL; COAL/CLOGS; "PINK" FILL; GRAY DEMO; SAND/WOOD

FEATURES PRESENT? No ☒ Yes Describe: CONCRETE SLAB W/ REBAR TIES W SURROUNDING POND
684.4

CULTURAL MATERIAL None _____
Flakes _____ Shatter _____ Lithic Tools _____ FCR _____ Precontact Ceramics _____
Shell _____ Charcoal _____ Bone _____ Bottle Glass _____ Window Glass 1
Nails _____ Metal _____ Post-contact Ceramics _____ Brick/Mortar _____ Concrete _____
Plastic _____ Other _____ Comments _____

GENERAL OBSERVATIONS
SLAB 97" WIDE 7' IMAGINATION SPACE; 1 PR. FLAT GLASS
OBSERVED IN CLEARING SITE COVERED BY COAL/CLOGS, CONSTRUCTED
IN "PINK" FILL LAYER, COVERED BY COAL/SLAB WOOD COAL
SLAB IS LIKELY 3'x16' (EST.)

Recorder M. Tennell Date 10-12-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT

ST. CHARX LOOP TRAIL

COUNTY

WASHINGTON

SITE

21 WPA

DATE

10-12-13

Monitor(s)

M. Tennell

Arrival at Site

6:45

AM PM

Departure from Site

10:00

AM PM

ACTIVITIES MONITORED

CONCRETE; PIPE INSTALLATION

LOCATION OF ACTIVITIES WITHIN SITE

POND; PIPE 5894 to 5895

DEPTH OF EXCAVATIONS

8 FT. (SIDE SLOPE)

PHOTOGRAPH NOS.

1-

SOIL DESCRIPTIONS (GENERAL)

FILL

FEATURES PRESENT?

No

Yes

Describe:

CONCRETE SLAB 4' x 4' x 8" DEEP, RUNS
600.1

CULTURAL MATERIAL

None

Flakes

Shatter

Lithic Tools

FCR

Precontact Ceramics

Shell

Charcoal

Bone

Bottle Glass

Window Glass

Nails

Metal

Post-contact Ceramics

Brick/Mortar

Concrete

Plastic

Other

Comments

GENERAL OBSERVATIONS

SOUTHWEST PORTION OF POND CUT - NO OTHER
PREVIOUSLY DISTURBED BY STORMWATER FLOWING
PIPE CUT IS FILL - PIPE WOULD HAVE BEEN LOW
+ WEST - SEWER (CITY) RUNS THROUGH AREA.
UPPER SLAB - DANGEROUS BRICKEN - TERRA TERMINAL? 36' + E-11

Recorder

M. Tennell

Date

10-12-13



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT ST. CROIX LAND TRUST
COUNTY INDEPENDENCE
SITE ZIWA91
DATE 10-20-15

Monitor(s) M. Tarnell

Arrival at Site 8:45 AM PM Departure from Site 3:00 AM PM

ACTIVITIES MONITORED GRADING

LOCATION OF ACTIVITIES WITHIN SITE SWALE TO NORTH OF MAIN ROAD
15' N.E. OF SBF9; POTENTIAL FOR SEWER IN
SBF9 SWALE

DEPTH OF EXCAVATIONS 1 FT. EXCAVATED PHOTOGRAPH NOS. 20, 29-30

SOIL DESCRIPTIONS (GENERAL)
SOFT - REDDISH BROWN CLAY; SOME SILT
CHUNKY AND FINE GRAINED

FEATURES PRESENT? ☒ No ☐ Yes Describe: _____

CULTURAL MATERIAL None

Flakes	Shatter	Lithic Tools	FCR	Precontact Ceramics
Shell	Charcoal	Bone	Bottle Glass	Window Glass
Nails	Metal	Post-contact Ceramics	Brick/Mortar	Concrete
Plastic	Other	Comments		

GENERAL OBSERVATIONS
SWALE GRADED IN FRONT OF MAIN E
CUTTING OCCURRED TO NORTH OF MAIN E
PT NORTH OF SWALE. GRADING IS APPROX
100 TO 200 FT SOUTH OF GATE.

Recorder M. Tarnell Date 10-20-15



MONITORING LOG

Two Pines Resource Group, LLC

PROJECT

ST. CASSIN LOOP TRAIL

COUNTY

WASHINGTON

SITE

21111111

DATE

10-22-15

Monitor(s)

MICHELLE TERRELL

Arrival at Site

9:00

AM PM

Departure from Site

8:45

AM PM

10:15

AM

11:00

AM

ACTIVITIES MONITORED

COAST GUARD

LOCATION OF ACTIVITIES WITHIN SITE

SWALL FOR INLET 5896

DEPTH OF EXCAVATIONS

LESS THAN 1 FT (SWALL)
INLET TO SWALL 1.5 FT.

PHOTOGRAPH NOS.

51-52

SOIL DESCRIPTIONS (GENERAL)

LOAMY TOPSOIL

FEATURES PRESENT?

No

Yes

Describe:

CULTURAL MATERIAL

None

Flakes

Shatter

Lithic Tools

FCR

Precontact Ceramics

Shell

Charcoal

Bone

Bottle Glass

Window Glass

Nails

Metal

Post-contact Ceramics

Brick/Mortar

Concrete

Plastic

Other

Comments

GENERAL OBSERVATIONS

CONCRETE FOR INLET 5896 IS MODERN FILL
THE ADJUTMENT OF BACKLIFE, FILL
FILL EXCAVATED SAME TO TOP OF
SEWER PIPE. SANDY FILL OVER TOPSOIL FILL AND INLET.

Recorder

M. TERRELL

Date

10-22-15