

**HERITAGE RESOURCES IMPACT
ASSESSMENT FOR PROPOSED
YORK & ST. MARY AVENUE
EXTENSIONS
(MAIN STREET - PIONEER BOULEVARD)**

Prepared For

I. D. SYSTEMS LTD.

**Quaternary
Consultants
Limited**

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1.0 INTRODUCTION

The City of Winnipeg will be undertaking an upgrading of the Provencher Bridge and extensions of York and St. Mary Avenue from Main Street to the new bridge approaches. The project will impact areas within the East Yard (Figure 1). An archaeological impact assessment of the impact areas east of Pioneer Boulevard was undertaken during 1988. Considerable evidence of pre-Contact occupation horizons was located. The archaeological resources are detailed in "**Provencher Bridge Project Archaeological Impact Assessment**" (Quaternary 1989).

With a high potential for heritage resources, throughout the East Yard, and considering the recoveries of the 1988 impact assessment, Historic Resources Branch (Manitoba Culture, Heritage and Recreation) determined that a heritage resource impact assessment was necessary for those areas of impact which are located between Main Street and Pioneer Boulevard. Accordingly, the project engineers, I. D. Engineering Ltd., engaged Quaternary Consultants Ltd. to undertake the necessary assessments.

In accordance with the provisions of the Manitoba Heritage Resources Act, Quaternary Consultants applied for and received Manitoba Heritage Permit #A33-89 to conduct the project (Appendix A). In addition, a City of Winnipeg Services Permit (District 1 - #12192) was obtained (Appendix A).

Field operations were conducted in three phases, between July 13 and October 19, 1989. The initial aspect, Phase I, consisted of the excavation of two backhoe trenches along the York Avenue right-of-way, between the CNR Main Line and Pioneer Boulevard. Phase II consisted of monitoring geo-technical soil test drill holes at various locations, along the CNR Main Line embankment and Main Street. Phase III consisted of backhoe excavation of exploratory trenches along the St. Mary Avenue right-of-way.

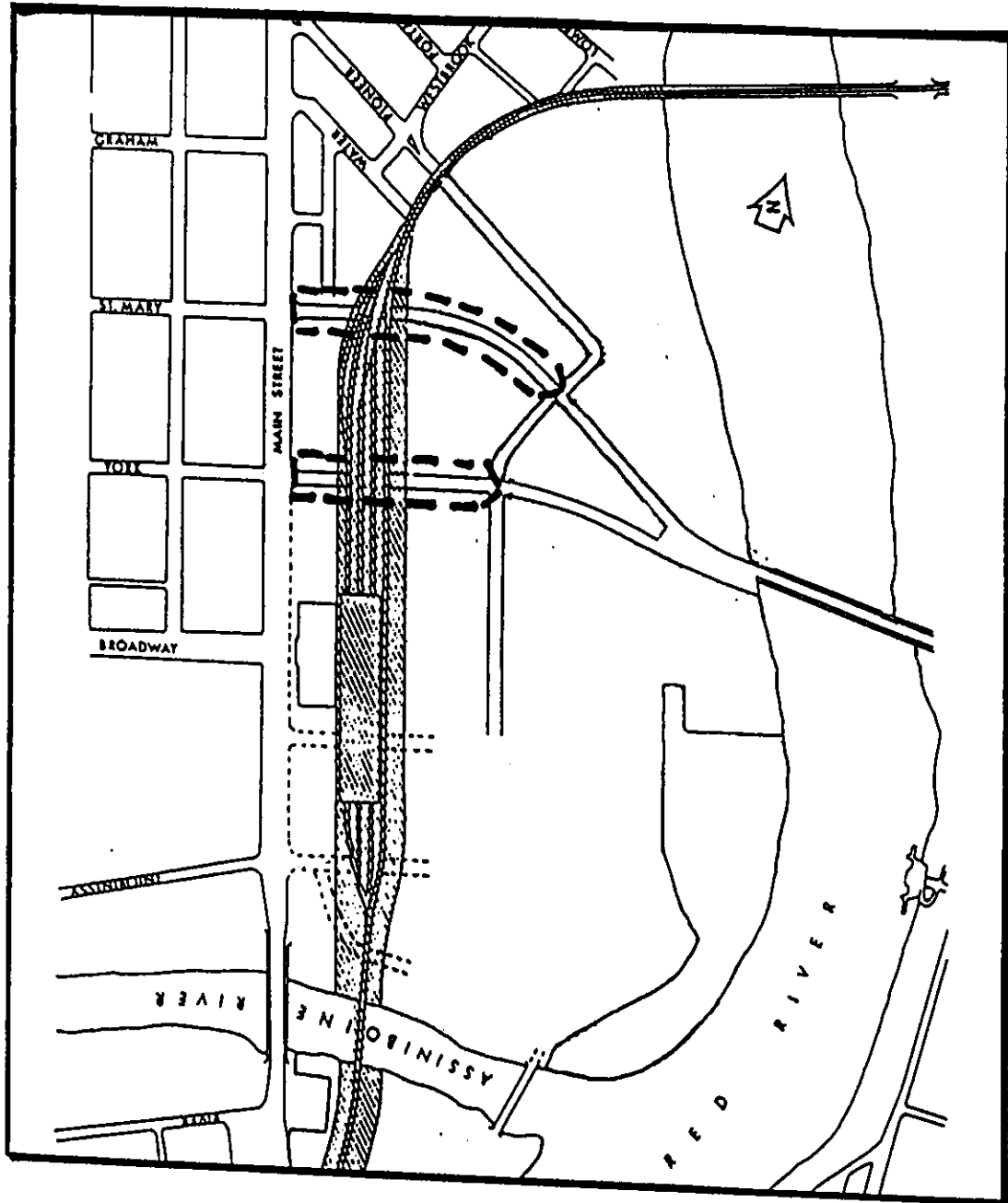


Figure 1: Map of East Yard showing Impact Zones

2.0 INVESTIGATION METHODOLOGY

The provenience of all investigation locations has been surveyed into The Forks Archaeological Survey Grid. This metric grid is based upon the City of Winnipeg survey marker (87R548) as the Site Datum. This marker, located on the north end of the Low Line Bridge across the Assiniboine River, has been assigned the arbitrary provenience of 1000N/1000W. The 1000E/W Baseline extends from the marker to the second concrete pier (to the south of the embankment) of the CNR Main Line. The locations of the backhoe exploratory excavation trenches have been recorded in relation to the Site Datum and the E/W Baseline. The locations are recorded in Appendix B.

2.1 Backhoe Exploratory Excavations

An archaeological team, consisting of a rubbermount backhoe with a skilled operator, the senior archaeologist and two assistant archaeologists, was deployed. A series of five test trenches were excavated within the proposed impact zone. Two test trenches were placed within the York Avenue extension right-of-way and three trenches were sited within the projected St. Mary Avenue right-of-way (Figure 2).

The method of investigation was the same as had been developed during the North Assiniboine Node Impact Assessment (FRC 1989) and the Provencher Bridge Assessment (Quaternary 1989). The backhoe, using a 24" bucket, would excavate the exploratory trench in thin layers, usually 5 to 10 cm thick. The extractant soil would be spread at the side of the trench and the archaeological team would examine it, using garden rakes to spread the material. The presence of relict soil zones and/or cultural material required detailed examination of the extracted soil, using trowels. All artifacts were collected and the depth below surface was recorded for each recovery. Soil samples of

cultural levels were collected in labelled bags and taken to the laboratory facilities for further processing. The soil profile of each excavated trench was recorded, to permit sub-surface mapping of the stratigraphy of the impact zone.

2.2 Monitoring of Geo-Technical Drilling

In order to determine the quality of the sub-strate for road construction, the project engineers conducted a geo-technical drilling program. A series of holes, 5" diameter, were drilled at various locations (Figure 2). As part of the archaeological impact assessment program, Quaternary Consultants arranged to monitor the operations, with the goal of observing and recording any archaeological data encountered during the sub-surface examinations. Due to the smallness of the diameter of the drill hole, minimal information was recovered. All soil that came to the surface, in the auger bit, was thoroughly mixed - precluding determination of thin relict soil horizons. Soil strata could be observed when split-tube core samples were taken; however, when Shelby cores were collected, only the soil at the top and bottom of the core tube could be observed.

2.3 Laboratory Procedures

Soil samples from Pre-Contact cultural horizons were water-screened using stacked meshes of 1/4" over 1 mm. This process is necessary to ensure the recovery of small artifacts (e.g., lithic flakes, ceramic sherdlets and small bone fragments). These recoveries were sorted by material and catalogued.

All recovered artifacts were washed, identified and sorted by provenience (i.e., location on the site [trench number] and stratigraphic level). Identification procedures consisted of ascertaining the material of which the artifact was composed, as well as determining the function of the object and the method of

manufacture. Additional descriptive data, such as color, date of manufacture, name of manufacturer, and condition of the artifact, were recorded when ascertainable. Whenever possible, the cultural affiliation of the artifact was determined (e.e.g, Blackduck; Recent Euro-Canadian; Pre-Contact; etc.).

All of the faunal remains were examined and identified as specifically as possible: body part, age of individual, and species, where possible. Any evidence of butchering techniques, such as cutting or sawing, was recorded. The condition of the specimens were noted, i.e., charred, broken, calcined, etc. The specimens were identified using standard references: Olsen (1960, 1964), Gilbert (1973), DeBlase and Martin (1974), Mundell (1975), Clarke (1981), Scott and Crossman (1973). Floral remains were identified as specifically as possible, using Montgomery (1977). Specimens were identified to the lowest taxonomic ranking wherever possible, although incompleteness of the element often resulted in identification at the Family, Order or Class level.

After the artifacts had been prepared, the locational and identifying data was entered into the computer cataloguing system. Each artifact, or cluster of artifacts, received a sequential catalog number which consisted of the Borden designation for The Forks (D1Lg-33), followed by the project designator (89C - indicating the third project of 1989 on the site) and the specimen number (e.g., D1Lg-33/89C-1234).

The cataloguing system is based upon the Canadian Heritage Inventory Network (CHIN) system (FRC 1988:110, 171). The computer cataloguing program was developed by Brian Lenius, based upon **DBASE3**, for use on personal computers. The project used an IBM AT clone computer with a 40 megabyte hard drive and a dot matrix printer for the generation of individual artifact catalogue cards on fanfold 3" x 5" cards.

Processed artifacts were prepared for storage by inserting the specimens and the catalogue card into a standard plastic storage bag and stapling the bag closed. All analysis and research on the artifacts was undertaken at the laboratory facilities of Quaternary Consultants Ltd. At the end of the project, all recovered artifacts will be taken to the repository designated by the City of Winnipeg.

3.0 ARCHAEOLOGICAL RECOVERIES

For all sub-surface investigations, soil profiles were recorded and the recovered artifacts were curated and catalogued. All stratigraphic sequences were divided into three major levels, to conform with data recovered from other archaeological projects at The Forks. These levels are:

Level 1	Railroad Fill Stratum	Usually consisting of gravel, cinder, ash, sand, or clay. Often containing historic artifacts.
Level 2	Early Historic Stratum	Correlated with the period between 1737 (La Verendrye) and the arrival of the railroad (1885). Marked by evidence of historically recorded floods (1793, 1826, 1850, 1882). Consists of discrete clay/silt strata, occasionally separated by a thin, juvenile soil layer. At locations away from the banks of the Red and Assiniboine River, this level contains few artifacts.
Level 3	Pre-Contact Native Ceramic Stratum	Numerous discrete soil zones, separated by layers of river-deposited silts and clays. Several soil zones contain evidence of occupation: fish and mammal bone, ceramic sherds, lithic tools and flakes, hearth, etc.

3.1 Exploratory Trenches

Five exploratory test trenches were excavated by backhoe along the proposed rights-of-way of York and St. Mary Avenues, between Pioneer Boulevard and the CNR Main Line embankment (Figure 2).

3.1.1 Trench 1

This unit was excavated at the western end of the York Avenue right-of-way, adjacent to the CNR Main Line embankment. The excavations were terminated at a depth of 355 cm.

The upper 102 cm was railroad fill (Level 1), made up of gravel, with embedded clumps of grey clay. The soil profile below the fill contained disturbed silt over a distinct 'plow zone' (Level 2). This cultivation stratum is correlated with the agricultural activity of the Hudson's Bay Company Experimental Farm (1836-1848) (FRC 1988:46). Below Level 2, the soil consisted of a series of relict soil horizons, separated by bands of riverine-deposited silt, silty clay and clay (Level 3). The following table lists the observed strata and the relevant depths below surface.

Depth (cm)	Stratum Description	Level
0 - 102	Gravel and Clay	Level 1
102 - 118	Disturbed black silt	Level 2
118 - 136	"Plow Zone"	"
136 - 153	Grey-brown silty clay	Level 3
153 - 154	Thin juvenile soil horizon	"
154 - 178	Light brown silty clay	"
178 - 179	Thin juvenile soil horizon	"
179 - 206	Light grey-brown silt	"
206 - 243	Light brown sand	"
243 - 355	Series of silt and sandy silt	"

Table 1: Soil Profile of Trench 1

Non-diagnostic historic artifacts were observed at the base of Level 1. These included severely corroded wire-cut nails, a railroad brake shoe and fragments of milled wood. These specimens were not curated. No artifacts were recovered from Level 2.

No Pre-Contact occupation strata were observed in Level 3. Native occupation levels are usually characterized by a dense deposit of charcoal, ash, fish bone and cultural artifacts. The sand stratum (206-243 cm) is tentatively identified with the 400/500 year flood, observed elsewhere in the East Yard (FRC 1989:164).

3.1.2 Trench 2

This unit was excavated on the York Avenue right-of-way, near the intersection with Pioneer Boulevard. The trench was excavated to a depth of 348 cm. The upper 170 cm of this excavation consisted of petroleum-saturated sediments. The soils were a dark slate blue and were quite odorous.

The upper 142 cm consisted of railroad period fill, made up of gravel, clay and ash. The soil profile below the fill stratum (Level 1) contained a layer of manure over a dark blocky clay (Level 2). This blocky clay stratum has more structure than a normal plow zone but, due to the color and the lack of a discrete A Horizon, it is tentatively identified with the Experimental Farm period. Below Level 2, the soil consisted of a series of bands of riverine silts and clays, with occasional faint, thin relict soil horizons. The observed stratigraphy is detailed in Table 2.

Twenty-four historic artifacts were recovered from the ash horizon of Level 1 (Railroad Period fill). These specimens included a railroad spike (DlLg-33/89C-14), a broken porcelain

house insulator (DlLg-33/89C-1), a round nail, a scrap of leather, and a section of iron wire. Artifacts identified as dinnerware consisted of a brown teapot sherd (DlLg-33/89C-3), two body sherds from a white porcelain bowl or cup (DlLg-33/89C-4), and the upper portion of a clear wine glass (DlLg-33/89C-5). Most of the recoveries were portions of glass or ceramic containers. DlLg-33/89C-2 is a sherd from a stoneware crock, with part of a number (3 ?) printed in blue. Two bottle fragments could be identified to their manufacturer, due to remnants of embossed markings: DlLg-33/89C-6 (McDonagh & Shea) and DlLg-33/89C-7 (Drewry). Both would have contained a beverage, probably beer. Unidentifiable beverage bottle sherds were clear, amethyst and green. A small white glass sherd (DlLg-33/89C-11) may derive from a cosmetic jar. A cork liner from a 'crown seal' bottle cap was recovered. Two fragments of local clam shell (Unionidae) occurred in the stratum, as well as a fragment of sawn wood and a piece of birch (Betula) bark.

Depth (cm)	Stratum Description	Level
0 - 24	Black gravel	Level 1
24 - 39	Unstained gravel	"
39 - 115	Oil-soaked clay	"
115 - 142	Oil-soaked clay and ash	"
142 - 155	Manure	Level 2
155 - 182	Dark blocky clay ("Plow Zone?")	"
182 - 189	Light brown blocky clay	Level 3
189 - 223	Light brown silt	"
223 - 224	Thin juvenile soil horizon ^x	"
224 - 345	Series of silt & silty clay	"
345 - 346	Thin pocket of charcoal/ash	"
346 - 348	Light grey-brown silt	"

Table 2: Soil Profile of Trench 2

No artifacts were recovered from Level 2 or Level 3. The ash/charcoal deposit, at 345 cm, may be the result of natural processes (i.e., the burning of a tree or deadfall during a prairie/gallery forest fire). No cultural artifacts or faunal remains were located with the charcoal. However, cultural occupation horizons were located at depths of three meters and greater, during the North/South Access Road (Quaternary 1988) and Provencher Bridge (Quaternary 1989) Assessments.

3.1.3 Trench 3

This unit was excavated at the southern end of the St. Mary Avenue right-of-way. Excavations were terminated at a depth of 322 cm.

The upper 79 cm (Level 1) consisted of a railroad period fill, made up of gravel and black cinder. The soil profile below the fill layer contained layers of brown clay and silty clay, overlying a mature soil horizon. This soil horizon had a strongly developed A/B horizon, with possible manure inclusions (Level 2). A second A horizon was observed at 128 cm. Below Level 2, the profile consists of a series of relict soil horizons, separated by bands of riverine silts and clays. These are detailed in Table 3.

Some tentative dates can be assigned to the strata in Level 2. The upper soil horizon (118 cm) is tentatively correlated with the Experimental Farm period (1836-1848), although the stratum has minimal evidence of cultivation. This interpretation would suggest that the silt layer (122 cm) was deposited by the 1826 flood, on top of the existing soil horizon (128 cm). A soil sample (DLg-33/89C-37) was taken from the 118 cm stratum, for potential pollen and/or phosphate analysis. While beyond the scope of this report, such analysis may indicate evidence of cultivation.

Depth (cm)	Stratum Description	Level
0 - 20	Gravel	Level 1
20 - 32	Black cinder	"
32 - 79	Gravel	"
79 - 118	Light brown silty clay	Level 2
118 - 122	Mature soil with manure	"
122 - 128	Light brown silty clay	"
128 - 130	Mature soil horizon	"
130 - 140	Grey-brown silty clay	Level 3
140 - 141	*Thin juvenile soil horizon	"
141 - 147	Light brown silty clay	"
147 - 148	*Thin juvenile soil horizon	"
148 - 167	Light grey-brown silt	"
167 - 170	*Juvenile soil - cultural occ.	"
170 - 179	Light brown silt	"
179 - 180	*Thin juvenile soil	"
180 - 209	Light brown silty clay	"
209 - 217	Brown sandy silt	"
217 - 218	*Juvenile soil - cultural occ.	"
218 - 245	Brown sandy silt	"
245 - 322	Series of silt and sandy silt	"

Table 3: Soil Profile of Trench 3

Forty-five artifacts were recovered from Level 1. The majority of the specimens are architectural objects: 16 round nails (DlLg-33/89C-34), 2 bolts (DlLg-33/89C-35), 3 windowpane (DlLg-33/89C-27, 28) and an iron strap (DlLg-33/89C-33). Five sherds from glass bottles were recovered: two brown (DlLg-33/89C-29) and three clear (DlLg-33/89C-30, 31). No diagnostic markings occurred on these specimens. A railroad spike (DlLg-33/89C-35) was also recovered. The majority of the recovered faunal remains derived from large mammals. The identifiable specimens are classed as Bovidae, a family which includes both cow and bison. Further identification was not possible. The elements present included a skull fragment, three ribs, one innominate, five long bone fragments and one molar. Cut marks were observed on the rib and long bone specimens. Four clam shells were present.

The recoveries from the upper pre-Contact occupation zone (167 cm) included 5 earthenware ceramic body sherds (D1Lg-33/89C-38). These sherds had a textile-impressed outer finish. As diagnostic rim sherds were not recovered, the cultural identity of the occupation can only be assigned to the broad 'Late Woodland' classification. In addition, a bison metatarsus (D1Lg-33/89C-39) and three fish bones, identified as catfish (Icatlurus), were recovered.

No cultural artifacts were recovered from the lower pre-Contact horizon (217 cm). Poorly preserved fish remains and fragments of fire-cracked granite were noted. This material was not curated.

3.1.4 Trench 4

This unit was excavated in the middle of the St. Mary Avenue right-of-way. Excavations were terminated at a depth of 310 cm. The area was petroleum-saturated to a depth of 245 cm.

The upper 84 cm (Level 1) consisted of a railroad period fill, made up of gravel, black cinder and clay. Level 2, the section below the fill layer, contained two mature soil horizons, separated by brown silty clay. Below Level 2, the profile consists of a series of relict soil horizons, separated by bands of riverine silts and clays. These are detailed in Table 4.

The upper soil horizon (84 cm) is probably the pre-railroad surface, while the second A Horizon represents a soil formed on silts deposited by the 1850, 1861 or 1882 flood. Agricultural activity during the Hudson's Bay Company Experimental Farm period (1836-1848) is represented by the dark brown silty clay (104 cm), containing small bone fragments. This stratum is relatively unstructured and represents a "plow zone", albeit one which was not frequently cultivated. The bone may have been

vertically displaced from the pre-Contact horizon, immediately below (117 cm).

Depth (cm)	Stratum Description	Level
0 - 22	Gravel and black cinder	Level 1
22 - 42	Gravel	"
42 - 55	Grey-brown clay fill (west half)	"
55 - 84	Black clay fill (west half)	"
42 - 84	Black clay fill (east half)	"
84 - 85	* Mature soil horizon	Level 2
85 - 96	Light brown silty clay	"
96 - 98	* Mature soil horizon	"
98 - 104	Grey-brown silty clay	"
104 - 117	Brown silty clay with bone	"
117 - 123	Brown silty clay - cultural occ.	Level 3
123 - 139	Light brown silty clay	"
139 - 140	* Thin juvenile soil - fish bone	"
140 - 147	Light grey-brown silt	"
147 - 148	* Juvenile soil - fish bone	"
148 - 149	Light brown silt	"
149 - 150	* Thin juvenile soil	"
150 - 155	Brown sandy silt	"
155 - 156	* Thin juvenile soil	"
156 - 271	Series of silt and clay bands	"
271 - 272	* Thin juvenile soil	"
272 - 282	Brown silt	"
282 - 285	Light brown sand	"
285 - 310	Series of silt and clay bands	"

Table 4: Soil Profile of Trench 4

Five artifacts were recovered from Level 1. Two specimens were fragments of aqua glass bottles. DLg-33/89C-42 was embossed with "...VER/...WING/...AND/...G C...". This enabled identification of the artifact as a sherd from a beverage bottle used by 'Beaver Brewing and Bottling Company' (Chopping 1978:98). This firm, located on Furby Street, produced soda water beverages from 1914 - 1918 (Stock 1978:31). The remaining

artifacts, from this level, consisted of two large mammal rib fragments and one large mammal long bone fragment.

The recoveries from the upper pre-Contact occupation zone (117 cm) included 21 earthenware ceramic body sherds (DlLg-33/89C-46, 47). These sherds had a textile-impressed outer finish, demonstrating a style of weave known as 'sprang'. One sherd (DlLg-33/89C-47) displayed an ochre wash. As diagnostic rim sherds were not recovered, the cultural identity of the occupation can only be assigned to the broad 'Late Woodland' classification. In addition, three fragments of 'daub' (waste ceramic clay) were recovered. The retrieved faunal remains included three unidentifiable mammal bone fragments and seven fish bones, only one of which could be identified to catfish (Ictalurus).

No cultural artifacts were recovered from the lower pre-Contact horizons (139 and 147 cm). Poorly preserved fish bone was present in both levels, but this material was not curated.

3.1.5 Trench 5

This unit was excavated near the western end of the St. Mary Avenue right-of-way, adjacent to the road parallel to the CNR Main Line embankment. Excavations were terminated at a depth of 340 cm.

The upper 73 cm (Level 1) consisted of a railroad period fill, made up of gravel and clay. Level 2, the section below the fill layer, contained four soil horizons. Below Level 2, the profile consists of a series of relict soil horizons, separated by bands of riverine silts and clays. These are detailed in Table 5.

The upper soil horizon (73 cm), the pre-railroad surface, has a very strongly defined A Horizon and a moderate B Horizon. This

directly overlies a thin A Horizon (86 cm). A layer of brown silty clay separates the third A Horizon (96 cm) from the upper horizons and from a lower soil zone (128 cm). The basal soil zone of Level 2 is a dark loamy silt, with inclusions of small bone fragments. This soil layer is unstructured and is interpreted as a 'plow zone', indicating cultivation activity during the Hudson's Bay Company Experimental Farm period (1836-1848).

Depth (cm)	Stratum Description	Level
0 - 61	Gravel	Level 1
61 - 68	Dark clay fill	"
68 - 73	Grey clay fill	"
73 - 86	*Mature (A/B) soil horizon	Level 2
86 - 87	*Thin mature (A) soil horizon	"
87 - 96	Brown silty clay	"
96 - 101	*Mature (A/B) soil horizon	"
101 - 112	Brown silty clay	"
112 - 128	*Loamy silt + bone (Plow Zone)	"
128 - 137	Brown silty clay	Level 3
137 - 139	*Juvenile soil zone - Cultural	"
139 - 220	Series of silt and clay bands	"
220 - 230	Grey clay	"
230 - 251	Light grey-brown silty clay	"
251 - 252	*Juvenile soil zone	"
252 - 260	Light brown sandy silt	"
260 - 315	Series of silt and clay bands	"
315 - 317	*Thin juvenile soil	"
317 - 340	Series of silt and clay bands	"

Table 5: Soil Profile of Trench 5

It would appear that all four historic floods are represented in this profile. The four relict soil horizons would have formed on the upper portion of the flood-deposited sediments: post-1882 (73 cm); post-1861 (86 cm); post-1851 (96 cm) and the 'plow zone' (112 cm) involving the sediments of the 1826 flood.

Three sherds from a brown glass bottle (DlLg-33/89C-53) were recovered from Level 1. No identifying marks were present.

The recoveries from the pre-Contact occupation zone (137 cm) included 2 earthenware ceramic rim sherds (DlLg-33/89C-54, 55). DlLg-33/89C-54 displays the characteristic Cord-Wrapped Object Impression (CWOI) of 'Blackduck' ceramics. The sherd has a chevron pattern, on the exterior surface, immediately below the rim, with an oblique pattern on the lip. The sherd also has an ochre wash. The second sherd is a small neck fragment and is decorated with a horizontal 'stab-and-drag' pattern. Because of the decoration characteristics, these specimens can be attributed to the Blackduck archaeological culture (A.D. 500 - 1750).

Other artifacts recovered from the Blackduck cultural level included floral and faunal remains. Seeds of hazelnut (Corylus) and pincherry (Prunus pensylvanica), as well as a strip of birch (Betula) bark, were recovered. All but one of the faunal remains derived from fish. The only mammalian bone was a naturally-deposited tibia from a small rodent. The 100 fish bones included vertebrae, ribs, scales and unidentifiable fragments. Some of the specimens were able to be identified to catfish (Ictalurus) and freshwater drum (Aplodinotus grunniens).

3.2 Monitoring of Geo-Technical Drilling

Due to the small bore of the augur (5"), minimal stratigraphic data was obtained during the drilling operations. The depths of the original soil surface will be recorded in the geo-technical

report. Evidence of sub-surface strata can be observed in the field when split-tube core samples are taken. However, Shelby cores were substituted once the drill passed the original (pre-railroad embankment) soil surface. At this point, the presence of the archaeologist was not cost-effective.

Only one artifact was recovered: a sheet-cut nail (D1Lg-33/89C-20) derives from the original soil surface, under the Main Line embankment, at Hole 1. Sheet-cut manufacture occurs after 1885.

4.0 INTERPRETATION

The interpretation of the cultural history of the area is based upon both stratigraphy and artifacts. The soil profiles yield a chronology of natural events (i.e., floods) and evidence of soil formation between those floods. Each soil surface has the potential for demonstrating human utilization of the location. Cultivation, camping and construction all leave evidence of the activity that occurred. The artifacts permit identification of the culture of the people at the location and, often, will enable a determination of the time period of the activity.

4.1 Artifacts

A total of 78 historic artifacts and 150 pre-Contact artifacts were recovered during the project (Appendix C). Most of these were retrieved from the three trenches within the St. Mary Avenue right-of-way. Table 6 displays the quantities of curated artifacts by location and time period.

Within each time period, the artifacts may be further detailed by category. The historic artifacts represented several functional categories: architectural objects, dinnerware, storage containers, transportation (railroad) artifacts, floral and faunal remains, detritus and soil samples (Table 7).

Location	Historic	Pre-Contact
Hole 1	1	-
Trench 1	-	-
Trench 2	24	-
Trench 3	45	9
Trench 4	5	34
Trench 5	3	107

Table 6: Location and Frequency of Recovered Artifacts

Category	Hole 1	Tr. 2	Tr. 3	Tr. 4	Tr. 5	Total
Architecture	1	3	22	-	-	26
Dinnerware	-	4	1	-	-	5
Storage Cont.	-	10	5	2	3	20
Transport	-	1	1	-	-	2
Faunal	-	2	15	3	-	20
Floral	-	3	-	-	-	3
Detritus	-	1	-	-	-	1
Soil Sample	-	-	1	-	-	1
Totals	1	24	45	5	3	78

Table 7: Frequency of Historic Artifacts

The pre-Contact occupation horizons contained ceramic artifacts and floral and faunal material. The rim sherds from Trench 5 were identified as Blackduck. The ceramics, recovered from Trench 3 and Trench 4, were not as diagnostic. Therefore, these cultural occupations were assigned to the more generalized Late Woodland period, although, given the depth of discovery, it is probable that all three horizons are Blackduck (A.D. 500 - 1750). No lithic tools or detritus were recovered during the excavations. Some ash and charcoal was noted in the cultural horizons.

Category	Tr. 1	Tr. 2	Tr. 3	Tr. 4	Tr. 5	Total
Ceramic Sherd	-	-	5	21	2	28
Ceramic Waste	-	-	-	3	-	3
Fish Bone	-	-	3	7	100	110
Mammal Bone	-	-	1	3	1	5
Floral	-	-	-	-	4	4
Totals	-	-	9	34	107	150

Table 8: Frequency of Pre-Contact Artifacts

4.2 Stratigraphy

The stratigraphy was relatively uniform throughout the five trenches. The thickness of the railroad fill varied from 73 cm (Trench 5) to 142 cm (Trench 2). In most cases, this stratum overlay a former cultivation zone which is correlated with agricultural activity relating to the operation of the Hudson's Bay Company Experimental Farm (1836 - 1848). At the maximum extent, this farm had 60 acres under cultivation. Evidence of

the 'plow zone' was found in Trench 1, Trench 3 and Trench 5, with a tentative identification of an equivalent stratum in Trench 2 and Trench 4.

The pre-Contact horizons were recorded at depths of 117 cm (Trench 4), 137 cm (Trench 5), 139 cm (Trench 4), 147 cm (Trench 4), 167 cm (Trench 3), 217 cm (Trench 3) and possibly 345 cm (Trench 2). Previous excavations in the East Yard have shown that the stratigraphy is complex and that correlations of strata between separate excavation units are very tentative.

However, it would appear that the 137 cm (Trench 5) and 139 cm (Trench 4) strata probably result from the same occupation. This occupation can be tentatively correlated with Culture Level I, located during the Provencher Bridge Project (Quaternary 1989:25). Correlation of the 147 cm (Trench 4) and 167 cm (Trench 3) levels is very tentative, as is the correlation with Culture Level II from the Provencher Bridge Project. The 217 cm stratum (Trench 3) may be equivalent to Culture Level IV. Chronologically, the sequence of occupation [from latest to earliest] would appear to be:

- a. 117 cm (Trench 4)
- b. 137 cm (Trench 5); 139 cm (Trench 4)
- c. 147 cm (Trench 4); ? 167 cm (Trench 3)
- d. 217 cm (Trench 3)

In the two trenches where there are more than one cultural stratum, the lower strata are very thin, with no artifacts and minimal faunal remains. This would indicate that the excavations encountered the periphery of the occupation zone. These strata are 139 cm (Trench 4), 147 cm (Trench 4) and 217 cm (Trench 3).

5.0 RECOMMENDATIONS

The three exploratory excavation trenches within the St. Mary Avenue right-of-way encountered major pre-Contact archaeological deposits. As these archaeological layers occur near the surface (i.e., 117 cm, 137 cm, and 167 cm), it is probable that roadbed construction will impact these resources. If sub-surface services, such as water or sewer are installed along the right-of-way, these archaeological strata will be definitely disrupted. Accordingly, Quaternary Consultants recommends that compensatory mitigative excavation be undertaken along the St. Mary Avenue right-of-way. The scope of mitigative action will have to be determined in consultation with Historic Resources Branch.

No pre-Contact resources were observed in the two exploratory trenches within the York Avenue right-of-way. However, up to five sequential cultural strata have been recorded within this right-of-way to the east of Pioneer Boulevard (Quaternary Consultants 1989). It is probable that small outliers of these occupational strata will occur to the west of Pioneer Boulevard. Therefore, Quaternary Consultants recommends that all sub-surface construction activity be monitored within the York Avenue right-of-way. In addition, it is recommended that all sub-surface construction activity be monitored within the St. Mary Avenue right-of-way, after compensatory mitigative excavations have been completed.

With regard to the compensatory mitigative excavations, it is recommended that consideration be given to using a modified public archaeology program to undertake the project. Alumni of the 1989 Forks Pilot Public Archaeological Project, under adequate supervision by professional archaeologists, could participate in the mitigative excavations. Due to the timeframe required to implement such a program, the project would have to begin the year before the onset of road construction.

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APPENDIX A
REQUISITE PERMITS

CITY OF WINNIPEG
OPERATIONS DIVISION
SERVICES PERMIT

12192

Street/Avenue No. The Forks
Description: Lot _____ Block _____ Plan _____

Single family residence
 Two family semi-detached
 Multiple family
 Commercial
 Industrial
 Demolition/removal
 Addition/alteration
 Other
Applicant Quaternary Consultants Ltd.
Address 130 Fort St.
Phone 944-8325
 Contractor
 Other

Details Trenching and Soil
testing for
ARCHAEOLOGICAL
TESTING

WATER SERVICE

Kind of Service	Size and Type	Account No.	Fee
Domestic—Single Meter	_____	_____	\$ _____
Domestic—Multiple Meter (standard Drawing) (application to be signed by owner)	_____	_____	\$ _____
Domestic—Single meter multiple users	_____	_____	\$ _____
Separate sprinkler service (fire)*	_____	_____	\$ _____
Combined domestic and fire service, industrial, etc. (drawings)*	_____	_____	\$ _____
Booster pump installation (drawings)*	_____	_____	\$ _____
Trunk rental (per unit per month)*	_____	_____	\$ _____

*Set of drawings showing interconnections, cross-connections, back-flow devices, etc., must accompany application.

Inspection Permit Only

SEWER SERVICE

Kind of Service	Size and Type	Account No.	Fee
Waste Water Sewer	_____	_____	\$ _____
Storm Drainage Sewer	_____	_____	\$ _____
Combined Sewer	_____	_____	\$ _____
Holiday & Weekend inspection	_____	_____	\$ _____

*Set of drawings must accompany application.

TOTAL FEE \$ N/C

Re: Indemnity Clause for Service Application and Services Permit

I undertake to observe and perform the provisions of all Dominion or Provincial statutes or regulations, and the applicable by-law or by-laws, rules and regulations or orders and plans continued in force pursuant to Part IX of The City of Winnipeg Act affecting said land; and all specifications or instructions issued by the duly authorized officers of the City in respect of the work incidental to the subject matter of this application and to indemnify the City against all losses, costs, charges or damages caused by or arising out of anything done pursuant to any permit issued under this application.

I AGREE to comply with all By-laws, requirements and Special Conditions set out herein:

Applicant [Signature]
Designated Officer [Signature]

DATE July 12/89
DATE _____



Heritage Permit No. A 33-89

FORM 11

PURSUANT to Section/Subsection 53 of *The Heritage Resources Act*:

Name: Quaternary Consultants Ltd.

Address: 130 Fort Street
Winnipeg, Manitoba
R3C 1C7

(hereinafter referred to as "the Permittee"),

is hereby granted permission to:

carry out a heritage resource impact assessment of the proposed Route of York and St. Mary Avenues from Main Street to Pioneer Boulevard in the City of Winnipeg; to ascertain the presence or absence of heritage resources;

during the period:

July 4 to August 31, 1989

This permit is issued subject to the following conditions:

- 1) That the information provided in the application for this permit dated the 28th day of June 19 89 is true in substance and in fact;
- 2) That the Permittee shall comply with all the provisions of *The Heritage Resources Act* and any regulations or orders thereunder;
- 3) That the Permittee shall provide to the Minister a written report or reports with respect to the Permittee's activities pursuant to this permit, the form and content of which shall be satisfactory to the Minister and which shall be provided on the following dates:

November 30, 1989

- 4) That this permit is not transferable;
- 5) This permit may be revoked by the Minister where, in the opinion of the Minister, there has been a breach of any of the terms or conditions herein or of any provision of *The Heritage Resources Act* or any regulations thereunder;

(6) Special Conditions:

- a) That the Site Archaeologist will apprise the Historic Resources Branch of all proposed activities and will notify the Historic Resources Branch as soon as possible about the occurrence of heritage resources in the area under study.
- b) That in the event that human remains are encountered at The Forks, all activity in the immediate area will cease and the special procedures relative to the treatment of human remains located at The Forks will be implemented forthwith.
- c) That neither the Government of Manitoba nor the party issuing this permit will be liable for any damages resulting from any activities carried out pursuant to this permit, and the Permittee specifically agrees, in consideration for receiving this permit, to indemnify and hold harmless the Minister and the Government of Manitoba, the Minister and any employees and officials of the Government, against any and all liens, demands, loss, liability, cost, damage and expense including, without limitation, reasonable legal fees, which the Government, Minister or any employee or official of the Government may suffer or incur by reason of any of the activities to or related to this permit.

Dated at the City of Winnipeg, in Manitoba, this 29th day of June 1989.


Minister of Culture, Heritage and Recreation

APPENDIX B
SITE GRID PROVENIENCES

PROVENIENCES OF EXCAVATION UNITS
BASED UPON THE FORKS SURVEY GRID

UNIT	NORTH PROVENIENCE	WEST PROVENIENCE
Trench 1	1477.7 - 1480.5	1343.1 - 1348.0
Trench 2	1495.8 - 1497.7	1303.9 - 1308.6
Trench 3	1636.2 - 1637.5	1301.4 - 1306.8
Trench 4	1648.2 - 1649.0	1337.2 - 1341.6
Trench 5	1642.0 - 1643.9	1386.8 - 1392.2

Proveniences of the geo-technical drill sites are not recorded, due to the minimal information which was retrieved.

APPENDIX C

CATALOG LIST OF RECOVERED ARTIFACTS

SPECIMEN CATALOGUE RECORD

Site: D1Lq-33/89C / THE FORKS Area: RED RIVER

Cat. #	Qty	Object Name / Object Type	Material / Cultural Phase	Location on Site	Coll. Date
1	1	INSULATOR	PORCELAIN HISTORIC	TRENCH 2	19890713
2	1	SHERD CROCK	STONEWARE HISTORIC	TRENCH 2	19890713
3	1	SHERD TEAPOT	STONEWARE HISTORIC	TRENCH 2	19890713
4	2	SHERD BOWL?/ CUP?	PORCELAIN HISTORIC	TRENCH 2	19890713
5	1	SHERD WINE GLASS	GLASS HISTORIC	TRENCH 2	19890713
6	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 2	19890713
7	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 2	19890713
8	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 2	19890713
9	3	SHERD BOTTLE	GLASS HISTORIC	TRENCH 2	19890713
10	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 2	19890713
11	1	SHERD JAR	GLASS HISTORIC	TRENCH 2	19890713
12	1	CAP BOTTLE	CORK HISTORIC	TRENCH 2	19890713
13	2	VALVE UNTONIDAE	SHELL HISTORIC	TRENCH 2	19890713
14	1	SPIKE	IRON HISTORIC	TRENCH 2	19890713
15	1	NAIL ROUND	IRON HISTORIC	TRENCH 2	19890713
16	1	WIRE	IRON HISTORIC	TRENCH 2	19890713
17	1	WOOD ANGIOSPERMAE	WOOD HISTORIC	TRENCH 2	19890713
18	2	BARK BETULA	WOOD HISTORIC	TRENCH 2	19890713
19	1	SCRAP	LEATHER HISTORIC	TRENCH 2	19890713
20	1	NAIL SQUARE	IRON HISTORIC	HOLE 1	19890928
21	4	VALVE UNTONIDAE	SHELL HISTORIC	TRENCH 3	19891019
22	1	SKULL MAMMALIA	BONE HISTORIC	TRENCH 3	19891019
23	1	MOLAR BOVIDAE	TOOTH HISTORIC	TRENCH 3	19891019
24	3	RIB MAMMALIA	BONE HISTORIC	TRENCH 3	19891019
25	1	INNOMINATE MAMMALIA	BONE HISTORIC	TRENCH 3	19891019

SPECIMEN CATALOGUE RECORD

Site: D1Lq-33/89C / THE FORKS Area: RED RIVER

Cat. #	Qty	Object Name / Object Type	Material / Cultural Phase	Location on Site	Coll. Date
26	5	LONG BONE MAMMALIA	BONE HISTORIC	TRENCH 3	19891019
27	2	WINDOWPANE	GLASS HISTORIC	TRENCH 3	19891019
28	1	WINDOWPANE	GLASS HISTORIC	TRENCH 3	19891019
29	2	SHERD BOTTLE	GLASS HISTORIC	TRENCH 3	19891019
30	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 3	19891019
31	2	SHERD BOTTLE	GLASS HISTORIC	TRENCH 3	19891019
32	1	SHERD BOWL	PORCELAIN HISTORIC	TRENCH 3	19891019
33	1	STRAP	IRON HISTORIC	TRENCH 3	19891019
34	16	NAIL ROUND	IRON HISTORIC	TRENCH 3	19891019
35	1	SPIKE	IRON HISTORIC	TRENCH 3	19891019
36	2	BOLT MACHINE	IRON HISTORIC	TRENCH 3	19891019
37	1	SAMPLE	SOIL HISTORIC	TRENCH 3	19891019
38	5	BODY SHERD BODY	EARTHENWARE LATE WOODLAND	TRENCH 3	19891019
39	1	METATARSUS BISON BISON	BONE LATE WOODLAND	TRENCH 3	19891019
40	2	PECTORAL SPINE FISH	BONE LATE WOODLAND	TRENCH 3	19891019
41	1	QUADRATE ICTALURUS	BONE LATE WOODLAND	TRENCH 3	19891019
42	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 4	19891019
43	1	SHERD BOTTLE	GLASS HISTORIC	TRENCH 4	19891019
44	2	RIB MAMMALIA	BONE HISTORIC	TRENCH 4	19891019
45	1	LONG BONE MAMMALIA	BONE HISTORIC	TRENCH 4	19891019
46	20	BODY SHERD BODY	EARTHENWARE LATE WOODLAND	TRENCH 4	19891019
47	1	BODY SHERD BODY	EARTHENWARE LATE WOODLAND	TRENCH 4	19891019
48	3	DAUB	EARTHENWARE LATE WOODLAND	TRENCH 4	19891019
49	2	UNDETERMINED MAMMALIA	BONE LATE WOODLAND	TRENCH 4	19891019
50	1	UNDETERMINED MAMMALIA	BONE LATE WOODLAND	TRENCH 4	19891019

SPECIMEN CATALOGUE RECORD

Site: D11q-33/89C / THE FORKS Area: RED RIVER

Cat. #	Qty	Object Name / Object Type	Material / Cultural Phase	Location on Site	Coll. Date
51	1	PECTORAL SPINE ICTALURUS	BONE LATE WOODLAND	TRENCH 4	19891019
52	6	UNDETERMINED ICTALURUS	BONE LATE WOODLAND	TRENCH 4	19891019
53	3	SHERD BOTTLE	GLASS HISTORIC	TRENCH 5	19891019
54	1	RIM SHERD LIP; NECK	EARTHENWARE BLACKDUCK	TRENCH 5	19891019
55	1	RIM SHERD NECK	EARTHENWARE LATE WOODLAND	TRENCH 5	19891019
56	1	BARK BETULA	WOOD BLACKDUCK	TRENCH 5	19891019
57	1	SEED CORYLUS	SEED BLACKDUCK	TRENCH 5	19891019
58	2	SEED ANGIOSPERMAE	SEED BLACKDUCK	TRENCH 5	19891019
59	1	SCALE FISH	SCALE BLACKDUCK	TRENCH 5	19891019
60	10	VERTEBRA FISH	BONE BLACKDUCK	TRENCH 5	19891019
61	5	PECTORAL SPINE ICTALURUS	BONE BLACKDUCK	TRENCH 5	19891019
62	8	RIB FISH	BONE BLACKDUCK	TRENCH 5	19891019
63	1	WEBERIAN ICTALURUS	BONE BLACKDUCK	TRENCH 5	19891019
64	1	OPERCULUM ICTALURUS	BONE BLACKDUCK	TRENCH 5	19891019
65	1	CLEITHRUM ICTALURUS	BONE BLACKDUCK	TRENCH 5	19891019
66	1	PREMAXILLA APLODINOTUS GRUNNIENS	BONE BLACKDUCK	TRENCH 5	19891019
67	72	UNDETERMINED FISH	BONE BLACKDUCK	TRENCH 5	19891019
68	1	TIBIA RODENTIA	BONE BLACKDUCK	TRENCH 5	19891019
69	1	NAIL ROUND	IRON HISTORIC	WEST BANK - STEAMBO	19890609