

Appendix A-2
Cultural Heritage Evaluation Report – St. Clair Avenue West
Subway

**CULTURAL HERITAGE EVALUATION REPORT
ST. CLAIR AVENUE WEST SUBWAY**

**FUNCTIONAL PLANNING STUDY:
RAILWAY UNDERPASS AND ROAD IMPROVEMENTS
ST. CLAIR AVENUE WEST
FROM KEELE STREET TO OLD WESTON ROAD
CITY OF TORONTO, ONTARIO**



March 2015

**Prepared for:
LEA Consulting Ltd.**

Prepared by:



UNTERMAN McPHAIL ASSOCIATES
HERITAGE RESOURCE MANAGEMENT CONSULTANTS

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1.0 INTRODUCTION

LEA Consulting Ltd., on behalf of the City of Toronto, retained Unterman McPhail Associates, Heritage Management Resource Consultants, to undertake a Cultural Heritage Evaluation Report (CHER) for the St. Clair Avenue West Subway as part of a transportation planning study for St. Clair Avenue West. The transportation planning study is being undertaken to develop, identify and evaluate short-term and long-term alternatives to address traffic operations and safety conditions along St. Clair Avenue West between Keele Street and Old Weston Road.

Immediately east of Keele Street, St. Clair Avenue West passes under Metrolinx Georgetown South Corridor and CP MacTier Subdivision rail corridor (**Figure 1**). St. Clair Avenue West, which runs east to west in direction, comprises dedicated streetcar tracks, one set in each direction, general traffic lanes, one in each direction, and pedestrian sidewalks. The study will result in a Functional Planning Report that will form the basis for a subsequent Environmental Assessment of infrastructure improvements.



Figure 1. A location plan identifies the St. Clair Avenue West Subway in the City of Toronto [City of Toronto Interactive Maps, as adapted, 2015].

Unterman McPhail Associates completed an Existing Conditions Report (ECR) in 2014 as part of the preliminary planning work for the project. The St. Clair Avenue West Subway was identified of potential cultural heritage in the ECR. Accordingly, LEA Consulting Ltd., on behalf of the City of Toronto, requested the consultants prepare a CHER to assess the cultural value or interest for the St. Clair Avenue West Subway.

Bridges over waterways were the first structures built along railway corridors. Most of the road crossings were initially at grade until increased traffic and safety concerns led to the introduction of grade separated structures, either subways or overheads, starting in the late 19th century. The Board of Railway Commissioners for Canada passed a judgment in 1924 for the Northwest Toronto Grade Separation, the last of four, large-scale grade separation projects in the city. The Northwest Grade Separation comprised a number of engineering works including the introduction of a subway on St. Clair Avenue West to the east of Keele Street. Although the structure carried tracks of both Canadian National Railways (CN) and the Canadian Pacific Railway (CP), the CN was responsible for the design and construction of the subway. Tenders for the St. Clair Avenue West Subway were advertised in June 1931 and it was completed in May 1932.

Consultation with the City of Toronto confirms the St. Clair Avenue West Subway is not municipally designated under the OHA. It is not included as a heritage resource on the City's Inventory of Heritage Properties, which acts as a municipal heritage register under the OHA.

This CHER includes a historical summary of the structure, a description of the structure and its setting and the evaluation and summary of cultural heritage value of the St. Clair Avenue West Subway. The site was evaluated using the criteria set out under Ontario Regulation 9/06, which were developed for the purpose of identifying and evaluating the cultural heritage value or interest of a property proposed for protection under Section 29 of the OHA. Regulation 9/06 recognizes three criteria, design value or physical value, historical value or associative value, and contextual value. Historical maps and drawings are included in Appendix A. Appendix B contains a bridge survey form with current photographs of the structure and its setting.

Imperial measurements are used in the description of the bridge to maintain consistency with the original design drawings. Metric equivalents are provided in brackets. For the purposes of this report, the St. Clair Avenue West is considered to run in an east to west direction and the bridge is oriented in north to south.

2.0 HISTORICAL SUMMARY

2.1 Township of York, County of York

In 1788, Lord Dorchester, Governor of Canada, divided the western part of the old province of Quebec into four administrative districts, Lunenburg, Mecklenburg, Nassau and Hesse. A judge and sheriff were appointed for each one. Quebec was subsequently split into Upper and Lower Canada in 1791. When John Graves Simcoe became the Lieutenant-Governor of Upper Canada he subdivided the four districts into nineteen counties for the purposes of parliamentary representation and military organization. The County of York was one of the original counties established in 1791. In the same year,

the districts were renamed, and the Nassau District became the Home District. The Home District included the County of York and the Township of York

A row of eleven townships was laid out in 1791 along Lake Ontario in a westerly direction from the Trent River. York, initially known as Dublin, formed the most westerly township. Augustus Jones, Deputy Provincial Surveyor, undertook the initial survey along the front of the Township of York. Additional work was carried out in subsequent years to complete the survey. The Township of York was surveyed with three concessions running parallel to Lake Ontario, designated Concessions 1, 2 and 3 Fronting on the Bay. To the north of the Base Line, i.e., the northern border of Concession 3 Fronting on the Bay, Yonge Street formed the north-south dividing line between concessions numbered East of Yonge Street (EYS) and West of Yonge Street (WYS).

A significant impetus to growth in the region came in 1796 with Lieutenant-Governor John Graves Simcoe's selection of York as the new capital of Upper Canada. Simcoe erected the defences at Fort York, laid out a nearby town site, and built a sawmill on the Humber River in Etobicoke Township approximately 2-½ miles (4 km) from the lake. Dundas Street and Yonge Street were built as military and settlement initiatives of Lieutenant-Governor Simcoe. The roads were important early transportation routes in York Township.

Settled in the early 19th century, York Township was transformed into an established agricultural landscape with small hamlets and villages by the mid 1800s. Early settlement focused on the shores of Lake Ontario and along Dundas Street and Yonge Street. With the outbreak of the War of 1812, the routes were quickly improved to facilitate the movement of military supplies. After the war, other land throughout York Township was taken up. By the mid 1820s, stagecoaches travelled along Dundas Street and Yonge Street as well as along the lakeshore between York and Niagara on a regular basis.

Smith's Canadian Gazetteer (1846) described York as a township in the Home District with 55,236 acres of land taken up and 24,238 acres under cultivation.¹ For agricultural purposes the land was considered less fertile adjacent to Lake Ontario, but improved considerably to the north with mixed forests of pine and hardwood. York was described as being well settled with many good farms. There were eight gristmills and thirty-five sawmills in the township.² Smith noted the Humber River, which formed the western boundary of the township, was an excellent mill stream. York's population in 1842 was given as 5,720 residents, principally of English, Irish and Scotch background.³ The City of Toronto with its boundaries from Bathurst Street to the west, Parliament Street to the east, Lake Ontario to the south and a point 400 feet north of Queen Street to the north was incorporated in 1834.

¹ Wm. H. Smith, *Smith's Canadian Gazetteer* (Toronto: H. & W. Rowsell, 1846) 225

² Ibid.

³ Ibid.

Early roads in the southwest part of York Township included Davenport Road, Dundas Street and Weston Road. Davenport Road, which was shown on maps as early as 1794 followed an early trail along the base of the Lake Iroquois shoreline in a westerly direction from the town of York. Dundas Street, also known as Governor's Road was built from Dundas to London in 1794. In 1795, work began on an extension of the road easterly to the new capital at York. It was completed c1800. Weston Road was surveyed from Dundas Street to the site of the community of Weston on the Humber River in the early 1800s. It was extended north into Vaughan Township between 1810 and 1820. The Weston Plank Road Company acquired the route in 1841 and collected tolls to fund its proposed improvements. In the 1850s, this road became the responsibility of the municipalities. St. Clair Avenue and Keele Street relate to the initial plan of York Township as surveyed road allowances. The Browne & Ellis map (1851) shows Davenport Road, Dundas Street and Weston Road as important routes in the southwest part of York Township. St. Clair Avenue West, known as the Third Concession Road, is depicted as an open road allowances while Keele Street in the vicinity of St. Clair Avenue West generally was undeveloped at the time.

A few years later, Tremaine's map of York County (1860) shows a settled rural landscape with a well-developed network of local roads, numerous farms and scattered villages and hamlets with mills, schoolhouses and churches. The Grand Trunk Railway (GTR) is depicted extending through the Township of York in proximity to Weston Road. The GTR bought the Toronto & Guelph Railroad, while it was under construction, and changed its original route. The Toronto to Stratford section of the line was opened in 1856 and it was extended to Sarnia in 1859.

The Township of York's population grew steadily in the 1800s reaching 8,502 inhabitants by the 1871 Census and 13,748 by the 1881 Census.⁴ The growth of the City of Toronto contributed to the sharp increase as a result of the suburban development of lands within the township for overflow city population. The York Township map in the *Illustrated Historical Atlas of the County of York* (1878) shows a well-established agricultural landscape with farm complexes, mills, numerous hamlets and villages, and an established local road system in the southwest part of the township outside of Toronto. The Toronto, Grey & Bruce Railway (TG&B), built in 1871, is shown paralleling the GTR line from Union Station northwest through West Toronto and Carlton.

In the first part of the 20th century, the southern part of the Township of York became increasingly urbanized while the northern part remained largely rural. The City of Toronto began a program of annexation in 1905, which took in much of the more urbanized areas of the township, including the City of West Toronto in the southwest part of the township.

⁴ *History of Toronto and County of York, Ontario*, Volume I, Part III, (Toronto: C. Blackett Robinson, Publisher, 1885) 80.

2.1.1 Carlton and West Toronto Junction

The settlement of Carlton⁵ developed in the mid 1800s around the junction of (Old) Weston Road and the Third Concession Road, later named St. Clair Avenue. The Browne & Ellis map (1851) shows a cluster of buildings on either side of Weston Road on the north side of the concession road (*Appendix A*). Businesses, such as a carriage and wagon manufactory, a blacksmith and a shoemaker, provided services to the surrounding rural population as well as to travellers along Weston Road. Carlton received an economic boost with the establishment of a GTR station in 1857. The post office of “Carleton West” was opened in the following year; a small brick church building was constructed south of St. Clair Avenue in 1859. Samuel Thompson and family members registered subdivision plans in the area in the 1850s. King, Queen and Carlton Streets, now known as Ford, Osler and Connolly Streets, respectively, were laid out to the south of St. Clair Avenue along with 53 building lots. A plan was registered in 1857 for land to the west of Weston Road and north of St. Clair Avenue comprising part of Lot 35, Concession 3. Union, Albert and Victoria (Townesley) streets and 60 lots were surveyed.

Tremaine’s map (1860) depicts a train station in proximity to the southwest corner of St. Clair Avenue and Weston Road, an inn on the northwest corner, and a blacksmith shop and wagon shop on the northeast corner (*Appendix A*). A Church of England building was located to the southeast. A toll bar and a second inn are noted on Weston Road to the north of St. Clair Avenue. *Mitchell’s Canada Gazetteer and Business Directory for 1864-65* describes “Carlton West” as a post village on the GTR with three hotel proprietors, three shopkeepers, two blacksmiths, a painter, a weaver, a butcher, two church ministers, a postmaster, and a schoolteacher and a population of about 150 inhabitants.⁶ In the latter part of the 1800s, market gardens, brickyards and gravel extraction operations flourished. The York Township (Southwest Part) map in the *Illustrated Historical Atlas of the County of York* (1878) identifies St. Clair Avenue by name and depicts farms to the north of St. Clair Avenue and to the east of Weston Road and the Toronto Gravel Co. to the south. To the west of Weston Road, brickyards extended to the north of St. Clair Avenue (*Appendix A*).

To the south of Carlton, the community of West Toronto grew up in the latter part of the 1800s as a significant railway centre. Several railway lines including the Ontario, Simcoe & Huron Railway (1853), the GTR (1856), the TG&B (1871), the Credit Valley Railway (1879) and the Ontario & Quebec Railway (1883) traversed the area. The intersection of the various rail lines, all at-grade, created several complex diamond crossings and provided “The Junction” with its name. By 1884, the CP had taken over the TG&B, Credit Valley and Ontario & Quebec Railways. It purchased 42 acres of land in the area for yards and constructed a roundhouse and a station under the name of “West Toronto

⁵ The community has been known as Carlton or Carlton West, and spelled with or without an “e”. For consistency, Carlton is used except when a specific reference is being cited.

⁶ *Mitchell’s Canada Gazetteer and Business Directory for 1864-65* (Toronto: Mitchell & Co., 1865) 94.

Junction”. In 1890, CP decided to relocate its main yards and the shops inherited when it took over the Credit Valley Railway from Parkdale to West Toronto. It acquired an additional 48 acres in West Toronto and established a freight classification yard as well as enlarging the roundhouse and the car and engines shops to the west of Keele Street and north of Dundas Street. Industrial development soon followed along the railway lines. It included the Canada Wire Mattress Company in 1887, the Dodge Wood Split Pulley Company (Dodge Manufacturing Company) in 1888, the Wilkinson Plough Company in 1894 and the Campbell Flour Mills Co. Ltd. in 1892. In 1898, the GTR built a new station to the south of the earlier Carlton Station in the proximity of Junction Road and (Old) Weston Road. The Carlton & Weston Road Station, later renamed the West Toronto Station, eventually replaced Carlton Station.

Residential construction proceeded along with the railway and industrial development. Many of the new residents settled in the village of West Toronto Junction. D.W. Clendenan acquired 240 acres of land to the south of Dundas Street, and by 1884, five miles of streets were laid out and 400 lots had been sold. Many of the CP workers occupied the new houses.

Both Carlton and Davenport, small settlements to the north of West Toronto Junction, saw significant growth in the late 1800s. Many of the remaining farms in the area were subdivided for residential development. Junction architect James A. Ellis was retained to design a large hotel building for Alexander Heydon on the northwest corner of Weston Road and St. Clair Avenue. The new building replaced an earlier hotel that had stood on the site since the mid 1800s. The three-storey brick structure with its distinctive corner tower was completed in 1891. “Heydon House” was carved prominently on the frontispiece facing onto St. Clair Avenue.

The Village of West Toronto Junction was established in 1887. In 1889, the village joined with the communities of Carlton and Davenport to become the Town of West Toronto Junction with a combined population of 3,000 inhabitants.⁷ The community became known as simply “Toronto Junction” in 1891. The latter part of the 1800s saw a number of infrastructure improvements in the Junction area. A network of water mains and sewers were constructed to service Carlton and Davenport, Davenport Road and Weston Road were widened, a bridge was constructed over the CP tracks at Weston Road, roads were graded, plank sidewalks and streetlights were installed and funds were allocated for a park on Union Street. A new school was constructed in 1889 at the southwest corner of Carlton (Connolly) Street and Queen (Osler) Street, and the West Toronto Firehall No. 2 was built in 1890 on King (Ford) Street, north of Carlton (Connolly) Street.

⁷ A.B. Rice, *West Toronto Junction Revisited* (Erin, ON: Boston Mills Press for the West Toronto Junction Historical Society, 1986) 21.

Connections to West Toronto were improved with the introduction of street railways 1890s. The Davenport Street Railway commenced electric streetcar service from Keele and Dundas along Davenport to Bathurst Street in 1892. The Toronto Belt Line Railway developed a loop through West Toronto in 1892 that ran from Toronto to Parkdale and then to Carlton along the GTR line. From Carlton it followed a dedicated right-of-way from Weston Road to the Humber River and then south through the Humber River valley and Swansea before reconnecting with a GTR track to Toronto. In addition, the Weston route of the Toronto Suburban Railway (TSR), an electric street railway, was completed along Weston Road in 1894.

Toronto Junction flourished in the first part of the 20th century as CP continued to expand its operations. In 1907, the Toronto Junction facilities became CP's principal Ontario repair shops. All of CP's most prestigious transcontinental trains stopped at the West Toronto station en route to the west coast. The City of West Toronto was incorporated in 1908 and amalgamated with the City of Toronto in the following year. The Union Stock Yard established itself on a 35-acre site at Keele Street and St. Clair Avenue in 1903 and was promptly followed by several slaughterhouses, including Levack's in 1905, Gunn's in 1907, Swift's in 1911 and the Harris Abattoir (later Canada Packers) in 1912. The Gurney Foundry Co. opened on Junction Road and Cawthra Avenue in 1902 and Willys-Overland of Toledo, Ohio, who acquired the Russell Motor Car Company in 1915, took over the Canada Cycle & Motor Co. Ltd. plant on Weston Road South to the north of St. Clair Avenue. A row of double houses from 224 to 316 (Old) Weston Road constructed in 1909-1910 typifies the accommodation available for the railway and industrial workers of the area.

As CP continued to prosper, additional capacity was once again required at its West Toronto Yard. In 1912, the company began construction on a servicing facility and freight yard at Lambton, 1 ¼-miles (2 km) to the west of its West Toronto Yard. The Lambton Yard included a second roundhouse and associated structures at the southwest corner of Runnymede Road and St. Clair Avenue. Both yards were enlarged in 1917 as a result of increased traffic during the First World War. The 1920s can be seen as the height of passenger rail service in North America with up to 40 trains a day stopping at CP's West Toronto station. In 1924, the West Toronto Yard and Lambton Yard were combined and were operated as one extensive complex with more than 2,000 men on payroll.

During the first part of the 20th century, Junction area roads were paved and a new Weston Road Bridge over the CP tracks was constructed in 1911-1912. Street railway routes established in the late 19th century were expanded. A three-mile (4.8 km) streetcar route from Yonge Street to Caledonia Road was introduced along St. Clair Avenue in 1913. As well, service was provided on Dundas Street, Davenport Road, Weston Road and Keele Street. The Toronto & Niagara Power Company transmission line that transported hydroelectricity from Niagara Falls was constructed through the area to the north of St. Clair Avenue c1905.

The federal government took over the GTR in 1923 and amalgamated it with the CN. CN created the Canadian National Electric Railways (CNER) on December 17, 1923, to run many of its electric lines, including the former Guelph Radial Line that had opened in 1917. The line originally terminated at Lambton and the CNER undertook an extension of the route to Keele Street and St. Clair Avenue. The extension followed the transmission corridor as far as the former Toronto Belt Line Railway, which CN had added to its West Toronto Yard. A bridge was constructed to carry the line over Weston Road and a brick terminal building was introduced on the northeast corner of the intersection in 1929.

In this period, Keele Street with access to the business area of West Toronto and the Union Stockyards and slaughterhouses, began to rival Weston Road as the principal north-south transportation route in the area. To the north of St. Clair Avenue, the CN and CP rail corridors crossed the Keele Street road allowance. A route identified on Fire Insurance Plans up to 1924 as Weston Road South paralleled the west side of the rail corridor from St. Clair Avenue to a point where Weston Road crossed to the west side of the rail lines, currently Rogers Road. By the 1930s, the westerly route was known as Weston Road and the original roadway was designated “Old Weston Road”. Improvements along St. Clair comprised the introduction of two grade separation structures to the east Keele Street in the early 1930s.

The Fire Insurance Plan (1924) indicates that most of the residential lots to the south of St. Clair Avenue and east of Keele Street were developed (*Appendix A*). A new public school, known as Carleton Village Public School, was constructed in 1914 to the south of the 1889 building. Housing also extended to the north of St. Clair Avenue to the east of Weston Road. General Mercer Public School on the north side of Turnberry Avenue was built in the first part of the 1920s to accommodate children moving into the area. An east extension was added to the school in the 1930s. St. Matthew Catholic School on Lavender Road was constructed in the latter part of the 1920s. Brickyards were still located to the north of St. Clair Avenue along the rail corridor.

The decline in rail traffic during the Great Depression gave way to its increase during the Second World War. However by the late 1950s, significant changes in the railway industry would affect the Junction area. In the post Second World War period, improved highways and air service competed with railways for passenger and freight traffic; CP shifted its operations to bulk freight and intermodal; and, as steam gave way to diesel locomotives, the Lambton and West Toronto yards were adapted to handle the new equipment. Despite modifications, the Lambton roundhouse was demolished in 1960 and CP moved many of its operations in 1964 to the new Toronto Yard in Agincourt, Scarborough. Most CP employees were transferred from the Lambton Yard to the Toronto Yard, although some local maintenance activities remained in West Toronto. All three train stations in West Toronto were demolished, including the CP terminal in 1982, and the West Toronto roundhouse in 1998. Further job losses were experienced with the

closure of the Ontario Stock Yards in 1993 followed by the closure of Canada Packers and much of the remaining manufacturing activities in the Junction.

2.2 St. Clair Avenue West Subway

The construction of the St. Clair Avenue West Subway is associated with the Northwest Toronto Grade Separation project in Toronto that was undertaken from 1922 to 1932.

Most of the road crossings along railway corridors were initially at grade until increased traffic and safety concerns led to the introduction of grade separated structures, either subways or overheads, starting in the late 19th century (**Figure 2**). Grade separation structures align the railway and the roadway at different heights to allow for unimpeded traffic flow along both routes. A subway structure takes the roadway under the rail corridor while an overhead structure carries the roadway over the rail corridor.



Figure 2. A view east from Keele Street depicts the CN at-grade crossing with gates and watchman's tower on St. Clair Avenue prior to the introduction of the grade separation structure [CTA, Fonds 1231, Item 2042, October 8, 1923].

If the roadway existed prior to the railway, the applicable railway company (or companies) was responsible for the construction of the grade separation structure. If the roadway was constructed after the railway, then it was the municipality's responsibility. Under the *Railway Act*, the Board of Railway Commissioners for Canada (the Board), which was inaugurated in 1904, could order work to be undertaken and apportion the costs between the interested parties. The Board administered the Railway Grade Crossing

Fund that was established by Federal Government in 1909 to assist in improving safety at crossings including the construction of grade separation structures. During the Great Depression, the government increased its allotment to the fund as one of its work relief projects. The Board was disbanded under the *Transport Act* of 1938, which consolidated three functions, namely the railways and canals, civil aviation and marine departments into the new federal Department of Transport.

The Northwest Toronto Grade Separation was one of four large-scale grade separation projects within the city. Earlier undertakings had included the Parkdale Grade Separation, the Waterfront Viaduct and the North Toronto Grade Separation. The City of Toronto began lobbying for grade separation in the northwest part of the municipality in the early 1920s.

In November 1922, the City of Toronto applied to the Board for an order to require CN and CP to work with the city on a joint plan for the separation of grades in the northwest part of the city. At a meeting held in Toronto on February 14, 1923, it was suggested the two railway companies and the city should work together to arrive at a satisfactory arrangement. No agreement was reached and as a result, a hearing was scheduled on January 8, 1924.

The hearing described the proposed Northwest Toronto Grade Separation as follows,

1. *Grade separation at all level street crossings, now existing on the Canadian Pacific double track known as the Galt Subdivision, the Canadian National double track Brampton Division and the Canadian Pacific single track known as the Toronto, Grey and Bruce, from Bloor street north to and including St. Clair avenue and also including Wallace avenue, Humberside avenue, and Junction road, at which there are no level crossings at the present time.*
2. *Subways at all level street crossings on the Canadian Pacific Railway North Toronto line, from the West Toronto diamonds eastwardly to and including Bartlett avenue, as well as grade separations at Primrose and Perth avenues, at which points there are now no level crossings.*
3. *Subways at all level street crossing on the Canadian National Newmarket Subdivision from Bloor street northerly to and including St. Clair avenue and also grade separations at Wallace Avenue and Lappin avenue, at which points there are now no level crossings.*⁸

Toronto's initial concept for the Northwest Toronto Grade Separation identified overhead street crossings along the corridor. Further it was proposed to set the CN and CP rail corridor comprising four main line tracks and one service track in an open cut below

⁸ The Board of Railway Commissioners for Canada, *Judgments, Orders, Regulations and Rulings from April 1, 1924 to March 31, 1925*, "Judgment, Re: Proposed Northwest Grade Separation, Toronto", File 32453", Vol. 14, No. 6 (Ottawa: June 1, 1924) 67.

grade to the north of Dupont Street, formerly known as Royce Avenue. The railway companies did not support the proposal, as it would restrict their flexibility along the corridor. By the time, the work commenced the rail corridor remained at grade and all the crossings had been revised from overhead structures to subways.

In 1924, the Board provided specific orders for the construction of the subways at Bloor Street West and Dupont Street and these projects were completed in 1925. No construction sequence or timing was provided for the other proposed grade separation structures. Work did not proceed on the remaining grade separations and in November 1929, the City of Toronto appealed to the Board to order the railway companies to complete the subways at St. Clair Avenue West as well as one on Lansdowne Avenue. While the Board dismissed the appeal in January 1930, Toronto continued to press for the work. By the end of the year, CN completed a preliminary plan for the proposed CN and CP subway at St. Clair Avenue West. The Board authorized the construction of the subway under the CN tracks, Brampton Subdivision and the CP tracks, Toronto, Grey & Bruce Subdivision on April 8, 1931 under Order No. 46530, as amended on May 12, 1931 under Order No. 46642.

The engineering drawings for the two-span, precast concrete slab subway are generally dated May 18, 1931 and tenders for the project were advertised at the end of the month. Details, revisions and shop drawings were undertaken in the ensuing months. The drawings indicate the subway extended the full width of the road allowance, i.e., 66-feet and had a 14-foot clearance in accordance with the Board's policy. The design maintained the preferred 5% grade on the east approach but proximity to Keele Street resulted in a slightly steeper grade of 6% on the west approach.

The City of Toronto's Department of Public Works documented the progress of construction through a series of photographs from June 8, 1931 to May 19, 1932. *The Globe* newspaper also reported regularly on the construction of the St. Clair Avenue West Subway near Keele as well as the one near Caledonia Road. Work on the Caledonia Road subway commenced first and upon its completion by the end of 1931, the St. Clair streetcar route was extended as far as Old Weston Road. Pile drivers were in place at the second St. Clair subway near Keele Street by June 8, 1931.⁹ Historical photographs indicate the grade separation structure was substantially complete by January 1932.¹⁰ Work continued on the sidewalks, roadway, utilities and the Toronto Transit Commission (TTC) tracks through the first months of 1932. An official opening held on May 14, 1932 included a streetcar trip through the new subway (**Figure 3**).¹¹ By this date, the TTC had

⁹ City of Toronto Archives, Fonds 200: City of Toronto fonds, Series 372, Subseries 63, Item 1, June 8, 1931.

¹⁰ City of Toronto Archives, Fonds 200: City of Toronto fonds, Series 372, Subseries 63, Item 70, January 30, 1932.

¹¹ City of Toronto Archives, Fonds 16: Toronto Transit Commission fonds, Series 71, Items 9233- 9235, May 14, 1935; and, *The Globe*, May 16, 1932, 11.

extended its tracks to the west of Keele Street and constructed a loop on the north side of St. Clair Avenue. *The Globe* reported the subway cost \$430,000.¹²



Figure 3. A view west shows the streetcars passing under the completed St. Clair Avenue West Subway at the official opening [CTA: Series 71, Item 9235, May 14, 1932].

A further ruling of the Board, namely Order No. 48682, dated May 28, 1932 proportioned the cost of construction and maintenance of the St. Clair Avenue West Subway as follows, 45% to CN and CP, 45% to the City of Toronto and 10% to the TTC. Bell Telephone Company of Canada, the Toronto Hydro Electric System and The Consumers' Gas Company of Toronto were required to pay the cost of relocating their infrastructure.

The Northwest Toronto Grade Separation project enhanced linkages between the old City of Toronto and the former City of West Toronto. While not all the structures initially envisioned for the Northwest Toronto Grade Separation project were ultimately built, significant engineering works were completed on Bloor Street, Dupont Street, Lansdowne Avenue, Symington Avenue, Davenport Road and St. Clair Avenue. The elimination of at-grade crossings allowed the TTC to initiate through service on important arterial roads such as Bloor Street and St. Clair Avenue. The St. Clair line, which formerly terminated at Caledonia Road was extended to Keele Street and opened up access to the industrial area located in proximity to the St. Clair/Keele intersection. The Northwest Toronto Grade Separation project represents a significant investment by the City of Toronto in its transportation infrastructure. While the railway companies

¹² "Ribbon Severed, Opening Subway", *The Globe*, May 16, 1932, 11.

contributed financially to the project, the share assigned to the city and the TTC could be equal to or more than that paid for by the railways. In the case of the St. Clair Avenue West Subway, the City of Toronto and the TTC paid 55% of the overall cost while the railway companies were responsible for 45%. The willingness of the city to incur these costs during the Great Depression underlines the importance of the grade separation schemes to the growth and expansion of Toronto.

2.3 Structure Type

The St. Clair Avenue West Subway is classified as a precast concrete deck slab structure.

Initially grade separation structures along the CN and CP rail corridors were constructed of steel girders. By the end of the 1920s, CN began to study the use of reinforced concrete bridge design for the many grade separation projects being undertaken, notably in the Central Region. The relatively shallow decks in relationship to the clear spans provided an economic advantage by conserving headroom, and thus, lowering overall cost. The finishes of the exposed concrete surfaces were considered to contribute to the attractiveness of the structures at the time they were built.

Three types of concrete structures were adapted for railway purposes – concrete rigid frame, precast concrete deck slabs and cast-in-place concrete deck slabs. The concrete rigid frame used for the CN Galt Subdivision subway on St. Clair Avenue West near Caledonia is an unusual application of this bridge type. Concrete deck slabs, either precast or cast-in-place became more common. Precast concrete deck slabs were used where it was impractical to detour traffic during construction, while cast-in-place decks were employed where tracks could be taken out of service to permit the construction of the slab.

The slabs were designed for Cooper's E-60 loading. The precast slabs, usually about 6 ½-ft. (1.98 m) wide were intended to carry one track. As a result, each single-track width of deck typically contained two slabs, which were structurally independent of one another. This design simplified the handling of the precast slabs during construction and minimized the concentrated crane loads on the approaches during the placement of the slabs. The weight of slabs limited the length of the spans. In 1939, CN reported the longest precast mainline slabs built to date were 80-ft. and weighed approximately 130 tons.¹³

The substructure comprising abutments and a central pier on a two-span bridge, such as the St. Clair Avenue West Subway were constructed first. The precast deck slabs were transported from the casting site to the bridge site and set on temporary wood trestles beside the substructure. Wrecking cranes, one at either end of the bridge on the approaches lifted the precast slabs into place (*Figure 4*). To the interior of the deck, the

¹³ *Railway Age*, "C.N.R. Builds More Long Span Concrete Bridges", Vol. 107, No. 3 (July 1939) 102.

slabs were keyed into one another. The outside face of the exterior slabs could be finished with a decorative panelling detail. Side walkways, if required, were supported on concrete brackets that were cast integrally with the exterior deck slabs.



Figure 4. A photograph of the St. Clair Avenue West Subway shows the wrecking cranes in position to lift the concrete deck slabs into position on the abutments and centre pier [CTA: Fonds 200, Series 372, Subseries 63, Item 67, January 8, 1932].

2.4 Bridge Designer

The Office of the Bridge Engineer of the CN Central Region undertook the design of the St. Clair Avenue West Subway.

The Government of Canada formed CN through the amalgamation of several financially troubled railways that the government had taken over. The Canadian Northern Ontario Railway failed first and on the recommendation of a Royal Commission, the government merged the Canadian Northern Ontario Railway with the Canadian Government Railways to form CN. The company was incorporated on June 6, 1919. With the take over of additional lines, including the GTR and its subsidiary the Grand Trunk Pacific, the Intercolonial and the National Transcontinental the government-owned transcontinental railway became by 1923 Canada's largest railway.

CN maintained bridge engineering offices for the design and maintenance of its numerous railway bridges. Regional offices were established across the country with the Central Region based in Toronto. Staff of the CN's Central Region designed numerous

structures throughout Ontario. This resulted in design innovation and experimentation as well as standardization. By the first part of the 20th century, many of the earlier wood and wrought iron railway bridges were being replaced by steel structures. The CN issued its Standard Specifications for Steel Railway Bridges (Fixed Spans) in 1922. By the 1930s, the Central Region of CN under Thomas T. Irving, Chief Engineer and Charles P. Disney, bridge engineer became known for its innovative grade separation structures, particularly in the area of reinforced concrete railroad bridge design. Notable advancements included the adaptation of concrete rigid frame construction to railway bridges, the extensive use of precast and cast-in-place concrete deck slabs, the design of structures with unusually long spans and relatively shallow decks and the introduction of concrete ties directly on the deck slab without ballast. An important development in plate girder design entailed the use of reinforced concrete T-beam construction for stringers and slab with transverse floor beams of structural steel, which permitted a significant decrease in the depth of the floor construction.

T.T. Irving, Chief Engineer and C.P. Disney, bridge engineer, along with B.A. Baldwin, Engineer of Construction and W.A. Kingsland, General Manager signed the drawings for the St. Clair Avenue West Subway on behalf of CN.

Thomas Tweedy Irving was born in Prince Edward Island on July 4, 1873. He received a degree in applied science from McGill University in 1899 and worked in Ontario before moving to Detroit, Michigan with the GTR c1903. He married Frances Egan in Detroit on November 14, 1914. The 1920 United States Census continues to identify Thomas as living with Frances, his wife in Detroit. Thomas Irving moved to Toronto to take up the position of Chief Engineer with CN's Central Region c1924. Irving registered with the Association of Professional Engineers of the Province of Ontario in October 1924. City of Toronto directories indicate Thomas Irving remained in Toronto until his retirement from CN in 1940. Barton W. Wheelwright succeeded Irving in the post of Chief Engineer. After his retirement Irving returned to the United States. He died on October 18, 1947 in Orlando, Florida and was buried in Detroit, Michigan.

Charles Percival Disney was born in Montreal on June 11, 1885. His parents, James and Charlotte along with his two eldest siblings were born in Ireland. The family came to Canada in the early 1880s. Three more children, including Charles were born in Canada. The 1911 Canada Census notes Charles P. Disney [Desny], a Bridge Engineer is living in Ottawa. Charles served in the Canadian army during the First World War as a Sapper with the Canadian Railway Troops and as a Captain in the Canadian Infantry. After the war, Charles took up residency in Toronto with Elsie Emily Clarke, his wife whom he had married in 1919 in England. The 1921 Canada Census notes Charles P. Disney, an engineer by occupation living in Toronto. Disney registered with the newly formed Association of Professional Engineers of the Province of Ontario on November 29, 1922. His place of work was noted as Room 427, Union Station. Presumably Disney achieved his professional qualifications through an apprenticeship process as no university affiliation is provided in the Association's List of Members. Disney continued to work as

a bridge engineer with CN's Central Region until 1946. Following his departure from CN, Disney remained active in the engineering profession and established Prepakt Concrete Company in Toronto, registered three patents relating to aspects of bridge construction and co-authored a book, published in 1949 entitled *Modern Railway Structures* with Robert F. Legget.

3.0 CULTURAL HERITAGE LANDSCAPE DESCRIPTION

3.1 Area Context

The St. Clair Avenue West Subway is situated in the West Toronto Junction community of the City of Toronto to the northwest of the city downtown.

The area lies within the Iroquois Sand Plain physiographic region, which is the former bed of glacial Lake Iroquois. It stretches from the old Lake Iroquois shoreline to the present day Lake Ontario and penetrates a distance to either side of the Humber River valley. A prominent ridge delineates the edge of a lake that existed approximately 10,000 years ago, when water levels were roughly 60 m higher than today. The higher water levels were the result of ice withdrawing from the Toronto area but remaining in place to the east, effectively blocking the outlet of the lake. Much of the downtown core of the City of Toronto is constructed on the floor of Lake Iroquois.

Between the two shorelines, the bed of Lake Iroquois is a slightly sloping plain. It is comprised primarily of sandy deposits. Barrier beaches or bars, which formed across the mouth of several creeks flowing into Lake Iroquois, including the Humber River, are distinctive features in the Toronto area. The Davenport Bar was located around St. Clair Avenue. The bars were noted sources of sand and gravel for the early settlers of the area. Large beds of clay that accumulated behind the bars were used for the manufacturing of brick that burned red. As Lake Iroquois drained after ice melted from the St. Lawrence valley, the water levels dropped and the rivers began to erode narrow, steep-sided ravines.

The area in the vicinity of the St. Clair Avenue West Subway lies within the Humber River watershed. The main branch of the Humber River flows 100 km from its headwaters in the Oak Ridges Moraine to Lake Ontario. Through its length the river descends approximately 350 m in elevation. The Lower Humber River is completely urbanized. The river was designated a Canadian Heritage River in 1999. Black Creek, a tributary of the Humber River flows in a southwesterly direction to the north of St. Clair Avenue West to join the Humber River to the west of Jane Street.

Settlers arriving in the early 1800s began clearing the original forest to cultivate the fertile soils. By the mid 1800s, an established pattern of agricultural fields, hedgerows, tree lines, woodlots and rural gravel roads were well established in York Township. The

rivers and streams, which proved suited to waterpower development, resulted in the construction of several sawmills and gristmills along the Humber River to benefit the agricultural settlers. A network of communities, along with schools and churches, grew up to support the largely rural population. The proximity of the growing City of Toronto provided a market for local products including milk, fruits, vegetables and poultry.

Late 19th century and early 20th century maps show the growth of industry in the area such as the Campbell Flour Mill Co. Ltd., the Gurney Foundry in the 1890s, and the Canada Cycle & Motor Co. Ltd. and Willys-Overland Motor Company, in the early 1900s. Local residential neighbourhoods that provided housing for workers in the CP yards and shops and other nearby industrial activities, as well as localized commercial development grew up along Old Weston Road, Weston Road, Davenport Road, Osler Street and at St. Clair Avenue and Weston Road. Schools and churches were built to serve the growth in the local population. The southwest part of York Township became part of the City of Toronto in 1909.

Topographic maps illustrate continuing urbanization of the Greater Toronto Area as the 20th century progressed (*Appendix A*). Railway activities and associated industries characterized the economy of the West Toronto Junction through the much of the 20th century. By the latter part of the century, most of the manufacturing activities in the area had ceased, and the land formerly occupied by railyards, stockyards, slaughterhouses and other industries was redeveloped for big box retail and residential purposes.

3.2 Site Description

The St. Clair Avenue West Subway is located on the St. Clair Avenue West between Keele Street and Old Weston Road in the City of Toronto.

The bridge was designed to carry tracks of CN Brampton Subdivision and the CP Toronto, Grey & Bruce Subdivision over the roadway. The CN line has been acquired by Metrolinx and is now designated the Georgetown South Corridor. St. Clair Avenue West runs in an east to west direction in proximity to the railway crossing. The roadway forms an important road allowance in the survey of the geographic Township of York as the division between Concessions 2 and 3 Fronting on the Bay. The arterial road follows a straight alignment between Keele Street and Old Weston Road. Prior to the construction of the subway in the early 1930s, an at-grade crossing, which was protected by gates and a watchman, was located on St. Clair at the rail corridor. The introduction of the subway resulted in modifications to the local road network that included termination of access to St. Clair Avenue from Mulock Avenue to the south and Union Street to the north.

St. Clair Avenue West comprises two eastbound and two westbound lanes. Tracks of the TTC have extended along the centre lanes of the roadway since the subway was constructed. In the first decade of 2000, the streetcar corridor was rebuilt as a dedicated right-of-way, which reduced the vehicle lanes to one in each direction. Sidewalks parallel

the north and south sides of the roadway. The design of the St. Clair Avenue West Subway incorporated stairways into all four quadrants to provide connections for pedestrians from the lowered St. Clair Avenue to the neighbouring streets. Stairways remain in situ at the northwest, northeast and southwest quadrants. The northwest stairway has been closed off with a locked gate.



Figure 5. An annotated aerial photograph depicts land uses in proximity to the St. Clair Avenue West Subway [City of Toronto Interactive Maps, Aerial 2012, as modified].

Land use in proximity to the St. Clair Avenue West Subway is mixed use and comprises industrial, commercial and residential activities (*Figure 5*). While many of the traditional manufacturing activities of the area have closed, some industries continue in operation to the southwest of the subway. The commercial area along St. Clair has expanded in recent decades into the former industrial lands on the northwest and southwest corners of the St. Clair Avenue and Keele Street. Residences from the first part of the 20th century characterize the Old Weston Road streetscape. The CN West Toronto Station and freight shed located along the east side of the rail corridor to the south of St. Clair Avenue have been removed.

A contemporary residential development is located to the northwest of the St. Clair Avenue West Subway on lands once owned by CN as part of the CNER and C.L. Maltby Co., a building supply company. To the northeast, commercial buildings and a hydro substation are numbered 1850 to 1900 St. Clair Avenue West although they are accessed from Townsley Street. Heydon House at 1834 St. Clair Avenue West at the corner of Old Weston Road is designated under the OHA. Delta Bingo to the southeast of the subway at

1799 St. Clair Avenue West occupies the former site of John T. Hepburn Ltd., a steel fabricating company. Land to the southwest at 1885 St. Clair Avenue West, previously the Hudson Coal Company, is vacant.

4.0 BUILT HERITAGE RESOURCE DESCRIPTION

The St. Clair Avenue West Subway was designed in 1931 and construction was completed in 1932. The following description is based on design drawings (1931-1933), rehabilitation drawings (1952 and 1988), historical photographs (1931-1932) and a site visit (November 2013). Imperial measurements used in this report provide consistency with the original design drawings. The metric equivalents are provided in brackets. For the purposes of this report, the St. Clair Avenue West Subway runs in an east to west direction. A selection of the engineering drawings is included in Appendix A and a Bridge Survey Form with current photographs is found in Appendix B.

4.1 St. Clair Avenue West Subway



Figure 6. A view east along St. Clair Avenue West depicts the two-span subway structure, retaining walls with stairways and sidewalks [CTA: Series 372, Subseries 63, Item 91, May 19, 1932].

The key elements of the St. Clair grade separation are the subway structure, retaining walls, stairways and sidewalks (**Figure 6**). The engineering works extend approximately 950-ft. (290 m) along St. Clair Avenue West from east of Keele Street to west of Old Weston Road. The subway has a skew of 71° 11' to St. Clair Avenue West. The General

Plan (1931) indicates the roadway was excavated for a 5% grade to the east of the subway and a 6% grade to the west. Retaining walls extend to the east and west of the subway on both sides of the roadway. Stairways were incorporated into the retaining walls to provide access to the surrounding local streets and businesses. Sidewalks run along the north and south sides of St. Clair Avenue West.

Subway Structure

St. Clair Avenue West Subway is classified as precast concrete deck slab structure. It has a reinforced, cast-in-place concrete substructure and a reinforced, precast concrete deck slab. The bridge consists of two spans, each extending 31-ft. 0-in. (9.45 m). The structure has an overall length of 66-ft. 0-in. (20.12 m) over St. Clair Avenue West. The General Plan (1931) specifies a vertical clearance of 14-ft. 0-in. (4.27 m) between the underside of the deck and the St. Clair Avenue West pavement surface.

As designed, the subway contained a 21-ft. 0-in. (6.40 m) wide eastbound roadway and a 21-ft. 0-in. (6.40 m) wide westbound roadway separated by the centre pier. Sidewalks, 8-ft. 9-in. (2.67 m) wide, with metal handrails ran along the north and south sides of St. Clair. The sidewalks were elevated above the roadway and had a vertical clearance of 8-ft. 6-in. (2.59 m) between the underside of the deck and the top of the sidewalk pavement. A 4-ft. 1-in. (1.25 m) high metal handrail, described as an ornamental fence at the time of construction, enclosed the sidewalk towards the roadway. The handrail extended beyond the subway for a total length of 361-ft. 3-in. (110.11 m). The handrail design featured panels built up of groupings of three 1-in. by ½-in. (25 mm by 13 mm) vertical pickets set between horizontal rails and finished with a 5-in. (127 mm) high decorative segment composed of a circular motif. The specifications note the fence was coated one shop coat of red lead and two field coats of aluminum paint.

The substructure comprises reinforced cast-in-place concrete abutments and centre pier. The elevated sidewalk obscures the lower portion of the abutments while the bridge deck covers the top part. Eight rectangular panels modulate the exposed portion of the north and south abutment beside the sidewalks. The construction date of 1931 was cast at the east end of the north abutment. The open spandrel centre pier is set on a base with overall dimensions of 4-ft. 0-in. (1.22 m) wide, 147-ft. 0-in. (44.81 m) long and 2-ft. 9-in. (0.84 m) high. The pier is made up of ten columns, spaced 10-ft. 0-in. (3.05 m) apart and connected at the top by a shallow arch. The base to the centre line of the arch is 9-ft. 3-in. (2.82 m) high. The end columns are 5-ft. 6⁷/₈-in. (1.70 m) long while the interior columns are 5-ft. 2-in. (1.58 m) long. The columns vary in width from the base to the top. Panelling detailing highlighted the four sides of the columns. A pier cap, 142-ft. 6-in. (43.43 m) long, 3-ft. 0-in. (0.91 m) wide and 2-ft. 0-in. (0.61 m) high completed the composition.

The bridge deck with an overall width of 137-ft. 0-in. (41.76 m) contains the precast concrete deck slab that carries the tracks and walkways supported on brackets on the east

and west sides of the bridge. The deck is built up of 20 precast sections, each 6-ft. 3-in. (1.91 m) wide and 3-ft. 0-in. (0.91 m) high. Each section was designed to carry one rail of a single track. Accordingly, it can be inferred the bridge had a capacity of up to 10 tracks. The notes on the Detail of Reinforced Concrete Pre-cast Deck Slabs drawing (1931) indicate the slabs were to be cast in a heated building and allowed to set at least 28 days before being placed under the track. CN was responsible for installing the deck slabs. Typically, the tracks were installed directly on the precast deck slab structures; however, historical photographs suggest the St. Clair Avenue West Subway was constructed with waterproofing, ballast and cross-ties (*Figure 7*).



Figure 7. A historical photograph looking northeast across the deck shows the new tracks and ballast at the east side of the bridge and the ongoing waterproofing of the west side of the deck [CTA: Series 372, Subseries 63, Item 76, February 15, 1932].

The visible side of the exterior deck slab was treated with a panel detail that echoed those used on the abutments and centre pier. Eight concrete brackets, one set between each of the nine panels supported the walkways on either side of the deck. Each walkway was 3-ft. 6-in. (1.07 m) wide. Metal handrails that used the same design as those along the sidewalks were mounted the outside of the walkways.

Retaining Walls

Retaining walls are frequently an integral part of grade separations in an urban setting. In the first part of the 20th century, cast-in-place retaining walls were typically treated with rectangular panel detailing that was considered to be visually attractive.

Retaining walls extend along the north and south sides of St. Clair Avenue West to the northwest, northeast, southeast and southwest of the subway structure. Typically, the retaining walls run for a distance at a height of 13-ft. 6-in. (4.12 m) above the sidewalk, before angling down to a 3-ft. 0-in. (0.91 m) high dwarf wall. The standard rectangular panel detailing relieves the visual monotony of the long retaining walls. A 4-ft. 0-in. (1.22 m) high railing constructed of 2-in. (51 mm) diameter gas pipes was located on top of the high sections of the retaining walls. The design comprised vertical posts and four horizontal pipes. The railing was finished with one shop coat of standard red lead and two coats of superior graphite.

Four stairways, one in each of the four quadrants were incorporated into the design to provide access from St. Clair to the neighbouring local streets and businesses. Metal pipe railings similar in design to those along the top of the retaining walls formed the handrails on the stairways. The stairway in the southwest quadrant to Union Street was not part of the original design but was added soon after the subway opened. The stairway in the northwest quadrant has closed off with a locked gate while the one in the southeast quadrant has been removed.

4.1.1 Modifications

The St. Clair Avenue West Subway has undergone some modification since it was completed in 1932. There is no rehabilitation record for the subway structure although there is some evidence of concrete repairs. Municipal records indicate the sidewalks have been repaired and most recently, the roadway was rebuilt as part of the introduction of the dedicated streetcar corridor along St. Clair Avenue. The original railings along the sidewalks and bridge deck have been replaced; however, the pipe railings have been retained on the top of the retaining walls. The stairway in the southeast quadrant has been removed. The stairway in the northwest quadrant remains in place but has been closed off.

Despite some modifications, the St. Clair Avenue West Subway retains its dominant design character and several noteworthy elements.

4.1.2 Comparative Analysis

In the 1930s, CN became known for its innovative grade separation structures, particularly in the area of reinforced concrete railroad bridge design. Articles in the *Railway Age* from 1932 and 1939 indicate CN started to use precast concrete deck slabs to construct railway bridges under traffic in the early 1930s.¹⁴ The St. Clair Avenue West Subway was designed in 1931 and construction was completed early in 1932. As such, it

¹⁴ *Railway Age*, “Unusual Concrete Bridges are Built on the Canadian National”, Vol. 93, No. 11, (September 1932) 354-357, 368 and 369; and “C.N.R. Builds More Long Span Concrete Bridges”, Vol. 107, No. 3, (July 1939) 102.

is considered to be an early application of a precast deck slab structure for railway purposes in CN's Central Region and representative of the developmental phase of this structure type within the railway industry in Ontario.

5.0 CULTURAL HERITAGE VALUE

5.1 Introduction

The criteria for determining cultural heritage value or interest were set out under Ontario Regulation 9/06 made under the OHA, as amended in 2005. These criteria were developed to assist municipalities in the evaluation of properties considered for designation. The regulation states that:

“A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:

- 1. The property has design value or physical value because it,
 - i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,*
 - ii. displays a high degree of craftsmanship or artistic merit,*or
 - iii. demonstrates a high degree of technical or scientific achievement.**
- 2. The property has historical value or associative value because it,
 - i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,*
 - ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or*
 - iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.**
- 3. The property has contextual value because it,
 - i. is important in defining, maintaining, or supporting the character of an area,*
 - ii. is physically, functionally, visually or historically linked to its surroundings,*or
 - iii. is a landmark.”**

Consultation with the City of Toronto confirms the St. Clair Avenue West Subway is not municipally designated under the OHA. It is not included as a heritage resource on the City's Inventory of Heritage Properties, which acts as a municipal heritage register under the OHA.

5.2 Evaluation

The evaluation criteria set out under Ontario Regulation 9/06 were applied to the St. Clair Avenue West Subway to determine its cultural heritage value or interest.

5.2.1 Design Value or Physical Value

Design or Physical Value	
i. Rare, unique, representative or early example of a style, type, expression, material or construction method.	Yes
ii. Displays a high degree of craftsmanship or artistic merit.	No
iii. Demonstrates a high degree of technical or scientific achievement	No

Representative example of a construction method

The St. Clair Avenue West Subway is considered to be an early example of a precast concrete deck slab railway subway within CN's Central Region in the City of Toronto. A subway is a type of grade separation structure that takes the roadway under a rail corridor. Initially subway structures along rail corridors were constructed of steel girders. By the end of the 1920s, CN began to study the use of reinforced concrete bridge design for the many grade separation projects being undertaken, notably in the Central Region. Three types of concrete structures were adapted for railway purposes – concrete rigid frame, precast concrete deck slabs and cast-in-place concrete deck slabs. Precast concrete deck slabs were used where it was impractical to detour traffic during construction. The deck slabs were prefabricated and could be installed in sections between trains to allow the rail line to remain in operation.

The Central Region of CN started to use precast concrete deck slabs to construct railway bridges under traffic in the early 1930s. By 1933, it was making extensive use of this structure type for grade separation structures. The St. Clair Avenue West Subway was designed in 1931 and construction was completed early in 1932. As such, it is considered to be an early application of a precast concrete deck slab structure for railway purposes within CN's Central Region and representative of the developmental phase of this structure type within the railway industry in Ontario. The bridge has undergone some modifications since it was first opened but is considered to retain its dominant design character and several noteworthy elements.

Displays a high degree of artistic merit

The bridge is not considered to display a high degree of craftsmanship or artistic merit.

Demonstrates a high degree of technical or scientific achievement

Short span, precast concrete deck slab structures have been constructed since the first decade of the 20th century. It was a known technology when the St. Clair Avenue West Subway was constructed in the early 1930s, and as a result, the bridge is not considered to demonstrate a high degree of technical or scientific achievement although it is an interesting application of the structure type by a railway company within the City of Toronto. No other aspects of technical or scientific merit were identified for the structure.

5.2.2 Historical Value or Associative Value

Historical or Associative Value	
i. Has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community	Yes
ii. Yields, or has the potential to yield, information that contributes to an understanding of a community or culture	Yes
iii. Demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community	Yes

Direct associations with a theme, activity and organization

The St. Clair Avenue West Subway is associated directly with the enhancement of the transportation network within Toronto in the post First World War period. It represents a component of the Northwest Toronto Grade Separation project that was undertaken from 1922 to 1932. Road crossings along railway corridors were initially at grade until increased traffic and safety concerns led to the introduction of grade separated structures, starting in the late 19th century. The Northwest Toronto Grade Separation was one of four large-scale grade separation projects undertaken in the City of Toronto in the first decades of the 20th century. During this period, the West Toronto Junction in the northwest part of the city experienced significant industrial growth. The expansion of factories in combination with the network of railroad tracks crossing the area resulted in significant traffic problems. The City of Toronto began lobbying for grade separation in the northwest part of the municipality in the early 1920s. Unlike the other grade separation projects that entailed a linear rail corridor, the Northwest Toronto Grade Separation project was complex and comprised several lines that were owned by CN and CP. The grade separation work allowed the TTC to expand its streetcar network and enhanced connections between West Toronto Junction and other parts of the city.

The St. Clair Avenue West Subway is concluded to have direct associations with the Northwest Toronto Grade Separation project, a significant city building activity in Toronto. It is also linked to CN, an organization of importance to the West Toronto Junction.

Yields information that contributes to an understanding of a community or culture

The St. Clair Avenue West Subway has the potential to contribute to an understanding of the evolution of the cultural landscape in the West Toronto Junction community. Railways were a key element in the economic growth of the Junction through the late 19th century and early 20th century. The subway structure clearly expresses its function as a railway bridge and stairways incorporated into its overall design allude to historic transportation patterns and important linkages. The structure is notable in terms of its size and carried multiple tracks that comprised both mainline and service facilities to support the surrounding industry.

Many railway structures and industrial buildings have been lost in the community of West Toronto Junction, including the former CN West Toronto railway station and freight shed that was located on the east side of the rail corridor to the south of the bridge. The subway structure remains an important physical reminder of the railway heritage and industrial past of the area.

Designer

Engineers of CN designed the St. Clair Avenue West Subway. CN maintained a bridge engineering office for the design and maintenance of its extensive network of railway bridges. Numerous structures were constructed across the province that resulted in design innovation and experimentation as well as standardization. CN's Central Region under the leadership of Thomas T. Irving, Chief Engineer, and Charles P. Disney, Bridge Engineer, was noted for its innovation and expertise in concrete grade separation structures.

It is concluded that the subway reflects the work of professionals that would be considered of importance to the engineering community.

5.2.3 Contextual Value

Contextual Value	
i. Is important in defining, maintaining, or supporting the character of an area.	Yes
ii. Is physically, functionally, visually or historically linked to its surroundings.	Yes
iii. Is a landmark.	Yes

Character

The character of the area is in transition. Most of the manufacturing activities in proximity to St. Clair/Keele intersection have ceased, and the land formerly occupied by railyards, stockyards, slaughterhouses and other industries has been redeveloped for big box retail and residential purposes. Some industries continue in operation to the southwest of the subway.

The St. Clair Avenue West Subway is important in maintaining aspect of the remaining industrial character in the area.

Linkages

Prior to the construction of the subway, the CN and CP rail lines crossed the roadway at grade and the introduction of the grade separation structure improved safety and traffic flow. The design of the structure addressed the need for multiple tracks at the site to allow for movement of through rail traffic as well as service tracks. Stairways permitted connections from St. Clair Avenue to the surrounding businesses and residential neighbourhoods.

It is concluded the St. Clair Avenue West Subway is physically, functionally, visually, and historically linked to its surroundings.

Landmark

The St. Clair Avenue West Subway is a physically prominent structure along St. Clair Avenue West as the roadway dips under the rail corridor. The structure encloses the roadway and heightens the awareness of passage under the bridge. Modifications to the St. Clair Avenue to permit a dedicated streetcar right-of-way have resulted in vehicular traffic being funnelled into a single lane to the east of Keele Street. Traffic slowdowns at this location have added to drivers' familiarity with the subway.

Therefore, the subway is considered to be a well-known structure within the context of the area.

5.3 Summary of Cultural Heritage Value

It is determined through the application of the Criteria for Determining Cultural Heritage Value under Ontario Regulation 9/06 that the St. Clair Avenue West Subway is of cultural heritage value for design/physical, historical/associative and contextual reasons.

5.3.1 Statement of Cultural Heritage Value

The St. Clair Avenue West Subway was constructed as part of the Northwest Toronto Grade Separation project that was undertaken from 1922 to 1932. In the first decades of the 20th century, the West Toronto Junction in the northwest part of the city experienced substantial industrial growth. The expansion of factories in combination with the network of railroad tracks crossing the area resulted in significant traffic problems. The City of Toronto began lobbying for grade separations in the northwest part of the municipality in the early 1920s. The City of Toronto, the TTC and the railway companies shared the cost of the engineering works at roadways in the West Toronto Junction community, including subways at Bloor, Dupont, Lansdowne, Davenport, Symington and St. Clair. [

Engineers at CN undertook the design and oversaw the construction of the St. Clair Avenue West Subway in 1931-1932. The first subways completed on the Northwest Toronto Grade Separation project were steel girder structures; however, by the late 1920s CN was studying the use of reinforced concrete bridge design for the many grade separation projects being undertaken, notably in the Central Region. CN's Central Region under the leadership of Thomas T. Irving, Chief Engineer and Charles P. Disney, Bridge Engineer became noted for its innovation and expertise in concrete grade separation structures. CN started to use precast concrete deck slabs to construct railway bridges under traffic in the early 1930s and by 1933, it was making extensive use of this structure type for grade separation structures. The St. Clair Avenue West Subway is an early example of a precast concrete deck slab structure and is notable in terms of its size to carry multiple tracks. The bridge has undergone some modifications since it was first

opened but is considered to retain its dominant design character and several noteworthy elements. Other bridges along the corridor have been modified recently as part of the Georgetown South Corridor expansion.

The St. Clair Avenue West Subway is a physical landmark in the area. It continues to form a critical link along the active rail corridor and is an important component of the railway history of the area. The subway acts a historical reference point and contributes to an understanding of the evolving cultural heritage landscape within the West Toronto Junction.

5.3.2 Description of Heritage Attributes

Heritage attributes, i.e., character defining elements, of the St. Clair Avenue West Subway include, but are not limited to, the following details.

Contextual Attributes

- Excavated road allowance to allow St. Clair Avenue West to pass under the rail corridor.
- Active rail corridor that comprises tracks of the former CN Brampton Subdivision, now part of Metrolinx Georgetown South Corridor and CP MacTier Subdivision.
- Engineering work known as the St. Clair Avenue West Subway that comprises the subway structure, retaining walls, stairways and sidewalks.

Design Attributes

- Two-span, precast concrete deck slab structure.
- Cast-in-place concrete abutments and open spandrel centre pier.
- Date stamp of '1931' incised in the northeast corner of the subway abutment.
- Cast-in-place concrete retaining walls with panel detailing.
- Original pipe handrails remaining on the top of the retaining walls.
- Elevated sidewalks along both sides of St. Clair Avenue West.
- Stairways remaining in the northwest, northeast and southwest quadrants.

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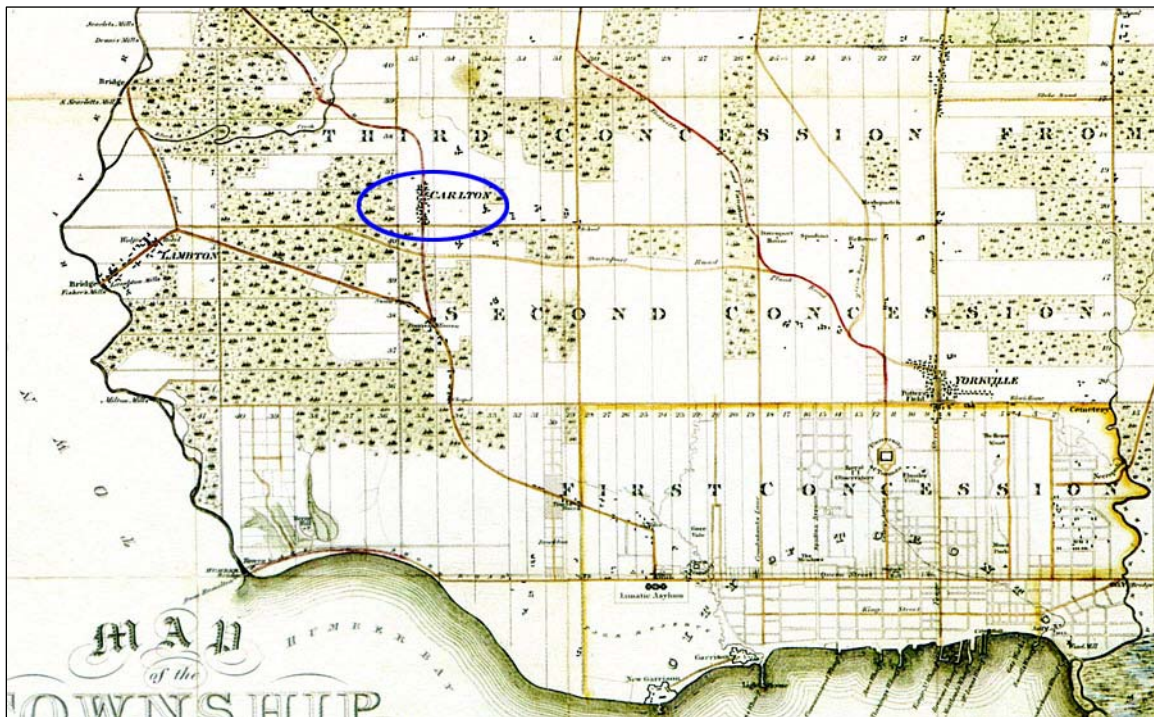
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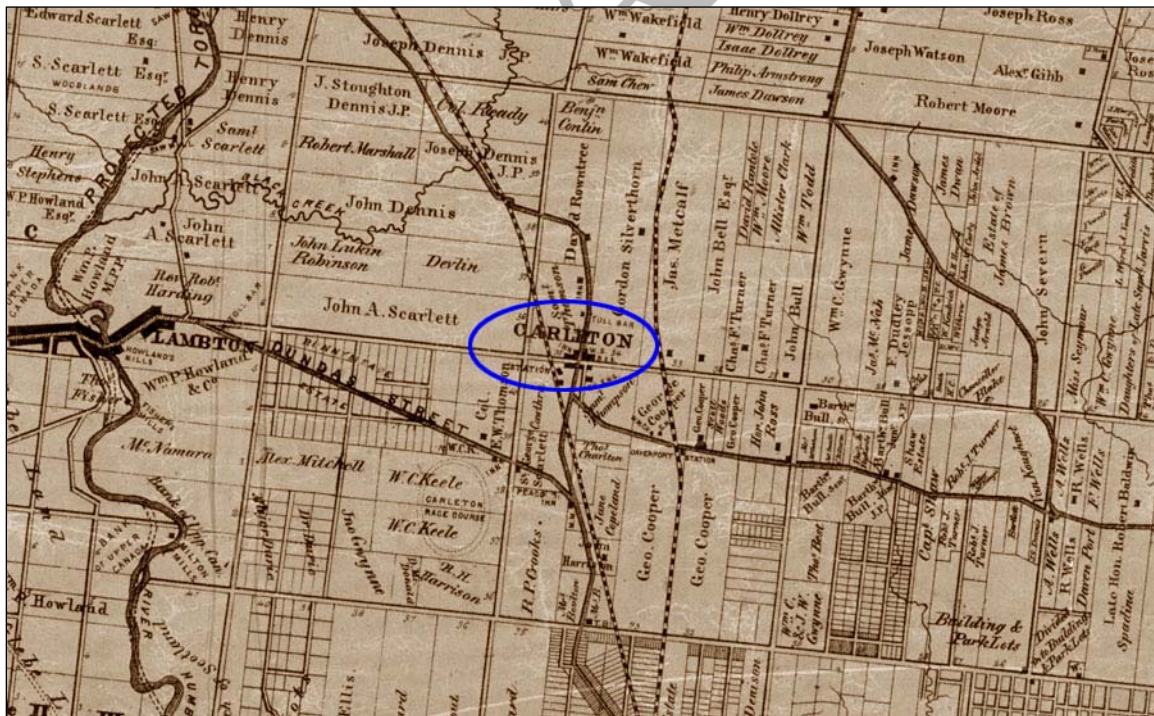
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**APPENDIX A:
HISTORICAL MAPS
AND DRAWINGS**

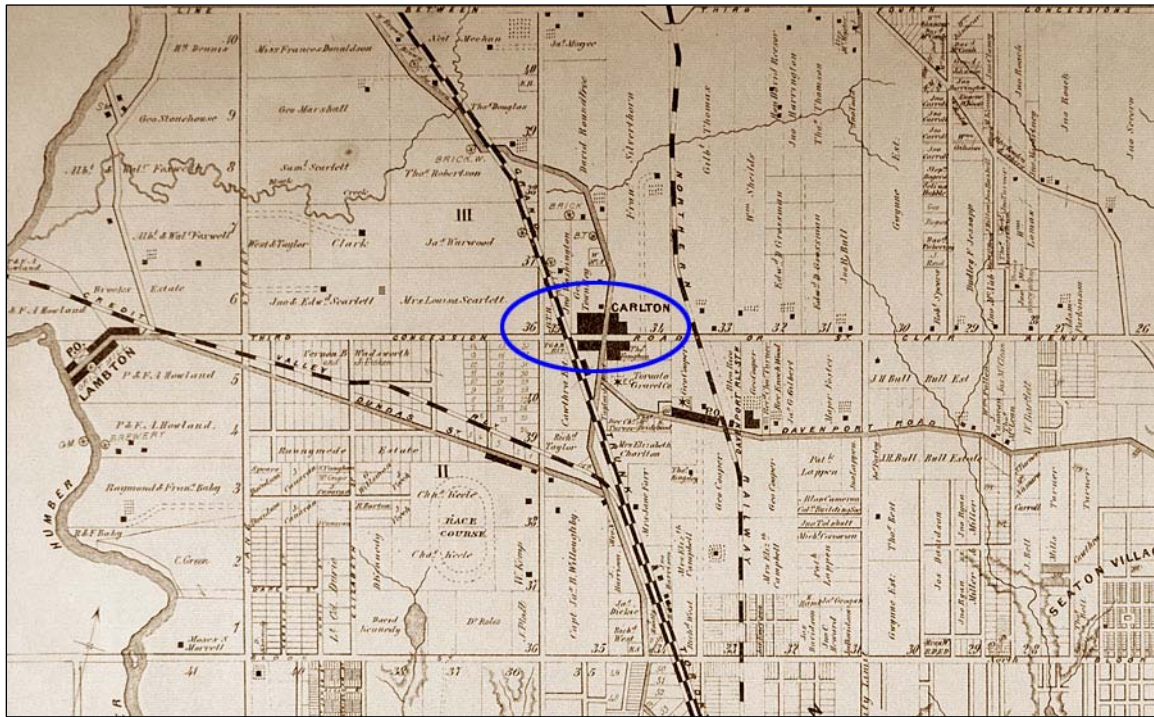
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Browne & Ellis' map (1851) identifies the community of Carlton (highlighted with a blue oval) on Weston Road at the Third Concession Road (St. Clair Avenue) to the northwest of Toronto.



Tremaine's map (1860) depicts the GTR crossing St. Clair Avenue between Weston Road and Keele Street in the community of Carlton. The blue oval highlights the crossing.



The York Township map in the *Illustrated Historical Atlas of the County of York* (1878) the TG&B paralleling the GTR line at Carlton. The blue oval highlights the railway crossings at St. Clair.



Plate 36 of Goad's Fire Insurance Plan (1884) notes a GTR station on St. Clair Avenue in the community of Carlton. The blue oval highlights the railway crossings.

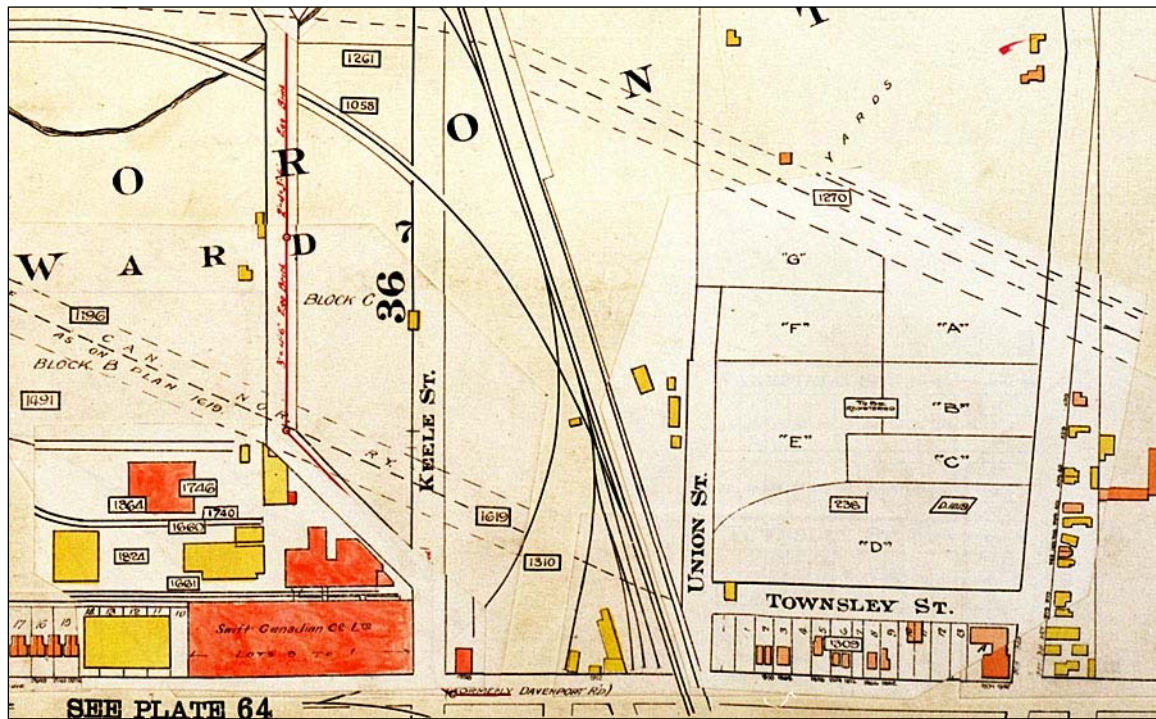


Plate 67 of Goad's Fire Insurance Plan (1924) depicts dispersed settlement to the north of St. Clair at Weston Road. Swift Canadian Co. Ltd. is noted on the northwest corner of Keele and St. Clair.

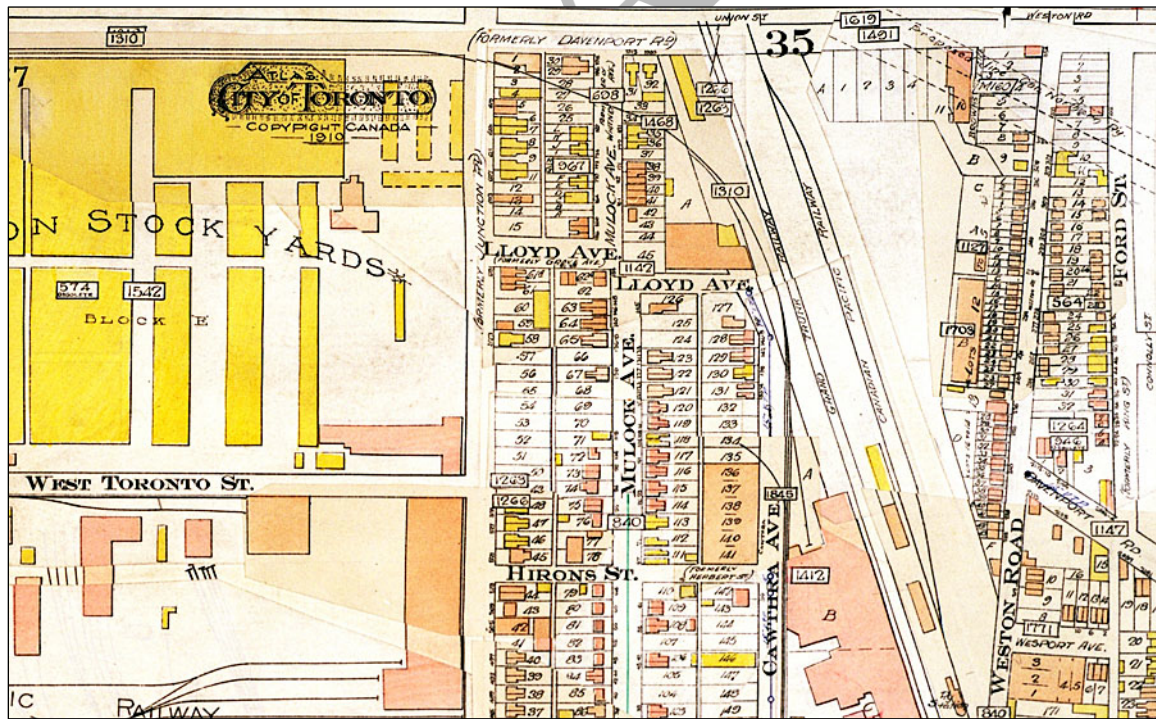
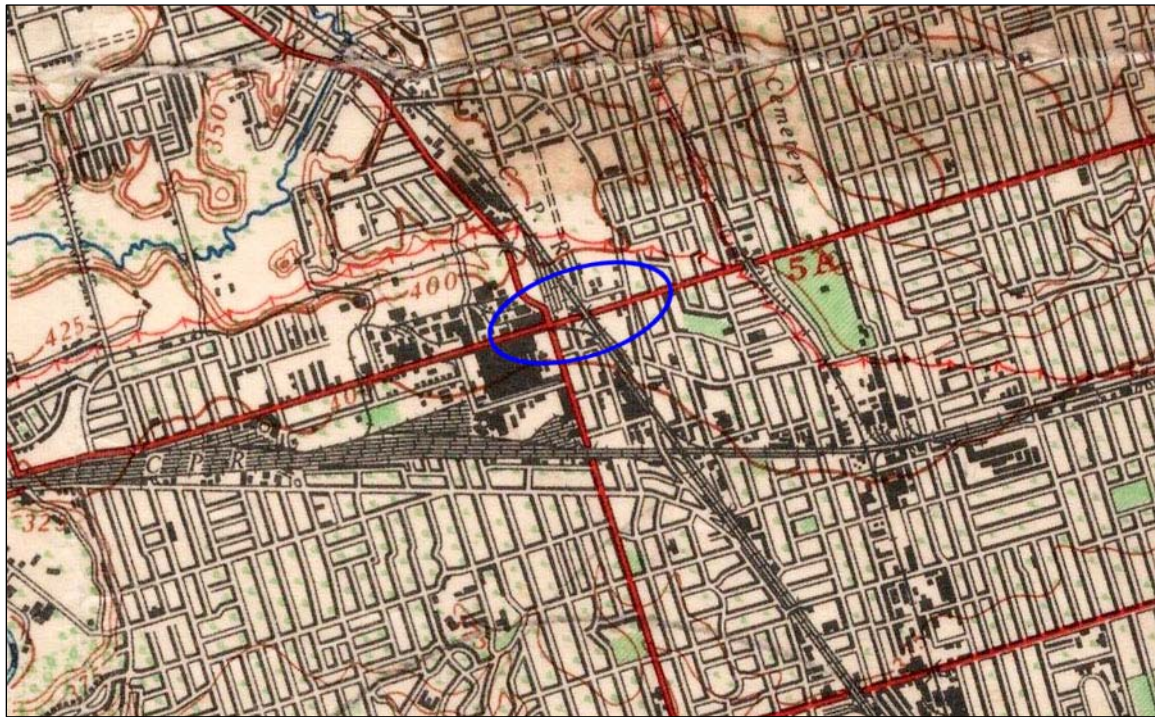
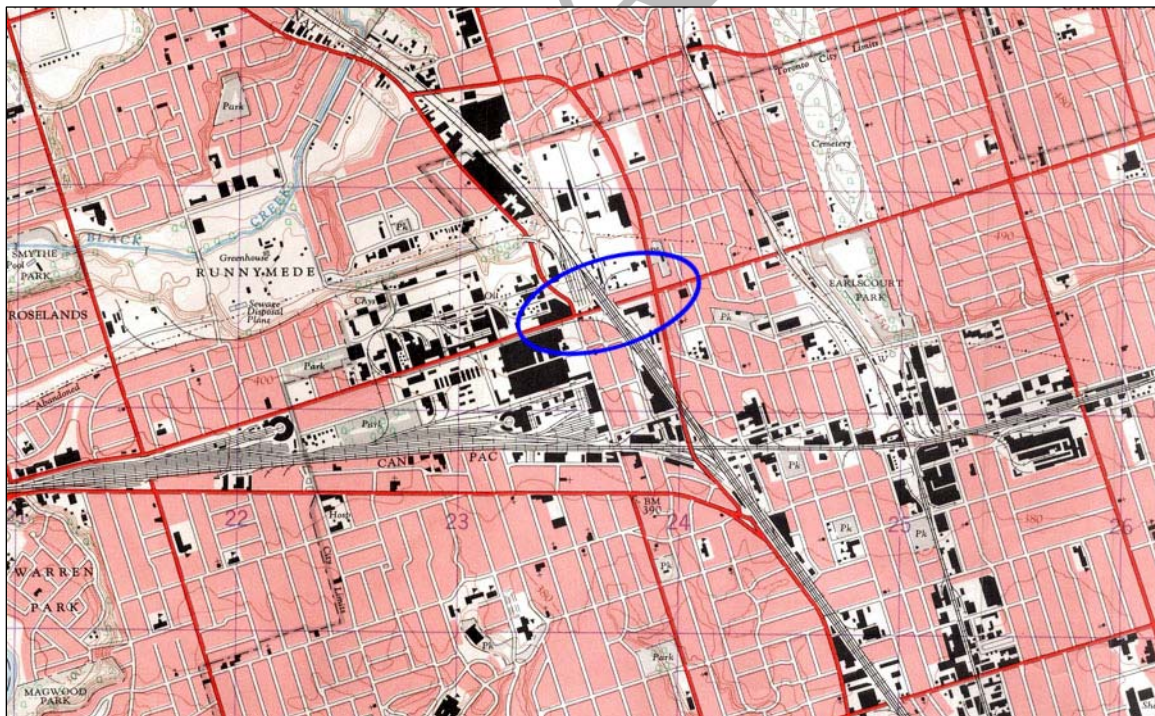


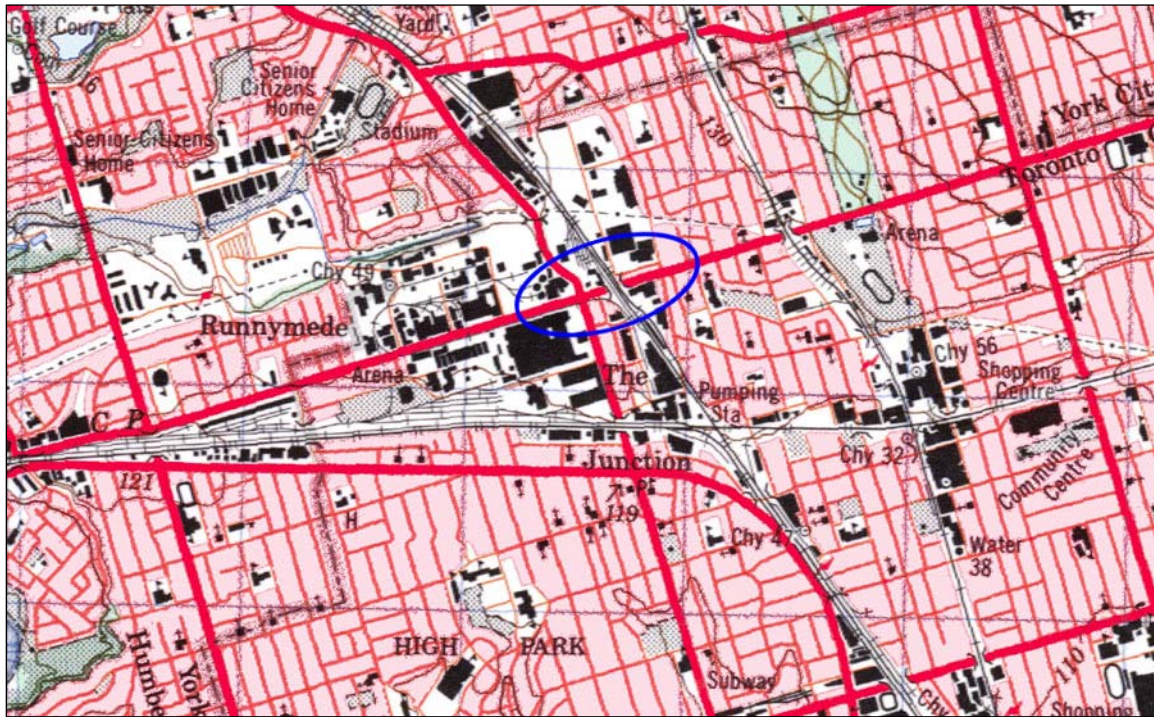
Plate 64 of Goad's Fire Insurance Plan (1924) indicates land to the south of St. Clair is heavily developed. The Union Stock Yards dominates the west side of Keele Street.



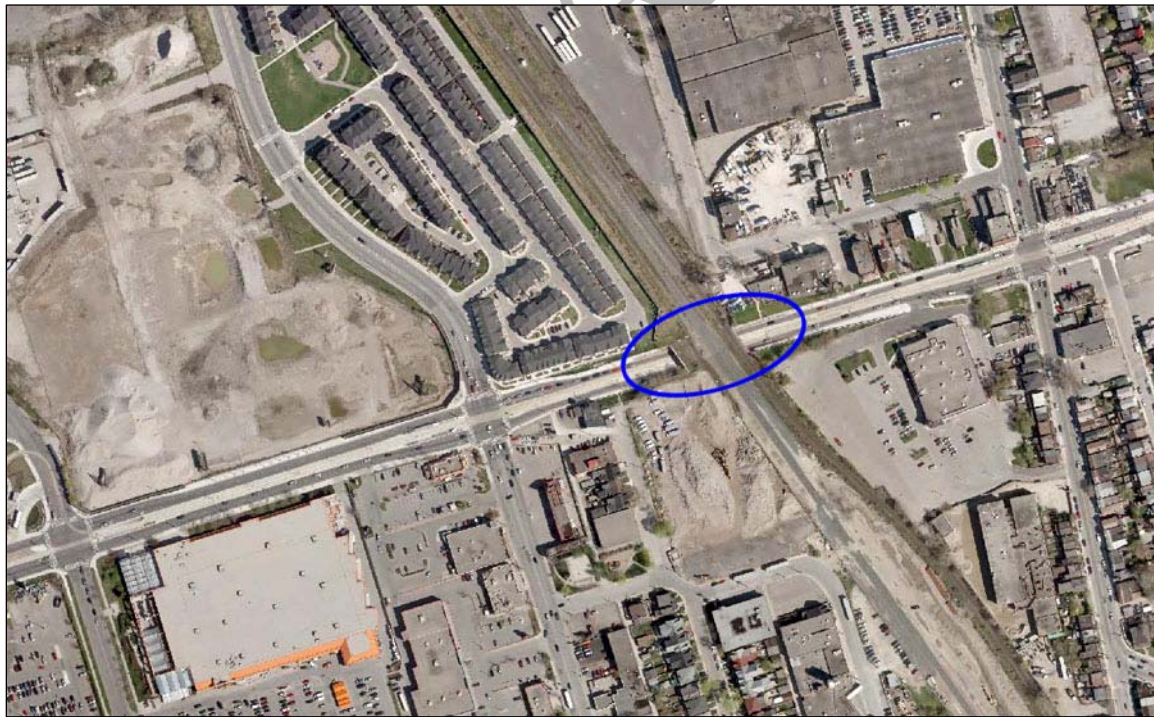
The NTS map 30 M/11 Toronto (1942) marks the St. Clair Avenue West Subway carrying the CN and CP tracks over the roadway to the east of Keele Street. The blue oval highlights the crossing.



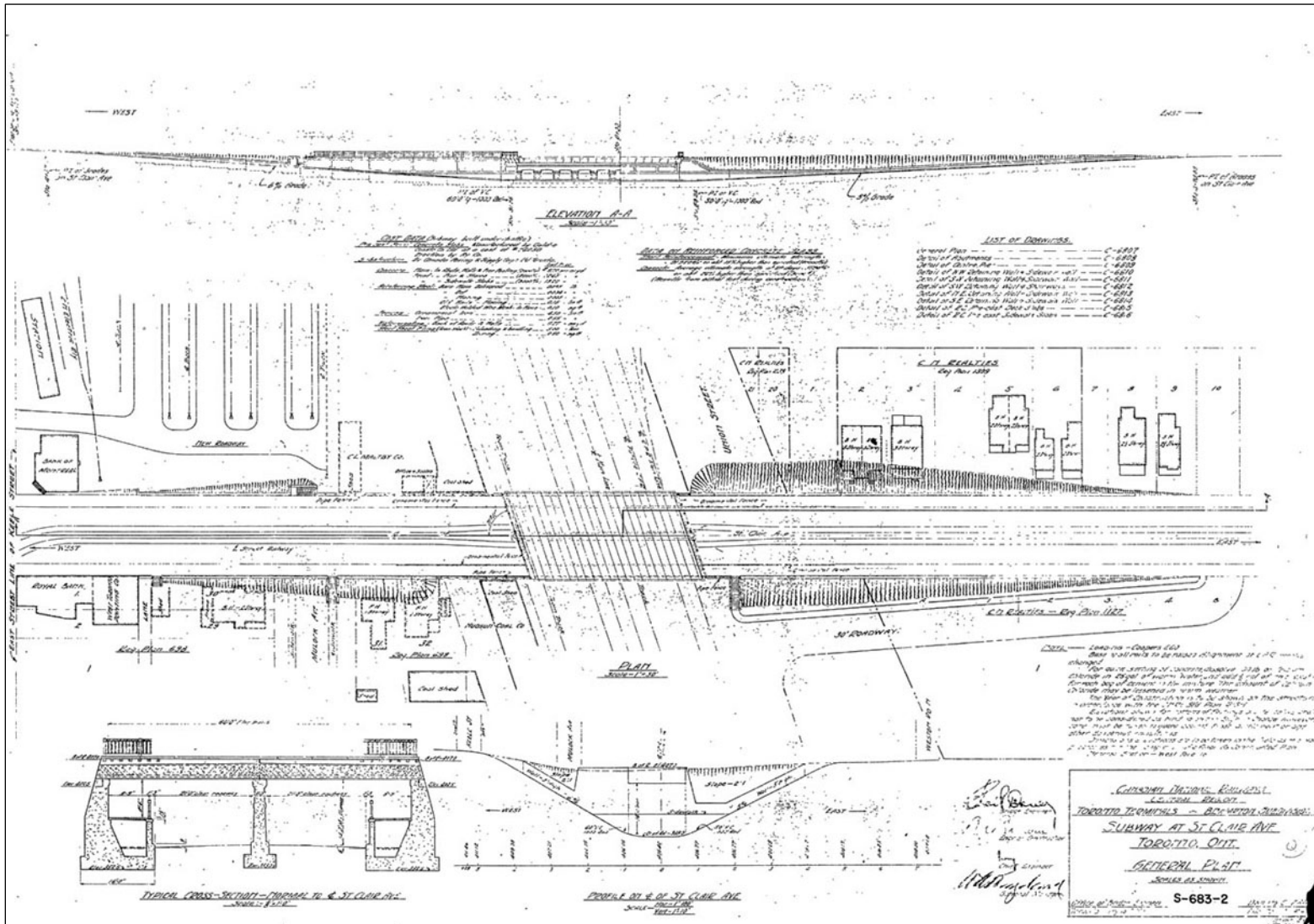
The NTS map 30 M/11 Toronto (1963) shows industries along the rail corridors in proximity to St. Clair Avenue and Keele Street. The blue oval highlights the St. Clair Avenue West Subway.



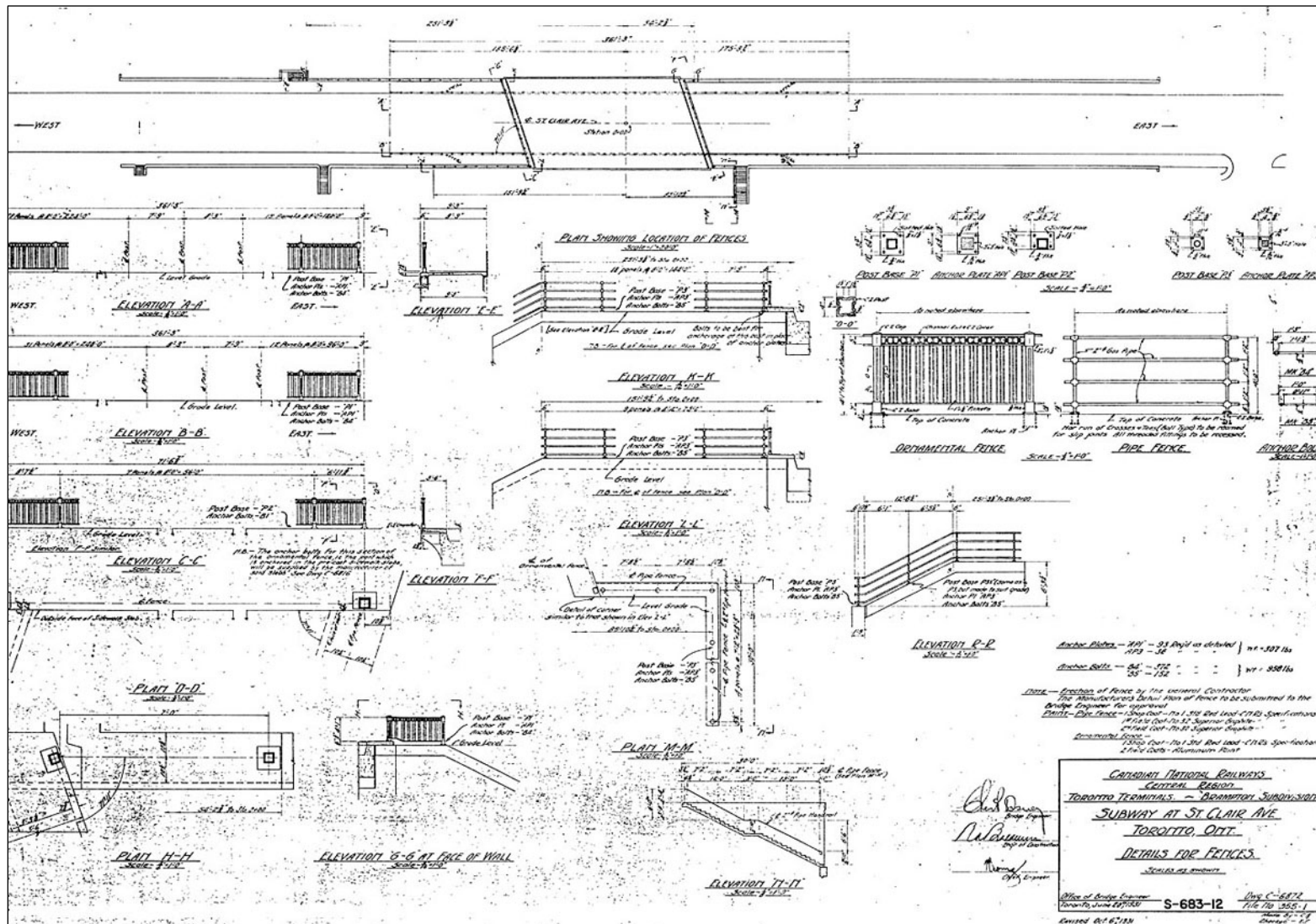
The NTS map 30 M/11 Toronto (1963) continues to show a concentration of industrial activity in proximity to St. Clair Avenue and Keele Street. The blue oval locates the railway subway.



An aerial photograph (2012) shows the redevelopment of the former industrial lands in proximity to St. Clair Avenue and Keele Street. The blue oval highlights the St. Clair Avenue West Subway.




The Office of the Bridge Engineer, Canadian National Railways, Central Region prepared a General Plan, Subway at St. Clair Avenue, Toronto, Ontario in 1931.



A drawing titled: Detail of Fences, prepared by the Office of the Bridge Engineer, Canadian National Railways, Central Region is dated June 20, 1931.

**APPENDIX B:
ST. CLAIR AVENUE WEST SUBWAY
BRIDGE SURVEY FORM**

DRAFT

BRIDGE NAME: St. Clair Avenue West Subway	Recorder: Unterman McPhail Associates & Jean Simonton Heritage Consultant	Ref. No.
HIGHWAY: St. Clair Avenue West	Map: City of Toronto Interactive Maps, as adapted, 2015.	Date: November 28, 2013
Lot: Con:		
Municipality: City of Toronto		
County / R.M.:		
1:50:000 Map Ref.: 30 M/11 Toronto		
Military Grid Ref.:		
Air Photo Ref.:		
Description: The St. Clair Avenue West Subway is located between Keele Street to the west and Old Weston Road to the east.		
BRIDGE ENVIRONMENT & USES		
Water/Road/Rail/Other Crossing: The bridge carries the rail lines of Metrolinx Georgetown South Corridor and CP MacTier Subdivision over St. Clair Avenue West.		
Surrounding Land-Uses & Landscape: St. Clair Avenue West comprises two eastbound and two westbound lanes. Tracks of the TTC have extended along the centre lanes of the roadway since the subway was constructed. In the first decade of 2000, the streetcar corridor was rebuilt as a dedicated right-of-way, which reduced the vehicle lanes to one in each direction. Sidewalks parallel the north and south sides of the roadway. Stairways located in the northwest, northeast and southwest quadrants provide connections to the neighbouring streets. Land use in proximity to the St. Clair Avenue West Subway is mixed use and comprises industrial, commercial and residential activities. A contemporary residential development is located to the northwest of the St. Clair Avenue West Subway on lands once owned by CN as part of the CNER and C.L. Maltby Co., a building supply company. To the northeast, commercial buildings and a hydro substation are numbered 1850 to 1900 St. Clair Avenue West although they are accessed from Townsley Street. Heydon House at 1834 St. Clair Avenue West at the corner of Old Weston Road is designated under the <i>Ontario Heritage Act</i> . Delta Bingo to the southeast of the subway at 1799 St. Clair Avenue West occupies the former site of John T. Hepburn Ltd., a steel fabricating company. Land to the southwest at 1885 St. Clair Avenue West, previously the Hudson Coal Company, is vacant.		
Bridge Uses: The bridge deck carries railway traffic while roadway carries TTC streetcars on a dedicated right-of-way, vehicular traffic and pedestrian traffic.		
DESIGN		
Materials: The structure uses reinforced, cast-in-place concrete for the substructure and reinforced, precast concrete deck slabs for the superstructure.		
Construction Techniques: The precast concrete deck slab structure comprises 20 precast sections, each 6-ft. 3-in. (1.91 m) wide and 3-ft. 0-in. high (0.91 m). Each section was designed to carry one rail of a single track. The deck slab were cast off-site, transported to the site and were lifted into place on the new substructure by two wrecking cranes, one located on the south approach and one located on the north approach.		
Decorative Features: The date of '1931' is cast in northeast abutment. Concrete brackets support walkways on the outside of the bridge deck. A rectangular panelling detail highlights the retaining walls, abutments, centre pier and visible side of the deck slab. The original pipe handrail system on the top of the retaining walls is retained.		
Landscape Quality: The subway structure is a visually prominent structure along St. Clair Avenue West as the roadway dips under the rail corridor. The structure encloses the roadway and heightens the awareness of passing under the bridge. The traffic is funnelled onto one lane to the east of Keele Street.		
State of Preservation: The subway is reported to be structurally sound and in good condition. The original metal railings on the sidewalks and bridge deck have been replaced.		
Other Comments: The structure has a skew of 71° 11' to St. Clair Avenue West. The centre pier has an open spandrel design.		

DIMENSIONS (based on the 1931-1932 drawings)	
Roadway Width: As designed, 21-ft. 0-in. (6.40 m) eastbound and 21-ft. 0-in. (6.40 m) westbound	Longest Span: 31-ft. 0-in. (9.45 m)
No. of Lanes: Four lanes (roadway); up to 10 tracks (deck);	Shortest Span: N/A
Sidewalks: Two, 8-ft. 9-in. (2.67 m) wide on the roadway and two, 3-ft. 6-in. (1.07 m) wide on the deck and	Overall Length: 66-ft. 0-in. (20.12 m)
Capacity: Unknown	Overall Width: 137-ft. 0-in. (41.76 m)
No. of Spans: Two	Clearance: Originally 14-ft. 0-in. (4.27 m); currently posted clearance is 4.0 m
HISTORY	
Date Built: The drawings are generally dated May 18, 1931 with revisions undertaken the following months. Tenders were advertised at the end of May 1931 and construction commenced in June 1932.	
Engineer/Designer: The Office of the Bridge Engineer, Central Region, CNR designed the bridge. Charles P. Disney, Bridge Engineer, Thomas T., Chief Engineer, W.A. Kingsland, General Manager and B.A. Baldwin, Engineer of Construction signed the drawings on behalf of CN.	
Construction Firm: The general contractor is not known. CN installed the precast concrete deck slabs.	
Drawings/Specifications: Structures Department, LEA Consulting Ltd.	
Photos: City of Toronto Archives: Fonds 16: Toronto Transit Commission fonds, Series 71, Items 9233- 9235. May 14, 1932. Fonds 200: City of Toronto fonds, Series 372, Subseries 63. June 8, 1931-May 19, 1932. Fonds 1231: James Salmon collection, Item 2042, October 8, 1923.	
Historical Association: The St. Clair Avenue West Subway is associated directly with the enhancement of the transportation network within Toronto in the post First World War period. It represents a component of the Northwest Toronto Grade Separation project that was undertaken from 1922 to 1932. Road crossings along railway corridors were initially at grade until increased traffic and safety concerns led to the introduction of grade separated structures, starting in the late 19 th century. The Northwest Toronto Grade Separation was one of four large-scale grade separation projects undertaken in the City of Toronto in the first decades of the 20 th century. During this period, the West Toronto Junction in the northwest part of the city experienced significant industrial growth. The expansion of factories in combination with the network of railroad tracks crossing the area resulted in significant traffic problems. The City of Toronto began lobbying for grade separation in the northwest part of the municipality in the early 1920s. Unlike the other grade separation projects that entailed a linear rail corridor, the Northwest Toronto Grade Separation project was complex and comprised several lines that were owned by CN and CP. The grade separation work allowed the TTC to expand its streetcar network and enhanced connections between West Toronto Junction and other parts of the city. The City of Toronto, the TTC and the railway companies shared the cost of the St. Clair Avenue West Subway.	
Previous Bridges: None, the existing grade separation structure replaced an at-grade crossing.	
Other Comments: The subway originally carried tracks of the CN Brampton Subdivision and CP Toronto, Grey & Bruce Subdivision.	
PROPERTY RIGHTS & RESPONSIBILITIES	
Owner: Multi-party Board Orders	Maintenance: Multi-party Board Orders
PLANNED UNDERTAKING	
The City of Toronto has initiated a Transportation Planning Study for St. Clair Avenue West. The study is being undertaken to develop, identify and evaluate short-term and long-term alternatives to address traffic operations and safety conditions along St. Clair Avenue West between Keele Street and Old Weston Road. Potential infrastructure improvements may impact the St. Clair Avenue West Subway.	

PHOTOGRAPHS



A view southwest to the St. Clair Avenue West Subway depicts the relationship of the railway corridor above and the roadway below.



The dedicated streetcar right-of-way runs along the centre lanes of the four-lane St. Clair Avenue West.



The retaining walls and deck slab structure enclose the roadway as traffic is funnelled into a single lane east of Keele Street.



A view along St. Clair shows the part of the contemporary housing development to the northwest of the subway structure.



A view across the bridge deck depicts the low-scale commercial buildings to the northeast of the subway.



The Heydon House at the northwest corner of St. Clair Avenue West and Old Weston Road is designated under the *Ontario Heritage Act*.

PHOTOGRAPHS



A view of the west side of the St. Clair Avenue West Subway depicts the general arrangement of the two-span, precast concrete deck slab structure.



The substructure including the abutments and centre pier use reinforced cast-in-place concrete.



The open spandrel centre pier comprises ten columns connected by a shallow arch.



The construction date of 1931 cast at the east end of the north abutment relates to the completion of the substructure work.



The railing at the edge of the deck is the only distinguishing feature that locates the bridge along the rail corridor.



The brackets support the walkway located on the outside of the deck. Rectangular panel detailing highlights the visible side of the deck slab.