

APPENDIX M

Cultural Heritage Evaluation Report – Etobicoke Creek Bridge

GO Rail Network Electrification TPAP

Final Draft Cultural Heritage Evaluation Report:

Etobicoke Creek Bridge

For



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Metrolinx Electrification Project

Contract No. QBS-2014-IEP-002

Submittal Date: September 2017

ISO 9001:2008
CERTIFIED

METROLINX GO RAIL ELECTRIFICATION

Quality Assurance Document Release Form

Name of Firm: Archaeological Services Inc. (ASI)

Document Name: Final Draft Cultural Heritage Evaluation Report: Etobicoke Creek Bridge, Version 1.0

Submittal Date: September 28, 2017

Discipline: Environmental Assessment

Prepared By: Joel Konrad Date: September 21, 2017

Reviewed By: Rebecca Sciarra Date: September 25, 2017

Approved By: Rebecca Sciarra Date: September 28, 2017
Project Manager

The above electronic signatures indicate that the named document is controlled by GF Canada ULC, and has been:

1. Prepared by qualified staff in accordance with generally accepted professional practice.
2. Checked for completeness and accuracy by the appointed discipline reviewers and that the discipline reviewers did not perform the original work.
3. Reviewed and resolved compatibility interfaces and potential conflicts among the involved disciplines.
4. Updated to address previously agreed-to reviewer comments, including any remaining comments from previous internal or external reviews.
5. Reviewed for conformance to scope and other statutory and regulatory requirements.
6. Determined suitable for submittal by the Project Manager.

REVISION HISTORY

Revision	Date	Comments
0	September 11, 2017	Initial Release to Metrolinx
1	September 28, 2017	Submission of Final Draft to Metrolinx, addressing Metrolinx comments.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	VII
1 INTRODUCTION	1
1.1 DESCRIPTION OF PROPERTY	1
1.2 HISTORICAL SUMMARY	1
1.3 CURRENT CONTEXT	2
2 METHODOLOGY AND SOURCES	3
2.1 LEGISLATION AND POLICY CONTEXT	3
2.2 APPROACH TO CULTURAL HERITAGE EVALUATION REPORT	5
2.2.1 LIST OF KEY SOURCES AND RESEARCH LIMITATIONS	5
2.3 CONSULTATION	7
3 HERITAGE RECOGNITIONS	7
3.1 MUNICIPAL	7
3.2 PROVINCIAL	8
3.3 FEDERAL	8
4 ADJACENT LANDS	8
5 SUMMARY OF ARCHAEOLOGICAL ASSESSMENTS	8
6 COMMUNITY INPUT	8
7 DISCUSSION OF CULTURAL HERITAGE VALUE	9
7.1 DISCUSSION OF HISTORICAL OR ASSOCIATIVE VALUE	9
7.1.1 SETTLEMENT HISTORY	9
7.1.2 SIGNIFICANT THEMES, EVENTS AND/OR PEOPLE	11
7.2 DISCUSSION OF DESIGN AND PHYSICAL VALUE	14
7.2.1 PHYSICAL CHARACTERISTICS	14
7.2.2 COMPARATIVE ANALYSIS	15
7.3 DISCUSSION OF CONTEXTUAL VALUE	16
7.3.1 DESCRIPTION OF SETTING AND CHARACTER OF THE PROPERTY AND SURROUNDINGS	16
7.3.2 COMMUNITY LANDMARK	17
8 DATA SHEET	18

FINAL DRAFT
CULTURAL HERITAGE EVALUATION REPORT:
ETOBICOKE CREEK BRIDGE



9	FIGURES	19
9.1	HISTORIC MAP REVIEW	19
9.2	SELECT STRUCTURAL DRAWINGS	23
9.3	SITE VISIT PHOTOGRAPHS	27
10	CHRONOLOGY	38
11	BIBLIOGRAPHY	38
12	PROJECT PERSONNEL	42

TABLES

Table 2-1: Results of Community Consultation for Etobicoke Creek Bridge	7
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FIGURES

Figure 1-1: Location of Etobicoke Creek Bridge study area in the City of Toronto, Ontario (Open Street Map)	2
Figure-1-2: North Elevation of the Etobicoke Creek Bridge	3
Figure 9-1: View of the study area on 1860 historic mapping (Tremaine 1860)	19
Figure 9-2: View of the study area on 1878 historic mapping (Miles & Co. 1878)	20
Figure 9-3: View of the study area on 1947 aerial photograph (Toronto Archives 1947)	20
Figure 9-4: View of the study area on 1960 aerial photograph (Toronto Archives 1960)	21
Figure 9-5: View of the study area on 1985 aerial photograph (Toronto Archives 1985)	22
Figure 9-6: View of north elevation, looking southwest towards the west abutment.	27
Figure 9-7: North elevation, looking south under the pedestrian trail span.	27
Figure 9-8: North elevation showing pier, looking south.	28
Figure 9-9: East elevation of pier, looking west from pedestrian path.	28
Figure 9-10: Ice flow protection on the north elevation of the pier, looking south.	29
Figure 9-11: North elevation of pier with ice floe protection supporting Warren truss structure, looking southeast.	30
Figure 9-12: East abutment with 1903 Warren truss bridge resting on stone portion at left, and 1923 plate girder structure resting on concrete portion at right, looking east.	31
Figure 9-13: East concrete abutment, showing date stamp, looking east.	31
Figure 9-14: Internal bracing within southern plate girder bridge under the east span.	32
Figure 9-15: Bracing in eastern span of northern Warren truss bridge, looking west towards pier.	32
Figure 9-16: Riveted structural components in Warren truss portion, looking southwest.	33
Figure 9-17: Underside of west span and west abutment, looking west from pier.	33

FINAL DRAFT
CULTURAL HERITAGE EVALUATION REPORT:
ETOBICOKE CREEK BRIDGE



Figure 9-18: West abutment with 1923 plate girder portion at left and 1903 Warren truss at right, looking west.	34
Figure 9-19: East abutment showing bearings on 1903 stone section, looking west.	34
Figure 9-20: South elevation with pier at center, looking northwest.	35
Figure 9-21: South elevation of east span, with east abutment at right, looking north.	35
Figure 9-22: East abutment and south elevation of plate girder bridge, looking northeast.	36
Figure 9-23: South elevation with pier at center, obscured by vegetation, looking northwest.	37
Figure 9-24: South elevation with recreational park at foreground, looking northwest.	37

FINAL DRAFT
CULTURAL HERITAGE EVALUATION REPORT:
ETOBICOKE CREEK BRIDGE



REPORT DISCLAIMER

NOTWITHSTANDING the results and recommendations presented in this study, Archaeological Services Inc. notes that no cultural heritage assessment, no matter how thorough or carefully completed, can necessarily identify every property and/or structure that has not been previously identified as a known or potential cultural heritage resource. Cultural heritage assessments for transportation related projects are limited to the public right-of-way, and as such, potential cultural heritage resources on private property may be screened from view by vegetation and/or other barriers. In the event that a potential cultural heritage resource is found during subsequent construction activities, the consultant cultural heritage specialist and approval authority should be immediately notified.

Executive Summary

ASI was contracted by Morrison Hershfield on behalf of Metrolinx to conduct a Cultural Heritage Evaluation Report (CHER) and Cultural Heritage Evaluation Recommendation Report (CHERR) of the Etobicoke Creek Bridge on the Lakeshore West rail corridor as part of the GO Rail Network Electrification Transit Project Assessment Project (TPAP). Metrolinx is undertaking a TPAP study under *Ontario Regulation 231/08 - Transit Projects and Metrolinx Undertakings* for electrification of the GO Rail Network. The Etobicoke Creek Bridge was identified as a Potential Provincial Heritage Property as part of the Cultural Heritage Screening Report completed for the GO Rail Network Electrification TPAP.

The Etobicoke Creek Bridge is located at Mile 9.82 of the GO Transit Lakeshore West rail corridor, and is owned by the Metrolinx. The truss portion of the bridge was constructed in 1903, with an addition on the south side constructed in 1923. The bridge carries three railway tracks in an east and west direction across the Etobicoke Creek, between Dixie Road and Long Branch GO Station, in the City of Toronto.

Part 1 of this CHER provides a description of the potential cultural heritage resources, including a summary of its historical and current context (Section 1), a description of methodology and sources (Section 2), existing heritage recognition of the resource (Section 3), a description of adjacent lands (Section 4), summary of previous archaeological assessment (Section 5), community input (Section 6), and discussion of cultural heritage value (Section 7). A data sheet is provided in Section 8 and figures, including mapping and photographs, are provided in Section 9. Part 2 of this CHER contains the Recommendations Report which presents the evaluation tables outlining criteria set out in *Ontario Regulations 9/06 and 10/06* and recommended outcome of the evaluation.

The CHER was conducted by Joel Konrad, Cultural Heritage Specialist, under the senior project management of Annie Veilleux, Manager of the Cultural Heritage Division, both of ASI.

1 Introduction

ASI was contracted by Morrison Hershfield on behalf of Metrolinx to conduct a Cultural Heritage Evaluation Report (CHER) and Cultural Heritage Evaluation Recommendation Report (CHERR) of the Etobicoke Creek Bridge, Lakeshore West rail corridor, Mile 9.82, as part of the GO Rail Network Electrification Transit Project Assessment Process (TPAP). Metrolinx is undertaking a Transit Project Assessment study under *Ontario Regulation 231/08 - Transit Projects and Metrolinx Undertakings* for electrification of the GO Rail Network. The purpose of the Project is to convert the GO Network from diesel to electric power. The Etobicoke Creek Bridge was identified as a Potential Heritage Property as part of the Cultural Heritage Screening Report completed for this Project.

The objective of this CHER is to provide evidence about reasons why the subject resource may be of cultural heritage value or interest, and identify the physical elements that contribute to its heritage value. Research for this CHER was conducted under the senior project management of Annie Veilleux, Manager of the Cultural Heritage Division, ASI.

1.1 Description of Property

The Etobicoke Creek Bridge is located at Mile 9.82 of the GO Transit Lakeshore West rail corridor, and is located in the City of Toronto (Figure 1-1 and Figure 1-2). The bridge is a two-span, modified Warren deck truss structure with plate-girder expansion on the south side that carries three railway tracks in an east and west direction over the Etobicoke Creek. The bridge is located within an unknown ownership parcel, and the bridge is currently owned and maintained by Metrolinx.

1.2 Historical Summary

The Etobicoke Creek Bridge is located in part of Concession 1 Fronting the Lake, Etobicoke Township, and Lot 4, Concession 2 in the Township of Toronto South in the former counties of York and Peel, respectively. The bridge is located west of the historic town of Mimico, founded in 1856, and later amalgamated with the Borough of Etobicoke in 1967, which was in turn amalgamated into the City of Toronto in 1998.

The Etobicoke Creek Bridge was built in 1903 and features a modified Warren deck truss design and stone foundations. A steel plate girder addition was constructed in 1923 on the south side of the original structure.

1.3 Current Context

The Etobicoke Creek Bridge is located on the Lakeshore West rail corridor in the City of Toronto. The area around the bridge generally consists of parkland and green space on the north, east, and west. The bridge carries the Lakeshore West rail corridor over the Etobicoke Creek and is publically accessible as part of a pedestrian and cycling path system that travels in a north south connection south of Queen Elizabeth Highway with a terminus at Marie Curtis Park and with connections to the Waterfront trail in this location.

Figure 1-1: Location of Etobicoke Creek Bridge study area in the City of Toronto, Ontario (Open Street Map)



Figure-1-2: North Elevation of the Etobicoke Creek Bridge



2 Methodology and Sources

2.1 Legislation and Policy Context

This cultural heritage evaluation considers cultural heritage resources in the context of improvements to specified areas, pursuant to *Ontario Regulation 231/08: Transit Projects and Metrolinx Undertakings* (Transit Projects Regulation) and the Ontario *Environmental Assessment Act* (EAA 1990). Pursuant to the *Environmental Assessment Act*, applicable infrastructure projects are subject to assessment so as to determine related impacts on above ground cultural heritage resources (MTO 2006). Infrastructure projects have the potential to impact cultural heritage resources in a variety of ways such as loss or displacement of resources through removal or demolition and the disruption of resources by introducing physical, visual, audible or atmospheric elements that are not in keeping with the resources and/or their setting.

When considering cultural heritage resources in the context of improvements to specified areas, a 40-year-old threshold is used as a guiding principle when identifying cultural heritage resources. While identification of a resource that is 40 years old or older does not confer outright heritage significance, this threshold provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from retaining heritage value.

The TPAP is defined in sections 6-17 in *Ontario Regulation 213/08: Transit Projects and Metrolinx Undertakings*, and provides a series of relevant provisions and definitions. The TPAP Guide (January 2014) includes provisions to consider when the proposed project may have a negative impact on a matter of provincial importance, which is defined as follows (2014: 2):

“...a matter of provincial importance that relates to the natural environment or has cultural heritage value or interest...”

The TPAP Guide further notes that identification and assessment of potentially impacted built heritage resources, cultural heritage landscapes, and protected heritage properties are relevant in determining if a matter is of ‘provincial importance’ (2014: 10). It should be noted that the TPAP Guide acknowledges that a built heritage resource, cultural heritage landscape, or protected heritage property does not necessarily need to meet criteria set out under *Regulation 10/06* of the *Ontario Heritage Act* to be considered of ‘provincial importance’.

The analysis used throughout the cultural heritage resource assessment process addresses cultural heritage resources under other various pieces of legislation and their supporting guidelines:

- *Environmental Assessment Act* (R.S.O. 1990, Chapter E.18)
 - o *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (MCC – MOE 1992)
 - o *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (MCR – MOE 1981)
- *Ontario Heritage Act* (R.S.O. 1990, Chapter O.18) and a number of guidelines and reference documents prepared by the Ministry of Tourism and Culture (MTC):
 - o *Standards and Guidelines for the Conservation of Provincial Heritage Properties* (MTC 2010)
 - o *Ontario Heritage Tool Kit* (MCL 2006)
- *Planning Act* (R.S.O. 1990, Chapter P.13) and the 2014 *Provincial Policy Statement*

This assessment was also guided by the *Metrolinx Interim Cultural Heritage Management Process* (Metrolinx 2013b), the *Draft Terms of Reference for Consultants: Cultural Heritage Evaluation Report and Cultural Heritage Evaluation Report Recommendations* (Metrolinx 2014); and the City of Toronto *Terms of Reference for Heritage Impact Statements* (August 2011).

2.2 Approach to Cultural Heritage Evaluation Report

The scope of a CHER is guided by the Ministry of Tourism, Culture and Sport's *Ontario Heritage Toolkit* (2006) as well as the Metrolinx *Draft Terms of Reference for Consultants: Cultural Heritage Evaluation Report and Cultural Heritage Evaluation Report Recommendations* (2014). Generally, CHERs include the following components:

- A general description of the history of the study area as well as a detailed historical summary of property ownership and building(s) development;
- A description of the cultural heritage landscape and built heritage resources;
- Representative photographs of the exterior and interior of a building or structure, and character-defining architectural details;
- A cultural heritage resource evaluation guided by the *Ontario Heritage Act* criteria;
- A summary of heritage attributes;
- Historical mapping, photographs; and
- A location plan.

A site visit was conducted by Rebecca Sciarra, Cultural Heritage Specialist, of ASI on 6 September 2017, to conduct photographic documentation of the subject resource. The assessment was conducted from publicly-accessible areas.

Using background information and data collected during the site visit, the cultural heritage resource is evaluated using criteria contained within *Regulation 9/06* and *10/06* of the *Ontario Heritage Act*. The two criteria sets share a requirement to fully understand the history, design and associations of all cultural heritage resources of the property. The following differences between the two sets of criteria should be noted (Metrolinx 2014: 12):

- *Regulation 9/06* requires a consideration of the community context
- *Regulation 10/06* requires a consideration of the provincial context

2.2.1 List of Key Sources and Research Limitations

Key Sources

Background historical research, which includes the consultation of primary and secondary source documents, photos, and historic mapping, was undertaken to identify early settlement patterns and broad agents or themes of change in a study area. In addition, on-site archival research was undertaken

at the following libraries and archives to build upon information gleaned from other primary and secondary materials:

- Toronto Archives
- Archives of Ontario

Where available, comprehensive bridge inventories were consulted for comparative analysis purposes to determine the potential design value of the subject bridge. The Metrolinx Master Bridge List (August 31, 2015) recording information such as bridge name, location, construction date, material, bridge type, number of spans and overall bridge length, was provided by Metrolinx and utilized for comparative purposes. Additional sources were considered for comparative analysis where relevant.

Available federal, provincial and municipal heritage inventories and databases were also consulted to obtain information about the property. These included:

- The City of Toronto's Heritage Properties Inventory;
- The Ontario Heritage Trust's *Provincial Plaque Program* database;
- Park's Canada's *Directory of Federal Heritage Designations*, a searchable on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses; and
- Park's Canada's *Historic Places* website: a searchable on-line register that provides information on historic places recognized for their heritage value at the local, provincial, territorial and national levels.

Previous consultant reports associated with potential above-ground cultural heritage resources and archaeological resources within and/or adjacent to the GO Rail Network Electrification TPAP included the following:

- Cultural Heritage Screening Report: GO Rail Network Electrification TPAP (ASI 2017)

A full list of references consulted can be found in Section 11 of this CHER.

Research Limitations

- Absence of original or existing structural drawings; and
- Absence of complete Engineer's Inspection Report

2.3 Consultation

Consultation with the Ontario Heritage Trust, the Ministry of Tourism, Culture, and Sport (MTCS), and heritage staff at the City of Toronto regarding the subject properties took place as part of the Cultural Heritage Screening Report (ASI 2017a), and is summarized below.

Table 2-1: Results of Community Consultation for Etobicoke Creek Bridge

Contact	Organization	Contact Information	Date(s) of Communications	Description of Information Received
Kiki Aravopoulos, Easements Coordinator	Ontario Heritage Trust	Kiki.Aravopoulos@heritagetrust.on.ca	November 12, 2015 November 27, 2015	Heritage Easement List
Sherry Pedersen, Program Manager	City of Toronto, Heritage Preservation Services	speders@toronto.ca	November 3, 2015 November 13, 2015 November 27, 2015 December 8, 2015 February 18, 2016	No information received at the time of report writing.
Paula Wubbenhorst, Senior Heritage Coordinator	City of Mississauga	Paula.wubbenhorst@mississauga.ca	November 27, 2015; April 9, 2016	Provided: Designation bylaws, confirmed heritage properties adjacent to study area.
Karla Barboza, Heritage Advisor	Ministry of Tourism, Culture and Sport	Karla.Barboza@ontario.ca	November 27, 2015 December 8, 2015	Confirmed known PHPs along corridors; provided direction on other reports/EA studies to review.

3 Heritage Recognitions

3.1 Municipal

The subject resource does not retain heritage recognition at the municipal level for the following reasons:

- The property is not listed on the City of Toronto's Heritage Properties Inventory;
- The property is not listed on the City of Mississauga's Heritage Properties Inventory; and
- The property is not identified in the City of Mississauga's Cultural Heritage Landscape Inventory.

3.2 Provincial

The subject resource does not retain heritage recognition at the provincial level for the following reasons:

- The property has not previously been identified as a Provincial Heritage Property; and
- The property has not been commemorated by the Ontario Heritage Trust.

3.3 Federal

The subject resource does not retain heritage recognition at the federal level for the following reasons:

- The property does not contain a Federal Heritage Building; and
- The property is not a National Historic Site.

4 Adjacent Lands

The Etobicoke Creek Bridge is not adjacent to any known heritage properties.

5 Summary of Archaeological Assessments

The Stage 1 Archaeological Assessment for the GO Rail Network Electrification TPAP has been completed (ASI 2017). It was submitted to the Ministry of Tourism, Culture, and Sport on September 22nd 2017 but has not been accepted into the Ontario Public Register of Archaeological Reports. Once accepted into the Register, this report will provide information about archaeological potential in the study area.

6 Community Input

For the purposes of this CHER, information received through consultation with the Ontario Heritage Trust, the Ministry of Tourism, Culture, and Sport (MTCS), and heritage staff at the City of Toronto regarding the subject properties undertaken as part of the Cultural Heritage Screening Report (ASI 2017) was considered. See Section 2.3 of this report for a summary of individuals contacted. Three rounds of public meetings have occurred since the initiation of the Metrolinx Electrification TPAP project. A review of summaries provided of the latest round, undertaken between June 26th and July 5th, reveals no express references to the Etobicoke Creek Bridge. The Etobicoke Creek Bridge was not discussed at any of the public meetings.

A review of various online sources did not reveal any known or identifiable interest from the community in the potential heritage value of the Etobicoke Creek Bridge.

7 Discussion of Cultural Heritage Value

7.1 Discussion of Historical or Associative Value

7.1.1 Settlement History

Township of Etobicoke

The land in Etobicoke Township was acquired by the British from the native Mississaugas, and was included in the terms of the Toronto Purchase of September 25, 1787. The township was originally under the authority of the Nassau District Land Board which sat at Newark (Niagara) until the district boards were abolished by John Graves Simcoe in November 1794. When Simcoe redefined the administrative and electoral boundaries for Upper Canada, the area which covers the modern City of Toronto and also Etobicoke formed part of the County of York in the East Riding of York in the Home District.

The first survey of Etobicoke was made by Abraham Iredell in April 1795, with the first “legal settler” taking up land in 1800 (Armstrong 1985:143). Several of the modern streets in Etobicoke follow the survey lines set down by Iredell, and his field notes were used by William Hawkins (PLS) when he corrected and confirmed parts of the township survey in 1856-7. Other parts of Etobicoke, such as the extensive tract in the southwest corner of the township which was granted to the Hon. Samuel Smith, remained unsurveyed until this work was undertaken by Samuel Wilmot in 1811 (Hawkins 1857). Other early township surveys were undertaken by Augustus Jones (1797) and Hambly (1798). A survey of a road leading across the township to the King’s Mill was undertaken by Ridout and some soldiers from the garrison at York during the summer of 1814. The irregular shape of the township, as well as the various surveyors who laid out the concessions, caused Etobicoke to be “laid out in a fragmentary and unsystematic fashion” (Robinson, 1914 vol. 1: 97). Canniff also speculated that part of the haphazard survey found in Etobicoke may have been in an effort to permit as many settlers as possible to “obtain a frontage upon a water way” (Miles and Co. 1878:xxi).

In 1805, Etobicoke was briefly described by D’Arcy Boulton: “further to the westward (that is, between the Humber and the head of the lake Ontario) the Tobicoake, the Credit, and two other rivers, with a great many smaller streams, join the main waters of the lake; they all abound with fish, particularly salmon. At this place is a small house for the entertainment of travelers.” He further noted that “the tract between the Tobicoake and the head of the lake is frequented only by wandering tribes of Missassagues” (Boulton 1805:48). It should be noted here that one of the early alternate names given to the Etobicoke Creek was “Smith’s River” (Firth 1962:29).

In 1846, Etobicoke was described as “a well settled township, containing good land” although some of the land near the lake was “generally poor and sandy.” The timber was principally pine and hardwood,

including beech, maple, elm and basswood. The township contained five grist mills and nine sawmills. The village of Mimico was of sufficient size to warrant notice at that time. The population of the township in 1842 had reached 2,467 (Smith 1846:57).

In 1851, it was noted that although Etobicoke was a small township, it was well settled and property values had increased greatly. During the late 1820s and early 1830s, land was available for purchase at \$6 per acre, but by 1851 it had increased to £10-12 (about \$50-60) per acre. The population in that year was 2,904. The township contained five grist mills and seven saw mills. The primary crops enumerated in the Agricultural census included wheat, barley, oats, peas, potatoes, wool, cheese and butter (Smith 1852:18).

Village of Long Branch

This community was named by Thomas J. Wilkie in 1884 after he visited the resort community of Long Branch, New Jersey. In 1887, Wilkie built the Hotel Long Branch, which was a popular destination for travelers. Unfortunately, this structure burned down in 1954. Long Branch was incorporated as a village in 1931. It amalgamated with the Borough of Etobicoke in 1967 (Rayburn 1997:197). Several acres of “reclaimed land” around the mouth of Etobicoke Creek east of Marie Curtis Park encroached into the lake and increased the size of Etobicoke Township.

Township of Toronto South

In 1788, the County of Peel was part of the extensive district known as the “Nassau District.” After the province of Quebec was divided into Upper and Lower Canada in 1792, the Nassau District became known as Home District. The same year, Upper Canada was subdivided into nineteen counties by its first Lieutenant Governor, Colonel John Graves Simcoe, and by 1852, the Home District was replaced by the Counties of York, Ontario and Peel (Robb 2003; Gibson 2002).

The Township of Toronto was originally surveyed in 1806 by Mr. Wilmot, Deputy Surveyor. The first settler in this Township, and also the County of Peel, was Colonel Thomas Ingersoll. The whole population of the Township in 1808 consisted of seven families scattered along Dundas Street. The number of township inhabitants gradually increased until the War of 1812 broke out, which gave considerable check to its progress. When the war was over, Toronto Township continued to grow and the rear part was surveyed and called the “New Survey.” Along the lakeshore, the pre-existing trail was widened and improved as a public road by 1798, but bridges were lacking. By 1826, a regular stagecoach service ran between York and Niagara. The Toronto Road Company purchased the Lakeshore Road in 1850, turning it into a toll road (Robb 2003; Gibson 2002).

7.1.2 Significant Themes, Events and/or People

Railway Development

The Lakeshore West rail corridor follows the tracks initially laid in the mid-1850s from Toronto to Hamilton by the Great Western Railway (GWR), who were leasing the land from the Hamilton & Toronto Railway Company (H&TRC). The H&TRC was established by Sir Allan MacNab and a number of other investors, with additional financial support from England, and a charter was granted in 1852.

Construction on the line began in 1853 and it was completed in 1855. The line was initially leased to the Great Western Railway (GWR), who in turn supplied railway stations along the corridor and constructed the GWR branch between Hamilton and Toronto (Paterson & George 1988:13). Given that the GWR was headquartered in Hamilton, mileage started in Hamilton. Extending from Hamilton, the first train stations were as follows (Reynolds 2011):

- Hamilton, Stuart St. (Mile 0.00);
- Bronte (Mile 13.33);
- Oakville (Mile 17.57);
- Clarkson (Mile 22.82);
- Lorne Park (Mile 23.89)
- Port Credit (Mile 25.84);
- Mimico (Mile 32.26); and
- Sunnyside (Mile 35.18).

The establishment of the railway through the settlement at Long Branch brought change to the village. In the 1890's the community began to expand and was used primarily for recreation with the construction of a summer resort and cottages along the lake shore (Mika and Mika 1983). The 1878 Illustrated Historical Atlas Map (Figure 9-1) demonstrates that the area retained a rural, agricultural character well into the late nineteenth century, with large tracts of land reserved by the government, and few subdivided residential lots containing structures (Miles & Co. 1878).

By the 1870s, there were five trains running daily between Toronto and Hamilton (Hicks 2007). Locomotives were now powered by coal rather than wood and air brakes had been developed which allowed for trains to attain greater speeds. By 1872, iron rails were being replaced by the more resilient steel rails, greatly improving safety standards and reducing expenses. It was also around this time that the H&TR was absorbed into the GWR and the single track between Hamilton and Toronto became known as the Toronto Branch. Other lines constructed by, or purchased by, the GWR included: the Galt & Guelph Railway; the London & Port Sarnia Railway; and the Canada Air Line Railway (Reynolds 2011).

In 1882, the Grand Trunk Railway (GTR) merged with the GWR. Track mileage was reversed at this time, with Union Station in Toronto now at Mile 0.00. In the 1880s and 1890s, a plan was developed by the GTR to fix the 'Dip' at the Credit River, in which the tracks would be raised by 12 feet. At the same time, the Toronto Branch rail corridor was doubled and to accommodate the new track and the raised roadbed (Reynolds 2011).

The Etobicoke Creek Bridge was constructed in 1903 to carry two railway tracks over the Etobicoke Creek in former Etobicoke and Toronto townships, Ontario. An additional steel plate girder bridge was constructed on the south side of the structure in 1923. A review of original and historic structural drawings associated with the bridge confirms that the 1903 designs were developed by the Canadian Bridge Company Limited of Walkerville, Ontario. A review of online bridge inventories (www.historicbridges.org) confirms that the Canadian Bridge Company was responsible for the design and/or construction of various bridges in Toronto, including but not limited to the Bloor Street Railway Overpass (ca. 1925) and the St. Clair Viaduct (ca. 1925). The company was based in Walkerville Ontario and constructed a facility there by 1907, with facility expansions undertaken in 1913 (International Metropolis, 2009). The Canadian Bridge Company later became a division of the Dominion Steel and Coal Corporation. The company is also known for the design and/or construction of various railway bridges across Canada in the late nineteenth century and early twentieth century: the Lethbridge Viaduct (1909), Peace River Railroad Bridge (1918), the South Saskatchewan River Bridge (1908), and the Stoney Creek Bridge (1893) (Janberg, 2017).

The 1923 expansion to the Etobicoke Creek Bridge is attributed to the Hamilton Bridge Works Company Limited, a manufacturer based in Hamilton, Ontario. The company was founded by Sir John Hendrie, 11th Lieutenant Governor of Ontario, around 1872 as a manufacturer of machine tools and named the Hamilton Tools Works. Soon after its inception, the company became involved in the construction of simple railway bridges, including structures for the Great Western Railway and was soon renamed the Hamilton Bridge and Tool Works. The company's first major bridge contract was the swing bridge over the Burlington Canal for the Hamilton & North Western Railway in 1876.

The company was renamed the Hamilton Bridge Works Co. Limited in 1894 and sold to J.H. Tildon soon after. Tildon placed particular emphasis on steel bridge and building construction and was awarded the Bloor Street Viaduct in Toronto in 1910 for his efforts. The company's operations were expanded in 1913 when it began work on the Canadian Pacific Office building in Toronto. Increased demand for steel used in shipbuilding during World War I offered another avenue for expansion and the company expanded to fill demand. The name was once again changed to the Hamilton Bridge Company Limited in 1928, though it still provided steel for a wide variety of projects, including the Bank of Commerce Building, Toronto, as well as the manufacturing of armored vehicles during World War II.

Subsidiary companies were established in the 1940s and 1950s. In 1954 the Bridge and Tank Company of Canada Limited subsumed the Hamilton Bridge Company and its subsidiaries and the company was renamed the Hamilton Bridge and Tank Company. Some of the company's projects include the Blue Water Bridge in Sarnia, the reconstruction of the Victoria Bridge in Montreal, the Burlington Canal lift bridge, the Burlington Skyway Bridge, and the Lion's Gate Bridge in Vancouver. The company closed in 1984.

Due to financial difficulty, control of the GTR was assumed by the Canadian Government in 1919 and by 1923, the GTR was amalgamated with Canadian National Railways (CNR) (Andreae 1997). The CNR continued to operate freight and passenger trains along the Lakeshore West rail corridor on a regular basis, making this one of the busiest rail corridors in Canada. By the 1950s, automobiles and highways were replacing trains and railways as the preferred mode of transportation, which meant that it was becoming economically unviable for the CNR to continue passenger services. The following decades saw the introduction of GO Transit commuter rail service and the creation of VIA Rail Canada by the federal government to ensure the continuity of intercity passenger train services (VIA Rail n.d.).

The current Lakeshore West GO transit corridor was built in 1855 to connect Toronto and Hamilton. The line was constructed by the Hamilton & Toronto Railway Company (HTR), which merged with the Great Western Railway (GWR) in 1871. The line changed hands twice more (owned by the Grand Trunk Railway of Canada [GTR] and the Canadian National Railway [CN]) prior to its use by GO Transit. GO Transit service began in May 1967, with the CN Oakville Subdivision rail line renamed the Lakeshore West rail corridor. The Lakeshore line was successful and GO Transit commissioned an options report in 1969 that proposed four new routes. The Lakeshore Line was carrying 8 million passengers by 1976, in 1992 the Lakeshore West Line was extended to Aldershot Station in Burlington (Taylor Hazel Architects, 2014: 2-9).

In the early 2000s, increase rail traffic on the Lakeshore West rail corridor necessitated the addition of a third track. Triple tracking was completed by 2008 and consisted of more than 29 miles (48 kilometres) of new track, 15 interlockings, and 25 bridges (AECOM n.d.).

The Lakeshore West rail corridor was Canada's busiest railway corridor during the nineteenth and most of the twentieth century (Paterson & George 1988: 15, 24).

Warren Truss

The Warren truss design has been widely used and adapted in North America, particularly in the twentieth century. The design was patented by James Warren and Theobald Willoughby Monsani in 1848 and consists of a "W" pattern of alternately placed members in tension and compression (Cleary 2007: 243). The addition of a vertical member intersecting the horizontal members, as displayed on the

Etobicoke Creek Bridge, was a common modification to the design. The Warren truss type became the design of choice for steel rail and road bridges in the mid-twentieth century, with Warren deck trusses common for multiple span structures (Cleary 2007: 251)

Steel Plate Girder

Beam or girder technology was commonly used for bridge construction in Ontario. This bridge type is comprised of girders, members placed perpendicular to the ford, supported by abutments and piers, when necessary. Simple girder bridges were constructed in the nineteenth century out of wood to support rail, pedestrian, and vehicular traffic primarily across water obstacles. At the turn of the twentieth century, steel beams were introduced and were supported by stone and then concrete abutments and piers. However, the large, rolled steel girders were difficult to transport and thus more costly. Plate girders afforded an economic and logistical solution as they consisted of smaller steel segments that could be welded and riveted together on site. These plate girder bridges proliferated and were commonly used to support railways in both urban and rural settings throughout the twentieth century (Cleary 2007: 50).

7.2 Discussion of Design and Physical Value

7.2.1 Physical Characteristics

The following description of the Etobicoke Creek Bridge is based on the site visit, inspection reports, and bridge inventory. The following documents were available for review:

- Metrolinx Bridge Inventory (2015)
- Metrolinx Bridge Inspection Report (2013a)

The Etobicoke Creek Bridge was constructed in 1903 to carry two railway tracks over the Etobicoke Creek in former Etobicoke and Toronto townships, Ontario. An additional steel plate girder bridge was constructed on the south side of the structure in 1923. Currently the bridge supports a total of three railway tracks. The two-span bridge features both a modified Warren deck truss and steel plate girder bridge construction, with the original section retaining stone abutments and the addition featuring poured concrete abutments and wingwalls.

Modifications

Aside from the major 1923 expansion, no other known modification or repairs have been conducted.

Existing Conditions

According to a 2013 Bridge Inspection Report (Metrolinx 2013a), the late-nineteenth-century modified Warren deck truss structure is in generally fair condition. The report does note that the backwall ties are in poor condition and the approaches are generally too low. In addition, the adjoining steel plate girder structure was assessed and found to be in generally fair condition, though like the original structure the backwall ties were found to be in poor condition and the approaches were too low (Metrolinx 2013). Photographic plates (Figure 9-6 to Figure 9-24) are provided in Section 9.4.

The Etobicoke Creek Bridge consists of a north and south structure, carrying the north two tracks and south single track, respectively. The original, modified Warren deck truss structure features a wood-tie deck supported by steel beams, which are in turn supported by a modified Warren deck truss. The truss structure is held together by both bolts and rivets and rests on original stone abutments and pier with poured concrete on lower portions. Both spans measure 28 metres for a full deck length of 56 metres.

The south addition consists of a steel plate girder structure with both rivets and bolts supporting a deck comprised of wood rail ties. The steel girders currently rest on poured concrete abutments and a single pier, with two spans measuring 28 metres each for a full deck length of 56 metres.

The top of the structure features three railway tracks, two on the north structure and one on the south structure, supported by a deck comprised of wood railway ties. A railing system of wood and steel is extant on the north side of the original structure and the south side of the plate girder structure, and is currently in a state of disrepair according to the 2013 Bridge Inspection Report (Metrolinx 2013a).

A pier is located on the east side of Etobicoke Creek and is comprised of both stone, generally on the north side, and poured concrete, on the south. The pier retains a chevron shape on the north side for ice floe protection, while the south side is of concrete construction and generally square.

A paved pedestrian and cycling path passes under the bridge and is bounded on both sides by vegetation. At the time of field inspection, the bridge appeared to be in good condition, with minimal wear noted. Public access to the underside of the bridge has resulted in graffiti and garbage surrounding the piers and abutments.

7.2.2 Comparative Analysis

The two-span, Etobicoke Creek Bridge is comprised of a modified Warren deck truss north structure built in 1903 and a steel plate girder addition on the south, added in 1923. The individual span lengths of both are 28 metres and 28 metres for an overall length of 56 metres. Deck truss railway and road bridges were introduced to the Ontario landscape in the late nineteenth century and became more popular in the early part of the twentieth century, when steel was becoming more affordable and

available (Cuming 1984). This type of bridge is typically used to span waterways and/or valleys, where overhead clearance is not necessarily an issue.

According to a review of the Metrolinx Bridge Inventory (2015), there are five other deck truss railway bridges owned by Metrolinx. These are summarized as follows:

- Five-span Rouge River Bridge, Toronto, Lakeshore East Corridor, which included a 140 ft (43 m) double track central deck truss span (b.1898) with four double track approach spans (b.1902), with a total bridge length of 236 ft (72 m);
- Five-span, Sixteen Mile Creek Bridge, Oakville, Lakeshore West Corridor, built 1900-1902, 98 ft (30 m) span length, and 490 ft (149 m) total bridge span length;
- Six-span Bronte Creek, Oakville, Lakeshore West Corridor, built 1900-1902, 93 ft (28 m) span length, and 558 ft (170 m) total bridge length;
- Single-span Mimico Creek Bridge, Toronto, Lakeshore West Corridor, built 1902, measuring 100 ft (31m); and
- Three-span Credit River Bridge, Mississauga, Lakeshore West Corridor, built in 1903, with span lengths of 30 ft, 2010 ft, and 30 ft (9m 63m, and 9m) for an overall length of 270 ft (82m).

According to the bridge inventory maintained by www.historicbridges.org¹, there are over twenty deck truss road highway bridges in Ontario. It is important to note that this list should not be considered exhaustive, as a complete inventory of bridges in Ontario is not available. In addition, an inventory of rail bridges currently owned/maintained by the CNR or CPR is not available for further comparison.

Based on this review, the subject bridge is not considered to be the oldest example of a deck truss, or significant in terms of individual span length, number of spans, or overall bridge length. Moreover, the modified Warren deck truss was a common type among rail bridges of this period unlike the inverted bowstring truss of the Credit River Bridge and the Rouge River Bridge. Therefore, the Etobicoke Creek Bridge is not considered unique in terms of its age, construction, or length.

7.3 Discussion of Contextual Value

7.3.1 Description of Setting and Character of the Property and Surroundings

The Etobicoke Creek Bridge is located west of the historic village of Mimico in Toronto, Ontario and within the community of what was previously known as Long Branch. The Etobicoke Creek is predominantly used for recreational purposes, is one of a number of waterways in the City of Toronto, and provides a natural and political boundary between Mississauga and the City of Toronto. Upriver, the

¹ Historicbridges.org is a website designed to "provide to the public, historic bridge photos, documentation, consultation and presentations..." The site was founded in 2003 by Nathan Holth. Nathan Holth has over ten years experience studying and working with historic bridges and since 2008 has volunteered or has been hired by several experts in the historic bridge field. He maintains the site in collaboration with Rick McOmber and Luke Gordon.

Etobicoke Creek is bounded by the Toronto Golf Club on the west and residential properties on the east. Downriver, to the south of the bridge, the Etobicoke Creek is bounded by the Maurice J. Breen Park on the east and high-rise residential properties on the west.

The Lakeshore Road Bridge over the Etobicoke Creek is located to the west of the historic village of Long Branch in Etobicoke, Ontario. The village of Long Branch was first settled in 1884, incorporated into the Borough of Etobicoke in 1967, and amalgamated with the City of Toronto in 1998.

A review of historical mapping and aerial photography (Figure 9-1 to Figure 9-5) demonstrate that the study area surroundings have undergone major changes since the construction of the Etobicoke Creek Bridge at the beginning of the twentieth century. Late nineteenth-century mapping indicates that the study area was a rural area to the west of the village of Mimico. It is likely that a previous crossing carrying the railroad over Etobicoke Creek existed at this point, however there is no evidence of the crossing remaining (Figure 9-1 and Figure 9-2). Aerial photography from 1947 indicates that some commercial and residential development had occurred to the southwest and southeast of the study area at that time (Figure 9-3). The Toronto Golf Course, founded in 1856, is visible northwest of the study area while the northeast appears to be woodlot. A road running north from Lakeshore Road passes under the east span of the bridge, crossing the Etobicoke Creek to the north of the structure.

Aerial photography from 1960 indicates that the lands to the northeast of the bridge had been developed into low-rise residential lots (Figure 9-4). Commercial or light industrial development is visible to the southwest of the bridge with an expansion of development on the southeast. Little had changed in aerial photography from 1985, apart from the construction of high-rise residential buildings to the southeast of the bridge that replaced the former commercial or light industrial property (Figure 9-5).

In summary, the character of the general vicinity of the Etobicoke Creek Bridge is varied and consists of parkland, recreational land, residential properties, and commercial/light industrial properties.

7.3.2 Community Landmark

Views upriver and downriver from the Etobicoke Creek Bridge are noted, as well as from Lakeshore Road and Maurice J. Breen Park. Views to the modified Warren truss structure from the south are obscured by the later plate-girder addition, however, reducing the aesthetic value of the vista. Despite a paved cycling and pedestrian path leading under the bridge, the structure is not considered a community landmark due to its secluded location and obscured visibility.

8 Data Sheet

	
Property Name:	Etoibicoke Creek Bridge
Municipal Address:	n/a
Location:	43°35.416', 79°32.915', Datum WGS84
Municipality:	City of Toronto
Metrolinx/GO Transit Rail Corridor:	Lakeshore West
PIN:	Unknown
Ownership:	Metrolinx
Date of Construction:	1903, 1923
Date of Significant Alterations:	1923
Architect/Designer/Builder:	Unknown
Previous Owner(s)/Occupant(s):	n/a
Current Function:	Rail Overpass
Previous Function(s)	n/a
Heritage Recognition/Protection:	None identified
Local Heritage Interest:	None identified
Adjacent Lands:	No protected heritage properties

9 Figures

9.1 Historic Map Review

Figure 9-1: View of the study area on 1860 historic mapping (Tremaine 1860)



Figure 9-2: View of the study area on 1878 historic mapping (Miles & Co. 1878)

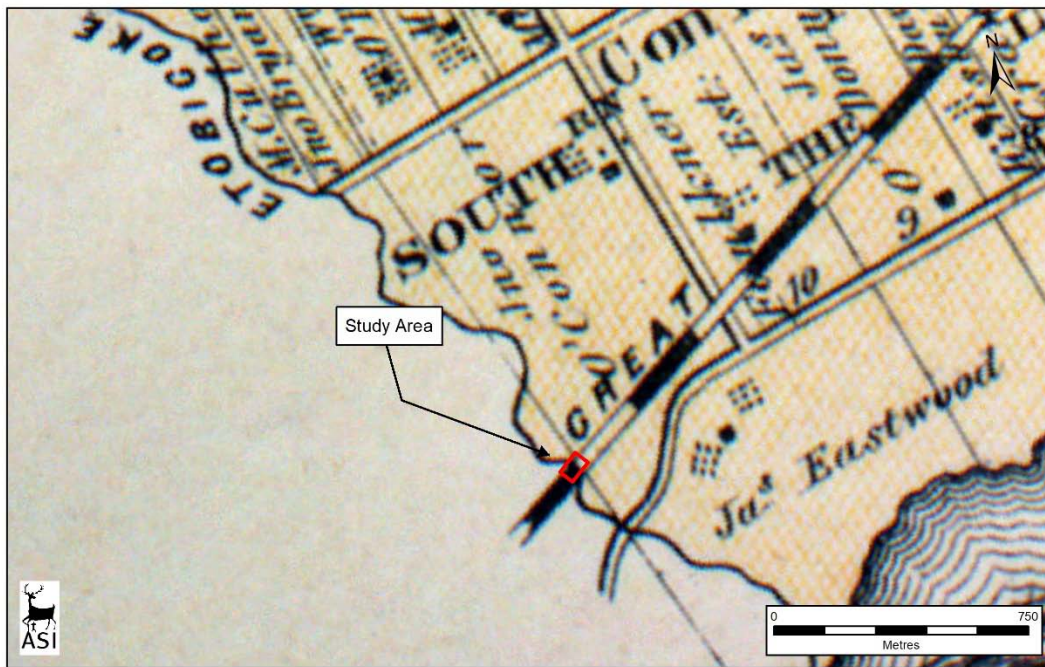


Figure 9-3: View of the study area on 1947 aerial photograph (Toronto Archives 1947)

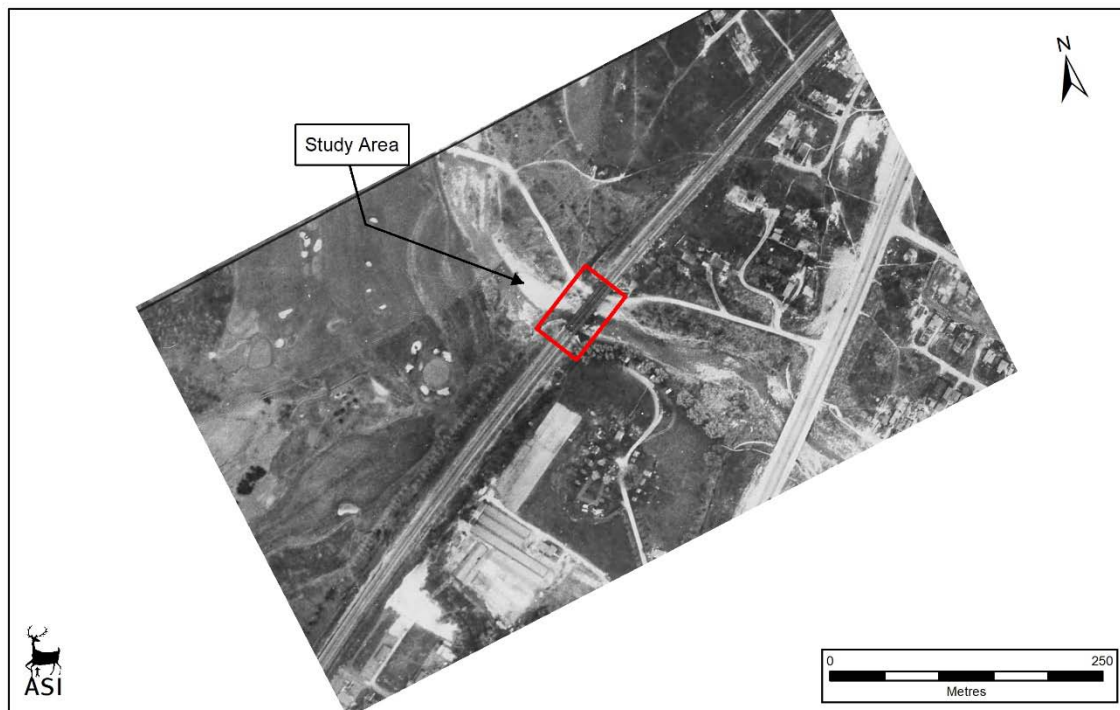


Figure 9-4: View of the study area on 1960 aerial photograph (Toronto Archives 1960)

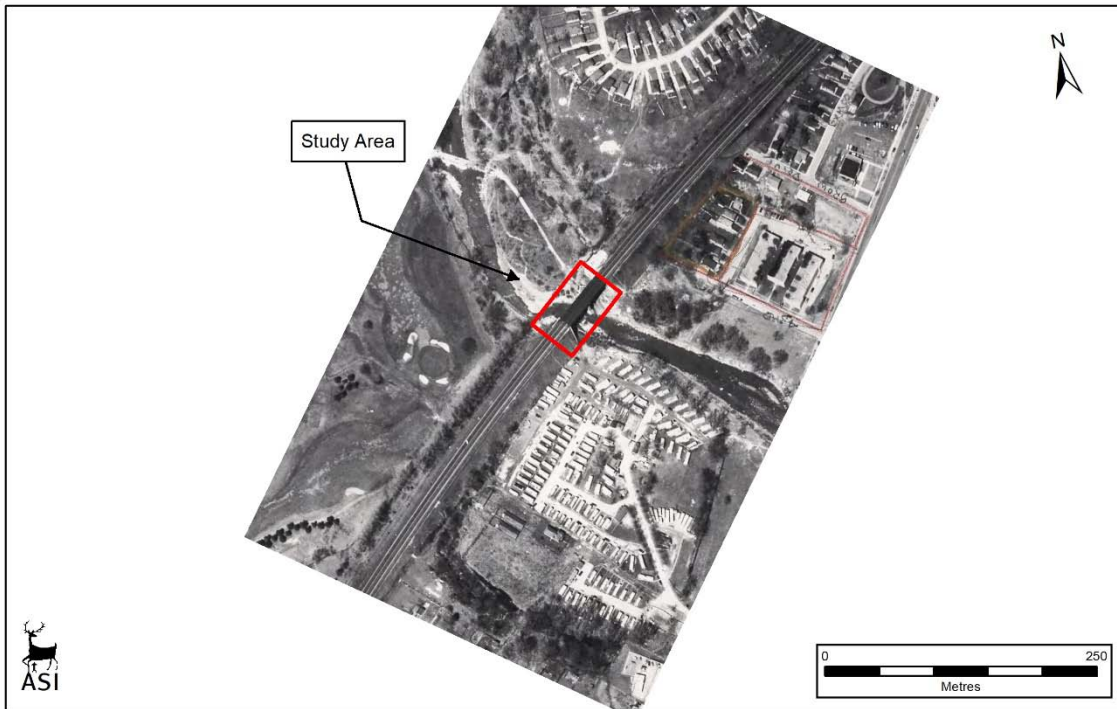
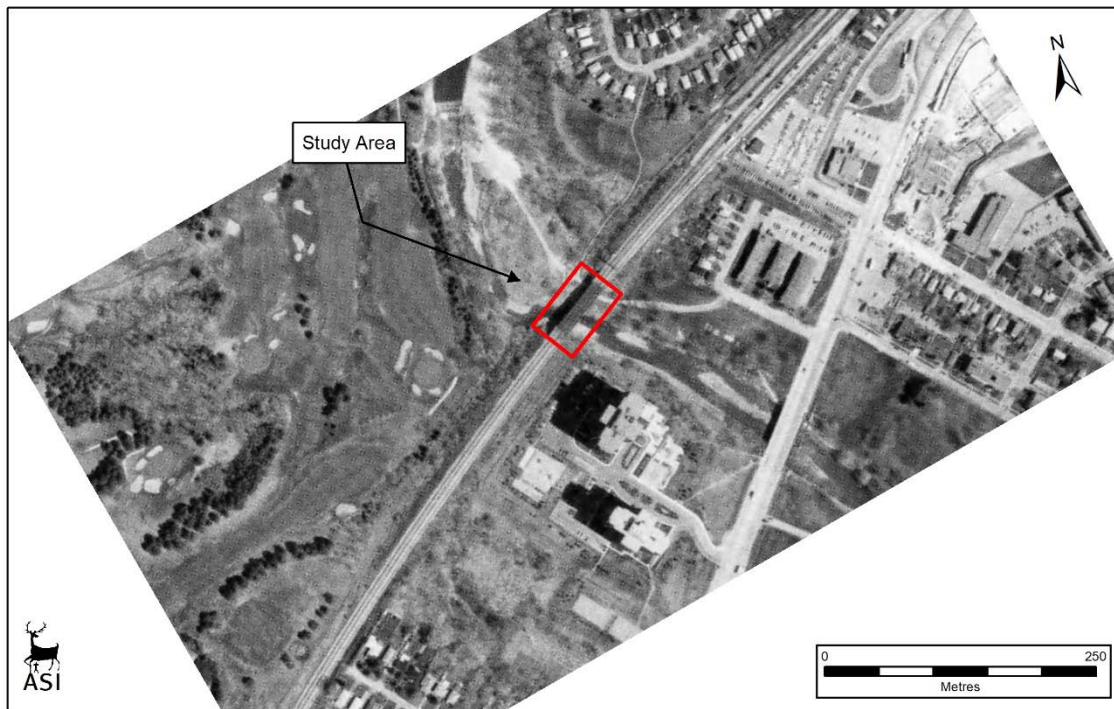


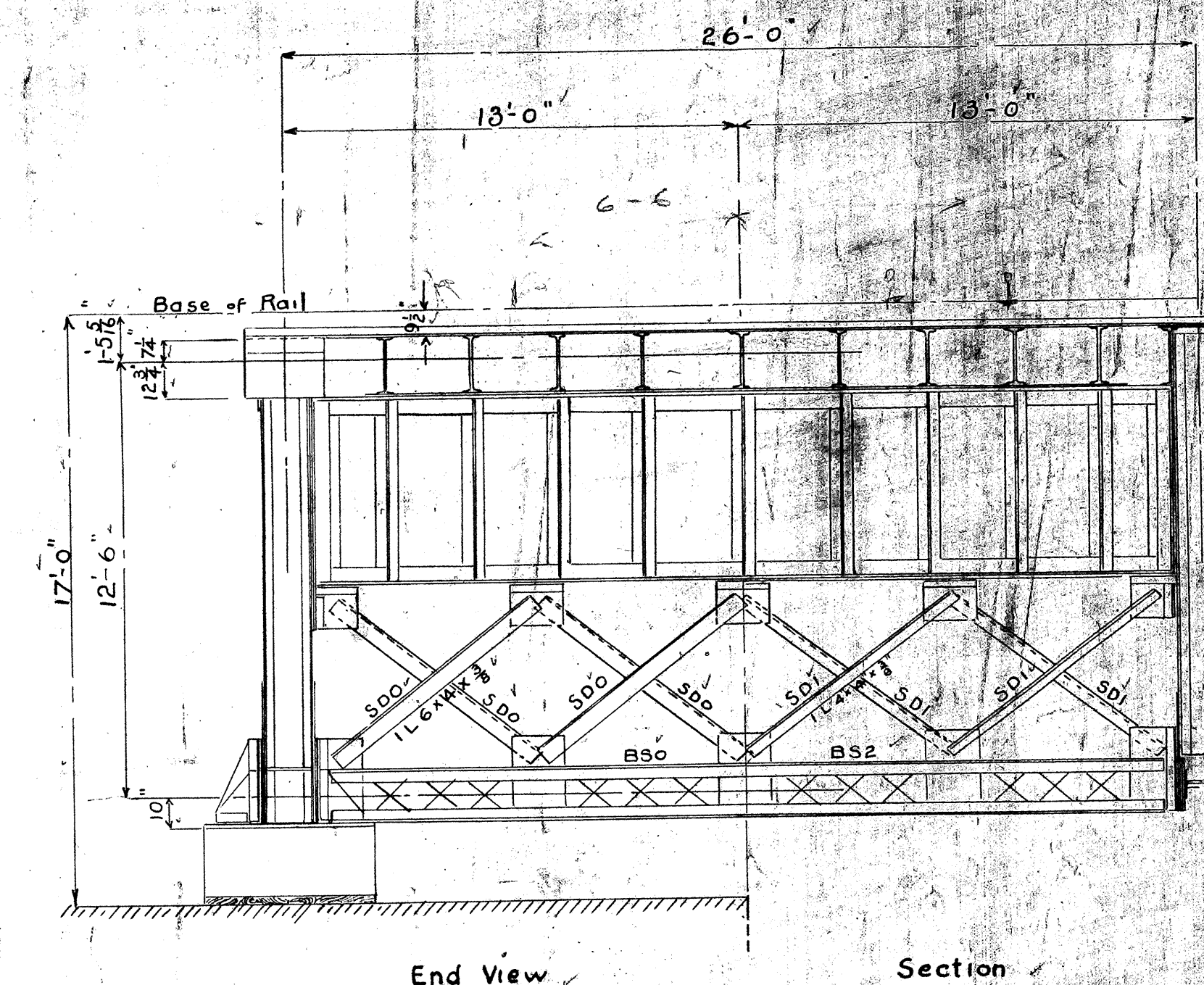
Figure 9-5: View of the study area on 1985 aerial photograph (Toronto Archives 1985)



9.2 Select Structural Drawings

The following drawings are presented below:

- 2-89'-0" Double Track Deck Riveted Truss Spans, Etobicoke River Bridge, Grand Trunk Railway, 16th District, M.P. 29.21, Toronto Branch: Diagram; Prepared by The Canadian Bridge Co. Limited of Walkerville Ontario, Dated January 31 1903
- Canadian National Railway Central Region Etobicoke Bridge No. 38 M.P. 29.24, London Division 16th District: Proposed Deck Plate Girder Spans for Third Track; Prepared by Canadian National Railway Central Region; Dated April 24 1923.
- Canadian National Railways Etobicoke Bridge No. 39 M.P. 29-24, London Division, 16th District. 89:0 S.O.G. Spans: Girders; Prepared by the Hamilton Bridge Works Company Limited, Hamilton Ontario, Dated May 31st 1923.
- Etobicoke Creek Bridge Embankment Protection Near West Abutment, Prepared by CN Rail; Dated May 1 1990.
- Etobicoke River Bridge Steel Repairs, Prepared by CN Rail Office of Chief Engineer; Dated July 26 1994.



	Floor Beams End	Interior
5'4 $\frac{1}{2}$ " Deep over L ⁵		
Flange Strain	16000 D.L. + 129600 L.L.	25200 D.L. + 154700 L.L.
	213.6 x 6 x $\frac{5}{8}$ + 19.48" @ 17.73" Net	213.6 x 6 x $\frac{5}{8}$ + 19.48" @ 15.98" Net 1 Pl. 13 x $\frac{1}{2}$ x 28" @ 7.31" @ 6.19" 26.79" 22.17" Net
Each Flange		
Shear	12500 D.L. + 101100 L.L.	20600 D.L. + 123000 L.L.
Web Plate	64 x $\frac{1}{2}$ x 2500"	64 x $\frac{1}{2}$ x 2800"

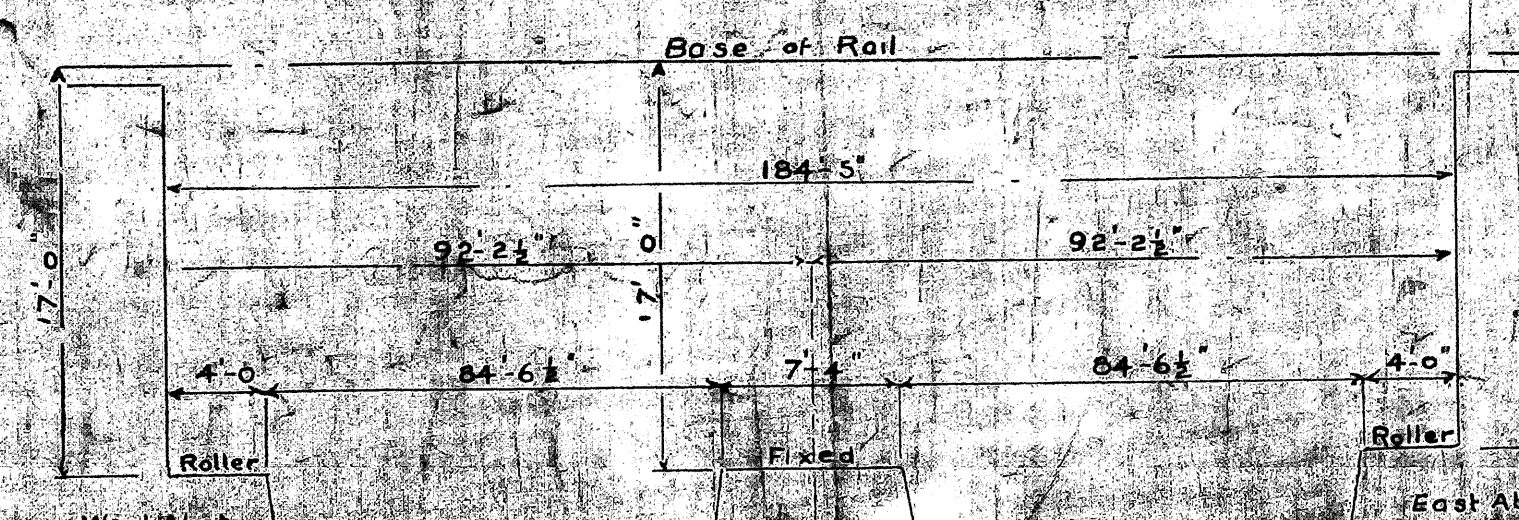
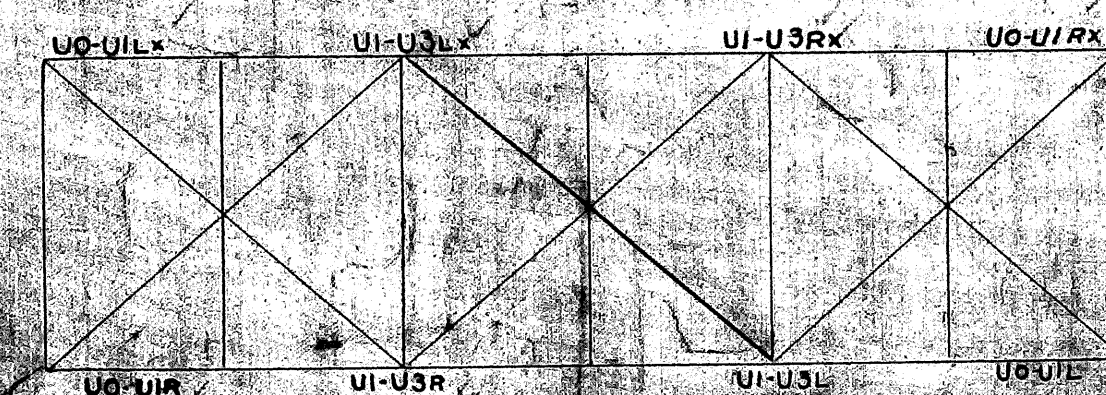
Stringers

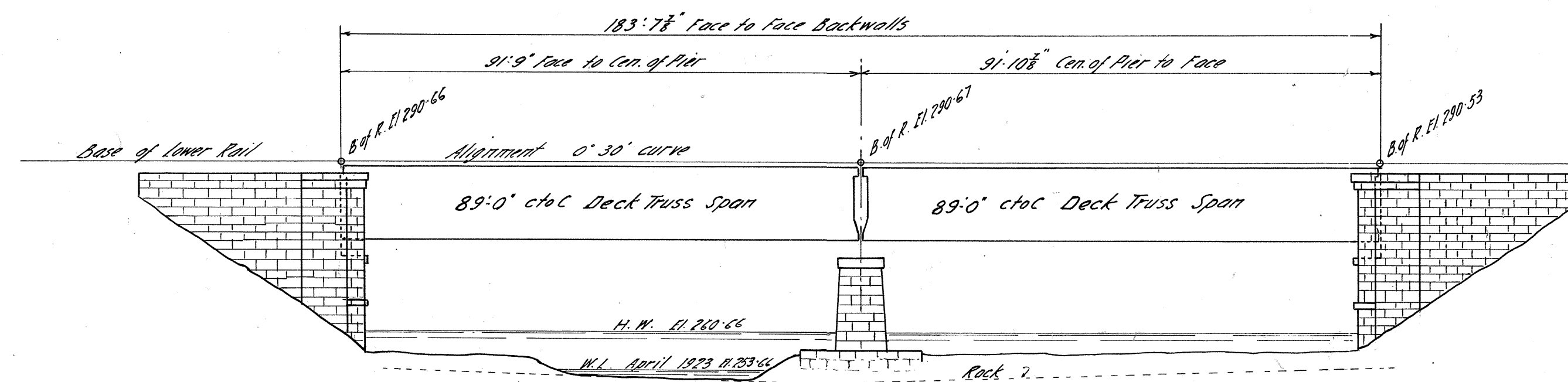
Max. Moment = 6600 Ft.lbs. D.L. + 68900 Ft.lbs L.L.
Shear 1800 D.L. + 22400 L.L.
Use 20" I Beam 65# 19.08' I = 1169.6

Assumed Dead Load - 3700*Steel+1300*Track - 5000 per lin. ft.
Live Load - 2 - 330000*Consols + 42.00 * per lin. ft. per Track
Bridge on $\frac{1}{2}$ " Curve to the South Radius = 11460 ft.
Material - Med. O.H. Steel
Ream all rivet holes
Specifications G.T.R'y. Nov 22, 1900.

Shop Painting - Inaccessible Parts 1 Coat
Parts inaccessible after erection 2 Coats
Other Parts 1 Coat Raw Linseed Oil
Field 2 Coats
Composition of Paint - 12 lbs. Red Lead and 10 oz. Lampblack
mixed with Raw Linseed Oil for each of Paint

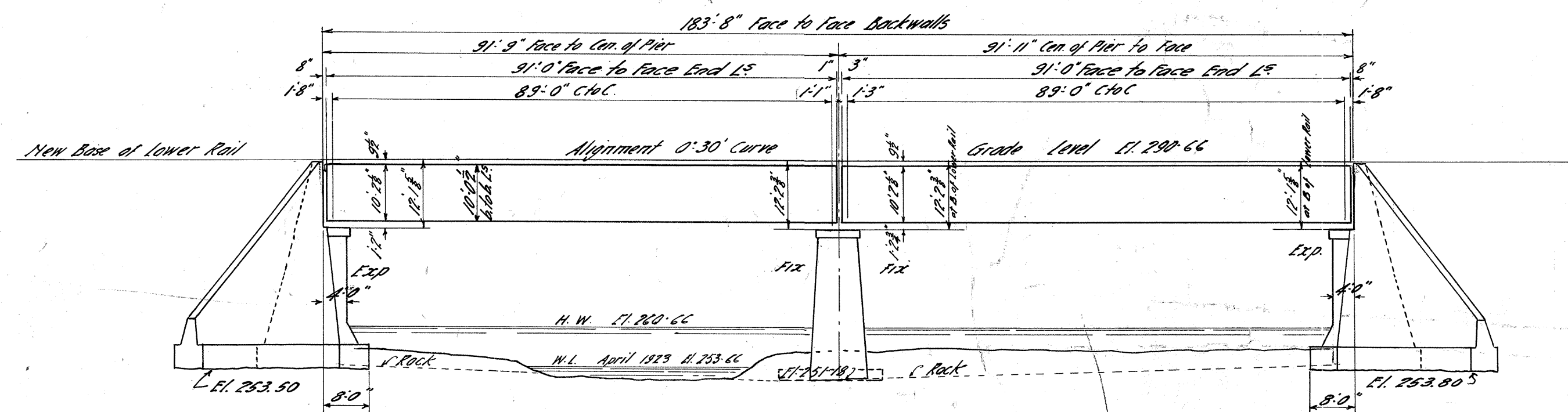
2-89-0" DOUBLE TRACK DECK RIVETED TRUSS SPAN
ETOBICOKE RIVER BRIDGE
GRAND TRUNK RAILWAY
16TH DISTRICT, MP 29.21 TORONTO BRANCH
DIAGRAM
Scale: 1" = 10' JAN 31, 1908
THE CANADIAN BRIDGE CO. LIMITED
WALKERVILLE, ONT.





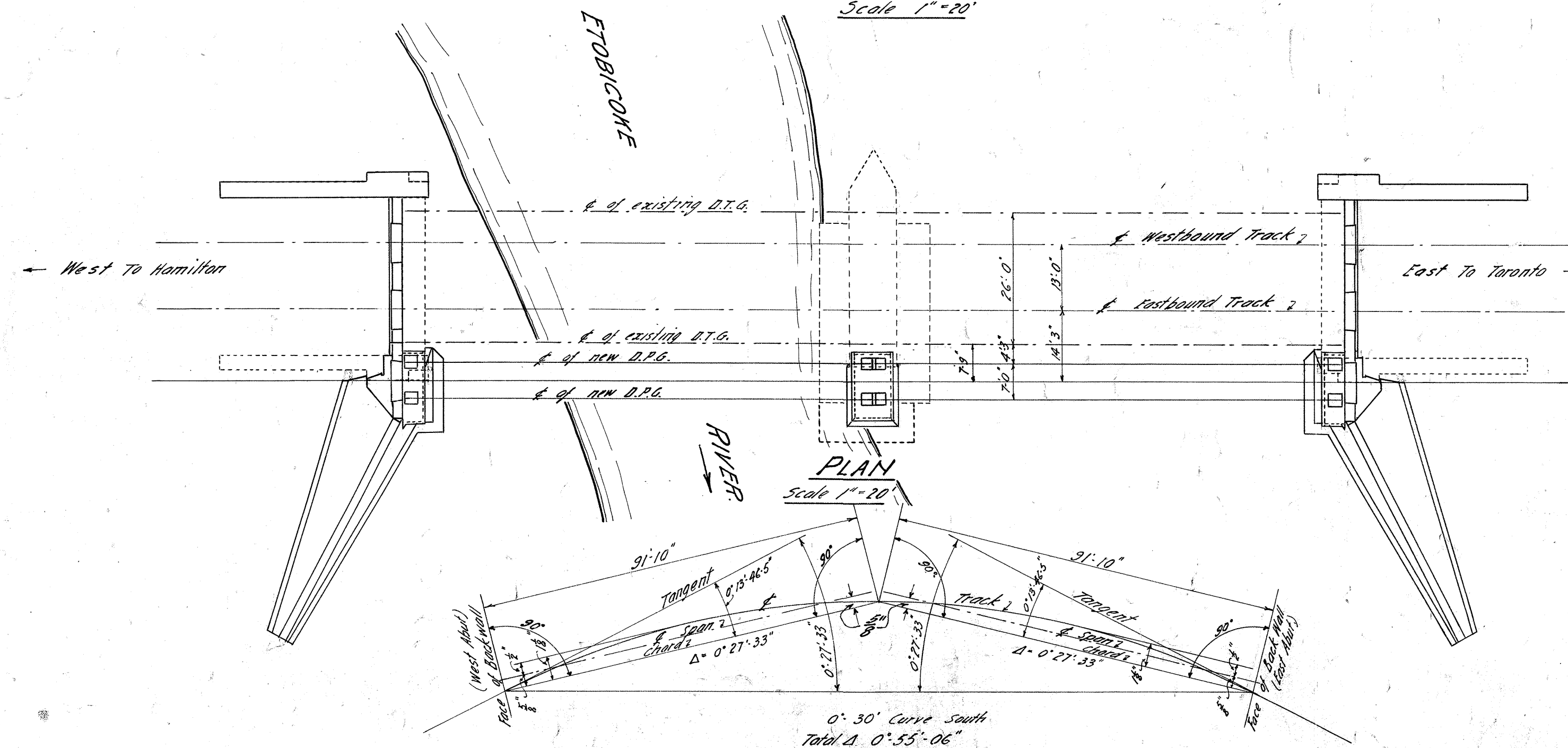
ELEVATION SHOWING PRESENT STRUCTURE

Scale 1"=20'

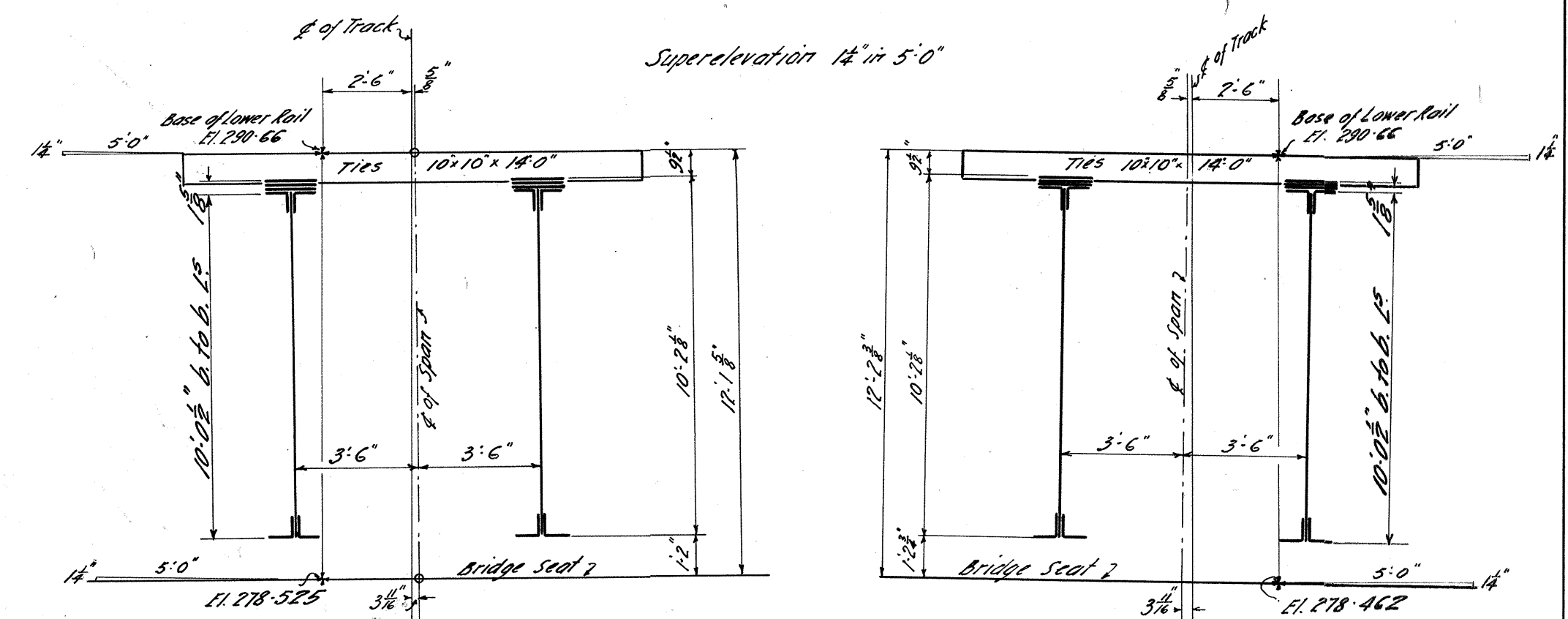


ELEVATION SHOWING PROPOSED STRUCTURE

Scale 1"=20'



SKETCH SHOWING RELATIVE POSITION OF TRACK & SPAN
AT ELEVATION BASE OF RAIL (Not to scale)



SECTION AT ENDS OF SPANS ON ABUTMENTS
LOOKING WEST

Scale 1/2"=1'-0"

SECTION AT ENDS OF SPANS ON PIER
LOOKING EAST

Ties 10'-10" x 14'-0" Douglas Fir
Floor -- See Std. Floor Plan (G.T.R.)
Grade -- Base of Rail to be made level across bridge.
Alignment -- unchanged.
Thickness of lead to be placed under all Pier Members.
Anchor Bolts 1 1/2" dia. 1'-6" into masonry.
Elevations shown for bottoms of footings of Abutments and Pier are tentative only and are not to be considered binding in any way on Engineer in Charge of Construction.
Engineer in Charge is to see that footings are carried to sound rock. Fill behind abutments to consist of rock, gravel or other dry material.
Where fill is exposed to water it should be protected by heavy stone rip rap to such height as may be deemed necessary by Engineer in Charge.
Year of Construction to be plainly shown on front of coping under bridge on Abutts. and Pier. See Standard G.T.R. drawings for details of figures.
Paint -- As per Can. Nat. Rlys 1922 specifications for paints for structural steel.
Shop Coat -- No. 1 Standard Red Lead.
Field Coat -- No. 2 Standard Red Lead and Carbon Black.
For Standard Pier Members see Div. 11' B.C. 10 revised to Oct. 17th 1922.
Specification -- Can. Nat. Rlys. Gen. Spec. for Steel Railway Bridges Fixed Spans 1922.
Loading -- Coopers 1-60.
3" continuous steel plate to be placed under adjacent pier members on pier.

Exam. R. A. W. W. Masonry Engineer
Exam. _____ Bridge Engineer
Approved _____ Chief Engineer
Approved _____ Gen. Supt.

CANADIAN NATIONAL RAILWAY
CENTRAL REGION
ETOBICOKE BRIDGE No. 38 M.P. 29.24
LONDON DIVISION 16TH DISTRICT
PROPOSED DECK PLATE GIRDER SPANS
FOR THIRD TRACK

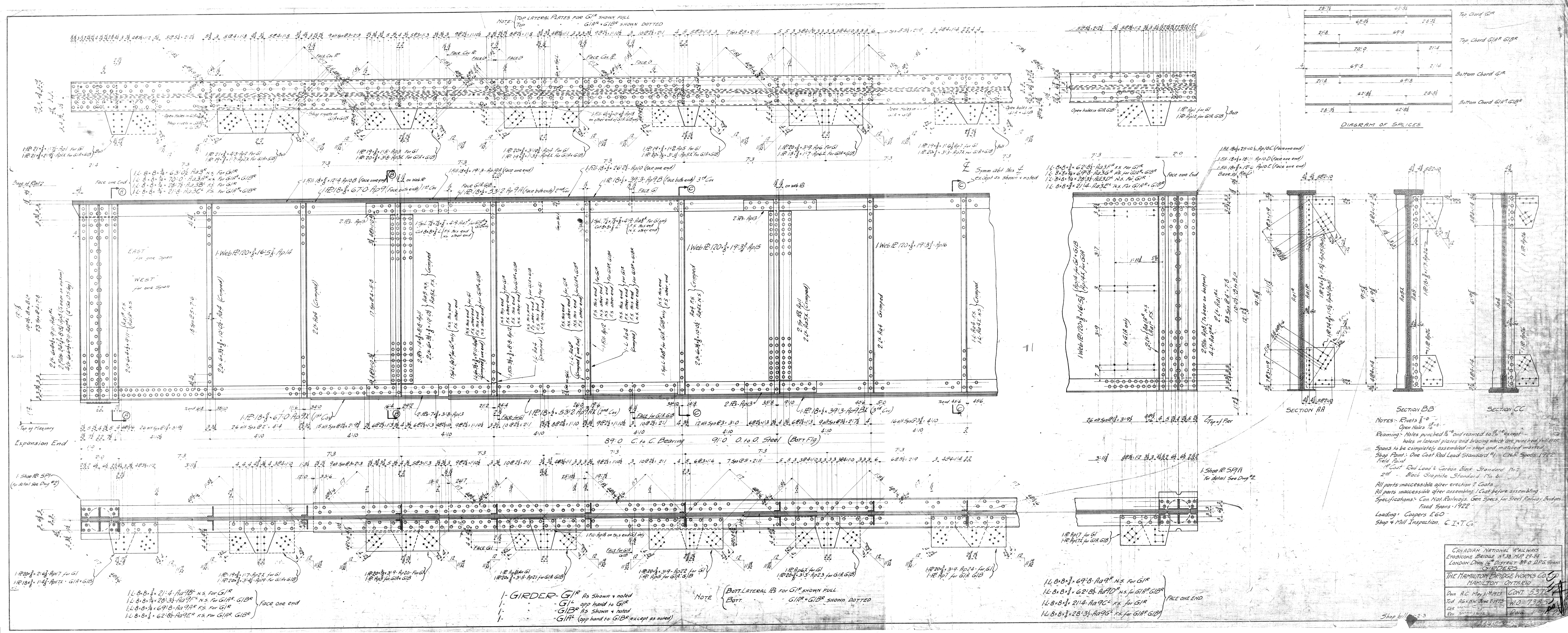
Scales as shown

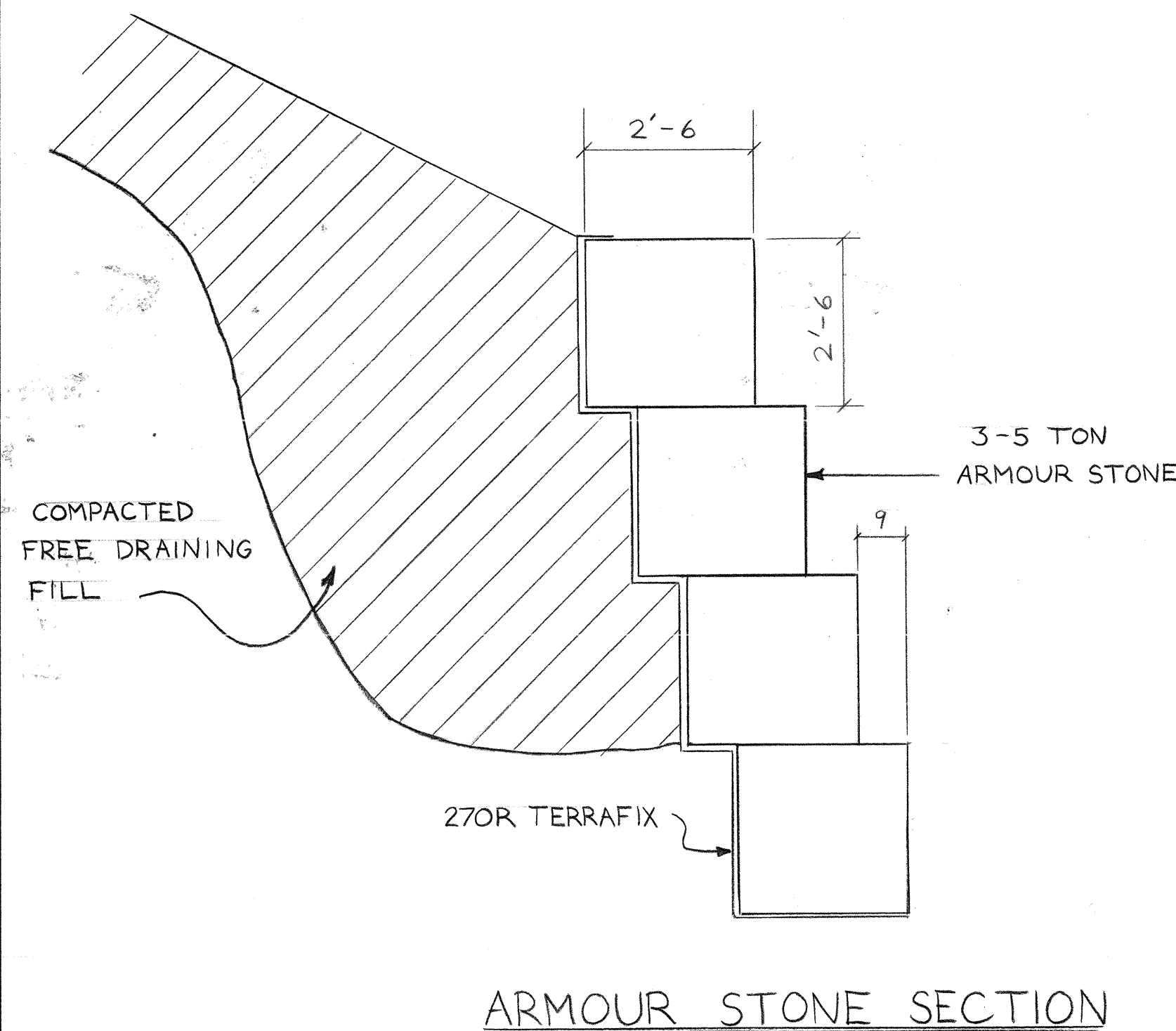
TORONTO 24th April 1923

JNL. No. 9624
FILE No. 483-27

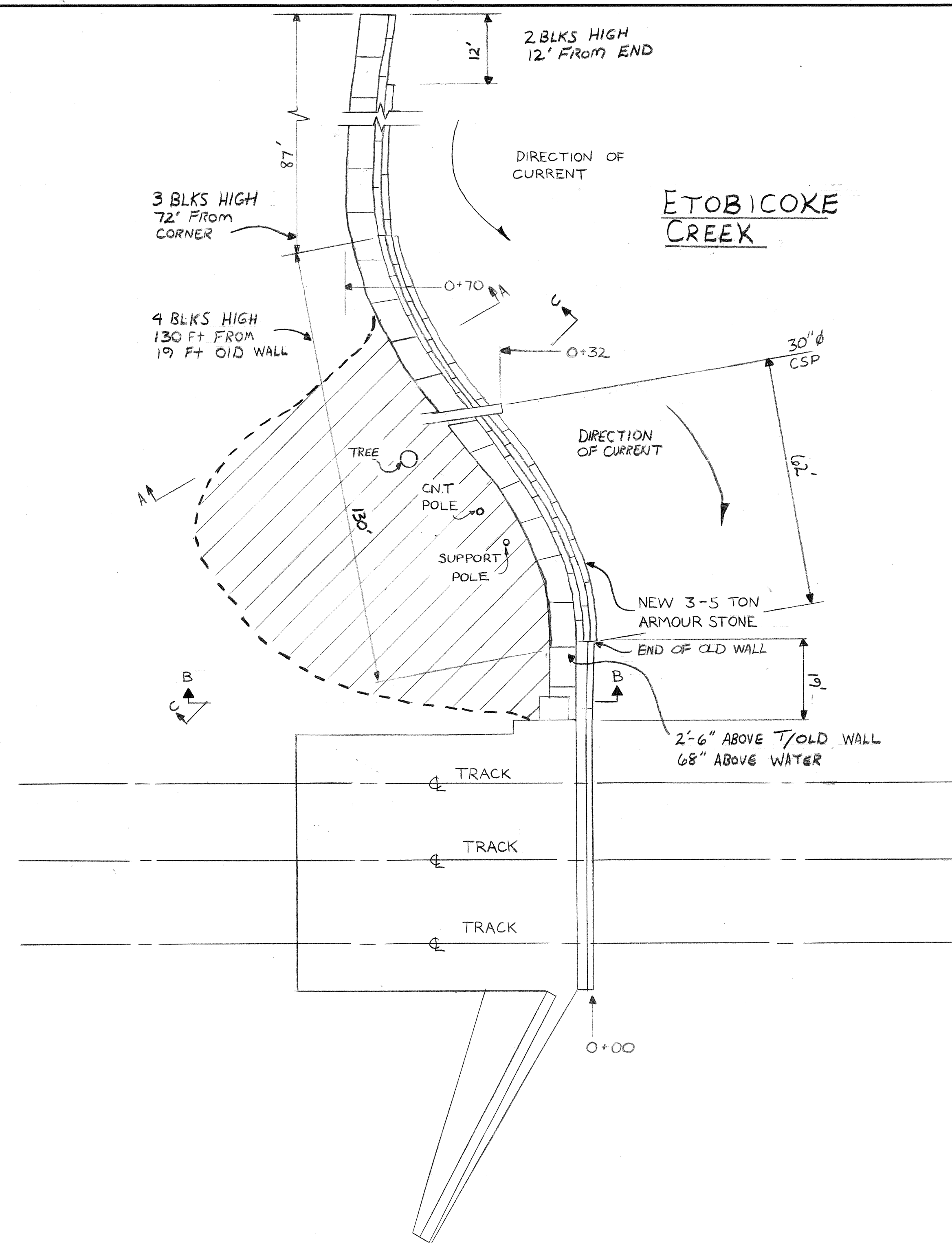
Mi. 9.82 OAKVILLE

Drawn by R.P.
Checked by E.E.
1711-18

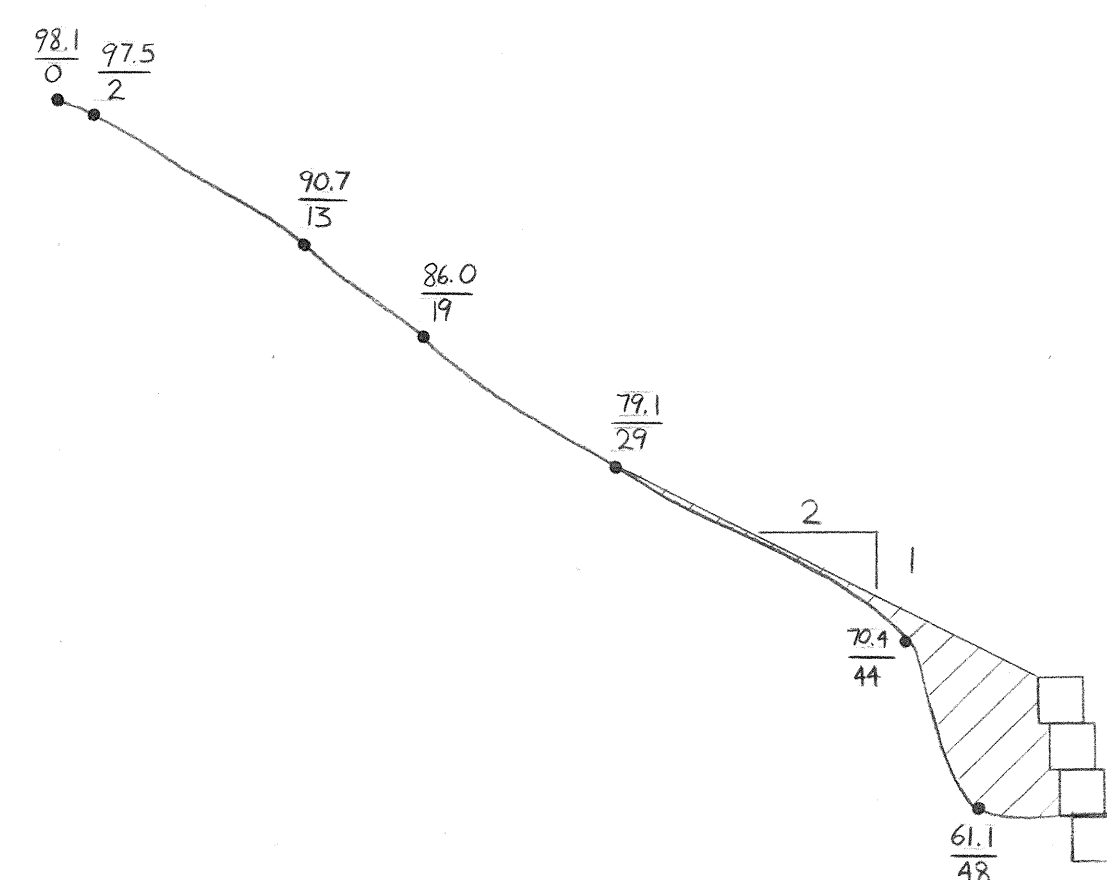




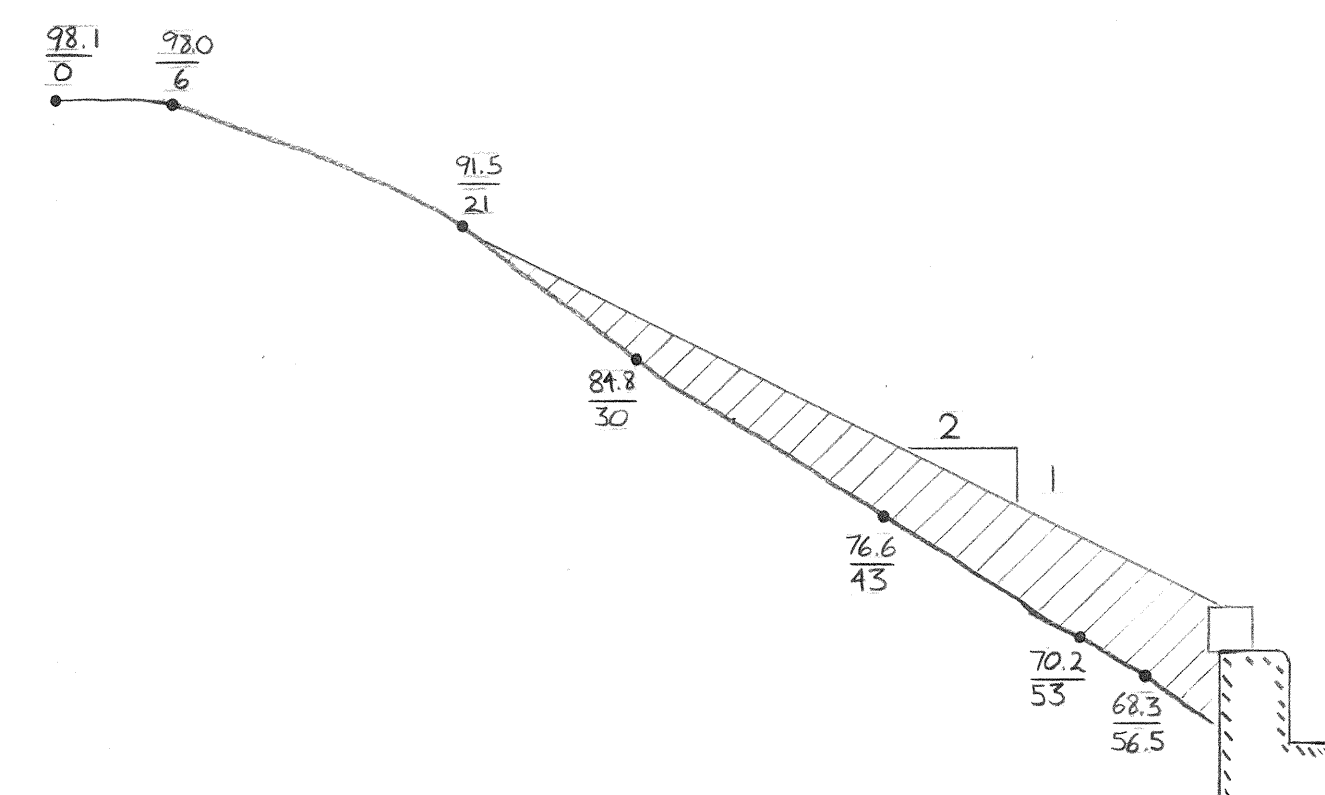
ARMOUR STONE SECTION



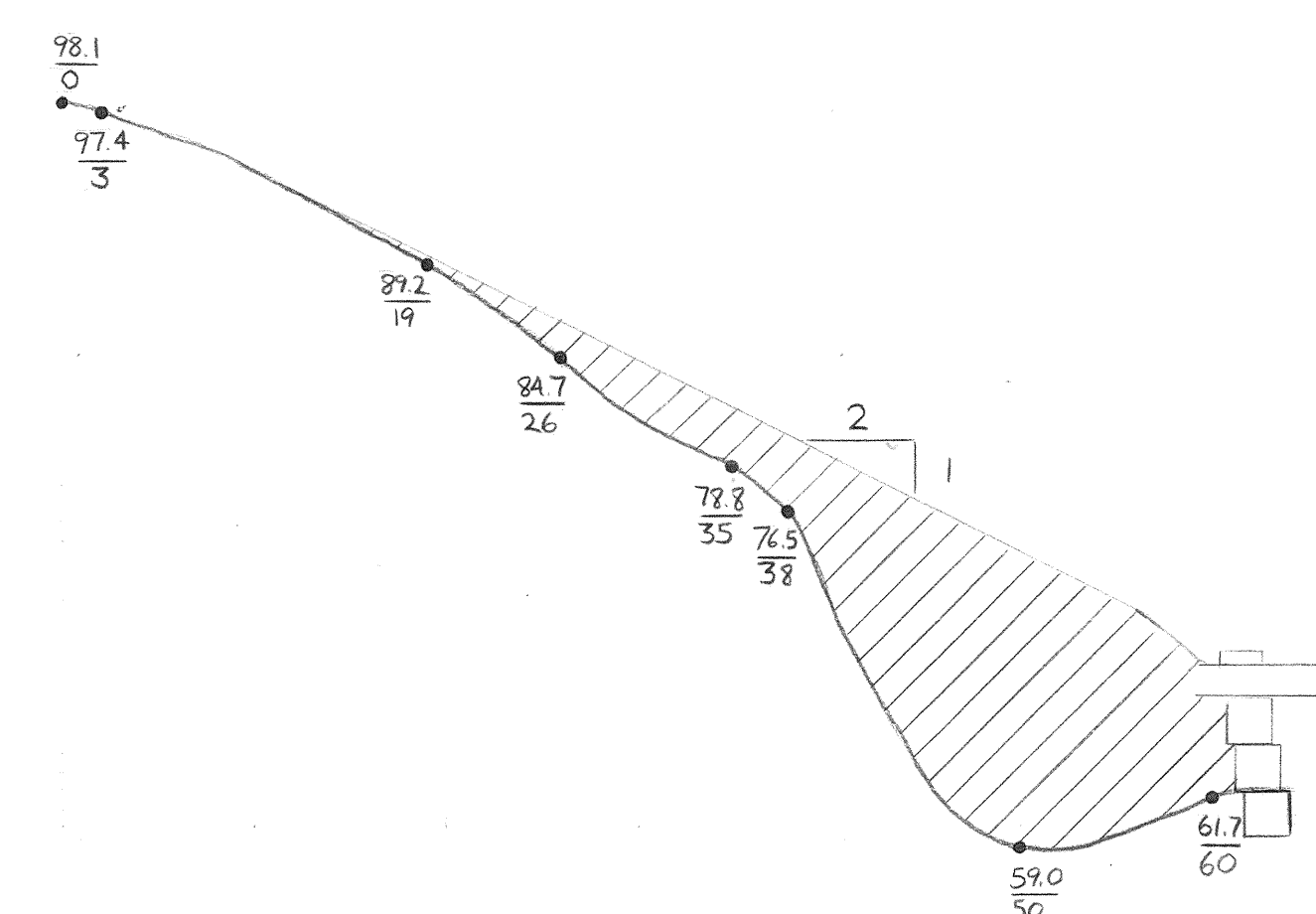
PLAN - WEST ABUTMENT



SECTION "A-A"

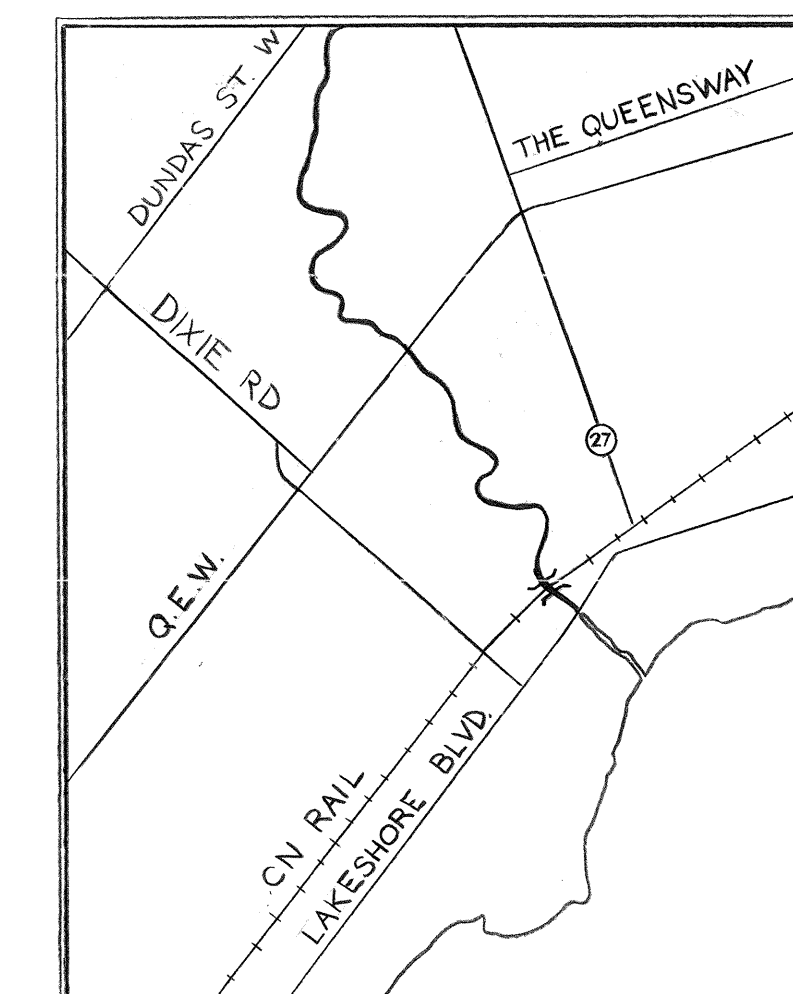


SECTION "B-B"



SECTION "C-C"

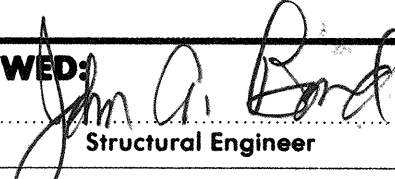
COMPLETED
DEC 1990



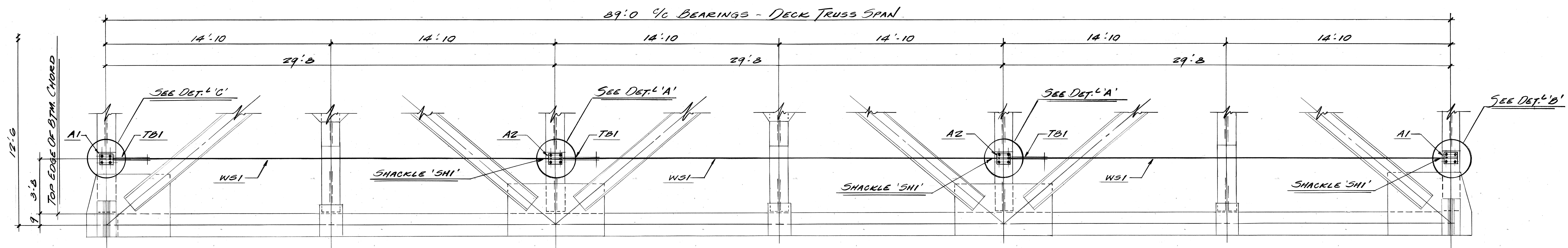
SITE PLAN

GENERAL NOTES:
IN ORDER TO RESTORE AND REINFORCE THE ERODED EMBANKMENT NORTH OF THE WEST ABUTMENT, BACKFILL AND AN ARMOURING WALL OF HEAVY ROCK IS TO BE PLACED ACCORDING TO THE SECTIONS AND DETAILS ON THIS DRAWING.

ESTIMATED QUANTITIES:	
ARMOURING ROCK	200 cu. yd.
FILTERING FABRIC	375 sq. yd.
GRANULAR BACKFILL	400 cu. yd.
EXCAVATION	16 cu. yd.

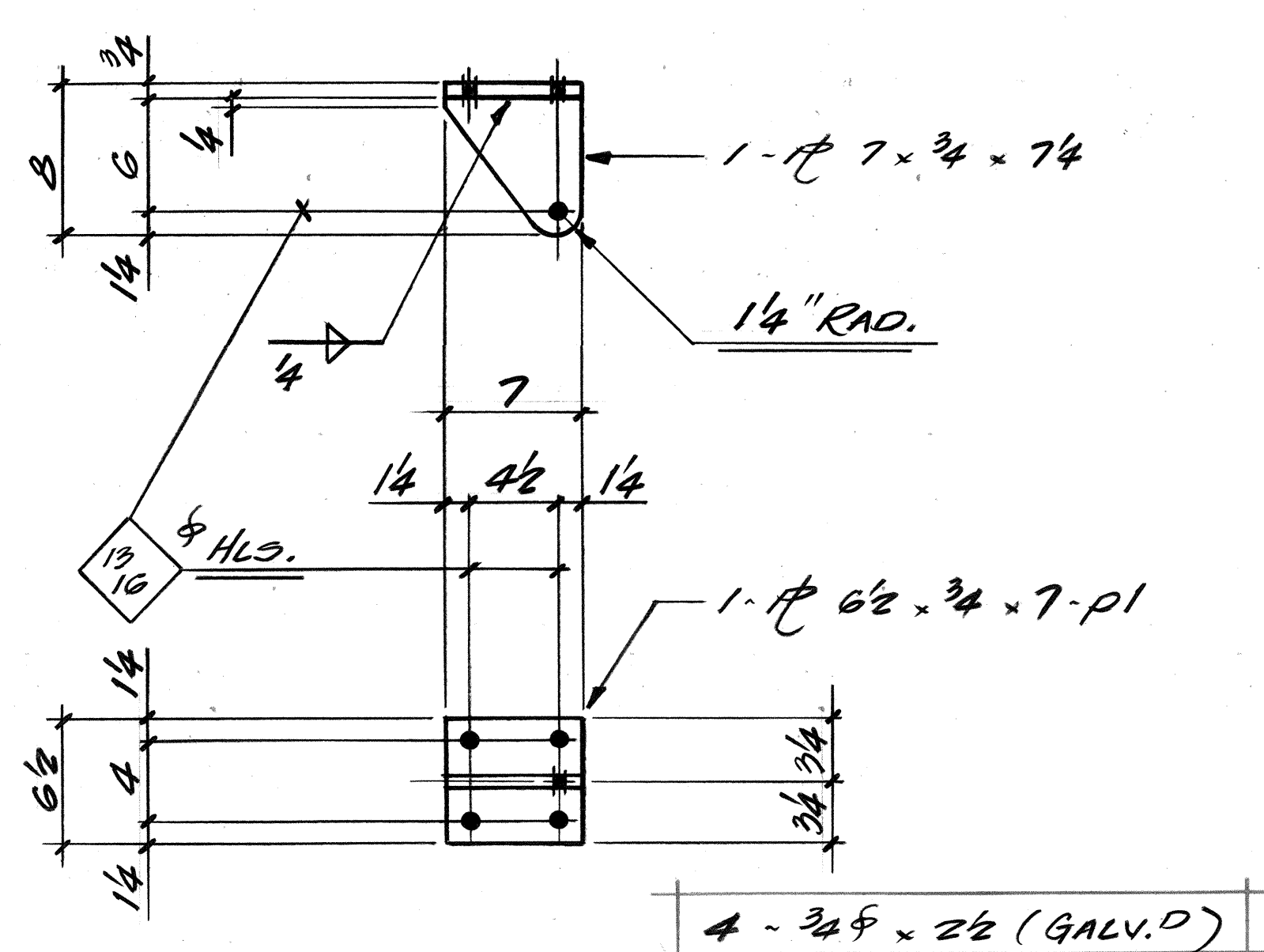
Scales: 1" = 10'				GREAT LAKES REGION		
DESIGNED:		CHKD.		DISTRICT S.O.D.		
DRAWN: A.T.		CHKD.		SUBDIV. OAKVILLE		
MK		DATE		MILE 9.82		
		DEC 1990		AS CONSTRUCTED		ETOBICOKE CREEK BRIDGE EMBANKMENT PROTECTION NEAR WEST ABUTMENT
		TS				
				REVIEWED: 		APPROVED: Regional Engineer — Bridges and Structures
				Structural Engineer		
OFFICE OF BRIDGES AND STRUCTURES						
TORONTO				1 MAY 1990		DWG. NO. C-24534

FILE NO. 217-36

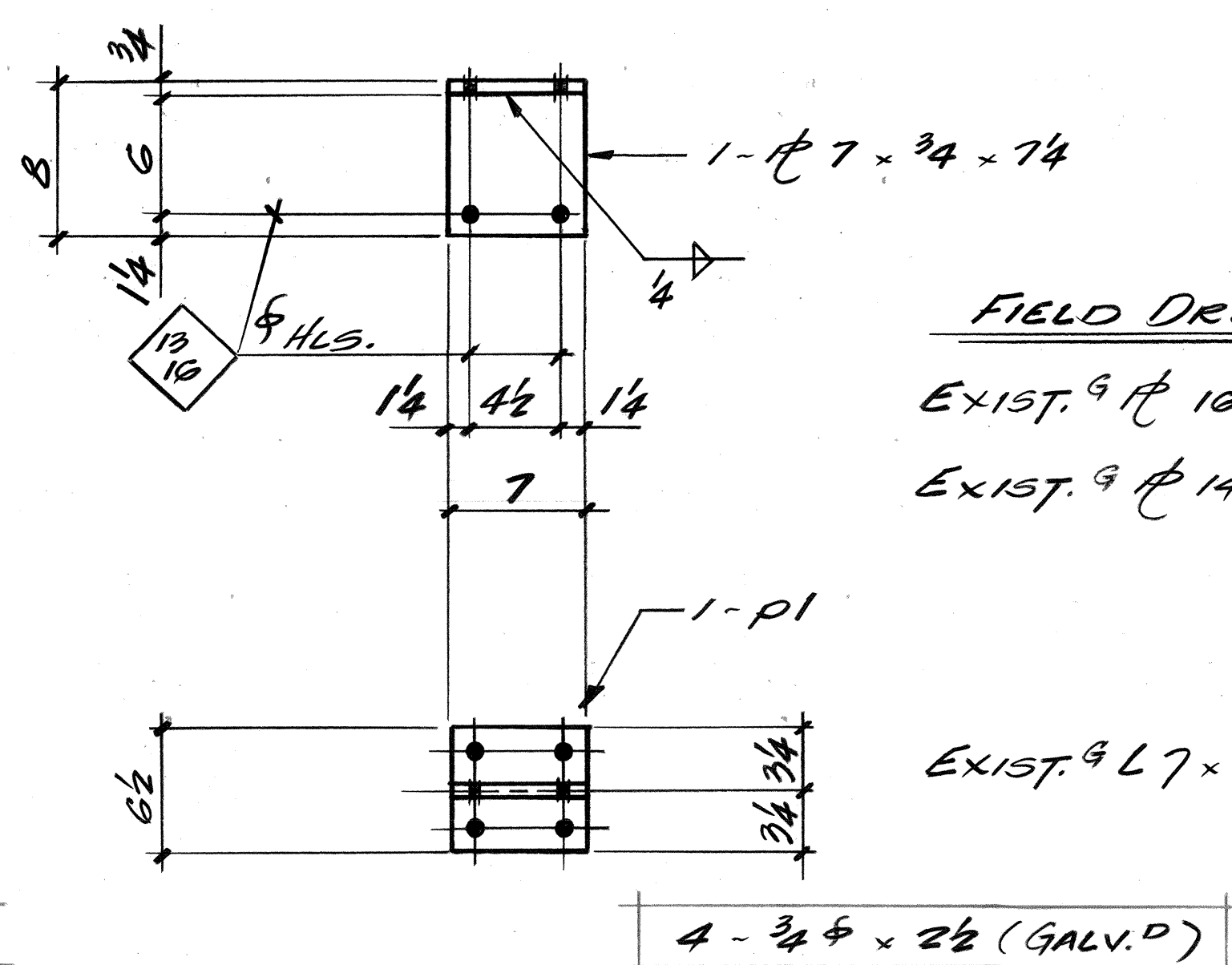


INSIDE ELEVATION OF NORTH TRUSS FOR SPANS 1 & 2 (AS SHOWN)

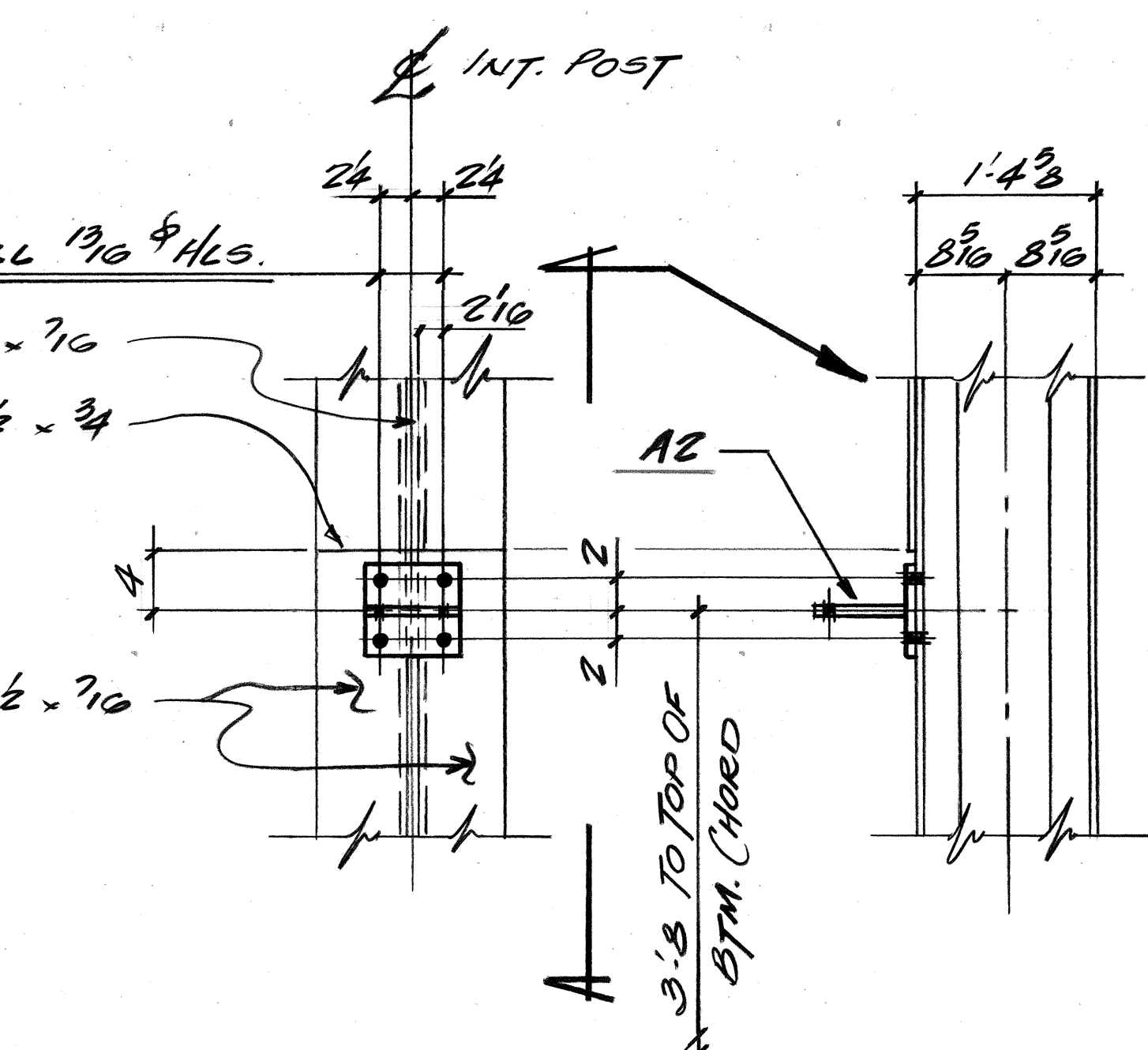
INSIDE ELEVATION OF SOUTH TRUSS FOR SPANS 1 & 2 (OPP. HAND)



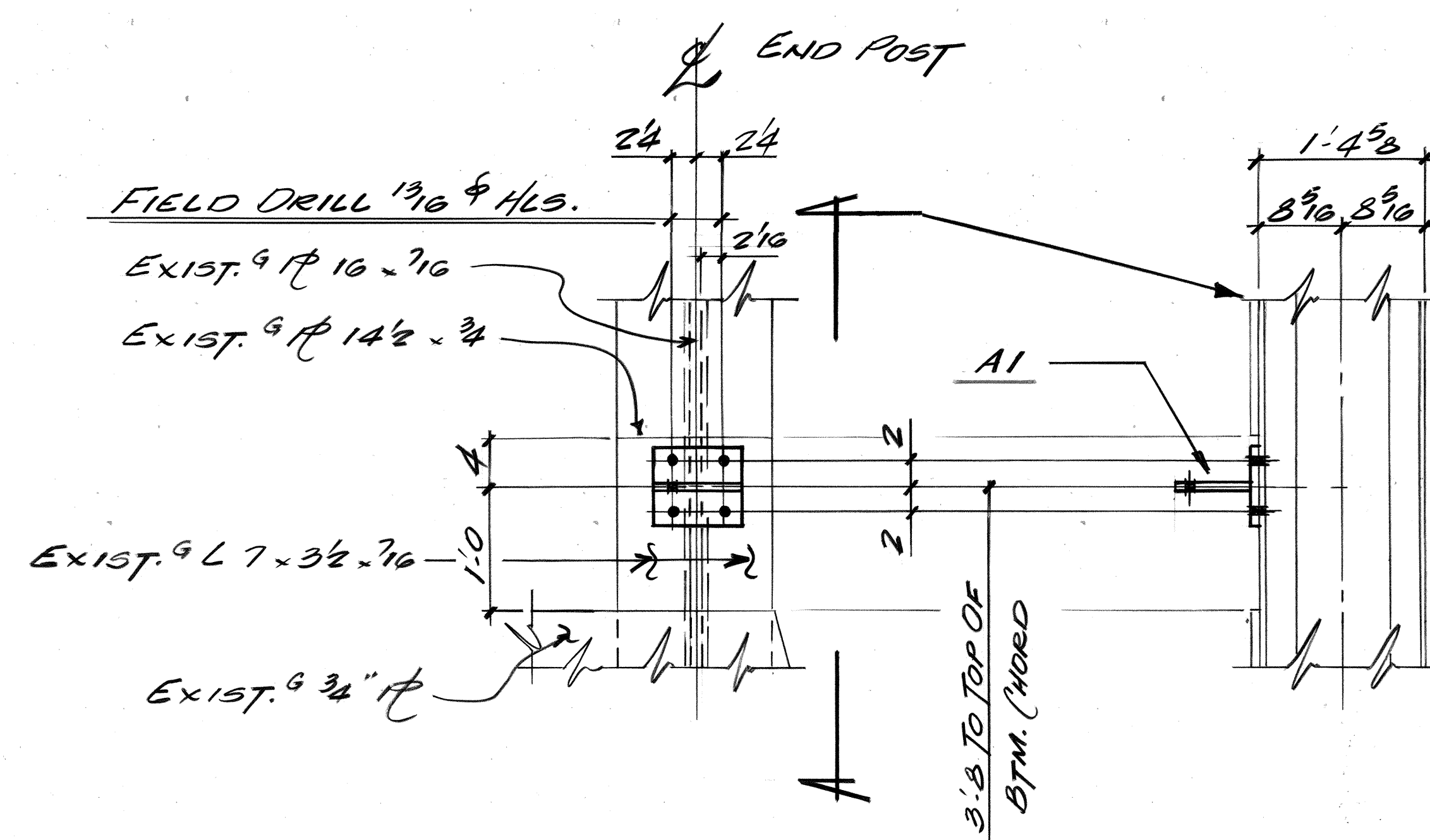
8 - BRACKETS REQ'D. - A1
(UNIT WT. 16#)
GALVANIZED



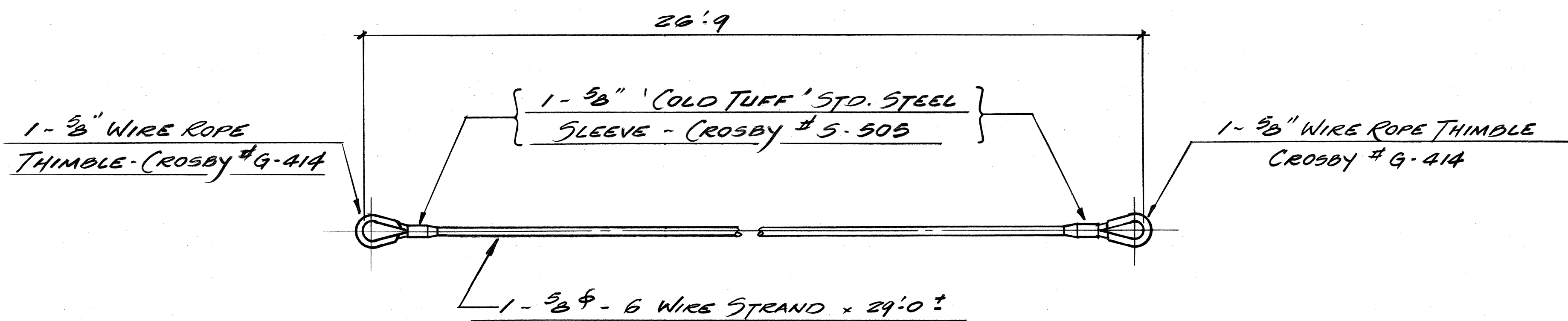
8 - BRACKETS REQ'D. - A2
(UNIT WT. 20#)
GALVANIZED



DETAIL 'A'

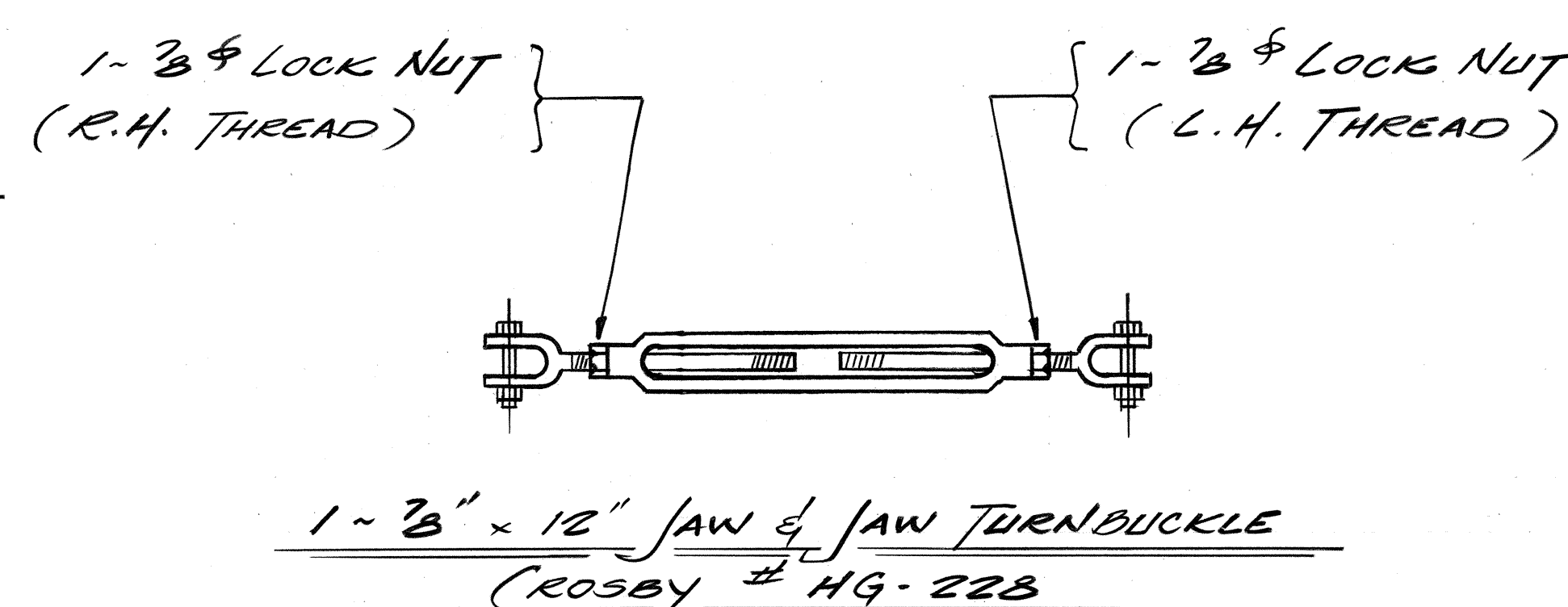


DETAIL 'B' (AS SHOWN)
DETAIL 'C' (OPP. HAND)



12 - WIRE STRAND CABLES REQ'D. - WSI

GALVANIZED
WIRE ROPE SPEC: CSA SPEC 64 GRADE 110/120.
IMPROVED FLOW, 5/8" - 6 x 7
FIBRE CORE, REGULAR LAY &
GALVANIZED, AVAILABLE FROM
WIRE ROPE INDUSTRIES LTD.



12 - TURNBUCKLES REQ'D. - TBI

GALVANIZED

3/4 TON BOLT TYPE ANCHOR
SHACKLE 1/4 IN PIN, NUT & OTTER
CROSBY # G-2130

12 - SHACKLES REQ'D. - 'SHI'

GALVANIZED

John A. Bond
STRUCTURAL ENGINEER

THIS DWG. TO BE READ IN CONJUNCTION WITH
DWG. # C-24663 THRU TO C-24669

N°	Date	Revision	Sub-division	Oakville	Mile	BY
Region	GREAT LAKES				9.820	PAR
ETOBICOKE RIVER BRIDGE						
STEEL REPAIRS						
Drawn	MH	Checked	Verification	2A	Approved	JAB
Scale	As Noted	Date	JULY 24/94			
Office of Chief Engineer						
Bureau de l'ingénieur en chef						
File	Reference	Drawing Number	C-24670			

AA910-9.82-2.8

1711-13

9.3 Site Visit Photographs

Figure 9-6: View of north elevation, looking southwest towards the west abutment.



Figure 9-7: North elevation, looking south under the pedestrian trail span.



Figure 9-8: North elevation showing pier, looking south.



Figure 9-9: East elevation of pier, looking west from pedestrian path.



Figure 9-10: Ice flow protection on the north elevation of the pier, looking south.



Figure 9-11: North elevation of pier with ice floe protection supporting Warren truss structure, looking southeast.



Figure 9-12: East abutment with 1903 Warren truss bridge resting on stone portion at left, and 1923 plate girder structure resting on concrete portion at right, looking east.



Figure 9-13: East concrete abutment, showing date stamp, looking east.



Figure 9-14: Internal bracing within southern plate girder bridge under the east span.



Figure 9-15: Bracing in eastern span of northern Warren truss bridge, looking west towards pier.



Figure 9-16: Riveted structural components in Warren truss portion, looking southwest.



Figure 9-17: Underside of west span and west abutment, looking west from pier.



Figure 9-18: West abutment with 1923 plate girder portion at left and 1903 Warren truss at right, looking west.



Figure 9-19: East abutment showing bearings on 1903 stone section, looking west.



Figure 9-20: South elevation with pier at center, looking northwest.



Figure 9-21: South elevation of east span, with east abutment at right, looking north.



Figure 9-22: East abutment and south elevation of plate girder bridge, looking northeast.



Figure 9-23: South elevation with pier at center, obscured by vegetation, looking northwest.



Figure 9-24: South elevation with recreational park at foreground, looking northwest.



10 Chronology

Date	Event	Reference
1855	Hamilton and Toronto Railway line established	Reynolds 2011
1903	Warren truss bridge constructed	Metrolinx (2015)
1923	Plate girder bridge constructed	Metrolinx (2015)
1923	Canadian National Railways assumes control of the Lakeshore West line	Reynolds 2011
1965-1967	GO Transit assumes control of rail line and begins commuter service	Mackenzie 2015

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