Statement of Cultural Resource Impact Analysis

RECOMMENDATION to the FUS

We recommend that you approve the implementation of these mitigation measures.

__/__ I concur as per revised decision (attached)
___ I do not concur
___ for discussion

Nov. 14/18

Jewel Cunningham, Director, Ontario Waterways Unit, Trent-Severn Waterway National Historic Site & Rideau Canal National Historic Site, jewel.cunningham@pc.gc.ca, T: 705-750-4919 (TSW)

For: Maria Street Swing Bridge #24 Rehabilitation Project, Trent-Severn Waterway, ON (RPA 879)

Date: October 31st 2018

Prepared by:
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nathalie.desrosiers2@canada.ca

Project overview
The objective for this project is to rehabilitate the Maria Street Swing Bridge and as a result, increase the current down rated capacity, to meet loading requirements and codes.

Heritage Value
Maria Street Swing Bridge was constructed in 1964-1965 by the Central Bridge Company (replacing the 1897 truss bridge). This bridge is not recognized as a cultural resource. However, while the bridge itself is not subject to any requirements under the CRM Policy, the landscape is part of the Peterborough Lift Lock (NS) and Lock 20 (OHV) area. The objective of conservation is to preserve the key character-defining elements of this landscape that contributes to the TSW NHS. Also, the bridge illustrates the juxtaposition of transportation technologies on the waterway and the evolution of bridge design, construction and use from the late 19th Century to the 1960s. By their similar design and profile in the landscape, Maria and Warsaw Swing Bridges are distinctive landmarks along the canal in the Peterborough Lift Lock area.

The following aspects of the proposal respect or enhance the heritage value of the cultural resource for the following reasons:
Rehabilitation of the Maria Street Swing Bridge ensures the continued operation of the Trent-Severn Waterway as an operational system for through-navigation, a key defining element of the system.

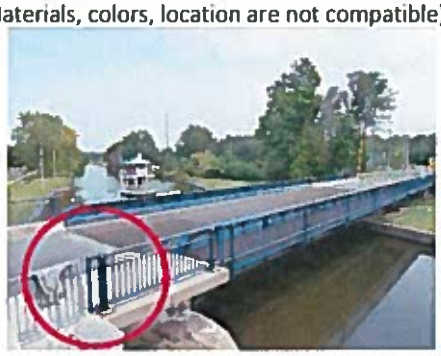
The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the mitigation measures to be taken to minimise impacts:
The rehabilitation of Maria Street Swing Bridge with a non-sympathetic concept including the change in height, profile and design of the bridge could adversely affect the heritage value of the Peterborough Lift Lock area. The project could also impact the connection of the bridge to the landscape.

Therefore, the design approach for the new bridge should be aligned with the Standards and Guidelines for the Conservation of Historic Places in Canada with an emphasis on minimal intervention. As such, the application of Standards 1-12 is recommended, including the relevant Guidelines on Cultural Landscapes (Section 4.1), Archeological Sites (Section 4.2), Engineering Works (Section 4.4) and Materials (Section 4.5).

The following solutions have been considered and discounted for the following reasons:
In 2016, three options were proposed Option A - Base Rehabilitation Design, Option B - Sympathetic Rehabilitation Design and Option C - Sympathetic Replacement Design. Based on the existing condition of the structure, the feasibility of repairing the swing bridge and heritage value of the area, the recommended option is the rehabilitation of the bridge structural members and associated mechanical and electrical systems covered by the Sympathetic Rehabilitation Design (Option B). Option B will also allow to reinstate the full CL-625-ONT truck loading in accordance with the Canadian Highway Bridge Design Code requirements and to extend the service life of the bridge.

Recommendations:
- ☐ The design should be aligned with the recommendations provided in the Conservation Guidance 2016-2021 Capital Works Program TSW.

- ☐ Document the existing features that will be removed (photos before, during, after construction).
- ☐ Maria Street Swing Bridge should correspond to the significance of the TSW by achieving a landmark quality that is visually connected to the TSW NHS. More specifically, its design should be an honest expression of the original design (girder bridge); be in scale with and compatible with the surrounding while respecting the key character-defining elements of the TSW landscape.
- ☐ Maria Street Swing Bridge design should be similar to Warsaw Road Swing Bridge to preserve their visual connection and landmark quality in the PLL and Lock 20 landscape.
- ☐ The bridge design should enhance the pedestrian, cyclist and driver experiences by: optimising views; enhancing barrier design, lower inner barriers, custom-designed railings, and innovative barrier terminations; if required, providing functional, high-quality and well-designed lighting that is simple and subtle.
- ☐ Minimize additions to the landscape, and ensure colours chosen are compatible with the TSW NHS landscape. Each element added to the site should be assessed and integrated (colours and materials) as much as possible to the different structures in the landscape. Cohesion, consistency and visual relationships between each element should dictate all interventions.
- ☐ Apply paint finishes (Federal Standard 595C 16251 grey, Fed standard 15052 blue and Aluminum Cityscape, ONWIOC, 17th January 2018) to the principal structural components, reflecting the approach used on the existing bridges of the TSW.
- ☐ Minimise the number of barriers designs on this location. Code requirements, material availability, labour and material costs can affect efficiencies in design, but they also can significantly impact a landscape. The visual and design integration of all safety measures on this site is recommended.
- ☐ Design railings, guardrails and girders that have minimal visual impact on the viewscape, waterscape and the bridge. Barriers should offer a smooth visual transition/design in order to better integrate the bridge to its surrounding. Avoid as much as possible superposing railings / guardrails on this location to minimise "visual walls" that could potentially obstruct viewscapes and waterscapes.
- ☐ Drawings should include all details related to railings and guardrails. Drawings should show transition between each barrier to avoid visual disconnection between them. If there are specific member sizes or details required by the project, they should be shown on the design drawings.
- ☐ Increasing the height of the girders can create visual walls and corridor effect in the landscape. Efforts should be made to reduce the height of this bridge while respecting the requirements imposed by the Canadian Highway Bridge Design Code requirements.
- ☐ Transition from the bridge guardrail to the roadway guardrails allows the continuity between the bridge and the landscape. Efforts should be made to reduce the number of guardrails in the design that is adapted to the heritage settings. (Photo below shows an example of what would not be an appropriate transition between railings. Materials, colors, location are not compatible).



- ☐ If replacing the watch house or any buildings on this site in the future, submit the proposed design to CRM for review. The new buildings / structures should be designed in a manner that respects the overall approach on the TSW for ancillary buildings (Ref. Approved SCRIA, June 2018).
- ☐ Any modification to the proposed scope of work must be submitted to the CRM Advisor for review and approval for compliance with the Standards and Guidelines and CRM Policy.
- ☐ If an opportunity arises to address or correct past interventions that are no longer considered best conservation practice or that seriously impact heritage value of the NHS, CRM advice should be sought to determine whether it makes sense to address this as a part of this project.
- ☐ An Archaeological Overview Assessment (AOA) is required for this project.
- ☐ Notify Parks Canada staff upon discovery of any archaeological resources. If features (i.e., structural remains and/or artifact concentrations) are encountered, leave in place, mark the location (e.g. with prominent flagging) and contact Parks

Canada staff to take photographs and, if possible, depth measurements. The Parks Canada representative must provide the information immediately to Parks Canada's Archaeology section for advice and assessment of significance, which will in turn determine what will be required to mitigate the find. Work in the area can resume when the Archaeology section has provided clearance.

References:

Conservation Guidance 2016-2021 Capital Works Program on the Trent-Severn Waterway National Historic Site.

Ontario Waterways Infrastructure Oversight Committee, Parks Canada, Meeting Minutes, January 17th, 2018.

Ontario Waterways Infrastructure Oversight Committee, Parks Canada, Maria Street Swing Bridge, Record of Decision Review, Power Point Presentation, August 2016.

Ontario Waterways Infrastructure Oversight Committee, Parks Canada, Maria Street Swing Bridge, Record of Decision Review, Power Point Presentation, 22 October 2018.

Parks Canada, Cultural Resource Management Policy, 2013.

Parks Canada National Best Management Practices; Works In and Around Waterbodies; Draft February 22, 2017.

Parsons Inc. Final Inspection Report For the Rehabilitation of Maria Street Swing Bridge, Single Span Through Plate Girder Sing Bridge Lock 20 – Peterborough , ON, April 2016.

Parsons Inc. Rehabilitation of Maria Street Swing Bridge (Lock 20), Final Recapitalization Report for Parks Canada, April 2016.

Passfield, Robert W., The Heritage Canals: Status and Significance, Parks Canada. Unpublished Report, 1987.

Standards and Guidelines for the Conservation of Historic Places in Canada, 2010.

Trent-Severn Waterway National Historic Site Commemorative Integrity Statement.

William Beahen, Manuscript Report Number 283, Historic Structures of the Trent-Severn Waterway, Parks Canada, National Historic Parks and Sites Branch, Department of Indian and Northern Affairs, 1978.

Appendix I – Photo

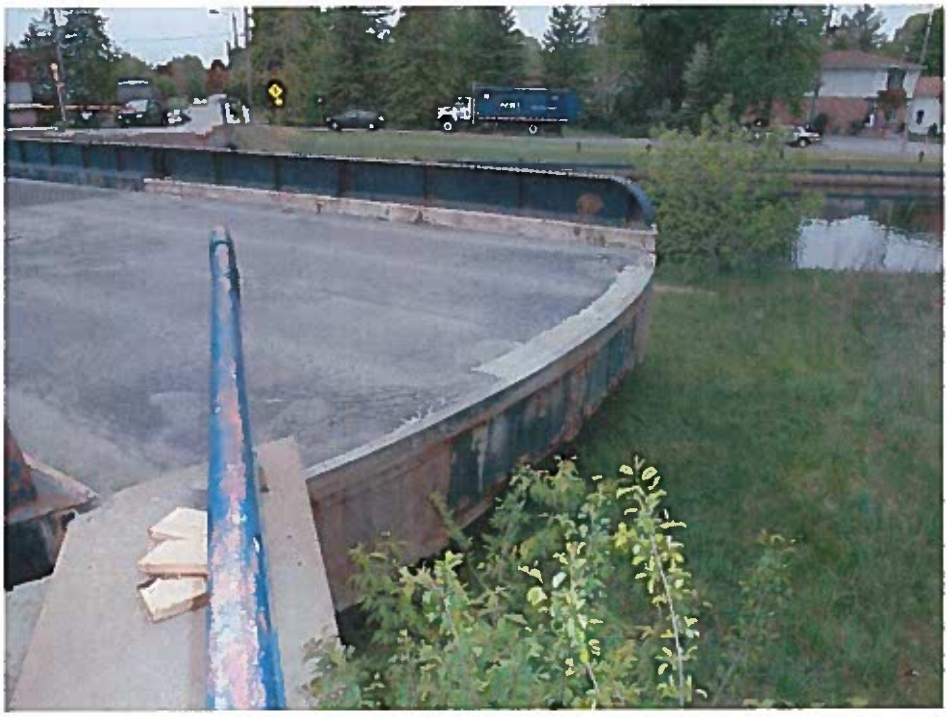
Maria Street Swing Bridge #27

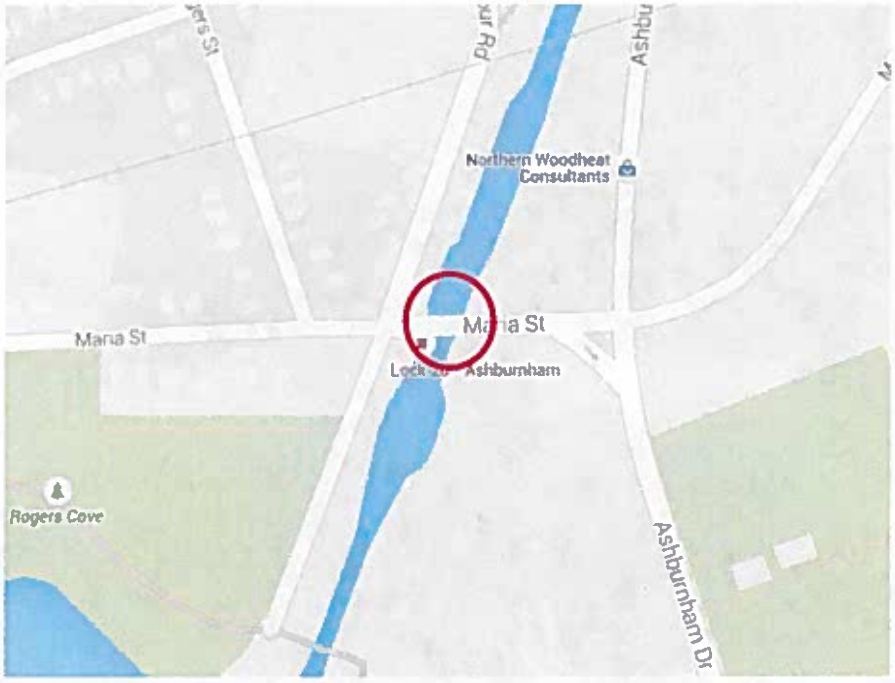


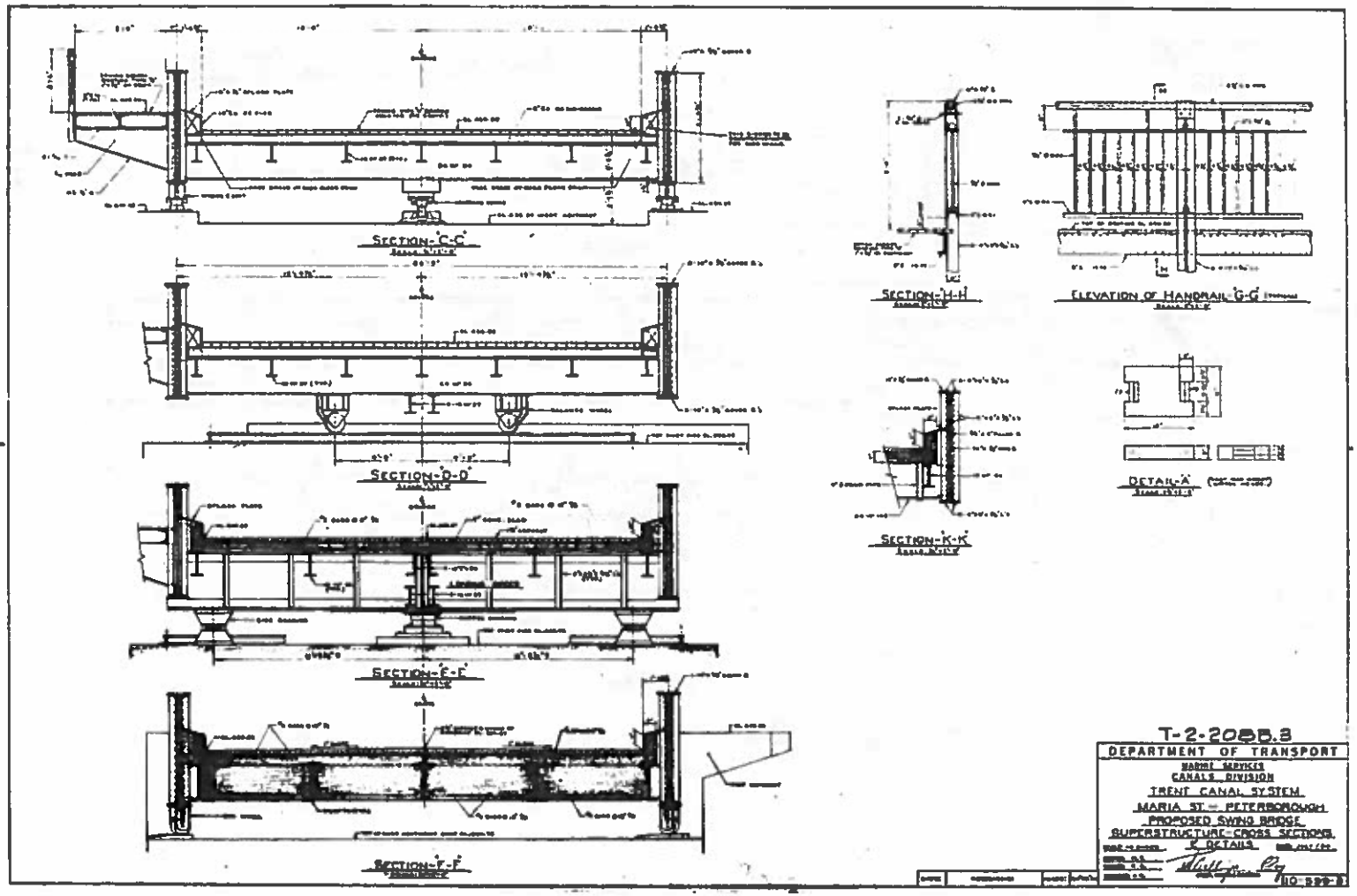
"The swing bridge is a girder/beam construction with a combination of steel grating and asphalt covered concrete deck. The overall length of the bridge is 54.12 m long from panel end to panel end, and has a width of 6.64 m from centre line to centre line of the outermost girders. The swing bridge is an unequal arm type pivoting about a centre pintle with balance wheels. The bridge is supported by an off-centre concrete pivot pier and concrete abutments. The off-centre pivot pier is located on the east side of the Trent Canal. The bridge carries two lanes of traffic (one lane each way), and has a steel grating pedestrian walkway mounted on the south side of the bridge, outside the south girder (Center Bearing Bobtail)." (source: Parsons Inc. Report 2015)

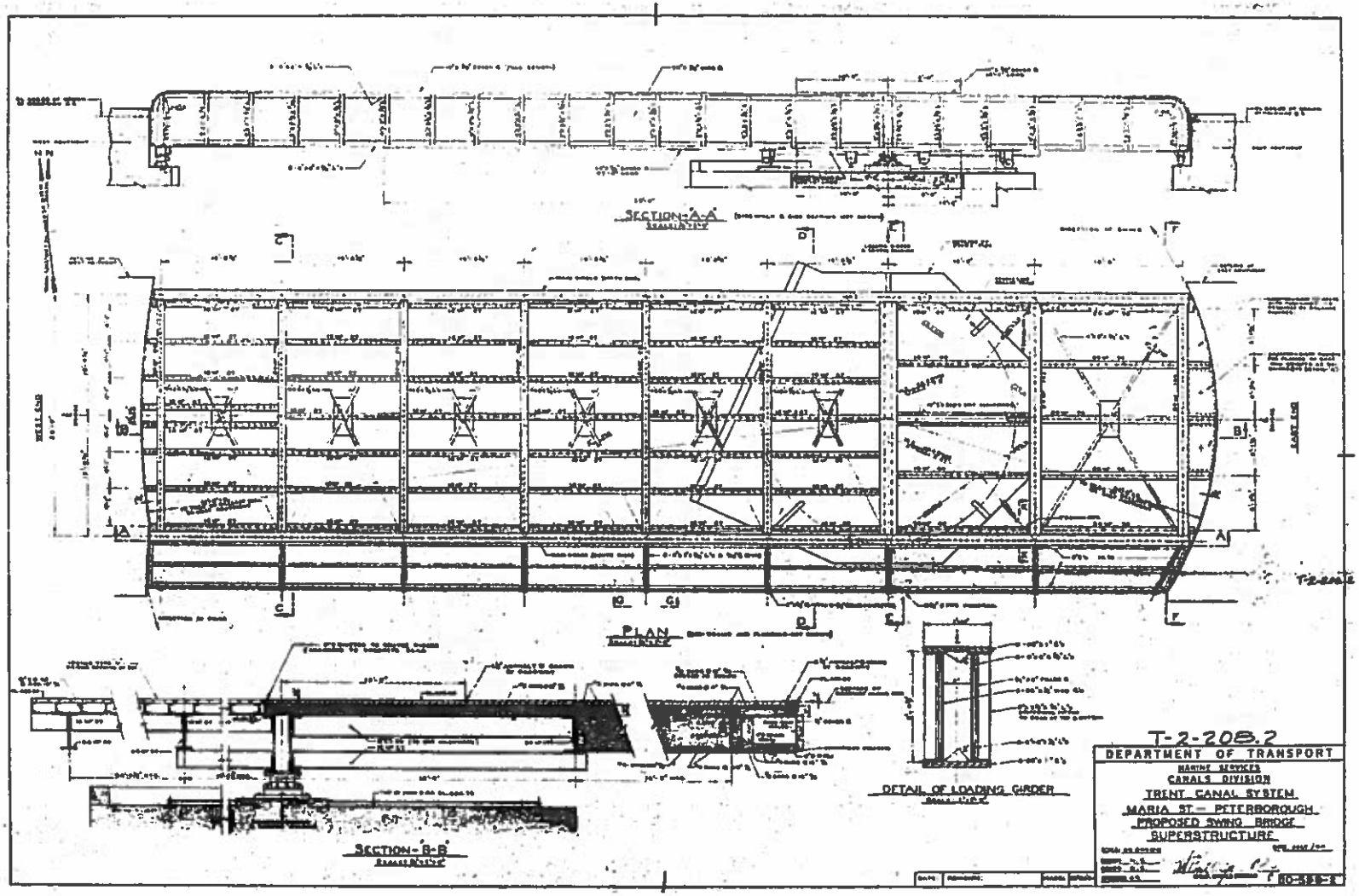
Original Construction Date: 1897 (rehabilitated in 1965)
By Builder/Contractor: Central Bridge and Engineering Company of Peterborough, Ontario






Northern Woodheat Consultants
Mana St
Mana St
Ashburnham
Rogers Cove
Ashburnham Dr


SECTION-'C-C'
SECTION-'D-D'
SECTION-'E-E'
SECTION-'F-F'
SECTION-'H-H'
ELEVATION OF HANDRAIL 'G-G'
SECTION-'K-K'
DETAIL-'A'
T-2-20BB.3
DEPARTMENT OF TRANSPORT
MARINE SERVICES
CANALS DIVISION
TRENT CANAL SYSTEM
MARIA ST - PETERBOROUGH
PROPOSED SWING BRIDGE
SUPERSTRUCTURE CROSS SECTIONS
& DETAILS


SECTION-A-A
PLAN
SECTION-B-B
DETAIL OF LOADING GIRDER
T-2-208.2
DEPARTMENT OF TRANSPORT
MARINE SERVICES
CANALS DIVISION
TRENT CANAL SYSTEM
MARIA ST. — PETERBOROUGH
PROPOSED SWING BRIDGE
SUPERSTRUCTURE