

APPENDIX B – TRANSPORT CANADA NAVIGABLE WATERS



Stantec Consulting Ltd.
100 – 1355 Taylor Avenue
Winnipeg, MB, R3M 3Y9
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Stantec

July 6, 2011
File: 113731590

Transport Canada
Canada Place
1100-9700 Jasper Avenue
Edmonton, AB
T5J 4E6

Attention: Matt Klaverkamp, Regional Manager, Navigable Waters Protection Program

Dear Mr. Klaverkamp,

Reference: Sturgeon Bridge Replacement, Winnipeg, Manitoba

DETAILS OF WORK:

The City of Winnipeg proposes to replace the existing Sturgeon Road bridge over Sturgeon Creek. The existing bridge is a three (3) span, four lane, concrete bridge founded on precast concrete piles.

The replacement bridge is proposed to be twin structures, three spans, approximately 58 m long, with concrete abutments founded on steel driven piles and concrete pier caps supported by rock socketed caissons. A drawing showing a general arrangement of the proposed replacement bridge is attached.

We are seeking approval for this project under the Navigable Waters Act. The estimated navigational clearance, which is the distance from the soffit of the bridge to the 1 in 2 year water level, of the existing bridge is approximately 0.99 metres. The navigational clearance of the proposed bridge is 3.4 metres, an increase of 2.43 metres.

Removal of the existing abutments and pier may cause some minimal disturbance to the Sturgeon Creek but this disturbance is extremely temporary and short term. The construction of the proposed bridge should not disturb Sturgeon Creek and aquatic life within. The proposed construction schedule is set for March 2012 through October 2013.

The installation of the proposed steel H-piles should not affect the fish habitat or aquatic environment provided care is taken during installation. The installation of the piles requires use of a pile driving crane, either diesel or gravity drop hammer. The piles are placed into their surveyed location and driven into the ground until they reach the specified elevation, as determined by the criteria developed during the geotechnical investigation.

Construction of the rock socketed caissons shall consist of a steel sleeve with a concrete shaft installed down to bedrock. At bedrock, a rock socket core will be drilled into the bedrock for

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Regional Manager, Navigable Waters Protection Program

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Reference: Sturgeon Bridge Replacement, Winnipeg, Manitoba

reinforced concrete placement. The pier caissons are located within the creek and therefore will only be construction outside of the in stream work restriction period. To construct the caissons, a steel sleeve is placed into the water at the proposed location and the shaft is drilled through the steel sleeve. The earth material is removed with an auger bit, placed on the adjacent embankment. This material is later removed offsite. Until that time, the material will be covered with poly overnight.

Once the piles and rock socketed caissons have been installed the abutments and pier caps can be constructed. Construction of the caps will comprise of standard concrete construction practice. Untreated wood forms will be used to support the wet concrete until it hardens. The proposed abutments are located outside of the existing waterway and therefore construction of the abutments will not adversely affect the environment. The pier caps are within the footprint of the creek, however are well above the 100 year flood level and therefore construction of the pier caps will not adversely affect Sturgeon Creek.

A crane or launching system will be used to place the box girders from Sturgeon Road and as such will not have an effect on Sturgeon Creek.

Stantec is very familiar with current environmental regulations and have completed numerous bridge replacement projects involving environmental and navigation approvals. A hard copy of Stantec's letter requesting approval and the Letters of Advice, or formal approval letters, received will form an integral part of the legal contract with the contractor and shall be on site through the duration of construction.

As part of our sediment and erosion control mitigation measures, Stantec will request the following task be implemented throughout the course of construction:

- Installation of silt fences isolating our abutment construction areas
- No in-water construction to be undertaken between April 1 through June 30.
- Non-reusable demolition or construction materials will be disposed of in an authorized waste disposal facility.
- Demolition materials will not be allowed to enter Sturgeon Creek.
- Construction will be halted during periods of heavy rainfall
- Stock piled backfill material will be covered with poly during heavy rainfall events and if to remain on site for an extended period of time
- Riprap to be placed to the waters edge and not within the river.
- The riprap will be clean fieldstone or quarried rock free of fines.
- Construction machinery may not be refueled or serviced within 100m adjacent to Sturgeon Creek or any body of water.
- All construction work shall be performed in a workmanship like manner and shall be in accordance with "Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat".

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Regional Manager, Navigable Waters Protection Program

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Reference: Sturgeon Bridge Replacement, Winnipeg, Manitoba

- At no time shall the arm of a back-ho or any other machinery extensions enter the waterway where exposed hydraulic cylinders, engines or other devices containing grease, oil, gas and other toxins could enter and contaminate the waterway and environment.
- The contractor shall have on site at all times, oil absorbent pads in the event of an oil spill or accidental submergence of toxin covered machinery occurs.
- The excavated material for abutment construction shall be placed where it is not likely to erode or be washed into the waterway.

Please review the proposed work and attached Navigable Waters Protection Application form, stream assessment document, photos and the General Arrangement drawing. Please provide authorization to proceed with advertising.

Please contact the undersigned if you require further information or clarification.

Sincerely,



Mike Boissonneault, P.Eng
Associate, Project Manager

Tel: (204) 488-5742

Fax: (204) 284-4795

Cell: (204) 799-7474

mike.boissonneault@stantec.com

Attachment: Environmental Assessment
Navigable Waters Application Form
Registered General Arrangement Drawing

C.

A Contact Information

Proponent:

City of Winnipeg, Public Works Department
1155 Pacific Avenue
Winnipeg, MB R3E 3P1
(204) 783-1135
www.city.winnipeg.mb.ca

Consultant:

Stantec Consultants Ltd.
603-386 Broadway Avenue
Winnipeg, MB R3C 3R6
(204) 942-2505
(204) 942-2548
brian.wood@stantec.com

B Location of Proposed development

Name of Nearest Community: Winnipeg

Municipality, District, Township, County, Province: City of Winnipeg, Manitoba

Name of Watercourse(s) or Water body(ies) likely to be impacted: Sturgeon Creek

Coordinates of the Proposed Development: 14U 623630(easting), 5526764(northing)

C Description of the aquatic environment

C.1 TYPE OF WATERCOURSE

Sturgeon Creek is a freshwater stream and tributary to the Assiniboine River.

C.2 PHYSICAL AND BIOLOGICAL CHARACTERISTICS OF THE SITE

C.2.1 PHYSICAL CHARACTERISTICS

Channel Width: Channel width at the current Sturgeon Bridge site is 51 meters.

Flow: The water flow is south/southeast in direction, confined to the channel and perennial in nature.

Water Depth: Water depth at the Sturgeon Creek Bridge is 1.5 meters. At this depth, it is unlikely that overwintering habitat is available for fish at the proposed development site.

Substrate type and density: The predominant substrate types in the bed of the watercourse are clay and sand, with densities of approximately 80% clay and 20% sand. Soft substrates to a depth of 6-12 inches in the stream bed may support benthic invertebrates, which may in turn provide forage for species such as white suckers, shorthead redhorse, and channel catfish.

Aquatic Vegetation type and density: Although in-stream vegetation is not present immediately beneath the Sturgeon Creek Bridge, within 10-15 meters of the bridge, cattails beds are present up- and downstream, in approximately 5-10% of the wetted width of the watercourse (Photos 1-6). In addition, the presence of grasses and sedges in the creek channel may provide spawning habitat for northern pike during spring flood conditions.

C.2.2 BIOLOGICAL CHARACTERISTICS

C.2.2.1 Presence of Fish Species

The list of fish species present in Sturgeon Creek presented in Table C-1 is compiled from Scott and Crossman (1973), Stewart and Watkinson (2004) and Manitoba Conservation, Fisheries Branch (1998). Other species may exist within the area, but their presence has not been confirmed.

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ENVIRONMENTAL ASSESSMENT - SURGEON ROAD BRIDGE REPLACEMENT AND ROADWORKS

Table C-1: Fish Species Inhabiting the Assiniboine River System¹

Systematic Name	Common Name	Systematic Name	Common Name
<i>Ichthyomyzon unicuspis</i>	Silver Lamprey	<i>Ictiobus cyprinellus</i>	Bigmouth Buffalo
<i>Acipenser fulvescens</i>	Lake Sturgeon	<i>Moxostoma anisurum</i>	Silver Redhorse
<i>Hiodon alosoides</i>	Goldeye	<i>Moxostoma erythrurum</i>	Golden Redhorse
<i>Hiodon tergisus</i>	Mooneye	<i>Moxostoma macrolepidotum</i>	Shorthead Redhorse
<i>Cyprinus spilopetra</i>	Spotfin Shiner	<i>Ameiurus melas</i>	Black Bullhead
<i>Luxilus cornutus</i>	Common Shiner	<i>Ameiurus nebulosus</i>	Brown Bullhead
<i>Macrhybopsis storeriana</i>	Silver Chub	<i>Ictalurus punctatus</i>	Channel Catfish
<i>Macrhybopsis margarita</i>	Pearl Dace	<i>Noturus flavus</i>	Stonecat
<i>Notemigonus crysoleucas</i>	Golden Shiner	<i>Noturus gyrinus</i>	Tadpole Madtom
<i>Notropis atherinoides</i>	Emerald Shiner	<i>Esox lucius</i>	Northern Pike
<i>Notropis blennioides</i>	River Shiner	<i>Umbra limi</i>	Central Mudminnow
<i>Notropis dorsalis</i>	Bigmouth Shiner	<i>Coregonus artedii</i>	Lake Whitefish
<i>Notropis heterodon</i>	Blackchin Shiner	<i>Percopsis omiscomaycus</i>	Trout-perch
<i>Notropis heterolepis</i>	Blacknose Shiner	<i>Lota lota</i>	Burbot
<i>Notropis hudsonius</i>	Spottail Shiner	<i>Culaea inconstans</i>	Brook Stickleback
<i>Notropis stramineus</i>	Sand Shiner	<i>Pungitius pungitius</i>	Ninespine Stickleback
<i>Notropis texanus</i>	Weed Shiner	<i>Cottus cognatus</i>	Slimy Sculpin
<i>Phoxinus eos</i>	Northern Redbelly Dace	<i>Ambloplites rupestris</i>	Rock Bass
<i>Phoxinus neogaeus</i>	Finescale Dace	<i>Pomoxis nigromaculatus</i>	Black Crappie
<i>Pimephales notatus</i>	Bluntnose Minnow	<i>Etheostoma exile</i>	Iowa Darter
<i>Pimephales promelas</i>	Fathead Minnow	<i>Etheostoma nigrum</i>	Johnny Darter
<i>Platygobio gracilis</i>	Flathead Chub	<i>Perca flavescens</i>	Yellow Perch
<i>Rhinichthys cataractae</i>	Longnose Dace	<i>Percina caprodes</i>	Logperch
<i>Rhinichthys obtusus</i>	Western Blacknose Dace	<i>Percina maculata</i>	Blackside Darter
<i>Rhinichthys atratulus</i>	Blacknose Dace	<i>Percina shumardi</i>	River Darter
<i>Semotilus atromaculatus</i>	Creek Chub	<i>Stizostedion canadense</i>	Sauger
<i>Carpodes cyprinus</i>	Quillback	<i>Stizostedion vitreum</i>	Walleye
<i>Catostomus commersoni</i>	White Sucker	<i>Aplodinotus grunniens</i>	Freshwater Drum

¹List compiled from Scott and Crossman (1973), Stewart and Watkinson (2004) and MB Conservation, Fisheries Branch (1998). Additional species may exist within the study area, but their presence has not been confirmed.

C.3 DRAWINGS OR PHOTOGRAPHS OF AQUATIC ENVIRONMENT

Immediately beneath the Sturgeon Bridge, and within 20 meters of the development site, there is minimal in-stream vegetation. Sedges and grasses line the edge of the wetted channel and may provide a slight degree of cover for fish. No large woody debris is present at the proposed development site. No shrubs or trees create overhanging riparian vegetation within 20 meters of the (Photos 1-5).

A relatively large cattail patch lies approximately 25 meters upstream of the Sturgeon Bridge development site. This cattail patch extends 53 meters into the stream channel and spans approximately 100 meters, at river right within the bankfull channel (Photo 6).

Although the riparian zone is designated as a Grassland Naturalization Area by the City of Winnipeg Park and Open Space Division, for the most part, this zone consists of a narrow (+/- 20 m) strip of grasses and cattails, with very little shrub or treed cover. Shrubs and small trees become more common in the riparian zone closer to Portage Avenue and Grant's Old Mill (Photo 7).

A seasonally operating grain mill and water wheel lie approximately 350 meters downstream of Sturgeon Bridge (Photo 8). The construction of a water diverting dam associated with this mill would obstruct fish passage except for the operation of a fish ladder (Photo 9-10). The fish ladder is maintained on a seasonal basis by the Naturalist Services Branch of the Winnipeg Public Works Department. Fish species using the ladder are periodically enumerated through the use of a fish trap and gill nets (Tuchscherer pers. comm.).

Portage Avenue crosses Sturgeon Creek approximately 375 meters downstream of the development site. Downstream of the Portage Bridge, the riparian zone associated with Woodhaven Park includes many more mature trees, with vegetation overhanging the wetted width of Sturgeon Creek. Downstream of the Portage Avenue Bridge, five riffles occur within Woodhaven Park (Photos 11-14) breaking the otherwise consistent run of Sturgeon Creek to the Assiniboine River. These riffles are composed of rocks and boulders ranging from 10-60 cm in diameter. In each riffle, 10-80% of the under-water surfaces of cobble, rocks and boulders were covered with green-brown filamentous algae (Photo 15).

D Description of the Proposed Construction Works

D.1 PROPOSED BRIDGE REPLACEMENT AND ROADWORKS

The existing concrete bridge on Sturgeon Road over Sturgeon Creek will be removed and replaced in 2012 through 2013. The new bridge is proposed to be constructed approximately 3 metres higher than the existing structure to facilitate an Active Transportation Trail under the new bridge. Sturgeon Road will need to be reconstructed due to the increase in bridge elevation.

D.2 CONSTRUCTION METHOD, MATERIALS AND EQUIPMENT

The replacement structure is proposed to be constructed in phases, Northbound structure first in 2012, followed by the construction of the southbound structure in 2013.

The proposed bridge is a precast concrete box girder bridge founded on rock socketed caissons at the piers and driven steel piles at the abutments. Construction of the rock socketed caissons shall consist of a steel sleeve with a concrete shaft installed down to bedrock. At bedrock, a rock socket core will be drilled into the bedrock for reinforced concrete placement. The pier caissons are located within the creek and therefore will only be construction outside of the in stream work restriction period. To construct the caissons, a steel sleeve is placed into the water at the proposed location and the shaft is drilled through the steel sleeve. The earth material is removed with an auger bit, placed on the adjacent embankment. This material is later removed offsite. Until that time, the material will be covered with poly overnight.

The abutment piles will be driven with a diesel hydraulic hammer pile driving crane. The crane will be positioned such that exhaust and or diesel spray will not enter the waterway. The crane shall be refueled over 100 metres away from Sturgeon Creek.

The bridge abutments and pier caps are proposed to be cast in place concrete, constructed by conventional methods.

The bridge superstructure is proposed to be precast concrete box girders which are prefabricated. The prefabricated box girders will be installed with a crane positioned on Sturgeon Road.

D.3 AFFECTED AREA

The only area affected by the construction of the proposed replacement structure would be around the caissons. However, the steel sleeves for the caissons create a barrier, protecting the waterway and aquatic life within during installation of the rock socketed caissons.

D.4 DRAWINGS

Attached is our Navigable Waters application drawing which has been registered in the Winnipeg land titles office. This general arrangement drawing illustrates the proposed structure, exiting structure and hydraulic design water elevations.

D.5 FISH AND FISH HABITAT PROTECTION MEASURES

Details for Preventative Measures in demolition and construction activity were adapted from Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (Manitoba Natural Resources and Department of Fisheries and Oceans 1996) and the Habitat Conservation and Protection Guidelines Developed from the Policy for the Management of Fish and Fish Habitat (Department of Fisheries and Oceans 1986).

- Removing the debris from the ice.
- Installation of silt fences isolating our abutment construction areas if the creek thaws (this is not anticipated to be an issue as construction should be completed during the winter months).
- No in-water construction to be undertaken from April 1 through June 30 (i.e. spring through summer spawning windows).
- Non-reusable demolition or construction materials will be disposed of in an authorized waste disposal facility.
- Demolition materials will not be allowed to enter Boyne River.
- Construction will be halted during periods of heavy rainfall (this is not anticipated to be an issue as construction should be completed during the winter months).
- Stock piled backfill material will be covered with poly during heavy rainfall events and if to remain on site for an extended period of time (this is not anticipated to be an issue as construction should be completed during the winter months).
- Riprap to be placed to the water's edge and not within the river.
 - The riprap will be clean fieldstone or quarried rock free of fines.
- Construction machinery may not be refueled or serviced within 100m adjacent to Bunn's Creek or any body of water.
- All construction work shall be performed in a workmanship like manner and shall be in accordance with "Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat".
- At no time shall the arm of a back-ho or any other machinery extensions enter the waterway where exposed hydraulic cylinders, engines or other devices containing grease, oil, gas and other toxins could enter and contaminate the waterway and environment.

- The contractor shall have on site at all times, oil absorbent pads in the event of an oil spill or accidental submergence of toxin covered machinery occurs.
- The excavated construction materials shall be placed where they are not likely to erode or be washed into the waterway.

D.6 IMPLEMENTATION SCHEDULE

The presence of spring and summer spawning fish species constrains development to activities between early July and late March.

REFERENCES

Penner, Rodney. 2007. Fish Sampling Report 2007. City of Winnipeg Naturalist Services Branch. Accessed online at http://www.winnipeg.ca/publicworks/naturalist/ns/ff/animal_lists.asp, 25 October, 2010.

Penner, Rodney. 2006. Fish Sampling Report 2007. City of Winnipeg Naturalist Services Branch. Accessed online at http://www.winnipeg.ca/publicworks/naturalist/ns/ff/animal_lists.asp, 25 October, 2010.

Penner, Rodney. 2005. Fish Sampling Report 2007. City of Winnipeg Naturalist Services Branch. Accessed online at http://www.winnipeg.ca/publicworks/naturalist/ns/ff/animal_lists.asp, 25 October, 2010.

Department of Fisheries and Oceans Canada. 1998. Habitat Conservation and Protection Guidelines Developed from the Policy for the Management of Fish and Fish Habitat (1986). Cat. No. Fs 23-352/199E

Manitoba Conservation, Fisheries Branch. 1998. City of Winnipeg - Fish Species Lists Fish species found in the Assiniboine River. Accessed online at <http://winnipeg.ca/publicworks/naturalist/ns/ff/FishReports/Assiniboine.html>, on 3 November, 2010.

PERSONAL COMMUNICATIONS

Tuchscherer, Kristin. 2010. Education Coordinator - Creeks and Streams, City of Winnipeg, Public Works Department, Parks and Open Space Division, Naturalist Services Branch, Winnipeg. Fish Sampling Species Summary from Sturgeon Creek 2010. Email to Shirley Bartz, Wildlife Biologist, Stantec Consulting Ltd., Broadway Office, Winnipeg, MB

Stantec
STURGEON ROAD BRIDGE REPLACEMENT AND ROADWORKS

PHOTOS



Photo #1: Sturgeon Creek, river right - looking upstream from Sturgeon Bridge, October 14, 2010.



Photo #2: Sturgeon Creek, river left - looking upstream from Sturgeon Bridge, October 14, 2010.



Photo #3: Sturgeon Creek, river right - looking downstream from Sturgeon Bridge, October 14, 2010.



Photo #4: Sturgeon Creek, river left - looking downstream from Sturgeon Bridge, October 14, 2010.

STURGEON ROAD BRIDGE REPLACEMENT AND ROADWORKS

PHOTOS

April 8, 2011



Photo #5: Sturgeon Creek, river right - looking downstream from Sturgeon Bridge, October 14, 2010.



Photo #6: Sturgeon Creek, large cattail patch upstream river right of Sturgeon Bridge, October 14, 2010.



Photo #7: Sturgeon Bridge as seen from Grant's Old Mill, October 14, 2010.



Photo #8: Sturgeon Creek, Old Grant's Mill, looking upstream from Portage Bridge, October 14, 2010.



Photo # 9: Sturgeon Creek, upstream entrance to fish ladder at Old Grant's Mill, October 14, 2010.



Photo # 10: Sturgeon Creek, downstream exit to fish ladder at Old Grant's Mill, October 14, 2010.



Photo # 11: Sturgeon Creek, first riffle downstream of Portage Bridge, October 14, 2010.



Photo # 12: Sturgeon Creek, second riffle downstream of Portage Bridge, October 14, 2010.



Photo # 13: Sturgeon Creek, third riffle downstream of Portage Bridge, October 14, 2010.



Photo # 14: Sturgeon Creek, fourth riffle downstream of Portage Bridge, October 14, 2010.

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STURGEON ROAD BRIDGE REPLACEMENT AND ROADWORKS

PHOTOS
April 8, 2011



Photo # 15: Sturgeon Creek, algae on riffle rocks, October 14, 2010.



NAVIGABLE WATERS PROTECTION ACT (NWP) - APPLICATION FORM

APPLICANT'S INFORMATION

Applicant File No. 113731590	If applying on someone's behalf fill out Representative in addition to Proponent.
*Proponent: City of Winnipeg Public Works Department	Representative: Stantec Consulting Ltd
*Mailing address: 1155 Pacific Avenue Winnipeg, MB R3E 3P1	Mailing address: 100-1355 Taylor Avenue Winnipeg, MB R3M 3Y9
*Contact Name:	Contact Name: Mike Boissonneault
*Telephone: (204) 783-1135	Telephone: (204) 488-5742
*Facsimile:	Facsimile: (204) 284-4795
*E-mail: www.city.winnipeg.mb.ca	E-mail: mike.boissonneault@stantec.ca

PROJECT INFORMATION

*Waterway: Sturgeon Creek *Width (m): 51 Depth (m) 1.5

*Work Description (Dock, Bridge, Riprap, etc.): Bridge Replacement

Legal Description of Site/
Nearest Community: Winnipeg

Street Address at Site: 3011 Portage Avenue Lands File No.

*Latitude: 49° 52' 49.79" N Chart No.

*Longitude: 97° 16' 44.97" W Topo Map No. 62H14

*Is this Work: Proposed Existing Modification of Existing Work

Is the proponent the upland owner? Yes No (Name)

If a Aerial Crossing/ Bridge include Overhead Clearance

In order to proceed with the review process please include the following:

- *Plan and cross section drawings of the work with all dimensions including high/low water mark
- *An area map with the location of the work clearly marked
- *Details of any anchoring systems (if applicable)
- Photographs at the site of the proposed/existing work and surrounding area
- Project description and work plan

*** Required information – application will be sent back if not complete.**

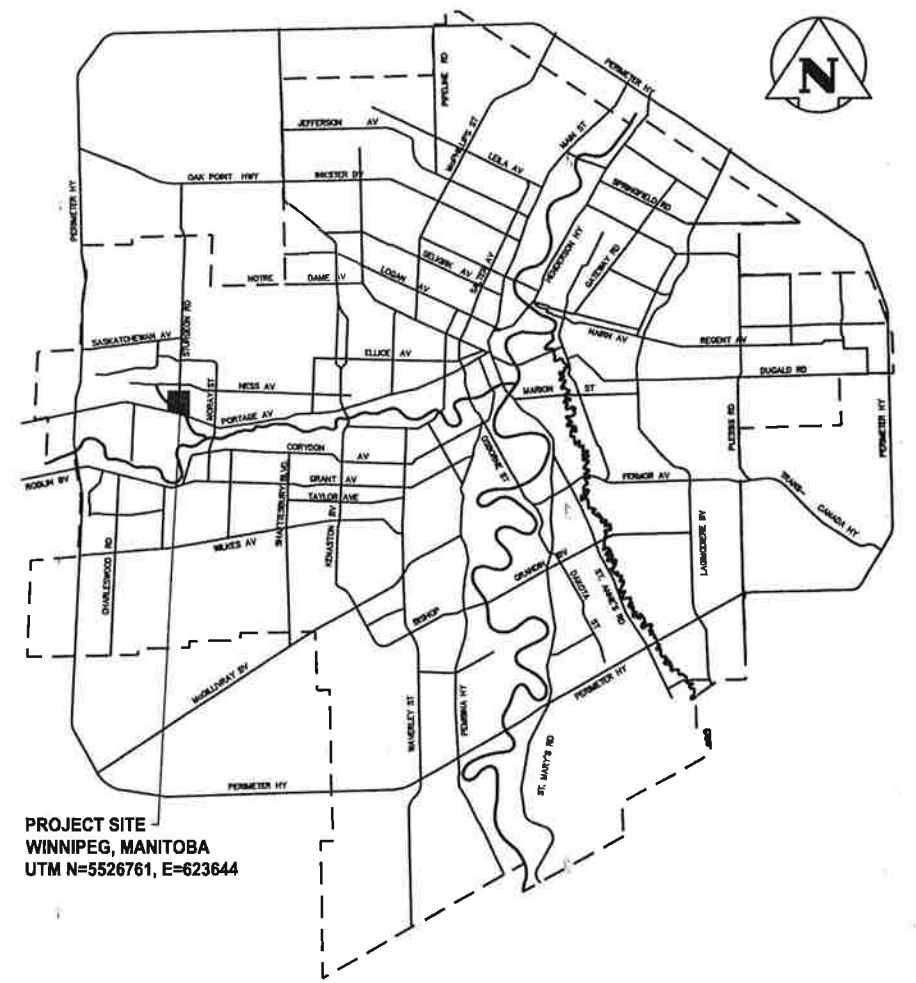
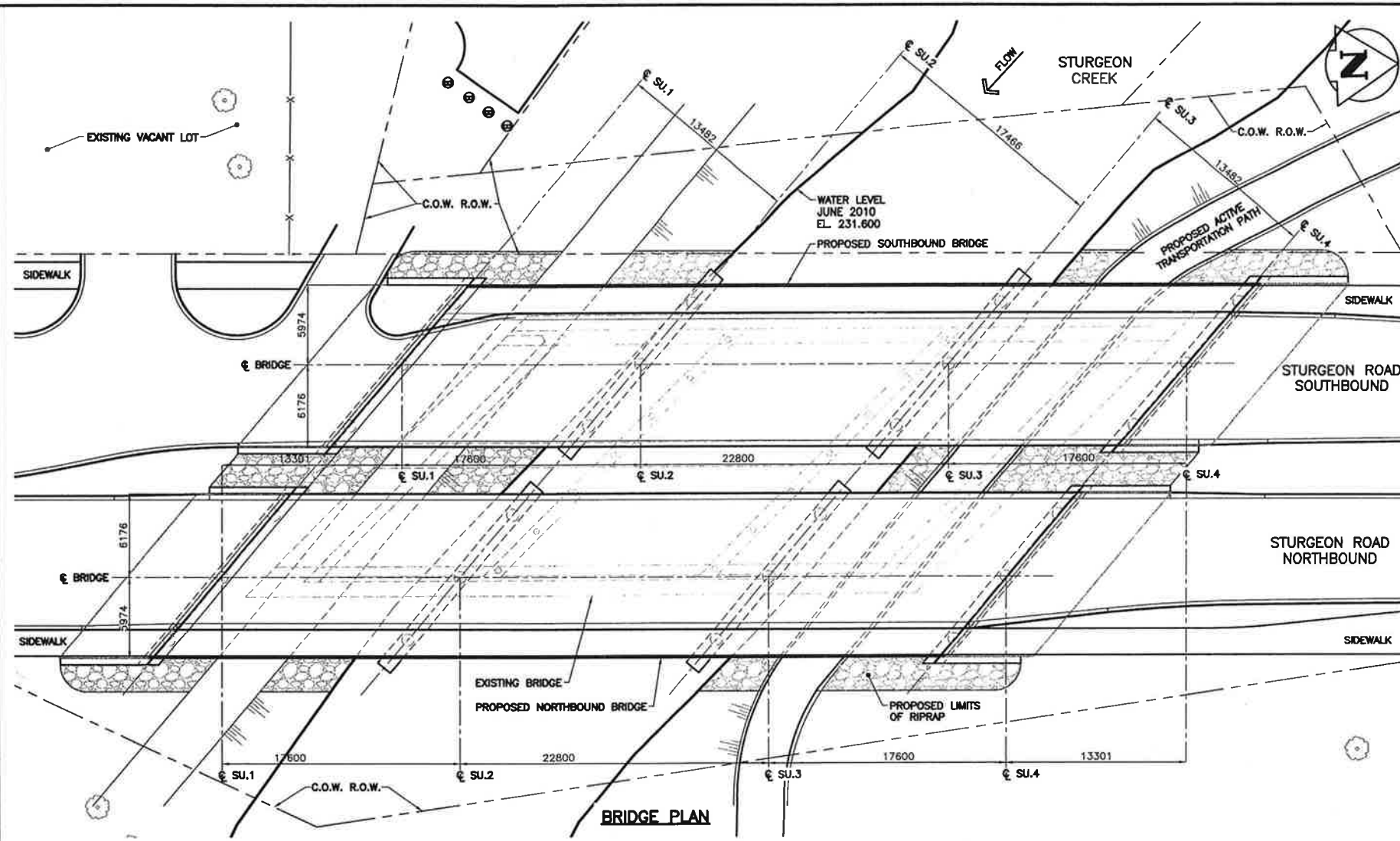
If your drawings are larger than 11" x 17", please enclose five (5) copies. For drawings 11" x 17" or smaller, one (1) copy will be sufficient.

Transport Canada - Pacific Region

Navigable Waters Protection Program
Suite 820 - 800 Burrard Street
Vancouver, BC, V6Z 2J8

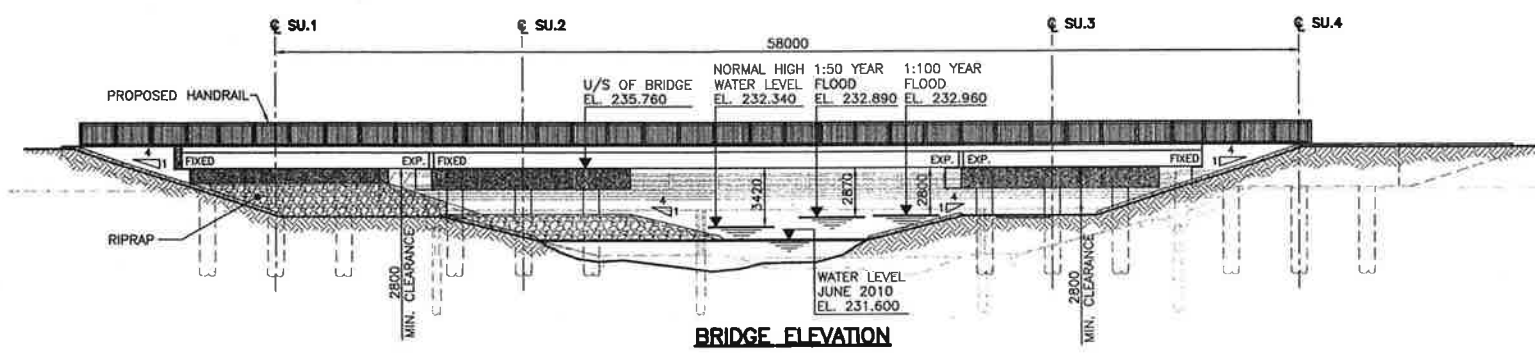
Telephone: (604) 775-8867
Facsimile: (604) 775-8828

PACNWP-PENPAC@tc.gc.ca (Electronic Applications will be accepted to this address only)

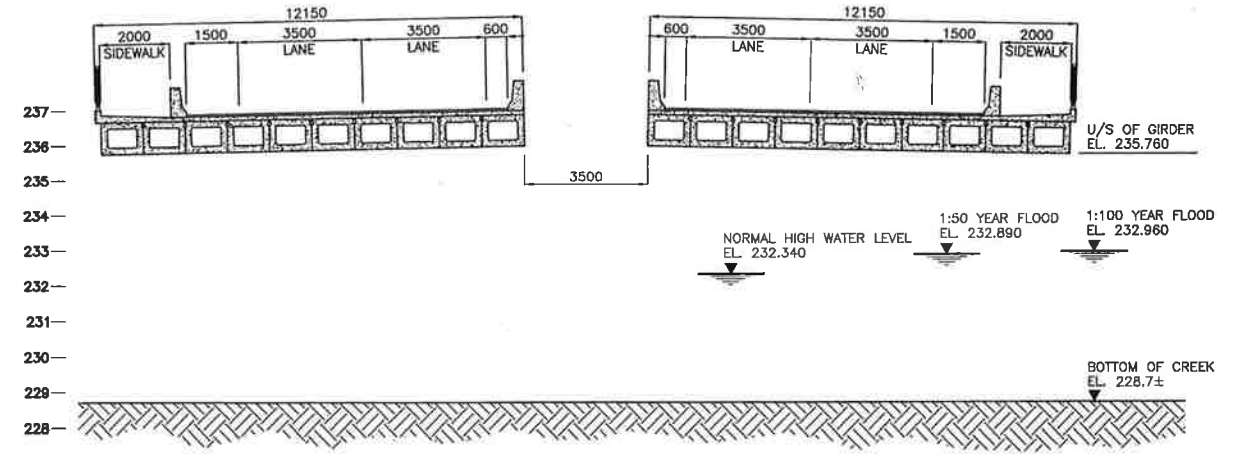


PROJECT SITE
WINNIPEG, MANITOBA
UTM N=5526761, E=623644

WINNIPEG MANITOBA



BRIDGE ELEVATION



BRIDGE SECTION

Deposited in the Winnipeg Land Titles Office
 this 23rd day of April 20 11
 as Railway Deposit No. 51297
 For District Registrar
 Registration No. 4064291

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED UNDERGROUND STRUCTURES
 SUPV. U/G STRUCTURES COMMITTEE DATE
 NOTE:
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. ELEV.	NO.	REVISIONS	DATE	BY

Stantec Consulting Ltd.
 100-1355 Taylor Ave., Winnipeg, Manitoba
 Tel 204-488-5742 Fax 204-284-4795

DESIGNED BY: M.J.B. CHECKED BY: B.J.W.
 DRAWN BY: J.M.B. APPROVED BY: -
 SCALE: AS SHOWN
 RELEASED FOR CONSTRUCTION: -
 DATE: MARCH 30, 2011

ENGINEER'S SEAL
PRELIMINARY
 NOT FOR CONSTRUCTION
 CONSULTANT DRAWING NO.
 TC-GA

THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 ENGINEERING DIVISION

STURGEON RD. RECONSTRUCTION
 BRIDGE REPLACEMENT
 STURGEON ROAD
 GENERAL ARRANGEMENT

SHEET 1 OF 1
 CAD FILE DRAWING NUMBER
 31590-1c-ga.dwg
 CITY DRAWING NUMBER