|Kontzamanis|Graumann|Smith|MacMillan|Inc.|

KGS GROUP CONSULTING ENGINEERS

3rd Floor
865 Waverley Street
Winnipeg,
Manitoba
R3T 5P4
204.896.1209
fax: 204.896.0754
www.kgsgroup.com

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City of Winnipeg
Planning Property and Development Division
Municipal Accommodations Division
3rd Floor, 65 Garry Street
Winnipeg, Manitoba
R3C 4K4

ATTENTION: Brent Novak, P. Eng.
Structural / Civil Engineer

RE: Alexander Dock - Inspection and Condition Assessment
Budget Estimates for the Retrofit Concept and the Dock Demolition and Riverbank Stabilization Concept – Final

Dear Mr. Novak:

KGS Group is pleased to submit Budget Estimates for the Retrofit Concept to rehabilitate and make use of the middle section of the Alexander Dock and also for the Dock Demolition and Riverbank Stabilization Concept to completely remove the structure.

1.0 BASIS OF RETROFIT CONCEPT ESTIMATE

The Retrofit Concept budget estimate has been prepared based on the concept to rehabilitate the middle third, approximately 49 m in length, of the existing dock structure. The middle section of the dock was considered to require the least amount of substructure rehabilitation, specifically with respect to deteriorated timber piles.

The scope of work is shown on the attached Figure 2 and summarized as follows:

- Demolish and dispose of approximately 81 lineal meters of dock structure no longer considered safe for use.
- Re-grade the riverbank along the sections of demolished dock and place geotextile and rip rap to protect the bank and minimize erosion.
- Construct an ice impact structure immediately upstream of the remaining dock section to reduce future damage and deterioration to the rehabilitated structure.
- Expose representative sections of the remaining dock, specifically substructure encased in the riverbank, to confirm condition and repair or replace if deemed feasible.

- Repair split piles with manufactured reinforcing jackets.
- Install timber pile bracing at select locations.
- Install pile beam seats at select locations.
- Replace damaged skirting.
- Replace damaged decking and stringers.

As described in the May 1, 2015 inspection report, approximately half of the dock substructure is not readily accessible as the piles, stringers and beams are encased in the riverbank. In order to confirm if rehabilitation is practical, a sufficient portion of the buried structure would require deck removal to confirm condition and structural integrity. The estimate includes an allowance for some rehabilitation work in these areas, if required, and considered feasible.

The budget cost estimate Table 1 is attached in Appendix A. The total cost for materials, labour, contractor indirects, engineering and contingency is approximately $872,000. Given the age of the structure and conditions that the timber elements are exposed to, the anticipated lifespan and performance of the rehabilitated dock would be difficult to quantify. In comparison, a new concrete dock structure with an occupancy area equivalent to the middle third could increase the project cost to $3-4M, dependent on size and amenities.

2.0 BASIS OF DOCK DEMOLITION AND RIVERBANK STABILIZATION CONCEPT ESTIMATE

The Dock Demolition and Riverbank Stabilization Concept budget estimate has been prepared based on the concept to demolish and dispose of the entire existing dock structure and stabilize the river bank around the dock's former location.

The scope of work is summarized as follows:

- Demolish and dispose of the entire dock structure.
- Re-grade the riverbank around the former dock site and place geotextile and rip rap to protect the bank and minimize erosion.

The budget cost estimate Table 2 is attached in Appendix B. The total cost for materials, labour, contractor indirects, engineering and contingency is approximately $720,000.

3.0 CAPITAL COST ESTIMATE STATEMENT OF LIMITATIONS

The cost estimates included with this report have been prepared by KGS Group using its professional judgment and exercising due care consistent with the level of detail required for the stage of the project for which the estimate has been developed. These estimates represent KGS Group's opinion of the probable costs and are based on factors over which KGS Group has no control. These factors include, without limitation, site conditions, availability of qualified labour and materials, present workload of the Bidders at the time of tendering and overall market conditions. KGS Group does not assume any responsibility to the Client, in contract, tort or otherwise in connection with such estimates and shall not be liable to the Client, if such estimates prove to be inaccurate or incorrect.

We trust this satisfies your requirements. Should you have any quesitons or require further assistance please do not hesitate to contact the under signed.

Prepared By:

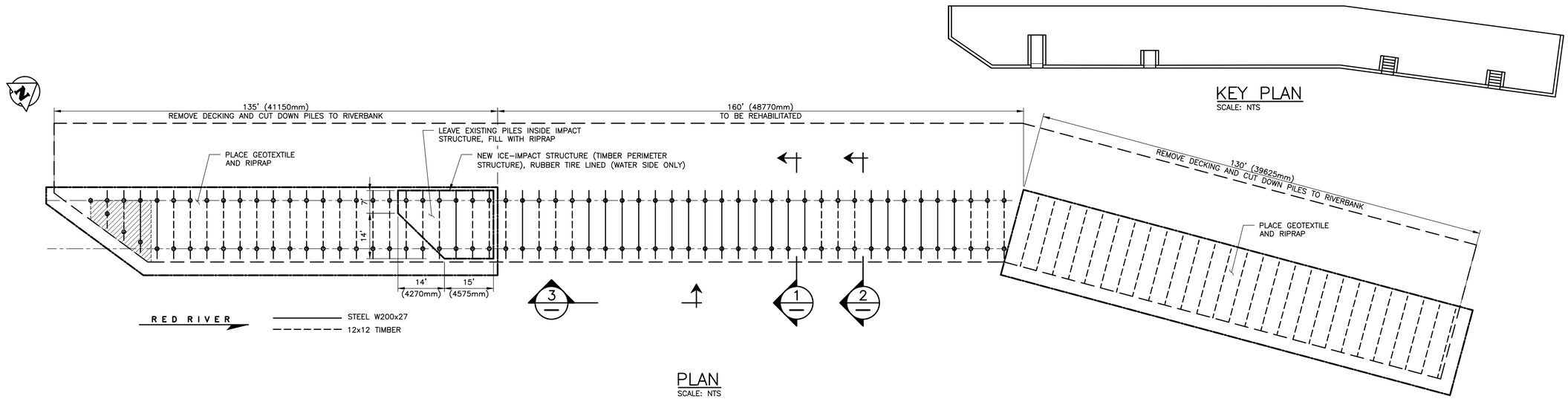
Nikolas Kyriakopoulos, P.Eng.
Structural Design Engineer

Approved By:

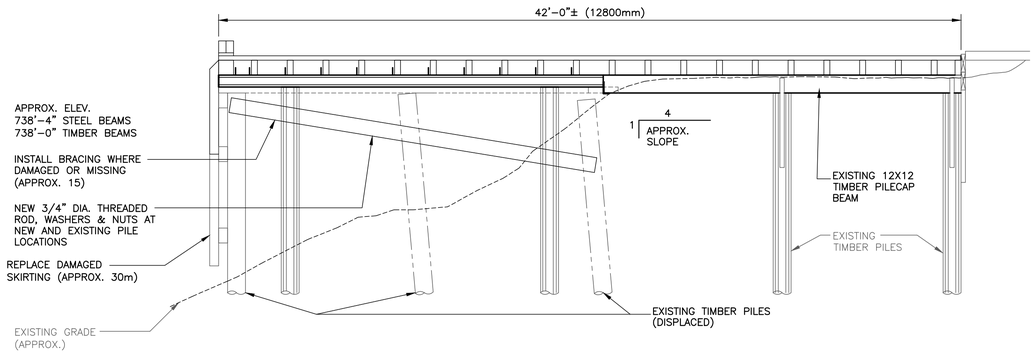
Rick Martin, P.Eng.
Senior Structural Engineer/
Project Manager

NK/mlb
Enclosure

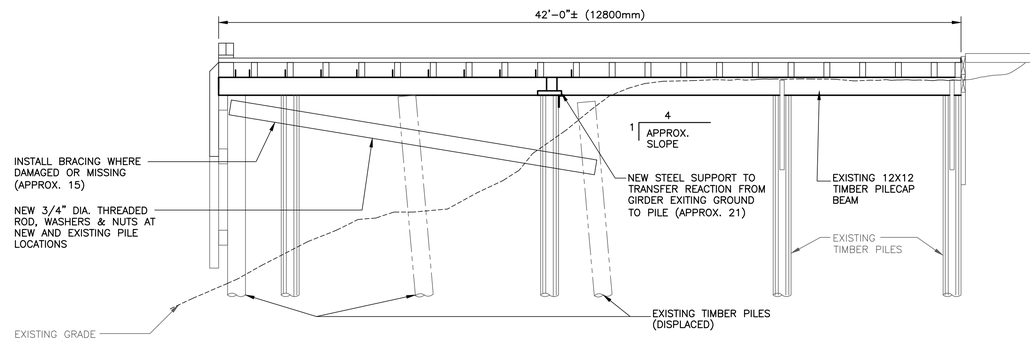
FIGURE



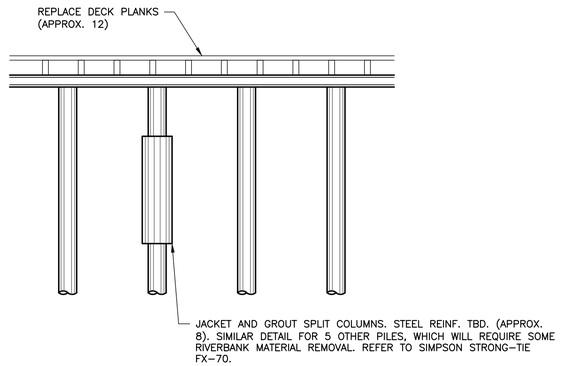
PLAN
SCALE: NTS



1 SECTION – TYPICAL STEEL BEAM LOCATION
SCALE: 1/4"=1'-0"



2 SECTION – TYPICAL TIMBER PILE CAP BEAM LOCATION
SCALE: 1/4"=1'-0"



3 ELEVATION – WITHOUT SKIRTING: SPLIT PILE REPAIR (APPROX. 13 LOCATIONS
SCALE: 1/4"=1'-0"

NO.	YY/MM/DD	DESCRIPTION	BY
0	15/06/19	ISSUED FOR INFORMATION	RM

REVISIONS / ISSUE

KGS GROUP CONSULTING ENGINEERS

THE CITY OF WINNIPEG
PLANNING AND PROPERTY DEVELOPMENT DEPT.

ALEXANDER DOCK

DOCK REHABILITATION AND DEMOLITION CONCEPT SKETCH

JUNE 2015 | FIGURE 2 | REV: 0

APPENDIX A

RETROFIT CONCEPT BUDGET COST ESTIMATE

Table 1 - Alexander Dock - Retrofit Concept
Budget Estimate
12-Jun-15

DIRECT COSTS - MATERIAL

Item	Quantity	Unit	Cost/Unit	Total	Comments
Demolition and Disposal of outer thirds of dock	1000	m^2	$63	$63,000	Assume half of demolished area for disposal
Remove planks for inspection and repair allowance	1	LS	$25,000	$25,000	
Replace timber planks	12	piece	$50	$1,000	
Replace half of waterside skirting	80	piece	$50	$4,000	
Repair split piles at midspan	8	piece	$2,000	$16,000	
Repair split piles barely showing out of bank (some bank material removal)	5	piece	$2,000	$10,000	
Replace / add missing diagonal timber bracing	15	piece	$200	$3,000	Steel fabricated piece
Build new ice-resisting structure (timber, rockfill, and rubber)	1	unit	$30,000	$30,000	Approx 13 m x 13 m x 5 m
Bank Protection	90	m	$1,000	$90,000	
Rectify girder bearing issues	21	piece	$200	$5,000	
			Subtotal 1	$247,000	

DIRECT COSTS - LABOUR

Labour:	Quantity	Hours / Quantity	Cost/Hour	Total	Comments
Demolition and Disposal of outer thirds of dock	1	80	$700	$56,000	Remove and cut piles to riverbank
Remove planks for inspection and repair allowance	1	LS	$25,000	$25,000	
Replace timber planks	12	1	$200	$3,000	
Replace half of waterside skirting	80	1	$200	$16,000	
Repair split piles at midspan	8	8	$200	$13,000	FRP jacket, reinforcing, and grout
Repair split piles barely showing out of bank	5	12	$200	$12,000	Minor excavation, FRP jacket, reinforcing, and grout
Replace / add missing diagonal timber bracing	15	3	$200	$9,000	
Build new ice-resisting structure	1	40	$200	$8,000	Install crib, rockfill, & rubber lining
Bank Protection	90	5	$200	$90,000	
Rectify girder bearing issues	21	2	$200	$9,000	Install steel piece
			Subtotal 2	$241,000	
			Subtotal 3	$488,000	Subtotal 1 + Subtotal 2

INDIRECT COSTS

Contractor Indirects	Quantity	Unit	Cost/Unit	Total	Comments
Supervision and Overhead (on Subtotal 3)	1	%	20%	$98,000	
Mob / De-Mob	1	LS	$20,000	$20,000	
			Subtotal 4	$118,000	
			Subtotal 5	$606,000	Subtotal 3 + Subtotal 4

Engineering	Quantity	Unit	Cost/Unit	Total	Comments
Final Design and Construction Inspection	1	%	15	$91,000	

Contingency	Quantity	Unit	Cost/Unit	Total	Comments
Project Contingency (on Subtotal 5 + Engineering)	1	%	25	$175,000	Risk of increased costs due to creosote timbers

TOTAL $872,000

APPENDIX B

DOCK DEMOLITION AND RIVERBANK STABILIZATION CONCEPT BUDGET COST ESTIMATE

Table 2 - Alexander Dock - Demolition and Bank Stabilization
Budget Estimate
12-Jun-15

DIRECT COSTS - MATERIAL

Item	Quantity	Unit	Cost/Unit	Total	Comments
Demolition and Disposal of entire dock	1600	m^2	$63	$100,000	Assumed approx. $500 per truck load of waste
Bank Protection	130	m	$1,000	$130,000	Rip Rap and Geotextile
			Subtotal 1	$230,000	

DIRECT COSTS - LABOUR

Labour:	Quantity	Hours / Quantity	Cost/Hour	Total	Comments
Demolition and Disposal of entire dock	1	120	$700	$84,000	Remove and cut piles to riverbank
Bank Protection	130	5	$200	$130,000	Rip Rap and Geotextile
			Subtotal 2	$214,000	
			Subtotal 3	$444,000	Subtotal 1 + Subtotal 2

INDIRECT COSTS

Contractor Indirects	Quantity	Unit	Cost/Unit	Total	Comments
Supervision and Overhead (on Subtotal 3)	1	%	20%	$89,000	
Mob / De-Mob	1	LS	$20,000	$20,000	
			Subtotal 4	$109,000	
			Subtotal 5	$553,000	Subtotal 3 + Subtotal 4

Engineering	Quantity	Unit	Cost/Unit	Total	Comments
Final Design and Construction Inspection	1	%	10	$56,000	

Contingency	Quantity	Unit	Cost/Unit	Total	Comments
Project Contingency (on Subtotal 5)	1	%	20	$111,000	Risk of increased costs due to creosote timbers

TOTAL $720,000