Public Works and Government Services Canada
Project Number: R.012641.001
Burlington Canal Vertical Lift Bridge Replacement
of Controls, Drives, and Overhead Cables

1. Please advise if the high voltage lines running parallel to the east side of the bridge can be re-routed to allow for the overhead cable replacement.

Response: High voltage lines cannot be rerouted.

2. If it is possible to shut the high voltage lines referred to in question #1 down please provide a contact person that we can discuss the project with.

Response:
These contacts will be provided to the Contractor after Contract Award.

3. If it is possible to shut the high voltage lines referred to in question #1 down please advise if there are any fees applicable to accomplish this.

Response
There will be cost associated with isolation and de-energization.
Planning lead time can be up to several months.

4. Regarding the qualification forms, are we correct in assuming that one person may be named for more than one position?

Response: Yes.

5. A full site plan showing property lines etc would be very helpful. Is it possible to get such a plan? This would be helpful in seeing to the public safety during the work periods.

Please refer to attachments 005, 006 and 007.. These are topographic drawings and provide accurate to the best of our knowledge. The contractor should verify its content on site.

6. Please confirm that a) Appendix 1 - Combined Price Form the total amount is the lump sum amount and the unit price amounts added together b) and that there are certain portions of the project that cannot be completed unless the associated unit prices are selected as part of the contract.

a) Yes

7. Can the PVC coated conduit be aluminum in lieu of hot dipped galvanized steel? Especially those rising up the towers?

Response: Aluminum conduit may not be used.

8. Please advise the local power utility for the south side of the bridge.

Response: The local utility is Horizon Utility

9. Please advise the local power utility for the north side of the bridge if different from the south side.

Response: The Bridge has a single electrical service located on the south west side.

10. Regarding "SC04" item 1. Please advise in clear terms what exactly is meant be this item.

The SC 04 Assessments and Damages for Late Completion is standard clausing, however, it has been revised to accommodate the project schedule. Please review this thoroughly.

11. Regarding "SC04" item 2. Please quantify as much as possible, how many people, what are their salaries, wages and travelling expenses. Also advise what the "other expenses and damages" may be and quantify them so they are calculable.

We are unable to quantify these items. The items are also part of the standard clausing associated with SC 04 Assessments and Damages for Late Completion.

12. Drawing E-60 shows a fiber synchlink cable running between CP-2 (2nd fl of control building) to CP-3 (machine room south tower). I can not find the conduit on the schedules E-86 thru E-89. Please advise how this cable is to be installed.

Response: The SynchLink fiber cable can be installed with the coaxial communication channels A & B in conduit C019.

13. Drawing E-88 gives details for C-077B and C-078B, these details do not seem to match up with the detail drawing E-85. Please advise which is correct.

Response: The detail of aerial cables C077B and C078B matches drawing E-88. The far left cable detail shown on E-85 contains the coaxial cables, fiber optic cables and ¾ inch interducts as indicated on the schedule of drawing E-88. The ¾ inch interducts will contain the PLC communication coaxial and fiber optic cables along with the two shielded twisted pair cables. The cables in the interduct are not shown as these are not supplied by the aerial cable manufacturer, but are furnished and installed later by the contractor's Bridge Control System Supplier. The aerial cable makeup shown on drawing E-88 is a guide. The Bridge Control System Integrator and Bridge Control System Supplier develop shop drawings and verify that the makeup of each aerial cable is compatible with the power and controls system shop drawing design

14. Drawing E-88 gives details for C-077B and C-078B, these details do not seem to match up with the detail drawing E-60. Please advise which is correct.

Response: Drawing E-60 is a diagrammatic architecture representation of the Programmable Logic Controller (PLC). This diagram is intended to show the PLC rack makeup of each control panel and how the communications coaxial and fiber optic cables integrate with each panel. The coaxial and fiber optic cables shall be included in the aerial cable makeup as shown on drawing E-88. The Bridge Control System Integrator and Bridge Control System Supplier develop shop drawings and verify that the exact makeup of each aerial cable is compatible with the power and controls system shop drawing design.

15. Is there a synchlink cable in the aerial cable (C-077B or C-078B)?

Response: Yes, in the ¾ inch interdicts of aerial cables C077B & C078B

16. We require clarification for what is described as Synchlink cable. Our suppliers need a clear manufacturers part number from Allen Bradley in order to establish the exact fiber optic cable required for this item.

Response: The Synchlink cable part number will be determined by the Bridge Control System Integrator and Control System Supplier as part of the shop drawing development.

17. The 3 new 600A breakers will not physically fit into switchboard #2, please advise a solution.

Response: The three existing 70 amp breakers can be removed. The existing two spare 800 amp breakers can be removed. The existing 30 amp breaker can be removed to make more space.

18. Are there any underground canals, cavities or the like that would prohibit being able to set up cranes on either side of both the north and south towers?

Response: The contractor should take into consideration the presence of outside utilities such as storm water, electrical, telecommunication etc., and the contractor shall verify the extent and location on site.

19. Cable detail E-85 for C-077B and C-078B does not seem to contain the 2 twisted shielded pairs called up on the schedule drawing E-88. Are these to be included in the aerial cable?

Response: The two shielded twisted pair cables in the interduct are not shown as these are not supplied by the aerial cable manufacturer, but are furnished and installed later by the Contractor.

20. Cable schedule E-88 indicates a "48 fiber network". Detail drawing E-85 shows only a single "24 x 62.5 um mutlimode fibers". Please advise what the intent is.

Response: The far left cable detail of drawing E-85 shows two (2) 24 x 62.5 um multimode fiber, 1 on top and 1 on bottom which is identified. The two multimode fibers equal the required 48.

21. Regarding drawing E-92 item #136 – “LP4”, please provide a panel schedule as nothing is shown on E-90 or E-91.

Response: LP-4 is an existing panel that was installed during the 2014 span lock rehabilitation. A new power feed from the motor control center of the local disconnect switch is all that is required. Refer to drawing E-78.

22. Please advise the turnaround time for submitted shop drawings.

Response: Refer to Spec Section 01 33 00; 1.2 SHOP DRAWINGS AND PRODUCT DATA; .4 Allow 30 working days for Departmental Representative's review of each submission.

23. The plans show a Rockwell Synchlink network connected the PLC CPUs and distributed IO. Synchlink is a proprietary network and set of hardware for motion systems. Given the speed of the bridge this is not a high speed system.

Response: So noted.

24. There are challenges to utilizing the Synchlink. The 1st is that it requires specific fiber. This fiber is not shown as part of the Aerial Cable assemblies on E-85. The use of the Sycnhlink requires special programming and configuration. Both of these issues will make the system more complicated, especially for maintenance in the future.

Response: Drawing E-88 shows the Synchlink network fiber cable in the ¾ inch interduct of C077B and C078B.

1. If there is a desire\need to keep the control and information flow from the drive separate from the IO network this can be cleanly done with a segregated Ethernet network. This allows for the use of non-proprietary equipment and fiber. The speed of the overall motion will be more than adequately handled in this fashion, both as to the drives and the position information coming into the control system via the networked IO.

Response: Motor synchronization between the master and slave drives is intended to occur thru the bridge control system's redundant control network. The Synchlink network is intended for real-time drive data and diagnostics and may be substituted with a segregated Ethernet network.