

Requirements for Design Presentation Meetings and Proposal Submissions for
CONSTRUCTION

Assignment of points

B1	Project Management	100
B2	Civil Design	75
B3	Systems Design	75
B4	Construction	100
B5	Maintenance and rehabilitation	75
B6	Operations	75
	Total Points	500

Key to Construction Design Presentation Meeting and Proposal Submissions

G.U.	General Understanding	Demonstrate a general understanding of the requirement
D.U.	Detailed Understanding	Demonstrate that Project Co has a detailed understanding of the requirement and how Project will apply or use the requirement to develop a specific approach
G.A.	General Approach	Presents a general or an example of an approach or solution to a requirement
D.A.	Detailed Approach	Presents a detailed approach to a requirement with specific solutions, products, concept drawings or specification
G.D.	General Demonstration	Presents drawings, specifications, and site specific information that demonstrates Project Co's specific solution to a requirement
S.D.	Specific Demonstration	Presents drawings, specifications, and site specific information to respond to a Specific Issue that demonstrates Project Co's specific solution to that issue
N.A.	Not Applicable	Requirement to be addressed later or in another proposal section
S.I.	Supplemental Information	Project Co to provide any supplemental information or updates to previous information, if required.
NOTE	Note on Submission	A specific note or instruction about a particular item

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B.4	Construction and Project Schedule		Primary Reference
B4.0	Holistic Approach To Construction and Project Schedule		Schedule 15-2 Article 18 & Schedule 15-2 Article 19
	1	Project Co's Holistic Approach To Construction and the Project Schedule	Schedule 15-2 Article 18.1, 18.2
	2	Construction Management Plan	Schedule Schedule 15-2 Articleicle 1, 1.2(o)(xii)
B4.1	Construction Organization and Key Personnel		Primary Reference
	1	Construction Organization for Phase 1 and Phase 2	RFQ, 9, Schedule 15-2 Article 18
	2	Key Construction Personnel	RFQ, 9, Schedule 15-2 Article 18
B4.2	Construction Criteria		Primary Reference
	1	General Requirements	Schedule 15-2 Article 18.1, 18.2
	2	Project Co Communications and Community Relations Representative/Firm	Schedule 15-2 Article 18.3
	3	Access and Protection of Property	Schedule 15-2 Article 18.4
	4	Construction Survey	Schedule 15-2 Article 18.5
	5	Pre- and Post-Condition Surveys	Schedule 15-2 Article 18.6
	6	Project Co Facilities	Schedule 15-2 Article 18.7
	7	Construction Sequence Considerations	Schedule 15-2 Article 18.8, 18.10
	8	Traffic Management Plan	Schedule 15-2 Article 18.9
	9	Railroad Traffic, Signaling and Crossing Warning System	Schedule 15-2 Article 18.10
	10	Air and Dust Monitoring Control	Schedule 15-2 Article 18.11
	11	Dewatering	Schedule 15-2 Article 18.12
	12	Stormwater Management and Sedimentation Control	Schedule 15-2 Article 18.13
	13	Historical and Scientific Specimens	Schedule 15-2 Article 18.14
	14	Noise and Vibration Monitoring and Control	Schedule 15-2 Article 18.15
	15	Waste Management	Schedule 15-2 Article 18.16
B4.3	Project Schedule		Primary Reference
	1	General Requirements	Schedule 15-2 Article 19.1
	2	Project Co's Baseline Schedule	Schedule 15-2 Article 19.2
	3	Level 2 Schedule - King Street	Schedule 15-2 Article 19.3
	4	Schedule Updates	Schedule 15-2 Article 19.4
	5	Levels of Detail for Project Schedules	Schedule 15-2 Article 19.5
	6	Project Schedule Terminology	Schedule 15-2 Article 19.6
	7	Schedule Formats, Submittals, Review and Approvals	Schedule 15-2 Article 19.7
	8	Schedule Updating Requirements	Schedule 15-2 Article 19.8
B4.4	Construction Safety		Primary Reference
	1	Zero Harm Policy and construction safety	Schedule 15-2 Article 18.1 and 15-3 Article 2
B4.5	Construction Quality and Workmanship		Primary Reference
	1	Approach to Construction Quality	Schedule 11, Article 18, and Schedule Schedule 15-2 Articleicle 1, 1.2(o)(xii)

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Holistic Approach to Construction and Project Schedule Part B4.0						The Proponent's holistic approach to the Construction Criteria and the Project Schedule, at an appropriate level of detail, as set out in or otherwise referenced in Schedule 15-2 Article 18 Construction Criteria, Schedule 15-2 Article 19 Project Schedule, the Project Agreement, and shall include the following:
Sub-item	Sub-item description	Primary reference	DPM #1	DPM #2	DPM #3	Holistic Submission Requirements for the Construction Criteria and the Project Schedule
1	Project Co's Holistic Approach To Construction and the Project Schedule	15-2 Art 18.1, 18.2	D.U. NOTE	D.A	S.I.	Project Co's detailed understanding of the Project requirements, its approach to the Work, experience with the Work, and approach to working as an integrated team. The holistic approach to completing the construction work shall be seamless and continuous, with the Work being completed in its entirety with the least disruption to the adjacent businesses, residents and traffic, while providing local and emergency access, and with the fewest post-construction activities following completion of major construction work. - Provide Project Co's approach to coordinating the project schedule with the civil and system design groups. (NOTE) Zero Harm to be addressed in B4.4
2	Construction Management Plan	Schedule 15-2 Article 1, 1.2(o):(x), (xi), & (xii)	D.U.	D.A	S.I.	Provide Project Co's general understanding and approach to complying with the requirements for the Construction Management Plan and the activities associated with managing the construction work. This summary shall reflect all critical construction activities and shall distinguish between self performed construction activities and construction work being performed by first and second tier subcontractors, at a minimum. Project Co shall include how it plans to coordinate, direct, monitor and track the Work of both self-performed work and subcontractor performed work. - Provide Project Co's approach to the Manufacturing and Procurement Plan and the Installation Plan.

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Construction Organization and Key Personnel to be addressed in Part B4.1						The Proponent shall describe the construction management operations organization and key personnel for Phase 1 and Phase 2, at an appropriate level of detail, as set out in or otherwise referenced in the RFQ, Schedule 9, Schedule 15 Article 18, the Project Agreement, and shall include the following:
Sub-item	Sub-item description	Primary reference	DPM #1	DPM #2	DPM #3	Submission Requirements for the Construction Organization and Key Personnel
1	Construction Organization for Phase 1 and Phase 2	NA	G.A.	D.A. G.D.	S.I.	<p>Provide Project Co's approach to its construction organization identifying all Phase 1 and Phase 2 Key Project Co construction Individuals and other key personnel responsible for construction operations and their relationship.</p> <ul style="list-style-type: none"> - Provide a description of the role and responsibilities, qualifications, and authority of the Project Co Key Individuals during each Phase, between each Phase, and other construction operations personnel. - Provide a description of the organizational interfaces between those responsible for construction operations and other disciplines such as design management, communications and community relations, survey and control, document control and configuration management, Project Co's Project management, quality assurance and quality control, Independent Third Party Inspections, LRV, and Systems testing, safety, environmental management, traffic management, waste management, System management and System Operations. - (G.D.) Provide a detailed organizational chart, for Phase 1 and Phase 2, indicating the key personnel, their role, firm association, and reporting lines within the construction organization and beyond the construction organization. Where applicable, the Phase 2 detailed organization chart shall identify all Key Construction Personnel for construction operations and their relationships. It shall contain an expanded description from that provided above of the role and responsibilities, qualifications, and limits of authority of each of the Key Individual and the hierarchy of other Project Co construction operations personnel. It shall provide a description of the roles, responsibilities and limit of authority of Project Co personnel, Key or otherwise, with first and second tier subcontractors. It shall describe the organizational interfaces between these Key Individual responsible for construction operations.
2	Key Construction Personnel	NA	G.A.	G.D.	S.D.	<p>For the DPM process provide a brief bio for each of Project Co's Key Construction Personnel, as cited in Schedule 9 of the RFP, and other significant construction positions including the following positions or equivalent positions with similar responsibilities. If a specific person has not been determined for a particular position, provide the minimum qualifications that Project Co will set for that position. Resumes or minimum qualifications shall be provide in the final submission:</p> <ul style="list-style-type: none"> - Construction Manager (Key Person) - Manager of Safety (Key Person) - General Construction Superintendent - Construction Superintendent (Buildings) - Construction Superintendent (Roads, Structures, & Utilities) - Construction Superintendent (Track) - Construction Superintendent (Systems) <p>For each key person or significant position, indicate if they are full time or part time positions, when they will be assuming their role on the project and when they will be redeployed.</p>

Construction Criteria items to be addressed in Part B4.2						The Proponent shall address the Construction Criteria requirements, at an appropriate level of detail, as set out in or otherwise referenced in Schedule 15-2 Article 18, the Project Agreement, and shall include the following:
Sub-item	Sub-item description	Primary reference	DPM #1	DPM #2	DPM #3	Submission Requirements for Construction Criteria
1	General Requirements	Schedule 15-2 Article 18.1, 18.2	N.A. Note	N.A. Note	N.A. Note	Note: Submitted under Project Co's B4.0.
2	Project Co Communications and Community Relations Representative/Firm	Schedule 15-2 Article 18.3	D.U.	D.A.	S.I.	Provide a description of Project Co's Communications and Community Relations Representative, team and firm. - Project Co shall provide its approach to the community outreach program and implementation plan including the protocols and procedures to be utilized to engage the BIA's, business leaders, community, and residents. It shall be consistent with Project Co's Project Schedule, TMP, TCP's and Work plans. - Provide resumes and project experience for Communications and Community Relations Representative.
3	Access and Protection of Property	Schedule 15-2 Article 18.4	G.A.	D.A.	S.I.	Provide Project Co's approach to minimizing the impacts of construction to businesses, residents and emergency response providers. - Provide Project Co's general approach to preparing and implementing the Protection of Adjacent Structures Plan. - Provide Project Co's general approach to maintaining pedestrian access including temporary fences, signs, and any special considerations. - Provide Project Co's general approach to maintaining vehicular access including local deliveries, emergency services, and garbage pick up. - Provide Project Co's detailed approach to maintaining Existing Utility Service.
4	Construction Survey	Schedule 15-2 Article 18.5	D.U.	D.A.	S.I.	Provide Project Co's approach for engaging a surveying firm, survey principal-in-charge, Project dedicated licensed surveying staff and field support personnel to be utilized on the Project for its duration. - Project Co shall provide all relevant resumes and firm qualifications. - Provide Project Co's approach to establish and protect all bench mark locations, control points and offsets to enable control of the Work and its quality. - Project Co shall describe the planned methods of controlling track alignment and grade including special track work, system work and station locations and their appurtenances. - Provide Project Co's approach to confirm proper wayside clearances are achieved.
5	Pre- and Post-Condition Surveys	Schedule 15-2 Article 18.6	G.U.	G.A.	S.I.	Provide Project Co's approach to pre- and post-construction surveys including the means and methods to establish existing conditions and monitor existing facilities. - Provide Project Co procedures, protocols and actions to be taken if movement is discovered during the course of the Project. - Provide the experience and staff resumes of lead firm responsible for establishing existing conditions.
6	Project Co Facilities	Schedule 15-2 Article 18.7	D.U.	D.A.	S.D.	Provide Project Co's approach to providing the support facilities for the construction work including temporary utility services, material storage and equipment yards, and lay down areas. - (SD) Show on Project Co's drawings the anticipated planned locations of all Project offices, field operation offices, work trailers, material storage and equipment yards, lay downs. - (SD) Show on Project Co's drawings the anticipated staging locations.
7	Construction Sequence Considerations	Schedule 15-2 Article 18.8 & 18.10	D.U.	D.A.	G.D.	Provide Project Co's detailed understanding and its approach to the construction phasing, sequencing and staging to accommodate the aspects of the Work. - Provide Project Co's understanding and its approach to reducing the durations of its planned intersections, lane and road closures. - Provide Project Co's understanding and responsibilities with respect to the intersecting projects listed in EXHIBIT 18.8-1 and Project Co's PIW. - Provide Project Co's understanding of its Project Schedule and the activities on the Critical Path in detail and what actions are required to occur. and be met to stay on track to prevent any delay to the milestone completion dates and revenue service. - (G.D.) Provide Project Co's specific approach and durations to all temporary railroad relocations for the three alignment locations and final railroad positioning while maintaining operations including at-grade crossings, signaling and warning protection systems. Project Co shall identify the planned outages required and slow order durations for each railroad alignment portion to complete the specific work for that alignment Section. - (G.D.) Provide Project Co's approach to construction sequencing at the Northfield/King Street intersection, OMSF, and Waterloo Spur, Uptown Waterloo Loop, King Street, King Street Grade Separation, Victoria Street, Downtown Kitchener Loop, Borden and Ottawa Loop, Huron Spur, Courtland Avenue and Mall work.
8	Traffic Management Plan	Schedule 15-2 Article 18.9	D.U.	D.A.	S.D.	Provide Project Co's understanding and approach to the requirements for the Traffic Management Plan and the Traffic Control Plans. - (G.D.) Provide a preliminary Traffic Control Plan for the King and Northfield intersection as per the construction sequence information provided in response to Article 18.8. - Provide Project Co's detailed understanding and approach to snow and ice removal.
9	Railroad Traffic, Signaling and Crossing Warning System	Schedule 15-2 Article 18.10	N.A.	N.A.	N.A.	Note: To be addressed B4.2, item 7 above.
10	Air and Dust Monitoring Control	Schedule 15-2 Article 18.11	D.U.	G.A.	S.I.	Provide Project Co's understanding and general approach preparing and implementing a comprehensive Air and Dust Monitoring Program including the protocols and procedures to be put in place to prevent fugitive dust from occurring.
11	Dewatering	Schedule 15-2 Article 18.12	G.U.	D.U.	D.A. G.D.	Provide Project Co's understanding of the requirements with respect to dewatering. - (G.D.) Provide a detailed approach and concept sketches depicting the protocols, procedures, and process to be followed should dewatering be required on the project.
12	Stormwater Management and Sedimentation Control	Schedule 15-2 Article 18.13	D.U.	D.A.	S.I.	Provide Project Co's approach to preparing and implementing the Stormwater Management and Sedimentation Control Plan with specific emphasis on Project Co's planned storage locations of all material types. - Provide approaches to meeting the requirements for water quality - Provide Project Co's approaches to control erosion materials from excavation activities including the mitigation measures to be put in place to prevent the tracking of mud and debris from entering the adjoining public areas. - Provide Project Co's approach for an incident management plan to address an unplanned event or spillage near a waterway.
13	Historical and Scientific Specimens	Schedule 15-2 Article 18.14	G.U.	G.A.	S.I.	Provide Project Co's approach to responding to the discovery of Historical and Scientific Specimens including a description of the procedures and protocols to be followed by all construction operations staff.
14	Noise and Vibration Monitoring and Control	Schedule 15-2 Article 18.15	G.U.	D.A.	S.I.	Provide Project Co's approach to preparing and implementing the Noise Control Plan and the Vibration Control Plan with specific emphasis on night time work near residential areas. - Provide whether Project Co will remain compliant with the noise by-law or if Project Co anticipates applying for a variance. If Project Co intends to seek a variance to the current noise by-law, describe in detail what changes in its approach to Work and beneficial outcomes would result to all Parties if a variance is granted.
15	Waste Management	Schedule 15-2 Article 18.16	D.U.	D.A.	S.D.	Provide Project Co's approach to preparing and implementing the Disposal Plan including the Waste Management Plan. - Provide Project Co's understanding and general approach to salvage requirements for traffic signal equipment and street lighting materials. - Provide Project Co's approach with respect to reuse of excavated materials. - Provide Project Co's approach with respect to disposal or salvage of railroad materials. - Provide Project Co's approach with respect to disposal of hazardous or contaminated materials. - Provide proposed haulers, receivers and disposal sites.

Project Schedule items to be addressed in Part B4.3						The Proponent shall address the Project Schedule requirements, at an appropriate level of detail, as set out in or otherwise referenced in Schedule 15-2 Article 18 and Article 19, the Project Agreement, and shall include the following:
Sub-item	Sub-item description	Primary reference	DPM #1	DPM #2	DPM #3	Submission Requirements for the Project Schedule
1	General Requirements	Schedule 15-2 Article 19.1	G.U.	D.U. G.D.	S.I.	Provide Project Co's understanding of the requirements for the Project Schedule - Provide a description of the software that Project Co will use for scheduling and cost tracking. - Provide Project Co's detailed understanding of the WBS and Cost Account codes provided in Article 19 Exhibit A. - (G.D.) Provide any proposed modifications to the WBS and Cost Account codes provided in Article 19 Exhibit A. - (G.D.) Provide any Non-schedule based cost tracking or progress tracking tools or software that Project Co intends to use to update the Cost Loaded CPM.
2	Project Co's Schedule	Schedule 15-2 Article 19.2	D.U.	D.A.	S.D.	Provide Project Co's understanding and approach to preparing the Level 2 cost loaded Baseline Project Schedule as per Article 19. - (S.D.) Provide a Level 1 summary of the Level 2 Project Schedule in hard copy and electronic format as per Article 19.2 and 19.5 (c)(iv) & (d) including the cost per month data. - (S.D.) Provide a Level 1 Summary of the Level 2 Project Schedule in hard copy and electronic format as per Article 19.2 and 19.5 (c)(vi) & (d) - "(S.D.) Provide the Cost of Work Form data in hard copy and electronic format as per Article 19 Exhibit A and Schedule 6. In DPM #3 demonstrate capability to produce the Cost of Work Form from the cost loaded schedule form and in final submission provide the completed cost loaded schedule and completed of entire Cost of Work Form generated from the and Cost Loaded Schedule." Note that the cost loaded Level 2 Schedule and the Cost of Work Form shall be submitted with the Financial Submission and not included in the Technical Submission. - (S.D.) Provide Level 2 schedule in electronic format Project Co shall identify its Critical Path with milestone dates for each Level 1 Summary Schedule including milestone for revenue service date. One version, without costs, shall be included in the Technical Submission. and One version with costs shall be submitted with the Financial Submission.
3	Level 2 Example Schedule - King Street	Schedule 15-2 Article 19.1(c)	D.U.	D.A.	S.D.	Provide Project Co's Level 2 project schedule for the location along King Street defined by Location Codes 1 - 04.L12, 04.S10, and 04.L13 including local testing of the systems installations but excluding system-wide testing and commissioning activities. Note that a separate construction schedule does not have to be prepared for the Technical Submission and the evaluation of this item will use the Level 2 Schedule for the entire project and the supplemental information requested in this subitem. Project Co shall identify all key procurement dates, construction start dates and their associated Work Packages/Design Unit start dates demonstrating Project Co approach to this section of the project. - (S.D.) Project Co shall provide supplemental drawings or equivalent presentation materials which clearly depict the sequence of construction and staging of the work for this section.
4	Schedule Updates	Schedule 15-2 Article 19.4	D.U.	D.A.	S.I.	Provide Project Co's understanding and approach for preparing and validating updates to the Project Schedule. - Provide Project Co's approach to schedule adherence and recovery strategies, to illustrate how it will maintain its Project Schedule and holistic and seamless approach to the Work.
5	Levels of Detail for Project Schedules	Schedule 15-2 Article 19.5	D.U.	D.A.	S.D.	Provide Project Co's understanding of each of the levels of the Project Schedule. - Provide Project Co's approach to increasing the level of detail in the Project Schedule to produce the Level 4 schedules.
6	Project Schedule Terminology	Schedule 15-2 Article 19.6	GU	S.I.	S.I.	Provide Project Co's understanding of the schedule terminology information.
7	Schedule Formats, Submittals, Review and Approvals	Schedule 15-2 Article 19.7, Appendix U	GU	S.I.	S.I.	Provide Project Co's understanding of the schedule formats, submittals, review and approvals.
8	Schedule Updating Requirements	Schedule 15-2 Article 19.8	GU	DU	S.I.	Provide Project Co's understanding of the schedule updating requirements.

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Construction Safety items to be addressed in Part B4.4						The Proponent shall address the Construction Safety requirements, at an appropriate level of detail, as set out in or otherwise referenced in Schedule 15-2 Article 18, Schedule 15-3 Article 3, 2.1(b), Schedule 15-3 Article 3, 2.2(j), the Project Agreement, and shall include the following:
Sub-item	Sub-item description	Primary reference	DPM #1	DPM #2	DPM #3	Submission Requirements for Construction Safety
1	Zero Harm Policy and construction safety	Schedule 15-2 Article 18.1 Schedule 15-3 Article 2	D.U.	D.A. G.D.	S.I.	<p>Provide Project Co's detailed approach to construction safety and a "Zero Harm Policy". The approach shall describe the measures the construction operation team members will follow, including:</p> <ul style="list-style-type: none"> - Provide Project Co's approach to providing the requisite authority to the Manager of Safety and Project specific safety personnel, the safety auditing team and staff qualifications and certifications. - Provide Project Co's approach to preparing the processes Project Co will undertake and implement to provide a safe work site and environment for all on and offsite personnel including visitors and the public. - Provide Project Co's "Mission Statement" from the construction operations team emphasizing Project Co's commitment to the principles of construction safety and well being of all personnel involved on the Project. - Provide a description of Project Co's initial and ongoing safety training plans for the construction operation team including all subcontractor personnel. Project Co shall explain how the training plan will address all aspects of the Project to be encountered during the Work and consider the required Site specific hazard training. - Provide Project Co approach to address active freight railroad operations during construction and testing. - (G.D.) Provide Project Co's construction operations team overall safety record over the last five (5) years including a list of orders, citations, or penalties received from either the Ontario Ministry of Labour or the United States of America Department of Labor Occupational Health and Safety Administration over the past five (5) years. Project Co shall provide all ongoing reviews and current status of any open case. Project Co shall provide the Recordable Incident Rates, DART Rate, Lost Time Case Rate, Severity Rate, Near Miss Incidents and duration of No Loss Time over that past five (5) years.

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Construction Quality and Workmanship items to be addressed as part of B4.5						The Proponent shall describe its management approach to the performance of the Work as it relates to quality and workmanship during construction operations, at an appropriate level of detail, as set out in or otherwise referenced in Schedule 11, Schedule 15-2 Article 1, 1.2(o)(xii), Schedule 15-2 Article 18, the Project Agreement, and shall include the following:
Sub-item	Sub-item description	Primary reference	DPM #1	DPM #2	DPM #3	Submission Requirements for Construction Quality and Workmanship
1	Approach to Construction Quality	Schedule 11, Schedule 15-2 Article 18, and Schedule 15-2 Article 1, 1.2(o)(xii)	D.U.	G.A.	S.I.	<p>Provide Project Co's understanding and approach to achieving quality during the construction, manufacturing, and installation phase of the work.</p> <ul style="list-style-type: none"> - Provide the approach of the Construction Management personnel, including first and second tier subcontractors, at a minimum, during any construction operation with respect to supporting the quality initiatives. - Provide Project Co's approach to ensuring that the protocols and procedures needed to ensure quality during the construction, manufacturing, and installation phase of the work. - Provide Project Co's approach to ensure as-built conditions are reconveyed to Project Co's designers during fast track design situations. - Provide Project Co's approach to ensure QA/QC tests are performed in accordance with the approved plans and specifications and CQMP while supporting the MQAQC and that of on and offsite QA/QC staff, Independent Third Party Testing agency personnel and Quality Audits. - Provide Project Co's approach to the "Next Day Activity Meeting and Agenda Briefing" that will be held before each day's work. It shall, at a minimum, include a description of the required attendees, a brief safety discussion of the days planned work and hazards including any planned audits, work activity locations on and offsite and required tests including quality audits and witnessing, a brief discussion of outstanding Non-Conformance resolutions and Corrective Actions planned, planned hours of operation for the day and evening and coming weekend work.