SCHEDULE 15-1

TECHNICAL TERMS AND REFERENCE DOCUMENTS

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PART 1
TECHNICAL TERMS AND REFERENCE DOCUMENTS

ARTICLE 1 DEFINITIONS

100-Year Storm means a storm event with a return period of one hundred (100) years (1-percent annual exceedance probability), as described in the City of Ottawa Sewer Design Guidelines.

100-Year Plus 20% Storm means a 100-Year Storm calculated on the basis of a 20% increase of the City's Intensity Duration Frequency (IDF) curves.

Access Point means radio transceivers connected to the CBTC network that allow network communications between trains and wayside CBTC equipment.

Accident means an unforeseen event or occurrence which causes death, injury or property damage. Any event involving the revenue service operation of a rail fixed guideway system if as a result:

- An individual dies;
- An individual suffers bodily injury and immediately receives medical treatment away from the scene of the accident; or
- A collision, derailment, or fire causes substantial property damage.

Alert Level has the meaning given in Schedule 15-2, Part 2, Article 7 – Geotechnical Design Criteria and Requirements.

Ancillary Facilities means those facilities, buildings, or structures adjacent to or directly linked to Stations. They can also be standalone facilities or structures located within or adjacent to the alignment. They include the following elements:

- Pedestrian overpass or underpass structures;
- Passenger shelter structures;
- Structures containing mechanical, electrical, communications or other service equipment;
- TPSS Buildings;
- Signal equipment enclosures;
- Parking areas;
- Entrances;
- PPUDO;
- Public washrooms;

- Bus terminals;
- Bus layby areas; and
- Bus Operations support building (including bus supervisor office).

Applicable Codes has the meaning ascribed to "Applicable Law" in Schedule 1 – Definitions and Interpretation.

Art Consultant means the person or persons responsible for the administration of the Art Program on behalf of the City.

Art Program includes both temporary and permanent artwork projects that may be linked, permanently affixed to and / or integrated into the architectural and / or landscape Design along the streets, Guideway, park land, or on the exterior or within the interior of the Stations.

Authorities Having Jurisdiction has the meaning given in NFPA 130.

Automatic Train Control means a vital system for controlling train movement.

Automatic Train Operation means a non-vital overlay for controlling train speed and operation within the limits allowed by the ATP system. Automatic Train Operation provides automatic station stopping, door opening and closing and automatic operation between stations.

Automatic Train Operation Mode means an LRV Train operation mode in which CBTC Automatic Train Operation capabilities are enabled on top of ATP.

Automatic Train Protection means a vital system for enforcing safe train movement and speeds.

Automatic Train Protection Only Mode means a mode of LRV train operation in which only CBTC ATP functions are enabled.

Automatic Train Supervision means a non-vital system providing supervisory commands to adjust train speeds and station dwell times and to request interlocking systems to set up and cancel routes.

Availability means the probability that a system or system element will be operational when required. Mathematically, the ratio of the mean time between failure and the sum of the mean time between failure and the mean down time.

Backup Control Centre means an emergency control center facility providing a remote location complete with the basic functioning systems to dispatch, monitor, and control operations of the OLRT in case the TOCC at 875 Belfast is unavailable.

Baseline Storm Sewer Outfall means the outfall of the 3.0m x 1.8m storm sewer to Pinecrest Creek, located immediately north of the property at **[REDACTED]**.

Basic Day Demand is as defined in Schedule 15-2, Part 2, Article 8 – Utility Infrastructure Design Criteria.

Blast Assessment Report is as defined in Schedule 15-2, Part 2, Article 7 – Geotechnical Design Criteria and Requirements.

Bridge means a structure that provides a Roadway, railway or walkway for the passage of vehicles, pedestrians or cyclists (or other similar forms of transportation) across an obstruction, gap or facility that is greater than 3 metres in span.

Central Instrument House means a wayside control room housing all the controls for an interlocking or group of interlockings.

Certifiable Elements Lists has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Certification Program Representative has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Checked Redundancy Principle has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Civil Works means the installation or relocation of duct banks, manholes, hand wells, vaults, transformer bases, and pads, or underground support structures in speciality structures.

Closed Circuit Television means a video transmission system monitoring a location, recording images and presenting the images to a central location.

Commissioning means the inspection of all components to verify that they are designed, installed, tested, operated and maintained according to the operational requirements of the owner or final client, including Utility Companies.

Communication and Stakeholder Engagement Plan has the meaning given in Schedule 18 – Communications and Stakeholder Engagement Obligations.

Communication Based Train Control means a system of tracking train movement and safely controlling that movement based upon communications between trains and wayside controllers.

Compensating Construction has the meaning given to that term in the OBC.

Complete Streets means the incorporation of physical elements that allow a street to offer safety, comfort and mobility for all users of the street regardless of their age, ability, or mode of transportation.

Concourse Level means the intermediate level of a Station that connects Platform Level and entry level.

Confederation Line means all of the Existing Confederation Line, the Confederation Line East Extension and the Confederation Line West Extension.

Confederation Line Extension means both the Confederation Line East Extension and the Confederation Line West Extension.

Confederation Line Regulations means the bylaws, guidelines, policies, regulations, rules, standards, safety management system requirements and Security management system requirements, or similar instruments or requirements, adopted by the City from time to time in relation to the regulation of the design, construction, operation, maintenance, Safety and Security of, as well as the rates and conditions of service of, the Confederation Line, including the System Infrastructure.

Connaught Tunnel has the meaning given in Schedule 15-2, Part 1 – General Requirements.

Connecting Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Construction Safety Management Plan has the meaning given in Schedule 15-2, Part 1, Article 10 – Construction Safety Management.

Controller means a City employee that will be assigned to the TOCC and will be responsible for all dispatching functions for the system.

Corrosion Control and Stray Current Mitigation Coordination Management Plan has the meaning given in Schedule 15-2, Part 3, Article 12 – Corrosion Control.

Counting Stations and Loops is as defined in Schedule 15-2, Part 9 – Highway Works.

Crime Prevention through Environmental Design means the design, maintenance, and use of the built environment in order to reduce both the incidence and fear of crime. It involves the application of these three core principles: natural surveillance, natural access control, and territorial reinforcement.

Cross-Acceptance means the status achieved by a product that has been accepted by one authority to the relevant Standards and is acceptable to other authorities without the necessity for further assessment.

Crossride means a crosswalk for bikes that allow cyclists to remain on their bikes and safely cross through intersections, identified with thick painted blocks on either side, sometimes enhanced with arrowed bicycle stencils and/or green paint.

Culvert means a structure that forms an opening through soil to allow the passage of surface water, wildlife or pedestrians under a Roadway, railway or roadside entrance.

Cut-and-Cover means a construction method for Underground Structures where the structure is constructed in an excavated trench or pit from the bottom up or the top down and covered with backfill. Underground Structures to be constructed by Cut-and-Cover methods are Tunnels, Underground Station Boxes, portals, shafts and Tunnel pump stations.

Daily Lane Closure Report has the meaning given in Schedule 15-2, Part 7, Appendix D – Daily Lane Closure Report.

Daily Traffic Management Site Record has the meaning given in Schedule 15-2, Part 7, Appendix B – Daily Traffic Management Site Record.

Daily Traffic Monitoring Report has the meaning given in Schedule 15-2, Part 7, Appendix C – Daily Traffic Monitoring Report.

Data Management Protocol (DMP) has the meaning given in Schedule 15-2, Part 2, Article 7, Geotechnical Design Criteria and Requirements.

Deadhead Bus means a bus carrying no passengers and generating no revenue, usually travelling to/from the garage or to/from the start of a bus route.

Demolition Plan has the meaning given in Schedule 15-2, Part 1, Article 14 – Demolition, Removals and Disposal.

Design Criteria means established parameters used during design.

Design Life means the period of time specified by the Owner during which an asset is intended to remain in service.

Design Safety means safety achieved by the integration of safety features into the system design characteristics to prevent or minimize the probability of operation in an unsafe manner.

Designated Waiting Area means TSA used in Schedule 15-2, Part 4, Appendix B and C.

Developer's Guide has the meaning given in Schedule 15-2, Part 2, Article 9 – Protection of Existing Adjacent Structures.

Drainage means the interception and removal of surface water or groundwater by constructed or natural means.

Dwell Time means the amount of time a Train resides at a Station measured from the time the Train wheels come to a stop to the time the Train wheels start moving.

Earth Borrow means a loose soil, sand, silt, or clay stratum that is capable of sustaining the growth of proposed trees and shrubs.

East Portal has the meaning given in Schedule 15-2, Part 1, Article 2 – Physical Layout.

Electromagnetic Interference/Compatibility Control Plan has the meaning given in Schedule 15-2, Part 3 – Systems.

Elements of Continuity has the meaning given in Schedule 15-2, Part 4, Article 2 – Architectural Design Criteria.

Elements of Variability has the meaning given in Schedule 15-2, Part 4, Article 2 – Architectural Design Criteria.

Elevated Guideway means a Guideway elevated above grade by means of a Structure.

Emergency Guard Rail (Steel Inner) is intended to contain and guard a derailed truck, keeping the Vehicle upright and on the Track structure.

Emergency Response Plan has the meaning given in Schedule 15-2, Part 1, Article 8 – Security and Emergency Management.

Emergency Services means Emergency Services Provider as defined in Schedule 1 – Definitions and Interpretation.

Emergency Stop Buttons has the meaning given in Schedule 15-2, Part 3, Article 10 – Signalling and Train Control System.

Emergency Stop Devices has the meaning given in Schedule 15-2, Part 3, Article 10 – Signalling and Train Control System.

Emergency Stop Key Switches has the meaning given in Schedule 15-2, Part 3, Article 10 – Signalling and Train Control System.

Emergency Traffic Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Engineering Safety and Assurance Case means the final safety case, providing documented safety evidence demonstrating that the product (i.e. a System, sub-system or equipment) complies with the specified safety requirements and demonstrating that the System is safe for revenue operation.

Environmental Management Plan has the meaning given in Schedule 17 – Environmental Obligations.

Erosion and Sediment Control Plan means the approach, techniques and measures used to prevent erosion during the construction process, to deal with suspended sediment at the source and minimize sediment transport from leaving the construction site, as per Schedule 15-2, Part 2 – Civil and Guideway, and Schedule 17 – Environmental Obligations.

Excavated and Imported Materials Management Plan has the meaning given in Schedule 17 – Environmental Obligations.

Existing Adjacent Structures means existing property, building, Bridge, retaining structure, Foundation, existing and under-construction Structure, railway, road surface, Drainage Culvert, Tunnel, excavations, Utility, temporary construction Utility, and man-made features of interest or other Structures located within the Project ZOI.

Existing Confederation Line means that portion of the Confederation Line located between and including Blair Station in the east and Tunney's Pasture Station in the west, including all associated Trackwork, which was the subject of a previous procurement by the City.

Existing Tree Protection/Monitoring Plan has the meaning given in Schedule 15-2, Part 6 – Urban Design, Landscape Architecture and Connectivity Requirements.

Facilities means the above-grade structures, at-grade structures, below-grade structures, mechanical elements, electrical elements, interior areas, and exterior areas described in Schedule 15-2, Part 4 – Stations, Part 5 – LMSF, and Part 6 – Urban Design, Landscape Architecture and Connectivity, including but not limited to: Stations, LMSF and Associated Facilities.

Failure means the event, or inoperable state, in which any item or part of an item does not, or would not perform as previously specified, regardless of the operational state of the subsystem.

Failure Review Board has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Fail Safe means a characteristic of a system and its elements, the object of which is to ensure that any fault or malfunction will not result in an unsafe condition.

Fail Safe Principle has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Fare Paid Zone means the area within transit stations in which Passengers shall have paid a fare and allows customers to transfer between modes of transit without passing through fare control barriers, revalidating fare payment on either the bus or when entering a train station, or passing in and out of a proof of payment zone.

Fault Tree Analysis means a systematic analysis of single and multiple events used for identifying the probability of occurrence of an undesired event using AND gates, OR gates, and Boolean algebra. FTA's produce graphic representations of failures and events which may result in a pre-selected top-level event to occur.

Federal Lands mean all lands owned and managed by all federal government departments.

Federally Mandated Stations means those stations within the project that are subject to Federal Land Use Agreement letters.

Fire Life Safety means those aspects of safety specifically related to the prevention, detection and response to fire, smoke and toxicity hazards.

Fire Life Safety and Security Committee means the committee that acts as a review board of the activities, analyses, and reports generated on fire/life safety issues.

Fire Life Safety System means: (a) emergency exit buildings, emergency pathways, emergency walkways, Tunnel cross passages, emergency stairs, emergency doors and emergency way-finding signage any other elements provided for the purposes of emergency egress; and (b) fire alarms, fire sprinkler systems, fire extinguishers, fire standpipe, emergency ventilation systems, fire fighter telephones, emergency lighting, emergency and standby power sources, and emergency response vehicles; and (c) any other assets provided for the purposes of fire/life safety and evacuation.

First Article Inspection means a design verification and design history file and a formal method of providing a reported measurement for a given manufacturing process.

Fitups means infrastructure required to operate a bus stop or a bus station, such as, but not limited to, shelters, benches, signage, garbage cans, lighting, PIDS, and power and communications necessary to support the elements.

Flooding means overflowing or ponding of water at the surface in areas that are not intended to be submerged.

Flyover Structure means the Guideway Structure to be constructed for the purposes of carrying the Guideway from the north side of OR174 to the median of OR174.

Foundation means a structure that transfers loads to the earth.

Generic Product means a product independent of applications, fulfilling predefined boundary conditions, interfaces and functionality.

Generic Application means a generic application can be re-used for a class/type of application with common functions.

Geotechnical Instrumentation and Monitoring Plan has the meaning given in Schedule 15-2 Part 2, Article 7 – Geotechnical Design Criteria and Requirements.

Greenfield has the meaning given in the City of Ottawa Sewer Design Guidelines.

Ground Movement means the movement of ground directly or indirectly caused by construction activities. Ground Movement may manifest itself in such ways as surface settlement, ground settlement, the movement of retained excavation systems, the movement of slopes, and the ground vibrations arising from construction activities.

Grounding and Bonding Plan has the meaning given in Schedule 15-2, Part 3, Article 1 – Introduction.

Guideway means the part of a passenger LRT system on which the Track is located, with a boundary marked by right-of-way fences, curbs and parapets or in a Tunnel; Guideway shall include the areas of intersections with City roads formed if the Guideway's curb-line had been continued over the City road.

Haul Route Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Hazard means any real or potential condition that can cause injury, death, or damage to or loss of equipment or property.

Hazard Analysis means any analysis performed to identify hazardous conditions for the purpose of their elimination or control.

Hazard Log has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Hazard Resolution means the analysis and subsequent actions taken to reduce, to the lowest level practical, the risk associated with an identified Hazard.

HWY 417 E-N/S Pinecrest Rd Ramp Tunnel has the meaning given in Schedule 15-2, Part 1 – General Requirements.

Incident Control Panel means a restricted access panel which permits the Emergency Services to gain fire telephone contact with the TOCC and other fire telephones. The ICP shall contain the fire alarm annunciation panel, required safety documentation and maps, and a PA microphone. Additionally, only at Underground Stations, the ICP shall include a ventilation control panel, telephone dial pad access to the Station's nominated area of refuge, and video feed monitoring.

Infill has the meaning given in the City of Ottawa Sewer Design Guidelines.

Initial Works means the Works undertaken by DB Co in the first 120 days following Commercial Close.

Interface Hazard Analysis means a process of identifying hazards and analysing their causes at System or equipment boundaries, and the derivation of requirements to limit the likelihood and consequences of hazards to a tolerable level.

Intermittent Period means a period time that occurs at irregular intervals. (Ex: changing traffic patterns for peak hours versus non-peak hours, day versus night, weekday versus weekend).

Intrusion Access Control System has the meaning given in Schedule 15-2, Part 3 – Systems.

Landscape Plan has the meaning given in Schedule 15-2, Part 6 – Urban Design, Landscape Architecture and Connectivity.

Lane Closure Measurement and Verification Plan has the meaning given in Schedule 15-2, Traffic and Transit Management and Construction Access.

Lane Shift means a transfer of traffic along lane(s) of the same route and which, using existing Roadway lanes or surfaces, guides traffic around the work zone.

Lead Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Legal Survey means a survey that is prepared by an Ontario Land Surveyor for the Registration or Deposit in the Provincial Land Registry Office to facilitate a conveyance by providing a Registerable description, effect an expropriation or to confirm the location of a property boundary.

Level of Service has the meaning as described in the City of Ottawa's Transportation Impact Assessment Guidelines, when used in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Light Rail Vehicles means a form of urban rail public transportation that generally has a lower capacity and lower speed than heavy rail and metro systems, but higher capacity and higher speed than traditional street-running tram systems. The term is typically used to refer to rail systems with rapid transit-style features that usually use electric rail cars operating mostly in private rights-of-way. LRVs are typically powered by a pantograph collecting power from an overhead catenary.

Long Term Lane Closure means a closure of any vehicular lane, including but not limited to traffic, transit and cycling lanes, for a period of longer than two weeks.

Low Impact Development means a SWM strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution by managing runoff as close to its source as possible.

Mainline Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Mainline Storage Track or Storage Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Maintainability means the quality of the combined features of equipment design and installation that facilitates the accomplishment of inspection, test, checkout, servicing, repair, and overhaul with a minimum of time, skill, and resources in the planned maintenance environments.

Maintainability Program Plan has the meaning given in Schedule 15-2, Part 1, Article 7 - System Safety Certification.

Maintenance Vehicles means vehicles that are capable of being rail-mounted and used by staff in the performance of maintenance duties on System Infrastructure.

Major Municipal Roads means a City freeway, Arterial Roadway or Major Collector Road as defined in the latest City of Ottawa Transportation Master Plan.

Manual Release Mode means a latched mode of train operation for moving trains at restricted speeds when communications with the wayside CBTC systems has failed.

Maximum Daily Demands is as defined in Schedule 15-2, Part 2, Article 8 – Utility Infrastructure Design Criteria.

Mechanical and Electrical Design Philosophy means the overall concept describing how the mechanical and electrical subsystems that make up the Tunnel Ventilation System should work and thus driving the TVS design.

Minor Municipal Roads means a Collector Road or Local Road as defined in the latest City of Ottawa Transportation Master Plan.

Moodie Yard Control Centre means a facility within the LMSF established to monitor and control yard and shop operations of Train movements, video observation of maintenance functions, intrusion control, IAC Security, and BMS system monitoring from one location.

Movement Authority means the limit of train movement allowed to a Train by the Zone Controller.

Multi-Use Path means a formalized travel surface intended for a wide variety of non-motorized travelers that is physically separated from motorized vehicular traffic, with the exception of bridges, sidewalks and walkways.

Natural Channel Design means an approach to channel design and management using naturally occurring stream processes such that new or reconstructed stream channels and their associated floodplain riparian systems are designed to be functional, stable, healthy, productive, and sustainable, in a way that restores or replicates natural channel system form and functions.

Night Period means the period of time between 22:00 and 5:00 hrs, when used in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access, and Part C of Schedule 15-2, Part 9 – Highway Works.

Noise and Vibration Control Plan has the meaning given in Schedule 17 – Environmental Obligations.

Non-Revenue Vehicles means vehicles that are used by staff in the performance of maintenance and operational duties on the OLRT and its related facilities.

Non-Station Entrance refers to any openings of adjacent buildings where air/smoke may penetrate.

OC Transpo Trainers means City employee(s) or contractor who has been trained and certified to instruct OC Transpo employees in certain classifications who are assigned to or have any duties and responsibilities on the system. These classifications include but are not limited to Operator, Station attendant, customer service staff, Controllers, supervisors and superintendents, and security personnel.

Off Peak Period means any period of time which is not a Peak Period or Night Period, when used in Schedule 15-2, Part 7 – Traffic Transit Management and Construction Access, and Part C of Schedule 15-2, Part 9 – Highway Works.

Onboard Computer means a Communications Based Train Control computer located on a rail vehicle that calculates train location and enforces Movement Authorities and Speed Restrictions based on communication with wayside CBTC systems and its own Track Database.

Operations and Maintenance Conformance Checklist has the meaning given in Schedule 15-2, Part 1, Article 7 – Safety Certification.

Operator means the driver of a Revenue Vehicle, which is a City employee who has been trained and certified to operate on the Confederation Line.

Operator Training means a program of Operator training a City employee must attend prior to becoming a certified Operator.

O-Train means the rail system operated by OC Transpo, including both the Confederation Line and the Trillium Line.

Ottawa Traffic Operations Centre means the MTO's traffic management centre (TMC) for coordinated highway management systems. It is at this TMC that the data from the highway system is collected and processed, fused with other operational and control data, synthesized to produce "information", and distributed to stakeholders such as the media, other agencies, and the traveling public.

Over-Dimensional Vehicle is as defined under the City of Ottawa By-law No. 2003-497.

Overhead means a structure where a roadway goes over the railway when used in Schedule 15-2, Part 2, Article 4 – Structural Design Criteria and Requirements.

Overhead Contact System sometimes referred to as **Overhead Catenary System** means a system that distributes DC power from the Traction Power System to the Vehicle via a pantograph on the Vehicle. The OCS consists of a conductive messenger wire suspending a contact wire between poles and/or attachments along the OLRT to provide the DC propulsion power requirements of the Vehicle to the train consist maintaining continuous contact between the pantograph and the contact wire.

Overpass means a structure where the major road goes over a lower category road when used in Schedule 15-2, Part 2, Article 4 – Structural Design Criteria and Requirements.

Park and Ride means parking lots located adjacent to Transitway stations or important transit nodes that are readily accessible by the public from the nearest major roadway.

Parkway Tunnel has the meaning given in Schedule 15-2, Part 1 – General Requirements.

Passengers means passengers and users of the Confederation Line and System Infrastructure.

Passenger Pick-Up and Drop-Off means a designated pick-up and drop-off area for Passengers from private vehicles adjacent to a Station.

Pavement means all structural elements or layers including granular, above the subgrade of a road and shoulders, such as a road, shoulder, sidewalk, plaza or other artificially-covered thoroughfare.

Peak Period means the AM and PM periods each weekday as determined by the City, which encompasses 6:30 to 9:30 hrs and 15:00 to 18:30 hrs, when used in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access, and Part C of Schedule 15-2, Part 9 – Highway Works.

Pedestrian Access Plan means a plan that outlines and shows the pedestrian flow, directions, route, volumes to and from and around all facilities, Guideway and Stations, as per Schedule 15-2, Part 1 – General, Part 6 – Urban Design, Landscape Architecture and Connectivity, and Part 7 – Traffic and Transit Management and Construction Access.

Pedestrian Control Plan has the meaning given in Schedule 15-2, Part 6 – Urban Design, Landscape Architecture and Connectivity, and Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Pedestrian Walkway means any facility that is intended for use by pedestrians, including pedestrian pathways, sidewalks and MUPs.

Permit to Take Water required for any taking of more than a total of 50,000 litres of water in a day under the *Ontario Water Resources Act*.

Permitted Periods for Closures means the periods during which DB Co may implement closures, full closures, detour routes, Lane Shifts and diversions in respect of the various Roadways, as set forth in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Physical Constraints means existing Structures (Bridges, Tunnels, buildings, retaining walls), existing Stations, environmentally protected elements (water bodies, SAR, archeological sites, etc) and the Lands. Physical Constraints shall be at the sole discretion of the City.

Platform means that portion of the Station where Trains and or buses stop to load and unload Passengers. There are two basic types of O-Train Platform configuration: centre loading which has the Platform located between each set of Tracks, and side loading, which has the Platforms located on the outside of each set of Tracks. Both Platform types are in use on the system.

Platform Level means the level of a Station with Platform(s) used by Passengers to board and alight from Trains.

Pocket Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Pre-delivery Test has the meaning given in Schedule 14 – Commissioning.

Preventive Maintenance Plan means the plan establishing the preventive maintenance which is required for the system, as per Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Private Approach Permit has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Project means the Confederation Line Extension Project, which consists of the Design and Construction Works for the extension to the Existing Confederation Line system.

Property Access and Business Continuity Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Protected Intersection has the meaning given in Schedule 15-2, Part 2, Article 6, Clause 6.19(h)(ix) and Appendix F of Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Provincial Highways means Highway 416 and Highway 417.

Public Art Plan has the meaning given in Schedule 15-2, Part 1, Article 12 – Artwork.

RAM Prediction Report means a report outlining the System's RAM targets, calculation methodologies and the supporting analysis demonstrating the ability of the proposed solution to meet the System's RAM targets based on prescribed Standards.

Reference Concept means the plans, drawings, reports and other information prepared during the preliminary design for the Project and which reside in the Project Data Room.

Reference Documents means the references, codes, standards, specifications, guidelines, policies, reports, publications, manuals, bulletins and other such documents listed throughout the Output Specification.

Reference Plan is defined in Ontario Regulation 43/96 Part I as a plan deposited under section 150 of the Land Titles Act or section 80 or 81 of the Registry Act and includes any other plan deposited as a reference plan. Part IV describes the requirements, contents, and procedures to be followed for a Reference Plan.

Relevant Authority means any applicable Governmental Authority.

Reliability means the probability that the system or subsystem will perform satisfactorily for a given period of time when used under stated conditions.

Reliability/Availability Program Plan has the meaning given in Schedule 15-2, Part 1, Article 7– System Safety Certification.

Remedial Action Plan has the meaning given in Schedule 17 – Environmental Obligations.

Replacement-In-Kind means replacement of identical or similar nature that satisfies the original design specification.

Requirements Management Plan has the meaning given in Schedule 15-2, Part 3, Article 1 – Introduction.

Response Action Plan has the meaning given in Schedule 15-2, Part 2 – Civil and Guideway.

Restraining Rail is an additional rail installed alongside of the gauge side of the low (inner) rail of a sharp radius curve which share with the running rails the lateral forces generated while the Train is traversing the curve. Restraining rail is to enhance safety by providing additional Vehicle truck guidance, divide lateral wheel forces between two rails, reducing forces on the rail fastening system and divide rail wear over two rail surfaces increasing the time between running rail replacements.

Revenue Vehicles or **Vehicles** are the Light Rail Vehicles which operate on the Confederation Line.

Review Level has the meaning given in Schedule 15-2, Part 2, Article 9 – Protection of Existing Adjacent Structures.

Risk means exposure to the chance of an event resulting in injury or loss.

Risk Assessment has the meaning given in Schedule 15-2, Part 1, Article 8 – Security and Emergency Management.

Risk Log has the meaning given in Schedule 15-2, Part 1, Article 8 – Security and Emergency Management.

Road Close Permit has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Road Cut Permit has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Road Safety Design Reviews means Design safety reviews that are to be carried out in accordance with Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Road Safety Audit means an audit carried out in accordance Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Road Safety Audit Team means a group of individuals appointed by DB Co from time to time to carry out Road Safety Audits in respect of the Works.

Road Safety Auditor has the meaning given in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Road Safety Audit Certificates has the meaning given in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Roadway means the driving surfaces including travelled lanes, auxiliary lanes, ramps, shoulders and shoulder rounding.

Roadway Works is defined as the design and construction of all temporary or permanent Roadway modifications, improvements or new construction of municipal or federal Roadway infrastructure, including but not limited to travelled lanes, auxiliary lanes, bike lanes, shoulders, boulevards, accesses, intersections, interchanges and the associated ramps, related to the scope of Stage 2 Project.

Safety means freedom from harm resulting from unintentional acts or circumstances.

Safety Case means the submission of Safety evidence at prescribed intervals in the Project lifecycle. It has the meaning outlined in EN 50129.

Safety Certification Manager means a position that is responsible for developing and implementing the safety certification program.

Safety Certification Report has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Safety Critical means a designation placed on a system, subsystem, element, component, device or function denoting that satisfactory operation of such is mandatory to safety assurance of patrons, personnel, equipment, or facilities. Such a designation dictates incorporation of special safety design features.

Safety Integrity Level means a relative level of risk-reduction provided by a safety function, or to specify a target level of risk reduction. The requirements for a given SIL are not consistent among all of the functional safety standards. In the functional safety standards based on the IEC 61508 standard, four SILs are defined, with SIL 4 the most dependable and SIL 1 the least. A SIL is determined based on a number of quantitative factors in combination with qualitative factors such as development process and safety life cycle management.

Safety Management System means the Safety protocol (including without limitation the activities, resources, procedures, methodologies, responsibilities and organizational structure) which DB Co shall establish in consultation with the City, taking into account the Design and Construction Specifications and is implemented to ensure the Safety of the system and compliance with the Safety Standards, and which is authorized by the City Manager and filed with the City Manager, adherence to which Safety protocol shall be mandatory in all operations and maintenance activities.

Safety Requirements Traceability Matrix is a means of tracking all Project Safety requirements identified by the PA or DB Co to ensure Safety elements are captured and fulfilled for the System with a direct link to the source of the Safety requirement.

Safety Verification Matrix has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Seasonal Load Restriction regulations are applicable to commercial vehicles or trailers with a gross vehicle weight in excess of 5 tonnes or 11,000 lbs per axle that are prohibited on roads where restriction signage is posted or on all truck routes identified on the most current City of Ottawa Urban and Rural Truck Route Maps.

Security means freedom from harm resulting from intentional acts or circumstances.

Security Management System means the Security protocol (including without limitation the activities, resources, procedures, methodologies, responsibilities and organizational structure) which DB Co shall establish in consultation with the City, taking into account the Design and Construction Specifications and the initial Threat and Vulnerability Assessment, and implement to ensure the Security of the system and compliance with the Safety standards, and which is authorized by the City Manager and filed with the City Manager, adherence to which Security protocol shall be mandatory in all operations and maintenance activities.

Security Requirements Traceability Matrix has the meaning given in Schedule 15-2, Part 1, Article 8 – Security and Emergency Management. For clarity, the Security Requirement Traceability Matrix is a matrix format document used to verify and certify that the Security requirements have been incorporated in the design and certify that all Security requirements of the design are constructed and/or installed in accordance with the Project Agreement.

Security Verification Matrix has the meaning given in Schedule 15-2, Part 1, Article 8 – Security and Emergency Management.

Service Life means the actual period of time during which a Structure performs its design function without unforeseen costs for maintenance and repair.

Signalling and Train Control System has the meaning given in Schedule 15-2, Part 3 – Systems.

Site Office has the meaning given in Schedule 15-2, Part 1, Article 9 – Project Office.

Site Specific Safety Plan(s) is a component of the CSMP and has the meaning given in Schedule 15-2, Part 1, Article 10 – Construction Safety Management.

Special Trackwork refers to all rail installations where Tracks converge, diverge or cross. Standard Trackwork is made simply from rolled rails of a constant cross-section, while rails in several special Trackwork components are cast or machined and have cross-sections that vary along their length.

Stage 1 Road Safety Audit means a Pre-Final Design Road Safety Audit as described in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Stage 2 Road Safety Audit means a Final Design Road Safety Audit as described in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Stage 3a Road Safety Audit means a Temporary Traffic Control On-site Road Safety Audit as described in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Stage 3b Road Safety Audit means a Construction Road Safety Audit as described in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Stage 4 Road Safety Audit means a Post Construction Road Safety Audit as described in Schedule 15-2, Part 2, Article 6 – Roadways, Bus Terminals and Lay-bys.

Station means a Facility where Trains and or buses stop to pick up or drop off customers. The Station primarily consists of Platform areas for Passenger loading/unloading, fare control equipment, and Passenger information. Other related components include; service rooms, stairs, ramps, escalators, elevators, advertising, public art, and Train and bus Operator support Facilities, customer amenities, etc. On the Ottawa system, Confederation Line stations are classified, and are not mutually exclusive as follows:

- **At Grade Station**: A Station at which the platform is at grade, above grade, below grade, and meets the criteria for an open station as defined in NFPA 130

- **Transfer Station**: Station with the incorporation of Facilities to support the transfer of Passengers between modes of transportation or between the O-Train Lines within a Fare Paid Zone.

- **Underground Station**: An enclosed Station as defined by NFPA 130 in which the platform is constructed fully underground or enclosed within a building.

- **Terminal Station**: A Station that is located at the terminus of a line.

- **Line Station:** Station that is located along the alignment providing service in both directions of the line.

Stormwater Management means the integrated process of capturing, treating and/or controlling of stormwater runoff to maintain the natural hydrologic cycle, prevent undesirable stream erosion, prevent an increased risk of flooding, and protect water quality of receiving waters.

Stormwater Management Practice means the combination of strategies, techniques and measures used on or off-site for Stormwater Management.

Stray Current Monitoring Plan has the meaning given in Schedule 15-2, Part 3, Article 13 – Traction Power System.

Structure means any building, Bridge, Tunnel, structural Culvert, or retaining wall.

Subsystem means a major functional subassembly or grouping of items or equipment which is essential to operational completeness of a system.

Supervisory Control and Data Acquisition means the system that allows the supervision and control of wayside and Station Equipment and devices from TOCC. SCADA collects alarm and indication functions for transmission and implements control commands initiated from TOCC and other control locations. The SCADA functions are an addition to local control, alarm, and indications associated with each equipment or system.

Supply Point is defined in the **[REDACTED]** Conditions of Service.

Sustainability Plan has the meaning given in Schedule 17 – Environmental Obligations.

System Assurance Program has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

System RAMS Program has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification

System Safety means the application of operating, technical, and management techniques and principles to the safety aspects of a system throughout its life to reduce hazards to the lowest practical level through the most effective use of available resources.

System Safety and Assurance Program has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

System Safety Certification means the process of verifying compliance with a set of formal safety requirements. The requirements are defined by a safety certification plan, design criteria and technical specifications and applicable codes and industry standards. Specifically, certifiable elements need to be identified, verification activities need to be performed and documented, and certificates of conformance need to be signed and issued by the responsible and accountable parties as described in Schedule 15-2, Part 1, Article 7 - System Safety Certification.

System Safety Program Plan means the implementation details of how the safety program and requirements of the Project will be achieved.

System Security Certification means the process of verifying compliance with a set of formal Security requirements. The requirements are defined by a System Security Certification Plan, design criteria and technical specifications and applicable codes and industry standards. Specifically, certifiable elements need to be identified, verification activities need to be performed and documented, and certificates of conformance need to be signed and issued by the responsible and accountable parties as described in Schedule 15-2, Part 1, Article 8 - Security and Emergency Management.

Systems means the combination of mechanical elements, hardware elements and software elements connected with a passenger LRT system as described in Clause 1.1 of Schedule 15-2, Part 3 – Systems.

Systems Engineering means an interdisciplinary field of engineering and engineering management that focuses on how to design and manage complex systems over their life cycles.

Systems Engineering Management Plan has the meaning given in Schedule 15-2, Part 3, Article 1 – Introduction.

Systems Integration Management means managing the process of bringing together the component sub-systems into one system (an aggregation of subsystems cooperating so that the system is able to deliver the overarching functionality) and ensuring that the subsystems function together as a system.

Systems Integration Management Plan has the meaning given in Schedule 15-2, Part 1, Article 11 – Systems Integration Program.

Systems Integrator has the meaning given in Schedule 14 – Commissioning.

Tail Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Temperature Rise Test has the meaning given in Schedule 15-2, Part 3, Article 13 – Traction Power System.

Threat and Vulnerability Assessment has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Threat Log has the meaning given in Schedule 15-2, Part 1, Article 7 – System Safety Certification.

Ticket Machine means a piece of City supplied and installed equipment where customers purchase tickets for OCT services.

Track means the system of ballast, rails, ties and fastenings composing the track structure.

Track Database means a database containing all station, switch, curve and end of track locations, all grades, and all civil and temporary speed restriction zones, and all work zones and all speed limits through these zones and over all switches in either position. The Track Database is used by the Onboard Computer to calculate a safe speed profile and station stopping braking profiles.

Track Design and Construction Test Plan has the meaning given in Schedule 15-2, Part 2 – Civil and Guideway.

Trackwork means all work related to the construction of a complete LRT Passenger system track structure from subgrade to top of rail including the design, supply, installation and Quality Control of ballast and sub-ballast, ballast curbs, ties, rails, guardrails, fastenings, subdrains, Special Trackwork, end of Track devices, Track drains, rail welds, rail insulated joints, direct-fixation baseplates as well as concrete slab inserts, and other Track materials.

Traction Power or **Traction Power System** means an electrical network of power conversion substations receiving MV electrical power from the Utility, transforming the power to a lower usable voltage, and converting the power from AC to DC power to supply the Train consists operating along the Confederation Line.

Traffic Advisory Temporary Signage Plan is a sub-plan of the TTMP and has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic and Transit Management Communications Plan is a sub-plan of the TTMP and has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic and Transit Management Monitoring Plan is a sub-plan of the TTMP and has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic and Transit Management Plan means a written plan, and a series of sub-plans, describing all direct and indirect impacts on all road users, including pedestrians, cyclists, transit vehicles and private vehicles of all types, at each stage of DB Co's construction sequencing plan, and outlining DB Co's measures and strategies to manage the impacts on road user traffic, parking, access for Emergency Services, as well as access to businesses and properties during construction. A Traffic and Transit Management Plan shall comply with the relevant standards, guidelines, policies and procedures of the City, OC Transpo, NCC and MTO as applicable. Further requirements are found in Schedule 15-2, Part 7, Article 6 – Traffic and Transit Management Plan.

Traffic Control Device(s) is a term used to describe any person, sign, signal, marking or device placed upon, over or adjacent to a roadway by or at the direction of a Relevant Authority or their designate, for the purpose of regulating, warning, guiding or informing a vehicle operator or pedestrian of an existing condition or hazard.

Traffic Control Persons/Personnel means a person duly trained and authorized to direct traffic at a Work zone through the use of the Traffic Control Sign (STOP/SLOW Paddle).

Traffic Control Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Control Supervisor(s) has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Engineer has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Incident Management Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Management Committee has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Management Implementation Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Manager has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Traffic Risk Assessment Plan is a sub-plan of the TTMP and has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Train means a 2-car consist of Vehicles.

Train Control or **Train Control System** means a Safety Critical computer based control system for Vehicle identification, Vehicle location control and monitoring, maintaining safe headway between vehicles, Vehicle speed control, maintaining safe brake rates, Vehicle route selection and fleet management, interlocking control and power consumption optimization.

Transit Information Panel has the meaning given in Schedule 15-2, Part 4 – Stations.

Transit Management Plan is a sub-plan of the TTMP and has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Transit Priority Lanes is as defined by the City of Ottawa.

Transit Priority Signal means a traffic signal used to assign right-of-way to public transit vehicles over all other vehicular and pedestrian traffic movements within a signalized intersection.

Transitway is a dedicated road network system that is open only to OC Transpo and emergency vehicles, which includes physically separated right of way from mixed traffic and on-street bus lanes.

Transitway Lane Closure Measurement and Verification Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Transportation Services Control Centre is the communications control center responsible for all dispatching, supervision, and monitoring of all functions within the OLRT system.

Tree Compensation Plan has the meaning given in Schedule 15-2, Part 6 – Urban Design, Landscape Architecture and Connectivity Requirements.

Tree Mitigation Plan means a plan to audit, monitor, protect, and preserve trees to comply with City regulations, as per Schedule 15-2, Part 6 – Urban Design, Landscape Architecture and Connectivity Requirements.

Trial Running means a twenty-one (21) consecutive day period that may commence upon the successful completion of testing and commissioning. Upon successful completion of trial running, the integrated system will be ready for revenue service.

Tunnels means Structures located below finished grade containing the Guideway, but excluding Underground Station Boxes.

Underground Station Boxes means Stations that are located below finished grade.

Underground Structures means Tunnels and Underground Station Boxes constructed using Cut and Cover methods excluding buried pipes and utilities, bridge foundations and above ground station foundations.

Underpass means a structure where the major road goes under the lower category road when used in Schedule 15-2, Part 2, Article 4 – Structural Design Criteria and Requirements.

Universal Design means the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

Utility Infrastructure Relocation Plan has the meaning given in Schedule 15-2, Part 2, Article 8 - Utility Infrastructure Design Criteria.

Vital Microprocessor Interlocking System means a vital microprocessor based system for controlling switches and signals at an interlocking. This system may also be known as a CBI controller.

Voice/Data Radio System has the meaning given in Schedule 15-2, Part 3 – Systems.

Weekend Period(s) means the period of time from a Saturday at 0:00 hrs to Sunday at 23:59 hrs.

West Portal has the meaning given in Schedule 15-2, Part 1, Article 2 – Physical Layout.

Winter Season means the period from November 14 in any calendar year, until April 15 the following calendar year, inclusive of these dates.

Winter Season Plan has the meaning given in Schedule 15-2, Part 7 – Traffic and Transit Management and Construction Access.

Yard Control Centre means a facility within the MSF established to monitor and control yard and shop operations of train movements, video observation of maintenance functions, intrusion control, IAC Security, and BMS system monitoring from one location.

Yard Track has the meaning given in Schedule 15-2, Part 2, Article 3 – Trackwork.

Zone Controller means a microprocessor based system which tracks train location, signal and switch positions and which provide Movement Authority limits to trains.

Zone of Influence means the area within the subsurface and surface boundaries where Ground Movement arising from DB Co construction activities is expected to occur.

ARTICLE 1 ACRONYMS

AADT means annual average daily traffic.

AAMA means American Architectural Manufacturers Association.

AAR means Association of American Railroads.

AASHTO means American Association of State Highway and Transportation Officials.

AC means alternating current.

ACI means American Concrete Institute.

ACP means access control panels.

ADA means *Americans with Disabilities Act*.

AESS means Architecturally Exposed Structural Steel.

AHJ means Authority Having Jurisdiction.

AHRI means Air-conditioning, Heating, and Refrigeration Institute.

AIC means Amp Interrupting Capacity.

AISC means American Institute of Steel Construction.

AISI means American Iron and Steel Institute.

ALCTV means Automotive Lifts – Safety Requirements for Construction, Testing and Validation.

ALI means Automotive Lift Institute.

AMCA means Air Movement and Control Association.

AMS means Aerospace Material Specifications.

ANSI means American National Standards Institute.

AODA means *Accessibility for Ontarians with Disabilities Act*.

AP means Access Point.

APTA means American Public Transportation Association.

AREMA means American Railway Engineering Maintenance-of-Way Association.

ASCE means American Society of Civil Engineers.

ASHRAE means American Society of Heating, Refrigerating and Air-Conditioning Engineers.

ASL means anticipated service life.

ASME means American Society of Mechanical Engineers.

ASSE means American Society of Safety Engineers.

ASTM means American Society for Testing and Materials.

ATC means Automatic Train Control.

ATM means automatic teller machine (bank machine).

ATMS means advanced traffic management system.

ATO means Automatic Train Operation.

ATP means Automatic Train Protection.

ATS means Automatic Train Supervision or automatic transfer switch.

AWG means American Wire Gauge.

AWMAC means Architectural Woodwork Manufacturers Association of Canada.

AWS means American Welding Society.

AWS BRH means American Welding Society Brazing Handbook.

AWS WHB means American Welding Society Welding Handbook.

AWWA means American Water Works Association.

G&B means grounding and bonding.

BAR means Blast Assessment Report.

BAS means building automation system.

BCC means Backup Control Centre.

BCI means bridge condition index, in accordance with MTO's bridge condition rating procedure.

BDA means bi-directional amplifier.

BHN means brinell hardness number.

BIA means business improvement association.

BIL means basic impulse level.

BMS means building management system.

BNC means Bayonet Neill-Concelman connector.

BRT means bus Rapid Transit.

BSS means British Standards Society.

BTS means base transceiver station.

BYCC means Belfast Yard Control Centre

CADD means computer aided design and drafting.

CaGBC means Canadian Green Building Council.

CALA means Canadian Association for Laboratory Accreditation.

CBI means computer based interlocking.

CBTC means Communication Based Train Control.

CCIL means Canadian Council of Independent Laboratories.

CCIP means Cement and Concrete Industry Publications.

CCOHS means Canadian Centre for Occupational Health and Safety.

CCTV means Closed Circuit Television.

CEAA means Canadian Environmental Assessment Agency.

CEC means Canadian Electrical Code.

CEL means Certifiable Elements Lists.

CFD means computational fluid dynamics.

CFEM means Canadian Foundation Engineering Manual.

CFR means Code of Federal Regulations.

[REDACTED]

CGSB means Canadian General Standards Board.

CHBDC means Canadian Highway Bridge Design Code ((CHBDC) CAN/CSA S6-06).

CIAR means Construction Impact Assessment Report.

CIAR-1 means Level 1 Construction Impact Assessment Report.

CIAR-2 means Level 2 Construction Impact Assessment Report.

CIH means Central Instrument House(s).

CIL means central instrument location.

CISC means Canadian Institute of Steel Construction.

CMAA means Crane Manufacturers Association of America.

CMMS means computerized maintenance management system.

[REDACTED]

CNLA means Canadian Nursery Landscape Association.

COADS means City of Ottawa Accessibility Design Standards.

COMAP means City of Ottawa Municipal Accessibility Plan.

CPCI means Canadian Precast/Prestressed Concrete Institute.

CPR means cardiopulmonary resuscitation.

CPTED means Crime Prevention through Environmental Design.

[REDACTED]

CPR means cardiac pulmonary respiration.

CRCA means Canadian Roofing Contractors Association.

CRI means colour rendering index.

CSA means Canadian Standards Association.

CSMP means Construction Safety Management Plan.

CSRS means Canadian Spatial Reference System.

CSSBI means Canadian Sheet Steel Building Institute.

CTS means communications transmission system.

CWB means Canadian Welding Bureau.

CWR means continuous welded rail.

DAQ means delivered audio quality.

DAS means distributed antenna system.

DC means direct current.

DCS means data communications system.

DF(F) means direct fixation (fastener).

DFO means Department of Fisheries and Oceans (Canada).

DLA means dynamic load allowance.

DMP means Data Management Protocol.

DOORS means dynamic object oriented requirements systems.

DOT means U.S. Department of Transportation.

DSD means Decision Sight Distance.

DSS means designated substance survey.

DTFM means dual toner multi-frequency.

DVD means digital versatile disk.

DWA means TSA used in Schedule 15-2, Part 4, Appendix B and C.

E&M means electrical and mechanical.

EA means Environmental Assessment.

EAS means existing adjacent structure(s).

EB means an eastbound direction or emergency brake (depending upon context).

ECA means Environmental Compliance Approval.

ECL means Existing Confederation Line.

EEB means emergency exit building.

EEMAC means Electrical Equipment Manufacturers Association of Canada.

EGFP means equipment ground fault protection.

EHFI means elevator hands free intercom.

EIA means Electronic Industry Association.

EMC means electromagnetic compatibility.

EMI means electromagnetic interference.

ERP means Emergency Response Plan or Emergency Response Providers.

ESA means Electrical Standards Association or Electrical Safety Authority.

ESB means Emergency Stop Buttons.

ESC means Erosion and Sediment Control (part of Erosion and Sediment Control Plan).

ESP means Emergency Service Providers.

ESS means Emergency Stop Key Switches.

ETEL means emergency telephones.

FAI means First Article Inspection.

FAT means Factory Acceptance Test as defined in Schedule 14 – Commissioning.

FCC means U.S. Federal Communications Commission.

FDAS means fire detection and alarm system.

FHWA means Federal Highway Administration.

FLS means Fire Life Safety.

FLSSC means Fire Life Safety and Security Committee.

FLUDTA means Federal Land Use, Design and Transaction Approval.

FMEA means Failure Mode and Effects Analysis.

FMECA means Failure Mode, Effect, and Criticality Analysis.

FODF means fiber optic distribution frame.

FRACAS means Failure Reporting and Corrective Action System.

FRP means fibre reinforced plastic.

FTA means Federal Transit Administration or Fault Tree Analysis.

FTEL means firefighters' telephones.

GANA means Glass Association of North America.

GBC means Green Building Council.

GDSOH means Geometric Design Standards for Ontario Highways (Ministry of Transportation).

GDGCR means Geometric Design Guide for Canadian Roads (Transportation Association of Canada).

GFI means ground fault interrupter.

GFRP means glass fibre reinforced polymer.

GIDS means Guideway intrusion detection system.

GIMP means Geotechnical Instrumentation and Monitoring Plan.

GSC means geological survey of Canada.

GUI means graphic user interface.

HINT means elevator help intercoms.

HFI means yard intercoms.

HMI means Hoist Manufacturers Institute or Human Machine Interface.

[REDACTED]

[REDACTED]

HOV means high-occupancy vehicle.

HSDR means high speed data radio.

HV means high voltage.

HVAC means heating, ventilation and air conditioning system.

I/O means input/output.

IAC means intrusion access control.

IBC means International Building Code.

ICD means interface control documents.

ICEA means Insulated Cable Engineers Association.

ICES means Interference-Causing Equipment Standards (Industry Canada).

ICNIRP means International Commission on Non-Ionizing Radiation Protection.

ICP means Incident Control Panel.

IEC means International Electrotechnical Commission.

IED means intelligent electronic device.

IEEE means Institute of Electrical and Electronics Engineers.

IES and **IESNA** means Illuminating Engineering Society of North America.

IFC means issued for construction.

IP means internet protocol.

IPI means In-Place-Inclinometers.

ISD means Intersection Sight Distance.

ISFP means City of Ottawa Integrated Street Furniture Policy and Design Guidelines.

ISO means International Standards Organization.

ITA means International Tunnelling Association.

ITEL means passenger assistance information telephones.

ITS means intelligent transportation system.

JHSC means joint health and safety committee.

LAN means local area network.

LCD means liquid-crystal display.

LED means light emitting diode.

LEED means Leadership in Energy and Environmental Design.

LID means Low Impact Development.

LKI means landmark kilometre inventory.

LMSF means Light Maintenance and Storage Facility.

LOS means Level of Service.

LRT means light rail transit.

LRV means Light Rail Vehicle.

LSD means limits state design

LV means low voltage.

LVC means length of vertical curve.

LSZH means low smoke zero halogen.

MA means Movement Authority.

MCC means motor control centre.

MDE means Maximum Design Earthquake.

MERV means Minimum Efficiency Reporting Value.

MEMS means micro-electro-mechanical systems.

MHIA means Materials Handling Industry of America.

MIL means U.S Military Standard.

MNECB means Model National Energy Code for Buildings.

MNR means Ontario Ministry of Natural Resources.

MOECC means Ontario Ministry of the Environment and Climate Change.

MOL means Ministry of Labour.

MOW means maintenance of way

MSE means mechanically stabilized earth.

MTBF means mean time between failures.

MTBSAF means mean time between service affecting failures.

MTEL means maintenance telephones

MTM means Modified Transverse Mercator.

MTO means Ontario Ministry of Transportation.

MTTR means mean time to repair.

MUP means Multi-Use Pathway.

MUTCD means Manual for Uniform Traffic Control Device.

MV means medium voltage.

MW means megawatts.

MYCC means the Moodie Yard Control Centre.

NACE means National Association of Corrosion Engineers.

NAD means North American Datum.

NB means a northbound direction.

NBC means National Building Code of Canada.

NC means Noise Level Criteria.

NCC means National Capital Commission.

NCMA means National Concrete Masonry Association.

NECA means National Electrical Contractors Association.

NEMA means National Electrical Manufacturer's Association.

NESC means National Electrical and Safety Code.

NETA means InterNational Electrical Testing Association.

NFCC means National Fire Code of Canada.

NFPA means National Fire Protection Association.

NGD means negative grounding device.

NHI means National Highway Institute.

NICD means network interface control document.

NMI means New Municipal Infrastructure.

NPA means National Particleboard Association.

NPCC means Northeast Power Coordinating Council.

NRCA means National Roofing Contractors Association.

NSF means National Sanitation Foundation.

NTP means notice to proceed.

NVR means Network Video Recorder.

OBC means Ontario Building Code.

OCS means Overhead Contact System and Overhead Catenary System.

ODE means Operating Design Earthquake.

ODV means Over-Dimensional Vehicle.

OEC means Ontario Electrical Code.

OESC means Ontario Electrical Safety Code.

OFC means Ontario Fire Code.

OGDL means open graded drainage layer

OGS means oil/grit separators

OHA means operating hazard analysis.

OHSA means the *Occupational Health and Safety Act* (Ontario).

OLRT means Ottawa Light Rail Transit.

ON and **ONT** mean Ontario.

ONVIF means open network video interface forum.

OPP means Ontario Provincial Police.

OPS means Ontario Provincial Standard or Ottawa Police Services.

OPSD means Ontario Provincial Standard Drawings.

OPSS means Ontario Provincial Standard Specifications.

OR means Ottawa Road.

ORPP means the Ottawa River Parkway pipe.

OSIM means Ontario Structure Inspection Manual.

OSIMS means Ontario Structure Inspection Management Systems.

OTOC means Ottawa Traffic Operations Centre.

OTM means Ontario Traffic Manual.

OWS means operation work station.

PA means Public Address.

PABX means private automatic branch exchange.

PAU means power alarm unit.

PBD means performance based design.

PBX means Private Branch Exchange.

PDI means Plumbing and Drainage Institute.

PED means platform edge door.

PEO means Professional Engineers of Ontario.

PERP means Ontario Provincial Emergency Response Plan.

PGFP means personal ground fault protection.

PHA means Preliminary Hazard Analysis.

PHL means Preliminary Hazard List.

PIC means public information centre.

PICO means Post Installation Checkout as defined in Schedule 14 – Commissioning.

PID(S) means Passenger Information Display (Systems).

PIS means public information system.

PIU means power interface unit.

PLC means Programmable Logic Controller.

PPHPD means passenger per hour per direction.

PPUDO means Passenger Pick-Up and Drop-Off.

PRP means Property Request Plan.

PSPC means Public Services and Procurement Canada.

PTTW means Permit to Take Water.

PTZ means Pan Tilt Zoom.

PVC means polyvinyl chloride.

PVDF means polyvinylidene fluoride.

PVI means point of vertical intersection.

PVMS means portable variable-message signs.

PXO means pedestrian crossover(s).

RAM means Reliability, Availability and Maintainability.

RCMP means Royal Canadian Mounted Police.

RFID means Radio Frequency Identification.

RFQ means request for qualifications.

RH means relative humidity.

RMA means Roadway Modification Approval.

RMP means Requirements Management Plan.

RMS means root mean square.

ROW means right-of-way.

RRFB means rectangular rapid flashing beacon.

RSS means radio standards specification in Schedule 15-2, Part 3 – Systems.

RSS means retained soil system in Schedule 15-2, Part 2 – Civil and Guideway.

RTM means requirements traceability matrix.

RTSB means real time streaming protocol.

RTU means remote terminal units.

RU means remote unit.

RVCA means Rideau Valley Conservation Authority.

S&I means service and inspection.

S&TCS means Signalling and Train Control System.

SAE means Society of Automotive Engineers.

SAP means System Assurance Program.

SAR means species at risk.

SAT means Site Acceptance Test as defined in Schedule 14 – Commissioning.

SB means a southbound direction.

SCADA means Supervisory Control and Data Acquisition.

SCIL means Safety Critical items list.

SCM means Safety Certification Manager.

SCR means Silicon Controlled Rectifier.

SeCM means Security Certification Manager

SEMP means System Engineering Management Plan.

SER means signal equipment room.

SES means "Subway Environment Simulation" software, originally referenced in the "Subway Environmental Design Handbook" (US Department of Transportation, Washington, DC, USA).

SeVM means Security Verification Matrix.

SI means System Infrastructure.

SIA means Security Industry Association.

SIMP means systems integration management plan.

SINAD means signal-to-noise and distortion ratio.

SIT means Systems Integration Test as defined in Schedule 14 – Commissioning.

SJAM means Sir John A MacDonald.

SLR means Seasonal Load Restriction.

SLS means Serviceability Limit State.

SMACNA means Sheet Metal and Air-conditioning Contractors' National Association.

SNCA means South Nation Conservation Authority.

SNMP means simple network management protocol.

SOE means support of excavation.

SOP means standard operating practice/procedure.

SPL means sound pressure level.

SRAC means Safety related application conditions.

SSAP means System Safety and Security Assurance Plan.

SSCP means System Safety Certification Plan.

SSCRT means Safety and Security Certification Review Team.

SSD means Stopping Sight Distance.

SSeCP means System Security Certification Plan.

SSePP means System Security Program Plan.

SeRTM means Security Requirement Traceability Matrix.

SSORC means Safety and Security Operations Review Committee.

SSPC means Society for Protective Coatings.

SSPP means System Safety Program Plan.

SRTM means Security Requirement Traceability Matrix.

SSVM means System Safety Verification Matrix.

STD means standard.

STEL means staff telephones.

STI means speech transmission index.

STO means Société de transport de l'Outaouais or semi-automatic Train operation.

SVM means Safety Verification Matrix.

SWGR means switch gear.

SWM means stormwater management.

SWMP means Stormwater Management Practice.

T&DI means Transportation and Development Institute.

TAC means Transportation Association of Canada.

TC means Transport Canada.

TCB means temporary concrete barrier.

TCD means Traffic Control Device.

TCP means Traffic Control Plan or Traffic Control Person or Transmission Control Protocol (depending upon context).

TCRP means Transit Cooperative Research Program.

TFTP means Trivial File Transfer Protocol.

THR means Tolerable Hazard Rate.

TIA means Transportation Impact Assessment (City of Ottawa).

TIAC means Thermal Insulation Association of Canada.

TIMP means Traffic Incident Management Plan.

TIP means Transit Information Panel.

TMIP means Traffic Management Implementation Plan.

TOCC means Transit Operations Control Centre.

TOD means Transit-Oriented Development.

TOR means Top of Rail.

TPRU means Traction Power Rectifier Unit.

TPS means Traction Power System.

TPSS means Traction Power substation(s).

TSA means transsecure area.

TSS means total suspended solids.

TTEL means Tunnel telephones.

TTMP means Traffic and Transit Management Plan.

TVA means Threat and Vulnerability Analysis.

TVS means Tunnel Ventilation System.

TWSI means tactile walking strip indicators.

UAD means Urban Arterial Divided.

UDP means user datagram protocol.

UIC means International Union of Railways.

ULC means Underwriter's Laboratories of Canada.

ULS means Ultimate Limit State.

UPS means uninterruptible power supply.

VFD means Variable-Frequency Drive.

VISSIM means the microscopic multi-modal traffic flow simulation software package used to develop traffic models.

VLAN means virtual local area network.

VMIS means Vital Microprocessor Interlocking System.

VMS means Vehicle Monitoring System or variable message sign.

VOBC means Vehicle on-board controller.

VOC means volatile organic compound.

VoIP means Voice over Internet Protocol.

WAN means Wide Area Network.

WB means a westbound direction.

WNC means West Nepean Collector

WSD means Working Stress Design.

ZOI means Zone of Influence.

ARTICLE 2 REFERENCE DOCUMENTS

1.1 General

(a) Codes, standards, manuals, installation, application and maintenance instructions, and other reference documents referred to in the Project Specific Output Specifications, unless otherwise specified and unless otherwise stated in governing legislation, shall be the latest published editions at the date of Commercial Close.

(b) DB Co shall conform to codes, standards, manuals, installation, application and maintenance instructions, and other Reference Documents referred to in the Output Specification.

(c) If there is a question regarding whether any product, material, component, assembly or system is in conformance with applicable requirements, the City reserves the right to have such products, materials, components, assemblies or systems tested at DB Co's cost to prove or disprove conformance. The cost for testing will be borne by the City in the event of conformance with the Output Specification, or by DB Co in the event of non-conformance.

(d) Refer to the Project Agreement and the Ontario Building Code for definitions applicable to the Project.

1.2 Reference Documents

Reference Documents in Schedule 15	Description of Reference Documents
14 CFR 25.853	Code of Federal Regulations, Title 14: Aeronautics and Space; Part 25.853 – Compartment Interiors
29 CFR 1910.19	Code of Federal Regulations, Title 29: Labor; Part 1910.19 – Special Provisions for Air Contaminants
40 CFR 82	Code of Federal Regulations, Title 40: Protection of Environment; Part 82 – Protection of Stratosphere Ozone
49 CFR 223	Code of Federal Regulations, Title 49: Transportation; Part 223 – Safety Glazing Standards - Locomotives, Passenger Cars and Cabooses
49 CFR Part 238	Code of Federal Regulations, Title 49: Transportation; Part 238 – Passenger Equipment Safety Standards
AAMA 611	AAMA 611 Voluntary Specification for

Reference Documents in Schedule 15	Description of Reference Documents
	Anodized Architectural Aluminum
AAMA 620	AAMA 620 Voluntary Specification for High Performance Organic Coatings on Coil Coated Architectural Aluminum
AAMA Aluminum Curtain Wall Design Guide Manual (CW-DG-1-96)	American Architectural Manufacturers Association (AAMA)
AAR M-101	AAR M-101 Carbon Steel Axles
AAR Manual of Standards and Recommended Practices	Association of American Railroads (AAR)
AAR RP-585	AAR RP-585 Wiring and Cable Specification
AAR S-501	AAR S-501 Specification for Wire and Cables
AASHTO Guide for the Design of Pavement Structures	American Association of State Highway and Transportation Officials (AASHTO), 1993
AASHTO Guide Specifications for Design and Construction of Segmental Concrete Bridges	
AASHTO Guide Specifications for Horizontally Curved Highway Bridges	
AASHTO Guide Specifications for Strength Evaluation of Existing Steel and Concrete Bridges	
AASHTO Guide Specifications for Structural Design of Sound Barriers	
AASHTO Guide Specifications – Thermal Effects in Concrete Bridge Structures	
AASHTO Manual for Condition Evaluation of Bridges	
ACI 201.2R	ACI 201.2R Guide to Durable Concrete
ACI 347.3R	ACI 347.3R Guide to Formed Concrete Surfaces
ACI 358.1	ACI 358.1 Analysis and Design of Reinforced and Prestressed – Concrete Guideway Structures
ACI 360R	ACI 360R Design of Slabs on Grade
ACI 365	ACI 365 Service Life Prediction
ACI Publication 201.2R	ACI Publication 201.2R Guide to Durable

Reference Documents in Schedule 15	Description of Reference Documents
	Concrete
ACI Publication 222R	ACI Publication 222R Protection of Metals in Concrete Against Corrosion
ACI Publication 506.2	ACI Publication 506.2 Below Grade Shotcrete Used as Permanent Support
ACI Publication SP-77	ACI Publication SP-77 Sulphate Resistance of Concrete
Accessibility for Ontarians with Disabilities Act (AODA)	
Advanced Traffic Management Systems (ATMS) Contract Design, Estimating and Documentation (CDED) Manual, Volume 4	Volume 4 - Electrical Contract Design, Estimating & Documentation Advanced Traffic Management Systems, MTO, latest version
Advanced Traffic Management Systems (ATMS) Design Guidelines	ATMS Design Standards, MTO
AESS Supplement	Modern Steel Construction, May 2003
AISC Code of Standard Practice for Steel Buildings and Bridges	American Institute of Steel Construction (AISC), March 2005
AISC Design Guide Series 9	AISC Design Guide Series 9 – Torsional Analysis of Structural Steel Members
AISI/ASTM A167	AISI/ASTM A167 Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
Alberta Transportation Highway Geometric Design Guide	Alberta Transportation Highway Geometric Design Guide, January 2004
Americans with Disabilities Act (ADA)	
AMCA Standard 210	Air Movement and Control Association International (AMCA) Standard 210, "Laboratory Methods of Testing Fans for Rating Purposes"
AMCA Standard 300	AMCA Standard 300, "Test Code for Sound Rating Air Moving Devices"
AMCA Standard 301	AMCA Standard 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data"
AMCA Standard 500-L	AMCA Standard 500-L Laboratory Methods of Testing Louvers for Rating
AMS 5050 E	AMS 5050 E Steel Tubing, Seamless, 0.15 Carbon, Maximum, Annealed

Reference Documents in Schedule 15	Description of Reference Documents
ANSI/ALI ALCTV-2006	ANSI/ALI ALCTV-2006 Safety Requirements for the Installation and Service of Automotive Lifts
ANSI/ASCE/T&DI 21	ANSI/ASCE/T&DI 21 Automated People Mover Standards – Parts 1-4
ANSI/ASHRAE 135	ANSI/ASHRAE 135 BACnet A Data Communication Protocol for Building Automation and Control Networks
ANSI/AWWA C105	ANSI/AWWA C105 Polyethylene Encasement for Ductile-Iron Pipe Systems
ANSI/IEEE 515.1	ANSI/IEEE 515.1 Testing, Design, Installation, and Maintenance of Electrical Resistance Heat Tracing for Commercial Applications
ANSI/IESNA RP-22	ANSI/IESNA RP-22 Tunnel Lighting
ANSI/SIA A92	ANSI/SIA A92 Elevating and Vehicle Lift Devices
ANSI B1.20.1	ANSI B1.20.1 Pipe Threads, General Purpose (Inch)
ANSI C34.2	ANSI C34.2 Semiconductor Power Rectifiers
ANSI C37	ANSI C37 Low Voltage Power Circuit Breaker
ANSI C57	ANSI C57 Power Transformers
ANSI Z26.1	ANSI Z26.1 Safety Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways
ANSI Z97.1	ANSI Z97.1 Safety Glazing Materials Used in Buildings
ANSI Z358.1	ANSI Z358.1 Emergency Eyewash and Shower Equipment
An Urban Design Strategy for Sussex Dr., Rideau St. and Colonel By	
APTA Guidelines for the Design of Rapid Transit Facilities	American Public Transportation Association, 1981
Heavy Duty Transportation System Elevator Design Guidelines	American Public Transportation Association (APTA)
APTA Heavy Duty Escalator Design	American Public Transportation Association

Reference Documents in Schedule 15	Description of Reference Documents
Guideline	(APTA)
APTA Manual for the Development of System Safety Program Plans for Commuter Railroads	American Public Transportation Association; Commuter Rail Safety Management Program, May 2006
APTA RP-E-002	APTA RP-E-002 Wiring of Passenger Equipment
APTA RP-E-004	APTA RP-E-004 Gap and Creepage Distance
APTA RP-E-007	APTA RP-E-007 Storage Batteries and Battery Compartments
APTA RP-E-009	APTA RP-E-009
APTA RP-M-001	APTA RP-M-001 Air Connections, Location and Configuration of, for Passenger Cars Equipped with AAR Long Shank Tight Lock or Similar Long Shank Type Couplers
APTA RP-M-009	APTA RP-M-009 New Truck Design
APTA SS-C&S-004	APTA SS-C&S-004 Austenitic Stainless Steel for Railroad Passenger Equipment
APTA SS-C&S-015	APTA SS-C&S-015 Aluminum and Aluminum Alloys for Passenger Equipment Car Body Construction
APTA SS-E-005	APTA SS-E-005 Grounding and Bonding
APTA SS-E-013	APTA SS-E-013 Emergency Lighting System Design for Passenger Cars
APTA SS-M-015-06	APTA SS-M-015-06 Wheel Flange Angle for Passenger Equipment
APTA SS-PS-004	APTA SS-PS-004 Low-Location Exit Path Marking
AREMA	Manual for Railway Engineering, AREMA
AREMA Communications and Signal Manual	AREMA
AREMA Manual For Railway Engineering, Volume 2, Chapter 28, Temporary Structure for Construction	AREMA
ASCE Guidelines for Tunnel Lining Design,	ASCE Technical Committee on Tunnel Lining Design, edited by T. O'Rourke, 1984

Reference Documents in Schedule 15	Description of Reference Documents
ASHRAE 52.2	ASHRAE 52.2 Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size
ASHRAE 55	ASHRAE 55 – Thermal Environmental Conditions for Human Occupancy, 2010 Edition.
ASHRAE 62.1	ASHRAE 62.1 – Ventilation for Acceptable Indoor Air Quality
ASHRAE 90.1	ASHRAE 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings – permitted for construction after December 31, 2011
ASHRAE 189.1	ASHRAE 189.1 – Design of High-Performance, Green Buildings
ASHRAE Handbook	HVAC Applications, Division 13, "Enclosed Vehicular Facilities", 2007
ASME/ANSI B16.3	ASME/ANSI B16.3 Malleable Iron Threaded Fittings
ASME/ANSI B16.5	ASME/ANSI B16.5 Pipe Flanges and Flanged Fittings
ASME/ANSI B16.22	ASME/ANSI B16.22 Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ASME A17.1	ASME A17.1 Safety Code for Elevators and Escalators
ASME A112.19.2 / CSA B45.1	ASME A112.19.2 / CSA B45.1 Ceramic Plumbing Fixtures
ASME B30.2	ASME B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)
ASME B30.10	ASME B30.10 Hooks
ASME 30.11	ASME 30.11 Monorails and Underhung Cranes
ASME B30.16	ASME B30.16 Overhead Joists (Underhung)
ASME B31.1	ASME B31.1 Power Piping
ASME B31.5	ASME B31.5 Refrigeration Piping and Heat Transfer Components
ASME RT-1	ASME RT-1 Safety Standard for Structural

Reference Documents in Schedule 15	Description of Reference Documents
	Requirements for Light Rail Vehicles
ASSE 1052	ASSE 1052 Performance Requirements for Hose Connection Backflow Preventers
ASTM	ASTM Standards
ASTM A1	ASTM A1 Carbon Steel Tee Rails
ASTM A6	ASTM A6 General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Pilings
ASTM A53	ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A82 / A82M	ASTM A82 / A82M Steel Wire, Plain for Concrete Reinforcement
ASTM A105	ASTM A105 Carbon Steel Forgings for Piping Applications
ASTM A106	ASTM A106 Seamless Carbon Steel Pipe for High-Temperature Service
ASTM A123	ASTM A123 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153M-03e	ASTM A153M-00 Zinc Coating (Hot Dip) on Iron and Steel Hardware
ASTM A167	ASTM A167 Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A185	ASTM A185 Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A193	ASTM A193 Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
ASTM A197	ASTM A197 Cupola Malleable Iron
ASTM A234	ASTM A234 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
ASTM A240	ASTM A240 Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications
ASTM A269	ASTM A269 Seamless and Welded Austenitic Stainless steel Tubing for General Service

Reference Documents in Schedule 15	Description of Reference Documents
ASTM A276-04	ASTM A276-04 Stainless Steel Bars and Shapes
ASTM A307	ASTM A307 Carbon Steel Bolts and Studs
ASTM A325M	ASTM A325M Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A416/416M-06	ASTM A416/416M-06 Steel Strand, Uncoated Seven-Wire for Prestressed Concrete
ASTM A421/421M-05	ASTM A421/421M-05 Uncoated Stress-Relieved Steel Wire for Prestressed Concrete
ASTM A496/A496M	ASTM A496/A496M Steel Wire, Deformed for Concrete Reinforcement
ASTM A497/A497M	ASTM A497/A497M Steel Welded Wire Reinforcement, Deformed, for Concrete
ASTM A515	ASTM A515 Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
ASTM A516	ASTM A516 Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower Temperature Service
ASTM A563	ASTM A563 Carbon and Alloy Steel Nuts
ASTM A568	ASTM A568 General Requirements for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled
ASTM A588	ASTM A588 High-Strength Low-Alloy Structural Steel
ASTM A606	ASTM A606 Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance
ASTM A653/A653M	ASTM A653/A653M Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A666	ASTM A666 Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar
ASTM A775/A775M	ASTM A775/A775M Epoxy Coated Reinforcing Steel Bars

Reference Documents in Schedule 15	Description of Reference Documents
ASTM B33	ASTM B33 Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
ASTM B209	ASTM B209 Aluminum and Aluminum Alloy Sheet and Plate
ASTM B221	ASTM B221 Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles and Tubes
ASTM B280	ASTM B280 Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
ASTM B584	ASTM B584 Copper Alloy Sand Castings for General Applications
ASTM C67	ASTM C67 Sampling and Testing Brick and Structural Clay Tile
ASTM C260	ASTM C260 Air-Entraining Admixtures for Concrete
ASTM C452-75	ASTM C452-75 Potential Expansion of Portland-Cement Mortars Exposed to Sulfate
ASTM C494/C494M	ASTM C494/C494M Standard Specification for Chemical Admixtures for Concrete
ASTM C507-95a	ASTM C507-95a Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe
ASTM C534	ASTM C534 Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form
ASTM C542	ASTM C542 Lock-Strip Gaskets
ASTM C547	ASTM C547 Mineral Fiber Pipe Insulation
ASTM C553	ASTM C553 Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM C568	ASTM C568 Limestone Dimension Stone
ASTM C612	ASTM C612 Mineral Fiber Block and Board Thermal Insulation
ASTM C615	ASTM C615 Granite Dimension Stone
ASTM C716	ASTM C716 Installing Lock-Strip Gaskets and Infill Glazing Materials
ASTM C864	ASTM C864 Dense Elastomeric Compression

Reference Documents in Schedule 15	Description of Reference Documents
	Seal Gaskets, Setting Blocks and Spacers
ASTM C881/C881M	ASTM C881/C881M Epoxy-Resin-Base Bonding Systems for Concrete
ASTM C936	ASTM C936 Solid Concrete Interlocking Paving Units
ASTM C1017/C1017M	ASTM C1017/C1017M Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1026	ASTM C1026 Measuring the Resistance of Ceramic Tile to Freeze-Thaw Cycling
ASTM C1036	ASTM C1036 Flat Glass
ASTM C1048	ASTM C1048 Heat-Treated Flat Glass—Kind HS, Kind FT Coated and Uncoated Glass
ASTM C1059/C1059M	ASTM C1059/C1059M Latex Agents for Bonding Fresh to Hardened Concrete
ASTM C1166	ASTM C1166 Lock-Strip Gaskets
ASTM C1172	ASTM C1172 Laminated Architectural Flat Glass
ASTM C1184	ASTM C1184 Structural Silicone Sealants
ASTM C1242	ASTM C1242 Selection, Design and Installation of Dimension Stone Attachment Systems
ASTM D395	ASTM D395 Rubber Property – Compression Set
ASTM D422-63	ASTM D422-63 Particle-Size Analysis of Soils
ASTM D516	ASTM D516 Sulfate Ion in Water
ASTM D695	ASTM D695 Compressive Properties of Rigid Plastics
ASTM D790	ASTM D790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D2205-85	ASTM D2205-85 Traffic Paints
ASTM D2240	ASTM D2240 Rubber Property – Durometer Hardness
ASTM D2244-85	ASTM D2244-85 Calculation of Colour Differences from Instrumentally Measured Colour Coordinates

Reference Documents in Schedule 15	Description of Reference Documents
ASTM D2850-95	ASTM D2850-95 Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils
ASTM D2922	ASTM D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D3222	ASTM D3222 Unmodified Poly(Vinylidene Fluoride) (PVDF) Molding Extrusion and Coating Materials
ASTM D3675	ASTM D3675 Surface Flammability of Flexible Cellular Materials Using a Radiant Heat Energy Source
ASTM D3960-87	ASTM D3960-87 Determining Volatile Organic Content (VOC) of Paints and Related Coatings
ASTM D4976	ASTM D4976 Polyethylene Plastics Molding and Extrusion Materials
ASTM D5856-95	ASTM D5856-95 Water in Petroleum Products and Bituminous Materials by Distillation
ASTM D6359-99	ASTM D6359-99 Minimum Retroreflectance of Newly Applied Pavement Marking Using Portable Hand-Operated Instruments
ASTM E84	ASTM E84 Surface Burning Characteristics of Building Materials
ASTM E90	ASTM E90 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
ASTM E119	ASTM E119 Fire Tests of Building Construction and Materials
ASTM E162	ASTM E162 Surface Flammability of Materials Using a Radiant Heat Energy Source
ASTM E274-06	ASTM E274-06 Standard Test Method for Skid Resistance of Paved Surfaces using a Full Scale Tire
ASTM E283-04	ASTM E283-04 Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E330	ASTM E330 Structural Performance of Exterior

Reference Documents in Schedule 15	Description of Reference Documents
	Windows, Doors, Skylights and Curtain Walls
ASTM E331	ASTM E331 Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E501-06	ASTM E501-06 Standard Specification for Standard Rib Tire for Skid Resistance Tests
ASTM E648	ASTM E648 Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
ASTM E662	ASTM E662 Specific Optical Density of Smoke Generated by Solid Material
ASTM E1347	ASTM E1347 Colour and Colour Difference Measurement by Tristimulus
ASTM E1332	ASTM E1332 Rating Outdoor-Indoor Sound Attenuation
ASTM E1710	ASTM E1710 Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer
ASTM F436	ASTM F436 Standard Specification for Hardened Steel Washers
ASTM F519	ASTM F519 Mechanical Hydrogen Embrittlement Evaluation of Plating/Coating Processes and Service Environments
ASTM F593	ASTM F593 Stainless Steel Bolts, Hex Cap Screws and Studs
ASTM F738M	ASTM F738M Stainless Steel Metric Bolts, Screws, and Studs
ASTM F836M	ASTM F836M Style 1 Stainless Steel Metric Nuts
ASTM G51	ASTM G51 Measuring pH of Soil for Use in Corrosion Testing
ASTM G57	ASTM G57 Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method
AWMAC	Quality Standards for Architectural Woodwork

Reference Documents in Schedule 15	Description of Reference Documents
AWS A5.0	AWS A5.0 Filter Metal Procurement Guidelines
AWS BRH	AWS BRH American Welding Society Brazing Handbook
AWS C1.1	AWS C1.1 Resistance Welding
AWS D1.1	AWS D1.1 Structural Welding Code – Steel
AWS D1.2	AWS D1.2 Structural Welding Code – Aluminum
AWS D1.3	AWS D1.3 Structural Welding Code – Sheet Steel
AWS D1.6	AWS D1.6 Structural Welding Code – Stainless Steel
AWS D14.1	AWS D14.1 Welding of Industrial and Mill Cranes and Other Material Handling Equipment
AWS D15.1	AWS D15.1 Railroad Welding Specification – Cars and Locomotives
AWS WHB	AWS WHB American Welding Society Welding Handbook
Bayview/Somerset Area Secondary Plan	
Bikeways Design Manual, Mar 2014	Bikeways Design Manual, Mar 2014
Bridge Clearance and Load Restriction Manual (OSCLIS)	Ontario, Ministry of Transportation, Bridge Office, Bridge Clearance and Load Restriction Manual, Ministry of Transportation, 2007
Bridge Condition Index (BCI): An Overall Measure of Bridge Condition, July 2009, MTO	Methodology for calculating and reporting the BCI.
Bridge Office Memorandum #2015-05 – November 30, 2015	Bridge Office Memorandum #2015-05 – November 30, 2015
BSS-7239	BSS-7239 Test Method for Toxic Gas Generation by Materials on Combustion
Canada's Capital Core Area Sector Plan	
Canadian Artists' Representation / Le Front des artistes canadiens (CARFAC)	Guidance on economic and legal rights for artists engaged in visual arts, as available on the CARCC website
Canadian Conservation Institute	Industry best practice for art handling and conservation in locations with existing artwork,

Reference Documents in Schedule 15	Description of Reference Documents
	as available on the Canadian Conservation Institute website
Canadian Road Safety Audit Guide (TAC)	Canadian Guide to Road Safety Audits, Ottawa: TAC, April 2004
Canadian Transportation Agency	Code of Practice, Passenger Terminal Accessibility
Canadian Transportation Agency	Code of Practice, Passenger Rail Car Accessibility and Terms and Conditions of Carriage by Rail of Persons with Disabilities
Canadian Transportation Agency	Code of Practice, Removing Communication Barriers for Travelers with Disabilities
Canadian Transportation Agency	Code of Practice, Intercity Bus
CAN/CGSB-1-GP 12C	Standard Paint Colours
CAN/CGSB 1.181	CAN/CGSB 1.181 Ready-Mixed Organic Zinc-Rich Coating
CAN/CGSB 12.1-M	CAN/CGSB 12.1-M, Tempered or Laminated Safety Glass
CAN/CGSB 12.11-M	CAN/CGSB 12.11-M Wired Safety Glass
CAN/CGSB 12.20-M	CAN/CGSB 12.20-M Structural Design of Glass for Buildings
CAN/CGSB 12.3-M	CAN/CGSB 12.3-M Flat, Clear Float Glass
CAN/CGSB 12.8-M	CAN/CGSB 12.8-M Insulating Glass Units
CAN/CGSB 75.1-M	CAN/CGSB 75.1-M Tile, Ceramic
CAN/CGSB 85.100	CAN/CGSB 85.100 Painting
CAN/CGSB-109.4	CAN/CGSB-109.4-2000, Passenger Information Symbols Standard
CAN/CSA A5	CAN/CSA A5 Portland Cement
CAN/CSA A16	CAN/CSA A16 Design of Steel Structures
CAN/CSA A23.1	CAN/CSA A23.1 Concrete Materials and Methods of Concrete Construction
CAN/CSA A23.2	CAN/CSA A23.2 Methods of Testing for Concrete
CAN/CSA A23.3	CAN/CSA A23.3 Design of Concrete Structures
CAN/CSA A23.4	CAN/CSA A23.4 Precast Concrete - Materials

Reference Documents in Schedule 15	Description of Reference Documents
	and Construction
CAN/CSA A23.5	CAN/CSA A23.5 Supplementary Cementing Materials
CAN/CSA A165	CAN/CSA A165 Concrete Masonry Units
CAN/CSA A179	CAN/CSA A179 Mortar and Grout for Unit Masonry
CAN/CSA A251	CAN/CSA A251 Qualification Code for Architectural and Structural Precast Concrete
CAN/CSA A370	CAN/CSA A370 Connectors for Masonry
CAN/CSA A371	CAN/CSA A371 Masonry Construction for Buildings
CAN/CSA A440	CAN/CSA A440 Window, Door, and Skylight Installation
CAN/CSA A3000	CAN/CSA A3000 Cementitious Materials Compendium
CAN/CSA B44	CAN/CSA B44 Safety Code for Elevators
CAN/CSA B45	CAN/CSA B45 Plumbing Fixtures
CAN/CSA B52	CAN/CSA B52 Mechanical Refrigeration Code
CAN/CSA B139	CAN/CSA B139 Installation Code for Oil Burning Equipment
CAN/CSA B167-96	CAN/CSA B167-96 Maintenance and Inspection of Overhead Cranes, Gantry Cranes, Monorails, Hoists and Trolleys
CAN/CSA B651-04	CAN/CSA B651-04 Accessible Design for the Built Environment
CAN/CSA C22.1-09	CAN/CSA C22.1-09 Canadian Electrical Code, Part I – Safety Standard for Electrical Installations
CAN/CSA C22.2-09	CAN/CSA C22.2-09 Canadian Electrical Code, Part II – General Requirements
CAN/CSA C22.2 No. 94	CAN/CSA C22.2 No. 94 Electrical Enclosures
CAN/CSA C22.3 No. 1 & 8	CAN/CSA C22.3 No. 1 & 8 Overhead Systems
CAN/CSA C22.3 No. 4	CAN/CSA C22.3 No. 4-1974(R1995) Control of Electromechanical Corrosion of Underground Metallic Structures

Reference Documents in Schedule 15	Description of Reference Documents
CAN/CSA C390-10	CAN/CSA C390-10 Energy Efficiency Test Methods for Three-Phase Induction Motors
CAN/CSA G30.5	CAN/CSA G30.5 Welded Steel Wire Fabric for Concrete Reinforcement
CAN/CSA G30.18	CAN/CSA G30.18 Grade 400W, Billet-steel Bars, Deformed
CAN/CSA G40.20	CAN/CSA G40.20 General Requirements for Rolled or Welded Structural Quality Steel
CAN/CSA G40.21	CAN/CSA G40.21 Structural Quality Steels
CAN/CSA-G164-M	CAN/CSA-G164-M Hot Dip Galvanizing of Irregularly Shaped Articles
CAN/CSA O86	CAN/CSA O86 Engineering Design in Wood
CAN/CSA Q396	CAN/CSA Q396 Software Quality Assurance Standards
CAN/CSA Q632-90	CAN/CSA Q632-90 Reliability and Maintainability Management Guidelines
CAN/CSA S6	CAN/CSA S6 Canadian Highway Bridge Design Code (CHBDC)
CAN/CSA S16	CAN/CSA S16 Limit States Design of Steel Structures
CAN/CSA S136-M	CAN/CSA S136-M Design of Cold-Formed Steel Structural Members
CAN/CSA S304.1	CAN/CSA S304.1 Design of Masonry Structures
CAN/CSA S413	CAN/CSA S413 Parking Structures
CAN/CSA S478	CAN/CSA S478 Guideline on Durability in Buildings
CAN/CSA S448.1	CAN/CSA S448.1 Repair of Reinforced Concrete in Buildings and Parking Structures
CAN/CSA S806	CAN/CSA S806 Design & Construction of Building Structures with Fibre Reinforced Polymer
CAN/CSA W47.1	CAN/CSA W47.1 Certification for Companies for Fusion Welding of Steel Structures
CAN/CSA W59	CAN/CSA W59 Welded Steel Construction (Metal Arc Welding)

Reference Documents in Schedule 15	Description of Reference Documents
CAN/CSA W186-M	CAN/CSA W186-M Welding of Reinforcing Bars in Reinforced Concrete Construction
CAN/CSA Z259.1	CAN/CSA Z259.1 Fall-Arresting Safety Belts and Lanyards for the Construction and Mining Industries
CAN/CSA Z259.2-M	CAN/CSA Z259.2-M Fall-Arresting Devices, Personal Lowering Devices and Life Lines
CAN/CSA Z259.3-M	CAN/CSA Z259.3-M Lineman's Body Belt and Lineman's Safety Strap
CAN/CSA Z462	CAN/CSA Z462 Workplace Electrical Safety
CAN/ULC-S701	CAN/ULC-S701 Thermal Insulation, Polystyrene, Boards and Pipe Covering
CAN3 S157-M	CAN3 S157-M Strength Design in Aluminum
Canadian Electrical Code	Canadian Electrical Code (CEC), 21st Edition
Canadian Foundation Engineering Manual	Canadian Foundation Engineering Manual, 3rd 4th, and 5th Editions
Canadian Motor Vehicle Safety Regulations, Technical Standard 108	
Canadian Portland Cement Association's Simplified Design Procedure	
Canadian Standards for Nursery Stock	Most recent addition
[REDACTED] Steel Framed Drywall Systems, 09250-1 E	**[REDACTED]** Steel Framed Drywall Systems, 09250-1 E
Chromaticity Coordinates, MTO	Chromaticity Coordinates for pavement line marking, MTO
CIE 1976 - L*, a*, b*	Uniform Colour Space and Colour Difference Equation
CISC Guide for the Design of Crane-Supporting Steel Structures	Canadian Institute of Steel Construction (CISC)
City of Ottawa Accessibility Design Standards	City of Ottawa Accessibility Design Standards, Second Edition November 2015
City of Ottawa Area Traffic Management Principles and Guidelines	
City of Ottawa CADD Standards Manual	City of Ottawa CADD standards for project and as-built drawings

Reference Documents in Schedule 15	Description of Reference Documents
City of Ottawa Confederation East / West Public Art Plan	Public Art Plan developed by the City of Ottawa for Stage 2 Light Rail Transit
City of Ottawa Data Handbook	
City of Ottawa Emergency Management Plan	
City of Ottawa Green Space Master Plan	
City of Ottawa Integrated Street Furniture Policy and Design Guidelines	City of Ottawa Integrated Street Furniture Policy and Design Guidelines, August 2009 (ISFP)
City of Ottawa Interior Planning Standards	City of Ottawa, Real Property and Assets Management, July 2002
City of Ottawa ISD Project Delivery Manual	City of Ottawa standards for project planning, design and construction
City of Ottawa Municipal Accessibility Plan (COMAP) Accessibility and Design Guidelines for the Visually Impaired	City of Ottawa Municipal Accessibility Plan (COMAP) Accessibility and Design Guidelines for the Visually Impaired
City of Ottawa Operational Policy, Procedures and Guidelines	
City of Ottawa Right of Way Lighting Policy	
City of Ottawa Road Corridor Planning & Design Guidelines, Urban & Village Collectors / Rural Arterials & Collectors	City of Ottawa Road Corridor Planning & Design Guidelines, Urban & Village Collectors / Rural Arterials & Collectors, October 2008
City of Ottawa Sewer Design Guidelines	City of Ottawa Sewer Design Guidelines
City of Ottawa Sewer Use By-law No. 2003-514	
City of Ottawa Slope Stability Guidelines for Development Applications	
City of Ottawa Standard Tender Documents for Unit Price Contracts, Volume 1, 2 and 3	
City of Ottawa Stormwater Management Facility Design Guidelines	City of Ottawa Stormwater Management Facility Design Guidelines (April 2012)
City of Ottawa Traffic and Parking By-Laws	
City of Ottawa Transit Technology Choice Report	
City of Ottawa Urban and Rural Truck Routes	

Reference Documents in Schedule 15	Description of Reference Documents
City of Ottawa Water Design Guidelines	
CL-625-ONT	CHBDC
Class Environmental Assessment for Provincial Transportation Facilities, MTO	Class Environmental Assessment for Provincial Transportation Facilities, MTO, (December 1997 - Amended July 2011)
CMAA No. 70	CMAA No. 70 Top Running Bridge and Gantry Type Multiple Girder Electric Overhead Traveling Cranes
CMAA No.74	CMAA No.74 Top Running and Under Running Single Girder Electric Traveling Cranes Utilizing Under Running Trolley Hoist
[REDACTED] Guidelines for Design of Railway Structures	**[REDACTED]**, 2006
Collision/Incident Report Form, MTO	Collision/Incident Report Form, MTO
Concrete Barrier Repair and Rehabilitation Maintenance Manual (Draft)	Concrete Barrier Repair and Rehabilitation Maintenance Manual (Draft), MTO
Construction Administration and Inspection Task Manual (CAITM) - Part B: Tasks, MTO	Construction Administration and Inspection Task Manual, Part B: Tasks, MTO Contract Management Office, April 2017
Contract Design, Estimating and Documentation Manual, MTO	Contract Design, Estimating and Documentation (CDED), MTO, Surveys & Design Office
CPCI Design Manual Precast Prestressed Concrete	
CRCA Specifications Manual	Canadian Roofing Contractors Association (CRCA)
CSA S807	CSA S807 Fibre Reinforced Polymers
CSA Standards pertinent to the Electrical Work	CSA Standards pertinent to the Electrical Work
CSSBI 101 M	CSSBI 101 M Zinc Coated Structural Quality Steel Sheet for Steel
Designation of Construction Zone forms, PH-M-101	Designation of Construction Zone forms, PH-M-101, May 2011
DCSO 2014-01	DCSO 2014-01 May 15 2014, Implementation of Tactile Walking Surface Indicators for new sidewalk ramps in compliance with Ontario

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	Regulation 413/12.
DCSO 2014-04	DCSO 2014-04 Oct 21, 2014 Implementation of Bikeways Design Manual
DCSO 2015-01	DCSO 2015-01 June 23, 2015 Fully Paved Shoulders on Major Capital Freeway Contracts
DOT-FTA-MA-26-5005-00-01 Hazard Analysis Guidelines for Transit Projects	U.S. Department of Transportation, Federal Transit Administration (January 2000)
DOT, "Recommended Emergency Preparedness Guidelines for Rail Transit Systems"	Department of Transportation (DOT), "Recommended Emergency Preparedness Guidelines for Rail Transit Systems"
Downtown Ottawa Urban Design Strategy	Downtown Ottawa Urban Design Strategy (DOUDS)
Drainage Act	*Drainage Act, 1990* (Ontario)
Electricity Act	*Electricity Act, 1998*
Elevating Devices Act and Ontario Regulation 229/81	
Elevators and Fixed Conveyance Act	
EN 13272	EN 13272 Railway applications – Electrical Lighting for Rolling Stock in Public Transport Systems
EN 50121-1	EN 50121-1 Railway Applications – Electromagnetic Compatibility – Part 1: General
EN 50121-2	EN 50121-2 Railway Applications – Electromagnetic Compatibility – Part 2: Emissions of the Whole Railway System to the Outside World
EN 50121-3-1	EN 50121-3-1 Railway Applications, EMC – Rolling Stock – Train and Complete Vehicle
EN 50121-3-2	EN 50121-3-2 Railway Applications, EMC – Rolling Stock – Apparatus
EN 50121-4	EN 50121-4 Railway Applications, EMC – Emission and Immunity of the Signaling and Telecommunications Apparatus
EN 50121-5	EN 50121-5 Railway Applications, EMC – Emissions and Immunity of Fixed Power Supply Installations and Apparatus

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EN 50126	EN 50126 Railway Applications – The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS)
EN 50128	EN 50128 Railway Applications – Communication, Signalling, and Processing Systems - Software for Railway Control and Protection Systems
EN 50129	EN 50129 Railway Applications – Communication, Signalling and Processing Systems - Safety Related Electronic for Signalling
EN 50155	EN 50155 Railway Applications – Electronic Equipment Used on Rolling Stock
EN 50159-2	EN 50159-2 Railway Applications – Communication, Signalling and Processing Systems – Part 2: Safety Related Communication in Open Transmission Systems
EN 50162	EN 50162 Protection Against Corrosion By DC Track Stray Currents
Environmental Guide for Fish and Fish Habitat Appendix B – Implementing the Protocol for Highway Maintenance Activities	Environmental Guide for Fish and Fish Habitat Appendix B – Implementing the Protocol for Highway Maintenance Activities
ESA Permits	ESA Permits
Federal Highway Administration (FHWA) FHWA-NHI-00-043	Federal Highway Administration (FHWA) FHWA-NHI-00-043 Mechanically stabilized earth walls and reinforced soil slopes design & construction guidelines
Federal Highway Administration (FHWA) Post Tensioning Tendon Installation and Grouting Manual	
FHWA Vehicle Classification Scheme F	FHWA Vehicle Classification Scheme F standard for vehicle classification data collection
Fisheries Act	*Fisheries Act, 1985*
FM 1-28	FM 1-28 Design Wind Loads
FM 4450	FM 4450 Approval Standards for Class 1 Insulated Steel Roof Decks
FM 4470	FM 4470 Approval Standard for Class 1 Roof

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	Covers
Full Road Closure Policy – June 2011	Full Road Closure Policy – June 2011
GANA Glazing Manual	Glass Association of North America (GANA)
GANA Laminated Glazing Reference Manual	GANA
Geometric Design Guide for Canadian Roads	Geometric Design Guide for Canadian Roads (TAC, 1999)
Geometric Design Standards for Ontario Highways	Geometric Design Standards for Ontario Highways (MTO)
Green Energy Act, 2009	
Guidelines for Foundation Engineering – Tunneling Specialty for Corridor Encroachment Permit Application	Guidelines for Foundation Engineering – Tunneling Specialty for Corridor Encroachment Permit Application
Guideline for Professional Engineers Providing Geotechnical Engineering Services, published by Professional Engineers of Ontario (PEO)	GUIDELINE, Professional Engineers Providing Geotechnical Engineering Services, Revised 11/15/98
Guideline for Use of Advisory and Regulatory Speeds in Construction Zones (2014 04)	Guideline for Use of Advisory and Regulatory Speeds in Construction Zones (2014 04)
Guidelines on the Use of Flashing Beacons, Mar 2010	Guidelines on the Use of Flashing Beacons, Mar 2010
HD Bulletin 2011-002 Permanent Ground Mounted Small Signs	HD Bulletin 2011-002 Permanent Ground Mounted Small Signs
HD Bulletin 2012-004 Integration of cyclists and pedestrians at Interchanges – Final Technical Report	HD Bulletin 2012-004 Integration of cyclists and pedestrians at Interchanges – Final Technical Report
Highway Capacity Manual 2010 (HCM 2010) Highway Capacity Manual 2015 (HCM 2015)	Highway Capacity Manual 2010 & 2015 (HCM 2010), (HCM 2015) Transportation Research Board
Highway Design – Removal of Pavement Markings (undated)	Highway Design – Removal of Pavement Markings (undated)
Highway Safety Manual 2010	Highway Safety Manual 2010
HMI 100	HMI 100 Electrical Wire Rope Hoists
IEC/ISO 27000	IEC/ISO 27000 Information Security

Reference Documents in Schedule 15	Description of Reference Documents
	Management Systems Standards
IEC 1000-5-2	IEC 1000-5-2 EMC Cabling Guidelines
IEC 15288	IEC 15288 Systems Engineering
IEC 60077-1	IEC 60077-1 Railway Applications – Electric Equipment for Rolling Stock - Part 1: General Service Conditions and General Rules
IEC 60077-3	IEC 60077-3 Railway Applications – Electric Equipment for Rolling Stock. Electrotechnical Components. Rules for D.C. Circuit-Breakers
IEC 60322	IEC 60322 Railway Applications – Electric Equipment for Rolling Stock – Rules for Power Resistors of Open Construction
IEC 60349-2	IEC 60349-2 Electric Traction – Rotating Electrical Machines for rail and Road Vehicles – Part 2: Electronic Converter-fed Alternating Current Motors
IEC 60529	IEC 60529 Degrees of Protection Provided by Enclosures (IP Code)
IEC 60623	IEC 60623 Secondary Cells and Batteries Containing Alkaline or Other Non-acid Electrolytes – Vented Nickel-cadmium Prismatic Rechargeable Single Cells
IEC 61000-2008	IEC 61000-2008 Electromagnetic Compatibility (EMC), Testing and Measurement Techniques
IEC 61071	IEC 61071 Capacitors for Power Electronics
IEC 61133	IEC 61133 Railway Applications – Rolling Stock – Testing of Rolling Stock on Completion of Construction and Before Entry Into Service
IEC 61287-1	IEC 61287-1 Railway Applications – Power Convertors Installed on Board Rolling Stock – Part 1: Characteristics and Test Methods
IEC 61508	IEC 61508 Functional Safety of Electrical/ Electronic/Programmable Electronic Safety-related Systems
IEEE 11	IEEE 11 Rotating Electric Machinery for Rail and Road Vehicles
IEEE 16	IEEE 16 Electrical and Electronic Control

Reference Documents in Schedule 15	Description of Reference Documents
	Apparatus on Rail Vehicles
IEEE 80	IEEE 80 Safety in AC Substation Grounding
IEEE 383	IEEE 383 Qualifying Class 1E Electric Cables and Field Splices for Nuclear Power Generating Stations
IEEE 497	IEEE 497 Accident Monitoring Instrumentation for Nuclear Power Generating Stations
IEEE 519	IEEE 519 Harmonic Limits
IEEE 1473	IEEE 1473 Communications Protocol Aboard Passenger Trains
IEEE 1474.1	IEEE 1474.1 Communications-Based Train Control (CBTC) Performance and Functional Requirements
IEEE 1474.2	IEEE 1474.2 Functioning of and Interfaces Among Propulsion, Friction Brake and Train-borne Master Control on Rail Rapid Transit Vehicles
IEEE 1474.3	IEEE 1474.3 Recommended Practice for Communications-Based Train Control (CBTC) System Design and Functional Allocations
IEEE 1477	IEEE 1477 Passenger Information System for Rail Transit Vehicles
IEEE 1482	IEEE 1482 Rail Transit Vehicle Event Recorders
IEEE 1483	IEEE 1483 Verification of Vital Functions in Processor-Based Systems Used in Rail Transit Control
IEEE 1584	IEEE 1584 Guide for Performing Arc-Flash Hazard Calculations
IEEE 1635.2	IEEE 1635.2 Draft Guide for the Ventilation and Thermal Management of Batteries for Stationary Applications
IEEE C37-13	IEEE C37-13 Low-Voltage AC Power Circuit Breakers Used in Enclosures
IEEE C37-14	IEEE C37-14 Low-Voltage DC Power Circuit Breakers Used in Enclosures
IEEE C95.1	IEEE C95.1 Safety Levels with Respect to

Reference Documents in Schedule 15	Description of Reference Documents
	Human Exposure to Electromagnetic Fields, 3 to 300 GHz
IEEE C95.6	IEEE C95.6 Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0 to 3 kHz
IESNA Lighting Handbook	Illuminating Engineering Society of North America (IESNA), Lighting Handbook
IESNA TM-11-2006	IESNA TM-11-2006 Technical Memorandum on Light Trespass
ISO 2631	ISO 2631 Mechanical Vibration and Shock
ISO 9000 Series	ISO 9000 Series – Quality Management
ISO 14224	ISO 14224 Petroleum, Petrochemical and Natural Gas Industries – Collection and Exchange of Reliability and Maintenance Data for Equipment
ITA Fire Guidelines	
Lebreton Flats South Development	
Materials Usage Report	Materials Usage Report – MTO
MHIA: MH 30.1	MHIA: MH 30.1 Specification for Dock Leveling Devices
MIL-STD-882	MIL-STD-882 System Safety
Model National Energy Code for Buildings	Model National Energy Code for Buildings (MNECB), 1997
MOE Design Guidelines for Drinking-Water Systems	Ontario Ministry of the Environment (MOE), 2008
MOE Design Guidelines for Sewage Works	MOE, 2008
MOE Guideline for Use at Contaminated Sites in Ontario	MOE Guideline for Use at Contaminated Sites in Ontario, 1997
MOE Stormwater Management Planning and Design Guidelines	MOE, 2003
MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings	MTO/DFO/OMNR, 2006
MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial	MTO/DFO/OMNR, 2006

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Transportation Undertakings – User Field Guide	
MTO/MOE Memorandum of Understanding on Permits-To-Take-Water	MTO/MOE, 2007
MTO/MOE Protocol for the Management of Excess Materials in Road Construction and Maintenance	MTO/MOE, 1994
MTO accepted luminaire Photometric list	MTO
MTO Aesthetic Guidelines for Bridges	MTO
MTO AutoCAD Standards Guide	MTO, 2004
MTO Bailey Bridge Manual	MTO, 1990
MTO Barrier Wall Inspection Guide	Ministry of Transportation Ontario, Ontario Structure Inspection Manual (OSIM), April 2008
MTO Cathodic Protection Manual for Concrete Bridges	MTO, 1993
MTO Class Environmental Assessment for Provincial Transportation Facilities	MTO, 2000
MTO Concrete Culvert Design and Detailing Manual	MTO, 2003
MTO Construction Manual	MTO
MTO Culvert Assessment Guide	Rating guidelines for Non-Structural Culvert condition assessments
MTO Designated Sources for Material	MTO, 2000
MTO Designated Sources of Materials List	MTO Designated Sources of Materials List, rev Dec 2009
MTO Directive B-63	Ministry of Transportation Drainage Management Policy and Practice, July 2007
MTO Directive PHM-C-001 The Use of Surface Course Types on Provincial Highways	MTO Directive PHM-C-001 The Use of Surface Course Types on Provincial Highways, Rev. Jul 2009
MTO Directive PHY B-209	MTO Directive PHY B-209, Chain Link Fence, MTO, 1987
MTO Drainage Directives	PHY Directive B014, B63, B217

Reference Documents in Schedule 15	Description of Reference Documents
MTO Drainage Management Manual	MTO, 1997
MTO Durability Classification Guidelines	MTO Durability Classification Guidelines
MTO Durable Marking Daily Work Log	MTO Durable Marking Daily Work Log for pavement line marking
MTO Eastern Region ROW Usage Form	Eastern Region Right-of-Way Usage Notification Form, Rev 08 04 2016
MTO Electrical Engineering Bulletin	MTO Electrical Engineering Bulletin
MTO Electrical Engineering Manual	MTO, 2012
MTO Electrical Engineering Manual Volume 2 (Electrical Maintenance)	Electrical Engineering Manual Volume 2 (Electrical Maintenance), 2012
MTO Embankment Settlement Criteria for Design	MTO Embankment Settlement Criteria for Design, March 2, 2010
MTO Entrance Permits and Corridor Management document	MTO Entrance Permits and Corridor Management document, May 2014
MTO Evaluation of Drainage Management Software	Refers to evaluation documentation in this website: http://www.mto.gov.on.ca/english/publications/drainage/software/index.shtml
MTO Environmental Guide for Contaminated Property Identification and Management	MTO, 2006
MTO Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects	MTO Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects, Feb 2007
MTO Environmental Guidelines for Structural Steel Coating	MTO, 1996
MTO Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operation and Maintenance	MTO, 2006
MTO Flasher Beacon Inspection Report	MTO
MTO “Fluorescent Orange Temp Pavement Markings Policy Number 2011-01”	MTO Highway Standards Branch Provincial Engineering Memorandum
MTO Formulations to Calculate Pavement Condition Indices	MTO, The Formulations to Calculate Pavement Condition Indices, September 2009

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MTO Formwork and Falsework Manual	MTO, 1997
MTO Friction Testing Guidelines – Criterion and Test Method for Friction Properties of Anti-Icing Liquids	Technical standards, equipment, software and reporting requirements for friction testing.
MTO General Conditions of Contract	MTO GENERAL CONDITIONS OF CONTRACT, Nov 2016
MTO Geometric Design Standards for Ontario Highways Manual	MTO
MTO Gravity Pipe Design Guidelines for Circular Culverts and Storm Sewers	MTO, 2014
MTO Guide for Preparing Hydrology Reports for Water Crossings	MTO
MTO Guide to the Design of Post-Tensioned Decks	MTO, 1997
MTO Highway Drainage Design Standards	MTO, 2008
MTO Highway Standards Branch – Provincial Engineering Memorandum – Design and Contract Standards Office #2016-01, January 28, 2016, MTO	MTO Highway Standards Branch – Provincial Engineering Memorandum – Design and Contract Standards Office #2016-01, January 28, 2016, MTO
MTO Illumination Inspection Report	MTO Illumination Inspection Report
MTO Illumination Maintenance Report	MTO Illumination Maintenance Report
MTO Illumination Warrant Policy PLNG-B-05	Ministry of Transportation Ontario Directives, Ministry Policy for Highway Illumination, issued by Policy, Planning and Standards Division
MTO Illumination Warrant Policy PLNG-B-06	Ministry of Transportation Ontario Directives, Ministry Policy for Financial Responsibilities for Highway Illumination, issued by ADM, Policy, Planning and Standards Division
MTO Integral Abutment Bridges	MTO, 1996
MTO Integral Abutment Guidelines	Integral Abutment Guidelines, July 1996, MTO
MTO Interchange Diagram Convention	MTO Interchange Diagram Convention
MTO IRI Reporting format	Requirements for the provision of pavement roughness measurements for the HMQ in terms of International Roughness Index (IRI) values
MTO King's Highway Guide Signing Policy Manual	MTO

Reference Documents in Schedule 15	Description of Reference Documents
MTO Lab Testing Manual	MTO, 2006
MTO Laboratory Testing Manual	MTO, 2016
MTO Landscape Composition Impact Assessment Report	MTO Landscape Composition Impact Assessment Report, August 2009
MTO Linear Highway Referencing System (LHRS)	MTO Linear Highway Referencing System (LHRS)
MTO Maintenance Manual	MTO Maintenance Manual
MTO Materials Information Report MI-183 "Adaptation and Verification of AASHTO Pavement Design Parameters for Ontario Conditions"	Adaptation and Verification of AASHTO Pavement Design Parameters for Ontario Conditions, Final Report, Rev. Dec 2008
MTO Municipal Work on MTO Traffic Signals Policy	Policy - Municipal Work on MTO Traffic Signals, September 2008
MTO Non-Structural Culvert Condition Assessment Report	Required file format for Non-Structural Culvert condition assessments
MTO Occupational Health and Safety Field Guide	MTO Occupational Health and Safety Field Guide for Engineering Functions
MTO Ontario Heritage Bridge Guidelines for Provincially Owned Bridges	MTO, 2008
MTO Ontario Structure Inspection Manual (OSIM)	MTO, 2008
MTO Ontario Structures Inspection Management Systems (OSIMS) User's Guide	MTO, April 2008
MTO Overcoating – Technical Assessment of Existing Coatings of Steel Bridges for Overcoating	MTO
MTO Pavement Design and Rehabilitation Manual (SDO-90-01)	Ministry of Transportation Ontario. SDO-90-01, Pavement Design and Rehabilitation Manual. Queen's Printer for Ontario (1990)
MTO Pavement Management System Data File Definitions	MTO Pavement Management System Data File Definitions - available from MTO Pavement and Foundations Office
Pavement Marking Daily Work Log, MTO	Pavement Marking Daily Work Log, MTO
MTO Pavement Roughness Measurement	MTO requirements for pavement roughness measurements in terms of IRI, March 2010

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MTO Performance of Integral Abutment Bridges Report	MTO, 2000
MTO PHM-125 Legal Drawings	MTO Legal Form PH-M-125 (Feb 2015)
MTO PHM-125 Legal Drawings Check List	MTO Legal Form PH-M-125 (Feb 2015)
MTO Pile Load and Extraction Tests	MTO
MTO Policy – Roadway Lighting on Municipal Crossroads	Roadway Lighting on Municipal Crossroads, Memorandum, October 24, 2003
MTO Power Supply Inspection Report	MTO Power Supply Inspection Report
MTO Prestressed Concrete Manual for Quality Assurance of Bridges During Construction	MTO, 1998
MTO Procedures For Estimating Traffic Loads For Pavement Design	Procedures For Estimating Traffic Loads For Pavement Design, Pavements and Foundations Section, MTO, 1995
MTO Ramp Closure Gate Sign Installation Drawings	Ministry of Transportation Ontario Drawings (MTOD) for Ramp Closure Gate Installation, December 2009
MTO Radio Protocol	MTO Radio Protocol
MTO Retaining Wall Inspection Guidelines (RWIG)	Ministry of Transportation Ontario, Ontario Structure Inspection Manual (OSIM), October 2000
MTO Retrofitting of Existing Bridges with Joints to Semi-Integral Abutments	MTO Retrofitting of Existing Bridges with Joints to Semi-Integral Abutments, 2004
MTO Roadside Safety Manual	Roadside Safety Manual, MTO, Quality and Standards Division, 1993
MTO Roadside Sign Support Maintenance Inspection Form	MTO Roadside Sign Support Maintenance Inspection Form
MTO RSS Design Guidelines	MTO, 2007 & 2008
MTO Seismic Design Guidelines	MTO
MTO Semi-Integral Abutment Bridges Manual	MTO
MTO Sign Sheeting Memorandum	Sign Sheeting Memorandum, February 21, 2008, MTO Traffic Office
MTO Sign Support Inspection Guidelines (SSIG)	Sign Support Inspection Guidelines, MTO, 2002

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MTO Sign Support Manual	MTO, April 2015
MTO SP-024	Manual for Condition Rating of Flexible Pavements - Distress Manifestations, MTO
MTO Stormwater Management Ponds Inspection Report	MTO Stormwater Management Ponds Inspection Report
MTO Structural Manual	MTO, August 2014
MTO Structural Steel Coating Manual	MTO, 2004
MTO Structural Rehabilitation Manual	MTO, 2004 & 2007
MTOD	Ministry of Transportation Design Drawings
MTO Temporary Conditions Traffic Management: Advanced Notification, Advanced Warning, and Alternate Route Signing Manual	MTO Temporary Conditions Traffic Management: Advanced Notification, Advanced Warning, and Alternate Route Signing Manual, April 2001
MTO Traffic Engineering Software (TES) – Header and File Name Convention	MTO Traffic Engineering Software (TES) – Header and File Name Convention
MTO Traffic Signal Bulletin 2009-01	MTO Traffic Signal Bulletin 2009-01
MTO Traffic Signal Callout Report	MTO Traffic Signal Callout Report
MTO Traffic Signal Inspection Report	MTO Traffic Signal Inspection Report
MTO Traffic Signal Timing Policy	MTO Traffic Signal Timing Policy, Oct 2012
NACE Standard SP0169	NACE Standard SP0169 Control of External Corrosion on Underground and Submerged Metallic Piping Systems
National Capital Act, 1985	U.S., 1985
National Electrical and Safety Code (NESC)	
National Transportation Communications for ITS Protocol (NTCIP)	Interface standards as applied to COMPASS
NBC 2010	National Building Code of Canada (NBC 2010)
NCC Pathway for Canada's Capital Region Strategic Plan	
NCHRP Report 280 Work Zone Practices	NCHRP Report 280 Work Zone Practices – Table 3: GENERAL GUIDELINES ON VEHICLE CAPACITY THROUGH WORK ZONES
NCMA Segmental Retaining Wall Design	

Reference Documents in Schedule 15	Description of Reference Documents
Manual	
NFPA 10	NFPA 10 Portable Fire Extinguishers
NFPA 13	NFPA 13 Installation of Sprinkler Systems
NFPA 14	NFPA 14 Installation of Standpipe, Private Hydrants, and Hose Systems
NFPA 20	NFPA 20 Installation of Stationary Pumps
NFPA 24	NFPA 24 Installation of Private Fire Service Mains and Their Appurtenances
NFPA 70	NFPA 70 National Electrical Code
NFPA 80	NFPA 80 Fire Doors and Other Opening Protectives
NFPA 90A	NFPA 90A Installation of Air-conditioning and Ventilation Systems
NFPA 91	NFPA 91 Exhaust System for Air-Conveying of Vapours, Gases, Mist, and Noncombustible Particulate Solids
NFPA 92A	NFPA 92A Recommended Practice for Smoke-Control Systems;
NFPA 99	NFPA 99 Health Care Facilities Code
NFPA 101	NFPA 101 Life Safety Code
NFPA 110	NFPA 110 Emergency and Standby Power Systems
NFPA 130	NFPA 130 Fixed Guideway Transit and Passenger Rail Systems
NFPA 204	NFPA 204 Smoke and Heat Venting
NFPA 502	NFPA 502 Road Tunnels, Bridges and Other Limited Access Highways
NFPA 1963	NFPA 1963 Fire Hose Connections
NFPA 2001	NFPA 2001 Clean Agent Fire Extinguishing Systems
NFRC 100	NFRC 100 Procedure for Determining Fenestration Product U-factors
NRCA Roofing Manual: Steep-slope Roof Systems	National Roofing Contractors Association (NRCA), 2009

Reference Documents in Schedule 15	Description of Reference Documents
NSF 61	NSF 61 Drinking Water System Components
Occupational Health and Safety Act	*Occupational Health and Safety Act* (OHSA)
OC Transpo Operating Policy and Procedures	
OC Transpo Transitway and Station Design Guidelines June 2013	OC Transpo Transitway and Station Design Guidelines June 2013
Old Ottawa East Community Design Plan	
Ontario Barrier-Free Design Guide	Ontario Barrier-Free Design Guide – Ontario Safety Codes Council
Ontario Building Code	Ontario Building Code (OBC 2006 & 2012)
Ontario Electrical Safety Code	Ontario Electrical Safety Code (OESC), 24th Edition
Ontario Electrical Safety Code	Ontario Electrical Safety Code, O. Reg. 164/99
Ontario Electrical Safety Code, Electrical Safety Authority	Ontario Electrical Safety Code, 26th Edition, 2015
Ontario Fire Code	Ontario Fire Code (OFC)
Ontario Heritage Act	*Ontario Heritage Act*
Ontario Mechanical Code	
Ontario Pavement and Rehabilitation Manual	1993
Ontario Traffic Manual	Ontario (Canada) Ministry of Transportation. Ontario Traffic Manual. Toronto, Ontario, Canada: Ontario Ministry of Transportation, July 2001.
Ontario Traffic Manual (MTO)	Ontario Traffic Manual, MTO, 2005
Ontario Traffic Manual (OTM) Book 1	Ontario Traffic Manual Book 1, Introduction to the Ontario Traffic Manual, March 2005
Ontario Traffic Manual (OTM) Book 1A	Ontario Traffic Manual Book 1A, Introduction to the Ontario Traffic Manual Appendix A – Illustrated Sign and Signal Display Index, July 2001
Ontario Traffic Manual (OTM) Book 1B	Ontario Traffic Manual Book 1B, Introduction to the Ontario Traffic Manual, Appendix B – Sign Design Principal, July 2001
Ontario Traffic Manual (OTM) Book 1C	Ontario Traffic Manual Book 1C, Introduction to the Ontario Traffic Manual, Appendix C –

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	Positive Guidance Toolkit, July 2001
Ontario Traffic Manual (OTM) Book 2	Ontario Traffic Manual Book 2, Sign Design, Fabrication and Patterns, March 2005
Ontario Traffic Manual (OTM) Book 5	Ontario Traffic Manual Book 5, Regulatory Signs, Jan 2005
Ontario Traffic Manual (OTM) Book 6	Ontario Traffic Manual Book 6, Warning Signs, July 2001
Ontario Traffic Manual (OTM) Book 7	Ontario Traffic Manual Book 7, Temporary Conditions, Jan 2014
Ontario Traffic Manual (OTM) Book 7 – Field Edition – ERRATA	Ontario Traffic Manual Book 7 – Field Edition – ERRATA, February 2016 Edition
Ontario Traffic Manual (OTM) Book 8	Ontario Traffic Manual Book 8, Guide and Information Signs, May 2010
Ontario Traffic Manual (OTM) Book 10	Ontario Traffic Manual Book 10, Dynamic Message Signs, December 2007
Ontario Traffic Manual (OTM) Book 11	Ontario Traffic Manual Book 11, Pavement, Hazard and Delineation Markings, March 2000
Ontario Traffic Manual (OTM) Book 12	Ontario Traffic Manual Book 12, Traffic Signals, March 2012
Ontario Traffic Manual (OTM) Book 15	Ontario Traffic Manual Book 15, Pedestrian Crossing Facilities, June 2016
Ontario Traffic Manual Book 18, Cycling Facilities, Dec 2013	Ontario Traffic Manual Book 18, Cycling Facilities, Dec 2013
Ontario Traffic Manual, Book 19, ATMS 2010	Ontario Traffic Manual, Book 19, ATMS 2010 December 2007
Ontario Water Resources Act	R.S.O. 1990
OPES 0910–1B	January 2008 Electronic Controllers
OPES 1920-1A	July 2008 Infrared Road Surface Temperature Indicating System Controllers
OPS	Ontario Provincial Standard for Roads and Public Works (OPS)
OPSD	Ontario Provincial Standard Drawings (OPSD)
OPSS	Ontario Provincial Standards Specifications
Ottawa Cycling Plan	Ottawa Cycling Plan (OCP)

Reference Documents in Schedule 15	Description of Reference Documents
Ottawa DOTT Recommended Plan	Ottawa DOTT Recommended Plan
Ottawa Escarpment Area District Plan	
Ottawa Integrated Street Furniture Program	Ottawa Integrated Street Furniture Program
Ottawa Official Plan	Ottawa Official Plan (OP)
Ottawa Pedestrian Plan	Ottawa Pedestrian Plan
Ottawa Train Yards Site Servicing Report	David McManus Engineering Ltd., 2001
Ottawa Transit-Oriented Development Guidelines	Ottawa Transit-Oriented Development (TOD) Guidelines
Ottawa Transportation Master Plan	Ottawa Transportation Master Plan
Ottawa Urban Design, A Reference Guide to Creating Great Places and Great Spaces	Publication #2103
Overhead Sign Structures Reference Spreadsheet	Required file format for overhead sign inventory data capture
Overhead Sign Support Maintenance Inspection Form, MTO	Overhead Sign Support Maintenance Inspection Form, MTO
PDI-WH 201	PDI-WH 201 Water Hammer Arresters
[REDACTED]	**[REDACTED]**
Policy and Guidelines on Disability and the Duty to Accommodate	Ontario Human Rights Commission
Portable Temporary Traffic Signals Policy, Oct 2012	Portable Temporary Traffic Signals Policy, Oct 2012
Post-Tensioned Box Girder Bridge Manual	Post-Tensioning Institute (PTI) Post-Tensioned Box Girder Bridge Manual
Professional Engineers Act	*Professional Engineers Act* R.S.O. 1990, CHAPTER P.28
Province of Ontario Emergency Response Plan (PERP)	Emergency Response Plan, Province of Ontario, 2008
Provincial Engineering Memorandum Traffic Office #2014-01, September 18, 2014	A design guideline for the implementation of accessible pedestrian signals (APS) taking into consideration the requirements of AODA Ontario Regulation 413/12 and TAC guidelines
PVMS Best Practices Manual V4 05-09	PVMS Best Practices Manual V4 05-09
Quality Standards for Architectural Woodwork	Quality Standards for Architectural Woodwork (AWMAC)

Reference Documents in Schedule 15	Description of Reference Documents
Recommendations for Prestressed Rock and Soil Anchors	Post-Tensioning Institute (PTI) Recommendations for Prestressed Rock and Soil Anchors
Region of Ottawa-Carleton Regional Road Corridor Design Guidelines	Region of Ottawa-Carleton Regional Road Corridor Design Guidelines, July 2000, Region of Ottawa-Carleton
Roadside Safety Manual	MTO
Rock Tunneling with Steel Supports	Proctor, R.V. and White, T.L., Youngstown, Ohio: Commercial Shearing, Inc., 1988
SAE J524	SAE J524 Hydraulic Standards for Industrial Equipment
Secondary Plan for the Central Area	City of Ottawa
Seismic Design and Analysis of Underground Structures	Hashash, Y.M.A. et al., 2001, Tunneling and Underground Space Technology 16, pp. 247-293
Shotcrete Lining Design: Factors of Influence	John M. and Mattle B. (2003), RETC 2003 Proceedings, 726-734
Sign Sheeting Standards for Regulatory, Warning and Temp Condition Signs, Oct 2013	Sign Sheeting Standards for Regulatory, Warning and Temp Condition Signs, Oct 2013
SMACNA Architectural Sheet Metal Manual	Sheet Metal and Air-conditioning Contractors' National Association (SMACNA), 2003
SMACNA HVAC Duct Construction Standards	SMACNA
Species-at-Risk Permits	See Schedule 17 Environmental Obligations
Specification for Tunnelling	British Tunnelling Society and Institution of Civil Engineers (latest edition)
Specifications Covering Use of Aluminum in Passenger Carrying Railway Vehicles	
SSPC SP10	SSPC SP10 Surface Preparations - Near-White Blast Cleaning
Standard Respecting Pipeline Crossings Under Railways	
Structural Financial Analysis Manual	Structural Financial Analysis Manual, April 1993

Reference Documents in Schedule 15	Description of Reference Documents
Structural Manual: Division 1 Exceptions to the Canadian Highway Bridge Design CAN/CSA-S6-14	Structural Manual - Division 1, Exceptions to the Canadian Highway Bridge Design Code CAN/CSA-S6-14 for Ontario
Subway Environmental Design Handbook	Subway Environmental Design Handbook (SEDH) (DOT 1976);
Superpave Asphalt Mix Selection	
TC – RTD 10 Road/Railway Grade Crossing Technical Standards and Inspection, Testing and Maintenance Requirements	Transport Canada (TC), October 2002
TC E-10 Standards Respecting Pipeline Crossings Under Railways	
Technical Report No. 63, Guidance for the Design of Steel-Fibre-Reinforced Concrete	The Concrete Society, CCIP-017, March 2007
Toxics Reduction Act	S.O. 2009
Transit Cooperative Research Program (TCRP) Report 57 Track Design Handbook for Light Rail Transit	
Transportation Association of Canada – 7.0 Design and Operation of Road Maintenance Yards (September 2003)	Transportation Association of Canada – 7.0 Design and Operation of Road Maintenance Yards (September 2003)
Tunnel Lining Design Guide	
Tunney's Pasture Master Plan	
UIC605OR	UIC605OR Protection from Corrosion
University of Ottawa – Main Campus Strategy	
User's Guide – NBC: Structural Commentaries (Part 4)	
U.S. FED-STD-595B	Colours Used in Government Procurement, Dec 15, 1989