



Construction Administration
And
Inspection Task Manual

Ministry of Transportation

April 2012

To all users of the Construction Administration and Inspection Task Manual (CAITM), April 2012

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CONSTRUCTION ADMINISTRATION AND INSPECTION TASK MANUAL

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SECTION 1.0: INTRODUCTION

1.1 PURPOSE OF THE MANUAL

This manual has been prepared to assist the Contract Administrator and the Inspection Staff in the administration of highway construction contracts for the Ministry of Transportation, Ontario.

The Contract Administrator is responsible for providing the Contract Administration Services and Deliverables in accordance with the Construction Administration Legal Agreement including the Construction Administration and Inspection Task Manual.

The manual is divided into two parts.

Part A outlines the requirements for construction administration from the time of award of the Contract Administration Assignment to the submission of the final deliverables. Part A is divided into three sections dealing with pre-construction, during construction and post construction. While Section 2.0 of Part A outlines Pre-Construction requirements, some of the points discussed under sub-section 2.1 Contract Administration Start-Up Meeting, refer to deliverables to be completed during construction and post-construction. This part of the manual is to be used for the processing of approvals, documentation requirements, change approvals, and as a standard for meetings.

Part B consists of Inspection Tasks. The tasks are intended to provide those involved in inspection on Ministry of Transportation Contracts with a resource to check that the quality and quantity of the work is in accordance with Ministry specifications, standards, drawings, policies and procedures. This part of the manual is divided into eight sections dealing with: Grading, Concrete and Structures, Bituminous, Electrical, ATMS, Traffic Control, Environmental, and Weighed Materials.

This document is not a complete documentation of the construction administration process. It shall be read in conjunction with the Construction Contract Administration Agreement, MTO Construction Memoranda, Directives, requirements of the construction contract and pertinent legislation. In addition, further direction and guidance relating to interpretation may be given by the Contract Services Administrator.”

1.2 DUE DILIGENCE

The Contract Administrator and field staff shall make themselves aware of ARTICLE 2 – APPOINTMENT AND RELATIONSHIP, ARTICLE 4 - DUTIES OF THE SERVICE PROVIDER, AND ARTICLE 9 - CONSTRUCTION CONTRACT ADMINISTRATION PHASE, OF THE CONSTRUCTION CONTRACT ADMINISTRATION LEGAL AGREEMENT.

1.3 CONFIDENTIALITY

The Service Provider shall ensure that the Service Provider, its partners, directors, officers and personnel maintain confidentiality, and secure all material and information, that are the property of the Ministry, and which comes into the Service Provider's possession or under the Service Provider's control during the term of the Construction Administration Agreement.

All Contractor records are to be treated as confidential documents. Information requests received from subcontractors, suppliers, the media, or by third parties shall be discussed with the Contract Services Administrator prior to release.

1.4 ACRONYMS

AASHTO	American Association of State Highway Transportation Officials
AC	Asphalt Cement
ACE	Area Contracts Engineer
ACI	American Concrete Institute
ADM-R	Administration Regional Services
AMC	Area Maintenance Contract
ASAP	As Soon As Possible
ASTM	American Society for Testing and Materials
ATMS	Advanced Traffic Management Systems
AVS	Air Void System
CA	Contract Administrator
CAITM	Construction Administration and Inspection Task Manual
CAN/BAS	Canadian Bridge Analysis System
CAS	Construction Administration System
CCAA	Construction Contract Administration Agreement (Legal Agreement)
CCO	Contract Control Officer
C of C	Certificate of Conformance
CCTV	Closed Circuit Television
CDED	Contract Design Estimating and Documentation
CDS	Contract Documentation System
CIR	Cold In-Place Recycling
CO	Change Order
CP	Cathodic Protection
CSA	Contract Services Administrator
CVOR	Commercial Vehicle Operator's Registration
CPR	Contractor Performance Rating
CPRA	Contract Payment and Records Assessment
DCR	Design and Construction Report
DFO	Department of Fisheries and Oceans
DFT	Dry Film Thickness
DGS	Design Graphic System

DSLAT	Data System Line-up Acceptance Testing
DSM	Designated Sources for Materials
DTE/DCE	Data Terminal Equipment / Data Communications Equipment
DTM	Digital Terrain Model
EA	Environmental Assessment
ENT	Electrical Non-Metallic Tubing
EPS	Expanded Poly Styrene
ERS	End Result Specification
ESA	Electrical Safety Association
ESD	Environmental Screening Document
FDS	Final Detailed Statement
FOS	Filtration Opening Size
GPS	Global Positioning System
GSTPM	Guidelines for Sampling and Testing of Pavement Markings
HIR	Hot In Place Recycling
HPC	High Performance Concrete
LED	Light Emitting Diode
M	Milestone
MOE	Ministry of the Environment
MNR	Ministry of Natural Resources
MOC	Ministry of Culture
MSA	Material Selection Approval
MTO	Ministry of Transportation Ontario
OGDL	Open Graded Drainage Layer
OHSA	Occupational Health and Safety Act
OPP	Ontario Provincial Police
OPR	Operations
OPSS	Ontario Provincial Standard Specification
OSCLIS	Ontario Structural Clearance and Load Information System
OTM	Ontario Traffic Manual
PCM	Provincial Construction Memo
PDA	Power Distribution Assembly
PGAC	Performance Graded Asphalt Cement
PH-A	Provincial Highways Program Administration
PH-CC	Provincial Highways Capital Construction
PH-D	Provincial Highways Design
PH-M	Provincial Highways Maintenance
PHY	Provincial Highways
PIT	Pre-Installation Testing
PMD	Profile Measuring Device
POP	Proof of Performance
PQP	Plan Quantity Payment
PMM	Provincial Maintenance Memo
PVMS	Portable Variable Message Sign
QA	Quality Assurance
QAO	Quality Assurance Officer

QC	Quality Control
QST	Quality and Standards
QVE	Quality Verification Engineer
RAP	Reclaimed Asphalt Pavement
RFP	Request for Proposal
RFQ	Request for Quotation
RHM	Recycled Hot Mix
ROW	Right of Way
RSS	Retained Soil System
SIT	System Integration Test
SP	Special Provision
SSPC	Steel Structures Painting Council
TESR	Transportation Environmental Study Report
TOC	Traffic Operations Centre
VDS	Vehicle Detection Station
VMS	Variable Message Sign
VSLAT	Video System Line-up Acceptance Testing
W	Warranty
WHMIS	Workplace Hazardous Materials Information System
WP	Work Project

1.5 CONTRACT SERVICES ADMINISTRATOR

Where Contract Services Administrator (CSA) is used in the document it shall also denote Contract Control Officer (CCO) as applicable.

SECTION 2.0: PRE-CONSTRUCTION

2.1 CONTRACT ADMINISTRATION ASSIGNMENT START-UP MEETING

The purpose of the Contract Administration Assignment Start-up meeting is to define the roles and responsibilities of both the Ministry and the Service Provider. The process for the handling of documentation and approvals will also be discussed. The Contract Services Administrator will arrange and conduct the Contract Administration Assignment Start-Up Meeting. The Service Provider's Project Manager and Contract Administrator(s), and the Area Contracts Engineer and Head Quality Assurance shall be in attendance. The Service Provider will be responsible for the minutes of this meeting. This meeting shall take place even if the work has started.

The following issues should be discussed at the meeting:

2.1.1 Construction Administration Agreement

Review the status of the Construction Administration Agreement. Changes or revisions to the RFP/RFQ must be requested in writing by the Service Provider and approved by the Ministry prior to implementation. The Contract Administration field team must familiarize itself with all the contract administration, and contract requirements of the assignment.

2.1.1.1 MTO Staff Training

The Contract Administrator is responsible to provide on the job training to MTO staff in accordance with direction provided by the Ministry.

2.1.2 Service Provider's Quality Control of Services and Deliverables Plan

The following records will be made available for review in the field office and in RAQS throughout the term of the agreement: The Service Provider's Quality Control of Services and Deliverable Plan; Audit Reports for Milestone Inspection: Final Verification Audit check for Services and Deliverables; Audit Reports showing compliance and non-compliance

The Service Provider will immediately address and correct identified non-compliances to the Quality Control of Services and Deliverables Plan.

2.1.3 Invoices

Review the requirements of the Construction Contract Administration Agreement. Confirm the frequency and method of invoicing for the Service Provider's Services and Deliverables. Discuss the format of the Monthly Status Reports to be prepared by the

Service Provider that should include things such as: the status and staffing of the contract administration assignment, requests for addenda and their rationale, etc.

2.1.4 General

- Address issues and concerns from both MTO and the Service Provider with respect to expectations and results with emphasis on the Services and Deliverables.
- The Contract Administrator shall become familiar with their responsibilities regarding the Directives concerning Constructor conflicts and check that the Contractor coordinates all work with adjacent contractors / maintenance staff and service crews. Provincial Highways Directive PHY-B-238 Designation of a Constructor
- Discuss documentation to be copied to MTO.
- Discuss the change of work procedure as outlined in Section 3.4 of this Manual.
- Discuss/determine location of Service Provider's field office.
- Discuss the need for calculating price adjustments for materials in a timely manner to ensure Contractor's work is not affected.
- Identify name and location of Ministry designated laboratory.
- Discuss the requirement for providing input into Post Construction Engineering Appraisal through the Design Package Evaluation.
- Review Regional Policy regarding Media / MPP / General Public Inquiries.

2.1.5 Survey Requirements

The Service Provider shall accurately survey and submit appropriate documentation for the following as required:

- After stripping the overburden, all new original rock cross sections shall be taken, independently of the Contractor. Check that zero rock stations are supported by field measurement prior to blasting operations.
- New rock cross sections shall be surveyed and new rock surface (DTM) is created in In-Roads. New rock surface (DTM) shall be compared to the original rock surface (DTM) using In-Roads Overburden, rock and shatter quantities shall be recalculated and the cross sections updated monthly for progress and final payment purposes.
- Actual muskeg depth and width.
- Verify under-fill stripping widths and depths and control over-stripping widths on a borrow contract.
- Topsoil piles for volumes if by cubic metre and not square metre.
- Earth borrow and rock borrow if in bank volume is used as opposed to truck haul (imported).
- Any sub-excavation or soft spots by elevation to check below specified sub-grade elevation verify record data including elevations and changes.
- Streambed elevation for any in-water work, if not provided in the design.
- Quality Assurance checks for subgrade and granulars shall include the record of station, actual elevation and offset. This information is to be recorded at the specified intervals in a separate field book. The Service Provider survey work will be separate and independent from the Contractor's Quality Control surveys.

- All Transition Points to be verified by elevation and offset.
- Verify and document 10% of Contractor's alignment layout throughout the life of the contract.
- Review In-Roads final design cross sections when matching to existing tie-ins, structures, or new structures to check that elevations and transitions are properly coordinated.

2.1.6 Inspection Tasks

- Ensure the inspection task requirements are carried out as outlined in Part B of this manual.
- Ensure that all applicable milestone inspections are carried out and documented in the appropriate diaries.
- Review staffing levels on the contract ensuring they meet inspection task requirements.

2.1.7 Insurance and Risk Management Issues

Reference:

- Provincial Highways Directive PHY-B-103 Claims for Compensation for Personal and Business Losses During Construction

Review Regional Contracts Office policy regarding Third Party claims. All claims for compensation for personal and business loss shall be forwarded to the Contractor, with a copy to be maintained by the Contract Administrator. The Contract Administrator shall obtain copies, and maintain a file of any pertinent accident reports from the appropriate police force.

When the claims are forwarded through Management Board Secretariat's Insurance and Risk Management Section, the Contract Administrator shall examine the contract documentation and respond to requests for information. Copies of all correspondence copied to the Contract Services Administrator.

2.1.8 Contractor's Performance Rating

The Contractor's Performance Rating (CPR) shall be carried out in accordance with the document titled "Contractor Performance Rating – A Contract Administrator's Guide to Rating" that was in effect on the tender opening date of the contract

2.1.9 Turnover of Documents from MTO to Service Provider to include the following:

- Copies of the tender documents, contract drawings, and addenda.
- Signed Contract
- List of MTO contact names for the contract.

- Ministry supplied documents (including digital files) listed in the Construction Administration Agreement.
- Standard Ministry forms available in electronic format.
- Copies of any project-specific environmental assessment documentation (Transportation Environmental Study Report, Design and Construction Report, etc.).
- Copies of any project-specific environmental permits/approvals/exemptions and the associated applications.
- Completed Statement of Imported Content Form.
- Design Calculations
- Templates
- Cost Share Agreements
- Ministry signed documents (such as the traffic drawings PHM – 125)
- Refer to Section 2.2 Design Handover Meeting

2.1.10 Concerns / Expectations on Issues

- Establishing and maintaining appropriate relationships with suppliers, sub-contractors, adjacent property owners, municipalities, other Ministries representatives, the OPP, local politicians, local police and emergency services, school boards, transit authorities, utility companies, etc.; and
- Recording all discussions and meetings.
- Providing day-to-day liaison with the Contractor
- Providing first line interpretations of the Contract Documents to the Contractor, consistent with the intent of the Contract Documents
- Communicating the Ministry's decisions to the Contractor
- Traffic management, lane and ramp closure notification protocol to be discussed.
- Inform MTO of issues which may lead to delays or claims
- Inform MTO of any overruns and/or underruns
- Review the procedures for administration of progress payments
- Check the contractor provides deliverables in a timely, accurate manner
- Receiving submissions such as Working Drawings (shop drawings, construction drawings / details and related submissions) plans, proposals, and product data from the Contractor and forwarding them, with the Contract Administrator's comments, within two working days, to the Ministry.
- Confirming, documenting and reporting that Working Drawings
 - Are received within the specified time frame
 - Consist of the specified number of copies, content and format
 - Are sealed and signed by the shop/construction drawing detailer and the design checker when specified
 - Discuss Health and Safety Plan; issues and protection of employees
- Advise Service Provider that they are ministry representatives and must abide by the Personal Protective Equipment Guideline
- Review the requirements of the General Conditions for the contractor to submit CVORs for equipment on site and supplying source materials throughout the duration of the contact

- Performing a cursory review of all documents pertaining to the work for the purpose of identifying errors and omissions and advising the Ministry of such errors and omissions
- Carrying out all on-site inspection, surveying including layout not required of the contractor, measuring and verification of construction methods as required by the Contract Documents
- Monitoring and reviewing the quality of Contractor's work to confirm that the Contractor is discharging its obligations and responsibilities under the Contract
- Notifying the Contractor of any deficiencies in the construction of the Work identified by the Ministry or Service Provider's monitors and reviewers, instructing the Contractor to take appropriate corrective measures and confirming and reporting the results of the corrective measures
- Maintaining control of the receipt, use and final disposition of all Ministry-supplied materials in accordance with Ministry procedures
- Reasonable travel to/from the Ministry's regional office or other local location for pick-up/delivery of mail or other materials
- Identify and track any design related issues maintaining sufficient supporting documentation.
- Written recommendations on situations / issues deemed necessary by the Ministry.
- Monitor environmental construction related permits to check that they are obtained and adhered to.
- For excavation and construction near pipelines, co-ordinate, communicate and consult with the High Pressure Gas utility company. Discuss requirements at the Pre-Start Meeting with the Contractor.
- Ensure CA Change Order Process is complied with as per Guidelines.

2.1.11 Pre-Construction Photos / Video

- The Contract Administrator shall obtain two sets of pre-construction photographs immediately in advance of commencement of construction, and provide one set to the MTO Contract Services Administrator. (i.e. signs, all entrances, side roads, ingress and egress of posted construction entrances, existing structures, electrical plant (i.e. traffic signals, highway lighting), power plants, other authority's equipment such as hydro, bell, and railways)

2.1.12 Documents Copied to MTO

The following documents shall be copied to MTO:

- Statement of Record of Working Days (if applicable)
- All Change Orders, reports on delays, monitor reports on over- or under-runs, minutes of meetings
- Instruction Notices to Contractor
- Extension of time requests
- Accidents or claims from the public or property owners
- Major issues or delays

- Notification of lane closures/lane reductions (faxed at time of initiation/cancellation)
- All other applicable documents requested by the Ministry.
- All documents are to distributed as indicated on the form
- Contract related permits.
- Hard copy / PDF copies of all documentation as per the CCA Agreement.

2.1.13 Material and Testing / Sampling Testing Materials

As per Contract Documents, CAITM, Ministry Directives Memoranda

2.1.13.1 Samples for Testing

The Service Provider is responsible for witnessing all QA sampling and for monitoring the contractor's operation to check that sampling techniques, sample identification and delivery to the appropriate laboratory are in accordance with contract requirements.

All samples are to be delivered in a timely fashion, in a testable condition with proper identification (e.g. contract number, date sampled, material type, lot, subplot, contact person, etc.) and WHMIS labels shall be include with the sample(s) in accordance with applicable Dangerous Goods Legislation. The CA is to review deficiencies in these operations as identified by his staff and the laboratory and take appropriate action if problems arise.

The CA shall maintain a log of QA samples sent to the laboratories. This log shall include the lot numbers, subplot numbers, security seal numbers, witness name, date sampled, date the samples were received by the lab, and the date the test results were received from the lab. The CA is required to evaluate test results in a timely manner.

2.1.13.2 Referee Testing

When referee testing is requested by the Contractor, the CA shall notify the CSA and the appropriate QAO in writing within 1 business day. Where referee testing of concrete cylinders is requested the CA shall also immediately notify the QA laboratory so that cylinders are not disposed.

The QAO shall contact the appropriate Materials Engineering & Research Office (MERO) office to obtain the name of the referee testing laboratory to be selected from the referee roster and shall provide the name and contact information for the referee laboratory to the CA.

The CA shall notify the QA laboratory in writing to deliver the samples to the referee laboratory and shall notify the Contractor and QAO as to the date of testing.

2.1.13.2 Application of Security Seals

The CA is responsible to properly apply security seals onto sample bags. The CA

should retain possession of the bags and seals until after the sample have been taken and all the required paperwork has been filled out and is in/with the sample container. Once this is done the container can be placed in the plastic security bag and the Contract Administrator / Inspector can apply the locking seal. If samples are too hot (i.e. PGAC samples) to put in the plastic security bags, the CA should retain possession of the samples until the bags and seals can be applied.

Security bags and seals shall be used with the following samples:

- Hot Mix Bulk QA and Referee samples
- Hot Mix compaction core QA and Referee samples
- Hot Mix Thickness Cores
- CIR and CREAM Bulk samples
- PGAC QA and Referee samples
- Granular QA and Referee samples
- Aggregate physical properties QA and referee samples
- Concrete Pavement Cores
- CIR and CREAM compaction slabs

Security bags and seals may be applied to other types of samples, in special circumstances, at the direction of the CA. However, such situations are expected to be infrequent.

Upon receipt of the test data, the CA shall verify the security seal identification provided with the tests results against those applied in the field.

MTO security bags and seals are supplied by the Regional QA Section. At the end of the contract, the CA shall account for and return all unused MTO sample bags and security seals to the QA Section.

2.1.13.3 Contact with Laboratories

The CA must provide the laboratory with the pertinent contract details (contract number, WP number, phone and fax numbers and e-mail addresses for CA and for Contractor) as well as all pertinent information, which affects testing procedures (hot mix re-compaction temperatures etc.). The CA should clearly indicate what samples are to be tested and the specific tests required. The CA is responsible to check that if samples are to be delivered outside of normal business hours, the testing lab receives at least one business day's notice by the Contractor in order to arrange for personnel to receive the samples. For example, for delivery after business hours on Friday evening through Monday morning, the lab should be contacted during business hours on Thursday or earlier.

The CA shall investigate all sample non-conformance identified by the QA Lab, and shall provide written direction to the QA Lab to resolve the problems(s) in a prompt and efficient manner, on the form provided. The CA is responsible for communicating such instances to the ministry staff (i.e. Contract Services Administrator, QA Officer) as appropriate, and taking further administrative action as may be required by the contract documents.

Contract Administrators should liaise directly with the labs on routine matters as required, however, issues related to the performance of the Area and/or MERO Testing Labs (e.g. turn around times and quality of results) or any other related concerns shall be brought to the attention of the MTO in writing (by e-mail). Although most QA testing is done by the Area Testing Laboratories, some specialized materials testing is conducted through the MTO Materials Engineering and Research Office (MERO) as listed below:

Bituminous:

Anti-stripping Additive
Crack Sealing Quality

Concrete:

Portland Cement, Hydraulic Slag or Fly Ash Material Quality
Latex Modifier Quality
Post Tension Cables
Shotcrete Cores
Bridge Deck Waterproofing and Protection Board Quality
Hot Poured Rubberized Asphalt Joint Seal Quality
Expansion Joint Seals
Elastomeric/Rotational Bearings
Structural Steel Coating Material Quality
Metal Wire Galvanizing
Traffic Paint Quality (not thickness)
Glass Beads Quality
Thermoplastic Pavement Markings
Field Reacted Polymer Pavement Marking
Pre-formed Pavement Marking Tape
Stainless Steel Reinforcing Steel

Soils & Aggregates:

Geotextile Quality

Foundations:

Wick Drains
Expanded Polystyrene
Geogrids
Slag

2.1.13.4 Review of Concrete and Asphalt Mix Designs

The Service Provider shall review all concrete and asphalt mix designs for compliance with the contract documents. The mix design package, including the independent Superpave Mix Design Verification, shall be scanned and saved into a single "PDF" format file and submitted to the Ministry CSA and Head of QA together with a summary of the review indicating compliance of the design within four (4) business days of the design being properly submitted by the Contractor. The procedures for processing concrete mix designs are given in HOC #2005-02, Acceptance and Use of Concrete Mix Designs.

2.1.13.5 Review and Submission of Test Results

The CA is responsible for determining if the material meets the contract requirements and using the results to calculate payments and adjustments, standard deviations, averages, lot summaries, etc., as required by the contract. The role of the lab is only to provide raw data and not determine acceptability.

After review by the CA, copies of test results should also be sent as detailed in the "Guidelines For Test Result Submissions" to the CSA and/or Head of QA (as determined by the Regional Construction Office). Test results are to be submitted within four (4) business days of the results having been submitted to the CA or within four (4) business days of the samples being available for testing in cases where the CA is responsible for testing. The Service Provider shall monitor, record and check that the test result submissions are meeting the required time frames. All test results to be submitted in PDF format.

All submissions must be sent with an appropriate cover letter, identifying the material represented, the acceptability of results, and any actions required as a result of not meeting the specification requirements. Where price adjustments are to be imposed, the cover letter should also summarize the price adjustments and indicate the responsibility for cost of referee and/or additional QA testing.

For materials that are decisioned using lots and sublots, individual test results need only be submitted when the results are outside of specified requirements (e.g. low cylinder breaks). These submissions should be accompanied by comments regarding any action that is being taken.

The "Guidelines for Test Result Submissions" has been developed, as an aid to Contract Administrators in order to more clearly identify which test results must be submitted to the Ministry. It is a general list that is to be used in conjunction with the Contract Documents and does not include all possible items which may be required to be submitted. If a conflict exists between the list and the Contract Documents, then the Contract Documents take precedence.

Not all materials are covered in the guideline for test result submissions. As a general rule, copies of all Quality Assurance results should be submitted to the Ministry.

2.1.13.6 Year End Summaries

Year-end summaries for Granular, Concrete, and Bituminous materials are to be submitted in electronic form no later than 30 days from last placement of the relevant material. For carry-over contracts, summaries shall be submitted at the end of each calendar year (by December 31) for the work completed to that date. The summaries shall include the completion of forms provided by the Ministry for that purpose.

2.1.13.7 Guidelines for Test Result Submissions

ITEMS	DETAILS OF SUBMISSIONS
Bituminous	
Asphalt ERS Test Results	ERS spreadsheet to be submitted electronically upon completion of the lot. Individual tests results are not required to be submitted unless specifically requested. If referee testing is invoked, the final spreadsheet shall also be submitted
Smoothness	Sketch of subplot locations and list of approved exempted sublots Summary of results on the Summary Acceptance Forms to be submitted electronically including scallops. This includes profiles taken for sublots re-tested Summary of audit data as specified in the "FIELD GUIDE FOR THE ACCEPTANCE OF HOT MIX AND BRIDGE DECK WATERPROOFING" Final summary of payment for the entire lot indicating pay factors and any penalties imposed for scallops
Smoothness By Inertial Profiler	Sketch of subplot locations and list of exempted sublots indicating stations on both Request for inertial profiler for QA/re-test/referee testing Summary of IRI results on the Summary Acceptance Forms to be submitted electronically including localized roughness and pay factors. This includes profiles taken for sublots re-tested Final summary of payment for the entire lot indicating pay factors and any penalties imposed for localized roughness Deliver all unfiltered and filtered electronic data files generated by the inertial profiler or the ProVAL software Confirmation indicating that the inertial profiler has completed the measurements and submitted the required electronic data
Hot Mix Aggregates Physical Properties	QA results Referee results if applicable
Pavement markings	Pavement Marking forms (glass bead application rates, paint

ITEMS	DETAILS OF SUBMISSIONS
	thickness, paint quality samples taken and submitted) to be submitted within 30 days of completion of pavement marking
Segregation	Listing of areas of segregation including a description of severity as required by the "FIELD GUIDE FOR THE ACCEPTANCE OF HOT MIX AND BRIDGE DECK WATERPROOFING"
Miscellaneous Asphalt Products PGAC Granular sealing Rout and Seal Tack Coat Anti-strip etc	QA test results Referee results if applicable
Granular	
Granular O, A, B, SSM Physical Properties	QA test results Referee results if applicable
Granular O, A, B, SSM Production Samples	ERS spreadsheet to be submitted electronically upon completion of the lot. Individual tests results are not required to be submitted unless specifically requested. If referee testing is invoked, the final spreadsheet including referee data shall also be submitted
Compaction Checks	Monthly summary of QC and QA compaction results and summary of acceptability on PH-CC-011 MTO QA/QC Compaction Summary Sheet Trial Strip/Proctor results and QA/QC correlation results to be submitted upon completion
Reinforced Earth Walls	All QC data required by the contract.
Miscellaneous Soils and Aggregates Products Geotextiles Seeding etc	QA test results Referee Results if Applicable
Concrete & Structural Items	
Compressive Strength Results	ERS spreadsheet to be submitted electronically monthly and upon completion of each lot for each class of concrete.
Temperature Records	Cold and Hot weather temperature records after completion of the curing and protection (if applicable) period. Temperature records for HPC after completion of curing (and protection) period.
Concrete Aggregates	QA results Referee results if applicable

ITEMS	DETAILS OF SUBMISSIONS
Physical Properties	
Air Voids in Hardened Concrete	QA test results; Referee test results if applicable
Tensile Bond Test	QC test results
Rapid Chloride Permeability	QA test results Referee test results if applicable
Covermeter Survey	Completed Survey together with calculated summary (ie. mean, standard dev etc). Make and model of covermeter used to be indicated
Waterproofing	Copy of Thickness Report and payment adjustment calculations Material Quality test results for membrane and protection board
Half Cell Survey	Copy of Half Cell Survey and continuity check form to be submitted to QA and Regional Structural Office (or as indicated by CSA). Note: Submitted immediately upon completion of field testing and prior to initiation of removals
Water test for expansion joints (if applicable)	Copy of form. Copies to include a c/c to the Regional QA section and the Bridge Office.
Proprietary Products	On an as required basis - Name of product - Test data for compressive strength, rapid chloride permeability, shrinkage and tensile bond or as per specification -Type of repair it is being used for. -Contractors proposal for use
Structural Steel Coating	QC data as required by SP plus Daily Coating Reports and Summary Report
Miscellaneous Concrete Materials Testing Portland Cement, Hydraulic Slag / Fly Ash Curing Compounds Admixtures, Air Entraining Expansion Joint Seals Elastomeric Bearings Post Tension	QA Test results Referee Results if applicable

ITEMS	DETAILS OF SUBMISSIONS
Cables Grout results Hot Poured Rubberized Sealant	

2.1.14 Engineering Materials Field Testing Reference Table

Material	Field Test	Reference Document(s)
Earth	Compaction	Construction Administration and Inspection Task Manual
Granulars	Compaction	Construction Administration and Inspection Task Manual
Hot Mix	Review Mix-Design Documentation	Contract Specifications
	Hot-In-Place Recycling	Contract Specifications
	Cold-In-Place Recycling	Contract Specifications
	Macrotexture (Sand Patch)	Field Guide
	QA testing of pavement smoothness (IRI method)	Contract Specifications and Construction Administration and Inspection Task Manual
	Expanded Asphalt	Contract Specifications
Concrete	Half Cell Survey	Guidelines for Conducting Half Cell Surveys
	Covermeter Survey	Guidelines for Conducting Covermeter Surveys
	Review Mix-Design Documentation	Contract Specifications
	Bridge Deck Waterproofing Thickness	Field Guide For The Acceptance Of Hot Mix And Bridge Deck Waterproofing
	Dowels in Concrete - Pull Testing	
Concrete	QA Audit Check on pavement Smoothness (profilograph)	Construction Administration and Inspection Task Manual

Miscellaneous	Traffic Paint Thickness	Guidelines for Sampling and Testing of Pavement Markings
	Glass Bead Distribution	GSTPM

2.1.15 Quality Assurance Frequency of Monitoring / Audit Checks

- As per the guidelines in the RFP/RFQ, Construction Administration and Inspection Task Manual, directives and memorandums
- Check that the contractor provides the deliverables in a timely and accurate manner
- Review the QVE process

2.1.16 Off-Site Inspection of Structural Items

- Check CCA Agreement for components identified for off-site inspection
- Examples: Pre-Cast Beams, Structural Steel and Aluminium Sign Supports
- QVE may do Pre-Cast Concrete Beams or some Regions may require additional inspections

2.1.17 Geotechnical

Review the Service Provider’s responsibilities for inspecting and administering non-commercial pits and quarries. These responsibilities include but are not limited to:

Prior to Construction

- Review the Aggregate Sources List and confirm the availability of each source proposed by the contractor for use on the contract.
- Review the operational and rehabilitation plans of the contractor prior to them being submitted to the Regional Geotechnical Section for review and approval.
- Regional Geotechnical Section will provide two copies of the approved site plan to the Contract Administrator. One copy is provided to the CA for inspection purposes and one copy is provided to the contractor for direction on operation of the source.

During Construction

- If the contractor proposes to make an amendment to the approved site plan, the amendment must be reviewed and approved by the Regional Geotechnical Section prior to any operational changes taking place.
- The contractor shall simultaneously inform the Contract Administrator when a request for an amendment is submitted to the Regional Geotechnical Section.
- Two copies of this new approved site plan will be forwarded to the Contract Administrator as above for distribution. By following this process the Contract Administrator will have the most up to date approved site plan on hand for their daily

inspection. Any amendments that are contentious in nature should be relayed to the contractor via an Instruction Notice.

- Once the pit and quarry activities have concluded, the Contract Administrator shall ensure that the contractor has rehabilitated each source as per the approved site plan prior to the contractor leaving the source.
- At the conclusion of the contract, or annually on December 31 for multiyear contracts, the Contract Administrator shall submit to the Regional Geotechnical Section form PH-D-046 Pit and Quarry After Use Report for all sources used on the contract for both non-commercial and commercial sources. Any tonnages derived from ROW production of aggregates shall also be reported at this time.

2.1.18 Electrical

Electrical quality assurance shall include the ongoing and final inspection of, but not limited to the following:

- Overhead lines;
- Cathodic protection;
- Periodic inspection of highway electrical systems, such as highway lighting, traffic signals, and vehicle detection equipment;
- Spot-checking validity of contractor-issued certificates, pre-installation testing, and proof of performance testing.
- Electrical quality assurance activities pertaining to Contractor electrical maintenance activities shall continue during winter shutdown
- Receive and review traffic signal PH-M-125 drawings

2.1.19 Post Pipe Installation Inspections

Quality Assurance of Post Installation Pipe Inspections shall be performed as detailed in 104S02. The inspections shall be carried out by the CA as specified.

- Post installation inspection service will be performed by a certified inspector. Receive list of completed gravity pipe installations from contractor who has certified them as ready for inspection (Contractor to submit PH-CC-822PIC Culvert and Sewer Certification Form, November 2009 attached – draft document never implemented)
- Arrange for date or dates that inspection service provider will be on site to do inspections and notify contractor of inspection dates
- Compile inspection results (CA to input into excel spreadsheet available from MTO)
- Submit inspection results to contractor
- Possible actions afterwards
- Nothing further;
- Contractor requests referee inspection (repeats steps 1 through 5 with another inspection firm) Referee requests limited to 1 batch submission – cannot request referee on a refereed inspection;

- Confirm replaced or repaired pipes required as a result of inspections
- Notify contractor of additional inspections should initial inspection triggers indicate non-satisfactory inspection results(repeats steps 1 through 6)
- Notify contractor of more additional pipe inspections (all remaining pipes) should additional inspection triggers indicate non-satisfactory inspection results(repeats steps 1 through 6)
- Forward to MTO contract payment recommendations based on Weighted Price Adjustment Factor (WPAF), referee inspections, etc.
 - WPAF values to gravity pipe tender items (i.e. WPAF = 98.5% indicates withhold 1.5% payment on gravity pipe tender item bid price to contractor
 - If referee WPAF value is equal to or less than original WPAF value, deduct referee inspection costs from payment to contractor.
 - If WPAF value is greater than original WPAF value, CA to submit inspection costs as part of their monthly billing;
 - Deduct additional inspection costs from payment to contractor

2.1.20 Environmental

Compliance with the project environmental requirements for construction administration assignments, as noted below are necessary to meet the requirements of environmental statutory duty of environmental due diligence on behalf of the Ministry, including but not restricted to, compliance with the 'Class Environmental Assessment for Provincial Transportation Facilities' (2000). Environmental statutory duty is outlined in Section 1.7.3 of the Class EA and environmental protection and monitoring requirements during construction are outlined in Section 4.8 of the Class EA. The penalties for not demonstrating environmental due diligence can be severe, including substantial monetary fines and jail terms.

Specific environmental requirements for administration, including monitoring the Contractor's day-to day operations, and considering any Contractor proposals, are provided below. For the purpose of clarity in meeting these requirements or in completing the Environmental Specialty Work-Plan if required, the environmental inspection tasks are detailed in Part B of this Manual and the project environmental requirements for construction administration are detailed below.

1. Environmental Requirements of Project-Specific Environmental Assessment Process Documentation and Construction Contract Documents

Commitments made during the environmental assessment process for Group A, B and C projects under the Class EA may be documented in various types of environmental assessment process documentation such as the Transportation Environmental Study Report – TESR, Design & Construction Report – DCR and Environmental Screening Document-ESD.

An 'Environmental Synopsis' is also prepared for Group A and B projects and for Group C projects for which an Environmental Screening Document has been prepared, at or near the completion of detail design as a means of summarizing the environmental protection plan that has been developed for the implementation of the project. The purpose of the 'Environmental Synopsis' is to monitor continuity in commitments and approaches to environmental protection between the design and construction stages. It provides a clear outline of the requirements that the Contract Administrator must be mindful of in supervising work that has been identified to have the potential for environmental impacts.

A 'Summary of Environmental Concerns and Commitments' table, which is also prepared as part of detailed environmental assessment process documentation for Group A and B projects and for Group C projects for which an Environmental Screening Document has been prepared, is extracted and attached to the 'Environmental Synopsis'. It outlines the environmental issues and concerns identified for a specific project and the measures and approaches that were developed to address each of them, including associated environmental provisions that have been inserted in the construction contract documents. The summary also provides a detailed breakdown of the identified environmental features within the project limits and the committed measures / approaches for protecting the environment or for addressing other project related (including specific public / agency) concerns.

Environmental provisions that may be inserted into construction contract documents, for which construction compliance is required include:

- Environmental design elements;
- Environmental protection, mitigation and compensation measures;
- Environmental construction constraints; and
- Incident management requirements.

In the event of any deficiencies in the Contractor's compliance with these provisions:

- The Contractor be notified and instructed to take appropriate corrective actions;
- The Implementation of the corrective actions shall be confirmed; and
- Infraction Notices shall be issued in compliance with Ministry policy where corrective measures are not implemented as instructed.

The Contract Administrator is encouraged to consult any and all available environmental assessment process documentation that is available for further information on the environmental provisions contained in the construction contract documents and their purposes.

2. Project Environmental Protection / Mitigation / Compensation Measures

The effectiveness of project environmental protection, mitigation and compensation measures as included in the construction contract documents shall be assessed to determine that:

- Protection / Mitigation / Compensation measures are:
 - In place as required;
 - Appropriate to the protection / mitigation / compensation required;
 - Functioning properly and maintained as specified; and
 - Removed where required at the end of construction.
- Operations, equipment and materials are:
 - On-site where they are permitted;
 - On-site when they are permitted; and
- Occurring and / or being used or applied as permitted.

3. Formal Environmental Approvals and Timing Constraints

- The construction shall be monitored to determine compliance with project-specific environmental permits / approvals obtained by the Ministry (e.g. federal Navigable Waters Protection Act permits and Fisheries Act authorizations).
- Where the ministry has obtained a draft Permit(s) to Take Water for the work from MOE in design, the Contractor must apply to MOE to have the permit(s) issued in the Contractor's name in accordance with Special Provision 100S59 and provide copies to the Contract Administrator before any work involving water-taking may commence.
- Construction activities that require project-specific environmental approvals that have not been obtained by the Ministry at the date of tender closing, shall not occur unless the Contractor has obtained such permits / approvals.
- It is important to note that fisheries-related dates for working in water may sometimes be difficult, if not impossible to adjust due to regulatory inflexibility. In any event, to adjust dates, consent from MNR will be required in all situations, and where there is a Fisheries Act Authorization, an amendment will be required from DFO. The possibility of inflexibility of fisheries-related dates for in-water work must be considered, and allowance made for required proposals to be submitted within a specified number of days prior to commencement of the work (usually 21 days), during review of the Contractor's construction schedule and critical path schedules.

4. Contractor Environmental Proposals

Contractor submitted environmental proposals shall be reviewed by the Contract Administrator as follows:

- To check that the Contractor complies with all environmental proposal submission requirements specified in environmental contract documentation;
- To determine constructability;
- To check that proposals are compliant with the construction contract documents, relevant environmental legislation (e.g. Fisheries Act) and environmental timing constraints and approvals. Proposal compliance shall be reviewed by the Contract Administrator's Environmental Monitor.

NOTE: In dealing with the Contractor, the Contract Administrator must keep in mind the review of proposals can take a significant amount of time, particularly where regulatory agencies may need to be consulted with respect to the possible impact of the proposal on existing permits, approvals or authorizations or requirements for new ones.

5. Environmental Documentation Requirements

There are a number of environmental documentation requirements that the Contract Administrator is responsible for, that require completion and submission of the following, during or after construction:

- "Summary of Environmental Concerns and Commitments " Table
- Contract Administrator's / Inspector's Environmental Diary
- Detailed Specialty Reports (under Environmental Specialty Work Plan, if applicable)
- 'Class EA Process Monitoring Questionnaire for Contract Administration Staff'

"Summary of Environmental Concerns and Commitments" Table

Where the 'Summary of Environmental Concerns and Commitments' table has been prepared during the environmental assessment process as stipulated in #1 above, an electronic version will be provided by MTO at the Design Package Handover meeting. The Contract Administrator's Environmental Monitor shall use the blank spaces provided in the table to document the Contractor's compliance with the environmental provisions of the construction contract as summarized in the table. This table shall be updated on a regular basis, as this is a living document.

Upon construction completion, the completed Summary table along with the 'Environmental Synopsis' described in #1 above, will be used to report on how well environmental assessment commitments were met through compliance with, and the effectiveness of, the environmental provisions in the construction contract. As such, confirmation that this table has been completed is part of the Contract Closing Process section of this Manual.

Contract Administrator's / Inspector's Environmental Diary

A separate Environmental Diary shall be maintained to record the following:

- The Contractor's compliance / conformance and non-compliance / non-conformance with environmental timing constraints and action taken to address them, as well as related communications with MTO and agencies;
- The Contractor's environmental protection measures and their effectiveness, including successes, deficiencies, instructions given and results of corrective actions taken;
- Spills or other environmental incidents that the Contractor is responsible for, including, but not restricted to details about when the incident took place, actions taken or intended to be taken by the Contractor regarding the incident such as containment of spills, notifications made to proper authorities, actions taken to clean up and restore the environment to pre-incident conditions, investigations, charges, stop work orders and remedial instructions by regulatory agencies, and environmental complaints by the public. A copy of the Incident Notification Form (PH-CC-818) that the Contractor is required to submit to the Ministry within 48 hours of the incident should also be kept with these notes in the diary.
- The discovery of existing environmental conditions such as archaeological finds and materials suspected of being contaminated including all relevant details as to what was found and actions taken by the Contractor to notify the CA and/or the ministry and secure the site for investigation.

Detailed Specialty Reports

If an Environmental Specialty Work Plan has been included in the Contract Administration contract (e.g. requirement for a Specialist such as a Waste Specialist to monitor contaminated property clean-up) detailed written reports shall be produced and submitted as outlined in the approved Environmental Specialty Work Plan (e.g. monthly).

Class EA Process Monitoring Questionnaire for Contract Administration Staff

The information used to complete the 'MTO Class EA Process Monitoring Questionnaire for Construction Administration Staff' shall be completed from, but not limited to: investigations / charges, stop work orders, remedial instructions from regulatory agencies, and public complaints as documented in the Environmental Diary. Two copies of the completed questionnaire shall be provided to the ministry including one that shall be submitted to the MTO Environmental Planner for the project (see form for more details).

6. Environmental Notifications

One of the purposes of the environmental assessment process is to identify and manage existing environmental conditions within and directly adjacent to the Right-of-Way such as archaeological finds and contaminated property during the design stage,

to avoid the Contractor encountering them during construction which may cause significant delays. However, occasionally these types of conditions may not be discovered during the environmental assessment process, in which case they may become environmental incidents during construction.

In addition, the environmental assessment process also attempts to identify environmental features including plant and animal species that need to be protected during construction using physical mitigation measures or by restricting access to certain locations inside and adjacent to the contract limits. In some cases species which may include lichens, mosses, vascular plants, insects, snakes, turtles, amphibians, fish or mammals, are protected under the federal *Species at Risk Act, 2002* or the Ontario *Endangered Species Act, 2007*, which prohibits them from being killed, harmed, harassed, captured, taken, possessed, collected, transported, bought, sold, leased or traded without a permit.

Where protected species at risk are identified during design as being present or suspected of being present in the contract area, MTO will include this information in the Contract Documents and provide direction on what the Contractor's responsibilities are with respect to these species. Occasionally however, protected species may be encountered during construction that were not identified during design and were therefore not anticipated to be present during construction.

While the Contractor is not held responsible for these types of incidents as with those that occur as a result of the Contractor's operations (e.g. spills), the CA must be notified of the incident and in turn must notify the ministry so that the necessary and appropriate actions to meet regulatory and contractual obligations can be taken by the ministry. As such, the CA shall make the following Environmental Notifications to the ministry immediately after the Contractor notifies the CA.

- In the event that the Contractor notifies the CA in accordance with section GC 3.07.05 of the General Conditions of Contract, that it is suspected that an archaeological find, such as building remains, hardware, accumulations of bones or other human remains, pottery, or arrowheads has been encountered during construction, the CA shall notify the CSA and the MTO Environmental Planner or MTO Regional Archaeologist. The MTO Regional Archaeologist, or if not available, a licensed Service Provider Archaeologist contacted by the ministry must visit the site to assess and verify the find and determine a course of action. The Archaeologist on-site will also be responsible for contacting other appropriate authorities, including the Police, Ministry of Culture and the Ministry of Government Services, if they determine that human and/or archaeological remains have been encountered.
- In the event that the Contractor notifies the CA in accordance with OPSS 180 that materials suspected of being contaminated (e.g. stained or odorous soil, oily sheen on water in an excavation) have been encountered during construction, the CA shall notify the CSA and the MTO Environmental Planner. MTO will make arrangements

to have an environmental Service Provider who specializes in contaminated property identification and management visit the site to investigate and determine a course of action. The environmental Service Provider will also be responsible for contacting MOE as deemed necessary in consultation with MTO.

- In the event that the Contractor notifies the CA that a Species at Risk has been encountered during construction in accordance with section GC 3.07.06 of the General Conditions of Contract, the CA shall notify the CSA and the MTO Environmental Planner. MTO will make arrangements to have an environmental Service Provider who is qualified to identify Species at Risk visit the site to verify the species and determine a course of action. The environmental Service Provider will also be responsible for contacting MNR as deemed necessary in consultation with MTO.

2.1.21 Traffic Management and Public Information Services

The Contract Administrator shall check that all Traffic Management and Public Information Services and Deliverables in the construction documents or required by law are complied with. To determine compliance with the traffic control plan requirements of the contract the Contract Administrator shall:

Prior to work starting:

- Instruct the Contractor to provide a copy of their health and safety policy and program, which includes the traffic control plan for the contract, to the Contract Administrator at the pre-work meeting
- Assess the contractor's Traffic Control Plan, to check that all construction contract requirements including, but not limited to, those in the Ontario Traffic Manual (OTM) Book 7 Temporary Conditions, the Ontario Traffic Manual (OTM) Book 7 Temporary Conditions (Field Edition), the Occupational Health and Safety Act and any specific traffic control contract requirements are complied with and provide satisfactory levels of safety for workers and motorists;
- Provide any Ministry approved instructions to the contractor regarding the traffic control plan and any further receipt, assessment and instructions to the contractor, as necessary.

In addition, the Contract Administrator shall assess the effectiveness of the traffic control measures planned by the contractor to determine that:

- The traffic control measures to be implemented by the contractor will be what is needed; in place when needed; positioned where needed; and will be working as required;
- Operations, equipment and materials will be only where they are permitted; occurring/operating/placed when they will be permitted; and will be doing what is permitted;

- Review Initial Construction Schedule and Critical Path Schedule prior to work starting, in regards to traffic control.

A report detailing the assessment procedure, findings and recommendations is to be submitted to the Ministry within two (2) business days of receiving the submission from the Contractor.

During construction:

- Monitor the traffic control measures implemented by the contractor to determine that the actual measures are consistent with those shown in the previously assessed Traffic Control Plan and that the measures provide satisfactory levels of safety for workers and motorists.

The minimum frequency of this monitoring for the first 24-hour period any traffic control measures are in place, shall be:

1. Once during the period immediately following the installation of the measures;
2. Once during the period one half hour before sun rise;
3. Once during the day-light period;
4. Once during the period one half hour after sun set; and
5. Once during the night time (dark period).

The minimum frequency for this monitoring, after the initial 24-hours, shall be such that:

- At least two (2) of the above noted daytime periods are monitored each 24-hours, and;
- Each period has been monitored twice during the normal work week; and
- Each period has been monitored twice during the weekend period.
- Assess the effectiveness of the traffic control measures used by the contractor, during the first 24-hour monitoring periods each time a new traffic control set up is placed or after any alteration to an existing set up, to determine that:
 - The traffic control measures implemented by the contractor are what is needed; in place when needed; positioned where needed; and are working as required;
 - Operations, equipment and materials are only where they are permitted; occurring/operating/placed when they are permitted; and are doing what is permitted; deficiencies are corrected when they are needed by using what is needed; and doing it where it is needed;
 - Notify the Contractor of any deficiencies identified in the traffic control measures, instructing the Contractor to take appropriate corrective measures and confirming and reporting the results of the corrective measures;
 - Provide a copy of the Contractor's traffic control signing diary, to the Ministry, on each Monday or day following a holiday for the preceding week or more frequently if requested by the Ministry;

- Check that Contractor's site supervisor performs traffic control/lane closure notifications including co-ordinating traffic management and public communications with other roadway work in the vicinity of the project;
- Provide notification to local media and the Ministry of any potential traffic delays, and on termination of the delay or associated activity, the proponent is to immediately notify the Ministry of instances that involve fatalities or serious injuries;
- Maintain adequate Public Traffic Staging Records including review of proposed staging plans sufficient to document and support all actions taken;
- Maintain adequate Public Notification Records sufficient to track all notifications;
- Providing a record of traffic accidents, public notifications and complaints that occur in the work zone, in all cases, a copy of all documentation is to be provided to the Ministry within the same business day as the traffic incident occurs;
- Videotape haul road conditions prior to use by the Contractor; and
- Perform all traffic control related tasks listed in the Contract Administration and Inspection Task Manual.
- Monitor the Contractor's operations for compliance with Ministry safety policies concerning the provision of safe passage for the travelling public.

In all cases, any communication between the Contractor and/or the Contract Administration staff and/or the Ministry shall be by verbal and written means, and a copy of all documentation is to be provided to the Ministry within the same business day as the communication occurs.

2.1.22 MTO Roles

- Contract Services Administrator – approvals, mediation, check compliance with agreement, monitor Service Provider's performance and report to construction office. Monitor Service Provider's conformance to the construction contract administration agreement, provide procedural information, and provide contact names for various offices in the region.
- Quality Assurance – advisors, information resources (including maintenance coordinators and electrical coordinators), provides technical expertise to senior Operations and Service Provider field staff through the CSA.
- Area Contracts Engineer – approvals, continuity of construction

2.1.23 Service Provider's Performance Appraisal

- Review the Performance Evaluation form.
- Random checks to monitor Service Provider's performance and adherence to the agreement, Services and Deliverables and records (select date for initial review).
- A Contract Payment and Records Assessment may be performed on payment records and documentation after contract completion. When recommended in the CPRA Report, the Service Provider Appraisal will be reviewed for potential adjustment of the rating.

2.1.24 Well Investigations

- Service Provider to review the requirements under Directive OPR-C-002 (21/05/2004) and the environmental assessment process documentation.
- Service Provider to follow “Guidelines For Drinking Well Water Sampling And Testing In Ministry Of Transportation Activities”.

2.1.25 Project Construction Report

- Maintain documentation during construction to assist in preparation of the project construction report.
- Follow format of Head Office Construction Memorandum No. 2002-01, Project Construction Report

2.2 DESIGN PACKAGE HANDOVER MEETING

Reference:

- Directive Provincial Highways PHY-C-047 Design Package Handover Meeting

The purpose of this meeting is for the designers to hand over any relevant documentation and information, and give an overview of the project and any pertinent issues. The Contract Services Administrator shall contact the MTO Design Project Engineer/Manager to initiate the terms of Directive PHY-C-47 (other specific project assignment turnover deliverables be included) and arrange to the Design Package Handover Meeting (location, attendees, taking of minutes, etc.). The MTO Design Project Engineer / Project Manager, with the assistance of the CSA, shall prepare an agenda, including a list of invitees, and a design synopsis for distribution one week prior to the meeting. The Contract Services Administrator shall chair the meeting and with the assistance of the MTO Design Project Engineer / Project Manager be responsible for checking that the required deliverables have been handed over to the Contract Administrator. The Contract Administrator shall prepare minutes of the meeting and shall distribute these minutes.

Value engineering judgements, contract simplification, etc., decisions made during the design phase should be discussed and documented in the minutes to identify and discuss red flag items and contentious issues that may arise during construction, and any recommended courses of action and the rationale for these.

Suggested List of Attendees:

MTO Project Engineer/Manager (Phone number and backup phone number)
Design Service Provider
MTO Area Contracts Engineer
MTO Contract Services Administrator(s)
Construction Contract Administration Project Manager
Contract Administrator

Geotechnical / Traffic / Structural / Electrical / Property / ATMS
Environmental (Planner / Specialists / Inspector)
MTO Environmental Planner
Field Services Engineer

The MTO Design Project Engineer/Manager and the CSA shall establish the list of attendees based on contract scope. The design change protocol will be discussed at this time.

After the contract is awarded, the following drawings and documents may be obtained from the Regional, Contracts Office or the MTO Project Engineer/Manager (if applicable):

1. Pavement Marking Drawings
2. Utility Work Orders
3. Original Structure Drawings
4. Overhead and Ground-Mount Message Sign Layouts
5. Horizontal and Vertical Control Sheets
6. Environmental Documentation:
 - Environmental Synopsis with Summary of Environmental Concerns and Commitments table*
 - Transportation Environmental Study Report (TESR) or Design Construction Report (DCR)
 - Environmental Screening Document
 - Environmental permits, approvals, and authorizations including draft Permits to Take Water obtained by the ministry that the Contractor must apply to MOE to have issued in the Contractor's name
7. Design Reports:
 - Foundation Investigation Reports
 - Geotechnical Reports
 - Original Cross Sections (highways, side roads, entrances, culverts and sewers) (hardcopy)
 - Original Plots (sub grade reports, template sheets, granular base reports (top of "B"), profile elevations (Top of "A") (digital files)
8. Additional copies of tender documents and contract drawings
9. Any other digital files (Detailed Calculation Sheets – reports)
10. Traffic Signal Legal Drawing (PH-M-125)
11. Property Agreements
12. Property Mark-up Plan.
13. MTO Project Engineer/Manager contact phone number and backup phone number
14. Design Service Provider and their sub-contractor contact phone numbers
15. Copies of applicable applications / permits related to construction (such as taking water)
16. Cost Share Agreements

- * ***This document is available electronically from MTO for Group A and B projects and for Group C projects for which an Environmental Screening Document has been prepared. It must be obtained for addition of comments by the Contract Administrator relative to Contractor compliance with project-specific environmental mitigation, protection and monitoring measures described in the table and included in the Special Provisions.***

2.3 CONTRACT AWARD

Reference:

- Provincial Highways PHY-B-152 Commencement of Work by a Contractor

The “Designation of Construction Zone” Form shall be completed and submitted by the Contract Services Administrator before the tender opening date. The Contract Administrator shall obtain the Designation of Construction Zone from the Contract Services Administrator.

The Head of Contract Services will advise the Contract Services Administrator when the Ministry has issued the “Notification of Acceptance of Contract” letter. This letter states that the required bonds and certificates of insurance have been received and are acceptable.

The Contract Services Administrator will duly notify the Construction Contract Administration Project Manager and the Contract Administrator of the acceptance letter.

The Contract Administrator must become familiar with the contract drawings and documents in preparation for the Pre-Start meeting.

2.4 PERMISSION TO START WORK

The Contract Administrator shall issue Permission to Start Work form PH-CC-700 when all contract requirements have been met by the Contractor, such as:

- The region has received notification that the Contract has been executed.
- The Contractor has submitted a Critical Path Schedule and it meets all the requirements outlined in GC 7.01.07 Critical Path Schedule.
- Any other requirements within the Contract that must be met prior to the start of the Work.

The Contractor may start Work within the right-of-way once the Contract Administrator has issued Permission to Start Work form.

2.5 PRE-START MEETING WITH CONTRACTOR

The Pre-Start meeting is held after the contract has been awarded by the Contracts Section and before the start of any work on the contract.

The Contract Administrator shall chair the meeting and arrange for the minutes to be taken and distributed. The agenda can be revised as appropriate for the contract.

CONTRACT NO.:

LOCATION:

DATE:

PLACE:

ADMINISTRATIVE REPRESENTATIVES	NOTIFIED		ATTENDANCE	
	YES	NO	YES	NO
Contract Services Administrator				
Construction Contract Administration Project Manager				
Contract Administrator				
Area Contracts Engineer				
Contractor				
Head of Operational Services Representative (local patrol, sign shop, electrical, etc.)				
Ministry of Labour				
Regional Quality Assurance				
Road User Safety				
Regional Environmental Section				
Regional Structural Section				
Foundations Office				
Regional Electrical Section				
Regional Geotechnical Section				
Regional Traffic Section				
Regional Advanced Traffic Management Section				
Ontario Provincial Police				
Regional/Municipal Police				
External Environmental Agencies (MOE, MNR, Conservation Authority, DFO, etc.)				
The following should be notified if applicable to the work:				
Emergency Services (Fire Response, Ambulance, etc.)				
Local Traffic Authorities				
Local Transit Authorities				
Municipality Road Superintendent				

Railway Representative				
MTO Property Office (if limited interest, or other)				
Health and Safety Representative				
Regional Construction Administration Office (to be notified)				
Utilities (Please identify)				
Others (Please identify)				

CA is to introduce all in attendance (i.e. persons name, representation, roles, responsibilities, distribution of business cards, etc.)

Take Attendance, noting Name of Person, Firm or Office Represented, Telephone Number(s), Facsimile Number, and E-mail Address.

Administration and Staffing

- A-1 Identify Contractor's Site Representative and alternates with signing authority.
- A-2 Identify the MTO representatives with signing authority.
- A-3 Determine the location of the Contractor's field office and yard.
- A-4 Confirm the location of the Contract Administrator's field office.
- A-5 Assemble the emergency 24-hour phone numbers: Ministry (Contract Services Administrator and Contract Administrator) and the Contractor (minimum two (2) representatives). Copies of the emergency name, position and phone numbers to be sent to the Regional Construction Office, O.P.P., Regional or Municipal Police, MTO or AMC Patrol, Area Office and/or Radio Room/COMPASS Centre with contract number and location.

Ministry of Labour

- L-1 Address any concerns identified by the Ministry of Labour.

Road User Safety (RUS)

Discuss Weighing and Overloading Issues

- D-1 Outline that the Contractor is responsible for any overloading that occurs on the contract, and that the Ministry RUS Section will monitor compliance.
- D-2 Indicate that the Contract Administrator will notify RUS when overloading is suspected.

- D-3 Request the haul routes proposed by the Contractor and outline the Contractor's responsibilities (load limits, responsibilities of Contractor, local by-laws, etc.)
- D-4 Address any concerns of Drivers & Vehicles
- D-5 Discuss CVOR General Condition 7.06.01
- D-6 Review the requirements of OPSS 102 General Specification for Weighing of Materials

Area/Regional Operations

- O-1 Review and discuss concerns of Operations Office (maintenance)

Environmental

- E-1 Make the Contractor aware that a copy of any project-specific environmental assessment documentation for Group A and B projects and for Group C projects for which an Environmental Screening Document has been prepared, and any project-specific environmental permits / approvals obtained by the ministry are available for their use. Review the key concerns / requirements with the Contractor.
- E-2 Ask the Contractor what environmental permits / approvals and / or amendments they anticipate obtaining for the work. Remind the Contractor that they must take into account the processing time that may be involved with the formal application process, and that application for federal permits also "triggers" the *Canadian Environmental Assessment Act* process. Tell the Contractor that copies of any permits/approvals they acquire must be provided to the Contract Administrator prior to commencing the related work.
- E-3 Provide the Contractor with a copy(ies) of any draft Permit(s) to Take Water that the ministry has obtained for the work from MOE in design, if the Contractor has not already obtained a copy(ies) from the Owner's Contract Business Management System listing under the contract as specified in Special Provision 100S59. Remind the Contractor that they must apply to MOE to have the permit(s) issued in the Contractor's name using the form appended to the draft permit(s) no later than five business days after the pre-start meeting, in accordance with SP100S59, and that a copy(ies) must be provided to the Contract Administrator no later than two business days prior to the commencement of water-taking.
- E-4 Ask the Contractor to identify any area that they plan to disturb outside the specified limits of the work (access, storage, disposal, work yard, etc.). Remind the Contractor that the selection and use of any such areas must comply with

Environmental laws as well as environmental assessment and environmental permit / approval requirements / commitments.

- E-5 Review the key environmental requirements of the contract. Advise the Contractor that, with respect to statutory environmental requirements and prohibitions, they are responsible for providing environmental protection measures that are required solely because of the choices made by the Contractor with respect to construction means, methods, techniques, sequences and procedures.
- E-6 Remind the Contractor that applicable environmental forms in the Contract documents or provided by the Contract Administrator must be completed and submitted to the Contract Administrator with regard to the following:
 - a) Use of sites for disposal or storage of “disposable fill” (per OPSS 180);
 - b) Shipment of hazardous waste (MOE Reg. 347 Waste Manifests);
 - c) Use of air-cooled blast furnace slag as granular material;
 - d) Incident Management Form to document spills and other environmental emergencies (PH-CC-818); and
 - e) Fisheries Act Authorization – Oversight, Monitoring and Documentation (MTO SP199F58)
 - f) Copy of applicable contract related permits (such as water taking)
- E-7 Remind the Contractor that applicable environmental timing constraints must be complied with, as follows:
 - a) Maximum time between removal of original vegetative surface cover and placement of final cover;
 - b) Timing requirements for replacement of straw bales in sediment barriers and flow checks;
 - c) Requirement to check that temporary erosion control measures are in effective working order prior to forecast storm events and following a storm event;
 - d) Fisheries timing constraints;
 - e) Control of construction noise in noise sensitive areas;
 - f) Migratory Birds Act / timing constraints and requirements for netting, if required; and
 - g) Any other timing constraints that are specified in the contract.
- E-8 Request submission of any environmental drawings or plans that are required by the contract, including contractor proposals for dewatering procedures or in water work. Explain the review process and the time required for any approvals.
- E-9 Identify the designated inspector who will monitor environmental protection/ mitigation and maintain an environmental diary.
- E-10 Obtain Contractor's contact names, positions and telephone numbers for the following:

- a) The Contractor staff to be notified for follow-up of any environmental accidents/incidents/problems both during the work and during periodic/seasonal shut-downs;
- b) The Contractor staff person ultimately responsible for meeting statutory environmental duty in the event that regulatory agencies wish to pursue any problems: and
- c) If required by the contract, the name and firm of the qualified Fisheries Contracts Specialist.

E-11 Identify the requirements of the MTO General Conditions of Contract with respect to Incident Management Under Legislation Protecting the Environment and Natural Resources.

Traffic

- T-1 Review the Contractor's responsibilities with respect to traffic, staging, detours, traffic control, maintenance of traffic, signing as per Ontario Traffic Manual (OTM) Book 7 Temporary Conditions, Freeway Detour Signing Guidelines, safety precautions, and special provisions (e.g. Traffic Control Signing, Hours for Lane Closures, Maintenance of a Traffic Control Diary, etc.).
- T-2 Review traffic staging revision submission and approval requirements. Review PHM125 Drawings. The Regional Traffic Section prior to the change taking effect must approve changes. Timeframes for submissions and approvals is to be provided by the Regional Traffic Section.
- T-3 The specified minimum clearances (horizontal and vertical; protocol for advising about clearances) must be maintained in accordance with the contract drawings and specifications. Any vertical clearance of less than 4.5m must be identified and Regional Structural Section and RUS and Manager of Regional Operations notified. Clarify that the Pre-construction bridge clearances for each lane and for shoulders must be measured by the Contract Administrator and forwarded to the Regional Structural Section. The Contractor must provide an opportunity for the Contract Administrator to obtain these measurements.
- T-4 Make the Contractor aware of their duties with respect to construction and traffic safety, and to abide by the Occupational Health and Safety Act.
- T-5 Advise the Contractor of any reduced speed zones to be in effect (if applicable).
- T-6 Review the concerns of any other interested agencies.
- T-7 Facilitate the advance notification of closures, detours, etc. to be provided to emergency services, municipalities, transit authorities, etc.

Quality Assurance

- QA-1 Discuss the requirements for properly managing non-conformances to QC Performance Measures and the consequences of major and minor deviations.
- QA-2 Chair a Pre-Pave meeting prior to asphalt placement. Meetings are to be scheduled in conjunction with the Contractor's schedule of work. The Ministry Quality Assurance Officer must be invited to attend.
- QA-3 Chair Pre-Placement meetings prior to the first concrete placement, bridge deck pour, and bridge deck overlay, or any other major placement. Meetings are to be scheduled in conjunction with the Contractor's schedule. The Ministry Quality Assurance Officer must be invited to attend.
- QA-4 Advise the Contractor that all structures are to be inspected by the Regional Structural Section a minimum of three (3) weeks prior to opening to traffic, with the exact time determined by construction field staff with the Contractor's assistance.
- QA-5 Advise the contractor the name and location of the QA lab including the applicable advance notification of sample delivery (e.g. 24 hrs)

Structural / Foundations

- S/F-1 A separate meeting with Regional Structural Office may be required on Rehabilitation and complex Structural (check with the Regional Structure Office representative).
- S/F-2 Check on Regional Structural Office requirement for notification of oversize load restrictions through structures including clearance restrictions (Form OSCLIS.xls in applicable regions).
- S/F-3 Check with Regional Structural Office to see if any off-site inspection has been identified for Structural steel, Aluminium Sign Support structures or Precast Concrete beams.

Geotechnical

- GT-1 Check with the Regional Geotechnical office to see if there are any specific concerns or requirements.
- GT-2 A separate meeting with Geotechnical may be required on complex contracts.
- GT-3 Advise the contractor of legislative responsibilities and Ministry process for operating non-commercial pits and quarries.

GT-4 Review disposal areas to confirm volumes and environmental suitability.

General

G-1 Submissions required from the contractor:

- a) Sub-Contractor's forms: Consent to Sublet (PH-CC-742);
- b) Contractor's work schedule and weekly work schedules, or acknowledgement of critical path schedule in writing;
- c) List of material sources for all materials supplied by the contractor, including suppliers for concrete, hot-mix, granular materials and manufactured products, including approved Designated Sources for Material (DSM) references;
- d) Current Workplace Hazardous Materials Information System (WHMIS) documentation and Material Safety Data Sheets for designated materials must be submitted to the Contract Administrator prior to the commencement of construction;
- e) Samples for testing in appropriate containers affixed with complete and accurate identification labels and WHMIS labels. Check that labelling and placarding of goods under the Transportation of Dangerous Goods Act is carried out;
- f) Concrete and Asphalt mix designs including supporting documentation;
- g) Permits required (pit or quarry permits for aggregates and borrow, environmental permits/approvals, forest resources licence prior to harvesting trees within a crown land pit or quarry boundary);
- h) Written confirmation of contractor's price for asphalt cement supply and hauling (e.g. paid invoice from supplier);
- i) Other submissions required by the terms of the contract.

G-2 Review of contract drawings, special provisions, specifications, etc.:

- a) Identify and discuss any provisions, unique problems, Ministry commitments and constraints to the contract;
- b) Instructions from the Contract Administrator must be adhered to in all cases. Disregarding verbal instruction will result in written notices, and could ultimately result in an Infraction Report being issued.

G-3 Advise that contract layout is to be done by the Contractor. The Contract Administrator shall:

- a) Review requirements of special provisions and any new initiatives;
- b) Advise the Contractor of the location and number of co-ordinate bars, benchmarks and alignment ties. (Hand over horizontal and vertical control sheets). Pre-engineering survey data may be available for viewing at the Contract Administrator's field office;
- c) Review requirements for submission of Record Drawings data and drawings (red-line revisions) for the contract. Digital files for contract drawings may be available to the Contractor for this purpose;

Replacement of layout (property bars, benchmarks, etc.) destroyed by the Contractor will be the responsibility of the Contractor;

- d) Review milestone field review requirements and submission procedures;
- e) Advise the Contractor of their responsibility to carry out a pre-blast survey.

G-4 Utility Work (Special Provisions)

- a) Advise that the Contractor is responsible for obtaining stake-out of existing utilities;
- b) Advise the Contractor to provide proper notification to utilities, in advance of any work affecting their plant;
- c) Advise the Contractor to abide by the O.H.S.A. (Constructor Issue);
- d) Review compliance with Operational Constraints relating to utilities.
- e) For excavation and construction near pipelines, co-ordinate, communicate and consult with the High Pressure Gas utility company.

G-5 Property

- a) Advise the Contractor of any property restrictions, expropriations, easements, clearances or restrictions, and Permission to Enter agreements. Review the terms of each property agreement (if applicable).

G-6 Railways

- a) Receive proper notification from the Contractor in order to make arrangements with railway officials;
- b) Confirm that appropriate insurance requirements are in place as per special provisions or the railway requirements;
- c) Check that the Contractor advises the railway authority when working within the railway right-of-way.

G-7 Contract Meetings

- a) To be held at regular intervals
- b) Convene and chair meetings with utility and municipal authorities as required.

G-8 Correspondence

- a) All contract correspondence must flow through the Contract Administrator.

G-9 Changes in the Work

Check that the contractor advises of any change in the work under the terms of the contract. The Contractor is not required to proceed with the change in the work until a Change Order has been issued. The Change Order will establish the method of payment. The four methods of payment are, in order of preference:

1. Variation in tender quantities;
2. Revised tender prices, or by negotiated unit price (for a new item)
3. Lump sum;
4. Time and Material

- a) Equipment rates will be as per OPSS 127 unless otherwise approved by the Contract Administrator. The Contractor shall supply an equipment list with sufficient detail to establish 127 rates;
- b) No labour premium payment (e.g. overtime, shift premium) will be made without prior approval of the Contract Administrator;
- c) Time and Material Summary For Payment, and all supporting invoices, etc. are to be forwarded to the Contract Administrator for verification prior to invoicing for payment.

The Contractor may apply for an extension of time in accordance with the MTO General Conditions of Contract regardless of the method of payment.

G-10 Work Directive

Discuss process for issuing a Work Directive when there is a dispute as to whether a Change Order should be issued.

G-11 Progress Payments

Review MTO General Conditions of Contract for Progress Payment. Set cut-off dates for each monthly progress payment.

G-12 Damage to Permanent or Temporary Installations

Review MTO Provincial Highways Directive PHY-B-102. Advise the Contractor of the safety and legal aspects of installations.

G-13 Claims by Motorists, Property Owners, etc.

Advise that all claims during the construction period will be forwarded to the contractor.

G-14 During the construction season the Contractor is responsible for maintenance of the highway infrastructure within the construction zone as per the General Conditions of Contract. Form PH-CC-771 Turnover Agreement shall be filled out in order to transfer the responsibility. A minimum of 5 Business Days prior to anticipated transfer date the CA, Contractor and representative of MTO maintenance shall perform a pre-turnover field inspection. The pre-turnover field inspection shall identify deviancies within the right-of-way and timeframe for correction.

Note: The transfer of the Roadway maintenance *does not* relieve the Contractor from the responsibility of the Work he has performed. The contract *may* require the contractor to perform routine and non-routine maintenance activities on electrical systems (i.e. traffic signals and highway lighting) during a shutdown

G-15 Substantial Performance and Contract Completion

Review MTO General Conditions of Contract. The contractor shall provide notice to the Contract Administrator at substantial performance.

- G-16 Contractor Performance Rating Report
Review the process for compiling the report and the impacts of assessments.
- G-17 Incentive/Disincentive and Penalty/Bonus Clauses
Clearly indicate requirements for assessing bonuses/penalties and incentives/disincentives in accordance with special provisions and/or operational constraints.
- G-18 Infraction Report
Discuss current process for issuing and receiving an Infraction Report with emphasis on impacts.
- G-19 Documents to be provided to the Contractor by the Contract Administrator:
- Standard forms related to the contract
 - Templates
 - Pavement Marking Drawings
 - Fair Wage Schedule (if applicable). The Contractor shall post one copy of the contract “Fair Wage Schedule” in the site trailer and one copy at the weigh scale. One copy of the “Fair Wage Schedule” shall be posted in the Contract Administrator’s field office.

Minutes are to be signed and dated by the Contract Administrator, with distribution list appended, and sent to all in attendance. Any noted errors or omissions should be brought to the attention of the Contract Administrator within one week of receipt of the minutes.

2.7 NOTIFICATIONS

2.7.1 Notifications Prior to Construction

Before construction begins, notifications should be provided to Property Owners and Businesses. The Contract Administrator shall give written notice to all property owners and businesses within the limits of the contract. The notice shall indicate that construction is about to begin and should identify the prime contractor, the contractor’s representative and a telephone number. Also provide a general description of the work, the anticipated completion date, and the name and office telephone number of the Contract Administrator.

The Contract Administrator shall keep all appropriate agencies apprised of any construction activity that may have an impact on their daily operations, including:

- | | |
|-----------------------|------------------------------------|
| – Schools | – Utilities |
| – O.P.P. | – Municipal/Regional Police Forces |
| – Fire | – Ambulance |
| – Transit Authorities | – Municipalities |

- Maintenance Patrols/Operations
- Department of Fisheries and Oceans
- Others as required
- Ministry of Natural Resources
- Conservation Authority

2.7.2 Notifications During Construction

- Applicable notification as per Regional protocols, contract related requirements, memoranda, directives or as requested by the Ministry including traffic and lane closure reports / notifications and weekly updates for Travellers website.

2.7.3 Traffic Control / Lane Closure Notification

References:

- Ontario Traffic Manual (OTM) Book 7 Temporary Conditions
- NSSP – Traffic Control Signing
- Ontario Traffic Manual (OTM) Book 7 Temporary Conditions (Field Edition)
- Regional Protocols for lane and ramp closure notification
- Regional Protocols for OSCLIS (Ontario Structural Clearance and Load Information System)

The Contract Administrator shall check that the Contractor maintains and updates a Traffic Signing Diary as required. The Contract Administrator shall check that all traffic control, staging, detours and lane closures by the Contractor follow Ontario Traffic Manual (OTM) Book 7 Temporary Conditions.

The Contract Administrator shall check that appropriate Traffic Control Lane Closure Notifications are submitted in accordance with Regional Protocols, whenever lane restrictions will be in place either on a permanent or temporary basis.

SECTION 3.0: DURING CONSTRUCTION

3.1 MISCELLANEOUS

3.1.1 Contract Meetings

General

- Project Manager shall be in attendance at all contract meetings.
- Minutes of meetings are to be provided within 5 business days of the meeting.

3.1.1.1 Contract Progress / Site Meetings

The Contract Administrator, in consultation with the Contractor, prepares an agenda three days before the progress / site meeting and forwards copies to the Contractor, Contract Services Administrator, Area Contracts Engineer, and Head of Quality Assurance.

For RFQ Assignments, the design Service Provider should be invited to a progress meeting prior to contract completion.

The following issues should be discussed at the meeting:

- Review the minutes of the previous meeting
- MTO or Contractor concerns, which have not been resolved on a day-to-day basis
- Safety and environmental issues
- Adherence to the Quality Control performance measures (non-conformances, deviations)
- Quality Assurance Issues
- Project status to date / planned activities / critical path updates
- Review the Contractor's Performance Rating report
- Claims/change orders/negotiations
- Safety-traffic control/accidents/MOL concerns/OPP
- New business/contractor issues/Ministry issues

The minutes of meetings are an important contract document. Each meeting should begin with a statement that the contents and wording of the previous minutes of meeting be accepted as written. Any amendments (i.e. errors, omissions and additional comments) are to be noted. If there are discussions pertaining to items in the previous minutes, these are to be discussed under "New Business" with reference to the previous minutes' number, e.g. Item No. 2, Site Meeting No. 6, Date.

The minutes should also include the following information:

- Meeting Number #
- Contract Number

- Date/Time and Location of the meeting
- Invited Guests / In Attendance or not
- Name of the person chairing the meeting
- Time that the meeting adjourned
- Date / Time and Location of the next meeting to be held
- Name of the person compiling the minutes
- Cc all present / copy to file

3.1.1.2 Pre-Start Meeting for Concrete

- A pre-start meeting shall be arranged prior to placement of any concrete on the contract. The agenda should be reviewed with the Quality Assurance Officer.
- The purpose of this meeting is to establish the lot and subplot sizes as per the requirements for concrete strength acceptance, and to review submission, sampling, testing and inspection requirements.
- The minutes of this meeting are to be recorded and documented with copies to all in attendance, absentees and other appropriate persons.

The following is a suggested list of attendees and topics to be discussed at the meeting:

Attendees:

1. Service Provider: Contract Administrator
Concrete Inspectors
Materials Testing Service Provider Representative
2. Contractor
3. Sub-Contractor (if applicable)
4. Ready Mix Supplier
5. Testing Personnel
6. MTO Contract Services Administrator
7. MTO Quality Assurance Officer
8. MTO Area Contracts Engineer

Topics:

1. Check that all submissions have been received as required (e.g. mix design, etc.).
2. Review all applicable Special Provisions and specifications including concrete acceptance.
3. The lot testing and acceptance procedures should be established and/or reviewed with the contractor.
4. Review the Inspection Milestones.
5. Review drawings as required.
6. Issue all relevant concrete forms to the Contractor.
7. Discuss distribution of test results.

3.1.1.3 Pre-Placement Meeting for Concrete

- A pre-placement meeting shall be arranged prior to any significant concrete operations on the contract.
- The purpose of this meeting is to review placement details of significant concrete operations prior to the event.
- The minutes of this meeting are to be recorded and documented with copies to all in attendance, absentees and other appropriate persons.

The following is a suggested list of attendees and topics to be discussed at the meeting:

Attendees:

1. Service Provider: Contract Administrator
Concrete Inspectors
Materials Testing Service Provider Representative
2. Contractor
3. Sub-Contractor (if applicable)
4. Concrete Supplier
5. Testing Personnel
6. MTO Contract Services Administrator
7. MTO Quality Assurance Officer
8. MTO Area Contracts Engineer

Topics:

1. Establish persons in charge
2. Date and time of placement
3. Review status of falsework and foundation certification, and dry run
4. Expected duration of placement
5. Equipment requirements
6. Representatives required at placement
7. Concrete mix properties
8. Testing procedures including acceptance/rejection of loads
9. Curing of cylinders
10. Retarders
11. Weather forecast
12. Hot/Cold weather protection/precautions
13. Surface finishing
14. Curing
15. Review requirements for post-placement sampling and testing (i.e. timing and number/location of cores for AVS, tensile bond, etc.)
16. For bridge decks discuss locations of possible construction joints if unforeseen issues arise.
17. General

3.1.1.4 Pre-Paving Meeting

- A pre-pave meeting shall be arranged prior to placement of any asphalt materials on the contract. The agenda should be reviewed with the Quality Assurance Officer. The lot testing and acceptance procedures should be established and reviewed with the Contractor.
- The purpose of this meeting is to review the special provisions and administration requirements. The minutes of this meeting are to be recorded and documented with copies to all in attendance, absentees and appropriate persons. This meeting shall be held a minimum of one (1) week prior to the commencement of paving.

The following is a suggested list of attendees and topics to be discussed at the meeting:

Attendees:

1. Service Provider - Project Manager, CA and Road Inspector
- Materials Testing Sub-Contractor
2. Quality Assurance Lab Representative (optional)
3. Contractor
4. Sub-Contractor and/or Hot Mix Producers if required.
5. MTO Area Contracts Engineer
6. MTO Contract Services Administrator
7. MTO Quality Assurance Officer

Topics:

1. Review all mix design with MTO representatives
2. Review of special provisions
3. Review of quality control performance measures
4. Review of Field Guide for the Acceptance of Hot Mix and Bridge Deck Waterproofing
5. Review plans, Traffic Control, Scheduling, etc.
6. Review Construction Administration and Inspection Task Manual milestones
7. Request that all paperwork is in order prior to commencement
8. Review sketch of sublots to be measured by PMD, areas to be exempt from surface smoothness measurements/penalties and all other additional measurements required (e.g. existing surface beneath single lifts)
9. Discuss Contractor's duties to facilitate smoothness measurements using an inertial profiler.
10. Discuss any new technologies that may be used on contract

3.1.1.5 Pre-start Meeting for Electrical

- A pre-start meeting shall be arranged prior to the installation of any electrical material or equipment on the contract. The agenda should be reviewed with the Electrical Quality Assurance Officer and / or the Electrical Coordinator.
- The purpose of this meeting is to review construction and maintenance requirements for the new and existing electrical plant.
- The minutes of the meeting are to be recorded and documented with copies to all in attendance, absentees, and other appropriate persons.

The following is a suggested list of attendees and topics to be discussed at the meeting:

Attendees:

1. Contract Administrator and Electrical Inspector
2. Contractor
3. Sub-Contractor (if applicable)
4. MTO Contract Services Administrator
5. MTO Electrical Quality Assurance Officer
6. MTO Electrical Coordinator
7. MTO Superintendent of Electrical and ATMS Services
8. Local Power Supply Authorities
9. Local Municipalities (if applicable)

Topics:

1. Review all applicable special provisions
2. Review contract requirements for the contractor to maintain existing electrical systems
3. Review condition of existing electrical plant
4. Review coordination needs with MTO electrical coordinators, local municipalities and power supply authorities
5. Review locates and clearances (overhead and underground)
6. Review schedule and material ordering and delivery timelines
7. Signal Activation Checklists

The MTO electrical staff identified above shall be notified of the start of the electrical work, and thereafter shall be notified as soon as possible on any changes to the schedule of electrical work.

3.1.1.6 Special Meetings

- Traffic meetings to discuss major changes in operations (staging, detours, night closures, etc.) are to be held prior to any change.
- Pre Soils Meeting to discuss any unique requirements for use of earth materials. Also clarify disposal and erosion and sediment control requirements.
- It may be beneficial to hold a separate Pre-Work Environmental Meeting with MNR and/or DFO, the Environmental Planner, and the CCA Environmental Monitor for any in-water, or de-watering work in the project.

- Any other meetings that are deemed necessary such as Emergency Services and Seasonal Shutdown shall be held and minutes taken and distributed.
- Prepare agenda, chair meeting and take minutes of the post construction Design Package Evaluation meeting.

3.1.1.6.1 Pre-Seasonal Shutdown / Final Inspection Meeting

Master Agenda for “Pre- Seasonal Shutdown/Final Inspection” Meeting

Contract:

Service Provider CA:

Contractor:

Date:

ADMINISTRATIVE REPRESENTATIVES	NOTIFIED		ATTEND	
	YES	NO	YES	NO
PM and Contract Administrator				
Area Contract Engineer				
Contractor (PM and Superintendent)				
Maintenance Superintendent/Maint. Coordinators Maintenance Contractors Representative				
Operations Representatives				
Regional Structural Section (if applicable)				
Regional Geotechnical Section				
Regional Traffic Section				
Regional Environmental Unit (if applicable)				
Ontario Provincial Police				
Regional/Municipal Police				
Contract Services Administrator				
The following should be notified and invited if applicable to the work:				
Emergency Services (Fire Response, Ambulance, etc.)				
Local Traffic Authorities				
Local Transit Authorities				

Municipality Road Superintendent				
Railway Representative (if applicable)				
Others (please identify)				

Old Business:

Review previous meeting minutes (if applicable)

New Business:

(For meeting # 1)

CA should introduce all in attendance (i.e. persons name, representation, roles, responsibilities, distribution of business cards, etc.)

- Take Attendance, noting Name of Person, Firm or Office Represented, Telephone Number and/or Facsimile Number.
- Assemble the emergency 24-hour phone numbers: Ministry (Contract Services Administrator and Contract Administrator) and the Contractor. Copies of the emergency name, position and phone numbers to be sent to the Regional Construction Office, O.P.P., Regional or Municipal Police, MTO Patrol, District Office and/or Radio Room/COMPASS Centre with contract number and location.

Name	Firm	Work Tel. # Fax #	Cellular # Home Tel. #	Pager #

New Business:

- Review the ministry’s protocol concerning the “Seasonal Shutdown and Working in Free Time” period.
- Review the contractor updated Critical Path Schedule at each Pre-Seasonal Shutdown Meeting (tentatively scheduled for Aug. 01, Sept.01, Oct.01, and Nov. 01), which must identify what work will be completed to allow the safe passage of the travelling public during the seasonal shutdown.
- Review the applicable portions of the construction season shutdown period checklist (Note to CA: if there are any outstanding issues, this is an appropriate time to address them.)
- Review the applicable “seasonal shutdown period” contract documents (contract drawings, SP’s, SWRC memos, ministry directives etc.

- Review and discuss any concerns of Operations/Maintenance that should be added to this agenda and sent out to all invites prior to the scheduled meeting.
- Review traffic staging revision submission and approval requirements.
- Request any haul routes proposed by the Contractor during this period are reviewed by the CA noting load limits and local by-laws may differ.
- Review the Contractor's responsibilities with respect to traffic, staging, detours, traffic control, maintenance of traffic, signing as per Ontario Traffic Manual (OTM) Book 7 Temporary Conditions, Freeway Detour Signing Guidelines, safety precautions, and special provisions (e.g. Traffic Control Signing, Hours for Lane Closures, Maintenance of a Traffic Control Diary, etc.).
- The specified minimum clearances (horizontal and vertical; protocol for advising about clearances) must be maintained in accordance with the contract drawings and specifications.
- Review the Contractor duties with respect to construction and traffic safety.
- Advise the Contractor of any reduced speed zones to be in effect (if applicable).
- Review the concerns of any other interested agencies.
- Facilitate the advance notification of closures, detours, etc. to be provided to emergency services, municipalities, transit authorities, etc.
- Damage to Permanent or Temporary Installations
- Review MTO Provincial Highways Directive PHY-B-102. Advise the Contractor of the safety and legal aspects of installations.
- All claims by Motorists, Property Owners, etc during the construction period must be brought to the attention of the CA.
- Substantial Performance and Contract Completion:
 - Review the General Conditions of Contract. Two weeks advance notice for final inspection should be provided to the Contract Administrator in writing.
 - Remind the Contractor that applicable environmental timing constraints must be complied with, as follows:
 - Obtain Contractor's contact names, positions and telephone numbers
 - The Contractor staff to be notified for follow-up of any environmental accidents/incidents/problems both during the work and during periodic/ seasonal shutdowns.

- Facilitate the advance notification of closures, detours, etc. to be provided to emergency services, municipalities, transit authorities, etc.
- Advise the Contractor that all structures are to be inspected by the Regional Structural Section a minimum of three (3) weeks prior to opening to traffic, with the exact time determined by construction field staff with the Contractor's assistance.

Discuss the responsibility of the contractor concerning proposed staging changes etc

Remind the contractor's about adhering to the submission of updated Critical Path Schedules (GC 7.01.07)

- Remind everyone that all contract correspondence must flow through the Contract Administrator.
- Check that the contractor advises of any change in the work prior to initiation. Advise the Contractor that work started without issuance of a Change Order will not be accepted and compensated.
- Review the appropriate typical cross-section for the Seasonal Shutdown/Working in Free time component in the contract documents.
- Anything unusual in this project, which should be covered by additional clarification.
- Does the designed staging comply with the seasonal shutdown requirements listed in the contract documents.
- Any staging proposal reviewed must comply with the contract documents (including the applicable seasonal shutdown typical cross etc.) and address the applicable construction and maintenance related concerns such as:
 - MH and CB's be reset to shut down pavement elevations
 - Provisions for drainage must be made
 - During the seasonal shut down/working in free-time period all lanes must be restored to contract requirements
 - Address all pavement markings (temporary and permanent) including appropriate obliteration
 - Address temporary and permanent signals etc. (if applicable)
 - Can the work be constructed with the staging provided
 - Have all the safety-related components been addressed (such as TCB, SBGR)
 - Address all structure-related issues
 - Does the proposal/shutdown plan incorporate the turnarounds for emergency vehicles

- Develop a *static* deficiency list, which incorporates any seasonal shutdown related situations/problems, which will be reviewed at all pre-seasonal shutdown meetings (noting by the time the scheduled shutdown nears all deficiencies must be established by the various offices involved in order for the CA team to administrate an orderly and timely turnover.)
- Arrange an acceptable emergency detour route with the allocable authorities
- Discuss the structural lane configuration that must be capable of carrying the traffic.
- Can all structural lanes be restored prior to seasonal shutdown.
- Can the work be constructed with the staging provided.
- Notification of winter work to applicable media-related (such as the Regional Radio etc.)
- Are the number of working days sufficient to allow the designed staging etc. to be constructed and restored by to the required configuration prior to the seasonal shutdown period.
- Discuss the contractor's intentions concerning Seasonal Shutdown and Free Time work.
- Discuss the removal of construction signs (if applicable)
- Prior to the scheduled shut down/working in free time each section submit their static list of deficiencies and concerns: (*noting the contractor is always encouraged to work in free time or accelerate which can end up in a stage that may not accommodate the minimum winter configurations. The CA must bring this type of situation to the attention of the CSA well in advance of the scheduled shutdown date.*)
- Prior to any turnover (whether a "seasonal shut down" for a carry over or a "final inspection" for contract completion) the CA must notified the applicable ministry represents (including a drive through with the CSA/Contractor/CA/ operations representatives)
- Has a final inspection type meeting been held with the construction / maintenance contractor/operations/ACE/CSA prior to the actual turn over or opening of the road/ lane etc. (whether final inspection or seasonal shut down) checking that everyone's concerns have been addressed each Section /Department should inspect the contract and submit a "*static list*" within two days to the CA

- Has the Turnover Agreement form (PH-CC-771) been sent to the appropriate MTO offices for Ministry accepting responsibility for the road (at the contract completion/winter shutdown or spring start up)
- Have all work zone accesses being addressed
- Has the late season paving been addressed
- Has the schedule been checked against the environmental timing constraints
- Any constructor or utility issues
- Have the operational people been involved in the review of their specific interests
- Will the operations accept the road back for winter maintenance (if not as per previously agreed as the winter came early for example) what is the least the ministry will accept.
- Review the contractor's traffic control and workers protection plan to check that they are up to date reflecting any necessary changes to address the seasonal shutdown or working in free time period.
- Has a contingency plan been developed to address for unexpected situations (such as a early snow fall or winter)

General Discussion

Open the meeting to any questions or concerns raised

Schedule next meeting (suggested one a month from August 01 on until the seasonal shut down and as required)

Minutes are to be signed and dated by the Contract Administrator, with distribution list appended, and sent to all in attendance. Any noted errors or omissions should be brought to the attention of the Contract Administrator within one week of receipt of the minutes.

3.1.1.6.2 Design Package Evaluation Meeting

Agenda

During Construction

- Compare the contract documents to the actual construction for errors, accuracy and constructability problems.

- Records and document concerns, issues and problems on the DPE (living) document.

Post Construction

- The CA provides the CSA with applicable comments in the draft DPE document to assist CSA in chairing the meeting.
- Applicable CA Service Provider representatives to attend the DPE meeting, recording the minutes and providing clarification etc.
- Design Service Provider representatives should also be present to provide their design reasoning / support /non-support of the comments etc.

3.2 APPROVALS

3.2.1 Working Days / Completion Date

References:

- MTO General Conditions of Contract
- Provincial Construction Memorandum PCM #2007-02

The Contract Administrator shall become familiar with and administer the contract requirements or special provisions regarding contract completion dates, incentives/disincentives, the charging of working days/calendar days, and liquidated damages, if applicable.

The Contractor must request an Extension of Time in accordance with the MTO General Conditions of Contract. The Contract Administrator shall receive and evaluate the Contractor's requests for extension of time, and provide a comprehensive written report with recommendations to the Ministry (within an agreed upon time frame). The request and Service Provider recommendations shall be reviewed with the Contract Services Administrator. The MTO Regional Operations Office will grant approval or disapproval of contractor requests for extension of time. When the Contractor has submitted PH-CC-775 Extension of Time Request and Approval or PH-CC-750 Request for Clarification disagreeing with the response to an extension of time request, the amount of liquidated damages shall be calculated but not deducted. The MTO Regional Operations Office will advise the CA of the outcome and instructions for application of damages when applicable.

3.2.2 Ministry Acceptance / Approvals

In addition to requirements outlined elsewhere in the Agreement, the Service Provider must secure the Construction related specific approvals and acceptance of the Ministry as noted. The Service Provider shall submit to the Ministry, the Construction items within the time lines indicated below. The time lines will commence upon receipt of all required documentation from the construction contractor.

Ministry Acceptance/Approvals		Turnaround Time
External Approvals/TESR Commitment Conditions	Approval	3 Weeks
Layout and Wording of Permanent Signs	Approval	3 Weeks
Design and Layout of Temporary and Permanent Signals	Approval	3 Weeks
Traffic Control Plan (Operational Constraints)	Approval	3 Weeks
Traffic Signal Timing (Approval required when the traffic signal timing is provided by a municipality or other non-Ministry source)	Approval	**
Design Criteria	Approval	4 Weeks
Project Physical Configuration	Approval	3 Weeks
Horizontal and Vertical Project Control	Approval	3 Weeks
Structure General Arrangement Drawing	Approval	4 Weeks
Transportation of Oversized Loads	Approval	1 Week
Load Limits (as per Highway Traffic Act)	Approval	3 Weeks
Contract Package	Acceptance	3 Weeks
Construction Contract Change Orders (<\$30K for information purposes, >\$30K.all Change Orders)	Approval	Without delay
Contractor Initiated Change Proposals	Approval	**
Changes to Contractor's Working Days/Completion Date	Approval	**
Contract Substantial Performance Acceptance	Approval	3 Business Days
Sub-Contract Substantial Performance Acceptance	Approval	3 Business Days
Stop Work Order (Non-Safety Related)	Approval	Same Business Day
Issue of Certificate of Completion	Approval	3 Business Days
Property Related Agreements with Municipalities/Private Owners	Approval	3 Weeks
Property Request	Approval	3 Weeks
Utility Relocation Cost-Sharing Arrangements	Approval	3 Weeks

** To be agreed by the Ministry and the Service Provider

3.2.3 Schedules / Critical Path

References:

- Contract Documents
- Contract Specific Special Provisions

The Contract Administrator shall receive and review the Contractor's critical path schedules, both hard copy and electronic version submitted by the contractor for practicality / achievability, and conformance to the Special Provisions of the contract documents. Analyse the originally submitted (as-bid) Critical Path Schedule in detail. Identify any deficiencies or impracticalities.

Deficient, non-conforming schedules shall be returned to the Contractor, noting error(s) and requesting a resubmission. The preliminary contractor schedule checklist shall be completed and forwarded to the Ministry.

Impracticalities e.g. operations which appear out of order, questionable production rates, shall be documented and brought to the contractor's attention.

The Contract Administrator shall review the Contractor's progress with respect to the schedule and/or critical path. The Contractor Administrator shall review weekly updates of the Contractor's intended work operations. Analyse critical path updates received from the contractor, and respond/administer these accordingly. The schedule and progress should be reviewed with the Contractor at every site meeting. Monitor the Contractor's progress throughout the construction period, and take action as appropriate in the event that the planned schedule is not maintained. If the Contractor is behind schedule, the Contract Administrator shall request an action plan (whether to accelerate or do nothing). Discuss reasons for delays, determine if any delays are due to MTO, Contractor, or other parties, and document it in the minutes of the meeting. Notify the Ministry of problems that may affect the completion time.

The Contract Administrator shall apply information gained from the critical path schedule, to assess in detail any requests for extension of time, and provide detail recommendations to the Ministry, with reasons.

The Contract Administrator shall apply knowledge gained from the critical path schedule to arising issues, including but not limited to delays, deleted, change in the work or additional work, potential acceleration, claim negotiations, and/or issue resolution processes, and provide input and detail recommendations to the Ministry, with reasons.

3.2.4 Verification of Weighed Items

Reference:

- Quality and Standards Directive QST-B-009 Weighing Controls and Axle Weight Enforcement
- OPSS 102 General Specification for Weighing of Materials
- Special Provision No. 101S18 – Bar Coding on Material Delivery Invoices

- Progress and Final Payment Guidelines

The Contract Administrator shall check that the weighed materials are administered according to current policy and that all weighed materials are paid under the appropriate items. The Contract Administrator shall also maintain up-to-date quantities and daily summaries of the weighed materials. Documentation, including tickets, for all weighed items shall be retained until all claims are settled and final payment is verified. Multiplier factors shall be applied to the weighed quantities for the types of aggregate used as specified in the contract.

The Contract Administrator shall check that each scale used for weighed items is within the tolerances specified by turning trucks over that scale. The frequency of scale checks shall be a **minimum** of twice weekly or as instructed by the Ministry while the scales are in operation for the contract; frequency of checks to be increased if warranted.

Sensitivity Test

With zero load on the scale deck, the sensitivity is determined by the addition to the platform of a known mass, or by using only the poise on the fractional beam, the beam is moved from a position of equilibrium to a position of rest at the limit of its travel.

CSA to be notified if RUS is required to perform independent roadside weigh checks

Performance Test

A loaded vehicle is driven on to the scale deck and the load is balanced out using the various poise and the indicated weight is noted. Indicated load refers to the weight of the vehicle used in conducting the performance test, when weighed at the centre of the platform, in the normal direction for weighing a loaded vehicle.

Just prior to the loaded vehicle driving onto the scale platform, the person performing the tests will carry out the sensitivity under zero load and recorded on the Record of Scale and Weighing Inspection Form. The loaded vehicle is then driven onto the scale platform until the rear wheels are just over the end levers, and the indicated gross weight is written in the upper left box under the heading "Performance Test". The loaded vehicle is then brought forward to the centre of the scale platform. The sensitivity test for a loaded vehicle is then carried out and recorded on the Scale and Weighing Inspection form.

With the loaded vehicle still on the centre of the scale platform, the weigh ticket is then made out. The Date, Truck Number, Net Weight and Weight Ticket Number are entered on the Scale and Weighing Inspection form. The loaded truck is then reversed, by the person performing the Sensitivity and Performance tests, and the net weight is recorded in the column "Checked Weight". This should be compared with the net weight shown in the column "Net Weight shown by the weigher". The Gross Weight is then obtained and entered in the centre box, top line under "Performance Test". This

Gross Vehicle Weight is the Indicated Load when calculating the Limit of Error. The loaded vehicle is then driven forward to the end of the platform scale so that the front wheels are just over the end levers. The gross vehicle weight is then obtained and entered in the top, right box. The loaded vehicle is then driven off the scales, turned around and weighed in the reverse order. The weigh ticket is then issued to the driver. The person checking the scale Sensitivity and Performance, signs the form, in the last column, along with his title and any remarks in regards to the test results.

3.2.5 Expenditure Control

The Contract Administrator shall use the Construction Administration System (CAS) supplied by the Ministry of Transportation for the production and tracking of change orders.

The Expenditure Forecast Summary Form will be utilized for tracking overruns and under runs. The Regional Operations Office will use this form for expenditure control and forecasting.

The Contract Administrator will be responsible for submitting a hard copy of an accurate expenditure forecast on a monthly basis along with the approved Progress Payment. All changes shall be listed and an accurate detailed explanation is required for each change. The CAS database must be submitted at the same time electronically to the Regional Operations Office.

The Contract Information Form in CAS must be updated monthly to include an updated contract completion date, all estimated expenditures for the current fiscal year (April 1st – March 31st) as well as carryover expenditures for the next fiscal year (if any).

3.2.6 Contractor's Payment Approvals

References:

- MTO General Conditions of Contract
- Supply and Fabrication of Structural Steel and Precast Concrete Beams QST-C 019
- Provincial Highways Directive PHY-B-241 Construction Lien Act, 1983
- Construction Lien Act

The Contract Administrator shall review the Contractor's Progress Payment Application and check it contains the information as stated in the MTO General Conditions of Contract.

The Contract Administrator shall establish and maintain appropriate levels of inspection to allow accurate verification of all item quantities (e.g. rock excavation, rock face, pavement markings, etc.) and for work approved through Change Orders. Where quality assurance and other checks (e.g. grade checks, compaction checks, material tests, etc.) are part of the basis of payment for the tender item, the Contract Administrator shall check that these have been carried out as a condition of payment.

The Contractor's invoice shall be reviewed by the Contract Administrator for completeness and subsequent approval for payment, along with the Invoice Cover Sheet and forwarded to the Contract Services Administrator within five (5) business days for processing.

The Contract Administrator shall complete the verification of progress and final quantity reports to support payment to the construction contractor, including 100% on-site verification of weighed materials. Reviewing Contractor's invoice for work performed on a Time and Material basis; verify all extensions and additions; certify that the invoice is correct and in accordance with Ministry policies.

3.2.7 Rock Administration

References:

- Special Provision SP 206S03 Earth Excavation, Grading
Excavation for Pavement Widening
Rock Excavation, Grading
Rock Face
Rock Embankment
Rock Supply

3.2.7.1 Rock Material Management Plan

The Contract Administrator shall review the Contractor's initial Rock Material Management Plan submission for conformance with the contract documents. Any deficiencies in the submission should be noted with non-conforming plans returned to the contractor.

The Contract Administrator shall monitor the contractor's actual work progress and rock materials management against the submitted plan. The Contract Administrator shall review the monthly updates to the plan for conformance to the contract documents and reflection of actual conditions.

Verify the Contractor's submission for Rock Surplus removed quantity.

Verify the contractor has designated a measurement method for all rock materials not placed in the embankment.

Measuring Rock Surplus

Accurate monitoring and verification of the removal of Rock Surplus from the contract is very important. Failure to account for rock materials removed as rock surplus, may result in unwarranted payment to the contractor under the Rock Supply item.

While the contractor is required to take the measurements and provide an accounting of the rock surplus removed, the Contract administrator is to monitor the contractor's rock material handling, verify (where required) and review measurements.

The Contract Administrator shall as part of the inspection tasks for Rock Excavation, continuously monitor the contractor's hauling of Rock Materials from Rock Excavation. The General inspection tasks for Rock Surplus are as follows:

- 1) Monitor at all times the locations where the contractor is hauling rock excavated from the contract.
- 2) Verify the contractor has designated a measurement method for all rock materials not placed in embankment.
- 3) Verify the quantities of Rock Surplus removed.
- 4) Record in diary all verification completed as described below.

Specific Tasks for the Different Measurement Methods

a) Weighed Aggregate Production Quantity

- 1) Verify Rock Materials are only hauled to the on-contract crushing site (unless accounted for using another measurement method).
- 2) Verify Contractor calculations for material weighed as processed aggregate from on-contract location and properly converted to broken rock quantity.
- 3) Survey stockpile location prior to aggregate placement – identify any discrepancy with contractor measurements.
- 4) Survey stockpile location after all aggregate removal – determine any remaining aggregate volume. Identify any discrepancy with Contractor measure.
- 5) Check that any aggregate remaining unprocessed is measured by the contractor and accounted for as rock surplus when disposed of (unless placed in embankment).

b) Stockpile Volume

- 1) Receive list of stockpile locations from Contractor. Stockpile locations include rock fill/placement at offsite premises, stockpiles in pits and quarries, disposal within contract limits (widening, slope flattening etc.)
- 2) For any stockpile locations in compressible soils instruct the contractor to provide monitoring devices in sufficient number to allow adequate assessment of stockpile settlement.
- 3) Verify the contractor's initial ground surveys for 1/3 of the stockpile locations.
- 4) Monitor contractor hauling operations to verify that Rock Surplus materials are only placed in the stated stockpile locations.
- 5) Frequently monitor each stockpile location (3-4 times per day) for a minimum period of 15-20 minutes each. Verify all rock materials are placed in the stockpile and no rock materials are removed from stockpile.
- 6) When the stockpile is complete, survey the completed stockpile.

- c) Weighed Broken Rock
 - 1) Monitor that all rock materials are weighed prior to leaving contract limits.
 - 2) Receive weigh tickets from contractor; verify all tickets have been accounted for against the daily material summary.

- d) Insitu Measure of Distinct Rock Cut
 - 1) Verify that only rock materials from the distinct rock cut location as identified by the contractor are removed from the contract.

Rock Supply

The Contract Administrator will determine when the contractor can gain access to the Rock Supply item in accordance with the contract. In cases where the contractor requests early access to the Rock Supply item due to substantial changes in Rock Excavation or Rock Embankment, the Contract Administrator may consider such requests providing the changes and the impact of the changes is substantial. The Contract Administrator shall continue to monitor the quantities of Rock Excavation and Rock Embankment, as well as the Rock Surplus removed. The quantities shall then be reconciled at the end of the contract or stage.

Contractor Proposals for Partial Cuts

The Contract Administrator can consider contractor proposals to remove partial cuts for Rock Surplus using an insitu measure with Bulking Factor applied. When considering such proposals, check that the requirements and conditions are in writing and agreed to. Avoid too many partial cut measurements. The contractor must accurately drill the rock to be removed, and accurately measure the removed insitu volume. No other removal of rock materials should be permitted at the location of the partial cut. In such cases the Contract Administrator shall verify and monitor rock surplus materials removed.

It is a serious matter if the Contractor fails to measure the Rock Surplus materials. Upon discovery of failure to measure rock materials removed as surplus, the contractor should be immediately notified by Instruction Notice and the CSA informed. Examples of Contractor failure to measure Rock Surplus are: trucks bypassing scales when Rock Surplus is to be measured by weighing, failing to place Rock Surplus in designated stockpiles, removing rock materials from stockpiles prior to measuring, etc.

The Contract Administrator shall apply information obtained from the Rock Materials Management Plan and monthly updates, to analyze contractor claims.

3.2.8 Commissioning of Highways Prior to Opening

- The Contract Administrator shall be familiar with the current protocol for Commissioning new sections of Highway prior to opening.
- Provide notification to the CSA and ensure that all items on the Commissioning Checklist are completed in accordance with the Contract

3.3 DOCUMENTATION

3.3.1 Documentation of Daily Activities

3.3.1.1 Documentation of Contract Activities

The Contract Administrator and technical support staff shall provide sufficient documentation of all contract activities occurring on each day of the contract. It is essential that an accurate and detailed description of contract operations be maintained. This is of paramount importance in assisting in the preparation of the final estimate, and in dealing with claims and Change Orders.

3.3.1.1.1 Contract Administrator's Diary

The Contract Administrator's Diary shall be properly titled, noting the Contract Number, the Region, and the Location. The name and address of the Contract Administrator keeping the Diary shall be placed on the personnel page, as well as a complete listing of all personnel assigned to the Contract.

Daily entries must be made in the Contract Administrator's Diary by the Contract Administrator or his representative in his absence.

The **minimum** documentation requirements are as follows:

- Index (for any significant issues, claims, etc.)
- Date
- Weather conditions; recording frequency should increase when conditions are near critical thresholds (i.e. low temperature, precipitation)
- General progress of the work, especially at the beginning and ending of important phases, and an account of any difficulties encountered by the Contractor including achievement of milestones and whether notification was made to the Contract Administrator
- Record of labour, materials, equipment, activity and location whenever there is the potential for a change in the contract or the Contractor has raised the potential for a change in the contract
- Assessment of working days and controlling operation
- Contractor's claims or complaints
- Verbal and written instructions given to the Contractor
- Record of events that could have an effect on the Contractor's production and possibly require shut down on the Contractor's part

- Any significant event that occurs on the contract and an assessment of the potential impacts
- Dates of the relocation of utilities and all pertinent data regarding the effects such as relocation has on the Contractor's use of equipment
- All discussions, complaints, concerns, etc. or dealings with property owners (i.e. date of physical acquisition of property)
- All discussions or dealings with municipalities, other ministries, utilities, third parties, etc.
- Record of any grade or alignment changes together with the rationale for and acceptance of the change
- Deviations from plans, profiles, specifications, special provisions along with the rationale for acceptance of the change
- Any decisions or recommendations made by MTO officials must be recorded, including the date, subject, decisions and final results. A copy of this record shall be promptly sent to the Contract Services Administrator for information and / or for forwarding to appropriate individuals
- Irregularities in any item during construction
- Explanation for underbuilding and / or overbuilding and for underexcavation and / or over-excavation
- Any changes in the work, including additions and deletions, identification of the compensation mechanism, including references and appropriate justification
- Reference to Change Orders
- Data required for reconciliation of Daily Work Records
- Record all accidents within the contract limits, and on operations connected with the contract (i.e. set up of closures or traffic queues resulting from closures, etc.)
- Maintain a record of environmental incidents, including, but not restricted to when the incident took place, actions taken or intended to be taken by the Contractor regarding the incident such as containment of spills, notifications made to proper authorities, actions taken to clean up and restore the environment to pre-incident conditions, investigations, charges, stop work orders and remedial instructions by regulatory agencies, environmental complaints by the public.
- The condition of haul roads before and after construction, including appropriate documentation (i.e. photographs)
- Explanations for incompleteness of any field records
- The necessity for re-excavation or sub-excavation not indicated on the plans
- Contamination of any materials, reasons for replacement and method of payment
- Record of non-compliance / non-conformance with environmental timing constraints and action taken to address, and communications with MTO and agencies
- Report Information shall be recorded in the Diary for the preparation of the Project Construction Report. All peculiarities as they occur such as design and construction problems, and their solutions, quality assurance problems, tender item overruns and overruns, etc. must be documented

3.3.1.1.2 Inspector's Diary

The Inspector shall maintain accurate and detailed description of contract operations relative to the Contractor's activities. This applies to operations involving equipment and labour as well as other items which the Ministry may either have to make payment or would require knowledge of at a future date.

Contractor's activities will be recorded in the Inspector's Diary by actual times when staff are present and by the best practical estimate of times when staff are not present, (i.e. the estimated times will be based on the Contractor's statements or a realistic appraisal of production rates, etc. Any abnormalities or explanations will be noted in the remarks column of the records.

A separate Inspector's Diary must be kept for Grade, Structures, Bituminous, Electrical, Environmental, and other major items as directed by the Contract Administrator.

The Inspector's attendance time on the operation will be recorded above his signature.

The **minimum** documentation requirements are as follows:

- The Inspector's Diary shall be titled noting the Region, Contract Number, Highway Number and Location, and the name of the Contractor
- Six pages are provided for an operational code index. The operational code numbers, item description and unit shall be entered by the Inspector at the commencement of work relative to Contract items.
- Four pages shall be used for an equipment inventory. This section may be completed from the "Master List of Equipment" provided by the Contractor at the start of construction. The inventory must record all appropriate data to establish a MTO 127 rate for all Contractor owned and rented equipment used on the contract. Where possible, the owner of the rented equipment shall be shown in the remarks column.
- Date
- Weather conditions; recording frequency should increase when conditions are near critical thresholds (i.e. low temperature, precipitation)
- Contractor's hours of work
- General progress of work: where the Contractor is working and what he is doing
- Equipment being moved or arriving on the job and it's purpose
- Visits to the contract of MTO officials, and any specific instructions they may have given.
- Instructions given to the Contractor
- Contractor's claims or complaints
- All discussions and dealings with property owners
- Work performed on the contract by public utilities, noting start and completion of the work
- Stoppage of work by the Contractor for any reasons with full description of why contract was shut down

- Separate Time and Materials Records are maintained
- Complete description of how cuts are excavated, type of equipment used and difficulties encountered due to either improper equipment or nature of material
- The source and nature of excavated material and its final disposition including the equipment involved and the time and duration of the work
- Number of loads of material where possible without consulting with the weighman's or Contractor's records
- Records of irregularities in the weighing operation and explain the remedial action taken or instructions given
- Maintain a record of incidents including but not restricted to when the incident took place, actions taken or intended to be taken by the Contractor regarding the incident such as containment of spills, notifications made to proper authorities, actions taken to clean up and restore the environment to pre-incident conditions, investigations, charges, stop work orders and remedial instructions by regulatory agencies, environmental complaints by the public.
- Record of non-compliance / non-conformance with environmental timing constraints and action taken to address, and communications with MTO and agencies
- Obtain and record accurate measurements of work done by the Contractor.
- All equipment that is on the contract must be recorded with the applicable code, whether it is working or not
- The name and type of equipment, and contractor's equipment number shall be recorded
- The number and type of labour shall be recorded
- The actual hours worked must be recorded with the applicable operations code
- The actual hours not worked must be recorded with the applicable codes
- Inspection activities and verification results
- Documented verification of all contract items

Note: Working time, downtime and stand-by time must equal total daily working hours.

- The actual areas worked shall be noted station to station
- Location and length of any work stoppages and the reasons why
- Where the method of payment in the tender is a rental hourly rate, the equipment hours should be recorded accurately to the nearest one half hour.

Note: To support contract payment in accordance with Plan Quantity Payment Procedures, additional diary entries are necessary. (Refer to H.O.C. Memo 2003-06 Progress and Final Payment Guidelines)

A payment statement in the diary is required:

- At the end of each payment period in which the item of work is in progress
- When a quantity of work, as identified on the Quantity Sheet, is complete
- When an item of work is complete

Additional information includes:

- The item number
- The limits of the work, by station or structure number, as identified on the Quantity Sheet / for each item are recorded by stations
- The payment quantity / percentage for progress payment and payment sub-code (i.e. Item # 14 Culverts / Culvert – “Pay 15m sub-code 14-23”)
- Details of changes affecting the plan quantity (i.e. additions or deletions) shall be recorded

3.3.1.1.3 Diaries (CA and Inspector’s) Submissions

Diaries (CA and Inspector’s) must be hardbound books with numbered pages. There shall be duplicate, perforated and carbonized pages for daily entries to allow for easy removal of a copy for distribution.

The original copy of the diaries must be submitted to the Field Office on a daily basis, and forwarded to the Contract Services Administrator on a weekly basis. The second (bound) hard copy of the diary sheets shall be kept at the Contract Administrator’s Field Office for submission with the Final Estimate. The Contract Administrator shall also retain a third hard copy of the diary sheets in a secure, separate location.

3.3.1.2 Documentation of Service Provider’s Activities

On a daily basis, the Service Provider shall make available to the Ministry, sufficient documentation to determine that they are satisfying their obligations under the Construction Administration Agreement and the Construction Administration and Inspection Task Manual requirements. Inspection tasks and time spent on each should be referenced in the Inspector’s Diaries.

3.3.1.3 Documentation/Certification

Documentation requirements related to inspection have not been specifically identified within the individual tasks in Part B of this manual. It is the responsibility of the Contract Administrator to require that all documentation specified by the contract is available or has been received and/or approved at the time and in the specified manner. Related work shall not proceed until the documentation requirements of the contract have been met. These documents include but are not limited to the following:

- Certificates of component
- Certificate of conformance
- Stamped drawings
- Proposals
- Material certificates and material data sheets
- Facilities and personnel certificates
- Electrical service manuals
- Proposed Aggregate Permit / Wayside Permit Applications

3.3.2 Instruction Notice to Contractor

Instruction Notices to the Contractor shall be issued to document concerns and deviations, clarify requirements of the contract, communicate information, and transmit documentation. Instruction Notices shall be signed by the Contract Administrator and the Contractor to acknowledge receipt of the Notice. Examples for the use of Instruction Notices to the Contractor include the following:

- Changes in the work
- Approvals
- Transmittal of documents
- Safety issues
- Non-compliance of the contract
- Warnings
- Suspension of work, stop work order issued by MTO or its agents
- Specific Instructions from the Ministry

3.3.3 Contractor's Infraction Report

Reference:

- Procedures for Processing the Contractor's Infraction Report

The Contract Administrator shall prepare the Contractor's Warning of Infraction Report/Infraction Report upon discussion with the Contract Services Administrator, and shall attach appropriate documentation. The completed Warning of Infraction Report/Infraction Report shall be forwarded to the Contract Services Administrator. The Contract Administrator shall prepare the Contractor's Infraction Report at the direction of the Contract Services Administrator and Area Contracts Engineer, and shall attach appropriate documentation. The prepared Infraction Report will be forwarded to the Regional Contracts Office for further action. The Contract Administrator shall attend any meetings with the Contractor to discuss the issuance of the Warning of Infraction Report or the Infraction Report at the request of the Regional Contracts Office.

3.3.4 Global Positioning System (GPS) Readings for ATMS Field Infrastructure

The Contract Administrator shall obtain accurate GPS readings at as-constructed locations of ATMS field infrastructure and provide a record containing the following:

- Contract Number
- Date
- Brand of GPS device used
- GPS reading of a known benchmark (BM) located within the project limits
- Item Name and Identification Code
- Location description (Highway, traffic direction, Contract sheet number, chainage station)
- Longitude and Latitude in decimal degrees accurate to the fifth decimal place (for sub-metre accuracy)

- The Contract Administrator is required to obtain GPS readings only for Contract Items that include GPS readings requirement under inspection tasks included in CAITM Part B: Tasks. The results shall be provided in Microsoft Excel format in two (2) hard copies and in two (2) electronic media copies on labelled

3.4 CHANGES

References:

- Provincial Highways Directive PHY-B-113 Plan Quantity Payment for Construction Contracts
- MTO DELEGATION OF AUTHORITY FRAMEWORK (DELEGATION OF AUTHORITY for the MINISTRY OF TRANSPORTATION)
- MTO General Conditions of Contract
- Construction Change Order Manual

3.4.1 All information on Change Orders can now be found in the Construction Change Order Manual.

3.4.2 Change Proposals

Reference:

- Contract Documents

The contract permits the contractor to submit Change Proposals, the Contract Administrator will be required to review and provide a preliminary evaluation and recommendations, within two business days, to the Ministry (Contract Services Administrator) for approval. The Regional Operations Office must give approval in advance of any change being implemented. If the Service Provider requires additional resources/expertise, a Change Order may be warranted, and may be eligible for additional compensation from the Ministry. If the proposal is accepted, the Service Provider shall maintain appropriate Records to document that the approved changes are implemented and the proposed benefits are achieved.

3.4.3 Clarification and Claims

References:

- MTO General Conditions of Contract GC 3.14
- HOC #2006-02 Administration of Claim Settlements

Check that the **Clarification and Claims** process and timeframes for resolutions are documented and the Contract Documents are adhered to. The Contractor must notify the Contract Administrator of a potential Claim situation. It is the Contractor's responsibility to maintain Daily Work Records in support of their (potential) Claim. The Contract Administrator shall prepare a report on the details of the claim for the Contract Services Administrator. The Contract Administrator shall liaise with the Contract

Services Administrator to provide input into the negotiations and facilitate the satisfactory resolution of **Clarification and Claims**.

The Contract Administrator shall as a minimum:

- Receive all written Request for Clarifications, Daily Work Records, and other supporting information/documentation.
- Check that Contractor's Request for Clarifications-submission fully complies with contract requirements both for content and time.
- Check that the Contractor submits Daily Work Records in accordance with the Contract.
- Monitor and record Contractor work activities (manpower, materials and equipment) for work affected by (or likely to be affected by) the Claim.
- The Daily Work Records shall be signed each Day by both the Contractor's representative and the Contract Administrator. The Contract Administrator will note disagreements on the Daily Work Record prior to signing and return a copy to the contractor.
- Conduct a detailed analysis and review based on the Contract Documents and all pertinent information related to Clarification and Claims.
- Provide final written response to the Contractor's request for clarification as soon as possible within the Contract timelines.
- In the event a Claim is elevated to the Regional level, the CA shall review the Contractor's Notice of Claim for compliance with the General Conditions of Contract prior to submitting to the Region. The Contract Administrator shall provide a covering memo assessing the content of the notice of claim within 5 days. It is recommended that the submission to the Region include pictures, background details and all other pertinent documentation.

3.4.3.1 Clarification and Claim Settlements on Active Contracts

Request for Clarifications determined to be a change to the contract shall be processed as a Change Order.

In the event that a Regional or Head Office level settlement is reached, and the Contract is still on going, Regional or Head Office Claims staff will forward the claim settlement details to the CSA and CA for payment processing. The CA will enter all relevant data into the CAS using the category for "claims settlements" under Other Payment Adjustments – No Change Order.

3.4.4 Media Enquires

The Contract Administrator must handle all media enquiries as per applicable Regional protocol.

3.5 SUBSTANTIAL PERFORMANCE & CONTRACT COMPLETION

References:

- Provincial Highways Directive PHY-B-241 Construction Lien Act
- MTO General Conditions of Contract

The Contractor must request Substantial Performance and/or Certificate of Contract Completion in writing and provide two weeks notice to Contract Administrator to make arrangements for the Final Completion Meeting.

The Contract Administrator shall participate in joint inspections of the work with representatives of the Contractor and the Ministry, following receipt of a written request from the Contractor, for the purpose of establishing the date of substantial performance of the work and/or the date of completion of the Work.

3.5.1 Certificate of Substantial Performance

References

GC 8.02.04.05 Certificate of Substantial Performance

The Contract Administrator shall monitor the progress and financial status of the contract and shall generate the Certificate of Substantial Performance at such time when the requirements of Substantial Performance have been met and will be signed by the Contract Administrator to be forwarded to the Regional Operations Office. The Contract Administrator will submit their calculations to support the eligibility for the Substantial Performance as identified in the MTO General Conditions of Contract and should also include a deficiency list or any outstanding work.

The Substantial Performance shall be processed in accordance with the appropriate contract documents. The CA must also identify set-offs to the contract for incomplete and deficient work.

Once all of the above has been addressed, the certificate can be issued to the contractor for publication.

3.5.2 Certification of Subcontractor Completion

References

GC 8.02.04.07 Certification of Subcontractor Completion

Before the work has reached the stage of substantial performance, the Contractor may notify the Contract Administrator that a subcontract is completed satisfactorily and ask that the Contract Administrator certify the completion of the subcontract. The purpose of this request is to allow for the holdback on the subcontracted items that have been completed, to be released. The Contract Administrator should follow the process as outlined in the MTO General Conditions of Contract.

3.5.3 Certificate of Contract Completion

References

General Conditions of Contract

The Completion Checklist shall be generated by the Contract Administrator and reviewed with the Contract Services Administrator prior to the Completion Meeting. All deficiencies in the work should be noted and reviewed with the Contract Services Administrator and the Contractor for rectification. The Contract Administrator/Contract Services Administrator will notify the Regional Contracts Office of the completion date and a Certificate of Completion will be issued and signed by the Payment Certifier. The General Warranty period begins with the completion of the work. Item-specific warranties begin as specified in the contract documents. Completion should not be certified until all work in the field is complete.

CONTRACT COMPLETION CHECKLIST

(*Denotes items to be completed prior to Completion of the Work)

	ACTION REQUIRED	ACTION TAKEN	DATE	COMMENTS
*	Request for Completion from Contractor in writing (including Substantial Performance with proof of advertising).			
*	Notify Contract Services Administrator two (2) weeks prior to anticipated Contract Completion and arrange meeting to review contract.			
*	Notify Head, Quality Assurance Section two (2) weeks prior to anticipated Contract Completion.			
*	Notify Head Operational Services/Patrol Supervisor/Area Maintenance Contract representative, two (2) weeks prior to anticipated Contract Completion. Arrange field review with Patrol Supervisor to determine deficiencies.			
*	Notify Regional Structural Section two (2) weeks prior to anticipated Contract Completion.			
*	Notify Regional Environmental Office.			
*	Notify permit-issuing agency for rehabilitation of pits or quarries under wayside permits or aggregate permits. Complete Compliance Report as per document "Procedures for Administration of Mineral Aggregate Extraction on MTO Contracts"			
*	Notify: <ul style="list-style-type: none"> ▪ Municipal Officials ▪ Railway Officials ▪ Utilities 			

	<ul style="list-style-type: none"> ▪ Other Interested Parties 			
*	Complete Structural Clearance Report.			
*	Review status of working days/completion date.			
*	Develop deficiency list.			
*	Review deficiency list with Contract Services Administrator.			
*	Meet with the Contractor to resolve outstanding deficiencies.			
*	Check that the Contractor replaces any property and/or horizontal and vertical bars damaged or removed during construction.			
*	Prepare/obtain a list of outstanding: <ul style="list-style-type: none"> ▪ Change Orders ▪ Intents to Claim ▪ Infraction Reports ▪ Test Results and Calculations of Penalties/ Bonuses ▪ Major Item Overruns / Underruns ▪ Cost Sharing/Recoverables ▪ Releases for disposal areas, pits, etc. ▪ All certifications ▪ PQP Adjustments 			
*	Review the status of: <ul style="list-style-type: none"> ▪ Permanent signs ▪ Pavement markings 			
*	Notify Regional Electrical Section			
	Notify Electrical Coordinator			
*	Notify Advanced Traffic Management Section			
	Complete a report regarding Management of Materials (OPSS 180)			
	Contract Completion Meeting.			
	Record Drawings (including applicable contractor as built) / update the contract drawing Q sheets to reflect applicable changes)			

3.6 ASSESSING COMPLIANCE TO THE QUALITY PROCESSES

References:

- Appendix B

The Contract Administrator (CA) will:

- 1 Ensure all contract administration staff are aware of the Special Provision “Performance Requirement – Quality Processes”, and their roles and responsibilities for monitoring compliance, assessing deviations and preparing monthly summary reports for submission to the ministry
- 2 Review certifications by the manufacturers, suppliers and Contractor’s authorised personnel to check proper wording and submissions including timeliness, test results and proper seals and signatures where required.

Note: Review of QVE services including Certifications of Conformance and Interim Inspections is covered in Appendix B.

- 3 Receive and review Non-Conformance Reports (NCR) from the Contractor to determine if they are complete, accurate and have been submitted in accordance with the contract requirements. If not, the CA will notify the Contractor in writing requesting correction and resubmission and consideration shall be given to assessment of a deviation.

In addition, the CA will review the proposed corrective action to determine its appropriateness. This decision will be made with consideration given to the effect of the proposed corrective action on the quality of the end product. If the corrective action is unusual or precedent setting, it is essential that the CA provides recommendations and obtains input from the appropriate Ministry personnel.

- 4 Monitor the Contractor’s operations and clearly document the contractor’s compliance, during construction and within 30 days after the date of certification of the completion of the Work (i.e. “Work” as defined in the MTO General Conditions of Contract). The CA shall identify all non-conformances.
- 5 Within 3 business days of identifying a non-conformance or receiving a NCR from the Contractor, notify the Contractor in writing using form PH-CC-862 Status of Non-Conformance that the non-conformance is;
 - a) Not a deviation, or
 - b) A deviation including the reason for the deviation, or
 - c) Under review with the Ministry.
- 6 Where the classification is not obvious or may be precedent setting, obtain Ministry involvement. The CA will forward Non-Conformance Report if the

Contractor identified the non-conformance, Status of Non-Conformance form, any other information related to the deviation and recommendations. The CA will submit this to the Ministry's Contract Services Administrator/Contract Control Officer and Regional QC Advisor within 2 business days of the deviation occurring.

- 7 When the CA issues Status of Non-Conformance to the Contractor indicating "under review with the Ministry", the CA will issue an Instruction Notice indicating the results of the review within 3 business days of receiving the results of the Ministry review. The Instruction Notice will inform the Contractor that the non-conformance is;
 - a deviation including the reason for the deviation; and its severity (minor/major)
 - not a deviation
- 8 For each non-conformance, review the requirements of the contract documents that resulted in the non-conformance to identify any requirements the Contractor must still complete. If the Contractor does not complete the requirements within 3 business days of receiving the Status of non-Conformance, the CA shall issue an Instruction Notice to the Contractor for the requirements that must still be completed. The deviation will not be waived regardless of the Contractor's compliance with the instruction. If the Contractor does not comply with the instruction, the CA shall consult with the Ministry to determine other appropriate administrative action.
- 9 Record all Non-Conformances and deviations from the QC requirements (using the form PH-CC-861 Monthly Summary of Processes No-Conformance) and submit to the Ministry as per the distribution list on a monthly basis
- 10 Recommend initiation of, or act upon recommendations to initiate the Ministry's infraction process if contractor's QC non-compliance warrants such action.

Respond to routine Ministry reports including but not limited to QAO inspection reports, CSA/CCO's Contract Administration performance reports that pertain to the CA's QC monitoring.

SECTION 4.0: POST-CONSTRUCTION

4.1 CONTRACT CLOSING PROCESS

The Contract Administrator shall complete the Contract Closing Checklist as follows:

ACTION REQUIRED	ACTION TAKEN	DATE	COMMENTS
Fill out Certificate of Contract Completion form			
Complete Contractor's Performance Rating			
Forward Certificate of Completion form, and Contractor's Performance Rating to the Contract Services Administrator			
Identify Contract Work under Warranty with Expiration Time Frame as per the Contract (Including all actual site seeding and landscape planting dates)			
Send 3 copies of electrical record drawings, electrical shop drawings and service manuals to the Electrical Coordinator			
Send record of GPS coordinates readings (electronic copy) for ATMS field components to ATMS contact			
Submit Project Construction Report to Contract Services Administrator			
Complete Pit & Quarry After Use Report PH-D-46-02-01 (commercial, wayside and permit sources)			
Material Summaries in a Digital Format Acceptable to the Ministry			
Submit Disposal Site Permits & Property Owner Clearance Certificates			
Submit completed MTO Class EA Process Monitoring Questionnaire			
Submit completed Summary of Environmental Concerns and Commitments Table			
Submit Record Documents Package			
Provide to the Contractor the Final Estimate Quantity and Cost Sheet (Ph-cc-829).			

Final Detailed Statement (FDS)			
Substantial Performance Form and proof of advertisement			
Final CAS should be reconciled to payments and provided to MTO at the hand over meeting.			
List of any known outstanding issues			

4.2 CONTRACTOR'S PERFORMANCE RATING

Reference:

- Contractor Performance Rating (A Contact Administrator's Guide To Rating)

The final document (rating and form B's) where applicable must include clear, complete and factual information to support the rating given with references to diary sheets, minutes of meetings or other record document.

The CA shall prepare the Contractor Performance Rating documents as per the Ministry Guidelines, for Ministry approval (Reviewed by CSA / recommended by ACE / confirmed by RCE).

4.3 SUBMISSION OF RECORD DOCUMENTS

The Contract Administrator shall prepare, package, and submit the Record Documents no later than the end date indicated for the Term of Agreement, or five weeks from the completion of construction activities, whichever is the later date (unless otherwise noted).

Record Documents shall be placed in Record Document file folders. The folders shall be titled and numbered. The folders shall be numbered starting with the correspondence Folder #1. The measured items and extra items, together with contents, shall then be placed in Record Document Folders in the same sequence as the Tender Items in the Contract (Folder #2 – Item #1 Clearing; Folder #3 - Item #2 Grubbing; Folder #4 - Earth Excavation, etc.). Wherever possible and available, digital information should be provided as well.

The Contract Administrator shall package the Record Documents in accordance with MTO Provincial Highways Management Progress and Final Payment Quantities Guidelines. Storage boxes shall be standard legal/letter size record storage boxes with a hinged lid and the boxes must meet current requirements for Government Storage Cartons.

Staples Advantage SKU STP20657 Government Records Storage Cartons meet the above requirement. Another source for these boxes is Colt Paper (a division Cold Pak) "Office File Storage Boxes" SKU Number FILEBOX-1.

Boxes shall not exceed 18kg / 40lbs or be overfilled (exceeding 7/8 full). File folders shall be arranged upright in a neat and orderly fashion. Oversize maps that do not fit in the standard boxes noted above shall be separated, rolled and stored in maps boxes. Binders and clips are not recommended due to the amount of space they take up. All box lids must be free of damage and open and close properly.

Photographic prints may be sent to storage along with paper files. If the photos are stored in an envelope with a "sticky" flap remove the sticky flap, otherwise the photos may be kept in the files as they are.

VHS tapes may be stored along with paper files, but they should be treated in a similar manner to the photographs – separate them from the paper by storing in a separate plastic sleeve.

Electronic records may not be sent to storage. Information that is being stored on electronic media (e.g. flash or CD Rom) shall be separated out from the paper files. These records will be retained by the Regional Office.

A transfer list and contents listing must be provided for each box. The contents listing shall be taped onto the inside lid of each box. There shall be no writing on the outside of the box. Contract numbers and box numbers must be written on separate sheets of paper attached to the outside of the boxes.

Note: Form PH-CC- 878 "Record Documents Checklist" includes a list of documentation to be submitted.

4.4 RECORD DRAWINGS

The Contract Administrator shall review the Record Drawings submitted by the Contractor that it complies with GC 7.17 Record Drawings of the MTO General Conditions of Contract. The Contract Administrator shall submit the Contractors Record Drawings to the Ministry with the final records package.

The Contract Administrator is responsible for updating the Quantity Sheets when a change occurs this may include the following changes but not limited to what is listed, quantity, location, offset, depth, and new items. The update shall include all line items in each Item. Authorized changes from the original Quantity Sheets shall be marked in red on one set of Quantity Sheets in a neat, legible manner.

The Quantity Sheets shall be scanned in PDF format

Quantity Sheets should be kept in the field office and updated regularly, as work progresses and submitted with the final records package.

A copy of the electronic documents, Record Drawings and Quantity Sheets shall be forwarded to the Regional Office.

4.5 PROJECT CONSTRUCTION REPORT

Reference:

- HOC Memorandum No. 2002-01, Project Construction Report

The CA shall prepare the Project Construction Report within 60 days of completion of the Certificate of Completion (or as otherwise agreed to by the Ministry). The Region will prepare Part A and distribute the report.

4.6 DESIGN PACKAGE EVALUATION

The CA shall prepare and submit the Design Package Evaluation documents, as per the Ministry Guidelines, for Ministry approval.

The Contract Administrator and the Project Manager shall prepare an agenda and minutes for the Design Package Evaluation meeting, and both shall be in attendance at the review meeting and / or presentation.

APPENDIX A

LIST OF CONTRACT ADMINISTRATION FORMS

CONTRACT ADMINISTRATION FORMS LIST	
ADM-R-44	RECORD OF EXPANSION JOINT - WATER TESTING
PH-A-106	LIST OF MATERIALS FROM DESIGNATED SOURCES
PH-CC-009	FIELD COMPACTION REPORT (NUCLEAR GUAGE)
PH-CC-010	ONE POINT PROCTOR TEST
PH-CC-106	BITUMINOUS ROAD INSPECTOR'S DAILY REPORT
PH-CC-117	COLD WEATHER CONCRETING RECORD TEMPERATURE
PH-CC-129A	WATERPROOFING MEMBRANE THICKNESS REPORT
PH-CC-130	DETERMINING PAYMENT PER SHIPMENT OF EMULSIFIED ASPHALTS
PH-CC-131	DETERMINING THE PERCENTAGE ADJUSTMENT FOR EMULSIFIED ASPHALTS
PH-CC-132	DETERMINING THE PERCENTAGE ADJUSTMENT FOR EMULSIFIED ASPHALT PRIMERS
PH-CC-133	DETERMINING THE PERCENTAGE ADJUSTMENT FOR LIQUID ASPHALTS
PH-CC-134	DETERMINING THE PERCENTAGE ADJUSTMENT FOR POLYMER MODIFIED EMULSIFIED ASPHALTS
PH-CC-139	BITUMINOUS SAMPLE IDENTIFICATION
PH-CC-247	HOT MIX – ACCEPTANCE TEST RESULT FOR RECOVERED PENETRATION
PH-CC-255	HOT MIX – COMPACTION ACCEPTANCE AND PRICE ADJUSTMENT SHEET
PH-CC-322	CONCRETE CONSTRUCTION REPORT
PH-CC-340	FIELD SAMPLE DATA SHEET - CONCRETE
PH-CC-349	BITUMINOUS MATERIAL (PRODUCT SAMPLE FORM)

PH-CC-360	PAVEMENT MARKING SAMPLE DATA MATERIALS ENGINEERING & RESEARCH OFFICE CONCRETE SECTION
PH-CC-427	BRIDGE DECK COVERMETER SURVEY
PH-CC-430	STRUCTURAL COATING SAMPLE DATA MATERIALS ENGINEERING & RESEARCH OFFICE CONCRETE SECTION
PH-CC-433A	CONCRETE MIX DESIGN SUBMISSION FORM A
PH-CC-433B	CONCRETE MIX DESIGN SUBMISSION FORM B
PH-CC-443	GEOTEXTILE TESTING REQUEST
PH-CC-448a	AGGREGATE TEST DATA – CONCRETE (Physical Properties – Fine Aggregate)
PH-CC-448b	AGGREGATE TEST DATA – CONCRETE (Physical Properties – Coarse Aggregate)
PH-CC-449a	AGGREGATE TEST DATA – HOT MIX ASPHALT (Physical Properties – Fine Aggregate)
PH-CC-449b	AGGREGATE TEST DATA – HOT MIX ASPHALT (Physical Properties – Coarse Aggregate)
PH-CC-449c	AGGREGATE TEST DATA – HOT MIX ASPHALT (Superpave – Consensus Properties)
PH-CC-450a	AGGREGATE TEST DATA – GRANULAR (PHYSICAL PROPERTIES)
PH-CC-450b	AGGREGATE TEST DATA – GRANULAR (PRODUCTION PROPERTIES)
PH-CC-451	AGGREGATE TEST DATA – SURFACE TREATMENT (Physical Properties)
PH-CC-455	QA GRANULAR SUMMARY
PH-CC-700	PERMISSION TO START WORK
PH-CC-703	SCALE ACCURACY INSPECTION
PH-CC-708	DAILY REPORT GLASS BEAD APPLICATION RATE
PH-CC-709	INSTRUCTION NOTICE TO CONTRACTORS
PH-CC-711	SUMMARY REPORT PAVEMENT MARKINGS
PH-CC-712	RECONCILIATION OF MTO SUPPLIED MATERIALS
PH-CC-713	DAILY REPORT PAVEMENT MARKINGS
PH-CC-716	SUMMARY QUANTITY SHEETS
PH-CC-719	COVER FORM FOR MATERIAL WEIGH TICKETS
PH-CC-721	RECORD OF SCALE AND WEIGHING INSPECTION
PH-CC-725	TAX CHANGE STATEMENT
PH-CC-730	SUMMARY FOR ITEM
PH-CC-731	FINAL PAYMENT QUANTITY
PH-CC-732	MATERIAL CONTROL LEDGER, CONTRACT MATERIALS
PH-CC-735	CROSS SECTION TEMPLATE (SUB - GRADE)
PH-CC-736	NOTIFICATION OF PLACEMENT OF STRUCTURAL CONCRETE
PH-CC-742	CONSENT TO SUBLET
PH-CC-744	FUEL CONSUMPTION LISTING SUBCONTRACTOR
PH-CC-745	FUEL CONSUMPTION TRACKING SUBCONTRACTOR
PH-CC-750	REQUEST FOR CLARIFICATION
PH-CC-754	DAILY WORK RECORD
PH-CC-763	STATEMENT OF RECORD OF WORKING DAYS
PH-CC-765	CONTRACT MATERIAL DELIVERY SCHEDULE
PH-CC-771	TURNOVER AGREEMENT
PH-CC-775	EXTENSION OF TIME REQUEST AND APPROVAL FORM
PH-CC-782	DAILY REPORT STRUCTURAL STEEL COATING
PH-CC-783	SUMMARY REPORT STRUCTURAL STEEL COATING
PH-CC-796	TIME & MATERIAL SUMMARY FOR PAYMENT
PH-CC-797	CERTIFICATE OF COMPLETION OF SUBCONTRACT
PH-CC-798	STATUTORY DECLARATION OF COMPLETION OF SUBCONTRACT
PH-CC-799	CERTIFICATE OF SUBSTANTIAL PERFORMANCE
PH-CC-800	CLAIM FOR LIEN

PH-CC-801	RELEASE OF LIEN
PH-CC-802	RELEASE FROM WARRANTY CERTIFICATE
PH-CC-811	CERTIFICATION OF THE COMPONENT
PH-CC-817	APPLICATION FOR SUBSTANTIAL PERFORMANCE / CONTRACT COMPLETION
PH-CC-818	INCIDENT NOTIFICATION FORM
PH-CC-819	ACTUAL PAYROLL BURDEN
PH-CC-820	CERTIFICATION OF GRADE ELEVATION / CROSSFALL
PH-CC-822	CERTIFICATE OF CONFORMANCE
PH-CC-822CPD	CERTIFICATE OF THE PAVEMENT DESIGN AND THE PAVEMENT DESIGN REPORT
PH-CC-822IMC	CERTIFICATE OF INDEPENDENT CHECK OF MIX DESIGN
PH-CC-822PIC	CERTIFICATION OF INSTALLATION OF PIPE CULVERTS
PH-CC-822PCC	POST CONSTRUCTION CERTIFICATE
PH-CC-823	ADVANCE PAYMENT FOR GRANULAR
PH-CC-825	LETTER OF APPROVAL (LAND OWNER AGREEMENT)
PH-CC-828	CHANGE PROPOSALS DURING CONSTRUCTION
PH-CC-829	FINAL ESTIMATE QUANTITIES AND COST SHEET
PH-CC-830	CONTRACT VALUE REPORT FOR SUBCONTRACTOR'S
PH-CC-831	DESIGNATION AND INSPECTION OF HAUL ROADS
PH-CC-832	CONTRACTOR'S INFRACTION REPORT
PH-CC-833	WARNING OF INFRACTION REPORT
PH-CC-834	MEMORANDUM RE: MAJOR ITEM OVERRUN/UNDERRUN
PH-CC-837	RELEASE OF PIT AREAS & WASTE SITES ON CROWN LAND
PH-CC-838	PRELIMINARY CONTRACTOR SCHEDULE CHECKLIST
PH-CC-839	MTO CLASS EA MONITORING QUESTIONNAIRE FOR CONTRACT ADMINISTRATION STAFF
PH-CC-840	REGIONAL ROAD REPORT
PH-CC-841	WARRANTIES
PH-CC-842	INSP., TESTING AND SAMPLING OF DESIGNATED SOURCE MATERIAL
PH-CC-843	NUCLEAR MOISTURE / DENSITY, GAUGE INSPECTION WORKSHEET (QC)
PH-CC-844	PRICE ADJUSTMENT FOR CONCRETE
PH-CC-845	DAILY CONCRETE LOAD TEST RESULTS
PH-CC-846	HOT MIX COMPACTION CORE SAMPLE LOCATION
PH-CC-847	HOT MIX SUMMARY
PH-CC-848	HOT MIX / CONCRETE SMOOTHNESS ACCEPTANCE & PRICE ADJUSTMENT SHEET
PH-CC-849	DETERMINATION OF SCARIFICATION DEPTH FOR HOT-IN-PLACE RECYCLING
PH-CC-850	CHANGE ORDER - ADDITIONAL WORK
PH-CC-851	CHANGE ORDER - CHANGE IN THE WORK, EXTRA WORK
PH-CC-852	TIME AND MATERIAL BAR GRAPH
PH-CC-854	CHANGE ORDER APPROVAL AND COST ESTIMATE
PH-CC-856	PRICE AGREEMENT FOR CHANGE IN THE WORK, EXTRA WORK OR ADDITIONAL WORK
PH-CC-857	WORK DIRECTIVE
PH-CC-859	NON-CONFORMANCE REPORT
PH-CC-861	MONTHLY SUMMARY OF QUALITY PROCESS NON-CONFORMANCES
PH-CC-862	STATUS OF NON-CONFORMANCE
PH-CC-863	ANNUAL DECLARATION: MTO MINIMUM QUALITY MANAGEMENT SYSTEM
PH-CC-863M	ANNUAL DECLARATION FOR A COMPANY WITH SUBSIDIARIES: MTO MINIMUM QUALITY MANAGEMENT SYSTEM
PH-CC-864	ANNUAL DECLARATION: ISO 9001 QUALITY MANAGEMENT STANDARD

PH-CC-866	APPLICATION FOR FIELD ADJUSTMENT TO JMF
PH-CC-867	MACROTEXTURE RATIO CALCULATION FORM
PH-CC-868	HOT MIX QC/QA COMPARISON AND PAY FACTOR CALCULATION
PH-CC-870	LIFT THICKNESS MEASUREMENT RECORDING FORM
PH-CC-871	FORM A: CONCRETE COVER METER CALIBRATION REPORT & FORM B: REPORT ON LIFT THICKNESS AS DETERMINED FROM CONCRETE COVERMETER READINGS
PH-CC-872	SAMPLE LETTER TO CONTRACTOR - Re: Contractor Mix Designation as required by SP for Acceptance of Hot Mix by End Result Specification
PH-CC-873	SAMPLE LETTER TO CONTRACTOR (Version 1.0) Re: Notice of (General/Mid-Lane) Segregation
PH-CC-874	HOT MIX - SMOOTHNESS ACCEPTANCE AND PRICE ADJUSTMENT SHEET
PH-CC-875	VISUAL ASSESSMENT OF HOT MIX DEFICIENCIES
PH-CC-876	CERTIFICATION OF TEMPORARY CONCRETE BARRIER INSTALLATIONS
PH-CC-877	CERTIFICATION OF THE INSTALLATION OF SAFETY ITEMS
PH-CC-878	RECORD DOCUMENTS CHECKLIST
PH-CC-879	CERTIFICATION OF ELECTRICAL CHAMBER INSTALLATIONS
PH-CC-880	CONTRACT CONTROL OFFICER REPORT
PH-CC-880CAPR	CONTRACT ADMINISTRATION PERFORMANCE REPORT
PH-CC-881	PAYMENT COVER SHEET
PH-CC-890	CERTIFICATE OF CONTRACT COMPLETION
PH-D-046	PIT AND QUARRY AFTER USE REPORT
PH-D-10	AGGREGATE SAMPLE DATA SHEET
PH-D-1A	GRANULAR A GRADATION COMPUTATION ACCEPTANCE & PAYMENT ADJUSTMENT SHEET
PH-D-1B	GRANULAR B TYPES I, II & III GRADATION COMPUTATION ACCEPTANCE & PAYMENT ADJUSTMENT SHEET
PH-D-1M	GRANULAR M GRADATION COMPUTATION ACCEPTANCE & PAYMENT ADJUSTMENT SHEET
PH-D-1O	GRANULAR O GRADATION COMPUTATION ACCEPTANCE & PAYMENT ADJUSTMENT SHEET
PH-D-1SSM	SSM GRADATION COMPUTATION ACCEPTANCE & PAYMENT ADJUSTMENT SHEET
PH-D-205	BRIDGE CONSTRUCTION PILE DRIVING RECORD
PH-D-352	MISCELLANEOUS DETAIL SHEET
PH-D-359	INVOICE OF PLANS, PROFILES, NOTES, ETC.
PH-M-002	SURFACE TREATMENT DAILY REPORT
PH-M-101	DESIGNATION OF CONSTRUCTION ZONE

Forms can be downloaded from RAQS/MERX Construction Documents

APPENDIX B

ROLE OF THE CONTRACT ADMINISTRATOR (CA) WITH RESPECT TO QUALITY VERIFICATION ENGINEER (QVE) SERVICES

PRINCIPLES

The CA shall monitor the performance of the Contractor (and by extension the QVE) by verifying the Contractor's processes, rather than assessing the quality of the Work. The CA shall conduct random assessments to determine whether or not the QVE services, including the issuing of Certificates of Conformance (CofC's), are in general conformance with the Contract Documents. It is important that the CA not assume any responsibility for the QVE services or the quality of the Work.

CA SERVICES

The CA shall provide the following services, as a minimum:

Construction

- Receiving CofC's for Construction;
- Confirming, documenting and reporting that CofC's:
 - Are received within the specified time frame
 - Consist of the specified content and format (defined in SP199S48)
 - Are sealed and signed by the QVE
- Requesting a copy of the QVE's written permission to proceed after an Interim Inspection on a random basis on the % of work specified in the Contract Administration and Inspection Task Manual or when there is justifiable concern that the work covered by the Interim Inspection does not comply with the Contract;
- Confirming, documenting and reporting that QVE's written permission to proceed after an Interim Inspection:
 - Is received within the specified time frame and
 - The work complies with the contract
- Conducting random assessments of the Work;
This activity includes conducting a random assessment on the % of work specified in the Contract Administration and Inspection Task Manual for that item, random assessment of fabricated components when received on site, and immediately advising MTO Construction staff (CSA) if the as-constructed work differs from the description in the CofC;
- Facilitating speedy consideration of Contractor proposals for Amendments to Contract Documents in cases of non-conformance.

QVE Performance Monitoring Report

- The CA shall submit a QVE monitoring report to the Regional Contracts Office at the same time the Contractor Performance Rating report is submitted;

- The report is not an audit of the construction work but the results of an audit of the Certificates of Conformance (CofC), permissions to proceed and the Contractor's processes;
- The monitoring shall include:
 - Has the Contractor complied with the Special Provision for QVE Services and the Quality Control Compliance Incentive Special Provision?
 - Has the QVE been on-site when required by the Contract, or at the fabrication plant (if applicable)?
 - What procedures did the QVE perform?
 - Did the QVE perform all the procedures required by the applicable SP?
- The report shall include:
 - Contract item/specification;
 - Component monitored;
 - Location of component monitored;
 - Details of their monitoring procedures;
 - Date/time of monitoring.

APPENDIX C

TECHNICAL STANDARDS AND SPECIFICATIONS

Document	Distributor
Abbreviation and Symbols Manual	MTO Library Website Publications Ontario
AutoCAD Drawings – Structural Library	MTO Library Website Publications Ontario
AutoCAD Standards Guide	MTO Library Website Publications Ontario
Bailey Bridge Manual	MTO Library Website Publications Ontario
Bridge Clearance and Load Restriction Manual	MTO Library Website Publications Ontario
Canadian Bridge Analysis System (CANBAS)	MTO Library Website Publications Ontario
Canadian Bridge Analysis System (CANBAS) Examples Manual	MTO Library Website Publications Ontario
Canadian Bridge Analysis System (CANBAS) Input Instruction Manual	MTO Library Website Publications Ontario
Canadian Highway Bridge Design Code	MTO Library Website Publications Ontario
Canadian Portland Cement Association “Thickness Design for Concrete Highways and Street Pavements”	Canadian Portland Cement Association
Cathodic Protection Manual for Concrete Bridges	MTO Library Website Publications Ontario
Class Environmental Assessment for Provincial Transportation Facilities (2000)	MTO Website Publications Ontario
Commercial Site Access Policy and Standards Manual	MTO Library Website Publications Ontario
Commercial Vehicle Survey Customized Report	MTO Library Website Publications Ontario
Concrete Culvert Design and Detailing Manual	MTO Library Website Publications Ontario
Construction Administration and Inspection Task Manual	MTO Library Website Publications Ontario
Construction Change Order Manual	MTO Library Website Publications Ontario
Construction Contract Administration Regional Memoranda	MTO – Regional Contracts Office
Service Provider Performance and Selection System, Service Provider Reviews and Service Provider Infraction Reports – Process Guide	MTO Website
Service Provider Quality Control (QC) Plan – Process Procedures Guide	MTO Website

Contractor Performance Rating Guideline	MTO – Regional Contracts Office
Contract Design Estimating and Documentation Manual	MTO Library Website Publications Ontario
Corridor Control and Permit Procedures Manual	MTO Library Website Publications Ontario
Designated Sources for Materials	MTO Library Website Publications Ontario
DGS Design Graphic System User Manual	MTO Library Website Publications Ontario
Drainage Management Manual – Volumes 1,2,3 and 4	MTO Library Website Publications Ontario
Electrical Engineering Manual Volume 1 – Electrical Design	MTO Library Website Publications Ontario
Electrical Engineering Manual Volume 2 – Electrical Maintenance	MTO Library Website Publications Ontario
Electrical Engineering Manual Volume 3 – C.D.E.D.	MTO Library Website Publications Ontario
Electrical Engineering Manual Volume 4 – ATMS C.D.E.D.	MTO Library Website Publications Ontario
Environmental Guide for Contaminated Property Identification and Management	MTO Website Publications Ontario
Environmental Guide for Built Heritage and Cultural Heritage Landscapes	MTO Website Publications Ontario
Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects	MTO Website Publications Ontario
Environmental Guide for Fish Habitat	MTO Website Publications Ontario
Environmental Noise Guide for Noise	MTO Website Publications Ontario
Environmental Guide for Patrol Yard Design	MTO Website Publications Ontario
Environmental Guide for Wildlife in the Oak Ridges Moraine	MTO Website Publications Ontario
Environmental Guidelines for Structural Steel Coating	MTO Library Website Publications Ontario
Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, Operations and Maintenance	MTO Website Publications Ontario
Environmental Reference for Contract Preparation	MTO Website Publications Ontario
Environmental Reference for Highway Design	MTO Website Publications Ontario
Exceptions to the Canadian Highway Bridge Design Code CAN/CSA – S6-00-Sign Support Inspection Guidelines	MTO Bridge Office

Environmental Standards and Practices User Guide	MTO Website Publications Ontario
Field Guide for the Acceptance of Hot Mix and Bridge Deck Waterproofing	MTO Library Website Publications Ontario
Flexible Link Slab for Steel Girder Bridges	MTO Bridge Office
Formwork and Falsework Manual	MTO Library Website Publications Ontario
Geometric Design Standards for Ontario Highways – Metric	MTO Library Website Publications Ontario
Guideline for the Design of Snowmobile Bridges	MTO Bridge Office
Guidelines For Drinking Well Water Sampling and Testing In Ministry of Transportation Activities	MTO Website Publications Ontario
Design and Construction Standards Office Bulletins / Memos	Design and Construction Standards Office
Highway Engineering Standards Drawings: Structural	MTO Library Website Publications Ontario
Highway Equipment Standards Manual	MTO Library Website Publications Ontario
Inspector's Diary	MTO Library Website Publications Ontario
Integral Abutment Bridges	MTO Library Website Publications Ontario
Interim Guide to Environmental Assessment: Co-ordinating Provincial and Federal Legislative Requirements	MTO Website Environmental Policy and Standards Section
King's Highway Guide Signing Policy Manual	MTO Library Website Publications Ontario
Laboratory Testing Manual (MTO)	MTO Library Website Publications Ontario
Maintenance Manual	MTO Library Website Publications Ontario
Management of Excess Materials in Road Construction and Maintenance Protocol	MTO – Environmental Policy and Standards Section (905-704-2104)
Manual for Condition Rating of Flexible Pavements (SP-024)	MTO – Materials Engineering and Research Office
Manual for Condition Rating of Rigid Pavements (SP-005)	MTO – Materials Engineering and Research Office
Manual of Standard Short Span Steel Bridges	MTO Library Website Publications Ontario
Mix Design Method for Recycled Hot Mix	MTO – Materials Engineering and Research Office

MTO Class EA Process Monitoring Program (Sept. 2000)	MTO Website Environmental Policy and Standards Section (905-704-2104)
MTO/DFO/MNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings (2006)	MTO Website Publications Ontario
MTO/MOE Memorandum of Understanding on Permits to Take Water (2006)	MTO Website Publications Ontario
MTO Environmental Glossary	MTO Website Publications Ontario
MTO General Conditions of Contract	MTO Library Website Publications Ontario
MTO Soil Classification Manual	MTO Library Website Publications Ontario
Ontario Bikeways: Planning/Design Guidelines	MTO Library Website Publications Ontario
Ontario Highway Bridge Design Code (3 rd Edition, 1991)	MTO Library Website Publications Ontario
Ontario Highway Traffic Volumes 1988 – 2002	MTO Library Website Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 1, General Conditions of Contract and Specifications for Construction (Division 1 to 9)	MTO Library Website Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 2, Specifications for Material	MTO Library Website Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 3, Drawings for Roads, Barriers, Drainage, Sanitary Sewers, Water-Mains, and Structures	MTO Library Website Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 4, Drawings for Electrical Work	MTO Library Website Publications Ontario
Ontario Structure Inspection Manual	MTO Library Website Publications Ontario
Ontario Traffic Manual (OTM) Book 5 Regulatory Signs	MTO Library Website Publications Ontario
Ontario Traffic Manual (OTM) Book 6 Warning Signs	MTO Library Website Publications Ontario
Ontario Traffic Manual (OTM) Book 7 Temporary Conditions	MTO Library Website Publications Ontario
Ontario Traffic Manual (OTM) Book 7 Temporary Conditions (Field Edition)	MTO Library Website Publications Ontario
Ontario Traffic Manual (OTM) Book 11 Markings and Delineation	MTO Library Website Publications Ontario
Ontario Traffic Manual (OTM) Book 12 Traffic Signals	MTO Library Website Publications Ontario
Ontario Traffic Signal Control Equipment Specifications	MTO Library Website Publications Ontario

Overcoating – Technical Assessment of Existing Coatings of Steel Bridges for Overcoating	MTO – Bridge Office
Pavement Design and Rehabilitation Manual	MTO Library Website Publications Ontario
Pesticides Spray Manual	MTO Library Website Publications Ontario
Pile Load and Extraction Tests, 1954 – 1992	MTO Library Website Publications Ontario
Post - Tensioned Decks	MTO Library Website Publications Ontario
Pre-stressed Concrete Manual for Quality Assurance of Bridges During Construction	MTO Library Website Publications Ontario
Prioritized Contract Content Guidelines	MTO Library Website Publications Ontario
Procedures for the Design of High Mast Pole Foundations	MTO – Bridge Office
Procedures for Administration of Mineral Aggregate Extraction on MTO Contracts	MTO – Materials Engineering and Research Office
Progress and Final Payment Guidelines (July 2003)	MTO – Regional Contracts Office
Property Request Manual	MTO – Property Section
Provincial Highways Distance Table	MTO Library Website Publications Ontario
Remote Airport Lighting Manual	MTO Library Website Publications Ontario
Roadside Safety Manual	MTO Library Website Publications Ontario
Seeding And Cover Quality Assurance Visual Inspection Field Guide	MTO Library Website Publications Ontario
Short Span Steel Bridges	MTO Library Website Publications Ontario
Sign Support Manual	MTO Library Website Publications Ontario
Standard Ministry Forms related to Construction Contract Administration Services	MTO - Regional Contracts Office
Standards for Engineering Surveys, Version 2.0	MTO Library Website Publications Ontario
Structural Financial Analysis Manual	MTO Library Website Publications Ontario
Structural Manual	MTO Library Website Publications Ontario
Structural Steel Coating Manual	MTO Library Website Publications Ontario

Structure Rehabilitation Manual	MTO Library Website Publications Ontario
Survey Book	MTO Library Website Publications Ontario
Surveys and Plans Manual (Volume 1–3)	MTO Library Website Publications Ontario
Traffic Control Signal Timing and Capacity Analysis for Signalized Intersections	MTO – Traffic Office
1993 AASHTO Guide for the Design of Pavement Structures for Rigid and Flexible Pavements	AASHTO
Applicable Ministry Directives and Regional Memoranda	MTO - Regional Contracts Office
Central Region Operation Constraints Non-Standard SP's	MTO – Central Region
Northwestern Region Geotechnical Investigation Minimum Requirements, Version 1	MTO – Northwestern Region Geotechnical Office
Northwestern Region Geotechnical Pavements Design Thickness Chart	MTO – Northwestern Region Geotechnical Office
Northwestern Region L:/ Drive Files	MTO – Northwestern Region P & D
Guidelines for Conducting ½ Cell Survey & Covermeter Survey	MTO – Regional Contracts Office
Stormwater Management Requirement for Land Development Proposals	MTO – Drainage Management Website
Evaluation of Drainage Management Software	MTO – Drainage Management Website