Ontario

Construction Administration

And

Inspection Task Manual

Ministry of Transportation

April 2006

To all users of the Construction Administration and Inspection Task Manual (CAITM), April 2006

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CONSTRUCTION ADMINISTRATION AND INSPECTION TASK MANUAL

TABLE OF CONTENTS
PART A: CONSTRUCTION ADMINISTRATION

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 Consultant 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 Consultant 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 Consultant 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 ensure 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 does not contend to be a complete documentation of the construction administration process. Additional direction and guidance should be obtained from the Contract Control Officer.

1.2 DUE DILIGENCE

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

1.3 CONFIDENTIALITY

The Consultant shall ensure that the Consultant, 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 Consultant's possession or under the Consultant'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 Control Officer prior to release.

1.4 DEFINITIONS

Contract Administrator means the Consultant's on-site representative who has the responsibility of administering the construction contract between the Ministry and the Contractor.

Contract Control Officer means the individual designated by the Manager of Contracts as the primary contact with the consultant on a day-to-day basis.

1.5 ACCRONYMS

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
CCA	Consultant Contract Administrator
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
CMS	Changeable Message Sign

CO	Change Order
CP	Cathodic Protection
CSA	Canadian Standards Association
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
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
GSTPM	Guidelines for Sampling and Testing of Pavement Markings
HDS	Highway Design System
HIR	Hot In Place Recycling
HOC	Head Office Construction Memorandum
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
PDA	Power Distribution Assembly
PGAC	Premium Grade 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
PCMS	Portable Changeable Message Sign
PVMS	Portable Variable Message Sign
QA	Quality Assurance
QAO	Quality Assurance Officer
QC	Quality Control
QCT	Quality Control Technician
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 Plan
TOC	Traffic Operations Centre
VDS	Vehicle Detection Station
VSLAT	Video System Line-up Acceptance Testing
W	Warranty
WHMIS	Workplace Hazardous Materials Information System
WP	Work Project

SECTION 2.0: PRE-CONSTRUCTION

2.1 CONSULTANT ASSIGNMENT START-UP MEETING

The purpose of the Consultant Assignment Start-up meeting is to define the roles and responsibilities of both the Ministry and the Consultant. The process for the handling of documentation and approvals will also be discussed. The Contract Control Officer will arrange and conduct the Consultant Assignment Start-Up Meeting. The Consultant's Project Manager and Contract Administrator(s), and the Area Contracts Engineer shall be in attendance. The Consultant will be responsible for the minutes of this meeting. This meeting shall take place even after the work starts.

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 Consultant 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 in accordance with the "On the Job Training Program" manual or direction provided by the Ministry.

2.1.2 Consultant's Quality Control of Services and Deliverables Plan

The Consultant's Quality Control of Services and Deliverable Plan, the Audit Reports for Milestone Inspection, the Final Verification Audit check for Services and Deliverables and the Audit Reports showing compliance and non-compliance to their plan will be made available to the Ministry for review, in the field office site, or in RAQS, throughout the term of the agreement.

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

2.1.3 Consultant Invoices

Review the requirements of the Construction Administration Agreement. Confirm the frequency and method of invoicing for the Consultant's Services and Deliverables. Discuss the format of the Monthly Status Reports to be prepared by the Consultant that should include things such as: the status and staffing of the consultant assignment, requests for addenda and their rationale, etc.

2.1.4 General

- Address issues and concerns from both MTO and the Consultant with respect to expectations and results with emphasis on the Services and Deliverables.
- Discuss documentation to be copied to MTO. 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 Control Officer.
- Discuss the change of work procedure as outlined in Section 3.4.2 of this Manual.
- Discuss/determine location of Consultant'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 designate laboratory.
- Discuss the need for providing input into Post Construction Engineering Appraisal through the Design Package Evaluation.

2.1.5 Survey Requirements

The Consultant shall survey the following as required:

- After stripping the overburden, all new original rock cross sections shall be taken, independently of the Contractor. Ensure that zero rock stations are supported by field measurement prior to blasting operations.
- All new original rock cross sections shall be surveyed and inputted into the original Highway Design System (construction) Design File. The HDS Project File shall not be altered, nor duplicate files made. The new original rock line and the design rock line shall be shown in the original HDS cross section Design File and where the new original rock line differs from the rock line used in design then the quantities of overburden, rock and shatter shall be recalculated and the cross sections in HDS 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 ensure 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 Consultant 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 HDS template sheets when matching to existing tie-ins, structures, or new structures to ensure 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 contract related documents.

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 Construction 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 Control Officer.

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 Consultant

- 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

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
- Request a copy of all Change Orders. Include justification, rational and expected costs with recommendations. Include impact statements such as, "it is agreed this negotiation will include all impact costs associated with this work" obtain / review a copy of the contractor's schedule. All required recommendations to come as a comprehensive summary on Consultant letterhead.
- Ensure the contractor delivers their approvals and 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 Consultant'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
  - Recognizing Contractor change proposals so as to require the Contractor to follow the procedures contained in MTO General Conditions of Contract
- Discuss Health and Safety Plan; issues and protection of employees
- Advise consultant that they are ministry representatives and must abide by the Personal Protective Equipment Guideline
- Review the requirements of the special provisions 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; including but not limited to, the use of HDS, CDS and other Ministry-compatible software packages
- 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, as defined in the MTO General Conditions of Contract to satisfy the Ministry that the Work is constructed in conformance with 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 Consultant'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.

2.1.11 Pre-Construction Photos / Video

- Detail signs, all entrances, sideroads, 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, railways, deliverables to MTO.

2.1.12 Documents 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

2.1.13 Material and Testing / Sampling Testing Materials

- As per Contract Documents, CAITM, Ministry Directives (i.e. QST-B-022), Memoranda, future meeting requirements

2.1.13.1 Samples for Testing

The CA is responsible for monitoring the contractor's operation to ensure proper sampling techniques, sample identification and delivery to the appropriate laboratory. The CA is responsible for witnessing of contractor sampling and proper application of security bags and tags. All samples of materials are to be delivered to the designated laboratory in a timely fashion, in a suitable testing condition with proper identification (e.g. contract number, date sampled, mix type, contact person, tests required, etc.) and WHMIS labels 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 lots, sublots, seal numbers, date shipped, date the test results were received from the lab, and turnaround times. The CA is required to evaluate QC and QA test results in a timely manner. Upon receipt of the test data, the CA shall verify the security seal identification provided with the tests results by the lab against those applied in the field.

2.1.13.2 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 address) as well as all pertinent information, which affects testing procedures (hot mix re-compaction temperatures etc.). The CA shall notify the labs in writing (fax or e-mail) as to which samples are to be tested and which tests are to be conducted (mix properties, air voids, compaction, etc.). The CA is responsible to ensure 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.

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/fax. 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

2.1.13.3 Review of Concrete and Asphalt Mix Designs

The Consultant 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 CCO 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.

2.1.13.4 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 CCO 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 Consultant shall monitor, record and ensure that the test result submissions are meeting the required time frames.

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 (ie. 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 attached guideline. Generally, copies of all Quality Assurance results and all Contractor QC results, which are used for acceptance, should be submitted to the Ministry.

2.1.13.5 Year End Summaries

Year-end summaries for Granular, Concrete, and Bituminous materials are to be submitted in electronic form ASAP, 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.

2.1.13.6 Guidelines For Test Result Submissions

ITEMS	DETAILS OF SUBMISSIONS
Bituminous	
Asphalt ERS Test Results	ERS spreadsheet to be submitted electronically upon completion of the QA/QC comparison. 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 sublot 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

ITEMS	DETAILS OF SUBMISSIONS
	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
Hot Mix Aggregates Physical Properties	QC and QA results Referee results if applicable
Pavement markings	Pavement Marking forms (glass bead application rates, paint thickness, paint quality samples taken and submitted) to be submitted upon completion of pavement marking within 30 days
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	QC and QA test results Referee results if applicable
Granular	
Granular O, A, B, SSM Physical Properties	QC and 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 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	QC and QA test results Referee Results if Applicable
Concrete & Structural Items	
Compressive	ERS spreadsheet to be submitted electronically monthly for

ITEMS	DETAILS OF SUBMISSIONS
Strength Results	each class of concrete.
Temperature Records	Cold and Hot weather temperature records after completion of the curing period
Concrete Aggregates Physical Properties	QC and QA results Referee results if applicable
Air Voids in Hardened Concrete	QC test results
Tensile Bond Test	QC test results
Rapid Chloride Permeability	QC test results
Additional Requirements for High Performance Concrete (HPC)	Results of Trial batch Results of Trial Slab - Confirmation of consolidation from cores and acceptable placement, finish and cure Temperature records for the 7d curing period
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 CCO). Note: Submitted immediately upon completion and prior to initiation of removals
Water test for expansion joints (if applicable)	Copy of form
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	QC and QA Test results Referee Results if applicable

ITEMS	DETAILS OF SUBMISSIONS
Ash Curing Compounds Admixtures, Air Entraining Expansion Joint Seals Elastomeric Bearings Post Tension 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 Audit Check on pavement Smoothness (profilograph)	Construction Administration and Inspection Task Manual, Field Guide For The Acceptance Of Hot Mix And Bridge Deck Waterproofing
	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
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

* The Consultant is responsible for conducting an audit of the Contractor's smoothness results. The audit shall consist of actual field-testing of at least 10% of the Contractor's results.
Note: Field tests as indicated above are considered part of the duties of site staff (or specialty sub-consultants). The Proponent is to make an allowance as per the requirements of the Construction Reference Documents or issued Construction Memorandums and incorporate those costs into the Lump Sum Bid, which includes the supply of applicable testing equipment and materials (such as metal plates for paint thickness.)

2.1.15 Quality Assurance Frequency of Monitoring / Audit Checks

- As per the guidelines in the RFP, Construction Administration and Inspection Task Manual, directives and memorandums
- Ensure 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 to see if Structural has identified any components 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 Consultant's responsibilities for inspecting and administering non-commercial pits and quarries.

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
- Verification of traffic signal PH-M-125 drawings

2.1.19 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' 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 by the Request for Proposal, the environmental inspection tasks detailed in Part B of this Manual and the project environmental requirements for construction administration shown below, are related as follows:

- Inspection Tasks ENV 1 to ENV 8 support environmental requirement #1 below;
- Inspection Tasks ENV 4, ENV 5, ENV 6 and ENV 7 support environmental requirement #2 below;
- Inspection Task ENV 1 supports environmental requirement #3 and #4 below; And
- Inspection Task ENV 8 supports environmental requirement #5 below.

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

Commitments made during the environmental assessment process for a project are 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 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

ensure 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, 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 / agency0 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 ensure 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 ensure compliance with project-specific environmental permits / approvals obtained by the Ministry (e.g. federal Navigable Waters Protection Act permits and Fisheries Act authorizations). 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. Consent from MNR and an amendment to any DFO Fisheries Authorizations will be required to adjust dates in any event. 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 ensure the Contractor complies with all environmental proposal submission requirements specified in environmental contract documentation;
- To ensure constructability;
- To ensure 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 and / or Fisheries Specialist / Biologist.

NOTE: In dealing with the Contractor, the Contract Administrator must keep in mind the review of proposals, especially for in-water work, 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 Fisheries Act authorizations.

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 Speciality Reports (under Environmental Speciality Work Plan, if applicable)
- 'Class EA Process Monitoring Questionnaire for Contract Administration Staff'

"Summary of Environmental Concerns and Commitments" Table

The Contract Administrator's Environmental Monitor shall use the blank spaces provided in the 'Summary of Environmental Concerns and Commitments' table, to document the Contractor's compliance with the environmental provisions of the construction contract as summarized in the table.

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.

An electronic version of the 'Summary of Environmental Concerns and Commitments' table is available from MTO at the Design Package Handover meeting.

Contract Administrator's / Inspector's Environmental Diary

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

- The Contractor's environmental protection measures and their effectiveness, including successes, deficiencies, instructions given and results of corrective actions taken;
- 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;
- Spills or other environmental incidents, 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.

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 Fisheries Specialist / Biologist to monitor compliance with environmental mitigation measures of Fisheries Act Authorizations during in-water work) detailed written reports shall be produced and submitted as outlined in the approved Environmental Specialty Work Plan (e.g. monthly).

MTO CLASS EA PROCESS MONITORING QUESTIONNAIRE FOR CONSTRUCTION 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).

2.1.20 Traffic Management And Public Information Services

The Contract Administrator shall ensure that all Traffic Management and Public Information Services and Deliverables in the construction documents or required by law are complied with. To ensure 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 ensure 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 proponent shall assess the effectiveness of the traffic control measures planned by the contractor to ensure 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 ensure 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 ensure 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;
- Ensure 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.

2.1.21 MTO Roles

- Contract Control Officer – approvals, mediation, ensure compliance with agreement, monitor consultant's performance and report to construction office. Monitor consultant's conformance to the consultant agreement, provide procedural information, and provide contact names for various offices in the region.
- Quality Assurance – advisors, information resources (including maintenance coordinators), provides technical expertise to senior contracts and consultant field staff through the CCO.
- Area Contracts Engineer – approvals, continuity of construction

2.1.22 Consultant's Performance Appraisal

- Review the Consultant Performance Appraisal form.
- Random checks to monitor consultant'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 Consultant Appraisal will be reviewed for potential adjustment of the rating.

2.1.23 Well Investigations

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

2.1.24 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 Control Officer 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 CCO, shall prepare an agenda, including a list of invitees, and a design synopsis for distribution one week prior to the meeting. The Contract Control Officer shall chair the meeting and with the assistance of the MTO Design Project Engineer / Project Manager be responsible for ensuring that the required deliverables have been handed over to the Consultant Contract Administrator. The Consultant 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)
Consultant Designer
MTO Area Contracts Engineer
MTO Contract Control Officer(s)
Consultant Project Manager
Consultant Contract Administrator
Geotechnical / Traffic / Structural / Electrical / Property / ATMS
Environmental (Planner / Specialists / Inspector)
MTO Environmental Planner
Field Services Engineer
Other appropriate attendees that may be required

The MTO Design Project Engineer/Manager and the CCO 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
7. Design Reports:
   – Foundation Investigation Reports
   – Geotechnical Reports
   – Original Cross Sections (hardcopy)
   – Original Plots (digital files)
8. Additional copies of tender documents and contract drawings
9. Any other digital files
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 Consultant and their sub-consultant contact phone numbers

* ***This document is available electronically from MTO and 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 form 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 Control Officer before the tender opening date. The Contract Administrator shall obtain the Designation of Construction Zone from the Contract Control Officer.

The Head of Contract Administration will advise the Contract Control Officer 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 Control Officer will duly notify the Consultant Project Manager and the Contract Administrator of the acceptance letter.

The contractor may start work provided that the Critical Path Schedule has been accepted by the MTO (see section 3.2.3). The Contract Administrator shall issue an Instruction Notice to the Contractor to notify when work may commence on the right-of-way and forward a copy to Contracts Section.

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

2.4 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 Pre-Start meeting is organized by the Ministry.

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 Control Officer				
Consultant Project Manager				
Consultant Contract Administrator				
Area Contracts Engineer				
Contractor				
Field Services Engineer's Representative (local patrol, sign shop, electrical, etc.)				
Ministry of Labour				
Regional Quality Assurance				
QVE(s), QC Administrator (and QC Co-ordinator, if applicable)				
Highway Carrier Section				
Regional Environmental Section				
Regional Structural Section				
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 Control Officer and Consultant 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.

Drivers & Vehicles

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 Drivers & Vehicles Section will monitor compliance.

D-2 Indicate that the Contract Administrator will notify Drivers & Vehicles 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 Special Provision

D-6 Review the requirements of OPSS 102 General Specification for Weighing of Materials

Area/Regional Operations

O-1 Review and discuss concerns of Area/Regional Operations (Maintenance, Service Crews, Electrical Crew, MTO and or AMC representative, etc.)

Environmental

E-1 Make the Contractor aware that a copy of any project-specific environmental assessment documentation 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 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 assessment and environmental permit/approval requirements/ commitments.

E-4 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-5 Remind the Contractor that applicable environmental forms 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; and
d) Incident Management Form to document spills and other environmental emergencies (PH-CC-818).

E-6 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) Cut-off dates for seed and cover;
c) Timing requirements for replacement of straw bales in sediment barriers and flow checks;
d) Requirement to check that temporary erosion control measures are in effective working order prior to forecast storm events and following a storm event;
e) Fisheries timing constraints;
f) Control of construction noise in noise sensitive areas; and
g) Migratory Birds Act / timing constraints and requirements for netting, if required
h) Any other timing constraints that are specified in the contract.

E-7 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-8 Identify the designated inspector who will monitor environmental protection/ mitigation and maintain an environmental diary.

E-9 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; and
b) The Contractor staff person ultimately responsible for meeting statutory environmental duty in the event that regulatory agencies wish to pursue any problems.

E-10 Identify the requirements of the MTO General Conditions of Contract with respect to Incident Management Under Legislation Protecting the Environment and Natural Resources.

<u>Traffic</u>

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 Drivers & Vehicles and Head of Regional Contracts 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 Review the initiatives and special provisions related to quality assurance items and the Contractor's Quality Control (if applicable).

QA-3 Advise the contractor that the Statement of Imported Content form will be checked to ensure that imported steel has been declared.

QA-4 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-5 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-6 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-7 Advise the contractor the name and location of the QA lab including the applicable advance notification of sample delivery (e.g. 24 hrs)

Structural

S-1 A separate meeting with Regional Structural Office may be required on Rehabilitation and complex Structural work to review the design assumptions (check with the Regional Structure Office representative).

S-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-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 require on complex contracts.

GT-3 Advise the contractor of legislative responsibilities and Ministry process for operating non-commercial pits and quarries.

General

G-1 Submissions required from the contractor:

a) Sub-Contractor's forms: Sub-Contractor's Consent (PH-CC-762); 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. Ensure 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.

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 Extra Work

Ensure that the contractor advises of any extra work under the terms of the contract. The Contractor is not required to proceed with extra 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, negotiated unit price (for a new item) or negotiated lump sum;
3. Ongoing or future negotiations;
   Advise the Contractor that interim payments will be made and that Daily Work Records must be kept until the negotiations are concluded.
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 Non-Standard Special Provision 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 Winter/Seasonal Shutdown of Work
During the construction season, the Contractor is responsible for maintenance of the highway infrastructure within the construction zone as per the MTO General Conditions of Contract. This includes debris on the roadway, existing signing, pavement markings, safety devices, etc. In order to transfer this responsibility back to MTO during a shutdown, the Contractor must provide written notification of the shutdown period, including effective dates, to the Contract Administrator. The Contract Administrator shall notify the applicable MTO office, and shall provide a written response to the Contractor. Clearly indicate to the Contractor that they remain responsible for ensuring environmental protection associated with the work during the shutdown period.

Note: 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. In this case, clearly indicate to the contractor that the electrical quality assurance and maintenance activities shall continue during the shutdown.

G-15 Substantial Performance and Final Acceptance of Work
Review the MTO General Conditions of Contract. Two weeks advance notice for final inspection should be provided to the Contract Administrator in writing.

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.

2.5 CONTRACTOR QUALITY CONTROL MONITORING CHECKLIST

References:
- Contract documents

The Contract Administrator will:

- Based on the QC requirements specified in the Contract Documents including the Special Provision for Quality Control Compliance, produce a Consultant Contractor QC Monitoring checklist of related requirements, and submissions made by the contractor and submit the checklist to the Ministry prior to the start of construction work. As a minimum, the checklist shall include:
  – The QC activities/submissions/records to be monitored
  – Place to indicate whether or not the contractor complied at the time of the monitoring
  - Place to date and sign off when the monitoring is complete for each activity/submission/set of records

2.6 NOTIFICATIONS

2.6.1 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.
– Fire
– Transit Authorities
– Maintenance Patrols/Operations
– Department of Fisheries and Oceans
– Others as required
– Municipal/Regional Police Forces
– Ambulance
– Municipalities
– Ministry of Natural Resources
– Conservation Authority

2.6.2 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.

2.6.3 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 ensure 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 ensure 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

- Consultant 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 Control Officer, Area Contracts Engineer, and Head of Quality Assurance.

For RFQ Assignments, the design consultant 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 (incidents, 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 sublot sizes as per the requirements for concrete strength acceptance and review submission, 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. Consultant - Project Manager and Contract Administrator
   - Concrete Inspectors
   - Materials Testing Consultant Representative
2. Contractor
3. Sub-Contractor (if applicable)
4. Ready Mix Supplier
5. Testing Personnel
6. MTO Contract Control Officer
7. MTO Quality Assurance Officer
8. MTO Area Contracts Engineer

Topics:

1. Ensure 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. Consultant - Contract Administrator
   - Concrete Inspectors
   - Materials Testing Consultant Representative
2. Contractor
3. Sub-Contractor (if applicable)
4. Concrete Supplier
5. Testing Personnel
6. MTO Contract Control Officer
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. 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. Consultant - Project Manager, Contract Administrator and Road Inspector
   - Materials Testing Sub-Consultant
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 Control Officer
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. Request that Contractor/Sub-Contractor/Hot Mix Producer/Quality Control Lab have appropriate forms and software
9. Confirm certification of labs and staff to carry out testing
10. Request that Quality Control test results are forwarded to the Contract Administrator
11. 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)
12. Discuss with the Contractor whose profilograph will be carrying out the PMD measurements for acceptance
13. 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. Consultant Project Manager, Contract Administrator and Electrical Inspector
2. Contractor
3. Sub-Contractor (if applicable)
4. MTO Contract Control Officer
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

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.
- 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.

3.1.2 Constructor Issue

Reference:

- Provincial Highways Directive PHY-B-238 Designation of a Constructor

The Contract Administrator shall become familiar with their responsibilities regarding the Directives and ensure that the Contractor co-ordinates all work with adjacent contractors / maintenance staff and service crews.

3.2 APPROVALS

3.2.1 Working Days / Completion Date

References:
- MTO General Conditions of Contract
- Provincial Highways Directive PHY-B-114 Extensions of Time

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 to time frame). The request and consultant recommendations will be reviewed with the Contract Control Officer. The MTO Regional Contracts Office shall grant approval or disapproval of the Contractor's request.

3.2.2 Ministry Acceptance / Approvals

In addition to requirements outlined elsewhere in the Agreement, the Consultant must secure the Construction related specific approvals and acceptance of the Ministry as noted. The Consultant 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/Commitment Conditions and TESR and Changes Thereto	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
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 only if precedent setting, >$30K and all changes to traffic operations constraints)	Approval	1 Week
Construction Contract – 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 Consultant

3.2.3 Schedules / Critical Path

References:
- Contract Documents
- Contract Specific Special Provisions

The Contract Administrator shall review the Contractor's critical path schedules, 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 and if necessary, challenge the contractor on any deficiencies or impracticalities.
Non-conforming schedules shall be returned to the Contractor, noting deficiencies and requesting a resubmission. The preliminary contractor schedule checklist shall be completed and forwarded to the Ministry.

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, extra 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.

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 of 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 consultant 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 Contracts 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 Contracts 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 ensure 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 ensure 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 ensure 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 Control Officer within five (5) business days for processing.

The Contract Administrator shall ensure 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 Material Management Plan

References:
- Special Provision SP 206S03 Earth Excavation, Grading
  Excavation for Pavement Widening
  Rock Excavation, Grading

Rock Face
Rock Embankment

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.

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

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 Control Officer 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 Consultant 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.

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

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 Control Officer on a weekly basis. The second (bound) hard copy of the diary sheets shall be kept at the Consultant Contract Administrator's Field Office for submission with the Final Estimate. The Consultant Contract Administrator shall also retain a third hard copy of the diary sheets in a secure, separate location.

3.3.1.2 Documentation of Consultant's Activities

On a daily basis, the Consultant shall make available to the Ministry, sufficient documentation to ensure 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 ensure 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
- PQP adjustments as detailed in section 3.4.4

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 upon discussion with the Contract Control Officer, and shall attach appropriate documentation. The completed Warning of Infraction Report shall be forwarded to the Contract Control Officer. The Contract Administrator shall prepare the Contractor's Infraction Report at the direction of the Contract Control Officer 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.

3.4 CHANGES

References:
- Provincial Highways Directive PHY-B-113 Plan Quantity Payment for Construction Contracts
- Quality and Standards Directive QST-B-039 Delegation of Authority, Construction and Maintenance Activities
- MTO General Conditions of Contract

3.4.1 Change Proposals

Reference:
- Contract Documents

If the contract contains a special provision permitting 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 Control Officer) for approval. The Regional Contracts Office must give approval in advance of any change being implemented. If the Consultant requires additional resources/expertise, this may be considered a Scope Change in accordance with the Agreement, and may be eligible for additional compensation from the Ministry. If the proposal is accepted, the Consultant shall maintain appropriate Record Documents to ensure that the approved changes are implemented and the proposed benefits are achieved.

3.4.2 "Change in the Work" and "Extra Work"

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

"Change in the Work" and "Extra Work" are defined in the MTO General Conditions of Contract. When changes are made to a contract, either by altering existing tender items or by adding work (within the scope of the contract) that was not anticipated in the contract documents, a Change Order must be issued to the Contractor detailing the changes and establishing the basis of payment. The Contract Control Officer is to be notified of all Change Orders issued or anticipated, regardless of value.

The term "extra work" is used throughout this section to mean either "Change in the Work" or "Extra Work".

The Contractor is not required to proceed with extra work until a Change Order has been issued.

Two forms are required for all extra work:

1. The Change Order which instructs the Contractor to proceed with the extra work. The Change Order describes the extra work, establishes the basis of payment, and instructs the Contractor to proceed with the extra work.

2. a) The "Price Agreement for Change in the Work, Extra Work, or Additional Work" which confirms the price where there is agreement between the ministry and the Contractor, **or**
   b) The "Estimated Cost of Change in the Work, Extra Work, or Additional Work" which is used to authorize payment for any work being done on a Time and Material basis, or to authorize interim payments where negotiations have not been completed.

3.4.2.1 Change Order

Change Orders are issued by completing the form, "CHANGE ORDER – CHANGES IN THE WORK, EXTRA WORK". The Change Order form contains the contract identification information, name and address of the Contractor and the Ministry's Regional Contracts Office, the date that the form is initiated, and the Change Order identification number. The Contract Administrator should confirm with the Contract Control Officer the Regional process for numbering Change Orders.

When the need for extra work is identified, the Contract Administrator shall complete the "Description of the Change in Work, or Extra Work" portion of the form, and request the Contractor to prepare a detailed estimate of the price for the extra work. This portion of the form should **clearly** and **concisely** address the following:

- Specifically, what work is to be performed (this must be sufficiently detailed for the Contractor to be able to submit a realistic price and perform the extra work, and also to give the person with approval authority a clear picture of the scope of the extra work).
- Precise location of the work with station-to-station limits and offsets. Detailed drawings, SPs, etc. may be attached.
- When the work will be performed (this will allow the Contractor to estimate how long it will take to complete, as well as the impacts to incentives/disincentives, working days and/or completion dates).
- Reductions or deletion of existing tender item quantities as a result of the work on the Change Order.

The Contract Administrator shall also prepare a detailed estimate of the value of the extra work, and shall indicate their assessment of the impact to the contract schedule and any associated incentives or disincentives. The estimate should be prepared using the categories listed in Section 3.4.2.4. The estimates prepared by the Contract Administrator and the Contractor will be used to establish the payment and extension of contract time for completing the extra work.

The form “CHANGE ORDER – CHANGE IN THE WORK, EXTRA WORK” provides four methods for the basis of payment **in order of preference**. The purpose of stating a preference for the basis of payment for work is to encourage negotiation and settlement in the field.

Method 1. By variation in tender quantities
Method 2. By revised tender prices, negotiated unit price (for a new item) or negotiated lump sum
Method 3. By ongoing or future negotiations
Method 4. By Time and Material

Method 1. In the case of revisions to contract items, basis of payment will be at the tender price for the item. If the revision results in major items varying by more than 15% of the tender quantity, the price may be adjusted in accordance with the MTO General Conditions of Contract.

Method 2. Is used wherever prices are negotiated, by revisions of tender prices, by negotiation of unit prices for a new item, or by agreement on a lump sum price that includes all direct and indirect costs. Where the extra work results in associated costs and impact costs (e.g. mobilization, traffic control, standby time, inefficiencies in production, acceleration costs, etc.) the MTO General Conditions of Contract provide for negotiation with the Contractor to revise the tender price upwards or downwards, as appropriate.

Method 3. Is to be used where it is necessary to instruct the Contractor to proceed with the extra work even though the negotiations to establish the payment are incomplete. Daily Work Records must be kept until the negotiations have been completed. It should be noted that the ministry does not condone delaying negotiations until the extra work has been completed and using the Daily Work Records to establish a “negotiated” price.

Method 4. With one exception, is intended for use only as a last resort, and for items of small value. The Time and Material method is discouraged because it is not conducive to efficient construction and requires significant resources to administer. The exception is that Method 4 should be used for recoverable costs, such as insurance claims. Method 4 provides a detailed cost breakdown of labour, equipment and materials that is often required by third parties.

Note: When a Change in the Work, Extra Work involves increases and decreases to existing items and revised prices and/or new items, Payment Method 1 and 2 should be combined under one Change Order so that the net change in value is captured on one Price Agreement form. When combining methods for the basis of payment, only one option of payment under Method 2 (By revised tender prices, negotiated unit price (for a new tem) or negotiated lump sum) can be combined with Method 1. No other combinations of methods are allowed on the same Change Order.

For all four methods, the Contractor may apply for an extension of contract time in accordance with the MTO General Conditions of Contract, using Form PH-CC-775.

A Change Order is issued by the Contract Administrator; some circumstances may require it to be issued expeditiously to avoid delaying work on the contract. In cases where the financial impact is expected to exceed the Contract Administrator's Authority **($30,000)** per occurrence, the procedures for obtaining approval to issue the Change Order shall be in accordance with the limits set out in Directive QST-B-039, Delegation of Authority, Construction and Maintenance Activities and in Schedule "B" of the Construction Administration Agreement. Signed copies of the Change Order will be distributed to the Contractor, Field Office, and the Regional Contracts Office (with the appropriate backup documentation and price substantiation). Provided that where the value of a change order is **$30,000.00** or less per occurrence, the Consultant may instruct the Contractor to carry out the change without prior approval of the Ministry. The Contractor's signature on the form indicates receipt of the form, and not necessarily agreement with the content.

3.4.2.2 The Price Agreement for Change in the Work, Extra Work, or Additional Work Form

The form "Price Agreement for Change in the Work, Extra Work, or Additional Work" (henceforth called the Price Agreement Form) is used to authorize the payment of invoices for the work described on the Change Order where the basis of payment is Method 1 or Method 2. The Price Agreement form is issued only **after** the price has been agreed. The Contractor enters the agreed upon unit prices or lump sum and dates and signs the form.

The Approval Authority for each Price Agreement form is based on the **net value** of the extra work or additional work identified on the Change Order in accordance with the limits set out in Directive QST-B-039 and in Schedule "B" of the Construction Administration Agreement.

If the net value shown on the Price Agreement form is within the signing authority of the Contract Administrator, then the Contract Administrator may sign for acceptance and distribute the three copies (one to the Contractor, one to be retained by the CA in the field office, and one to the Regional Contracts Office).

If the net value of the Price Agreement form is above the signing authority level of the Contract Administrator, then the Contract Administrator shall sign the form and forward four (4) copies to the Contract Control Officer for acceptance or for recommendation to the next level of authority, depending on the value of the work. When the appropriate level of authority has been reached, and approval has been obtained, two (2) copies will be returned to the Contract Administrator for distribution, and the remaining copy will be retained by the Regional Contracts Office.

Care must be taken when using digital forms to ensure that the appropriate number of copies are being distributed. There should be an original signature on all copies. The distribution of each copy should be highlighted on the bottom of each sheet.

3.4.2.3 Estimated Cost of Change in the Work, Extra Work, or Additional Work

Where the basis of payment for the extra work is Method 3 or Method 4, the Contract Administrator shall complete the form "Estimated Cost of Change in the Work, Extra Work, or Additional Work" (henceforth called the Estimated Cost Form) and attach a detailed estimate of the cost. The purpose of the form is to obtain approval authority to make interim payments under Method 3, or progress payments under Method 4.

Once a price has been negotiated for extra work being done under Method 3, a Price Agreement form must be completed. When the estimated cost differs from the negotiated cost for Method 3 or the actual cost for Method 4 by variance of at least 10% and $5000, a **written explanation** is required.

The procedure for obtaining the appropriate signing authority is the same as described in Section 3.4.2.2 and applies to the **net value** of the extra work or additional work. The distribution of the form is one copy to the field office, and one copy to the Regional Contracts Office. The Contractor does not receive a copy.

The actual cost of the work may, in some cases, increase from the original estimate to a new signing authority level. Re-approval should be sought as soon as the actual cost exceeds, or is expected to exceed, the original approval authority level.

The Contract Administrator shall have the authority to approve invoicing received relevant to each Change Order to the limit of Total Estimated Cost shown on the Estimated Cost Form as approved by the appropriate authority. If this value is exceeded at any time, the Contract Administrator may recommend the invoice for payment and discuss with the Contract Control Officer in order to obtain approval for payment.

3.4.2.4 Interim Payments

The Ministry will make interim payments to the Contractor in accordance with the MTO General Conditions of Contract for changes in the work, or extra work, executed under Method 3. The MTO General Conditions of Contract recognize that, while it is often not possible to calculate all costs, especially impact costs, the Contractor will incur costs to complete the extra work that are not in dispute, and payment of these costs should be included in progress payments. **The principle is to include all costs that are not in dispute.** These will typically include the direct costs associated with the extra work:

- Salaries and wages plus payroll burden
- Equipment costs
- Materials

- Payments to subcontractors

Where overhead costs are not in dispute, (e.g. site overhead when the extra work is on the critical path) payment should also be included.
The preferred method of calculating the interim payments is to negotiate with the Contractor a lump sum estimate of the undisputed costs. The lump sum is then pro-rated in accordance with the percentage of work completed for inclusion in the monthly progress payment. Where agreement cannot be reached, the calculation of interim payments will be made on a Time and Material basis from the Daily Work Records.

Interim payments are not a substitute for completing the negotiations to establish a lump sum payment that covers all direct and indirect costs (Method 2). The interim payments simply recognize that the Contractor should be reimbursed for those costs not in dispute, and not have to wait for resolution of a claim to receive any monies.

3.4.2.5 Documentation

The Contractor shall prepare Daily Work Records for Methods 3 and 4 that shall be reconciled on a daily basis by the Contractor and the Contract Administrator. The Contract Administrator shall note comments and areas of concern directly on the Daily Work Records.

For Change Orders, in addition to the description contained on the change order form, the Contract Administrator shall document the following:

- Justification: Why the work is required, why the work is considered to be extra work and is not covered by the terms and conditions of the existing items, and who requested that the work be performed. Attach a copy of recommendations that support the extra work.
- Whether work is recoverable from a Third Party, including additional information (e.g. municipality, homeowners, accidents, etc.)

3.4.3 Additional Work

The essential difference between “Additional Work” and “Changes in the Work” or “Extra Work” is that additional work is considered by the Contract Administrator not to be essential to the satisfactory completion of the contract. The Contractor is not obligated to do additional work.

Where the need for additional work is identified, the Contract Administrator shall only complete the upper portion (including the description of the additional work) of the form “Change Order – Additional Work” without signing the form and request a detailed estimate of the price and impact on contract time from the Contractor. The Contract Administrator shall also prepare a detailed estimate of the additional work. The two estimates shall be used to negotiate the basis of payment. As in the case of extra work,

the options listed on the change order form are given in order of preference. The Time and Material method of payment is intended for small items of additional work.

Once full agreement has been reached with the Contractor, the CHANGE ORDER – ADDITIONAL WORK is re-issued with the Contract Administrator's signature to authorize the additional work to be done, and a Price Agreement form is issued to authorize payment of invoices for the additional work. If the additional work is to be paid on a Time and Materials basis, the Estimated Cost form is used instead of the Price Agreement form. The procedures are the same as those described for extra work.

The Contractor's signature on the CHANGE ORDER – ADDITIONAL WORK form indicates agreement to proceed with the additional work. Where the additional work has an impact on the Contractor's schedule, application for an extension of contract time may be made in accordance with the MTO General Conditions of Contract using Form PH-CC-775. The contractor may decline to sign the CHANGE ORDER – ADDITIONAL WORK form until there is mutual agreement on the impact on contract time.

3.4.4 Adjusting Quantities for Plan Quantity Payment (PQP) Items

A Change Order and Price Agreement are required for PQP quantity adjustments. When it first becomes apparent to the Contract Administrator that a PQP item(s) requires adjustment, the Contract Administrator will issue a Change Order indicating on the Change Order form that the basis of payment will be "by variation in tender quantities at the tender prices for the applicable work". A Change Order may be issued for one or more PQP items for one or more reasons. ("Reason" means the Head Office Category and Sub category chosen by the Contract Administrator when the Change Order is generated using the Contract Administration System (CAS).)

When a Change Order includes PQP adjustments to one or more items for the same reason, there is no dollar limit to the value of the Change Order. However, if it appears that the final value will exceed the authority of the person that originally approved the Change Order, the Contract Administrator shall revise the estimate and have the Price Agreement approved by the person with the proper signing authority.

When a Change Order includes PQP adjustments to one or more items for more than one reason, the value of the Change Order is limited to a maximum increase or decrease in value of $30,000 per occurrence. If the value exceeds $30,000 per occurrence, more than one Change Order will be required so that none of the Change Orders exceed $30,000 per occurrence. (This is necessary to ensure the reasons for Change Order's recorded in CAS are accurate enough to identify recurring problems within regions or across the province.) The Head Office Category/sub-category for the Change Order should be selected based on the initial reason for the Change Order. However, when the items are complete or the maximum value has been reached, which ever occurs first, the Contract Administrator shall revise the Head Office category and sub-category based on the reason with the greatest dollar value.

When a Change Order is initiated for a PQP item(s), the Contract Administrator shall prepare an estimate of the change in quantity and value of the item(s). When the change occurs early in the work for the PQP item(s), the estimate shall be based on the Contract Administrator's knowledge of the accuracy of the design quantities and the variability of the type of work. The Price Agreement should be issued immediately based on the initial estimate. However, for contracts with a Rock Excavation PQP item, where a realistic estimate cannot be made because changes are likely to occur several times over several months, the Price Agreement may be issued when the item is finished or at the end of each calendar year, whichever occurs first. The applicable signing authority shall be obtained for the Price Agreement.

There is no limit to the number of PQP items covered by one Change Order but the Price Agreement form will become longer than one page when rows are added in CAS. In that case, signatures must be included on all pages of the Price Agreement.

The description of the change on the Change Order shall state:

"This Change Order is for all PQP adjustments for Item(s) X1, X2, X3 and related items where applicable, not to exceed an aggregate value of $YY, YYY. Details of the individual adjustments will be provided by Instruction Notice on a monthly basis with reference to the applicable Change Order. The Price Agreement for PQP adjustments shall not affect the right of either party to renegotiate a major item in accordance with the MTO General Conditions of Contract."

The Contract Administrator shall track each change to the item as it occurs and list them in an Instruction Notice to the Contractor once a month, noting the applicable Change Order number. An Instruction Notice may include reference to more than one Change Order. The requirements for proper supporting documentation for individual PQP adjustments remain unchanged.

If any of the PQP items are, or become, major items as defined in the MTO General Conditions of Contract and the quantity has changed by more than 15%, then the Contract Administrator shall consider the need for negotiating a credit. The Contractor may also initiate negotiations for major item changes that exceed 15%.

3.4.5 Work Directive

Cases may arise where the Contractor interprets a situation as requiring extra work and may refuse to proceed until a Change Order is issued. The Contract Administrator will not issue a Change Order because the CA does not recognize that a change has occurred within the meaning of the contract, or there is disagreement as to the cause of the Change Order. In the case of such disputes, it is essential that work on a controlling operation not be delayed, and the Contract Administrator shall issue a Work Directive to the Contractor. The Work Directive instructs the Contractor to proceed with the work.

The Contractor may pursue resolution of the dispute in accordance with the MTO General Conditions of Contract.

3.4.6 Engineering Claims

References:
- MTO General Conditions of Contract
- Special Provision – CLAIMS, REVIEW AND RESOLUTION
- Provincial Highways Directive PHY-B-151 Claim Releases on Engineering Contracts

Ensure that the 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 work records in support of their (potential) claim. The Contract Administrator shall prepare a preliminary report on the details of the (potential) claim for the Contract Control Officer. The Contract Administrator shall liaise with the Contract Control Officer to ensure proper notice, input into the negotiations and facilitate the satisfactory resolution of possible claims and disputes.

The Contract Administrator shall:
- Receive all written claim notices, Notices of Claim, Daily Work Records, requests to advance in negotiation levels, etc.
- Ensure contractor's Notice of Claim submission fully complies with contract requirements both for content and time
- Monitor and record contractor work activities (manpower, materials and equipment) for work affected by (or likely to be affected by) the claim. Compare observed work activities with contractor Daily Work Record submissions and identify to contractor any conflicts
- Ensure contractor submits Daily Work Records in accordance with contract
- Provide review, analysis and recommendations of the contractor's claim to the ministry representatives
- Investigate all allegations of a change in the work, review options for resolution with Ministry, and issue appropriate instructions to the Contractor
- Identify and track any design related issues arising from claims maintaining sufficient supporting information

3.4.6.1 Engineering Claim Settlements on Active Contracts

A claims settlement does not require a Change Order. The claims release is an agreement that takes the place of a Change Order. Regional Claims or Head Office Claims staff will forward the claim settlement details to the CCO and CA. The CA will enter all relevant data into the CAS using the category for "claims settlements" under Other Payment Adjustments – No Change Order. If the CA was involved in preparing an estimated cost and negotiations, the CA's estimate(s) and all other documentation shall be kept on the claim file.

3.4.7 Media Enquires

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

3.5 SUBSTANTIAL PERFORMANCE & COMPLETION OF THE WORK

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

The Contractor must request Substantial Performance and/or Completion of the Work 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 of the Contract

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 and the Project Manager to be forwarded to the Regional Contracts 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 so that there is payments held back to ensure the contractor returns to complete 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

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 Final Completion of the Work

The Completion Checklist shall be generated by the Contract Administrator and reviewed with the Contract Control Officer prior to the Completion Meeting. All deficiencies in the work should be noted and reviewed with the Contract Control Officer and the Contractor for rectification. The Contract Administrator/Contract Control Officer will notify the Regional Contracts Office of the completion date and a Certificate of Completion will be issued and signed by the Area Contracts Engineer. 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 Control Officer 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 Field Services Engineer/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: ▪ Municipal Officials ▪ Railway Officials ▪ Utilities ▪ Other Interested Parties			

*	Complete Structural Clearance Report.			
*	Review status of working days/completion date.			
*	Develop deficiency list.			
*	Review deficiency list with Contract Control Officer.			
*	Meet with the Contractor to resolve outstanding deficiencies.			
*	Ensure that the Contractor replaces any property and/or horizontal and vertical bars damaged or removed during construction.			
*	Prepare/obtain a list of outstanding: ▪ 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: ▪ 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			

3.5.4 Acceptance of the Work

The Regional Contracts Office issues the Acceptance of Work form, which is signed by the Manager of Contracts, after the expiry of all warranties.

3.6 ASSESSING COMPLIANCE TO THE QUALITY CONTROL PERFORMANCE MEASURES

References:

- Appendix B
- Appendix C

The Contract Administrator (CA) will:

1. Ensure all consultant staff are aware of the Contractor QC Compliance requirements and their roles and responsibilities for the assigned work. When the RFP requires a separate person to assist in monitoring compliance, the CA will ensure that person clearly knows their role with respect to the other consultant staff that also monitor compliance.

2. Review Declaration of Qualification of Firms and Personnel and certifications by the manufacturers, suppliers and Contractor's authorised personnel to ensure proper wording and submissions.

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

3. Randomly audit declarations of qualifications for personnel and firms by requesting and reviewing supporting documentation from the contractor for a minimum of two declarations or 10% of the total number of declarations, whichever is greater. The selected declarations shall include both individuals and firms. If problems are found with the work of certain individuals or firms, further audits shall be carried out after consultation with the Contract Control Officer. The results of the audits shall be submitted to the Contract Control Officer and the Regional QC Advisor.

4. Use the checklist prepared prior to the start of work to monitor 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).

5. Monitor the Contractor's operations, identify deviations, and record all incidents and deviations from the QC requirements (using the form PH-CC-861 Summary of Quality Control Incidents Deviations and Deficiency Reports provided by MTO).

   Note: All incidents and deviations are to be listed on the summary. Though incidents will not be "penalized" financially or under Performance Rating, the contractor's willingness and ability to self-identify and address incidents are important indicators of the contractor's commitment to quality.

6. Receive a Non-Conformance Report from the contractor when there is a non-conformance to a QC performance measure that documents their proposed corrective (or mitigating) actions to address the non-conformance (see clause 6.2.1 of the Special Provision entitled “Quality Control Compliance Incentive”). The CA will review the Non-Conformance Report to decide if the corrective action to be taken is appropriate. 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. Within 3 business days of receiving the Non-Conformance Report, the CA will notify the Contractor in writing that the non-conformance is;

   - an incident, or
   - a deviation including the reason for the deviation, or
   - under review with the Ministry.

   After the submission has been reviewed, the Contractor is to be informed by the CA of the decision.

   For minor non-conformances, the contractor may make proposals verbally, if agreed with the CA, and followed up afterward by the contractor with documentation of the corrective action.

7. Confirm that deviations actually have occurred and determine the classification of the deviation, major or minor, using clauses 6.2.2 and 6.2.4 of Special Provision entitled “Quality Control Compliance Incentive” and the Ministry’s current list of typical examples of major/minor deviations (see Appendix C).

8. Where the classification is not obvious or may be precedent setting, obtain Ministry involvement to ensure consistency. In this case, the CA will produce a summary report (using the form PH-CC-858 “Details of Possible Major Deviation”). The report provides background information, rationalizes the deviation and provides a recommendation. The CA will submit this to the Ministry’s Contract Control Officer and Regional QC Compliance Advisor within 2 business days of the deviation occurring.

9. Using form PH-CC-862 “Deviation Notification to Contractor”, inform the contractor that there has been a deviation, after allowing a reasonable time for the Contractor’s QC process to function by taking in consideration the seriousness of the departure and the urgency of corrective action. If in doubt about the classification, inform the contractor using an Instruction Notice that a deviation has occurred but the classification is being reviewed and will be determined after the review. The CA shall distribute copies of each deviation notification form to Ministry staff noted on the form within 5 business days of the deviation occurring. The initial notice to the contractor can be verbal, however form PH-CC-862 shall follow for all deviations within a reasonable time.

10. For each deviation, review the requirements of the contract documents that resulted in the deviation to identify any requirements the Contractor must still complete. If the Contractor does not complete the requirements within 3 business days of receiving the Deviation Notification to Contractor, 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.

11. When there are deficient materials and / or workmanship, receive the Deficiency Report from the Contractor and review it for completeness. If the deficiency requires corrective work, review the contractor's proposal in the contractor's Deficiency Report to ensure it will correct the deficiency. Review and approve / disapprove, in writing, the contractor's proposal for associated testing and inspection to ensure the proposal will demonstrate that corrective action has been effective and the resulting material or elements of work are acceptable. Consult with the Contract Control Officer in unusual or precedent setting cases.

12. Keep an up-to-date list of all Deficiency Reports for submission to the Head, Quality Assurance using form PH-CC-861 Summary of Quality Control Incidents, Deviations and Deficiency Reports.

13. Determine the classification of a deviation in a timely manner but no later than 30 calendar days after the date of certification of the completion of the Work (i.e. "Work" as defined in the MTO General Conditions of Contract. If major deviations have been assessed, make appropriate deductions from the Quality Control Compliance Incentive after Contract Completion before the incentive payment is made.

14. If deviations have been assessed, make appropriate deductions from the Contractor Performance Rating as per the Contractor Performance Rating guidelines.

15. Recommend initiation of, or act upon recommendations to initiate the infraction process to the Ministry if contractor's QC non-compliance warrants such action (i.e. when all the points allotted for QC Compliance under the Contractor Performance Rating system have been used up and major deviations continue to occur).

16. Prepare and submit, to the appropriate distribution list, a monthly and year-end Summary of Quality Control Incidents, Deviations and Deficiency Reports (form PH-CC-861 provided by MTO).

17. In addition to the Summary of Quality Control Incidents and Deviations, produce and submit a monthly QC monitoring report, as part of the Monthly Status Report, with the consultant's monthly invoice under the signature of the Project Manager which:

    - Demonstrates the CA's monitoring process and contractor's conformance with the prepared checklist for the period;
    - Summarizes the CA's action taken with respect to the contractor's QC activities including but not limited to changes, QC personnel changes, QC deviations, QC related instruction notices, infraction reports, site meetings and work stoppages.

18. Respond to routine Ministry reports including but not limited to QAO inspection reports, CCO's consultant 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 Completion form			
Complete Contractor's Performance Rating			
Forward Certificate of Completion form, and Contractor's Performance Rating to the Contract Control Officer			
Identify Contract Work under Warranty with Expiration Time Frame as per the Contract (Including all actual site seeding and landscape planting dates)			
Send electrical record drawings (one copy), electrical shop drawings and service manuals to the Electrical Coordinator			
Submit Project Construction Report to Contract Control Officer			
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			
Disposal Site Permits & Property Owner Clearance Certificates			
Completed MTO Class EA Process Monitoring Questionnaire			
Submit Record Documents Package			
Provide to the Contractor the Final Detailed Statement (FDS)			
Substantial Performance Form and proof of advertisement			
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 CCO / 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 Record Documents shall be assembled in plain brown storage boxes (12"W x 15"D x 10"H) with attached hinged lids. A transfer list and contents listing must be provided for each box. The contents listing should be taped onto the inside lid of each box. There should be no writing on the outside of the box. Contract numbers and box numbers should be written on separate sheets of paper attached to the outside of the boxes.

Note: Refer to form PH-CC- 878 "Record Documents Checklist" for the list of documentation to be submitted.

4.4 RECORD DRAWINGS

The Consultant Contract Administrator shall compile and submit Record Drawings illustrating constructed deviations from the original contract drawings in Hard Copy and Scanned Digital Copy. Authorized deviations from the original contract drawings shall be marked up in red on one set of contract drawing prints in a neat, legible manner.

The Consultant Contract Administrator will also review and submit the Contractor's as-built records for structural and electrical work, along with the marked up drawings. It is not intended that the consultant duplicate the work already required of the contractor.

The following scanning criteria is to be utilized when scanning "Record Drawings" upon completion of construction:

- All documents are to be scanned at a minimum resolution of 200 dpi.
- Scanned images are to be cropped to the edge of the original drawing so as to reduce file storage requirements.
- All files must be stored aligned and oriented to allow normal viewing and maximization of the image on retrieval at the viewing workstation (no user rotation required).
- Files are to be stored using "Tiff CCITT Group 4 Standard Compression" format.

Record Drawings should be kept in the field office and updated regularly, as work progresses.

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 construction contract (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 Consultant 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	DETERMING 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-249	ERS – HOT MIX – EXTRACTION TEST RESULT FOR GRADATION AND AC
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 ENG. MATERIALS OFFICE CHEMICAL SECTION
PH-CC-427	BRIDGE DECK COVERMETER SURVEY
PH-CC-430	STRUCTURAL COATING SAMPLE DATA
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-450	AGGREGATE TEST DATA – GRANULAR A, B, M, O and Subgrade Material (SSM)
PH-CC-451	AGGREGATE TEST DATA – SURFACE TREATMENT (Physical Properties)
PH-CC-703	SCALE ACCURACY INSPECTION
PH-CC-704	LEASE AGREEMENT MTO AND LANDLORD
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	RECONCILLIATION 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-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-754	DAILY WORK RECORD
PH-CC-761	REQUEST TO ENTER UPON CROWN LANDS TO WORK A PIT OR QUARRY
PH-CC-762	SUB-CONTRACTOR'S CONSENT TO SUBLET
PH-CC-763	STATEMENT OF RECORD OF WORKING DAYS
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	FINAL ACCEPTANCE 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-822HMP	CERTIFICATE OF CONFORMANCE HIGH MAST POLES
PH-CC-823	ADVANCE PAYMENT FOR GRANULAR
PH-CC-824	APPLICATION FOR AN AGGREGATE PERMIT
PH-CC-825	LETTER OF APPROVAL (LAND OWNER AGREEMENT)
PH-CC-826	CERTIFICATE OF COMPLETION
PH-CC-827	DECLARATION OF QUALIFICATION
PH-CC-828	CHANGE PROPOSALS DURING CONSTRUCTION
PH-CC-829	FINAL ESTIMATE QUANTITES 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-835	MEDIA ENQUIRIES
PH-CC-836	MPP ENQUIRIES
PH-CC-837	RELEASE OF PIT AREAS & WASTE SITES ON CROWN LAND
PH-CC-838	PRELIMINARY CONTRACTOR SCHEDULE CHECKLIST FOR SP 100 S25
PH-CC-839	MTO CLASS EA MONITORING QUESTIONNAIRE FOR CONSULTANT CA 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 FOR COMBINED ERS
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	ESTIMATED COST OF CHANGE IN THE WORK, EXTRA WORK OR ADDITIONAL WORK
PH-CC-856	PRICE AGREEMENT FOR CHANGE IN THE WORK, EXTRA WORK OR ADDITIONAL WORK
PH-CC-857	WORK DIRECTIVE
PH-CC-858	DETAILS OF POSSIBLE MAJOR DEVIATION
PH-CC-860	QC COMPLIANCE QUARTERLY REPORT
PH-CC-861	MONTHLY SUMMARY OF QUALITY CONTROL INCIDENTS, DEVIATIONS AND DEFICIENCY REPORTS
PH-CC-862	DEVIATION NOTIFICATION TO CONTRACTOR
PH-CC-863	ANNUAL DECLARATION: 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	ERS 2004 – HOT MIX QC/QA COMPARISON AND PAY FACTOR CALCULATION
PH-CC-869	LETTER TO CONTRACTOR (Version 4.0) Re: MUTUAL AGREEMENT FOR OPTING-INTO THE SEGREGATION SPECIFICATION
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 DEFICIENCES
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-880	CONTRACT CONTROL OFFICER REPORT
PH-D-046	PIT AND QUARRY AFTER USE REPORT
PH-D-10	SAMPLE DATA SHEET
PH-D-1A	GRANULAR A GRADATION COMPUTATION ACCEPTANCE & PAYMENT ADJUSTMENT SHEET
PH-D-1B	GRANULAR B TYPES 1, 11 & 111 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

PH-M-238	SEEDING INSPECTORS DAILY REPORT

These forms are available from the Regional Contracts Office.

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 suggested that the assessments be made within 48 hours after completion of an activity. 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 (CCO) 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

QC INCIDENTS AND DEVIATIONS WITH TYPICAL EXAMPLES

QC Incidents and Deviations

"Incident" means any non-conformance to the quality performance measures detailed in sub-section 5.3, 5.4 or 5.5 of the Special Provision “Quality Control Compliance Incentive” that is properly managed. For a non-conformance to subsection 5.2, 5.6 and 5.7, a deviation is assessed regardless of the Contractor’s action because, in the Ministry’s opinion, it is not possible or feasible to correct the non-conformance. See subsection 6.2 of the Special Provision “ Quality Control Compliance Incentive” for further details.

The Contract Administrator will assess the Contractor’s compliance to the performance measures related to:

a) The production and supply Engineering Materials;
b) The removal, rehabilitation, modification or construction, of temporary or permanent elements of work that comprised of Engineering Materials, and
c) Inspection, sampling, testing and QC records associated with *a*) and *b*) above

For the purposes of the Special Provision, Engineering Materials includes:

Granular Base and Sub-Base Materials
Bituminous Materials
Concrete Materials
Electrical Materials
Grading, Drainage and Backfill Materials
Structures and Foundations Materials
Guide rail Items, end treatments and pavement markings

The Special Provision does not cover engineering materials used solely for traffic control signing or protection of the natural environment.

Deviations from the QC performance measures in the Special Provision “Quality Control Compliance Incentive” shall be worded carefully when recording them using form PH-CC-862 “Deviation Notification to Contractor”. Reference should be made to the applicable performance measure in Section 5.0 of the Special Provision “Quality Control Compliance Incentive”. Reference should also be made to the applicable part of clause 6.2.4 of the Special Provision for major deviations.

A major deviation negatively impacts, or increases the Ministry’s risk of negatively impacting one or more important aspects of the project that are specified in clause 6.2.4 of the Special Provision Quality Control Compliance Incentive. A major deviation is also any deviation specified in clause 6.2.4 of the Special Provision “Quality Control Compliance Incentive”. These deviations demonstrate the Contractor has failed to maintain an effective quality control program.

Deviations are associated with a problem or failure in the contractor’s QC “process” or “procedure”. The actual impact of a deviation on the quality of work is not relevant to the classification of the deviation as Major or Minor. “No harm – no foul” does not apply

to QC deviations. Quality cannot be accidental but must be the planned outcome of the QC process.

Deficient work, while it may be associated with a QC deviation, is not by itself, a deviation from the QC performance measures. If the contractor had done proper quality control and has also properly identified the deficient work together with carrying out acceptable corrective and preventative action, then there will not be a deviation. Generally, the deviation is related to lack of testing, inspection, reporting or corrective/preventative action rather than the occurrence of deficient work.

TYPICAL EXAMPLES: Major/Minor Deviations from the performance measures in Section 5.0 of the Special Provision "Quality Control Compliance Incentive".

The following list contains **typical** examples of Major and Minor deviations.

It is **NOT** intended to be a complete list of all possible deviations. The list is a "living document" and may be revised as the construction season progresses.

It should be used as a **guide** in deciding whether a deviation is "Major" or "Minor" in nature.

Because circumstances vary considerably, a deviation that would normally be Minor may be judged to be Major due to its severity or repeated occurrences.

UNLESS OTHERWISE STATED IN THE FOLLOWING LIST, THE 3RD AND EACH SUBSEQUENT OCCURRENCE OF THE SAME OR SIMILAR MINOR DEVIATION ARE MAJOR DEVIATIONS. **IN THIS CASE, THE FIRST 2 MINOR DEVIATIONS ARE NOT CANCELLED.**

A. Quality Control Personnel/Firms

Description of the Deviation	Classification
1) Failure to submit an accurate Declaration of Qualification of Personnel or Firms (The CA should not accept an incomplete declaration)	Major
2) Failure to submit a Declaration of Qualification of Personnel or Firms	Major (late may be minor)
3) Failure to ensure use of qualified or certified personnel as specified in the Contract Documents, including failure to submit a proper Declaration of QVE Qualifications for an alternate QVE	Major
4) Failure to ensure notification of the CA prior to substitution of QC staff named in a Declaration, when the substitute has started work and is: Qualified Unqualified	 Minor Major

5) Failure to ensure the name of the Quality Verification Engineer (QVE) is provided to the CA prior to the QVE providing services to the contract or prior to substitution of a QVE.	Minor
6) Failure to submit a Declaration of Qualification at least one (1) business day prior to the QC personnel or firm conducting QC activities. Submission was made before conducting QC activities but it was less than 1 business day.	Minor
8) Failure to ensure use of a qualified lab.	Major
9) Failure to submit a Declaration of Qualification to the CA prior to substitution of a lab when the substitute is: Unqualified Qualified	 Major Minor

B. Sampling, Testing and Submission of Results

Sampling and Testing	
1) Failure to ensure measurements/tests are carried out in accordance with the Contract Documents or a sample is taken, handled, delivered, prepared, or tested in accordance with the Contract Documents. Note: Some sampling and testing deviations in this sub-category add little risk to the Ministry of a poor product. If this may be the case, please contact the QC Compliance Advisor for advice before assessing the deviation as minor.	Major (late delivery or sampling at the wrong time may be Minor)
2) Failure to have the testing equipment required to perform a test (this is in addition to failure to perform a test).	Major
3) Failure to use functioning certified or calibrated testing equipment if specified in the Contract Documents.	Major
4) Failure to take a sample at the proper location (e.g. shifting core locations).	Major
Concrete-Specific Examples	
5) Failure to provide a temperature controlled environment in the curing facility for the concrete cylinders (no tolerance is allowed outside the specified range).	Major
6) Failure to provide temperature records or a working data logger for continuous recording of cylinder curing temperatures.	Minor
7) Failure to provide a minimum/maximum thermometer in the curing facility.	Minor
Submission of Results	
8) Providing test results that are incomplete, inaccurate or late. Occurrences accumulate for the entire work, not by item or operation.	Minor
9) Failure to submit data in an acceptable format.	Minor

C. Material Sources and Mix Designs

1) Failure to ensure notification of the CA prior to substitution of a product, material or a material/product source including a change to a mix design (mix designs also require checking for contract compliance by the CA prior to use).	Major
2) Failure to prevent rejectable material from being incorporated into the work when rejectable QC test results were available (or should have been available) beforehand, or when QC results were not available/required but rejectable QA results had been given to the contractor beforehand.	Major
3) Failure to ensure the use of materials from sources identified in the accepted mix design submission and/or from approved/designated sources when specified in the Contract Documents	Major
4) Failure to ensure submission of an acceptable mix design (including all necessary documentation) to Contract Administrator prior to placement.	Major (Missing information on a form **may** be Minor)
Bituminous –Specific Example	
5) Failure to ensure that hot mix is produced with anti-strip additive in a way that is effective (e.g. Incorrect dosage, improper storage of treated aggregates, etc.)	Major

D. Construction Quality Control Inspection

1) For QC inspection records and reports, except certifications, failure to submit required documentation specified in the Contract Documents	Minor
2) Except for certifications, failure to have complete and accurate inspection reports available or submitted as specified in the Contract Documents.	Minor
3) Failure to provide QC testing and/or inspection staff on site when specified in the Contract Documents Except: significant absence at a critical time (e.g. on-site testing when responsible for deciding on use of the material immediately after the testing is complete).	Minor Major
4) Failure to carryout inspection tasks in accordance with the QC requirements for the work Occurrences accumulate for the work, not by item or operation	Minor
Concrete- Specific Examples	
5) Failure to ensure finishing equipment is provided which meets the contract requirements.	Major
6) Failure to ensure that a finished concrete deck surface is provided which meets the contract requirement without the need	Major

of hand finishing (i.e. bull floating). This excludes areas around screed rails and start & end of placement of concrete.	
7) Failure to ensure conformance to the placement, consolidation or finishing procedures outlined in the specifications.	Minor
8) Failure to ensure that specified curing procedures are followed, during the placement of the concrete (e.g. burlap applied, but not properly pre-soaked; curing compound applied, but coverage is poor etc.)	Minor
9) Failure to ensure the timely application of curing protection, **during the placement of concrete** (i.e. it's occurring, but it's slower than specified). Severe neglect of the specified timing requirements (i.e. it's not occurring at all, or it's so far behind that one may conclude the requirements are being neglected).	Minor Major
10) Failure to ensure that acceptable curing protection is provided and maintained for the duration of the curing period.	Major
11) Failure to ensure that the specified temperature of the concrete is maintained for the duration of the curing period or failure to ensure that temperature differentials are maintained within specification requirements.	Major (a 2 degree deviation may be Minor)
12) Failure to monitor temperatures prior to placing concrete (i.e. temperature of forms & steel, ground, anything concrete is placed against).	Major
13) Failure to ensure that thermocouples are installed meeting the contract requirements and/or the temperature of the concrete is monitored for the duration of the curing period and beyond if necessary to demonstrate conformance to specifications.	Major
14) Failure to ensure that the properly sized jackhammers are used for Concrete Removal.	Major

E. Certifications, Permission to Proceed and Submission of Drawings/Documents

1) Certification of work that is not complete or is not in general conformance to the Contract Documents. Also, for some work such as safety items, temporary concrete barriers and electrical chambers, etc. certification of supply and and/or installation is not in accordance with Contract requirements required.	Major
2) Failure to ensure certification (C of C) or written permission to proceed was received from the QVE when certification or permission to proceed was required prior to proceeding with the next phase of the work (i.e. the specification required the C of C or the Interim Inspection with permission to proceed from the QVE before the next operation could begin.)	Major
3) Failure to provide full and complete inspection of the work as specified in the Contract for which certification or permission to	Major

proceed was issued (even if the work is acceptable).	
4) Submission of a certificate containing notes or exceptions when followed up in a timely manner with a proper certificate. (The CA should not accept the certification with notes or exceptions)	Minor
Documents.	Major (late submission may be minor)

F. Disposition of Deficient Materials and Workmanship

1) Failure by the contractor to identify deficient materials or workmanship	Minor
2) Failure to submit complete documentation for deficient materials or workmanship in a Deficiency Report as specified in the Quality Control Compliance Special Provision.	Minor
3) Undertaking subsequent operations which prevent or impede corrective work on deficient materials or workmanship	Major
4) Refusal of the contractor to carry out corrective action	Major
Bituminous-Specific Examples	
5) Failure to ensure Tack Coat is applied. – Non-uniform application or inadequate curing may be minor.	Major
6) Failure to prevent excessive milling depth leading to reduced pavement strength (in final design) or break-up of milled surface under traffic.	Major
7) Failure to control milling quantities (e.g. improper depth, width, length) or milled surface quality (cleanliness, uniformity, cross-fall, alignment).	Minor
8) Failure to identify and prevent medium and/or severe segregation, including mid-lane segregation regardless of lift or mix type.	Minor
9) Failure to ensure paved and/or milled lanes match at the end of the day (when specified in the Contract Documents): i) proactive adequate remedial measures are implemented, and safety concerns are addressed; ii) remedial measures are inadequate but safety concerns are adequately addressed iii) remedial measures are inadequate and fail to address safety concerns	i) No deviation ii) Minor iii) Major
10) Failure to prevent excessive lift thickness in Crack Repairs without prior approval.	Minor
11) Paving at incorrect super-elevation or cross-fall (tangent sections, or full super areas only). (i.e. outside of specified tolerances).	Major

G. General

1) The third and fourth occurrence of the same or similar non-conformance when the first 2 occurrences were incidents. Each occurrence of the same or similar non-conformance after the 3rd and 4th ones have been assessed as minor deviations	Minor Major

APPENDIX D

TECHNICAL STANDARDS AND SPECIFICATIONS

TECHNICAL STANDARDS AND SPECIFICATIONS

Document	Distributor
Abbreviation and Symbols Manual	MTO Library web site Publications Ontario
Archaeological Protocol	MTO Library web site Publications Ontario
AutoCAD Drawings – Structural Library	MTO Library web site Publications Ontario
AutoCAD Standards Guide	MTO Library web site Publications Ontario
Bailey Bridge Manual	MTO Library web site Publications Ontario
Bridge Clearance and Load Restriction Manual	MTO Library web site Publications Ontario
Canadian Bridge Analysis System (CANBAS)	MTO Library web site Publications Ontario
Canadian Bridge Analysis System (CANBAS) Examples Manual	MTO Library web site Publications Ontario
Canadian Bridge Analysis System (CANBAS) Input Instruction Manual	MTO Library web site Publications Ontario
Canadian Highway Bridge Design Code	MTO Library web site 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 web site Publications Ontario
Class Environmental Assessment for Provincial Transportation Facilities (submitted 1997, approved 1999, amended July 2000)	MTO Library web site Publications Ontario
Commercial Site Access Policy and Standards Manual	MTO Library web site Publications Ontario
Commercial Vehicle Survey Customized Report	MTO Library web site Publications Ontario
Concrete Culvert Design and Detailing Manual	MTO Library web site Publications Ontario
Construction Administration and Inspection Task Manual	MTO Library web site Publications Ontario
Construction Contract Administration Regional Memoranda	MTO – Regional Contracts Office
Consultant Performance and Selection System, Consultant Reviews and Consultant Infraction Reports – Process Guide	MTO – Website
Consultant Quality Control (QC) Plan – Process Procedures Guide	MTO – Website

Construction Inspector's Environmental Field Guide	MTO Library web site Publications Ontario
Contractor Performance Rating Guideline	MTO – Regional Contracts Office
Contract Design Estimating and Documentation Manual	MTO Library web site Publications Ontario
Corridor Control and Permit Procedures Manual	MTO Library web site Publications Ontario
Designated Sources for Materials	MTO Library web site Publications Ontario
DGS Design Graphic System User Manual	MTO Library web site Publications Ontario
Drainage Management Manual – Volumes 1,2,3 and 4	MTO Library web site Publications Ontario
Electrical Engineering Manual Volume 1 – Electrical Design	MTO Library web site Publications Ontario
Electrical Engineering Manual Volume 2 – Electrical Maintenance	MTO Library web site Publications Ontario
Electrical Engineering Manual Volume 3 – C.D.E.D.	MTO Library web site Publications Ontario
Electrical Engineering Manual Volume 4 – ATMS C.D.E.D.	MTO Library web site Publications Ontario
Environmental Guidelines for Structural Steel Coating	MTO Library web site Publications Ontario
Environmental Manual – Erosion and Sedimentation Control	MTO – Environmental Policy and Standards Section (905-704-2104)
Environmental Manual – Fisheries – Volume 1	MTO Library web site Publications Ontario
Environmental Office Manual – Technical Areas – Noise	MTO – Environmental Policy and Standards Section (905-704-2104)
Environmental Reference for Highway Design	MTO Library web site Publications Ontario
Exceptions to the Canadian Highway Bridge Design Code CAN/CSA – S6-00-Sign Support Inspection Guidelines	MTO Bridge Office
Field Guide for the Acceptance of Hot Mix and Bridge Deck Waterproofing	MTO Library web site Publications Ontario
A Fisheries Protocol – An Agreement between MTO and MNR for Protecting Fisheries Resources on Provincial Highway Undertakings	MTO Library web site Publications Ontario
Flexible Link Slab for Steel Girder Bridges	MTO Bridge Office
Formwork and Falsework Manual	MTO Library web site Publications Ontario

Geometric Design Standards for Ontario Highways – Metric	MTO Library web site 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 Library web site Publications Ontario
HDS Highway Design System User's Manual (Volumes 1–3)	MTO Library web site Publications Ontario
Highway Design Office Bulletins / Memos	Highway Design Office
Highway Engineering Standards Drawings: Structural	MTO Library web site Publications Ontario
Highway Equipment Standards Manual	MTO Library web site Publications Ontario
Inspector's Diary	MTO Library web site Publications Ontario
Integral Abutment Bridges	MTO Library web site Publications Ontario
Interim Guide to Environmental Assessment: Co-ordinating Provincial and Federal Legislative Requirements	MTO – Environmental Policy and Standards Section (905-704-2104)
King's Highway Guide Signing Policy Manual	MTO Library web site Publications Ontario
Laboratory Testing Manual (MTO)	MTO Library web site Publications Ontario
Maintenance Manual	MTO Library web site 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 web site Publications Ontario
Mix Design Method for Recycled Hot Mix	MTO – Materials Engineering and Research Office
MTO Class EA Process Monitoring Program (Sept. 2000)	MTO – Environmental Policy and Standards Section (905-704-2104)

MTO General Conditions of Contract	MTO Library web site Publications Ontario
MTO Soil Classification Manual	MTO Library web site Publications Ontario
MTO Technical Guidelines for Identification, Assessment, and Remediation of Contaminated Property	MTO Library web site Publications Ontario
Noise Protocol	MTO Library web site Publications Ontario
Ontario Bikeways: Planning/Design Guidelines	MTO Library web site Publications Ontario
Ontario Highway Bridge Design Code (3rd Edition, 1991)	MTO Library web site Publications Ontario
Ontario Highway Traffic Volumes 1988 – 2002	MTO Library web site 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 web site Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 2, Specifications for Material	MTO Library web site Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 3, Drawings for Roads, Barriers, Drainage, Sanitary Sewers, Water-Mains, and Structures	MTO Library web site Publications Ontario
OPS Specifications for Roads and Municipal Services, Volume 4, Drawings for Electrical Work	MTO Library web site Publications Ontario
Ontario Structure Inspection Manual	MTO Library web site Publications Ontario
Ontario Traffic Manual (OTM) Book 5 Regulatory Signs	MTO Library web site Publications Ontario
Ontario Traffic Manual (OTM) Book 6 Warning Signs	MTO Library web site Publications Ontario
Ontario Traffic Manual (OTM) Book 7 Temporary Conditions	MTO Library web site Publications Ontario
Ontario Traffic Manual (OTM) Book 7 Temporary Conditions (Field Edition)	MTO Library web site Publications Ontario
Ontario Traffic Manual (OTM) Book 11 Markings and Delineation	MTO Library web site Publications Ontario
Ontario Traffic Manual (OTM) Book 12 Traffic Signals	MTO Library web site Publications Ontario
Ontario Traffic Signal Control Equipment Specifications	MTO Library web site Publications Ontario
Overcoating – Technical Assessment of Existing Coatings of Steel Bridges for Overcoating	MTO – Bridge Office
Pavement Design and Rehabilitation Manual	MTO Library web site Publications Ontario

Pesticides Spray Manual	MTO Library web site Publications Ontario
Pile Load and Extraction Tests, 1954 – 1992	MTO Library web site Publications Ontario
Post - Tensioned Decks	MTO Library web site Publications Ontario
Pre-stressed Concrete Manual for Quality Assurance of Bridges During Construction	MTO Library web site Publications Ontario
Prioritized Contract Content Guidelines	MTO Library web site 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 web site Publications Ontario
Remote Airport Lighting Manual	MTO Library web site Publications Ontario
Roadside Safety Manual	MTO Library web site Publications Ontario
Seeding And Cover Quality Assurance Visual Inspection Field Guide	MTO Library web site Publications Ontario
Short Span Steel Bridges	MTO Library web site Publications Ontario
Sign Support Manual	MTO Library web site Publications Ontario
Standard Ministry Forms related to Construction Contract Administration Services	MTO - Regional Contracts Office
Standards for Engineering Surveys, Version 2.0	MTO Library web site Publications Ontario
Structural Financial Analysis Manual	MTO Library web site Publications Ontario
Structural Manual	MTO Library web site Publications Ontario
Structural Steel Coating Manual	MTO Library web site Publications Ontario
Structure Rehabilitation Manual	MTO Library web site Publications Ontario
Survey Book	MTO Library web site Publications Ontario

Surveys and Plans Manual (Volume 1–3)	MTO Library web site 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