

# **Construction Manager's Manual**



**MARCH 2019**

**ILLINOIS STATE TOLL HIGHWAY AUTHORITY**

The Construction Manager's Manual dated March 2019 replaces the previous version dated March 2018.

The Construction Manager's manual has been revised to reflect the most recent changes in the IDOT Manual and Specifications, including the latest Illinois Tollway Supplemental Specifications to IDOT Standard Specifications, and to the WBPM system.

### Major Revision Highlights

- **Article 1.3 Definitions**
  - Updated definitions for DPM, ESCP, I-MIRS, NOA, NOI, NOT, and SWPPP.
  - Added definitions for IA, Materials Coordinator, and OR.
- **Article 3.2.1 General Contractor Responsibility**
  - Added "Provide required materials that have been approved by IDOT, the Illinois Tollway or other entities the Illinois Tollway has designated for processing of payment. This includes material documentation requested by the CM"
- **Article 3.3.1.1 Other Responsibilities**
  - Added "Provide a designated Material Coordinator for contracts with a significant number of materials pay items."
  - Added "Process Property Damage Claims for Tollway Risk Management."
  - Added All personnel shall perform their duties in a safe and professional manner and comply with Illinois Law regarding distracted driving."
- **Article 3.3.1.4.1 Testing Equipment**
  - Added "dynamic cone penetrometer (DCP),"
- **Article 3.3.1.4.2 Other Supplies and Equipment**
  - Changed requirement for high visibility safety apparel from Class 2 to Class 3.
- **Article 3.3.1.3.3 Designer of Record Documents**
  - Changed "CADD" to "Microstation"
- **Article 4.1.2 CM General Qualifications**
  - Changed staff requiring Illinois Tollway approval for changes from "Key staff" to "personnel listed in the PSB"
- **Article 4.1.2.1 CM Staff**
  - Removed "Key" and added "As detailed in the applicable Professional Services Bulletin."
  - Listed Staff as Standard Key Personnel and Additional Personnel that may be required
- **Article 4.1.2.2.2 Resident Engineer**
  - Changed "Shall be an Illinois Licensed Professional Engineer" to "Is preferred to be a Professional Engineer or must have a minimum of 15 years of Phase III Construction Inspection experience"
  - Removed reference to 30-Hour OSHA Certification not currently being mandatory
- **Article 4.1.2.2.9 Erosion and Sediment Control Site Representative**
  - Added "The ESCSR determines compliance with permit conditions, applicable regulations, and other requirements and assesses the adequacy of best management practices to protect natural resources and control the quality of stormwater discharges from a project. The ESCSR should have experience in highway construction and in stormwater BMP implementation, maintenance

standards, and repairs. The Tollway prefers that the ESCSR maintains a professional license such as a licensed Professional Engineer (P.E.), or relevant certification such as Certified Professional in Erosion and Sediment Control (CPESC), a Certified Erosion Sediment and Storm Water Inspector (CESSWI), a Certified Stormwater Inspector (CSI)”

- **Article 4.2.3                      Soils Inspection and Compaction**
  - Revised the first paragraph to “Perform soils sampling and testing at a 20% frequency of QC. Perform soils inspections as required by the Illinois Tollway to verify that the Contractor maintains proper control of density and moisture content of subgrade, embankments, backfills, and other earthwork items. Provide soil testing and recommendation of borrow sources for approval by the Illinois Tollway”
- **Article 4.2.5                      Laboratory Qualifications/Qualified Laboratories**
  - Private Laboratories that perform Quality Assurance sampling and testing under the Contractor’s Quality Program (CQP) or Construction Manager’s or the Illinois Tollway’s Independent Assurance program must be accredited under the AASHTO Resource Accreditation Program. These requirements are outlined in the current IDOT departmental policy, “Quality Assurance Procedures for Construction,” the current IDOT BM lab inspection policies, and the Consultant prequalification
- **Article 4.4.3.2                      Preconstruction Materials QC/QA Meeting**
  - Added “within 5 business days of when the meeting was held”
- **Article 4.4.3.3                      Preconstruction Sediment and Erosion Control Meeting**
  - Added “Meeting minutes shall be recorded, produced and distributed to attendees and other contacts identified in the meeting notice through the WBPM system. The final meeting minutes, sign in sheet, and copies of any documents distributed at the meeting shall be uploaded in the WBPM System as a single PDF within 5 business days after the meeting.”
- **Article 4.4.5.1                      National Pollutant Discharge Elimination System**
  - Clarified the applicability and exemptions related to NPDES permits, stormwater pollution prevention plans, and erosion and sediment control plans. Updated the CM’s responsibilities to include monitoring and enforcing the SWPPP and Erosion and Sediment Control Plans. Updated the listing of documents NPDES-related documents required to be filed by the CM on the Illinois Tollway WBPM system.
- **Article 4.4.7                      Documentation of ITS Removals or Relocation**
  - Added “The CM shall maintain a separate record than that of the Contractor for temporary and final location of conduit as it is installed. The CM must submit a \*.csv file containing all mapping requirements per the contract documents to serve as the working “As-Built” for verification by the CCM (when available) or the GEC when there is not a CCM. Without this documentation, work related to this item shall not be paid to the CM or the Contractor”
- **Article 4.4.9.1                      Progress Payments**
  - Prior to approval of a Baseline Schedule, payments for Mobilization and completed work are subject to the requirements of Article 108.02(a) and 671.02(a).

- **Article 4.4.9.4            Stored Materials**
  - Added items are typically acceptable for material allowance payment.
- **Article 4.4.10.2.1        Authorization to Proceed (ATP)**
  - Added "ATP-Exhibit B form is required for changes equal to or greater than \$30,000.00. ATP's may be submitted to the Project Manager (PM) as a PDF formatted document"
- **Article 4.4.10.2.6        Potential Change Order (PCO)**
  - Added "PCO's with a value greater than or equal to \$100,000 shall be discussed with the PM prior to being added to the PCO Log."
- **Article 4.4.13            Record Drawings**
  - Added "All line styles and layer settings shall match those used for the as-bid plans"
  - Added requirement for submittal of Preliminary Record Drawings within 6 weeks of the Contract Completion Date and Final Record Drawings within 2 weeks of submittal of the Final Pay Estimate.
  - Added "Deleted drawings shall not be included in the record plan set"
- **Article 4.4.14            Progress Schedules and Timely Completion of the Construction Contract**
  - Added the following to the list of situations about which the CM shall advise the Illinois Tollway on a weekly basis:
    - The Contractor is on schedule but has submitted a Notice of Delay through the WBPM system.
    - The Contractor is behind schedule and has submitted a Notice of Delay through the WBPM system.
- **Article 4.4.16            Request for Extension of Time**
  - Added "Has the Contractor submitted a Notice of Delay for the impacted scope?" to the list of questions to address in their evaluation.
- **Article 4.4.21            Invoicing Requirements**
  - Added "All invoices shall comply with the requirements of the CM's contract with the Illinois Tollway."
- **Article 4.4.25            Intergovernmental Agreement**
  - New Section regarding Intergovernmental Agreement
- **Article 4.4.26            Unmanned Aircraft Systems (UAS)**
  - New Section regarding Unmanned Aircraft Systems (UAS)
- **Article 4.5.3            Quality Assurance Documentation by the Construction Manager**
  - Added "Monitor the execution of all on-site and off-site testing of all construction materials performed by the Contractor as required in the contract documents. Monitor the Contractor's execution of the CQP for proper QC compliance. QA shall test a minimum of 20% of QC."
- **Article 4.5.4            Frequency of Sampling and Testing**
  - Added "QA shall test a minimum of 20% of QC"
- **Article 4.5.5            Materials Documentation on Illinois Tollway Forms**
  - Added "The Illinois Tollway's I-MIRS applies to Aggregate gradations; HMA & PCC plant and field-testing; and all other applicable QC, QA and IA test reports for analysis by the Illinois Tollway. Record copies are kept in I-MIRS"

- **Article 4.5.6.2 Evidence of Material Inspection**
  - Add direction to document the conditions in which the materials were accepted by the NCR process in the Tollway's WBPM system for materials accepted that are not in conformance with contract requirements.
  - Added "This too shall include any material without approved test results for PCC/HMA/Aggregate in I-MIRS or without approved test results for Soils/Others required as per Evidence of Inspection in WBPM System" to the section regarding withholding payment for work without material inspection.
- **Article 4.5.8.1 General**
  - Changed requirement for material not meeting specifications from "analysis of the material and its proposed use is made by the Contractor" to "written approval" and added direction to submit requests for material substitution via the submittal process for Illinois Tollway approval.
- **Article 4.5.8.2 Material Acceptance Overview**
  - Added "I-MIRS – The MC or designated QA representative, shall input all QA test data into I-MIRS within 3 days of test completion. The MC is responsible to review and acknowledge the QA data, contractor's QC data, and QC/QA comparisons weekly"
- **Article 4.9.1 Nonconformance**
  - Added the Contractor's "failure to submit QC test results into I-MIRS within the required time frame" to the list of Nonconformances issued by the CM.
- **Article 4.10.4.3 Field Books**
  - Added "Note: When choosing to use a field book to document all paving summaries, all information that is required in order to complete the IDOT paving forms (BC259/BC2531) shall be documented as such in the field book"
- **Article 4.10.7.1 Agreed Unit Price Items**
  - Added requirement for subcontractor's unit price breakdown to be provided.
- **Article 4.10.7.2.2 Progress Documentation for Force Account Items**
  - Added requirement for CM to track estimated costs for each A-7 and monitor the cost of the work as it occurs so that a supplemental ATP can be prepared before exceeding the approved value of the extra work.
- **Article 4.13.8 Warranties**
  - Added "all other items specified by Article 105.18 of the Tollway Supplemental Specifications any other supporting documentation shall be attached to the process" and "For items with multiple warranty expiration dates, a separate process shall be submitted for each expiration date."
- **Appendix C**
  - Removed "TABLE 1. Evidence of Materials Inspection" and added "Evidence of Material Acceptance Definitions"
- **Appendix D**
  - Illinois Tollway "A" Form and Project Documentation Examples – Added an example of the A-1C form (Traffic Control Inspection Report)

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## **SECTION 1.0 Introduction**

### **1.1 Purpose and Use**

The Construction Manager's (CM) Manual is to provide guidance to the Illinois Tollway Construction Manager (CM) for the successful administration of the project's construction contract documentation and observation. The CM shall monitor and report the contractor's activities and construction contract. The CM shall verify that the construction activities are performed and production achieved per the contractual requirements, open issues and/or activities are promptly resolved, and required documentation is adequately prepared and maintained. By performing the tasks outlined in this manual, the CM will meet the Illinois Tollway's documentation and inspection requirements, deliver a quality completed project, and ultimately improve the driving experience of the travelling public, our customer.

### **1.2 Abbreviations and Acronyms**

The acronyms provided are in addition to the abbreviations listed in the Definition of Terms, the Illinois Tollway Supplemental Specifications Article 101, and latest edition as modified by the contract documents.

ACI	American Concrete Institute
USACE	United States Army Corps of Engineers
Agg	Aggregates
AASHTO	American Association of State Highway and Transportation Officials
ASTM	American Society for Testing Materials
ATP	Authorization to Proceed
AUP	Agreed to Unit Price
Blue Book	Equipment Watch's Rental Rate Blue Book
Capture	DBE/EEO Reporting Application
CCC	Construction Communication Coordinator
CCM	Corridor Construction Manager
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
C5	Contract Cost Change Controls Committee
CLSM	Controlled Low Strength Material

CM	Construction Manager
CO	Change Order
CORS	Continuously Operating Reference Stations
CQP	Contractor's Quality Program
CQP-CM	Consultant Quality Program – Construction Manager
CREATE	Chicago Region Environmental and Transportation Efficiency Program
DA	Documentation Audit
DCM	Design Corridor Manager
DBE	Disadvantaged Business Enterprise
DMS	Dynamic Message Sign
DOR	Designer of Record
DPM	Deputy Program Manager
DR	Daily Report
DSE	Design Section Engineer
ECP	Earned Credit Program
EDM	Electronic Distance Measurer
EEO	Equal Employment Opportunity
EO	Errors and Omissions
EPA	U.S. Environmental Protection Agency
ESCLDC	Erosion and Sediment Control Landscape Design Criteria
ESCP	Erosion and Sediment Control Plan
EWO	Extra Work Order
FHWA	Federal Highway Administration, Department of Transportation
GEC	General Engineering Consultant
GPS	Global Position System
HMA	Hot Mix Asphalt

IEMA	Illinois Emergency Management Agency
IDOT	Illinois Department of Transportation
IEPA	Illinois Environmental Protection Agency
I-MIRS	Illinois Materials Inspection and Reporting System
ISO	International Organization for Standardization
ISTHA	Illinois State Toll Highway Authority, also Tollway, also Illinois Tollway
ITS	Intelligent Transportation Systems
INVEST	Infrastructure Voluntary Evaluation Sustainability Tool
ION	Incidence of Non-Compliance
JOC	Job Order Contracting
NCR	Non-Conformance Report
NEC	National Electrical Code
NOA	Notice of Award
NOD	Notice of Delay
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTP	Notice to Proceed
MA	Meeting Agenda
MOT	Maintenance of Traffic
MVDS	Microwave Vehicle Detection System
OR	Owner's Representative
OSHA	Occupational Safety and Health Administration
PCL	Project Communication Liaison
PCC	Portland Cement Concrete
PCO	Potential Change Order

PCR	Project Change Request
PIR	Project Initiative Request
PM	Project Manager
PMO	Program Management Office
QA	Quality Assurance
QC	Quality Control
QR	Quality Representative, usually the Contractor's
RE	Resident Engineer
RQDS	Ramp Queue Detection System
RFI	Request for Information
ROW	Right-of-Way
RWIS	Road Weather Information System
SAAEOE	Schedule of Average Annual Equipment Ownership Expense
SBSP	Small Business Set-Aside Project
SWPPP	Storm Water Pollution Prevention Plan
SWZ	Smart Work Zone
TIMS	Traffic Information Management System
TOC	Traffic Operations Center
UFS	Uniform Filing System
VEP	Value Engineering Proposal
VM	Value Management
VOSB	Veteran Owned Small Businesses
VWIM	Virtual Weigh In Motion
WBPM	Web-Based Program Management
WIM	Weigh In Motion
WMA	Warm Mix Asphalt

### 1.3 Definitions

The definitions provided are in addition to the definitions listed in the Definition of Terms, Illinois Tollway Supplemental Specifications Article 101 latest edition as referenced by the contract documents. Whenever this manual uses the following terms, their intent and meaning shall be as follows:

**Aggregates Certification Program:** The Illinois Tollway's system for evaluating aggregate sources and materials that are not reviewed and approved in the IDOT Aggregate Gradation Control System.

**Authorization to Proceed (ATP):** Approved document/process to proceed with additional of changed contract work PRIOR to the processing of the corresponding Change Order/Extra Work Order.

**Capital Program Processes and Procedures:** ISO format document procedures determined by the Illinois Tollway to be followed in each project. Earlier versions were called Project Management Procedures and Congestion Relief Plan. The work instructions for processes are located in the WBPM system to provide guidance for required business practices.

**Capture:** DBE / EEO stand-alone software application available on the Illinois Tollway website allowing the contractor to electronically complete Forms DBE 2114 & EEO 003. The DBE 2114 and EEO 003 are submitted through the WBPM system.

**CENTRALSYS:** The only Illinois Tollway administered database application for tracking pay estimates, Change Orders (CO), and Extra Work Orders (EWO) for all Illinois Tollway projects. FieldSys supplements CENTRALSYS with a specific project's payment documentations.

**Checklist, Construction Inspector's:** The lists derived from the Illinois Tollway Special Provisions and Supplemental Specifications. IDOT Standard Specifications are used to verify essential items of the work to meet contractual requirements. The checklists are in no way intended to serve as a substitute or waiver of any provisions of the contract. They may be modified by the contractor to meet project requirements.

**Checklist:** Documented lists used to verify essential items of the work as to meet contractual requirements.

**Checklists, CQP:** The Contractor or Consultant Quality Program guidelines used to determine if the contractor or consultant is fulfilling the requirements of the Capital Program and Procedures P6000 procedure and their approved CQP plans.

**Chief Engineering Officer:** The Chief Engineer of the Illinois Tollway.

**Chicago Region Environmental and Transportation Efficiency Program (CREATE):** Public-private partnership to address freight, commuter, and intercity passenger rail congestion in the Chicago area.

**Commissioning, ITS:** The process of ensuring that all systems and components pertaining to Intelligent Transportation Systems (ITS) are installed, configured, and tested according to the operational requirements of the Illinois Tollway.

**Completion Date, Final:** The date all construction contract items, including punch list, have been completed.

**Completion Date, Interim:** The dates established in the Special Provisions, designating the completion of certain job progress milestones.

**Completion Date, Substantial:** The date that traffic has been established in its final configuration; and there will be no further permanent lane closures unless otherwise specified in the Special Provisions.

**Construction Communication Coordinator (CCC):** Illinois Tollway representative to whom the CM's Project Communications Liaison (PCL) reports to in order to provide timely project construction activity information.

**Construction Manager:** The Engineer or firm of engineers and their duly authorized employees, agents, and representatives engaged by the Illinois Tollway to observe the work to determine whether or not it is being performed and constructed in compliance with the Contract.

**Construction Manager Agreement (CM Agreement):** The written agreement executed between the Illinois Tollway and the consultant performing the Construction Management Services. The agreement includes the Consultants Proposal and the signed contract. This document is also called Proposal and Agreement for Construction Management Services.

**Consultant Quality Program – Construction Manager (CQP-CM):** The CM's approved internal quality program that addresses the quality of the CM services, assuring they are provided in a professional, correct, and adequate manner to meet the Illinois Tollway's needs. The CQP-CM does not address quality control of the construction contractor's work. However, it does include the review of the Contractor's Quality Control Documentation.

**Contract Cost Change Controls Committee (C5):** An Illinois Tollway Board authorized panel who recommends or rejects an Authorization to Proceed (ATP).

**Contractor's Designer:** The professional engineering entity that is responsible to the contractor for the scope of design defined in the construction contract for Performance Based design work.

**Contractor's Quality Program (CQP):** The contractor's approved program that details the method of inspection and documentation procedures that will be taken to assure that all of the work included under the project conform to the contract requirements, whether constructed and/or processed by the contractor, or procured from subcontractors or vendors.

**Corridor Construction Manager (CCM):** The engineer or the firm of engineers contracted by the Illinois Tollway to act as the duly authorized agent of the Chief Engineering Officer to manage other CM's, in accordance with the scope of the particular duties delegated to them by the terms of their Agreement.

**Deputy Program Manager (DPM):** The engineer that manages the efforts of the Illinois Tollway Project Managers (PM) and the Corridor Construction Manager (CCM) assigned to the corridor.

**Designer:** The individual (or consultant team) responsible for performing a design task for an Illinois Tollway project. Although this is typically the Design Section Engineer (DSE), it may also include a person (or consultant team) hired by a contractor to perform design as part of a Value



Engineering Proposal or part of a Performance Based Design. This document will use the term “Designer” which covers anyone performing design and will only use the term “DSE” when discussing tasks specific to the DSE.

**Designer of Record (DOR):** The engineering firm that takes responsibility for the design work for the entire project or certain specified sections. The Engineer of Record (EOR) is the firm’s professional engineer (PE) or structural engineer (SE) who stamps the drawings and specifications. The EOR is employed by the DOR, which may be the Design Section Engineer, or the Contractor’s Designer as designated by the contract.

**Disadvantaged Business Enterprise (DBE):** The majority of a business that is owned by a woman or minority. The Illinois Tollway is committed to providing DBE construction contractors, suppliers, and consultants with opportunities afforded to them by State and Federal law and the Illinois Tollway policies.

**Diversity Program:** Illinois Tollway Management initiative responsible for ensuring the participation of minorities, veterans, and females in both professional and construction business and employment opportunities on Illinois Tollway projects. This program is administered by Diversity and Strategic Development Department with the assistance of the Construction Manager.

**Equal Employment Opportunity (EEO):** The process, mandated by the Federal Government, of providing equal access to the marketplace for women and minorities. The U.S. Department of Labor has created requirements and goals related to the total number of hours worked by women and minority tradespersons.

**Equipment Watch’s Rental Rate Blue Book (Blue Book):** A web-based document designed for use on force account bills of contractors performing work for the Illinois Tollway, IDOT, and local government agencies who choose to adopt these equipment rates. The Blue Book replaces the Schedule of Average Annual Equipment Ownership Expense (SAAEOE). The Illinois Tollway has adopted these equipment rates for all force account work.

**Erosion and Sediment Control Landscape Design Criteria (ESCLDC):** An Illinois Tollway manual that provides general guidelines for plan preparation and permitting of erosion and sedimentation control and landscape planning and design. The information documented in the manual are for use to ensure fulfillment of commitments associated with Section 402 and Section 404 permits of the Clean Water Act issued by the U.S. Army Corps of Engineers (USACE), Illinois Environmental Protection Agency (IEPA), and other regulatory and natural resource agencies during project development.

**Erosion and Sediment Control Plan (ESCP):** Plans that are part of the Storm Water Pollution Prevention Plan (SWPPP) that detail the strategy and measures that will be implemented during construction to minimize erosion and prevent off-site sedimentation. The ESCP may also include permanent measures that will remain in place once construction is complete the control erosion and sedimentation.

**FieldSys:** Illinois Tollway Construction Services stand-alone software application allowing the CM to initiate pay estimates, Change Orders (CO), and Extra Work Orders (EWO) for a specific Illinois Tollway project. After a review process initiated by the CM, the contractor, contract services, and the CM come to agreement that the documents are complete and payments may be made. The approved documents are uploaded to the web-based program management (WBPM) system.

**General Engineering Consultant (GEC):** The engineer or firm of engineers retained by the Illinois Tollway for the purpose of carrying out the duties imposed on the General Engineering Consultant pursuant to the terms and conditions of any trust indenture, and any additional requirements, entered into, by, or on behalf of the Illinois Tollway.

**Geotechnical Engineer:** The engineer or firm of engineers contracted by the Illinois Tollway to perform work in the field of Soil Mechanics and Foundation Engineering for the Design Section and/or the Construction Section.

**Illinois Tollway INVEST Program:** Processes and tools adopted by the Illinois Tollway to incorporate sustainability into project design and construction as well as System-Wide Planning and Operations and Maintenance activities. The program is based upon implementation of the Federal Highway Administration's (FHWA's) INVEST Tool.

**Illinois Tollway Supplemental Specifications:** The Illinois Tollway Supplemental Specifications to the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction adopted April 1, 2016.

**I-MIRS (Illinois Materials Inspection and Reporting System):** Materials stand-alone software application allowing the contractor and CM to submit Aggregate gradations; HMA & PCC plant and field-testing; and all other applicable QC, QA and IA test reports for analysis by the Illinois Tollway. I-MIRS is considered the final project record for Aggregate, HMA & PCC and material testing reports.

**Independent Assurance (IA):** The Independent Assurance (IA) program is a component of the system used by the Tollway to assure that soils, aggregate, asphalt, concrete and manufactured materials conform to specification requirements. The IA program provides a final check on the QC and QA processes through random independent oversight and testing to assure the system is producing products that fully conform to specification requirements.

**Inspector:** The authorized representative of the construction manager, who must perform the necessary quality assurance checking, verification, measurements, and documentation of the work to determine whether or not the contractor is adhering to their CQP.

**Interim Completion Dates:** See **Completion Date, Interim.**

**JOC (Job Order Contracting):** Job Order Contracting is a unique indefinite quantity type of contract that enables facility owners to accomplish a large number of repairs, maintenance, and construction projects with a single, competitively bid contract. It eliminates the time and expense of completing the normal design-bid-construct cycle for each project. Contractors competitively bid an adjustment factor to be applied to a catalog of construction tasks with pre-set unit prices. The overall contract amount (the sum of the individual projects that may be performed) is expressed as a range in dollar volume for example from \$50,000 to \$1,000,000. The contractor will be asked to perform a series of projects one after the other. The price for each project will

be the pre-set unit prices multiplied by the quantity multiplied by the competitively bid adjustment factor.

**Materials Coordinator(s):** The member of CM staff responsible for the management of QC/QA functions as well as any soil, aggregate, concrete, asphalt and manufactured materials to determine whether or not it is being produced and constructed in compliance with the Contract.

**Method of Material Acceptance:** Means of determining whether material supplied is in conformance with specifications. See the materials acceptance list in Appendix C.

**National Pollutant Discharge Elimination System (NPDES):** A provision of the Clean Water Act that prohibits discharge of pollutants into the waters of the United States unless a special permit is issued by the Environmental Protection Agency (EPA), a state or other designated regulatory agency.

**Non-Compliance:** Failure to comply with written contract documents, directives, standard requirements, or government rules and regulations.

**Non-Conformance:** A failure to fulfill contractual requirements, which renders the quality of a process or work product unacceptable or indeterminate in regard to meeting all relevant contract requirements.

**Non-Conformance Report (NCR):** Process developed in the WBPM system to document non-conforming actions, non-conforming work, and acceptable corrective action.

**Notice of Award (NOA):** A written notice from the Illinois Tollway to the apparent successful bidder that the Illinois Tollway is planning to award the Contract to that bidder. This notice will also establish the times and dates for contract and pre-construction meeting.

**Notice of Intent (NOI):** Notification to the IEPA of a planned discharge for which coverage under the ILR10 general permit is needed and contains information about the planned discharge. The NOI serves as notice to the IEPA that the Illinois Tollway intends for the discharge to be authorized under the terms and conditions of the general permit and by signing and submitting the NOI, the Illinois Tollway certifies that the discharge meets all of the eligibility conditions specified in the general permit and indicates the intent to follow the terms and conditions of the permit.

**Notice to Proceed (NTP):** A written or telegraphic notice from the Chief Engineering Officer to the Contractor that will be issued after the Board has approved the Contract, which notice designates the date for commencement of the work by the Contractor pursuant to the terms and conditions of the Contract.

**Notice of Termination (NOT):** Notification to the IEPA that the permitted discharge under the ILR10 general permit is no longer required and that final stabilization has been achieved (as defined in the ILR10 permit) on all portions of the permitted construction site.

**Owner's Representative (OR):** The engineer or the firm of engineers contracted by the Illinois Tollway to act as the duly authorized agent of the Chief Engineering Officer to coordinate all contract matters and all matters related to delivering the project in accordance with the scope of the particular duties delegated to them by the terms of their Agreement.

**Potential Change Order (PCO):** Possible modification to the work which would result in increases or decreases in the quantity of or cancellations of any one or more of the unit price or lump sum items. The PCO alerts the Illinois Tollway management to potential changes to the contract budget. The PCO process also includes any additional work items not included in the original contract. The PCO process is managed in the WBPM system. A PCO may become a CO or EWO.

**Private Laboratory:** Any construction material testing or design facility not operated by the Illinois Tollway. This requirement includes contractor, producer, consultant, or local agency testing facilities performing quality control, quality assurance, acceptance, independent assurance, or any other required or contracted testing on a Tollway project. All private laboratories must be IDOT approved and also AASTHO Resource accredited as required.

**Program Management Office (PMO):** The Engineer or firm of Engineers retained by the Illinois Tollway for the purposes of carrying out the duties imposed on the Program Manager, pursuant to the terms and conditions of an authorized Program Management Contract.

**Project Change Request (PCR):** The process used to request and approve changes to project scope and budget of capital program projects.

**Project Communication Liaison (PCL):** CM or CCM employee assigned to facilitate the link between the Illinois Tollway Communications and the CM. The PCL will provide timely updates about the project's construction activities so communications may convey up-to-date information to the travelling public.

**Project Manager (PM):** The representative of the Chief Engineering Officer assigned to be the primary technical and administrative liaison between the Illinois Tollway and its various contractors, construction managers, designers of record, program manager, and consulting engineers.

**Proposal and Agreement for Construction Management Services:** See **Construction Manager Agreement**.

**Punch List.** A list prepared by the CM of outstanding work items and/or work items not complete in conformance with the contract. Reference the A-45 PL Punch List Template. The Punch List process is managed through the WBPM system.

**Quality Assurance (QA):** The inspection, sampling, and testing programs performed by the CM and/or the Illinois Tollway to verify and validate the results of the Contractor's Quality Control Program (CQP) to assure general conformance with the contract requirements. In the CQP-CM, QA is performed by the Consultant's Quality Representative (QR) as an internal audit of the CM staff's tasks.

**Quality Control (QC):** The process and activities put forth by the contractor to ensure conformance with the specification requirements. This is the responsibility of the Contractor. The CM shall refer to the Illinois Tollway Contractor's Quality Program (CQP), the Illinois Tollway CQP Manual, and Capital Program Procedures.

**Quality Representative (QR):** The construction manager's assigned individual responsible for implementing and administering the CQP-CM with the authority to act in all quality matters, remaining at all times independent of those having direct responsibility for the work being

performed and not responsible for cost, construction, schedule, or production of work. The contractor has a representative designated as a QR to administer their CQP.

**Request for Information (RFI):** A formal request from the contractor to the CM, who forwards it to either the Designer of Record or the Illinois Tollway, seeking clarification of a specific element of the contract. The CM may respond directly to the RFI also. The RFI process is managed through the WBPM system. A response must be provided within 7 days of the RFI being created.

**Schedule of Average Annual Equipment Ownership Expense (SAAEOE):** Document that has been replaced by the web-based Equipment Watch's Rental Rate Blue Book.

**Small Business Set-Aside Project (SBSP):** Construction contracts, generally with values of approximately \$1 million, that are set aside specifically for small businesses. The SBSPs have no DBE or VOSB goals, nor is any DBE/VOSB paperwork required during the course of the contract. EEO documentation is required for SBSPs.

**Storm Water Pollution Prevention Plan (SWPPP):** Document required by the Illinois Tollway to meet IEPA and other regulatory and environmental resource agency requirements to specify erosion and sediment control, spill prevention and spill control measures on the project site to prevent water pollution during construction activities. This is required by the IEPA for all construction projects where the total land disturbance is equal to or greater than one acre. A SWPPP is also required per Illinois Tollway policy for projects with less than 1 acre of land disturbance in which erosion and sediment controls are required and/or a reasonable potential to impact storm quality exists due to sediment or other potential stormwater contaminants.

**Submittals:** A WBPM process used during the construction phase to manage the submission and review of information required to be submitted by the General Contractor (GC). Submittals include items such as shop drawings, product data, samples, or any other information required to be submitted for review or record. A response must be provided within 14 days of creating the submittal.

**Substantial Completion Date:** See **Completion Date, Substantial**.

**Utility Work Order:** An order to a utility for the removal, rearrangement, relocation, protection, or construction of its facilities on the Illinois Tollway right-of-way (ROW) and off the (ROW) if it is part of the work. Such order, usually prepared and issued by the Illinois Tollway, specifies both the work to be done by the utility and the basis of payment for such work.

**Value Engineering Proposal:** Method of evaluation done by the contractor to provide a written proposal to the Illinois Tollway for modifying the contract documents to provide innovative, alternative, and/or lower cost construction without impairing the essential functions and characteristics of the facility including, but not limited to, service life, reliability, economy of operation, ease of maintenance, necessary standardized features, desired appearance, or IDOT and the Illinois Tollway design standards. Refer to the Illinois Tollway Supplemental Specifications Article 104.07 and Capital Program Procedure P5150.

**Visual Examination:** Assessment of any item's markings, physical dimensions, obvious defects, or damage for acceptance or rejection and/or close conformity with contract requirements.

**VOSB (Veteran Owned Small Businesses):** A business that is majority-owned by a veteran. The Illinois Tollway is committed to providing VOSB construction contractors, suppliers, and consultants with opportunities afforded to them by State and Federal law and the Illinois Tollway policies.

**Web-Based Program Management (WBPM) system:** Software tool used to reduce coordination errors and improve productivity through automation of previously paper-based processes. The secure system is administered via a website on the Internet, allowing controlled access to the documentation processes. The WBPM system is utilized as a communication, collaboration, and coordination tool, as well as a document management solution, for most project activities during planning, design, and construction phases. The WBPM system allows Illinois Tollway authorized users with various roles to collaborate on various types of projects. The WBPM system is the official repository of the project records.

## **SECTION 2.0 SCOPE OF THE CONSTRUCTION MANAGER'S MANUAL**

### **2.1 Scope**

It shall be understood that this manual shall be contractually a part of and directly pursuant to the Proposal and Agreement for Construction Management Services. This manual replaces all the previous versions of the Construction Manager's Manual effective immediately. Procedures, processes, expectations, and nomenclature presented in this manual are subject to change at any time upon notification from the Illinois Tollway. The emphasis will be on the procedures the CM has to follow derived from such documents as, but not limited to: The contract documents (See **Exhibit 1**, page 112), the Capital Program procedures, the WBPM system, the approved Consultant Quality Program (CQP), and various construction checklists. See Section 6.0, Reference Documentation, in this CM Manual.

### **2.2 Contractor's Responsibilities**

The contractor is not contractually bound by the CM manual. However, when contractor responsibilities are identified in this document, they are usually requirements from the contract documents. This information is provided as a guide to the CM.

### **2.3 Contract Documents**

The documents listed in the Illinois Tollway Supplemental Specifications Article 105.05, provided to the CM have been prepared by the Designer of Record using design criteria and standards approved by the Illinois Tollway. These contract documents should be assumed to be complete and accurate (unless otherwise stated) as far as the available information and assumptions made of the existing conditions are accurate, but minor changes are expected to occur as the work progresses.

### **2.4 Electronic Database Systems**

The CM and their staff will use various electronic database systems to manage the contractor and the construction contract.

The Illinois Tollway has implemented a WBPM system to facilitate the process of the contract activities. All parties who utilize the WBPM system are required to use the Illinois Tollway naming convention when uploading project documents. The Illinois Tollway naming convention may be found on the WBPM system under project 16. Various Illinois Tollway Engineering groups use other types of databases, such as I-MIRS (Engineering-Materials), FieldSys (Construction Services), and Capture (Diversity). The Illinois Tollway has separate training classes for these databases (See **Exhibit 3** on page **114** for references). Throughout this manual, the CM will be alerted to which database is used.

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## **SECTION 3.0     RESPONSIBILITY AND AUTHORITY**

All responsibility and authority relationships are governed by the specific project contract documents, contractor contract, and construction manager agreement (CM Agreement).

### **3.1             Illinois Tollway**

#### **3.1.1           Illinois Tollway Responsibility**

The Illinois Tollway is responsible for such items, but not limited to:

Design of the project except Performance Based Specifications work.

Selection of the CM and award of the contract to contractor for the project.

Communications to inform the travelling public about roadway conditions.

Training for the Contractor and CM in the various software applications and the WBPM system.

Payments to the contractor and CM.

Final assessment of the Diversity Program conformance with the contract requirements.

#### **3.1.2           Illinois Tollway Authority**

The Illinois Tollway has overall authority over the contractor, CM, and final contract compliance. Disputes that cannot be resolved at the CM level are decided by the Illinois Tollway. See Capital Program Procedure P3120 Construction Dispute Resolution Procedure.

The Illinois Tollway has delegated specific tasks enumerated in this manual for the CM to perform, making the CM the Illinois Tollway's Project construction representative. Some of the Capital Program Procedures requiring CM participation are, but not limited to:

P1010 Deviating from Procedures

P1040 Meeting Agendas and Minutes Procedure

P1070 Developing or Revising Procedures and Forms Procedure

P1080 Staff Summary Sheet Procedure

P2010 Capital Program Master Planning Procedure

P3040 Evaluation of Contractor Performance

P3080 Contract Change Order & Extra Work Order Procedure

P3090 Errors and Omissions on Consultant Work Procedure

P3100 Notice and Selection of Professional Services Procedure

P3115 Consultant Upon Request

P3120 Construction Dispute Resolution Procedure

P3200 Consultant Contract Supplement/ Continuation of Services/ Contract Renewal Procedure

P4000 Design Management Procedure

P4010 Acquisition of Permits Procedure

P4015 Railroad Flagging Procedure

P4020 Value Management Procedure

P4100 Constructability Review Procedure

P4110 Cost Estimating Procedure

P5000 Pre-Construction Agenda Procedure

P5030 Submittals Procedure

P5050 Corrective and Preventive Actions Procedure

P5070 Nonconformance Reports Procedure

P5080 Construction Administration Procedure

P5120 Calculating Liquidated Damages Procedure

P5130 Construction Contract Closeout Procedure

P5140 Maintenance of Traffic Stage Change Approval Procedure

P5150 Construction Value Engineering Proposal Procedure

P6000 Evaluation of Consultants' and Contractors' Quality Plan Procedure

P6010 Quality Training Procedure

P6040 Quality Assurance Audit Procedure

P6060 Document Control Procedure for Quality Manuals and Program Management Procedures Manuals

P6110 Management Review of Quality Management System Procedure

P6120 Quality Assurance, Quality Control During Construction Procedure

P7000 Web-Based Program Management (WBPM) Procedure

P7010 Monthly Status Reporting Procedure

P7020 PIR Procedure

P7030 PCR Procedure

P7040 Measurement, Analysis and Improvement Procedure

P7050 Customer Satisfaction

P7060 Lessons Learned

P7110 Scheduling Control Procedure

See Section 6.4, for a comprehensive list of Capital Program Procedures and their attachments.

## **3.2 General Contractor**

### **3.2.1 General Contractor Responsibility**

The contractor shall provide goods, services, and workmanship as specified in the contract documents. Depending on the scope of the contract, some other responsibilities are, but not limited to:

Knowledge of the contract documents.

Agree to and implement the Illinois Tollway's Contractor's Quality Program (CQP).

Provide Soils, Aggregate, PCC, and HMA Quality Control testing in accordance with the IDOT QC/QA Program and Illinois Tollway S.P. requirements.

Provide other QC testing for other materials and services.

Supervise subcontractors and subconsultants.

Provide required materials that have been approved by IDOT, the Illinois Tollway or other entities the Illinois Tollway has designated for processing of payment. This includes material documentation requested by the CM.

Participate in the Illinois Tollway's Diversity Program.

Inform the Illinois Tollway through the CM of discrepancies in a timely manner so an equitable solution may be determined.

### **3.2.2 General Contractor Authority**

The Contractor has overall authority over their suppliers, vendors, subcontractors, and subconsultants.

### **3.3 Construction Manager**

#### **3.3.1 Construction Manager Responsibility**

Each CM shall furnish services assigned to them per the agreement with the Illinois Tollway and in accordance with this Construction Manager's Manual. The CM will use the WBPM system as a tool to allow the contract participants to perform many of the requirements of the contract documents and Capital Program Procedures electronically. Such services shall be performed under the direct administration of the Illinois Tollway.

##### **3.3.1.1 Other Responsibilities**

Other responsibilities include, but are not limited to:

Knowledge of the contract documents.

Developing and adhering to the Illinois Tollway's Consultant Quality Program-Construction Manager (CQP-CM).

Providing QA Soil, Aggregate, PCC, and HMA Quality Assurance testing following the IDOT QC/QA Program requirements and contract documents per Capital Program P6120.

Provide a designated Material Coordinator for contracts with a significant number of materials pay items.

Monitoring the CQP activities per Capital Program P6000.

Providing qualified staff as defined in the CM Agreement.

Monitoring the project construction activities.

Maintaining the project record as required by the Illinois Tollway.

Generate and process contractor Pay Estimates.

Monitoring contractor submission of payment data to the subcontractor on DBE/VOSB Form 2114.

Monitoring contractor submission of EEO data on Form EEO 0003 Workforce Analysis.

Process Property Damage Claims for Tollway Risk Management.

All personnel shall perform their duties in a safe and professional manner and comply with Illinois Law regarding distracted driving.

### **3.3.1.2 CM Reporting to the Illinois Tollway**

The Construction Manager (CM) is advised that the Illinois Tollway has retained a Program Manager (PMO), Project Manager (PM), General Engineering Consultant (GEC), Illinois Tollway Independent Assurance, and, at times, Owner's Representative (OR) and Corridor Construction Manager (CCM) to perform certain functions when directed by the Illinois Tollway (See **Exhibit 4**, page 120). The CM shall cooperate fully with these representatives of the Illinois Tollway in the performance of their duties and functions. The CM shall keep the Illinois Tollway and its representatives informed of the activities of their own operations, as well as those of the Contractor, by making job related documents and reports accessible at all times.

### **3.3.1.3 Items Furnished to the Construction Manager**

The CM is responsible for obtaining the following items which will be furnished to the CM from various sources. Generally, only those portions of these listed items applicable to the particular construction section will be furnished to the CM to the extent deemed necessary. Reimbursement for direct costs related to expenditures for any of the following items shall be in accordance with the applicable Professional Services Bulletin and the CM Agreement with the Illinois Tollway.

#### **3.3.1.3.1 Contract Documents**

Two 11x17 hard copies of the reduction sets and a reproducible electronic copy of the plans for each awarded construction contract assigned to the CM and from which the CM shall make additional prints of the size wanted. The as-bid contract documents are located in the WBPM system.

One reproducible electronic copy of the contract requirements for each awarded construction contract assigned to the CM located in the WBPM system.

One hard copy of Traffic Barrier Warrant analysis document.

Copies of the Supplemental Specifications are obtained under the "Doing Business" section of the Illinois Tollway website. See Section 6.0.

One reproducible electronic copy each of the Structure Soils Report and the Roadway Soils Report prepared by the Geotechnical Engineer, (request stored in the WBPM system where appropriate).

Blank electronic copies of the Illinois Tollway standard "A" forms and the Illinois Tollway material forms as needed for quantity reproduction by the CM are available on the Illinois Tollway website or the WBPM system. See Section 6.0 for locations and form lists.

One reproducible electronic copy of each Utility Work Order, Railroad Agreement, and/or Agency Agreement applicable to the construction section. A utility relocation job file for each utility conflict along with executed Agreements or Permits affecting each utility company will be provided.

A reproducible electronic copy of this CM manual can be obtained from the Illinois

Tollway website.

A reproducible electronic copy of the latest version of the Illinois Tollway's Roadway Traffic Control and Communications Guidelines can be obtained from the Illinois Tollway website.

A reproducible electronic copy of the latest version of the Illinois Tollway's Erosion and Sediment Control, Landscape Design Criteria can be obtained from the Illinois Tollway website.

A field office and/or laboratory complete with furniture, air conditioning, heat, electricity, telephone, internet, reproducing equipment, and sanitary facilities will be furnished by the Contractor as an item of the work if and as specified in the construction contract.

One copy of any permits and/or agreements secured by the Illinois Tollway and uploaded to the WBPM system.

Project INVEST Tracking Form-95D and Project INVEST Scorecard-95D.

Right-of-way plats and/or strip maps applicable to the construction section which supplement the plans and specifications.

One copy of the Illinois Tollway's bid and meeting calendar for the current year which is also located on the Illinois Tollway website.

### **3.3.1.3.2 Diversity Program Documents**

One copy each of the Diversity Reporting forms as displayed on the Illinois Tollway website or the WBPM system:

Prime contractor's approved Disadvantaged Business Enterprise (DBE) and Veteran Owned Small Business (VOSB) Utilization Plans, if applicable, to be uploaded by Tollway Diversity.

DBE/VOSB Forms, if applicable:

- 2024 Trucking Reporting and Verification
- 2114 Utilization by Period Report
- 2115 Final Payment Report

Equal Employment Opportunity (EEO) Form 0003.

DBE Forms 2114 and 2115.

List of Recommended EEO Posters for Job Site Trailers.

Earned Credit Program (ECP) Brochure and Flyer.

### **3.3.1.3.3 Designer of Record Documents**

One electronic copy of the following prepared by the Designer of Record:

Design Calculations

Quantity Calculations

Bridge Condition Report(s) (if applicable)

Set of Plans (MicroStation & PDF), Specifications and Addenda. NOTE: Individual plan sheets shall be uploaded by the Designer in the WBPM system.

Permits

Utility Conflict Report

### **3.3.1.4 Items Furnished by the Construction Manager**

It is the intent of the Illinois Tollway that the CM furnish, at no additional cost to the Illinois Tollway, unless specifically stipulated otherwise in the applicable Professional Services Bulletin and/or the CM Agreement with the Illinois Tollway, all such equipment and materials necessary to perform and manage the Quality Assurance inspection and testing of soils, aggregate, concrete, and bituminous materials and all remaining Engineering and Management Services as required by this Manual.

#### **3.3.1.4.1 Testing Equipment**

The equipment furnished shall include, but not necessarily be limited to, the following:

Calibrated soil testing equipment including: dynamic cone penetrometer (DCP), field density apparatus, access to a laboratory's proctor soil density apparatus, scales, drying oven, hot plate, sample bags, containers, and miscellaneous small tools, and equipment as needed.

Concrete testing equipment including cylinder molds, calibrated testing machines for on-site compressive or flexural strengths when specified, air meters, slump cones, tamping rods, concrete thermometers, maximum/ minimum thermometers for cold weather concrete work, buckets, shovels, test cylinder curing equipment, miscellaneous small tools, and equipment as needed.

Calibrated HMA testing equipment including that required in connection with mixture specific gravities (bulk and maximum theoretical), any specified HMA performance tests, and bitumen extractions, together with thermometers, scales, miscellaneous small tools, and equipment as needed.

Aggregate and soil gradation equipment including screens, screen shakers, timers, drying equipment, soil containers, scales, balances, miscellaneous small tools, and

equipment as needed.

Calibrated nuclear density gauge for testing compaction of HMA and earthwork.

Equipment necessary for steel paint testing including calibrated sling psychrometer for determining dew point, a calibrated surface temperature measuring device, surface roughness profilograph, and wet and dry film paint thickness gauges for those contracts which include steel bridge painting.

Multi-meter for determining proper voltage, grounding, and continuity of all ITS field devices.

#### **3.3.1.4.2 Other Supplies and Equipment**

Office furniture and equipment required by the CM but not furnished under the construction contract, special provisions, or CM's agreement, such as answering machines, calculators, adding machines, and such miscellaneous office equipment and supplies as needed.

Survey supplies and calibrated field equipment such as transits, levels, Electronic Distance Measurer (EDM), Global Positioning System (GPS), and related devices along with rods, tapes, paint, and flagging as needed.

Safety devices such as hard hats, high visibility safety apparel and accessories, safety glasses, flashing yellow beacons, and company vehicle identification signs are required by the CM, sub consultants, contractor, subcontractors, and any other personnel present onsite.

High visibility safety apparel and accessories shall comply with the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 3.

All vehicles, including passenger cars, shall be equipped with a yellow, high-intensity, rotating, flashing, oscillating, or strobe warning light visible on a sunny day from a distance of 1000 feet to the rear of the vehicle. In addition, a sign must be displayed on both sides of the vehicle with letters at least 3 inches in height with a suitable font showing the company identification. Magnetic or temporary signs are acceptable.

All specifications, manuals, reference publications, and related literature called for in the contract documents for use by the CM's staff (ASTM, AASHTO, ACI, NEC, etc.).

Computer hardware and software for use in the field office in accordance with the latest update in the Supplemental Specifications on the Illinois Tollway website or as stipulated in the CM Proposal and Agreement.

#### **3.3.1.4.3 Use of Subconsultant Testing Laboratory**

Should the CM engage the services of a sub consultant to perform any portion of the contracted work, all terms set forth in this manual shall also apply to the subconsultant.

In the event the CM engages the services of a testing agency to perform any testing of on-site



work required by the contract, only the labor of the testing agency's personnel shall be invoiced to the Illinois Tollway as a direct cost. Materials sampled onsite that require offsite testing may be billed by test. No payment will be made for individual tests performed by the testing agency representative whose time is being invoiced on an hourly basis. No payment will be made for equipment furnished by a testing agency under contract to the CM. Such equipment is considered as being furnished by the CM in accordance with the sub-paragraphs above.

Section 4.2.5 references the testing agency requirements. All testing agencies shall be paid Prevailing Wages when applicable.

### **3.3.2 Construction Manager Authority**

The CM has overall authority over their subconsultants. The CM has authority over the contractor as defined by the Illinois Tollway Supplemental Specifications Articles 101.82, 105.01, 105.10, 105.11, and 105.14. The CM acts as a delegate to the Chief Engineering Officer.

### **3.4 Impact by the Capital Program - Plan Procedures**

In Section 4.0, Construction Manager's tasks, responsibilities, and authority may be modified to meet the specific requirements of a Capital Program Procedure or the Illinois Tollway practice. These modifications will be indicated in Section 4.0.

## **SECTION 4.0 CONSTRUCTION MANAGER'S TASKS**

The tasks identified in this section are impacted by the contract documents, Capital Program Procedures, and IDOT QC/QA Programs for Aggregate, PCC, and HMA, and various manuals and guidelines as listed in Section 6.0, Reference Documentation. Numerous documents generated while performing CM tasks are managed by a WBPM system (refer to section 4.4.1) FieldSys, and I-MIRS software applications.

### **4.1 Construction Manager's Staff Requirements**

The Illinois Tollway Professional Service Bulletin and CM Agreement identify the qualifications required by the CM organization. The Capital Program Procedures P6120, Quality Assurance, Quality Control during Construction and P6000, Evaluation of Consultants', and Contractors' Quality Programs with attachments influence the CM's organization and qualification.

#### **4.1.1 CM Organization**

The CM shall provide a competent and qualified field organization staff as listed in section 4.1.2.1. The field organization is necessary to perform scope of work inspections, monitor and verify the Contractor's Quality Program (CQP), as well as to report on the Diversity Program performance status, and conformance to the contract requirements.

The CM shall provide and maintain an organization chart and staffing plan for review and approval by the Illinois Tollway. The chart and plan shall be kept current for review, approval, and modification by the Chief Engineering Officer and shall be updated when requested by the Illinois Tollway.

#### **4.1.2 CM General Qualifications**

The CM firm must have a Illinois Licensed Professional Engineer(s) on staff that will be available at all times to provide the Illinois Tollway with analysis services in structural, drainage, roadway, or Intelligent Transportation Systems (ITS) when required in support of the field staff. Where subconsultants, including DBEs and VOSBs, are anticipated, the individual names, work experiences, and qualifications are required to be submitted by the CM for the review and approval by the Illinois Tollway. The applicable work experience, in addition to the verification of the required training and certification for the office engineer, laboratory technician, construction inspectors, and the registration of any professional land surveyor, shall be included with the individual resumes of any subconsultant.

Specific staff requirements and qualifications will be detailed in the applicable Professional Services Bulletin (PSB). The Illinois Tollway must approve all changes of key personnel as defined in the PSB.

##### **4.1.2.1 CM Staff**

Construction Manager's project staff, including subconsultants, shall include the following personnel as detailed in the applicable Professional Services Bulletin.

Standard Key Personnel:

- Project Manager
- Resident Engineer
- Material Coordinator
- Office Engineer
- Material Technician

Additional Personnel that may be required:

- Quality Representative(s)
- Inspector(s)
- Professional Land Surveyor(s)
- Erosion and Sediment Control Site Representative(s)
- Intelligent Transportation System (ITS) Inspector
- Landscape Architect
- Scheduler
- Structural Engineer
- Administrative/Clerical Assistants

#### **4.1.2.2 CM Staff Qualifications**

The Construction Manager's project staff, including subconsultants, shall possess the minimum qualifications stated below and in the applicable Professional Services Bulletin.

##### **4.1.2.2.1 Project Manager**

Shall be an Illinois Licensed Professional Engineer or an Illinois Licensed Structural Engineer for predominantly Structure Improvements under the direct employment of the Construction Manager and shall be responsible for the performance of all services required by the Construction Manager Agreement with the Illinois Tollway. The Project Manager must be fully knowledgeable in construction engineering and construction management, client-oriented, assertive, well-rounded in technical training and experience, a strong personnel manager who is able to delegate effectively, and a good communicator. The Project Manager shall possess the qualifications required in the applicable Professional Services Bulletin.

##### **4.1.2.2.2 Resident Engineer**

Is preferred to be a Professional Engineer or must have a minimum of 15 years of Phase III Construction Inspection experience in the construction of projects of similar type and magnitude of the work and shall have substantial administrative ability. The Resident Engineer must possess the technical competence and the ability to represent the Illinois Tollway professionally in the field and to determine contractor compliance with the requirements of the contract documents. These skills must be satisfactorily demonstrated on prior assignments as Resident Engineer. The extent and nature of individual experience and the possession of the attributes listed will be considered in relation to project size and complexity. The Resident Engineer shall possess the qualifications as required in the applicable Professional Services Bulletin.

A 30-Hour OSHA certification in construction safety and health within the last five years is mandatory for all Resident Engineers for all projects with notice to proceed after April, 2018.

##### **4.1.2.2.3 Material Coordinator**

For contracts which include soils, aggregates, asphalt and/or concrete placement, the CM shall provide a Material Coordinator, exclusively for this role, unless waived by Tollway Materials for smaller projects. The Material Coordinator shall be pre-qualified to manage the Contractor's Material QC reporting output and to manage the Construction Manager's approved Materials QA Program. The Material Coordinator shall have passed IDOT's Level III Hot Mix Asphalt, Level III Portland Cement Concrete training courses for QC/QA management, Soils Field Testing and Inspection (S-33) and IDOT Documentation of Contract Quantities (S-14). The Material Coordinator shall possess the qualifications required in the applicable Professional Services Bulletin and shall attend the Illinois Tollway training course annually.

The Material Coordinator shall have a working knowledge of the I-MIRS data base system.

##### **4.1.2.2.4 Office Engineer**

Shall possess a current certificate indicating passage of IDOT's Specific Task Training for Documentation of Contract Quantities and shall have substantial administrative ability including computer and organizational skills and a working knowledge of applicable terminology. The

Office Engineer shall preferably have considerable knowledge of the construction industry to handle the many facets of construction documentation and shall possess the qualifications required in the applicable Professional Services Bulletin.

#### **4.1.2.2.5 Material Technicians**

Material Technicians shall be required to be prequalified by having passed the certification / training requirements outlined in Section 4.2.2.

- The CM will provide copies of Material Technicians' certifications.
- Any changes to the status of the trained technician (name, address, employer, etc.) should be reported to the IDOT Bureau of Materials.

#### **4.1.2.2.6 Quality Representative (QR)**

Shall have substantial knowledge in both quality control and quality assurance procedures necessary for contract compliance. The QR will provide an equal but parallel role in the Work and will report to the Principal. The QR performs tasks for the Consultant's Quality Program-Construction Manager (CQP-CM). Refer to section 4.3.

#### **4.1.2.2.7 Inspectors**

All inspectors must be able to read and interpret plans and specifications in order to make a determination whether or not the work meets the requirements of the construction contract. Inspectors shall preferably be a degreed Engineer, with Professional Engineer (PE) or Engineer-in-Training (EIT)/Engineer Intern (EI) certification and/or a person certified in the area of inspection in lieu of having a degree or PE. All shall meet the qualifications required in the current Professional Services Bulletin. The inspectors should also possess a current certificate indicating passage of IDOT's Specific Task Training for Documentation of Contract Quantities.

#### **4.1.2.2.8 Professional Land Surveyor**

An Illinois Professional Land Surveyor shall be required for contracts including work to set monuments and markers as specified in Right-of-Way Marker, Drainage Markers, and Permanent Survey Markers (Sections 666 and 667 of the IDOT Standard Specifications). This also applies to contracts that include complex structures.

#### **4.1.2.2.9 Erosion and Sediment Control Site Representative**

The Erosion and Sediment Control Site Representative (ESCSR) shall have verification of completing Illinois Center for Transportation workshops Fundamentals of Storm Water Pollution and Inspection of Erosion & Sediment Control Best Management practices, in compliance with IDOT Departmental Policy D&E-23 or 12 hours of equivalent erosion and sediment control training from the following sources:

Red Vector online professional training

Higher education trainings or other technical courses

County trainings in the topics of NPDES, storm water, or other similar topics

## Soil and Water Conservation districts seminars

The ESCSR determines compliance with permit conditions, applicable regulations, and other requirements and assesses the adequacy of best management practices to protect natural resources and control the quality of stormwater discharges from a project. The ESCSR should have experience in highway construction and in stormwater BMP implementation, maintenance standards, and repairs. The Tollway prefers that the ESCSR maintains a professional license such as a licensed Professional Engineer (P.E.), or relevant certification such as Certified Professional in Erosion and Sediment Control (CPESC), a Certified Erosion Sediment and Storm Water Inspector (CESSWI), a Certified Stormwater Inspector (CSI). See section 6.3, Reference Documentation Table for more details.

### **4.1.2.2.10 Intelligent Transportation System (ITS) Inspector**

The Illinois Tollway prefers to have an ITS inspector with a minimum of 5 years of experience in the construction of ITS projects, specifically in the installation of Closed-Circuit Television (CCTV) cameras, Dynamic Message Signs (DMS), and Vehicle Detection Systems (VDS). The inspector must be able to comprehend wiring schematics, test voltage, grounding, circuit continuity, and successfully provide all of the services noted in Appendix A CM ITS Checklist.

### **4.1.2.2.11 Landscape Architect**

For contracts which include landscape improvements, tree and/or shrub plantings, and preservation, the CM shall provide a qualified licensed Landscape Architect. The Landscape Architect should have experience in road and highway landscape layout, construction, and inspection in relation to the project size and complexity.

### **4.1.2.2.12 Scheduler**

The CM Scheduler must have at least 5 years' experience reviewing and interpreting Critical Path Method (CPM) schedules. The CM Scheduler will review the contractor submitted Baseline Schedule to evaluate and offer recommendation for acceptance of the proposed construction schedule to the Illinois Tollway. If the CM Scheduler finds the proposed Baseline Schedule unacceptable, the CM Scheduler will coordinate with the Contractor to resolve any deficiencies, in an attempt to expedite the resubmission and acceptance of the Baseline Schedule.

The CM Scheduler will also be responsible for the review and recommendation of contractor submitted Monthly Schedule Updates which compare construction progress to the Baseline Schedule. The CM Scheduler must also have familiarity with delay claim analysis and schedule recovery.

If a particular project is not assigned a CM Scheduler, the Resident Engineer shall act as the CM Scheduler and meet all the necessary requirements referenced above.

### **4.1.2.2.13 Structural Engineer**

The Structural Engineer shall be an Illinois Licensed Structural Engineer, respond to structural engineering RFI's, complete construction review of structure plans, quantities, and calculations

prior to the start of construction, and assist preparation of record drawing structure plans. The Structural Engineer may act as the Project Manager for predominantly structure improvements.

#### **4.1.2.2.14 Administrative/Clerical Assistants**

The Administrative/Clerical assistants may be required due to the size and/or complexity of projects. The Administrative/Clerical assistant will assist the Office Engineer and Resident Engineer with project documentation tasks. The assistant shall have substantial administrative ability including computer and organizational skills.

### **4.2 Construction Manager's Materials Training & Laboratory Requirements**

#### **4.2.1 IDOT QC/QA Programs**

For the IDOT Prequalified Consultant List, IDOT QC/QA Program and other IDOT training, see section 6.3, Reference Documentation Table for website locations.

##### **4.2.1.2 Qualified Laboratories**

Test laboratories used to support the QC and QA testing inspections must be qualified by IDOT. See section 4.2.5, for details.

#### **4.2.2 Material Testing Training Requirements**

The following tables for Aggregate Gradation, Hot Mix Asphalt (HMA), cast-in-place concrete, and precast concrete training are from the IDOT Project Procedure Guide. Check the Guide for the latest updates, CET and number after refer to the Lake Land College course designation. Lake Land College administers all the QC/QA training classes. Contact the Precast/Prestressed Concrete institute (PCCI) for the latest class information.

Refer to the governing specification, special provision, or Contract document for details concerning requirements and limitations of trained technicians under the QC/QA programs. Refer to section 6.3 for website locations.

**AGGREGATE GRADATION TRAINING REQUIREMENTS**  
**Table 4.2–A**

<b>PERSONNEL</b>	<b>TASK</b>	<b>REQUIRED TRAINING COURSE</b>
Producer	AGCS Program Management	Aggregate Technician (CET 021) or A.G.C.S. Technician (CET 032)
CM / Material Coordinator	Quality Assurance Oversight	Aggregate Technician (CET 021) or A.G.C.S. Technician (CET 032)
All	Aggregate Sampling	Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020) or A.G.C.S. Technician (CET 032)
All	Splitting and Gradation Testing	Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020) or Gradation Technician (Department ½- day class)

**HOT MIX ASPHALT TRAINING REQUIREMENTS**  
**Table 4.2–B**

<b>PERSONNEL</b>	<b>TASK</b>	<b>REQUIRED TRAINING COURSE</b>
Producer	Quality Control Management	Hot Mix Asphalt Level II (CET 023)
CM / Material Coordinator	Quality Assurance Oversight	Hot Mix Asphalt Level III (CET 031)
All	Aggregate Sampling and Gradation Testing	Hot Mix Asphalt Level I (CET 022 or CET 029) or Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020)
All	Aggregate Gradation Testing	Gradation Technician (Department ½-day class)
All	HMA Sampling and Testing	Hot Mix Asphalt Level I (CET 029)
All	HMA Mix Design	Hot Mix Asphalt Level III (CET 031)
All	HMA Field Density	<p>ALL: ½-day class taught by Lake Land College or Bureau of Materials.</p> <p>CONTRACTOR/CONSULTANT: Specific Task Training Program S-34, "Radiation Safety and Density by the Nuclear Method". The Radiation Protection Officer or District Radiation Safety Officer will monitor the operator until the individual can demonstrate the competent use of the nuclear gauge.</p> <p>CONTRACTOR/CONSULTANT: Radiation safety class as approved by the Illinois Emergency Management Agency (IEMA), Division of Nuclear Safety.</p>



**CAST-IN-PLACE CONCRETE TRAINING REQUIREMENTS**  
**Table 4.2–C**

<b>PERSONNEL</b>	<b>TASK</b>	<b>REQUIRED TRAINING COURSE</b>
Producer/Contractor	Quality Control (proportioning at plant)	PCC Level II (CET 024)
Producer/Contractor	PCC Mix Design	PCC Level III (CET 039)
Contractor	Quality Control Management	PCC Level II (CET 024)
CM / Material Coordinator	Quality Assurance Oversight	PCC Level III (CET 039)
All	Aggregate Sampling and Gradation Testing	Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020)
All	Aggregate Gradation Testing	Gradation Technician (Department ½-day class)
All	Mix Sampling and Testing	PCC Level I (CET 030) or PCC Tester (Department ½-day class)

**PRECAST CONCRETE AND PRECAST, PRESTRESSED  
CONCRETE TRAINING REQUIREMENTS**

**Table 4.2–D**

<b>PERSONNEL</b>	<b>TASK</b>	<b>REQUIRED TRAINING COURSE</b>
<b>PRECAST CONCRETE</b>		
Producer	Quality Control Management	ACI Grade I or PCC Level I (CET 030) AND Precast / Prestressed Concrete Institute Level I and Level II
IA	Quality Assurance Oversight	ACI Grade I or PCC Level I (CET 030) AND Precast / Prestressed Concrete Institute Level I and Level II
All	Mix Sampling and Testing	ACI Grade I or PCC Level I (CET 030)
<b>PRECAST, PRESTRESSED CONCRETE</b>		
Producer	Quality Control Management	Mixture Aggregate Technician (CET 020) or Aggregate Technician (CET 021); AND ACI Grade I or PCC Level I CET 030); AND Precast / Prestressed Concrete Institute Level I and Level II
IA	Quality Assurance Oversight	Mixture Aggregate Technician (CET 020) or Aggregate Technician (CET 021); AND ACI Grade I or PCC Level I CET 030); AND Precast / Prestressed Concrete Institute Level I and Level II
All	Aggregate Sampling and Gradation Testing	Mixture Aggregate Technician (CET 020) or Aggregate Technician (CET 021)
All	Mix Sampling and Testing	ACI Grade I or PCC Level I (CET 030)
All	Cylinder Testing	ACI Grade I or PCC Level I
All	Strand Tensioning	Precast/Prestressed Concrete Institute Level I and Level II

### 4.2.3 Soils Inspection and Compaction

Perform soils sampling and testing at a 20% frequency of QC. Perform soils inspections as required by the Illinois Tollway to verify that the Contractor maintains proper control of density and moisture content of subgrade, embankments, backfills, and other earthwork items. Provide soil testing and recommendation of borrow sources for approval by the Illinois Tollway.

The following table is from the IDOT Project Procedure Guide. Check the guide for the latest updates. Specific Task Training Program information is available on the IDOT website. Refer to section 6.3 for website location.

#### SOILS DENSITY TRAINING REQUIREMENTS

Table 4.2–E

PERSONNEL	TASK	REQUIRED TRAINING COURSE
All	Volumetric Density	Specific Task Training Program S-33, "Standard Earth Density"
All	Nuclear Density	<p>ALL: Specific Task Training Program S-33, "Standard Earth Density".</p> <p><b>DEPARTMENT/LOCAL AGENCY:</b> Department and Local Agency employees must also have Specific Task Training Program S-34, "Radiation Safety and Density by the Nuclear Method". The Radiation Protection Officer or District Radiation Safety Officer will monitor the operator until the individual can demonstrate the competent use of the nuclear gauge.</p> <p><b>CONTRACTOR/CONSULTANT:</b> Radiation safety class as approved by the Illinois Emergency Management Agency (IEMA), Division of Nuclear Safety.</p>

#### General Notes:

These programs document that a person is qualified to perform density tests by either the sand-cone method or the nuclear method on granular and earth embankment, lime-modified soil, lime-stabilized soil, granular subbase, cement aggregate mixture, pozzolanic-stabilized mixture, aggregate base course, and soil-cement.

#### **4.2.4 Miscellaneous Inspections**

Depending on the specific project requirements, the CM Materials staff will witness these additional tests performed by the Contractor including but not limited to:

Bridge bolting testing

Stud weld bend tests

Tie bar pull-out tests

Caisson inspection

#### **4.2.5 Laboratory Qualifications/Qualified Laboratories**

Private Laboratories that perform Quality Assurance sampling and testing under the Contractor's Quality Program (CQP) or Construction Manager's or the Illinois Tollway's Independent Assurance program must be accredited under the AASHTO Resource Accreditation Program. These requirements are outlined in the current IDOT departmental policy, "Quality Assurance Procedures for Construction," the current IDOT BM lab inspection policies, and the Consultant prequalification instructions in the applicable Professional Services Bulletin.

Refer to section 6.3 for website locations.

### **4.3 Consultant Quality Program - Construction Manager**

The Consultant Quality Program-Construction Manager (CQP-CM), shall conform to the requirements of Capital Program Procedure P6000 – Evaluation of Consultants' and Contractors' Quality Programs Procedure with attachments.

#### **4.3.1 Quality Assurance (QA) by the Construction Manager**

The Construction Manager (CM) is an integral part of the Illinois Tollway's quality team. Capital Program Procedure P6120 (Quality Assurance, Quality Control during Construction) requires the CM to verify QA/QC requirements. While the contractor is solely responsible for the quality control of their work, the CM is responsible for providing adequate quality assurance to ensure the Illinois Tollway obtains the specified standards for their projects. Sampling frequency shall be as required by the IDOT Project Procedures Guide. CM QA responsibilities include monitoring and auditing the Contractor's Quality Control processes and documentation to ensure the contractor delivers, documents (per the WBPM system), and maintains contractually compliant work.

An important element of Capital Program Procedure P6120 is the Consultant Quality Program-Construction Manager (CQP-CM). Capital Program Procedure P6000 defines what the CM needs to do to create the CQP-CM.

#### **4.3.2 Purpose of the CQP-CM**

The purpose of the CQP-CM is to describe the consultant's internal quality program to ensure the CM services are provided in a professional, correct, and adequate manner that meet the

Illinois Tollway's needs and ensure the Contractor is performing the work in accordance with the construction contract documents.

Quality projects will be achieved when all CM management, engineering, technical, and support levels of the project organization are engaged in the quality process. All of the consultant's team members are responsible for the implementation and success of their quality program. The CM's responsibility for quality work also extends to include Sub-consultants, testing firms, suppliers, and others that are under contract to the CM, or on whom the CM relies for input to or assistance with the work.

### **4.3.3 Scope of the CQP-CM**

The CQP-CM will define in detail the aspects of the work to be monitored for quality and the frequency of such quality inspections and audits. The CQP-CM addresses the quality of the CM's services, not the quality assurance of the contractor's work.

### **4.3.4 Development, Submittal, Acceptance and Monitoring of the CQP-CM**

The CQP-CM will be submitted, approved by the Chief Engineering Officer, and implemented as set forth herein. The CM must develop, implement, and maintain an effective quality program that will assure that its services conform to the requirements set forth in the agreement for professional services. The CQP-CM shall meet the requirements established herein.

The CQP-CM must work in conjunction with other Illinois Tollway-mandated management systems, specifically the WBPM system, FieldSys, and I-MIRS. Accordingly, it is a requirement of the CQP-CM that the procedures therein are management tools to proactively manage all contractual requirements of the CM and the Contractor, and that open actions from meetings, RFIs, submittals, NCRs, etc. are effectively and satisfactorily completed.

After receiving the Notice to Proceed (NTP), the consultant, the CM's firm, shall supply their CQP-CM, signed by an appropriate officer, to the Illinois Tollway Quality Management team within 14 days. The CQP-CM shall be signed by top management and include a written endorsement by the Consultant's Quality Representative (QR). The CQP-CM shall be developed using the CQP-CM template supplied by the Illinois Tollway which may be found in the WBPM system under project 16. The CQP-CM is to be submitted via the WBPM system under the assigned CM contract number.

If the CQP-CM is not sent within 14 days, or the plan is not accepted by the Illinois Tollway, CM operations may be suspended until the consultant provides an acceptable plan addressing quality assurance requirements. Delays in developing and implementing an Illinois Tollway-approved CQP-CM may result in sanctions against the consultant.

The Illinois Tollway will accept the CQP-CM based on satisfactory review of the plan and work performance. As the work progresses, the CM may be required to revise the CQP-CM for consistency. Any revisions will be subject to the Illinois Tollway's approval. The Consultant shall notify the Illinois Tollway via the WBPM system of any proposed changes to the CQP-CM.

### **4.3.5 CQP-CM Responsibilities and Authority**

Top management of the CM must approve and endorse the CQP-CM in writing and review it at defined intervals over the course of the project for suitability and effectiveness.

A Quality Representative (QR) shall be assigned by the CM to the project who will implement and administer the CQP-CM and have the authority to act in all matters pertaining to quality of the CM's services. The QR shall be qualified for this role by demonstrated education, training, and/or experience.

Personnel assigned to the CQP-CM organization shall have the necessary authority and independence to perform their roles effectively. To minimize conflicts of interest, the CQP-CM quality organization shall include leadership independent of the direct project staff. Staff required to support the QR and conduct the quality-related tasks on the project shall be assigned as needed to meet the varying levels of activity over the course of the project.

The CQP-CM shall include an organization chart with names and titles that illustrate the lines of authority and interrelationships of those responsible for the activities on each individual construction project. All staff shall interface with the project team and within the CM organization. The CQP-CM shall describe in detail the roles and responsibilities of the quality organization. Each role must be assigned to a specific CM staff member.

Resumes of the CM's quality staff members shall be included as an attachment to the CQP-CM. Resumes will demonstrate that the assigned staff has suitable training, experience, and/or credentials for their roles.

### **4.3.6 CQP-CM Elements**

The CQP-CM is made up of the following elements:

- Management Responsibilities and Authority

- Quality of CM Services

- Document Control/Records

- CM activities requiring specific Quality procedures

- Non Conformances

- Corrective Action

- Internal Monitoring

- ITS System and Site Testing (if applicable)

- Procedures training

- Detailed QA Material Management Plan for HMA & PCC materials

- Scope of QA services on all remaining construction materials specified

Refer to Capital Program Procedure P6000, Form F6000.02, CQP-CM Guidelines, and CQP-CM template for more details.

## **4.4 Project Administration**

Administration of the project shall conform to the requirements of Capital Program Procedure P5080 - Construction Administration Procedure and per the WBPM system detailed in section 4.4.1.

### **4.4.1 Web-Based Program Management System**

The Illinois Tollway has implemented a WBPM system for all official project communications as mandated by the Illinois Tollway Supplemental Specifications Article 105.19. This system provides all project team members:

Simplification of communications.

Automated tracking of time-sensitive information.

Workflow configured to match project processes and best practices.

Common document storage and management, electronic documents reside in a central repository.

Audit trail of information so project participants will be able to determine who did what and when.

Secure, real-time 24/7 access, and exchange of project information via the internet.

Robust and customizable project reporting.

The CM shall be required to use this system for all official project communications and interactions, including but not limited to:

Meeting Minutes & Agendas

Requests for Information (RFI's)

General Correspondence (Utilizing the "Forms" module)

Punch List

Resident Engineer's Daily Diary

Daily Activity Reports

Non-Conformance Reports (NCR's)

Shop and Working Drawing Submittals

Schedule Submittals

Monthly Status Reports

Record Drawing Management

Project Archiving and Closeout

ITS System and Site Testing (if applicable)

Traffic Control Inspection Reports

Erosion Control Inspection Reports

Environmental Permits

Material Documentation/ Quality Control

Pay Estimates and Associated Daily Reports

Time Extension Requests

Potential Change Order (PCOs)

Authorizations to Proceed

Change Orders and Extra Work Orders

Subcontractor Approval Request Review and Recommendation

Warranty Review

Project Closeout documents

CM personnel shall make themselves thoroughly familiar with WBPM documentation and those processes that may be added to the WBPM system through the term of the CM contract. The WBPM Documentation Matrix shall be used to show all parties how to properly name documents according to the Illinois Tollway naming convention and specify placement of project documents in the WBPM system folders. The Documentation Matrix may be found on the WBPM system under project 16.

For most contracts, the Contractor will establish broadband Internet connectivity in the Field Office for exclusive use of the Illinois Tollway and the CM personnel in accordance with the Illinois Tollway Supplemental Specifications Article 670.03 (Field Office). However, the CM will be responsible for establishing and furnishing high-speed internet connectivity to access their project websites from locations other than the field office.

The CM will be responsible for furnishing all hardware and software required to establish and maintain access to the project websites, including personal computers, peripheral software, virus protection software, and provision of any small or large format scanning hardware, plotter devices, printers, or means of obtaining scanned or plotted documents from a printing/plotting service, to support the electronic submittal review process via the websites.

#### **4.4.2 Notice to Proceed (NTP)**

The CM shall commence work upon receipt of written Notice to Proceed (NTP). Should the CM receive NTP prior to the contractor receiving NTP, the Contractor may choose to begin



administrative tasks, including shop drawing submittals, meetings, permitting, and utility coordination. The CM shall review this administrative work completed by the Contractor. This administrative work will be done at the contractor's own risk. No field work shall commence until the contractor receives NTP.

### **4.4.3 Preconstruction and Progress Meetings**

The meetings discussed below, along with their agendas and minutes, shall conform to the requirements of Capital Program Procedures P5000 – Pre-Construction Meetings Procedure and P1040 – Meeting Agendas and Minutes Procedure; as well as the Illinois Tollway Supplemental Specifications, Articles 103.09 & 108.14. Sign-in sheets along with other documents distributed in the meeting shall be uploaded in the WBPM system as a single PDF file within five business days after the meeting date.

#### **4.4.3.1 Preconstruction Meeting**

A preconstruction meeting will be held at a time, place, and date established in the Notice of Award, and confirmed in writing by the Project Manager.

The purpose of this meeting is to discuss the prosecution of the project, as well as the starting and completion dates for construction. This meeting shall also outline project control, DBE/EEO requirements, sustainability expectations, as well as coordination, communications, reporting and documentation requirements, and other procedures necessary for compliance with contract documents, Illinois Tollway standards, and user requirements.

The following is a partial list of those individuals or entities that must be invited to, and may attend, this meeting: PM, CCM (if applicable), CM, DSE, contractor, representatives of the Illinois Tollway departments affected or impacted by the project, State Police, representatives of any public agencies, railroads and/or utilities whose facilities are interfaced or impacted by the project, as well as, any parties which have entered into agreements associated with the project.

The Project Manager will prepare and distribute the agenda and will conduct this meeting, with assistance from the CM, in accordance with the Illinois Tollway supplied agenda and assistance of the Illinois Tollway's staff. The CM shall record, produce, and distribute minutes of the meeting to attendees and other contacts identified in the preconstruction notice through the WBPM system.

For projects that include ITS, the Project Manager shall discuss with the CM, DSE, Illinois Tollway ITS Operations Manager, and contractor the construction and testing of the ITS, ITS submittal requirements, maintenance of both existing and new ITS, and expected level of completion of ITS construction and testing prior to scheduling of the Pre-Final and Final Project Walkthroughs.

The contractor will be provided the location to access a copy of the ITS Labeling Guide and site inspection criteria.

#### **4.4.3.2 Preconstruction Materials QC/QA Meeting**

Following the preconstruction meeting for all contracts requiring full-time or continual material

production, the CM shall contact the Illinois Tollway's Materials Department, the Contractor, the Contractor's specific material suppliers and producers, and arrange a Preconstruction Materials QC/QA meeting to review the materials QC/QA requirements established by the contract. The Resident Engineer will conduct this meeting with assistance from the CM's quality control/quality assurance team and the Illinois Tollway's Materials Department.

For contracts which include an established or required Contractor's Quality Program (CQP), it will be necessary to conduct this meeting with attendance by representatives of the Illinois Tollway, the CM's quality control/quality assurance team, the Contractor Quality Representative, and the Contractor's QC Manager for PCC and HMA, if appropriate.

Where the contract work includes the production of off-site materials and/or mixtures, the representatives of the contractor's material suppliers or producers shall also be present. The CM's representatives shall include their own staff members or testing subconsultant's personnel to conduct the specified quality assurance sampling and testing of materials.

For contracts that include the construction of complex structures, as defined by the IDOT Consultant Prequalification Requirements, a prefabrication meeting shall be conducted with attendance by representatives of the Illinois Tollway, the erection contractor, the Contractor, the fabricator's QC manager, the Illinois Tollway's QA inspector, and the DSE. The schedule for submittals and review, construction-site and shop drawing inspections, and the phases of erection will be presented and discussed.

Meeting minutes shall be recorded, produced, and distributed to attendees and other contacts identified in the preconstruction notice through the WBPM system within 5 business days of when the meeting was held.

#### **4.4.3.3 Preconstruction Sediment and Erosion Control Meeting**

Prior to any land disturbance on the project, the CM shall schedule and hold a Preconstruction Sediment and Erosion Control Meeting in accordance with the requirements of the Illinois Tollway's Erosion and Sediment Control, Landscape Design Criteria (ESCLDC). Form A-40 provides a sample agenda. The CM shall also record, produce, and distribute minutes of the meeting to attendees, pursuant to Capital Program Procedure P1040. The A-40 form shall be included as an attachment to the meeting minutes.

Meeting minutes shall be recorded, produced and distributed to attendees and other contacts identified in the meeting notice through the WBPM system. The final meeting minutes, sign in sheet, and copies of any documents distributed at the meeting shall be uploaded in the WBPM System as a single PDF within 5 business days after the meeting.

#### **4.4.3.4 Weekly Progress Meeting**

Progress meetings, which conform to the Illinois Tollway Supplemental Specifications Article 108.14, will be held weekly. Agendas and minutes of the weekly meetings shall conform to Capital Program Procedure P1040 and follow the work instructions provided in the WBPM system. Sign in sheets, RFI logs, and Submittal logs shall be distributed during each meeting and uploaded in the appropriate WBPM system folders as a single PDF file within five business days of the meeting date.

#### **4.4.4 Working Drawings, Shop Drawings, and ITS Equipment Submittals**

The drawings discussed below shall conform to the requirements of the Illinois Tollway Supplemental Specifications Article 105.04

**Working Drawings** - The Engineer may require that the Contractor prepare and submit for review working drawings depicting details of the construction whenever it is necessary for the Contractor to construct or erect temporary works or structures.

**Shop Drawings** - The contractor shall submit copies of detailed shop drawings for any part of the work that is to be prepared or fabricated away from the site, or for which there are not complete fabrication details in the contract plans.

**ITS Equipment Submittals** – The Contractor shall submit copies of product specifications, cut-sheets, manuals, and other manufacturer references to the CM for any ITS equipment required in the contract plans.

The CM shall verify that all contractors provide ITS equipment submittals that are in compliance with the project Special Provisions. When the Contractor provides an ITS Equipment submittal that is a substitute for equipment within the special provisions, the CM shall require the DSE to review and provide a recommendation on approval or rejection of this substitute. The CM and DSE shall contact the Illinois Tollway's GEC ITS Manager to coordinate any changes from the original design intent.

Working Drawings, shop drawings, and ITS Equipment Submissions shall be prepared, submitted, administered, reviewed, and returned as specified in the Illinois Tollway Supplemental Specifications Article 105.04 except as modified by the Special Provisions.

The CM shall process working drawing and/or shop drawing submittals in accordance with Capital Program Procedure P5030 Submittal Procedure.

The CM shall review each submittal for compliance and completeness. All working and/or Shop Drawings detailing the fabrication or erection of structural components that have been prepared by an Illinois Licensed Structural Engineer shall be reviewed by the CM by an Illinois Licensed Structural Engineer.

When the CM finds that the shop drawings do not adequately indicate compliance, or do not represent specified products or methods, they will promptly return the submitted items to the Contractor with appropriately detailed explanations and request re-submittal.

When the plans or Special Provisions stipulate certain products or methods, the CM shall verify that the shop drawings and equipment submittals indicate full compliance with those requirements. A statement of the CM's findings as to equality or product compliance shall accompany these transmittals prior to forwarding to the DSE for review.

A submittal log may be generated from the WBPM system to track the status of shop drawings, working drawings, catalog cuts, etc.

Upon completion of the contract, the Contractor shall deliver a complete set of shop drawings in a format acceptable to the Illinois Tollway. The CM shall incorporate the shop drawings into the Record Drawings.

#### **4.4.5 Pollutant Control**

##### **4.4.5.1 National Pollutant Discharge Elimination System**

The National Pollutant Discharge Elimination System (NPDES) program of the Federal Clean Water Act of 1972 (33 U.S.C. §1251 et seq.) imposes erosion and sediment control requirements on construction activities that involve the disturbance of one acre or more of total land area. The Illinois Environmental Protection Agency (IEPA) has issued a statewide General Permit (ILR10) that details the NPDES requirements for construction projects. The Illinois Tollway's Erosion and Sediment Control, Landscape Design Criteria (ESCLDC) requires the preparation, by the Designer of Record, of a Storm Water Pollution Prevention Plan (SWPPP) that includes an Erosion and Sediment Control Plan (ESCP) to meet the requirements of and allow construction of projects under the IEPA General Permit that meet the ILR10 permit applicability criteria.

As an operator of a small municipal separate storm sewer system (MS4) and ILR40 permittee from the IEPA, the Illinois Tollway is required to reduce the discharge of pollutants from their MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter 1) and the Clean Water Act. Accordingly, it is the policy of the Illinois Tollway that all construction operations be conducted in a manner that minimizes the potential to impact stormwater. To this end, the Illinois Tollway also requires a SWPPP for projects which require the use of erosion and sediment control BMPs (regardless of the area of disturbance) or otherwise have a reasonable potential to impact stormwater quality. Examples of activities which have a reasonable potential to impact stormwater and require a SWPPP include:

- Bridge cleaning and painting operations
- Bulk petroleum or chemical storage
- Demolition activities
- Bulk solid waste generation and storage
- Regular on-site equipment fueling and maintenance operations
- Storm sewer cleaning
- Dewatering operations
- Pavement grinding and saw cutting
- Structural bridge repairs over water
- Concrete pours (washout areas)

The following are examples of routine construction and maintenance operations that will not require a SWPPP:

- Maintenance and installation of lighting fixtures, signing, traffic signals, and guardrail
- Weed spraying
- Pavement marking
- Pavement crack sealing
- Landscape maintenance (tree trimming, moving)

Illinois Tollway projects which involve clearing and grubbing, excavation, stockpiling of soil and aggregate, borrow, construction of embankment, or otherwise require the use of

temporary erosion and sediment control measures requires the preparation of an ESCP by the Designer of Record.

For projects subject to ILR10 permit criteria, an Erosion Control Inspection Report (A-38) shall be completed by the CM every seven (7) days and within 24 hours of a rainfall event of 0.5 inches or more. This requirement will be in effect from the time of initiation of earth disturbing activities until the establishment of final landscaping and submittal of the Notice of Termination.

For projects that do not meet the criteria for ILR10 permitting, an A-38 report shall be also be completed by the CM every seven (7) days and within 24 hours of a rainfall event of 0.5 inches or more. However, inspections and reporting can be discontinued once the earth disturbing work has been completed and final landscaping has been reestablished in the areas disturbed. The first and last A-38 forms submitted when inspections are required shall be indicated as such.

The ESCLDC also delineates the responsibilities and expectations of the Contractor and the CM related to implementing, monitoring, and documenting the effectiveness and maintenance of sediment and erosion control measures installed and other temporary stormwater quality BMPs used on the construction projects they are managing.

For ESCSR training requirements, see sections 4.1.2.2.9 & 6.3.

The CM Shall:

For projects that meet the criteria for ILR10 permitting, obtain the Notice of Intent (NOI) from the DSE, verify sections completed by the DSE, complete all remaining fields, and submit it with the contractor's SWPPP to the Illinois Tollway for processing prior to 30 days before the start of any construction activities, if not sooner.

Schedule and hold a Preconstruction Sediment and Erosion Control Meeting in accordance with the requirements of the ESCLDC and the Special Provisions prior to any land disturbance on the project (see Form A-40).

Obtain all required signatures on the SWPPP, the materials inventory for the Pollution Prevention Plan, the names of the Spill Coordinator(s), and obtain credentials of the Contractor's Erosion and Sediment Control Manager (ESCM) at the Preconstruction Meeting, if not sooner.

Provide qualified personnel capable of checking and reporting on the installation and maintenance of the measures identified in the ESCP.

Determine whether or not the ESCP is installed in accordance with the requirements of the Contract Plans and Documents.

Determine if the ESCP needs to be adjusted or modified and consult with the Designer of Record, the Illinois Tollway, and/or its designated representatives to determine what adjustments/modifications are necessary.

Review any proposed changes to the ESCP against the ESCLDC and the

Drainage Design Manual prior to approving any changes. The proposed changes must be consistent with the Illinois Tollway standards. The CM must not approve nor permit the leaving of temporary erosion control measures in place on a permanent basis, unless consistent with Drainage Design Manual standards. In no instance may riprap or ditch checks be left in place unless the CM gets written approval from the Illinois Tollway Environmental Unit.

Verify if changes require a revised SWPPP.

Check and document all installed ESCP measures for maintenance once every seven calendar days and within 24 hours of a precipitation event greater than 0.5 inches (including equivalent snowfall), in cooperation with the Contractor's Erosion and Sediment Control Manager, using Form A-38 (Erosion Control Inspection Report). During the winter months, if erosion is unlikely due to frozen ground, inspections shall be conducted at least once per month. However, if significant thawing or snowfall occurs, an inspection shall be performed within 24 hours.

Determine if concrete fines are discharging as a result of roadway reconstruction and ensure that the discharge does not exit the right-of-way. Additionally, immediately test the pH levels of the affected discharge runoff to determine the average pH levels. Where pH levels exceed 9.0, recommend a remediation strategy to reduce the alkalinity to acceptable levels before allowing it to exit the ROW or discharge to environmentally sensitive locations.

Prepare any required Incidence of Non-Compliance (ION) and Notice of Termination (NOT) Forms and forward to the Illinois Tollway for submittal to the IEPA.

Conduct and document weekly erosion and sediment control inspections with the Contractor.

Monitor and Enforce SWPPP and ESCP Compliance: The CM shall monitor and instruct the Contractor with regard to SWPPP and ESCP compliance on the right of way. The Standard Specifications, Supplemental Specifications, Special Provisions, and/or Contract plans and documents provide the requirements to ensure the Contractor's actions comply with the environmental permit requirements.

Ensure that ESCP, SWPPP, ILR10 General NPDES permit, IEPA NPDES Permit Coverage Letter, Erosion and Sediment Control Schedule, signed Contractor Certification Statements, Erosion Control Inspection Report (A-38's), Erosion Control Preconstruction meeting minutes (A-40), ESCM qualifications, ESCSR qualifications, NOT, SWPPP Amendments, Erosion and Sediment Control Plan Amendments, and any IONs are filed in the Illinois Tollway WBPM system.

### **4.4.5.2 Construction Air Quality – Dust Control**

The CM shall obtain the Contractor's Dust Control Plan (DCP). The DCP shall be in accordance with Article 107.36 of the Illinois Tollway Supplemental Specifications. All construction activities shall be governed by the DCP. A copy of the DCP must be available on

the project site at all times and a complete PDF copy of the DCP shall be uploaded in the WBPM System.

#### **4.4.5.3 Construction Air Quality – Diesel Vehicle Emission Controls**

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list shall be in accordance with Article 107.37 of the Illinois Tollway Supplemental Specifications. The contractor shall submit an updated list as retrofitted equipment changes or additions to the jobsite. If any diesel powered off-road equipment is found to be in non-compliance with any portion of Article 107.37, the CM shall issue the Contractor a diesel retrofit deficiency.

#### **4.4.6 Utility Coordination**

Existing utility facilities located within or adjacent to the project may need to be abandoned, protected, adjusted, or relocated (utility facilities include the Illinois Tollway's electrical /facility utilities and fiber optic system). The Illinois Tollway is required to reimburse the utility for the cost of performing utility relocation work unless the utility facility was installed under a permit issued by the Illinois Tollway. In conjunction with the Illinois Tollway utility project manager, the CM shall review, monitor, document, and perform other engineering services as described under this section.

For any utility work that occurs prior to the issuance of the NTP to the CM, the CCM (If applicable) or an Illinois Tollway designated consultant shall review, monitor, document, and perform other engineering services as described under this section.

All work associated with the relocation of utilities shall be in accordance with Illinois State law, the utility agreements or permits, and the Illinois Tollway's policies and guidelines. The work shall also be in accordance with IDOT, county, and municipal requirements if applicable. The CM shall assist the Illinois Tollway in carrying out the utility relocation process in accordance with the terms and conditions of the agreements and applicable documents and policies.

##### **4.4.6.1 General Requirements**

The CM shall:

- Maintain a presence in the field at each utility relocation site to monitor the utility work.

- Assist the utility in verifying horizontal and vertical control points and other survey information to facilitate the installation of proposed utility relocation work.

- Verify that the utility work does not conflict with the Illinois Tollway's construction project and verify compliance with the Utility Work Order.

- Verify, during the installation and as the work progresses, that the utility relocation work eliminates conflicts between the Illinois Tollway's projects and does not conflict with other utility facilities being relocated in the same general location. If needed, consult with and request the assistance of the designer of record and the Illinois Tollway utility project manager.

Maintain an As-Built record of the utility relocation.

#### **4.4.6.2 Coordination of Utility Work**

The CM shall:

Schedule regular utility coordination meetings between utility representatives, the contractor, and the Illinois Tollway utility project manager to discuss the contractor's requirements, perform and coordinate utility work, and to resolve construction and scheduling conflicts on the project.

#### **4.4.6.3 Damage to Utility Facilities**

The CM shall:

Maintain a presence in the case of damage to a utility. The CM shall complete the Utility/Fiber Incident Report, which shall include basic information, such as the date, time, location etc., the contract contact information, personnel notified of the incident, and an overall summary of the incident. This Utility/Fiber Incident Report shall be completed and uploaded to the WBPM system. A copy of the Utility/Fiber Incident Report may be located on the WBPM system under project 16.

Institute the Illinois Tollway's Emergency Communication Plan (refer to section 4.7 Communications) immediately following damage to a regulated utility. It is the CM's responsibility to assure that the Emergency Communication Plan is implemented and that the proper authorities are notified of the damage. This responsibility includes notifying the Illinois Tollway utility project manager.

Coordinate with the repair crews and keep an onsite presence during the repair process. Upon completion of the repair, the CM shall notify the Illinois Tollway Communications and the Illinois Tollway utility project manager that the repair has been completed.

#### **4.4.6.4 Review of Reimbursable Costs for Utility Work**

The CM shall:

Review and make recommendations regarding approvals for the reimbursement of costs on all reimbursable utility relocation work on the project.

Review and verify utility reimbursement invoices by comparing the documentation recorded during the observations.

If required, cooperate with an independent auditing firm to certify documents on all utility work orders.

Assist the Illinois Tollway in negotiating, evaluating, and justifying the costs for field changes or extra work.



#### **4.4.6.5 Documentation of Utility Work**

The CM shall:

Create and maintain a Utility Relocation Log of all utility work performed on the Illinois Tollway's construction projects and any off-site utility work related to the project. Maintain daily records of activities performed by the utility and the utility contractor in the WBPM Resident Engineer Daily Diary.

Observe and monitor the progress of the utility work and submit a report on a weekly basis to the WBPM system for inclusion with the Illinois Tollway's Utility Relocation Status Report.

Monitor, quantify, and verify all inactivity or delinquency of a utility to relocate its facilities.

Identify and make known to the Illinois Tollway any change in the work or plans that may affect the contractor's construction schedule or the construction schedule of the utility. Changes and extra work shall be processed using Utility Field Change Authorization (Form A-28).

Document and maintain a log of all communications and meetings between the utility, the utility's contractor, utility representatives, and the Illinois Tollway's contractor.

Record all relocated utility facilities and the utility conflict numbers on the record drawings.

Process a Certificate of Completion for Utility Work (Form A-23) for each completed utility relocation project.

#### **4.4.7 Documentation of ITS Removals or Relocation**

This section discusses the removal, relocation, reconfiguration, and storage of ITS elements during the Construction phase, herein referred to as an "outage". The following procedures shall be adhered prior to ANY Construction phase removal, disconnection, relocation, or alteration of any ITS element.

An ITS element "outage" may be defined as disconnected from the power source and/or from its communication source (whether wireless or wired), or caused to stop functioning. When an ITS element is relocated, then the power source and communications source need to be reconnected. In some cases, there may be instances when a Fiber Optic cable or a power cable is required to be relocated but the ITS element connected to that Fiber Optic cable or power cable is not removed and relocated. These cases will be handled in a similar fashion as if the ITS element itself were removed and relocated.

In cases when a construction contract has been initiated and these procedures do not make it into the contract documents, then an Extra Work Order (EWO) will be required to execute the work described herein.

The CM shall coordinate with the Contractor to ensure the Contractor submits ITS Outage

(ITS-01) form, ensuring the CM concurs with the outage request. Questions or concerns raised by the Illinois Tollway regarding the outage will be directed to the CM for resolution with the Contractor. The outage form is required for temporary outages, permanent removals, relocations, and storage. Only co-located equipment may be listed on a single form. The equipment IDs must be shown, as the form is incomplete without the IDs and may be cause for rejection of the request. If equipment IDs are unknown, the CM must coordinate with the Traffic Operations Center to determine the subject equipment IDs prior to the Contractor submitting form ITS-01. The CM shall submit the completed and coordinated form through the WBPM.

When temporary locations are determined, the CM shall attach one or more of the following to ITS-01 form to assist in the approval process:

- Plans
- Schematics
- Aerial View

The CM shall obtain from the Contractor and provide to the ITS Unit GPS locates of temporary locations. The GPS locates shall be in accordance with the ISO 6709 process.

The CM shall maintain a separate record than that of the Contractor for temporary and final location of conduit as it is installed. The CM must submit a \*.csv file containing all mapping requirements per the contract documents to serve as the working “As-Built” for verification by the CCM (when available) or the GEC when there is not a CCM. Without this documentation, work related to this item shall not be paid to the CM or the Contractor.

When equipment is permanently removed, then it must be given back to the Illinois Tollway utilizing an A-14 form (Inventory Control Form) available on the Illinois Tollway website. The CM and Contractor shall confer with the Illinois Tollway regarding the coordination of equipment transfer.

In cases when a construction contract has been initiated and these procedures do not make it into the contract documents, then an Extra Work Order (EWO) will be required to execute the work described herein.

The ITS-01 outage form shall be submitted to the Illinois Tollway TOC Manager at least 2 weeks prior to the work commencing. Outages during the hours of 5:00 AM – 9:00 AM and 3:00 PM to 7:00 PM are to be avoided. Any changes to the ITS-01 form shall be submitted via email and phone call at least two (2) days prior to work commencing. The CM must call the TOC Manager the day work begins providing an approximate start time and duration of the outage in order to obtain final approval to proceed. The CM must call the TOC just prior to the outage to ensure the ITS element is not actively being utilized for incident management on the Illinois Tollway; if so, the device outage may be postponed by the Illinois Tollway until such time the incident is cleared. After relocation or reactivation of any ITS element, the TOC manager shall be contacted to confirm proper initial operation of subject devices and all associated equipment. If additional burn-in testing requirements exist, they will be specified in the contract documents and should then be followed.

The ITS-02 (MVDS Stage Change) notification forms shall be submitted to the Illinois Tollway TOC manager prior to the 21-day MOT meeting. This form is required for any MVDS unit within construction limits and Maintenance of Traffic (MOT) stage change limits, which subsequently will require recalibration to pick up the new traffic lane configurations. The CM shall obtain from the Contractor stage change diagrams and lane configuration cross sections

at each MVDS unit to provide at the 21-day meeting, providing these documents electronically to the Traffic Operations Manager and the TOC Manager prior to the 21-day meeting. Where included by contract, the CM shall coordinate with the Contractor to ensure the re-aiming and recalibration of MVDS units is performed. Where the re-aiming and recalibration is not included by contract, the CM shall coordinate with the ITS Unit to perform the re-aiming and recalibration by ITS Maintenance forces, or as extra work by the Contractor upon resolution with the Project Manager and ITS Unit.

### **4.4.7.1 Unforeseen ITS Element Outage Details**

The CM and Contractor shall use the ITS element details below when coordinating extra work related to ITS outages. The following recommendations outline the necessary steps to be coordinated with the Contractor, ITS Unit, and Project Manager. This material is provided for reference only, as the basis for formulating the subject extra work for the affected permanent ITS elements are detailed below.

#### CCTV (Closed Circuit TV) Camera

Any CCTV Camera(s) that requires disconnection due to construction, shall be temporarily relocated until the construction phase is completed or the new camera(s) is (are) installed. The disconnection and subsequent relocation shall be coordinated with the ITS Unit. The CM shall utilize Form ITS-01 accordingly. For outages lasting beyond the start of the next twice-daily peak travel period, prior to disconnection, the CM shall coordinate with the ITS unit to determine whether a temporary camera is required for the duration of the permanent camera outage.

#### Plaza / Control Building Equipment

Any equipment located in a plaza or control building that requires turning off, disconnection, removal or relocation must be coordinated with the I.T. Data Communication Manager and the ITS Unit. This equipment may include (but is not limited to): cables, power supplies, video switches, video backhaul, network switches, fiber optic transceivers, etc. The CM shall utilize Form ITS-01 accordingly. The CM shall coordinate with the I.T. Data Communication Manager to determine whether temporary devices will be required.

#### MVDS (Microwave Vehicle Detection System)

Removal/Relocate/Storage – Any MVDS unit disconnection due to construction purposes must be coordinated with the ITS Unit. If it is necessary to relocate an MVDS unit, then every effort should be made to place the MVDS unit in its final location. Any single unit relocation required through the duration of the project shall be responsibility of the Contractor. The goal is to remove and immediately relocate/recalibrate the MVDS unit. If construction conditions do not facilitate a removal and immediate relocation, then the Contractor shall remove and store the unit. Once the unit may be re-installed then the Contractor shall complete the re-installation. The CM shall utilize Form ITS-01 accordingly.

#### DMS (Dynamic Message Sign)

DMS signs are critical elements of the Illinois Tollway traffic management system and are not to remain out of service for more than an 8-hour period if at all possible. Any DMS unit disconnection due to construction purposes must be coordinated with the ITS Unit and the Illinois Tollway IT department (only if involving a tag reader). The temporary relocation of DMS is allowed, when involving no more than a 2 working day outage, preferably over a weekend if required due to construction conflicts. Contractor to furnish and install a minimum of one (1) Illinois Tollway approved and pre-tested (with TIMS) Full Matrix Portable Changeable Message

Sign (PCMS) during approved DMS out of service time beyond 24 hours. The PCMS will be utilized for incident and travel time messaging. The CM shall utilize Form ITS-01 accordingly.

### RWIS (Road Weather Information System)

Coordinate with the ITS Unit to obtain an RWIS Pre-construction Test Report prior to commencing construction activity in the vicinity of an RWIS system. All affected RWIS roadway sensors are to be replaced with non-intrusive temperature sensors prior to commencing pavement grinding, stripping or resurfacing operations at a RWIS site. Any RWIS unit or roadway sensor disconnection due to construction purposes must be coordinated with ITS Unit. The CM shall utilize Form ITS-01 accordingly. The Contractor is responsible for restoring the RWIS to 100% functionality after construction unless the Pre-construction report shows a pre-existing failure. Even if the construction period spans more than one year, the Contractor shall restore the RWIS to full operation during snow season (December thru March).

### VWIM (Virtual Weigh in Motion)

All affected VWIM roadway sensors are to be disconnected and/or removed prior to commencing pavement grinding, stripping or resurfacing operations at a VWIM site. Any VWIM unit disconnection or in-pavement sensor disconnection due to construction purposes must be coordinated with the ITS Unit. All in-pavement VWIM sensors affected by roadway construction must be replaced with new sensors and that the entire system must be recalibrated at the end of road construction. The CM shall utilize Form ITS-01 accordingly.

### RQDS (Ramp Queue Detection System)

RQDS (queue/count system) elements are for the most part wireless and off-road, therefore not affected by road construction. The exceptions are the Access Point (connected to a camera system) and the in-pavement magnetic detection sensors. They should be removed and reinstalled in less than eight hours. This should be done prior to commencing any pavement grinding, stripping or resurfacing operations at a RQDS sensor location. Any RQDS element disconnection due to construction purposes must be coordinated with the ITS Unit. Planned removal of permanent RQDS must include temporary replacement. Testing of temporary equipment and its interface to the TIMS system must be conducted with Traffic Operations Center. If it is necessary to relocate the RQDS unit, then every effort should be made to place the RQDS unit in its final location. Contractor must coordinate with the ITS Unit for interface of the permanent system to the ITS network. Local site testing of the permanent system must be conducted by the Contractor and witnessed by the Engineer. If construction conditions do not facilitate an immediate relocation, then the Contractor will remove and store the unit if approved by the Illinois Tollway. The CM shall utilize Form ITS-01 accordingly.

### Power Service and Cable

Any power service or cable disconnection may affect ITS elements when these elements are powered from those sources. When these services or cables are disrupted due to construction purposes, then coordination must be handled through ITS Unit. Outages lasting beyond an 8 hour period are to be avoided. The CM shall utilize Form ITS-01 accordingly.

### Fiber Optic Cable

Any disruptions shall be coordinated with the ITS Unit. Outages lasting beyond an 8 hour period are to be avoided. The CM shall utilize Form ITS-01 accordingly.

### Temporary Interruption of an ITS Element

Outages lasting beyond an 8 hour period are to be avoided. Final approval of all scheduled outages of ITS elements that will temporarily be disrupted will need to be obtained from the ITS

Unit on the day of the outage prior to its commencement. The hours of 5:00 AM – 9:00 AM and 3:00 PM to 7:00 PM are to be avoided. The CM shall utilize Form ITS-01 accordingly.

### **4.4.8 Sustainability**

Sustainability is an important goal of all Illinois Tollway projects. The project's design team has taken specific measures to incorporate sustainable features in the construction of the project as well as requiring the Contractor perform their work sustainably.

#### **4.4.8.1 Illinois Tollway INVEST Program**

Refer to the Illinois Tollway INVEST Manual for detailed information and guidance on CM responsibilities related to the Illinois Tollway INVEST Program.

The Illinois Tollway INVEST Program has included and embedded I-LAST's practices and, therefore, no specific actions related to I-LAST are required.

The CM shall:

- Review the Illinois Tollway's sustainability expectations for the project by reviewing the Project Sustainability Tracking Form and the Project INVEST Scorecard (from 95% Design).
- Include sustainability at the Pre-construction Meeting and review and update the Project Sustainability Tracking Form.
- Verify that the work complies with the contract documents and review and monitor submittals, shop drawings, field changes, and change orders to confirm that they are consistent with the Project Sustainability Tracking Form.
- Perform INVEST Substantial Completion Sustainability Scoring and generate a copy of the Project INVEST Scorecard provided by the Illinois Tollway.

#### **4.4.8.2 Illinois Tollway LEED (Leadership in Energy and Environmental Design) certified buildings**

The Illinois Green Buildings Act (20 ILCS 3130) requires all construction and major renovations of state-funded buildings to seek Leadership in Energy and Environmental Design (LEED) (or an equivalent) certification to the highest level of certification practical. Refer to <http://www.usgbc.org/leed> for additional information on the LEED process.

The Illinois Tollway is using the LEED program to improve sustainability, score new vertical structures, and insure compliance with Illinois statutes. Sustainability measures will be contained within the plans and specifications, with documentation required at Construction Substantial Completion.

The CM shall:

- Review specifications and plans to determine design requirements for LEEDs certification.

- Identify specific documentation that is required, such as how recycled materials were handled, waste management, environmental product declarations, or specified materials.
- Confirm Contractor has complied with LEED requirements.
- Obtain required documents from Contractor and ensure they are filed in WBPM System.

### **4.4.9 Pay Estimates and Computations**

#### **4.4.9.1 Progress Payments**

The CM shall prepare an estimate of quantities completed and certify this for payment to the Contractor at regular intervals stipulated by the Illinois Tollway, but not less than once a month. The estimate shall be prepared as specified in the Illinois Tollway Supplemental Specifications, Article 109.07 Partial Payments or as modified by the Special Provisions.

In order for the CM's to generate Pay Estimates, the Illinois Tollway Contract Services shall provide a FieldSys database to the CM once the NTP has been issued to the Contractor. The CM will discuss with contract services the current system requirements for the FieldSys database. Quantities and unit prices shall be updated at the Illinois Tollway once change orders, extra work orders, and prior pay estimates are approved and the revised FieldSys file will be sent to the CM.

Incomplete pay estimates shall be returned unpaid with the deficiencies noted on a transmittal cover sheet.

Withholding partial payment for acceptably completed and measured quantities of work shall not be allowed. However, no payment shall be made for any item lacking the proper material certifications, including all required test results uploaded and acknowledged in I-MIRS, bill of lading, original PCC and HMA tickets, disposal letters, etc., which must be documented on the Material Acceptance Log (Form A-5). The CM shall also withhold all accrued penalties to the Contractor on each partial payment, as well as, payment for items found to be in nonconformance. If quantities are paid and later found deficient of the required material evidence, the quantity of this item is to be adjusted prior to the next pay estimate.

#### **4.4.9.2 Final Quantity, Individual Pay Item**

Immediately upon full completion of any work/pay item, including submittal of all required material certifications, including all required test results uploaded and acknowledged in I-MIRS, the CM shall perform final measurement(s) and/or calculation(s) for that item. As soon as the necessary measurements and computations may be made, the CM shall advise the Contractor of these calculated final quantities. If the Contractor disagrees with the CM's measured or computed quantities, the Contractor shall produce the required documentation (calculations, actual contractor measurements) showing the reason why the quantities cannot be agreed upon.

Any disagreement in final quantity between the CM and the Contractor shall be brought to the Illinois Tollway project manager's attention immediately.

#### **4.4.9.3 Transmitting Pay Estimates**

The pay estimates shall be accompanied by the pay estimate checklist, along with a written transmittal stating that the estimate has been checked for accuracy, and that the CM recommends payment.

#### **4.4.9.4 Stored Materials**

Payment for materials received by the Contractor, prior to their use in the work may be included in partial pay estimates, if the material allowance may be adequately justified, and the materials are properly insured, stored, and documented. Refer to the Illinois Tollway Supplemental Specifications, Article 109.07.

The following items are typically acceptable for material allowance payment:

- Fabricated structural steel
- Complete bridge bearing assemblies
- Precast structural units (e.g., beams, deck planks)
- Fabricated sign trusses
- Mast arms
- Items impacted by a regional or statewide shortage
- Groups of items common except for type or size (e.g., pipe for culverts or storm sewers)

#### **4.4.9.5 Semi-Final Payment Estimate**

A Semi-Final Pay Estimate may be prepared if it is:

Requested in writing by the Contractor.

Reviewed and recommended by the CM.

Authorized by the Illinois Tollway.

In the event the Illinois Tollway authorizes preparation of a Semi-Final Pay Estimate, the CM shall prepare said estimate in accordance with the provisions of the Illinois Tollway Supplemental Specifications, Article 109.07 along with a Request for Partial Release of Retainage Below 5% of the Adjusted Contract Amount (Form A-34).

The Semi-Final Pay Estimate, accompanied by fully executed copies of a Request for Partial Release of Retainage Below 5% of the Adjusted Contract Amount (A-34) form, will be submitted via the WBPM system to all of the required parties for review. The Executive Director is the final approver of the Reduction of Retainage.

#### **4.4.9.6 Final Payment Estimate**

Upon completion of the work, execution of the A-4 Form, and balancing of final quantities a final pay estimate shall be submitted, together with a list of remaining required forms or certifications required, pursuant to the provisions of the Illinois Tollway Supplemental Specifications, Article 109.08. Diversity is to be advised of the final release of retention (Final Pay Estimate submittal), and the CM shall ensure required Diversity reporting by the prime contractor via Form DBE/VOSB 2115 Final Payment if applicable, Form EEO 003 Workforce Analysis, and related correspondence or any other reporting as may be included in any subsequent Special Provisions. This reporting shall be submitted through WBPM and Capture for review and final analysis by Diversity of diverse program performance.

Before the final pay estimate is prepared, the CM must finalize all contract quantities and shall update and advise the Illinois Tollway of any and all outstanding claims or requests for extensions of time by the Contractor, and where applicable, update and advise the Illinois Tollway of liquidated damages assessed to the Contractor, in accordance with the Illinois Tollway Supplemental Specifications, Article 108.09.

Final payment is normally made to the Contractor only after the following conditions have been met:

All physical work has been satisfactorily completed and accepted.

All required training has been satisfactorily completed and accepted.

Documentation of payment to all subcontractors.

All required submittals, including but not limited to: guarantee bond; warranties; special insurance bonds (such as roofing bonds, which the Illinois Tollway has agreed to accept in lieu of other indemnities); shop drawings; record drawings; O&M manuals, etc. All have been satisfactorily completed and accepted.

All documentation requirements have been satisfactorily completed.

All materials incorporated into the work have been certified.

A final documentation audit has been performed and the results are satisfactory.

Failure to respond within 21 days after receiving the final pay estimate will be considered as acceptance by the Contractor, and the Illinois Tollway's Board will be presented the final release of retention for approval.

The CM must advise the Illinois Tollway of all agreements between the Contractor and owners of private property, property adjacent to the job site, and off-site dumps. The Contractor must collect copies of releases from such owners and any other documentation required by the Illinois Tollway.

Signatures appearing on all pay estimates shall be in ink.



#### **4.4.10 Initiation, Processing, and Approval of Change Orders and Extra Work Orders**

##### **4.4.10.1 Understanding the Provisions of the Construction Contract**

All CM personnel are directed to make themselves thoroughly and accurately conversant with the Illinois Tollway Supplemental Specifications. This familiarity shall include but not be limited to the following Articles:

- 104.02 ALTERATIONS, CANCELLATIONS, EXTENSIONS,  
DEDUCTIONS and EXTRA WORK
- 105.01 AUTHORITY OF THE ENGINEER
- 105.14 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK
- 109.03 INCREASED OR DECREASED QUANTITIES
- 109.04 PAYMENT FOR EXTRA WORK
- 109.06 CANCELED ITEMS

##### **4.4.10.2 Understanding Change Orders and Extra Work Orders**

Refer to the definitions contained within Capital Program Procedures P3080 – Contract Change Order and Extra Work Order Procedure.

###### **4.4.10.2.1 Authorization to Proceed (ATP)**

Before identified changes to the contract may proceed, the CM must obtain permission from the Illinois Tollway via an approved Authorization to Proceed (ATP).

The ATP must be submitted through the Illinois Tollway Project Manager to the Contract Cost Change Controls Committee (C5). The C5 Committee reviews submitted ATP and either recommends approval, returns it to the CM for revision or clarification, or rejects the request.

ATPs are to be submitted to the Illinois Tollway using the current version of the ATP cover and signature sheets. Each ATP shall also include an ATP-Exhibit A form. ATP-Exhibit B form is required for changes equal to or greater than \$30,000.00. ATP's may be submitted to the Project Manager (PM) as a PDF formatted document.

Events for which ATP's are to be prepared shall include but not be limited to:

- Adjustments to contract quantities. This also includes adjustments to the "999" pay item numbers

- Added work that will require an extra work order.

- Significant changes in scope of work (Additional lanes, design exceptions, etc).

- Any contract change that increases the cost of anticipated supplemental work listed in the detailed estimate

Any change in the specification; method of payment or material processing, such as type or quality of materials to be furnished: or, proprietary material for which specific or blanket approval has not been previously given.

#### **4.4.10.2.2 Change Order (CO)**

A change order is a written directive authorizing changes in quantities for items which are included in the original contract, or items created by a previously approved Extra Work Order.

All Change Orders shall include the following documentation:

- CM and contractor ink signatures provided on the Change Order Cover Sheet (generated in FieldSys)

- Change Order Review Checklist (F3080.05, to be completed by the Illinois Tollway PM).

- Approved ATP, which authorized the change, and all documentation supporting the ATP.

- Description and Impact of Change (completed template) for each pay item (F3080.02- Change Order).

- A signed Recommendation Letter from the CM to specifically “recommend” the Contract adjustment. It should include review of impact to DBE/VOSB goals.

- Other necessary supporting documentation.

#### **4.4.10.2.3 Final Change Orders**

Upon completion of the Work, calculation of final quantities, and agreement to final quantities with the contractor, final Change Orders should be processed and approved prior to submitting the Final Pay Estimate.

Quantity changes are expected to be kept current through the submission of Change Orders for prior approval as detailed above. Every effort shall be made to confine the entries in a Final Change Order to those items which have been previously changed with prior approval and/or which require adjustment to actual quantities measured in place. Inclusion in a Final Change Order of initial quantity increases after their incorporation into the Work will be an unacceptable practice unless obvious time, and/or measurement constraints make this unavoidable.

#### **4.4.10.2.4 Extra Work Order (EWO)**

A written directive authorizing payment for pay items not yet established in the Contract Documents for work authorized in an approved ATP.

All Extra Work Orders shall include the following documentation:

- CM and contractor ink signatures provided on the Extra Work Order Cover Sheet

(generated in FieldSys).

Extra Work Order Review Checklist (F3080.06, to be completed by the Illinois Tollway PM).

Approved ATP, which authorized the change, and all documentation supporting the ATP.

Specification for and Impact of Change (completed template) for each added pay item (F3080.03- Extra Work Order).

A signed Recommendation Letter from the CM to specifically “recommend” the Work be added to the Contract. It should include review of impact to DBE/VOSB goals.

Other necessary supporting documentation.

#### **4.4.10.2.4.1 Damage by Public Traffic**

Payment shall be made to the Contractor for repair or replacement of any permanent element of the highway, whether existing or newly constructed within the contract construction limits, which is completed to the stage of serving its intended function and is subsequently damaged on accident by public traffic in accordance with Article 107.30(a) of the Illinois Tollway Supplemental Specifications due to no fault of the Contractor. The CM shall obtain all documentation of the accident including photos, repair cost estimate, and any relevant documents from the Contractor before any payment is authorized. The work will be paid via original contract pay items or in accordance with Article 104.02.

If damages caused by public traffic involve an insurance related claim, the Illinois Tollway will submit a Property Damage Claim (PDC) process to the CM via the WBPM system. The CM shall inform the Illinois Tollway Project Manager of the pending PDC and confirm inclusion of the work in the contract. Upon confirmation from the Illinois Tollway PM, the CM shall obtain authorization to proceed with the work from the Illinois Tollway via the ATP process prior to the Contractor proceeding with the repair or replacement work. To close the PDC process, the CM shall attach the following documentation:

- Photos of damages prior to and following the repair or replacement work.
- Audited force account invoices and any other payment related documentation pertaining to the repair or replacement work if paid for on a force account basis. Audited force account invoices shall not include hand-marked corrections or revisions when attached to the process. If corrections to the invoice are needed, they shall be addressed by the Contractor within the original invoice and resubmitted to the CM.
- Summary of the quantity utilized in the repair or replacement work multiplied by the contract unit price if paid via original contract pay items. Additionally, the summary shall include the pay item number and description as well as the date and location in which the work was completed.
- Summary of the quantity utilized in the repair or replacement work multiplied by the agreed unit price if paid for on an agreed unit price basis, including supporting documentation for the agreed unit price (historical bid prices, force account estimate).

Additionally, the summary shall include the pay item number and description as well as the date and location in which the work was completed.

- Summary of CM and DSE professional service fees for processing the claim including but not limited to revisions or additions to contract documents, construction inspection, ATP preparation, auditing of force account invoices, and meetings pertaining to the repair or replacement work. Professional service fees shall be documented via Form A-35.
- All other documentation as requested by the Illinois Tollway.

The CM shall document each incident separately and shall not combine original contract work or other damages caused by public traffic into a single PDC. The PDC process will remain open until the CM has provided all required information, moved the process to the Illinois Tollway's step, and the Illinois Tollway has accepted and closed the process.

The CM shall add a comment to the PDC process quarterly, at a minimum, if completion of the repair or replacement work and submission of the above documentation requirements are anticipated to exceed 3 months beyond issuance of the PDC. The comment shall include the current status of PDC resolution as well as the anticipated completion date.

Damages to Contractor owned equipment or elements shall be the responsibility of the Contractor and shall be repaired or replaced by the Contractor at his/her cost.

#### **4.4.10.2.5 Lump Sum Pay Items**

Modifications to Lump Sum items should be handled by an Extra Work Order (EWO). Adjustments to Lump Sum items cannot be done by Change Order unless:

The entire Lump Sum is being deleted on the Change Order.

OR

The entire Lump Sum is being deleted on a Change Order and a new item is being created in its place on an Extra Work Order.

A Lump Sum Pay Item **cannot** be finalized by paying for only a portion of the item. The entire Lump Sum needs to be paid or the steps above need to be followed.

#### **4.4.10.2.6 Potential Change Order (PCO)**

A placeholder cost estimate for any item that has the potential to be executed as either a Change Order or an Extra Work Order. Each PCO should be listed on the PCO Log (found in the WBPM system, ISO logs) with a title, description of the work, the date initiated, and the most recent cost estimate associated with this work. PCO's should be used as planning tool for funding items, including pending or potential claims. PCO's with a value greater than or equal to \$100,000 shall be discussed with the PM prior to being added to the PCO Log.

#### **4.4.10.3 Contract Change Order and Extra Work Order Procedure**

Refer to Capital Program Procedures P3080 – Contract Change Order and Extra Work Order Procedure.

#### **4.4.10.3.1 Anticipating the Need**

The CM is directed to anticipate the need for extra work and/or Contract adjustments, and to process necessary ATP's in a timely manner, in order for the Illinois Tollway to authorize the changes prior to initiating work. In most cases, these needs will become apparent with sufficient lead time for orderly approval action through:

Continual scrutiny of the contract plans and Special Provisions and Designer of Record quantity calculations with respect to work in progress.

Daily updating of Quantity Records (A-6 forms) in the Quantity Book.

Alert and expeditious guidance through the complete approval process of shop drawings, working drawings, and contractor requests for substitutions.

Alert and knowledgeable observation of work in progress.

Once a potential contract adjustment has been identified, the CM should gather and estimate a value of the adjustment and create a new entry on the PCO Log. This new entry should follow numerical sequence through the duration of the entire contract and this numerical identifier shall be shown on the corresponding ATP once formal authorization for the work is sought.

If an item is a continuation or cost adjustment of a previously authorized portion of work, the numerical sequence from the original authorization should be followed (e.g. PCO 4, PCO 4.1, and PCO 4.2 all for related work). The PCO number and the ATP number may differ, as the number of ATP's general exceeds the number of PCO's; however, similar numbering should be followed for the ATP number.

For claims or items in dispute, a PCO entry should be created specifically noting the claim status so that funding may be accounted for and resolution discussions can be scheduled as early as possible. Should the claim be resolved such that the item does not require a contract adjustment, the PCO should be closed on the log.

#### **4.4.10.3.2 Obtaining Prior Approval Authorization (C5 Committee Process)**

In the event that the review of the contract should conclude that the Contractor is required to alter the work, the CM shall prepare an Authorization to Proceed (ATP) (Form F3080.01), prior to preparing a Change Order (Form F3080.02) and/or an Extra Work Order (Form F3080.03), demonstrating the need to increase or decrease the Work.

The Illinois Tollway Supplemental Specifications, Article 104.02, Alterations, Cancellations, Extensions, Deductions, and Extra Work and 109.04, Payment for Extra Work and the Illinois Tollway's administrative policies provide that Extra Work or quantity changes to the Contract, which have not been authorized in writing by the Engineer will be rejected.

In exceptional cases, such as in an emergency, advance oral approval to proceed may be sought from the Chief Engineering Officer of the Illinois Tollway. The amount of funds involved will not be the governing factor. The first contact in seeking prior approval authorization shall, in all cases, be to the assigned Illinois Tollway Project Manager with notice to the Deputy Program Manager.

To facilitate the prior approval authorization process, the Illinois Tollway has authorized the formation of the Contract Cost Change Controls Committee (C5 Committee). The intent of the C5 Committee and the prior approval authorization is to provide a timely review of all changes to the Work, recommend approval of those that are deemed valid, proceed with contingency and added/extra work if necessary, and expedite completion and payment of such authorized work.

The CM shall submit ATP's and all required supporting documentation to the Illinois Tollway PM who will then arrange for C5 Committee review. The C5 Committee will review the Scope of Work and the independent cost estimate/estimated level of effort for the proposed changes. The C5 Committee will recommend approval, return the package for additional information and/or further clarification, or reject/disallow the ATP. This process is also known as the C5 Authorization.

An ATP that is recommended for approval by the C5 Committee is forwarded to the Chief Engineering Officer for review and signature. Based upon the net contract adjustment amount, the ATP will be forwarded to the proper signature authority as follows:

Project Manager: up to \$30,000.00

Chief Engineering Officer: \$30,000.01 - \$100,000.00

Executive Director: \$100,000.01 - \$150,000.00

Board Chairman: \$150,000.01 - \$200,000.00

Board of Directors (Board Resolution): greater than \$200,000.00 Pursuant to Board Resolution 17250, for purposes of determining signature authority, Change Orders that are within a project line item or relate to work of a similar nature, as defined by the following categories may be netted and the net amount will be used in calculating the required signature authority:

Roadway (Earthwork, Sub-bases and Bases, and Pavements)

Structures

Drainage and Erosion Control

Roadway Appurtenances (Roadway Safety, Roadway Marking Signing and Delineations and Traffic Control)

Roadway Lighting, ITS, and Electrical Work

When approval is received from the Chief Engineering Officer and the proper signature authority, the approved ATP will be transmitted to the project team. Upon receipt of the approved ATP the Contractor may begin the authorized work, and the CM may begin to generate the associated Change Order and/or Extra Work Order so that the items may be included in a future Pay Estimate.

The CM is to note on the Authorization to Proceed if an approved DBE/VOSB Contractor/supplier will be impacted by the change in the Work and if there are any schedule

impacts as a result of the change.

All proposed EWO's in excess of \$200,000 are to be reviewed by the Diversity Department for potential DBE/VOSB participation, if applicable.

Signatures appearing on an Authorization to Proceed (F3080.01), a Change Order (F3080.02) or an Extra Work Orders (F3080.03) shall be in ink.

#### **4.4.10.4 Guidelines**

Whenever possible, any change in scope should be identified and the price negotiated BEFORE any out of scope work is undertaken.

The full documentation of contract changes for Prior Approval Authorization, as presented above shall, at a minimum, contain the following elements:

A detailed factual narration of events that details the nature and circumstances which caused the CO/EWO.

Describe the scope of the work. The C5 Authorization of an ATP is not necessarily for one pay item, but rather for the changed work as a whole. C5 Authorization of an ATP may include items to be included on both CO's and EWO's. Describe how changed work was identified. Some examples are change in site conditions, revisions to plans, etc.

Describe how the cost was determined (Contractor proposed price or CM estimate). The CM is to provide documentation to substantiate their cost estimate (use of bid tabs, sample force accounts, etc.).

Describe how the work will affect the project schedule.

The specific provisions of the contract or laws which support the CO/EWO and a statement of the reasons why such provisions support the CO/EWO.

The identification and/or copies of all documents and the substance of any oral communication that support the CO/EWO. Manuals that are standard to the industry may be identified by reference.

Include applicable correspondence from the Illinois Tollway or the DSE authorizing / recommending the work.

A statement from the CM recommending the Illinois Tollway's approval of the CO/EWO at the price(s) provided.

Proposed contract changes (field changes, value engineering proposal or performance based design) may affect the Final Barrier Warrant Analysis. The CM should follow the amendment process outlined in the Illinois Tollway Traffic Barrier Guidelines.

The CM shall carefully examine the nature and magnitude of the changes proposed in each Change Order and/or Extra Work Order to determine if accomplishment of any of the changed

work will:

Extend the contract time beyond the then current contract completion date or interim completion date as described in the Illinois Tollway Supplemental Specifications, Article 108.08.

OR

Result in a delay as described in the Illinois Tollway Supplemental Specifications Article 108.08.

If an adjustment of time for the performance of the contract is sought, the following information needs to be submitted by the Contractor and recommended by the CM:

The specific days and dates for which it is sought.

The specific reasons the contractor believes a time adjustment should be granted.

The specific provisions of the contract under which additional time is sought.

The contractor's detailed analysis of their schedule to demonstrate the justification for a time adjustment.

Only the Chief Engineering Officer may grant contractual time extensions. Time extension process shall be generated through the WBPM system.

The CM's complete and detailed analysis of the impact of the changes on the contract time shall be attached as a part of the supporting documentation to the Change Order and/or Extra Work Order.

Any quantities in a Change Order and/or Extra Work Order that are related to other quantities that may have been previously approved and/or modified shall be cross-referenced to each succeeding Change Order (F3080.02) and/or Extra Work Order (F3080.03) in which the same item appears.

#### **4.4.11 Value Engineering Proposals**

Administration, processing, and evaluation of Value Engineering Proposals shall conform to the requirements of the Illinois Tollway Supplemental Specifications, Article 104.07, as well as to Capital Program Procedure P5150 – Construction Value Engineering Proposal Procedure.

**Value Engineering Proposal (VEP):** A written proposal submitted by the Contractor to modify the contract documents to provide an innovative and alternative means of construction at a lower cost or improved value to the Illinois Tollway, without altering the end product of the work as defined in the contract. The proposal should be submitted as a Process through the WBPM system.

**Concept Phase:** A brief summary of the proposal submitted for review and consideration prior to submission of VEP.

The CM shall review the contractor's written concept submittal for completeness



and accuracy and provide the Illinois Tollway PM and if related to structures or the roadway, Tollway Materials with their recommendation as to whether the concept qualifies for consideration as Value Engineering.

If the VEP Committee approves the Contractor's concept proposal, the VEP Committee will direct the CM to note such approval in the contractor's WBPM submittal for the concept proposal. Approval of the concept does not constitute or imply the approval of subsequent submittals, or the final VEP. The CM will use Capital Program Procedure Form F5150.

If the Illinois Tollway approves the concept, and the Contractor elects to proceed with a complete Value Engineering Proposal, the CM shall provide a detailed review, and if necessary, coordinate review by others (DSE, CCM). The CM shall provide the Illinois Tollway PM with the recommendations regarding cost and time impacts of the VEP.

If the Illinois Tollway approves the complete Value Engineering Proposal the CM will receive authorization from the Illinois Tollway to proceed with the proposal and direction regarding the type of document to be prepared.

The CM shall submit documentation for initiating payment to the Contractor, i.e., Authorization to Proceed, Change Order, and/or Extra Work Order.

### **4.4.12 Claims for Extra Compensation**

Contractor claims for extra time or compensation shall be governed by the Illinois Tollway Supplemental Specifications, Article 109.09.

Claims or potential claims shall be processed in accordance with the requirements of Capital Program Procedures P3120 – Contractor Dispute Resolution Procedure. All claims shall be submitted to the Illinois Tollway by the contractor and tracked through the WBPM system.

### **4.4.13 Record Drawings**

Unless specifically stated to the contrary in the Agreement, the CM is responsible for the preparation of final Record Drawings.

The CM shall maintain one set of record prints, i.e. mark-ups of the contract plans, which shall be kept up-to-date during the course of construction. These mark-up prints shall be available to representatives for review as the work progresses.

Preliminary Record Drawings shall be submitted through the WBPM within 6 weeks of the Contract Completion Date. These drawings shall meet all of the requirements of this section, with the exception of Article 4.4.13.9 – Quantity Sheet.

Final Record Drawings meeting all of the requirements of this section shall be submitted through the WBPM within 2 weeks of the Final Pay Estimate.

The final record drawings shall be prepared with computer aided drafting software using the contract plans supplied to the CM by the Illinois Tollway and shall be delivered as well as

uploaded to the WBPM system in both source and PDF formats. All line styles and level settings shall match those used for the as-bid plans. NOTE: Zip files are not allowed in the WBPM system. The Illinois Tollway may utilize these record drawings to update the asset management system.

No erasures on the original drawings will be permitted.

All data pertinent to changes, including final quantities (marked in red) shall be included.

All changes shall be dated, a description and the date shall be in the Revision Box at the bottom of the plan sheet.

If the modifications to an Illinois Tollway supplied drawing be to such an extent that a new drawing must be made to replace it, only the new drawing shall be included in the record plan set.

All added drawings including shop drawings shall be full size, numbered, and included in the record plan index drawing.

The cover sheet shall be signed and sealed by the Construction Manager verifying the record plans are completed in full. The words RECORD DRAWINGS shall be added at the top of the cover sheet in one (1) inch high letters.

The Record Drawings shall incorporate the "mark-ups" on the above prints along with the following:

All revisions for work added by Change Order, Extra Work Order, or other means.

Survey obtained throughout the construction process.

Contractor supplied shop drawings on reproducible Mylar or electronic equivalent as provided in the Illinois Tollway Supplemental Specifications Article 105.04 shall be included in the record plan set.

The record drawing files shall show any alterations from the bid documents and include a record terrain model. These files shall be reviewed and approved by the CCM prior to submitting for close-out.

The following is a partial list of items that the CM should add to as necessary:

#### **4.4.13.1 Storm Sewers**

Rim elevations

Invert elevations

Station locations & offset

Pipe lengths, material, class, and etc.

Structure type

Restrictor size and invert

Outfall station & offset

Pipe culverts - length, size, type

Paved ditches - location, slope, invert, type

Permanent erosion control (rip-rap)

Verify storm water detention volume provided

#### **4.4.13.2 Electrical Systems**

Conduit - location, length, size

Locate direct buried cables

Locate cables in unit duct, streetlights, hand holes, pull boxes, and surveillance boxes

Cable and wire gauge and number of conductors

Changes to lighting under bridges and sign lighting

Identify service (power source) location & type

#### **4.4.13.3 Utilities**

Water mains - size, type, valves, hydrants, meters

Sanitary sewers - same as storm sewers including force mains and lift stations

Location of fiber optics, cable, gas (if encountered/known)

Limits of pipe encasement and location of crossings

#### **4.4.13.4 Traffic Signage**

The CM shall complete the Illinois Tollway Sign Data Sheet for each sign installed or relocated. The Sign Data Sheet shall be maintained throughout the duration of the contract and uploaded to the WBPM system at the end of the contract. A copy of the Sign Data Sheet may be located in the WBPM system under project 16.

Location and off-set / depth of the footing.

Actual sign size and text on the sign.

**4.4.13.5      Pavement**

Pavement elevation sheets and Cross sections, as shown on plans, including pavement elevation at PGL, all lane lines and edges of paved shoulders.

Cross sections at P.C./P.T. for super-elevation verification.

**4.4.13.6      Roadway**

Undercut limits - unsuitable removal and PGE replacement

Rock excavation limits

**4.4.13.7      Fencing**

Any modifications - pull posts, corner posts, gates, stream crossing lengths, and locations

**4.4.13.8      Bridges**

Actual Length, type, and location of piling

Any foundation alternations

Vertical clearance (minimum low beam)

**4.4.13.9      Quantity Sheet**

Revisions to final quantities on quantity sheet (original quantities lined out with black ink and new numbers placed next to them in RED).

Include any additional pay items added to the contract as a force account or new line item.

**4.4.13.10     Location of Anything Abandoned In Place**

Light pole foundations

Sign foundations

Bridge footings

Conduits/direct buried cables

Temporary sheet piling - location and elevation

All utilities/sewers

#### **4.4.13.11 List of Permanent Benchmarks (post construction)**

One for each bridge structure

One for each toll plaza

One every  $\pm 2000$  feet on mainline

#### **4.4.13.12 Executed Maintenance of Traffic Plans**

#### **4.4.14 Progress Schedules and Timely Completion of the Construction Contract**

The CM shall review the qualifications of the contractor's proposed scheduler as submitted at the Preconstruction Meeting and recommend approval or rejection to the Illinois Tollway as appropriate. The contractor's proposed scheduler should have:

- At least 3 years' experience developing and updating Critical Path Method (CPM) schedules.
- Experience using and interpreting schedule analyzing software.
- Familiarity with delay claim analysis and how to capture schedule recovery.

Maintenance of construction schedules is vitally important to the Illinois Tollway and the CM is required to work to ensure the timely completion of construction and contract closeout. The CM shall include a risk analysis and description of management actions that will be taken to avoid or mitigate the effects of potential problems identified during the review of the contractor's monthly schedule updates (MSU's). Examples of potential project risks include but are not limited to:

**Restricted Project Access.** All areas that do not give the Contractor full and immediate access due to environmental permitting, property acquisition, late removal of utilities, etc., shall be identified.

**Equipment and Material Deliveries.** All delivered items that could have a negative impact on project progress (i.e., precast concrete beams, bearings, expansion joints, piles, electrical equipment, etc.) shall be identified.

**Structural Steel.** Special consideration shall be given to curved and heavily skewed bridges. The CM shall hold a coordination meeting with the fabricator and erector before erection plans and shop drawings are produced. This will ensure the fabrication, delivery, and erection proceeds to the schedule. Issues that could have a negative impact on project progress shall be identified.

**Land Acquisition (temporary or permanent easements, etc).**

**Utility Coordination and Relocation.** Any utility relocation to be performed by the contractor or others shall be identified.

**Weather Sensitive Construction Activities.** Any activities that may only be

performed at a specific time of year (i.e. landscaping, tree planting, painting, pavement marking, etc.) shall be identified.

**Permits.** Acquisition of permits requiring access to the work shall be identified.

**Coordination with other Contracts and agencies.** Potential conflicts of construction activities with adjacent contracts, either with Illinois Tollway or with other agencies, shall be identified.

**Contractor not meeting necessary production rates.** For any reason, should the contractor not perform the necessary amount of work to complete the necessary activities to meet the contractual milestones, the CM shall identify, through the review of the schedule submittals, when contractor production rates and project progress are insufficient to meet contract milestones.

The CM, with input from the designer of record, shall review, analyze, and provide comments/recommendations to the Illinois Tollway regarding the contractor's proposed Baseline Schedule, Revised Baseline Schedule (RBS), and monthly schedule updates, with consideration for project specific risk factors, such as are described above, for acceptance or rejection by the Illinois Tollway, in accordance with the requirements of the Illinois Tollway Supplemental Specifications Article 108.02. The schedule review, including the review by the CM, CCM, and PMO, must be completed and review comments provided to the contractor within 14 days of the schedule submission.

The CM shall be sufficiently familiar with the plans to determine that the contractor's Baseline Schedules and monthly schedule updates reflect the actual developing site conditions, optimize critical path durations, and make the most efficient use of the resources allotted for the work. Any schedule submittal must be reviewed using the approved scheduling software to verify logic, critical path, type of constraints, production rate, and potential use of lag. Lag of any type is not allowed in any schedule. Each schedule submittal must also be analyzed using the Schedule Analyzer Pro software.

The monthly schedule update shall be baselined against the approved Baseline Schedule to verify progress and based on controlling items and shall show the critical path of the contractor's activity including the scheduled delivery dates for critical submittals and associated review periods, materials, etc.

It shall be the responsibility of the CM to review the monthly schedule updates to verify that progress on the controlling items is maintained. If progress falls 14 days behind schedule or if a significant number of items are approaching criticality, the CM will require that a Revised Baseline Schedule be submitted by the Contractor, pursuant to the Illinois Tollway Supplemental Specifications, Article 108.02 (c), Revised Baseline Schedule. The PDF Schedule submittal cannot solely be used to approve or reject any schedule submittal. Any schedule submittal must be opened and reviewed using the approved scheduling software and also checked with the Schedule Analyzer Pro software.

The CM shall monitor construction progress, particularly as it compares to the contractor's approved Baseline Schedule, Revised Baseline Schedules, monthly schedule updates, and Diversity performance (DBE/VOSB and EEO) as applicable. The CM is to advise the Illinois Tollway on a weekly basis, unless directed otherwise, of any of the following situations:

The Contractor is on schedule and has agreed they will complete on time.

The Contractor is on schedule but has submitted a Notice of Delay through the WBPM system.

The Contractor is on schedule but has filed a time extension request through the WBPM system.

The Contractor is on schedule but an impending change in the work may/will cause a time extension claim by the contractor.

The Contractor is behind schedule and a request has been made of the Contractor to revise the project schedule to achieve the assigned completion date.

The Contractor is behind schedule and has submitted a Notice of Delay through the WBPM system.

The Contractor is behind schedule and no request has been made of the contractor to revise the project schedule to effect the assigned completion date.

The Diversity commitments are not being met or there may be a need to adjust the plan commitments.

The CM is also required to follow the Construction Schedule Review (CSR) WBPM system process to manage the review of all of the contractor's schedule submissions including the Baseline, the Revised Baseline Schedule, and the monthly schedule updates.

The CM review of the Contractor's Baseline schedule submission shall:

- Verify Xer file is provided
- Open and analyze the schedule submittal using the approved scheduling software
- Analyze the schedule using schedule Analyser Pro software
- Verify the schedule narrative is provided
- Verify a pdf copy is provided (pdf cannot solely be used to review a schedule submittal)
- Verify that there are no construction durations greater than 30 days
- Verify that the constraint type is correct for SP Milestones (Finish on or Before)
- Intended rate of production is shown for each activity
- Verify that SP Milestones coordinate with the contract requirements book
- Check for Negative Float (**schedule is automatically rejected if it contains negative float**)
- Verify the data date
- Verify work calendars
- Identify Lags. (Lags are typically not allowed).
- Verify each activity (with the exception of Start and Finish) has at least one Predecessor or Successor (no open ended activities)

The Baseline Progress Schedule must include the removal, relocation, and new installation dates for all ITS equipment.

#### **4.4.15 Project Status Reporting**

Monthly Status Reports (MSR) processes are required through the WBPM system and are to be submitted by the CM. The Monthly Status Report shall include contract budget, approved contract adjustments, pending contract adjustments, schedule status, interim and completion milestone dates, and accrual cost projections by month through the end of the contract and project issues as well as other data requested by the Illinois Tollway.

#### **4.4.16 Request for Extension of Time**

All extension of time requests received from the Contractor shall be reviewed and evaluated by the CM. Refer to the Illinois Tollway Supplemental Specifications, Article 108.08, Request for Extension of Time as well as the work instruction for required submission via the WBPM system.

The CM's evaluation should address the following questions:

Is the Contractor complying with the requirements of the contract with respect to utilization of their forces, working hours, and working days?

Does the delay affect the critical path? Is the critical path accurate or has it changed?

Can the delay be mitigated by modifying a construction stage or re-sequencing work?

Could the Contractor change their critical path to avoid delay or expedite to make up for it?

Has the Contractor submitted a Notice of Delay for the impacted scope?

Within five (5) working days of receiving the request, the CM shall submit to the Illinois Tollway via the WBPM system process all pertinent facts regarding the Contractor's request, including information requested and required in the process along with other pertinent documentation attached to the process.

The Illinois Tollway will review the request and the Chief Engineering Officer will rule upon the merit of said request. The decision of the Chief Engineering Officer shall be final.

Based upon the Illinois Tollway's response to the time extension request, the contractor may be required to submit a revised Baseline Schedule or modified monthly schedule update.

#### **4.4.17 Documentation**

Refer to section 4.10.



#### **4.4.18 Correspondence with the Illinois Tollway**

All project correspondences shall be transmitted through the WBPM system for all parties involved with the project.

#### **4.4.19 Coordination with Public Agencies and Railroads**

The CM shall:

Make contact with all public agencies whose facilities are affected by the construction contract and coordinate relocations and rearrangements in order to avoid any delays in construction.

Verify layout surveys required for reconstruction and/or relocations of public highways and railroads as provided in the contract documents.

Record the actual location of all related work on the record drawings.

Monitor and coordinate, as necessary, construction performed as part of public agency and railroad agreements, and document the work so that billings may be checked and certified on a force account basis or per work order.

Check and make recommendations on all public agency and railroad billings for the reimbursement of cost for facility relocations and rearrangements.

Document time and materials expended by a public agency or railroad for items of safety, such as services of watchmen or flagmen, items required for protection of overhead electric lines or other items for safety as may be stipulated in the Agreements with railroads or other public agencies when the costs of such are to be reimbursed directly by the Illinois Tollway. This information should be documented in a field book and/or in the WBPM Daily Activity Report and recorded in the Resident Engineer Daily Diary WBPM system entry.

Maintain records of the condition of properties and utilities abutting the project for use in the resolution of any damage claims arising from prosecution of the work. (For documentation purposes – take photos of the properties before and after the project and upload in the WBPM system.)

##### **4.4.19.1 Railroads**

As a general rule, the railroad owns the property over/under which the Illinois Tollway passes. Railroad Flaggers are needed when work is being performed at these crossings that may impact railroad operations. A list of active railroads within the project limits will be included in the Special Provisions.

It is the contractor's responsibility to obtain a "Right of Entry" permit from the railroad. A copy of this permit should be uploaded to the WBPM system.

The railroad's engineer shall have jurisdiction as to safety measures, methods, and procedures used on railroad property.

The Contractor provides 48 hours advance notice to the railroad of the need of a flagger and the duration of the need. Notify the Contractor at the Pre Construction meeting that in order for the bills to be processed, they shall submit the same information to the CM for documentation in the Resident Engineer Daily Diary WBPM system entry.

The cost of providing a flagger at a temporary crossing used for moving material or equipment across the railroads tracks will not be reimbursed. They are considered as included in the contract unit prices. All other Railroad flagger costs will be reimbursed by the Illinois Tollway. Reference the Chicago Region Environmental and Transportation Efficiency Program (CREATE).

### **4.4.20 Staffing and Field Office Support**

Upon Notice of Award of the CM contract, the Resident Engineer shall notify the Project Manager of any staffing modifications to the Contract Agreement Exhibit C through the use of a Work Force Rate Revision (found on the Illinois Tollway Website). After notification, all staffing modifications, including salary adjustment, will not be billable until further Work Force Rate Revisions are signed by the Project Manager and the Deputy Program Manager accepting the additions or increases.

The CM must provide, at all times, qualified staff and field office support as required by the Illinois Tollway to satisfactorily perform all duties and responsibilities identified in this manual and in accordance with the CM's Agreement and Proposal.

The CM shall manage their staff based on the actual work being performed in the field.

### **4.4.21 CM Invoicing Requirements**

The Illinois Tollway will provide detailed invoicing procedures to the CM upon start of work for any assigned project. Such requirements may be found on the Illinois Tollway Website, with appropriate instructions for completion. An Illinois Tollway A-2 Form(s) must be submitted with the invoice for each week of the Invoice billing period (Sunday to Saturday). The A-2 forms are generated through the WBPM system. All invoices shall comply with the requirements of the CM's contract with the Illinois Tollway.

### **4.4.22 Surveys**

The CM shall use the Illinois Tollway's (CORS) Real-Time Kinematic (RTK) to verify previously set survey monuments by the Designer and establish any additional monuments outside the construction area, centerline, all improvements, and property corners. The CM will also verify the coordinate systems in the plans are the same as the coordinate system set for the Contractor to use. In addition, the CM shall comply with the survey requirements of the Illinois Tollway Supplemental Specification, Article 105.09, Survey Control Points and the following:

Locate in the field, with the help of the designer of record, if needed, all reference points, centerline control points, property corners, and other survey data included as part of the contract plans.

If the Illinois Tollway requires the Contractor to provide their own layout, the

Contractor shall replace missing centerline stakes or points on stations prior to beginning construction. The CM will verify the new stakes.

Check benchmarks set previously and establish any additional ones required for vertical control of the work.

Perform all survey work necessary for establishing the locations of monuments and markers as specified in Right-of-Way Markers and Drainage Markers, and Permanent Survey Markers; Sections 666 and 667 of the IDOT Standard Specifications. This work shall be performed by a Professional Land Surveyor licensed in the State of Illinois.

Check the Contractor's stake-out of all structures and other construction surveys made by the Contractor to verify the accuracy of their layout work.

Make all surveys and measurements necessary for determination of final pay quantities and for preparing record drawings.

Make all surveys necessary to determine if the Work has been done in accordance with the plans and specifications.

Tie into surveys of adjacent projects and coordinate and make adjustments as necessary.

### **4.4.23 Constructability Review**

The CM shall be responsible for the performance of constructability reviews in accordance with requirements of Capital Program Procedure P 4100 - Constructability Review Procedure.

### **4.4.24 ITS Processes**

The ITS Unit has developed process flow charts to outline the procedural steps for bringing ITS elements online. Refer to Appendix E for the following ITS process flow charts:

- Pre-Installation
- CCTV
- MVDS
- DMS
- VWIM
- RWIS
- Burn-in
- Removal/Relocation

### **4.4.25 Intergovernmental Agreement (IGA)**

It shall be the responsibility of the CM to coordinate and track costs when there is an IGA associated with the construction project. The CM must provide final quantities with back up documentation so that the IGA reimbursement invoices can be prepared. The CM must also

document any additional work requested by the IGA agency and obtain sign-off on all work performed.

#### **4.4.26 Unmanned Aircraft Systems (UAS)**

To be eligible to utilize an Unmanned Aircraft System (UAS) on Tollway Contracts, Vendors must complete and submit the UAS request on [uas.illinoisvirtualtollway.com](http://uas.illinoisvirtualtollway.com). The Vendor represents and warrants that it will operate UAS solely for purposes traceable to the scope of the Contract. It is the Vendor's responsibility to comply with all federal, state, and local laws and ordinances including FAA rules and guidelines regarding UAS usage.

### **4.5 CM Materials Inspection and Acceptance**

#### **4.5.1 Information Sourcing**

The CM is to provide QA materials inspection for various items, materials acceptance review, and documentation. Materials items are impacted by various agencies in order to meet the Illinois Tollway requirements. The following list of items and topics provides guidance identifying the agencies, but is not limited to:

- Aggregates. PCC and HMA, IDOT QC/QA Programs, Illinois Tollway Aggregates Certification Program.

PCC precast & prestressed components, Precast Concrete Institute (PCI) & IDOT QC/QA Programs.

- Soils QA Inspection & Compaction, IDOT Geotechnical Manual, and IDOT Subgrade Stability Manual.

Miscellaneous Inspections, IDOT Manual of Test Procedures for Materials, ASTM Specifications; AASHTO Specifications.

Qualified Laboratories, IDOT Bureau of Materials.

IDOT Construction Manual topics including but not limited to: Materials Acceptance & Documentation Review, IDOT Project Procedure Guide & Documentation Guide, and IDOT Approved Lists of Materials.

Material Documentation, Illinois Tollway forms; I-MIRS.

#### **4.5.2 Capital Program Procedures**

Below is a partial list of Capital Program Procedures that the CM may use:

P5030 Submittals Procedure.

P5070 Nonconformance Reports Procedure.

P6000 Evaluation of Consultants' and Contractors' Quality Programs Procedure

P6120 Quality Assurance, Quality Control during Construction Procedure

In addition to the ISO procedures in place, the CM should follow the work instructions provided for automated processes in the WBPM system that directly support the ISO procedures or represent additional process requirements.

### **4.5.3 Quality Assurance Documentation by the Construction Manager**

Management and QA testing work performed by the CM, and verification of field QC inspection and testing performed by the Contractor, as guided by Capital Program Procedure P6120, shall be thoroughly documented. All documentation shall be in compliance with the requirements of the contract documents, this manual, and in accordance with generally accepted good engineering practices.

The Construction Manager shall:

Check, verify, and document the work as specified in the contract documents for general conformance with the construction contract. Keep daily records and measurements of the quantities involved. Proactively monitor and regularly report to the Illinois Tollway on the progress of the Contractor in achieving the established schedule and budget. Anticipate and provide suggested remedies to scheduling and budgeting problems should they arise.

Effectively and efficiently process all documentation necessary to acceptably administer the construction contract and CM Agreement including but not limited to submittals, RFI's, correspondence, Diversity performance, etc. Consult with the Illinois Tollway or Corridor Construction Manager, if applicable, for proper routing of documentation.

Keep logs, records, and document all activities and proceedings relevant to the administration of the contract in accordance with all the various requirements of this manual.

Documentation of work progress shall be timely, factual, concise, and complete.

Monitor the execution of all on-site and off-site testing of all construction materials performed by the Contractor as required in the contract documents. Monitor the Contractor's execution of the CQP for proper QC compliance. QA shall test a minimum of 20% of QC.

Anticipate the need and prepare documentation for and perform any field work and negotiations required to construct items covered by extra work orders, change orders, and Supplemental Agreements (see section 4.4.10 on correct procedures).

Monitor and verify that the Contractor has checked all pavements for thickness and surface tolerance as required by the Standard Specifications and Special Provisions (depth check requirements – see section 4.10.6).

Verify that the Contractor maintains HMA, PCC, and Aggregate Quality Control charts of all QC data to determine when test results appear marginal and to demonstrate conformance with the QC requirements of the contract documents.

On a QA basis, witness and document the calibration of all equipment the Contractor uses that directly affects the quantity of a respective pay item (e.g., mobile concrete mixers, liquid asphalt distributors, slurry seal machines, etc.).

Check and document the Contractor's construction equipment to determine its general conformance with the requirements of the contract documents and its capability to perform the work properly within the required time limit.

Monitor the performance of all ITS site and system testing by the Contractor as required in the contract documents and verify the Contractor's test results.

### **4.5.4 Frequency of Sampling and Testing**

The frequencies for the various types of acceptance sampling and testing for QA construction materials by CM are listed in the IDOT Project Procedure Guides on the IDOT website.

Refer to the current applicable Special Provisions, Specifications, and stand-alone documents referenced therein for sampling and testing frequency requirements for QC/QA project-produced materials. QA shall test a minimum of 20% of QC. All samples shall be obtained, and all tests performed in strict accordance with ASTM or AASHTO standard methods, or with any modified methods as established by IDOT or Illinois Tollway Manual of Test Procedures for Materials and Project Procedure Guide. Good judgment on the part of CM personnel is essential for proper checking of the work.

Onsite job conditions such as consistency, methods, equipment, and weather may result in a decision to increase the frequencies listed in these sampling schedules. Likewise, reliance should never be placed entirely on the numerical results of sampling and testing when determining the acceptability of the materials and construction work. Observation of the actual construction operations and processes is necessary to determine whether or not the materials incorporated and the construction procedures utilized are acceptable and in conformance with the requirements of the contract.

### **4.5.5 Materials Documentation on Illinois Tollway Forms**

The Illinois Tollway's I-MIRS applies to Aggregate gradations; HMA & PCC plant and field-testing; and all other applicable QC, QA and IA test reports for analysis by the Illinois Tollway. Record copies are kept in I-MIRS.

### **4.5.6 CM Materials Acceptance Responsibilities**

#### **4.5.6.1 General**

The CM is responsible for checking that all materials are inspected and approved. The CM must check that all inspection, sampling, and testing are done in accordance with the instructions in this manual, the pertinent project specifications, and the record keeping listed in the Illinois Tollway CQP Manual, Capital Program Procedures, and CQP. Source of material must be approved through a WBPM submittal process before material is delivered to the site.

The Contractor shall generate a submittal package for approval in the WBPM system. The CM shall communicate with the Illinois Tollway when work is in progress to report whether or not all required testing is being accomplished.

#### **4.5.6.2 Evidence of Material Inspection**

All material shall be subject to inspection by the CM. The Contractor shall follow the requirements of the Illinois Tollway Supplemental Specifications Article 106.03, Sampling, Testing and Cited Specifications and Article 106.04, Inspection of Materials.

If material arrives on the job without any Evidence of Materials Inspection, the CM must contact the CCM and/or the PM immediately to determine the proper course of action.

If a CM decides to accept material that may not be in conformance with the pertinent contract requirements by using acceptance samples and tests, the CM must document the conditions in which the materials were accepted by the NCR process in the Tollway's WBPM system. A copy of this record must be sent to the Illinois Tollway Materials Engineer. The CM, as the duly authorized agent of the Illinois Tollway, is delegated the responsibility to question, sample, and / or reject any material arriving on the project.

If the material is rejected, then the item needs to be noted in detail in the Resident Engineer Daily Diary WBPM system entry with the basis for rejection.

The CM shall not include any item of material on a payment estimate for which there is no inspection or approval of the material until it has been approved for incorporation into the work. This too shall include any material without approved test results for PCC/HMA/Aggregate in I-MIRS or without approved test results for Soils/Others required as per Evidence of Inspection in WBPM System. Refer to the Illinois Tollway Supplemental Specifications Article 106.04.

Force Account Work and Agreed Unit Price Pay Items – Material documentation shall be accompanied and be supported by invoices for all material used. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from their stock, that the quantity was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

#### **4.5.7 Material Acceptance Responsibilities of the Contractor**

##### **4.5.7.1 General**

The Contractor is responsible for providing inspection and testing of materials to demonstrate that they meet the specification requirements and to producing work in conformance with the contract documents per the Illinois Tollway Supplemental Specifications, Article 105.05. All material certifications from the Manufacturer must include the Illinois Tollway contract number and the Illinois Tollway Specification number. All materials to be permanently incorporated into the work shall be new unless otherwise specifically prescribed in the contract documents.

#### **4.5.7.2 Suggested Contractor's Responsibilities**

The suggestions below identify common problem areas that may impact the amount of payment to the Contractor if materials certification is delayed. The CM should advise the Contractor as follows:

As far in advance as possible, furnish the Illinois Tollway, through the CM, information of the sources of materials that will be used on the project. This information should be submitted as a submittal package in the WBPM system.

Order materials as early as possible, perform QC in conformance with approved CQP, and notify the CM so that proper arrangements may be made for QA inspection.

Notify the supplier that the Illinois Tollway or State inspection is required and warn the supplier not to ship without inspection per the Supplemental Specifications.

For products with source inspection, the Contractor must plan the work so that the CM or the Illinois Tollway has sufficient advance notice to perform the sampling and testing requirements per the Supplemental Specifications.

Additional responsibilities may be required of the Contractor depending upon the governing contract documents.

#### **4.5.8 Material Acceptance**

##### **4.5.8.1 General**

Material not meeting the specifications as determined by the CM shall not be used in the work without written approval. Prior to incorporating such material into the Work, the Contractor shall submit a written request for Substitution of Material to the CM as a Submittal in the WBPM. The CM shall evaluate this request and shall make a recommendation to the Illinois Tollway. The Illinois Tollway will then rule on the request and will advise the CM of its decision.

Rejected material shall be disposed of by the Contractor to assure that none are incorporated into the work. Re-tests of materials may be authorized whenever there is sufficient reason to question the accuracy of the original tests. If re-tests are made, at least two samples shall be tested for each sample that failed. Both of the re-test samples shall meet the Specifications before the material is reconsidered for acceptance.

With HMA and Portland Cement Concrete mixtures, the CM may reject materials, suspend mixture production, or take appropriate action if the Contractor does not control the quality of the mixture for acceptance in accordance with contract requirements. The acceptance will be based on the following:

The contractor's compliance with required actions and documents for quality control per the approved CQP.



Validation of the contractor's QC by the CM's QA process using split samples, to the extent described above.

### **4.5.8.2 Material Acceptance Overview**

The following is a brief overview of the key steps involved in the materials acceptance process by the Contractor per the approved CQP.

The CM monitors the key steps as part of the QA process.

Inspection of Materials – Physical testing or visual inspection of the materials for compliance with the Specifications.

Evidence of Materials Inspection – The minimum proof that Method of Acceptance sampling and testing has been performed.

Documentation of Inspection – Documentation that the materials received on the job site were accompanied by adequate Evidence of Materials Inspection, e.g., delivery tickets, bill of lading, certifications, etc. This documentation should be included as part of the project files.

I-MIRS – The MC or designated QA representative, shall input all QA test data into I-MIRS within 3 days of test completion. The MC is responsible to review and acknowledge the QA data, contractor's QC data, and QC/QA comparisons weekly.

Project Materials Certification Review – The CM, PM, and / or General Engineering Consultant compares the quantities on all pay estimates with the inspection reports on file with the CM.

Project Acceptance – Upon completion of the materials certification review, the CM proceeds with preparation of the final change order.

### **4.5.8.3 Method of Acceptance**

Method of Acceptance refers to the means of determining whether material supplied conforms to the requirements of the Specifications. Method of Acceptance sampling and testing categories are listed below.

Manufacturer's Certification (CERT) - When testing is not practical or small quantities are involved, a manufacturer's or producer's certification may be used to accept material. The certification must represent the materials or items being accepted and must also indicate compliance with the applicable specifications. This method of accepting materials is used for items such as epoxy, grass seed, and steel frames and grates. The dimensions and/or appearance of the item must be visually examined to verify specification compliance.

Approved Materials List (LIST) - Some manufactured products are placed on an IDOT approved materials list available on the IDOT website, see section 6.3. This method of accepting material is used for items such as concrete admixtures, bridge seat sealers, and asphalt release agents. These materials are not under QC/QA or certification programs, and may be used without additional plant or

jobsite testing.

Quality Control/Quality Assurance (QC/QA) - The material is produced under an Illinois Tollway QC/QA program as defined by a specific Illinois Tollway contract, where QC is performed by the producer or contractor and QA is performed by the CM. Material acceptance criteria are included in a specification or special provision in the contract, or IDOT Policy Memorandum as referenced in the Illinois Tollway's CQP Special Provision. This method of accepting material is used for items such as aggregates, HMA, PCC, and precast concrete products.

Certified Source (QUAL) - A source that conducts an internal sampling and testing program in conjunction with IDOT or the Illinois Tollway source and random destination sampling and testing. Once a producer is certified to manufacture or produce specific products, such materials may be accepted for incorporation into the contract without additional jobsite testing. The CM is required to perform a visual examination at the jobsite. This method of accepting material is used for items such as PG asphalt binder, emulsified asphalt, PCC, and steel reinforcement bars.

Testing Program (TEST) - Materials are sampled at the source or jobsite by the contractor's QC personnel, the CM's QA personnel or contractual representatives of the Illinois Tollway and tested at the jobsite, or in a qualified private laboratory, at the discretion of the CM to verify specification compliance. This method of accepting material is used for items such as aggregates, paints, and fabrics. Jobsite sampling and testing is always a prerogative of the Illinois Tollway. Investigative samples may be taken to verify certain characteristics.

Visual Acceptance (VIS) - Acceptance or rejection of material based on an assessment of its markings, physical dimensions, obvious defects or damage, and close conformity with contract specifications. No lab or field tests are required. Visual acceptance is used when sampling is impractical, destructive tests are not practical, or no test method is available for use. Visual acceptance applies to most small quantities. This method of accepting material is used for items such as copper water pipe and metal survey markers.

#### **4.5.8.4 Evidence of Materials Inspection**

In most cases, the material for use in the Work has been pre-inspected or may have been produced under an Illinois Tollway approved QC program. Evidence of Materials Inspection is the minimum proof that Method of Acceptance sampling and testing has been performed. Evidence of Materials Inspection categories are listed below.

Bill of Lading (BOL) - A producer or supplier shipping ticket that accompanies a product to the job site and which identifies the product, source, and lot.

LA-15 (LA15) – This form is a supplier's certification indicating material is from approved stock. The form is sometimes used as a Bill of Lading (as referenced above) to indicate prior approval. The form should include supplier, proper contract/job designation, material description, manufacturer, specific approved material (test ID number, lots, or batches), and quantity.

Certification (CERT) - Manufacturer's written certification that indicates material complies with the specifications or contract.

Daily Plant Reports (DPR) - For PCC and HMA, reports generated that provide mixture test results and other production data. For QC/QA projects, refer to the appropriate special provisions to determine responsibility for Daily Plant Reports. DPRs are created and submitted through I-MIRS.

List (LIST) - The material appears on a current list of IDOT-approved products or sources found on the IDOT web site. Contact the inspecting district's materials office for information on aggregates.

Mark (MARK) - A commercial label, tag, or other marking which indicates product specification compliance and/or an approved source or manufacturer. The MARK information verified onsite by the inspector shall be referenced in a project field book or Inspector Daily Report (A-1) when payment is made. It is also suggested to take photographs of the MARK to verify that the source/manufacturer coordinates with the approved submittal. If photographs are used as part of verifying the MARKs onsite, the information shall be referenced on the A-5 form in the Quantity Book. Photographs shall be uploaded in WBPM folder 03.12.05.

Test (TEST) - Approved test result available from locally performed lab or field tests (e.g. soil density).

Ticket (TICK) - A ticket from an approved source indicating the Illinois Tollway and / or IDOT material or aggregate gradation, job designation, purchaser, and weight (if applicable).

- Visual (VIS) - A record of visual inspection is required in the Material Acceptance Log using Form A-5. This method should be used sparingly. Use for small quantities, non-structural items; all Illinois Tollway materials should have documentation.

### **4.5.9 Small Quantities**

#### **4.5.9.1 Procedures**

Field sampling, testing, or source inspection of small quantities may be waived by the CM with approval by Illinois Tollway Materials on the basis of one of the two following methods:

Approval on the basis of visual inspection provided the producer or manufacturer has recently furnished similar material found to be satisfactory under the Illinois Tollway's normal sampling and testing procedures.

Approval on the basis of certification by the producer or manufacturer stating that the material meets the specification requirements. Vendor certifications are not acceptable.

Under either of the above methods, the CM must record the acceptance on the Material Acceptance Log (A-5 form) detailing the acceptance method used. The producer and the quantity of material covered by the approval shall be indicated.

The Illinois Tollway's CQP Special Provision suggests approximate quantities of material per contract that may be approved using this procedure. The CM must utilize other methods to approve quantities in excess of those listed in small quantities documentation.

Small Quantities are addressed in the IDOT Project Procedures Guide (PPG).

### **4.5.9.2 Restrictions**

These procedures are not permitted to be used for structurally critical items or features that could directly affect the safety of the traveling public. For examples of items for which small quantities are not allowed, see the IDOT PPG. Under no conditions are materials to be used from an unknown or unapproved producer.

### **4.5.10 Certification of Materials**

#### **4.5.10.1 Project Materials Certification**

When an Illinois Tollway project is finalized, the CM is required to certify to the Illinois Tollway PM that all applicable materials certifications have been submitted by the Contractor through the WBPM system using the Illinois Tollway Documentation Matrix for Construction. The CM verifies all materials incorporated into the contract work were in conformity with the approved plans and specifications. The project material certification must be submitted with any references to non-conforming materials to be documented.

#### **4.5.10.2 Project Materials Certification Review**

When an Illinois Tollway project is finalized, a review of the project records of materials and inspection will be conducted by the Illinois Tollway representatives and the CM.

Project Records of Material Inspection must be reviewed to verify conformance to the applicable specifications including aggregate gradations; HMA and PCC plant and field-testing; and all other applicable QC/QA reports in I-MIRS to support the project materials certification. Non-conforming materials shall be identified based on the following evidence:

Project test records or project files indicate one of the conditions for initial approval was not met.

Project test records suggest that a significant portion of the mixture was not in substantial conformance with the specifications. This will require a review of all test data utilizing the HMA and PCC Reports. If a significant number or percentage of tests does not meet the specification requirements, the material should be listed as a non-conforming material and be accompanied by an explanation/documentation provided for its use on the project.

All mixture reports shall become a permanent part of the project test records, as well as supporting documents covering non-conforming materials. All information shall be included in the WBPM system.

## **4.6 Diversity Program**

### **4.6.1 Construction Manager's Roles and Responsibilities**

The CM is responsible to monitor and report on the contractor's adherence to the DBE/VOSB or Small Business Set-Aside Program and EEO requirements of their Illinois Tollway contract. The CM is responsible for obtaining Certified Payroll from all contractors and subcontractors working on the project. The CM shall also verify that all contractors and subcontractors Work Force Analysis are being uploaded into the Diversity Program Capture. The CM is to compile and submit certified payroll reports at 30, 60 and 90 percent, verifying that prevailing wage has been paid.

Office/site visits by the Illinois Tollway Diversity Department will be conducted to ensure that all Construction Managers are compliant with the DBE/VOSB, if applicable, and EEO requirements.

Refer to Section 6.0 for additional information and training materials, including the document titled "Diversity Program Training for Construction Managers", pertaining to the Illinois Tollway's Diversity Program.

## **4.7 Communication**

Providing a high level of safety for the Illinois Tollway users requires that information about maintenance and construction activities be fully conveyed to the traveling public in a timely manner. The Illinois Tollway's Communication and Marketing Department (hereinafter referred to as 'Communications'), uses various means for these public communications, including press releases, emailed construction alerts, fact sheets, palm cards distributed by toll collectors, dynamic message signs (DMS), etc. Communications also works to ensure that the content of signage is clear and consistent with other messages being delivered to Illinois Tollway users.

To facilitate the link between Communications and CMs, a Project Communications Liaison (PCL) will be established. In most cases, the PCL will have already been established for an Illinois Tollway corridor or group of the Illinois Tollway projects. In some cases, the PCL will be an employee of the CM. In all other cases the PM functions as the PCL.

It is the responsibility of the PCL to fully understand the scope and schedule of work to be performed on the Illinois Tollway, and to transmit that information to Communications. A Construction Communication Coordinator (CCC) at the Illinois Tollway is responsible for developing various communications to inform the traveling public and news media.

CMs will be informed at, or prior to, the Notice to Proceed of whether a PCL exists, who that person is, and contact information. If a PCL has not been identified, a CM representative will be designated to fulfill PCL responsibilities.

The CM must keep the PCL informed of all project related developments planned, expected, or otherwise to allow communications to effectively develop and convey the Illinois Tollway's message to the public. Note the damage to utility facilities may require the CM to implement the Illinois Tollway Emergency Communication Plan. Refer to section 4.4.6.3.

All external communication must be reviewed by the Illinois Tollway Communications prior to

release.

## **4.8 Traffic Control**

Work Zone Traffic Control and Protection shall be governed by the Illinois Tollway Supplemental Specifications, Article 701.

### **4.8.1 CM Maintenance of Traffic Engineer**

The CM shall designate a Maintenance of Traffic (MOT) Engineer if required by the applicable Professional Services Bulletin or CM's Proposal and Agreement or as directed by the Illinois Tollway. The MOT Engineer shall be responsible for the administration of all MOT requirements of this Manual and/or the Illinois Tollway's Roadway Traffic Control and Communications Manual. For contracts containing ITS elements, the CM shall also ensure that all outage requests are executed according to the Roadway Traffic Control and Communications Manual.

### **4.8.2 General**

The MOT Engineer shall study the proposed Maintenance of Traffic (MOT) staging in advance to ensure there are sufficient intermediate stages and that the traffic control plan will work. Illinois Tollway Materials shall be notified if the plan deviates from original contract documents. Upon the identification of any potential conflicts, an action plan shall be developed that identifies required dates for interim or incremental completion to mitigate any delay and achieve scheduled progress. Identified risk items shall be discussed in the weekly progress meeting to define required outcomes, assign responsibility for performance and emphasize that required MOT items stay live until removed.

The CM shall check, verify, and document that the MOT layout and traffic control devices used are in conformance with the contract documents the Illinois Tollway Specifications and the Illinois Tollway Standards and including the Illinois Tollway's Roadway Traffic Control and Communications Guidelines prior opening to traffic and/or prior shifting of traffic for each stage of construction.

For all issues related to Traffic Control and MOT, the CM shall communicate with the Illinois Tollway using the procedures included in the Illinois Tollway's Traffic Control and Communications Guidelines and utilize Traffic Control Inspection Report (Form A-1C) for inspections.

### **4.8.3 Coordination of Maintenance of Traffic Stage Changes**

The procedure by which all project stakeholders should provide review and comment prior to planned MOT Stage Changes is detailed in Capital Program Procedure P5140 - Maintenance of Traffic Stage Change Approval Procedure.

If the contract includes Microwave Vehicle Detection System (MVDS) re-aiming by the Contractor, the CM shall coordinate MOT stage change activities with the Contractor for re-aiming MVDS units affected by traffic shifts or lane closures. Form ITS-02 (MVDS Stage Change Coordination) is required to be submitted by the Contractor 3 days prior to the 21-day meeting, and a revised form (if necessary) be submitted prior to the 2-day meeting. ITS-02 is

available on the WBPM system.

#### **4.8.4 Maintenance of Traffic Management**

During the course of each stage change or temporary lane closure, the CM shall make regular inspections of the traffic control devices on the project and complete a Traffic Control Inspection Report (Form A-1C). A copy of the report shall be sent to the Contractor for appropriate action. If deficiencies are noted, the CM shall notify the Contractor, in writing. The CM shall verify that the deficiencies were corrected in a timely manner, document the corrections on the report, and again transmit copies to the Contractor.

The CM shall coordinate with the Illinois Tollway's Traffic Operations Center (TOC) supervisor to review and approve the implementation of Smart Work Zones (SWZ), as part of the overall project Maintenance of Traffic.

Immediately prior to initiating, and upon completion of a stage change or temporary lane closure, the CM shall notify the Illinois Tollway Dispatch by phone and designated Illinois Tollway personnel by email that the operation is beginning or is complete. Should the operation be cancelled for any reason, the same notification is required by the CM as soon as knowledge of the cancellation is available.

- At all other times, between stage changes, the CM shall monitor the contractor's MOT operations on a daily basis for conformance with the contract requirements.
- The CM's personnel shall be fully aware of their assigned project's MOT requirements, note observations, and report any deficiencies observed during job site travel or during performance of their regular duties on a Traffic Control Inspection Report (Form A-1C).
- A copy of the report noting observed deficiencies shall be sent to the Contractor for appropriate action and uploaded to the WBPM system. The CM shall verify that the deficiencies were corrected in a timely manner and document the corrections on the following report. If the Contractor fails or refuses to address the deficiencies noted or does not complete the task in the timely manner, a NCR shall be issued through the WBPM system. If needed, consult with the Illinois Tollway to determine the proper course of action.
- "FINAL REPORT" shall be referenced on the last project A-1C report and uploaded to the WBPM system.

At a minimum, maintenance inspections shall be performed as follows:

- Twice each shift, one at the beginning of shift work and one at end of shift work.
- If no night work is being performed, a bi-weekly nighttime inspection must be performed
- A-1C forms are not necessary to complete daily when there is no work onsite on the weekends. However, it is recommended that an inspection be completed during a long holiday weekend or if the weather is inclement. (Examples: snow/rain storms, high winds, etc.)

The CM shall confirm the re-establishment of traffic control devices as soon as possible after dislocation due to traffic accidents, weather, or any other means.

CM shall note all changes to MOT configurations and devices for incorporation in to the record drawings.

These provisions by no means are intended to relieve the Contractor of their complete and sole QC responsibility for conformance with the detailed terms of their Construction contract with respect Maintenance of Traffic requirements and to maintaining safety of both traffic and personnel.

The CM shall make entries in the Resident Engineer Daily Diary WBPM system entry regarding the following MOT items:

Current traffic stage.

Lane closures/stage changes for the day describing direction, duration, and activity.

Status of any traffic deficiencies noted: Contractor advised, corrected, or none.

Any accidents and/or injuries that occur in an Illinois Tollway construction zone shall be documented in the Resident Engineer Daily Diary WBPM system's entry and communicated to all CM, CCM (if applicable), Contractor, and Illinois Tollway personnel, which include but not limited to, the Illinois Tollway Project Manager, Chief Engineering Officer, and Illinois Tollway's legal department immediately after the occurrence. The CM is responsible for ensuring the Contractor is complying with Article 107.39 of the Illinois Tollway Supplemental Specifications to ensure the safety of all parties involved.

Payment for Traffic Control shall conform to the requirements of the Illinois Tollway Supplemental Specifications, Article 701.15.

### **4.8.5 Maintenance of the Illinois Tollway Intelligent Transportation System (ITS)**

**Existing ITS Equipment** - Before performing any work, the Contractor (through the CM) shall request from the Illinois Tollway an ISTHA ITS Asset Transfer Packet for the contract. The ITS Packet will include information regarding the locations and operational status of each ITS component that the Contractor will assume maintenance jurisdiction over for the duration of the contract. Prior to the formal transfer of assets from the Illinois Tollway to the Contractor, the CM shall supervise the Contractor's visit to each location for verification of the operability and condition of the equipment. The CM shall coordinate and resolve any discrepancy between the ITS Packet information and field verification results with Traffic Operations personnel such that an agreed asset status shall be signed off on by the contractor and the Illinois Tollway. Any subsequent corrective actions determined to be necessary at an existing ITS equipment location will be delegated as noted in the contract documents or determined to qualify as Extra Work to remedy the field device(s).

**Proposed ITS Equipment** – The Contractor is responsible for maintaining all proposed ITS equipment until it is officially accepted in writing by the Illinois Tollway. The CM shall enforce maintenance of all proposed ITS equipment by the Contractor until final acceptance.

See specific Contract Special Provision for additional instructions.



## **4.9 Nonconformance Reports**

### **4.9.1 Nonconformances**

A Nonconformance occurs when a service, product, or action does not meet requirements. Nonconformance Reports (NCR) are generated through the WBPM system to document such non-conforming work and corrective action with concurrence with all concerned parties.

The handling of nonconformances, as described below, which occur on a project, shall conform to the requirements of Capital Program Procedures P5070 - Nonconformance Reports Procedure and P5050 – Corrective and Preventive Actions Procedure.

Nonconformances that will be issued TO the CM are:

CM work and/or the submittal of CM deliverables are not in compliance with the requirements of the agreement, scope of work, or CM manual.

CM work or service that does not meet the obligations of professional practice or standard of care.

Upon discovery of a non-conforming condition, CM fails to submit a nonconformance to the Contractor in the course of administering the contract.

Deviations from the requirements set forth in the CQP-CM or deficiencies observed during Illinois Tollway external audits.

Nonconformances that will be issued BY the CM include:

Faulty Contractor execution of the work as specified in the construction contract documents.

Inadequate or faulty Contractor quality control activities including the inadequate documentation of those quality control activities.

Inadequate or faulty Contractor management of their CQP including quality control that cannot be supported by documentation and failure to submit QC test results into I-MIRS within the required time frame.

Guidance for processing nonconformance is included in the WBPM system under Project 16 User Manuals.

Additionally, the CQP-CM must include procedures that address nonconformances and close-out of nonconformances, issued to the CM as well as those issued against the Contractor including the following:

Identification of nonconformance

Control of problem

Root cause

Corrective action

Action to prevent recurrence

CM staff handling the disposition of nonconformances must have the necessary qualifications and authority to do so.

### **4.10 Construction Documentation**

#### **4.10.1 Web-Based Program Management System Usage for Documentation**

The Illinois Tollway has implemented a WBPM system that will be used by project participants. This system will function as the project record and it is expected all electronic project documentation is contained within the system, including data and forms generated through processes used to conduct business with the Illinois Tollway. Refer to section 4.4.1.

#### **4.10.2 Source Documentation**

It is required that all field activities, tests, and/or inspections be documented in a manner to include "original source documents". Daily Reports (A-1 Forms) are the Illinois Tollway's primary source of final documentation. The CM may use A-1 forms to directly record locations and field measurements, or may opt to use alternate forms of source documentation such as hardbound Field Books, or other forms specific to an activity or test being performed. If A-1 forms are not used as original source documents, copies of the field book pages or other original source documentation shall be attached to the A-1 form. The CM must keep source documentation current as work progresses throughout the day.

The CM shall not record observations, measurements, sketches, calculations, etc. on scrap pieces of paper, notebook paper, or personal notebooks. All original source documentation shall include the date, name of the consultant, and contract number. Measured By, Calculated By, and Checked By initials shall be provided, where applicable.

No erasures or whiteout shall be allowed on the Daily Reports (A-1 Forms), field books, test reports, or any other source documentation. Any incorrect entry shall be crossed out with a single horizontal line and the correct entries shall be entered and initialed, directly above.

Original source documentation must be maintained in the project files and submitted to the Illinois Tollway at the completion of the work.

#### **4.10.3 General Documentation**

All project documentation shall be maintained in the WBPM system according to the most current Illinois Tollway Documentation Matrix. The Documentation Matrix also specifies what project documents need to be submitted in the job boxes at the end of the project. Any documentation that is required to be submitted in the job boxes shall be maintained in separate labeled files, kept up-to-date during the course of the contract, and available for review by an Illinois Tollway representatives at any time.

#### **4.10.4 Project Documentation**

It shall be the responsibility of the CM to provide proper and up-to-date documentation, as described in this manual, including all quantities incorporated into the work. The various types of records and reports needed to determine and verify progress, as well as to establish interim and final quantities and Diversity Utilization Plan goal progress and attainment, are contained herein in order to provide a standard record keeping system. Examples of payment documents and reporting forms are included on the Illinois Tollway website.

CM personnel responsible for the documentation on the project must meet the qualifications in the applicable Professional Services Bulletin and must be thoroughly familiar with IDOT documentation procedures as contained in the IDOT Construction Manual. Refer to sections 4.2 & 4.5. The CM is responsible for implementing all procedures identified in the IDOT Documentation of Contract Quantities Manual, unless otherwise specified in the Illinois Tollway CM Manual.

##### **4.10.4.1 Project Diary**

The Resident Engineer Daily Diary (REDD) that is entered into the system will be considered sufficient to meet the requirements of a REDD. Therefore, it will not be necessary for the Resident Engineer to produce a hardbound "Project Diary".

The REDD entries are a primary legal document and may become evidence in future litigations, claims, or disputes. Each REDD entry shall include the following:

1. Work completed by the Contractor and subcontractor(s) during each shift.
2. Important orders, discussions, or meetings with Contractor.
3. Official visitors and inspections.
4. Work or materials rejected and reasons.
5. Time of shutting down or resuming of work and explanations.
6. Account of any time spent by Contractor's workers or equipment on disputable items of work.
7. The presence of railroad flaggers and whether the Contractor is to be reimbursed for their services.
8. Length and cause of any delay.
9. Arrival and departure of major equipment.
10. Record of important faxes and telephone calls.
11. Unusual conditions, if any, such as high water, bridge failures, slides, accidents/injuries, etc.
12. Discussions regarding any specific safety related instruction given to field staff.
13. Traffic control inspection times from the A-1C Reports.
14. Opening or closing detours, lane closures, changes in lane closures, stage changes, etc.
15. Date of NTP issued.
16. Start and End date of field office.

##### **4.10.4.2 Daily Activity Reports**

The Daily Activity Report (DAR) that is entered into the WBPM system will be considered sufficient to meet the requirements of a DAR. All DAR entries will be considered original source documentation.

All pertinent labor and equipment shall be provided in the DAR, specifically the counts of each trade and classification, along with the count of each equipment type by category.

### **4.10.4.3 Field Books**

Field Books must be hard-covered and bound books.

The inside cover of the Field Book shall include the following information:

Contract Number.

Contract Name.

Location.

Name, permanent address, and telephone number of the CM.

Proper identification to assure return to the Illinois Tollway, if lost.

The cover of each field book should be clearly identified with the contract number and contract description. If more than one field book is used on a project, the cover of each shall be uniquely identified for the purpose of cross-referencing the field book to other documentation. The Field Book Log (Form A-8) shall be used to keep record of all project field books.

All pages within the field book shall be sequentially numbered (including the field book number on each page) and an index of the contents for the field book shall be updated on a daily basis. The index should include the date of the work observed/performed, a brief description of the work observed/performed, and the page number the information is located on.

Daily field book entries shall include the date, work observed/performed, measurements taken, sketches or any other pertinent information regarding the activities observed.

Observed By or Measured By initials and dates are required on any field book page that documents measurements.

All equations that are documented in the field books must clearly identify a completed calculation that reveals a final answer. Calculated By and Checked By initials and dates are required on any field book page that documents calculations.

Any pages left blank upon daily entry shall be crossed out with the single line or marked "Intentionally Left Blank" prior to making subsequent entries. The field book index shall identify the last entry of each field book.

Field Books may be used to supplement the documentation of all field activities. However, field books are required for:

Permanent survey records, layout records and cross-sections.

Concrete Superstructure pour summary (e.g. bridge deck pours).

Paving when NOT using IDOT Form BC 2529 (HMA paving summary) or Form BC 2531 (PC Concrete paving summary). Note: When choosing to use a field book to document paving summaries, all information that is required in order to complete the IDOT paving forms (BC259/BC2531) shall be documented as such in the field book.

#### **4.10.4.3.1 Field Book Log (Form A-8)**

The Field Book Log (Form A-8) will be used to document all project field books. The log shall include the contract number and contract description. The field book number(s), the date each field book was issued for use, and the field book description by activity or the inspector's name shall be recorded for each field book. The A-8 form is to be kept current throughout the project and shall be filed with the field books.

#### **4.10.4.4 Quantity Book**

The Quantity Book shall be a three ring binder, provided by the CM, in which contract items and evidence of materials inspection shall be posted. The daily quantities posted shall be referred to when each pay estimate is prepared. The pages of the quantity book shall be arranged in the same pay item order as the pay estimate. The format and general instructions for the Quantity Book are as follows:

##### **4.10.4.4.1 Cover Sheet (Form A-3)**

The cover sheet information in the Quantity Book shall either be completed electronically or neatly printed in ink. The signature of the Resident Engineer is required on the bottom of this form. See an example in Appendix D.

##### **4.10.4.4.2 Signature and Initials Log (Form A-3A)**

The Signature and Initials log is a list of printed names, title, and the written signatures with initials of all project personnel on the contract. A copy of this log should be placed in the front of the Quantity Book. See an example in Appendix D.

##### **4.10.4.4.3 Approved Concrete Mix Design Log (Form A-3B)**

The Approved Concrete Mix Design log (Form A-3B) will be used to document all of the approved concrete mix design(s) information on the project. The log includes the approved mix design numbers, Producer/Plant numbers, plant locations, concrete class, pay item number(s) assigned to the mix, and the approved WBPM system submittal number the mix was approved on. The A-3B form shall be maintained throughout the duration of the project and filed in the front of the quantity book. See an example in Appendix D.

##### **4.10.4.4.4 Approved Asphalt Mix Design Log (Form A-3C)**

The Approved Asphalt Mix Design log (Form A-3C) will be used to document all of the approved asphalt mix design(s) information on the project. The log includes the approved mix design numbers, Producer/Source numbers, plant locations, mix type, pay item number(s) assigned to the mix, and the approved WBPM system submittal number the mix was approved on. The A-

3C form shall be maintained throughout the duration of the project and filed in the front of the quantity book. See an example in Appendix D.

#### **4.10.4.4.5 Quantity Book- Table of Contents (Form A-4)**

The quantity book table of contents shall be prepared in the same pay item order as the Pay Estimate. If additional line items are added during the course of the contract, they too shall follow the order of the pay estimate. Final quantities shall be posted to the A-4 when items are agreed to and balanced. When the contractor and CM agree to final quantities, initials from both parties shall be provided in the appropriate columns located on the A-4 form. Page numbers shall also be referenced on this form. See example in Appendix D.

#### **4.10.4.4.6 Material Acceptance Log (Form A-5)**

This form shall be completed, by the CM, as material tickets, certifications, bill of ladings, test reports, and approved submittal information are received. The "A-5" box on each Daily Report (Form A-1) shall be checked after the required material documentation for each item has been correctly recorded on the A-5 form.

- Each time an entry is made on the Quantity Record (A-6 form), it should be verified that the A-5 form contains sufficient material documentation information to cover the quantity of the item that has been paid. If there is insufficient material evidence to support the quantity listed on the A-6 form, a holdback daily report (Form A-1) should be prepared to reduce the quantity to date on the A-6 form such that the quantity to date on the A-6 form matches the quantity to date on the A-5 form.
- When the quantity for any pay item is dependent upon a weight (Tonnage) determined on a platform scale (paid by the ton), the Department of Agriculture decal date and identification number shall be printed on this page. The Department of Agriculture information is renewed annually and must be kept current on the A-5 form.
- Each entry for asphalt and/or concrete items shall record the date, source, mix number, amount of material delivered, and unit of measure the material was delivered in along with references to the I-MIRS records relating to the material
- For all other items, the WBPM system submittal containing material acceptance information (e.g. ISTHA, IDOT, approved shop drawings or catalog cuts, notarized manufacturer's certifications, etc.) shall be listed on the A-5 form.
- The CM is to record each source of material evidence on the A-5 form. All material evidence, with the exception of concrete, asphalt, and aggregate tickets is to be uploaded by the Contractor in the WBPM system. Each A-5 entry shall include the date, Manufacturer, Product Name or material code, quantity of material with unit of measure, the WBPM file location for the material documentation. The date listed on the A-5 is to correlate with the date the information was uploaded into the WBPM system.
- IDOT approved source numbers are to be listed on the A-5 forms for all items accepted on the basis of an IDOT approved list.

- For all removal pay items, letter(s) of consent from disposal sites and/or Inventory Control Forms (A-14) shall be recorded on the A-5 form. The WBPM location of Material Management Plans shall also be recorded on the A-5 form for applicable pay items.
- “Transferred to Other Item or Remarks” column is to be used when the material certification or quantity of material inspected/certified covers multiple pay items. This column should also be used for other pertinent information, such as referencing to the ticket file location, WBPM file location, or, I-MIRS record, etc. where more detailed information may be found.
- Conversion factors are also required to be entered onto the A-5 form when pay items are measured and paid in a different unit of measurement than the unit of measurement listed on the material certification/delivery ticket. If the conversion factor is variable, a final yield calculation is to be performed when the item is finalized to confirm that sufficient material has been delivered and accepted in order to process the final quantity. Conversion factors or final yields are also required for all incidental materials listed on the A-5 form.
- The A-5 form shall be placed on the “right side” of the Quantity Book. See examples in Appendix D.

#### **4.10.4.4.7 Material Inspection Report (Form A-5A)**

The Material Inspection Form (A-5A) shall be completed by the inspector and/or Resident Engineer for lump sum pay items in order to document the inspection of various materials specified in the contract documents. A separate A-5A form should be used for each component of the work which requires material documentation. Prior to field inspection by the CM, the approved submittal(s) should be reviewed and summarized in the “WBPM Approved Submittal Summary” section of the report. The material incorporated into the project shall be inspected and the required material documentation shall be submitted prior to acceptance. Once the material has been inspected and accepted, the Resident Engineer shall sign this form and assign an A-5A number in numerical order. The assigned A-5A number shall also be referenced on the A-5 form. The A-5A form shall be uploaded in the WBPM system under folder 03.12.05. Photos, Bill of Ladings, LA-15 forms, and Certifications shall be uploaded in the appropriate WBPM folders. The original A-5A form, along with any attachments, shall be maintained in the project material files. See example in Appendix D.

#### **4.10.4.4.8 Quantity Record (Form A-6)**

The A-6 form is the official record of project quantities for all pay items. The A-6 form shall be updated daily to accurately reflect the approved quantities recorded on each Daily Report (Form A-1). The “A-6” box on each Daily Report (Form A-1) shall be checked after the quantity for each item has been correctly recorded on the A-6 form.

The contract number, pay item number, pay item description, plan quantity and units, and the contract unit price shall be either be filled in electronically or neatly printed in ink.

Entries in the column titled "Date" should be the date the quantity was actually placed and should coordinate with the Daily Report (Form A-1) date.

The entries in the "Station to Station, Location, or Description" column shall describe the actual area where the quantity was placed or other unique identifier as structure number.

Entries in the columns titled "Quantities Complete" will be both the daily entry and the running total of all work completed to date for this pay item.

The Column titled "Pay Estimate No." shall include entries that indicate which pay estimate the daily quantities have been paid on.

The "CM Observation Notes" column shall be completed on an as needed basis for any additional information that may be required regarding the quantity being paid.

Each entry on the Quantity Record shall be cross-referenced to its supporting quantity documentation. The sequence number (assigned by FieldSys) for the corresponding Daily Report (Form A-1) shall be listed in the column titled "Daily Report Number".

If pay items are added to the contract by approved Extra Work Order, an A-6 form shall be added to the quantity book for each pay item. The Extra Work Order information shall be posted to the "Authorization" box at the top of this form only when the approved documents are received. The date listed in the "Authorization" box should be the date the Extra Work Order is approved. Enter the approved extra work order number in the "EWO No" column. The quantity added in the "Authorization" box shall be the approved quantity shown on the Extra Work Order. The "Approved Adjusted Quantity" column shall be adjusted accordingly. The "Plan Quantity and Units" box for each extra work pay item shall be shown as "0" with the unit of measurement listed as shown on the Extra Work Order. See example in Appendix D

Quantity adjustments to contract pay items and previously approved extra work pay items by an approved Change Order shall be posted to the "Authorization" box at the top of this form when the approved documents are received. The date listed in the "Authorization" box shall be the date the Change Order is approved. Enter the approved change order number in the "CO No" column. The quantity added/deducted in the "Authorization" box should be the approved quantity shown on the Change Order. The "Approved Adjusted Quantity" column shall be adjusted accordingly. See example in Appendix D

The A-6 form for each item is to be compared against the pay estimate to verify that the quantity to date for each item correlates with the quantity to date paid on the pay estimate, prior to submitting the pay estimate to the Illinois Tollway.

"Max Pay" items: The last IDR entry on the A-6 form shall be for adjustments related to max pay.

The A-6 form shall be placed on the "left side" of the quantity book and the A-6 forms shall be placed in the Quantity Book in the same pay item order as shown



on the A-4 form.

When each pay item is complete, the quantity shall be marked "FINAL" after the last entry on the quantity book page. Typically, this is done when CM and contractor agree to final quantities. Prior to submitting final documentation the Illinois Tollway, the CM shall verify that balancing change orders have been approved and properly recorded in the "Authorization" box for each item and confirm that the final quantity for each item coordinates with the plan quantity or the approved adjusted quantity shown in each "Authorization" box.

#### **4.10.4.5 Quantity Documentation**

##### **4.10.4.5.1 Quantity Computations**

When a calculation file is used to document a progress payment for a pay item or a series of pay items, all quantities shall be kept in consecutive pages and files, with pay item numbers and cross-references clearly marked. This calculation file shall contain all math, units of measure, conversion factors, etc.; and each page of the calculations shall be initialed and dated by the person (CM) making the calculations and by the separate individual checking the calculations. Include creator's Consultant name on spreadsheets.

##### **4.10.4.5.2 Daily Report (Form A-1)**

In order to properly document the quantities shown in the quantity book and on the Pay Estimate, daily entries on Daily Reports (Form A-1) are required.

- Each Daily Report (Form A-1) shall include the contract number, contractor/subcontractor name, the date work was completed, the date of the Fieldsys entry, Fieldsys sequence number, page numbers, pay item number, pay item description, location (station to station, offset, etc.), measured or calculated quantity, the unit of measure for each pay item listed on the form, completed "Required Materials" box, and checked "A-5" & "A-6" columns.
- Daily quantities may be based upon either estimates or final measurements. Any pay item numbers being paid for on the Daily Report shall be referenced in the "Estimated Progress Item #" and/or "Final Measurement #" fields on the front of the Daily Report.
- Any quantities being corrected or held back on the Daily Report shall also have the pay item numbers referenced in the "Corrected Item #" and/or "Holdback Item #" fields on the front of the Daily Report.
- The Daily Report must contain original source documentation either directly on or connected directly to the Daily Report to show how the quantities paid were measured, documented, and calculated. Required information includes all measurements, quantity calculations, yield calculations, depth checks, etc. Each IDR shall include copies of field book pages, plan sheets, calculation sheets, spreadsheets, computer printouts, etc. The field book number and page number for measurements or calculations recorded in field books shall be referenced on the front of the Daily Report (Form A-1).

- Overall yield calculations are required on the IDR for all pay items delivered in units which differ from the pay item unit of measure. Any yields under 100% require an explanation or recalculation.
- Any incorrect entry shall be crossed out with a single horizontal line and the correct entries shall be entered directly above. This correction shall be initialed by the individual making the change.

Spaces for Measured by, Calculated by, and Checked by shall be hand written initials and dated. The Resident Engineer shall provide a handwritten signature on the Daily Reports each day.

- The completed A-1 forms should be kept in chronological order and filed in a binder for review at any time. See example in Appendix D

All items, except lump sum or each items, shall have their entries recorded to the proper decimal place, based on unit price in accordance with the Illinois Tollway Supplemental Specifications Article 109.01, Measurements of Quantities.

#### **4.10.4.6 Guidelines for Determining In-Progress Quantities**

The following guidelines may be used in establishing estimated in-progress quantities. Whenever possible, take accurate final measurements as job progresses. Note: quantities that are estimated must be labeled as such.

##### **4.10.4.6.1 Excavation Pay Items - Cubic Yards**

Estimate percentages of Plan balance quantities.

Update quantities as balance volumes are completed.

Use load counts when available. Use 80% of truck capacity.

##### **4.10.4.6.2 Concrete Items - All Classes - Cubic Yards**

Extract the daily volumes for your computation check file.

Use a reasonable percentage (typically 90%) of actual delivered concrete.

Update each completed structure with the plan Bill of Materials and "as-built" calculations.

Confirm payment quantities by performing yield against delivery quantities.

##### **4.10.4.6.3 Reinforcement Bars – Pounds**

Establish a lbs/cy factor from plan quantities.

Use it as concrete volumes are placed for estimated quantity progress payment.

Update each completed structural item with the Plan Bill of Materials quantity. Actual bar counts and calculations are done to compare to the plan quantity, accounting for any modifications made during construction.

#### **4.10.4.6.4 Pipe Pay Items - FEET**

Count and record pipe sections as installed.

Update completed runs with measured quantities, as required by Specification Method of Measurement or Special Provisions.

#### **4.10.4.6.5 Foot and Area Pay Items (Feet, Square Foot / Square Yard)**

Base computations on actual in-place measurements.

Station to Station staked dimensions.

Plan quantity schedules.

#### **4.10.4.6.6 Sodding**

Pay 25% of area placed upon placement of sod.

Pay 75% of area placed upon acceptance of sod.

#### **4.10.4.6.7 Each and Lump Sum Items**

If payment is to be made when the item is partially completed, record station and/or location, date, the estimated percentage of completion and the basis of this estimate.

If progress payments are to be made against Lump Sum pay items the Contractor must submit, and the CM must approve, a breakdown equating progress to the percent complete/paid. This breakdown along with the CM's daily activity reports will be used as source documentation, for these progress payments.

Payments for Work Zone Traffic Control and Protection Maintenance of Traffic (MOT) shall conform to the requirements of the Illinois Tollway Supplemental Specifications, Article 701.15.

The quantities for certain pay items (e.g. removals) cannot be estimated, so final measurements must be made daily. Information needed to determine final quantities for such pay items must be obtained at the time work is done, or before, as it will be difficult or impractical to compute quantities with acceptable accuracy at a later date.

Examples of items which cannot be estimated are removal items, pilings, most weight ticket items, trench backfill, and similar items which, when installed, covered or removed, are impossible to measure.

#### **4.10.4.7 Progress Photos**

Progress photos shall be taken on a weekly basis and uploaded to the WBPM System under the Progress Photos folder and named in accordance with the Illinois Tollway file naming convention.

#### **4.10.5 Use of Computers for Quantity Documentation**

The use of computers to determine quantities is encouraged for excavation quantities, reinforcement bars, and area items. If computer printouts are used to support pay item quantities paid, the following information is required for proper documentation reference section 5.3 (**Exhibit 3**, page 114), Coordination of Illinois Tollway Software Applications.

##### **4.10.5.1 Compiled Calculation Programs Approved for Use by the Illinois Tollway**

When results of the calculation are printed, the printout must show:

Pay Item number and description.

Printout of the input data, initialed, and dated by the persons who input and checked the data.

Hard-copy of the results.

##### **4.10.5.2 Electronic Spreadsheets**

When a spreadsheet is printed, the printout must show:

Location.

Pay item number and description.

The input data.

Description of how the results are calculated (e.g. sample formulas).

Calculation results (if applicable).

Cross-references to any other referenced documents.

Construction Manager's name.

The hard-copy of the spreadsheet must be manually initialed and dated by: The person who prepared the spreadsheet and printout, and the person who checked the formulas embedded in the spreadsheet and calculated quantities.

Units of calculations (i.e. LB/FT etc.) must be labeled.

If a Standard is used to determine a conversion factor, note on spreadsheet the Standard.

#### **4.10.5.3 Other Programs**

For other programs not approved for use by the Illinois Tollway the following general rules apply:

A record of the original field measurements (if applicable) must be included in the project files.

The measurements, or a computer-interpolated version of the measurements, must be in the same format as would normally be required if the measurements had been recorded manually. In other words the raw-data must be in, or be put in, a format that could be understood by the reviewer.

The program must be identified, including version numbers.

Input data, if entered manually, must be checked.

The preparer may be required to demonstrate that the results are correct. This should be accomplished by manually calculating a sample of the results – under the supervision of the PM or auditor.

All other documentation requirements shall apply.

#### **4.10.5.4 Supporting Documentation**

The field documentation used to create the spreadsheet data for each item shall be kept on file and marked with the item number for easy cross reference.

Names or initials of persons measuring, calculating and/or checking quantities shall appear on the documentation, along with the dates each occurred.

#### **4.10.6 Documentation Guidelines**

The following are guidelines for most pay units showing the degree of accuracy for measuring each and information required for documenting each. All final quantities will be rounded in accordance with the Illinois Tollway Supplemental Specifications, Article 109.01. All daily quantities will be computed to one decimal place beyond that specified for final.

##### **4.10.6.1 Documentation Guide by Pay Units**

See Table 4.10-A

**Illinois Tollway Documentation Guide by Pay Units (Table 4.10-A)**

<b>PAY UNIT</b>	<b>REQUIRED DOCUMENTATION</b>
<b>Acre</b> Seeding	Field measurements used to calculate the final quantity $\text{Area (acre)} = \frac{L \text{ (ft)} \times W \text{ (ft)}}{43,560 \text{ s.f.}}$
<b>Calendar Day</b> Traffic Control Surveillance	Monthly entries in the Quantity Book cross referenced to daily, summarized Traffic Control Surveillance Forms.
<b>Calendar Month</b> Engineers Field Office Engineers Lab	Project Diary entry on the date the office or lab is ready for use, and Monthly entries on A-1 forms. Project Diary entry on the date the Contractor was notified the office or lab would no longer be needed.
<b>Cubic Yard</b> Structure Excavation, Trench Backfill, Porous Granular Embankment, Concrete Structures, Concrete Super Structures Concrete Headwall, etc.	Field measurements used to calculate the final quantity of the statement "built to plan dimensions" when they are used to calculate the final quantity, and Calculations.  <div style="text-align: center;">or</div> "Built according to Standard ____" statement. <div style="text-align: center;">or</div> Depth checks (where applicable)
<b>Each or Lump Sum</b>	Recorded by Station or location and date in the Quantity Book.
<b>Gallon</b> Prime Coat	Calculations based upon initialed weight tickets and Specific Gravity. The Specific Gravity is given on the shipping or storage ticket.  $1 \text{ (gallon)} = \frac{\text{net wt. (lbs)}}{8.328 \times \text{Sp. Gr.}}$ <div style="text-align: center;">or</div> Meter ticket, if the ticket contains proper information in accordance with the Specifications.  Record of the D.O.A. decal date, I.D. number
<b>Lineal Foot</b> Elec. Cables, Pipe Culvert, Piling	Field Measurements. Depth checks (where applicable)
<b>Pound</b> Rebar, Structural Steel, Fertilizer, Asphalt Prime Coat	Calculations based on the Bill-of-Materials. Use of the Weight table shown in Art. 508.07, <div style="text-align: center;">or</div> "Built according to Standard ____" statement. (Standard headwall bars, approach slab bars, etc.), <div style="text-align: center;">or</div> Weight tickets or bag counts, accompanied by conversion calculations (ie. Fertilizer Nutrients) or calculations based

PAY UNIT	REQUIRED DOCUMENTATION
	on residual asphalt content (ie. Asphalt Prime Coat) or Weights calculated using ANSI steel weights and as verified on Bill of Lading forms (ie. Structural Steel)
<b>Square Foot</b>  <b>or</b> <b>Square Yard</b> PCC Sidewalk, Patching, Base Course widening, Slopewall, etc.	Field measurements used to calculate the final quantity or the statement, "built to plan dimensions" when they are used to calculate the final quantity, and Calculations Depth checks (if applicable)
<b>Ton</b> Aggregate Ground Limestone, Aggregate Base Course, Hot Mix Asphalt, Stone Matrix Asphalt Warm Mix Asphalt	Weight tickets showing the material, date and weight, and project name & contract number. Field inspectors must initial all tickets Daily tare weights on each truck recorded and retained. (See "Small Quantities" for information regarding small quantities.) and Daily adding machine tape showing: job designation, pay item, date, location, net weight and pay weight corrected for moisture and/or 4-year lime conversion factor, if required, with "Calc. By:" and "Checked By:" initials and dates, and Record of the Department of Agriculture decal date and identification number in the Quantity Book or a record of a DOA approved commercial scale company, and Scale check for asphalt batch plants or when automatic printer tickets are used in lieu of scale inspector, and Tickets should have the jobsite and scale inspectors' initials on them. Scale inspector's initials are not needed for small quantities (see "Small Quantities")
<b>Unit</b> <b>1000 gal.</b>  <b>Suppl. Water, or</b> <b>Water</b>	Meter tickets  or Weight tickets and calculations Volume (gallon) = net wt. (lbs) $8.328 \times \text{Sp. Gr.}$ (Sp. Gr. for water = 1.0)  or volume measurements of conveyance and calculations  or Record manufacturer rated capacity of truck tank when full loads are used.

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#### 4.10.6.2 Documentation Guide by Item of Work

##### Item of Work Documentation

Removals	<p>Form A-14 (Inventory Control) ONLY for salvaged material (guardrail, signs, grates, glare screen, right of way fence, handrail etc.). *1</p> <p>A notarized letter of consent signed by the owner of the disposal site and/or recycling firm, with IEPA permit number and address of the facility. *1</p> <p>Disposal/Dump letters referencing the disposal locations for aggregate, concrete, and asphalt removal pay items. *1</p>
HMA Items	Contractor Quality Control Plan, Mix Designs, Plant Reports, Delivery Tickets, Department of Agriculture scale decal date and identification number(Tonnage item), Field Tests, Cores.*1, *2, and *3
Concrete Items	Contractor Quality Control Plan, Mix Designs, Plant Reports, Delivery Tickets, Cylinder Break Reports, Field Tests.*1, *2, and *3
Reinforcing Steel	Mill Certifications, Manufacturer Test Reports, Lab Test Reports (bending tests, coating test, or certification etc.). *1
Structural Steel	Shop Drawings, Mill Certifications, Lab Test Reports. *1
Bearings	Shop Drawings, Manufacturer Test Reports, Load Test Reports, Test Reports of samples requested by the Illinois Tollway. *1
PCC Beams	Shop Drawings, Mix Designs, Test Reports for materials, including concrete and reinforcing steel. *1
Aggregates	Source Observation or IDOT source reports (i.e. proctors, gradations, etc.), Delivery Tickets, Department of Agriculture scale decal date and identification number, Field Tests. *1 and *3
Drainage	Shop Drawings, Material Certifications, Concrete Mix Structures and Structure Designs, Test Reports for materials, including concrete and reinforcing steel. *1
Drainage Pipes	Material Certifications (pipes and coatings). *1
Embankments	Field Tests. *1 Source Inspection (i.e. proctors, moisture, plasticity indexes, etc.)
Topsoil	Bioassay Tests from an approved lab, Salt Content Tests. *1
Electrical	Shop Drawings, Manufacturer Tests, Manufacturer Certifications. *1
Painting	Manufacturer tests, Manufacturer Certifications. *1

Guardrail	Mill Certifications, Galvanizing Certifications, Anchor Bolt Load Tests. Form A-14. *1
ITS	Shop drawings, Manufacturer Tests, Manufacturer Certifications, Product Data Sheets, Equipment Testing Plans, Asset Transfer Packet, ITS Element Removal/Relocation Form. *1
Pavement Markings	Manufacturer Certifications, Manufacturer Tests. *1
Sign Supports	Shop Drawings, Manufacturer Tests, Field & Trusses Confirmation. *1

\*1 – Documentation criteria modified to meet Supplemental Specifications requirements.

\*2 – Test reports for Concrete and HMA are recorded in the Illinois Tollway's I-MIRS system. The location and report numbers for these records should be cross referenced on the A-5 (Acceptance/Testing/Monitoring Certifications Log) form.

\*3 – If copied tickets are provided, a memo shall be prepared explaining why original tickets were not obtained.

Blanket certifications from manufacturers, which do not identify the Illinois Tollway, the appropriate Contract number, and the applicable specification(s) are not acceptable.

If a pay item is encountered that does not conform to the categories included in the above list, the CM shall refer to Appendix C- Material Acceptance List.

#### **4.10.7 Extra Work Documentation**

Extra Work which results from any of the changes as specified in the Illinois Tollway Supplemental Specifications, Article 104.02 and for which no unit price is provided in the contract, shall not be started until receipt of an authorization or work order from the Illinois Tollway, which authorization shall state the items of work to be performed and the method of payment for each item. The contractor shall not be entitled to payment for work performed without such order. Refer also to section 4.4.10.

If it is practicable to pay for Extra Work on the unit price, or lump sum basis, a fair and equitable sum shall be fixed by agreement of the parties and shown in an Extra Work (EWO).

##### **4.10.7.1 Agreed Unit Price Items**

Establishment of a new unit price item will require a copy of the letter of proposal from the Contractor and an approved Extra Work Order from the Illinois Tollway.

The Agreed Unit Price (AUP) will be supported by a break-down of costs prepared by the Contractor showing labor, equipment, and mark-ups and will be supported by documentation which substantiates labor rates, which are verified by certified payrolls, benefits established by bargaining agreements, insurance and bond rates, etc. Sufficient detail must be provided in order for proper evaluation of the price. Additionally, if the work is to be performed by a subcontractor, the subcontractor's breakdown shall be provided as outlined above, .

When an Agreed Unit Price is being established, the first two characters should be XT and the third and fourth characters should be the authorization number. Example "XT010000" identifies a new agreed unit price along with the Extra Work Order number, 01.

The CM shall then review the proposed unit price and shall make a recommendation to the Illinois Tollway. The CM may have to negotiate with the Contractor to arrive at an acceptable unit price. The Illinois Tollway will have final approval. Supporting data shall be submitted as an attachment to the Extra Work Order.

### **4.10.7.2 Force Account**

When the Illinois Tollway deems it impracticable to handle any Extra Work on the unit price or lump sum basis, or if agreement of the parties cannot be reached, the Extra Work may be ordered to be performed and paid for on a force account basis. The CM shall reference the Illinois Tollway Supplemental Specifications, Article 109.04, and the IDOT Construction Memorandum pertaining to Force Account Billing, which may be found on the IDOT website, for direction with regard to reviewing contractor force account billings.

#### **4.10.7.2.1 Initiating the Work**

The CM must have copies of:

- The CM's brief explanation and the initial recommendation for the need to perform the force account work.

- The Illinois Tollway's letter or electronic approval (via the WBPM system) authorizing the work to be performed on a force account basis.

#### **4.10.7.2.2 Progress Documentation for Force Account items**

Illinois Tollway Form A-7 (Daily Report - Force Account Work or Disputed Work) shall be prepared jointly, signed by both the CM and the Contractor daily, with the original remaining in the field office, the Contractor receiving a copy, and uploaded into the WBPM system.

The CM shall create and maintain a log of A-7 forms for force account work completed on the project. The log is to include the date and description of the extra work, the approved ATP Number, estimated costs of the force account work, and the associated force account invoice number. The CM shall assign estimated values to each A7 and monitor the value of the force account work as it occurs and so that a supplemental ATP can be processed prior to exceeding the approved value of the extra work. If the extra work includes labor, equipment, or material costs that are not known by the CM at the time of construction, approximate values should be requested from the Contractor to be utilized in the estimated A7 values.

Labor - Show classification, first initial and last name of each person. Include the shift time worked and specify if the hours worked were straight time, over time, or double time hours. Copies of certified payroll shall also be provided with the force account bills. Information on the certified payroll shall include personnel names, dates, hours worked, pay rates, union deductions, taxes deductions, etc. All

certified payroll shall be filed in the CM field office in a locked fire proof file cabinet. All certified payroll shall be included with the project job box(s) at the end of each project in sealed envelopes with the contractor/subcontractor information listed on the front cover.

Equipment - The Contractor will be paid in accordance with the latest revision of "EQUIPMENT WATCH RENTAL RATE BLUE BOOK (Blue Book)" show make, model, year, horsepower, gross vehicle weight, etc. This will enable the office technician to accurately check the equipment as shown the Contractor's invoice. A copy of the Blue Book Equipment Rate sheets needs to be attached to the Contractor's invoice as backup.

Material - Attach copies of invoices, stone, asphalt, concrete or other material truck tickets, along with the appropriate materials inspection / certification to the backside of the Illinois Tollway Form A-7 (Daily Report - Force Account Work or Disputed Work).

Billing - The Contractor's billing shall follow the format established in Construction Memorandum pertaining to Force Account Billing, which may be found on IDOT's website.

Disputed Work – Explain in letter format, what work is disputed and why, and attach the explanation to an A-7 form. The CM and Contractor must both sign the letter and the A-7 form.

For force account, the first three characters of the number should be "FRC". The next two digits will correspond to the Extra Work Order number on which the item was first submitted. Example "FRC01000" identifies a new Force Account along with the Extra Work Order number, 01. The unit of measure for force account items is UNITS, and the unit price is \$1.00. The value of the force account is given in the quantity of the force account pay item.

### **4.10.8 Project Suspension Documentation**

The CM shall be required to submit to the Illinois Tollway the following list of items no later than two (2) weeks after the Contractor has suspended or slowed operations for the winter months:

An entry in the Resident Engineer Daily Diary stating the reason for the job suspension, the date the contractor stops work (winter shutdown etc.), and the date the work was resumed.

A partial pay estimate with all final quantities to date checked and agreed to by the Contractor.

A detailed list of remaining items to be completed, detailing item titles, and pay item numbers.

A time estimate and manpower estimate necessary to complete the required CM services.

Final documentation, as required, to the extent possible, including all material inspection.

#### **4.10.9 Final Documentation**

The final quantity for all items appearing in the Quantity Book shall be cross-referenced to a Daily Report (Form A-1) identified as a final measurement, which will serve as final documentation and which will show measurements and calculations used in determining the final quantity. The Daily Report (Form A-1) shall have copies of one of the following sources of documentation attached:

Copies of field measurement books (hardback only).

Cross-section paper for cross-sections only.

Reference to calculation file for such items as grading, concrete structures, and reinforcement bar.

Copy of Force Account invoice cover sheet with initials of person that checked the invoice. The original force account invoice with A-7 forms (Daily Report – Force Account Work of Disputed Work) shall be maintained in a separate file with the location reference on the front of the A-1 form.

Computer printout or spreadsheet (see section 4.10.5).

The final quantities shall be posted on the A-4 forms (Quantity Book- Table of Contents) along with the CM and contractor initials agreeing to final quantities.

For items requiring depth checks, each A-1 form identified as a final measurement, shall include depth checks.

All calculations made to determine final pay quantities must be checked by someone other than the preparer.

##### **4.10.9.1 Final Payment – Qualifications**

Final payment is normally made to the Contractor after the following conditions have been met:

All physical work has been satisfactorily completed and accepted by the Illinois Tollway.

All documentation requirements have been satisfactorily completed.

All materials incorporated into the work have been certified.

The Contractor has agreed to final quantities.

All warranty documents have been submitted.

#### **4.10.9.2 Final Measurement and Rounding**

The CM must complete and submit final measurements, calculations, and contract record documents to the Illinois Tollway no later than six (6) weeks after completion of the punchlist for the project.

Pertinent information regarding measurement of progress and/or final quantities is provided in Measurement of Quantities, the Illinois Tollway Supplemental Specifications Article 109.01, and in the Measurement and Payment Sub-sections for the various construction items, all as contained in the IDOT Standard Specifications, the Illinois Tollway and IDOT Supplemental Specifications, and Contract Special Provisions.

#### **4.10.9.3 Final Pay Estimate**

Refer to section 4.4.9.6.

#### **4.10.10 Distribution of Documents**

Electronic copies of the following documents will be available via the WBPM system as they are uploaded.

##### **4.10.10.1 Request for Acceptance and/or Approval of:**

- Proposed Subcontractors

- DBE Subcontractor/Supplier Substitutions Requests

- Shop and Working Drawings

- Concrete and Asphalt Mix Designs

- Sources of Aggregates

- Submitted Substitutions

##### **4.10.10.2 QC/QA Reports (I-MIRS):**

- QC/QA HMA Plant Reports

- QC/QA HMA Density Reports; Concrete Plant Reports

- QC/QA Concrete Compressive Strength Test Reports

##### **4.10.10.3 Other Documents:**

- Purchase Orders

- Force Account Work Daily Reports (A-7 forms)

- Significant correspondence with Contractor

## Accident records

The original signed copy of each change order, extra work order, and pay estimate shall be submitted to the Illinois Tollway (Distribution in accordance with Capital Program Procedure P3080 – Contract Change Order and Extra Work Order Procedure).

### **4.11 Project Walk Through**

The CM shall first confirm a walk through date with the Illinois Tollway GEC prior to sending any official walk through invite. This will apply to Pre-Final, Final, and any other walk through as needed.

#### **4.11.1 Pre-Final Walk Through**

After a date has been confirmed with the Illinois Tollway GEC, the CM shall schedule a pre-final walk through to perform a general overview and review of the project. The walk through shall be scheduled at a state of completion to allow for a beneficial review of the project and at a time prior to the substantial completion date. The scheduled time shall consider project completion, maintenance of traffic, ongoing contract work, among other factors. At least one week notice should be provided to walk through attendees.

For projects that contain ITS devices, the ITS site construction (including proposed and relocated devices), and all testing and burn-in periods as per the Special Provisions, should be completed prior to scheduling the Pre-Final Walk through. If the ITS work is not complete at the time of the Pre-Final Walk through, the CM shall provide a report of ITS construction status (including anticipated completion date) to the Illinois Tollway ITS Operations Manager, Traffic Operations Center supervisor, the Illinois Tollway network and communications leads, and the ITS GEC prior to the start of the Pre-Final Walk through.

The CM's punch list will be made available to walk through participants in advance of the scheduled walk through. This walk through is to establish supplemental items which need to be addressed prior to final completion. The CM shall be responsible to identify whether items identified during the walk through are contract or extra work items.

Required Walk through attendees:

- CM
- Illinois Tollway Maintenance
- Illinois Tollway PM
- Illinois Tollway GEC
- Illinois Tollway User Departments (IT, ITS, Business Systems, Building Maintenance...)
- Contractor (Optional)
- Designer (Optional)

The CM is responsible for documenting (photos, notes, etc.) the walk through. The revised punch list shall be provided to walk through participants after the completion of the walk through.

When local agencies are involved, separate walk through(s) will be conducted to review and achieve approval of jurisdictional related items.

#### 4.11.2 Final Walk Through

After a date has been confirmed with the Illinois Tollway GEC, the CM shall provide to the attendees the final punch list document. Final shall mean that the punch list items are closed which shall mean that they are either physically completed or that documentation has been provided to indicate why no further action was required by the Contractor. At least one week notice should be provided to walk through attendees.

For projects that contain ITS devices, the CM shall verify that all testing and burn-in periods have been completed, as per the Special Provisions before scheduling the walkthrough.

Required Walk through attendees:

- CM
- Illinois Tollway Maintenance
- Illinois Tollway PM
- Illinois Tollway GEC
- Illinois Tollway User Departments (IT, ITS, Business Systems, Building Maintenance...)
- Contractor (Optional)

The CM is responsible for documenting (photos, notes...) the walk through. The revised punch list shall be provided to walk through participants after the completion of the walk through.

#### 4.12 Construction Contract Close-Out and Consultant Evaluation

All contracts must be closed out in accordance with procedures established and included within the Manual. All contracts are to be closed out within 90 days of submitting the final pay estimate.

The administrative and procedural requirements for contract closeout, including, but not limited to, completion of physical work, submission of records, closeout meeting, financial closeout, and contract closeout guarantees are identified in the Illinois Tollway Capital Program Procedures, P5130 - Construction Contract Closeout. The CM may request copy of this procedure from the Illinois Tollway.

There are several basic steps to be taken by the CM in connection with the orderly close out of any construction contract.

**Expected Completion Date Letter.** Written notification to the Illinois Tollway of the expected completion date or the date the work is expected to be substantially complete, if applicable.

**Punch List.** A complete and thorough inspection of the project for the purpose of compiling a punch list of completions or corrections to be undertaken by the Contractor to bring the project to an acceptable condition. Punch list items should also be generated based upon review by representatives of Villages, IDOT, railroads, utilities, all applicable Illinois Tollway departments; and all other departments or outside entities involved in the project. The punch list is tracked



through the WBPM system process. All fields in the punch list must be completed on the A-45PL form and attached to the punch list WBPM process. These fields include:

- Date
- Description
- Location
- Responsibility (Optional)
- Projected Completion Date
- Date Complete by Contractor
- Date CM Concurred
- Inspector Initials
- Comments/Status (when applicable)

**List of Permanent Benchmarks (after construction is completed).** List may include benchmarks for each structure, for each toll plaza, & for every  $\pm 2000$  feet on mainline pavement. Place list of permanent benchmarks in a hardbound field book marked benchmarks/contract number.

**Traffic Signage.** Complete the Illinois Tollway "Sign Data Sheet" for each sign installed or relocated. Provide location and off-set/depth of the footing and actual sign size and text of the sign. Take a picture of each sign. The picture file name shall be identical to sign ID. Submit sign data sheets and pictures to the Illinois Tollway Project Manager at the conclusion of the contract via the WBPM system.

**Contract Completion Date Letter.** Written notice to the Illinois Tollway certifying that the work under the contract is in all respects acceptable and the date thereof. This notice should be accompanied by any necessary releases from other agencies, local governing bodies, railroads, abutting property owners, utilities, manufacturers' warranties for installed equipment, waivers of lien, and by the final change order, final pay estimate, and any necessary attachments thereto.

**Final Records Transmittal to the Illinois Tollway.** All completed documentation/records/files shall be indexed, boxed, and transmitted to the Illinois Tollway document control for processing as the archive project box(s). The CM is responsible for contacting the Illinois Tollway Document Controls Department with the number of job boxes being delivered 7 days ahead of their arrival.

**Annual and Final CM Performance Evaluation.** Once annually and upon receipt from the CM of record drawings, field office files, and other required closing documents, the Illinois Tollway Project Manager will complete a CM Performance Evaluation through the WBPM system process. This CM Performance Evaluation identifies key consultant personnel, records, project costs, and separately evaluates the effectiveness of the CM's overall management and the performance of the Resident Engineer, inspectors, field office staff, and the materials technicians. The Illinois Tollway will refer to the completed evaluations for the selection process of future construction inspection services.

**Post Construction / Lessons Learned.** A post construction meeting will be held two weeks after the final inspection of the contract. The CM shall schedule and chair the meeting to be attended by the CM and staff and others as deemed

necessary, the Designer of Record's Project Manager and project Design staff, the General Engineering Consultant, the Program Manager, the Illinois Tollway's Project Manager, the Deputy Program Manager, Design, and the Deputy Program Manager of Construction.

#### **4.13 Management of Performance Based Specifications**

This article describes the additional scope of work when a construction contract includes responsibility for performance based specifications. At all times, the CM must be proactive and aware of key dates within the project schedule and take steps necessary to ensure that critical elements, such as drawing production and reviews, are completed such that the work proceeds as planned.

##### **4.13.1 Pre-Bid Document Review**

The Bid Documents will be given to the CM prior to the bid. The sections that are relevant to design and build shall be reviewed for completeness and accuracy to confirm that there is a full and complete scope such that the Illinois Tollway will be assured of an appropriate transfer of responsibilities to the Contractor.

##### **4.13.2 Contractor Design Quality Management Plan**

The Contractor is responsible for the professional quality, technical accuracy, and coordination of all surveys, designs, drawings, specifications, geotechnical, and other services furnished as part of the contract. Accordingly, the Contractor must provide a design Quality Management Plan (QMP), which includes a description of their QC and QA procedures to be utilized to verify, independently check, and review all drawings, specifications, and other documentation prepared as a part of the contract. The Contractor must describe how the checking and review processes are to be documented to verify that the required procedures are followed.

##### **4.13.3 Review and Distribution of Contractor Produced Designs**

It is not the CM's function to "approve" Contractor produced drawings as the Contractor must remain entirely responsible for their deliverables. The CM is expected, however, to study the drawings and point out errors and conflicts if they are apparent. The CM review and distribution process should ensure the Illinois Tollway of:

Conformance with the Design QMP – The CM shall review the drawings and specifications submittal packages to ensure they are properly stamped by the contractor's designer, and there is evidence that the necessary QC / QA checks have been performed. The Illinois Tollway shall be informed immediately if the CM suspects that the design QMP is not being followed, and the CM may be instructed to perform an audit of the Contractor's design operations.

Document Control – The CM must review the drawings used in the field. The CM must maintain an updated log of each document, with review status for each revision number, and the date of document issue. The CM shall audit the drawings actually being used by the Contractor. It should be noted that performance based contracts typically proceed quickly and the CM shall have the drawing reviews

processed as soon as possible. The process will be handled through the WBPM system.

A complete submittal shall consist of the proposed plans in PDF format and evidence that the QA check has been performed. The CM will review the submittal; if it is confirmed that the submittal is complete, the plan sheets will be electronically stamped "Released for Construction" with the CM firm's name and the date. When the submittal is returned to the Contractor it shall include a note that references the submittal number and the individual plan sheet numbers. In addition, the plan sheets are entered into the document log showing submittal number, revision date, and released date. Revisions to the already released plan sheets that are resubmitted should use the same numerical submittal number but add an "A" or the next available letter to show a revision. The file name and date will change to reflect the most recent "Issued for Construction" version and the log will be revised to reflect changes.

#### **4.13.4 Working Drawings and Shop Drawings**

Refer to section 4.4.4.

#### **4.13.5 Illinois Tollway and Other Agency Review**

In some cases the Contractor must submit design drawings for review and approval by the Illinois Tollway or local agency prior to being "Released for Construction". For scheduling purposes, the Contractor should allow no less than fourteen (14) calendar days for the reviews and/or verifications to be conducted by the Illinois Tollway and no less than fourteen (14) calendar days for the reviews and/or verifications to be conducted by local agencies; these time frames shall also apply to comments on the final plan submittals before receiving authorization to proceed with construction with "Released for Construction" drawings. In any case, final signed and sealed component plans and calculations will be delivered to the Illinois Tollway a minimum of twenty-one (21) calendar days prior to construction or procurement associated with the work contained in any design drawing submittal.

#### **4.13.6 Lump Sum Breakdown and Progress Payments**

Prior to any progress payments being made it will be necessary to agree to a lump sum breakdown of the work for the entire project or prescribed sections. It will be necessary for the CM to assess the Contractor's proposal to ensure that it is fair representation of the value of various elements of the work so that progress payments may be made efficiently and quickly at intervals described in the contract. After the CM has agreed that the contractor's proposal is acceptable it will be forwarded to the Illinois Tollway PM for approval. Once the Illinois Tollway approval has been given, the document will be used to control all progress payments to the Contractor. The breakdown is to be used only for the purpose of progress payments and not used as the basis of establishing the value of extra work.

#### **4.13.7 As-Built Drawings**

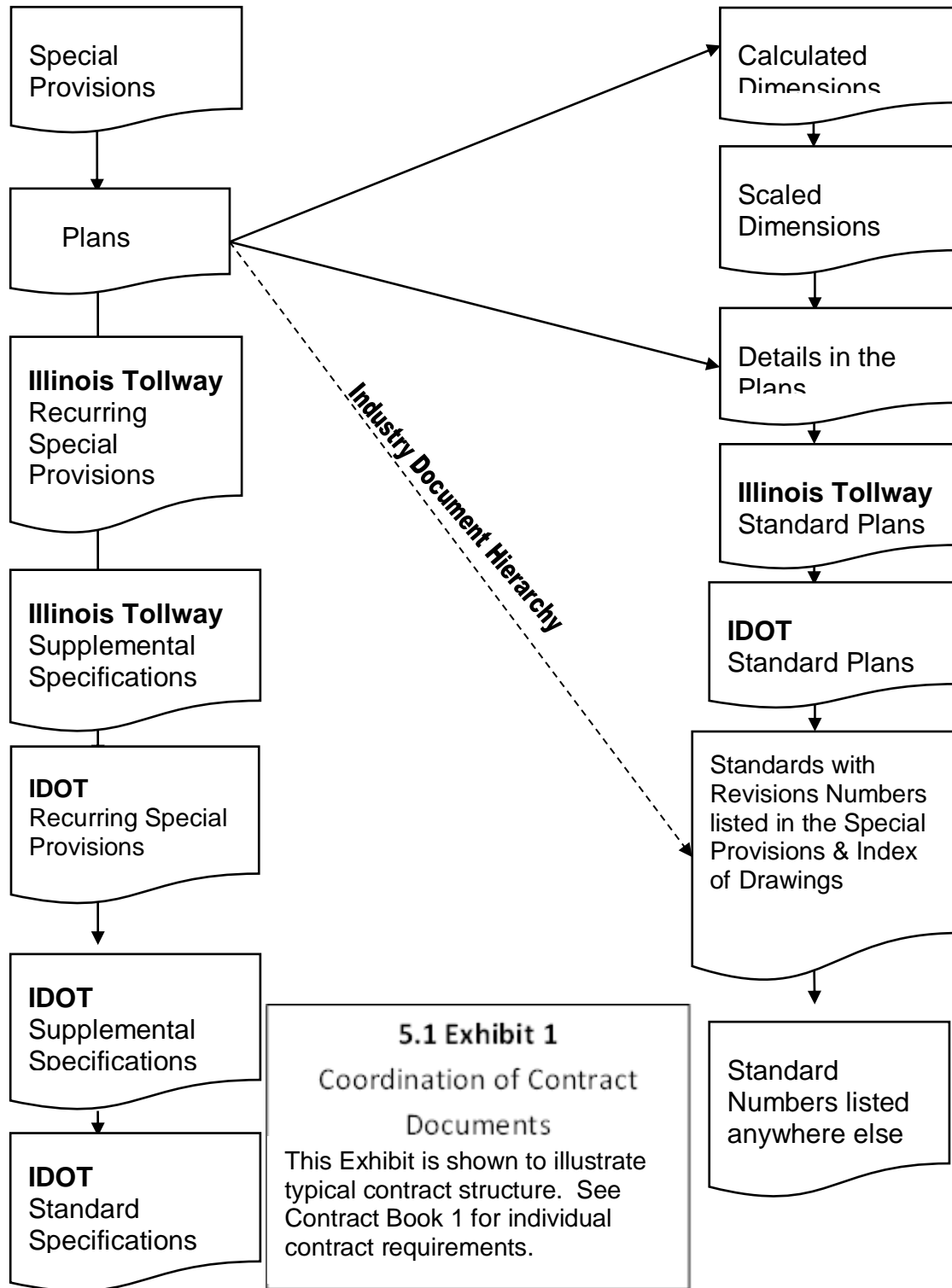
The Contractor is responsible for providing the as-built drawings for the performance-based elements. PDF and MicroStation files shall be uploaded in the appropriate WBPM system folders.

#### **4.13.8 Warranties**

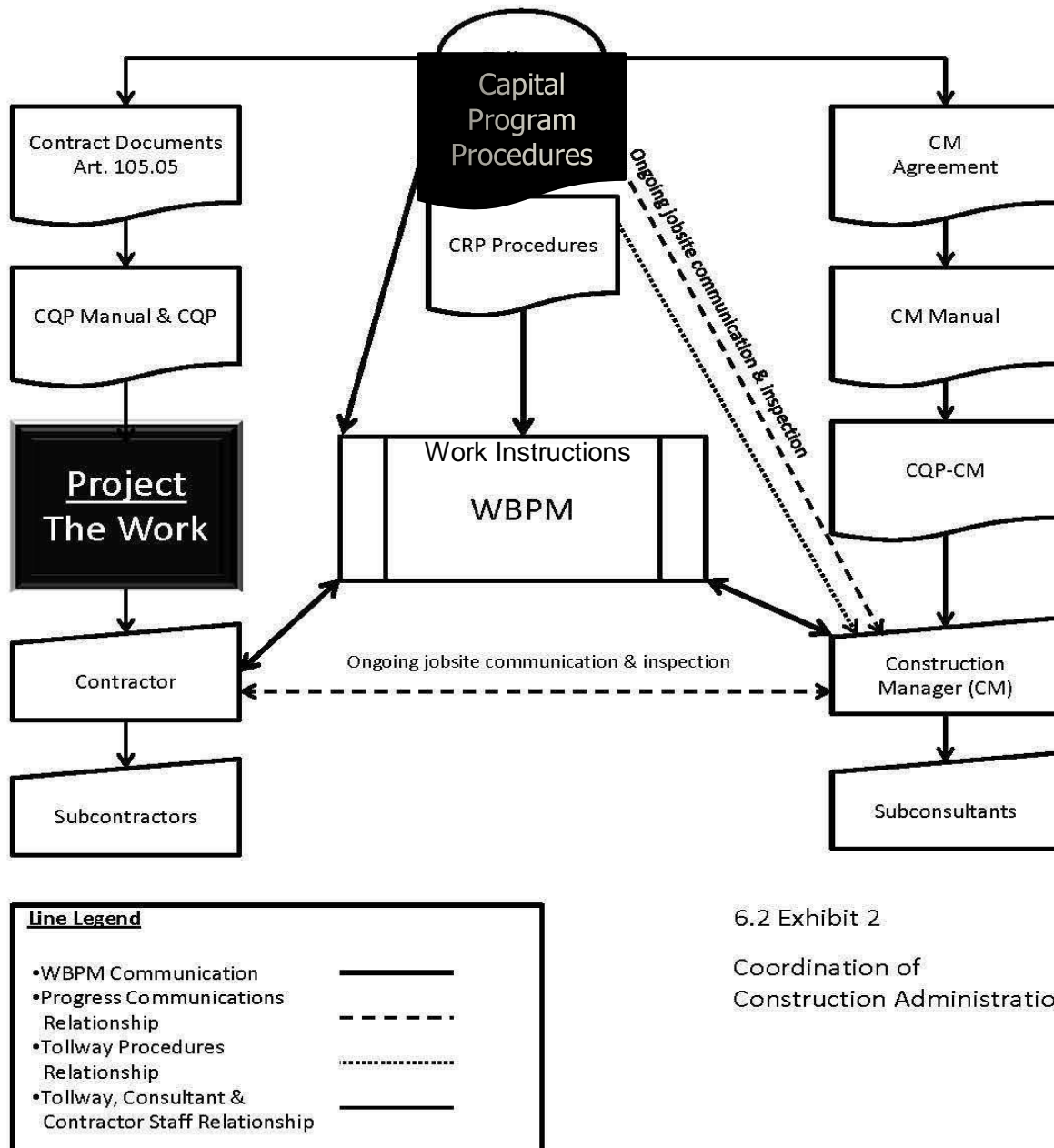
The submission and review of project Warranties shall be generated as a process through the WBPM system. The Warranty process is used to ensure the Illinois Tollway receives all completed Warranties on time by the Contractor. The Warranty reports shall be utilized the Illinois Tollway Maintenance Department to ensure inspections are completed prior to Warranty expiration.

The Contractor initiates and submits the Warranty process in the WBPM system. . A completed A-27 form (Warranty form) and all other items specified by Article 105.18 of the Tollway Supplemental Specifications shall be attached to the process. The CM is responsible for reviewing and accepting & closing the process. The CM can also return the process to the Contractor for revisions or additional information if necessary. For items with multiple warranty expiration dates, a separate process shall be submitted for each expiration date.

All Warranties are based on S.P. 103.1 (Contract Completion Date) unless otherwise stated in the Contract.

**SECTION 5.0 GUIDELINES****5.1 Exhibit 1: Coordination of Contract Documents**

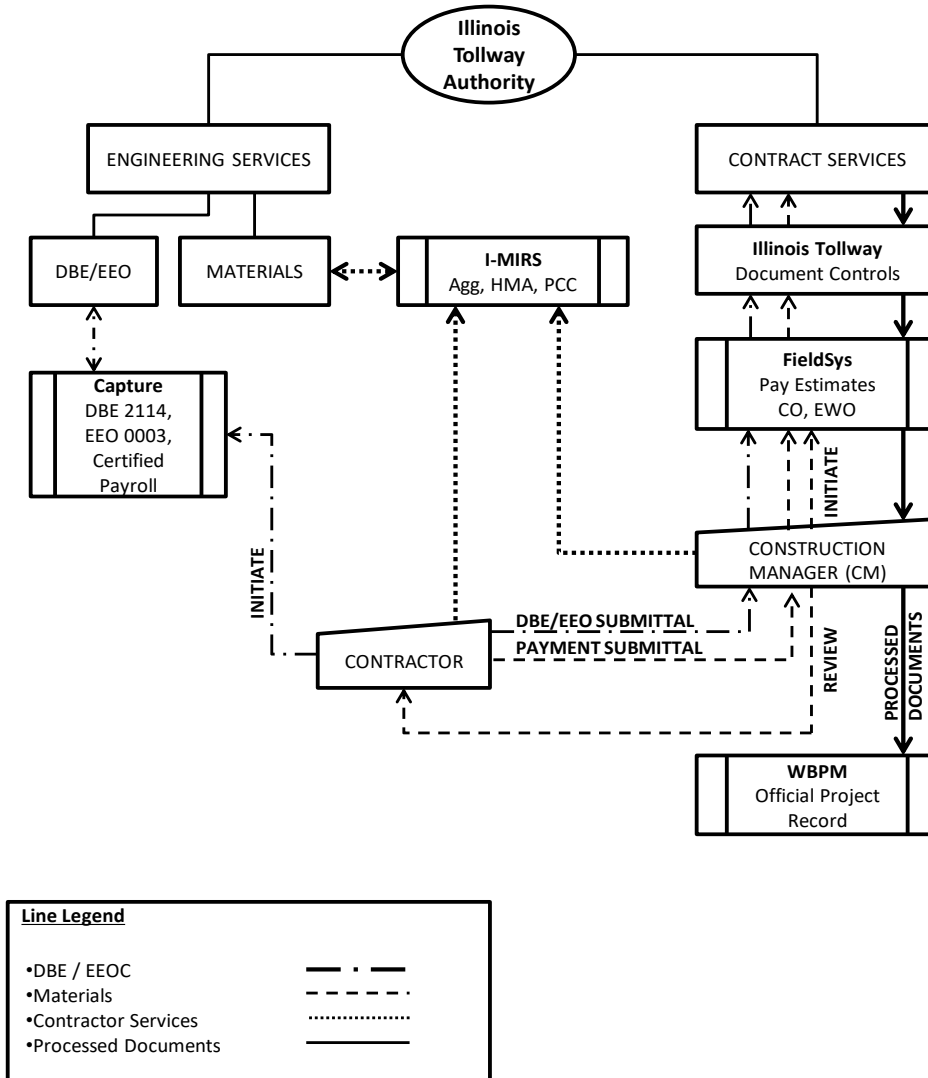
5.2 Exhibit 2: Coordination of Construction Administration



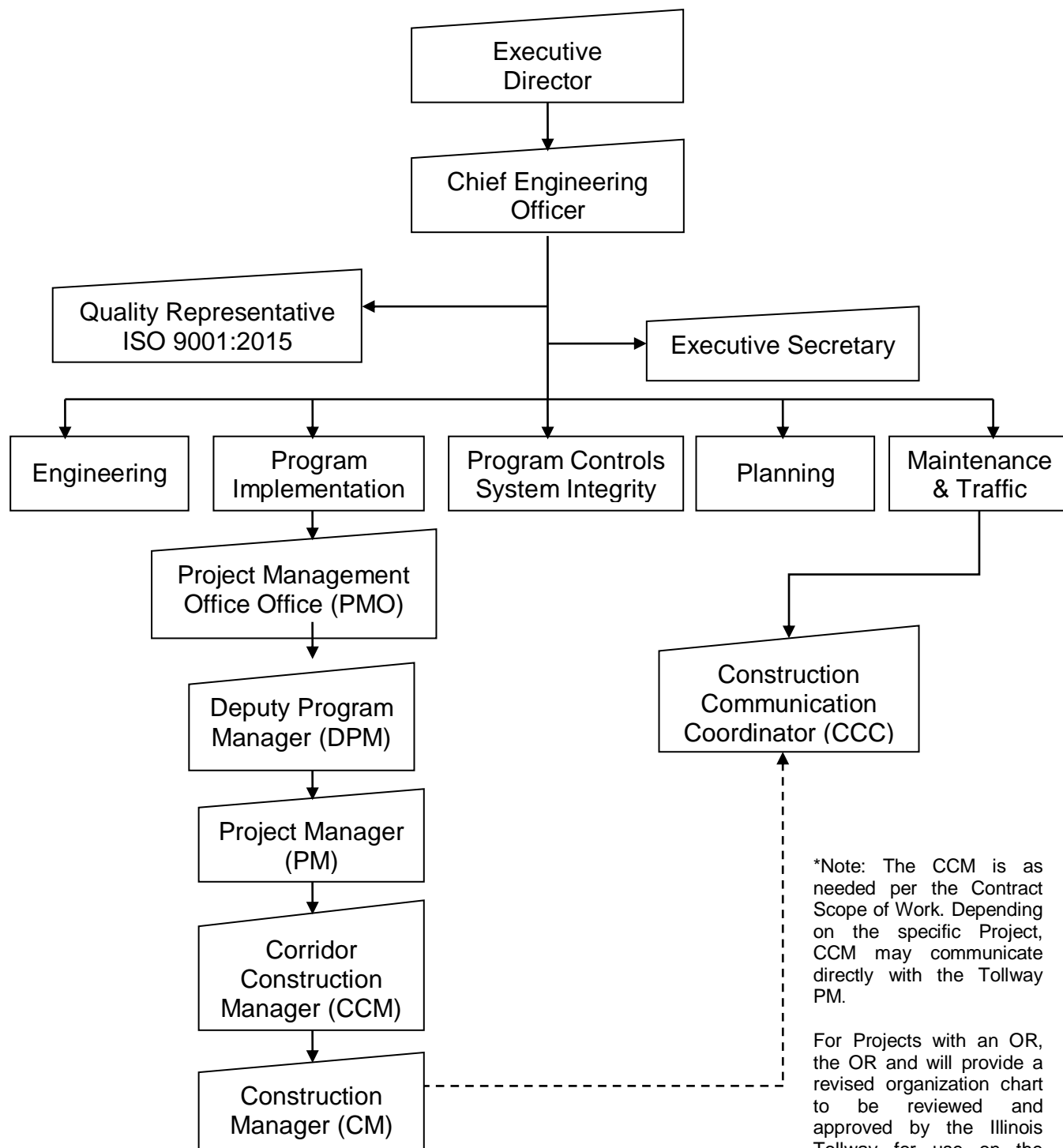
6.2 Exhibit 2

Coordination of Construction Administration

### 5.3 Exhibit 3: Coordination of Illinois Tollway Software Applications



# 5.4 Exhibit 4: Illinois Tollway Organization Chart



\*Note: The CCM is as needed per the Contract Scope of Work. Depending on the specific Project, CCM may communicate directly with the Tollway PM.

For Projects with an OR, the OR will provide a revised organization chart to be reviewed and approved by the Illinois Tollway for use on the subject projects.

## Line Legend

- Department Relationship ———
- Communication on behalf of the PM - - - - -



## SECTION 6.0 REFERENCE DOCUMENTATION

### 6.1 Purpose

Reference documentation listed in the table below (section 6.3) is the source manuals, guidelines, various Agency specifications, checklists, and forms used to create the content of the CM Manual. The CM needs to be familiar with the portions of the reference documentation that directly impact the CM's responsibilities to successfully administer the project's construction contract documentation and observation.

Capital Program Procedures, Illinois Tollway forms, and IDOT Material forms lists (Sections 6.4 through 6.8) are provided for reference. See Reference Documentation Table (Section 6.3) for the Illinois Tollway website location.

The Program Management Procedures and Forms are available from the Illinois Tollway's Project Manager. Section 6.4 provides an index for these documents.

### 6.2 Scope

The referenced documentation for the CM Manual is provided with websites and paths. Reference documentation sourced from the Illinois Tollway website takes precedence over the IDOT, WBPM system, and other website sources. Websites and paths maintained by others are subject to change without notice.

### 6.3 Reference Documentation

#### ILLINOIS TOLLWAY (ISTHA) CM MANUAL REFERENCE DOCUMENTATION

**Table 6.3.1 Illinois Tollway Website Documents**

<b><i>Reference Documentation Name</i></b>	<b><i>Website/ Path</i></b>
Illinois Tollway Website	Illinois Tollway <a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>
Illinois Tollway A & AC Forms (Inspector's Checklists)	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Joint Resources/A Forms and AC Forms
Illinois Tollway Construction Bulletins	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Consultant Resources/Bulletins

<b>Reference Documentation Name</b>	<b>Website/ Path</b>
Illinois Tollway Construction Inspector's Checklists	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Joint Resources/A Forms and AC Forms
Illinois Tollway CM Progress Reporting forms	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Consultant Resources/Invoicing Forms/ Consultant Forms/CM Monthly Progress Report Narrative (CM Inspection)
Illinois Tollway Contractor's Form	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Contractor Resources/Contractor Forms
Illinois Tollway Contractor's Quality Program Manual (CQP Manual)	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway : Doing Business/Construction & Engineering/Contractor Resources/ Manuals/Contractor Manuals/Contractor's Quality Program Manual
Illinois Tollway Design Bulletins	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Manuals, Processes and Guidelines/Design Bulletins
Illinois Tollway Design Section Engineer's Manual	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Resources/Manuals/Roadway Design and Traffic Safety/Design Section Engineer's Manual
Illinois Tollway Diversity Program	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Resources/Diversity

<b>Reference Documentation Name</b>	<b>Website/ Path</b>
Illinois Tollway Erosion and Sediment Control, Landscape Design Criteria (ESCLDC)	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway : Doing Business/Resources/Manuals/Environmental & Drainage/ESCLDC (manual)
Illinois Tollway Geotechnical Manual	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway: Doing Business/Resources/Manuals/Bridges and Structures/Geotechnical Manual
Illinois Tollway Intelligent Transportation System (ITS) Deployment Guide	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway: Doing Business/Construction & Engineering/Consultant Resources/Manuals/Roadway Design and Traffic Manuals/Intelligent Transportation System (ITS) Deployment Guide
Illinois Tollway: Intelligent Transportation System (ITS) Labeling Guidelines	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway: Doing Business/Construction & Engineering/Consultant Resources/Manuals/Contractor Manuals/Intelligent Transportation System (ITS) Labeling Guidelines
Illinois Tollway Lane Closure Guide	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway : Doing Business/Construction & Engineering/Consultant Resources/Manuals/Roadway Design & Traffic Safety/Illinois Tollway Lane Closure Reference Guide
Illinois Tollway Materials Inspection List	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway : Doing Business/Construction & Engineering/Consultant Resources/Manuals/Construction & Materials/Contractor Manuals/Contractor's Quality Program Manual

<b>Reference Documentation Name</b>	<b>Website/ Path</b>
Illinois Tollway Professional Services Bulletin	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Joint Resources/Active Construction and Professional Service Contracts
Illinois Tollway Roadway Traffic Control & Communications Manual	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway : Doing Business/Construction & Engineering/Consultant Resources/Manuals/Roadway Design & Traffic Safety/Roadway Traffic Control & Communications Manual
Illinois Tollway Standard Drawings	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Consultant Resources/Standard Drawings
Illinois Tollway Storm Water Prevention Plan (SWPPP)	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Consultant Resources/Manuals/Environmental & Drainage/ESCLDC Manual
Illinois Tollway Supplemental Specifications to the IDOT Standard Specifications for Road & Bridge Construction (Supplemental Specifications)	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway: Doing Business/Construction & Engineering/Joint Resources/Standard Specifications & Special Provisions

**Table 6.3.2 IDOT Documents**

<b>Reference Documentation Name</b>	<b>Website/ Path</b>
IDOT Website	Illinois Department of Transportation <a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>
IDOT Approved Lists for Materials	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Doing Business/Material Approvals
IDOT BMPR Lab Inspection Policies  IDOT BMPR Policy Memorandums  IDOT BMPR Policy Memorandum for Certified Reinf. Bar &/or Dowel Bar Producers  IDOT BMPR Policy Memorandum for Certified Weld Wire Reinf. Producers	PDF information ONLY:  <a href="http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Specialty-Lists/Highways/Materials/Materials-&amp;-Physical-Research/ListOfPolicyMemos.pdf">http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Specialty-Lists/Highways/Materials/Materials-&amp;-Physical-Research/ListOfPolicyMemos.pdf</a>
IDOT Construction Manual (Documentation)	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Resources/Manuals and Guides/Construction Manual

IDOT Construction Manual: HMA & PCC forms (Documentation)	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: (HMA) Doing Business/Material Approval/Hot Mix Asphalt/Forms  IDOT: (Concrete) Doing Business/Material Approval/Concrete/Forms
IDOT Construction Memorandum 08-09 (Equipment Watch's Blue Book for Documentation)	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Doing Business/Procurement/Construction Services/Current Construction Memorandums
IDOT Geotechnical Manual	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Resources/Manuals & Guides/Geotechnical Manual
IDOT Local Roads Training T2	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Transportation System/Local Transportation Partners/County Engineers and Local Public Agencies
IDOT Manual for the Fabrication of Precast, Prestressed Conc. Products	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Resources/Manuals and Guides/Manual for the Fabrication of Precast Prestressed Concrete Products
IDOT Manual of Test Procedures for Materials	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Resources/Manuals and Guides/Manual of Test Procedures for Materials
IDOT Prequalified Consultant List	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Doing Business/Procurements/Engineering, Architectural, and Professional Services
IDOT Project Procedure Guide	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  IDOT: Resources/Manuals and Guides/Project Procedures Guide

IDOT Railroad Safety Training	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Transportation System/Transportation Safety/Rail Safety
IDOT Specific Task Training (STTP)	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Resources/Manuals and Guides
IDOT Standard Drawings	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Resources/Standards
IDOT Standard Specifications, latest edition per Contract requirements	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Resources/Manuals and Guides
IDOT Subgrade Stability Manual	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Resources/Manuals and Guides/Subgrade Stability Manual
IDOT Supplemental Specifications & Recurring Special Provisions, latest edition per Contract requirements	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Resources/Manuals and Guides/Supplemental Specifications & Recurring Special Provisions

**Table 6.3.3 Other Websites & Software Applications**

<b>Reference Documentation Name</b>	<b>Website/ Path</b>
Equipment Watch Rental Rate Blue Book (Documentation)	Equipment Watch <a href="http://www.equipmentwatch.com/">http://www.equipmentwatch.com/</a>
IDOT Erosion & Sediment Control Workshop	ICT: Outreach: Erosion Control Workshop <a href="http://ict.illinois.edu/outreach/erosion-control-workshop/">http://ict.illinois.edu/outreach/erosion-control-workshop/</a>
FieldSys (Payment Software)	Received from the Illinois Tollway Document Control department
IDOT QC/QA Training Program	Lakeland College, Mattoon, IL, IDOT QCQA <a href="http://www.lakeland.cc.il.us/as/idt/index.cfm">http://www.lakeland.cc.il.us/as/idt/index.cfm</a>
I-MIRS (Materials Software)	Access received from the Illinois Tollway Materials department
Precast/ Prestressed Concrete Institute (PPCI)	<a href="http://www.pci.org/">http://www.pci.org/</a>
Web-based Project Management (WBPM)	e-Builder <a href="https://app.e-builder.net">https://app.e-builder.net</a>

**Table 6.3.4 Contract Documents**

<b>Reference Documentation Name</b>	<b>Website/ Path</b>
Agency Agreement applicable to the Construction Section	<a href="https://app.e-builder.net">https://app.e-builder.net</a> WBPM system: ProjectXXXC/Documents/03 Construction
Program Procedures	Received from the Illinois Tollway PM



CM Agreement	<p>Received from the Illinois Tollway</p> <p><a href="https://app.e-builder.net">https://app.e-builder.net</a></p> <p>WBPM system: ProjectXXXXCM /Documents/04 Construction Management/01 CM Contract</p>
Contract Documents for specified project	<p><a href="https://app.e-builder.net">https://app.e-builder.net</a></p> <p>WBPM system: Project XXXXC/Documents/03 Construction Contract</p>
Guidelines & Checklists for CM's or DSE's Quality Program (ref. Capital Program Procedure P6000 5.2.2.2)	<p><a href="https://app.e-builder.net">https://app.e-builder.net</a></p> <p>Guidelines &amp; Checklists-Contract Documents; WBPM system: Project 0016/Documents/Templates and Forms/ISO Forms for Capital Program Procedures</p>
Guidelines & Checklists for Contractor's Quality Program (ref. Capital Program Procedure P6000 5.2.2.1)	<p><a href="https://app.e-builder.net">https://app.e-builder.net</a></p> <p>Guidelines &amp; Checklists-Contract Documents; WBPM system: Project 0016/Documents /Templates and Forms/ISO Forms for Capital Program Procedures</p> <p>Procedures shall be obtained from the Illinois Tollway PM</p>
Partnering Agreement	<p><a href="https://app.e-builder.net">https://app.e-builder.net</a></p> <p>Contract Documents; WBPM system: Project XXXXCM/ Documents/04 Construction Management/01 CM Contract/01 Agreements</p> <p>WBPM: Project XXXXD/Documents/02 Design/01 Contract Documents/01 Agreements</p>
Railroad Agreement applicable to the Construction Section	<p><a href="https://app.e-builder.net">https://app.e-builder.net</a></p> <p>Contract Documents; WBPM system: Project XXXXCM/Documents/04 Construction Management/01 CM Contract/01 Agreements</p>

Time Extension Requests	<a href="https://app.e-builder.net">https://app.e-builder.net</a> WBPM system Time Extension Process Project 16/User Manual/Time Extension Requests
Illinois Tollway CM Construction Administration Checklists, Program Procedures	Received from the Illinois Tollway PM

**Table 6.3.5 Other Documents**

Reference Documentation Name	Website/ Path
QA Qualified Laboratories list	AMRL Website <a href="http://www.amrl.net">http://www.amrl.net</a>
List of Prequalified Engineering Consultant Firms	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a> IDOT: Doing Business/Procurements/Engineering, Architectural & Professional Services
Illinois Tollway Air Quality & Dust Control Specifications	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> Illinois Tollway : Doing Business/Construction & Engineering/Joint Resources/Standard Specifications & Special Provisions: 107.36 Construction Air Quality - Dust Control
Illinois Tollway Right-of-way plats &/or strip maps- Construction Section	Received from the Illinois Tollway <a href="https://app.e-builder.net">https://app.e-builder.net</a> WBPM system: Project XXXXC/03 Construction/05 Coordination/02 Right-Of-Way
Illinois Tollway Roadway Soils Report by the Geotechnical Engineer	Received from the Illinois Tollway <a href="https://app.e-builder.net">https://app.e-builder.net</a> WBPM system: Project XXXXC/03 Construction/12 Earthwork Aggregates Steel Misc Material Control

Illinois Tollway Utility Work Order applicable to the Construction Section	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 16/Documents/Templates and Forms/Utilities Agencies
Pay Estimate Checklist	<a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a>  Illinois Tollway: Doing Business/Construction & Engineering/Forms/Contractor Forms/CM Pay Estimate Checklist
WBPM system Manual	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 0016/Documents/User Manuals
Illinois Tollway Diversity Program: DBE/EEO forms & instructions	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 16/Documents/Templates and Forms/DDB-EEO Reports
Illinois Tollway Diversity Program: Training for Construction Managers	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 16/Documents/Consultant Information/Videos/Diversity (Current year)
Illinois Tollway: Intelligent Transportation System (ITS), ITS-01 and ITS- 02 forms	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 16/Templates and Forms/ITS Reference Documents
ATP Form	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 0016/Documents/Templates and Forms/ ISO Forms for Capital Program Procedures
Change Order Form	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 0016/Documents/Templates and Forms/ISO Forms for Capital Program Procedures
Change Order Review Checklist	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 0016/Documents/Templates and Forms/ISO Forms for Capital Program Procedures

Extra Work Order Form	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 0016/Documents/Templates and Forms/ISO Forms for Capital Program Procedures
Extra Work Order Review Checklist	<a href="https://app.e-builder.net">https://app.e-builder.net</a>  WBPM system: Project 0016/Documents/Templates and Forms/ISO Forms for Capital Program Procedures
IDOT Mistic Conversion	<a href="http://www.idot.illinois.gov">http://www.idot.illinois.gov</a>  PDF ONLY: <a href="http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Reports/Highways/Materials/misticpayitemmaterial.pdf">http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Reports/Highways/Materials/misticpayitemmaterial.pdf</a>
Illinois Department of Agriculture Scale Information	<a href="https://www.agr.state.il.us/weights-measures/">https://www.agr.state.il.us/weights-measures/</a>

## 6.4 Capital Program Procedures Forms List

ISO Forms are available on WBPM system:

Hyperlink to Index: <https://app.e-builder.net/da2/Home/index.aspx>

## Appendix A: Construction Manager's ITS Checklist

### PRECONSTRUCTION PHASE

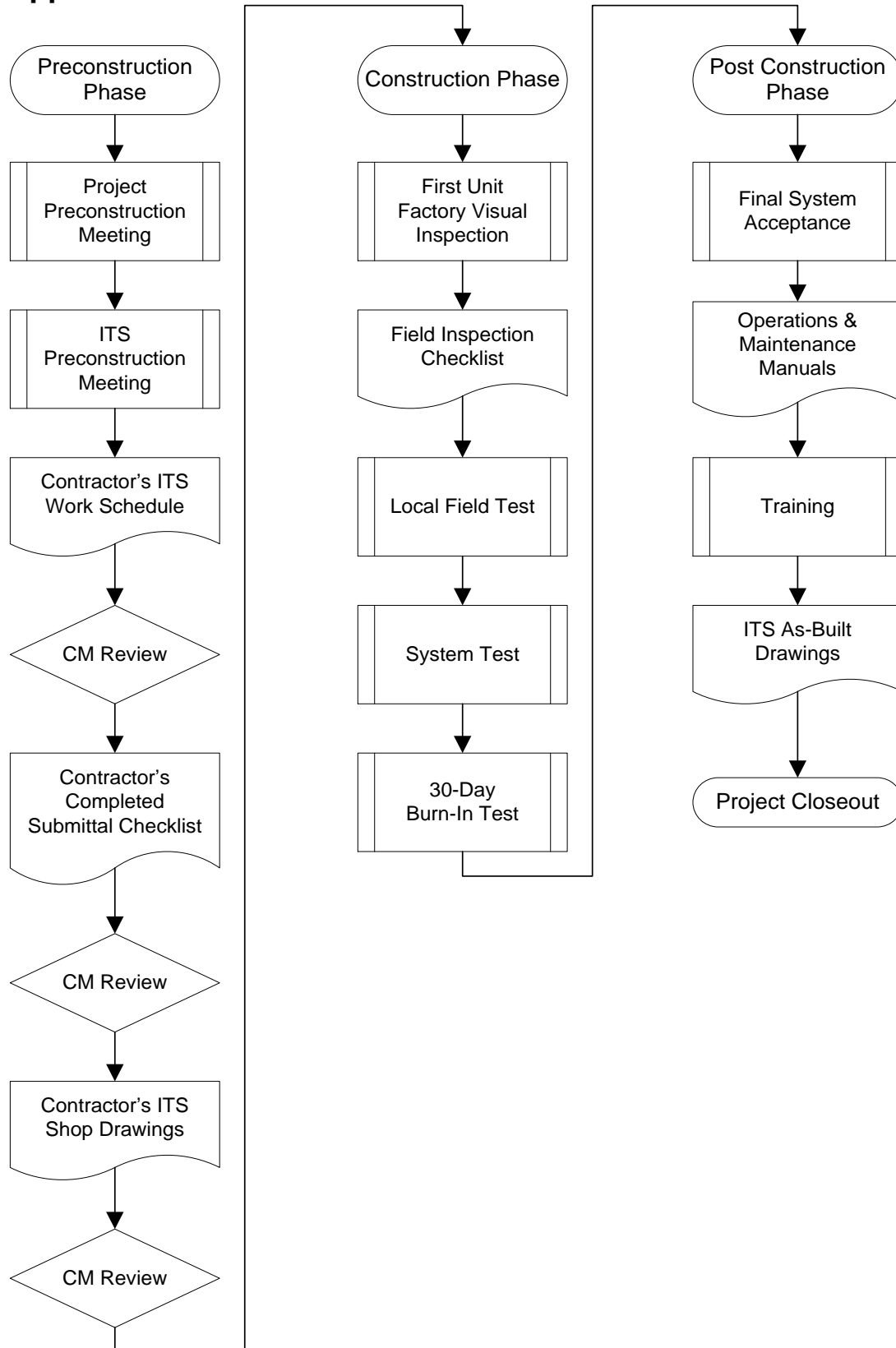
- ☐ Conduct an ITS Preconstruction meeting with the CM's ITS Inspector, Illinois Tollway Operations Manager, and ITS GEC. Provide and discuss the following topics:
  - ☐ Discuss schedule and critical path elements (submittals, approvals, fabrication, installation, commissioning, testing and walk throughs)
  - ☐ Provide testing requirement documentation and data validation requirements to Contractor
  - ☐ Provide "ITS Labeling Guide" to Contractor
  - ☐ Provide inspection criteria to Contractor
  - ☐ Review ITS Pre-Final Walk through requirements
  - ☐ Review maintenance of ITS during construction requirements
  - ☐ Review ITS site grounding testing requirements
- ☐ Review ITS submittals and shop drawings for conformance (approve/reject)
  - ☐ Review ITS submittal utilizing the submittal checklist found in special provision
  - ☐ Request DSE support for approval of nonstandard ITS submittals
  - ☐ Request GEC support for additional clarification of nonstandard ITS submittals
- ☐ Review ITS shop drawings for compliance and approve

### CONSTRUCTION PHASE

- ☐ Coordinating device configuration between the Contractor and the Illinois Tollway's communications and Traffic Operations Center (TOC) leads.
- ☐ Verify receipt of Asset Management documentation from Contractor to include:
  - ☐ ITS Device identification model and serial number of ITS devices
  - ☐ Latitude/Longitude of final installation of devices
  - ☐ IP addresses
  - ☐ Serial and Firmware version installed
  - ☐ Warranty Information
  - ☐ Site photographs including general site photo and equipment cabinet photos
- ☐ Electronic and PDF manuals delivered
- ☐ Verify that construction meets the intent of the project plans, specifications utilizing best practices and national, regional and local standards.
- ☐ Witness and verify device configuration and testing data
- ☐ Witness Contractor site and system testing
- ☐ Coordinating with the TOC supervisor on system and burning-In testing
- ☐ Conduct Pre-Final Walk through with GEC ITS and Illinois Tollway personnel
- ☐ Submit list of ITS devices that have successfully completed Contractor Local field test to TOC Manager for integration
- ☐ Notify Contractor when Burn-In test period begins
- ☐ Conduct Final Walk through with GEC ITS and Illinois Tollway

### POST CONSTRUCTION PHASE

- ☐ Include all as-built drawings, manuals and certificates, as per the special provisions, from the contractor in the WBPM system.
- ☐ Verify that training, if required, has been provided to the Illinois Tollway staff.

**Appendix B: ITS Work Flow**

## Appendix C: Material Acceptance List & Definitions

EVIDENCE OF MATERIAL	DEFINITION
BILL OF LADING	A shipping ticket that accompanies a product to the job site and which identifies the product, source, and lot.
CERT	Manufacturer's written certification that indicates material complies with the specifications or contract.
DAILY PLANT REPORTS	For PCC and HMA, reports generated that provide mixture test results and other production data. For QC/QA projects, refer to the appropriate special provisions to determine responsibility for Daily Plant Reports.
LIST	The material appears on a current list of IDOT-approved products or approved sources found at the IDOT's web site, <a href="http://www.idot.illinois.gov/">http://www.idot.illinois.gov/</a> Contact the local district's Materials Office for information on aggregates.
Illinois Tollway LIST	The material appears on a current list of the Illinois Tollway-approved products or approved sources found at the Illinois Tollway's web site, <a href="http://www.illinoistollway.com">http://www.illinoistollway.com</a> .
MARK	A commercial label, tag, or other marking which indicates product specification compliance and/or an approved source/manufacturer.
Test	Approved test results available from locally performed lab or field tests (e.g. soil density).
TICK	A ticket from an approved source indicating IDOT material or aggregate gradation, job destination, purchaser, and weight (if applicable).
VIS	Engineer or Inspector's visual examination indicating that the material is found to be acceptable based on similar approved source or manufacture, certification of conformance and or previous test.

**Note: See the Contractor's Quality Program Manual, Section 5.3.1, for the Evidence of Material Inspection Table.**



## Appendix D: Illinois Tollway “A” Form and Project Documentation Examples

1. A-1 form (Daily Report)
2. A-1C form (Traffic Control Inspection Report)
3. A-3 form (Quantity Book Cover Page)
4. A-3A form (Signature and Initials Log)
5. A-3B form (Approved Concrete and Mix Design Log)
6. A-3C form (Approved Asphalt and Mix Design Log)
7. A-4 form (Quantity Book Table of Contents)
8. A-5 form (Material Acceptance Log) **Example 1: CONCRETE**
9. A-5 form (Material Acceptance Log) **Example 2: REINFORCED CONCRETE PIPE**
10. A-5 form (Material Acceptance Log) **Example 3: ASPHALT**
11. A-5A form (Material Inspection Report)
12. A-5 form showing how to document the A-5A information
13. A-6 form (Quantity Record) **Example 1: CONTRACT LINE ITEM**
14. A-6 form (Quantity Record) **Example 2: EXTRA WORK ORDER PAY ITEM**
15. A-8 form (Field Book Log)
16. A-13A form (Production Pile Driving Record)
17. Field Book contract information and Table of Contents example
18. Material ticket tape example
19. Project Archive Box closeout label example
20. Project Archive Box Checklist for Construction Managers
21. Project Archive Box index example

# ILLINOIS TOLLWAY Daily Report

A-1

Contract No. I-55-0001 Daily Report Date 1/13/2017 Number 12  
 Contractor (Sub) XYZ Paving Fieldsys Entry Date 1/14/2017 Page 1 of 3

Item No.	Item Description	Location	Quantity	Unit of Measure	Required Material	(V) A5	(V) A6
42000501	PCC Pavement 10"	EB Lane 1: Sta. 1520+10 to 1520+90	115.55	SY	Plant Report, Tick & Test	✓	✓

☐ Estimated Progress Item # \_\_\_\_\_  
☐ Corrected Item # \_\_\_\_\_  
☐ Holdback Item # \_\_\_\_\_  
☒ Final Measurement # 42000501  
☒ Depth Checks Required and Documented  
☒ Yield Checks Required and Documented  
☒ Field Book # 2 : Page 6 to Page 8

Attachments:  
 See attached field book page for calculations, depth checks, and yield checks.

☒ Measured by AR Date 1/13/17  
☒ Calculated by AR Date 1/13/17  
☒ Checked by BD Date 1/14/17

*Joe Eagles*  
 Resident Engineer Signature

October 2013  
 Revised January 2017

**ILLINOIS TOLLWAY**  
**Traffic Control Inspection Report**

Example

A-1C

Date 4/18/2017 Time 7:50 P.M. Weather Clear 70's Contract RR-15-5713 Report No. 150Day Report ☒ Night Report ☐ Type of Work: Deck Patching Location: NB/SB I-294 Mile Long BridgeType of Closure: Temporary ☐ Permanent ☒ If permanent, current MOT stage Pre-Stage N/A ☐ (Temp Signage Only)CM/Resident Engineer: Cherry Street Engineers Contractor: J.T. Lemmons

Traffic Control	Evaluate: (A) Acceptable, (M) Marginal, (U) Unacceptable, (X) N/A				Observation Comments
	Condition	Location / Placement	Night Visibility*	Overall Effectiveness	
Signs	A	A	A	A	
Sign Flashers	X	X	X	X	
Drums or Barricade Lights	A	A	A	A	
Drums, Barricades or Cones	M	A	A	M	Five Barrels Down NB Shoulder MP15-15.1 (1)
Pavement Markings	X	X	X	X	
Changeable Message signs	A	A	A	A	
Vertical Panels	X	X	X	X	
Arrow Board(s)	X	X	X	X	
Temporary Concrete Barrier Wall	X	X	X	X	
Attenuator(s)	X	X	X	X	

Do any discrepancies from the previous report still exist?

☐ Yes, List the discrepancies that still exist:☐ No, When were the discrepancies noted resolved?☒ N/A, No discrepancies observed (From Report #149)Submitted By Signature: Eddie Carlisle (Must be Wet Ink Signature) Reviewed By Signature: Belinda Vedder (Wet Ink)

October 2013

Revised March 2017

Example

## Following Report

The questions below directly coordinate with the PREVIOUS report and do not correlate with the current traffic control report being filled out.

A-1C

Report No. 151Scenario 1 (YES)

Do any discrepancies from the previous report still exist?

☒ Yes, List the discrepancies that still exist:

Five Barrels down NB Shoulder MP15-15.1 (1)

☐ No, When were the discrepancies noted resolved?☐ N/A, No discrepancies observedScenario 2 (NO)

Do any discrepancies from the previous report still exist?

☐ Yes, List the discrepancies that still exist:☒ No, When were the discrepancies noted resolved?

Five Barrels down NB Shoulder MP15-15.1 (1) was corrected in the morning hours.

☐ N/A, No discrepancies observed

October 2013

Revised March 2017

**ILLINOIS TOLLWAY**  
**Quantity Book Cover Sheet****A-3**

**Contract No.** I-13-9999

**Description** Roadway Reconstruction: Cicero to 95<sup>th</sup> Street

**Route** I-294 Tri-State Tollway

**Mile Post** 12.0 to 17.0

Construction Manager Information	
<b>Company Name</b>	CE, Inc.
<b>Address</b>	100 S. Construction Drive, Chicago, IL 60608
<b>Telephone No.</b>	312-630-7089

Contractor Information	
<b>Company Name</b>	XYZ Paving
<b>Address</b>	123 E. Concrete Road, Chicago, IL 60608
<b>Telephone No.</b>	312-555-1234

**Resident Engineer Name and Signature** Joe Eagleyes *Joe Eagleyes*

If found, please return to:  
Illinois Tollway, Engineering Department, 2700 Ogden Avenue,  
Downers Grove, Illinois, 60515-1703, (630) 241-6800

# ILLINOIS TOLLWAY

## Signature and Initials Logs

**A-3A**

Contract No. I-15-0001

Description Roadway Reconstruction: Cicero to 95<sup>th</sup> Street

Route I-294 Tri-State Tollway

Mile Post 12.0 to 17.0

<u>Printed Name</u>	<u>Company/Title</u>	<u>Signature</u>	<u>Initials</u>
<u>Joe Eagleyes</u>	<u>CE Inc./ RE</u>	<u><i>Joe Eagleyes</i></u>	<u><i>JE</i></u>
<u>Brad Dockington</u>	<u>CE Inc./ Doc Eng</u>	<u><i>Brad Dockington</i></u>	<u><i>BD</i></u>
<u>Amy Revere</u>	<u>CE Inc./ Inspector</u>	<u><i>Amy Revere</i></u>	<u><i>AR</i></u>
<u>Pat Jennings</u>	<u>123 Eng./ Inspector</u>	<u><i>Pat Jennings</i></u>	<u><i>PJ</i></u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

March 2015



**ILLINOIS TOLLWAY****A-3B****Approved Concrete Mix Design Log**

MIX DESIGN NO.	PRODUCER/ PLANT NO.	PLANT LOCATION	CONCRETE CLASS	APPROVED FOR ITEM NO.	APPROVED e-BUILDER SUBMITTAL NO.
71PCC353P	KPM Conc/ 01	Addison	SI, PV	42000501	13-0
"	"	"	"	JS836001	"
"	"	"	"	73400100	"
"	"	"	"	JT601900	"
"	"	"	"	JT637031	"
71PCC389P	KPM Conc/ 02	Romeoville	SI, PV	42000501	25-0

November 2015

## A-3C

## Approved Asphalt Mix Design Log

[illegible]



## ILLINOIS TOLLWAY

A-4

## Quantity Book - Table of Contents

Contract No. I-15-0001Page 1 of 4

Item	Description	Page Number	Final Quantity	CM initials	Contractor initials
20200100	EARTH EXCAVATION	1	14662.3	gg	RK
20800150	TRENCH BACKFILL	2	1907.3	gg	RK
21101505	TOPSOIL EXC + PLAC	3	5351.4	gg	RK
25000400	NITROGEN FERT NUTR	4	0	gg	RK
25000600	POTASSIUM FERT NUTR	5	0	gg	RK
25100630	EROSION CONTR BLANKET	6	41091	gg	RK
25200200	SUPPLE WATERING	7	0	gg	RK
28000255	TEMP EROS CONTR SEED	8	0	gg	RK
40603340	HMA SURFACE COURSE, "D" N70	9	2547.6	gg	RK
42000501	PCC PAVEMENT 10", JOINTED	10	849.9	gg	RK
44004250	PAVED SHLD REMOVAL	11	826.8	gg	RK
50104400	CONC HDWL REM	12	13	gg	RK
50800105	REINFORCEMENT BARS	13	1206	gg	RK
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	14	71.73	gg	RK
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	15	47.3	gg	RK
54248510	CONCRETE COLLAR	16	2.38	gg	RK
550A0050	STORM SEW CL A 1 12	17	2334.5	gg	RK
550A0070	STORM SEW CL A 1 15	18	1709.8	gg	RK
550A0090	STORM SEW CL A 1 18	19	906.9	gg	RK
550A0120	STORM SEW CL A 1 24	20	1396.6	gg	RK
550A0140	STORM SEW CL A 1 30	21	1294.9	gg	RK
550A0160	STORM SEW CL A 1 36	22	2195.8	gg	RK
550A0180	STORM SEW CL A 1 42	23	424.5	gg	RK
550A0190	STORM SEW CL A 1 48	24	8	gg	RK
550A0210	STORM SEW CL A 1 60	25	2264.2	gg	RK



**ILLINOIS TOLLWAY**

### Material Acceptance Log

A-5

ITEM NUMBER: 550A0050- Storm Sewer, CL A, Ty 1, 1:

Contract No.: I-15-0001

**MATERIAL TYPE :** Reinforced Concrete Pipe

Location of Material Approval Information: WBPM Submittal No 12 and IDOT Certified Precast Concrete List

Name of Approved Source/Manufacturer: ABC Precast

IDOT Source No(s): 9998-01, 9998-12

**For Weighted (Tonnage) Items:**

IL Department of Agriculture ID No.: N/A Location of Scale N/A

MATERIAL CONVERSION FACTOR ■

(Unit Delivered/ Unit Paid)      N/A      FINAL CONVERSION or OVERALL YIELD= N/A

[illegible]

## ILLINOIS TOLLWAY

### Material Acceptance Log

A-5

ITEM NUMBER: 40603340- HMA SC "D" N70

Contract No.: I-15-0001

**MATERIAL TYPE :** Asphalt

**Location of Material Approval Information:** See A-3C form for approved mix designs

Name of Approved Source/Manufacturer: XYZ Paving

IDOT Source No(s): 9999-07

**For Weighted (Tonnage) Items:**

IL Department of Agriculture ID No.: 6012

Location of Scale: XYZ Paving- West Chicago, IL

**MATERIAL CONVERSION FACTOR ■**

(Unit Delivered/ Unit Paid)	N/A
-----------------------------	-----

FINAL CONVERSION or OVERALL YIELD= N/A

[illegible]

**ILLINOIS TOLLWAY****Material Inspection Report****A-5A**

CONTRACT NO.	<b>I-17-0003</b>
PROJECT DESCRIPTION	<b>HVAC Improvements</b>
LOCATION	<b>Systemwide</b>

CM FIRM	<b>CE Inc.</b>
CM RE	<b>Joe Eagleyes</b>
MILEPOSTS	<b>Systemwide</b>

MATERIAL DESCRIPTION	REQUIRED QUANTITY	UNIT
<b>Air Handling Units</b>	<b>2</b>	<b>Each</b>
PAY ITEM NUMBER	PAY ITEM DESCRIPTION	INSPECTED QUANTITY
<b>JT131442</b>	<b>HVAC Removal and Replacement, Loc. 2</b>	<b>1</b>
		<b>Each</b>

WBPM APPROVED SUBMITTAL SUMMARY		
SUBMITTAL NO.	SUBMITTAL PACKAGE NO.	APPROVED SUBMITTAL DATE
<b>22</b>	<b>20-0</b>	<b>11/18/16</b>
MANUFACTURER	LOCATION	IDOT PRODUCER CODE (if applicable)
<b>Continental Cooling</b>	<b>Chicago, IL</b>	<b>N/A</b>
SUPPLIER	LOCATION	IDOT SUPPLIER CODE (if applicable)
<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
SIGNIFICANT NOTATIONS (if applicable)		
<b>None</b>		

CM INSPECTION		
DATE OF INSPECTION	INSPECTED BY	SPECIFICATION & SECTION or PAGE NOS.
<b>1/26/17</b>	<b>AR</b>	<b>Contract Requirements Book p. J-130-137</b>
<input checked="" type="checkbox"/> MATERIAL MEETS SPECIFICATION AND IS ACCEPTED		<input type="checkbox"/> MATERIAL DOES <b>NOT</b> MEET SPECIFICATION
EVIDENCE OF INSPECTION: <input checked="" type="checkbox"/> VISUAL INSPECTION <input checked="" type="checkbox"/> TICKETS or BILL OF LADING <input type="checkbox"/> PRODUCER CERTIFICATION <input type="checkbox"/> LA-15 <input type="checkbox"/> ISTHA/IDOT INSPECTION <input type="checkbox"/> IL-OK STAMP <input checked="" type="checkbox"/> MARK <b>CC AHU-1</b> OTHER _____ (With photographs)		COMMENTS:
DOCUMENTATION IN WBPM FOLDER      Photos uploaded in 03.12.05 + BOLs in 03.16.01.02		
ATTACHMENTS	<input type="checkbox"/> NONE <input type="checkbox"/> TAG/LABEL <input checked="" type="checkbox"/> PHOTO(s) <input type="checkbox"/> SHOP DRAWING <input type="checkbox"/> OTHER _____	

MIR APPROVAL (RE Signature): Joe Eagleyes DATE 2/1/17

March 2017

**A-5A NO. 1 IDR NO. 3**

**ILLINOIS TOLLWAY****A-5****Material Acceptance Log**ITEM NUMBER: JT131442Contract No.: I-17-1321CMATERIAL TYPE: HVAC ReplacementLocation of Material Approval Information: Lump Sum pay item- See A-5A info listed belowName of Approved Source/Manufacturer: N/AIDOT Source No(s): N/A

For Weighted (Tonnage) Items:

IL Department of Agriculture ID No.: N/ALocation of Scale: N/A

MATERIAL CONVERSION FACTOR =

(Unit Delivered/ Unit Paid)

N/AFINAL CONVERSION or OVERALL YIELD= N/A**EXAMPLE: How to reference A-5A information on the A-5 form**

Date	Source or Manufacturer and Mix No. (if applicable)	Amount Unit ( )	Total to Date Unit ( )	WBPM File Folder Number	Date uploaded in WBPM	Transferred to Other Item or Remarks
	<b>Air Handling Units</b>					
1/26/2016	Continental Cooling Inc.	2	1	03.12.05	1/28/2016	A-5A # 1
1/27/2016	"	3	4	03.12.05	1/28/2016	A-5A #5
	<b>Refrigerant Piping &amp; Fittings</b>					
1/11/2016	Continental Cooling Inc.	200 feet	200 feet	03.12.05	1/12/2016	A-5A # 2
	<b>Condensing Units</b>					
1/18/2016	Clean Air Co.	2 each	2 each	03.12.05	1/20/2016	A-5A #3
	<b>Cable</b>					
1/15/2016	StraightWire Cable Co.	500 feet	500 feet	03.12.05	1/20/2016	A-5A #4
	<b>Conduit</b>					
1/20/2016	Metal Bros.	400 feet	400 feet	03.12.04	1/20/2016	A-5A #6
	<b>Reports</b>					
4/12/2016	Test and Balance Reports	N/A	N/A	03.12.01	4/12/2016	
	<b>Salvage Items</b>					
11/12/2016	A-145- Cooling Units	4	4	03.12.04	11/12/2016	
Note: This page is provided for reference only and does not include all applicable materials. The material documentation for all major components of lump sum pay items are to be listed on the A-5 form.						







**ILLINOIS TOLLWAY  
Field Book Log****A-8**Contract No. I-15-0001Contract Description I-294 Roadway Reconstruction: Cicero to 95<sup>th</sup> Street (MP 12.0 to 17.0)

Field Book #	Description/ Issued To	Date Issued
	<i>For Field Books assigned by Activity type:</i>	
1	Removals	12/15/15
2	Earth Excavation	12/15/15
3	PCC Paving	1/16/15
	<i>For Field Books assigned to inspectors:</i>	
1	Amy Revere	12/15/15
2	Brad Dockington	12/15/15
3	Pat Jennings	1/16/15

# ILLINOIS TOLLWAY

## Production Pile Driving Record

A-13A

Structure Number (Enter #) Date 7/1/2016 Sheet 1 of 1  
 Abutment/Pier No. East Abutment (Stage 1) Contract I-15-0001  
 Pile Type & Size HP 14 x 73 Location I-294: Cicero to 95<sup>th</sup>  
 Nominal Required Bearing 434.5 Estimated Plan Length 50 ft Milepost 12.0 to 17.0  
 Pile Cutoff Elevation 646 Authorized Furnished Length 36 ft Driven Bearing Verification WSDOT  
 Ground Surface Elev. at Pile While Driving 647.89 Closest Boring(s) E-1 & E-2  
 Hammer Make & Model D30-32 Hammer Cushion Material & Thickness Plastic MC 904 & 2.0 inches  
 Max. Operating Energy 55138 Min. Operating Energy 23427 Pile Hammer Weight 6610

Pile No. <u>1</u>					Pile No. <u>1</u>				
Tip Elevation (Feet)	Distance Below Cut Off	Blows Per (Foot)	Hammer Energy Developed	Nominal Driven Bearing	Tip Elevation (Feet)	Distance Below Cut Off	Blows Per (Foot)	Hammer Energy Developed	Nominal Driven Bearing
647.89	-1.89				616.89	29.11	16	47363	381
646.89	-.89				615.89	30.11	18	49679	417
645.89	.11				614.89	31.11	18	52126	438
644.89	1.11				613.89	32.11	20	52126	455
643.89	2.11								
642.89	3.11								
641.89	4.11								
640.89	5.11								
639.89	6.11								
638.89	7.11								
637.89	8.11								
636.89	9.11								
635.89	10.11								
634.89	11.11								
633.89	12.11	3	37772	107					
632.89	13.11	3	37772	107					
631.89	14.11	3	43130	123					
630.89	15.11	3	43130	123					
629.89	16.11	4	43130	161					
628.89	17.11	5	43130	191					
627.89	18.11	5	43130	191					
626.89	19.11	5	45180	200					
625.89	20.11	7	45180	247					
624.89	21.11	9	45180	282					
623.89	22.11	9	45180	282					
622.89	23.11	9	45180	282					
621.89	24.11	9	54838	343					
620.89	25.11	9	54838	343					
619.89	26.11	9	52126	326					
618.89	27.11	9	52126	326					
617.89	28.11	10	52126	343					
Driving Observations and Comments: 395 Kips used for production Furnished Length was: 60.3 feet Cutoff Length was: 27.89 feet									

Measured By JF Calculated By JF Checked By JE

**FIELD BOOK 1: REMOVALS**

IF FOUND PLEASE RETURN TO:

Name: ILLINOIS STATE TOLL HIGHWAY  
 DEPARTMENT OF ENGINEERING  
 Address: 2700 OGDEN AVENUE  
 DOWNERS GROVE, IL 60515-1703  
 Phone: (630) 291-5800

CONTRACT# 1-15-0001  
 I-294 TRI-STATE TOLLWAY ROADWAY  
 RECONSTRUCTION:  
 CICERO TO 95<sup>th</sup> STREET (MP 12.0 to 17.0)

**CM INFORMATION:**  
 CE, Inc.  
 100 S. Construction Drive  
 Chicago, IL 60608  
 (312) 630-7089

Projects

INDEX		
DATE	DESCRIPTION	PAGE(S)
6/1/15	TREE REMOVAL	1-2
6/2/15	TREE REMOVAL	3-6
6/3/15	CLEARING	7-12
6/4/15	CLEARING	13-24
6/5/15	HMA MILLING	25-20
6/9/15	HMA MILLING	21-24
6/10/15	PAVEMENT REMOVAL	25-26

This book is published on a fine 50% cotton-content ledger paper, specially treated for maximum archival service, and protected by a water resistant surface sizing.

## Ticket Tape Example for PCC Pavement, 10"

Date: 8/20/15

Contract: I-15-00001

Pay item: JI420005

Description: PCC Pavement,  
10" Jointed

Location: Lane 1 (NB)

Sta. 426+00 to 428+50

		0. C
Calculated by: AR	Date: 8-20-15	9.00 +
		9.00 +
		9.00 +
		9.00 +
		9.00 +
		9.00 +
		9.00 +
		9.00 +
		9.00 +
		9.00 +
4.00 +		
		94.00 *
		cys
		delivered

# **CONTRACT I-15-0001**

**ROADWAY RECONSTRUCTION**

**TRISTATE TOLLWAY (I-294): MP 12.0 to 19.0**

**CM: CE, INC. GC: XYZ PAVING**

## **Box 1 of 2**

**Files C-01 to C-09**

**A-1s, Qty Book, A-7s, A-2s, A-38s, Tickets**



### **Project Archive Box Checklist for Construction Managers (e-Builder)**

This checklist must be completed before archive boxes can be turned over. The Tollway cannot hold boxes in a temporary storage location in order to wait for missing documentation to arrive. Please submit this form to the Tollway Document Control Manager at box delivery. The CM shall include all original (e.g. wet-signature) documents in the project archive boxes. Not required in the boxes are copies of non-original documents already archived in e-Builder, i.e. Change Orders, Extra Work Orders, ATPs, Subcontractor Approvals (A-15), etc.

Yes N/A

- ☒ Record Drawings have been uploaded to the Record Drawings folder in e-Builder in bundled PDF volumes.<sup>1</sup> [03 Construction \ 19 Project Closeout \ 02 Record Drawings and Specifications]
- ☒ Record Drawings in MicroStation format have been uploaded to the Record Drawings subfolder below in e-Builder AND burned to a CD that is included in the boxes.  
[03 Construction \ 19 Project Closeout \ 02 Record Drawings and Specifications \ 01 CAD Drawings]
- ☐ ☒ O&M manuals have been submitted to final users with additional copies placed in boxes.
- ☒ Smaller sized banker boxes have been used (approx. 10"H x 12"W x 15"D).  
R-Kive Box #7243 or Staples Box #33250 are appropriately sized boxes.
- ☒ An index has been prepared with box numbers and short descriptions of box contents.
- ☒ A detailed Table of Contents of each box has been taped to the underside of each box lid.
- ☒ Written on the outside, on both the front and back of each box is the following:  
Contract #  
Short Description of Contents  
Box # \_\_ of \_\_
- ☒ Certified Payroll has not been interspersed among the boxes or attached to other documentation (such as diversity forms or Change Orders).
- ☒ Certified Payroll documents have been organized by vendor, kept together in the fewest number of boxes possible, and sealed in a tamper-proof envelope or a functional equivalent with the sealed envelopes appropriately labeled with the company name. (Large UPS mailer bags work well for this purpose).
- ☒ The index identifies the box(es) that contain Certified Payroll documents, but the outsides of those boxes are not labeled as containing Certified Payroll.
- ☒ Document Control has been notified of the number of boxes being delivered to the Tollway at least 7 days ahead of their arrival.
- ☒ A signed Documentation Matrix for Construction will accompany the boxes and has been checked against the contents of the archive boxes for completeness. (Note in comments the location of any documents not archived in the place prescribed by the Matrix). The Matrix will be signed by the Tollway PM upon receipt. The matrix is found in e-Builder: Project 16 → Documents \ Project Documentation Matrices.
- ☒ Boxes will be accompanied by a transmittal letter to be signed by the Tollway upon receipt.

---

<sup>1</sup> For more information on Record Drawing requirements, refer to the Construction Manager's Manual on the Tollway's website: Doing Business → Construction and Engineering → Consultant Resources → Manuals → Construction and Materials

Questions? Please contact Tollway Document Control at: ([jdainis@getipass.com](mailto:jdainis@getipass.com)).

Rev. 3/2015

Contract No: I-15-0001  
 Description: I-294 Roadway Reconstruction (MP 12.0 to 19.0)  
 CM Firm: CE, Inc.  
 Contractor Firm: XYZ Paving

## Archive Box Index

### BOX NO. 1 of 2

File ID	File Name	Notes
C-01	01 Construction Contract	
C-01-05	05 Sub-Contractor Approvals	Original Letters <i>(if applicable)</i>
C-02	02 Correspondence	
C-02-01	01 Tollway-CCM-CM-DCM-DSE-GC	Original Letters only
C-02-02	02 Tollway-CCM-CM-DCM-DSE	Original Letters only
C-02-03	03 Tollway-CCM-CM-GC	Original Letters only
C-02-04	04 Tollway-CCM-CM	Original Letters only
C-02-05	05 Tollway-CCM	Original Letters only
C-03	03 Payment	
C-03-01	01 Certified Payroll	Filed by contractor/sub contractor in sealed
C-03-02	02 Paid Material and Freight Bills	envelopes
C-06	06 Construction Progress	
C-06-01	01 Contractor's Progress Reports	Original A-2 Reports
C-08-01	01 Daily Activity Reports	See Below
C-08-01-01	01 A-1 Reports	
C-08-01-02	02 Quantity Book	
C-08-01-03	03 Delivery Tickets	Items 20800150 to Z0026400
C-08-01-04	04 Field Books	Field Book Log (A-8) included
C-08-01-05	05 Quantity Calculations	
C-08-03	03 Environmental Inspection Reports	
C-08-03-01	01 ESC Inspection Reports	Original A-38 forms
C-08-05	05 Sewer Television Reports	Original reports
C-08-06	06 Force Account or Disputed Work	A-7s and Force Account Bills filed by pay item
C-09	09 Traffic Control	
C-09-02-01	01 Daily MOT Inspection Report	Original A1-C forms

## **Appendix E: ITS Flow Charts**

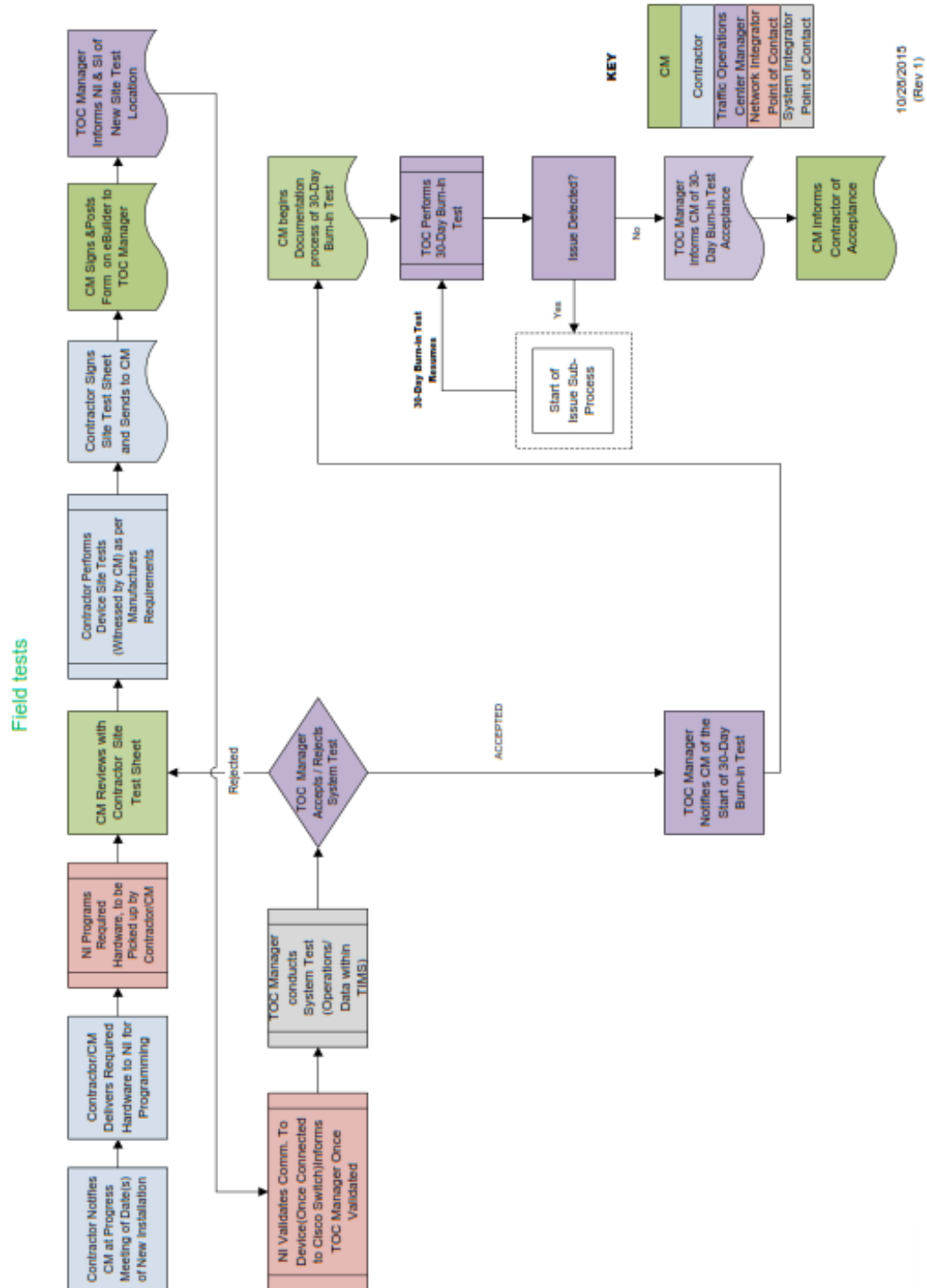
### Appendix E

#### ITS Processes Flow Charts:

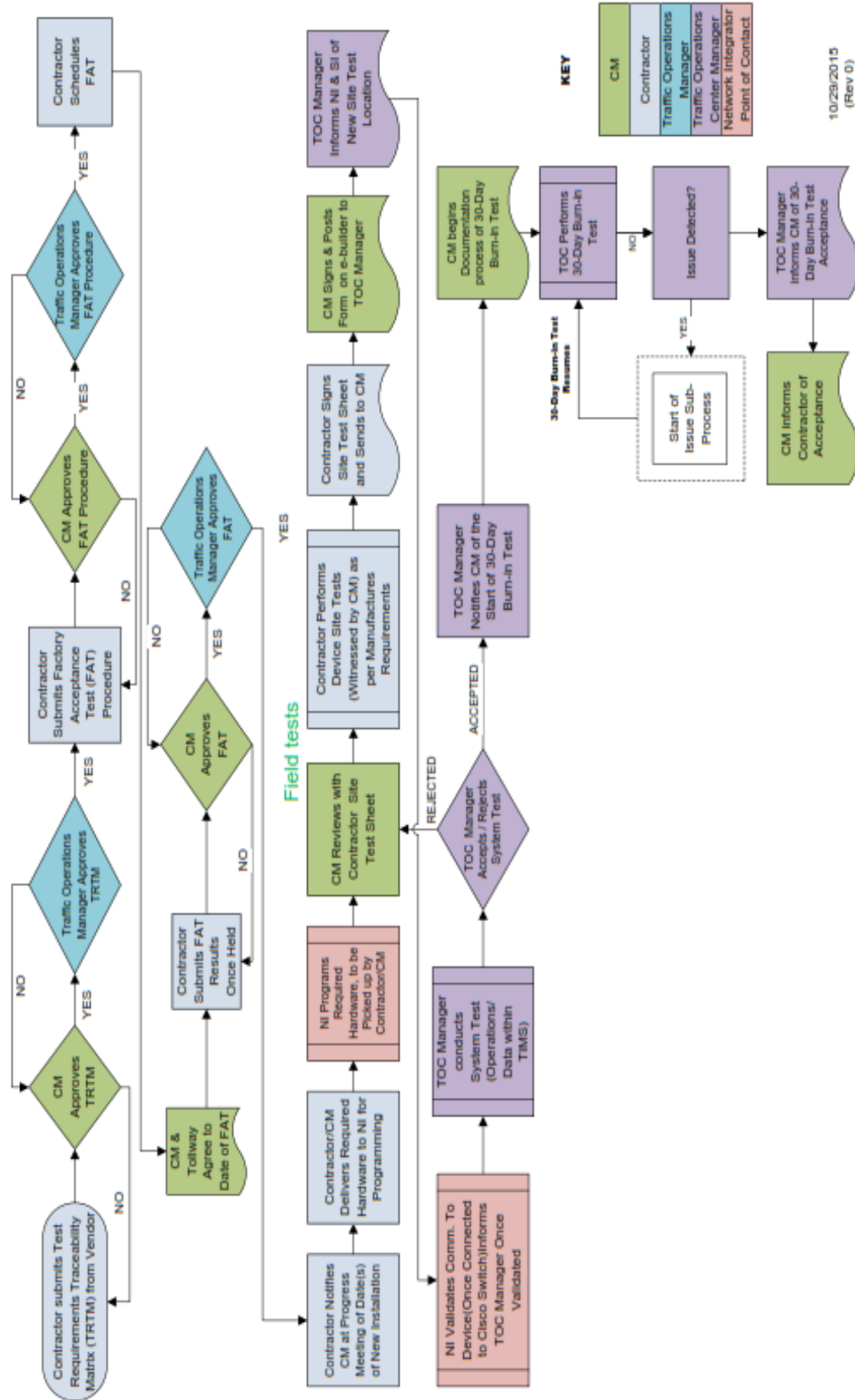
1. Illinois Tollway ITS Unit Device Acceptance Process- CCTV
2. Illinois Tollway ITS Unit Device Acceptance Process- DMS
3. Illinois Tollway ITS Unit Device Acceptance Process- MVDS
4. Illinois Tollway ITS Unit Device Acceptance Process- RWIS
5. Illinois Tollway ITS Unit Device Acceptance Process- VWIM
6. Illinois Tollway ITS Unit Device Pre-Installation Approval Process
7. Illinois Tollway ITS Device Removal/ Relocation Process
8. Illinois Tollway ITS Unit 30 Day Burn- In Issue Sub- Process



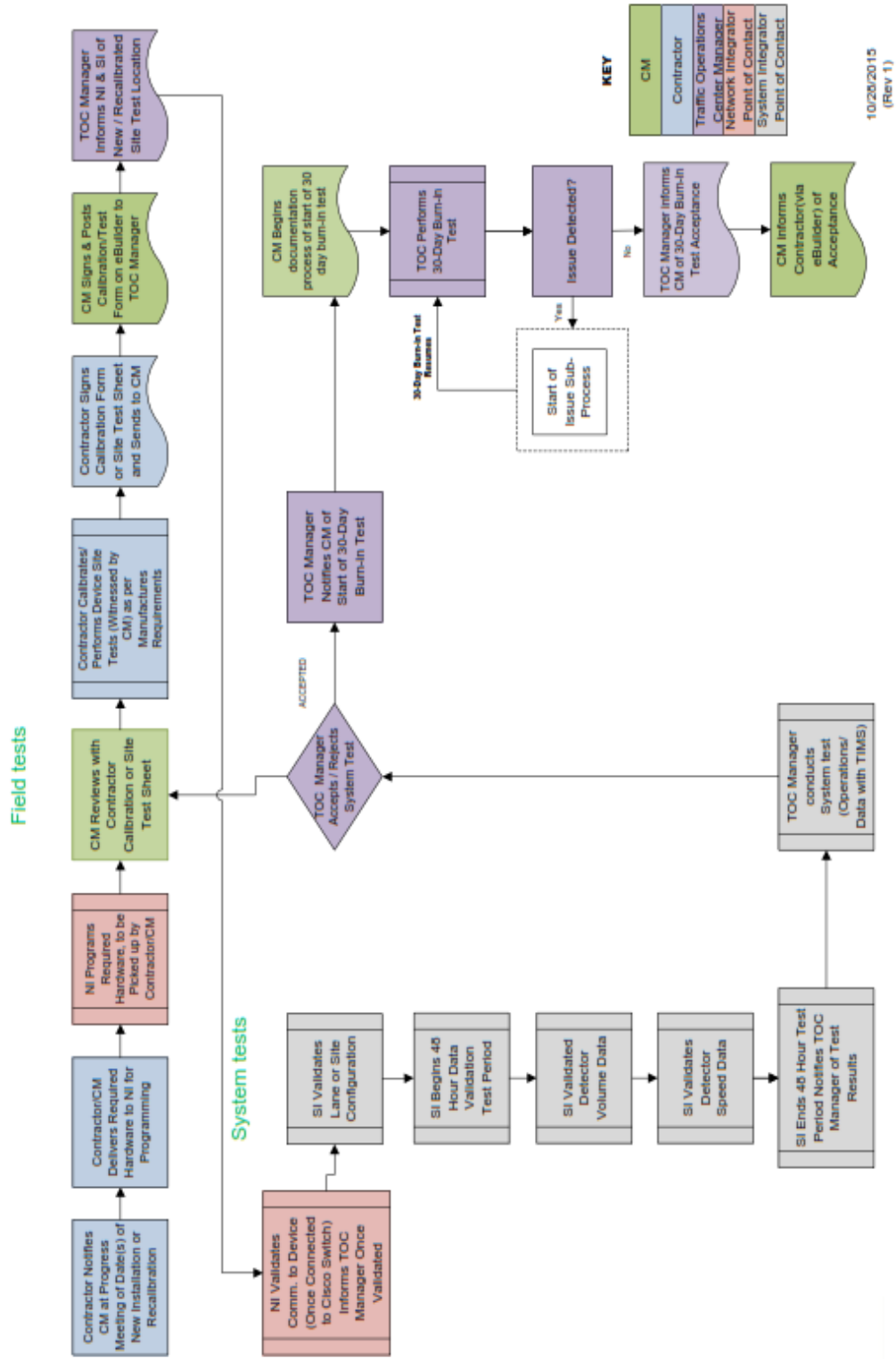
# Tollway ITS Unit Device Acceptance Process - CCTV



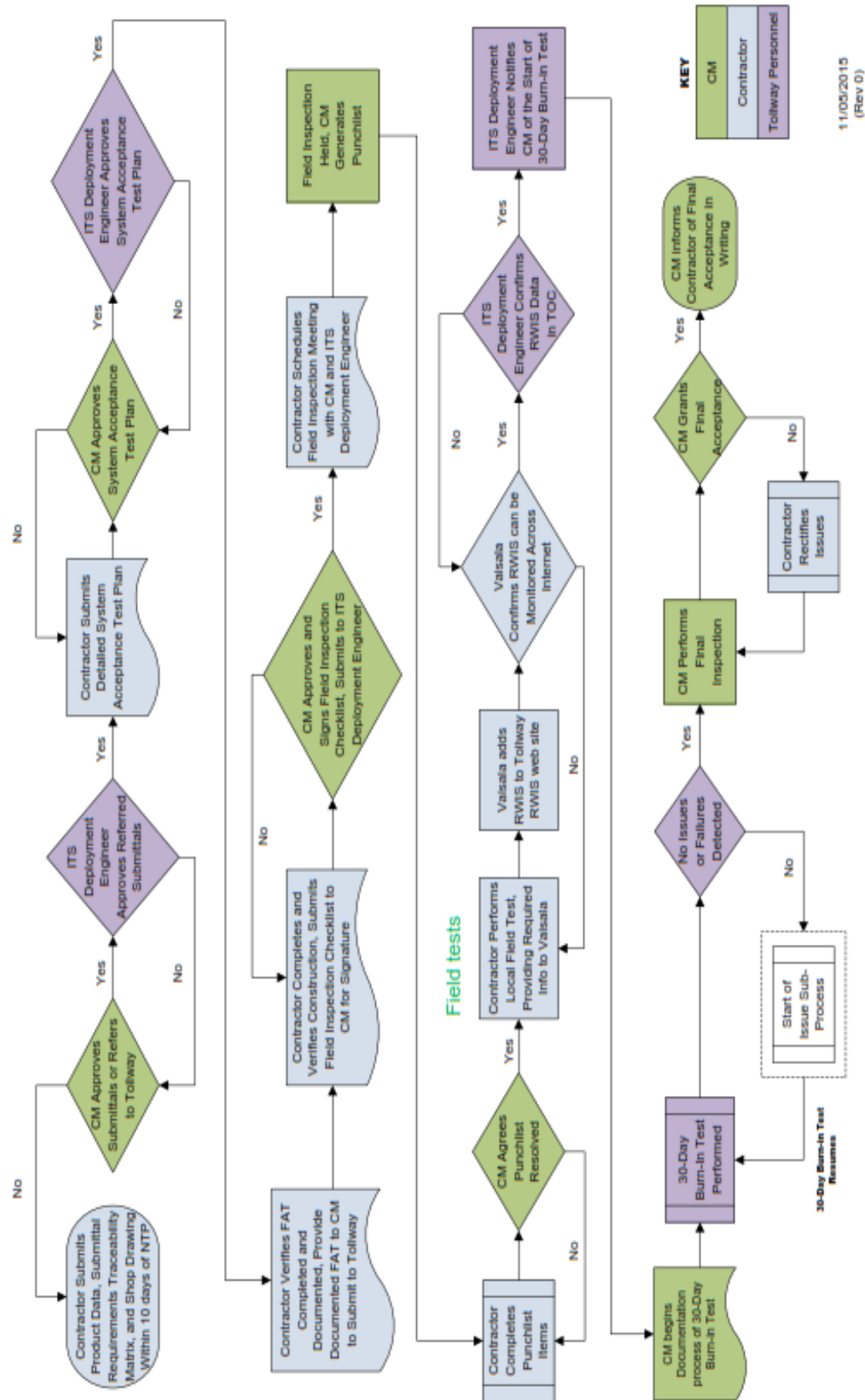
# Tollway ITS Unit Device Acceptance Process - DMS



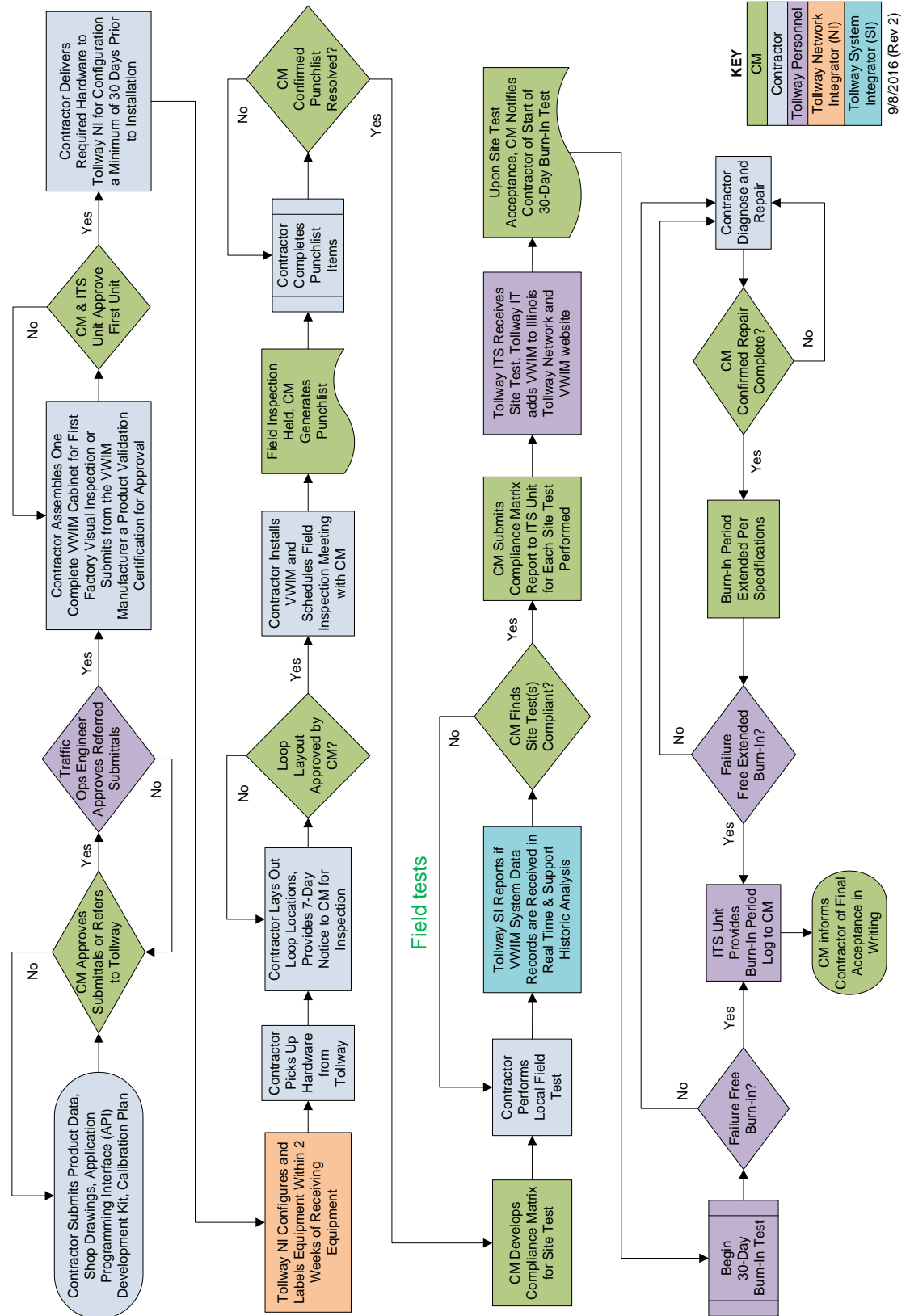
# Tollway ITS Unit Device Acceptance Process - MVDS



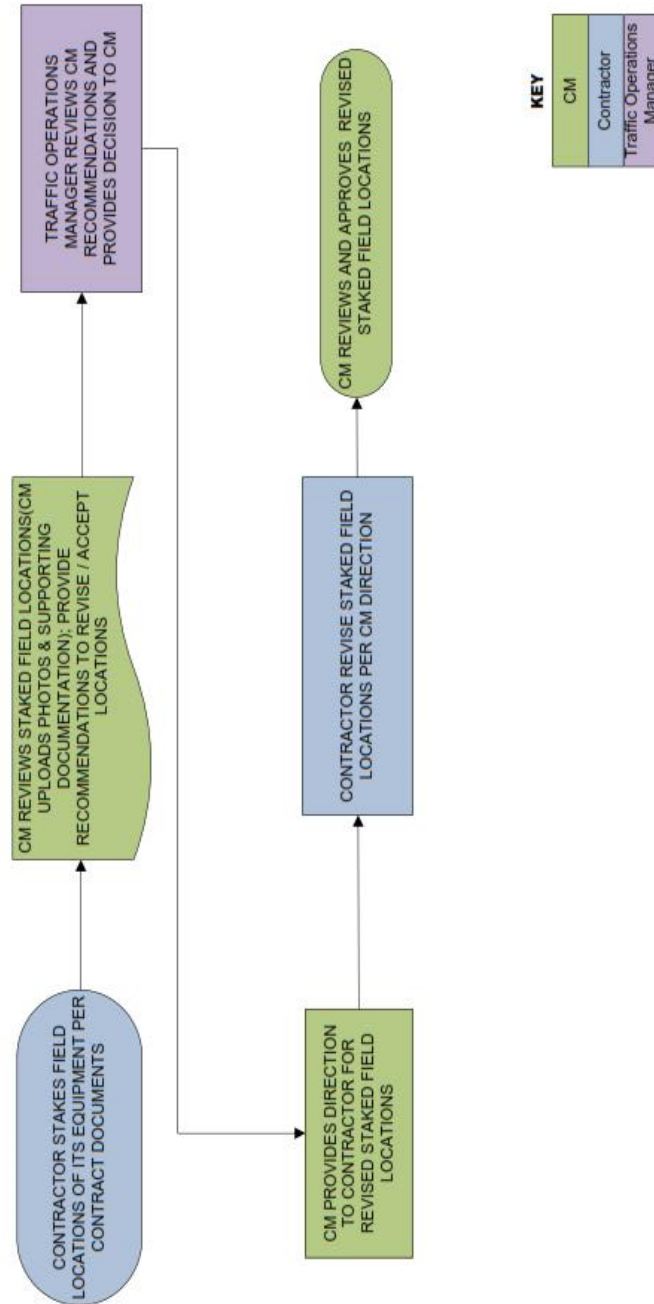
# Tollway ITS Unit Device Acceptance Process - RWIS



# Tollway ITS Unit Device Acceptance Process - VWIM

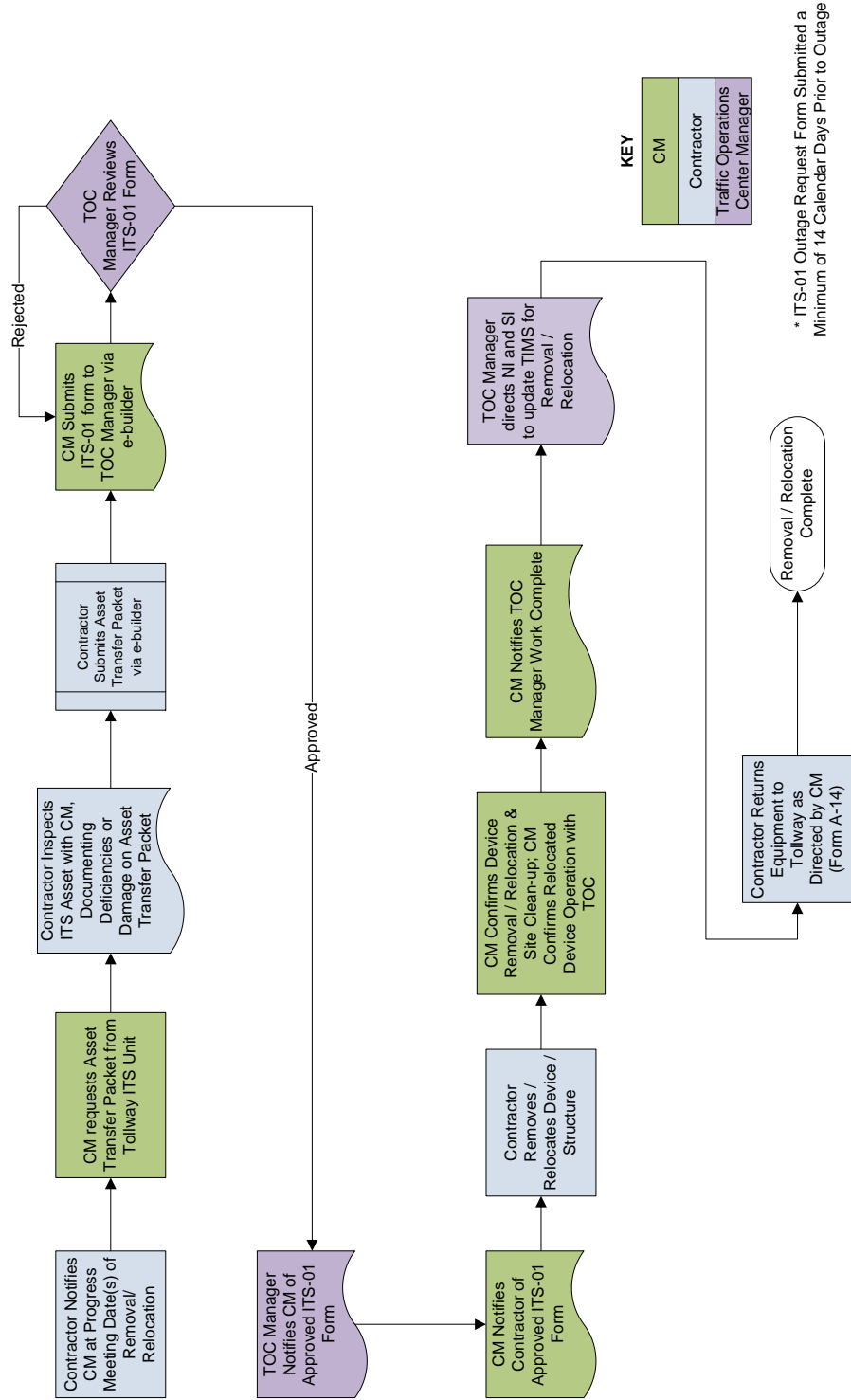


# TOLLWAY ITS UNIT DEVICE PRE-INSTALLATION APPROVAL PROCESS



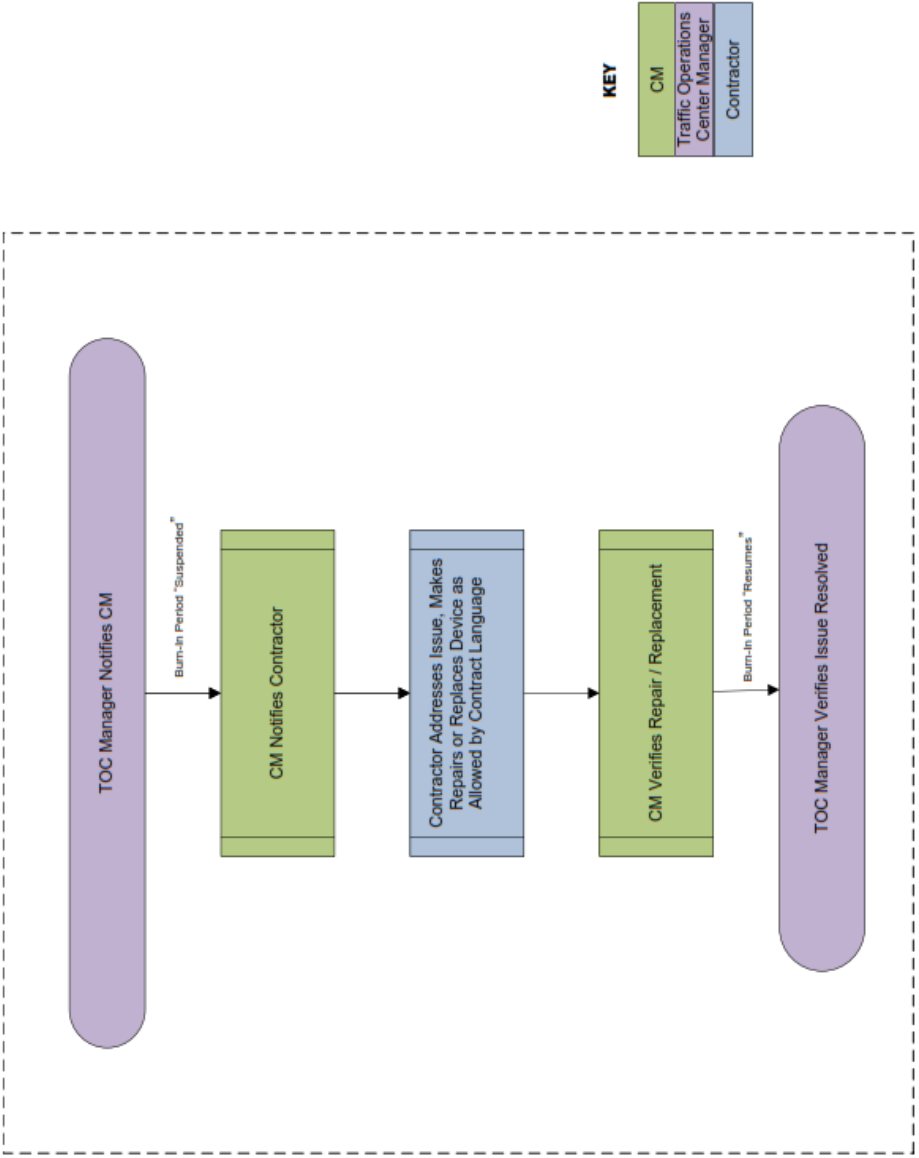
10/28/2015  
(Rev 1)

# Tollway ITS Device Removal / Relocation Process



1/28/2016  
(Rev 2)

Tollway ITS Unit 30 Day Burn-In Issue Sub-Process



10/28/2015  
(Rev 1)



## Appendix F: ATP/Extra Work Order/Change Order Flow Charts

