



**Third Party Contracts  
Quality Management Plan  
(TPCQMP)  
Revision 01  
Issue Date: April 1, 2019**

Northeast Illinois Regional Commuter Railroad Corporation  
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Chicago, Illinois 60661



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<b>REVISION HISTORY</b>				
<b>Section Number</b>	<b>Revision Number</b>	<b>Revision Date</b>	<b>Reason for Revision</b>	<b>Description</b>
N/A	00	N/A	No revision at this time. New document.	New Document
3.0	01	4/1/19	To update Section 3.0 to account for the Signal Dept. design activities.	Updated Responsibilities and Procedures for the Signal Dept. activities.

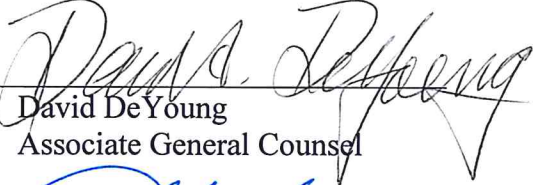


# Third Party Contracts Quality Management Plan (TPCQMP)

## REVIEW AND APPROVAL RECORD

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### INTRODUCTION

The United States Department of Transportation, Federal Transit Administration (FTA) Quality Management System (QMS) Guidelines FTA-PA-27-5194-12.1 (2012 Update), was issued for grantees that undertake design, construction, or equipment acquisition programs. The Federal Transit Administration requires grantees undertaking major capital projects to prepare a Quality Management Plan (QMP), which incorporates the FTA QMS Guidelines.

Metra is committed to completing capital projects in conformance with required standards that are consistent with both regulatory and contractual requirements. Metra's goal is to complete the capital projects on schedule and within budget. To ensure this commitment, Metra has developed the Third Party Contracts Quality Management Plan (TPCQMP), which documents Metra's commitment for implementation of the FTA QMS Guidelines for FTA funded capital projects.

The TPCQMP incorporates all requirements as listed in the FTA QMS document. It is the responsibility of the Third Party Contractors and their subconsultants and subcontractors, as well as the applicable Metra internal department(s), to implement the elements of the FTA QMS Guidelines as described in the TPCQMP. The success of the TPCQMP's implementation depends on all participating parties understanding their responsibilities as defined in the TPCQMP. The understanding of the plan's implementation occurs through the training of all project personnel, including subconsultants and subcontractors.

The scope and type of work for the Third Party Contractors are identified in the Invitation for Bid (IFB), Request for Proposal, (RFP) Task Order, Request for Specific Services (RFSS), or other contractual documents. The TPCQMP provides guidance in implementation of the FTA QMS Guidelines for the various types of capital projects undertaken by Metra or outsourced to the Third Party Contractors for completion. The quality requirements are referenced in the contract. To further emphasize these requirements, a document entitled, the "Third Party Contracts Quality Management Plan (TPCQMP) Authorization Letter", is submitted to each Third Party prior to start of contract work, signed by the Third Party, and then returned to the Metra Project Manager as contractual adherence to the implementation of the TPCQMP.

Metra may contractually require the use of a Metra-approved 'Web Based System' regarding project management for some capital projects. When a Web Based System is required, it should ensure compliance, and address the implementation of the applicable FTA QMS Guidelines. When a Web Based System is not required, the applicable forms, checklists and logs included in the TPCQMP will be completed along with any other related documentation, at the appropriate time, and submitted to Metra. Unless contractually required otherwise, only one system, either the hard copy TPCQMP system or the Web Based System should be followed in the implementation of the FTA QMS Guidelines.

Guidance for environmental issues are not included in this manual. If NEPA documentation is required for mitigation commitments, please see EGP-01, Rev. 00, 03-01-12 (Metra Intranet, Engineering/Quality), for direction. For environmental concerns such as non-hazardous or hazardous waste issues including, but not limited to asbestos, lead paint, and contaminated water/soil, please contact Metra's Safety & Environmental department for direction.

Additional procedures and/or documentation not included in the TPCQMP are to be provided by the Third Party when applicable.



### MANAGEMENT COMMITMENT AND AUTHORIZATION

Metra's capital program includes projects that involve design, construction, procurement and installation of materials providing for the operation of a safe, reliable, and convenient commuter railroad system. The Third Party Contracts Quality Management Plan (TPCQMP) has been established to ensure these objectives are accomplished in a manner which will provide consistent, high quality implementation of the Third Party Contractor's scope of work.

The TPCQMP reflects Metra management's quality guidelines that apply to all project activities performed by the Third Party Contractor.

The Chief Engineering Officer assigns specific responsibilities to the Third Party Contractor, the Metra Force Account personnel, and the QA/QC Director – Engineering, consistent with the requirements listed in this TPCQMP. It is the Chief Engineering Officer's responsibility to ensure that the TPCQMP is implemented, and that all project activities are accomplished to meet contractual objectives.

The TPCQMP applies to all Consultants, Contractors, their Subcontractors and Metra Force Account personnel performing work for Metra capital projects in the implementation of this TPCQMP.

If a nonconformance is identified during project work activities, the project personnel must take the appropriate steps to implement the recommended corrective action within the scheduled time allotted. Noncompliance and/or noncompletion of the recommended corrective action may be considered a breach of contract subject to the terms and conditions defined in the contract.

The QA/QC Director - Engineering, has the authorization and the responsibility to ensure compliance to the TPCQMP. Internal audits performed by the QA/QC Director - Engineering are conducted to verify implementation of the TPCQMP by its internal force account personnel.

The Director - Corporate Quality Assurance, Grant Management and Accounting, has been authorized to verify implementation of the TPCQMP through external, Third Party quality assurance audits. Both Quality Assurance Directors have the responsibility to identify quality concerns, recommend solutions and verify implementation of the appropriate corrective actions.

Christopher M. Krakar  
Chief Engineering Officer

Judy Nowacki  
QA/QC Director - Engineering

## REFERENCES

References include location, current revision date, and, if available, hyperlink to document.

1. American Railroad Engineering and Maintenance-of-Way Association (AREMA)  
<https://www.arena.org/>
2. Award Management Requirements Circular (5010.1E) | FTA  
<https://www.transit.dot.gov/regulations-and-guidance/updated-award-management-requirements-circular-50101e-webinar-presentation>
3. CADD Manual (Engineering) *Metra website*  
<https://metrarail.com/engineering>
4. CADD Manual (Signals) *Metra website*  
<https://metrarail.com/engineering>
5. Construction Specifications Institute (CSI)  
<https://www.csiresources.org/home>
6. FRA 49, CFR Part 236 – Rules, Standards & Instructions Governing the Installation, Inspection, Maintenance & Repair of Signal & Train Control Systems, Devices & Appliances  
<https://www.gpo.gov/fdsys/granule/CFR-1998-title49-vol4/CFR-1998-title49-vol4-part236>
7. FTA Project and Construction Management Guidelines 2016  
<https://www.transit.dot.gov/funding/procurement/fta-project-and-construction-management-guidelines-2016>
8. FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)  
<https://www.transit.dot.gov/funding/grant-programs/capital-investments/quality-management-system-guidelines>
9. Metra Corporate Quality Manual (09-01-15) *Metra Employee Portal (Under Reports)*  
<https://employee.metrarr.com/Department/grants/Page/grants-home-page>
10. Metra Design Guidelines *Metra website*  
<https://www.metrarr.com/engineering/design-guidelines/>
11. Metra Procurement Process Manual (12-09-15) *Metra Employee Portal*  
<https://employee.metrarr.com/Corporate/Policy/metra-procurement-procedures-manual>
12. Metra Signal Maintenance Inspection Test Instructions (Blue Book) *Metra 'Y' Drive*  
[Y:\srv03211\\_c\\_engadmsec\QUALITY\PTC\BLUE BOOK-Signal Manual 11-24-08](Y:\srv03211_c_engadmsec\QUALITY\PTC\BLUE BOOK-Signal Manual 11-24-08)
13. National Institute of Standards & Technology, NIST Handbook (2017- Revised Annually)  
<https://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-44>
14. NEPA Document Control (EGP-01, Rev.00, 03-01-12) *Metra Intranet/Engineering/Quality*  
[https://employee.metrarr.com/sites/default/files/Department/Page/2017-09/NEPA\\_EGP-01.pdf](https://employee.metrarr.com/sites/default/files/Department/Page/2017-09/NEPA_EGP-01.pdf)
15. Occupational Safety and Health Association (*Requirements applicable to task*)  
<https://www.osha.gov/>



# Third Party Contracts Quality Management Plan (TPCQMP)

## DOCUMENT MATRIX

Document No.	Document Type	Document Name	Document applies to the following Third Party Contractors:						
			<sup>1</sup> Design Consultants	<sup>2</sup> Construction Contractors	<sup>3</sup> Construction Management Consultants	<sup>4</sup> Signal Consultant Management Consultants	<sup>5</sup> Testing Consultants	<sup>6</sup> Metra Project Management Personnel	<sup>7</sup> Metra Force Account Field Personnel
01	I	Addenda Preparation	X			X			
02	F,I,S	Drawing Log		X	X	X		X	
03	F,I,S	Contract Modification Cost Worksheet		X	X	X		X	
04	F,I,S	Contract Modification T&M		X	X	X		X	
05	F,I,S	Contract Modification Log		X	X	X		X	
06	F,I,S	Correspondence Log	X	X	X	X		X	
07	F,I,S	Daily Report		X	X	X		X	
08		Document Removed from TPCQMP							
09	F,I,S	Disposition of Review Comments Log	X			X		X	
10	F,I,S	Equipment Calibration Log	X	X	X	X	X	X	X
11	F,I,S	Inspection and Testing Log	X	X	X	X	X	X	X
12	F,I,S	Meeting Attendance Sheet	X	X	X	X		X	
13	F,I,S	Meeting Minutes	X	X	X	X		X	
14	F,I,S	Nonconformance Report	X	X	X	X		X	X
15	F,I,S	Nonconformance Log	X	X	X	X		X	X
16	F,I,S	Project/Deliverables List	X	X	X	X		X	
17	I	Project File Naming/Directory Structure	X	X	X	X		X	X
18	I,S	Project Organization Chart	X	X	X	X		X	X
19	F,I,S	RFI	X	X	X	X		X	
20	F,I,S	RFI Log		X	X	X		X	
21	F,I,S	RFIM	X	X	X	X		X	
22	F,I,S	RFIM Log	X	X	X	X		X	
23	F,I,S	RFMR				X		X	
24	F,I,S	RFMR Log				X		X	
25	F,I,S	ROCC		X	X			X	
26	F,I,S	ROCC Log		X				X	
27	F,I,S	Schedule	X	X	X	X	X		
28	F,I,S	Submittal Cover Sheet - Signals				X		X	
29	F,I,S	Submittal Log - Signals				X		X	
30	F,I,S	Submittal Log		X	X			X	
31	F,I,S	Training Log	X	X	X	X		X	X
32	F,I,S	Transmittal Cover Sheet	X	X	X	X		X	

**Legend:**

- F - Form
- I - Instructions
- S - Sample

<sup>1</sup> Design Consultants - Third Parties contracted to do design work for Metra.  
<sup>2</sup> Construction Contractors - Third Parties contracted to construct bridges, facilities, etc. per bid documents for Metra.  
<sup>3</sup> Construction Management Consultants - Third Parties contracted to oversee construction work on Metra's behalf.  
<sup>4</sup> Signal Consultant Management Consultants - Third Parties contracted by Metra's Signal Department to do various design and budget management activities.  
<sup>5</sup> Testing Consultants - Third Parties contracted to do testing work for Metra.  
<sup>6</sup> Metra Project Management Personnel- Metra personnel providing oversight of construction and design activities.  
<sup>7</sup> Metra Force Account Field Personnel- Metra field personnel performing construction activities.





## 1.0 - MANAGEMENT RESPONSIBILITY

### 1.1 PURPOSE

- 1.1.1 The purpose of this procedure is to identify the requirements of Management Responsibility, and to direct the Third Party Consultant/Contractor (TPC) and/or Metra Force Account, as applicable, in the level of management commitment that is required for successful implementation of the contractual quality requirements.
- 1.1.2 This procedure identifies the responsibilities, levels of authority, organizational structure, and process for implementation of the required quality assurance program for activities affecting quality.

### 1.2 SCOPE

- 1.2.1 The requirements of this section apply to Third Party Consultant/Contractors (TPC) their subconsultants/subcontractors and to the applicable Metra Force Account personnel.

### 1.3 RESPONSIBILITIES

- 1.3.1 Metra Chief Engineering Officer has the authority and ultimate responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all work activities relating to capital projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System (QMS) Guidelines, FTA-PA-27-5194-12.1 (2012).
- 1.3.2 Engineering's Senior Directors have the authority and responsibility to appoint experienced, qualified personnel to the position of Project Manager/Oversight for the capital projects assigned to their area of responsibility and to ensure successful implementation of the TPCQMP for the oversight of the capital project work completed by TPC and Metra's Force Account personnel.
- 1.3.3 Engineering's Senior Director - Maintenance has the authority and responsibility to ensure successful implementation of the TPCQMP for work and activities performed on or relating to capital projects completed by Metra's Maintenance Force Account personnel.
- 1.3.4 Metra's Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects, and to ensure that project records, including checklists, logs, designs, drawings, specifications, submittals, etc., included in the TPCQMP, as well as those contractually required, are accurately completed, updated, and maintained as required throughout the duration of the project. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 1.3.5 Metra's Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 1.3.6 The QA/QC Director – Engineering has the authority, responsibility and the independence to provide quality assurance oversight through the monitoring of quality control activities performed by Metra Force Accounts personnel (Engineering) for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering's QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to



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ensure that the requirements of the TPCQMP are completed as contractually required. QA/QC support includes, but is not limited to:

- 1.3.6.1 Develop and present the necessary training materials for all project personnel involved in the work activities for capital projects, including Third Parties, to ensure that they are adequately trained for adherence to the TPCQMP requirements.
- 1.3.6.2 Ensure that all revisions to the TPCQMP and quality document updates are communicated to all applicable parties. Communication is followed by training, as applicable. Training is documented.
- 1.3.6.3 Provide new project personnel with the training necessary for implementation of the TPCQMP.
- 1.3.6.4 Develop the Engineering department's quality assurance audit schedule for the assessment of Metra's oversight on the capital project work activities.
- 1.3.6.5 Conduct internal quality assurance audits, assessments, surveillance audits in order to verify the implementation and overall effectiveness of Metra's Force Account activities and oversight of the TPCQMP for capital projects, and to verify compliance of the FTA QMS Guidelines.
- 1.3.6.6 Monitor the resolution and completion of proposed corrective actions for deficiencies resulting from both internal and corporate external, Third Party quality audits.
- 1.3.7 The Senior Director, Grant Management & Accounting has the overall responsibility and authority to ensure that the requirements of the Metra Third Party Contracts Quality Management Plan (TPCQMP) is being adequately implemented and maintained.
- 1.3.8 The Director - Corporate Quality Assurance, reports to the Senior Director, Grant Management & Accounting, and is responsible for and has the authority, responsibility and independence to:
  - 1.3.8.1 Develop the annual quality assurance audit schedule for Third Party capital projects.
  - 1.3.8.2 Conduct quality assurance audits, assessments, surveillances, etc., to determine the status and verify the overall implementation and effectiveness of the TPCQMP, and to verify compliance of the FTA QMS Guidelines.
  - 1.3.8.3 Identify and report internal and Third Party quality issues/deficiencies for initiation of corrective action through appropriate channels to correct and prevent reoccurrence of the reported deficiencies.
  - 1.3.8.4 Provide suggested revisions proposed by project personnel for the TPCQMP received during quality assurance audits and provide input to the QA/QC Director – Engineering for subsequent revision(s) to the TPCQMP.
- 1.3.9 The Third Party Consultants/Contractors have the responsibility to ensure that:
  - 1.3.9.1 The day-to-day primary quality control (QC) activities are, implemented, documented, and maintained per written, approved procedures, as contractually required.
  - 1.3.9.2 The applicable guidelines provided in various sections of the TPCQMP are adequately implemented in their entirety.
  - 1.3.9.3 All applicable project records required by the TPCQMP are completed, maintained and submitted to Metra or the designee Third Party Contractor/Consultant as the work progresses, and again at the completion of the project.
  - 1.3.9.4 The appropriate procedure is implemented for the correction of deficiencies identified through quality assurance assessments, audits, surveillances etc., and/or documented nonconformance and corrective action report(s).
  - 1.3.9.5 Corrective actions documented through Metra's quality audits are to be completed, at no cost to Metra, within the specified timeframe established and mutually agreed upon by the Third Party Contractors, Metra PM and the Corporate Quality Assurance Director. The corrective actions are to



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include effective measures to prevent, or significantly reduce, the reoccurrence of reported nonconformances.

### 1.4 PROCEDURES

- 1.4.1 The requirements of the Third Party Contract Quality Management Plan (TPCQMP) are applicable to Metra Project Management personnel (PMs), Metra Force Account personnel, Design Consultants, Construction Contractors, Construction Management Consultants (CMs), Signal Consultant Management Consultants, and their subconsultants/subcontractors, etc.
- 1.4.2 The Third Party is to provide an organizational chart to Metra for approval prior to the start of the project's work activities. The organizational chart should provide and accurately portray the interfacing relationships between Metra and the Third Party's key project personnel. The Third Party's organizational chart is to include its management, quality assurance, quality control personnel, subconsultant's and subcontractor's project personnel. Quality Control responsibilities can be added to the organizational chart or as a separate document. Quality Control personnel are to be identified.
- 1.4.3 Quality Plan(s) developed for capital projects are to include:
  - 1.4.3.1 A written and approved Quality Management Plan (QMP) for the successful implementation of the contractual quality requirements. The QMP is to define the project's quality responsibilities and those responsible for performing the stated quality requirements. The QMP is to include and address both quality assurance and quality control responsibilities.
  - 1.4.3.2 The quality activities conducted during construction, may include, but are not limited to receipts of items, materials and/or equipment, installation, inspection, testing and documentation not included in the TPCQMP.
  - 1.4.3.3 A revised organization chart should be submitted to Metra (or Metra's designee) for approval prior to implementing the changes and/or re-assignments of key project personnel.

### 1.5 REFERENCES

- 1.5.1 Metra Corporate Quality Manual (CQM)
- 1.5.2 Metra Procurement Process Manual
- 1.5.3 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012)
- 1.5.4 NIST Handbook – 2016 (Revised Annually)
- 1.5.5 Third Party's Organization Quality Manual

### 1.6 RELATED DOCUMENTATION

- 1.6.1 Project Organization Chart

### 1.7 DEFINITIONS

- 1.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 1.7.2 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*



## 1.8 ACRONYMS

- 1.8.1 FTA – Federal Transit Administration
- 1.8.2 QA/QC – Quality Assurance/Quality Control
- 1.8.3 PM – Project Manager
- 1.8.4 Sub – Subconsultant or Subcontractor
- 1.8.5 TPC – Third Party Consultant or Contractor
- 1.8.6 TPCQMP - Third Party Contracts Quality Management Plan



## 2.0 – DOCUMENTED QUALITY MANAGEMENT SYSTEM

### 2.1 PURPOSE

- 2.1.1 This procedure establishes Metra’s process for the documentation of its’ quality management plan. Documentation of this quality plan includes the completion, execution, and management activities relating to Metra capital projects.

### 2.2 SCOPE

- 2.2.1 The requirements of this section apply to Third Party Consultants and/or Contractors (TPCs), their Subconsultants/Subcontractors (Subs), Metra Force Account personnel and Metra User Departments (hereafter referred to as Metra Force Accounts), as applicable, assigned to work on capital projects.

### 2.3 RESPONSIBILITIES

- 2.3.1 Chief Engineering Officer has the authority and ultimate responsibility for ensuring the implementation of the Third Party Contracts Quality Management Plan (TPCQMP) and that all work activities relating to capital projects is implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System (QMS) Guidelines, FTA-PA-27-5194-12.1 (2012).
- 2.3.2 Senior Directors [Capital Projects and Maintenance], have the authority and responsibility to ensure the successful implementation of the TPCQMP for all work activities completed on capital projects by the Third Parties, their subconsultants/subcontractors and Metra Force Account project personnel. This requirement applies to all project records relating to the projects.
- 2.3.3 The Metra Project Manager (Metra PM) has the day-to-day authority and responsibility for ensuring that the work performed on capital projects is completed and adequately documented as evidence of compliance to the requirements of the TPCQMP and other contractual and regulatory requirements. The Metra PM is to ensure that all forms, checklists and other project records are completed on time by the applicable parties, and that the resulting documents include all related information such as contract, project and, when applicable, task numbers. Metra’s Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 2.3.4 Metra’s Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 2.3.5 The QA/QC Director – Engineering has the authority, responsibility and independence to provide QA oversight through the monitoring of quality control activities performed by Metra Force Accounts personnel (Engineering) for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering’s QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day QA/QC support to ensure that the requirements of the TPCQMP are completed as contractually required.
- 2.3.6 The Director - Corporate Quality Assurance has the overall authority, responsibility and independence to ensure implementation of the TPCQMP through oversight of the work activities performed for capital projects. In order to verify Metra’s compliance of the FTA QMS, this oversight consists of the audits and/or assessments of the Third Party’s documents and records resulting from the work activities performed on the capital project.
- 2.3.7 The Third Party Consultant/Contractor (TPC) has the responsibility to ensure that their project personnel, including their subconsultants and/or subcontractors implement the requirements of the TPCQMP as contractually required. This includes the quality of their products and/or services, and the completion of all required, related project documentation.



- 2.3.7.1 The TPC is to maintain primary quality control responsibilities for the project from initiation through completion of the project.

### 2.4 PROCEDURE

- 2.4.1 Written procedures are to be developed, implemented and maintained for all activities affecting control of quality documents. These procedures should define the applicable controls and responsibilities of both quality assurance and quality control requirements.

Written procedures for processes not included in the TPCQMP are required to:

- 2.4.1.1 Define in writing the project's quality assurance and quality control responsibilities and those responsible for performing the stated process.
- 2.4.1.2 Include the quality activities required to ensure the level of quality is controlled and maintained throughout all phases of the project.
- 2.4.2 The TPCQMP provides the appropriate procedures, forms, checklists, logs, etc. required for the documentation of all work activities associated with a capital project. Instructions and samples are included for each of the forms, checklists and logs provided in the TPCQMP. The procedure described in Section 4.0 of the TPCQMP include the following components, as appropriate to the specific procedure:
  - 2.4.2.1 Purpose and Scope *[of the procedure]*
  - 2.4.2.2 Responsibilities
  - 2.4.2.3 Procedure Process
  - 2.4.2.4 References *[Standards, specifications, regulations, directions or guidelines outside of the procedure]*
  - 2.4.2.5 Related Documents *[Other forms, records and/or procedures within the TPCQMP that relate to the procedure]*
  - 2.4.2.6 Definitions
  - 2.4.2.7 Acronyms *[Abbreviations for words, titles or names]*
- 2.4.3 All project documentation should include the following components, as applicable:
  - 2.4.3.1 Third Party Company Logo
  - 2.4.3.2 Document Title
  - 2.4.3.3 Metra contract number, project number and, when applicable, task number.
  - 2.4.3.4 Project Description
  - 2.4.3.5 Information specific to the document title.
- 2.4.4 Changes to forms, checklists and logs provided in the TPCQMP are prohibited without prior Metra approval. Proposed changes to forms provided in the TPCQMP are to be submitted in writing to the Metra Project Manager for review and signature approval prior to use. In the event that a specific form is required by the Third Party's organization, a request must be submitted in writing to the Metra PM. The alternate form cannot be used until the Third Party has received written approval from the Metra PM.
- 2.4.5 The TPCQMP should be reviewed by Metra, at minimal, every eighteen (18) to twenty-four (24) months for inclusion of revisions as needed, continuous improvements and/or to update regulatory requirements. Internal as well as external project personnel, including Metra Force Account and/or Third Party Contract personnel can make suggestions for revisions and/or improvements to the TPCQMP.



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- 2.4.6 Proposed changes to the TPCQMP must be approved by the applicable Metra department head and then forwarded to the QA/QC Director-Engineering for incorporation into the TPCQMP. Revisions to the TPCQMP require a revisions notification to all applicable parties, including Metra Force Account personnel, and all TPCs to whom the TPCQMP has been issued.
- 2.4.7 Unless otherwise specified in the contractual documents, the TPC is to maintain all project documents in electronic format for the duration specified in the contractual documents.
- 2.4.8 The TPC is required to develop a list of all contractually required documents, including those required by the TPCQMP. This list is referred to as the Project/Deliverables List. Documents included on the Project/Deliverables List are to be submitted to Metra at the completion of project.
- 2.4.9 The TPC is to maintain primary quality control responsibilities for the project from initiation through completion of the project. The TPC is to designate and assign quality control personnel to perform quality control activities to ensure the quality level of its work remain consistent with the requirements of the TPCQMP. The list of personnel assigned to quality control activities is to be documented. The list of quality control responsibilities is also to be documented. Both lists are to be submitted to the Metra PM prior to startup of the work activities.
- 2.4.10 Responsibilities of each Third Party Contractor should be defined in the contractual documents for field inspection and testing of materials and other work activities including the QA/QC.
- 2.4.11 The TPC is to eliminate all obsolete documentation from each work location. For those functions requiring obsolete documents be retained for comparison and reference purposes, the remaining obsolete documents must be clearly identified as obsolete.
- 2.4.12 The Third Party Contractor must provide Metra and/or designee with appropriate access for observation, verification and/or inspection of all work records, as well as all work activities relating to the capital project.

### 2.5 REFERENCES

- 2.5.1 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012)
- 2.5.2 Metra Corporate Quality Manual (CQM)
- 2.5.3 Third Party's Organization Quality Manual

### 2.6 RELATED DOCUMENTS

- 2.6.1 Document Matrix
- 2.6.2 Equipment Calibration Log
- 2.6.3 Nonconformance Report
- 2.6.4 Training Records (Logs, Attendance sheets, Certificates, Licenses, etc.)

### 2.7 DEFINITIONS

- 2.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 2.7.2 Standard: *(1) an idea or thing with the known or assigned correctness, (2) test and measurement standards that define the methods to be used to assess the performance or other characteristics of a product or process, (3) a level of quality or accomplishment (4) common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices.*



- 2.7.3 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*
- 2.7.4 Third Party Consultant or Contractor: *Entity or Organization contracted with Metra to complete the requirements of a written capital project. The Third Party can be for service and/or materials.*

### **2.8 ACRONYMS**

- 2.8.1 CQMP – Corporate Quality Management Plan
- 2.8.2 FTA - Federal Transit Administration
- 2.8.3 NCR – Nonconformance Report
- 2.8.4 PM – Project Manager
- 2.8.5 QA/QC – Quality Assurance/Quality Control
- 2.8.6 TPC – Third Party Consultant or Contractor
- 2.8.7 TPCQMP – Third Party Contracts Quality Management Plan





### 3.0 - DESIGN CONTROL

#### 3.1 PURPOSE

- 3.1.1 The purpose of this section is to establish and document the project requirements and assign responsibilities in order to ensure that the original design activities and all revisions to original design and construction drawings, specifications, and other related design documents are accurately identified, documented and processed.

#### 3.2 SCOPE

- 3.2.1 The requirements of this section apply to all Third Party Consultants/Contractors (TPC), subconsultants/subcontractors (Subs), Metra Force Account personnel and Metra User Departments (hereby referred to as Metra Force Account personnel) undertaking design capital projects. The requirements of this section include As-Built of the Issued for Bid, Request for Proposal, or Issued for Construction (“IFC”) drawings and specifications.

#### 3.3 RESPONSIBILITIES

- 3.3.1 Metra Chief Engineering Officer has the authority and ultimate responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all work activities relating to capital projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012).
- 3.3.2 The Senior Directors have the responsibility and authority to appoint experienced, qualified personnel to the position of Project Manager/Oversight for each of the capital projects and to ensure the requirements of this written procedure are implemented and maintained.
- 3.3.3 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. Metra’s Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 3.3.4 Metra’s Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 3.3.5 The QA/QC Director – Engineering has the authority, responsibility and independence to provide QA oversight through the monitoring of quality control activities performed by Metra Force Accounts personnel (Engineering) for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering’s QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day QA/QC support to ensure that the requirements of the TPCQMP are completed as contractually required.
- 3.3.6 The Director - Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillance audits to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.
- 3.3.7 TPCs and their Subconsultants/Subcontractors (Subs) contracted by Metra to perform Capital Project design activities, including inspection and testing, as well as those Metra Force Account personnel



assigned to design and related activities, are responsible for ensuring that work activities completed meet all contractual requirements, and those of the TPCQMP.

### 3.4 PROCEDURE

Design activities are controlled through review, verification and validation processes used throughout the design process, and through the internal audit of project-related documentation. The design control activities should include and identify the organizational interfaces between the various groups [producing, reviewing and commenting on design as well as the transmittal, review, and documentation of activities reviewed, including the design changes] are adequately identified in the design project records.

Reference Manufacturer's Planning Guidelines, Installation Guides, Technical Manuals, and all other specification documentation as required.

- 3.4.1 Written procedures establishing control and verification of design activities shall be documented and implemented. This written procedure shall include direction for design changes and configuration management for the appropriate participation and implementation from the beginning of design through project completion.
- 3.4.2 The design control procedure(s) shall include identification, review, and documentation of design inputs, regulatory requirements, performance objectives, preparing and checking calculations, specifications, drawings, inspection and testing criteria, planning design interfaces, submittals and design documents review, and assigning competent personnel to perform design and provide oversight for design activities.
- 3.4.3 The design control procedure(s) shall be established and implemented for any field design changes to the "IFC" or Issued for Bid, "100% (Percent) Submittal", drawings and specifications and those As-Builts made as part of the contractual document prior to the award of the contract, configuration management, and other contractual design documents through project completion.
- 3.4.4 The TPC is to incorporate Metra furnished design criteria including Metra standards, industry codes and standards, standard specifications, special conditions, drawings and/or other design requirements, into their design documents. The design documents are to include inspection and test requirements, calculations, drawings, sketches, specifications, standards, procedures, instructions, reports, etc., as applicable.
  - 3.4.4.1 The TPC (Design and or Consultant Management) is to document the review, approval, release, distribution, and revisions to all the design documents such as design drawings, specifications, reports, shop drawings, procedures, etc.
  - 3.4.4.2 The TPC (Design and or Consultant Management) is to provide a resolution to the Request for Information (RFI) document received from Metra or designee within the time specified in this Plan or as otherwise specified in the contractual documents.
  - 3.4.4.3 The TPC (Design and or Consultant Management) is to review and provide disposition for Shop Drawings received from Metra or designee, and respond within the time contractually specified.
  - 3.4.4.4 The TPC is to document all issued and revised drawings on the Drawing Log, as applicable, for distribution, maintenance, and/or transfer to Metra at the project completion.
- 3.4.5 Design Verification - The TPC (Design and or Consultant Management) is to:
  - 3.4.5.1 Provide a documented quality control check for the calculations, drawings, specifications, reports, etc. prior to their submittal to Metra for review and/or final project records.



## Third Party Contracts Quality Management Plan (TPCQMP)

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- 3.4.5.2 Provide Submittals for Metra review at the various design stages identified in the scope of work documents, e.g., Task Order, the Request for Proposal (RFP), Invitation for Bids (IFB), Request for Specific Services (RFSS), or other contractual documents.
- 3.4.5.3 Log in, track, and respond in writing to the review comments with the completed resolution.
- 3.4.5.4 Prepare meeting minutes which reflect the required actions of the meeting.
- 3.4.6 TPC (Design and or Consultant Management) is to:
  - 3.4.6.1 Review the contractual “IFC” or Issued for Bid or otherwise contractually issued drawings and specifications’ to ensure compliance with the contractual documents.
  - 3.4.6.2 Document the clarifications required on the current contractually issued drawings and specifications using the Request for Information (RFI) process.
  - 3.4.6.3 Identify and segregate superseded and/or voided drawings and specifications.
  - 3.4.6.4 Attend progress meetings and discuss status of items in question.
  - 3.4.6.5 Arrange for the progress meetings. Prepare, distribute, and follow-up on action items discussed during the meeting.
  - 3.4.6.6 Maintain and submit construction progress photos per contractual requirements.
  - 3.4.6.7 Provide a schedule of all required submittals (shop drawings, product data, etc.) in accordance with the contractual requirements.
  - 3.4.6.8 Provide all submittals in accordance with the established schedule and the contractual requirement. (Construction/Project Management Consultants are responsible for reviewing all submittals received from Third Party Contractors, as applicable).
  - 3.4.6.9 Ensure that there is no conflict of interest in providing the design, administrative services or construction management services, as applicable.
  - 3.4.6.10 Document the verification of work performed by its Subs to the established design criteria and the TPC’s contractual agreement with Metra.
- 3.4.7 General Design Development – The TPC (Design) is to:
  - 3.4.7.1 Ensure that the drawings are prepared in the Computer Aided Design Drafting (CADD) format using the software and the standards specified in the contractual documents.
  - 3.4.7.2 Follow the current Construction Specifications Institute (CSI), **50 Division Format**, in developing and formatting the specifications.

### **Non-Signal Department Design**

- 3.4.8 Design Development – The TPC (Design) is to:
  - 3.4.8.1 Assign milestone submittal revision numbers in a manner described here. The tracking of the drawings and specifications is to start with the initial submittal having a numeric number of one (1). Each milestone submittal made by the design consultant after that is to be assigned a new revision number increasing sequentially e.g. 2, 3, 4, etc. The title page of the specifications and every page of each drawing submitted are to include the same revision number and date. Typical milestone submittals made during design development may be 30%, 40%, 60%, 80%, 90% and/or 100% completion. (See Engineering CADD Manual for details.)
  - 3.4.8.2 Ensure milestone submittals are distributed to all appropriate parties for comments.
  - 3.4.8.3 Ensure 100% drawing submittals include reference to the receipt or non-receipt of comments from the municipality and/or the applicable government agency.



**DESIGN DEVELOPMENT - EXAMPLE REVISION BLOCK:**

4	xx-xx-xxxx	CM	CP	100% Submittal
3	xx-xx-xxxx	CM	CP	90% Submittal
2	xx-xx-xxxx	CM	CP	60% or 80% Submittal
1	xx-xx-xxxx	CM	CP	30% or 40% Submittal
<b>Rev.</b>	<b>Date</b>	<b>By</b>	<b>App.</b>	<b>Description</b>

3.4.9 Issued for Bid:

3.4.9.1 Once contract documents reach the 100% approved completion level, they are issued for bid or issued for construction or otherwise issued as part of the contractual documents. The revision block is cleared, and the Issued for Bid documents are assigned a revision letter of (A). As bidders review the bid documents and ask questions seeking clarification, changes may be made to the documents resulting in Addenda. Each addendum issued is to be assigned a new revision number increasing sequentially e.g. A1, A2, A3, etc. Changes made to the Issued for Bid documents as part of an addendum should be identified by placing a bubble around the revised item, and calling out the corresponding addendum number in the description block. Only the sheets with changes are to be issued as an addendum document, not the entire bid set. One or more addenda may be issued as the project dictates. The TPC (Design) shall complete the Drawing Log, tracking all Issued for Bid drawings and revisions.

3.4.9.2 The TPC (Design) Issued for Bid drawings, specifications, and structural calculations are to have the seal of the Professional Engineer(s), Structural Engineer(s) etc. as required by the scope of work, contractual documents and the State of Illinois regulations for professional engineers and structural engineers. Unless otherwise identified in the Metra Engineering CADD Standards, the front sheet of a set of drawings Issued for Bid with a complete list of all the drawings for the project may have the seals by all appropriate professionals. The revised drawing(s), specifications, and structural calculations are also to bear the seals by appropriate engineering professionals at the time of issue.

**ISSUED FOR BID - EXAMPLE REVISION BLOCK:**

A3	xx-xx-xxxx	CM	CP	Addendum No. 3
A2	xx-xx-xxxx	CM	CP	Addendum No. 2
A1	xx-xx-xxxx	CM	CP	Addendum No. 1
A	xx-xx-xxxx	CM	CP	Issued for Bid
<b>Rev.</b>	<b>Date</b>	<b>By</b>	<b>App.</b>	<b>Description</b>

3.4.10 Issued for Construction “IFC”:

3.4.10.1 Once the bidding phase has ended, the TPC (Design) is to incorporate all changes made by Addenda into an “IFC” set of documents. If no changes were made to the Issued for Bid set, simply remove the words “Issued for Bid” from the revision block and replace them with the words “Issued for Construction”. The initial issue of the “IFC” drawings and specifications are assigned a revision letter of (B). Each subsequent issued revision is to be assigned a new revision number increasing sequentially e.g. B1, B2, B3, etc.

3.4.10.2 The TPC (Design) “IFC” drawings and specifications are to have the seal of the Professional Engineer(s), Structural Engineer(s) etc. as required by the scope of work, contractual documents and the State of Illinois regulations for professional engineers and structural engineers. Unless



## Third Party Contracts Quality Management Plan (TPCQMP)

otherwise identified in the Metra Engineering CADD Standards, the front sheet of a set of drawings “IFC” with

a complete list of all the drawings for the project may have the seals by all appropriate professionals. The revised drawing(s), specifications, and structural calculations are also to bear the seals by appropriate engineering professionals at the time of issue.

- 3.4.10.3 If there are ambiguities or a need for clarification on the contract documents during construction, the TPC (Construction Contractor) may issue a Request for Information (RFI) document requesting clarifications from Metra or designee TPC (Construction Management). If the RFI results in changes to be made to the construction documents by the TPC (Design), then a bulletin shall be issued. A bulletin is a change to the contract documents after contract award that may or may not result in a change order. If the Issued for Bid or “IFC” drawings or specifications require revision, the TPC (Design) revising the drawings or specifications is to clearly bubble or delineate changes and identify them with the appropriate bulletin number. Bulletins will be issued as the project dictates.
- 3.4.10.4 Revised drawings and/or specifications are to be issued as the project dictates.

### ISSUED FOR CONSTRUCTION - EXAMPLE REVISION BLOCK:

B3	XX-XX-XXXX	CM	CP	Bulletin for RFI #009
B2	XX-XX-XXXX	CM	CP	Bulletin for RFI #002
B1	XX-XX-XXXX	CM	CP	Bulletin for RFI #001
B	XX-XX-XXXX	CM	CP	Issued for Construction
<b>Rev.</b>	<b>Date</b>	<b>By</b>	<b>App.</b>	<b>Description</b>

### 3.4.11 As-Built: Drawings, Specifications, and Shop Drawings

- 3.4.11.1 It is critical that the Issued for Bid or “IFC” drawings, specifications, and shop drawings used during construction are to be marked with the approved documents authorizing the changes, e.g. RFI, NCRs, Contract Modifications, etc. (Construction Contractor.) The document authorizing the changes is to be referenced on the affected drawing or the section of the specification and the changes shown exactly as approved, highlighting the revision indicators and bubbles. Alternatively, an approved copy of the complete document authorizing the detailed changes is affixed to the drawing or specifications. At least one complete and current set of the drawings and specifications along with the approved changes is to be maintained in the field. Additionally, the Drawing Log maintained for the current set of Issued for Bid or “Issued for Construction” drawings and specifications should have appropriate reference to the approved documents authorizing the changes.
- 3.4.11.2 The project may have a completion date for the complete project or the project may have different milestone completion dates for several portions of the whole project. It is not acceptable to have the As-Built set of drawings and specifications as a punch list deliverable item either for the whole project or after completion of all portions of the whole project. The record As-Built are to be maintained current at all times during the construction and requires the appropriate documented verification and certification, as part of the regular pay application process.
- 3.4.11.3 Unless it is otherwise specified in the contractual documents, the configuration management for the As-Built drawings and specifications are to be controlled as specified herein and in the Engineering CADD Manual.
- 3.4.11.4 The TPC (Construction Contractor) is to ensure that the As-Built drawings are prepared in the Computer-Aided Design and Drafting format using the software and the standards specified in the



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contractual documents including the Scope of Work, RFSS, Issued for Bid, and the Request for Proposal (RFP), as appropriate.

### Signal Department Design

3.4.12 Signal In-Process Drawings – The TPC (Design) is to adhere to the following:

3.4.12.1 In-Process Drawings are to be used for signal system designs that are in development, and are used prior to IFC, RFP, or In-Service Drawings. During all design projects, signal drawings shall be submitted for Metra review and approval utilizing the “In-Process Revision Block” as shown below. The “In-Process Revision Block” shall be used while: Request for Proposal (RFP) Contract Drawings are being developed until final approval by Metra and Procurement RFP Package is complete, and Issued for Construction (IFC) Drawings are being developed and until final In-Service Drawings are issued.

3.4.12.2 All Submittals of Signal Drawings shall have an “In-Process Revision Block” located in the lower left corner of the referenced border as shown below. This revision block shall be used to track revisions from initial design to either RFP or IFC and to Final In-Service Drawings.

D4	08/01/17	ABC	08/05/17	J A	100% SUBMITTAL
D3	07/25/17	ABC	07/27/17	J A	50% SUBMITTAL
D2	05/16/17	ABC	07/06/17	J A	60% SUBMITTAL
D1	05/26/17	ABC	05/31/17	J A	30% SUBMITTAL
REV	SUBMITTED	BY	REVIEWED	BY	DESCRIPTION
				APP	

**IN-PROCESS DESIGN  
FOR RFP CONTRACT DRAWINGS  
REVISION BLOCK:**

C2	08/14/17	ABC	08/14/17	J A	ISSUED SUPERCEDE
D4	08/11/17	ABC	08/13/17	DEF	VLC IP ADDRESS CHANGE
C1	08/01/17	ABC	08/05/17	J A	IFC DISTRIBUTION
D3	07/25/17	ABC	07/27/17	DEF	ELECTROLOGIX REVISION
D2	06/16/17	ABC	07/06/17	DEF	PTC REVISION
D1	05/26/17	ABC	05/31/17	DEF	INITIAL SUBMITTAL
REV	SUBMITTED	BY	REVIEWED	BY	DESCRIPTION
				APP	

**IN-PROCESS DESIGN FOR  
CONSTRUCTION PROJECTS  
REVISION BLOCK:**


DATE PLACED IN SERVICE: / /  
PRINT NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_



## Third Party Contracts Quality Management Plan (TPCQMP)

3.4.13 Signal Request for Proposal (RFP) Contract Drawings – The TPC (Design) is to adhere to the following:

- 3.4.13.1 Drawings that are to be used as part of a procurement package, upon completion and approval of the design, shall be released as “RFP Contract Drawings”.
- 3.4.13.2 The “In-Process Revision Block” shall be utilized while RFP contract drawings are being developed as outlined in 3.4.11.4 and shall be removed when RFP contract drawings are completed and approved.
- 3.4.13.3 Signal Contract Drawings that are issued shall use the “RFP Revision Block” shown below. The “RFP Revision Block” shall be located directly above the Title Block. This revision block shall be used to track issuance of and any revisions to the RFP contract drawings.

B	MM/DD/YY	ADDENDUM 1
A	MM/DD/YY	REQUEST FOR PROPOSAL
Revision	Date	Description
 SIGNAL ENGINEERING CHICAGO, ILLINOIS		
CHICAGO TO FOX LAKE RONDOUT INTERLOCKING UPGRADES CONSTRUCTION DETAILS (2 OF 2)		
REFERENCE:	CD-1 THRU CD-8	DATE: 01/15/19
DRAWN:	DRAWN:	CHECKED:
LTK	LTK	st
APPROVED:	APPROVED:	DATE:
LTK	st	01/15/19
CONTRACT:	PROJECT NUMBER:	
MW/N	CD-8	

3.4.14 Signal Issued for Construction (IFC) Drawings – The TPC (Design) is to adhere to the following:

- 3.4.14.1 Drawings that are to be issued for construction (IFC), upon completion and approval of the design, shall be released as “IFC Drawings”.
- 3.4.14.2 On projects where the In-Process Drawings have been completed and approved, following the guidelines in section 3.4.11, the drawings shall be prepared to issue for construction (IFC).
- 3.4.14.3 The “Date Placed In Service” stamp shown in section 3.4.11 shall be added whenever the IFC Drawings have been approved for distribution.
- 3.4.14.4 The “Yellow - in Red - out” stamp and the “CREW” stamp shall be highlighted in yellow and placed into the drawings at the bottom of the Revisions Block as shown below. The date shall be the IFC approved date. This stamp shall be used to designate drawing sets to the appropriate personnel (SHOP, CREW, FOREMAN, RECORD, AS-BUILT, and BLK & WT). Shop drawings shall only be used for new construction. This is done by use of the different plot setting files during the printing process.

~REVISIONS~	~REVISIONS~	~REVISIONS~	~REVISIONS~	~REVISIONS~	~REVISIONS~
<p><i>YELLOW - IN</i> <i>RED - OUT</i></p> <p><i>CREW</i> <i>mm/dd/yy</i></p>	<p><i>YELLOW - IN</i> <i>RED - OUT</i></p> <p><i>FOREMAN</i> <i>mm/dd/yy</i></p>	<p><i>YELLOW - IN</i> <i>RED - OUT</i></p> <p><i>AS-BUILT</i> <i>mm/dd/yy</i></p>	<p><i>YELLOW - IN</i> <i>RED - OUT</i></p> <p><i>RECORD</i> <i>mm/dd/yy</i></p>	<p><i>BLK/WT</i> <i>mm/dd/yy</i></p>	<p><i>SHOP</i> <i>mm/dd/yy</i></p>

3.4.14.5 If construction projects require Phasing, an additional note shall be added to the drawings directly above the Title Block and inside the Revisions block border as shown below. This note shall read, "PHASE XXX" with the phase number determined by either the contract specifications or an approved phasing work drawing submitted by the designer.


~REVISIONS~
<p><i>YELLOW - IN</i> <i>RED - OUT</i></p> <p><i>PHASE XXX</i></p> <p><i>CREW</i> <i>mm/dd/yy</i></p>

3.4.14.6 During the design process, there may be an occasion where a new page is added and all new equipment installed. Rather than highlighting everything displayed on the page in yellow color, a stamp; "THIS SHEET ALL NEW" (Metra Cell: TSAN), shall be utilized in the revision block as shown below.

~REVISIONS~
<p><i>THIS SHEET</i> <i>ALL NEW</i></p> <p><i>CREW</i> <i>mm/dd/yy</i></p>



3.4.14.7 During the design process, there may be an occasion where everything depicted on a page is to be removed from service. Rather than highlighting everything displayed on the page in red color, a stamp; “THIS SHEET ALL OUT”, shall be utilized in the revision block as shown below. In addition, all items in the title block shall be highlighted in red in order to draw attention to this page being removed in its entirety from the print set. Design file shall be saved with a lower case “v” at end of the string (elg2200.001v) to designate this sheet to be voided.


~REVISIONS~			
THIS SHEET ALL OUT			
CREW mm/dd/yy			
		SIGNAL ENGINEERING CHICAGO, ILLINOIS	
CHICAGO TO ELGIN ROSELLE WEST CODE LINE CIRCUITS			
REFERENCE:		DATE:	
16.93 SH.1 THRU SH.105		mm/dd/yy	
DESIGNED	DRAWN	CHECKED	APPROVED
ABC	ABC	DEF	GHI
DISTRICT		PRINT NUMBER	
MW/W		16.93 SH.8	

3.4.14.8 If there is a need to change a design after the initial design process has been completed and prints have been issued for construction, a SUPERSEDE page(s) shall be issued depicting the change to a given page(s). Page(s) that have to be re-issued shall utilize a stamp; “THIS SHEET SUPERSEDES PAGE DATED DD/MM/YY as shown in example below. The date entered into supersede field shall be the crew date of previously issued page. A new crew stamp shall also be added for the date the SUPERSEDE was issued.

~REVISIONS~	
YELLOW - IN RED - OUT	
THIS SHEET SUPERSEDES PAGE DATED mm/dd/yy	
CREW mm/dd/yy	

3.4.15 Signal In-Service Drawings – The TPC (Design) is to adhere to the following:

- 3.4.15.1 In-Service Drawings are to be used as a record of the actual signal system design as it is installed and operating.
- 3.4.15.2 When As-Built Drawings are returned to the designer, the designer shall then correct the drawings as noted on the As-Built Drawings, removing all color and the “CREW” stamp.
- 3.4.15.3 On installations where these drawings are the first drawing set issued, the As In-Service date from the returned As-Built Drawings shall be inserted into the title block in the DATE section. The entire drawing set shall have the same date where shown below.

		SIGNAL ENGINEERING CHICAGO, ILLINOIS	
CHICAGO TO ELGIN ROSELLE WEST CODE LINE CIRCUITS			
REFERENCE: 16.93 SH.1 THRU SH.105		DATE: mm/dd/yy	
DESIGNED ABC	DRAWN ABC	CHECKED DEF	APPROVED GHI
DISTRICT MW/W		PRINT NUMBER 16.93 SH.8	

- 3.4.15.4 When the IFC drawings utilize existing In-Service Drawings, the initials of the designer, the as in-service date from the returned as-built drawings, and the initials of the approver shall be added into the Revision Block for all sheets that had approved changes as shown below.

~REVISIONS~
<div style="border: 1px solid black; padding: 2px;"> <del>mm/dd/yy</del>    <del>DK</del>    <del>JK</del> </div>

- 3.4.15.5 The drawings shall then be submitted to Metra for approval with an F and revision number in the REV column of the “In-Process Revision Block”.
- 3.4.15.6 When approved, the drawing set shall have the “In-Process Revision Block” and the “Date Placed In-Service” stamps removed. Four sets of In-Service Drawings shall be created and issued for distribution.

### 3.5 REFERENCES

- 3.5.1 Construction Specifications Institute (CSI) Specifications Guidelines, 50 Division Format
- 3.5.2 Metra Stations & Parking Design Guidelines
- 3.5.3 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)



### 3.6 RELATED DOCUMENTS

- 3.6.1 Metra CADD Manual (Engineering and/or Signal)
- 3.6.2 Drawing Log
- 3.6.3 Drawings
- 3.6.4 Metra Parking Design Checklist
- 3.6.5 Metra Station Design Checklist
- 3.6.6 Milestone Submittals
- 3.6.7 Specifications

### 3.7 DEFINITIONS

- 3.7.1 Addendum: *An additional document not included in the main part of the contract, amending the contract requirements*
- 3.7.2 Bulletin: *A change to the contract documents after contract award that may or may not result in a change order.*
- 3.7.3 Non-Signal Department Design: *Design functions related to all other disciplines with the exception of the Signal Department.*

### 3.8 ACRONYMS

- 3.8.1 CADD – Computer-Aided Design and Drafting
- 3.8.2 CSI – Construction Specifications Institute
- 3.8.3 FTA – Federal Transit Administration
- 3.8.4 IFB – Invitation for Bid
- 3.8.5 IFC – Issued for Construction
- 3.8.6 NCR – Nonconformance Report
- 3.8.7 RFI – Request for Information
- 3.8.8 RFP – Request for Proposal
- 3.8.9 RFSS – Request for Specific Services
- 3.8.10 TPC – Third Party Consultant/Contractor

## 4.0 – DOCUMENT CONTROL

### 4.1 PURPOSE

- 4.1.1 This procedure has been developed and documented to establish the requirements of Metra’s Document Control process, and assign the applicable responsibilities to all parties involved in all phases of the work activities relating to capital contracts.

### 4.2 SCOPE

- 4.2.1 This procedure applies to all capital project documents required by the Metra Third Party Contracts Quality Management Plan (TPCQMP) for the verification of work activities completed by project personnel involved with capital projects. The requirements of this section apply to all Third Party Consultants/Contractors (TPCs), their subconsultants and subcontractors, and Metra Engineering personnel performing work on capital projects.

### 4.3 RESPONSIBILITIES

- 4.3.1 Metra Engineering Department Directors - have the authority and responsibility to appoint experienced, qualified personnel to the position of Project Manager/ Oversight for capital projects assigned to their area of responsibility, and to ensure the successful implementation of the TPCQMP for the oversight of capital projects and/or the work activities completed by Metra’s internal and Force Account personnel relating to capital projects.
- 4.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects.
  - 4.3.2.1 Metra’s Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
  - 4.3.2.2 Ensure that the work performed is documented as evidence of completion and compliance to the applicable quality, contractual and regulatory requirements.
  - 4.3.2.3 Ensure that all project documentation includes the required project information and identification, and has been accurately completed.
- 4.3.3 Metra’s Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirement, as the Third Party Contractors. This includes the quality of the materials and/or services, and the completion of all required, related project documentation.
- 4.3.4 The Director - Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and audits to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.
- 4.3.5 The QA/QC Director - Engineering has the authority, responsibility and independence to provide quality assurance oversight through the monitoring of quality control activities, which are performed by Metra Force Accounts personnel (Engineering) for those work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering’s QA/QC Director is responsible for



providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to ensure that the requirements of the TPCQMP are completed as contractually required.

- 4.3.5.1 Ensure that all project personnel, both internal and Third Party, are provided with access to the required/applicable quality documents, and that only the most current quality documentation is available for accessing, as needed
- 4.3.5.2 Issue and distribution of all revisions relating to the TPCQMP to all applicable project personnel.
- 4.3.6 The TPC is responsible for ensuring that all project personnel involved in capital project work activities, including their subcontractors/subconsultants, are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including subs.

#### 4.4 PROCEDURE

This procedure has been developed to provide all project personnel with written direction for the control of project records and data during all phases of the capital contract/project, including the development of forms, checklists, specifications and drawings, and the identification, review, distribution, and removal of obsolete/superseded documents, and the control of changes to project records. Project documentation is produced, controlled and maintained to verify conformance to the requirements of the Federal Transit Administration (FTA) Quality Management System (QMS) Guidelines, FTA-PA-27-5194-12.1 (2012 Update).

- 4.4.1 Written procedures shall be developed, implemented, and maintained for the control of project documents and data during all phases of project completion, including the establishment of forms, logs, checklists, and control changes to the 'Issued for Construction' or 'Issued for Bid' drawings and specifications.
- 4.4.2 All project personnel are required to implement the Project File Naming and Directory Structure included in the TPCQMP as the required method for filing, indexing, distribution, storage, maintenance and retrieval of project records.
- 4.4.3 Documents originating from the TPCQMP are to contain the originator's logo. The company logo is to replace the Metra logo.
- 4.4.4 Project personnel are to complete and maintain all required forms, records and other project reference materials required as part of contractual, regulatory or department procedural requirements, and as objective evidence for implementation of this TPCQMP.
- 4.4.5 Any/all project records submitted during the course of the project are to include the Transmittal Cover Sheet.
- 4.4.6 Documentation required by the TPCQMP, including forms, checklists, logs, etc., and the applicable instructions and completed samples are included in the TPCQMP. The TPCQMP consists of four sections; Text (QMP requirements), Forms, Instructions, and Samples.
- 4.4.7 Metra and/or designee is to assist TPC and Metra Force Account project personnel in completing the required forms, checklists, logs, etc. when and as requested by the Metra and/or TPC project personnel.
- 4.4.8 The TPCQMP includes the checklists, logs, templates, instructions and samples for the documentation of generally required work activities. The TPC, due to the uniqueness of the work, may be required to develop additional written procedures, special forms or documentation in completing some projects. The TPC should submit these documents to Metra or its' designee for signature approval **prior** to the document's initial use. Proposed changes to forms provided in the TPCQMP are to be submitted in writing to the Metra Project Manager for review and signature approval prior to use.



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- 4.4.9 The use of alternate forms not approved by Metra is prohibited. Use of unauthorized forms will be considered as noncompliance of the contractual requirements, and will require completion of a Nonconformance Report (NCR).
- 4.4.10 Completed project documents are to be transferred to Metra and/or designee at the specified time and as part of the closing project documents.
- 4.4.11 Electronic copies of all project quality records, including all supporting back-up documents, are to be considered project deliverables in addition to the deliverables specified in other contractual documents.
- 4.4.12 All project records should contain or reference the Metra contract, project and (if applicable) task numbers, when submitted to Metra or its designee.
- 4.4.13 The TPC should require its subconsultants/subcontractors to complete, submit and maintain all applicable documentation to demonstrate implementation of, and compliance to, the TPCQMP.
- 4.4.14 All documents, including the forms, checklists, logs, etc., received from the TPC's subconsultants/subcontractors, as well as the supporting documents, should be clearly identified with the TPC's contract, project and (if applicable) task numbers for proper identification and traceability.
- 4.4.15 In some instances, Metra may contractually require the use of a Web-Based System for project management of some capital projects. In such instances, the Web Based System should address and ensure compliance and implementation of the FTA QMS Guidelines. When a Web Based System is not required, the applicable forms, checklists, logs, etc., listed in the TPCQMP should be completed along with the associated documentation, at the appropriate time and submitted to Metra.

NOTE: Only one method, either the TPCQMP or the contractually identified Web Based System, should be followed in the implementation of the FTA QMS Guidelines.

### 4.5 REFERENCES

- 4.5.1 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012)
- 4.5.2 Third Party Contractor Quality Manual
- 4.5.3 Third Party Subconsultant and/or Subcontractor Contractual Agreements

### 4.6 RELATED DOCUMENTS

- 4.6.1 Invitation for Bid
- 4.6.2 Nonconformance Report (NCR)
- 4.6.3 Project File Naming/Directory Structure Instructions
- 4.6.4 Third Party Contracts

### 4.7 DEFINITIONS

- 4.7.1 Metra Force Account: *Metra personnel.*
- 4.7.2 Metra User Departments: *Metra personnel.*
- 4.7.3 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*



**4.8 ACRONYMS**

- 4.8.1 FTA - Federal Transit Administration
- 4.8.2 NCR – Nonconformance Report
- 4.8.3 QA/QC – Quality Assurance/Quality Control
- 4.8.4 QMS – Quality Management System



### 5.0 PURCHASING

#### 5.1 PURPOSE

- 5.1.1 This procedure has been developed and documented to establish the requirements and assign the applicable responsibilities to all parties involved in the procurement process relating to capital contracts, including Third Party Consultants and/or Contractors, their subconsultants and/or their subcontractors, Metra Force Account personnel, and all other parties related to the capital contracts/projects. The development of this procedure is to ensure that Metra's quality procurement standards are followed and implemented as directed by this document.

#### 5.2 SCOPE

- 5.2.1 The requirements of this section apply to all Third Party Consultants/Contractors, (TPCs), their Subconsultants/Subcontractors (Subs), Metra Force Account personnel and Metra's User Departments, and all other related project personnel performing the work activities for Metra's capital projects.

#### 5.3 RESPONSIBILITIES

- 5.3.1 Metra Chief Engineering Officer has the authority and ultimate responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all work activities relating to capital projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012).
- 5.3.2 The Senior Division Director, General Administration, has the overall responsibility and authority to ensure that the established procurement requirements are clearly defined for inclusion into the Metra TPCQMP, and that these requirements are implemented as contractually required.
- 5.3.3 The Metra Project Manager assigned as oversight to the capital project is responsible for, and has the authority to implement the requirements of this procedure, as well as all procedures included in the TPCQMP. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 5.3.4 Metra's Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 5.3.5 The Director - Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and audits to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.
- 5.3.6 The QA/QC Director – Engineering has the authority, responsibility and independence to provide quality assurance oversight through the monitoring of quality control activities performed by Metra Force Accounts personnel (Engineering) for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering's QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to ensure that the requirements of the TPCQMP are completed as contractually required.
- 5.3.7 The Third Party Consultants/Contractors performing activities or furnishing parts, materials, equipment or services for Metra projects have the responsibility to ensure that the procurement documents are appropriately developed, maintained and controlled as required, and that the procured products or services conform to the specified procurement requirements for products or activities under their control.



### 5.4 PROCEDURE

- 5.4.1 Written procedures are to be established and implemented to ensure that the work, products and services purchased for, through and as a result of a capital project, [whether by a Third Party Contract or work performed by Metra Force Account], conforms to the requirements specified in FTA-PA-27-5194-12.1 (2012 Update) and Metra's procurement process, including but not limited to, correct account codes, cost, schedule, milestone submittals, deliverables, the assignment of competent and qualified project personnel, training requirements, and the approved work scope.
- 5.4.2 The Third Party Contractor (TPC) is to:
- 5.4.2.1 Select Sub(s) based on their ability to meet the Metra contractual requirements, including quality and timeliness requirements. The TPC is to ensure and document the selection of its Subs, following the approved procurement procedures, system, checklists, etc.
  - 5.4.2.2 Contractually require its' Subs to implement the same contractual requirements as that of the TPC's contract with Metra and to ensure that their Sub(s) fully understands, acknowledges and agrees to the Third Party contract and to Metra's terms and conditions, and has the capacity to perform and complete the scope of work, as required.
  - 5.4.2.3 Require its' Subs to complete, update, maintain, and submit documentation that demonstrates and verifies their implementation of the procurement standards established by Metra in conformance with the FTA, FRA, and/or other regulatory agency regulations as contractually required.
  - 5.4.2.4 With regard to cost estimates for Contract Modifications, Metra's cost estimates, i.e., Independent Cost Estimate (ICE), must be produced independently of, and prior to, the Third Party Construction Contractor's estimate.
  - 5.4.2.5 Metra may initiate a Contract Modification or Change Order per contractual requirements. Work by the TPC relating to a Contract Modification or Change Order is not to be started until the final negotiated cost has been accepted and the Contract Modification or Change Order approved by Metra. The work for a pending or in-process Contract Modification for time and/or material modification is not to be started without an executed Contract Modification or Change Order from Metra. When submitted, all Contract Modifications and Change Orders must include an executive summary as the top sheet/cover page. The executive summary is to include a detailed synopsis, consisting of a brief history of the submitted Contract Modification and/or Change Order. Contract Modifications and Change Orders will not be processed without the inclusion of the required documentation and other related back up.
  - 5.4.2.6 Prepare and submit a complete list of all project deliverables, including but not limited to, hardware, project records, parts, maintenance, training, manuals, warranties, defective items call-out processes, quality records required by the TPCQMP, and/or other contractual records for the authorized scope of work.
  - 5.4.2.7 Develop and submit to Metra or designee, a list of all submittals required per specifications, scope of work or other contractual requirements. The list of submittals is to be submitted on the Submittal Log and delivered to Metra or designee immediately after the kick-off meeting, prior to starting the project work. The work activities will begin after the required submittal has been approved by Metra.
  - 5.4.2.8 Prepare and submit an overall work schedule in sufficient detail to correlate with the scope of work and submittals, prior to starting the project work.
  - 5.4.2.9 Submit a two-week 'look ahead' schedule of the work activities during the scheduled project progress meetings, when required by contractual documents.



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5.4.2.10 Prepare and submit a punch list at the substantial completion of the project, when required by contractual documents.

5.4.3 Only competent, qualified TPC personnel and/or Subs are to be employed for procuring services for the out-sourced, capital project work activities.

### 5.5 REFERENCES

5.5.1 Metra Corporate Quality Manual (CQM)

5.5.2 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)

5.5.3 Metra Procurement Process Manual

### 5.6 RELATED DOCUMENTS

5.6.1 Metra Contract Modification Form

5.6.2 Metra Change Order Form

### 5.7 DEFINITIONS

5.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*

5.7.2 Independent Cost Estimate (ICE): *A cost estimate that is prepared independently by the consultant /contractor or Metra, which lists the total costs involved for a product, material or service. The ICE should establish the price a company would charge Metra. An estimate of the proper price level or value of the product or service to be purchased that is produced by the Requisitioner, using information obtained from knowledgeable sources before soliciting proposals.*

5.7.3 Metra User Departments: *Metra personnel.*

5.7.4 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*

### 5.8 ACRONYMS

5.8.1 CQM – Corporate Quality Manual

5.8.2 FTA – Federal Transit Administration

5.8.3 ICE – Independent Cost Estimate

5.8.4 Sub – Subconsultant or Subcontractor

5.8.5 TPC – Third Party Consultant or Contractor

5.8.6 TPCQMP – Third Party Contracts Quality Management Plan

## 6.0 – PRODUCT IDENTIFICATION AND TRACEABILITY

### 6.1 PURPOSE

- 6.1.1 This section establishes the requirements for the identification and control of the items and services procured, maintained and used throughout the various phases of the capital project to prevent the inadvertent use of improperly identified materials, products and/or services or those found to be nonconforming.
- 6.1.2 This procedure identifies the roles and responsibilities of the project personnel, i.e., Third Party Contractors, their Subconsultants/Subcontractors, Metra Force Account and the Metra User Departments in the performance of this procedure, and directs the project personnel in the related work activities to ensure that all contractual and regulatory requirements are maintained for adequate product identification and traceability.

### 6.2 SCOPE

- 6.2.1 The requirements of this section apply to all Third Party Contractors (TPCs), their subconsultants/subcontractors (Subs), Metra Force Account personnel and the Metra User Departments involved in the work of, or relating to, capital projects, and are applicable to all products, materials, work and services relating to the capital contract.

### 6.3 RESPONSIBILITIES

- 6.3.1 The Chief Engineering Officer has the overall authority and responsibility for providing adequate resources to ensure that the requirements of this procedure are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all requirements, regulations and contractual obligations are implemented, including those for the identification and traceability of materials, products and services, as contractually required.
- 6.3.2 The Senior Division Director, General Administration, has the overall responsibility and authority to ensure that the procurement requirements are established and clearly defined for inclusion into the Metra Third Party Quality Management Plan (TPCQMP), and that these requirements are implemented as contractually required.
- 6.3.3 Engineering Department Directors have the responsibility to appoint a qualified, competent Project Manager (PM) for oversight of each capital project to ensure that the contractual and regulatory requirements are managed successfully throughout all phases of the contract.
- 6.3.4 The Project Manager appointed by Metra for oversight of the project has the authority and responsibility for implementing the requirements of this procedure, as well as all procedures included in the TPCQMP.
  - 6.3.4.1 Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
  - 6.3.4.2 Metra's Project Manager (PM) is to ensure that the work performed on capital projects is completed as contractually required and documented as evidence of completion and compliance to the requirements of the TPCQMP and other contractual and regulatory requirements.
  - 6.3.4.3 The Metra PM is to ensure that all forms, checklists and other project records are completed on time by the applicable parties, and that the records include all related information such as contract, project and, when applicable, task numbers.

- 6.3.4.4 The Metra PM has the day-to-day responsibility for ensuring that the work performed on capital projects is completed and documented as evidence of completion and compliance to the requirements of the TPCQMP and other contractual and regulatory requirements.
- 6.3.5 Metra's Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirements for the identification and traceability of materials, parts, and services as the Third Party Contractors.
- 6.3.6 The Director - Corporate Quality Assurance has the authority, responsibility and independence to identify internal and external (Third Party) quality issues, to initiate action through the appropriate channels to correct and/or prevent those quality deficiencies, and to conduct quality assurance assessments, audits, and surveillances audits to determine the overall implementation and effectiveness of the TPCQMP.
- 6.3.7 The QA/QC Director - Engineering has the authority, responsibility and independence to provide quality assurance oversight through the coordination of the quality control activities performed by Metra Force Accounts for work activities relating to capital projects, as specified in the TPCQMP.
- 6.3.8 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects (including Subs), are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel (including Subs).
  - 6.3.8.1 The TPC is to ensure that all forms, checklists and other project records are completed on time and that the records include all related information such as contract, project and, when applicable, task numbers.

### 6.4 PROCEDURE

- 6.4.1 A written procedure(s) is to be developed and implemented to ensure that contract items such as batches, materials, parts, components, services, and work activities such as inspection, testing, design, installation and construction, and the oversight of these activities, are controlled to prevent the inadvertent use or installation of incorrect, unidentified or defective items. The documented procedure should ensure that only correct and accepted items and services, which meet contractual and regulatory requirements, are designed, used and installed by the appropriate contract/project personnel.
- 6.4.2 Project personnel, including TPCs, Subs, Metra Force Account and Metra User Departments involved in the project are to maintain the appropriate, required documentation for all items procured and/or used in all phases of the project, including but not limited to materials, equipment and services, to be traceable back to specific documentation such as drawings, specifications, standards, physical and chemical materials test reports, etc., when required by drawings, codes, standards, or specifications, industry standards and practices, and contractual requirements.
- 6.4.3 Any/all project records that include attachments are to be submitted using the Transmittal Cover Sheet.
- 6.4.4 The TPC should arrange for the physical identification and separation of items, to the maximum extent possible. Where physical separation is impractical, marking, tagging, labeling or other appropriate means may be employed. Identification may be either on the item or on records traceable to the item. When an identification marking is used, the marking should be clear, unambiguous, and applied in such a manner as not to affect the quality or the function of the item.
- 6.4.5 The use of a physical location, such as a recognized and/or identified hold area is allowed for placement of batches, materials, parts and components not meeting the status of adequately identified or acceptable to specification or adequately traceable.



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- 6.4.6 The TPC is to ensure the transfer of any identifying marking(s) to the separated items, if possible, when nonconforming or unidentified items are subdivided. The markings should not be hidden or destroyed by coatings or surface treatments.
- 6.4.7 The Metra Project Manager is to verify that products, materials, work and services relating to the capital project not meeting the stated acceptance criteria are properly identified and controlled to prevent inadvertent use or installation. Products, materials, work and services lacking the proper identification and/or traceability are to be identified, segregated and then documented on the Nonconformance Report provided in the TPCQMP. If such product, material, work and/or service is later identified or becomes traceable, the identification or traceability must be confirmed as acceptable by the Metra Project Manager before the NCR can be closed out.
- 6.4.8 Where physical identification is impractical, physical separation, procedural control, or other appropriate means may be employed. Items that fail to possess identification, items for which record traceability has been lost, or items that do not conform to requirements should be segregated to prevent use or installation and immediately rejected or returned to supplier.
- 6.4.9 Project personnel are to ensure and confirm the segregation, isolation, evaluation and/or re-evaluation, when warranted, of items and/or services which fail to possess identification, the status of inspection and/or testing, items for which record traceability has been lost, or items which do not meet contractual requirements.
- 6.4.10 The TPC is to ensure that the items, service and work used for the project are traceable to the batch number, shipment number, packing slip, invoice, etc., as contractually required, and accompanied by test data and material certifications per contractual documents.
- 6.4.11 The TPC is to ensure that the acceptance receipt and/or rejection for items of production is documented using the Request for Inspection of Material (RFIM) form and logged into the RFIM Log. For Signals projects, the Request for Material Received (RFMR) form and RFMR Log are to be used.
- 6.4.12 The TPC is to ensure that the material has been accepted by Metra or the designee Third Party Contractor prior to use and/or permanent installation.
- 6.4.13 The TPC is to ensure that a list of materials and/or items requiring certification of manufactured items, certified material test reports, other inspection, and test reports for the items procured from the suppliers, per specifications and contractual documents, is prepared and submitted to Metra or its designee via the Submittal Process. This list is separate from the Inspection and Testing Plan identified in Section 8.0 of the TPCQMP.

### 6.5 REFERENCES

- 6.5.1 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1, (2012 Update)
- 6.5.2 Metra Procurement Manual
- 6.5.3 Metra Corporate Quality Manual (CQM)

### 6.6 RELATED DOCUMENTS

- 6.6.1 Nonconformance Report (NCR)
- 6.6.2 Request for Inspection of Material (RFIM) form
- 6.6.3 Request for Inspection of Material Log
- 6.6.4 Request for Material Received (RFMR) form
- 6.6.5 Request for Material Received Log



### 6.7 DEFINITIONS

- 6.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 6.7.2 Metra Force Account: *Metra personnel.*
- 6.7.3 Metra User Departments: *Metra personnel.*
- 6.7.4 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*
- 6.7.5 Traceability: *[1] the ability to verify the history, location, or application of an item or service by means of documented recorded identification. [2] traceable to a particular project, specific warranty, test report, supplier, point in time, purchase order, or through production.*

### 6.8 ACRONYMS

- 6.8.1 FTA – Federal Transit Administration
- 6.8.2 NCR – Nonconformance Report
- 6.8.3 PM – Project Manager
- 6.8.4 QMP – Quality Management Plan
- 6.8.5 RFIM – Request for Inspection of Material
- 6.8.6 RFMR – Request for Material Received
- 6.8.7 Sub – Subconsultant or Subcontractor
- 6.8.8 TPC – Third Party Consultant or Contractor
- 6.8.9 TPCQMP – Third Party Contracts Quality Management Plan



### 7.0 – PROCESS CONTROL

#### 7.1 PURPOSE

- 7.1.1 This procedure has been developed and documented to establish the requirements and assign the applicable responsibilities to all parties involved in all phases of the work activities relating to capital contracts. The development of this document is to ensure this procedure, and all those included in the Metra Third Party Contracts Quality Management Plan (TPCQMP), which directly affect the quality of the product, service and work activities, are followed and implemented as directed.

#### 7.2 SCOPE

- 7.2.1 The requirements of this section apply to all Third Party Consultants/Contractors, (TPCs), their Subconsultants/Subcontractors (Subs), Metra Force Account personnel, Metra User Departments (hereby referred to as Force Account Personnel), and all other parties associated with the work activities relating to the capital projects/contracts.

#### 7.3 RESPONSIBILITIES

- 7.3.1 Metra Chief Engineering Officer has the has the overall authority and responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all requirements, regulations and contractual obligations are implemented as contractually required.
- 7.3.2 The Metra Project Manager assigned as oversight to the capital project is responsible for, and has the authority to implement the requirements of this procedure, as well as all procedures included in the TPCQMP. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 7.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow and implement the same TPCQMP requirements for the control of the work processes as the Third Party Contractors.
- 7.3.4 The Director - Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits, and surveillances audits in order to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues observed during these audits, and to initiate action through appropriate channels for the correction and/or prevention of such quality deficiencies.
- 7.3.5 The QA/QC Director - Engineering has the authority, responsibility and independence to provide quality assurance oversight through the coordination of the quality control activities performed by Metra Force Accounts for work activities relating to capital projects, as specified in the TPCQMP.
- 7.3.6 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects (including Subs), are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including its' Subs.

#### 7.4 PROCEDURE

The following procedure for Process Control has been developed by Metra in order to ensure that the requirements and methodologies Metra has implemented adequately control the planned work activities for the oversight,



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design, construction management and contractor construction work for its Capital Projects. The following procedure includes characteristics from each of the sections included in the TPCQMP, such as

- Process controls
- Special processes
- Proper sequence of the work
- Verifiable by objective evidence
- Documented criteria (specifications, standards, codes, etc.)
- Inspection and testing, (schedules, calibration, status)
- Tools and equipment used for the work are properly maintained
- Identifying & tracing parts, materials and service results
- Tools and equipment operated by qualified operators
- Personnel qualifications/certifications
- Training

When properly implemented, the above items will result in drawings, specifications, parts, materials, services and work that conform to the required contractual and applicable regulatory guidelines, and are verifiable by documented criteria.

7.4.1 Documented Quality Management System: Metra's documented quality plan, the TPCQMP, has been created to direct the development of the procedures, forms, checklists, logs, etc. required for the documentation of all work activities associated with a capital project.

7.4.1.1 TPCs and Metra Force Account personnel performing work activities relating to capital projects are to implement, document, and maintain day-to-day work activities per the TPCQMP. Written quality plans and procedures provided by the Third Parties are to be used in conjunction with the Metra TPCQMP. In the event of conflicting direction between the two quality plans, the TPCQMP supersedes the TPC's procedures, and the TPCs are to implement the requirements of the TPCQMP in their entirety.

7.4.1.2 Procedures for control of project documents have been established through this TPCQMP, and are to be maintained. The document control measures are to ensure that all relevant documents are current and readily available to all users who require them.

7.4.2 Drawing Control: Metra has developed written procedures, CADD Manuals, for the control and verification of design activities, including design changes and configuration management, to direct the work activities of all applicable project personnel through all phases of the project, from design through project completion. This design control procedure incorporates the identification, review, and documentation of the design inputs, regulatory requirements, preparation and verification of the calculations, specifications, and drawings, planning design interfaces, submittals and design review documents, and verifying qualifications of project personnel allocated to perform design and provide oversight for design activities.

7.4.2.1 The TPC and/or Metra Force Account personnel are required to ensure the design, construction and/or installation progresses in a logical manner in accordance with established industry procedures and contractual requirements utilizing the suitable equipment for construction and special processes, specifically where inspection after the fact may not reveal deficiencies.

7.4.3 Document Control: Metra has established written procedures to develop, implement, and maintain the control of its project documents and data during all phases of the capital project, from design through completion, including forms, logs, checklists, and instructions for use of the forms, logs and checklists. Control of project records include, but are not limited to, version control, accessibility, maintenance,



distribution, use of Project File Naming/Directory Structure, retention back up of electronic data and preservation. All project personnel are required to adhere to this procedure.

- 7.4.3.1 A plan for the control of project records is to be implemented by the TPC that controls the documentation resulting from the project's work activities. The resulting documentation is to verify implementation of and compliance to the contractual requirements, including the document control process. All new and revised documents are to be reviewed and approved by the applicable parties prior to distribution to all applicable project personnel. Distribution should be controlled in such a manner as to ensure that approved documents are made accessible in a timely manner to all applicable project personnel, that only the most currently approved documents are accessible, and that the documents within the quality plan clearly identify the revision level and issue date.
- 7.4.3.2 Forms required for the documentation of work activities are provided in the TPCQMP. Project personnel are required to use the forms provided. Revising forms provided in the TPCQMP without Metra's prior written approval is strictly prohibited. Project records provided in the TPCQMP are to be completed, updated, maintained and submitted to Metra/designee at the appropriate time as the work progresses, and again at the completion of the project.
- 7.4.3.3 All project records are to include the applicable contract, project, and if applicable, task numbers along with the project description.
- 7.4.4 Purchasing: Written procedures have been established and implemented to ensure that the work, products and services purchased relating to a capital project, conforms to the requirements specified in FTA-PA-27-5194-12.1 (2012 Update) including but not limited to, correct account codes, cost, schedule, milestone submittals, deliverables, the assignment of competent and qualified project personnel, training requirements, and the approved work scope.
- 7.4.5 Product Identification and Traceability: Metra has developed and implemented a written procedure for controlling the identification and traceability of the batches, parts, materials, components and services resulting from the work performed on or relating to capital projects. The procedure controls these aspects of the project from receipt of raw materials through installation and services completed.
  - 7.4.5.1 TPCs, Subs and Metra Force Account project personnel are required to implement Metra's documented procedure for the identification and traceability of batches, parts, materials, components and services to ensure against inadvertent use or installation of unidentified, incorrect or defective items in the process, and to ensure that the required information, if needed, can be retrieved later for recalls, defects, future orders, spare parts etc. The Third Party Contractor should ensure that the final assemblies are coded properly and clearly marked with the specification, project number, model number, serial number, bar codes, storage and used location, and similar information.
  - 7.4.5.2 Where physical identification is impractical, physical separation, procedural control, or other appropriate means may be employed. Items that fail to possess identification, items for which record traceability has been lost, or items that do not conform to requirements should be segregated to prevent use or installation and immediately rejected or returned to supplier.
  - 7.4.5.3 All project records are to include the applicable contract, project, and if applicable, task numbers along with the project description.
- 7.4.6 Process Control/Special Processes: Special Processes are the processes for which results cannot be verified by subsequent inspection and testing of the product. Metra has identified and planned for the work activities directly affecting the quality of special processes to ensure that these activities are completed under controlled conditions.

- 7.4.6.1 The TPC and the Metra PM/oversight, or designee, are to ensure that continuous monitoring and/or conformance with documented procedures, performed in proper sequence, is accomplished for all special processes including, but not limited to, welding, chemical cleaning, nondestructive examination (NDE), special coatings, cold weather concrete curing, construction sequencing, etc.
- 7.4.6.2 All special processes are to be controlled by procedures, instructions, drawings, checklists and/or other appropriately defined means and performed by qualified personnel.
- 7.4.6.3 The TPC is required to develop a written procedure for each special process. The written procedure is to specify the methods for verifying the acceptability of processing materials, activity, and final installation.
- 7.4.7 Inspection and Testing, Calibration, and Inspection and Testing Status: Metra has developed written procedures to direct the TPCs, their Subs and Metra's Force Account project personnel in the implementation of the processes required for inspection and testing, the readiness of the tools and equipment used for inspection, measurement and testing, and the status of inspections and tests. This begins with the inspection and test activities developed by the Design Consultant, which is to be included in the contractual requirements.
  - 7.4.7.1 Schedule: The Construction Contractor is to submit an Inspection and Testing Schedule/Plan to the Metra PM for approval prior to start of the work. The Inspection and Testing Schedule is to list all required inspections and tests through completion of the project. The status of all inspections and tests is to be documented on the Daily Report and the Inspection and Testing Log provided in the TPCQMP. All tests and/or inspections that do not meet the stated acceptance criteria are to be noted on the Nonconformance Report provided in the TPCQMP and submitted to the Metra PM/designee.
  - 7.4.7.2 Calibration: All tools and equipment used in the inspection, testing and/or measuring of work activities are to be calibrated prior to the start of work, and at specified intervals for the duration of the project work. The calibration status for each of the tools and equipment is to be identified on the tool/piece of equipment, the equipment or tool's container, or in the immediate area of where the inspection, testing and/or measuring activity is being performed.
  - 7.4.7.3 Equipment Calibration Log: All tools and equipment used in the inspection, testing and/or measuring of work activities performed for capital projects are to be listed on a calibration list and submitted to the Metra PM for approval prior to the start of the work. The required Equipment Calibration Log which is provided in the TPCQMP is to include the calibration information for each tool and piece of equipment listed for use on the project.
- 7.4.8 Nonconformance, Corrective/Preventive Action: Metra has developed and implemented written procedures for the immediate control of nonconforming material, parts and/or work, in order to ensure that such materials, parts and/or work is not inadvertently used or installed. Nonconforming materials, parts and/or work is identified, documented on the Nonconformance Report [provided in the TPCQMP], segregated, evaluated and dispositioned by the appropriate, authorized parties. Disposition, re-inspection and final approval of all such work are addressed in sections 11.0 and 12.0 of the TPCQMP. The corrective action process for noted deficiencies includes an analysis of the root cause in order to determine the underlying cause of the deficiency. Proper corrective action includes preventive action to prevent or significantly reduce the reoccurrence of the reported nonconformance. Metra/designee is the sole authorization for disposition of nonconforming materials, parts, work, etc., including approval for re-graded, repaired and/or reworked materials, parts, work, etc. Repaired or reworked materials, parts, work, etc., are to be re-inspected prior to release to verify corrective action has been completed and that the corrected materials, parts, work, etc., meets all specified acceptance criteria.

- 7.4.8.1 **Nonconformance:** All TPCs and Force Account personnel associated with the work activities relating to the capital projects/contracts are required to have a written procedure directing the control of items and/or work that does not conform to contractual requirements. The documented procedure is to prevent inadvertent use or installation of such items and/or work, and is to require adequate direction for the identification, documentation, segregation and notification of such items/work to all affected parties. All nonconforming materials, parts, work, etc., is to be documented on the NCR provided in the TPCQMP and submitted to the Metra PM/designee. TPCs are responsible for ensuring that their Subs adhere to these requirements.
- 7.4.8.2 **Corrective/Preventive Action:** TPCs and Metra Force Account project personnel are responsible for implementing appropriate measures to correct noted deficiencies. These measures are to include the investigation of the root cause for the deficiency, the implementation of corrective action sufficient to resolve the issue(s), and to ensure that the corrective action includes the appropriate action to prevent or significantly reduce the reoccurrence of the reported nonconformance.
- 7.4.9 **Quality Records:** Metra has developed, implemented and maintains a documented procedure for the control of all quality records resulting from the work and related activities relating to capital projects. All project personnel are required to adhere to this procedure. The procedure for control of quality records identifies records to be retained, and the parties responsible for the production and collection, indexing, filing, storage, maintenance, and disposition of the controlled quality records. Quality records are maintained to verify implementation of the TPCQMP and the effectiveness of the implementation. Control of project records include, but is not limited to, version control, accessibility, maintenance, distribution, retention, back up of electronic data and preservation.
- 7.4.9.1 Quality records typically included in a Metra capital contract project folder would be, but not limited to
- Inspection reports
  - Test data
  - Qualification records
  - Calibration records
  - Nonconformance reports
  - Corrective actions
  - Audit reports
  - Training Records
- 7.4.10 **Quality Audits:** Metra has developed, established and implemented a quality audit program to ensure that the elements of the TPQCMP are functioning as intended, and to verify that the requirements of the FTA's QMS, FTA-PA-5194-12.1 (2112 Update) are being maintained as contractually required. External quality audits of Third Party organizations performing work on capital projects are scheduled and conducted by Metra's Corporate Quality Assurance Director. Metra's internal quality audits are scheduled and conducted by the QA/QC Director – Engineering. Internal quality audits measure the level of Metra's oversight of the capital projects, verify and evaluate the effectiveness of the TPCQMP's implementation. Combining the results of the internal and external quality audits allows for analyzing of noted deficiencies, corrective actions and the effectiveness of the TPCQMPs implementation in specific areas, and the actions and/or resources required for improvement of areas indicating repetitive issues. Metra's Quality Audits are performed by experienced, qualified quality assurance personnel.
- 7.4.10.1 Verification for the performance of Metra's quality assurance audits are available in the audit packet. The audit packet is comprised of documents from the various stages of the audit, i.e., audit notification through audit closure.
- 7.4.11 **Training:** The last variable of objective evidence for Metra's process control is the training process that Metra has developed and implemented to ensure that all project personnel involved in the work, or responsible for the work relating to capital projects, receive the quality training in relation to their position responsibilities with the capital project. Metra's training procedure identifies the training needs



required to ensure that project personnel are qualified and where needed, certified, in the principles and techniques for completing the activity being performed and to ensure all contractual and regulatory requirements are being met. Additional training is administered for new or revised procedures, forms, materials, etc., as warranted.

- 7.4.11.1 TPCs are responsible for ensuring their project personnel, including Subs, receive the required training on the TPCQMP.
- 7.4.11.2 TPCs are to employ qualified personnel with adequate experience, training, qualifications, and certifications proportionate to the scope, complexity, and special nature of the activities to be managed, performed, reviewed, inspected, and tested.
- 7.4.11.3 TPCs are to ensure and/or provide, maintain and document all additional contractual and regulatory training such as OSHA, Metra and other railroad safety training, etc.
- 7.4.11.4 All training is to be documented as objective evidence of training, and the training records maintained and accessible as needed.

### 7.5 REFERENCES

- 7.5.1 CADD Manual (Signal and Engineering)
- 7.5.2 Corporate Quality Manual (CQM)
- 7.5.3 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)
- 7.5.4 Metra Signal Maintenance Inspection Test Instructions (Blue Book)
- 7.5.5 NIST Handbook – 2016 (or Current Version)
- 7.5.6 Procurement Process Manual
- 7.5.7 Reference the following manuals for control processes specific to the contract.
  - 7.5.7.1 Site Planning Guide
  - 7.5.7.2 Installation Manuals
  - 7.5.7.3 Design and Engineering Guidelines
  - 7.5.7.4 Technical Manuals
  - 7.5.7.5 Other Manufacturer Guides, Manuals, etc.

### 7.6 RELATED DOCUMENTS

- 7.6.1 Equipment Calibration Log
- 7.6.2 Nonconformance Report (NCR)
- 7.6.3 Nonconformance Log
- 7.6.4 Project File Naming/Directory Structure
- 7.6.5 Training Log
- 7.6.6 Training Records (Attendance Sheets, Certificates, Licenses, etc.)

### 7.7 DEFINITIONS

- 7.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*



- 7.7.2 Corrective Action: *An action or activity intended to reduce or eliminate an identified deficiency or nonconformance.*
- 7.7.3 Root Cause: *Underlying cause of a deficiency/nonconformance.*
- 7.7.4 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*
- 7.7.5 Special Process: *the results of which cannot be verified by subsequent inspection and testing of the product.*
- 7.7.6 Traceability: *[1] the ability to verify the history, location, or application of an item or service by means of documented recorded identification. [2] traceable to a particular project, specific warranty, test report, supplier, point in time, purchase order, or through production.*

### 7.8 ACRONYMS

- 7.8.1 FTA – Federal Transit Administration
- 7.8.2 NCR – Nonconformance Report
- 7.8.3 NIST - National Institute of Standards and Technology
- 7.8.4 TPC – Third Party Consultant or Contractor
- 7.8.5 TPCQMP – Third Party Contracts Quality Management Plan
- 7.8.6 OSHA – Occupational Safety and Health Association



## 8.0 - INSPECTION AND TESTING

### 8.1 PURPOSE

- 8.1.1 This section establishes requirements and assigns responsibilities for planning and performing inspection and testing of items and activities affecting quality during all phases of the project work, to provide assurance that the final accepted parts, materials, batches, service or other work activity conforms to specified requirements.

### 8.2 SCOPE

- 8.2.1 The requirements of this section apply to the Third Party Consultants and/or Contractors (TPCs), their Subconsultants and/or Subcontractors (Subs), Metra's Force Account personnel and all other Metra User Departments (hereby referred to as Force Account personnel) involved in the work of the capital projects, and is applicable to all testing and inspection activities related to all phases of the capital project.

### 8.3 RESPONSIBILITIES

- 8.3.1 Metra Chief Engineering Officer has the has the overall authority and responsibility for providing adequate resources to ensure that the requirements of the Third Party Contracts Quality Management Plan (TPCQMP) are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all requirements, regulations and contractual obligations are implemented as contractually required.
- 8.3.2 The Metra Project Manager (PM) assigned oversight for Capital Project has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 8.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP inspection, measuring and test requirements as the Third Party Contractors.
- 8.3.4 The Director - Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits, and surveillances in order to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues observed during these audits, and to initiate action through appropriate channels for the correction and/or prevention of such quality deficiencies.
- 8.3.5 The QA/QC Director - Engineering has the authority, responsibility and independence to provide quality assurance oversight through the coordination of the quality control activities performed by Metra Force Account personnel for work activities relating to capital projects, as specified in the TPCQMP.
- 8.3.6 The Third Party Consultant/Contractor has the responsibility to ensure that all requirements included in this procedure are clearly communicated to, understood, and implemented by its project personnel, including Subs, and to ensure that all tools, equipment and processes used for the inspection, measuring and/or testing for this project adhere to this procedure. When contractually required, the Third Party Contractor is responsible for performing all inspections and tests.



- 8.3.7 The Third Party Design Consultant has the responsibility to develop a complete list of all inspections and tests contractually required for each project.

### 8.4 PROCEDURE

In order to ensure that all accepted and/or finished parts, materials, batches, services or work conform to all stated contractual requirements, Metra has documented and implemented this procedure for the services, tools and/or equipment used in the inspection and testing process.

- 8.4.1 The party contractually responsible for the project's inspection and testing activities is responsible for ensuring that the personnel performing the inspections and tests are qualified for the task. Qualifications must be documented, kept current, and verifiable. Training, certification or licensing for qualification should be included on the training log provided in the TPCQMP.
- 8.4.2 The TPC/Metra is to ensure that items, parts, materials, batches, etc., received are in conformance with the contractual documents. When required, items, parts, materials, batches, etc., are to be inspected and/or tested at the factory prior to shipping to the delivery location. The inspection and testing should be documented and the documentation should contain or reference the requirements and acceptance/rejection limits per contractual documents, codes, standards or regulatory requirements, frequency, location, final inspection and testing. Inspection and test results are to be recorded and distributed to all applicable parties, including the Metra oversight.
- 8.4.3 Inspection and Testing Plan (s):
- 8.4.3.1 TPCs are required, prior to start of the work, to prepare an Inspection and Testing Plan (ITP) that lists all of the inspections and tests required per specifications, drawings, and other contractual documents for the various items, parts, materials, batches, services and work activities planned during the project progress. The ITP is to list and address the inspection and testing required at the factory, prior to shipping as well as the inspection and testing required at the receipt/installation location. The TPC may elect to prepare a consolidated ITP, which includes the inspection and testing at the factory prior to shipping as well as the inspection and testing at the receipt/installation location. Two (2) separate ITPs listing the inspection and testing at the factory prior to shipping separately from the inspection and testing at the receipt/installation location may also be acceptable.
- 8.4.3.2 The TPC purchasing item(s), part(s), material, batch(es) equipment, etc., delivered to the project site for inspection, acceptance, and permanent installation should submit the ITP(s) to Metra or designee TPC. The ITP(s) should reference the item to be inspected or tested, appropriate specification section, drawing number, or other contractual document, the frequency of inspection or testing, location of inspection/test (on site, test lab, fabrication shop, etc.), Metra personnel witnessing required (Yes/No), reference standard for inspection/test, criteria, organization responsible for inspection/test, testing agency presence to perform the inspection or testing, date and time of testing, if available etc.
- 8.4.3.3 Metra PM or designee is to review the ITP(s) to ensure that it includes all the applicable contractually required inspections and testing for the project.
- 8.4.3.4 Any/all changes to the ITP should be submitted to Metra/designee, following the submittal process per the TPCQMP. Hard copies of both the initial and revised ITP should be filed in the same folder. All revisions should be identified with revision level and/or date.
- 8.4.3.5 In order to prevent delays or impact to the project, the TPC should coordinate with Metra/designee and the project's schedule to ensure that the required inspection and testing is performed as scheduled.



### 8.4.4 Inspection and Testing - Site Location:

- 8.4.4.1 Party contractually responsible for the project's inspection and testing is responsible for scheduling and coordinating inspections and testing with the independent testing agency, as needed, where needed.
- 8.4.4.2 Party contractually responsible for inspection and testing should ensure that the inspections and tests have passed all acceptance criteria. Upon completion, inspection and test results are to be transmitted to all applicable parties.
- 8.4.4.3 Inspections and tests failing to meet all required acceptance criteria are to be documented on the Nonconformance Report (NCR) provided in the TPCQMP and submitted to all applicable parties, include the party responsible for corrective action. Metra is to disposition failing parts, materials, batches, service or other work activity.
- 8.4.4.4 Party contractually responsible for inspection and testing should inspect all items, including materials and equipment brought on site for installation. The Request for Inspection of Material (RFIM) Form and the Request for Material Received (RFMR) Form, provided in the TPCQMP, are to be used to ensure that the items ordered are in compliance with the procurement and contractual requirements, and to verify that the items, parts, materials, batches, etc., delivered are per the purchase order and delivery ticket.

### 8.4.5 Inspection and Testing at the factory location prior to shipping:

- 8.4.5.1 Party contractually responsible for the inspection and testing function is to ensure that the acceptance/rejection criteria [for the parts, materials, batches, etc., to be inspected and/or tested at the factory] are clearly identified in the contractual documents prior to shipping, and the required inspection and test results are obtained from the supplier and transmitted to Metra/designee, in a timely manner.
- 8.4.5.2 Party contractually responsible for managing inspection and testing should review documents submitted by the TPC to ensure that
  - 8.4.5.2.1 All the factory inspection and testing identified in the contractual documents have been performed prior to shipping,
  - 8.4.5.2.2 The inspection and test results are acceptable, and the documentation has a complete traceability to each of the items, parts, material, equipment, etc., received.

## 8.5 REFERENCES

- 8.5.1 American Railroad Engineering and Maintenance-of-Way Association (AREMA)
- 8.5.2 FRA 49, CFR Part 236 – Rules, Standards & Instructions Governing the Installation, Inspection, Maintenance & Repair of Signal & Train Control Systems, Devices & Appliances
- 8.5.3 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)
- 8.5.4 Metra Signal Maintenance Inspection Test Instructions (Blue Book)
- 8.5.5 NIST Handbook – 2016 (Revised Annually)
- 8.5.6 Testing Agency Test Procedures

## 8.6 RELATED DOCUMENTS

- 8.6.1 Nonconformance Report
- 8.6.2 Nonconformance Log
- 8.6.3 Request for Inspection of Material Form





- 8.6.4 Third Party Contracts Quality Management Plan
- 8.6.5 Third Party Inspection and Testing Plan
- 8.6.6 Training Log
- 8.6.7 Training Records (Attendance sheets, Certificates, Licenses, etc.)

### 8.7 DEFINITIONS

- 8.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 8.7.2 Corrective Action: *An action or activity intended to reduce or eliminate an identified deficiency or nonconformance.*
- 8.7.3 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*

### 8.8 ACRONYMS

- 8.8.1 NCR – Nonconformance Report
- 8.8.2 ITP – Inspection and Test Plan
- 8.8.3 PM – Project Manager
- 8.8.4 QA/QC – Quality Assurance/Quality Control
- 8.8.5 RFIM – Request for Inspection of Material
- 8.8.6 RFMR – Request for Material Received
- 8.8.7 Sub – Subconsultant or Subcontractor
- 8.8.8 TPC – Third Party Consultant or Contractor
- 8.8.9 TPCQMP – Third Party Contracts Quality Management Plan



### 9.0 - INSPECTION, MEASURING AND TEST EQUIPMENT

#### 9.1 PURPOSE

- 9.1.1 This procedure documents the requirements and assigns the responsibilities for the identification, control, calibration, and maintenance of the inspection, measuring, and test equipment required to perform the project's inspection and testing activities, as per the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012)

#### 9.2 SCOPE

- 9.2.1 The requirements of this section apply to the Third Party Consultants and/or Contractors (TPCs), their Subconsultants and/or Subcontractors (Subs), Metra's Force Account personnel and all other Metra User Departments (hereby referred to as Force Account personnel) involved with the equipment used in the project's inspection, measuring and/or testing activities.

#### 9.3 RESPONSIBILITIES

- 9.3.1 Metra Chief Engineering Officer has the overall authority and responsibility for providing adequate resources to ensure that the requirements of the Third Party Contracts Quality Management Plan (TPCQMP) are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all requirements, regulations and contractual obligations are implemented as contractually required.
- 9.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 9.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP inspection, measuring and test requirements as Third Party Construction Contractors.
- 9.3.4 The Director of Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits, and surveillance in order to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues observed during these audits, and to initiate action through appropriate channels for the correction and/or prevention of quality deficiencies.
- 9.3.5 The QA/QC Director - Engineering has the authority, responsibility and independence to provide quality assurance oversight through the coordination of the quality control activities performed by Metra Force Account personnel for work activities relating to capital projects, as specified in the TPCQMP.
- 9.3.6 The Third Party Consultant/Contractor has the responsibility to ensure that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including Subs, and to ensure that all tools and equipment used for the inspection, measuring and/or testing for this project adhere to this procedure. The TPC is responsible for ensuring that its' project personnel are properly trained to perform any in-house calibration of the tools and equipment used during the course of the project work. Personnel must be capable of assessing the results of calibration assessments and of properly documenting the calibration activities and results.

### 9.4 PROCEDURE

Calibration of the equipment is required to ensure the accuracy of the tools and equipment used for inspection and testing, and to provide assurance that measuring and test equipment conforms to specified requirements. Written procedures have been established, documented, implemented and maintained in order to ensure that the tools and equipment used for the project's inspection, measuring and testing activities are properly maintained and calibrated, and that the calibration status is properly identified and maintained. Only those tools and equipment used for quality-critical results should be included on the Equipment Calibration Log provided in the TPCQMP. (Note: Force Account personnel may be required to enter tools and equipment information in a database instead of the Equipment Calibration Log.)

- 9.4.1 The TPC (Construction Contractor) is to prepare and maintain the current list of the project inspection, measuring, and test equipment requiring calibration, including its calibration status. The list should be provided to the Metra PM or designee for review and maintained as part of the project files (Deliverables).
- 9.4.2 The TPC (Construction Contractor) is to log all inspection, measuring and test equipment on the Equipment Calibration Log provided in the TPCQMP (Force Account personnel may be required to enter tools and equipment information in a database instead of the Equipment Calibration Log.). When completed, the log will contain information such as item description, model and serial numbers, current calibration information on dates, results, who calibrated the item, and any other additional comments or information the TPC deems notable.
  - 9.4.2.1 The calibration of the tools and equipment used for the inspection, measuring, and testing activities performed for and throughout the duration of the project is to be completed at the specified, scheduled intervals, and the results of the calibration documented on the Equipment Calibration Log provided in the TPCQMP (Force Account personnel may be required to enter tools and equipment information in a database instead of the Equipment Calibration Log.).
  - 9.4.2.2 Daily/Prior to Use: Some tools and equipment may require a verification of calibration, i.e., “a calibration check”, on a daily or ‘prior to use’ basis, such as weight scale or survey equipment. Trained, qualified project personnel perform these calibration checks on a daily or ‘prior to use’ basis, at point of use. For tools and equipment such as this, the TPC should develop a log sheet to document the calibration checks.
- 9.4.3 The TPC is to determine and list the inspection, measuring, and test tools and equipment requiring calibration and submit the list to the Metra PM before the project work begins.
- 9.4.4 The TPC is to determine how and when the tools and equipment are to be calibrated, whether the calibration is to be done in-house, by a consultant or by a calibration service agency.
- 9.4.5 Acceptance criteria for the tools and equipment to be calibrated should be developed according to national standards or to manufacturer's suggested standards where no national standards exist.
- 9.4.6 The TPC is to ensure that all tools and equipment to be used for the inspection, measurement and/or testing of the project's parts, materials, service, installation or other project-related work are properly calibrated and the calibration documented prior to the start of the project work.
- 9.4.7 The status of all calibrated equipment is to be clearly identified on the body of the tool or equipment. In the event labeling of the item itself is impractical, the calibration label should be placed on the item's case or container. If the tool or equipment is stationary, the calibration status can be documented on a separate calibration sheet and maintained in the immediate area.
- 9.4.8 Any tool or piece of equipment used for inspection, measuring, and/or testing that is found to be out of calibration is to be immediately removed from service until such time as the tool or equipment has been assessed, the assessment and results documented and the situation rectified. Items previously inspected



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and/or tested with tools or equipment in question must be traced back and the test/inspection repeated to confirm acceptance. This process continues until the test/inspection results are deemed free of suspect. In cases where the calibration is determined to be deficient, the items are subject to recall.

- 9.4.8.1 Inspection, measurement and/or test tools and equipment that (1) does not perform to specifications, (2) is prone to go out of adjustment, (3) has been damaged or (4) where the calibration cannot be verified, is to be taken out of service, labeled accordingly, and documented on the NCR provided in the TPCQMP. A copy of the NCR is to be submitted to the Metra PM for direction as to how to proceed, e.g., reassessment of prior inspections, measurements and/or tests conducted with.
- 9.4.9 The party contractually responsible for the project's inspection and testing is responsible for ensuring that personnel performing the inspections and tests are qualified for the task. Qualifications must be documented, kept current, and verifiable. Training, certification or licensing should be included on the training log provided in the TPCQMP.
- 9.4.10 Inspection, measuring, and test equipment should be properly maintained to ensure its availability for use when/as required. Inspection, measuring, and test equipment are to be maintained in an environment suitable to sustain functionality.
- 9.4.11 The Metra personnel or the designated Third Party Contractor managing the testing agency performing inspections, should obtain the testing agency's written procedures for control of inspection, measuring, and testing equipment and review to confirm compliance with the TPCQMP requirements. In cases of conflict [between the testing agency's procedures and the TPCQMP], the requirements in Metra's TPCQMP supersede the testing agency's requirements. A copy of the testing agency's procedures is to be maintained in the project files.

### 9.5 REFERENCES

- 9.5.1 American Railroad Engineering and Maintenance-of-Way Association (AREMA)
- 9.5.2 FRA 49, CFR Part 236 – Rules, Standards & Instructions Governing the Installation, Inspection, Maintenance & Repair of Signal & Train Control Systems, Devices & Appliances
- 9.5.3 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)
- 9.5.4 Metra Corporate Quality Manual (CQM)
- 9.5.5 Metra Procurement Process Manual
- 9.5.6 Metra Signal Maintenance Inspection Test Instructions (Blue Book)
- 9.5.7 NIST Handbook – 2016 (Revised Annually)

### 9.6 RELATED DOCUMENTS

- 9.6.1 Equipment Calibration Log
- 9.6.2 Nonconformance Report
- 9.6.3 Third Party Contracts Quality Management Plan
- 9.6.4 Training Log
- 9.6.5 Training Records (Attendance sheets, Certificates, Licenses, etc.)

### 9.7 DEFINITIONS

- 9.7.1 Calibrate: *(1) to check, adjust, or standardize a measuring instrument, usually by comparing it with an accepted model, (2) to determine, check, or rectify the graduation of any instrument giving quantitative measurements.*



- 9.7.2 Calibration: (1) *setting of a measurement device between two dimensions, (2) to set with one device to a precise measurement made in as similar a way as possible with a second device of known magnitude or correctness.*
- 9.7.3 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 9.7.4 Quality-Critical: *Criteria by which acceptance and/or rejection is decided. Example: If the results of an inspection or test are based on a specified acceptance/rejection range, then the results are defined as “quality-critical”.*
- 9.7.5 Standard: (1) *an idea or thing with the known or assigned correctness, (2) test and measurement standards that define the methods to be used to assess the performance or other characteristics of a product or process, (3) a level of quality or accomplishment (4) common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices*

### 9.8 ACRONYMS

- 9.8.1 NCR – Nonconformance Report
- 9.8.2 PM – Project Manager
- 9.8.3 QA/QC – Quality Assurance/Quality Control
- 9.8.4 Sub – Subconsultant or Subcontractor
- 9.8.5 TPC – Third Party Consultant or Contractor
- 9.8.6 TPCQMP – Third Party Contracts Quality Management Plan



### 10.0 - INSPECTION AND TEST STATUS

#### 10.1 PURPOSE

- 10.1.1 This section establishes requirements and assigns responsibilities for identifying the inspection and test status of work during production and installation to ensure that only those items and work that have passed the required inspections and tests are used and accepted.

#### 10.2 SCOPE

- 10.2.1 The requirements of this section apply to the Third Party Consultants and/or Contractors (TPCs), their Subconsultants and/or Subcontractors (Subs), Metra's Force Account personnel and all other Metra User Departments (hereby referred to as Force Account personnel) involved with the project's inspection, measuring and/or testing activities.

#### 10.3 RESPONSIBILITIES

- 10.3.1 Metra Chief Engineering Officer has the has the authority and ultimate responsibility for providing adequate resources to ensure that the requirements of the Third Party Contracts Quality Management Plan (TPCQMP) are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all work activities relating to capital projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012).
- 10.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 10.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP requirements for inspection, measuring and testing as the Third Party Contractors.
- 10.3.4 The Director of Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillances to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.
- 10.3.5 The QA/QC Director – Engineering has the authority, responsibility and independence to provide quality assurance oversight through the monitoring of quality control activities performed by Metra Force Account personnel for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering's QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to ensure that the requirements of this procedure and the TPCQMP are completed as contractually required.
- 10.3.6 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects (including their Subs), are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including its Subs.

### 10.4 PROCEDURE

- 10.4.1 The test and inspection status are to be identified by means of markings, stamps, tags, labels, inspection records, test software, physical location, or other suitable means. The status identification indicates the conformance or nonconformance with regard to inspections and tests performed.
- 10.4.2 The inspection and test status of planning and design documents should be identified by suitable means that indicate the conformance or nonconformance of product with regard to checking and reviews performed.
- 10.4.3 The TPC or Metra, whichever is responsible for the inspection and testing functions, should document the status of completed tests and inspected work in the Daily Reports, meeting minutes, etc. as appropriate.
- 10.4.4 The party contractually responsible for inspection and testing (TPC/Metra) should ensure that the inspections and tests have passed all acceptance criteria. Upon completion, inspection and test results are to be transmitted to all applicable parties.
- 10.4.5 Inspections and tests failing to meet all required acceptance criteria are to be documented on the Nonconformance Report (NCR) provided in the TPCQMP and submitted to all applicable parties, including the party responsible for corrective action.
- 10.4.6 TPC/Metra should inspect all items, including materials and equipment brought on site for installation. The Request for Inspection of Material Form (RFIM) or Request for Material Received (RFMR) Form should be used to document that the items ordered comply with the procurement and contractual requirements, and to verify that the items, parts, materials, batches, etc., delivered are per the purchase order and delivery ticket.
- 10.4.7 The TPC/Metra should obtain and maintain the copies of tests along with the Inspection and Testing Log, when performed by an independent testing agency. The test records should include both conforming and nonconforming results.
- 10.4.8 The TPC/Metra should ensure that the tests and inspections have passed the acceptance criteria per contractual requirements.
- 10.4.9 The TPC/Metra should identify and document the status of planning and design documents by suitable means that indicate the acceptance or rejection of the product with regard to checking and reviews performed.
- 10.4.10 The TPC/Metra should identify and document the status of rejected items or items failing inspection/test via nonconformance report per section 11.0 of the TPCQMP.
- 10.4.11 The TPC/Metra should maintain the photographic records of nonconforming items, when practical and/or helpful.
- 10.4.12 Metra should ensure that the requirements for the status identification for inspections and testing is included, where appropriate, in the contract documents, for contractors to identify the inspection and test status of work during design, production and installation.
- 10.4.13 The party contractually responsible for the project's inspection and testing function is responsible for ensuring that the personnel performing the inspections and tests, including Subs, and those identifying the results, are qualified for the task. Qualifications must be documented, kept current, and verifiable. Training, certification or licensing for qualification should be included on the training log provided in the TPCQMP.
- 10.4.14 The party contractually responsible for the inspection and testing is also responsible for ensuring that the current calibration status of the inspection, measuring and testing equipment is adequately identified on each piece of equipment. Following completion of the project, Metra will verify the status of the equipment through regularly scheduled checks.



### 10.5 REFERENCES

- 10.5.1 American Railroad Engineering and Maintenance-of-Way Association (AREMA)
- 10.5.2 Federal Railroad Administration (FRA)
- 10.5.3 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)
- 10.5.4 Metra Corporate Quality Manual (CQM)
- 10.5.5 Metra Procurement Process Manual
- 10.5.6 Metra Signal Maintenance Inspection Test Instructions (Blue Book)
- 10.5.7 NIST Handbook – 2016 (Revised Annually)
- 10.5.8 Third Party and/or Testing Agency’s Documented Procedure(s)

### 10.6 RELATED DOCUMENTS

- 10.6.1 Daily Report
- 10.6.2 Equipment Calibration Log
- 10.6.3 Inspection & Testing Log
- 10.6.4 Meeting Minutes
- 10.6.5 Nonconformance Report
- 10.6.6 Request for Inspection of Material Form
- 10.6.7 Request for Material Received Form
- 10.6.8 Third Party Contracts Quality Management Plan
- 10.6.9 Training Log
- 10.6.10 Training Records (Attendance sheets, Certificates, Licenses, etc.)

### 10.7 DEFINITIONS

- 10.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 10.7.2 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*

### 10.8 ACRONYMS

- 10.8.1 AREMA – American Railroad Engineering and Maintenance-of-Way Association
- 10.8.2 NIST – National Institute of Standards & Technology
- 10.8.3 NCR – Nonconformance Report
- 10.8.4 PM – Project Manager
- 10.8.5 QA/QC – Quality Assurance/Quality Control
- 10.8.6 Sub – Subconsultant or Subcontractor
- 10.8.7 TPC – Third Party Consultant or Contractor
- 10.8.8 TPCQMP – Third Party Contracts Quality Management Plan





### 11.0 NONCONFORMANCE

#### 11.1 PURPOSE

11.1.1 This procedure has been developed and documented to establish the requirements of Metra's Nonconformance process, and assign the applicable responsibilities to all parties involved in all phases of the work activities relating to capital contracts. This procedure has been developed and implemented for the immediate response for control of the nonconforming item(s) and/or work, in order to ensure that the item(s) and/or work are clearly identified, documented, and evaluated to prevent the inadvertent use or installation of such item(s) and/or work, and to determine the appropriate means of disposition.

#### 11.2 SCOPE

11.2.1 The requirements of this section apply to all Third Party Consultants/Contractors, (TPCs), their Subconsultants/Subcontractors (Subs), Metra Force Account personnel, Metra User Departments (hereby referred to as Force Account Personnel), and all other parties associated with the work activities relating to capital projects/contracts.

#### 11.3 RESPONSIBILITIES

11.3.1 Metra Chief Engineering Officer has the overall authority and responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all requirements, regulations and contractual obligations are implemented as contractually required.

11.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. The PM is responsible for and has the authority for disposition of nonconforming item(s) and/or work. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.

11.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP requirements for nonconformances as the Third Party Contractors.

11.3.4 The Director of Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillances to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.

11.3.5 The QA/QC Director – Engineering has the authority, responsibility and independence to provide quality assurance oversight for quality control activities performed by Metra Force Account personnel for work activities relating to the capital project as specified here and in the applicable sections of the TPCQMP. Engineering's QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to ensure that the requirements of this procedure are completed as contractually required.

11.3.6 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects (including Subs), are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in

the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including its' Subs.

### 11.4 PROCEDURE

To ensure that the materials, products and/or work found to be nonconforming are controlled and prevented from inadvertent use or installation, Metra has developed, documented and implemented the following procedure. This procedure includes directions for the identification, documentation, notification and disposition, as well as the general measures, for all affected parties. This procedure also addresses audit nonconformances, which is addressed in greater detail in Section 14.0 – Quality Audits.

#### 11.4.1 Identification:

- 11.4.1.1 Nonconforming materials, products and/or work is to be documented on the Nonconformance Report (NCR) provided in the TPCQMP.
- 11.4.1.2 Unidentified material, product and/or work is to be placed on hold and segregated to prevent inadvertent use or installation, until the identification has been confirmed.
- 11.4.1.3 When the conformance status of a material, product and/or work is in question, it is to be identified as being on hold, and segregated to prevent inadvertent use or installation until the status has been confirmed.
- 11.4.1.4 In the event that the conformance of a material, product or part cannot be confirmed in installation, a detailed history is to be documented and included in the work records.
- 11.4.1.5 Where practicable, nonconforming items should be segregated. When segregation is not possible, nonconforming items should be clearly identified as such (i.e. nonconforming).
- 11.4.1.6 Nonconforming material, product or work that has been reworked or repaired is to be re-inspected to ensure the original requirements or specifications have been met. The re-inspection and results of the re-inspection are to be noted on both the Daily Report (provided in the TPCQMP) and the NCR. Nonconforming materials or construction are to be recorded with location noted on inspection reports or nonconformance reports as applicable. When available, photographs of nonconformances should be included with the NCR records as supporting evidence.

#### 11.4.2 Documentation:

- 11.4.2.1 The organization responsible for correction of the reported nonconformance (TPC, Sub, and Metra) is also responsible for completing the NCR, which is to include the root cause of the nonconformance and the actions taken to prevent the reoccurrence, or significantly reduce the reoccurrence of the nonconformance.

#### 11.4.3 Disposition:

- 11.4.3.1 Nonconforming work should be identified, documented on the NCR provided in the TPCQMP, and evaluated to determine appropriate disposition.
- 11.4.3.2 The Metra PM or designee is the approval authority for disposition of nonconforming materials, products and/or work.
- 11.4.3.3 A determination to accept nonconforming work 'With Repair' or 'Use As Is' requires the concurrence of the Metra PM.
- 11.4.3.4 A disposition of 'Use As Is' also requires the written approval of the applicable Metra Managing Director. His/her approval signature is to be documented on the reporting NCR.



### 11.4.3.5 Dispositions for nonconforming work include:

- Use As Is (Requires concurrence of Metra PM and Metra Managing Director)
- Use As Is for alternate applications (Requires concurrence of Metra PM)
- Repair (Requires concurrence of Metra PM)
- Rework to meet requirements
- Scrap

### 11.4.4 General Requirements:

- 11.4.4.1 The TPC should have qualified personnel to determine the root cause of the nonconformance, and to develop, implement and verify the corrective and preventive action for each nonconformance issued.
- 11.4.4.2 The backup (verifying documents) for each NCR must be traceable back to the original findings, disposition, and corrective/containment actions to which they are applicable.
- 11.4.4.3 All backup documentation is to be attached to the original NCR.
- 11.4.4.4 Information listed on the NCR such as dates, descriptions, contract info, etc., should match the information recorded on the NCR Log.
- 11.4.4.5 Nonconformances are to be resolved in cooperation with project management and quality personnel.
- 11.4.4.6 The TPC is responsible for tracking the nonconforming item or work through closure of the NCR.
- 11.4.4.7 The TPC should document and discuss the status and progress of the corrective action for each nonconforming item, work, material, equipment etc. during scheduled project or progress meetings.
- 11.4.4.8 The TPC is to verify and document the completed corrective action(s) prior to submitting the NCR for closure.
- 11.4.4.9 If the agreed upon corrective/preventive action requires the revision of existing procedures or the development of new procedures, all applicable project personnel are to be trained and the training verifiable.
- 11.4.4.10 TPCs are required to have written, implemented procedures to ensure the requirements outlined in Section 11.4 of this procedure are maintained as contractually required.

### 11.4.5 Audit Nonconformances

- 11.4.5.1 Audit nonconformances will be issued per element. Example: There were five deficiencies/nonconformances noted during ABQ's last quality audit; two were noted and reported under Document Control. One was noted and reported under Purchasing, and two were noted and reported under Process Control. As a result, three Audit NCRs were issued to ABQ; one for Document Control, one for Purchasing and one for Process Control. Responses for each audit nonconformance should be identified with the original NCR number, and objective evidence of the nonconformance attached to the applicable NCR.

## 11.5 REFERENCES

- 11.5.1 Metra Corporate Quality Manual (CQM)
- 11.5.2 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)
- 11.5.3 Third Party Contracts Quality Procedure for Control of Nonconformances



### 11.6 RELATED DOCUMENTS

- 11.6.1 Daily Report
- 11.6.2 Nonconformance Log
- 11.6.3 Nonconformance Report

### 11.7 DEFINITIONS

- 11.7.1 Nonconformance: *a condition noted that does not meet the established quality, technical and/or contractual requirements.*
- 11.7.2 Repair: *The item can be repaired to make it acceptable for its intended use, although it will still not meet its original requirements.*
- 11.7.3 Rework: *The item can be completed or corrected so that it is brought into conformance with the original requirements.*
- 11.7.4 Scrap: *Rejecting the item for use as originally intended. However, the item may be used for alternate applications if it is determined acceptable for the alternate application.*
- 11.7.5 Use-As-Is: *Although it does not meet its original requirements, this item can be used with no adverse conditions while continuing to meet all engineering functional requirements of safety, performance and fit.*

### 11.8 ACRONYMS

- 11.8.1 NCR – Nonconformance Report
- 11.8.2 PM – Project Manager
- 11.8.3 QA/QC – Quality Assurance/Quality Control
- 11.8.4 Sub – Subconsultant or Subcontractor
- 11.8.5 TPC – Third Party Consultant or Contractor
- 11.8.6 TPCQMP – Third Party Contracts Quality Management Plan



### 12.0 CORRECTIVE AND PREVENTIVE ACTION

#### 12.1 PURPOSE

- 12.1.1 Metra has established, documented and implemented the following procedure for the direction of the activities and responsibilities required to effectively correct nonconforming or deficient materials, parts, services and/or work, and the proactive measures to prevent the reoccurrence of deficiencies.

#### 12.2 SCOPE

- 12.2.1 The requirements of this section apply to all Third Party Consultants/Contractors, (TPCs), their Subconsultants/Subcontractors (Subs), Metra Force Account personnel, Metra User Departments (hereby referred to as Force Account Personnel), and all other parties associated with the work activities relating to capital projects/contracts.

#### 12.3 RESPONSIBILITIES

- 12.3.1 Metra Chief Engineering Officer has the authority and ultimate responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all work activities relating to capital projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012).
- 12.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 12.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP requirements for corrective and preventive actions as the Third Party Contractors.
- 12.3.4 The Director of Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillances to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.
- 12.3.5 The QA/QC Director – Engineering has the authority, responsibility and independence to provide quality assurance oversight through the monitoring of quality control activities performed by Metra Force Account personnel (Engineering) for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering's QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to ensure that the requirements of the TPCQMP are completed as contractually required. The QA/QC Director – Engineering has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillances to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality nonconformances.
- 12.3.6 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects (including Subs) are trained in the implementation,



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documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements, included in this procedure, are clearly communicated, understood, and implemented by its project personnel.

### 12.4 PROCEDURE

This section establishes the requirements and assigns the responsibilities for the correction of nonconformances and conditions adverse to quality performance, the investigation of the root cause(s) of the nonconformance, the corrective action needed to prevent reoccurrence, and the procedures for analysis to detect and eliminate potential causes of nonconforming work.

- 12.4.1 Third Party Contractors are required to develop written procedures, instructions, or guidelines to ensure implementation of a corrective/preventive action process to meet the requirements of this procedure.
- 12.4.2 The party who is issued a Nonconformance Report (NCR), whether Third Party Consultant/ Contractor or Metra Force Account, is responsible for the action(s) to be taken for the correction of the reported nonconforming item, work, material, equipment etc. Actions taken should be documented on the NCR provided in the TPCQMP.
- 12.4.3 The party responsible for correction of a reported deficiency is to investigate, determine and document the root cause of the reported nonconformance on the NCR, and provide the appropriate action to successfully correct the deficiency and to prevent, or significantly reduce, the reoccurrence of the reported deficiency.
- 12.4.4 Nonconforming materials or construction are to be recorded with location noted on inspection reports or nonconformance reports as applicable. When available, photographs of nonconformances should be included with the NCR records as supporting evidence.
- 12.4.5 Project personnel should report and discuss proposed corrective action(s) for all NCRs issued during the project's regularly scheduled progress meetings. The status of each NCR is to be tracked until the NCR is successfully completed, approved and closed.
- 12.4.6 The TPC is to document and maintain results regarding the effectiveness of the corrective action for nonconforming items, work, materials, equipment etc.
- 12.4.7 Punitive measures may be enforced, per contractual agreement, including termination of the contract for ineffective or incomplete corrective action.
- 12.4.8 The party implementing corrective action is responsible for adhering to the Metra PM's decision for disposition, and for implementing the appropriate action to correct the deficiency and prevent reoccurrence.
- 12.4.9 Parties should incorporate changes resulting from corrective action into the appropriate procedures and implement the revised procedures to prevent reoccurrence. Training for the revisions is to be documented for all applicable project personnel.
- 12.4.10 Root cause analysis should be used by management to identify trends, based on analysis of nonconformances and audit findings.

### 12.5 REFERENCES

- 12.5.1 Metra Corporate Quality Manual (CQM)
- 12.5.2 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)
- 12.5.3 Third Party Contracts Quality Procedure for Control of Nonconformances



### 12.6 RELATED DOCUMENTS

- 12.6.1 Daily Report
- 12.6.2 Nonconformance Log
- 12.6.3 Nonconformance Report

### 12.7 DEFINITIONS

- 12.7.1 Continual Improvement Initiatives: *a type of change that focuses on increasing the effectiveness and/or efficiency of an organization to fulfill its policy and objectives.*
- 12.7.2 Nonconformance: *a condition noted that does not meet the established quality, technical and/or contractual requirements.*
- 12.7.3 Root Cause: *Underlying cause of a deficiency/nonconformance.*
- 12.7.4 Root Cause Analysis: *concept of analyzing a problem beyond the obvious symptoms manifested by the problem, and identifying the actual cause of the problem.*

### 12.8 ACRONYMS

- 12.8.1 NCR – Nonconformance Report
- 12.8.2 PM – Project Manager
- 12.8.3 QA/QC – Quality Assurance/Quality Control
- 12.8.4 Sub – Subconsultant or Subcontractor
- 12.8.5 TPC – Third Party Consultant or Contractor
- 12.8.6 TPCQMP – Third Party Contracts Quality Management Plan



### 13.0 - QUALITY RECORDS

#### 13.1 PURPOSE

13.1.1 This procedure has been developed and documented to establish the requirements and assign responsibilities for the collection, filing, indexing, storage, maintenance, retrieval, and disposition of the project quality records necessary to provide evidence of quality procedures in the elements included in the TPCQMP, and that these implemented procedures meet the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update).

#### 13.2 SCOPE

13.2.1 The requirements of this section apply to all Third Party Consultants/Contractors, (TPCs), their Subconsultants/Subcontractors (Subs), Metra Force Account personnel, Metra User Departments (hereby referred to as Force Account Personnel), and all other parties associated with the work activities relating to capital projects/contracts. The scope of this procedure applies to all project records relating to all capital projects.

#### 13.3 RESPONSIBILITIES

13.3.1 Metra Chief Engineering Office has the authority and ultimate responsibility for ensuring the implementation of the Third Party Contracts Quality Management Plan (TPCQMP) and that all work activities relating to capital Projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012).

13.3.2 Senior Directors [Capital Projects and Maintenance], have the authority and responsibility to ensure the successful implementation of the TPCQMP for all work activities completed on capital projects by the Third Parties, their subconsultants/subcontractors and Metra Force Account project personnel. This requirement applies to all project records relating to the projects.

13.3.3 The Metra Project Manager (Metra PM) has the day-to-day authority and responsibility for ensuring that the work performed on capital projects is completed and adequately documented as evidence of compliance to the requirements of the TPCQMP and other contractual and regulatory requirements. The Metra PM is to ensure that all forms, checklists and other project records are completed on time by the applicable parties, and that the resulting documents include all related information such as contract, project and, when applicable, task numbers. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.

13.3.4 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP requirements for quality records as the Third Party Contractors.

13.3.5 The Director of Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits, and surveillances audits in order to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues observed during these audits, and to initiate action through appropriate channels for the correction and/or prevention of such quality deficiencies.

13.3.6 The QA/QC Director - Engineering has the authority, responsibility and independence to provide quality assurance oversight through the coordination of the quality control activities performed by Metra Force Account personnel for work activities relating to capital projects, as specified in the TPCQMP.

13.3.7 The Third Party Consultant/Contractor (TPC) has the responsibility to ensure that their project personnel, including their subconsultants and/or subcontractors implement the requirements of the





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TPCQMP as contractually required. The requirements include the completion of all work-related project documentation to verify implementation of the TPCQMP as contractually required.

- 13.3.7.1 The TPC is to maintain primary quality control responsibilities for the project from initiation through completion of the project.

### 13.4 PROCEDURE

- 13.4.1 All project personnel are required to implement the Project File Naming/ Directory Structure included in the TPCQMP as the required method for filing, indexing, distribution, storage, maintenance and retrieval of project records.

#### 13.4.2 Collection, Filing and Indexing

- 13.4.2.1 Testing results, delivery slips, and certifications for material deliveries should be filed together to show test results for specific materials.
- 13.4.2.2 Quality Records shall be identified, filed and maintained in such a manner that will make them readily retrievable when requested by authorized personnel.

#### 13.4.3 Distribution

- 13.4.3.1 When contractually stated, the project records are to be submitted to Metra in the form of hard copies and electronic copies. Otherwise, project personnel are to maintain electronic copies of all documents listed in the TPCQMP.
- 13.4.3.2 The TPC/Project personnel are to forward to Metra, all contractually required deliverables including the project records (hard copies, electronic copies or both) at project close-out, that support the various completed work activities, e.g., design, construction, management, administration, materials & equipment procurement, supporting operating, training, maintenance and/or quality manuals, spare part lists, warranties, product/material/equipment/parts recall notice transferring to Metra, etc.
- 13.4.3.3 TPCs/Project Personnel are to maintain and submit the Project/Deliverables List to Metra that identifies all project records to be transferred to Metra at the completion of the project. The Project/Deliverables List is provided in the TPCQMP.
- 13.4.3.4 The project will not be considered complete until all the project deliverables, including the project documentation, has been submitted to Metra/Designee and accepted by the Metra PM.

#### 13.4.4 Storage, Maintenance and Retrieval

- 13.4.4.1 Project personnel are to maintain project records in an environment that minimizes deterioration and damage, prevents loss, precludes entry of unauthorized personnel, and facilitates document retrieval without undue delay.
- 13.4.4.2 The Third Party Contractors should maintain additional electronic copies of project records, as a safe guard, away from the facility where work is being performed, as needed.
- 13.4.4.3 All consultants/contractors and their subconsultants and/or subcontractors, vendors, suppliers and Metra project personnel generating quality records are responsible for the retention of the quality records during the design, construction, inspection, assembly and/or installation phases, per contractual, Federal, and State regulations and requirements.
- 13.4.4.4 Electronic data is to be regularly backed up, and backups stored offsite in a manner to ensure their safety from deterioration and/or damage.
- 13.4.4.5 Quality records must be available and readily retrievable for Quality Assurance and Surveillance audits.

#### 13.4.5 General Requirements



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- 13.4.5.1 Project personnel are required to prepare, update, and submit completed documents, as identified in the applicable sections of the TPCQMP, to Metra or designee for acceptance/approval during the course of the project.
- 13.4.5.2 Documents originating from the TPCQMP are to contain the originator's logo. The company logo is to replace the Metra logo.
- 13.4.5.3 Project records should be legible, identifiable, and retrievable.
- 13.4.5.4 Hard copy project records will be considered valid only if stamped, initialed, or signed and dated by authorized personnel.
- 13.4.5.5 Hard copy and electronic files maintained by the TPC/project personnel should provide sufficient information to permit identification of the record and the item or activity to which it applies.
- 13.4.5.6 Information and documentation maintained in the electronic files and folders are to match the related electronic log entries. The electronic files and the entries in the electronic logs should support each other.
- 13.4.5.7 Project deliverables may include, but not limited to, project documents required by various sections of the specifications, drawings, etc.
- 13.4.5.8 TPCs/Project personnel are required to keep all project records current, including logs, during the duration of the project work.
- 13.4.5.9 All TPCQMP forms, checklists, logs, procedures, instructions, samples and related project documents such as contracts, specifications and drawings are considered "controlled documents". To avoid confusion when referencing and/or inadvertent use in the installation, each version is to be uniquely identifiable and traceable.
- 13.4.5.10 All project quality records are to be identifiable by contract, project and (where applicable) task numbers, and project description. Where applicable, project records must be dated and include signatures of responsible personnel.

### 13.5 REFERENCES

- 13.5.1 Metra Corporate Quality Manual (CQM)
- 13.5.2 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)

### 13.6 RELATED DOCUMENTS

- 13.6.1 Project/Deliverables List
- 13.6.2 Project File Naming/Directory Structure

### 13.7 DEFINITIONS

- 13.7.1 Contractor or Consultant: *An organization providing services or products to Metra under direct contractual agreement. It could be Construction Contractor, Construction Management Consultant, Project Management Consultant, Project Administration Consultant, etc. A joint venture with two or more consultants and/or contractors is also considered to be a TPC.*
- 13.7.2 Metra Force Account: *Metra personnel.*
- 13.7.3 Metra User Departments: *Metra personnel.*
- 13.7.4 Project Personnel: *Consultants, contractors, subconsultants, subcontractors, vendors, Metra Force Account personnel and Metra User Departments. All individuals performing work activities for/on a capital project.*



- 13.7.5 Quality Records: *Documents that provide objective evidence of compliance of materials, products and services to specified acceptance criteria, including compliance with approved procedures.*
- 13.7.6 Subconsultant or Subcontractor: *Any organization supplying service, products or materials under contract to a prime contractor or consultant. A subconsultant or subcontractor is not contracted directly with Metra.*

### **13.8 ACRONYMS**

- 13.8.1 FTA – Federal Transit Administration
- 13.8.2 NCR – Nonconformance Report
- 13.8.3 PM – Project Manager
- 13.8.4 QA/QC – Quality Assurance/Quality Control
- 13.8.5 Sub – Subconsultant or Subcontractor
- 13.8.6 TPC – Third Party Consultant or Contractor
- 13.8.7 TPCQMP – Third Party Contracts Quality Management Plan



### 14.0 - QUALITY AUDITS

#### 14.1 PURPOSE

14.1.1 This procedure has been developed and documented to establish the requirements of Metra's Quality Audit process, and to assign the applicable responsibilities to all parties involved in the audit process for capital projects. Metra established this process in order to ensure that the elements of Metra's Third Party Quality Management Plan are being implemented as intended, to meet the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines (QMS), FTA-PA-27-5194-12.1 (2012 Update.)

#### 14.2 SCOPE

14.2.1 The requirements of this section apply to all Third Party Consultants/Contractors (TPCs), their subconsultants and subcontractors (Subs), Metra Force Account personnel and Metra's User Departments (hereby referred to as Metra Force Account personnel) involved in the work for capital projects. By contractual consent, all work activities and documentation resulting from the work conducted on Capital Projects are to be made accessible to Metra's quality audits.

#### 14.3 RESPONSIBILITIES

14.3.1 Metra Chief Engineering Officer (CEO) has the authority and responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that all work activities relating to capital projects are executed according to the requirements of the FTA's QMS. The CEO is responsible for ensuring QA Engineering personnel conducting QA audits are adequately trained to perform such assessments.

14.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of the TPCQMP are adequately implemented by the TPCs, their Subs and/or Metra Force Account personnel for the work performed on the capital projects. The PM is required to maintain oversight of quality control activities performed by project personnel for the work activities relating to the capital projects. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.

14.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP requirements for quality audits as the Third Party Contractors.

14.3.4 The Director Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillances to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality deficiencies.

14.3.5 The QA/QC Director – Engineering has the authority, responsibility and independence to provide quality assurance oversight through the monitoring of quality control activities performed by Metra Force Accounts personnel (Engineering) for work activities relating to capital projects as specified in the applicable sections of the TPCQMP. Engineering's QA/QC Director is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support to ensure that the requirements of the TPCQMP are completed as contractually required. Engineering's QA/QC Director is responsible for conducting quality assurance assessments, audits and surveillances to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and



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external quality issues, and to coordinate the action necessary for the correction and prevention of reoccurrence of such quality deficiencies.

14.3.6 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects (including their Subs), are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. In addition, the TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including Subs.

14.3.6.1 TPC should conduct scheduled audits of the work activities performed by its project personnel (including its Subs) to verify compliance to the TPCQMP and other contractual requirements. The audits should be performed periodically by qualified quality personnel who are independent of the work being audited. A written audit procedure shall be developed to direct audit activities. If the Third Party's quality manual does not include a procedure for auditing, the following procedure should be implemented.

### 14.4 PROCEDURE

To ensure that the elements of Metra's Third Party Contracts Quality Management Plan/TPCQMP are effectively implemented as intended, Metra has established and documented the following quality audit procedure. All project personnel are required to adhere to the documented procedure.

#### 14.4.1 Audit Schedule

14.4.1.1 Based on the status and the importance of the activity to be audited, together with Metra's Engineering Staff, Metra's Director, Corporate Quality Assurance, develops and issues the approved schedule for the quality audit of third party/external capital projects. Metra's Corporate Quality Assurance conducts the quality audits of third party/external capital projects.

14.4.1.2 Metra's QA/QC Director - Engineering will schedule and, and per the approved schedule, conduct internal quality audits to verify and evaluate the effectiveness of the PM's QA/QC compliance and oversight of the capital projects work activities.

14.4.1.3 Metra's Auditor will distribute the quality audit schedule to all applicable parties.

14.4.1.4 Metra's Corporate Quality Assurance performs scheduled and/or special quality assurance audits of the TPCs per the approved quality assurance audit schedule and checklists, as applicable, to verify implementation of the TPCQMP.

14.4.1.5 Planned audits and periodic process-specific quality surveillances are conducted to verify that applicable elements of the TPC's implementation of the TPCQMP are acceptable and have been developed, documented, and effectively implemented in accordance with specified requirements.

14.4.1.6 Metra's quality assurance audits are scheduled on a frequency proportionate with the activities of the project.

14.4.1.7 Metra will conduct internal audits to verify compliance with and evaluate the effectiveness of the [Metra] PM's QA/QC oversight.

#### 14.4.2 Audit Notification

14.4.2.1 The Auditee is to be notified in writing at least fourteen (14) working days in advance of the audit.

#### 14.4.3 Audit Checklist

14.4.3.1 Quality audits are independent, scheduled, and performed to specific standards and/or requirements. The questions on the audit checklist are to be developed from the standards and/or requirements being audited.



### 14.4.4 Audit Performance

- 14.4.4.1 Quality assurance audits are to determine if the requirements of the TPCQMP are being implemented by the TPCs and/or Metra Force Account personnel as required and whether or not the effectiveness of that implementation is successful in the correction and prevention of deficiencies noted in the work, materials and/or services conducted for capital projects.
- 14.4.4.2 Project personnel/auditees are required to provide and maintain appropriate administrative support and documentation to facilitate quality assurance audits performed by Metra and for resolving items requiring corrective action identified by the audits.
- 14.4.4.3 Auditors are to have no direct responsibility for the project activities to be audited.
- 14.4.4.4 Auditors are responsible for completing the Audit Checklist, preparing the Audit Nonconformance Report for each audit element requiring corrective action and conducting the post-audit conference with the TPC and other audit attendees at the conclusion of the audit to discuss the audit results, determine due date for corrective action(s) necessary to resolve audit findings. Note: Agreed upon date for completion of the audit NCR's will be documented in the audit report.
- 14.4.4.5 Personnel responsible for the area audited will respond to the audit Nonconformance Reports and proposed corrective actions to resolve audit findings. The completed NCRs are to be returned to the Metra PM for review and approval before being submitted to the QA Auditor.
- 14.4.4.6 The assigned Auditor is responsible for the development of the audit documents. Audit records include: audit schedule, audit notification, audit checklist, audit report, audit nonconformance reports (NCRs), corrective action activities, and the audit closure notification.

### 14.4.5 Audit Reporting

- 14.4.5.1 Audit results presented to the TPC at the audit's closing meeting should include positive attributes as well as the audit deficiencies noted during the audit. Recommendations for continual improvements, if applicable, should be included as well.
- 14.4.5.2 Metra's quality audit program requires the audit report, along with the audit deficiencies, to be submitted to the appropriate TPC management personnel for completion of corrective action and performing root cause analysis of the deficiencies to prevent reoccurrence.
- 14.4.5.3 Once all audit deficiencies have been resolved, a final audit closure notification documenting the resolution of the audit deficiencies and declaring the audit's closure, should be generated by the Auditor and distributed to all applicable parties.
- 14.4.5.4 There are three types of audit results: major finding, minor finding and observation.

### 14.4.6 Audit Follow-Up

- 14.4.6.1 The Third Party Contractors should perform follow-ups of previous audits performed by Metra. Follow-ups should verify completion and implementation of corrective actions identified during earlier Metra quality assurance audits. This is to ensure that the corrective action for the deficient items have been completed so that the quality assurance audits can be closed.
- 14.4.6.2 PMs and the User Departments should monitor the progress of the ongoing corrective action and document the status including the completed corrective action for noncompliances, during the scheduled project meetings to ensure timely close out of the nonconformance by the Third Party Contractors.
- 14.4.6.3 Metra's QA auditor will schedule follow-up surveillance audits as necessary to verify the completion of corrective action and the effectiveness to prevent reoccurrence.

### 14.4.7 Audit Closure

- 14.4.7.1 The Third Party Contractors should create an electronic folder for each quality assurance audit performed by Metra and file all the documents in a chronological manner from the initiation of the audit until it is closed. The folder should have provision for filing documents related to scheduling of audit including the audit notification; activities prior to, during, and after the audit but prior to receipt of audit, including checklists; audit report; nonconformance reports, if any; completing corrective action for nonconformance; close out of nonconformance; misc. etc.
- 14.4.7.2 The Third Party Contractors should be issued an audit report along with the audit deficiencies, if any, in the form of a nonconformance and corrective action report (NCR) for each deficient area/element, listing the nonconforming condition in detail, proposed corrective action, the scheduled completion date, and instructions in completing and processing the NCR to assist the Third Party Contractor in a timely close out of the NCR and the audit.
- 14.4.7.3 The Third Party Contractors should review the proposed corrective action and provide
  - a. the action to prevent reoccurrence,
  - b. the root cause analysis, and
  - c. verification of the completed corrective actionfor each NCR to the Metra or designee Third Party Contractor for review and acceptance.
- 14.4.7.4 The Metra PM or Designee should review the completed NCR, forward the documented review results to the Third Party Contractor for final review and then transmittal to the Auditor for review and closure of the NCR and the audit.
- 14.4.7.5 The Third Party Contractors should be notified in writing regarding closure of the NCR and the audit.
- 14.4.7.6 The Third Party Contractors should be notified in writing regarding verifying the implementation of the completed corrective actions in the future quality assurance audits by Metra, if any.
- 14.4.7.7 The Third Party Contractors should provide accurate and complete documentation having closed all open Metra quality assurance audit items including completion of corrective action for the nonconformance in the time specified. Non-receipt of accurate and complete audit related documentation required by Metra, at the established scheduled date, may/can be considered noncompliance of the Metra contractual requirements and is subject to the provisions of the contract.

### 14.4.8 Auditor Qualifications

- 14.4.8.1 In order to ensure that objective, substantive results are reported, only qualified quality personnel are permitted to conduct quality audits.
- 14.4.8.2 Auditors are required to have experience or training appropriate with the scope, complexity or special nature of the activities to be audited.
- 14.4.8.3 Metra prohibits quality audits and/or audit-related activities being performed by personnel that have any direct responsibilities or commitments in the areas being audited.
- 14.4.8.4 Quality auditors must have sufficient authority and the organizational freedom to perform the quality audits as per the written procedure.
- 14.4.8.5 Auditor's qualifications should be kept current and maintained on file.

### 14.4.9 Preventive Measures

- 14.4.9.1 Metra's quality assurance audit process includes provisions for the auditee to take necessary action within the agreed upon time to correct the deficiencies noted during the audit and to complete the



corrective action(s) necessary to prevent reoccurrence.

#### 14.4.10 Audit Records

14.4.10.1 The Auditee is to ensure that the audit records are maintained as part of the project records, and are readily available for review, as needed.

14.4.10.2 Audit records will include:

- Audit Schedules
- Audit Notifications
- Audit Checklists (includes initial NCRs)
- Written Responses
- Initial Audit Reports
- Completed Nonconformance Reports
- Audit Closure Notifications

#### 14.4.11 General Comments

14.4.11.1 Metra's Corporate Quality Assurance personnel will conduct external audits of consultants and contractors to verify compliance with the TPCQMP and other contractual requirements.

14.4.11.2 Metra's Engineering Quality Assurance personnel will conduct internal audits to verify compliance, and to evaluate the effectiveness of the PM's QA/QC oversight of the TPCQMP.

14.4.11.3 The Third Party Contractors should designate and assign personnel within their organization to document the quality assurance related activities and the day-to-day quality control activities to ensure that the authorized scope of work is proceeding on schedule, within budget, and that the completed work complies with the TPCQMP and the contractual requirements.

14.4.11.4 Metra will conduct periodic surveillance audits of specific work processes to evaluate the TPC's adherence to specific, approved work plans and procedures.

14.4.11.5 Requirements for consultants/contractors to cooperate with quality audits should be stated, and included where appropriate, in contract documents

### 14.5 REFERENCES

14.5.1 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012 Update)

14.5.2 Metra Corporate Quality Manual (CQM)

### 14.6 RELATED DOCUMENTS

14.6.1 Audit Schedule

14.6.2 Audit Notifications

14.6.3 Audit Checklist

14.6.4 Audit Report (including initial NCRs)

14.6.5 Nonconformance Reports

14.6.6 Audit Closure Notification

### 14.7 DEFINITIONS

14.7.1 *Audit: an evidence gathering process. Audit evidence is used to evaluate how well audit criteria are being met. Audits must be objective, impartial, and independent, and the audit process must be both*



*systematic and documented.*

- 14.7.2 *Audit Finding: result from a process that evaluates audit evidence and compares it against audit criteria. Audit findings can show that audit criteria are being met (conformity) or that they are not being met (nonconformity).*
- 14.7.3 *Major Finding – Evidence of a total breakdown or absence of the stated requirement.*
- 14.7.4 *Minor Finding – Evidence of a deficiency in a part, material, service or work observed, the process or a stated requirement.*
- 14.7.5 *Observation: a part, material, action or work observed during the audit that is not to the extent of a deficiency, but one that has the indications of becoming a deficiency if circumstances, activities and/or actions remain unchanged. They can also identify best practices or improvement opportunities.*

### **14.8 ACRONYMS**

- 14.8.1 NCR – Nonconformance Report
- 14.8.2 QA/QC – Quality Assurance/Quality Control



### 15.0 TRAINING

#### 15.1 PURPOSE

- 15.1.1 Metra has established and implemented this procedure in order to ensure that the training needs are identified and that all personnel [involved in the performance of the work and work-related activities for capital projects] are qualified, certified, and/or licensed in the processes, principles and techniques required for completing the contractual and/or regulatory activities being performed.

#### 15.2 SCOPE

- 15.2.1 The requirements of this section apply to all Third Party Consultants/Contractors (TPCs), Subconsultants/Subcontractors (Subs), Metra Force Account and User Department personnel (hereby referred to as Force Account personnel) involved in the work for capital projects.

#### 15.3 RESPONSIBILITIES

- 15.3.1 Metra Chief Engineering Officer has the authority and responsibility for providing adequate resources to ensure that the requirements of the TPCQMP are effectively communicated and implemented, and that the oversight managed by Metra Force Account personnel ensures that work activities relating to capital projects are implemented according to the requirements of the Federal Transit Administration (FTA) Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012).
- 15.3.2 The Metra Project Manager (PM) assigned oversight for capital projects has the authority and the day-to-day responsibility to ensure that the requirements of Metra's training procedure are adequately implemented by the TPCs and Metra Force Account personnel involved in the work performed on the capital projects. Metra's Project Management personnel assigned oversight on capital projects are required to follow and implement the same TPCQMP requirements as the Third Party Contractors.
- 15.3.3 Metra's Force Account personnel assigned to work on capital projects are required to follow the same TPCQMP requirements for training as the Third Party Contractors.
- 15.3.4 The Director Corporate Quality Assurance has the authority, responsibility and independence to conduct quality assurance assessments, audits and surveillances in order to determine the overall implementation and effectiveness of the TPCQMP, to identify internal and external (Third Party) quality issues observed during these audits, and to initiate action through appropriate channels for the correction and/or prevention of such quality deficiencies.
- 15.3.5 Metra's QA/QC Director – Engineering is responsible for providing Metra and TPC project personnel with day-to-day quality assurance and/or quality control support, including the appropriate training, to ensure that the requirements of the TPCQMP are completed as contractually required.
- 15.3.6 The Third Party Consultant/Contractor (TPC) is responsible for ensuring that all project personnel involved in the work activities for capital projects, including their Subs, are trained in the implementation, documentation, and maintenance of the quality requirements and related quality activities as stated in the TPCQMP. The TPC is responsible for ensuring that all requirements included in this procedure are clearly communicated, understood, and implemented by its project personnel, including its Subs.

#### 15.4 PROCEDURES

Metra has established and implemented this procedure to identify the training requirements for all personnel involved in the performance and/or oversight of the work and related activities associated with Metra's capital projects, and to ensure that the identified training is completed and documented as required.



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- 15.4.1 Third Party Consultants/Contractors should employ qualified project personnel with adequate experience, training, qualifications, and certifications commensurate with the scope, complexity, and special nature of the activities to be managed, verified, inspected, tested and/or installed. The TPC should employ qualified personnel with appropriate certifications and licenses, as required per codes, standards and regulations of the involved community, city, village, township, county, OSHA, Trade Associations, e.g. American Welding Society, American Concrete Institute, State of Illinois, etc.
- 15.4.2 Project personnel are required to complete training on the TPCQMP requirements.
- 15.4.3 Training of the TPCQMP requirements is to include the TPC's senior management involved in the project work. The TPC's QA personnel are to be included in the training. This allows for additional assistance with the TPC's implementation of the project's initiatives.
- 15.4.4 Subsequent training on the TPCQMP is to be provided for all revisions to the TPCQMP.
- 15.4.5 TPCs are responsible for ensuring that their Subs receive training on the TPCQMP requirements as appropriate.
- 15.4.6 TPCs should ensure that the TPCQMP training is documented on the Training Log provided in the TPCQMP. Training is to be documented in order to verify that it has been completed by attaching a completed attendance sheet to the Training Log.
- 15.4.7 The Third Party Contractors should provide additional training, as required, for completing the appropriate scope of work.
- 15.4.8 All other required training, such as Occupational Safety and Health Association (OSHA), Metra Safety Training, other Railroad Safety Training, etc., is to be documented on the Training Log provided in the TPCQMP.
- 15.4.9 The required training for project personnel should be identified, documented, and maintained by the TPCs using the appropriate instructions and forms provided in the TPCQMP. Training records to be maintained include the Training Log, certifications, meeting attendance sheets, etc.
- 15.4.10 The Third Party Contractors should ensure that the training, licenses and the certifications by and for all project personnel are maintained and kept current.

### 15.5 REFERENCES

- 15.5.1 Metra Corporate Quality Manual (CQM)
- 15.5.2 FTA Quality Management System Guidelines, FTA-PA-27-5194-12.1 (2012)

### 15.6 RELATED DOCUMENTS

- 15.6.1 Training Logs
- 15.6.2 Certifications, Licenses, Degrees, etc.

### 15.7 DEFINITIONS

- 15.7.1 Key Personnel: *Employees listed on the initial organizational chart submitted to Metra prior to start-up of the project.*

### 15.8 ACRONYMS

- 15.8.1 OSHA - Occupational Safety and Health Association