

# THIS IS A QUALITY PLAN & MANUAL SAMPLE ONLY SELECTED PAGES ARE INCLUDED

## **[CompanyName]** **Electrical Construction** **Quality Assurance/Quality Control Plan**

**[ProjectName]**  
**[ProjectNumber]**

Management acceptance

This Construction Quality Assurance/Quality Control Plan has been reviewed and accepted.

Endorsed By: (Name / Title)	[QualityManagerName], Quality Manager		
Signature:	<i>[QualityManagerName]</i>	Date:	[Date]
Version	1.0	Notes	Initial Issue

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## SIGNATURE SHEET

### Plan Preparer

This [CompanyName] Project Quality Assurance/Quality Control Plan was prepared in accordance with the contract specifications and requirements of the [CompanyName] quality system and approved by:

*[QualityManagerName] / [Date]*

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[QualityManagerName], Quality Manager /Date

### Approval by Company Officer

This [CompanyName] Project Quality Assurance/Quality Control Plan is approved by:

*[PresidentName] / [Date]*

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[PresidentName] President /Date

### Plan Concurrence

[CompanyName] Project Quality Assurance/Quality Control Plan concurrence by:

*[ProjectManagerName] / [Date]*

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[ProjectManagerName], Project Manager /Date

*[SuperintendentName] / [Date]*

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[SuperintendentName], Superintendent /Date

## SECTION 1: PROJECT-SPECIFIC ELECTRICAL QUALITY PLAN

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## BACKGROUND INFORMATION

### CUSTOMER

[CustomerName]

### PROJECT NAME

[ProjectName]

### PROJECT NUMBER

[ProjectNumber]

### PROJECT LOCATION

[Insert Location of Project Work Here]

### OVERALL PROJECT DESCRIPTION

[Insert Overall Project Description Here]

### [COMPANYNAME] SCOPE OF WORK

[Insert Scope of Work for This Contract Here]

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## F. DUTIES, RESPONSIBILITIES, AND AUTHORITY OF QC PERSONNEL

QC personnel assigned to this project have the duties, responsibilities and authority defined by their job position.

Each appointment is recorded on a Letter of Appointment. The project-specific Letter of Appointment exhibits are included as exhibits in this subsection. Key project personnel have accepted their appointments and declared their ability to carry out the appointments as indicated by their signature.

### **VICE PRESIDENT: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY**

The Vice President is responsible for ensuring company-wide effectiveness of the Quality System. Regardless of other duties, the Vice President is responsible for:

- Fully implementing all provisions of the [CompanyName] Quality System and related documents.
- Manage the operation of the [CompanyName] Quality System
- Implement and manage all phases of quality control
- Ensuring that the Quality System is established and implemented by persons doing work that impacts quality
- Ensuring that the Quality System is maintained
- Acting as [CompanyName] liaison with parties outside the company on matters relating to quality
- Review and approval of all Quality System documents

### **QUALITY MANAGER: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY**

The Quality Manager is responsible for ensuring the overall effectiveness of the Quality System for a specific project. Regardless of other duties, the Quality Manager is responsible for:

- Planning project quality controls required by the [CompanyName] quality systems and contract requirements
- Fully implementing all provisions of the [CompanyName] Quality System and related documents on the project.
- Manage the operation of the [CompanyName] Quality System on the project.
- Implement and manage all phases of quality control
- Communicating project-specific quality requirements to all affected departments, subcontractors and suppliers, and customers
- Ensuring that the Quality System is established and implemented by persons doing work that impacts quality
- Monitoring progress of activities
- Ensuring that the Quality System is maintained
- Acting as the project quality liaison with parties outside the company on matters relating to quality
- Reporting to senior management on performance of the Quality System, including needed improvements
- Review and approval of all project Quality System records
- Review and approval of project quality-related contract submittals
- Managing all project inspection and quality control activities
- Controlling corrective actions
- Resolving quality nonconformances

The Quality Manager has the authority to:

- Stop work when continuing work may adversely affect quality or cover up a defect
- Prevent the use of equipment or materials that may adversely affect quality or cover up a defect
- To direct the removal and replacement of any non-conforming work, equipment, or material by [CompanyName], any subcontractor, or any supplier.
- Suspend work and/or supply of materials by any staff member, subcontractor personnel, or supplier as deemed necessary to assure quality results.

Alternate Quality Managers acting in the role of the project Quality Manager has the same quality duties, responsibilities and authority as the project Quality Manager.

### **SUPERINTENDENT: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY**

A Superintendent verifies that work performed by subcontractors and suppliers and [CompanyName] work crews conforms to [CompanyName] quality standards. The Vice President appoints one or more Superintendents for each project.

A Superintendent has specific responsibilities for:

- Ensuring that work meets government regulatory and code requirements, customer requirements, contract requirements, contract technical specifications, contract drawings, approved contract submittals, and company quality standards and specifications
- Ensuring that subcontractors and suppliers begin work in accordance with [CompanyName] start-work policies
- Ensuring that subcontractors and suppliers receive a notice to work only when conditions will not adversely affect quality results
- Conducting quality inspections, tests, and recording findings
- Accurately assessing subcontractor quality and on-time performance
- Ensuring that quality standards are achieved before approving subcontractor or work crew completion of work

The Superintendent has the authority to:

- Stop work when continuing work may adversely affect quality or cover up a defect
- Prevent the use of equipment or materials that may adversely affect quality
- Direct the removal or replacement of any non-conforming work, equipment, or material
- Suspend work and/or supply of materials as deemed necessary to assure quality results

Alternate Superintendent has the same quality duties, responsibilities and authority as the Superintendent. Multiple Superintendents may be assigned to the project.

### **PROJECT MANAGER: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY**

The Project Manager is the one person responsible for management of a specific project. Regardless of other duties, the Project Manager is responsible for:

- Demonstrating commitment to the [CompanyName] Quality System and its integrity
- Ensuring achievement of project quality objectives
- Providing adequate resources for effective operation of the Quality System on the project
- Ensuring that each design employee understands his or her quality responsibilities as well as [CompanyName] quality policies
- Ensuring that each project employee understands his or her quality responsibilities as well as [CompanyName] quality policies
- Conducting management reviews of the [CompanyName] Quality System
- Ensuring the availability of necessary resources and information for effective operation of the [CompanyName] Quality System

The Project Manager has authority to:

- Stop work when continuing work adversely affects quality or covers up a defect
- Prevent the use of equipment or materials that would adversely affect quality or cover up a defect
- Suspend work and/or supply of materials by any staff member, subcontractor personnel, or supplier as deemed necessary to assure quality results.

**ALL EMPLOYEES: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY**

All employees have quality responsibilities that include:

- Conformance to project quality requirements
- Compliance with the project quality plan
- Meeting or exceeding all applicable regulations, codes, industry standards, and manufacturer specifications as well as meeting or exceeding our customers' contract and individual requirements.
- Fully implementing and complying with all provisions of the [CompanyName] Quality Manual.

All employees have the authority to:

- Stop work when continuing work may adversely affect quality or cover up a defect
- Prevent the use of equipment or materials that may adversely affect quality

Selected pages



## **K. MATERIAL INSPECTION TRACEABILITY AND QUALITY CONTROLS**

Products and materials are controlled to assure the use of only correct and acceptable items. Controls include identification of the inspection status. Materials that require lot control traceability and the method of traceability are listed on the Controlled Materials form included as an exhibit in this subsection.

### **IDENTIFICATION OF LOT CONTROLLED MATERIALS**

The Quality Manager determines types of project materials that require quality controls.

For each type of quality-controlled material, the Quality Manager determines lot control traceability requirements, if any, and specifies the means of lot identification. Identification methods may include physical labels, tags, markings and/or attached certification documents.

When lot-controlled materials are received, the Superintendent verifies that materials have the specified lot identifications.

The Superintendent maintains lot identification at all production phases from receipt, through production, installation, or assembly, to final completion. Acceptable methods for preserving lot identification include physically preserving observable lot identifications, recording the lot identification on a work task quality inspection form or other work record, or collecting the physical lot identifier as a record along with supplemented with location.

If lot-controlled materials are without lot identification, the Superintendent deems the materials as nonconforming and segregates them and/or clearly marks them to prevent inadvertent use. The Superintendent treats the material according to the company policy for nonconformances. Only the Quality Manager can re-identify or re-certify the materials.

### **MATERIAL RECEIVING AND INSPECTION**

When lot-controlled materials are received, the Operations Manager inspects the materials and verifies that materials have the specified lot identifications. Received materials are listed on the Material Receiving and Inspection Report form or Metals Materials Receiving, and Inspection form included as an exhibit in this subsection.

Material quality inspections and tests ensure that purchased materials meet purchase contract quantity and quality requirements. The Superintendent inspects or ensures that a qualified inspector inspects materials prior to use for conformance to project quality requirements.

The Superintendent ensures that each work task that uses the source inspected materials proceed only after the material has been accepted by the material quality inspection or test.

[CompanyName] Controlled Materials Form				
Version 1.0/ [Date]				
Contract ID	Contract Name	Preparer	Date	
[ProjectNumber]	[ProjectName]			

Contract Section/ Activity ID	Material	Intended Use (If description is necessary)	Lot Traceability Requirements	Method for identification of Approved Inspection Status

<div style="text-align: center;"> <b>[CompanyName]</b>  <b>Metals Material Receiving Inspection Report</b>  <small>Version 1.0/ [Date]</small> </div>				
Project ID	Project Name	P.O.#	Supplier	Receipt Date
[ProjectNumber]	[ProjectName]			
Type of Material (i.e., steel plate)	Material Description (Nominal dimensions)	Heat Number/ Serial Number/Markings	Condition / Damage	Color Code Marking
Receiving Inspector Approval Signature / Date		Government Representative Name/Approval Date		
				<input type="checkbox"/> Material Receiving Inspection Passed

## L. ELECTRICAL INSPECTION AND TEST PLAN

The Quality Inspection and Test Plan form lists inspections and tests (other than work task inspections) that will be performed on this project.

Results of inspections and tests will be recorded on the Inspection and Test Form.

Form exhibits are included as an exhibit in this subsection.

### INSPECTION AND TESTING ELECTRICAL STANDARDS

Inspection and testing standards that may apply to this project include those listed below.

Description	Reference Standard No.	Reference Standard Title
Direct-current high-potential test for conductors	IEEE 400.2	Guide for Field Testing of Shielded Power Cable Systems Using Very Low Frequency (VLF)
Visual and mechanical inspections and electrical tests	NETA ATS	Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
Ground rod resistance to ground	IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
Telecommunications cabling inspection, verification, and performance tests	TIA-568-C.1	Commercial Building Telecommunications Cabling Standard
Optical fiber end-to-end attenuation tests	TIA-568-C.3	Optical Fiber Cabling Components Standard
Fiber optic cables power budget and bandwidth	TIA-455-78-B	FOTP-78 Optical Fibres - Part 1-40: Measurement Methods and Test Procedures – Attenuation
Intercommunication system intelligibility test	ASA S3.2	Method for Measuring the Intelligibility of Speech Over Communication Systems
Optical time domain reflectometer tests	TIA-455-78-B	FOTP-78 Optical Fibres - Part 1-40: Measurement Methods and Test Procedures - Attenuation
Ground resistance testing	IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
Preliminary and acceptance testing	NFPA 72	National Fire Alarm and Signaling Code
Carbon monoxide detector testing	UL 2034	Single and Multiple Station Carbon Monoxide Alarms
Testing of duct smoke detectors	NFPA 72	National Fire Alarm and Signaling Code
Combustible gas detector preliminary and acceptance testing	ANSI/ISA 12.13.01	Performance Requirements for Combustible Gas Detectors

## **CALIBRATION OF INSPECTION, MEASURING, AND TEST EQUIPMENT**

The Quality Manager determines inspection, measuring, and test equipment that will be controlled, calibrated, and maintained.

Records of calibrations will be maintained including calibration certificates documenting of traceability to national standards.

A list of controlled and calibrated test equipment is listed on the Test Equipment Calibration Plan and Log included as an exhibit in this subsection.

The Quality Manager evaluates the project requirements and determines if there are measuring devices that require controls to assure quality results.

For each type of device, the Quality Manager identifies:

- Restrictions for selection
- Limitations on use.
- Calibration requirements including the frequency of calibration. All calibrations must be traceable to national measurement standards.

When a measurement device is found not to conform to operating tolerances, the Quality Manager validates the accuracy of previous measurements.

Selected Pages

<b>[CompanyName]</b> <b>Inspection and Test Plan and Log</b> <small>Version 1.0/ [Date]</small>									
Project Number			Project Name						
[ProjectNumber]			[Project Name]						
Item	Spec #	Specification s Section	Subsectio n	Inspections & Tests Required	Frequency	Inspection-Test By <small>(All tests verified by Superintendent and/or QC Manager)</small>	Date Completed	Date Forwarded to Client.	Remarks
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									

**[CompanyName]**  
**Test Equipment Calibration Plan and Log**

Version 1.0/ [Date]

Project ID	Project Name	Preparer	Date	
[ProjectNumber]	[ProjectName]			

Type of measuring device	Calibration Type and Frequency	Measuring Device ID	Calibrated By/ Calibration Date	Calibration certificate #	Next Calibration Due Date
					Project Start

## **N. CONTROL OF CORRECTIONS AND NONCONFORMANCES**

Should a problem occur in the quality of work, we systematically contain the issue and quickly make corrections. Our first action is to clearly mark the item by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

Then we expedite a corrective action that brings the workmanship or material issue into conformance by repair, replacement, or rework. Previously completed work is reinspected for similar nonconformances. If we cannot correct the item to meet contract specifications, the customer will be notified, and customer approval of corrective actions is required before proceeding.

Fixing problems found is not sufficient. [CompanyName] systematically prevents recurrences to improve quality. First enhanced controls and management monitoring are put into place to assure work proceeds without incident. Then using a structured problem-solving process, [CompanyName] identifies root causes and initiates solutions. Solutions may involve a combination of enhanced process controls, training, upgrading of personnel qualifications, improved processes, and/or the use of higher-grade materials. Follow-up ensures that a problem is completely resolved. If problems remain, the process is repeated.

Nonconformances and their resolution are recorded on a Nonconformance Report form. A Nonconformance Report form exhibit is included in this subsection.

### **MARKING OF NONCONFORMANCES AND OBSERVATIONS**

When the Quality Manager, Superintendent, inspector, or customer identifies a nonconformance or an observation, the item is quickly and clearly marked by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

### **CONTROL THE CONTINUATION OF WORK**

After the item is marked, the Superintendent determines if work can continue in the affected area:

**CONTINUE WORK:** When continuing work does not adversely affect quality or hide the defect, work may continue in the affected area while the disposition of the item is resolved. The Superintendent may place limitations on the continuation of work.

**STOP WORK ORDER:** When continuing work can adversely affect quality or hide the defect, work must stop in the affected area until the disposition of the item resolved. The Superintendent identifies the limits of the affected area. The Superintendent quickly and clearly identifies the boundaries of the stop work area.

### **RECORDING OF NONCONFORMANCES**

If nonconformances or observed items exist by the work task completion inspection, the Superintendent or inspector records the nonconformances on a nonconformance report.

The Superintendent sends the nonconformance report to the Quality Manager.



## **QUALITY MANAGER DISPOSITION OF NONCONFORMANCE REPORTS**

When the Quality Manager receives a Nonconformance Report, he or she assesses the affect the reported nonconformance has on form, fit, and function. The Quality Manager may assign a disposition of either:

**REPLACE:** The nonconformance can be brought into conformance with the original specification requirements by replacing the nonconforming item with a conforming item.

**REPAIR:** The nonconformance can be brought into conformance with the original requirements through completion of required repair operations.

**REWORK:** The nonconformance can be made acceptable for its intended use, even though it is not restored to a condition that meets all specification requirements. The Quality Manager may specify standards that apply to the completion of rework. Rework nonconformances must be approved by the customer.

**USE AS-IS:** When the nonconforming item is satisfactory for its intended use. Any use as-is items that do not meet all specification requirements must be approved by the customer.

## **CORRECTIVE ACTIONS**

The Superintendent verifies that corrective actions eliminate the nonconformance to the requirements of the original specifications or as instructed by the disposition of the nonconformance report, and then removes, obliterates, or covers the nonconformance marker.

Furthermore, the Superintendent ensures that previously completed work is reinspected for similar nonconformances and corrective actions are taken to avert future occurrences (see section 9.3 Corrective Actions).

### **CONTROL OF CORRECTIVE ACTIONS**

When a nonconformance is found, the Superintendent ensures that:

- Previously completed work is reinspected for similar nonconformances
- Corrective actions are taken to avert future occurrences

The Quality Manager identifies requirements for corrective actions with respect to frequency, severity, and detectability of quality nonconformances items found during and after completion of work activities.

When a solution requires changes to [CompanyName] quality standards, the Quality Manager makes modifications as necessary by making changes to:

- Material specifications
- Personnel qualifications
- Subcontractor and Supplier qualifications
- Company standards
- Inspection processes

### **CORRECTIVE ACTION TRAINING**

The Superintendent initiates corrective action training to address quality nonconformances. Personnel and subcontractors and suppliers performing or inspecting work participate in the training.

Heightened awareness during quality inspections verifies and documents compliance with the corrective action improvement items. A qualified Superintendent inspects corrective actions during regular quality inspections and records observations on the quality inspection form.

The Superintendent notifies affected subcontractors and suppliers of selected preventive action training requirements.

The Superintendent evaluates the effectiveness of the improvements. The Quality Manager reviews improvement results recorded on quality inspection records and monthly field reviews. When the Quality Manager determines that the improvement actions are effective, the item is no longer treated as a preventive action.

## **NONCONFORMANCE PREVENTIVE ACTIONS**

Fixing problems found during quality inspections is not sufficient. Systematic prevention of recurrences is essential for improving quality.

[CompanyName] makes changes to solve the problem. Solutions may involve a combination of enhanced process controls, training, upgrade personnel qualifications, improved processes, or use of higher-grade materials.

Follow-up ensures that a problem is completely resolved. If problems remain, the process is repeated.

Selected Pages

<div style="text-align: center;"> <b>[CompanyName]</b>  <b>Nonconformance Report</b>  <small>Version 1.0/ [Date]</small> </div>		
Nonconformance Report Control ID	Project ID	Project Name
	[ProjectNumber]	[ProjectName]
Preparer Signature/ Submit Date		Quality Manager Signature / Disposition Date
Description of the requirement or specification		
Description of the nonconformance, location, affected area, and marking		
Disposition	<input type="checkbox"/> Replace <input type="checkbox"/> Repair <input type="checkbox"/> Rework <input type="checkbox"/> Use As-is	
	Approval of disposition required by customer representative? Yes <input type="checkbox"/> No <input type="checkbox"/> Customer approval signature /date: _____	
Corrective Actions	<input type="checkbox"/> Corrective actions completed Name/Date: _____ Customer acceptance of corrective actions required? Yes <input type="checkbox"/> No <input type="checkbox"/> Name/Date: _____	
Preventive Actions		
	<input type="checkbox"/> Preventive actions completed Name/Date: _____	

# [CompanyName]

## Quality Manual

### Operating Policies of the [CompanyName] Quality System

Management acceptance

This Quality Manual has been reviewed and accepted

Endorsed By: (Name / Title)	[PresidentName], President		
Signature:	<i>[PresidentName]</i>	Date:	[Date]
Version	1.0	Notes	Initial Issue

## SECTION 2: QUALITY MANUAL

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## 3. CONTRACT SPECIFICATIONS

### *DEFINE CUSTOMER QUALITY EXPECTATIONS*

#### 3.1. OVERVIEW

Fulfilling customer contract expectations is a primary objective of the [CompanyName] Quality System. To ensure that customer expectations will be fulfilled, [CompanyName] clearly defines the requirements for each contract before it is approved.

The Project Manager ensures that the information in customer contracts clearly defines customer expectations and that the necessary details are provided to set requirements for construction.

#### 3.2. CONTRACT TECHNICAL SPECIFICATIONS

The Project Manager obtains contract technical specifications from the customer.

For each specific contract, The Vice President identifies supplemental technical specifications on the Project Quality Assurance/Quality Control Plan when they are not otherwise specified by the contract or the approved drawings. Superintendents have jobsite access to contract technical specifications for the construction activities they supervise.

All [CompanyName] activities comply with the contract technical specifications.

#### 3.3. CONTRACT DRAWINGS

The Project Manager obtains customer supplied drawings that have been approved by local government regulators. Superintendents have jobsite access to approved architectural drawings for the construction they supervise.

All [CompanyName] activities comply with the drawing details and specifications cited in the drawings.

##### 3.3.1.1. AS-BUILT RED-LINE DRAWINGS

As the project progresses, the Superintendent will mark the original design drawings to indicate as-built conditions including changes to specified materials, dimensions, locations, or other features.

#### 3.4. CONTRACT SUBMITTALS

The Quality Manager prepares submittals that provide additional details of how [CompanyName] plans to carry out quality-related aspects of the customer contract, contract technical specifications, and contract drawings and reporting of quality records to the customer.

The Quality Manager lists, schedules, and approves all quality-related submittals that are required by the project including submittals prepared by subcontractors and suppliers. The Quality Manager must review all submittals for compliance with the requirements of the [CompanyName] Quality System. The Quality Manager must sign approval of each contract submittal.

[CompanyName] extends compliance to contract specifications to all customer approved submittals. All [CompanyName] activities comply with customer approved submittals.



#### **3.4.1. CONTRACT SUBMITTAL SCHEDULE**

The Project Manager identifies submittals that apply to a specific contract and when they should be submitted, including:

- Contract requirement reference (if applicable)
- Submittal type: Shop drawing, product data, quality inspection and test plan, request for information, or allowances and unit prices
- Description
- Due date for submission to customer by [CompanyName]
- Due date for approval by the customer. Due dates may be a number of days after a project plan milestone.
- Approval date

#### **3.4.2. SHOP DRAWING SUBMITTALS**

The Project Manager or Purchasing and Estimating Manager prepare shop drawing submittals that supplement contract drawings. Shop drawings are required when additional details are necessary for fabrication or installation. The following information is included, as applicable:

- Dimensions established by field measurement
- Relationships to adjoining construction
- Identification of products and materials
- Fabrication and installation drawings
- Diagrams showing locations of field-installations
- Shop fabricated manufacturing instructions
- Templates and patterns
- Design calculations
- Compliance with specified standards
- Seal and signature of professional engineer if required
- Additional requirements as specified in the contract, contract technical requirements, or contract drawings.

[CompanyName] extends contract specifications to include customer approved shop drawings.

#### **3.4.3. PRODUCT DATA SUBMITTALS**

The Project Manager prepares product data submittals that consist of the manufacturer's product information. The information included in this submittal is:

- Manufacturer, trade name, model or type number
- Description
- Intended use
- Size and physical characteristics including drawings when applicable
- Finish and color characteristics
- Product manufacturer's installation instructions, when applicable
- Additional requirements as specified in the contract, contract technical requirements, or contract drawings.

#### **3.4.4. ALLOWANCES AND UNIT PRICES SUBMITTALS**

When customer contracts specify allowances and unit prices that the customer will select after the contract is awarded, the Project Manager prepares an allowance and unit price submittal for customer approval.

When a customer selects or approves an allowances and unit prices, the customer indicates the allowance and unit price selection on the signed submission return.

[CompanyName] extends compliance to contract specifications to customer approved allowances and unit prices.

### **3.4.5. REQUEST FOR INFORMATION (RFI) SUBMITTALS**

The Project Manager submits a request for additional information to the customer when errors are found or when required information is not contained in the contract, contract technical specifications, or contract drawings.

Should any number of contract technical specifications or contract drawings result in conflicting requirements, the Quality Manager submits a request for information to the customer to select the standard that applies.

[CompanyName] extends compliance to contract specifications to customer requests for information.

### **3.4.6. CHANGE ORDER SUBMITTALS**

Contract requirements or contract technical specifications may require a change after the contract is awarded. The Project Manager submits the change order to the customer for approval, including any contract price adjustments.

When a customer approves a change order, the customer signs the submission return.

[CompanyName] extends contract specifications to include customer approved change orders.

### **3.4.7. MOCK-UP SUBMITTALS**

The Superintendent prepares mock-up submittals as required by contract. Additionally, the Quality Manager specifies mock-up requirements when they are necessary to ensure customer expectations are clearly identified.

The Quality Manager ensures that each mock-up demonstrates specific elements of form and/or function, and that they are specified in the submittal documents.

[CompanyName] extends contract specifications to include customer approved mock-up submittals.

## **3.5. CUSTOMER SUBMITTAL APPROVAL**

The Project Manager obtains the signature of an authorized customer representative on the submittal form.

[CompanyName] extends compliance to contract specifications to customer approved submittals.

Work in the affected area of a pending submittal requirement does not start until the customer approves the submittal.

## **3.6. CONTRACT WARRANTY**

The Project Manager ensures that customer contracts clearly specify warranty coverage including:

- Scope
- Starting date
- Duration

The Project Manager ensures that customer contracts also clearly specify owner responsibility for:

- Restrictions of use
- Maintenance requirements
- Exclusions for customer supplied materials or equipment
- Timely notification of problems

### **3.7. CONTRACT REVIEW AND APPROVAL**

The Vice President conducts customer contract reviews to ensure that:

- Customer requirements and specifications are complete
- Customer requirements and specifications are compatible with the relevant regulations, [CompanyName] quality standards, and Quality System requirements
- [CompanyName] has the capability to deliver the completed project in the time allotted

Before construction begins, the Vice President makes sure that all contract requirements are clearly understood, all discrepancies are resolved, and all requirements are agreed upon. Once these requirements are met, the Vice President signs the contract.

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## **7. PROCESS CONTROLS**

### *HOW WORK IS CARRIED OUT*

#### **7.1. OVERVIEW**

The construction process plan defines how project work is to be done and approved for the overall project. The construction process plan is communicated to all key personnel, subcontractors and suppliers in a startup meeting. As the project proceeds, work task plans provide additional details of how each individual work task is carried out. Work tasks planning meetings are used to communicate expectations of the work task plan to key personnel responsible for carrying out the work task.

#### **7.2. PROJECT STARTUP AND QUALITY CONTROL COORDINATION MEETING**

Prior to the commencement of work, the Project Manager holds a meeting to discuss and coordinate how project work will be performed and controlled. Key personnel from [CompanyName], subcontractors and suppliers meet to review expectations for project quality results as well as quality assurance and quality control policies and procedures including:

- Key requirements of the project
- The Project Quality Assurance/Quality Control Plan
- Required quality inspections and tests
- The project submittal schedule
- Quality policies and heightened awareness of critical quality requirements
- Project organization chart and job responsibilities
- Methods of communication and contact information
- Location of project documents and records

#### **7.3. PREPARATORY PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN PLANNING**

##### **7.3.1. WORK TASK REQUIREMENTS REVIEW**

In preparation for the start of an upcoming work task, the Superintendent reviews an integrated and coordinated set of documents that collectively define quality requirements for the work task including:

- Objectives and acceptance criteria of the work task
- Quality standards that apply to the work task
- Work instructions, process steps, and product installation instructions that apply to the work task
- Shop drawings
- Submittals
- Tools and equipment necessary to perform the work
- License, certification, or other qualification requirements of personnel assigned to work
- Required records of the process and resulting product
- The subcontractor contracted to perform the work, if applicable
- Customer contract requirements
- Required quality inspections and tests
- Method for clearly marking nonconformances to prevent inadvertent use
- Location of quality system records and documents
- Personnel training

### **7.3.2. PREPARATORY SITE INSPECTION**

The Superintendent also performs a quality inspection of the work area and:

- Assesses completion of required prior work
- Verifies field measurements
- Assures availability and receiving quality inspection status of required materials
- Identifies any nonconformances to the requirements for the work task to begin
- Identifies potential problems

### **7.3.3. WORK TASK PREPARATORY QUALITY PLANNING MEETINGS**

Prior to the start of a work task, the Superintendent conducts a meeting with key company, subcontractor personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives.

During the meeting, the Superintendent communicates the work task quality requirements and reinforces heightened awareness for critical requirements. Topics for a work task quality plan meeting include:

- Conflicts that need resolution
- Required quality documents and a verification of availability to personnel carrying out, supervising, or inspecting the work task
- Record keeping requirements and the availability of necessary forms
- Review methods and sequences of installation
- Special details and conditions
- Standards of workmanship
- Heightened awareness of critical quality requirements
- Quality risks
- Work tasks quality inspection form

### **7.4. WEEKLY QUALITY PLANNING AND COORDINATION MEETINGS**

The Superintendent conducts a meeting with key company, subcontractor and supplier personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives.

The meeting is held on a nominal weekly schedule. During the meeting, the Superintendent facilitates coordination among the participants, communication among the participants, and reinforces heightened awareness for critical requirements.

The Superintendent maintains a record of the meeting event on the Daily Quality Control Report.

### **7.5. PROCESS CONTROL STANDARDS**

#### **7.5.1. JOB-READY START WORK STANDARDS**

Work on a work task starts only when conditions do not adversely impact quality, comply with government regulations, contract technical specifications, industry standards, or product installation instructions.

The Quality Manager identifies supplemental start-work requirements that apply to a specific project when they are necessary to assure quality results.

#### **7.5.2. WORK IN PROCESS STANDARDS**

Work is conducted only when conditions do not adversely impact quality, comply with government regulations, contract technical specifications, industry standards, or product installation instructions.

The Quality Manager identifies supplemental work in process requirements that apply to a specific project when they are necessary to assure quality results.

### **7.5.3. PROTECTION OF COMPLETED WORK STANDARDS**

Completed work is protected from damage as specified by government regulations, contract technical specifications, industry standards, or product installation instructions.

The Quality Manager identifies supplemental protection requirements that apply to a specific project when they are necessary to assure quality results.

### **7.5.4. MATERIAL STORAGE**

The Superintendent ensures all materials will be delivered, stored and handled in a manner that protects them from damage, moisture, dirt and intrusion of foreign materials.

Delivery of materials will be planned according to the work progress to minimize storage on site, where there are higher possibilities of damages and deterioration of materials.

Stored materials will be segregated to prevent cross contamination and limit losses should a delivery be rejected.

The Superintendent surveys stored materials during daily jobsite reviews and identifies any material that have incurred damage or otherwise become defective and therefore unfit for use.

### **7.5.5. CONTROLLED USE OF MATERIALS**

The Project Manager ensures that contracts and purchase orders are awarded only to outside organizations qualified to perform the work task and/or supply materials as required for the specific project.

Only approved materials are used in the construction process. Only approved materials are specified in purchase and/or subcontracts.

Materials that are defective, deteriorated, damaged, or not approved are not used. The Superintendent clearly marks such materials for non-use or otherwise holds them aside.

When customer-supplied materials are lost, damaged, or otherwise found unsuitable for use, the Superintendent reports such findings to the customer.

When subcontractor-supplied materials are damaged or otherwise found unsuitable for use, the Superintendent reports such findings to the subcontractor.

The Superintendent ensures that construction uses only materials specified in the contract technical specifications, contract drawings, and approved submittals. Substitutions are made only by agreement of the customer and documented by a change order (see section 2.1.3.6).

#### **7.5.5.1. CONTROLLED PRODUCT USE AND INSTALLATION**

[CompanyName] construction activities conform to manufacturers' product use and installation instructions that apply to the construction process.

When installing a product, the Superintendent has access to all applicable product installation instructions.

### **7.6. DAILY QUALITY CONTROL REPORT**

The Superintendent records a summary of daily work activities. The report will include:

- Schedule Activities Completed
- General description of work activities in progress.
- Problems encountered, actions taken, problems, and delays
- Meetings held, participants, and decisions made
- Subcontractor and Supplier and Company Crews on site
- Visitors and purpose
- General Remarks
- Improvement Ideas
- Weather conditions

### **7.7. MONTHLY QUALITY CONTROL REPORT**

When a monthly quality control report is required by the Project Quality Plan, the Superintendent records a monthly status report. The report includes:

- A summary of work completed and work in progress
- Outstanding issues
- Issues resolved during the reporting period
- Outstanding potential change orders
- Project status with current project costs and estimated completion date
- A cost analysis summarizing actual costs to date and estimated future costs
- Project pictures as appropriate

## 8. INSPECTIONS AND TESTS

### *ASSURE COMPLIANCE*

#### **8.1. OVERVIEW**

Inspections are necessary to verify that work processes and results conform to both contract requirements and [CompanyName] quality standards.

Qualified personnel inspect every project throughout the construction process. Additional reviews validate the accuracy of the field quality inspections and ensure that the quality standards apply uniformly.

An inspection and test plan defines the quality inspections and tests required for a specific project.

Personnel may only inspect work activities for which they have been qualified by the Quality Manager.

#### **8.2. REQUIRED WORK TASK QUALITY INSPECTIONS AND TESTS**

The Quality Manager identifies each Task that is a phase of construction that requires separate quality controls to assure and control quality results. Each Task triggers a set of requirements for quality control inspections before, during and after work tasks.

Tasks are divided into two categories:

- Discrete Tasks are standard type of work where a completion inspection is performed one time at the completion of a phase of work.
- Process Tasks are tasks where completion inspections are performed continuously. Continuous inspections are required when there is a limited window of time to perform a completion inspection before the next task begins. Process tasks may also be characterized by independent monitoring of a work process, such as welding, where the observer verifies conformance to work procedures.

Process tasks undergo additional quality controls that continuously monitor compliance to specifications.

Independent quality audits are conducted to verify that the task quality controls are operating effectively.

Construction projects may execute a work task multiple times in a project, in which case a series of quality inspections are required for each work task.

#### **8.3. MATERIAL INSPECTIONS AND TESTS**

Material quality inspections and tests ensure that purchased materials meet purchase contract quantity and quality requirements. The Superintendent inspects or ensures that a qualified inspector inspects materials prior to use for conformance to project quality requirements.

The Superintendent ensures that each work task that uses the source inspected materials proceed only after the material has been accepted by the material quality inspection or test.

##### **8.3.1.1. SOURCE INSPECTIONS**



Source quality inspections are required when quality characteristics cannot or will not be verified during subsequent processing. The Quality Manager determines if a source inspection is necessary to validate supplier quality before materials are delivered to the project jobsite.

The Superintendent ensures that each work task that uses the source inspected materials proceed only the material has been accepted by the source inspection.

#### **8.4. WORK IN PROCESS INSPECTIONS**

Work in process quality inspections continuously verify compliance project quality standards beginning at the start of a work task, as work is conducted, and continues until the work task is complete.

##### **8.4.1.1. INITIAL JOB-READY INSPECTIONS**

For each work task, the Superintendent or a qualified inspector performs job-ready quality inspections to ensure that work activities begin only when they should begin. Job-ready quality inspections verify that conditions conform to the project quality requirements.

##### **8.4.1.2. INITIAL WORK IN PROCESS INSPECTION**

For each work task, the Superintendent or a qualified inspector performs an initial work in process inspection when the first representative portion of a work activity is completed.

##### **8.4.1.3. FOLLOW-UP WORK IN PROCESS INSPECTIONS**

The Superintendent or a qualified inspector performs ongoing work in process quality inspections to ensure that work activities continue to conform to project quality requirements. Punch Items

If the Superintendent or inspector observes an item for correction prior to a work task completion inspection, the item is identified for correction. During the work task completion inspection each punch item correction is verified.

Any outstanding punch items remaining after the work task completion inspection is deemed a nonconformance.

#### **8.4.2. ADDITIONAL INSPECTION REQUIREMENTS FOR PROCESS TASKS**

For each process task, a qualified person inspects the ongoing completion work for conformance to project quality requirements. This is in addition to discrete task completion inspections that are performed one time at the end of a phase of work.

The continuous monitoring inspections are conducted before starting other work activities that may interfere with an inspection.

#### **8.5. WORK TASK COMPLETION INSPECTIONS**

For each work task, the Quality Manager or a qualified inspector inspects the completion of each work task to verify that work conforms to project quality requirements.

Completion quality inspections are performed for each work task. Completion quality inspections are conducted before starting other work activities that may interfere with an inspection.

Any outstanding punch items remaining after the work task completion inspection is deemed a nonconformance.

### **8.6. INSPECTION OF SPECIAL PROCESSES**

The Quality Manager identifies special processes where the results cannot be verified by subsequent inspection or testing and determines if continuous work in process inspections are required. For these special processes, a qualified inspector continuously inspects the work process.

### **8.7. INDEPENDENT MEASUREMENT AND TESTS**

The Quality Manager ensures that quality tests that apply to a specific project are clearly identified. Tests for a project include:

- Customer required quality tests as specified by the contract, contract technical specifications, contract drawings, and approved submittals.
- Additional quality tests necessary to assure quality results.

### **8.8. COMMISSIONING FUNCTIONAL ACCEPTANCE TESTS**

A functional test is performed on each functional system. A qualified inspector performs functional acceptance tests to verify that a system meets predetermined acceptance criteria including:

- The equipment and systems operate as intended
- The equipment and systems perform as intended
- Documentation for operation and maintenance is complete

Each functional test has a documented testing procedure that includes:

- Step-by-step work instructions for conducting the test
- Data recording requirements
- Acceptance criteria
- A determination of pass or fail

### **8.9. HOLD POINTS FOR CUSTOMER INSPECTION**

The Superintendent stops work when reaching a hold point specified on the inspection and test plan. The Superintendent ensures that work proceeds only with customer approval.

### **8.10. QUALITY INSPECTION AND TEST SPECIFICATIONS**

Specifications for each inspection or test are clearly understood before the inspection or test is performed including:

- Items to be inspected/tested
- Inspections/tests to be performed
- Testing schedule frequency
- Specification references including contract drawing identification number and version, if applicable, and/or contract technical specification number and version, if applicable
- Performing party
- Witness parties
- Certificates required
- Checklists/procedures
- Reference standards

### **8.11. INSPECTION AND TEST ACCEPTANCE CRITERIA**

Inspections assess conformance of materials or work for each work task to project quality requirements, including applicable:

- Contract technical specification
- Contract drawings
- Approved shop drawings
- Approved product submittals
- Approved allowances and unit prices
- Product identification requirements
- Approved submittals
- [CompanyName] quality standards

The material or completed work task is accepted only when it meets all project quality requirements.

### **8.12. INSPECTION AND TEST STATUS**

The status of each quality control inspection or test is clearly marked by tape, tag, or other easily observable signal to ensure that only items that pass quality inspections is accepted.

For each quality-controlled work task, the Quality Manager determines the appropriate method of identification to show inspection and test status.

For each quality-controlled material, the Quality Manager determines the appropriate method for identifying quality inspection and test status.

### **8.13. INDEPENDENT QUALITY ASSURANCE INSPECTIONS**

The Quality Manager and/or qualified inspectors perform independent quality assurance inspections that verify that task quality controls are operating effectively.

The Quality Manager selects a representative portion of task completion inspections performed by the Superintendent. Those tasks are independently inspected by the Quality Manager and/or qualified inspectors. The findings are compared to the findings of the inspections performed by the Superintendent. Any deviations are addressed by corrective actions and preventive actions as necessary.

### **8.14. INSPECTION AND TEST RECORDS**

#### **8.14.1. INSPECTION RECORDS**

The Quality Manager prepares an inspection form for each work task. The Quality Manager lists on the form checkpoints for heightened awareness including:

- Initial job-ready inspection requirements
- Inspection and tests
- Work in process inspection requirements
- Completion quality inspections
- Other quality requirements as necessary to reduce quality risks

The person responsible for the inspection, records work task inspection results on the work task inspection form.

#### **8.14.2. TEST RECORDS**

Test result data include as appropriate:

- Reference to the inspection and test plan item
- Description or title of the inspection activity
- Drawing identification number and version, if applicable
- Technical specification number and version, if applicable
- Location of the inspection activity
- Acceptance criteria
- Nonconformances
- Validation that nonconformances are corrected, reinspected or retested, and confirmed to meet Quality System requirements.
- Any open items to be completed at a later date.
- Inspector's name and signature indicating compliance with all requirements of the Quality System
- Quality rating scores as appropriate
- Date of inspection or test
- Certificate, if applicable
- Conspicuous statement of final result as either "CONFORMS" or "DOES NOT CONFORM"

### **8.15. PROJECT COMPLETION AND CLOSEOUT INSPECTION**

#### **8.15.1. PRE-FINAL [COMPANYNAME] INSPECTION**

Near the end of the project, or a milestone established in the Project Quality Inspection and Test Plan, the Quality Manager will inspect the completed project and verify conformance to contract specifications.

The Quality Manager records nonconforming items.

The Superintendent assigns a planned date by which the deficiencies will be corrected. The date may be assigned for all items or individual items as necessary. After corrections have been made, the Superintendent verifies the completion of each item.

Then the Quality Manager conducts a follow-up inspection and verifies that all nonconforming items have been corrected to meet contract specifications. Any remaining deficiencies are recorded and managed as nonconformances.

When the pre-final [CompanyName] inspection process is complete, the Quality Manager then notifies the customer that the project is ready for the customer's final inspection. The customer is also notified of any remaining nonconformances and their planned resolution.

#### **8.15.2. PRE-FINAL CUSTOMER INSPECTION**

If the customer performs a pre-final inspection, the Quality Manager records nonconforming items and assigns a planned date by which the deficiencies will be corrected.

The Superintendent assigns a planned date by which the deficiencies will be corrected. The date may be assigned for all items or individual items as necessary. After corrections have been made, the Superintendent verifies the completion of each item.

After corrections have been made, the Quality Manager will conduct a follow-up inspection and verify that all nonconforming items have been corrected to meet contract specifications. Any remaining deficiencies are recorded and then managed as nonconformances.

When the pre-final customer inspection process is complete, the Quality Manager then notifies the customer that the project is ready for the customer's Final inspection. The customer is also notified of any remaining nonconformances and their planned resolution.

**8.15.3. FINAL ACCEPTANCE CUSTOMER INSPECTION**

If the customer performs a final inspection, the Quality Control Manager, Superintendent, and Project Manager will participate in the inspection. The Quality Manager records nonconforming items and assigns a planned date by which the deficiencies will be corrected. The date may be assigned for all items or individual items as necessary. After corrections have been made, the Superintendent verifies the completion of each item.

After corrections have been made, the Quality Manager will conduct a follow-up inspection and verify that all nonconforming items have been corrected to meet contract specifications. Any remaining deficiencies are recorded managed as nonconformances.

When the final customer inspection process is complete, the Quality Manager then notifies the customer that the project is ready for the customer's follow-up verification. The customer is also notified of any remaining nonconformances and their planned resolution.

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## 12. RECORD AND DOCUMENT CONTROLS

### 12.1. OVERVIEW

[CompanyName] ensures that quality related documents and records are created, current versions are in use, complete, identifiable, and stored properly.

### 12.2. QUALITY SYSTEM DOCUMENTS

#### 12.2.1. QUALITY MANUAL

The Quality Manager maintains the [CompanyName] Quality Manual that documents [CompanyName] quality policies. Each policy identifies the titles of personnel responsible.

The Quality Manager ensures that the Quality Manual and documents related to a work task are accessible to personnel performing the work.

The Quality Manager maintains, improves, and updates the manual as necessary. At least annually, the Quality Manager determines if updated versions of standards and product installation instructions are available. If so, the Quality Manager updates the Quality System documentation accordingly.

### 12.3. DOCUMENT CONTROLS

The Vice President controls all company-wide quality system documents including:

- Approval of all quality system documents and for adequacy prior to issue or reissue.
- Ensures that applicable documents are available and usable at points of use
- Prevents unintended use of obsolete documents

The Quality Manager controls project-specific quality system documents including:

- Approval of all project quality documents and for adequacy prior to issue or reissue.
- Ensures that applicable documents are available and usable at points of use
- Prevents unintended use of obsolete documents

#### 12.3.1. CONTROL OF SYSTEM DOCUMENTS

The Quality Manager controls documents related to the [CompanyName] Quality System including:

- Quality System Manual
- Quality System Procedures
- Project Management Procedures (including interface and coordination with customers and regulatory agencies with jurisdiction over jobsites)
- Government regulations
- Industry standards
- Procurement specifications

The Quality Manager ensures that records of the distribution of Quality System documents are kept. When new versions are distributed, obsolete versions are destroyed or controlled to prevent inadvertent use.

#### 12.3.2. CONTROL OF PROJECT DOCUMENTS

The Project Manager controls documents related to specific customer contracts including:

- Customer contracts
- Contract technical specifications
- Contract drawings
- Shop drawing submittals and approvals
- Product data submittals and approvals
- Allowances and unit price submittals and approvals
- Requests for information and customer responses
- Subcontracts
- Inspection and test plans

#### **12.4. RECORD CONTROLS**

The Quality Manager verifies records for conformance to the Quality System Requirements and approves all Quality System records.

Records demonstrating conformance with and operation of the Quality System are retrievable for at least five years. The Quality Manager verifies records for conformance to the Quality System Requirements.

##### **12.4.1. QUALITY SYSTEM RECORDS CONTROL**

The Quality Manager verifies the completeness, accuracy, and retention of project-specific Quality System records including:

- Annual reviews
- Quality improvement records

##### **12.4.2. PROJECT RECORDS CONTROL**

The Quality Manager verifies the completeness, accuracy, and retention of project-specific Quality System records including:

- Inspection and test records
- Quality submittals to the customer
- Project quality system audits
- Field reviews
- Calibration certificates
- Daily log reports
- Incident reports
- Redline drawings
- Qualified personnel approvals
- Qualified subcontractor approvals
- Quality improvement records
- Project Quality records specified by customer contract, or contract technical specifications

The Quality Manager assigns record control responsibilities and document location that apply to a specific project.

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Project:	Phase:	Contract#:	Subcontractor:	Crew:
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<p><b><u>Compliance Verification</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Compliance with initial job-ready requirements</li> <li><input type="checkbox"/> Compliance with material inspection and tests</li> <li><input type="checkbox"/> Compliance with work in process first article inspection requirements</li> <li><input type="checkbox"/> Compliance with work in process inspection requirements</li> <li><input type="checkbox"/> Compliance with Task completion inspection requirements</li> <li><input type="checkbox"/> Compliance with inspection and test plan</li> <li><input type="checkbox"/> Compliance with safety policies and procedures</li> </ul> <p>Reported Nonconformances and incomplete items:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> <th style="text-align: left;"><b><u>Heightened Awareness Checkpoints</u></b></th> </tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Cuts for Conduits in structural members approved by ENGINEER</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Firestops installed at penetrations through fire partitions// fire walls// smoke partitions// or floors</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Penetrations through floor// exterior wall and roof sealed and made watertight</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Excess wiring// insulation// ties// etc. removed from Conduits</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Conduits secured to prevent movement and chafe</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Remaining snake lines labeled at both ends</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Conduit bends do not exceed minimum for size of Conduit used and are even</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Metal Conduits bonded and grounded</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Conduits are mechanically continuous</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Flexible connections to equipment subject to vibrations</td></tr> </table>	YES	NO	<b><u>Heightened Awareness Checkpoints</u></b>	<input type="checkbox"/>	<input type="checkbox"/>	Cuts for Conduits in structural members approved by ENGINEER	<input type="checkbox"/>	<input type="checkbox"/>	Firestops installed at penetrations through fire partitions// fire walls// smoke partitions// or floors	<input type="checkbox"/>	<input type="checkbox"/>	Penetrations through floor// exterior wall and roof sealed and made watertight	<input type="checkbox"/>	<input type="checkbox"/>	Excess wiring// insulation// ties// etc. removed from Conduits	<input type="checkbox"/>	<input type="checkbox"/>	Conduits secured to prevent movement and chafe	<input type="checkbox"/>	<input type="checkbox"/>	Remaining snake lines labeled at both ends	<input type="checkbox"/>	<input type="checkbox"/>	Conduit bends do not exceed minimum for size of Conduit used and are even	<input type="checkbox"/>	<input type="checkbox"/>	Metal Conduits bonded and grounded	<input type="checkbox"/>	<input type="checkbox"/>	Conduits are mechanically continuous	<input type="checkbox"/>	<input type="checkbox"/>	Flexible connections to equipment subject to vibrations
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### FTQ Scores and Completion Sign-off

#### Field Mgmt.-91.45.01

**Quality**      5   4   3   2   1   *Notes:*

**On-Time**      5   4   3   2   1   *Notes:*

**Safety**      5   4   3   2   1   *Notes:*

Sign and date\*: Cell # / ID #: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Task has been verified complete and in compliance with contract drawings and specifications except for non-conformances and incomplete items reported above.

**Quality Score**  
**On-Time Score**  
**Safety Score**

5 = 100% NO problems  
5 = On Time  
5 = 100% NO problems

4 = 1 minor problem  
4 = Late  
4 = 1 minor problem

3 = Hotspot or 2-3 minor  
3 = Late by 1 day  
3 = Hotspot or 2-3 minor

2 = 6+ or major problems  
2 = Late by 2 days  
2 = 4+ or major problem

1 = Excessive problems  
1 = Late more than 2 days  
1 = Injury

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## Electrical - Electrical and Cathodic Protection 26.40.00

Project:	Phase:	Contract#:	Subcontractor:	Crew:
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<p><b><u>Compliance Verification</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Compliance with initial job-ready requirements</li> <li><input type="checkbox"/> Compliance with material inspection and tests</li> <li><input type="checkbox"/> Compliance with work in process first article inspection requirements</li> <li><input type="checkbox"/> Compliance with work in process inspection requirements</li> <li><input type="checkbox"/> Compliance with Task completion inspection requirements</li> <li><input type="checkbox"/> Compliance with inspection and test plan</li> <li><input type="checkbox"/> Compliance with safety policies and procedures</li> </ul> <p>Reported Nonconformances and incomplete items:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> <th style="text-align: left;"><b><u>Heightened Awareness Checkpoints</u></b></th> </tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Anti-oxidant paste applied to connections of dissimilar metals</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Connections tight and free of corrosion// paint// and other non-conductive materials</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Ground rods / plates not located in rock or stone fill</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Conductors secured to prevent movement and chafe</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Multi-strand wire or strap connectors utilized on movable connections</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>System tested for continuity</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Grounding conductors routed in most direct path possible</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>No sharp bends or turns in conductors</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Underground and submerged splices made waterproof</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Anodes not supported by lead wiring</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td>Anodes not located in rock or stone fill</td></tr> </table>	YES	NO	<b><u>Heightened Awareness Checkpoints</u></b>	<input type="checkbox"/>	<input type="checkbox"/>	Anti-oxidant paste applied to connections of dissimilar metals	<input type="checkbox"/>	<input type="checkbox"/>	Connections tight and free of corrosion// paint// and other non-conductive materials	<input type="checkbox"/>	<input type="checkbox"/>	Ground rods / plates not located in rock or stone fill	<input type="checkbox"/>	<input type="checkbox"/>	Conductors secured to prevent movement and chafe	<input type="checkbox"/>	<input type="checkbox"/>	Multi-strand wire or strap connectors utilized on movable connections	<input type="checkbox"/>	<input type="checkbox"/>	System tested for continuity	<input type="checkbox"/>	<input type="checkbox"/>	Grounding conductors routed in most direct path possible	<input type="checkbox"/>	<input type="checkbox"/>	No sharp bends or turns in conductors	<input type="checkbox"/>	<input type="checkbox"/>	Underground and submerged splices made waterproof	<input type="checkbox"/>	<input type="checkbox"/>	Anodes not supported by lead wiring	<input type="checkbox"/>	<input type="checkbox"/>	Anodes not located in rock or stone fill
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### FTQ Scores and Completion Sign-off

#### Field Mgmt.-91.45.01

**Quality**      5   4   3   2   1   *Notes:*

**On-Time**      5   4   3   2   1   *Notes:*

**Safety**      5   4   3   2   1   *Notes:*

Sign and date\*: Cell # / ID #: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Task has been verified complete and in compliance with contract drawings and specifications except for non-conformances and incomplete items reported above.

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**On-Time Score**  
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2 = 6+ or major problems  
2 = Late by 2 days  
2 = 4+ or major problem

1 = Excessive problems  
1 = Late more than 2 days  
1 = Injury

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## Electrical - Enclosed Bus Assemblies 26.25.00

Project:	Phase:	Contract#:	Subcontractor:	Crew:

<p><b><u>Compliance Verification</u></b></p> <p><input type="checkbox"/> Compliance with initial job-ready requirements</p> <p><input type="checkbox"/> Compliance with material inspection and tests</p> <p><input type="checkbox"/> Compliance with work in process first article inspection requirements</p> <p><input type="checkbox"/> Compliance with work in process inspection requirements</p> <p><input type="checkbox"/> Compliance with Task completion inspection requirements</p> <p><input type="checkbox"/> Compliance with inspection and test plan</p> <p><input type="checkbox"/> Compliance with safety policies and procedures</p> <p>Reported Nonconformances and incomplete items:</p>	<p><b><u>YES NO    Heightened Awareness Checkpoints</u></b></p> <p><input type="checkbox"/> <input type="checkbox"/> All sections of metal Busway grounded and bonded</p> <p><input type="checkbox"/> <input type="checkbox"/> Busway expansion joints installed where building expansion joints are traversed</p> <p><input type="checkbox"/> <input type="checkbox"/> Firestops installed at penetrations through fire partitions// fire walls// smoke partitions// or floors</p> <p><input type="checkbox"/> <input type="checkbox"/> Penetrations through exterior wall and roof sealed and made watertight</p> <p><input type="checkbox"/> <input type="checkbox"/> Busway run level and plumb</p> <p><input type="checkbox"/> <input type="checkbox"/> Busway mounted securely to structural members and free of sway / rotation</p> <p><input type="checkbox"/> <input type="checkbox"/> Busway sections// joint covers// bends// transitions// plug-ins// end caps// etc. securely connected</p> <p><input type="checkbox"/> <input type="checkbox"/> All joints accessible (not within wall or floor penetrations)</p> <p><input type="checkbox"/> <input type="checkbox"/> Minimum clearances observed</p> <p><input type="checkbox"/> <input type="checkbox"/> Busway megger tested prior to energizing</p>
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### FTQ Scores and Completion Sign-off

#### Field Mgmt.-91.45.01

**Quality      5   4   3   2   1   Notes:**

**On-Time      5   4   3   2   1   Notes:**

**Safety      5   4   3   2   1   Notes:**

Sign and date\*: Cell # / ID #: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Task has been verified complete and in compliance with contract drawings and specifications except for non-conformances and incomplete items reported above.

<b><u>Quality Score</u></b>	5 = 100% NO problems	4 = 1 minor problem	3 = Hotspot or 2-3 minor	2 = 6+ or major problems	1 = Excessive problems
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## Electrical - Identification for Electrical Systems 26.05.53

Project:	Phase:	Contract#:	Subcontractor:	Crew:
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<p><b><u>Compliance Verification</u></b></p> <p><input type="checkbox"/> Compliance with initial job-ready requirements</p> <p><input type="checkbox"/> Compliance with material inspection and tests</p> <p><input type="checkbox"/> Compliance with work in process first article inspection requirements</p> <p><input type="checkbox"/> Compliance with work in process inspection requirements</p> <p><input type="checkbox"/> Compliance with Task completion inspection requirements</p> <p><input type="checkbox"/> Compliance with inspection and test plan</p> <p><input type="checkbox"/> Compliance with safety policies and procedures</p> <p>Reported Nonconformances and incomplete items:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> <th style="text-align: left;"><b><u>Heightened Awareness Checkpoints</u></b></th> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Labels and markers are permanent</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Labels are securely mounted or attached</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Cabling and wiring labeled on both ends</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Label material compatible with operational environment</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Names of rooms approved by OWNER before labels are purchased or mounted</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Instruction and warning signs are clearly located</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Panel circuit schedules complete and accurate</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Wiring schematics supplied to the OWNER</td> </tr> </table>	YES	NO	<b><u>Heightened Awareness Checkpoints</u></b>	<input type="checkbox"/>	<input type="checkbox"/>	Labels and markers are permanent	<input type="checkbox"/>	<input type="checkbox"/>	Labels are securely mounted or attached	<input type="checkbox"/>	<input type="checkbox"/>	Cabling and wiring labeled on both ends	<input type="checkbox"/>	<input type="checkbox"/>	Label material compatible with operational environment	<input type="checkbox"/>	<input type="checkbox"/>	Names of rooms approved by OWNER before labels are purchased or mounted	<input type="checkbox"/>	<input type="checkbox"/>	Instruction and warning signs are clearly located	<input type="checkbox"/>	<input type="checkbox"/>	Panel circuit schedules complete and accurate	<input type="checkbox"/>	<input type="checkbox"/>	Wiring schematics supplied to the OWNER
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### FTQ Scores and Completion Sign-off

#### Field Mgmt.-91.45.01

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**410-451-8006**

**[edc@firsttimequality.com](mailto:edc@firsttimequality.com)**