[CompanyName]

[CompanyAddress]
[CompanyPhone]

Electrical Construction

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:	*[PresidentName]*	Date:	[Date]
Version	1.0	Notes	Initial Issue

QUALITY MANUAL

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2. PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN

2.1. OVERVIEW

After [CompanyName] is awarded a contract to carry out a construction project, the President forms a team consisting of a Quality Manager, Project Manager, and Superintendent.

First, the Quality Manager develops a set of project specifications that align project requirements with customer specifications and requirements, regulations, industry standards, product instructions, and [CompanyName] quality standards.

The Quality Manager evaluates personnel, subcontractors and suppliers, materials, and suppliers, and ensures that only those that are capable and qualified are included in the project. Training is provided to ensure that all personnel involved in the project understand their quality responsibilities and authorities.

The Quality Manager then details how the quality is controlled throughout the construction process through a quality inspection and test plan that specifies requirements and pass/fail criteria for quality inspections and tests. [CompanyName] operating policies assure compliance with the project specifications.

Throughout the project there are standard operating procedures and forms for creating, maintaining, and controlling quality documents and records.

Throughout the project, the Quality Manager performs on-site quality audits to ensure that the [CompanyName] Quality System is operating effectively.

2.2. [COMPANYNAME] PROJECT LICENSE AND QUALIFICATION REQUIREMENTS

The Quality Manager identifies company license and qualification credentials required by contract specifications and government regulators. The Quality Manager obtains records, certificates, and license records that provide verification of [CompanyName] credentials.

2.2.1.1. Required Company Licenses and Certifications

The Quality Manager defines quality-related company credentials for each project work task that affects quality.

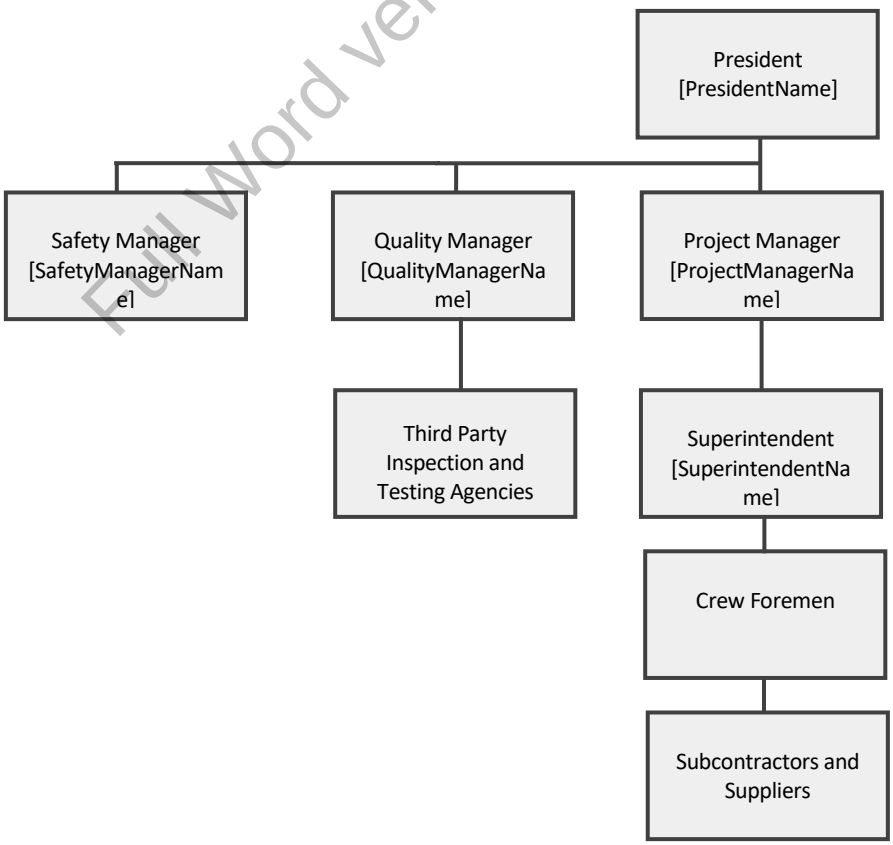
2.3. Project Personnel and Qualifications

2.3.1. Project Organization Chart

The President defines the organization chart for the project. The organizational chart includes job titles, names of assigned personnel, and organizational and administrative interfaces with the customer. The organization chart defines lines of authority as indicated by solid connection; dotted lines indicate lines of communication. The lines of authority preserve independence of quality control personnel from the pressures of production.

When a person with authority is unavailable only a person with higher authority may assume the responsibility of the unavailable person.

The President assesses the qualification requirements for each position on the project organization chart, qualifications of each person, and then appoints only qualified persons to the project organization.



2.3.2. Appointment of Key Project Personnel

The President forms a project management team consisting of:

- A Quality Manager
- A Project Manager
- A Superintendent
- A Safety Manager (if required)

The President appoints qualified persons to each project management job position with specific quality responsibilities and authorities. The President assesses the qualifications of each person before the appointment is made.

The President keeps a record of the appointment and signs the document. The person accepts the appointment by signing a declaration as a competent person.

2.3.3. Personnel Qualifications

The Quality Manager qualifies employee capabilities to ensure that they are capable of completely carrying out their assigned quality responsibilities including the following capabilities:

- Knowledge of Company quality standards

2.3.3.1. Required Licenses and Certifications

The Quality Manager defines quality-related credentials for each project job position that affects quality.

2.3.3.2. Personnel Certification Requirements

Personnel certifications are required for the following:

Personnel Category	Certification / License Title	Reference Standard No.	Reference Standard Title
Electricians	Journeyman or Master Electrician License	State / Local	State Electrical Licensing Law
Electrical Safety	NFPA 70E Qualified Electrical Worker	NFPA 70E (2024)	Standard for Electrical Safety in the Workplace
Electrical Maintenance	NFPA 70B Maintenance Qualification	NFPA 70B (2023)	Standard for Electrical Equipment Maintenance
Electrical Testing Technicians	NETA Level III or IV	NETA	International Electrical Testing Association

EVSE Installers	EVITP or Manufacturer Training	NEC 2026 (Draft)	Electric Vehicle Supply Equipment
Fire Alarm Technicians	NICET Level II or III Fire Alarm Systems	NICET	National Institute for Certification in Engineering Technologies
Telecom / Low Voltage	BICSI Installer 2 Copper and/or Fiber	ANSI/TIA-568-E	Commercial Building Telecommunications Cabling Standard
Safety	OSHA 10- or 30-Hour Construction Safety	OSHA	Occupational Safety and Health Administration

2.5. Identification of Quality Controlled Work Tasks

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

2.6. Project Quality Inspection and Test Plan

The Quality Manager prepares quality inspection and test plans for a project that identifies:

- Each required quality inspection and/or test
- Inspection and test specifications for each required quality inspection or test
- Hold points for customer quality inspection
- Specification requirements for each quality inspection and test

2.7. Project Quality Communications Plan

After [CompanyName] is awarded a contract, the Project Manager plans the methods of communications among the customer, subcontractors, and suppliers and [CompanyName].

2.8. Project Quality Training Plan

The Quality Manager ensures that all employees receive training relevant to their quality responsibilities.

The Quality Manager ensures that all subcontractors and suppliers receive training on relevant elements of the [CompanyName] Quality System, Project Quality Assurance/Quality Control Plan, and quality standards.

The Quality Manager identifies the training needs of all personnel performing activities that affect quality. Training topics may include:

- The [CompanyName] Quality System
- The [CompanyName] Quality Policy
- Quality standards cited in the Quality Manual, or project documents, or records
- Relevant quality standard operating procedures

2.10. Project Records and Documentation Plan

The Quality Manager identifies the quality records that will be maintained during the planning and execution of the project. Considerations include:

- Contract requirements for maintaining records
- The size of the project
- Types of activities
- The complexity of processes and their interactions
- The competence of personnel
- The duration of the project
- The need to demonstrate completion of work
- The need to demonstrate due diligence for quality system related activities
- Balancing the cost and benefits of maintaining the record

2.11. Project Audit Plan

The Quality Manager identifies the frequency of project quality audit that will be conducted during the project and the job position that will conduct the audits. Considerations include:

- The size of the project
- The complexity of processes and their interactions
- The duration of the project

5. PROJECT-SPECIFIC QUALITY STANDARDS

APPLICABLE REGULATIONS, INDUSTRY, and COMPANY STANDARDS

5.1. OVERVIEW

[CompanyName] personnel and subcontractors and suppliers are accountable for compliance to standards-based written specifications.

To achieve expectations reliably and consistently, specifications are clearly spelled out, not only for results but also for processes. Specifications apply to materials, work steps, qualified personnel and subcontractors and suppliers, safe work rules, and environmental work conditions.

Standards ensure that results are specified rather than left to discretionary practices.

5.2. REGULATORY CODES

All [CompanyName] construction activities comply with the relevant regulations. The Quality

Project Quality Assurance/Quality Control Plan.

The Superintendent had jobsite access to relevant codes and government regulations.

5.3. INDUSTRY QUALITY STANDARDS

All [CompanyName] construction activities comply with generally accepted good workmanship practices and industry standards.

The Quality Manager identifies supplemental requirements for industry standards that apply to a specific project on the Project Quality Assurance/Quality Control Plan when it is not otherwise specified by the contract, contract technical specifications, or approved drawings.

5.3.1. REGULATORY CODES AND INDUSTRY STANDARDS

Description	Reference Standard No.	Reference Standard Title
Splicing and general conductor installation	NFPA 70 (2023)	National Electrical Code (NEC) - Chapter 3 Wiring Methods
Mounting height of wall-mounted outlet and switch boxes	ICC/ANSI A117.1	Accessible and Usable Buildings and Facilities
Install control devices and protective devices	NFPA 70 (2023)	National Electrical Code - Chapter 4 Equipment Installation
Grounding and bonding requirements	NFPA 70 (2023)	National Electrical Code - Article 250 Grounding and Bonding
Workmanship	NECA 1	Standard Practices for Good Workmanship in Electrical Construction
Telecommunications grounding	TIA-569	Commercial Building Standard for Telecommunications Pathways and Spaces
Telecommunications pathways	TIA J-STD-607	Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
Warning sign placement	NFPA 70E (2024)	Standard for Electrical Safety in the Workplace
Lightning Protection installation	NFPA 780	Standard for the Installation of Lightning Protection Systems
Grounding of systems	IEEE 142	Recommended Practice for Grounding of Industrial and Commercial Power Systems
System electrical installation	NFPA 70 (2023)	National Electrical Code
Cables not installed in conduit or wireways	NFPA 70 (2023)	National Electrical Code
Cable tray installation	NEMA VE 2	Cable Tray Installation Guidelines
Preparation of record drawings	TIA/EIA-606	Administration Standard for the Telecommunications Infrastructure
Installation of telecommunications cabling	ANSI/TIA-568-E	Commercial Building Telecommunications Cabling Standard
Termination of UTP cables	ANSI/TIA-568-E	Commercial Building Telecommunications Cabling Standard
Telecommunication system labeling	TIA/EIA-606	Administration Standard for the Telecommunications Infrastructure
Installation of equipment support frames	TIA-569	Commercial Building Standard for Telecommunications Pathways and Spaces
Underground fiber optic cabling installation	TIA-590	Standard for Physical Location and Protection of Below Ground Fiber Optic Cable Plant
Installation of signal and control circuits	NFPA 70 (2023)	National Electrical Code
Conduit installation	NFPA 70 (2023)	National Electrical Code
Installation of fire alarm and signaling systems	NFPA 72	National Fire Alarm and Signaling Code

Location of manual fire alarm stations	NFPA 101	Life Safety Code
Modification of an existing fire alarm system	NFPA 241	Standard for Safeguarding Construction, Alteration, and Demolition Operations
Installation of control panel	UL 864	Standard for Control Units and Accessories for Fire Alarm Systems
Switchboard and panelboard installation	UL 67	Panelboards
Enclosures for electrical equipment	UL 50/50E	Enclosures for Electrical Equipment
Molded case circuit breakers	NEMA AB 1	Molded Case Circuit Breakers
Enclosed switches	NEMA KS 1	Enclosed and Miscellaneous Distribution Switches
Roadway and area lighting equipment	ANSI C136 Series	Roadway and Area Lighting Standards
Fire alarm smoke detectors	UL 268	Smoke Detectors for Fire Alarm Systems
Manual fire alarm boxes	UL 38	Manual Signaling Boxes for Fire Alarm Systems
Telecom cabling field testing	TIA-1152-A	Requirements for Field Testing of Balanced Twisted-Pair Cabling
Telecommunications cabling installation	NECA/BICSI 568	Standard for Installing Commercial Building Telecommunications Cabling
EV Charging System Installation	NEC 2026 (Draft)	Proposed Article 624 - Electric Vehicle Supply Equipment
Electrical Equipment Maintenance	NFPA 70B (2023)	Standard for Electrical Equipment Maintenance

5.4. Material and Equipment Specifications

The Quality Manager ensures that all types of materials and equipment that affect quality are identified and controlled.

The Quality Manager evaluates the expected use of materials and equipment and identifies types of materials and equipment that may affect project quality. For each item, the Quality Manager sets specifications for their intended use, including:

- Compliance with contract requirements
- Compliance with code and industry standards and listing requirements
- Structural integrity
- Performance
- Durability
- Appearance
- Product identification for traceability.

The Quality Manager identifies controlled material and equipment that apply to the project.

The Quality Manager ensures that purchase orders for listed materials and equipment include the relevant specifications as specified in section 6.7 Purchase Order Requirements.

Only approved materials are used in the construction process.

5.6. Controlled Material Identification and Traceability

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.

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.

5.7. Measuring Device Control and Calibration

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.

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.

Process tasks undergo additional quality controls that continuously monitor compliance with 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.

8.3.1.1. MATERIAL RECEIVING INSPECTION

The Superintendent inspects or ensures that a qualified inspector inspects materials prior to use for conformance to project quality requirements. The receiving inspection includes a verification that the

Correct material has been received
The material is identified and meets the traceability requirements for the material
Material certifications and/or test reports meet the specified requirements
Materials are tested and approved for the specific application

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

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.

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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.

- 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.

- 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.

8.11.1. Inspection and Testing Standards

Div.	Description	Reference Standard No.	Reference Standard Title
26	Direct-current high-potential test for conductors	IEEE 400.2	Guide for Field Testing of Shielded Power Cable Systems Using Very Low Frequency (VLF)
26	Visual/mechanical inspections and electrical tests	NETA ATS	Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems

26	Ground rod resistance to ground	IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
26	Electrical equipment maintenance and testing	NFPA 70B (2023)	Standard for Electrical Equipment Maintenance
26	Arc flash hazard analysis and PPE compliance	NFPA 70E (2024)	Standard for Electrical Safety in the Workplace
27	Telecommunications cabling inspection and testing	ANSI/TIA-568-E	Commercial Building Telecommunications Cabling Standard
27	Optical fiber attenuation tests	TIA-568-C.3	Optical Fiber Cabling Components Standard
27	Fiber optic cables power budget and bandwidth	TIA-455-78-B	FOTP-78 Optical Fibers – Attenuation
27	Telecommunications cabling field testing	TIA-1152-A	Requirements for Field Testing of Balanced Twisted-Pair Cabling
28	Ground resistance testing	IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
28	Preliminary and acceptance testing	NFPA 72	National Fire Alarm and Signaling Code
28	Carbon monoxide detector testing	UL 2034	Single and Multiple Station Carbon Monoxide Alarms
28	Smoke detector testing	UL 268	Smoke Detectors for Fire Alarm Systems
28	Manual fire alarm box testing	UL 38	Manual Signaling Boxes for Fire Alarm Systems
28	Testing of duct smoke detectors	NFPA 72	National Fire Alarm and Signaling Code
28	Combustible gas detector testing	ANSI/ISA 12.13.01	Performance Requirements for Combustible Gas Detectors
--	EV charging system commissioning	NEC 2026 (Draft)	Proposed Article 624 - Electric Vehicle Supply Equipment

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 are 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.

validation that nonconformances are corrected, reinspected or retested, and confirmed to meet Quality System requirements.

- Any open items to be completed later.
- 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.

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

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.

14. FORMS

[CompanyName]
Inspection and Test Plan and Log

Project Number	Project Name	
[PROJECTNUMBER]	[PROJECTNAME]	

Item	Spec Section Number	Spec Section Title	Applicable Standard	Inspections & Tests Description	# Of Tests /Inspections Reqd.	Time Schedule/ Frequency	Inspection/Test By (All tests verified by Superintendent and/or QC Manager)	Sample Reqd. Yes/No	Unique characteristics of QC Service
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									

[CompanyName]
Material Inspection and Receiving Report

Contract ID	Contract Name	Purchase Order No.	Supplier	Bill of Lading No.	Date
[ProjectNumber]	[ProjectName]				

Item No.	Stock/Part No.	Description	Quantity Received	Condition	Marking	Accept	Conditional Use	Reject
						☐	☐	☐
						☐	☐	☐
						☐	☐	☐
						☐	☐	☐
						☐	☐	☐
						☐	☐	☐

Receiving Quality Control

ACCEPTANCE

Listed items have been accepted by me or under my supervision

☐Conform to contract specifications EXCEPT as noted herein or on supporting documents.
☐Received in apparent good condition EXCEPT as noted

Signature of authorized person and date: _____

EXCEPTIONS:

For More Information:

Contact: First Time Quality

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