



Comprehensive USACE/NAVFAC Quality Plan & Manual Sample

Selected pages (not a complete plan)

Sample includes:

- ✓ Project-specific Quality Plan Pages
- ✓ Quality Manual Pages
- ✓ Submittal Forms Examples

Contact:

First Time Quality

410-451-8006

www.firsttimequalityplans.com

[CompanyName]

Construction Quality Control (QC) Plan

[ProjectName]

[ProjectNumber]

Version	Version notes
[Date]	Initial issue

Approved

[QCManagerName], QC Manager

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Project-specific Quality Assurance/Quality Control Plan	Section 1
[CompanyName] Quality Manual	Section 2

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PROJECT-SPECIFIC QUALITY PLAN

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The Project Quality Control Plan contents correspond with USACE / NAVFAC / AFCEA / NASA UFGS-01 45 00.00 20 (November 2011) Construction Quality Control (QC) Plan requirements.

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A. QC ORGANIZATION

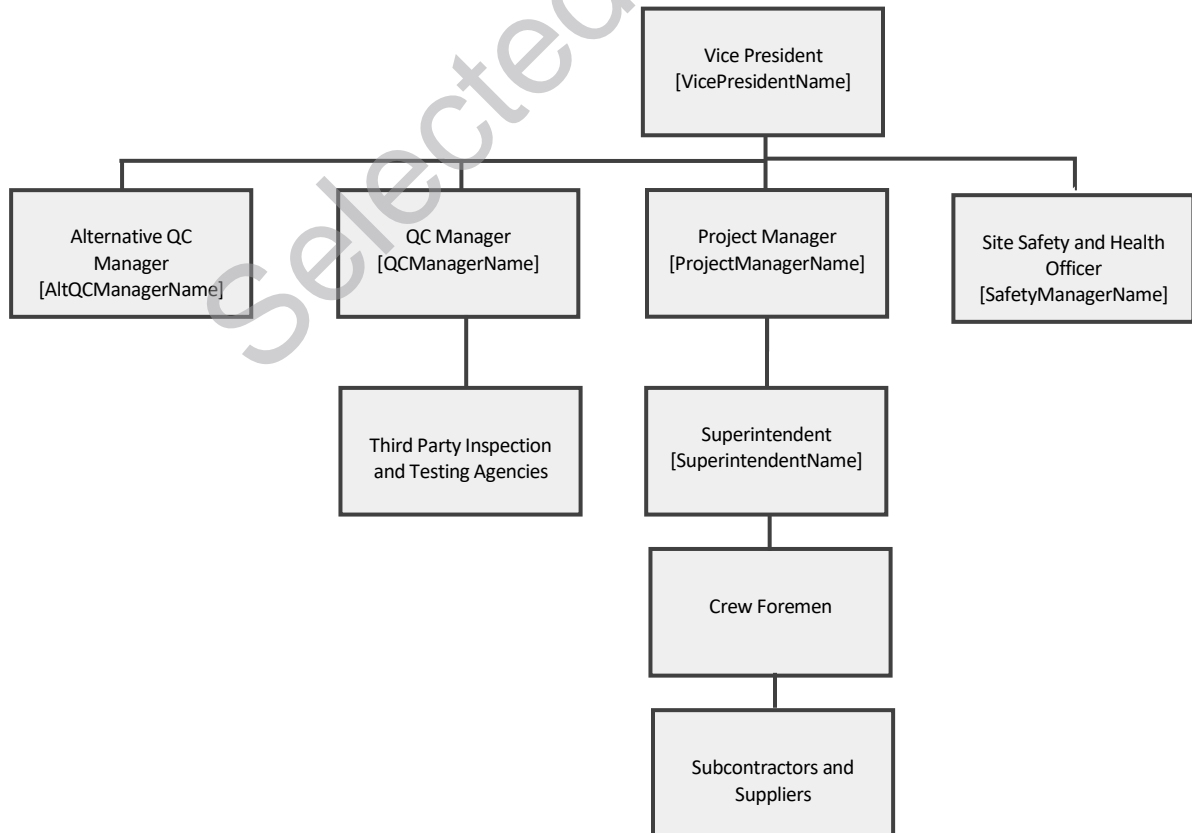
The Project QC Organization Chart shows the QC organizational structure. The chart includes job positions along with the name of each person appointed to that position. Figure A-1 shows the QC Organization Chart for this project.

The Vice 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.

The Vice 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.

Additional detail on [CompanyName] policies and procedures for the preparation of the project organization chart appear in Quality Manual section 2.3.1 Project Organization Chart.

Figure A-1



H. QUALITY TESTING PLAN AND LOG

The Quality Test Plan and Log lists the tests that will be performed on this project. The Quality Test Plan exhibit is included in this subsection.

PREPARATION OF INSPECTION AND TEST PLAN

The QC 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

Additional detail on [CompanyName] policies and procedures for the preparation of the test plan appears in Quality Manual sections 2.6 Project Quality Inspection and Test Plan and 8.2 Required Feature of Work Quality Inspections and Tests.

Selected Pages

[CompanyName] Quality Inspection and Test Plan												
Project ID			Project Name						CONTRACTOR			
[ProjectNumber]			[ProjectName]						[CompanyName]			
SPECIFICATION SECTION AND PARAGRAPH NUMBER		SCHEDULE ACTIVITY ID	TEST REQUIRED	ACCREDITED/ APPROVED LAB YES /NO		SAMPLED BY	TESTED BY	LOCATION OF TEST ON/OFF SITE/SITE		DATE COMPLETED	DATE FORWARDED TO CUSTOMER	REMARKS

I. PROCEDURES COMPLETION OF REWORK ITEMS

Should a nonconformance be identified by an inspection, a systematic method will be used to control the item, correct it, and ensure that project quality is not adversely impacted by the event.

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

NONCONFORMANCE CONTROLS

Should a nonconformance be identified by an inspection there is a systematic method to control the item, correct it, and ensure that project quality is not adversely impacted by the event.

A nonconformance is any item that does not meet project specifications or [CompanyName] Quality System requirements.

MARKING OF NONCONFORMANCES AND OBSERVATIONS

When the QC 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 feature of work completion inspection, the Superintendent or inspector records the nonconformances on a nonconformance report.

The Superintendent sends the nonconformance report to the QC Manager.

QC MANAGER DISPOSITION OF NONCONFORMANCE REPORTS

When the QC Manager receives a Nonconformance Report, he or she assesses the affect the reported nonconformance has on form, fit, and function. The QC 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 QC 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.

NONCONFORMANCE 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 QC 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 QC 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 QC Manager reviews improvement results recorded on quality inspection records and monthly field reviews. When the QC Manager determines that the improvement actions are effective, the item is no longer treated as a preventive action.

Additional detail on [CompanyName] policies and procedures for the controlling nonconformances appear in Quality Manual section 9 Nonconformances and Corrective Actions.

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.

Additional detail on [CompanyName] policies and procedures for the preventing nonconformances appear in Quality Manual section 10 Preventive Actions.

Selected Pages

[CompanyName] Nonconformance Report		
Nonconformance Report Control ID	Project ID	Project Name
	[ProjectNumber]	[ProjectName]
Preparer Signature/ Submit Date		QC 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: _____	

L. PROCEDURES FOR PERFORMING THE THREE PHASES OF CONTROL

Three phases of control and a feature of work completion inspection will be performed for each defined feature of work.

The controls and the forms that will be used to record control activities are included on table L-1.

Table L-1

Control	Form
Phase 1: Preparatory Phase	Preparatory Phase Checklist
Phase 2: Initial Phase	Initial Phase Checklist
Phase 3: Follow-up Phase	Contractor Quality Control Report
Feature of Work Completion Inspection	Feature of Work Inspection Form

Three Phases of Control and FOW Completion Inspection forms exhibits are included as an exhibit in this subsection.

PHASE 1: PREPARATORY PHASE

Phase 1 is the Preparatory Phase that plans quality for an upcoming feature of work. It includes a requirements review, site inspection, and a preparatory meeting. Records of the preparatory phase of control are recorded on the Preparatory Phase Checklist included as exhibits in this subsection.

Procedures that will be used on this project to conduct the Phase I preparatory phase of control are as follows.

PREPARATORY FEATURE OF WORK QUALITY CONTROL PLANNING

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

- Objectives and acceptance criteria of the feature of work
- Quality standards that apply to the feature of work
- Work instructions, process steps, and product installation instructions that apply to the feature of work
- 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

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 feature of work to begin
- Identifies potential problems

FEATURE OF WORK PREPARATORY QUALITY PLANNING MEETINGS

Prior to the start of a feature of work, 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 feature of work quality requirements and reinforces heightened awareness for critical requirements. Topics for a feature of work quality plan meeting include:

- Conflicts that need resolution
- Required quality documents and a verification of availability to personnel carrying out, supervising, or inspecting the feature of work
- 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
- Features of work quality inspection form

PHASE 2: INITIAL PHASE

Phase 2 is the Initial Phase occurs when crews are ready to start work to ensure work begins only when it does not adversely impact quality results. Inspections are performed before work starts and after work starts.

Records of the initial phase inspection is maintained using the Initial Phase Checklist form appearing as an exhibit in this subsection.

Procedures that will be used on this project to conduct the Phase 2 initial phase of control are as follows.

JOB-READY INSPECTION BEFORE WORK BEGINS

PREPARATORY PHASE CHECKLIST		SPEC SECTION	DATE
(CONTINUED ON SECOND PAGE)			
CONTRACT NO	DEFINABLE FEATURE OF WORK	SCHEDULE ACT NO.	INDEX #
PERSONNEL PRESENT	GOVERNMENT REP NOTIFIED _____ HOURS IN ADVANCE: YES <input type="checkbox"/> NO <input type="checkbox"/> NAME _____ POSITION _____ COMPANY/GOVERNMENT _____ _____ _____ _____ _____		
SUBMITTALS	REVIEW SUBMITTALS AND/OR SUBMITTAL REGISTER. HAVE ALL SUBMITTALS BEEN APPROVED? YES <input type="checkbox"/> NO <input type="checkbox"/> IF NO, WHAT ITEMS HAVE NOT BEEN SUBMITTED? _____ _____ ARE ALL MATERIALS ON HAND? YES <input type="checkbox"/> NO <input type="checkbox"/> IF NO, WHAT ITEMS ARE MISSING? _____ _____ CHECK APPROVED SUBMITTALS AGAINST DELIVERED MATERIAL. (THIS SHOULD BE DONE AS MATERIAL ARRIVES.) COMMENTS : _____ _____ _____		
MATERIAL STORAGE	ARE MATERIALS STORED PROPERLY? YES <input type="checkbox"/> NO <input type="checkbox"/> IF NO, WHAT ACTION IS TAKEN? _____ _____ _____ _____		
SPECIFICATIONS	REVIEW EACH PARAGRAPH OF SPECIFICATIONS. _____ _____ _____ DISCUSS PROCEDURE FOR ACCOMPLISHING THE WORK. _____ _____ CLARIFY ANY DIFFERENCES. _____ _____ _____		
PRELIMINARY WORK & PERMITS	ENSURE PRELIMINARY WORK IS CORRECT and PERMITS ARE ON FILE. IF NOT, WHAT ACTION IS TAKEN? _____ _____ _____ _____		

[CompanyName]

Construction

Corporate Quality Manual

Operating Policies of the
[CompanyName] Quality System

Version	Version notes
[Date]	Initial issue

Approval Signature and Date: _____

President/ Date

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QUALITY MANUAL

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The [CompanyName] Quality System complies with US Army Corps of Engineers Quality Control Requirements "USACE / NAVFAC / AFCEC / NASA UFGS-01 45 00.00 20 (November 2011)".

USACE Requirements Section	Quality Manual Section
1.5 QC Organization	2.3.1 Project Organization Chart
1.6 Quality Control Plan	2 Project Quality Assurance/Quality Control Plan
1.7 QC Plan Meetings	2 Project Quality Assurance/Quality Control Plan
1.8 Coordination and Mutual Understanding Meeting	7.3 Preparatory Project Quality Assurance/Quality Control Plan Planning
1.9 QC Meetings	7.4 Weekly Quality Planning and Coordination Meetings
1.10 Design Review and Documentation	3.7 Contract Review and Approval 4.2 Design Input Review
1.11 Three Phases of Control	7.3 Preparatory Project Quality Assurance/Quality Control Plan 8.4.1.2 Initial Work in process Inspection 8.4.1.3 Follow-up Work in Process Inspections
1.12 Submittal Review and Approval	3.4 Contract Submittals
1.13 Testing	6.2.1.1.1 Independent Laboratory Credential Requirements 8.14 Inspection and Test Records
1.14 QC Certifications	Daily Quality Control Report 7.6 Daily Quality Control Report 8.15 Project Completion and Closeout Inspection
1.15 Completion Inspections	8.15 Project Completion and Closeout Inspection
1.16 Training	2.9 Customer Training On Operation and Maintenance
1.17 Documentation	12 Record and Document Controls
1.18 Notification of Noncompliance	9 Nonconformances and Corrective Actions

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 QC 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 QC Manager lists, schedules, and approves all quality-related submittals that are required by the project including submittals prepared by subcontractors and suppliers. The QC Manager must review all submittals for compliance with the requirements of the [CompanyName] Quality System. The QC 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 QC 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 QC Manager specifies mock-up requirements when they are necessary to ensure customer expectations are clearly identified.

The QC 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.

Selected Pages

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, feature of work plans provide additional details of how each individual feature of work is carried out. Features of work planning meetings are used to communicate expectations of the feature of work plan to key personnel responsible for carrying out the feature of work.

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. FEATURE OF WORK REQUIREMENTS REVIEW

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

- Objectives and acceptance criteria of the feature of work
- Quality standards that apply to the feature of work
- Work instructions, process steps, and product installation instructions that apply to the feature of work
- 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 feature of work to begin
- Identifies potential problems

7.3.3. FEATURE OF WORK PREPARATORY QUALITY PLANNING MEETINGS

Prior to the start of a feature of work, 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 feature of work quality requirements and reinforces heightened awareness for critical requirements. Topics for a feature of work quality plan meeting include:

- Conflicts that need resolution
- Required quality documents and a verification of availability to personnel carrying out, supervising, or inspecting the feature of work
- 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
- Features of work 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 feature of work starts only when conditions do not adversely impact quality, comply with government regulations, contract technical specifications, industry standards, or product installation instructions.

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 QC Manager.

8.2. REQUIRED FEATURE OF WORK QUALITY INSPECTIONS AND TESTS

The QC 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 features of work.

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 feature of work multiple times in a project, in which case a series of quality inspections are required for each feature of work.

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 feature of work 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 QC 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 feature of work 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 feature of work, as work is conducted, and continues until the feature of work is complete.

8.4.1.1. INITIAL JOB-READY INSPECTIONS

For each feature of work, 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 feature of work, 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 feature of work completion inspection, the item is identified for correction. During the feature of work completion inspection each punch item correction is verified.

Any outstanding punch items remaining after the feature of work 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. FEATURE OF WORK COMPLETION INSPECTIONS

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

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

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

8.6. INSPECTION OF SPECIAL PROCESSES

The QC 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 QC 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



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