[CompanyName]

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

PROJECT-SPECIFIC CONSTRUCTION QUALITY PLAN

TABLE OF CONTENTS

B. KEY ELEMENTS OF THE CONSTRUCTION QUALITY PLAN

Key elements of the [CompanyName] Quality Assurance/Quality Control Plan include:

Quality Management and Responsibilities. [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Maintain a documented quality system consisting of a quality manual with policies and procedures.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project
- Systematically maintains quality system documents and records.

Quality Control Personnel. [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Appoint a Quality Manager, Superintendent, and Project Manager to each project, each with well-defined quality responsibilities and the authority to carry them out.
- Have well-defined quality responsibilities for every employee with specific quality responsibilities for key job positions.
- Plan project quality records and documentation that will be maintained.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project
- Enforce policies that monitor work conditions before and during work so that quality results are assured.

Project Quality Coordination and Communication. [CompanyName] tightly controls the construction process to ensure quality results. We:

- Plan quality communications through meetings, reporting requirements, and points of contact.
- Have a project startup meeting to communicate project goals and expectations.
- Conduct preparatory meetings in advance of each scheduled work task to communicate requirement details and coordinate work activities.

Quality Assurance Surveillance. [CompanyName] audits the quality system to assure it is operating effectively. We:

- Audit the operation of the quality system on each project for conformance to the Project Quality Assurance/Quality Control Plan and the [CompanyName] Quality System requirements.
- Conduct annual company-wide audits to evaluate effectiveness of the [CompanyName] Quality System and improve its operation.

Employee Qualifications. [CompanyName] ensures that only knowledgeable, capable employees carry out the planning, execution, and control of our projects. We:

- Identify employee qualification requirements, including licensing requirements, training qualifications, responsibilities, and authority for each job position.
- Train field employees on quality standards and procedures for their job position.
- Validate employee capabilities before they are assigned to carry out quality job responsibilities.

- Review ongoing employee qualifications and evaluate quality practices and performance as part of the employee performance management process.

Qualification of Subcontractors and Suppliers. [CompanyName] purchases only from subcontractors and suppliers that consistently meet [CompanyName] standards for quality. We:

- Clearly define outside organization qualification requirements including licensing requirements, compliance with specific quality standards, quality responsibilities, qualification of personnel and quality improvement processes.
- Validate capabilities to meet project quality requirements at planned production levels.
- Verify ongoing quality performance.

Project-Specific Quality Standards. [CompanyName] clearly defines standards and specifications that apply to each project. We:

- Identify all relevant regulations, codes and industry standards.
- Identify specifications for materials that meet contract as well as regulatory requirements.
- Specify quality and certification requirements for materials and equipment that affect quality.
- Identify special requirements for calibration of quality measuring devices.
- Supplement the contract and published standards with [CompanyName] quality standards as required to reduce quality risks and assure quality results.

Inspections and Test Plan. [CompanyName] quality inspection processes ensure that all work activities comply with the documented standards and specifications. We:

- Identify inspections and tests required by contract specifications and industry standards.
- Record the result of each quality inspection and test.
- Use independent laboratories certified by nationally recognized accreditation agencies

Work Task Quality Inspections. [CompanyName] quality inspection processes ensure that all work activities comply with the documented standards and specifications. We:

- Identify required quality inspections and tests at key milestones during the project.
- Identify each work task that is subject to a series of quality inspections and quality control activities
- Conduct a series of quality inspections for each construction task: before work begins, at first article completion, while work is in process, and at completion.
- Inspect all materials before use.
- Record the result of each work task inspection.

Quality Control of Corrections and Nonconformances. [CompanyName] nonconformance control processes ensure that we prevent all nonconformances from cover-up, inadvertent use, and corrected. We:

- Mark the item to clearly identify it for correction.
- Make corrections in a timely manner and validate their effectiveness.
- Require customer approval before accepting any nonconforming items.
- Identify nonconformance items for future prevention.
- Address nonconformance causes systematically by updating standards and specifications; improving process and employee capabilities; setting new requirements for outside organizations; and enhancing the effectiveness of field and third-party quality inspections.
- Validate actions taken to prevent nonconformances and their effectiveness.

Project Completion Inspections. [CompanyName] conducts a series of inspection near the completion of major milestones and end of the project to assure that the contracted work is completed to specifications. We:

- Perform a rigorous inspection by senior managers independent of production.
- Correct any deviations and reinspect prior to submittal to the customer for final review.
- Participate in the customer's final inspection quickly address any issues found.

G. CONSTRUCTION PROJECT QUALITY SPECIFICATIONS

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.

[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.

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

COMPLIANCE WITH INDUSTRY CONSTRUCTION STANDARDS

Codes that may apply to this project include those listed below.

Description	Reference Standard No.	Reference Standard Title
Install high-strength bolts		RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts"
Finish formed surface tolerances	ACI 117	Specifications for Tolerances for Concrete Construction and Materials and Commentary
Hot weather requirements	ACI 305R	Specification for Hot Weather Concreting
Prevention of plastic shrinkage cracking	ACI 305R	Specification for Hot Weather Concreting
Reinforcement fabrication shapes and dimensions	ACI 318M	Building Code Requirements for Structural Concrete and Commentary
Reinforcement Placement	ACI 318M	Building Code Requirements for Structural Concrete and Commentary
Reinforcement Splices	ACI 318M	Building Code Requirements for Structural Concrete and Commentary
Drilled shaft foundation installation	ACI 336.1	Specification for the Construction of Drilled Piers
Construction and placement of forms, shoring and scaffolding	ACI MCP-2	Manual of Concrete Practice Part 2
Installation details of stressing tendons and accessories.	ACI SP-66 and ACI 318M ACI 318	ACI Detailing Manual and Building Code Requirements for Structural Concrete and Commentary
Minimum spacings and edge distances for screws	AISI SG02-KIT	North American Specification for the Design of Cold-Formed Steel Structural Members

Fiber Reinforcement mixing	ASTM C 1116/C 1116M	Standard Specification for Fiber-Reinforced Concrete
Cold weather requirements	ASTM C 494/C 494M	Standard Specification for Chemical Admixtures for Concrete
Geotextile storing and handling	ASTM D 4873	Identification, Storage, and Handling of Geosynthetic Rolls and Samples
Definitions of welding terms	AWS A3.0M/A3.0	Standard Welding Terms and Definitions
Welding standards	AWS B2.1/B2.1M	Specification for Welding Procedure and Performance Qualification
Workmanship and techniques for welded construction	AWS D1.1/D1.1M	Structural Welding Code – Steel
Welding lengths of pipe together for bore holes	AWS D1.1/D1.1M	Structural Welding Code - Steel
Reinforcement Splice Welds	AWS D1.4 D1.4M	Structural Welding Code - Reinforcing Steel
Bedding for buried piping	AWWA C600	Installation of Ductile-Iron Water Mains and Their Appurtenances
Installation of bracing and permanent bracing and bridging	CFSEI	Field Installation Guide for Cold-Formed Steel Roof Trusses
Shoring installation	EM 385-1-1	Safety and Health Requirements Manual
Mounting height of wall-mounted outlet and switch boxes	ICC/ANSI A117.1	Accessible and Usable Buildings and Facilities
Installation of chimneys, vents, and smokestacks	NFPA 211	Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances
Splicing and general conductor installation	NFPA 70	National Electrical Code
Install Control devices and protective devices	NFPA 70	National Electrical Code
Grounding and bonding	NFPA 70	National Electrical Code
Workmanship	NFPA 70	National Electrical Code
Warning Sign placement	NFPA 70E	Standard for Electrical Safety in the Workplace
Lightning Protection installation	NFPA 780	Standard for the Installation of Lightning Protection Systems
Precast prestressed concrete pile installation	PCI JR-382	Recommended Practice for Design, Manufacture and Installation of Prestressed Concrete Piling
Placement of concrete on a metal deck	SDI 31	Design Manual for Composite Decks, Form Decks, and Roof Decks
Framing and reinforcing openings through a steel deck	SDI DDP	Deck Damage and Penetrations
Telecommunications pathways	TIA J-STD-607	Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
Telecommunications grounding	TIA-569	Commercial Building Standard for Telecommunications Pathways and Spaces

H. CONSTRUCTION INSPECTION AND TEST PLAN

[CompanyName] identifies inspections and tests that will be performed during the project. A test report is completed for each test. The test reports are then used for monitoring compliance to the plan and tracking results.

If independent laboratories are required to perform tests or quality inspections, we ensure that the laboratories are certified by a nationally recognized testing accreditation organization as appropriate for the scope of the inspection or test.

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 CONSTRUCTION STANDARDS

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

Description	Reference Standard No.	Reference Standard Title
Ultrasonic weld inspecting techniques	ASNT SNT-TC-1A Q&A Bk C	Ultrasonic Testing Method
temperature of concrete at time of placement	ASTM C 1064/C 1064M	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
Vacuum Testing	ASTM C 1244/ASTM C 1244M	Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill
Make concrete slump test specimen	ASTM C 143 C 143M	Standard Test Method for Slump of Hydraulic-Cement Concrete
Test air content for air-entrained concrete	ASTM C 231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
Concrete strength specimens	ASTM C 31/C 31M	Standard Practice for Making and Curing Concrete Test Specimens in the Field
Grout consistency for pressure grouting operations	ASTM C 939	Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)
Load tests of driven piles	ASTM D 1143/D 1143M	Piles Under Static Axial Compressive Load
Field in-place density of soil	ASTM D 1556	Density and Unit Weight of Soil in Place by the Sand-Cone Method
Subgrade compaction	ASTM D 1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
Bearing capacities of soils	ASTM D 1586	Penetration Test and Split-Barrel Sampling of Soils
Field in-place density of soil	ASTM D 2167	Density and Unit Weight of Soil in Place by the Rubber Balloon Method
Pile lateral load tests for steel H-piles	ASTM D 3966	Standard Test Methods for Deep Foundations Under Lateral Load

Field in-place density of soil	ASTM D 6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
Ultrasonic Inspection	ASTM E 164	Standard Practice for Contact Ultrasonic Testing of Weldments
Liquid Penetrant Inspection	ASTM E 165	Standard Practice for Liquid Penetrant Examination for General Industry
Magnetic Particle Inspection	ASTM E 709	Standard Guide for Magnetic Particle Testing
Radiographic Inspection	ASTM E 94.D	Standard Guide for Radiographic Examination
Test frequency for ferrous materials	AWS D1.1/D1.1M	Structural Welding Code – Steel
Visual inspection of welds	AWS D1.1/D1.1M	Structural Welding Code – Steel
Direct-current high-potential test for conductors	IEEE 400.2	Guide for Field Testing of Shielded Power Cable Systems Using Very Low Frequency (VLF)
Ground rod resistance to ground	IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
Visual and mechanical inspections and electrical tests	NETA ATS	Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
Rock and soil anchor performance testing	PTI DC35.1	Recommendations for Prestressed Rock and Soil Anchors

CONTROL OF INSPECTION, MEASURING, AND TEST EQUIPMENT

Inspection, measuring, and test equipment that will be controlled, calibrated, and maintained.

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.

[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.									
15.									

I. CONSTRUCTION WORK TASK QUALITY INSPECTIONS

[CompanyName] identifies a list of work tasks, phases of production, which will be quality controlled.

WORK TASKS SERIES OF INSPECTIONS

Each work Task is subject to a series of inspections; before, during, and after the work is complete. Each inspection verifies compliance with full scope of the relevant specifications; not limited to checkpoints for heightened awareness.

- The initial task-ready inspection occurs when crews are ready to start work and ensures that work begins only when it does not adversely impact quality results.
- Incoming material inspections verify that materials are as specified and meet all requirements necessary to assure quality results.
- Work-in-process inspections continuously verify that work conforms to project specifications and workmanship expectations. Work continues only when it does not adversely impact quality results.
- At completion of the Task an inspection verifies that work, materials, and tests have been completed in accordance with project quality requirements. When appropriate, functional tests are performed.

Inspection results are recoded and maintained as part of the project files.

SPECIAL PROCESS INSPECTIONS

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.

MATERIAL QUALITY INSPECTION 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.

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

[CompanyName]
Quality Controlled Work Task List

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

Project Work Tasks / Contract Section	Quality Controlled work task	Method for identification of Approved Inspection Status

[CompanyName]
Daily Production Report

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

* On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

	Description
Job-ready and WIP Inspections (Active work tasks)	
Work Tasks Completion Inspections	
Sampling/Tests Performed	
Nonconformance Reports	
Problems encountered, actions taken, problems, and delays	
On Site Subcontractors and Suppliers, Company Crews, and Visitors	
Meetings held and decisions made	
General Remarks and improvement ideas	
Weather conditions	Temperature: Low: _____ F High:_____F Precipitation: ❑ No ❑ Yes, type and amount: _____

[CompanyName]
Work Task Inspection Form

Work Task :		
Project: Id# [ProjectNumber]	Project Name: [ProjectName]	Subcontractor and Supplier Company ID/Name:
Location/Area:	Reference drawing version #:	Crew ID/Name

Compliance Verification	**Heightened Awareness Checkpoints**
☐ Compliance with initial job-ready requirements ☐ Compliance with material inspection and tests ☐ Compliance with work in process first article inspection requirements ☐ Compliance with work in process inspection requirements ☐ Compliance with work task completion inspection requirements ☐ Compliance with inspection and test plan	☐ [Insert items identified at project startup and preparatory meetings] ☐ ☐ ☐ ☐

Production Notes:	
Reported Nonconformances:	
Verification of Work Task Completion (sign and date)	
Subcontractor and Supplier Sign and date*: Work task verified complete to specifications (sign and date)	
Project Superintendent Sign and date*: Work task verified complete to specifications (sign and date)	
Project Superintendent score subcontractor/crew performance and feedback notes	**Quality:** 5 4 3 2 1 **Safety:** 5 4 3 2 1 **Delivery:** 5 4 3 2 1
Quality Manager Sign and date*: Work task verified complete to specifications (sign and date)	
Quality Manager score quality performance and feedback notes	**Quality: 5 4 3 2 1**

* On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

J. Quality Control of Corrections, Repairs, 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.

[CompanyName] Nonconformance Report		
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	☐Replace ☐ Repair ☐ Rework ☐ Use As-is Approval of disposition required by customer representative? Yes ☐ No ☐ Customer approval signature /date:_____	
Corrective Actions	☐Corrective actions completed Name/Date:_____ Customer acceptance of corrective actions required? Yes ☐ No ☐ Name/Date:_____	
Preventive Actions	☐Preventive actions completed Name/Date:_____	

L. QUALITY ASSURANCE SURVEILLANCE

We manage overall project performance by setting performance objectives, measuring actual performance, and managing performance improvements. Overall performance objectives will be designed to extend our customer's performance work objectives into [CompanyName] operations. Each objective will have specific and verifiable measures.

We expect to measure performance in the following areas:

- Customer satisfaction through customer feedback, surveys, complaints, and quality assurance surveillance reports.
- On-time task completion as measured by a monthly on-time performance assessment
- Contract administration compliance as measured by a monthly project contract administration assessment
- Safety Plan compliance as measured by safety violations and a monthly safety assessment
- Quality Plan conformance as measured by a monthly Quality Plan assessment

Every month, [CompanyName] holds a performance improvement meeting with the participation of key project and customer personnel. They review past performance, project quality risks, and quality issues. An action plan is set for improvement and progress is reviewed at the next meeting.

[CompanyName]
Project Quality System Audit Form

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

Review Topics:
(Place check mark next to each item audited)

- ❑ Customer satisfaction
- ❑ On-time task completion
- ❑ Contract administration
- ❑ Safety compliance
- ❑ Quality risk planning and mitigation
- ❑ Performance improvement results
- ❑ Action plan for improvements

Quality Plan Conformance:

- ❑ Project QC Personnel
- ❑ Project Quality Coordination and Communication
- ❑ Employee Qualifications
- ❑ Qualification of subcontractors and suppliers
- ❑ Project Quality Specifications
- ❑ Testing Plan
- ❑ Test Reports
- ❑ Work Task Quality Inspections
- ❑ Daily Quality Control Report
- ❑ Control of Punch Items and Nonconformances
- ❑ Project Records and Documents

Nonconformance Notes and observations

Action plan for improvement

Follow-up results and date