

California High-Speed Rail Project




Design-Build Contract for Construction Package 2-3

Agreement No. HSR13-57



A joint venture

1	04/08/2016	20160408_SUB 00046_Rev 003_PCM Submittal Response_SONO	A. Hindiyeh A. Gimenez	L. Neal	C. Mathes	B. Grabinski		
Rev	Date	Description	By	Checked	Approved	Approved		
Prepared By: 								STATUS ACC
CONSTRUCTION QUALITY MANAGEMENT PLAN PART 1 OF 2								
Particular document code	CP	Construction Segment No.	Depart.	Doc type	Discipline	Identification number	Rev.	Segment of CQMP
CQMP	2-3	0	Q	PR	QA	0 000 024	1	1 of 2



California High-Speed Rail Project
Design-Build Contract for Construction Package 2-3

CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

CONSTRUCTION QUALITY MANAGEMENT PLAN (CQMP) *PART 1 of 2*



California High-Speed Rail Project
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CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

REVISION CONTROL


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CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

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1 INTRODUCTION

Dragados-Flatiron Joint Venture (DFJV) Executive Committee is committed to delivering a quality project. They have assigned a highly qualified staff to lead the Quality Management Team (QMT) to implement the required activities of the Quality Control (QC), Quality Assurance (QA) and Verification, Validation and Self-Certification (VVSC) programs. The QMT will work closely with the Authority's Representative, the Project Construction Management (PCM) team and third parties to establish a quality culture at all levels within the Project Team.

2 PURPOSE

The Construction Quality Management Plan (CQMP) ensures compliance of the contract documents, applicable regulatory requirements and industry standards in construction and acceptance phases.

Figure 1 provides a graphic description of the Construction Quality Management process.

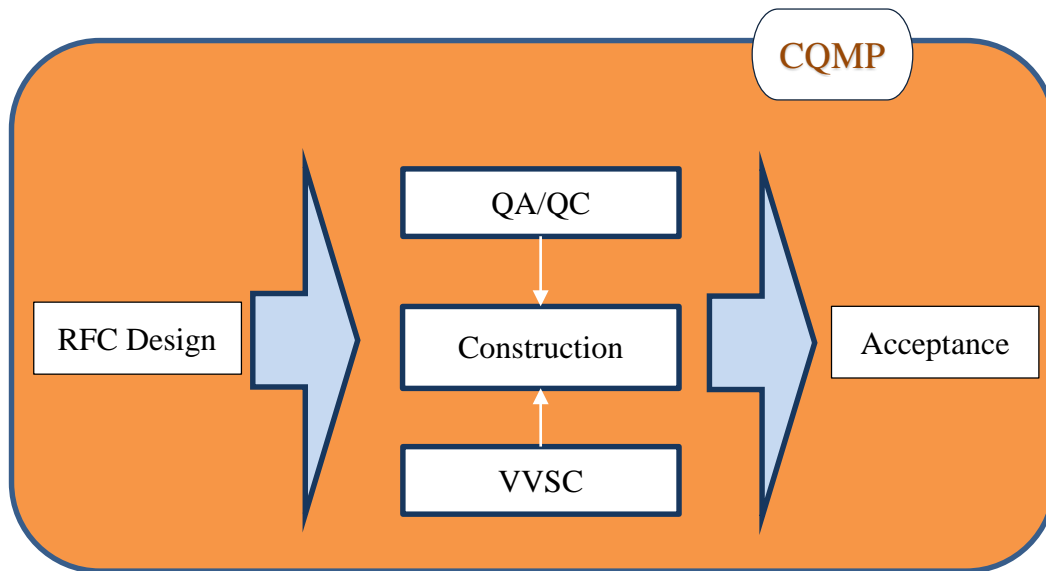


Figure 1 Construction Quality Management Process

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3 SCOPE

The CQMP applies to the entire construction team including subcontractors of the Design-Build contract for the construction Package 2-3, Agreement No. HSR 13-57.

CQMP is part of the Quality Management Manual (QMM) and contains QC/QA organizational structure, responsibilities, procedures, processes, and resources necessary to deliver a product, service, or result with specified features and/or functions of this Project.

CQMP is part of the Quality System to ensure that the construction and testing processes are developed and implemented with compliance of the Authority's Technical Contract Requirements in the construction, testing and acceptance phases of the Project.

The General Procedures included in the QMM related specifically to the construction phase are:

GP 2.03	GP Construction Quality Management Plan
GP 2.04	Construction Work Plan / Site-specific Construction Work Plan (CWP/SSCWP)
GP 2.05	Monitoring, Inspection and Testing Work on Sites
GP 2.06	Project Sections Acceptance
GP 2.07	Project Handover

Figure 2 provides a table hierarchy of the QMM and the related plans.

CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

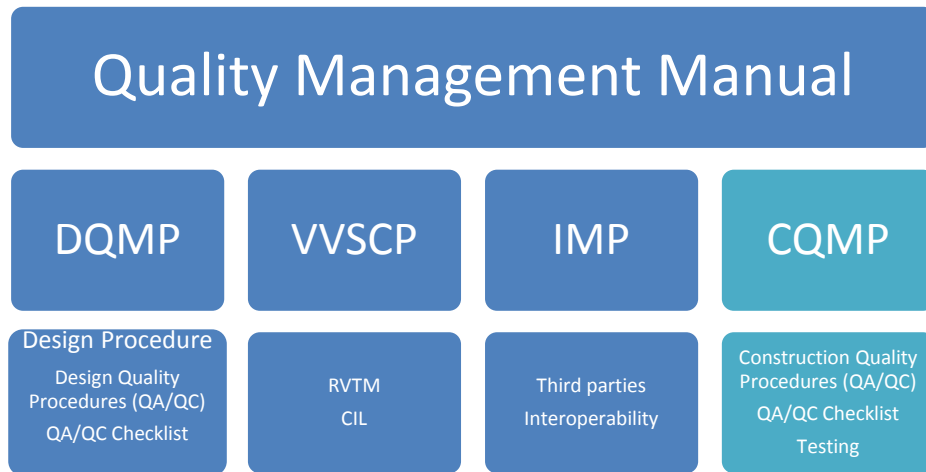


Figure 2 CQMP relationship to other Plans

The CQMP provides the basis for cultivating a quality culture among the entire construction, supervision, and acceptance staff.

CQMP provides the framework to the QMT to implement and manage the overall quality (QA, QC, & VVSC) program. This is a performance based program. Various key performance indicators data will be collected to monitor and report on the quality program performance. Lessons learned will be identified and utilized to support a continuous improvement to the program.

Targeted training sessions early throughout the project along with on the job coaching will ensure that all construction, Quality Control, Quality Assurance, and VVSC staff understands their roles and responsibilities for completing each element of the work in compliance with the project requirements.

This CQMP will include:

Part 1:

- Construction Quality Responsibilities
- Construction Process
- Quality Control and Quality Assurance Processes
- Appendices



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CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

- A.1 Construction Quality Procedures (CQP)
- A.2 CQA Forms

Part 2:

- Appendix B.1 Construction Activities
 - Construction Activities List
 - CQC Forms (Inspection Forms)
- Appendix B.2 Construction Materials – Testing Program
 - Construction Materials List
 - Testing Program
 - Third Party Inspection Plan
- Appendix C Construction Work Plan (CWP) Form / Site Specific Construction Work Plan (SSCWP)

The CQMP has been developed in two parts:

- First part contains Quality Management Process during construction phase, Construction Quality Procedures and CQA Forms.
- The second part contains Inspection and Testing Plans and CWP Form which will be developed according the progress of the Design Phase.
- Sections of Part 2 (Appendices B) will be submitted as many times as needed to update its content to match the actual schedule of construction activities and their relations to the Quality Milestones.

The following definitions are used in this CQMP:

- **Construction Activity** is a task which is separate and distinct from other tasks and has separate control requirements and a distinct construction method. Usually it appears as a line in the schedule.
- **Construction Materials List** is a list of permanent materials which have separate control requirements, specifications and characteristics. The materials included on the List will be controlled through the QC/QA processes.



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The Construction Activities List and the Construction Materials List will be developed at the end of the 60% Design phase.

CQC Forms (Inspection Forms) and Testing Program will be developed at the end of the 90% Design phase.

Inspection and Testing Plans could be different for the same Construction Activity or Construction Material depending on the jurisdiction's requirement that needs to comply with HSR, or third parties including Caltrans, Counties, Cities, BNSF, PG&E, etc.

When a Third Party has developed standardized inspection and testing plans, they will be implemented in that jurisdiction work site and will be added in the Appendix B of the CQMP.

Therefore Appendix B.1 and Appendix B.2 are living documents that will be updated and approved to match the progress of its related work as follows:

Appendix B.1 Construction Activities

- Construction Activities List: Develop at the end of the **60% Design Phase**
- CQC Forms (Inspection Forms): Develop at the end of the **90% Design Phase**

Appendix B.2 Construction Materials – Testing Program

- Construction Materials List: Develop at the end of the **60% Design Phase**
- Testing Program: Develop at the end of the **90% Design Phase**
- Third party Testing and Inspection Plan: Develop at the end of the **90% Design Phase**



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

4 CONSTRUCTION QUALITY RESPONSIBILITY

DFJV has the primary responsibility to perform the construction quality and self-certification processes and will ensure the work approach and methods are clearly described in the Construction Work Plans and in compliance with the contract requirement.

Responsibilities are discussed in detail in the Quality Management (QM) document in the Quality Management Manual (QMM).

The Construction Quality Team (CQT) is made up from three independent functional groups and all independently reporting to the Quality Manager who in turn reports to the DFJV Executive Committee.

These functional groups are:

- 1) Construction Quality Assurance Team (CQAT) headed by Construction Quality Assurance Manager (CQAM) will have a staff that includes Auditors, Inspectors, Testers and Laboratory performing only Quality Assurance Testing and Auditing.
- 2) Construction Quality Control Team (CQCT) headed by Construction Quality Control Manager (CQCM) will have a staff that includes Materials Engineer, Inspectors, Testers and Laboratory performing only Quality Control Testing.
- 3) Verification, Validation and Self-Certification Team (VVSC) headed by VVSC Manager will have a staff that include Systems Analysts and Reviewers to perform the self-certification process.

The Construction Quality Team (CQT) including the CQAT, CQCT and VVSC personnel are independent of production and construction teams.

The list of position responsibilities for the CQT are:

Quality Manager

Report to the Executive Committee and responsible for the development and implementation of the Quality Management System.



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Quality Assurance Manager

Report to the Quality Manager and responsible along the construction phase for coordination of Segment Construction Quality Assurance Managers and covering their responsibilities.

Segment Construction Quality Assurance Managers

Report to the Quality Assurance Manager and responsible for:

- Development, participation in the implementation and monitoring of the CQMP.
- Preparing and coordinating the preparation of Quality Assurance Procedures and other documents for the Quality System according requirements of the contract, keeping them appropriately updated.
- Assessment to Construction Quality Control Managers to implement Quality Plans and Quality Procedures, including resources needed.
- Supervising all the resources to implement the quality processes and procedures including staff, accredited laboratories and inspectors, audits and the nonconformance registry.
- Advising DFJV staff in quality aspects.
- Updating quality assurance files as required.
- Providing quality training as required.
- Supervising equipment and staff assigned to Quality Control are capable of performing their tasks and document them.
- Working with and assisting the staff in charge of the purchasing process in quality aspects according the QS.
- Performing internal audits and their registry as well as fill in all QA Checklists.
- Working with and assisting external auditors to perform their audits.
- Analyzing corrective and preventive actions and, in general, identifying and recording any incidents related to the QMS.
- Preparing monthly reports with all data and records required.- Preparing the six month reports on all incidents, nonconformities, the degree of compliance with objectives and other



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matters of interest related to the application of the QMS, for review with the Quality Manager.

- Coordinate and provide information and records required to the PCM and to the Verification, Validation and Self-Certification Team.
- Supervising the design criteria and construction procedures according the requirements of the contract.
- Supervising the maintenance of the quality software and supervising any upgrades.
- Fill in all QA Checklists.
- Initiate Stop Work Orders and Non-conformances Reports.

QA Inspectors / Auditors

Report to the Construction Quality Assurance Manager and responsible for:

- Audit the approval process of incoming materials by confirming specifications; conducting visual and measurement tests; rejecting and returning unacceptable materials.
- Audit the approval process in-process production by confirming specifications; conducting visual and measurement tests; communicating required adjustments to Construction responsible.
- Audit the approval process of finished products by confirming specifications; conducting visual and measurement tests; returning products for re-work; confirming re-work.
- Documents inspection and audits results by completing reports and logs; summarizing re-work and waste; inputting data into quality database.
- Accomplishes quality and organization mission by completing related results as needed.

QA and QC Laboratory Manager

Report to the Construction QA Manager or Construction QC Manager and responsible for:

- Supervise, mentor, train and monitor Materials Testing Technicians and laboratory workers.
- Schedules and monitors daily testing schedule. Reviews test results and distribute results.
- Communicate with management, field staff and client regarding laboratory testing services.



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- Prepares laboratory testing reports and report test results to applicable CQA/CQC Managers via appropriate test reports including maintaining test result charts.
- Maintain laboratory in organized manner.
- Manage day to day operations of concrete batch plant and materials testing laboratory.
- Maintain communication with co-workers and supervisors.

QA and QC Testers

Report to the QA Laboratory Manager or QC Laboratory Manager and responsible for:

- Collects samples of soils and construction materials in the field to measure physical characteristics; may be required to collect and test environmental media and measure environmental characteristics.
- Performs a variety of tests on construction materials including soils, reinforcing steel, sand, aggregates, concrete, asphalt and other mixes, cement-treated bases, and other materials, using sophisticated materials-testing equipment.
- Operates nuclear and electronic instruments to determine relative compaction of soils; calibrates and adjusts instruments to compensate for changing conditions.
- Inspects facilities where materials are used and stored to ensure compliance with Federal, State, and local regulations and ordinances.
- Inspects the operations of asphalt and concrete batch plants; checks equipment, weights, temperatures and materials for compliance with specifications; tests and calculates aggregate grading for field mix design.
- Records and reports test results after performing mathematical calculations, making graphical solutions and graphical representations.
- Communicates orally and in writing with supervisor and staff members.
- Process operational and inspection reports and to perform computer file management when storing and retrieving information related to documentation of inspections, sampling and testing activities and results.



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QA and QC Document Control

Report to the QA Manager or Construction QC Manager and responsible for:

- Process operational and inspection reports and to perform computer file management when storing and retrieving information related to documentation of inspections, sampling and testing activities and results.

Construction Quality Control Manager

Report to the Quality Manager and responsible for coordination of Segment Construction Quality Control Managers.

Segment Construction Quality Control Managers

Report to the Construction Quality Control Manager and responsible for:

- Development, implementation and monitoring CWP/CWPSS, Test and Inspection Checklists, Construction Quality Plans and Construction Quality Procedures.
- Advising Construction staff in quality aspects.
- Updating any quality control files as required.
- Providing quality training as required.
- Performing self-assessment internal audits.
- Working with internal auditors to perform their audits.
- Participating in analyze corrective and preventive actions and, in general, identifying and recording any incidents related to the Quality Plans and Quality Procedures.
- Supervising and controlling the Construction Procedures according RFC documents.
- Maintaining the quality software and supervising any upgrades.
- Preparing monthly reports with all data and records required.
- Organize all the resources to implement the quality processes and procedures including staff, accredited laboratories and inspectors.



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- Performing measurements, testing, and inspecting processes as well as design and construction elements to assure that it meets specification.
- Perform and organize and keep all records from measurements, testing, and inspecting.
- Fill in all QC Checklists.
- Initiate Stop Work Orders and Non-conformances Reports.

Materials Engineer

Report to the Construction Quality Control Manager and responsible for:

Conduct or supervise tests and inspections on raw materials or finished products in order to ensure their quality.

Analyze product failure data and laboratory test results in order to determine causes of problems and develop solutions.

Design and direct the testing and/or control of processing procedures.

Determine appropriate methods for fabricating and joining construction materials.

Evaluate technical specifications and economic factors relating to process or product design objectives.

Monitor material performance and evaluate material durability.

Verification, Validation and Self Certification Manager

Report to the Quality Manager responsible for:

- Participating in the development, implementation and monitoring of the Verification, Validation and Self Certification. It would include the Requirements Management Tool, Requirements Verification Traceability Matrix, and Certifiable Items List.
- Performing Verification, Validation and Self Certification, during design and construction processes. Also include Verification and Validations Reports.
- Participating in the development, implementation and monitoring of the Interface Management.



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- Organize all the resources to implement the Verification, Validation and Self Certification.

Authority, RDP, PCM, Caltrans, and third parties are continually integrated into the overall construction process according to their responsibilities in this Project.

The following organization charts show the relationship between the Authority and DFJV including internal relationship between Quality, Design, and Construction teams.

Figure 3 Organization Charts show the key positions of the Authority, PCM, DFJV's Construction and Quality teams.

For Quality issues the Quality Manager deals directly with the PCM

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CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

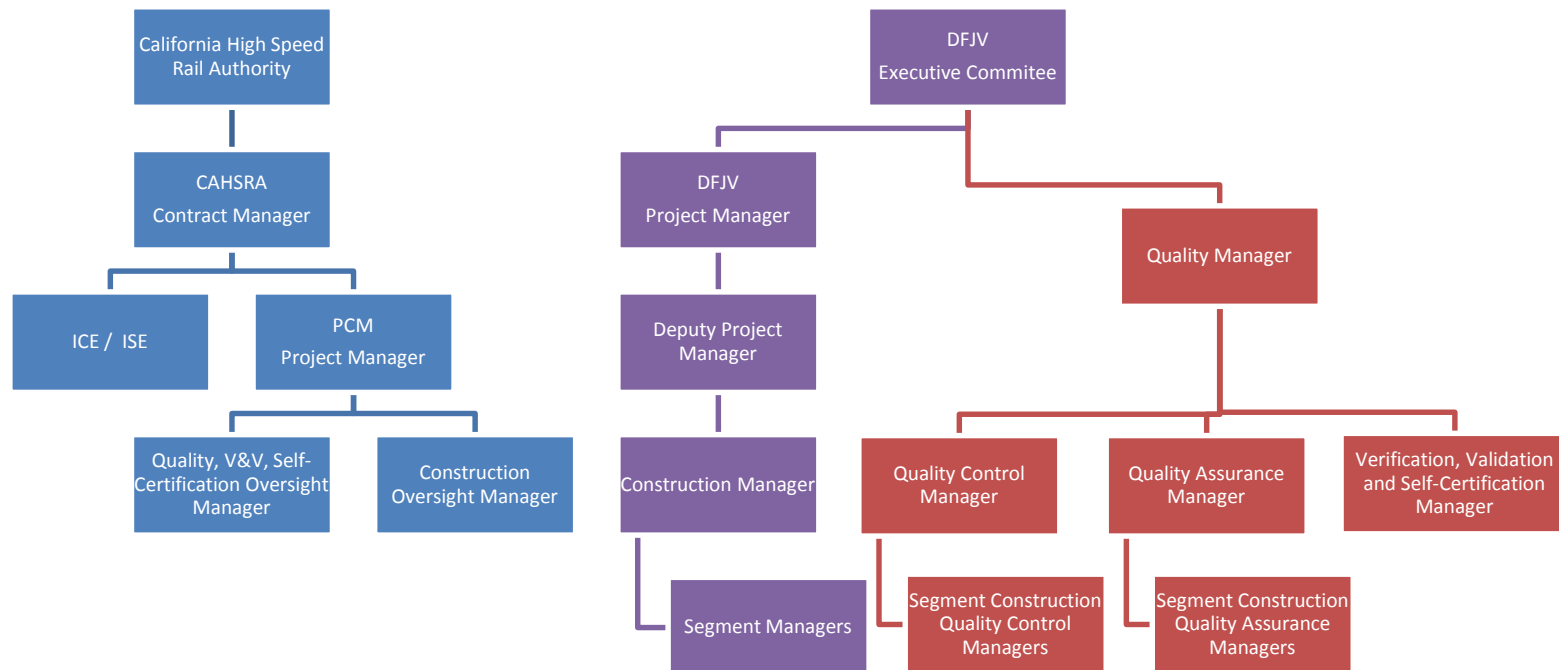


Figure 3 Key positions PCM-Production-Quality Management for Construction Phase



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Figure 4 Organization Chart shows clearly the reporting independency of the Quality Management Team (QMT) led by the Quality Manager reporting directly to the Executive Committee from the Design Team led by the Design Manager and the Construction Team led by the Construction Manager both reporting to the Project Manager during the design and construction phases of the project. It also shows the reporting independency of the three functional teams reporting to the Quality Manager during the design and construction phases of the project. These functional teams are: Quality Assurance Team (QAT) led by Quality Assurance Manager, the Quality Control Team (QCT) led by the Quality Control Manager, and the Verification, Validation and Self-Certification (VVSC) Team led by VVSC Manager for both design and construction phases activities.

CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

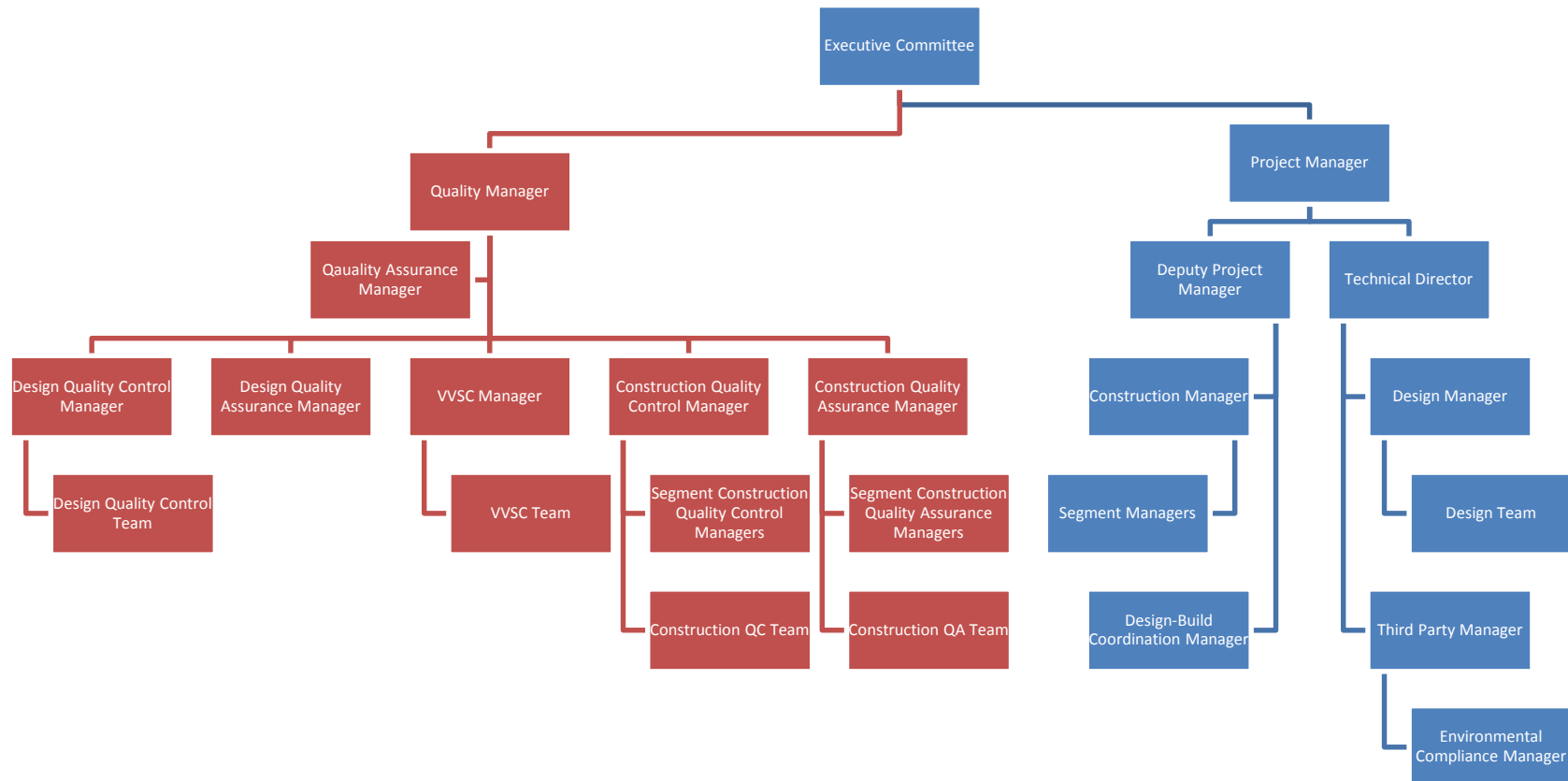


Figure 4 Quality Management and Project Management OC

CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

Figure 5 Organization Chart shows the composition of the Construction Quality Control Team (CQCT) lead by the Quality Control Manager and reporting to the Quality Manager.

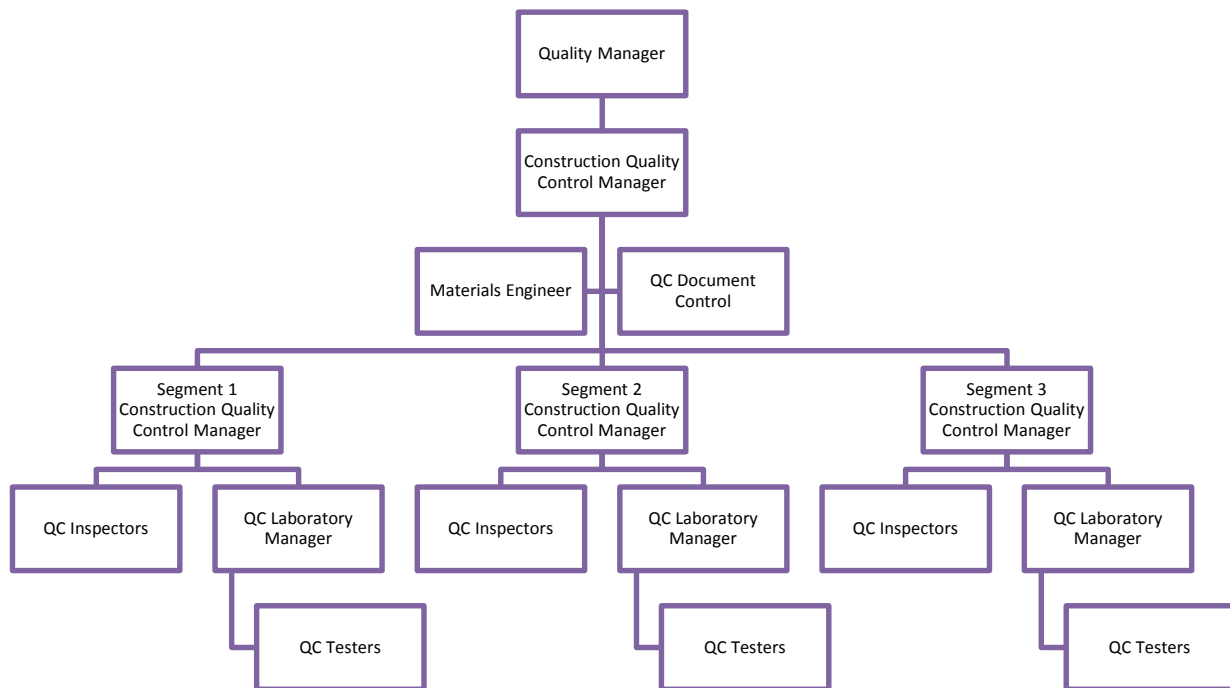


Figure 5 Quality Control Team OC for Construction Phase

CONSTRUCTION QUALITY MANAGEMENT PLAN *(Part 1 of 2)*

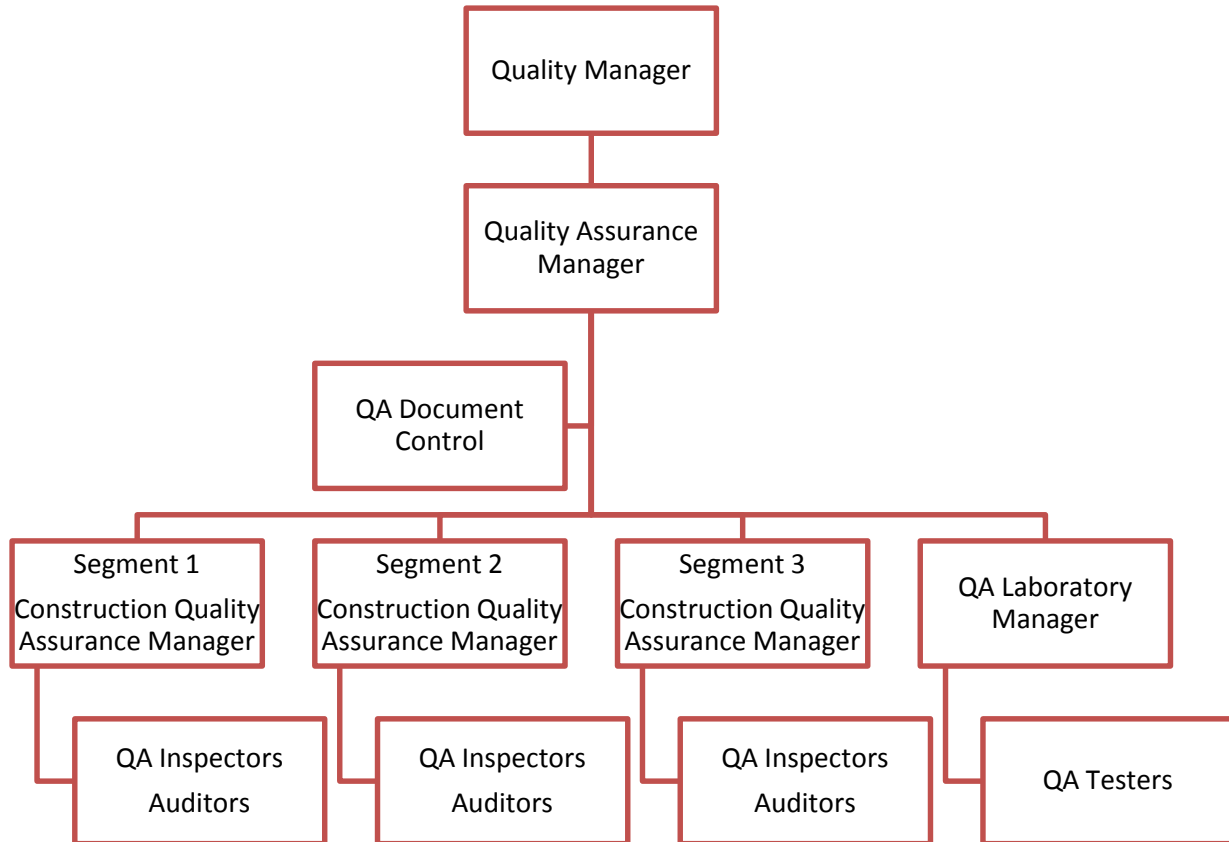


Figure 6 Quality Assurance Team OC for Construction Phase

Figure 6 Organization Chart shows the composition of the Construction Quality Assurance Team (CQAT) lead by the Quality Assurance Manager and reporting to the Quality Manager.



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

5 CONSTRUCTION QUALITY PROCESS

Figure 7, Construction Quality Process has five phases during construction stage:

- Materials
- Work Plan
- Construction
- Partial Acceptance
- Final Acceptance

Approved design allows the release of the “Ready for Construction” documents which allows construction phases to commence starting with Materials, Construction Work Plan, Construction and Acceptance phases.

CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

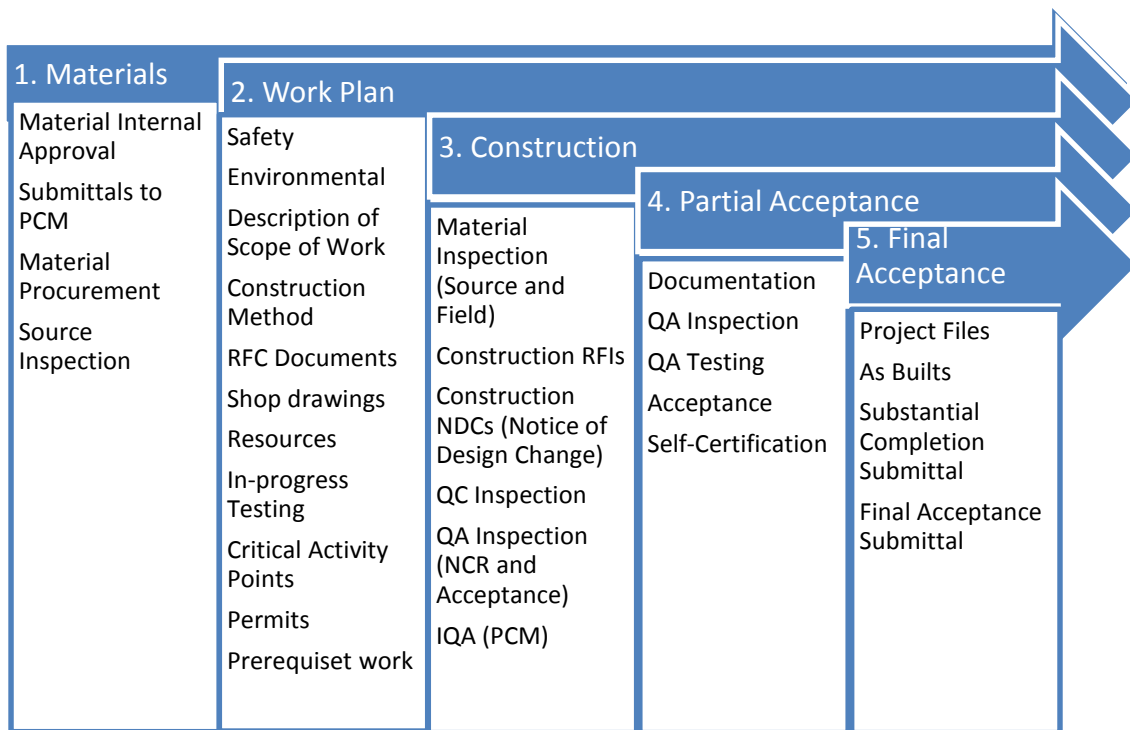


Figure 7 Construction Quality Process Chart



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

CQMP will include the following procedures to implement the construction process:

5.1 Materials

Permanent materials will be controlled and documented in accordance with the process outlined in CQP-007 Inspection and Control of Permanent Materials in Appendix A.

CQP-007 will include the following tasks and activities:

- Materials Internal Approval
- Submittals to PCM
- Materials Procurement
- Source Inspection

The Materials Engineer part of the Construction Quality Control Team (CQCT) will be responsible for carrying out the tasks and activities to assure that all permanent materials are complying with the contract requirements, including storage, handling and security.

The Construction Material List and Inspection forms related to Materials Approval included in Appendix B will be updated accordingly to match the requirement of the RFC documents being approved and released.

Temporary Materials which does not need professional registration signature or it is not specified in the specifications / special provisions will not be included in the Construction Material List and will not be processed as such.

5.2 Construction Work Plan (CWP)

DFJV Construction Team will prepare Construction Work Plans (CWP) for individual work elements that are specified in a “Ready for Construction” (RFC) plans and specifications, and in compliance with the contract requirements.

CWPs are information packages that describe individual elements of the work in details. These packages are prepared by the construction team and in coordination with CQCT.

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Figure 8 provides a graphic of the process of traceability of the CQC Forms and Testing Program through V&V to develop the QA/QC Checklist.

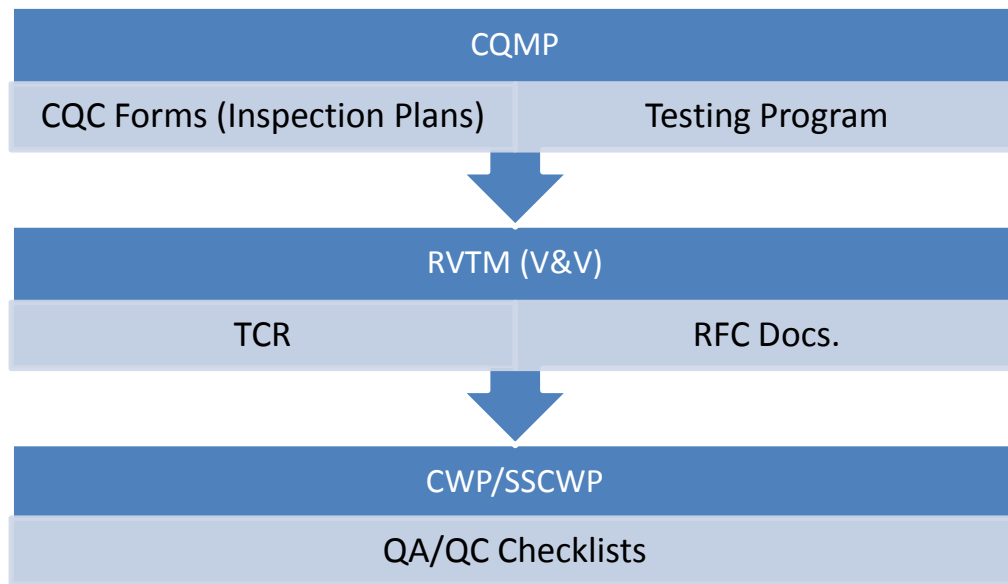


Figure 8 Process to provide QA/QC Checklist

The QA/QC Checklist provided by the VVSC Team will be included in the Construction Work Plan (CWP).

The QA/QC Checklist will be utilized by the CQAT, CQCT, VVSC personnel, and by PCM to verify, validate, self-certify, and accept the work.

For every element of the construction, a general CWP (i.e. precast concrete piles, CIDH piles, etc.) will be initiated by the Construction Team and will be reviewed by the CQCT. General CWPs are intended to be reused for common work and not to be redeveloped for each similar construction work package. These general CWPs will be documented in a Library to be used in the development of the various SSCWPs.

The CWP will include as minimum the following:

- 1) Relevant construction plans and specifications



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CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

- 2) List of materials
- 3) Construction methods
- 4) Testing and Inspection Plan
- 5) QA/QC Checklists

A CWP Form will be included in Appendix C of the CQMP.

5.2.1 Site Specific Construction Work Plan (SSCWP)

The Site Specific CWPs are combination of all the CWPs created for individual work elements defined in a Scope of Work in specific site.

SSCWPs are prepared by the construction team and in coordination with CQCT, Safety and Security Team, Environmental Team, Joint Venture Departments and other stakeholders.

The SSCWP collects site-specific approved documents necessary to perform the work.

The SSCWP will include as minimum the following:

- 1) Work Overview: Description of the work and applicable RFC Design Documents and contract specification section; prerequisite activities; and construction sequence;
- 2) Safety: Identify potential hazards and safety issues;
- 3) Resources: Identify all resources materials, equipment and elements of the work;
- 4) Special Events: Include actions that are defined as “special events” in that the work may constitute exposing the general public to danger, inconvenience or risk;
- 5) Permits: List of required submittals and permits to complete the work activity;
- 6) Personnel: List of individual(s) and position(s) responsible for supervision and testing of the work;
- 7) Schedule: Planned start date of the work, expected progress rate and required extended work hours;
- 8) Prerequisite Activities: List of prerequisite activities including notifications and approved works;
- 9) Hazard Analysis: Include a hazard analysis for the scope of work;
- 10) Quality Assurance and Quality Control Activities: List of inspection and/or tests to be accomplished including frequency and type;



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- 11) Critical Activity Points (CAP): List of CAP's locations, timing of inspections, and required Inspectors;
- 12) Quality Issues: Including high risk areas, recent material defects, etc.;
- 13) Environmental Issues: Including sensitive areas and features, debris handling;
- 14) Plans & Specification: Required construction drawings, shop drawings and working drawings to complement the RFC documents.
- 15) QA/QC checklists for the work or element of the work to be utilized (provided by VVSC Team).
- 16) Utility identification and verification forms

The SSCWPs are to be presented and discussed at the Pre-activity Meetings prior to construction of a new work. The procedure for Pre-activity Meetings (CQP 001) details the process of presenting the Site Specific Construction Work Plan prior to the start of work to ensure that quality, technical, safety and environmental features are discussed and understood. The SSCWPs are to be maintained onsite and be made available to the CQAT, CQCT, PCM, and third parties onsite representatives for review.

A SSCWP Form will be included in Appendix C of the CQMP. This form will identify by coding the SSCWP according the Quality Milestones Data Packs (QMDP).

5.3 Construction

Construction Team during the construction phase will construct the scope of work elements specified in the CWP and SSCWP with a goal to build the work right the first time.

Some of the processes that support or assist construction, and will aid in achieving the goals are:

- Surveying;
- Shop Drawings and Falsework Drawings;
- In-process inspections;
- Stormwater Pollution Prevention Plan;
- Maintenance of Traffic; and
- Environmental Compliance.



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

5.3.1 Surveying

Surveying activities will provide the control to build the work in the correct location, and to facilitate the inspection and verification of the work as detailed in the Inspection and Testing Procedures.

As necessary, the survey group will be utilized by the CQMT to verify the work is built in the correct location.

Audits will be performed, as needed, by the CQAT to verify that the project's Survey Program Manual is being followed by the survey group. Audits will be performed according General Procedure "GP 4.03 Quality Audits" included in the Quality Management Manual (QMM).

The Survey Program Manual will be based on standard guides and manuals such as the *Guide to the Preparation of Records of Survey and Corner Records by the County Engineers Association of California* and/or *Caltrans Surveys Manual*. It will include an internal Quality Management Plan that will be approved by QMT.

5.3.2 Shop Drawings and Falsework Drawings

DFJV will be responsible for developing Shop Drawings and Falsework Drawings. The Shop and Falsework Drawings will be reviewed, approved and submitted in accordance with the process outlined in procedure CQP 010 included in Appendix A.

5.3.3 In-Process Inspections

In-Process Inspections are checks done by the CQCT to verify the methods detailed in the CWP/SSCWP, Specifications, and Contract Documents, as applicable, to produce a product that satisfies the requirements.

In-Process Inspections are detailed in the following procedures:

Pre-activity Meeting	CQP 001
Follow up Daily Inspection.	CQP 002
Critical Activity Point Inspection.	CQP 003



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

Work Completion Inspection.

CQP 004

In-Process Inspections shall identify any concerns or issues and address any modifications or improvements to the CWP/SSCWP.

5.3.4 Stormwater Pollution Prevention Plan

The Stormwater Pollution Prevention Plan (SWPPP) is a program manual that describes the measures, controls, and management practices for both Construction and Post-Construction to prevent sediment, erosion, and pollutant discharge into waterways.

Construction Team is responsible for installing and maintaining SWPPP measures.

The SWPPP manual details the inspections and verifications required to be performed by Environmental Team that is independent of construction.

The Environmental Team, through their inspections and surveillances, verifies that the required SWPPP measures are properly installed, maintained and are providing effective results.

Environmental inspection and surveillance reports will be maintained on file in Document Control.

CQCM will make sure that all appropriate SWPPP inspection reports are submitted accordingly in timely manner.

Quality Management will periodically audit the SWPPP compliance Team on implementation of the processes defined in the SWPPP.

5.3.5 Maintenance of Traffic

The Transportation Management Plan (TMP), under separate cover, provides the requirements for long term traffic control within the limits of the project. The California Manual on Uniform Traffic Control Devices (MUTCD) and the Work Area Traffic Control Handbook (WATCH) provide the requirements for short term traffic control within the limits of the project.

The Maintenance of Traffic (MOT) group, part of the Construction Team, is responsible for installing, maintaining, and monitoring the traffic control measures in accordance with these



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manuals.

The Safety and Security Team will oversee the MOT group performance.

The CQCT and CQAT, while performing their other activities, will notice and immediately report any defect in the installation of the traffic control devices on site to the Construction Team for correction of any safety concerns to the public or workers.

5.3.6 Environmental Compliance

Although the Environmental Compliance activities will be carried out by the Environmental Compliance Team, under the direction of the Project Manager, according to their own plan, the CQCM will have to assure that environmental compliance certificate is included with every submittal and/or acceptance of the work.

Quality Management will periodically audit the Environmental Compliance Team on implementation of the processes defined in the Environmental Compliance Plan.

5.4 Acceptance and Final Acceptance

Quality Control of all works will take place within the Construction Quality Control Team (CQCT) and under the direction of the Construction Quality Control Manager (CQCM).

CQCT will perform complete acceptance inspection and testing frequency in accordance with the QC Checklists provided by the VVSC team that include requirements of the RFC plans and specification, , and any additional related third parties requirements.

QC activities and test results will be documented and maintained on file in Document Control as Quality Records.

CQAT will monitor the QC activities and perform complementary inspections and testing frequency in accordance with QA Checklists provided by the VVSC team that include requirements of the RFC plans and specification, CWP/SSCWP, RVTM / CIL, and any additional related third parties requirements to ensure product conformance and compliance.

QA activities and test results will be documented and maintained on file in Document Control as

CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

Quality Records.

The QA and QC documentation will include photographs and completed inspection reports for each work activity.

The CQAM will collect the completed QA/QC Checklists for a specific work and submit them to the VVSC Manager for review and self-certification.

When a construction element or construction work is completed, the Quality Test and Acceptance Reports, as well as As-Built documents which have been changed, are traced in the RVTM by the VVSC team using the RM tool in compliance with the VVSC process shown graphically in Figures 9 and 10. After satisfactory completion of this validation task, the VVSC Manager will sign a self-certification report for that element of the construction work.

The Quality Test and Acceptance Records Package and As-Built Package are the basis and the last step of the validation, self-certification and acceptance of Project Sections.

Figures 9 and 10 provide a graphic description of the process.

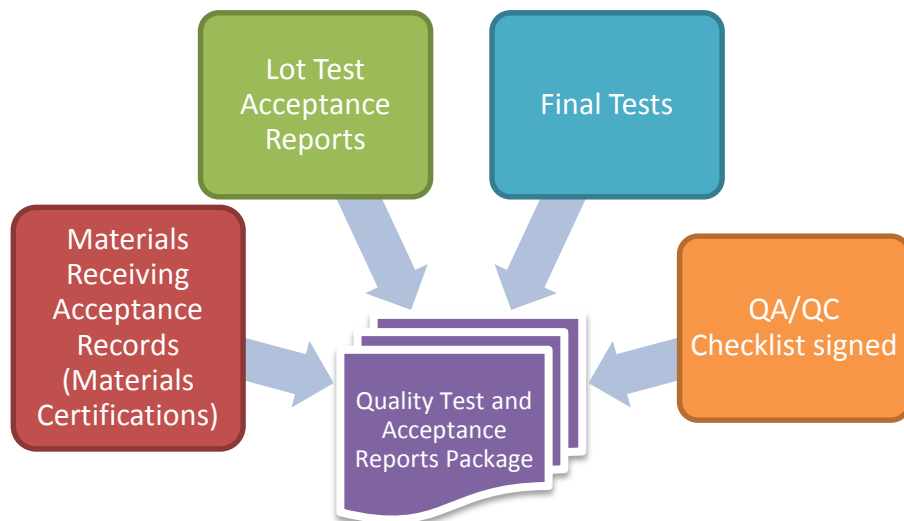


Figure 9 Inspection and Testing Records in Quality Test and Acceptance Records Package

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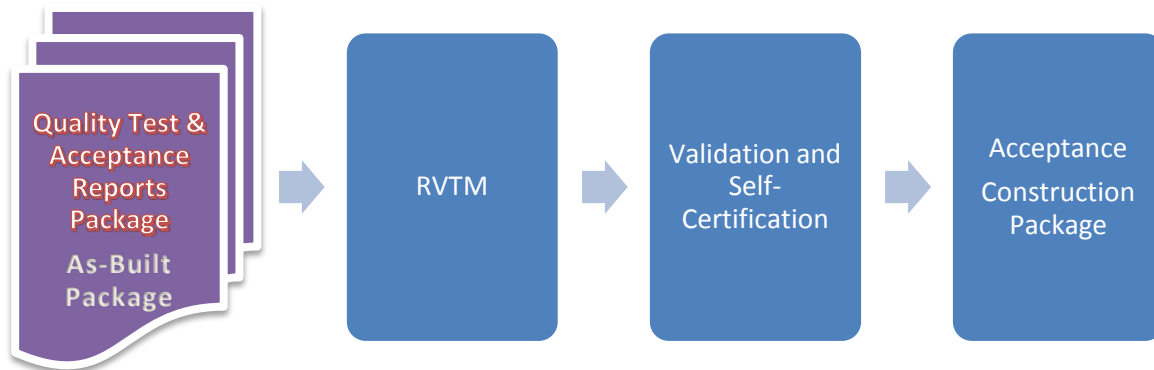


Figure 10 Construction Package Acceptance

All quality records and self-certification documents will be maintained and stored in their related Quality Milestone Folders in Document Control accessible to Authority and PCM personnel for auditing purposes and Final Acceptance.

These Quality Milestones are product of schedule, WBS, and contractual requirements agreed upon between the Authority and DFJV to manage the acceptance and compensation procedures.

These specific Quality Milestone Folders will contain quality documents as required by section 4.6 Quality Milestone Data Pack, page 23 of 31 of Book IV Part D.1.

These quality documents in each of the Quality Milestone Folders will support the DFJV's assertion that the works in this milestone is 100% complete.

Works in Quality Milestone Folders can only be considered complete if it is contractually and technically compliant with and satisfactory passed through the VVSC, Quality and Contract Administration processes.

Each Quality Milestone Data Pack will be transmitted electronically to the Authority with contents and format according to section 4.7 of Book IV Part D.1 for acceptance of this submitted milestone.

PCM will provide and perform Independent Quality Assurance activities according to their contract requirements.



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

Final Acceptance will be granted after acceptance of all the individual milestones of this project.

6 QUALITY CONTROL AND QUALITY ASSURANCE PROCESSES

DFJV will implement formal and informal processes and procedures to ensure that all required quality control and quality assurance activities are timely performed during construction phases.

6.1 Process Control

Processes for construction, manufacturing, installation, testing, etc. will be planned, documented and approved by authorized individuals. Quality workmanship standards will be stipulated in written standards. Individuals performing the work will be trained and qualified in specific processes and quality workmanship standards.

Workmanship standards can be developed by the construction team, subcontractors and/or manufacturers. PCM and third parties may perform additional test and inspection points to verify compliance.

DFJV requires that all civil construction, basic production operations, and all other processing and fabricating, be prescribed and performed under controlled conditions in accordance with the Ready for Construction Packages, Construction Work Plans, and the CQMP.

Adequate in-process inspection and test points will be included to ensure conformance with the contract requirements.

PCM may perform their own additional inspection and test points to verify compliance.

Inspection by PCM does not relieve DFJV from performing required inspections and tests.

Construction Management process includes construction management activities such as preparing work plans, schedule updates, invoicing, shop drawing reviews, and document control. These activities are subject to internal audit and surveillances. They will be stored on file in Document Control and made available to PCM for review.

In-process and completed work will be documented. Records of completed work operations shall be maintained by DFJV, and be made available to PCM.



CONSTRUCTION QUALITY MANAGEMENT PLAN *(Part 1 of 2)*

6.2 Control of Measuring and Testing Equipment

DFJV and subcontractors shall only utilize an audited/authorized facility that resides on the latest Caltrans and AASHTO Authorized Facility list or others that the Authority or Third Parties may consider.

PCM has the right to check independent testing laboratories' equipment and laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the Contract Documents.

Tools, gages, instruments, and other measuring and testing devices used in activities affecting quality, including software, shall be controlled and provided with a status by individual item to ensure the accuracy and reliability of the item is maintained on an ongoing basis.

The process for controlling measuring and testing devices is detailed in procedure CQP 008 included in Appendix A.

6.3 Handling, Shipping, Storage and Preservation

DFJV shall provide the methods and means for handling hardware and materials to prevent damage or deterioration to it before it is used in the works. Hardware and materials shall be stored in designated controlled areas such as stock rooms, designated hold areas, segregated areas, etc., to facilitate accountability and to prevent damage, deterioration and theft.

DFJV shall be responsible for authorizing receipt and dispatching hardware and materials.

The CQCT will check and verify compliance of all permanent materials before its placement in site.

6.4 Critical Activity Points

Critical Activity Points (CAP) are hold points at which proper inspection, testing, and verification are performed prior to proceeding to the next activity or next stage of that particular item of Work or when a material is first used on the Project.

CAP list identifying its locations and type of required inspection and testing shall be established



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to ensure that the proper inspection and testing has been performed prior to starting, or before proceeding to, the next stage or activity of that particular construction activity.

The CAP must be formally accepted, as required, by the CQAT, CQCT, PCM, Caltrans, applicable Governmental Entities, Utility Owners and BNSF. The agreed upon CAP list will be included in the related CWP/SSCWP.

The process for performing a Critical Activity Point Inspection is detailed in procedure CQP 003 included in Appendix A.

6.5 Pre-activity Meetings

DFJV Construction Manager or Segment Managers and/or the CQCM requests the CQAM to schedule, conduct and document Pre-activity meetings at the start of major construction operations.

The appropriate PCM, Third Parties and DFJV personnel must be in attendance.

PCM shall be notified at least one week in advance of the start of the operation.

The purpose of the Pre-activity Meeting is to:

- 1) Conduct prerequisite planning of activities;
- 2) Review required submittals;
- 3) Discuss specific work to be accomplished;
- 4) Review Construction Work Plans;
- 5) Assess construction risks;
- 6) Define safe working methods;
- 7) Identify necessary sampling, testing and inspections required before and during the work;
- 8) Identify QC/QA personnel responsible for testing and inspection;
- 9) Review anticipated schedule.

The process for conducting the Pre-activity Meeting is detailed in CQP 001 included in Appendix A.



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6.6 QC & QA Inspection and Testing

Quality Control and Quality Assurance Inspections and Testing shall be performed on all work to ensure compliance to contract documents.

QA/QC inspection will include inspection of work methods when specifications provide these methods.

Assignment of inspection personnel and frequency of inspection(s) shall be consistent with the level of activity and complexity of work to be performed.

In order to provide a practical assignment of inspection resources, the Quality Manager (QM) with inputs from the CQT will assess the complexity and risk of each work activity and adjust the level of inspection provided an acceptable level of confidence is achieved.

Inspection and Testing Plan will define the acceptable level of confidence based on different type of inspection such as Full Time, Part Time, Intermittent based on number of hold points, structural criticality, buried items, etc.

The QM will instruct the CQT to increase the level of inspection on work activities where issues are raised and when needed to ensure that work is appropriately monitored until issues are resolved.

QA and QC inspections shall be by individuals other than those responsible for performing the work. Work activities subject to inspection include, but are not limited to; materials and equipment receiving, in process and final construction activities, in process tests, qualification tests, equipment installation and tests, and system integration testing and acceptance.

Figure 11 provides a chart of the Inspection & Testing Planning and Performance Process.

CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

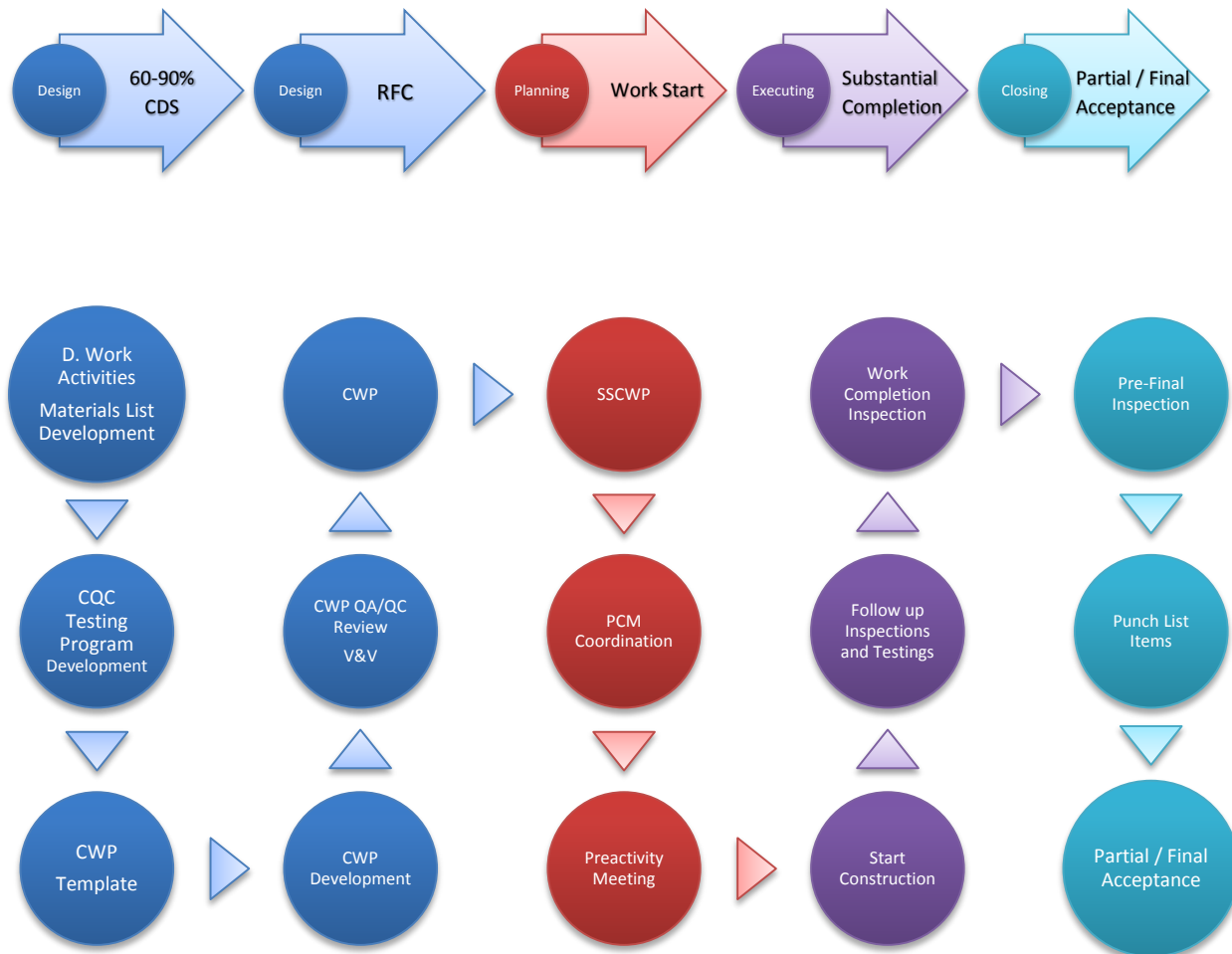


Figure 11 Inspection & Testing Planning and Performance Process



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6.6.1 Planning Activities

Prior to performing any Quality Control and/or Quality Assurance Inspection, current QC/QA personnel certificates for all staff performing field testing, will be submitted to QM for approval and will be available for PCM to review.

Inspection planning shall be prepared in support of the construction schedule. Inspection requirements will be detailed and shall include identification of prerequisite requirements such as approved submittals, material identification and certifications, verification of personnel certifications for special processes, equipment calibration verification, applicable inspection instructions, QA/QC checklists, and required number of inspectors, etc.

Inspection requirements shall be detailed in the Construction Work Plans as necessary.

6.6.2 Follow-up Inspection Activities

Quality Control and Quality Assurance inspection will be performed at sufficient inspection points in order to verify conformance.

The frequency of material testing and types of tests are defined in the Testing Program that will be developed at the 90% Design phase according to Specifications/Special Provisions. It will be located in Appendix B.

All of the inspection activities are subject to the following:

1. All of the work will conform to the Contract Documents.
2. All activities affecting the quality of the construction work will be accomplished under suitably controlled conditions, using appropriate equipment, and executed in accordance with acceptable industry practices.
3. All material, equipment, and elements of the work used will perform satisfactorily for the intended purpose.
4. The elements of work will be installed in accordance with Ready for Construction (RFC) design documents.
5. Purchased materials, equipment, and services will conform to the Contract



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Documents.

Inspections will be conducted in accordance with the requirements, frequencies and acceptance criteria established for this project confirming to VVSC process and the Contract Documents.

Materials, equipment and elements of the work will be tracked by appropriate means, either on the item or on records traceable to the item, as necessary, throughout fabrication, assembly, erection, installation and use of the item.

While performing inspection, the status of inspections and tests performed on individual items of the work will be indicated by the use of markings such as stamps, tags, labels, routing cards or other suitable means. This includes items that have satisfactorily passed required inspection and tests, where necessary, to preclude inadvertent bypassing or duplication of such inspections and/or tests.

During ongoing construction work, the CQAM and QA staff must perform and document the following minimum activities either daily or more frequently, as necessary, until the completion of each work element:

- Make certain the work complies with requirements of the QA/QC Checklist.
- Make certain that required quality of workmanship is maintained.
- Make certain that nonconforming items are properly resolved and that rework items are corrected in accordance with approved methods.

PCM has the right to review the work, processes and procedures at any time to determine the work is in accordance with the CQMP and Contract Documents.

Any Work, processes and/or procedures that do not conform to the CQMP or Contract Documents will be corrected.

All the results will be logged according the Standard Forms included in **GP 2.05 Monitoring, Inspection and Testing Work on Sites**” included in the QMM:

GP 2.05/ SF-01 Materials Receiving Acceptance Status



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GP 2.05/ SF-02	Materials provided by the Authority/Third Parties
GP 2.05/ SF-03	QA/QC Checklists / Lot Tests Acceptance Reports Status

6.6.3 Work Completion Inspection

Work Completion Inspection may be scheduled on the first portion of completed work as described in the Construction Work Plan (CWP).

Work Completion Inspections will be performed before acceptance of an individual milestone of the project.

The intent of the Work Completion Inspection is to verify the effectiveness of the process described in the Construction Work Plan and ensure satisfactory work performance.

When all Work Completion Inspections of the construction milestone are completed then it will allow the start of the following activities:

- Acceptance of the work according “**GP 2.06 Project Sections Acceptance**” included in the Quality Management Manual.
- Substantial Completion of the work according “**GP 2.07 Project Handover**” included in the Quality Management Manual.

When scheduled, PCM and third party will be invited to participate in Completion Inspections. By conducting these Completion Inspections, modifications to the work plan to improve the quality of the work can be incorporated early in the construction schedule.

CQP 004 Work Completion Inspection describes the procedure to perform Work Completion Inspections and **CQA-004** is the Quality Assurance form for this activity.

6.6.4 Pre-Final Inspection

CQP 005 Pre-Final Inspection describes the procedure to perform Pre-final Inspections and **CQA-005** is the Quality Assurance form for this activity.

When all CWP has been completed in a defined segment of the Project (except for punch list items, final cleanup, and other items included in the requirements for Partial / Final Acceptance),



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

a Pre-Final Inspection will be performed to start the process of Partial / Final Acceptance of the Project according “**GP 2.07 Project Handover**” included in the Quality Management Manual.

6.6.5 Final Inspection

CQP 006 Final Inspection describes the procedure to perform Final Inspections which will allow Partial / Final Acceptance of the Project. Final Inspection will be performed to close the process of the Partial / Final Acceptance of the Project according “**GP 2.07 Project Handover**” included in the Quality Management Manual.

6.6.6 Post-Inspection Activities

Each Inspector shall document the results of daily inspections and surveillances on daily inspection reports that include the applicable quality inspection checklists.

All inspection documents shall be maintained as quality records and be made available to PCM upon request.

Results of inspections and tests shall be validated by printed name, signature and date on the test document by the test technician, reviewing test engineer or appropriate responsible individual and the inspector who witnessed the test.

Quality Records including a summary of field tests performed each month will be included in the monthly report provided to PCM at the end of each month throughout the duration of Construction.

6.6.7 Statistical Analysis and Evaluation

The Quality Management Plan is a performance and continuous improvement program. Audits and surveillances; and testing and inspection will be logged and statistically evaluated to insure reliability and performance consistency. Graphs will be plotted and presented in a monthly report.

The QM will request information from other test data, by quality control or independent quality assurance to prepare a comparison and if necessary calculate the statistical confidence interval.



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PCM will perform similar testing, at smaller intervals, and results will be compared to determine if there is a statistical significant difference in the test results. Substantial statistical differences will be evaluated to determine the root cause and a corrective action will be immediately implemented. When results follow a normal distribution the statistical evaluation methods will be t-test (independent samples or paired) or ANOVA according the number of laboratories. Repeatability and reproducibility values of the different test standards will be taken into account for validation of test results from different laboratories.

6.7 Roles and Responsibilities

The definitions of these functions are as defined in the Authority's Master Quality Management Plan:

Quality Assurance (QA) – Emphasizes actions at a management level that directly improve the chances that QC actions will result in a product or service that meets requirements. QA includes ensuring the project requirements are developed to meet the needs of all relevant internal and external agencies, planning the processes needed to assure quality of the project, ensuring that equipment and staffing is capable of performing tasks related to project quality, ensuring that contractors are capable of meeting and carrying out quality requirements, and documenting the quality efforts.

Quality Control (QC) – Techniques that are used to assure that a product or service meets requirements and that the work meets the product or service goals. QC is the act of taking measurements, testing, and inspecting a process or product to assure that it meets specification. Products may be design drawings/calculations or specifications, manufactured equipment, or constructed items. QC also refers to the process of witnessing or attesting to, and documenting.

Verification, Validation and Self-Certification (VVSC) – Confirmation by examination and provision of objective evidence that: a) the specified requirements have been fulfilled, b) the particular requirements for a specific intended use have been fulfilled and c) Certification that the Technical Submittals conform to Technical Contract Requirements and as reasonably inferred therefrom.

DFJV has the responsibility to perform both Quality Control (QC) and Quality Assurance (QA) in addition to conducting the Verification, Validation and Self Certification (VVSC) plan.



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PCM are responsible for performing Independent Quality Assurance (IQA).

Both QC and QA will be conducted in a collaborative effort to ensure acceptable levels of workmanship in accordance with the Contract Documents and applicable standards, specifications and requirements.

Quality Control

Quality Control activities will be conducted by the Construction Quality Control Team (CQCT) under the direction of the Construction Quality Control Manager (CQCM).

Quality Control is responsible for performing Acceptance Testing and Inspection.

All required and/or necessary tests for the Acceptance of the Project will be performed by the CQCT.

The CQCT, to monitor the quality of construction works, will utilize the Construction Quality Procedures as well as QC Forms and Testing Program which are included in Appendix B.

Construction Quality Control Managers (CQCM) of each segment will manage a team of inspectors and testers to conduct 100% of the required tests and inspection on all lots of materials and activities performed in construction works.

Quality Control test and inspections will be conducted during the production of the work, as materials arrive on the Project Site, as materials are incorporated into the work, and as work is completed.

The results of Quality Control testing and inspection will be formal and documented.

Quality Assurance

The CQMP establishes and maintains documented QA forms for the Construction Quality Assurance processes as well as QC Forms and Testing Program to monitor the quality of construction works.

Audits in the Construction phase will be performed according General Procedure “GP 4.03



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Quality Audits” included in the Quality Management Manual.

The Construction Quality Assurance Manager (CQAM) will verify, by examination and evaluation of objective evidence, that the CQMP and CWP/SSCWP have been documented and effectively implemented in accordance with the Contract Requirements applied in the related Project Segment.

The level of staffing depends on the planned construction activities identified in the approved schedule to execute the scope of work in the various CWP.

The results of Quality Assurance testing and inspection will be formal and documented.

The CQAM will develop and manage a Contrast Testing Plan to perform a sampling of the required tests according to the statistical audit method on lots of materials and activities performed in construction works with the purpose to have a contrast of the results.

QA sampling frequencies are usually minimum 10% which will be increased according to the performance and severity of the issue.

Collaboration

Quality Control is responsible for conducting Acceptance testing and inspection, while Quality Assurance is responsible for conducting Contrast testing and inspection at different time and frequency. However, a collaborative effort the two teams will be implemented to ensure the highest level of quality, facilitate expedient acceptance and contrast of each element of work, and prevent the use of incorrect or defective materials and equipment.

The Quality Assurance and/or Quality Control will be available to Construction Team to perform informational and informal testing in the field. The intent of the informational testing is to provide supplemental information to the Construction staff regarding the readiness of the work element for acceptance testing. These supplemental informational tests will not result in rejections or nonconformance while the construction work is considered “In progress”.



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

6.8 Failure to Perform

6.8.1 Non-Conforming Items

In general, all items whether material, equipment, or hardware, including construction and testing that do not conform to contract requirement shall be documented on a Non Conformance Report, segregated and controlled until the nonconforming condition(s) is analyzed, disposition, corrected and the corrective action verified.

This process is described in the following procedures included in Quality Management Manual and CQMP:

- **GP 4.01 Non-Conformance Management**
- **GP 4.02 Corrective and Preventive Actions**
- **CQP 011 Stop Work Order**

6.8.2 Stop Work Orders

A Stop Work Order will be issued to stop the continuation of work being performed by the DFJV that is not in conformance with the requirements of the applicable contract documents. Also, to stop the continuation of any work that is deemed to be life threatening or otherwise unsafe.

The process for issuing a Stop Work Order is detailed in procedure **CQP 009** included in Appendix A.

6.9 Access to Work Areas

CQCT, CQAT and PCM shall have safe access wherever work is performed under this Contract to conduct audits, inspections and tests to verify compliance to Contract documents requirements.

Access includes onsite and offsite work areas and work areas of DFJV's subcontractors and suppliers. Local agencies and utility companies shall have access to the work performed on their facilities.

Audits, inspections and tests conducted by PCM and other authorized third parties shall not in



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any way relieve DFJV of the responsibility to conduct required inspections and tests to ensure compliance to all contract document requirements.

6.10 Quality Personnel Qualifications

All Quality Inspectors are required to have the adequate qualifications and/or experience to perform the work according codes and standards identified in the specifications or special provisions defined by the designer. Some of these qualifications are:

- Experience with Caltrans (CT), American Concrete Institute (ACI), International Code Council (ICC), and ASTM International (ASTM) standards and test methods.
- Minimum five years construction experience related to roadways, bridges, concrete structures, and/or utilities.

A list of the independent testing laboratory and the personnel performing the tests will be developed and maintained on file in Document Control. The list will account for all laboratory and field testing technicians by proper name, current certifications, and expiration dates.

Approval by the Quality Manager for all staff proposed to perform construction inspection will be documented and made available to PCM prior to ground disturbing construction activities.

The proposed staffing levels will be adjusted as necessary throughout the duration of the project.

7 AGENCY OVERSIGHT

7.1 Construction Quality Acceptance

PCM, Governmental Entities, Utility Owners, BNSF, UPRR, SJVRR or their respective representatives have the right to inspect and accept the Work as required by their role and responsibilities in the Contract Documents.



CONSTRUCTION QUALITY MANAGEMENT PLAN (*Part 1 of 2*)

8 APPENDIX

- Appendix A.1 Construction Quality Procedures (CQP)
- Appendix A.2 CQA Forms

Appendix not included in this document:

- Appendix B.1 Construction Activities
 - Construction Activities List
 - CQC Forms (Inspection Forms)
- Appendix B.2 Construction Materials – Testing Program
 - Construction Materials List
 - Testing Program
- Appendix C Construction Work Plan (CWP) Form / Site Specific Construction Work Plan (SSCWP)



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APPENDIX A.1 Construction Quality Procedures (CQP)

CQP-001 Pre-activity Meeting
CQP-002 Daily Inspection Report
CQP-003 Critical Activity Point Inspection Report
CQP-004 Work Completion Inspection
CQP-005 Pre-Final Inspection
CQP-006 Final Inspection
CQP-007 Inspection and Control of Permanent Material
CQP-008 Control of Measuring and Test Equipment
CQP-009 Stop Work Order
CQP-010 Shop and Working Drawings
CQP-011 Request for Information
CQP-012 As-Built



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APPENDIX A.2 CQA Forms

CQA-001	Pre-activity Meeting Checklist (2 pages)
CQA-002	Daily Inspection Report
CQA-003	Critical Activity Point Inspection Report
CQA 004	Work Completion Inspection Report
CQA-005	Pre Final Inspection Report
CQA-006	Final Inspection Report
CQA-007	Form Request for Approval of Materials (RFAM)
CQA-008A	Materials Receiving Report (MRR)
CQA-008B	Materials Placement Report (MPR)
CQA-009	Stop Work Order Form
GP 2.05/ SF-01	Materials Receiving Acceptance Status
GP 2.05/ SF-02	Material Provided by the Authority / Third Parties
GP 2.05/ SF-03	QA/QC Checklist / Lot Tests Acceptance Reports Status
GP 4.01/ SF-02	Non-conformance Report
GP 4.02/ SF-02	Corrective Action Report
GP 4.02/ SF-04	Preventive Action Report
DQP 3.12-1	Notice of Field Design Change
DQP 3.16-1	Construction Submittal

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	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-001 Pre-activity Meeting	CQP-001
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1 PURPOSE

To define the responsibilities and describe the methods and documents used to carry out the Pre-activity Meeting for a feature of work.

2 SCOPE

This procedure applies to the Pre-activity Meeting for the feature of work prior to the start of work to ensure that quality, technical, safety and environmental features are discussed.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Segment Manager or his designee shall lead the meeting.

The following personnel should attend or participate in the meeting, as applicable:

- Construction and Quality Management representatives
 - Construction Manager / Segment Manager
 - Subcontractor or Supplier representative
 - Construction Quality Control Manager (QCM)
 - Construction Quality Assurance Manager (CQAM)
- Representatives from other appropriate groups (i.e. Construction, Engineering, Safety, Environmental)
- Construction Quality Control personnel
- Construction Quality Assurance personnel
- Third Parties QA representatives

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	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-001 Pre-activity Meeting	CQP-001
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- PCM
- Other groups as required

5 PROCEDURE

Prior to the commencement of a feature of work, the Construction Manager / Segment Manager, or his designee, shall prepare the Site Specific Construction Work Plan (SSCWP).

The Quality Control Manager, or QC Representative, work jointly with the construction designee to prepare the QA/QC Checklist to be included in the Site Specific Construction Work Plan (SSCWP) and prepare all the content related to quality control. Other DFJV departments and other stakeholders shall participate in the preparation of the SSCWP (Safety and Security Team, Environmental Team, etc.).

The Quality Assurance Manager, or QA Representative, shall participate in an “Over the Shoulder” Review during the development of the Site Specific Construction Work Plan (SSCWP).

Prior to the commencement of a feature of work, the Segment Manager, or his designee, shall request the CQCM to schedule a Pre-activity Meeting for the specified work feature.

At the meeting the Site Specific Construction Work Plan (SSCWP) shall be reviewed and the CQCM, or his designee, shall facilitate the discussion of, as a minimum, the requirements of the following items:

- Review RFC drawings, and specifications, RFIs and NDCs for the feature of work
- Approval of shop drawings, catalog working drawings, etc. (submittals).
- Approval of inspection and test reports on material and equipment.
- Review schedule and anticipated progress of work.
- Availability of materials and equipment required, including proper storage and protection.
- Environmental and Safety precautions to be observed.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-001 Pre-activity Meeting	CQP-001
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- Quality Standards to be applied to the feature of work including testing required.
- Identify QA and QC personnel responsible for inspection and/or testing
- Prerequisite permits
- Utility outages.
- Safe working and Traffic Control conditions.
- Administrative requirements.
- Provisions for instruction of workers regarding workmanship.

Communications with other representative(s), third party inspection or regulatory personnel shall be identified where applicable.

A Pre-activity Meeting Report shall be prepared by Construction Manager / Segment Manager and checked by CQCM with all the above applicable information. This shall be used as a record/reference document.

The original Pre-activity Meeting Report shall be given to the Documentation Control Manager for filing with the Quality Records.

The Pre-activity Meeting Report shall be prepared and distributed to all attendees.

6 REFERENCES

Quality Management Manual (QMM)

7 ATTACHMENTS

CQA-001 Pre-activity Meeting Checklist

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-002 Daily Inspection Report	CQP-002
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1 PURPOSE

To define the responsibilities and describe the methods and documents used to carry out Acceptance and Contrast Daily Inspections of work item features.

2 SCOPE

This procedure applies to the Acceptance Inspections performed daily by the Construction Quality Control Manager and his QC representatives together with the construction and subcontractor representatives of the items of work.

This procedure applies as well as to the Contrast Inspections performed by the Construction Quality Assurance Team.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Construction Quality Control Manager and/or his designated QC representatives shall perform daily Acceptance Inspections according to the schedule of constructing the work that is identified in the related Construction Work Plan.

The priorities of the Inspections and Tests will be:

- Acceptance of Material prior to be used or built
- Inspection of Critical Activity Points (Hold Points)

For the effectiveness of the performance of the Inspection and Testing, the Construction Manager

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-002 Daily Inspection Report	CQP-002
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or construction representatives will send a weekly Work Activities Plan updated daily to the Construction Quality Control Manager.

The Construction Quality Control Manager or QC representatives will plan the Inspections and Testing, identifying the Critical Activity Points (Hold Points) and tests with the required traceability that may appear in the Inspection and Testing reports.

The Construction QC Manager will define the required Inspections and Tests with the following information:

- Location / Traceability (Lot)
- Date and Time (approx.)
- Defined Work Activity / Operation
- Quantities of materials/ Amount of samples / Type of tests

This information will be sent to the Construction Quality Assurance Manager to plan their Contrast Inspections and Tests.

The QC Representative with the presence of the Contractor and/or Subcontractor Representatives shall perform daily QC Inspections and document the results.

The Construction Quality Assurance Manager and/or his designated QA representatives shall perform daily QA Inspections according to the QC planning and document the results.

5 PROCEDURE

Following the Pre-activity Meeting and the start of work, Acceptance and Contrast Inspections shall be performed daily by the Construction QA and QC representatives.

Daily inspections will be conducted in accordance with the requirements, frequencies and acceptance criteria established in the following documents:

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-002 Daily Inspection Report	CQP-002
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- Ready for Construction Documents
- Construction Work Plan
- Technical Contract Requirements

The intent is to assure the continuing conformance of the work to the documents listed above as applicable and described during the Pre-activity Meeting.

During the Follow up Inspection, nonconforming items that are not repaired or are incorporated into the work shall be noted on a Non-conformance Report. These reports shall be signed by the QA and QC representatives and included with the specific inspection report or the Daily QA Report. Copies will be given to Construction representatives for their action following the inspection.

The Daily Quality Assurance Reports and the Daily Quality Control Reports shall be completed daily and returned to their respective Managers by 9:00 am of the following day.

6 REFERENCES

Quality Management Manual (QMM)

7 ATTACHMENTS

CQA-002 Daily Inspection Report

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-003 Critical Activity Point Inspection Report	CQP-003
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1 PURPOSE

To define the responsibilities and describe the methods and documents used to carry out Critical Activity Point Inspections (Hold Point) on various features of work.

The intention of this inspection is to allow further construction upon, or integral to, the completed work feature that will be closed in and thus unavailable for later inspection.

2 SCOPE

This procedure applies to all Critical Activity Points identified for each feature of work.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

Critical Activity Points: Hold points at which proper inspection, testing, and verification are performed prior to proceeding to the next activity or next stage of that particular item of work or when a material is first used on the project as identified in the Inspections and Test Plans.

4 RESPONSIBILITIES

Critical Activity Points must be formally accepted by the Construction and Quality representatives as well as Caltrans and third parties when applicable.

The Segment Manager shall notify the Construction Quality Control Manager (CQCM) when a feature of work has been completed and is ready for a Critical Activity Point Inspection.

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	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-003 Critical Activity Point Inspection Report	CQP-003
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The CQCM, or his the designated QC representative, shall perform the Critical Activity Point Inspection in the presence of a construction representative. As part of the inspection, CQAM, PCM, Caltrans, and involved local agency representatives shall be notified to participate according to their requirements.

5 PROCEDURE

For all features of work, the Critical Activity Points must be identified and accepted before starting the work. The Critical Activity Points shall be detailed in the Inspection and Test Plan which will be included in the Site Specific Construction Work Plan (SSCWP).

The list of Critical Activity Points must be published and made available to the appropriate Construction personnel.

The Segment Manager or Subcontractor QC representative shall be responsible for insuring that the feature(s) of work designated for inspection have in fact been substantially completed prior to scheduling a formal Critical Activity Point Inspection. A Notice of Inspection shall be initiated and forwarded to the CQCM for distribution.

After review, the CQCM will forward the Notification of Inspection via e-mail and/or DFJV cloud platform managing information program (*Aconex*) to:

- Construction Quality Assurance Manager (CQAM)
- PCM
- Third Parties involved

Notification to all appropriate parties will be provided at a minimum of 2 hours prior to the end of the work day previous to the scheduled inspection or upon agreed time.

The CQCM, or his the designated QC representative, shall inspect the feature of work to verify that it is complete and conforms to the applicable requirements jointly with a Construction representative.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-003 Critical Activity Point Inspection Report	CQP-003
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The CQCM, or his the designated QC representative, must ensure that the required tests and/or inspections for acceptance have been performed according to the Contract requirements. The required documentation will be reviewed and verified to ensure that the required signatures have been made on the forms.

The inspection details shall be entered on the Critical Activity Point Inspection Report form during the inspection process.

At the end of the inspection, the Construction representative, the Subcontractor representative if it is required and CQCM/QC representative shall sign off on the form. When the QA representative has selected this feature of work for inspection and statistical audit, he shall sign off on the form too.

PCM, Caltrans and others third parties, as applicable, shall sign off on the form too.

The completed form shall be forwarded to the Quality Document Control Manager for processing.


Construction of any feature of work that will be covered or otherwise deny access to the inspected feature of work shall not begin until all nonconforming items have been cleared and verified by the CQCM / CQAM in writing.

6 REFERENCES

Quality Management Manual (QMM)

7 ATTACHMENTS

CQA-003 Critical Activity Point Inspection Report

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-004 Work Completion Inspection	CQP-004
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1 PURPOSE

To define the responsibilities and describe the methods and documents to be used to carry out Work Completion Inspections of portions or sections of the Project.

2 SCOPE

This procedure applies to those portions and/or sections of the Project which have been substantially completed.

The Work Completion Inspection shall demonstrate the conformance of a particular portion of work or system to the contract requirements. Completed portions of work may include sections of roadway, bridges, structures, and environmental areas, or in the case of subcontracted work, specific elements of work associated with a portion of the Project.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Construction Manager or Segment Manager, shall notify the Quality Manager when a portion and/or section of the Project has been Substantially Completed and is ready for a Work Completion Inspection. Where sections of the Project are being considered for Work Completion Inspection, the size and length of the Project to be scheduled for inspection shall be determined by the Construction Manager.

As a prelude to performing any Work Completion Inspection, the Quality Manager shall assemble a list of all incomplete work, outstanding tests, material reports and/or open Non-conformance Reports for the portion or section of work being considered for Completion Inspection.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-004 Work Completion Inspection	CQP-004
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The Construction Representatives, PCM, Third parties, and involved local agency representatives shall be notified and requested to participate in the inspection.

5 PROCEDURE

The Construction Representative, shall be responsible for ensuring that the portions and/or sections of the work designated for inspection have in fact been substantially completed prior to scheduling a formal Work Completion Inspection. A Notice of Inspection shall be initiated and forwarded to the Quality Manager for distribution.

The Quality Manager, or QA Representative, shall perform a formal inspection of the completed portion or section of the Project.

The Work Completion Inspection details, including nonconforming items, shall be entered on the Work Completion Inspection Report form during the inspection process.

At the end of the inspection, the Construction Representative, QA Representative, V&V representative, Safety and Security representative (for certifiable items) and Environmental Compliance representative, PCM, and Third Party as applicable shall sign off on the form. The completed form shall be forwarded to the Quality Document Control Manager for processing.


6 REFERENCES

Quality Management Manual

Book IV Part D.1, Section 4.6 Quality Milestone Data Pack

7 ATTACHMENTS

CQA 004 Work Completion Inspection Report

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-005 Pre-Final Inspection	CQP-005
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1 PURPOSE

To define the responsibilities and describe the methods and documents to be used to carry out Pre Final Inspections of Substantially Completed project Segments and/or approved sub segments.

2 SCOPE

This procedure applies to all project Segments and approved sub segments.

The Pre Final Inspections shall be performed when all elements of work have been Substantially Completed by all entities performing work in the Segment and/or sub segment.

Pre Final Inspection is an acceptance inspection which requires the participation of Authority, PCM, Third parties and involved local agencies.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Construction Manager, or Segment Manager, shall ensure that all work within the Segment and/or sub segment has been Substantially Completed prior to scheduling the Pre Final Inspection.

The Construction Manager, or Segment Manager, shall ensure that all aspects of the particular Segment have been satisfactorily completed, including identified deficiencies and Nonconformance Reports.

The Quality Manager will verify that all required in process inspections have been performed

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-005 Pre-Final Inspection	CQP-005
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and documented in accordance with the Construction Quality Management Plan and the Quality Management Manual.

The Quality Manager shall coordinate the performance of the Pre Final Inspection with Authority, PCM, Third parties and local agency representatives.

5 PROCEDURE

Pre Final Inspection of a Segment and/or sub segment shall be scheduled by the Quality Manager when all elements of work have been Substantially Completed by all entities performing work in the Segment.

In addition to verifying that all required in process inspections and tests have been performed, the following must have occurred:

- All work has been completed (except for Punch List and final cleanup),
- The Segment and/or sub segment has been constructed in accordance with the requirements of the Contract Documents,
- The Segment and/or sub segment may be operated without damage to the Project or any other property on or off the site, and without injury to any person, and
- The Segment and/or sub segment is ready for operation or other subsequent contracts of the project for which the DFJV is not responsible.

Pre Final Inspections shall be scheduled sufficiently in advance of requesting Substantial Completion and Partial Acceptance from Authority, PCM, and Caltrans or third party for a Segment and/or sub segment.

In addition to the performance of a document review, the Pre Final Inspection of a Segment and/or sub segment shall include a formal walk through coordinated by the Quality Manager with Authority, PCM, Third parties and local agency representatives.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-005 Pre-Final Inspection	CQP-005
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The Pre Final Inspection details shall be entered on the Pre Final Inspection Report form during the inspection process.

At the completion of the inspection a review meeting shall be held to discuss the results of the inspection and any outstanding issues which may impact Substantial Completion and Partial Acceptance of the Segment and/or sub segment.

6 REFERENCES

Quality Management Manual

Book IV Part D.1, Section 4.6 Quality Milestone Data Pack

7 ATTACHMENTS

CQA-005 Pre Final Inspection Report

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-006 Final Inspection	CQP-006
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1 PURPOSE

To define the responsibilities and describe the methods and documents to be used for accepting and turning over to Authority and PCM project Segments and/or sub segments which have been Substantially Completed.

2 SCOPE

This procedure applies to all project Segments and approved sub segments.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Project Manager shall determine which Segments and/or sub segments will be opened to use or traffic prior to the contract Guaranteed Completion Dates.

The Construction Manager shall ensure that all work within the Segment and/or sub segment has been Substantially Completed prior to scheduling the Final Inspection.

The Construction Manager, or Segment Manager, shall ensure that all aspects of the particular Segment have been satisfactorily completed, including identified deficiencies and Non-conformance Reports.

The Quality Manager will verify that all required in process inspections and Pre Final Inspection have been performed and documented in accordance with the Quality Management Manual.

The Quality Manager shall coordinate the performance of the Final Inspection with Authority, PCM, Caltrans, Third Party and other local agency representatives.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-006 Final Inspection	CQP-006
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5 PROCEDURE

The Segment and/or sub segment shall be Substantially Completed prior to requesting Acceptance from PCM and Third parties.

Substantial Completion and Partial Acceptance of the Project, Segment and/or sub segment shall be requested from Authority and PCM after the following have occurred:

- Correction of all nonconforming items in the Project (including possible punch lists) relating to any of the items described above and/or deviations of any installed equipment, materials and workmanship from the requirements of the Contract Documents,
- If required, satisfying agreed to Caltrans Safety Committee review comments prior to opening for service,
- All applicable Governmental Approvals for the Project, Segment and/or sub segment have been obtained,
- Punch List for the Project, Segment and/or sub segment and, if required, a list of Caltrans Safety Committee review comments to be performed after opening of the Project, Segment and/or sub segment has been mutually agreed to by Authority, PCM, Caltrans and the Design Builder DFJV,
- Performed all work required by the authorities having jurisdiction over the Project or Segment, and

Final Acceptance of the Project shall be requested by the Project Manager from Authority and PCM after the following have occurred:

- All requirements for Substantial Completion of the Project have been fully satisfied,
- All Design Documents, as built drawings, ROW record maps, surveys, test data and other deliverables required under the Contract have been transferred to Authority and PCM,
- All special tools and spare parts have been delivered to Authority / PCM,
- Certification representing that there are no outstanding claims, liens or stop notices by any

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	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-006 Final Inspection	CQP-006
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subcontractor in accordance with the Contract,

- That all remaining Punch List items and, if required, Caltrans Safety Committee review items, have been completed to the reasonable satisfaction of Authority, PCM, Caltrans, Third Party and local agencies,
- Prepare and deliver to Authority / PCM a Notice of Completion for the Project in recordable form and meeting all statutory requirements.

6 REFERENCES

Quality Management Manual

Book IV Part D.1, Section 4.6 Quality Milestone Data Pack

7 ATTACHMENTS

CQA-006 Final Inspection Report

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-007
	Construction Quality Management Plan	REVISION: 1
	Construction Quality Procedures (CQP)	Page 1 of 3
	CQP-007 Inspection and Control of Permanent Material	04/08/2016

1 PURPOSE

To define the process by which Permanent Materials and Manufactured Products purchased by DFJV and its Subcontractors are inspected/tested, released and received for use on the project.

2 SCOPE

This procedure applies to all permanent materials being incorporated into the Project, regardless of the origin.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Construction Manager (CM) and Construction Quality Control Manager (CQCM) shall maintain a list of all permanent material which will be purchased and incorporated into the work in each Segment of the Project.

For all permanent materials to be used in third parties right of way, standardized procedures and forms from the Third Party will be applied including all third party formal approvals in intermediate fabrication steps that will take place prior to delivery to the jobsite according to their Master Agreements with the Authority.

The QC Material Engineer shall implement and maintain a system for monitoring and tracking all permanent materials purchased and sourced for the project.

The QC Material Engineer part of the Construction Quality Control Team (CQCT) shall be responsible for conducting receipt and placement inspections of permanent material delivered to the project.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-007 Inspection and Control of Permanent Material	CQP-007
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5 PROCEDURE

The Segment Manager (SM) shall prepare a list of all permanent material to be purchased and incorporated into the work. The list shall be specific to the Project Segment (High Speed Rail), Caltrans or Third Parties right of way and jurisdiction.

The SM shall submit all permanent material to be purchased for the Project on the DFJV Request for Approval of Material (RFAM) form (CQA 007), along with material/product data sheets. The SM must provide all relevant data on the form, including material/product type, manufacturer, manufacturer location, unit of measure, and specification section reference (i.e. HSR Construction Specifications).

If the material/product is to be used in in a third party right of way, additionally the standardized forms of the third party will be generated when it is required.


The QC Material Control Engineer will generate a RFAM number for the RFAM form. For each type of material/product, a Record of Materials (ROM) number will be generated and included on the RFAM form. All materials/products purchased must have a ROM number that can be traced to an approved RFAM form.

All materials to be used on the Project must be approved by DFJV using the RFAM form. The RFAM form is reviewed and approved by CQCM, and the Design Materials Engineer.

As permanent materials are placed on the Project, the QA and QC Inspector(s) will perform daily inspections and record placement quantities on the Materials Placement Report (form CQA 008B).

6 REFERENCES

Quality Management Manual (QMM)

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-007
	Construction Quality Management Plan	REVISION: 1
	Construction Quality Procedures (CQP)	Page 2 of 3
	CQP-007 Inspection and Control of Permanent Material	04/08/2016

7 ATTACHMENTS

CQA 007 Form Request for Approval of Materials (RFAM)

CQA 008A Materials Receiving Report (MRR)

CQA 008B Materials Placement Report (MPR)

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-008
	Construction Quality Management Plan	REVISION: 1
	Construction Quality Procedures (CQP)	Page 1 of 4
	CQP-008 Control of Measuring and Test Equipment	04/08/2016

1 PURPOSE

To define a uniform method of identifying and controlling the calibration, inspection, and reliability of all measuring and test equipment used by any personnel under this contract.

2 SCOPE

This procedure applies to all inspection, measuring and test equipment and devices used on the project which assist in determining work item conformance to contract and Quality requirements.

This procedure does not apply to equipment and devices owned and maintained by Laboratories contracted to perform work on the Project. Laboratories shall follow in house procedures.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The organization or department responsible for using the measuring and test equipment is responsible for verifying that it is maintained and calibrated in accordance with the manufacturer's recommendations. The organization or department responsible for using the equipment shall maintain a permanent record of all calibrations.

The Quality Manager shall review calibration/maintenance records on an adequate basis, depending on the manufacturer's requirements, to verify they are current.

The Authority and PCM may review the calibration/maintenance records at any time.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-008 Control of Measuring and Test Equipment	CQP-008
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5 PROCEDURE

5.1 Identification

All measuring and test equipment used for acceptance inspections and tests shall be calibrated. Calibration frequencies shall be in accordance with the measuring or test equipment manufacturer's recommendations. Measuring and test equipment shall be classified as Category 1 or 2 as follows:


- **Category 1** – Measuring and test equipment used to determine acceptability of the physical, mechanical, environmental, and/or chemical characteristics of items, products, processes, systems, and structures. Scheduled calibration shall be required and documented.
- **Category 2** – Measuring and test equipment such as rulers, tape measures, levels, beakers, etc. may be used to produce data where commercial accuracy is considered adequate for the intended purpose without calibrations and control measures applied. No calibration is needed.

Measuring and test equipment shall be identified and controlled to ensure proper selection and use, based on such items as type, range, accuracy and tolerance to accomplish the function of determining acceptability and conformance to specified requirements of items.

Each Category 1 device requiring calibration shall be assigned a unique identification. The identification, when physically possible, shall be permanently placed on the device. Where marking the device is not possible, due to the size, configuration, complexity, or location of the device, the marking shall be in such a manner that identification control is ensured.

A controlled listing of all Category 1 devices requiring calibration with their associated unique identifications shall be maintained.

A record shall be established and maintained for each Category 1 device under the calibration program. The record shall include the following information:

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	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-008 Control of Measuring and Test Equipment	CQP-008
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- Description of the device
- Manufacturer of the device
- Model number
- Unique assigned identification number
- Frequency of calibration
- Standard used for calibration
- Required calibration range
- Date of last calibration
- Due date of next scheduled calibration
- Name of calibrator
- Environmental conditions necessary for storage and/or use
- Accuracy deviation allowances as found and as calibrated

5.2 Calibration

The standards used for calibrations shall be traceable to its base source validating its qualification as a standard, e.g., National Institute of Standards and Technology (NIST). If no standard exists, the basis for calibration shall be documented.

Calibrations shall be performed by qualified personnel using approved procedures. The basis for personnel qualification shall be documented.

The appropriate organization shall be notified if an out of calibration condition is identified. An evaluation shall be performed and documented to validate previous inspections or tests utilizing the subject equipment.

Out of calibration devices shall be tagged and segregated and not used until they have been recalibrated.

If equipment shows evidence of damage, does not function properly, or was exposed to actions or environmental conditions that may have jeopardized its accuracy, or if the calibration label or

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-008 Control of Measuring and Test Equipment	CQP-008
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tamper resistant seals show evidence of tampering, the equipment shall be properly identified or segregated, removed from service, and recalibrated.

The organization shall arrange for a replacement during which time the equipment is out of use for repair or calibration.

5.2 Equipment Use

Selection of equipment shall be controlled to assure that such items are of the proper type, range, accuracy and tolerance to accomplish the function or task.

Prior to the use of calibrated measuring and test equipment for acceptance Inspections or tests, the current calibration status and condition of the measuring and test equipment will be verified. Measuring and test equipment that is out of calibration will not be used.

Shop and Working Drawings will be included in the appropriate CWP to be utilized by field construction inspection personnel.

6 REFERENCES

Quality Management Manual (QMM).

7 ATTACHMENTS

None.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-009 Stop Work Order	CQP-009
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1 PURPOSE

To define the responsibilities and describe the methods and documents to be used to stop the continuation of work being performed by the DFJV that is not in conformance with the requirements of the applicable contract documents. Also, to stop the continuation of any work that is deemed to be life threatening or otherwise unsafe.

2 SCOPE

This procedure applies to any item of work where an NCR has been issued and the DFJV has continued work with the nonconforming item.

This procedure also applies to any life threatening or otherwise unsafe conditions that where work must be stopped to restore a safe working environment.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

In the case of safety, any project personnel may stop work without the issuance of a Stop Work Order.

The Quality Manager is responsible for issuing a Stop Work Order.

The Construction Manager is responsible to stop work and develop corrective action to resolve the nonconforming work item.

The DFJV Executive Committee shall respond when there is no action taken.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-009 Stop Work Order	CQP-009
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5 PROCEDURE

A Stop Work Order action shall only be taken subsequent to other project procedural action having been taken, such as: verbal or written communication or a Non-conformance Report.

Only the Quality Manager shall issue a Stop Work Order.

The Quality Manager may propose recommended corrective action to resolve the problem.

The Quality Manager shall verify the corrective actions are implemented and the work is in conformance with the requirements of the contract documents.

Upon implementation and verification of the corrective action, the Quality Manager will sign off the Stop Work Order and allow the work to resume.

The completed Stop Work Order shall be distributed to the project personnel involved in the action. A copy will also be documented as Quality Records.

6 REFERENCES

Quality Management Manual (QMM)

7 ATTACHMENTS

CQA 009 Stop Work Order Form

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-010
	Construction Quality Management Plan	REVISION: 1
	Construction Quality Procedures (CQP)	Page 1 of 4
	CQP-010 Shop and Working Drawings	04/08/2016

1 PURPOSE

To define the responsibilities and describe the methods used to review and submit Shop and Working Drawings.

2 SCOPE

This procedure applies to all Shop and Working Drawings created by DFJV depicting the proposed fabrication and/or assembly of structural elements or the installation of materials or equipment which illustrate the construction of work.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

The Segment Manager is responsible to submit Shop and Working Drawings using the form DQP 3.16-1 to the Design Manager and copy to the Construction Quality Assurance Manager (CQAM).

The Design Manager is responsible for implementing Quality Control as stipulated in the Design Procedure **DQP 3.16. “Construction Submittals”** included in the DQMP.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-010 Shop and Working Drawings	CQP-010
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5 PROCEDURE

5.1 Working Drawings

Working Drawings shall be defined as follows:

- False work
- Shoring
- Column Guying
- Bridge Demo Plans
- Erection Plans
- Bridge Deck Pour Plans
- Haul Bridges
- Other Temporary Work

Working Drawings shall be prepared by a California Registered Engineer. A second California Registered Independent Engineer shall verify and stamp the Working Drawings. The second California Registered Independent Engineer will not directly report to the original California Registered Engineer.

The Segment Manager will submit the Working Drawing to the Design Manager using the form DQP 3.16-1 to process according to Design Procedure **DQP 3.16. “Construction Submittals”**.

The CQAM shall review the submittal package to ensure the above process has been followed according to this procedure (CQP-010 “Shop and Working Drawings”) before submitting it to the PCM, Caltrans or Third Parties for review, SONO or Information according to the Construction Phase Submittal List.

5.2 Shop Drawings

Shop Drawings shall be defined as follows:

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
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- Sign Structures
- Pre-stressing Drawings
- Earth Retaining Systems
- Precast Elements
- PTFE Bearings
- Structural Steel
- Pumping Facilities, Buildings
- Anchor Bolt Layouts
- Bearing Pads and Joint Seals
- Utilities
- TMS


Shop Drawings shall be prepared and checked by the Supplier.

The Segment Manager will submit the Shop Drawing to the Design Manager using the form DQP 3.16-1 to process according to Design Procedure **DQP 3.16. “Construction Submittals”**.

The Construction Submittal Reviewer (CSR) appointed by the Design Manager shall stamp each page of the review package with the Project Shop Drawing Review Submittal Stamp according DQP 3.16-1 Form.

The DQAM shall review the submittal package to ensure the above process has been followed. Following a satisfactory review, the DQAM shall certify that the package is compliance with this procedure.

All Shop Drawings shall be submitted to PCM for SONO or Information according to the Construction Phase Submittal List by the Construction Manager including approval of the Design Manager.

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-010
	Construction Quality Management Plan	REVISION: 1
	Construction Quality Procedures (CQP)	Page 4 of 4
	CQP-010 Shop and Working Drawings	04/08/2016

6 REFERENCES

Quality Management Manual (QMM).

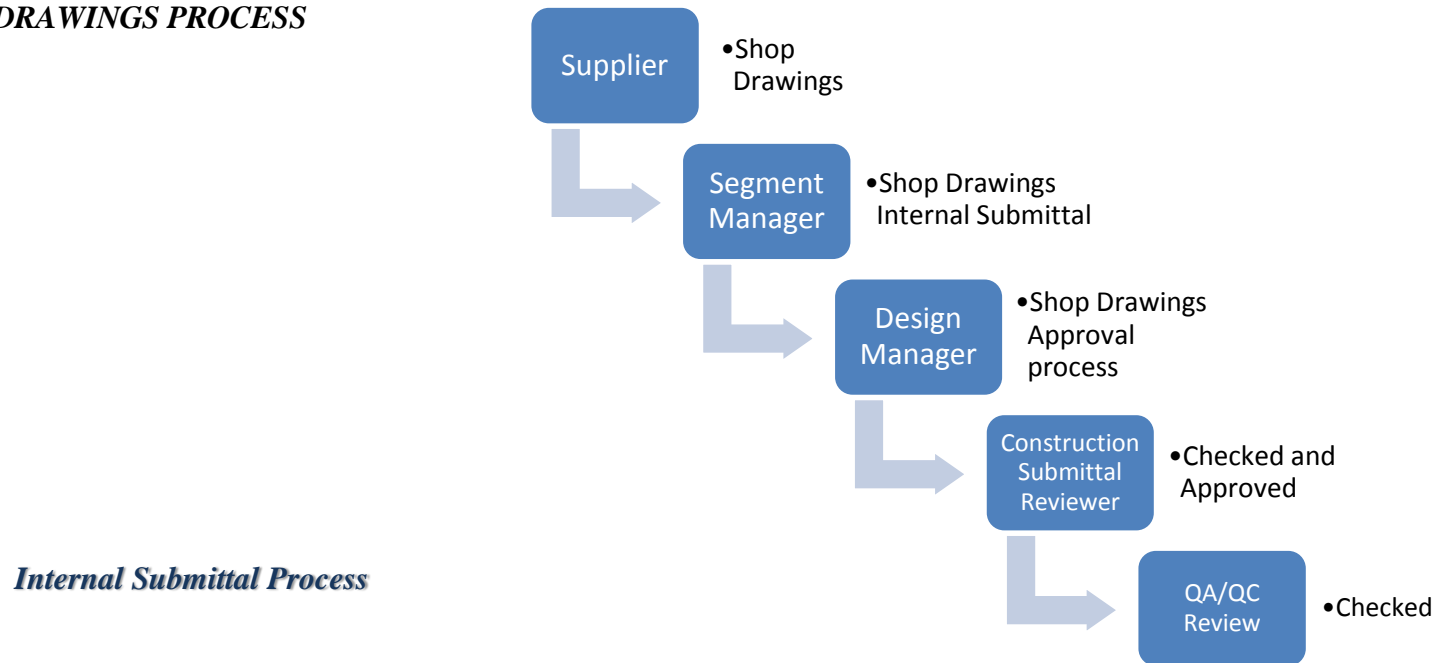
Design Quality Management Plan (DQMP): **DQP 3.16 “Construction Submittals”**

Verification, Validation and Self-Certification Plan (VVSCP).

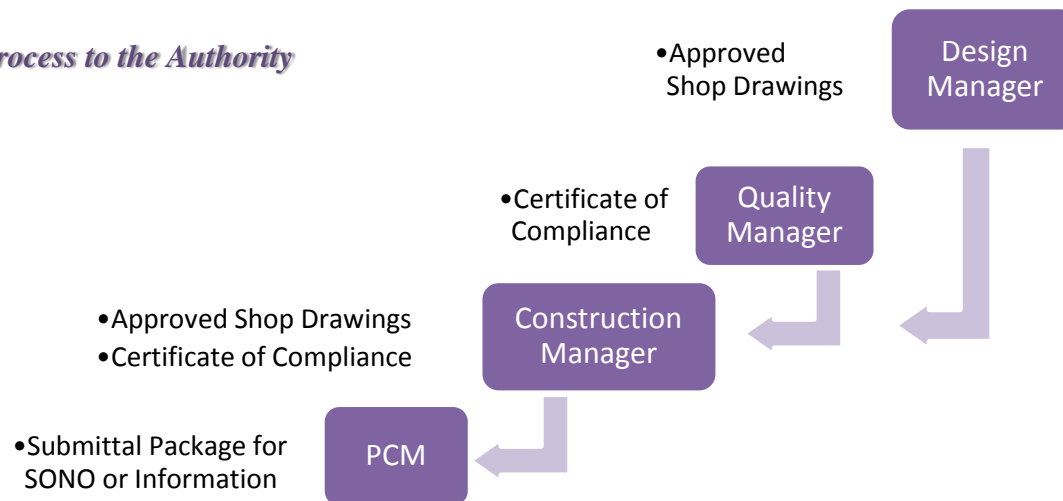
7 ATTACHMENTS

Shop Drawings Flow Chart.

SHOP DRAWINGS PROCESS



Submittal Process to the Authority



Flow Chart 1 Shop Drawings

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-011
	Construction Quality Management Plan	REVISION: 1
	Construction Quality Procedures (CQP)	Page 1 of 4
	CQP-011 Request for Information	04/08/2016

1 PURPOSE

To provide a uniform and documented process to address Requests for Information (RFI) to the Ready for Construction (RFC) documents or Contract Documents requested by the DFJV, Authority or PCM. An RFI may be initiated when there is a need for clarification to the RFC's plans or specifications, there is some ambiguity to the plans or specifications, or to address unexpected or changed conditions in the field.

2 SCOPE

This procedure defines the interaction between the Authority, PCM, and DFJV's Contractor and Designer Teams when a RFI is initiated. When the RFI is Major and results in the revisions to RFC documents, a Notice of Design (NDC) will be issued.

3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

RFI's will be documented and tracked using the DFJV's RFI module in DFJV cloud platform managing information program (*Aconex*). DFJV will be responsible for providing access to the RFI module in *Aconex* to enable the procedures outlined here to be accomplished.

The default system set by the Authority to initiate RFI's by DFJV to the Authority/PCM is through *CMS*. Besides, the Contractor will provide the possibility to the Authority/PCM to use *Aconex* to generate an RFI and be included in the distribution of all initiated RFI's and responses to RFI's.

The Document Control Manager is responsible for processing the RFI for distribution.

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQP-011
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	Construction Quality Procedures (CQP)	Page 2 of 4
	CQP-011 Request for Information	04/08/2016

The Construction Manager / Segment Manager / Design-Build Coordination Manager initiate any RFI related to design questions and clarifications to the Design Manager processed by the Document Control Manager. The RFI distribution list consists of persons from Design, V&V Team, Quality Control and Quality Assurance Team, Change Manager and other Project personnel.

If the RFI cannot be internally resolved, it will be forwarded to the Authority/PCM through *CMS*.

The Primary Responder is responsible for responding to the RFI in a timely manner.

The Design Manager, Construction Manager, Design-Build Coordination Manager, CQAM and Document Control Manager are all responsible for providing necessary oversight of the RFI process. All members of the RFI distribution list will be notified when a RFI is initiated, updated and closed.

5 PROCEDURE

All open RFI's will be reviewed during the regular construction status meetings where Authority/PCM and/or Third Parties can communicate their concurrence with the action being considered for any outstanding RFI's.

RFIs can be generated in *Aconex* by DFJV Managers.

Design Related RFI

The Construction / Segment Manager or Design-Build Coordination Manager generate an RFI to the Design Manager as a Primary responder for design related RFI's in *Aconex*.

The Construction / Segment Manager generate an RFI to the Authority/PCM for contract related RFI's in *CMS*.

The Document Control Manager (DCM) will automatically be notified of the RFI. The DCM assigns a primary responder and posts the RFI for distribution. The open RFI is automatically

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sent to the RFI distribution list.

When the Design Manager is the Primary responder, shall apply the procedure included in the Design Quality Management Plan (DQMP) **DQP 3.12.1 “Field Design Services-Request for Information”**.

The Primary Responder will prepare the response to the RFI and notifies the DCM that the response is complete for distribution. For Design related RFI’s the Design Manager will prepare the RFI response preferably using *Aconex*.

The DCM posts the RFI response in *Aconex* for distribution. The RFI response is automatically sent to the RFI distribution list.

Upon Authority/PCM concurrence, the RFI will be closed and automatically sent to the RFI Distribution list. The closed RFI is not to be re-opened for further reviews.

The closed RFI will be noted and hyper linked to the pertinent RFC Controlled document(s).

The RFI Log shall be reviewed on a regular basis within the context of the coordination meetings. The intent of the review is to coordinate the management of the RFI process and not to be a technical review of RFI content.

When the RFI is Major and results in revising and rereleasing RFC’s plans the following additional procedures shall be followed:

- The RFI response shall indicate which plans sheets and/or specifications will be revised.
- A Notice of Design Change (NDC) shall be issued per the **DQP 3.11 “Documentation and Notice of Design Change”** or a Notice of Field Design Change (NFDC) shall be issued per the **DQP 3.12 “Field Design Services-Field Design Change”** both included in the Design Quality Management Plan (DQMP).

When a change is coming from the Designer, then a Design Change Notice is prepared to be sent to the potential impacted holders of documentation and to the Worksite Managers (Construction

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Manager, Segment Managers, QA/QC Managers, VVSC Manager and Change Manager).

When the change is coming from the Construction Manager/Segment Managers, then a Field Change Notice is prepared to be sent to the Designer and prepare all the documentation needed to be submitted and follow the Design Process including Verification, Validation and Self-Certification process, as well as to inform all potential impacted stakeholders (Segment Managers, QA/QC Managers, VVSC Manager and Change Manager).

6 REFERENCES

Quality Management Manual (QMM)

Design Quality Management Plan (DQMP):


DQP 3.11 “Documentation and Notice of Design Change”

DQP 3.12 “Field Design Services-Field Design Change”

DQP 3.12.1 “Field Design Services-Request for Information”.

7 ATTACHMENTS

None.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-012 As-Built	CQP-012
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1 PURPOSE

To provide a uniform process to document the construction “As Built” conditions on the Project As-Built records.

As-Built documents are also used to support close out of logical elements of work (Quality Milestone) and ultimately Project Closeout.

2 SCOPE

This procedure defines the interaction between Constructions, Quality Management, Design and PCM to provide As-Built records that document the built conditions that differ from the Ready for Construction (RFC) approved design documents.

As-Built information will be progressively documented during construction in Notice of Field Design Change (NFDC), Non Conformance Reports (NCRs) and Redline drawings and uploaded to a “As Built Drive” immediately upon the logical work element (Quality Milestone Data Pack) acceptance.


3 DEFINITIONS

The terms and definitions listed in the Quality Management Manual shall apply.

4 RESPONSIBILITIES

Field Engineers will be responsible for providing complete, accurate and timely As-Built Redlines, NCRs and NFDCs to enable the procedures to be accomplished as soon as the work is completed.

Construction Manager/Segment Manager is responsible for enforcing this procedure, training staff, ensuring completeness and timely delivery.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-012 As-Built	CQP-012
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Design Manager is responsible for updating the As-Built information provided by construction in the CADD files and preparing the deliverables per the contract requirements; and maintaining a log of completed As Built sheets that can be reviewed by QC and QA.

Design Quality Manager is responsible for ensuring compliance and certifying that the As-Built documents are prepared and checked in accordance with the DQMP.

Quality Manager is responsible for certifying the As Built documents follow the procedure and submitting it to PCM.

5 PROCEDURE

As Built records are progressively prepared on suitable electronic records by the field engineer for a logical element of work. The record information will be complete, accurate and presented neatly by updating the plan documents on a Share Point / DFJV cloud platform managing information program (*Aconex*).


The Construction Manager/Segment Manager reviews and ensures that the information is for a logical element of work, complete information is provided and presented so that that the information can easily be interpreted by the Design Manager to update CADD files.

The CQCM verifies the As-Built records are updated on the Share Point / *Aconex* include all applicable NFDCs, Redlines, NCRs and satisfies a logical element of work.

The CQAM certifies the As-Built records followed the appropriate procedures.

The Design Manager verifies the information/changes and updates in CADD, in accordance with the contract requirements. The Design Manager will create and maintain a current log of the As Built sheets on the Share Point / *Aconex* that can be audited by QA.

The Construction / Segment Manager will work with the VVSC Manager to ensure that the revised technical document is traced to the RVTM and undergoes design QA/QC processing.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	Construction Quality Management Plan Construction Quality Procedures (CQP) CQP-012 As-Built	CQP-012
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The DQM will certify that the As Built Records are updated in accordance with the DQMP and coordinates transmittal to the Quality Assurance Manager for validation and subsequent submittal to PCM for review and approval. VVSC Manager provides V&V report and Self-certification of As-Built submittals whenever changes occur for RFC impacting TCR.

PCM will review and/or approve the As-Built submittal. If any information is missing or incomplete, it will be coordinated with the Quality Manager to rectify the situation.

If additional information is necessary, the Quality Manager will coordinate between construction and design to complete the required information and resubmit to PCM.

An As-Built Log sheet shall be updated by Document Control Manager as they are accepted by PCM.

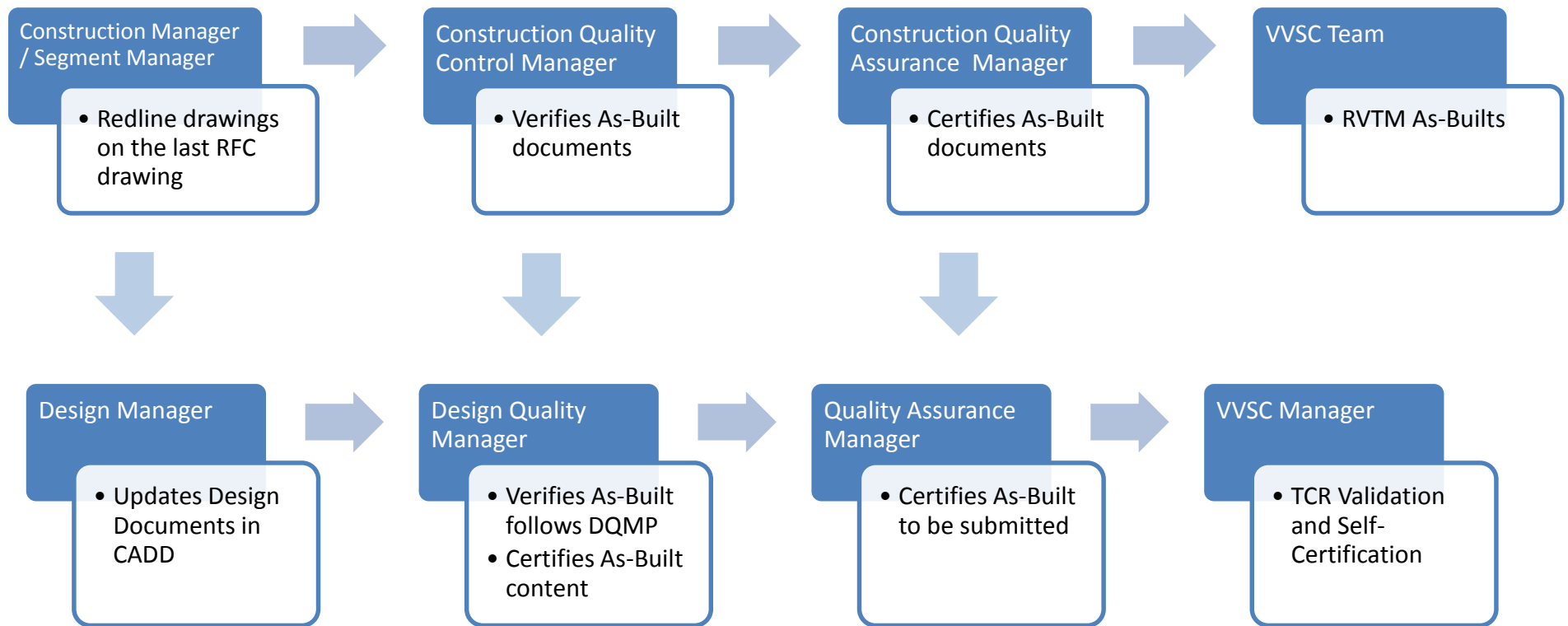
6 REFERENCES

Quality Management Manual (QMM)

7 ATTACHMENTS

As Built Process Flow Chart

AS-BUILT PROCESS



Flow Chart 2 As-Built Process before submitting to PCM /Authority



California High-Speed Rail Project

Design-Build Contract for Construction Package 2-3

CONSTRUCTION QUALITY MANAGEMENT PLAN (Part 1 of 2)

APPENDIX A.2 CQA Forms

CQA-001	Pre-activity Meeting Checklist (2 pages)
CQA-002	Daily Inspection Report
CQA-003	Critical Activity Point Inspection Report
CQA 004	Work Completion Inspection Report
CQA-005	Pre Final Inspection Report
CQA-006	Final Inspection Report
CQA 007	Form Request for Approval of Materials (RFAM)
CQA 008A	Materials Receiving Report (MRR)
CQA 008B	Materials Placement Report (MPR)
CQA-009	Stop Work Order Form
GP 2.05/ SF-01	Materials Receiving Acceptance Status
GP 2.05/ SF-02	Material Provided by the Authority / Third Parties
GP 2.05/ SF-03	QA/QC Checklist / Lot Tests Acceptance Reports Status
GP 4.01/ SF-02	Non-conformance Report
GP 4.02/ SF-02	Corrective Action Report
GP 4.02/ SF-04	Preventive Action Report
DQP 3.12-1	Notice of Field Design Change
DQP 3.16-1	Construction Submittal

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	CQA-001 Pre-activity Meeting Checklist	CQA-001
		Page 1 of 2

Date:	Construction Work Plan:
CWP Prepared By	

Third Parties:

--

Subcontractors:

--

Pre-activity Meeting Checklist	Yes	No	N/A
Construction Work Plan Components			
Does the CWP contain the following components?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description of the Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety Requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental requirements, including SWPPP?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List of applicable Contract Documents, Plans and Specifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schedule and Sequence of Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QA/QC Checklists (Inspection and Tests)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acceptance Criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Critical Activity Points (Hold Points)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, list items:			

List of contacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>	HSR 13-57
	CQA-001 Pre-activity Meeting Checklist	CQA-001
		Page 2 of 2

Pre-activity Meeting Checklist	Yes	No	N/A
Pending Items			
Are any items pending that must be completed prior to starting the Work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, list items:			

Conclusion			
Are all the prerequisites completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is it cleared to proceed with the Work at this time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, list items:			

Notes

Construction Representative
Name and position

Subcontractor(s) Representative
Name and position

QC Representative
Name and position

QA Representative
Name and position

Safety Representative
Name and position

Environmental Representative
Name and position

PCM Representative
Name and position

Third Party Representative
Name and position

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-002 Daily Inspection Report		CQA-002
			Page 1 of 1

General			
Segment	<i>1</i>	Inspection date (mm/dd/yyyy)	<i>08/08/2018</i>
Construction Work Plan	<i>Viaduct 1</i>		

Weather	AM	Sample	<i>Cloudy 100 F</i>	Working?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	PM	Sample	<i>Windy</i>	Working?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

QA/QC Checklist# - Construction Activity		<i>QA/QC # F-001 - Foundations</i>	
Element - Traceability		<i>Foundation 1</i>	
Operation	<i>Rebar</i>	QA/QC Checklist report #	<i>F-11052</i>
Responsible	<i>Superintendent</i>	CAP Inspection report #	<i>CAP-0534</i>
Rework items identified not corrected	<i>Separation bars north side</i>		
	<i>-</i>		
Rework items identified corrected	<i>Separation bars south side</i>		
	<i>-</i>		
Remarks	<i>Lab took sample of rebar, ticket # SG1-R-526</i>		

QA/QC Checklist# - Construction Activity		<i>QA/QC # F-001 - Foundations</i>	
Element - Traceability		<i>Foundation 2</i>	
Operation	<i>Concrete</i>	QA/QC Checklist report #	<i>F-11063</i>
Responsible	<i>Superintendent</i>	CAP Inspection report #	
Rework items identified not corrected	<i>-</i>		
	<i>-</i>		
Rework items identified corrected	<i>Separation bars west side</i>		
	<i>Cast deviation west side</i>		
Remarks	<i>Lab took sample of concrete, ticket # SG1-C-1025</i>		

General Remarks / Identified Non –Conformances?			
<i>Protection of the surface at the end concrete operation (windy and hot)</i>			
Key Personnel present on site:		QC Representative Name and position	
Construction Representative Name and position	Subcontractor(s) Representative Name and position	QA Representative Name and position	

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-003 Critical Activity Point Inspection Report		CQA-003
			Page 1 of 1

CAP Report No.	<i>CAP-0534</i>		
Segment	<i>1</i>	Inspection date (mm/dd/yyyy)	<i>08/08/2018</i>
Construction Work Plan	<i>Viaduct 1 Foundations</i>		

QA/QC Checklist# - Construction Activity		<i>QA/QC # F-001 - Foundations</i>	
Element - Traceability		<i>Foundation 1</i>	
Operation	<i>Rebar before concrete</i>	Construction Responsible	<i>John Smith Superintendent</i>
		QC Responsible	<i>Rob Roy QC Inspector</i>

Does work comply with RFC Plans?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>FF-TT-2514</i>
Does work comply with RFC specifications?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>1 000 523 RFC 1</i>
Does work comply with any issued RFI's?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>RFI-53</i>
Have all materials been approved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>Inspection report #356</i>
Have all materials been accepted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>Inspection report #556</i>
Have all materials been sampled per specifications?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>Lab ticket # SG1-C-74</i>
Do all materials meet material testing specifications?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	<i>Testing report# C-2253</i>
WORK OK TO PROCEED?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Document Reference:	
Remarks	<i>Concrete scheduled for tomorrow morning 6 AM; 5000 psi – 1000 yd3</i>		

Construction Representative Name and position	QC Representative Name and position
---	---

Subcontractor(s) Representative Name and position	QA Representative Name and position
---	---

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-004 Work Completion Inspection Report		CQA-004
			Page 1 of 1

Segment	<i>1</i>	Date (mm/dd/yyyy)	<i>08/08/2018</i>
Construction Work Plan	<i>Viaduct 1 Foundations</i>		
Summary of Elements	<i>Deep Foundations</i>		
	<i>Foundations</i>		

Requirement		Comments
Pre-activity Meeting completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	:
Inspection elements conducted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Critical Activities Point Inspection completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
QA/QC Checklists completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Materials approved and accepted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Materials sampled per specifications	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Materials meet lab test specifications	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Are Non-conformances closed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Final tests meet design specifications	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
As built drafts prepared?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
WORK OK FOR SUBSTANTIAL COMPLETION?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Remarks	<i>Pillars ready to go</i>	

Disclaimer / Maintenance

ACCEPTANCE	
Construction Representative	QC Representative
QA Representative	V&V Representative
Safety and Security Representative	Environmental Compliance Representative
PCM Representative	Third Party Representative

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-005 Pre-final Inspection Report		CQA-005
			Page 1 of 1

Segment		Date (mm/dd/yyyy)	
Sub-segment	From Station	To Station	
Summary of Structures/Subsystems			
Attached documents	<input type="checkbox"/> Report Ref.:	<input checked="" type="checkbox"/> Drawings Ref.:	

Requirement		Comments
All work has been completed ¹ ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All necessary work by Third Parties has been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The Work complies with the Environmental Requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All conditions to acceptance by Third Parties and railroads has been satisfied?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The close-out report has been delivered to the Authority?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The warranty service plan has been delivered to the Authority?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All Work has been performed in accordance with the requirements of the Contract Documents	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The Project may be used without damage to the Project or any other property on or off the Site and without injury to any Person?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Special tools purchased as provided in the Contract Documents have been delivered to the Authority free and clear of liens?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
WORK OK FOR PARTIAL ACCEPTANCE?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Are there items for a Punch List?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Remarks		

ACCEPTANCE	
Construction Representative	QC Representative
QA Representative	V&V Representative
Safety and Security Representative	Environmental Compliance Representative
PCM Representative	Third Party Representative

¹ Work completed except for punch list items and final cleanup.

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-006 Final Inspection Report		CQA-006
			Page 1 of 1


Segment		Date (mm/dd/yyyy)		
Sub-segment	From Station		To Station	
Summary of Structures/Subsystems				
Attached documents	<input type="checkbox"/> Report Ref.:		<input checked="" type="checkbox"/> Drawings Ref.:	

Requirement		Comments
All items of the Punch List (if any) has been closed out with the Authority?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All necessary work by Third Parties has been completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The Work complies with the Environmental Requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All conditions to acceptance by Third Parties and railroads has been satisfied and documented?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The close-out report has been delivered to the Authority?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The warranty service plan has been delivered to the Authority?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All Work has been performed in accordance with the requirements of the Contract Documents	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
The Project may be used without damage to the Project or any other property on or off the Site and without injury to any Person?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Special tools purchased as provided in the Contract Documents have been delivered to the Authority free and clear of liens?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
WORK ACCEPTED FOR PARTIAL ACCEPTANCE?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Remarks		

ACCEPTANCE	
Construction Representative	QC Representative
QA Representative	V&V Representative
Safety and Security Representative	Environmental Compliance Representative
PCM Representative	Third Party Representative

	California High-Speed Rail Project	HSR 13-57
	<i>Design-Build Contract for Construction Package 2-3</i>	CQA-007
	CQA-007 Request for Approval of Materials Form	
		Page 1 of 1

Date:							RFAM #:	
ROM #	Material or Manufacturer Product/Type	Name and Location of Fabricator, Manufacturer or Pit Number	Unit of Measure	Standard Specs Reference	Construction Manual Reference	Approval Code	Listed on QPL	
							Yes MCC Mill Certs	No CMO
							Yes MCC Mill Certs	No CMO
							Yes MCC Mill Certs	No CMO
							Yes MCC Mill Certs	No CMO
							Yes MCC Mill Certs	No CMO
							Yes MCC Mill Certs	No CMO
							Yes MCC Mill Certs	No CMO
APPROVAL								
Materials Engineer Signature		Date	CQCM Signature		Date	Materials described above meet or exceed design's specifications intended use		
						<input type="checkbox"/> Yes, Proceed with Approval <input type="checkbox"/> No, resubmit		
Approval Action Codes:						Remarks:		
1. Conditionally Approved:	Acceptance based upon Satisfactory Test Report for samples of materials to be incorporated into Project			7. Approval Pending:	Request transmitted to METS Laboratory for approval action			
2. Conditionally Approved:	Submit Mfg. Cert. of Compliance for Approval prior to use of material			8. Source Approved:	Document materials acceptance by completing a Materials Receiving Report			
3. Conditionally Approved:	Submit Catalog Cuts for Approval prior to use of material			9. Approval Withheld:	Submit samples for preliminary evaluation			
4. Conditionally Approved:	Submit Shop Drawings for Approval prior to fabrication of material			10. Approval Withheld:	Product/Material is rejected			
5. Conditionally Approved:	Only "Approved for Shipment" or "Caltrans Inspected" material shall be used			11. Source Approved:	Visually verify and document via Daily Inspection Report or Materials Receiving Report			
6. Conditionally Approved:	Submit Materials Certificate of Origin to QA			Other:				

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-008A Materials Receiving Report		CQA-008A
			Page 1 of 1

Segment		Date (mm/dd/yyyy)		
Sub-segment		Location		
Material Information				
Supplier Name				
Contract or PO Ref. / Date:				
ROM #				
Attached Specifications Ref.:				
Quantity delivered		Quantity accepted		Quantity rejected
Remarks				

Material Acceptance		Comments / References / Issues
Dimensions Verified?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Properly Stored and Protected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Bill of Landing Supplied?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Delivery Record Supplied?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Stamped / Labeled "Approved for Shipment"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Are the Materials Damaged?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Certificate of Compliance Provided?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Ref.:
Certificate of Compliance Provided Meets Specs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Ref.:
QC Testing Documentation Included?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Ref.:
QC Testing Meets Specs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Ref.:
Sample taken?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Ref.:
Materials Accepted at Delivery?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Remarks		

ACCEPTANCE	
Construction Representative	QC Representative
Subcontractor Representative	QA Representative
Supplier Representative	

	California High-Speed Rail Project <i>Design-Build Contract for Construction Package 2-3</i>		HSR 13-57
	CQA-008B Materials Placement Report		CQA-008B
			Page 1 of 1

Segment		Date (mm/dd/yyyy)		
Sub-segment		Location		
Material Placement Information				
Supplier Name				
Contract or PO Ref. / Date:				
ROM #				
Location Placed				
Quantity placed				
Remarks				

CHECKED	
Construction Representative	QC Representative
Subcontractor Representative	QA Representative
Supplier Representative	



MATERIALS RECEIVING ACCEPTANCE STATUS

CW PLAN ID:

EDITION:


PAGE:


DATE:


CWP / SSCWP:

MATERIAL

Lot	SUBCONTR.	VENDOR / MANUFACTURER	Certificate Ref.	Inspection Report Ref.	Tests Provided	QC Sample Ref.	QC Test Reports	COMMENTS	Sign Approval Reference	
									CQCM	CQAM
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date
			Date	Date	Date	Date	Date		Date	Date

	MATERIAL PROVIDED BY THE AUTHORITY / THIRD PARTIES	
CWP/SSCWP: Page ____		
MATERIAL	PRODUCT DESCRIPTION	SUPPLIER

	QA/QC CHECKLISTS / LOT TESTS ACCEPTANCE REPORTS STATUS											CW PLAN ID:		
												EDITION:		
												PAGE:		
												DATE:		
CWP/SSCWP: <i>HSR Viaduct No. 1</i>													QA/QC CHECKLIST: <i>FOUNDATIONS</i>	
LOT	ELEMENT	QUALITY MILESTONE: <i>Viaduct no. 1</i>										Sign Completion		
		QA/QC Record Ref. / CA Point Inspection Report					Lot Test Acceptance Report					CQCM	CQAM	
HSRV1F1	FOUNDATION 1	RBI123	CAP544	CAP545			CRT593	RBT521						
		10/12/18	NC-21 →	10/12/18	Date	Date	11/15/18	11/15/18	Date	Date	Date	Date	Date	
HSRV1F2	FOUNDATION 2													
		Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date		
		Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date		
		Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date		
		Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date		
		Date	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date		

	<h1 style="margin: 0;">NON-CONFORMANCE REPORT</h1>							No. NCR:	
								Report Date:	
								SEGMENT	ALL <input type="checkbox"/>
CLIENT: California High-Speed Rail Authority									
PROJECT: Design-Build Contract for Construction Package 2-3									
DEPARTMENT:	Quality <input type="checkbox"/>	Environm. <input type="checkbox"/>	Safe/Sec <input type="checkbox"/>	Managem. <input type="checkbox"/>	Construction <input type="checkbox"/>	D-Build <input type="checkbox"/>	Contracts <input type="checkbox"/>	Third Party <input type="checkbox"/>	Design <input type="checkbox"/>
TYPE:					DETECTED BY:				
Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	Department <input type="checkbox"/>		QM <input type="checkbox"/>		PCM/Authority <input type="checkbox"/>		
LOT OR ELEMENT:									
SHORT DESCRIPTION:									
<u>DESCRIPTION:</u>									
<u>CAUSES OF NON- CONFORMANCE:</u>									
<u>ACTION TO TAKE:</u>									
<u>ADOPTED SOLUTION:</u> Same as proposed action to take? YES <input type="checkbox"/> NO <input type="checkbox"/>									
Does it affect works deadlines? YES <input type="checkbox"/> NO <input type="checkbox"/> Estimated Cost: \$ _____									
Estimated closing date: _____ Doc. Attached? NO <input type="checkbox"/> YES <input type="checkbox"/> _____									
Closing date of Non-conformance: _____ Undertake corrective action: YES <input type="checkbox"/> NO <input type="checkbox"/>									
COMMENTS:		KNOWLEDGEABLE		CLOSED		APPROVED BY PCM (*)			
		QA Manager.	Dep. Manager	QA Manager.	Dep. Manager				
DATE									
SIGNATURE									
CRITICAL NC		Quality Manager	Project Manager	Quality Manager	Project Manager				
		DATE							
		SIGNATURE							



PREVENTIVE ACTION REPORT

PROJECT:

CODE:

PREVENTIVE ACTION:

No.

OPENING DATE __ / __ / __

SOURCES OF INFORMATION:

REASON FOR THE PREVENTIVE ACTION:

PREVENTIVE ACTION:

DOCUMENTS OR ACTIVITIES AFFECTED:

ESTIMATED IMPLEMENTATION DATE:

IMPLEMENTATION CONTROL:

Was the Preventive Action effective? YES ____ NO ____

COMMENTS:

OPENING:

CLOSING:

DATE:

DATE:

Procedure No.: **DQP 3.12**

Rev. No.: 0

Issue Date: 08/19/2015

Subject: **FIELD DESIGN SERVICES – FIELD DESIGN CHANGE**

FORM DQP 3.12-1

NOTICE OF Field DESIGN CHANGE

FORM DQP 3.12-1 NOTICE OF FIELD DESIGN CHANGE			FDC No.:
			DATE:
RFC DWG/SPEC AFFECTED:	DOC NO.:	REV. NO.:	TITLE OF DRAWING/SPECIFICATION:
DESIGN UNIT TO BE REVISED:			
REASON FOR CHANGE:			
OTHER DOCUMENTS AFFECTED BY THIS CHANGE:			
RFC DOCUMENTS TO BE REVISED? YES <input type="checkbox"/> NO <input type="checkbox"/> NEW RFC DOCUMENTS TO BE ISSUED? YES <input type="checkbox"/> NO <input type="checkbox"/> DESCRIPTION OF CHANGE (Specific Elements to be Revised):			
REVISED DRAWING TARGET DATE:			
PREPARED BY:	_____ Responsible Engineer (SIGN AND PRINT NAME)		_____ DATE
ACKNOWLEDGED BY:	_____ Design Manager (SIGN AND PRINT NAME)		_____ DATE
ACKNOWLEDGED BY:	_____ DF Design/Build Coordinator (SIGN AND PRINT NAME)		_____ DATE

Form DQP 3.12-1

Procedure No.: DQP 3.16

Rev. No.: 0

Issue Date: 08/19/2015

Subject: **CONSTRUCTION SUBMITTALS**

**FORM DQP 3.16-1
CONSTRUCTION SUBMITTAL FORM**

Design Unit: _____ Title: _____ Category No.: _____

Date Requested: _____ Date Needed: _____ Reference Specification No.: _____

Submitted To:

____ DFJV
____ OTHER

Attn: _____

Submitted by:

Subcontractor: _____

Design Unit: _____

Submitted By: _____

Authorized By: _____

Signature: _____

____ Temporary Structures

____ Material Approval ____ For Approval

____ Shop Drawings ____ For Concurrence

____ Samples ____ For Information

____ Record Drawings ____ Attached

____ Certificate of Compliance

____ Other

Remarks To: _____

Item No.	No. of Copies	Specification Sub Paragraph No.	Description	Action Code	Return Date

Action Codes : A = Approved as Submitted AN = Approved as Noted RA = Receipt Acknowledge RC = Returned for Correction

Remarks From: _____ Telephone Number: _____

Returned By: _____ Signature _____ Date: _____ Document No. _____

Form DQP 3.16-1