

AGENDA

Committee 121 Quality Assurance Systems for Concrete

Wisconsin Center
Milwaukee, WI

Sunday, November 8, 2015
3:00 to 5:00 pm
Room: C-103A (Wisconsin Center)

MEMBERS:

Thomas G. Tyler
Chair

Jon B. Ardahl
Vice Chair

Michelle E. Walters
Secretary

Godwin Q. Amekuedi

Mihaela Birley

Casimir Bognacki

Paul D. Brooks

Martin Brugger

Martin J. Fradua

Thomas M. Greene

Paul Hedli

Stephen Marchese

Anand S. Mehta

Oon-Soo Ooi

Michael Osburn

Jerry Parnes

Johan C. F. Schor

Eugene Takhtovich

James R. Turnham

Woody L. Vogt

CONSULTING MEMBERS

Stefanos J. Eapen

Alejandro Graf Lopez

Morris V. Huffman

Larry Mrazek

Gajanan M. Sabnis

Paul Zoltanetzky, Jr.

ASSOCIATE MEMBERS

Dirar Alaa

Keith S. Foster

Mostafa M. Gad Alla

Arturo C. Gaytan

Jack Holley

Jinesh Mehta

Jose Rangel

Peter Stamps

Rongyun Xu

AGENDA
Committee 121
Quality Assurance Systems for Concrete
Wisconsin Center
Milwaukee, WI
Sunday, November 8, 2015
3:00 to 5:00 pm
Room: C-103A (Wisconsin Center)

1. Call to Order and Welcome
2. Introduction of Members and Guests
3. Update of Membership Status – No change to membership
4. Establish Date of Next Meeting
5. Attendance – Prior Notification of non-attendance, response to email
6. Approval of Minutes from Denver, CO
7. Announcements
8. New Business – These discussions should be short.
 - A. Change in the Committee Chair - Spring 2017 Convention
 - B. Co-sponsorship with ACI 231 for a session on Early Age Cracking for Fall 2017 Convention. (Proposal from ACI 231 attached)
9. Old Business – These discussions will take some time.
 - A. Audit Document 121XR – *Guide to Auditing in the Concrete Industry*.
 1. Responses to 367 Comments prior to publication
Ballot passed, next steps.
(Copy of ballot results attached.)
 2. Development of text for sections on:
 - a. Batching (if to be done)
 - b. Laboratory Testing and Inspection (Section outline and ideas sheet attached.)
 - c. Precast Manufacture (if to be done)
 - B. Revision to the existing document – *121R-08 -Guide for Concrete Construction Quality Systems in Conformance with ISO 9001-*
 - Status of the rewrite
 - Proposal from Jim Turnham.(Attached)
 - ***Approach to be discussed and decided upon.***
10. Open discussion on ideas for new projects
11. Adjourn

Tyler, Thomas

From: Tyler, Thomas
Sent: Sunday, April 10, 2016 12:33 PM
To: 'Jussara.Tanesi.CTR@dot.gov'
Cc: bebyard@tva.gov; 'Oscar.Antommattei@kiewit.com'; Bognacki, Casimir; Michelle Walters (michelle.walters@hatchmott.com)
Subject: RE: ACI 2017 fall session co-sponsorship

Tanesi,

Thanks for the proposal on co-sponsorship of the session on early age cracking. Please accept my apologies for not getting back to you sooner.

I have placed this item on the agenda for the upcoming 121 Committee meeting on Sunday, April 17, at 3:00 PM. At present I have one interested committee member from the Port Authority of NY and NJ. I also plan to speak some more with Oscar Antommattei of ACI 231 for a case study on the project I am assigned to and he has consulted on.

I plan to attend your committee meeting on Monday, April 18, at 2:00 PM. It would be a good opportunity to meet you and further the discussion.

I look forward to meeting you and your colleagues.

Thanks,
Tom Tyler

Thomas G. Tyler, PE
Quality Manager
Skanska-Kiewit-Ecco III, JV
Kosciuszko Bridge Project
917-709-0917

From: Jussara.Tanesi.CTR@dot.gov [<mailto:Jussara.Tanesi.CTR@dot.gov>]
Sent: Thursday, March 03, 2016 4:45 PM
To: Tyler, Thomas
Cc: bebyard@tva.gov
Subject: ACI 2017 fall session co-sponsorship

Thomas,

Good afternoon. Ben Byard and I are preparing a session for ACI 231 and would like to ask if ACI 121 would be willing to co-sponsor the session. Below is our preliminary session request write up (comments are welcome).

Part 1: The influence of early age properties' development on bridge deck cracking and long term durability

Part 2: The influence of early age properties' development on concrete pavement cracking and long term durability

This is a two-part session on the influence of early age properties' development on:

Part 1: Bridge deck cracking and long term durability

Part 2: Concrete pavement cracking and long term durability

Target audience: These sessions are intended for: practitioner engineers, contractors, specifiers, DOTs, academia and students.

Expected outcomes: Provide a better understanding on the connection between early age properties' development and cracking of bridge decks and concrete pavements and its impact on the long term durability. Promote best practices for obtaining the necessary early age properties to avoid cracking and detrimental effects to durability.

Potential topics for part 1:


- Causes for bridge deck cracking and how they are related to the development of early age properties
- The effect of mixture design (including materials used and proportion of materials) on early age properties and bridge deck cracking
- The influence of construction practices on early age properties and bridge deck cracking
- The impact of specifications on early age properties and bridge deck cracking
- The relation between bridge deck cracking caused by early age properties development and the reduction of long term durability
- Early age measurement techniques that can evaluate early the age properties that are most related to bridge deck cracking
- Quality assurance practices to prevent cracking
- Case studies

Potential topics for part 2:

- Causes for concrete pavement cracking how they are related to the development of early age properties
- The effect of mixture design (including materials used and proportion of materials) on early age properties and concrete pavement cracking
- The influence of construction practices on early age properties and concrete pavement cracking
- The impact of specifications on early age properties and concrete pavement cracking
- The relation between concrete pavement cracking caused by early age properties development and the reduction of long term durability
- Early age measurement techniques that can evaluate early the age properties that are most related to concrete pavement cracking
- Quality assurance practices to prevent cracking
- Case studies

Thank you

Jussara Tanesi, PhD, FCI
Concrete Materials Engineer/ Lab Manager
SES Group & Associates LLC
Turner Fairbank Highway Research Center/FHWA
6300 Georgetown Pike
McLean VA 22101
Ph: 202 493 3485

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Ballot Results

121 - Quality Assurance Systems for Concrete

[Return to Ballots Maintenance](#)**THIS BALLOT IS OPEN.****Type:** Technical Letter Ballot**Ballot Title:** Ballot 4 - 121XR - Responses to TAC Final Comments Issued 04/12/15**ID:** 6305**Description:** 121 Members,

We have come to a major milestone on 121XR - Guide to Quality Management Auditing in the Concrete industry. The 367 comments from TAC review have been addressed and incorporated into the attached revision of the Guide. We are now ready to ballot the responses. Please bear in mind that the committee is balloting the responses to the comments. The originally submitted Guide is posted on the 121 web site under "Draft Documents", also in PDF, for use with the comments sheet.

All comments, negatives, etc. must be referenced to a specific TAC comment number. Please make your comments directly onto the TAC comments table in the far right column. Then delete all TAC comments that are not relevant. Please then attach the condensed table to your ballot.

You can call or email me if you have any questions.

Thanks and see you at the convention.

Tom

917-709-0917

Project:**Start Date:** 3/13/2016**End Date:** 4/13/2016**Attached File** [Responses to TAC Comments](#)**(Optional):****Attached File 2** [Document with Comments](#)**(Optional):****Attached File 3****(Optional):****Attached File 4****(Optional):****Attached File 5****(Optional):****BALLOT ITEMS**

Sort Order	Item Description


TOP

Sort Order	Item Description
Sort Order	Item Description
1	<p>121XR - Response to TAC Comments Issued 04/12/15</p> <p>121 Members, We have come to a major milestone on 121XR - Guide to Quality Management Auditing in the Concrete industry. The 367 comments from TAC review have been addressed and incorporated into the attached revision of the Guide. We are now ready to ballot the responses. Please bear in mind that the committee is balloting the responses to the comments. The originally submitted Guide is posted on the 121 web site under "Draft Documents", also in PDF, for use with the comments sheet.</p> <p>All comments, negatives, etc. must be referenced to a specific TAC comment number. Please make your comments directly onto the TAC comments table in the far right column. Then delete all TAC comments that are not relevant. Please then attach the condensed table to your ballot.</p> <p>You can call or email me if you have any questions.</p> <p>Thanks and see you at the convention.</p> <p>Tom 917-709-0917</p> <p>Attached File:</p>

[Download all ballot description + item description files as zip file](#)

VOTING MEMBERS:

Item #	Member Name	Aff.	Aff. w/ Com.	Neg.	Abs.	Not Retd.	Comments	Attached Files
121XR - Response to TAC Comments Issued 04/12/15								
<p>121 Members, We have come to a major milestone on 121XR - Guide to Quality Management Auditing in the Concrete industry. The 367 comments from TAC review have been addressed and incorporated into the attached revision of the Guide. We are now ready to ballot the responses. Please bear in mind that the committee is balloting the responses to the comments. The originally submitted Guide is posted on the 121 web site under "Draft Documents", also in PDF, for use with the comments sheet.</p> <p>All comments, negatives, etc. must be referenced to a specific TAC comment number. Please make your comments directly onto the TAC comments table in the far right column. Then delete all TAC comments that are not relevant. Please then attach the condensed table to your ballot.</p> <p>You can call or email me if you have any questions.</p> <p>Thanks and see you at the convention.</p> <p>Tom 917-709-0917</p>								
1	Amekuedi,Godwin	X						
	Ardahl,Jon	X						
	Birley,Mihaela	X						
	Bognacki,Casimir	X						
	Brooks,Paul	X						
	Brugger,Martin	X						
	Fradua,Martin	X						
	Greene,Thomas	X						
	Hedli,Paul	X						
	Marchese,Stephen	X						
	Mehta,Anand					X		
	Ooi,Oon-Soo	X						^ TOP
	Osburn,Michael					X		
	Parnes,Jerry					X		

Item #	Member Name	Aff.	Aff. w/ Com.	Neg.	Abs.	Not Retd.	Comments	Attached Files
	Schor,Johan					X		
	Takhtovich,Eugene		X				Affirmative to comments to chapter 9 response (comments # 300 to 367) - agree with all committee responses.	
	Turnham,James	X						
	Tyler,Thomas	X						
	Vogt,Woodward					X		
	Walters,Michelle		X				Agree with comment 272, to make Specifications, Calculations, and Drawings major subchapters of Chapter 8 for design.	

NON-VOTING MEMBERS

Item #	Member	Comments	Attached Files
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PRELIMINARY VOTING SUMMARY

There are 20 committee members eligible to vote.

Passage of an item requires resolution of any negative votes. Passage of an item also requires that the number of affirmative votes be at least that given by the 1/2 and 2/3 rules. Please refer to the ACI Technical Committee Manual for additional information on balloting procedures.

Item #	Affirmative	Affirmative with Comments	Negative	Abstain	Not Returned	The 1/2 Rule	The 2/3 Rule
1	13	2	0	0	5	Item Meets	Item Meets

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[ACI Concrete Specification Center](#)



Ideas - Audit Document – Labs

1. How quickly can they give you a list of the personnel they have on staff and their qualifications / certifications? Do all these people work for them, or are they just “on lone” from another company?
2. How quickly can they come up with the list of their equipment complete with serial numbers, make and model, and most recent calibration date?
3. Do they have a data base for test results tracking, or do they just give you the results and you keep track on them?
4. For special inspections, do they have the PE on staff, or do they have to go outside the organization? Do local laws of certification / accreditation requirements require them have a PE on Staff? I think CCIL does in Canada.
5. Dispatching efficiency. Do they have a central person for this? Are they the manager or just an administrative person that has not clue as to what the work is about?
6. Tracking of cost reports, tests, and charges for services. Do they have electronic records of the reports to be accessed quickly, or is it all done on paper? Do they have an organized billing system? Do they bill you on the basis of itemized charges that are traceable to a specific date, sample, report, or person assigned? Do they have dispatch log to recording the time and location of the employees?
7. Standards for performance:
 - a. ASTM A329?
 - b. ASTM A1074?
 - c. ISO 17025, 17011, 17020
 - d. ASHTO R17
 - e. CCRL
 - f. AMRL
 - g. CSA A283-06, A23.1,
 - h. ASTM E329 – Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
 - i. ASTM C1077 – Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
 - j.
8. Accreditations and certifications and registries
9. Auditing, accrediting, and certifying bodies and their hierarchies (who accredits them?)
10. Scope of capabilities – Level of talent and what they can do.
11. Scope of accreditations
12. Performance – Coefficient of variation (Luke Snell Email)
13. What other measureable indicators of performance?
14. Take a look at the ACI 311 specifications that were recently published.
15. Do they have a quality manual?
16. Do they have a library of ASTM’s (or CSA) for the work they cover?

17. Record keeping and archives.
18. Traceability of information
19. Difference between accreditation and certification
20. Calibration of equipment.
21. Their forms and paperwork. Do they make sense. Do they fit your needs?
22. Who reviews the reports. How long does it take to get an official copy? Can you get the report at the end of each day?

Outline - Contract Lab Testing and Inspection

1. Scope
2. Roles of Labs
3. Levels of Project Participation
 - A. Scope of services – Types of tests and inspections –
 - Categorization of labs into simple, intermediate, and sophisticated. (*Depends on what level of testing they perform – CSA A283 has a categorization level system for their certifications*)
 - Outsourcing thru liaison and networking with other labs for work not within their capabilities (*resulting in possible longer turn around for services that cannot be done in-house*)
 - Calibration and testing laboratories
 - Inspection service organizations
 - Special Inspections for Building Official or Owner acceptances
 - Quality control services for contractor in-house programs
 - Lab testing to include qualification and confirmation of materials and mix design and trials
 - B. Roles on the project site
 1. Technician work to include only testing and no decision making or leadership roles
 2. Inspection role with the authority to accept or reject
 3. Total quality program management
 - a. QA
 - b. QC
4. Standards for performance and competency as an organization - Applicable standards
 - A. AASHTO R18
 - B. ISO 17028, 17025, 17021, 17020
 - C. ASHTO R18
 - D. CSA A283-06, A23.1,
 - E. ASTM E329 – Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
 - F. ASTM C1077 – Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
5. Certification, Accreditation, registration, and licenses – Scope and mechanisms of recognition, overlaps and duplications
 - (*difference between certification and accreditation*)

- *(scopes of certifications – do all only certify or accredit to specific task rather than give blanket certs?)*
 - *(Talk about local licensing. NYC has these requirements. WACEL is required of DC area cities. What about other cities and states?)*
- A. AASHTO –AMRL, CCRL
 - B. NACLA - Laboratory Accreditation Bureau (L-A-B) to accredit calibration and testing laboratories and Inspection Services Accreditation Bureau (IS-A-B) to accredit inspection service organizations
 1. L-A-B
 2. I-S-A-B
 - C. A2LA
 - D. NAVLAP
 - E. WACEL - Washington Area Council of Engineering Laboratories, Inc.
 - F. Local jurisdictions
 - G. NAFLAP???
 - H. NIST
6. Staffing – human resources - counts and certifications of technicians, engineers, lab personnel, PE's, managers, etc.
Are all these persons in-house or only available through outsourcing?
7. Operations
- A. Dispatching, field management, communication with techs, inspectors, client
 - B. Reporting - Turnaround time, management review, accuracy and detail, test results equipment tracking, formats and sensibility of reports *(do they carry a lot of useless, repetitive information and little substance?)*
 - C. Sample marking, storage, handling, transportation, and curing.
 - D. Record keeping, archiving, traceability of information, data bases,
8. Qualification, Competency, and Certifications of personnel (see common Processes - Training
- A. Technicians – Types of certs to include those from CCIL, ACI, WACEL
 - B. Engineers
 - C. Managers
 - *How quickly can they come up with a list of personnel and their qualifications, resumes, certifications, etc, and the associated documentation?*
 - *Do they train in-house or offer training to others as part of an ACI network?*
9. Management of equipment
- A. Inventory
 - B. Condition
 - C. Calibration

How quickly can they come up with a list of the equipment they have and the latest calibration date? It should include year of purchase, make, model, serial number, and calibration date.

10. Company resume – scope and scale of experience.

11. Quality Plans

12. Observation of Activities (*Use things from Guide, Chapter 3*).

13. *Measurable indicators of performance (Coefficient of variation in testing results?)*

13. *Resources*

- A. PE's on staff - *For special inspections, do they have the PE on staff, or do they have to go outside the organization? Do local laws of certification / accreditation requirements require them have a PE on Staff? I think CCIL does in Canada.*
- B. Subconsultants
- C. Networking of other labs for overflow and specialties
- D. Libraries of ASTM, ACI, CRSI, etc. Standards

ACI Quality Plan [Template] – [Proposed]

Describing the
Quality Management System
(QMS)

For the

American Concrete Institute (ACI) and ACI Members for [Organization]

Rev A, April 12, 2016

[PHOTO?]

[Notes to Practitioners:

0. The ISO 9001-2015 Compliance Matrix should be referenced with this document as it provides the road map for implementing the second pass of the Quality Plan.
1. Note that the term “Quality Manual” will be the term that describes all of the quality documentation, including this Quality Plan overview document.
2. **Hyperlinks** may be used in the Quality Summary to provide more detailed information found later in the document or in other documents. To enable hyperlinks, file all of the quality documents in the same folder. [Note: Hyperlinks add really good access to referenced materials stored in the same folder (and for sure in the same document)]
3. In order to return to your original location after hyperlinking, press Alt left-arrow.

ACI Quality Plan Template – (proposed)

Instructions for use of this ACI Committee 121 Quality Plan Template [which may be deleted prior to publishing the Quality Plan]

The author(s) have developed this Quality Plan Template (called the Quality Plan once it is developed), in order to assist **owners, designers, concrete construction practitioners**, construction managers, contractors, subcontractors, and students to develop a Quality Plan (QP) modeled to or compliant with ISO 9001-2015.

In the past, ACI Quality Assurance Committee 121, provided a document ACI 121R-08 “Guide for Concrete Construction - Quality Systems in Conformance with ISO 9001”. The document provided instructions for use of the ISO 9001 standard and templated Quality Plan sections to correspond to each of the sections in the ISO 9001-2008 Standard. That approach assumed that using the ISO 9001 numbering and structure is the best format in which to construct a construction Quality Plan.

The ISO 9001 Standard has recently been upgraded to 9001-2015 as of the fall of 2015. The revision was major with both the content and structure being revised. Hence ACI 121 has to conduct an upgrade to the 121R-08 document.

Three new ideas or concepts have influenced this document enhancement:

Concept 1 - Scalability:

It has been observed by practitioners that the use of ISO 9001 needs to be scaled to the company or project in question. This observation has resulted in three classifications of ISO 9001 usage; the first 2 have been part of the process for many years; the third is newly minted as follows:

1. **Registration to ISO 9001:** Companies or projects that need to demonstrate full documented compliance may choose to register to ISO 9001.
2. **Compliant to ISO 9001:** Companies that wish to comply with the standard, but choose not to implement Registration may choose to “comply with ISO 9001”.
3. **Semi-compliant to ISO 9001:** Many companies and projects have identified that they simply require a Quality Management System that identifies how they conduct their business. Companies new to quality management may conclude that they do not need to implement all of 9001, and rather they choose to “model to the ISO 9001 Standard but shall only be semi-compliant”.

Concept 2 – Summarization of processes:

It has been the experience of the author that Quality Manuals have been written in accordance to the numbering and titling of the 9001 Standard. If one was required to comply with 9001, that was the simplest method to make sure that all of the items are covered. But that produced a Quality Plan that let ISO 9001 determine the hierarchy of sections and clauses. In short, it read like the ISO 9001 standard and was often rather distant from the processes the company performed.

Concept 2 identifies that it is not necessary to construct a quality plan in accordance with the hierarchy of the 9001 standard. This ACI Quality Plan Template suggests that the company processes be summarized at the very front of the Quality Plan – in section 2 – even before the table of contents. In that manner, the Quality Plan can become relevant to the users because it describes in chronological order the tasks that are done with every new project. We have identified that this is the first pass in writing a Quality Manual – write about the processes your company uses, and be brief, summary only.

Concept 3: ISO 9001-2015 compliance matrix usage in the introduction of quality management clauses:

Due to Concept 1 clause 3 above and allowing for scaling of a Quality Plan for small to middle sized companies, and due to Concept 2 where practitioners are invited to summarize the essential or significant company processes; where and how do the 9001 elements come in to the picture? The answer comes by the introduction of the ISO 9001-2015 Compliance Matrix. Practitioners are provided with a grid template with company processes on the vertical axis and ISO 9001 clauses on the horizontal axis. One can check to see if 9001 clauses that are deemed by

ACI Quality Plan Template – (proposed)

the company to be important, are satisfied by any of the company processes. If they are satisfied, the linkage is noted on the matrix. If the 9001 clause is not satisfied, then it can be added if it is felt to be significant.

What tends to happen is that the company or project processes are listed first, and the ISO 9001 clauses that are felt to be important are listed after the project processes (assuming that registration or compliance with 9001 is not required).

The method of writing a Quality Plan that follows the ISO 9001-2015 numbering and titling is still an option, but the option to structure of a QMS to suit the organization of a company's work process is now considered a major improvement to this Template.

This Quality Plan Template suggests that you develop your Quality Plan directly from your construction processes using typical construction project chronology (or design project chronology if you are a design firm) as the basis for the Quality Plan. The construction processes summarized at the front in the Quality Manual highlights the fact that construction processes, and their controls provides the most value to the user. The ISO 9001 standard must take a secondary guidance role.

[Square brackets] are used to highlight areas where you (the user) are asked to provide specific requirements to be inserted or identified. Delete brackets when user information has been substituted.

No guarantee is made for this Template. In some cases portions of individual elements in ISO 9001:2015 may not apply, or apply in a limited way. In other cases, the scope of work (design or construction or construction management) may necessitate different wording approaches.

ACI Quality Plan Template – (proposed)

SECTION 1: Introduction and Mission Statement

“OUR MISSION IS TO BE THE MOST ... CONTRACTOR IN _____. OUR TEAM ASPIRES TO...

1.1 [Organization] Quality Policy

“[Organization] (do a word search and replace) Construction Ltd. ([Organization]) is committed to ...[]

1.2 Quality Management Objectives

“What gets measured gets managed”. We have established the following “Quality Objectives” ...

[List quality objectives] [and make sure they are measurable]

1.3 Approval and Signatures

It is the intent of [Organization Construction Ltd] that this Quality Plan is prepared: [choose 1 of the 3]
with ISO 9001:2015 as the model for quality management [compliance with ISO 9001 is not required]
to comply with the requirements of ISO 9001:2015, or
to register with the requirements of ISO 9001:2015.

Approval by Company Representatives

This [Organization] Construction Ltd. Project Quality Control Plan is approved by:

[Position] [name here] / Date

[Position] [name here] / Date

ACI Quality Plan Template – (proposed)

SECTION 2: Quality Summary – Project Quality Management

We suggest that organizations start by listing all of the organization’s significant processes here in this Quality Summary section. The Quality Summary introduces the project processes which all have a quality element even if the quality element is simply to understand and control the process. The Quality Summary is intended to be brief and to the point, and a “must read” for [Organization] QMS training. Details providing background and controls may be provided in Section 11 the Quality Plan, but that strategy can be implemented at a later stage).

[Some of the construction processes identified in this document may require further detail. If a detailed section is needed, it is recommended to add a section at the end of the document in Section 11 in order to provide further definition and detail including controls. The clause numbers utilized there may be the same as the clause suffix numbers used in Section 2. That suffix number is suggested to be shared with numbering system here in section 2, with the QMP 000 Accountability Matrix and with the QMP 090 Compliance Matrix.]

Hyperlinks [optional] may provide linking of the summary items to section 11 items where additional detail, checklists, and procedures are located.

Organizational Summary items:

[Some organizations will require company level (in addition to project level) activities that may be included here at the start. There may be processes like organizational context, marketing, business development, leadership, policy, organization chart, and quality objectives that will be better addressed in the company level section. List and summarize them.]

The Organization has written and implemented this Quality Plan focused on project level details. It is [Organization’s] belief that Senior Management and head office are in place to support the projects, and not the other way around. The [Project Manager] is the prime position for any given project with the [Superintendent] in charge of site activities. This Quality Plan is largely owned and managed by [those two positions].

[Organization] Project Pre-Award Activities:

The Organization’s Quality Plan (QP) starts with the description of the Quality System at project bid stage.

[The following section as written assumes this quality plan is for a Construction Management Contractor. Please make revisions to identify the type of organization and type of project for which the Quality Plan and Project Plan will be written.]

2.10 Project Plan***

[For purposes of this model, please imagine that this paragraph or page is the Project Plan – the cover page to the Quality Plan.]

Project Plan is often the top level document in project and quality planning. This Quality Plan is a chapter of the Project Plan. The Project Plan provides the details and addresses variable items for the specific project, thereby allowing this Quality Plan to remain generic so that it does not need to be changed for every project.

This Project Plan will include:

- **Context of the organization** (per ISO 9001 Section 4 requirements)
- **Type of organization** that is implementing this QMS: (Owner, Designer, Contractor, Construction Manager, Subcontractor)
- **Delivery Strategy - Project type** or types performed under this QMS: (Design-Bid-Build, or Design-Build)
- **Scope**
- **Schedule**
- **Budget**
- **Values alignment plan**
 - **Purpose**
 - **Objectives**
 - **Communication**

ACI Quality Plan Template – (proposed)

- Document Control
- Key messages and strategies
- Stakeholder interests
- Organization chart
- Project specific quality standards
- Change management
- Reporting
- Quality Plan (to be referenced)
- Health and Safety Plan (can be referenced)
- Environmental Management Plan (can be referenced)
- Appendices

[The Project Plan wants to be brief, addressing the elements of projects that are variable with each new project. Once the Project Plan is templated and provided with this Quality Plan, then this Project Plan chapter will no longer be required.]

2.20 RFP / Contract Review

[Optional specialty item, not detailed at this time.] [Note that any of these items 2.2 – 2.7 are candidates for additional documentation]

2.30 Bid – No Bid Determinations (Risk Assessment)

[Optional specialty item, not detailed at this time.]

2.40 Estimating - Bidding:

[Optional specialty item, not detailed at this time.]

2.50 Project Work Break-down Structure, activities listed.

See (QMP-002) Subcontractor Status Report***

2.60 Scheduling, estimate phase

[Optional specialty item]

2.70 Site Plans (for crane costing, etc)

[Optional specialty item]

2.80 Subcontractor Invitation to Bid, pre-contract pricing and selection

In the estimate phase of a project, supplier and subcontractor costs need to be established based upon the scope of work that is required. This is the time to provide quality management scope as well as physical drawings and specification scope.

The Quality Manager (working with the Estimator) needs to set the policy regarding the level of quality management required of each Subcontractor – see various options as set out below.

[The following is included as an example only.]

Subcontractor (sub) and supplier requirements via “Invitation to Bid” and “Contract” – identify preference given to those performing well in the following:

1. Has the Sub previously worked with [Organization] and if so, have they achieved a positive evaluation (at least 7 on a scale of 10)
2. Does the Sub have an Inspection and Test Plan (ITP) and Checklists which the subcontractor commits to update prior to the start of work meeting current project specifications and defining subcontractor self-checking of the work? If the sub does not have these documents, will they commit to writing them?
3. If the sub does not have these documents, [Organization] [will/may] provide them. When provided, does the subcontractor commit to implementation of these quality documents during construction?

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4. Does the Subcontractor have a Quality Plan? (Optional but appreciated from subs)
5. The above are indicators of the level of quality management that a subcontractor will commit to for this project. The Project Manager now has the ability to select subcontractors on a combination of price and quality management. As the saying goes “The sweetness of low price is soon overpowered by the bitterness of low quality”. We have choices.

[End of Pre-award section]

The above Pre-Award section is provided with the template as an example. Edit the pre-award list and summary to correspond with how your organization would list and summarize YOUR processes.

[Organization] Post Project Award Activities*:**

[This section is to contain the list of processes. Each item is followed by a summarized description of the project process or activity required to manage the typical project. Start with your company’s existing processes, and experience.

Note that the following list with examples detailed are just examples. Create your own list and examples.]

2.90 Award

2.100 Contract Acceptance [Optional specialty item]

2.110 Team Formation and Transition Meeting:

2.120 Personnel Evaluation and Training:

2.130 Project Documentation and Specifications:

2.140 Design Review: (for D-B and IPD Contracts)

2.150 Subcontractor Status Report (QMP 002):

The Estimating Department and/or the Project Manager typically identifies and itemizes all work tasks (trades) through a work breakdown structure per QMP 002 (columns 1 and 2). Once the project is a “go”, each significant task in the Work Breakdown Structure (created during the estimate) will need an ITP and a checklist updated to match project specifications in order to detail how quality is performed and controlled. Contractor as General Contractor, plans and schedules the writing of the ITP and Checklists, and at the same time, requires accountability for quality to be owned and implemented by subcontractors.

2.160 QMP 002 –Subcontractor Status Report [see [hyperlink](#)] is a tool to assist the Project Manager (and Quality Manager) for the update of each ITP and checklist to be used on the project. Each ITP and Checklist will need to be edited so that they are consistent with Project Plans and Specs. The initially QM is responsible to see that this task is self-performed, by Contractor staff, by outside resources or by the Subcontractor.

2.170 Project Controls / Metrics / Reports [Optional specialty item]

“Begin with the end in mind.” ...

2.180 Subcontractor - Pre-Award Meeting, and final selection process

2.190 ITP and quality checklist update per project specification:

As the project proceeds and prior to starting each construction work task, the Quality Manager or Superintendent coordinates detailed quality requirements and resources, identifies who will update the ITP and quality checklist in accordance with specification; and schedules and coordinates ITP update completion, (see QMP 002 for the ITP and Checklist “who” and “when” scheduling tool).

Templates for ITPs and Checklists as well as previous project specific ITPs and Checklists written by quality technician are available at a folder that will be stored at Contractor document library. The real work involved in creating useful Inspection and Test Plans occurs by reviewing Project Specifications and identifying the key

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elements not to be forgotten.

2.200 Work Methods – updated to reflect project specifications and requirements:

Currently at Contractor, we are providing an optional requirement for a document called the Work Method. As its name implies, the Work Method identifies HOW the contractor (or subcontractor) will build the work. Contractor has determined that we will concentrate on providing ITPs and Checklists, each of which are updated to match project specific drawings and specifications. The Work Method is an option at the discretion of the Project Manager or Quality Manager that can be written and required if circumstances indicate that the risks of process failure outweigh the costs of Work Method initiation.

2.210 Project Pre-construction (Kickoff) Meeting:

2.220 Subcontractor (Sub) Pre-Work Review Meetings:

This is a Superintendent (or Subtrade Rep) led meeting (also called Pre-Mobilization, or Work Method and ITP Review Meeting) held prior to the start of each task Initial Inspection:

Held at the first implementation of the work, the objective from the very first occurrence shall be to verify that workmanship standards are being met based on the Inspection and Test Plan, Checklist and specification.

2.230 Project Schedule and Trade Meetings:

2.240 Documented information and records:

2.250 Subcontractor accountability and nonconformances:

2.260 Audits – Internal (and External - of subcontractors)

2.270 Change Management:

2.280 Subcontractor Substantial Completion Review:

Quality checklists for divisions based on Contract Spec is utilized (self performed) – Sub Rating: _____

ITPs for divisions based on Contract Specs is utilized (self performed) – Sub Rating: _____

Review Meeting to review checklists and ITPs is utilized by Subtrades with Contractor + Owner invited. Rating: _____

Schedule conformance: _____

Accountability: _____

Crew Attitude _____,

Attention to detail _____,

Safety: _____

Housekeeping and cleanliness: _____

Average Score: _____ (on a scale of 1 – 10 where 5 is fail, 7 = average, 8 = good, 9 = excellent, 10 = home run)

End of Quality Summary items

[Number and list the post-award project activities in chronological order]

At this time if not already written, the summary text should be added forming a paragraph or two that identifies the issue and the control(s) for it.

[Alternate method of ordering the Quality Plan items: One option for those who do not wish to list the construction processes is simply to follow the ISO 9001 clause numbering system and respond to the 9001 clauses with your QMS item, summarize and detail as need be done. In the previously ACI 121-08 document, this is the way it was done; it works. The down side is that 9001 standard is providing the order of items as opposed to chronologically ordering our construction (or design) processes. Both methods work.]

[Inclusion of ISO 9001 requirements in addition to the list of construction processes: Section 4 - 10 of this template provides 9001 clauses. One of our jobs is to compare our construction processes to the ISO clauses. If there is a strong linkage, and if our construction process addresses and satisfies the ISO 9001 clause, then provide a reference in the compliance matrix (QMP 090) to that effect. If there is only slight or no linkage, then we need

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to add an item to the construction processes in order to document how the ISO 9001 requirement is performed by the Organization and described in the Quality Plan.

For those companies that are electing to “not comply”, but to use 9001 as a model, “semi-compliance”: the question of how many of the 9001 clauses need to be listed and described (summarized or detailed) for the Quality Plan? The author suggests that 9001 clauses with zero or 1 star are less relevant, but this is your company’s choice. Items with 2 and 3 stars are recommended to be summarized and included. Items with 3 stars are recommended to be detailed, in addition to being summarized.]

For companies that wish to “Register” or “comply with ISO 9001”, then all of the ISO 9001 items need to be addressed.

[See 9001-2015 Compliance Matrix for assistance in comparison and linkage of Construction processes to 9001 clauses. That Compliance Matrix document also has included the same star*** rating system for practitioner’s benefit.

First the Compliance Matrix is utilized to test for the ability of process summary description as providing compliance with the 9001 clause. If the summarized process satisfies the intent of the ISO clause, then indicate the linkage in the Compliance Matrix, for future auditing purposes. The reality is that a summary of the process is not likely to satisfy the ISO 9001 clause, but the linkage can be identified and the understanding of the process in summary form will be valuable.

Once all summarized processes have been tested against the 9001 clauses, the 9001 clauses with 2 or 3 stars** that are not yet satisfied are marked for addition to the Quality Plan. The writer will then use the 9001 text as the specification and will describe (summarize) how the organization will address the 9001 requirement.

These processes that are derived from the 9001 clause can be listed by their ISO section and clause order. This is the end of the second pass and the construction processes and 9001 clauses to be included in the Quality Plan are now determined. Copy paste the number and title of the items from the Compliance Matrix back to the Quality Plan. Save the Compliance matrix for auditing purposes and attach it to your Quality Plan.

Once the titles of the project processes have been listed and summarized (including the processes derived from 9001 elements), copy and paste them to QMP 000 Accountability Matrix, left two columns. We will come back to that document later, but it has the purpose of identifying the personnel (position) taking responsibility for that activity and the position that will do review or checking. With that knowledge, the Quality Plan may not have to identify “who” implements the process and “who” reviews that it is getting done properly – the “who” is provided project by project with the project specific Accountability Matrix.]

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SECTION 4: Scope of QMS* and context of the organization**

[This section Scope of Quality Plan and context of the organization corresponds to both Sections 1 and 4 of the ISO 9001-2015 Standard and is used to state the general scope of application of this Quality Plan (QP) and the project type or basis for its usage.]

The Company strives to enhance customer satisfaction through the effective application of the QP including processes utilized by the company, for continual improvement and for assurance of conformity to customer, regulatory, and code requirements.

SECTION 4 and onward The following clauses have been pre-selected as the more important or more relevant of the 9001 clauses to be included in the company or project Quality Plan.

If the clauses are not required for summary or for detail, the number and name may remain for continuity.

4.1 Understanding the organization and its context**

This item is typically detailed in the Project Plan, although the generalities of the business of the company is appropriate in this section

4.2 Understanding the needs and expectations of interested parties**

4.3 Determining the scope of the quality management system**

The *Company* will utilize the Quality Plan (QP) for the following project type(s) [describe the typical application]. [Organization] will model (semi compliant) to or comply with or register to ISO 9001:2015. [Chose only one. Organizations are encouraged to think realistically, a “semi-compliance” response may be the start, and compliance can be provided later if the need arises.]

4.4 Quality management system and its processes**

SECTION 5: Leadership

5.1 Leadership and Customer Focus* [Describe how.]**

5.2 Policy* (See item 1.1)**

5.3 Organizational Roles

The Organization fully integrates its quality management system into the performance management systems for each project by means of an Accountability Matrix. [It is recommended to attach the Accountability Matrix.]

5.3.1 Position Descriptions***

5.3.2 Org Chart***

SECTION 6: Planning

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6.1 Risk and opportunities:** [Describe the organizations approach]

6.2 Quality Objectives*:** (See item 1.2)

6.3 Planning of Change

SECTION 7: Support

7.1 Resources (general including calibration if appropriate)**

[Feel free to expand resources to include sub-bullets if your project type or company requires them]

7.2 Competence** - [Describe how competence is achieved in work force]

7.3 Awareness* - [Describe how personnel are encouraged to be mindful of quality]

7.4 Communication** – [Client and subcontractor]

7.5 Documented Information*** – [Describe or reference a procedure]

SECTION 8: Operation

8.1 Operational planning and control*** – [Describe the tools (discussed in class)]

8.2 Requirements for product and services (Customer requirements)*** [Describe]

8.3 Design and Development

Consult 9001-2015 4.3 for applicability options for Design-builders (D-B)

Note that for Designers, the following 8.3 clauses are the key clauses to be satisfied.

8.3.1 General*

8.3.2 Planning***

8.3.3 Inputs**

8.3.4 Controls***

8.3.5 Outputs**

8.3.6 Changes**

8.4 Control of Suppliers and Subcontractors

8.4.1 General**

8.4.2 Type and extent of control**

8.4.3 Information**

8.5 Production

8.5.1 Control of Production (contractors***, designers*)

8.5.2 Traceability** [some industries need it]

8.5.3 Customer property*

8.5.4 Preservation* [some industries need it]

8.5.5 Post-delivery** [some industries need it]

8.5.6 Change control**

8.6 Release of product** - (Contract closeout activities)

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8.7 Control of nonconforming outputs**

SECTION 9: Performance evaluation

9.1 Monitoring, measurement, analysis and evaluation [How?]

9.1.1 General**

9.1.2 Customer Satisfaction***

9.1.3 Analysis and evaluation*

9.2 Internal Audit***

9.3 Management Review**

SECTION 10: Improvement

10.1 General**

10.2 Nonconformity and corrective action***

10.3 Continual Improvement**

Section 11: Optional Detailed Description of Processes

[Some of the construction processes and possibly the star*** 9001 clauses identified in this document may require further detail. For the purposes of this classroom quality plan, there may not be the room or the need for the added detail section. If a detailed section is needed, it is recommended to add a section at the end of the document in order to provide further definition and detail including controls. The clause numbers utilized there may be the same as the suffix numbers used in Section 2. That suffix number is suggested to be shared, provides ties to each other, to the Accountability Matrix and to the Compliance Matrix.]

Section 12: Terms and Definitions*

This Quality Plan utilizes the definitions provided in ISO 9000:2015 as well as any specific terms that are listed in this Section.

Audit: Review by a party independent of the activity being audited, to provide confidence that QC and QA processes and/or resulting products satisfy the contractual requirements.

Contractor: The organization that has a contract with the Owner to perform physical work on the Project. It includes Contractor's suppliers and sub-contractors. [For clarity, Consultants and Designers are identified as "Consultants" or "Designers" rather than as "Contractors".]

Corrective Action: Action to eliminate the cause of an existing Nonconformity, defect or other undesirable situation to prevent recurrence.

External Quality Audit: A second party or third party Quality Audit; second party Quality Audits are Quality Audits conducted by parties having an interest in the relevant organization, such as customers; third party Quality Audits are Quality Audits conducted by external independent organizations such as certification or registration bodies. For this Project, second party audits are conducted by the Project Team (Owner) on any tier-below including designers, contractors, subcontractors and suppliers.

Hold Point To be added

Inspection and Test Plans (ITPs): A Contractor produced plan that lists work elements and identifies: method of inspection or test, criteria for acceptance, position providing QC inspection, position providing QA inspection (if required), position or organization providing testing, column for Owner "Hold Points" and "Witness Points" provided (to be filled in by the Owner's Rep), and the name of the form to record the findings of the inspection.

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The ITP is typically an attachment to the Work Method along with the checklist and the three documents are linked with a common numbering and naming system for each item of inspection.

Internal Quality Audit: A first party Quality Audit conducted by or on behalf of the organization of its own processes by trained personnel who have no direct responsibility for the process being audited.

Nonconformity or Non-conformance: A deficiency of a characteristic or a failure to adhere to documented procedures, which may render the quality of a product or service unacceptable.

Non-conformance Report (NCR): A document issued to detail the description and proposed resolution (or disposition) of an identified Nonconformity.

Non-conformance Tracking System: A system to track Non-conformance Reports, including the total number and status of all the Non-conformance Reports.

Owner: Customer of the Contractor

Preventive Action (Risk Management): Action to eliminate the cause of a potential Non-conformance, defect or other undesirable situation in order to prevent its occurrence.

Procedure: A document that describes specifically how an activity is to be performed and may include methods, equipment, the sequence of operations, and checklists to be used.

Process: A set of interrelated resources and activities, which transforms inputs into outputs.

Quality Assurance (QA): The process of evaluating overall process, product or service, by persons independent of those doing the Work, on a regular basis, to provide **confidence** that the process, product or service satisfies the relevant quality standards. QA is typically a spot check of QC, at a frequency which can vary in accordance with confidence achieved by previous inspection. The frequency of Quality Assurance field inspection and testing will typically start with - the first occurrence of the work in question, and thereafter (with positive results) reducing to 30%, then 10% of the QC inspection frequencies undertaken in the Contractor's ITP and at a level commensurate with the risk an element has on final product quality. Elements having greater risk, any change of personnel, or activities having a history of nonconformity shall be audited at higher frequencies; lower risk elements may be checked at lower frequencies. Records are to be kept.

Quality Control (QC): The process of checking specific product or service results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory product or service performance. Generally speaking, (occurring after self-check) QC is the primary documented check on a process. QC is generally independent (not to check their own work) and records are to be kept. [There are circumstances (for instance a small crew) whereby QC may be allowed to be conducted by the person who did the work as a documented self-check. For such situations, the QA spot check role shall be implemented with a level of rigor.]

Quality Management (QM): The compendium of quality control, assurance and audit provided and managed by a party.

Quality Management System (QMS): Management system (per the Quality Plan) to direct and control an organization with respect to Quality that includes Quality Policy, Objectives, Procedures, Work Methods, ITPs.

Quality Manual: The entire collection of Quality Plan, Procedures, Work Methods, ITPs, checklists, etc, that collectively form the QMS.

Quality Surveillance (QS) (field audit): A scheduled visit or meeting to observe and/or discuss the Contractor's implementation of Inspection and Test Plans, Witness or Hold points, or any other aspect of the QM; or an unannounced visit to the Construction site to observe and record the quality of Work that is being undertaken by the Contractor.

Quality System Procedures: (also called Quality Management Procedures) The detailed documented procedures that describes the processes of the Organization. [Note: ISO 9001:2008 requires a minimum of 6 documented procedures: Control of Documents, Control of Records, Internals Audits, Control of Nonconforming Product, Corrective Action, and Preventive Action.]

Record: Document stating results achieved or providing evidence of activities performed.

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Resident Engineer (RE): The Engineer (or delegate) that signs the drawings and carries the responsibility and authority (for structural, geotechnical, civil, etc) and has the authority to determine the usage or rejection of items identified as noncompliant. Non-conformance Reports of a technical nature are to be reviewed by the RE.

Resolution (often called Disposition): Accepted action to address a NCR (fix of the physical problem).

Review: An examination to evaluate conformance, indicated by signature, initials, stamps, etc.

Self-Check: The first level of quality in order that personnel at all levels are checking their own work and are accountable for the work they produce. For significant items, it is suggested that personnel put into place a self-check habit or method that provides for personal documentation that checking was done for items requiring checking. Systemic documentation of self-checking not typically required.

Supplier: Organization retained by the Contractor (or by the Project) for provision of service or product and includes Consultants, Sub-consultants, Designers, Contractors, and Subcontractors.

Top Management: Top Management (also called Senior Management) for the organization includes the, Project Sponsor, Project Manager, Quality Manager, and other key personnel as named.

Witness Point. To be added

Attachments:

QMP 000 - Accountability Matrix

QMP 002 – Subcontractor Status Report

QMP 090 – Compliance Matrix

9001-2015 Compliance Matrix		9001 Clause Numbers -->	4***	4.1	4.2	4.3	4.4	5.1**	5.1.1	5.1.2	5.2***	5.2.1	5.2.2	5.3***
Process Title	9001 Clause Title right-----> > Below - Process Description	Organization & its context	Understanding the organization & its context	Understanding the needs and expectations of interested parties	Determining the scope of the quality management system	Quality management and its process	Leadership and Commitment (includes customer focus)	Leadership & Commitment General	Customer Focus	Policy	Establishing the Quality Policy	Communicating the Quality Policy	Organizational Roles, Responsibilities & Authorities	
Procedures -							↓						↓	
1.10	Quality Policy									done				
1.20	Approvals and Signatures												partial	
1.30	Quality Management Quality Objectives													
2	Quality Summary													
Project Pre-Award Activities														
2.10	Project Plan	done												
2.20	Prime contract RFP / Contract Review													
2.30	Bid - No Bid (Go - No Go) Risk Assessment	No 9001 clause, and no problem.												
2.40	Estimating - Bidding	No 9001 clause, and no problem.												
2.50	Work Break-down Structure, estimate phase	Subcontractors												
Assume this is the end of the "List" on the first pass and includes all my construction processes. Now start the second pass adding														
5.1	Leadership and Commitment (includes customer focus)						←							
5.3	Org Chart													←
5.3	Position Descriptions													←
6.1	Actions to Address Risk & Opportunities													←
7.1	Resources (include calibration,	<p>[Instructions to users: Your construction process title goes in column B. Enter or copy your list of processes to here including a clause number. It is recommended to number the construction processes as if they are in section 2 - example 2.10, 2.20, etc.</p>												
7.2	Competence	Your Summary description (it has to be brief) is entered in Column C.												
7.5	Documented Information	Finish the above noted list of processes. Then consult the 9001 clauses (in row 2) to identify the linkage from process to ISO clause.												
		Where there is a linkage, colour the linkage intersection square.												
		Continue until all processes are compared with all 9001 clauses. When 9001 clauses that are not sufficiently satisfied are identified, determine a) Is this 9001 clause significant (for example, does it have 2 or 3 stars**) and therefore needed in the QMS? If yes, then add the 9001 clause title and description to the list at the bottom and number the clause per its 9001 clause number. [Follow the arrows.]												
		Review Quality Plan Template for instructions on requirements to include based on number of stars assigned to the clause.												
		This is an iterative process to list and describe your processes, including 9001 processes.												
		Quality Plan Template is the place to summarize and detail the processes.]												

	A	B	C	D	E	F	G	H	I	J	K	L
1	Rev 0	4/12/2016	Accountability Matrix - Summary Items					These columns indicate the type of document.				
2	Summary #	Summary Item Description	Level: Company or Project	Performed by (position)	Date Req'd	Self Check (Initial & Date completed)	On Schedule?	Check List	Inspection and Test Plan (ITP)	Procedure	Reviewed by (Position)	Reviewed Signature, (Init & date)
3		Project name & number to be entered into the tab at bottom										
4	1.10	Quality Policy	Company	President, VPs, Q Mgr							President, VPs	
5	1.20	Approvals and Signatures	Company	President, VPs, Q Mgr							President, VPs	
6	1.30	Quality Management Quality Objectives	Company	President, VPs, Q Mgr							President, VPs	
7	2	Quality Summary		ABC Construction Ltd								
8		Project Pre-Award Activities										
9	2.10	Project Plan	Project	PM, Team Lead, Const Mgt						template needed	Const Mgr	
10	2.20	Prime contract RFP / Contract Review	Project	PM, Team Lead, Const Mgt							Const Mgr	
11	2.30	Bid - No Bid (Go - No Go) Risk Assessment	Project	PM, Team Lead, Const Mgt							Const Mgr	
12	2.40	Estimating - Bidding [Optional specialty item]	Project	PM, Team Lead, Const Mgt, Estimator							Const Mgr	
13	2.50	Work Break-down Structure, estimate phase	Project	Estimator, PM,						QMP 002	Team Lead	
14	2.60	Scheduling, estimate phase [Optional item]	Project	PM							Team Lead	
15	2.70	Site Plans, (crange, etc) [Optional item]	Project	PM							Team Lead	
16	2.80	Subcontractor RFPs, pre-contract selection ** See below for meaning of yellow items relating to subcontractors.	Project	PM				Checklist req'd			Team Lead	
17	2.90	Staffing and Resources, for costing	Project	PM							Team Lead	
18	2.10	Bid Review [Optional specialty item]	Project	PM, Team Lead, Const Mgr							Const Mgr	
19		Project Award n Implementation Activities										
20	2.11	Contract Acceptance [Optional specialty item]	Project	PM, Team Lead, Const Mgt						Job Start Checklist	Const Mgr	
21	2.12	Team formation and Transition Meeting	Project	Team Lead				Checklist req'd			Const Mgr	
22	2.13	Personnel evaluation and training	Project	PM and QMgr				Agenda req'd		Procedure?	Q Mgr	
23	2.14	Project specifications	Project	PM				Checklist req'd			Team Lead	
24	2.15	Design Review: (for D-B and IPD Contracts)	Project	Sup, PM,				Agenda req'd		QMP 204	Team Lead	
25	2.16	ITP – Identification and Activity Status	Project	PM, QMgr						QMP 002	QMgr	
26	2.17	Project Controls / Metrics / (see Project Plan) [Optional]		PM, Team Lead, Const Mgt							PM	
27	2.18	Subcontrs - Premobliztn Mtg - submittals, final selection	Project	Sup, PM, QMgr				Agenda req'd		Pre-Award, QMP 202	PM	
28	2.19	ITP and Checklist <u>update per project specs</u>	Project	QMgr, or resource, Proj Coord				Checklist - Div 2 example	ITP and checklist		PM	
29	2.20	Work Methods (optional/reqd? - updated to pro	Project	QMgr, or resource, Proj Coord						WM 03 10 Temp	PM	
30	2.21	Project Pre-construction Kickoff Meeting:	Project	Sup, PM, QMgr				Agenda req'd			Team Lead	
31	2.22	Sub Pre-Work Review Meetings	Project	Sup, PM, QMgr				Agenda req'd		QMP 003	PM	
32	2.23	Initial Inspection	Project	Sup, PM, QMgr						QMP 004a	PM	

	A	B	C	D	E	F	G	H	I	J	K	L
33	2.24	Project Schedule and Trade Meetings	Project	Sup, PM, QMgr				Agenda req'd			PM	
34	2.25	Inspection and records	Project	Sup, PM, QMgr							PM	
35	2.26	Subcontractor accountability and nonconformances		Sup, PM, QMgr						QMP 05	?	
36	2.27	Audits	Project	QMgr + optional other						QMP 010	QMgr	
37	2.28	Change Management	Project	PM, Team Lead				Checklist req'd			Team Lead	
38	2.29	Sub Substantial Completion Review	Project	Sup, PM, QMgr				Checklist req'd		QMP 025	PM	
39	2.30	Quality metrics	Project	Sup, QMgr				Checklist req'd			PM	
40	2.31	Project Plan achievements and lessons learned	Company	Sup, PM, QMgr				Checklist req'd		Post-audit template	PM	
41												
42	4.10	Organizational Description	Company	Q Mgr, VPs, President							Quality VP	
43	4.20	Senior Leadership	Company	Q Mgr, VPs, President							Quality VP	
44	4.30	Strategic Planning	Company	Q Mgr, VPs, President							Quality VP	
45	4.40	Customer Satisfaction & Engagement	Company	Q Mgr, VPs, President							Quality VP	
46	4.50	Workforce Engagement	Company	Q Mgr, VPs, President							Quality VP	
47	Date in column F means item is done and checked											
48	Responsibilities are in prioty, first position listed is prime position of responsibility, and are therefore accountable for it being done correctly.											
49	Think about how to implement. If it is updated weekly and reported up the chain monthly - I think it will identify stuff getting done.											
50												
51	**Yellow highlight means that a line item will be dealt with in QMP 002 as that document has rows for the various subtrades.											

	A	B	C	D	E	H	I	K	M	N	O	P	Q	R	S
1	Subcontractor Status Report Construction Co Ltd Updated: 4/12/2016		Project Name: Project 2 (Demonstration)										Project Number: 1		
2			Project Location:										Project Sponsor: Jack		
3			Project Type: Design-Bid-Build										Estimator:		
4			Project Head quarters:										Project Manager: George		
5	QMP 002		Procurement			Quality Management Activities									
6	Construction Activities								WM and Mockup - Optional by PMgr, consulting with QMgr	On time (10 days to spare)	Due 10 days or less	Red = over-due			
7	Master Format Number	Item Description This column is populated first (possibly by estimating at the time of RFP and prior to Tender or Bid. This column identifies the activities or subtrades that are required.	Sub-contracted ? or Self Performed	Target start date entered to Column R (date of entry)	Status or Target Completion date for sub contract signed.	Submittal status: date required from sub-supplier - same date as col O? Or long lead item?	Submittal requirements to be identified from Project Specs by QM or resource. [Date emailed to Sub with cc Super] - Inspection and Test Plan (ITP) is the tracking tool	Checklist by QM or resource, email to Super and Sub, Checked by Sub and submitted back to Super (date rec'd by Super)	Optional Work Method. PM & QMgr decision [Yes or No] [written by whom] [date submitted]	Mock-up - (or hold-point after the first instance) to be implemented [Yes or No?] [Date submitted to Owner]	*Target Date for ITP and Checklist Completion - typically set at 10 days prior to the Column Q date, so that Review Mtg can occur	ITP, Checklist Package - Actual Completion Date	Float for ITP and Checklist	Target date for Contractor (Chandos crew) or sub-contractor start date	Comments: Columns will be configurable so for instance Columns L and K can be optional
8	00 00 00	Procurement and Contracting Requirements	Prime Contract		NA	NA	N/A	N/A	N/A	N/A	NA	NA	NA	10/1/2015	This spec 00 category defined as the date the Owner-contract negotiations signed.
9	01 45 23	Testing Services	subcontract				supplier	supplier			12/22/2015	12/20/2015	2	1/1/2016	Testing happens to come first in the Master Format
10	02 00 00	Existing Conditions	self perform		NA		Project Manager	Project Manager	[Yes or No?]	N/A	9/22/2015	10/1/2015	-9	10/2/2015	Dates should be driven by preceeding schedule by 2 weeks
11	03 00 00	Concrete - supply	subcontract				Supplier	Supplier	no	no	11/21/2015	11/1/2015	20	12/1/2015	
12	03 11 00	Concrete - forming	subcontract					Sub	no	no	11/21/2015	11/1/2015	20	12/1/2015	
13	03 21 00	Rebar	subcontract					Sub	no	no	12/22/2015	12/21/2015	1	1/1/2016	
14	03 35 00	Concrete - slab finish	subcontract					Sub	yes	no	12/22/2015	12/21/2015	1	1/1/2016	
15	03 37 00	Concrete - pumping and placing	subcontract					Sub	no	no	12/22/2015	12/21/2015	1	1/1/2016	
16	03 39 00	Concrete - curing	subcontract					Sub	yes	no	12/22/2015	12/21/2015	1	1/1/2016	See WM 03 10 00. To be provided to sub with limit of liability (see below).
17		not used						Sub							
18	04 00 00	Masonry	[Subcontractor?]		1/1/2016			Sub							
19	05 00 00	Metals	[Subcontractor?]		1/1/2016			Sub							

	A	B	C	D	E	H	I	K	M	N	O	P	Q	R	S
20	06 00 00	Wood, Plastics, and Composites	[Subcontractor?]		1/1/2016			Sub							
21	07 00 00	Thermal and Moisture Protection	[Subcontractor?]		1/1/2016			Sub							
22	08 00 00	Openings	[Subcontractor?]		1/1/2016			Sub							
23	09 00 00	Finishes	[Subcontractor?]		1/1/2016			Sub							
24	10 00 00	Specialties						Sub							
25	11 00 00	Equipment						Sub							
26	12 00 00	Furnishings						Sub							
27	13 00 00	Special Construction						Sub							
28	14 00 00	Conveying Equipment													
29	20 00 00	Common Mechanical Requirements													
30	21 00 00	Fire Suppression													
31	22 00 00	Plumbing													
32	23 00 00	Heating, Ventilating, and Air Conditioning (HVAC)													
33	25 00 00	Integrated Automation													
34	26 00 00	Electrical													
35	27 00 00	Communications													
36	28 00 00	Electronic Safety and Security													
37	31 00 00	Earthwork													
38	32 00 00	Exterior Improvements													
39	33 00 00	Utilities													

It is suggested that Electrical and Mechanical Subcontractors should be the first to bring on board for making their own ITP's ideally using the Chandos ITP template (or their own) which would then be checked by the Quality Manager.