



Knowledge for Creating
and Sustaining
the Built Environment

CERTIFIED CONSTRUCTION SPECIFIER PROGRAM

CCS EXAMINATION STUDY GUIDE

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CERTIFIED CONSTRUCTION SPECIFIER EXAMINATION STUDY GUIDE

(For use in preparation for exams to be administered March 2009 or thereafter)

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PROGRAM OVERVIEW

Congratulations on taking the career-enhancing step of studying for the Certified Construction Specifier (CCS) examination! The Construction Specifications Institute (CSI) sincerely hopes that you will be among the candidates who can successfully demonstrate knowledge of the construction process by achieving a passing score on the exam.

Objective

The objective of the CCS Program is to improve construction specifications and to accomplish the following:

1. Provide a means for construction specifiers to demonstrate their knowledge in these areas:
 - a. Contractual relationships
 - b. Document organization
 - c. Document preparation
2. Encourage the elevation of the competence of construction specifiers
3. Enhance the image of construction specifiers
4. Encourage specifiers to become familiar with the principles of specification writing and construction document organization as recommended by CSI

Definition of Certified Construction Specifier

A CCS is a person who has successfully completed both the Construction Documents Technologist (CDT) and CCS examinations, has the required experience, and has demonstrated the minimum acceptable knowledge and ability to prepare written construction documents as prescribed by CSI.

Qualifications of a Certified Construction Specifier

1. Fulfill Application Requirements:
 - a. Submit written application for examination.
 - b. Pay examination fee.
2. Meet Application Prerequisites:
 - a. CDT certificate holder.
 - b. Within the last five years, candidate must have prepared, helped prepare, or coordinated the following:
 - Division 00 - Procurement and Contracting Requirements
 - Division 01 - General Requirements
 - c. Within the last five years, candidate must have directly prepared specification sections actually used in construction.
 - d. Submit contact information for two design professional references who will attest to the candidate's having at least five years of experience in a construction design discipline (not including academic work).
3. Pass the CCS examination with a score of 75 or higher.
4. Maintain designation by adhering to renewal requirements.
Membership in CSI is not required.

EXAMINATION OVERVIEW

The exam includes 200 questions, each worth 1/2 point for a total of 100 points. A passing score on the exam is 75 or higher. Candidates have four hours to complete the exam.

Exam Summary

The proportion of the exam dedicated to each subject area is as follows:

Study Unit No. 1: Construction Contract Types.....	5%
Study Unit No. 2: Agreements and Conditions of the Contract.....	10%
Study Unit No. 3: Changes in the Work.....	10%
Study Unit No. 4: Construction and Design Document Organization	10%
Study Unit No. 5: Division 01 – General Requirements	10%
Study Unit No. 6: Production Techniques	10%
Study Unit No. 7: Procurement and Contracting Requirements.....	10%
Study Unit No. 8: Specifying Techniques and Applications	15%
Study Unit No. 9: Specification Writing.....	20%

Reminder to Candidates

Questions on the exam will occur in the percentages given above. Exam candidates are urged to focus their studying accordingly to be sure that they are adequately prepared. The importance of a topic in the exam should not be judged merely by the amount of space devoted to it in the PRM.

SOURCE MATERIALS

The examination is based solely on the following documents and this study guide:

CSI Publications

- *Project Resource Manual – CSI Manual of Practice (PRM)*
- *MasterFormat™* (2004 Edition)
- *UniFormat™* (1998 Edition)
- *SectionFormat™* (2007 Edition)
- *PageFormat™* (2007 Edition)

These materials are available from:

The Construction Specifications Institute
99 Canal Center Plaza, Suite 300
Alexandria, VA 22314
Ph: (800) 689-2900
Fax: (703) 684-0465
Email: csi@csinet.org
www.csinet.org (click on Bookstore)

Contract Documents

The general conditions of the contract and contract forms common to the following documents, available through the organizations listed:

AIA Document A201-2007	- OR -	EJCDC C-700-2007
AIA Document A101-2007		EJCDC C-520-2007
American Institute of Architects		National Society of Professional Engineers
1735 New York Avenue, NW		1420 King Street
Washington, D.C. 20006		Alexandria, VA 22314
Ph: (800) 242-3837		Ph: (800) 417-0348
Fax: (202) 626-7547		www.nspe.org
www.aia.org		

Study Guide Addendum

Addendum to CSI Examination Study Guides, September 1, 2008

Important Note About Source Materials

The Project Resource Manual – CSI Manual of Practice (PRM) has not yet been updated to reflect the 2007 versions of *SectionFormat™*, *PageFormat™*, and the AIA and EJCDC contract documents. Therefore, some of the information in the PRM is out of date. While a brief summary of the changes is provided in the Addendum to this study guide, candidates are **strongly urged** to obtain and study the 2007 editions of the source documents and not rely solely on the PRM or on earlier versions of the documents.

PREPARING FOR THE EXAM

Performing a Self-Evaluation

These questions will help you decide if you are ready to prepare for taking the examination:

1. Do you have access to the Project Resource Manual – CSI Manual of Practice (PRM) and the **current versions** of its appendices? Do you thoroughly understand them?
2. Do you use, or are you thoroughly familiar with, listed **current editions** of either the EJCDC or AIA general conditions of the contract and agreement forms?
3. If the answer to question 1 or 2 is “No,” are you willing to study the required reference materials in a disciplined manner over several months?
4. Are you willing to attend a series of CSI chapter-sponsored study groups extending over several weeks, if available in your area?

Using the Study Guide

A thorough reading, study, and understanding of the referenced source materials is necessary to achieve a passing score. A candidate whose study efforts thoroughly cover the source materials listed in each study unit will not encounter subjects on the exam that were not covered in the material.

Please use this study guide to help you through the source materials, and call upon the local CSI chapter representatives for assistance as you continue in your quest for knowledge of the construction process. Note that successful candidates prepare for the exam well ahead of the test date. Best wishes for a successful result.

Utilizing Study Tools Not Included in this Guide

Study Groups

Several local CSI chapters offer review courses or group study sessions for this exam. Exam candidates are not required to enroll in study sessions. The discipline of these structured classes and the interaction with fellow candidates, however, has proven helpful to most candidates. Most of these chapter study groups are coordinated through the Certification and Education Committees. They are generally led by group leaders who have passed the CCS examination. Contact your local CSI chapter or your CSI Region Certification Chair for assistance in locating study sessions in your area.

Online Resources

The CSI website, www.csinet.org/certification, lists additional study information and resources.

Passing the Exam

Candidates may have been away from an academic, test-taking environment for many years. We offer the following suggestions:

1. Preparation should start as soon as possible. Putting off study until the last minute so that information is fresh in your mind is a faulty concept. Cramming the night before or the morning of the examination is also discouraged.
2. Practice answering test questions. A small sample of the types of questions on the examination is included in this study guide. Remember, in multiple-choice questions, usually one or two answers are definitely incorrect. Two answers may seem correct,

but only one is right based on the reference materials. Note: None of the questions in this study guide will be used on the actual examination.

3. This can be a difficult examination for the unprepared candidate. The exam thoroughly tests the candidate's knowledge and comprehension of the PRM and other relevant CSI publications and the agreements and general conditions in common use (AIA Documents A101, A201 and EJCDC C-520, C-700). Candidates who took the CDT exam prior to 2009 will have studied different source material and should take care to review all sections of the PRM as well as the current source materials referenced above.
4. Before the day of the examination, candidates should obtain directions to the test site and, if driving, find out where to park. Allow ample time. Dress comfortably. A good night's sleep and a relaxed attitude are more important than trying to "learn one more thing."
5. Remember that the exam is based on CSI's recommended practices as stated in the PRM. Departures from PRM principles as practiced by individual offices must be disregarded to succeed on this examination.

STUDY GUIDE ORGANIZATION

The study guide is organized in the same manner as the PRM. It follows the chronological order of the facility life cycle, with study units that correspond to each stage of the life cycle of the facility. The study units in this guide are intended to serve as a "road map" for study of the source materials.

Study Unit Organization

Each study unit is organized as follows:

Weight of the Unit on the Examination

The PRM is a comprehensive document. It serves as the primary source for the CDT examination as well as the advanced certification exams, including the CCS. As passing the CDT exam is a prerequisite to taking the CCS exam, basic knowledge of the PRM is assumed. Study units are focused on more in-depth knowledge of the PRM; therefore, some units are weighted more heavily than others. Candidates should pay close attention to each unit's weight on the exam and budget study time accordingly.

Examination Objectives

Each unit has a statement summarizing the basic knowledge and comprehension expected of a successful CCS candidate.

Source Materials

Questions included on the examination are carefully referenced to specific statements in the source materials. Some study units specify basic knowledge of the source materials, while others require a more detailed knowledge of source materials. This section will provide guidance as to the level of knowledge and comprehension of the source materials that is required for each subject area.

Study Checklist

This section outlines the specific elements of information that the candidate should study, and the primary location in the source materials where the information can be found.

Additional Study Materials Included in the Study Guide

Sample Questions

The sample questions are designed to illustrate the format used for test questions and as practice in selecting correct answers from among several alternatives. These questions will not appear on the exam as presented and are NOT a summary of tested material.

ABBREVIATIONS/ACRONYMS

A/E	Architect/Engineer
AIA	American Institute of Architects
CCS	Certified Construction Specifier
CDT	Construction Documents Technologist
CSI	Construction Specifications Institute
EJCDC	Engineers Joint Contract Documents Committee
PRM	Project Resource Manual - CSI Manual of Practice

Study Unit No. 1 - Construction Contract Types

Weight on Examination: 5%

Approximately 10 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objective

- Measure knowledge, benefits, and limitations of each type of construction contract.

Source Materials

PRM Module 3 - Project Delivery

PRM Module 5 - Construction Documents

PRM Module 6 – Bidding/Negotiating/Purchasing

Candidate is expected to understand the methods of contractor selection as related to the number of contracts and the various contract types, the differences in relationships among design and construction participants in different types of contract situations, and the different forms of contracts in regard to basis of payment.

Study Checklist

A. Method of Contractor Selection (PRM Modules 3.4, 3.5)

The contractor is selected by competitive bidding, by negotiation, or by direct selection. Know how these methods are defined, and understand the benefits and limitations of each. Have a clear sense of how the method of contractor selection relates to the type of contract used.

B. Number of Contracts (PRM Modules 3.3, 3.4, 3.5, 6.4)

The owner may execute a single prime contract or multiple prime contracts. Know how they differ and when the owner would use one method as opposed to the other, and how multiple prime contracts relate to project delivery methods. Be able to explain how the relationships among the participants change if the number of contracts changes, as shown in PRM Figures 3.3-C and 3.3-D.

C. Contract Types (PRM Modules 3.1, 3.4, 3.5, 5.15, 5.16, 6.6)

1. Construction Management:

Construction management contracts take more than one form, with substantial differences. Be able to define construction management and its most common variations, including the roles of the participants under each. Know when construction management is used and what benefits and limitations it offers.

2. Design-Build Contracts:

A design-build contract is between the owner and an entity known as the design-builder, which may take several forms. Design-build contracts must carefully define the roles and responsibilities of the participants to avoid unexpected difficulties. Understand the issues that can arise as well as the general advantages and drawbacks of this type of contract.

3. Owner-Builder Contracts:

When the owner acts as the builder, some of the usual participants may not be involved, or may have atypical roles. Be able to describe the circumstances under which owner-builder contracts are best used. Know the potential benefits and problems with this type of contract.

4. Construction Subcontracts:

Understand the issues associated with subcontracting, including flow-down language and mechanic's lien rights.

5. Purchasing/Procurement Contracts:

Know how contracts for the purchase of goods differ from construction contracts. Understand the basic provisions of the Uniform Commercial Code governing purchasing contracts.

D. Relationships Among the Design and Construction Participants for Each Type of Contract (PRM Module 3.4)

The roles and responsibilities of the owner, A/E, contractor, and others depend upon the type of contract used. Study and understand Figures 3.4-A through 3.4-F in the PRM. Be able to recognize which type of contract each figure represents.

E. Basis of Payment (PRM Module 3.3)

The three most common methods for determining payment in construction contracts are stipulated or lump sum, unit price, and cost-plus-fee. Be able to define each basis of payment, when it is typically used, and what advantages it offers.

F. Performance Specifying (PRM Module 5.15)

Performance specifying requires changes in some of the traditional practices for design, construction documentation, procurement, and construction. Understand how the roles of the participants may change when performance specifications are used. Be able to explain how the evaluation of contractors' proposals may need to follow different criteria than with traditional specifications. The drawings also may be less detailed; understand what this means for coordination of drawings and specifications.

Study Unit No. 2 - Agreements and Conditions of the Contract

Weight on Examination: 10%

Approximately 20 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure knowledge of the purpose and requirements outlined in the owner-contractor agreement.
- Measure knowledge of the rights, duties, and responsibilities outlined in the general conditions of the contract for construction.
- Measure knowledge of the application of supplementary conditions to modify the general conditions of the contract for construction.

Source Materials

PRM Module 3 – Project Delivery

PRM Module 5 - Construction Documents

PRM Module 7 - Construction

AIA A201 - 2007

EJCDC C-700 – 2007

AIA A101 – 2007

EJCDC C-520 - 2007

Note: The PRM has not yet been updated to reflect the 2007 editions of the AIA and EJCDC contract documents. While a brief summary of the changes is provided in the Addendum to this study guide, candidates are **strongly urged** to refer to the 2007 source documents and not rely solely on the PRM or on earlier versions of the documents.

Candidate is expected to understand the standard provisions of stipulated sum/price agreements, the industry standard general conditions as they pertain to the development of a project manual, and the procedures to modify the general conditions and types of information normally modified.

Study Checklist

A. Basic Elements of an Agreement (PRM Module 5.3)

The basic elements of an agreement are: date; identification of parties; identification of other participants; scope of work; contract amount; time of performance; and signatures. Understand why each of these elements is necessary for a valid contract to exist.

B. Formats of an Agreement (PRM Module 5.3; AIA A101, EJCDC C-520)

The standard format for construction agreement forms includes a cover page/preamble, identification of parties, identification of other participants, definition of contract documents, scope of work, time and completion, contract sum/price, payment procedures, miscellaneous provisions, termination or suspension, and

signatures. Know the function and purpose of each article. Know which key information is found in the agreement itself, rather than in the general conditions.

C. Types of Agreements (PRM Modules 5.3, 5.4)

Standard construction agreement forms have been developed by industry organizations. There are typically different forms depending on the project delivery method, basis of payment, and number of contracts. Be familiar with the organizations whose forms are most commonly used and with the range of forms they offer. Understand the benefits of using standard agreement forms and the precautions relevant to their use.

D. Types and Purpose of Conditions of the Contract (PRM Module 5.4)

A construction contract form is used along with corresponding general conditions and supplementary conditions, which define the basic rights, responsibilities, and relationships of the parties. Know the purpose of general and supplementary conditions, how they relate to one another, and how and by whom they are prepared.

E. General Conditions (PRM Modules 5.4, 5.9, 7.2, 7.6, 7.9, 7.11; AIA A201 and EJCDC C-700)

Be able to explain the benefits of using general conditions prepared by professional societies. Be familiar with the common concerns addressed by the societies' general conditions (work, contract documents, payments, termination, claims and dispute resolution). Also understand the function and purpose of each article in the general conditions in development of a project manual.

F. Legal Implications Relating to the Conditions of the Contract (PRM Module 5.4)

Know who should approve and guide the development of general and supplementary conditions, and why.

G. Supplementary Conditions (PRM Modules 5.4, 5.5)

Supplementary conditions are almost always necessary along with the general conditions. Know why they are used, what format they take, and what specific topics usually require provisions in the supplementary conditions.

H. Coordination of Division 01 General Requirements with Conditions of the Contract (PRM Modules 5.4, 5.6)

The general conditions and supplementary conditions of the contract bear specific relationships to Division 01 of the specifications. Understand how these three elements should be coordinated. Use Figure 5-6.A in the PRM to clarify these relationships.

I. Liquidated Damages (PRM Modules 3.3, 5.3, 7.11)

Know what liquidated damages are, why a contract would include them, advantages and disadvantages of including them, and how they are collected.

J. Retainage (PRM Module 7.11)

Retainage involves the owner's keeping part of the payment due the contractor until a future time. Understand why it is used and how it works.

K. Contractor's Warranty (PRM Modules 5.9, 5.18)

The general conditions of the contract usually require a warranty by the contractor. Know what this warranty addresses, how long it runs, and what it has to do with the one-year period for correcting defective work. Also understand how the requirement of specific warranties may result in lesser warranty coverage for the owner.

Study Unit No. 3 - Changes in the Work

Weight on Examination: 10%

Approximately 20 questions from material directly referenced in the source materials from the study unit will appear on the exam.

Examination Objectives

Measure knowledge and understanding of the following:

- Methods for requesting and implementing changes to the bidding documents.
- Different methods of implementing changes to the contract documents.

Source Materials

PRM Module 5 - Construction Documents

PRM Module 6 - Bidding/Negotiating/Purchasing

PRM Module 7 - Construction

AIA Document A201 - 2007

EJCDC C-700 - 2007

Note: The PRM has not yet been updated to reflect the 2007 editions of the AIA and EJCDC contract documents. While a brief summary of the changes is provided in the Addendum to this study guide, candidates are **strongly urged** to refer to the 2007 source documents and not rely solely on the PRM or on earlier versions of the documents.

Candidate is expected to understand the requirements and concerns regarding changes due to substitutions during bidding and construction phases; differences between the types of changes to the work, with thorough understanding of the purposes and timing of addenda and contract document modifications; and the forms and procedures for contract document modifications as required by AIA and EJCDC.

Study Checklist

- A. Procurement and Contract Document Modifications (PRM Modules 5.12, 7.9)

It is often necessary to make changes in the procurement documents or the contract documents, using addenda and change orders. Know the difference between an addendum and a change order. Understand the general criteria for verbal, written, and graphic modifications, and be familiar with the two basic methods for preparing written changes.

- B. Procurement Document Modifications (Addenda) (PRM Modules 5.4, 6.4, 5.12)

Know the definition of an addendum and the purposes for which one is used. Know when addenda are generally issued. Be able to list the basic components of an addendum and the order in which they should appear.

C. Contract Document Modifications (PRM Modules 5.6, 7.8, 5.12; AIA A201 and EJCDC C-700)

1. General:

Contract document modifications may involve a change in the contract scope, sum, or time, or may merely clarify the documents or order minor modifications in the work. Understand the typical reasons why contract documents are modified and the general procedures involved.

2. AIA Documents:

AIA Document A201 recognizes three ways to modify the contract documents: change order, change directive, and minor changes in the work (Architect's Supplemental Instructions). Know how, when, and by whom each is issued, and for what purposes.

3. EJCDC Documents:

EJCDC C-700 recognizes four ways to modify the contract documents: change order, work change directive, field order, and written interpretation or clarification. Know what these have in common with the AIA A201 methods; how, when, and by whom each is issued; and for what purposes.

4. Change Order Procedures:

Know in detail how change orders are initiated, signed, and executed. Also understand how a change order may relate to other documents such as a change directive or change order proposal request.

D. Substitutions (PRM Modules 5.2, 5.6, 5.7, 5.12, 6.4, 7.8)

1. Proprietary Specifications:

Proprietary specifications identify products by manufacturer, model number, etc. They may be open or closed. Closed proprietary specifications may list one product or several options. Open proprietary specifications may request alternates, substitutions, or controlled substitutions. Know the differences among the various types of proprietary specification methods and the potential problems with each method.

2. Nonrestrictive Specifications:

Understand what nonrestrictive specifications are, how they often relate to public works contracts, and how they can best be written.

3. Substitution Requests During the Bidding Period:

Know in general how substitutions during bidding may be permitted, what types of time limits should apply, and how to include requirements for substitutions in instructions to bidders.

4. Substitutions After Bidding and Negotiating:

Understand why substitutions after bidding and negotiating may be permitted or even encouraged, and how they are requested and approved.

5. Substitutions During Construction:

Substitutions during construction should be avoided except in two circumstances. Know why, and what the two exceptions are.

6. Procedures in Division 01:

Procedures for substitutions are set forth in Division 01. Know which Level 2 group of sections (Summary, Administrative Requirements, etc.) they belong in, and know generally what that section should cover. Be familiar with the reasons why a substitution request would be rejected and how substitution requests should be evaluated.

Study Unit No. 4 - Construction and Design Document Organization

Weight on Examination: 10%

Approximately 20 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure knowledge of concepts for construction document organization.
- Measure knowledge of and ability to locate and coordinate requirements within the project manual and between the project manual and the drawings.
- Measure knowledge of, use of, and ability to identify the benefits of using *MasterFormat*.
- Measure knowledge of, use of, and ability to identify the benefits of using *UniFormat*.

Source Materials

PRM Module 4 - Design

PRM Module 5 - Construction Documents

PRM Module 7 - Construction

MasterFormat™ 2004

UniFormat™ 1998

Candidate is expected to understand what information should appear on the drawings and what information should be included in the project manual; *MasterFormat* and how to use it to find information in the project manual; the underlying structure of *MasterFormat*; conventions and options for establishing number and title designations using *MasterFormat*; and the relationship and complementary use of *MasterFormat* and *UniFormat*.

Study Checklist

- A. Construction Documents (PRM Modules 4.8, 4.9, 5.1, 5.2, 5.3, 5.4, 5.6, 5.8, 5.9, 5.10, 5.11, 7.1, 7.8)
1. Definition and Purpose:
Construction documents are prepared or assembled by the A/E. Know how construction documents are defined and the primary purposes they serve.
 2. Schematic and Design Development Documentation:
Many documents that are prepared during schematic design and design development are not construction documents. Understand what these documents are and what purposes they serve.
 3. Components:
Construction documents consist of the following categories of documents. Be able to state, from memory and in detail, what is included in each category.

Procurement requirements
Contracting requirements

Specifications
Contract drawings
Resource drawings
Addenda
Clarifications and proposals
Contract modifications

4. Major Groups of Construction Documents:

The major groups of construction documents are the procurement documents and the contract documents. It is essential to know exactly how the categories of construction documents are grouped together to form the procurement documents and the contract documents. Figure 5.1-A and Figure 5.3-A in the PRM are very helpful tools for grasping these relationships. Study them repeatedly until you have mastered what they show.

Procurement Documents:

Know the names of the various procurement documents and the content of each.

Contract Documents:

Understand what makes up the contract documents and, in particular, the composition of the contracting requirements.

5. Project Manual:

The project manual contains parts of the procurement and contracting documents. Know its definition, purpose, and sequence of information. Also understand the origin and function of the Uniform Location of Subject Matter.

6. Drawings:

Know the definition and purpose of drawings, what kinds of drawings are typically prepared, and which drawings are and are not contract drawings. Also understand the function of drawings at different project stages, typical content, and how drawings should be organized. Know the purpose and two primary components of the National CAD Standard.

7. Coordinating Drawings and Specifications:

Coordination of information contained in the drawings and specifications is essential to avoid discrepancies. Understand the general principles of coordination and how they are applied to drawings, specifications, and schedules. Know the types of coordination that need to occur, the importance of consistent terminology, how issues of precedence should be addressed, and tools that should be used.

B. Formats (PRM Modules 5.5, 5.6; *MasterFormat™* Introduction; *UniFormat™* Introduction and Application Guide)

1. *MasterFormat™*

MasterFormat™ is the primary system used for organizing construction information, including specifications and project manuals, data files, cost information, and product data. It is also used for organizing drawings,

construction market data, and facility management information. Know the organization of *MasterFormat™* into groups, subgroups, and divisions, and how this hierarchy is reflected in the numbering system. Be familiar with the principles that guide selection of titles and numbers. Understand the applications in which *MasterFormat™* is used, and how it relates to and is used with *UniFormat™*.

2. *UniFormat™*

UniFormat™ is a classification system for preliminary construction information. *UniFormat™* organizes information functionally based on building systems and assemblies composed of multiple components, whereas *MasterFormat™* provides information about individual materials, products, and activities. Know the purpose and coverage of *UniFormat™*, its basic organization, the numbering system used, how it coordinates with *MasterFormat™*, and the applications for which it is suited.

Study Unit No. 5 - Division 01 - General Requirements

Weight on Examination: 10%

Approximately 20 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure knowledge of Division 01 concepts within the divisions of *MasterFormat™*.
- Measure knowledge of relationships between Division 01 and other contract documents.
- Measure knowledge of and ability to organize project manuals around the Division 01 concept.

Source Materials

PRM Module 5 - Construction Documents

MasterFormat™ 2004

Candidate is expected to understand the purpose and proper use of Division 01 sections in relationship to other contract documents; how to properly incorporate Division 01 requirements into a project manual; how to properly group Division 01 requirements and to find specific subject matter within Level 2 section designations; and how contractual requirements, budget, and the role of each project entity affect the development of Division 01.

Study Checklist

- A. Organizational Basis for Division 01 (PRM Module 5.6)

The organization of Division 01 derives from the structure of *MasterFormat™* and *SectionFormat™*. Understand this correlation to grasp the underlying structure of Division 01.
- B. Relationships of Division 01 Sections to Other Documents (PRM Module 5.6)

Understand precisely how Division 01 relates to other documents: the procurement requirements, the owner-contractor agreement, the general conditions, the supplementary conditions, other specification sections, and the contract drawings. Figure 5.6-A in the PRM is useful for clarifying these relationships.
- C. Procedures for Writing Division 01 Sections (PRM Module 5.6)

Know how *SectionFormat™* is applied to Division 01 sections. Be able to explain how Division 01 should be coordinated internally, with the general and supplementary conditions, and with other specification sections.
- D. Items Included Within Level 2 Sections of Division 01 (PRM Modules 5.2, 5.6; *MasterFormat™*)

Understand the commonly used Division 01 sections and what they cover. Know where in Division 01 common topics should be addressed. Commit to memory the names and numbers of the Level 2 sections of Division 01 to assist in properly locating information. Also know the commonly used Level 3 sections and where they belong.

Section 01 10 00 – Summary
Section 01 20 00 – Price and Payment Procedures
Section 01 30 00 – Administrative Requirements
Section 01 40 00 – Quality Requirements
Section 01 50 00 – Temporary Facilities and Controls
Section 01 60 00 – Product Requirements
Section 01 70 00 – Execution and Closeout Requirements
Section 01 80 00 – Performance Requirements
Section 01 90 00 – Life Cycle Activities

Study Unit No. 6 - Production Techniques

Weight on Examination: 10%

Approximately 20 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure ability to effectively produce and maintain an office master guide specification.
- Measure ability to effectively produce a project manual.

Source Materials

PRM Module 5 - Construction Documents

Candidate is expected to understand the benefits of establishing an office master guide specification, the use of the master guide as part of the total information library for an office, how to properly organize and include all information pertinent to the maintenance of a master guide section, what criteria to use to establish the proper scope for a section, the basic steps to follow when preparing a master guide specification, the proper use of commercially available master guide specifications, the key tasks in producing a project manual and the recommended order in which they should be performed, the recommended method for organizing/filing product decisions, and the use of preliminary project descriptions and outline specifications in assembling a project manual.

Study Checklist

A. Producing a Project Manual (PRM Modules 5.9, 5.14)

1. Order of Key Tasks:

The sequence of tasks necessary to produce a project manual is discussed in Section 5.9.10 of the PRM. Be familiar with what is involved at each step and the order in which the steps should be completed.

2. Methods of Recording Project Decisions:

Commonly used methods for recording project decisions include memos, notebooks, checklists, worksheets, preliminary project descriptions, and outline specifications. Understand the uses and benefits of each method.

3. Incorporating Procurement and Contracting Requirements:

The project delivery method chosen will affect the kinds of procurement and contracting documents to be included in the project manual, as well as methods of specifying and the content of specification sections. Know the general kinds of variations that may be necessary.

4. Specification Organization and Preparation:

Be familiar with the decisions and processes necessary for the development of a specification section. Understand the relationship of level of detail to scope of work.

5. Coordinating with Consultants:

Special coordination is required when some of the specifications are written by consulting engineers or other specialists. Know who is responsible for what and what should be done.

6. Writing Specifications:

Know the most effective writing sequence when writing a specification section from scratch.

7. Preliminary Review:

Preliminary review of the project manual requires many checks and crosschecks, as outlined in the PRM. Know the steps necessary to conduct a complete preliminary review.

8. Final Preparation, Reproduction, and Distribution:

The final steps in producing a project manual include proofreading, preparation of the table of contents, final review, reproduction, and distribution. Understand what happens at each step.

B. Master Guide Specifications (PRM Module 5.13)

1. Contents:

A master guide specification system should ideally include specification sections, coordination tools, product lists, decision checklists, and supporting data. Know what these consist of and what information should be included in a master guide specification section.

2. Benefits:

Understand the advantages of using a master guide specification system.

3. Preparation:

Office master guide specifications can be based upon commercial specification systems or upon previous specifications and industry guide specifications. Preparation includes establishing a master list of sections, determining the scope of each section, and developing standard formats and language. Preparing each section also involves a number of specific steps. Be able to explain these processes.

4. Organization:

Office master guide specifications should be organized using *MasterFormat™* and *SectionFormat™*. Sections can be further segregated into Level 2 and Level 3 (broad scope and narrow scope). Know when it is appropriate to use each.

5. Updating Procedures:

Master guide specifications must be kept current to be reliable. They should be updated on a regular schedule, based upon several specific criteria that might require changes. Be familiar with these criteria.

C. Shortform Master Guide Specifications (PRM Module 5.14)

Shortform master guide specifications may be prepared for each project type by editing full-length specifications. Know how Level 1, 2, and 3 sections can be used in shortform specifications. Understand how to develop a section list, shortform section and page formats, and Division 01 requirements.

D. Specifying for the Federal Government (PRM Module 5.17)

Specifications for the federal government and other government agencies are subject to special requirements. These affect the procurement and contracting requirements, social value regulations, use of manufacturers' names, and reference standards. The specifier's role, editing of master guide specifications, and review process are also complicated when working with federal government agencies, and may vary regionally. Be familiar with these considerations and with the types of specifications and software used by the federal government.

Study Unit No. 7 - Procurement and Contracting Requirements

Weight on Examination: 10%

Approximately 20 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure knowledge of the content and application of various procurement documents.
- Measure knowledge of the types of bonds and insurance available for construction contracts.
- Measure knowledge of and ability to define and prepare procurement documents.

Source Materials

PRM Module 3 - Project Delivery

PRM Module 4 - Design

PRM Module 5 - Construction Documents

PRM Module 6 - Bidding/Negotiating/Purchasing

PRM Module 7 - Construction

MasterFormat™ 2004

Candidate is expected to understand how to prepare procurement documents; how to organize and order the procurement requirements in accordance with *MasterFormat* and other recommendations in the PRM; how to designate the proper location of subject matter within the procurement requirements; methods of specifying allowances, unit prices, and alternate work, including typical pitfalls in specifying each; the basic terms standard to the forms of insurance and bonding used in the construction industry; and the definitions, limitations, and intent of the typical types of bonding and insurance in common use.

Study Checklist

- A. Procurement Requirements (PRM Modules 5.1, 5.2, 6.4; *MasterFormat™*)
 1. Procurement Documents:

Keep in mind that procurement documents and procurement requirements are not the same. The procurement requirements define specific procedures for the bidding or proposal process. The procurement documents are all of the documents made available to prospective bidders. Study Figure 5.1-A to learn what is included in each category.
 2. Bid Security and Bidder's Qualifications:

Bid security protects the owner from frivolous bids. Know how bid security works and how bid security is addressed in the procurement requirements. Also know what qualification data may be requested and where in the procurement requirements it is addressed.

3. Bid Solicitation:

A bid solicitation (invitation to bid) should be brief and simple, but complete. Understand the purpose of the bid solicitation, how the two types of bid solicitation are used, and what content should be included.
 4. Instructions to Bidders:

The instructions to bidders (instructions for procurement) tell how to prepare and submit a bid and describe conditions affecting award of the contract. Study what information is, and is not, included in the instructions to bidders. Have a clear understanding of what information belongs in the instructions and what belongs in the solicitation.
 5. Information Available to Bidders:

Understand what types of information and resource drawings may be made available to bidders and how they are to be used. Also know how this material relates to the contract documents.
 6. Bid Form:

Know why bid forms are necessary and what items should be included. Pay particular attention to treatment of alternates, allowances, and unit prices.
- B. Special Applications (PRM Modules 3.3, 4.6, 5.1, 5.2, 5.6, 5.9, 5.15, 5.19, 5.20, 6.4, 6.5, 7.1)
1. Allowances:

Allowances, like unit prices and alternates, are used to cover items that are not fully defined at the time of procurement. Know the definition of an allowance and how it differs from an alternate or unit price. Know what cash allowances are, what cost components they may include, when to use them, and problems they may present. Understand how a quantity allowance is different. Also know how allowances are addressed in the procurement requirements, conditions of the contract, Division 01, and specification sections.
 2. Unit Prices:

When the extent of a work item cannot be determined at the time of procurement, unit prices are useful. Understand why they are used and how they are covered in the procurement requirements, conditions of the contract, Division 01, and specification sections.
 3. Alternates:

Alternates are sometimes unavoidable but can present drawbacks. Understand what alternates are, why they are used, and why they should be avoided if possible. Also know how they are incorporated into the procurement requirements, conditions of the contract, Division 01, and specification sections.
 4. Multiple Prime Contracts:

Know when multiple prime contracts may be used and what additional responsibilities they place on the A/E and the owner in developing and administering the construction documents. Understand how multiple prime

contracts relate to construction management and how they are used in public projects. Also know how the organization and content of the construction documents are modified when multiple prime contracts are used.

5. Negotiated Contracts:

Procurement requirements and processes are different and may be less formal for negotiated contracts. Know how the documents and processes differ from those used in bid situations.

6. Design-Build:

In design-build, detailed design occurs after contract award rather than before. As a result, procurement requirements and contract documents are quite different from those used in design-bid-build projects. Understand the process and the necessary document variations, and know from whom standardized documents may be obtained.

7. Construction Management:

The involvement of a construction manager, whether as advisor/agent or as contractor, affects the structure and content of construction documents as well as by whom they are prepared. Be familiar with the variations that may be necessary and the organizations who offer standard documents for construction management projects.

C. Construction Bonds (PRM Modules 5.1, 5.19)

1. Bonding Procedures:

Know the definitions of terms used in bonding, as given in PRM Module 5.19. Understand the purpose of bonding and the roles of the key participants. Be familiar with the criteria for rating and qualifying bonding companies. Know who provides the basic information on bonding requirements, and how the information is obtained. Also be familiar with the advantages and costs of bonding.

2. Bid Bond:

A bid bond ensures that the owner will get the benefit of an accepted bid. There are two main types of costs that bid bonds protect against; know what they are. Have a clear understanding of who is obligated to do what under a bid bond.

3. Performance Bond:

A performance bond ensures the owner that the project will be completed if the contractor defaults. Understand what happens when a default occurs, and the various ways in which the project may be completed.

4. Payment Bond:

Know how a payment bond benefits the owner and whose payments are protected under the bond.

5. Bond Forms:

Know from whom bond forms are available, who should advise on selection of bond forms, and who should make the selection.

D. Construction Insurance (PRM Modules 5.20, 7.3)

1. General:

The contractor's insurance, required by the conditions of the contract, provides most of the protection needed by both the contractor and the owner during construction. Know what general types of additional coverage the owner may require. Also, clearly understand who should offer recommendations and make decisions on construction insurance matters.

2. Liability Insurance:

Liability insurance covers liability to others arising from actions of the insured. Be familiar with the four main types of liability insurance needed for construction projects: workers' compensation, general liability, automobile, and owner's protective liability. Know who needs to carry workers' compensation insurance and the special requirements that may apply. Know the two types of general liability coverage and the six categories of limits of liability, as well as how the aggregate limit applies and who carries this insurance. Know who needs automobile insurance. Also know what owner's protective liability insurance is and how it should be obtained.

3. Property Insurance:

Property insurance covers damage to the insured's own property. The keystone of property insurance for a construction project is builder's risk insurance. Know the difference between named peril and all-risk policies, what exclusions may limit all-risk coverage, how many policies should be obtained and by whom, and who should be covered. Know what builder's risk insurance covers and the issues that arise with materials and equipment. Also understand what is covered by the owner's boiler and machinery insurance and business interruption insurance, and by the contractor's general property and equipment insurance and umbrella excess liability insurance.

4. Terms of Coverage:

Through subrogation, one party's insurance settlement can become another party's lawsuit. Understand what subrogation is, how it can cause problems, and what is recommended to prevent them. Know what an additional insured is, and how an additional insured's rights under a liability policy differ from those of the named insured.

5. Obtaining and Incorporating Information:

Understand how and from whom insurance information for a project should be obtained, and where it should be incorporated into the contract documents.

6. Glossary of Insurance Terms:

Be familiar with insurance terminology as set forth in the PRM.

E. Construction Warranties (PRM Modules 5.16, 5.18)

1. Terminology:

Construction warranties cover products and workmanship and are usually called out in individual specification sections. A warranty and a guarantee

are not the same thing; understand the difference and how a construction warranty may include elements of both. Be familiar with the provisions of the Uniform Commercial Code as they relate to construction warranties. Both express and implied warranties apply to construction; know how each is created. Also know how a limited warranty differs from a full warranty, how exclusions and conditions affect warranty coverage, and what an extended warranty is.

2. Purpose and Limitations:

Understand the reasons for requiring construction warranties. Also be aware of the possible limitations on the true value of a warranty, such as good warranties for poor products, warranties that disclaim responsibility, the manufacturer's not honoring the warranty, warranty rights limited to the original purchaser, common limitations and exclusions, and limited remedies.

3. Role of the A/E:

Understand why the A/E should specify warranties on behalf of the owner only with caution, and why.

Study Unit No. 8 - Specifying Techniques and Applications

Weight on Examination: 15%

Approximately 30 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure knowledge of and ability to identify the benefits, limitations, and use of each type of specification.
- Measure knowledge of and ability to identify the benefits, limitations, and use of each method of specifying.
- Measure knowledge of and ability to identify the benefits and use of preliminary project descriptions and outline specifications.

Source Materials

PRM Module 4 - Design

PRM Module 5 - Construction Documents

UniFormat™ 1998

Candidate is expected to understand: the major types and methods of specifying, including the appropriate use of each; the Uniform Commercial Code as it relates to procurement contracts, the essential differences between procurement and construction contracts, and how these differences might affect preparation of the specifications; the essentials of performance specifying and how or when the performance method is used; how the owner's use of a particular contracting method might affect the type and method of specification used; how to organize a preliminary project description using the format and concept established in *UniFormat*; and the "shortform" method of specifying.

Study Checklist

A. Product Evaluations (PRM Modules 4.4, 5.9)

1. Identifying Products:

To find the right products, the A/E needs to be familiar with a wide variety of sources of product information. Know the sources commonly used. Also understand how product selection is progressively refined as design moves forward.

2. Evaluating Products:

Six major aspects are considered in evaluating products: product characteristics, manufacturer, installation, cost, maintenance, and warranty. Know the issues associated with each.

B. Performance Specifications (PRM Modules 4.4, 5.7, 5.15)

1. Definition and Purpose:

A performance specification is defined as a statement of required results with criteria for verifying compliance, but without unnecessary limitations on the

methods for achieving the required results. Know this definition and the implications of each element of it. Also know the general reason why performance specification is used.

2. When to Use Performance Specifications:

There are four main circumstances when performance specification can be useful: to obtain broader options or expedited schedules in systems, assemblies, and products; to incorporate nonstandard technologies; to induce development of new technology; and to delegate design responsibilities. Understand how performance specification is beneficial in these situations.

3. Determining Scope of Elements to Be Performance Specified:

Know the factors favoring the use of performance specifications for a given project element, both when a range of options exists and when no such range of options exists.

4. Establishing Levels of Performance Specifying:

Performance specifying can take several levels, which offer the contractor narrow, broad, or in-between opportunities for innovation. Study Figure 5.15-A to grasp the possible range and the relationship between performance specifying and design-build project delivery.

5. Means of Evaluation:

Understand how the means of evaluating proposals may broaden or narrow the results of a performance specification.

6. Four Essentials in Performance Specifying:

Understand how performance criteria are structured. Be able to define the terminology associated with performance (attributes, requirements, criteria, and tests). Be able to recognize and give an example of each. Review the sample recommendations given in Figure 5.15-E.

7. Performance Specification Format:

Know how *SectionFormat* would typically be applied in a performance specification. Also know how the means of verifying performance (including submittals; credentials; performance descriptions with attributes, requirements, criteria, and tests; execution requirements) should be addressed.

8. Design and Construction Contracting Strategies:

Performance-based specifying changes the roles of the participants in design, construction documentation, procurement, and contracting. Understand how the roles of the owner, A/E, construction manager, and contractor may be affected.

- C. Preliminary Project Descriptions and Outline Specifications (PRM Modules 4.8, 4.9, 5.7)
1. Preliminary Project Descriptions:
Know the uses of a preliminary project description, when it should be prepared, what information it should contain, and how it relates to *UniFormat*.
 2. Outline Specifications:
Understand why outline specifications are used, when they should be prepared, how they are structured and phrased, and what information they should include.
- D. Methods of Specifying (PRM Module 5.7)
1. Prescriptive versus Performance Specifications:
Know the difference between prescriptive and performance specifications. Also know which of the four methods of specifying are used for each.
 2. Descriptive Specifications:
Know how a descriptive specification is defined, how it differs from a proprietary specification, and the five steps to prepare it.
 3. Reference Standard Specifications:
Know what reference standard specifications are, how they relate to the other methods of specifying, what sorts of standards they incorporate, and pitfalls to watch out for. Also understand how to incorporate a standard properly.
 4. Proprietary Specifications:
Proprietary specifications identify products by manufacturer, model number, etc. They may be open or closed. Know the differences among the various types of proprietary specification methods and the potential problems with each method.
- E. Shortform Specifications (PRM Module 5.14)
1. Characteristics:
Shortform specifications are concise and direct, but still require a level of detail sufficient to achieve the required results. Understand the required characteristics of shortform specifications as described in the PRM and the difficulties they may present.
 2. Uses:
Projects for which shortform specs are used usually involve limited or standardized scope, or project delivery methods other than design-bid-build. Understand what it is about each of these situations that makes shortform specs appropriate.

3. Producing Shortform Project Specifications:

Be familiar with the recommended process for preparing shortform project specifications, and how they relate to shortform master guide specifications (discussed in Study Unit 6).

F. Specifying for the Purchase of Goods (PRM Modules 5.16, 5.18)

1. Uses of Purchasing Contracts:

Purchasing refers to the acquisition of goods directly by the owner rather than indirectly through the construction contractor. It may or may not include delivery or special services other than installation. Be familiar with the uses of purchasing as outlined in the PRM, as well as the potential drawbacks.

2. Differences Between Purchasing Contracts and Construction Contracts:

Activities, responsibilities, and documentation for purchasing are different than for construction contracts. Be familiar with the major differences as outlined in the PRM.

3. Uniform Commercial Code:

The UCC governs contracts dealing with the sale of goods in every state except Louisiana. Its provisions supplement, or may override, contract provisions. Know the UCC's limits on contract enforceability, formation, interpretation, and remedies. Also know its provisions on express and implied warranties and how the UCC relates to purchasing warranties.

Study Unit No. 9 - Specification Writing

Weight on Examination: 20%

Approximately 40 questions from material directly referenced in the source materials for this study unit will appear on the exam.

Examination Objectives

- Measure knowledge of the application of specification section format, organization, and language.
- Measure knowledge of and ability to prepare specification sections using *SectionFormat* and *PageFormat*.
- Measure knowledge of and ability to demonstrate proficiency in specification language, sentence structure, and grammar.

Source Materials

PRM Module 5 - Contract Documents

MasterFormat™ 2004

SectionFormat™ 2007

PageFormat™ 2007

Note: The PRM has not yet been updated to reflect the 2007 editions of *SectionFormat™* and *PageFormat™*. While a brief summary of the changes is provided in the Addendum to this study guide, candidates are **strongly urged** to refer to the 2007 source documents and not rely solely on the PRM or on earlier versions of the documents.

Candidate is expected to understand the outline format, proper sequence of article titles, and proper specification language; know how to write a specification section; be able to identify proper information to be included, assemble it in the proper format and sequence, and maintain proper sentence structure and grammar; and produce specifications that are legible and easy to read.

Study Checklist

A. *SectionFormat™* (PRM Modules 5.5, 5.6, 5.7, *SectionFormat™*)

1. Definitions:

SectionFormat™ provides a uniform approach to organizing specification text contained in a project manual. Know the purpose of a section and how sections relate to divisions of the specifications as well as how sections relate to the division of work among trades.

2. Functions of Section Parts:

Be able to define the purpose of each of the three parts of a section: Part 1 General, Part 2 Products, and Part 3 Execution.

3. Article and Paragraph Titles:

Study the standard contents of each part, consisting of articles and paragraphs. Also review the explanations for each category, as given in *SectionFormat™*. Know the sequence as well as the content.
 4. Coordination:

Understand the relationship between Part 1 of a section and Division 01 of the specifications.
- B. *PageFormat™* (PRM Module 5.5, *PageFormat™*)
1. Standard Presentation:

Know the three objectives of a standard page format and the advantages of uniformity of presentation.
 2. Practices to Avoid:

PageFormat™ lists several practices to avoid, including excessive use of sublevels, single subparagraphs, underlining, and special characters; be familiar with the reasoning.
 3. Sample Page:

Be familiar with the sample page illustrating CSI *PageFormat™* and with its features as described in *PageFormat™*. Know the recommended practices for margins, page arrangement, and headers and footers; designation of divisions, parts, articles, and paragraphs; end of section treatment; and schedules and tables.
- C. Requirements for Effective Communication (PRM Modules 5.7, 5.8, 5.9)
1. The Four Cs:

Commit to memory the four Cs for effective communication – clear, concise, correct, and complete – and their meanings.
 2. Writing Style:

Accuracy, brevity, and clarity characterize good writing style. Know the four rules for good style as described in the PRM.
 3. Vocabulary:

The main vocabulary guidelines for specifications are precision, consistency, and correct use of commonly misused or ambiguous terms. Know those terms, as given in the PRM, and how they should be correctly used.
 4. Spelling:

Spelling should be correct and consistent; know how that is best accomplished.
 5. Abbreviations:

Abbreviations should be limited and follow specific guidelines; know what they are.

6. Symbols and Numerals:

Understand which symbols should not be used in specifications and why. Know the recommended rules for parentheses, quotation marks, dimensions, and standards designations. Also know the rules for use of numerals, fractions, and unneeded zeroes.
7. Capitalization:

The specifications are part of the contract documents; therefore, in the specifications, it is appropriate to capitalize terms that are defined and capitalized in the contract and conditions of the contract. Be familiar with the list of terms that should be capitalized according to the PRM.
8. Punctuation:

Punctuation rules for specifications include correctness according to the formal rules of punctuation and the use of commas after each item in a series. Complex sentence constructions dependent on punctuation for their meaning should be avoided.
9. Grammar:

The grammar rules of primary importance in specifications deal with subject/verb agreement, parallel construction, inappropriate terms, pronoun reference, unnecessary words, and prepositional phrases. Be familiar with the examples given in the PRM.
10. Sentence Structure:

Because the specifications are instructions addressed to the contractor, the imperative mood should predominate. The imperative mood expresses direct commands, requests, and prohibitions: "Paint the rails with acrylic paint." This form is preferred instead of a longer and more ambiguous statement in the indicative mood: "The rails shall be painted with acrylic paint" or "The contractor shall paint the rails with acrylic paint."
11. Streamlining:

Streamlining reduces verbiage by placing the subject first and providing keywords for quick reference. Know when it is used and what it looks like.
12. Specification Detail:

Be familiar with the general principle governing how much detail should be included in specifications.

D. Writing Specifications (PRM Module 5.9)

1. Gathering Information and Drafting the Specification Section:

The specifier needs to gather two types of information: project information and reference information. Know the types and sources of necessary information included in each of these categories. Drafting the specification involves certain procedural, format, and method decisions, then development of Division 01 and the list of sections, and then preparation of individual sections, which is most effectively done in a certain sequence. Understand what the PRM has to say about each of these topics.

2. Product Selection:

Product selection should be systematic, well-documented, and well-communicated. Be familiar with the factors that are considered in selecting products and the common methods of assembling and recording product selection information.

3. Specifying Workmanship:

Workmanship has measurable properties which can be controlled and verified. Know the methods by which this is done and how specifying practice differs for workmanship in fabrication and workmanship in installation.

4. Specifying Quality Assurance and Quality Control:

The project requirements and administrative procedures set forth in the contract documents establish the project quality. Understand how the responsibilities of the contractor and A/E defined in the conditions of the contract set the basis for quality assurance and quality control. Know how Division 01 sections relate to quality and where quality requirements are addressed in specification Divisions 02-49.

5. Editing, Review, and Coordination:

Coordination of information among the different documents is critical and has to take place continually throughout design. Careful review for errors is also essential. Be familiar with review and coordination methods and with the kinds of errors that need to be watched for.

SAMPLE QUESTION FORMATS

The sample questions used in this study guide do NOT necessarily represent those questions used in the examination. They are intended to familiarize you with the types of questions and formats that will be presented on the examination. Examination questions may not be limited to the types represented below.

Multiple Choice Question

Multiple choice questions are questions where the participant selects from a number of choices as answers in reply to a text or formula question. The participant must select a single choice as the answer.

1. Construction contract administration begins:
 - A. When the contract documents are issued for bid or negotiation.
 - B. When the owner-contractor agreement is executed.
 - C. When construction commences.
 - D. During the contract document phase of the A/E's services.

Answer: B

Matching Question

Matching questions are questions where the participant matches a number of choices as answers in reply to a series of text or formula questions. Choices may be used more than once.

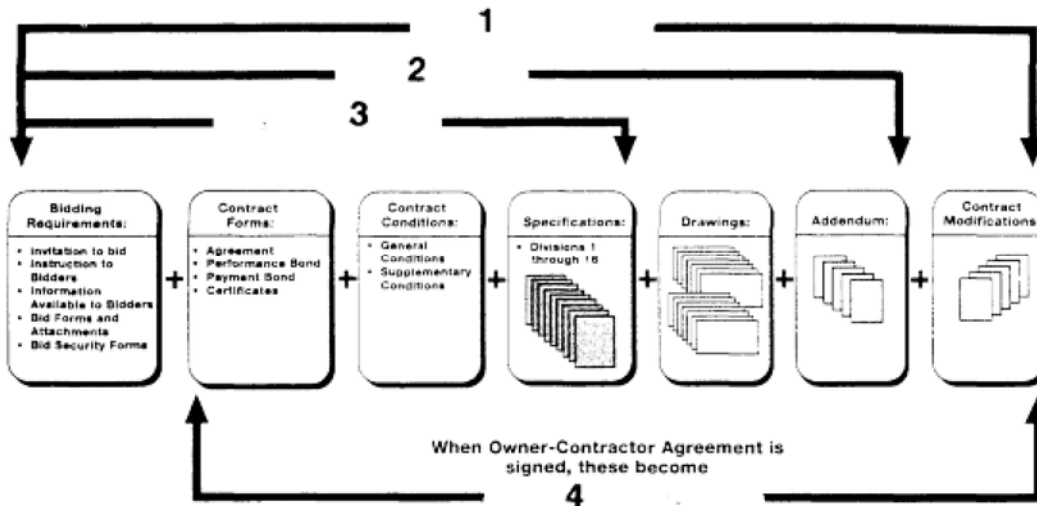
2. Match the appropriate party or parties with the corresponding duty or responsibility. A letter may be used more than once in the exercise.
 - A. Contractor
 - B. Architect/engineer
 - C. Architect/engineer AND contractor
 - D. Owner OR contractor
 1. Initiates requests for interpretation. D
 2. Interprets the documents. B
 3. Is responsible for job site safety. A
 4. Reviews submittals. C

Matching Graphic Question

3. Name the missing elements from the following diagram:

- A. Project manual
- B. Bidding documents
- C. Construction documents
- D. Contract documents

- 1. C
- 2. B
- 3. A
- 4. D



Scenario Question

Scenario questions outline or model an expected or supposed sequence of events.

The lighting fixture schedule indicates that 1,000 total fixtures are required for the project. The reflected ceiling plan shows the 1,000 fixtures. However, architectural interior elevations indicate 32 decorative wall sconces that are not on the lighting fixture schedule, or indicated on the electrical power plans. The wall sconces are specified. The Contractor submits an RFI after award of contract requesting clarification.

Based on the above scenario, answer the following question in the space provided.

- 4. The contractor's RFI should:
 - A. Have been sent during the bidding phase.
 - B. Be directed to the architect/engineer.
 - C. Be sent to the electrical engineer.
 - D. Have been sent by the electrical subcontractor.

Answer: B

NOTES

NOTES

USER RESPONSE FORM - CCS EXAMINATION STUDY GUIDE

As part of CSI's effort to keep documents current, we encourage you to comment on the contents and effectiveness of this document. Please use this form to record recommended changes or additions. Thank you for sharing your experience and helping to keep CSI a leader in the industry.

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