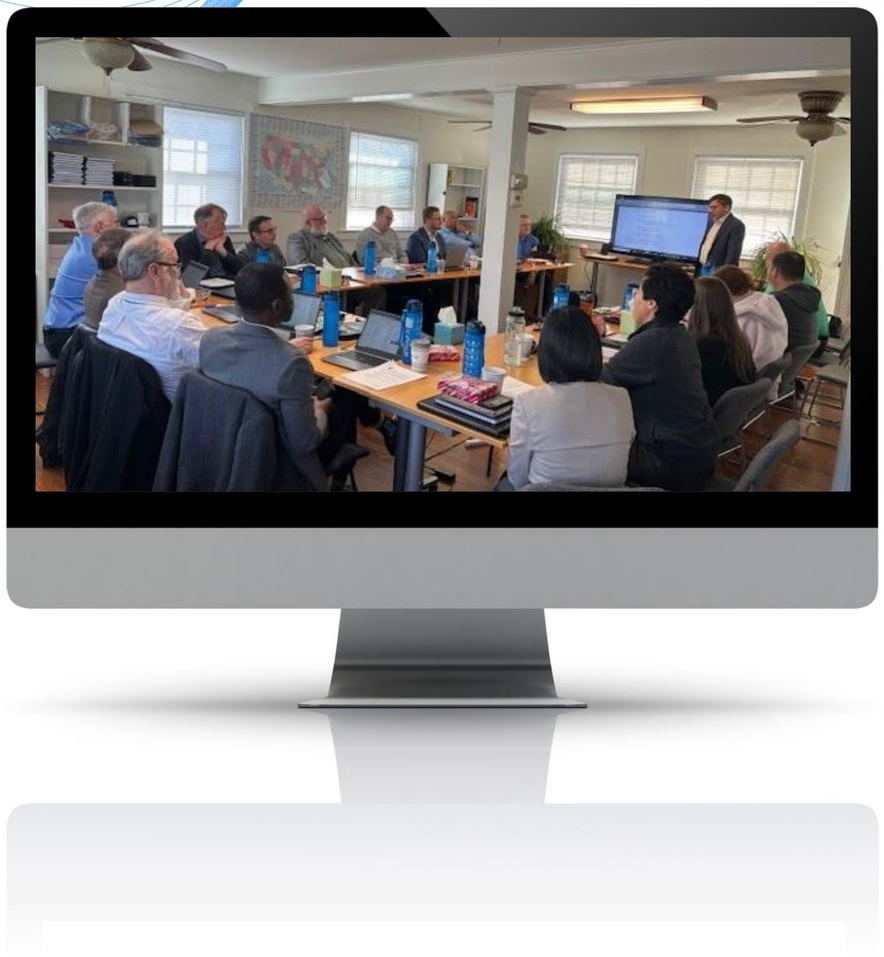
CONSPECTUS®

CONSTRUCTION SPECIFICATION WRITING STUDY SESSION

Presented by:

Conspectus, Inc.



WHO IS CONSPECTUS?

Conspectus, Inc. is a national specification consultancy, employing 16 specifiers, providing high quality, industry-leading specifications and related consulting services on thousands of projects for some of the most prestigious design and engineering firms, government agencies, and private entities domestically and internationally.

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KNOWLEDGE AREAS

Domains:

1	~~9/12~~	~~Planning, Development & Organization~~
4	~~9/19~~	~~Research~~
2	~~09/26~~	~~Coordination~~
6	~~10/03~~	~~Production, Part 1~~
6	**10/10**	**Production, Part 2**
3	10/24	Procurement
5	10/31	Analysis

ITEMS TO NOTE

GENERAL FYI

- No CDT ® certification - highly advisable to **also read Project Delivery Practice Guide (PDPG).**
- Yes CDT ® certification - brush up on the PDPG.
- Exam is based on CSI® **Construction Specifications Practice Guide (CSPG)** content and may not always reflect the real world; we will note items which may not align.
- Those who wrote the CSPG are not the same as the exam writers; study guides have divided the source material - **read the entire book.**
- We encourage interaction in the chat and will also provide time for Q&A at the end of each session.

AIA Continuing Education

Conspectus, Inc. is a registered provider of AIA-approved continuing education under Provider Number 40103229. All registered AIA CES Providers must comply with the AIA Standards for Continuing Education Programs. Any questions or concerns about this provider or this learning program may be sent to AIA CES (cessupport@aia.org or (800) AIA 3837, Option 3).

This learning program is registered with AIA CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product. AIA continuing education credit has been reviewed and approved by AIA CES. Learners must complete the entire learning program to receive continuing education credit.

AIA continuing education Learning Units earned upon completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

Construction Specification Writing Session 5:

Production – Part Two

AIA LO1

Discover how clarity and minimizing conflicts by aligning drawings and specifications into a cohesive set of contract documents can reduce barriers and miscommunication during construction, resulting in better projects for Owners, occupants, and communities

AIA LO3

Review the procurement and contracting requirements, vital for administering the construction contract correctly as the Owner's representative to provide the best results for future occupants.

AIA LO2

Translate design narratives and graphic information from drawings into 3-part technical specification text and learn how to develop specs throughout design phases to capture and convey project decisions which are not easily conveyable in drawings, including levels of quality and testing for materials and assemblies required for code compliance and meeting performance goals- which all directly affect the safety, health and well-being of inhabitants.

AIA LO4

Organize project documents according to CSI formats, prepare for publication and distribution of contract and procurement documents.

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DOMAIN 6:
PRODUCTION – PART TWO

COMPETENCIES

6A Develop outline specifications and project manuals.

6B Translate design narratives into specifications (e.g. UniFormat® to MasterFormat ®).

6D Translate graphic info presented in drawings into succinct written form.

6E Review the procurement and contracting requirements.

6J Organize project documents according to CSI formats.

6K Prepare documents for publication and distribution.

6L Archive electronic files for version control.

PRODUCTION

“In all instances, someone by choice or assignment assumes the specifier’s role and becomes responsible for assembling the project specifications. Like architectural designers, some of these specifiers may find that they have a predilection for writing specifications proficiently.”

-CSPG

PRODUCTION
COMPETENCY 6A

LEARNING OBJECTIVES

LO1 Identify the types and sources of information needed to begin writing specification sections.

LO2 List common methods of assembling and recording specification information.

LO3 Convert full-length or shortform master guide specifications into outline specifications.

Develop outline specifications and project manuals.

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Gathering Info

Type 1: Information regarding the specific project requirements:

- Owner specific requirements:
  - Mandatory products.
  - Standard forms and details.
  - Designation of a green building rating system and target goals.
- Owner’s intent to use FM Global to insure the structure.
- A/E design team drawings.
- Spec notebook or checklist with recorded product selections.
- Preliminary project description (PPD) or outline specification.
- Detailed cost estimate.
- Public project government request for proposal, with amendments and attachments.
- Applicable laws and building codes.

Gathering Info

Type 2: Reference materials about products and construction methods applicable to the specification section:

- Manufacturer info: Product data, guide specs, binders, catalogs.
- Reference material published by trade associations of mfrs, fabricators, and installers.
- Reference standards from trade associations, govt agencies, and national standards associations- ASTM, ANSI.
- Info from technical and professional societies- AIA, ASCE, ASME, ASHRAE, CSI, NSPE.
- Commercial master guide specs.
- Product representatives.
- Information from contractors, subcontractors, and special consultants.
- Personal experience of project team members.
- Specifications for similar projects/products/methods.
  - Caution: Reference only; check mfrs/products, reference standards, and codes.

ASK!!!

Product Reps

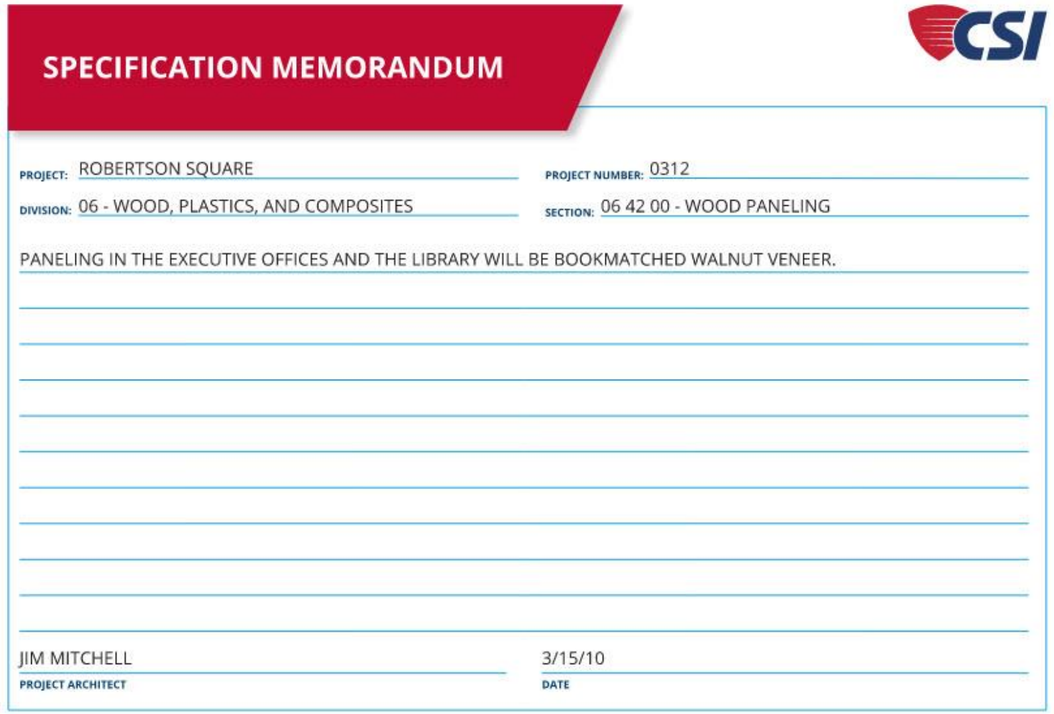
Trusted advisors!

- Understand work of other trades that affects installation and performance.
- Identify related reference standards.
- Describe related work.
- Assist in determining system, assembly, product options and accessories.
- Identify modifications necessary to integrate system or product into project.
- Answer questions concerning delivery, storage, and handling.
- Explain installation procedures.
- Explain product and system installations.
- Identify required certifications.
- Discuss requirements for field quality control.
- Answer questions regarding composition and manufacturing processes.
- Provide a guide specification.
- Provide info on codes and regulations.
- Assist in obtaining AHJ approval.
- Provide product samples.
- Provide CAD drawings.
- Provide BIM Objects.

Recording Information

Common methods:

- Notes or Email Memoranda (Figure 11.2).
  - Meetings minutes.
- Product Notebook.
  - Folder of cut sheets.
- Specification Checklists (Figure 11.3).
- Specification Worksheets.
- Preliminary Project Description (PPD).
- Outline Specifications.



SPECIFICATION MEMORANDUM

CSI

PROJECT: ROBERTSON SQUARE

PROJECT NUMBER: 0312

DIVISION: 06 - WOOD, PLASTICS, AND COMPOSITES

SECTION: 06 42 00 - WOOD PANELING

PANELING IN THE EXECUTIVE OFFICES AND THE LIBRARY WILL BE BOOKMATCHED WALNUT VENEER.

JIM MITCHELL
PROJECT ARCHITECT

3/15/10
DATE

Specification Checklist

SAMPLE COORDINATION CHECKLIST:

SECTION 08 31 13—Access Doors and Frames

- Location and size of each access door and floor door required.
- Locations of fire-rated access doors and their required fire-resistance ratings.
- Construction details such as those for masonry, gypsum board assemblies, plaster, tile, and acoustical surfaces in which access doors will be installed.
- Schedule of access doors.
- Hand of the access door and clearance around doors.
- Details of nonstandard units that require custom fabrication.
- Identification of custom units and standard units fabricated from other than the usual materials or finishes.
- Locations of floor fire doors painted yellow with the following warning painted in black letters on the surface: FIRE DOOR—DO NOT STORE MATERIALS ON SURFACE.
- Details of safety railings on the floor doors.

Converting Full-Length or Shortform to Outline Specifications

- Discard most of PART 1—GENERAL and PART 3—EXECUTION requirements. Maintain only unique items that add cost:
  - Mock-ups, installation warranties.
  - Contractor-provided field quality control testing.
- Remove typical reference standards.
- Condense text using streamlining techniques. Eliminate text not driving **cost** or **schedule**.

- Focus on PART 2—PRODUCTS. Retain content directly applicable to materials, products, and manufacturers (when known).
  - Only info required to establish basic product and installation quality.
  - Special fabrication or workmanship.
  - Include special or custom finishes.
  - Unique reference standards.

CSI provides no standard format for outline specifications.

Streamlining

Subject first, keywords for quick reference:

- Adhesive: Spread with notched trowel.
- Equipment: Install plumb and level.
- Portland Cement: ASTM C150, Type 1.
- Aggregate: ASTM C33.
- Air-Entraining Agent: More-Air Brand, More-X Manufacturing Company.

Can include explanatory statement in Division 01 or supplementary conditions:

- These specifications are written using imperative mood and streamlined form. The imperative language is directed to Contractor unless expressly noted otherwise. The words “shall,” “shall be,” and “shall comply with,” as applicable to context, are included by inference where a colon (:) is used within sentences or phrases.

PRODUCTION
COMPETENCY 6B

LEARNING OBJECTIVES

LO1 Convert construction information from UniFormat® to MasterFormat®.

Translate design narratives into specifications (e.g. UniFormat® to MasterFormat®).

Translating UniFormat® to MasterFormat ®

UniFormat® provides a cross-reference to MasterFormat® Level 1 and 2 numbers.

A SUBSTRUCTURE

Facility Substructure Performance Requirements 01 82 00

NUMBER	TITLE	MF NUMBER
A10	**FOUNDATIONS**	
	Foundations Performance Requirements	01 82 13
	Load Capacity	01 82 13
	Settlement	01 82 13
A1010	**Standard Foundations**	
	See Also:	
	Substructure Excavation: A9010.	
	Construction Dewatering: A9020.	
	Excavation Support Systems: A9030.	
	Backfill and Compaction: A9010.10.	
	Soil Treatment: A9040.	
A1010.10	Wall Foundations	
	Continuous Footings	
	Cast-In-Place Concrete	03 30 00
	Foundation Walls	
	Cast-In-Place Concrete	03 30 00
	Precast Concrete	03 40 00
	Unit Masonry	04 20 00
	Treated Wood Foundations	06 14 00
	See Also:	
	Subdrainage Systems: A6010.	

B SHELL

B SHELL

NUMBER	TITLE	MF NUMBER	EXPLANATION
B20	**EXTERIOR VERTICAL ENCLOSURES**		
	Vertical Exterior Enclosure Performance	01 83 16	
	Sustainable Design Requirements	01 83 16	
B2010	**Exterior Walls**		Includes: Exterior Wall Supplementary Components as appropriate. Includes Exterior Wall Opening Supplementary Components as appropriate.
	Exterior Walls Performance Requirements	01 83 16	
	Wind Load Capacity	01 83 16	
	Fire Rating	01 83 16	
	Thermal Resistance	01 83 16	
	Vapor Transmission Resistance	01 83 16	
	Air Infiltration Resistance	01 83 16	
	Sound Transmission	01 83 16	
	See Also:		
	Exterior Windows: B2020.		
	Exterior Doors and Grilles: B2050.		
	Exterior Louvers and Vents: B2070.		
	Exterior Wall Appurtenances: B2080.		
B2010.10	Exterior Wall Veneer		Includes: Nonstructural outside face elements of exterior walls. Includes precast concrete veneer, unit masonry veneer, exterior insulation and finish systems, manufactured siding, and stucco. Includes water repellents, coatings, and painting.

Translating UniFormat® to MasterFormat ®

Uniformat®

B2010.40
Fabricated Exterior Wall Assemblies

- Curtainwall system, aluminum-framed entrances with panic hardware and low-E insulated glazing.

MasterFormat®

Level 2:

- 08 44 00 Curtain Wall and Glazed Assemblies.

Level 3 numbers and titles:

- 08 44 13 Glazed Aluminum Curtain Walls.
- 08 42 13 Aluminum-Framed Entrances.
- 08 71 00 Door Hardware.
- 08 80 00 Glazing.

UniFormat® to Masterformat ® Bonus Info!

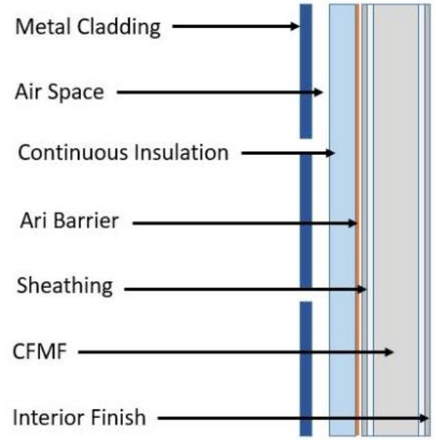
B SHELL

B20 EXTERIOR ENCLOSURE

B2010 EXTERIOR WALLS

B2010.EWA-1 EXTERIOR WALL ASSEMBLY 1

Description: Metal rainscreen, continuously insulated, metal framed exterior wall at ground floor.



Performance Requirements
- Fire Resistance: NFPA 285 compliant
- Thermal: Continuous: R-7.5, minimum; Cavity: R-13, minimum

Design Requirements
- Metal panel finish: Kynar 70% PVDF, custom metallic color

Components

Metal cladding	Preformed ACM panels, 1 inch deep
Air space	1 inch, minimum
Support framing	Thermally broken girts.
Continuous insulation	Mineral wool, 3 inch thick
Air barrier	Fluid applied, vapor permeable
Sheathing	5/8 inch, Type X glass-mat-faced gypsum board
Cold formed metal framing	6 inch metal stud wall framing, 33mil
Cavity insulation	Mineral wool batts in studs
Gypsum board	5/8 inch, Type X

History
- 2024-02-29: Evaluating cost of custom metallic finish versus non-metallic

	Components	Description...
074213.23	Metal cladding	Preformed ACM panels, 1 inch deep
	Air space	1 inch, minimum
	Support framing	Thermally broken girts.
072100	Continuous insulation	Mineral wool, 3 inch thick
072700	Air barrier	Fluid applied, vapor permeable
061601	Sheathing	5/8 inch, Type X glass-mat-faced gypsum board
054000	Cold formed metal framing	6 or 8 inch metal stud wall framing, 33mil
072100	Cavity insulation	Mineral wool batts in studs
092116	Gypsum board	5/8 inch, Type X

Ref: Conspectus blog and podcast!

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PRODUCTION
COMPETENCY 6D

LEARNING OBJECTIVES

LO1 Outline the production process for developing specifications by extracting information about the project design as expressed in the drawings.

LO2 Recognize the importance of making the drawings and specifications complimentary.

Translate graphic information presented in drawings into succinct written form.

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Spec Development Process

Specs can be developed many ways:

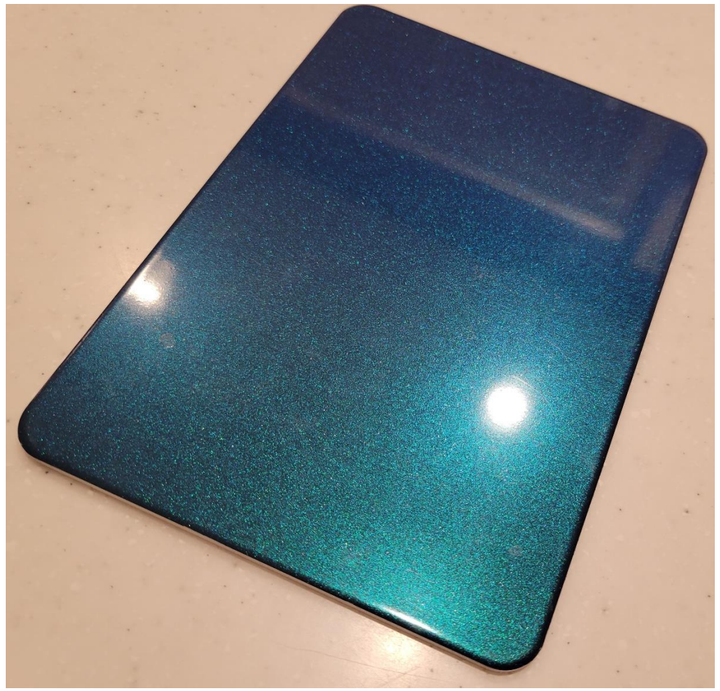
- Small firm. (Principal)
- Medium firm. (Full-time specifier)
- Large firm. (Specifications department)

- Project team with 1 person coordinating/writing.
- Independent specification consultants.
  - Project-by-project basis or all.
- Building product manufacturer specs.
  - Door hardware, elevators, curtainwall.
  - Require thorough review and editing.
    - Remove proprietary information (not permitted for govt/public projects).
- Online building product services offer free outline and short-form specs from a checklist.

TIP! Look out for:
- Means and methods
- Language not for Contractor

Spec Development Process

Dwgs indicate ACM-1: Manufacturer Name, Spectra Ocean



Material Composition

- Aluminum facings in 0.020" nominal thickness
- 4mm total nominal thickness including a proprietary fire retardant core
- High quality, color-shifting paint finish

Attributes

- Transitioning colors create dramatic effects
- Light weight, high rigidity, very flat
- Easily fabricated using conventional tools
- Can be formed to create dramatic curves
- Large panel sizes for fast installation
- Custom lengths up to 400"

	Stock Items	Finish	Core	Stock Size
	Cupral	PVDF + FEVE	4mm	62" x 196"
	Sakura	PVDF + FEVE	4mm	62" x 196"
	Ocean	PVDF + FEVE	4mm	62" x 196"

2.1 METAL COMPOSITE MATERIAL WALL PANELS

A. Aluminum Faced Composite Wall Panels ACM-1: Two aluminum facings bonded to solid, fire retardant core.
   1. Manufacturers and Products:
      a. 3A Composites Alucobond Plus.
      b. Alcotex FR.
      c. Arconic Architectural Products Reynobond FR.
      d. Mitsubishi Chemical ALPOLIC/fr.
   2. Panel Thickness: 4 mm.
   3. Face Texture: Smooth.
   4. Finish: Mica coating.
   5. Color: See Drawings.

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Complimentary Contract Documents

Spec development requires close coordination with drawings as they are developed.

Regardless of who writes the specification sections or how they are developed, products must be:

- Researched.
- Selected.
- Evaluated.
- Coordinated with other products.
- Specified consistently and clearly.
- Coordinated with the drawings.

PRODUCTION
COMPETENCY 6E

LEARNING OBJECTIVES

LO1 Compile the procurement and contracting requirements into the project manual.

Review the procurement and contracting requirements.

Procurement and Contracting Requirements

PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 00

INTRODUCTORY INFORMATION

00 01 01 Project Title Page
00 01 05 Certifications Page
00 01 07 Seals Page
00 01 10 Table of Contents
00 01 15 List of Drawing Sheets
00 01 20 List of Schedules

PROCUREMENT REQUIREMENTS

00 10 00 SOLICITATION
00 11 13 Advertisement for Bids
00 11 16 Invitation to Bid
00 20 00 INSTRUCTIONS FOR PROCUREMENT
00 22 13 Supplementary Instructions to Bidders
00 30 00 AVAILABLE INFORMATION
00 31 13 Preliminary Schedules
00 31 19 Existing Condition Information
00 31 32 Geotechnical Data
00 40 00 PROCUREMENT FORMS AND SUPPLEMENTS
00 41 00 Bid Forms
00 43 00 Procurement Form Supplements
00 43 13 Bid Security Form
00 45 00 Representations and Certifications

CSPG REF: Figure 11.1

Procurement and Contracting Requirements

CONTRACTING REQUIREMENTS

- 00 50 00 CONTRACTING FORMS AND SUPPLEMENTS
- 00 52 00 Agreement Forms
- 00 60 00 PROJECT FORMS
- 00 61 00 Bond Forms
- 00 62 00 Certificates and Other Forms
- 00 70 00 CONDITIONS OF THE CONTRACT
- 00 72 00 General Conditions
- 00 73 00 Supplementary Conditions

SPECIFICATIONS

DIVISION 01	GENERAL REQUIREMENTS SUBGROUP
DIVISION 02-19	FACILITY CONSTRUCTION SUBGROUP
DIVISION 20-29	FACILITY SERVICES SUBGROUP
DIVISION 30-39	SITE AND INFRASTRUCTURE SUBGROUP
DIVISION 40-49	PROCESS EQUIPMENT SUBGROUP

CSPG REF: Figure 11.1

PRODUCTION
COMPETENCY 6J

LEARNING OBJECTIVES

LO1 Summarize the intended use for CSI standards and formats.

Organize project documents according to CSI formats.

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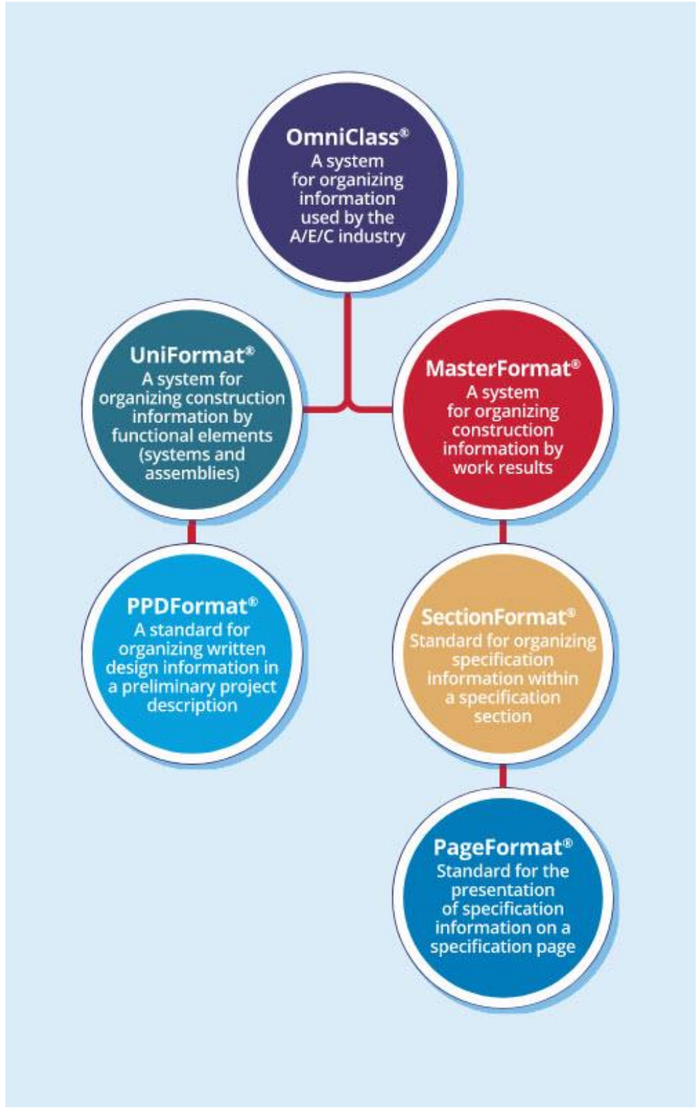
Formats, Formats, Formats

CSI formats give order to specifications.

- OmniClass® - Org info used by AEC

- Uniformat® - Org by functional elements
- PPDFormat® - Org prelim project description

- MasterFormat® - Org by work results
- SectionFormat® - Org section by 3 parts
- PageFormat® - Org page layout of sections



CSPG REF: Fig 13.1

OmniClass®

- Table 11—Construction Entities by Function
- Table 12—Spaces by Function
- Table 13—Construction Entities by Form
- Table 14—Spaces by Form
- Table 21—Elements
- Table 22—Work Results
- Table 23—Products
- Table 31—Phases
- Table 32—Services
- Table 33—Disciplines
- Table 34—Organizational Roles
- Table 35—Process Aids
- Table 41—Information
- Table 42—Materials
- Table 49—Properties

UniFormat®

Nine Level 1 categories:

- Project Description.
- A Substructure.
- B Shell.
- C Interiors.
- D Services.
- E Equipment and Furnishings.
- F Special Construction and Demolition.
- G Building Sitework.
- Z General.

Numbering system:

Level 1	A	SUBSTRUCTURE
Level 2	A10	Foundations
Level 3	A1010	Standard Foundations
Level 4	A1010.10	Wall Foundations
Level 5	A1010.10.CF, or A1010.10.03 30 00	Continuous Footing

PPDFormat®

OUTLINE FORMAT FULL PAGE EXAMPLE

The figure below gives an example of the appearance and content of a typical Preliminary Project Description as presented on a page in outline format (*See* 6.2 Outline Format).

[PROJECT NO.]
[ISSUE DATE]
[REVISION NUMBER]

[PROJECT NAME]
[PROJECT LOCATION]
[PACKAGE OR PHASE IDENTIFICATION]

ELEMENT B [Level 1 Element Letter]

SHELL [Level 1 Element Title]

B20 EXTERIOR ENCLOSURE [Level 2 Element Title]

B2010 EXTERIOR WALLS [Level 3 Element Title]

B2010.001 MASONRY VENEER WALLS [Level 4 Element Title]

A. Description: Face brick veneer with architectural precast concrete trim, continuous insulation in drainage cavity, air and water barrier membrane, gypsum sheathing, and cold-formed metal framing back-up.

B. Functional Requirements:

1. Thermal Performance: Minimum assembly U-value of 0.06 per International Energy Conservation Code.
2. Aesthetic Requirements: Match appearance of existing building.

C. Components:

1. Brick: Match existing jumbo size brick.
2. Precast Trim: Match existing. Portions will have decorative moldings with multi-color painted finish to match existing building.
3. Cavity Continuous Insulation: Extruded polystyrene, R-10
4. Weather-Resistive Barrier: Liquid-applied air and water barrier membrane, vapor permeable.
5. Sheathing: 1/2 inch glass-mat faced gypsum sheathing.
6. Framing: 4-inch cold-formed metal framing, delegated design.
7. Framing Space Insulation: R-13 unfaced fiberglass batts.

B2010.002 METAL PANEL WALLS

A. Description: Aluminum-faced composite metal panel cladding system with open joints over continuous insulation, weather-resistive barrier, gypsum sheathings, and cold-framed metal framing.

B. Functional Requirements:

1. Thermal Performance: Minimum assembly U-value of 0.06 per International Energy Conservation Code.
2. Aesthetic Requirements: Match color of metal panels on existing building.

C. Components:

1. Metal Panels: Shop-fabricated 4-mm aluminum-faced composite panels with PVDF finish on concealed aluminum anchorage system.
2. Continuous Insulation: Extruded polystyrene, R-10
3. Weather-Resistive Barrier: Liquid-applied air and water barrier membrane, vapor permeable.
4. Sheathing: 1/2 inch glass-mat faced gypsum sheathing.
5. Framing: 4-inch cold-formed metal framing, delegated design.
6. Framing Space Insulation: R-13 unfaced fiberglass batts.

END

[AUTHOR]
[FILE NAME]
[COPYRIGHT NOTICE]

[LEVEL 1 ELEMENT TITLE]
[LEVEL 1 ELEMENT LETTER] - [PAGE NUMBER]
[TOTAL NUMBER OF PAGES]

TABULAR FORMAT FULL PAGE EXAMPLE

The figure below gives an example of the appearance and content of a typical Preliminary Project Description as presented on a page in tabular format (*See* 6.3 Tabular Format).

[PROJECT NO.]
[ISSUE DATE]
[REVISION NUMBER]

[PROJECT NAME]
[PROJECT LOCATION]
[PACKAGE OR PHASE IDENTIFICATION]

ELEMENT B [Level 1 Element Letter]

SHELL [Level 1 Element Title]

B20	**EXTERIOR ENCLOSURE [Level 2 Element Title]**	
B2010	**EXTERIOR WALLS [Level 3 Element Title]**	Thermal Performance: Minimum assembly U-value of 0.06 per International Energy Conservation Code. Aesthetic Requirements: Match appearance of existing building.
B2010.001	Masonry Veneer Exterior Walls [Level 4 Element Title]	Brick: Match existing jumbo size brick. Precast Trim: Match existing. Portions will have decorative moldings with multi-color painted finish to match existing building.
B2010.002	Metal Panel Exterior Walls [Level 4 Element Title]	Aluminum-faced composite metal panel cladding system with face sealed joints; 4 mm thickness, factory-applied fluorocarbon coating in metallic color. Sealant: Medium modulus silicone.
	Exterior Wall Construction [Component common to all exterior walls]	6-inch deep cold formed metal framing with 1/2-inch glass-mat faced gypsum sheathing.
	Exterior Wall Vapor Retarders, Air Barriers, and Insulation	Insulation: R-10 extruded polystyrene continuous insulation in drainage cavity, unfaced R-13 fiberglass batts in stud cavities. Weather Barrier: Liquid-applied vapor permeable air and water barrier membrane.
	Exterior Wall Interior Skin	Gypsum board, painted finish.
	Exterior Louvers	Aluminum louvers, drainable storm-proof blades, welded construction, factory-applied fluorocarbon finish that matches metal cladding panels.
	Exterior Soffits	Direct-applied exterior finish system (DEFS) on gypsum sheathing over CFMF framing with R-19 unfaced fiberglass batt insulation.

END OF ELEMENT

[AUTHOR]
[FILE NAME]
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[LEVEL 1 ELEMENT TITLE]
[LEVEL 1 ELEMENT LETTER] - [PAGE NUMBER]
[TOTAL NUMBER OF PAGES]

REF: PPDFormat® Appendix (not in CSPG)

CONSPECTUS®

MasterFormat®

PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP
Division 00 – Procurement and Contracting Requirements
Introductory Information
Procurement Requirements
Contracting Requirements

SPECIFICATIONS GROUP

GENERAL REQUIREMENTS SUBGROUP
Division 01 – General Requirements

FACILITY CONSTRUCTION SUBGROUP
Division 02 – Existing Conditions
Division 03 – Concrete
Division 04 – Masonry
Division 05 – Metals
Division 06 – Wood, Plastics, and Composites
Division 07 – Thermal and Moisture Protection
Division 08 – Openings
Division 09 – Finishes
Division 10 – Specialties
Division 11 – Equipment
Division 12 – Furnishings
Division 13 – Special Construction
Division 14 – Conveying Equipment
Division 15 – Reserved for Future Expansion
Division 16 – Reserved for Future Expansion
Division 17 – Reserved for Future Expansion
Division 18 – Reserved for Future Expansion
Division 19 – Reserved for Future Expansion

FACILITY SERVICES SUBGROUP
Division 20 – Reserved for Future Expansion
Division 21 – Fire Suppression

Division 22 – Plumbing
Division 23 – Heating, Ventilating, and Air-Conditioning (HVAC)
Division 24 – Reserved for Future Expansion
Division 25 – Integrated Automation
Division 26 – Electrical
Division 27 – Communications
Division 28 – Electronic Safety and Security
Division 29 – Reserved for Future Expansion

SITE AND INFRASTRUCTURE SUBGROUP
Division 30 – Reserved for Future Expansion
Division 31 – Earthwork
Division 32 – Exterior Improvements
Division 33 – Utilities
Division 34 – Transportation
Division 35 – Waterway and Marine Construction
Division 36 – Reserved for Future Expansion
Division 37 – Reserved for Future Expansion
Division 38 – Reserved for Future Expansion
Division 39 – Reserved for Future Expansion

PROCESS EQUIPMENT SUBGROUP
Division 40 – Process Integration
Division 41 – Material Processing and Handling Equipment
Division 42 – Process Heating, Cooling, and Drying Equipment
Division 43 – Process Gas and Liquid Handling, Purification, and Storage Equipment
Division 44 – Pollution and Waste Control Equipment
Division 45 – Industry-Specific Manufacturing Equipment
Division 46 – Water and Wastewater Equipment
Division 47 – Reserved for Future Expansion
Division 48 – Electrical Power Generation
Division 49 – Reserved for Future Expansion

00 94 00 Record Modifications
00 94 33 Record Minor Changes in the Work
00 94 36 Record Supplemental Instructions
00 94 39 Record Field Orders
00 94 43 Record Amendments
00 94 46 Record Construction Change Directives
00 94 49 Record Work Change Directives
00 94 63 Record Change Orders

01 00 00 General Requirements

01 10 00 Summary
01 11 00 Summary of Work
01 11 13 Work Covered by Contract Documents
01 11 16 Work by Owner
01 11 19 Purchase Contracts
01 12 00 Multiple Contract Summary
01 12 13 Summary of Contracts
01 12 16 Work Sequence
01 12 19 Contract Interface
01 14 00 Work Restrictions
01 14 13 Access to Site
01 14 16 Coordination with Occupants
01 14 19 Use of Site
01 14 33 Work in Rights-of-Way
01 18 00 Project Utility Sources
01 18 13 Utility Service Connections

01 20 00 Price and Payment Procedures
01 21 00 Allowances
01 21 13 Cash Allowances
01 21 16 Contingency Allowances
01 21 19 Testing and Inspecting Allowances
01 21 23 Installation Allowances
01 21 26 Product Allowances
01 21 29 Quantity Allowances
01 21 43 Time Allowances
01 22 00 Unit Prices
01 22 13 Unit Price Measurement
01 22 16 Unit Price Payment
01 23 00 Alternates
01 24 00 Value Analysis
01 24 13 Value Engineering
01 25 00 Substitution Procedures
01 25 13 Product Substitution Procedures
01 25 16 Execution Substitution Procedures
01 26 00 Contract Modification Procedures
01 26 13 Requests for Information
01 26 19 Clarification Notices
01 26 33 Minor Changes in the Work
01 26 36 Supplemental Instructions
01 26 39 Field Orders
01 26 43 Amendments
01 26 46 Construction Change Directives
01 26 49 Work Change Directives
01 26 53 Proposal Requests
01 26 54 Proposal Worksheet Summaries
01 26 57 Change Order Requests
01 26 63 Change Orders
01 29 00 Payment Procedures
01 29 73 Schedule of Values
01 29 76 Progress Payment Procedures
01 29 83 Payment Procedures for Testing Laboratory Services

01 30 00 Administrative Requirements
01 31 00 Project Management and Coordination
01 31 13 Project Coordination
01 31 14 Facility Services Coordination
01 31 16 Multiple Contract Coordination

07 51 00 Built-Up Bituminous Roofing (Level 2)
07 51 13 Built-Up Asphalt Roofing (Level 3)
07 51 13.13 Cold-Applied Built-Up Asphalt Roofing (Level 4)

REF: Appendix C

SectionFormat®

PART 1— GENERAL

SUMMARY
- Section Includes
- Products Furnished [OR] Supplied But Not Installed Under This Section
- Products Installed But Not Purnished [OR] Supplied Under This Section
- Related Requirements

PRICE AND PAYMENT PROCEDURES
- Allowances
- Unit Prices
- Alternates [OR] Alternatives
- Measurement and Payment

REFERENCES
- Abbreviations and Acronyms
- Definitions
- Reference Standards

ADMINISTRATIVE REQUIREMENTS
- Coordination
- Preinstallation Meetings
- Sequencing
- Scheduling

SUBMITTALS

ACTION SUBMITTALS/INFORMATIONAL SUBMITTALS
- Product Data
- Shop Drawings
- Samples
- Certificates
- Delegated Design Submittals
- Test and Evaluation Reports
- Manufacturers' Instructions
- Source Quality Control Submittals
- Field [OR] Site Quality Control Submittals
- Manufacturer Reports
- Sustainable Design Submittals
- Special Procedure Submittals
- Qualification Statements

CLOSEOUT SUBMITTALS
- Maintenance Contracts
- Operation and Maintenance Data
- Bonds
- Warranty Documentation
- Record Documentation
- Sustainable Design Closeout Documentation
- Software

MAINTENANCE MATERIAL SUBMITTALS
- Spare Parts
- Extra Stock Materials
- Tools

QUALITY ASSURANCE
- Regulatory Agency Sustainability Approvals
- Qualifications
  - Manufacturers
  - Suppliers
  - Fabricators
  - Installers/Applicators/Erectors
  - Testing Agencies
  - Licensed Professionals
- Certifications
- Sustainability Standards Certifications
- Preconstruetion Testing
- Field [OR] Site Samples
- Mock-ups

DELIVERY, STORAGE, AND HANDLING
- Delivery and Acceptance Requirements
- Storage and Handling Requirements
- Packaging Waste Management

FIELD [OR] SITE CONDITIONS
- Ambient Conditions
- Existing Conditions

WARRANTY [OR] BOND
- Manufacturer Warranty
- Special Warranty
- Extended Correction Period

PART 2—PRODUCTS

OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS
- New Products
- Existing Products

[SYSTEMS]/[ASSEMBLIES][MANUFACTURED UNITS]/[EQUIPMENT]/[COMPONENTS]/ [PRODUCT TYPES]/[MATERIALS]/[USER-DEFINED HEADING]

Manufacturers
- Manufacturer List
- Substitution Limitations
- Product Options

Description
- Regulatory Requirements
- Sustainability Characteristics

Performance/Design Criteria
- Capacities

Operation
- Operators
- Controls
- Operation Sequences

Materials

Assembly [OR] Fabrication
- Factory Assembly
- Shop Fabrication
- Assembly [OR] Fabrication Tolerances

Mixes

Finishes
- Primer Materials
- Finish Materials
- Shop Finishing Methods

ACCESSORIES

SOURCE QUALITY CONTROL
- Tests and Inspections
- Non-Conforming Work
- Manufacturer Services
- Coordination of Other Tests and Inspections

PART 3—EXECUTION

INSTALLERS
- Installer List
- Substitution Limitations

EXAMINATION
- Verification of Conditions
- Preinstallation Testing
- Evaluation and Assessment

PREPARATION
- Protection of In-Place Conditions
- Surface Preparation
- Demolition/Removal

[ERECTION]/[INSTALLATION]/ [APPLICATION]/[USER-DEFINED PROCESS]
- Special Techniques
- Interface with Other Work
- Systems Integration
- Tolerances

[REPAIR]/[RESTORATION]

REINSTALLATION

FIELD [OR] SITE QUALITY CONTROL
- Field [OR] Site Tests and Inspections
- Non-Conforming Work
- Manufacturer Services

SYSTEMS STARTUP

ADJUSTING

CLEANING
- Waste Management

CLOSEOUT ACTIVITIES
- Demonstration
- Training

PROTECTION

MAINTENANCE

ATTACHMENTS

END OF SECTION

Schedules
Tables
Illustrations
Forms

REF: Fig 13.2 and Appendix E

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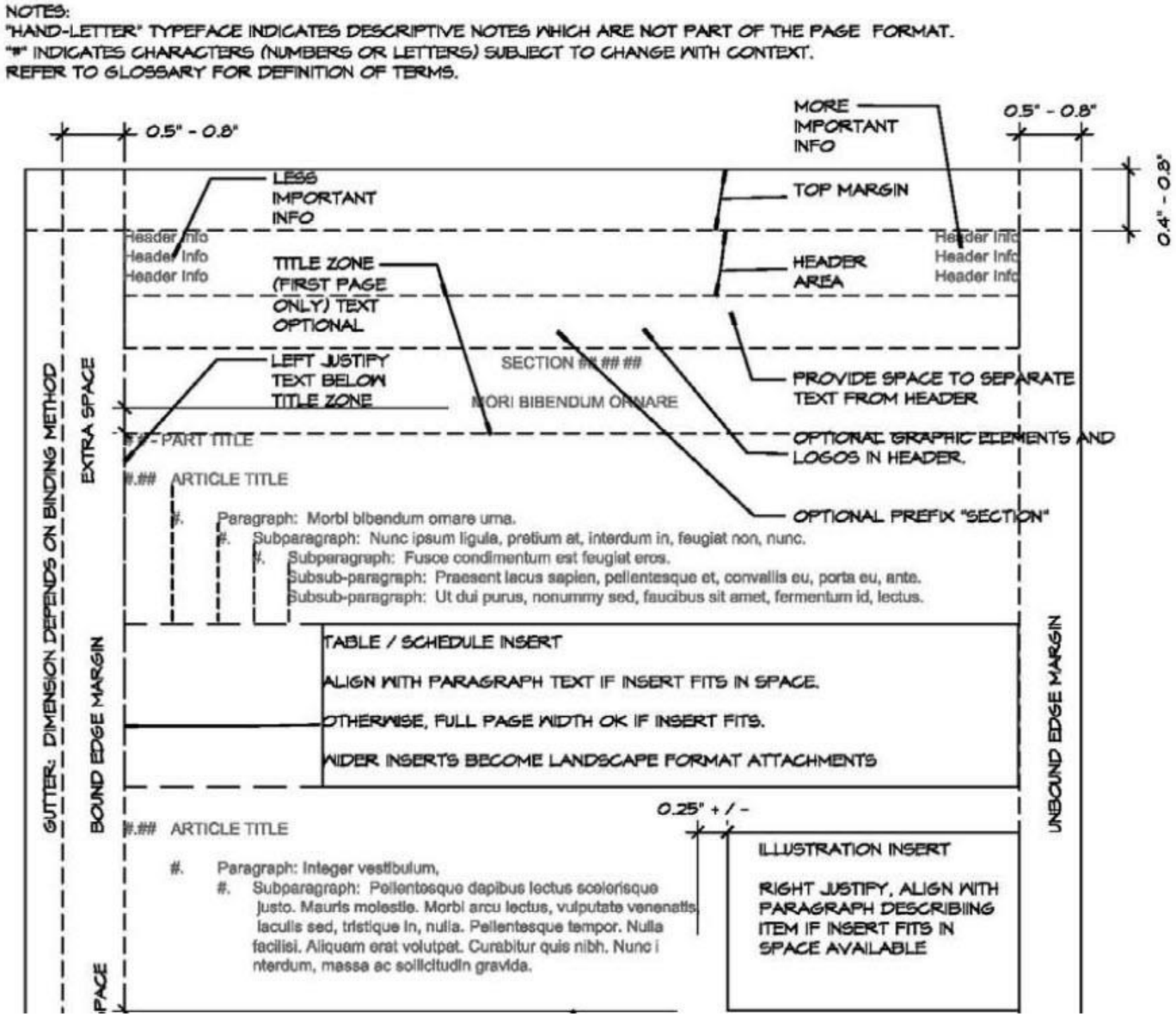

REF: Appendix E Fig PF-2a

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FIGURE PF-1a
CSI PageFormat Identification and Alignment.

PART 1 GENERAL (Part Level)

1.01 ARTICLE (1st Level)

A. Paragraph (2nd Level)
1. Subparagraph (3rd Level)
a. Subparagraph (4th Level)
1) Subparagraph (5th Level)
a) Subparagraph (6th Level)

[PROJECT NUMBER] **[PROJECT NAME]**
[DATE] **[PROJECT LOCATION]**

SECTION 04 05 13
MASONRY MORTARING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mortar for unit masonry and exterior stone cladding.

1.02 RELATED SECTIONS

A. Section 04 20 00 - Unit Masonry: Mortar for concrete unit masonry.

B. Section 04 42 00 - Exterior Stone Cladding: Mortar for natural stone veneer.

1.03 REFERENCES

A. ASTMC150 - Portland Cement.

B. ASTM C144 - Aggregate for Masonry Mortar.

C. ASTM C207 - Hydrated Lime for Masonry Purposes.

D. ASTM C270 - Mortar for Unit Masonry.

E. International Masonry Industry All-Weather Council (IMIAC) – Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of Section 01 60 00.

B. Store and protect products under provisions of Section 01 60 00.

C. Protect cement from moisture and humidity.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather Requirements: IMIAC requirements.

B. Maintain materials and surrounding air temperature to minimum 10 degrees C (40 degrees F) prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Portland Cement: ASTM C150, Normal - Type I, white color for facebrick and grey color for common brick.

[AUTHOR]
[FILE NAME]

MASONRY MORTARING
04 05 13-1

REF: Fig PF-1a and PF-4a PageFormat®

CONSPECTUS®

PRODUCTION
COMPETENCY 6K

LEARNING OBJECTIVES

LO1 Outline a process for the final publication and distribution of the project manual.

Prepare documents for publication and distribution.

Publication and Distribution

- When no further substantial changes in content are expected…
- Final preparation = Processing edited content into a final draft of the project manual.
  - For final review and subsequent revision and publishing.
- Coordinated header/footer with consultants.
- Physical printing rare.
- Volumes recommended:
  - Over 700 pages.
  - Addenda and modifications.
  - Multiple-prime contracts.
- Cross-checking sections with the table of contents for quality control.

Publication and Distribution

Inclusion of Agreement and Conditions of the Contract into Project Manual

- Avoid including the agreement by reference only.
- More appropriate to include the actual agreement forms in the project manual.
- Referencing an incorrect or outdated form is eliminated if bound into the project manual.
- Include the conditions of the contract (general and supplementary conditions) along with the agreement.

  - Note: AIA documents are under copyright by subscription holders.

Publication and Distribution

- Final Owner review and revisions.
- Publish final documents.
  - Bookmarked pdf file.
- Prints:
  - Procurement.
  - Funding approvals by financial institutions.
- Distribute:
  - All project team members.
  - Regulatory agencies for permit.
  - Public projects- plan rooms.

PRODUCTION
COMPETENCY 6L

LEARNING OBJECTIVES

LO1 Maintain a project manual revision log.

Archive electronic files for version control.

Archiving and Version Control

Revisions distributed and archived:

- Neutral format (PDF) or cloud-based posting.
- Consistent file naming protocol for version control:
  - yyyy-mm-dd (ISO 8601).
- Security features to prevent modifications.
- Revision log:
  - Project info.
  - Spec section number and title.
  - Brief description of changes.
  - Items to update in office master guide specs to capture lessons learned.

RECAP: PRODUCTION – PART TWO

COMPETENCIES

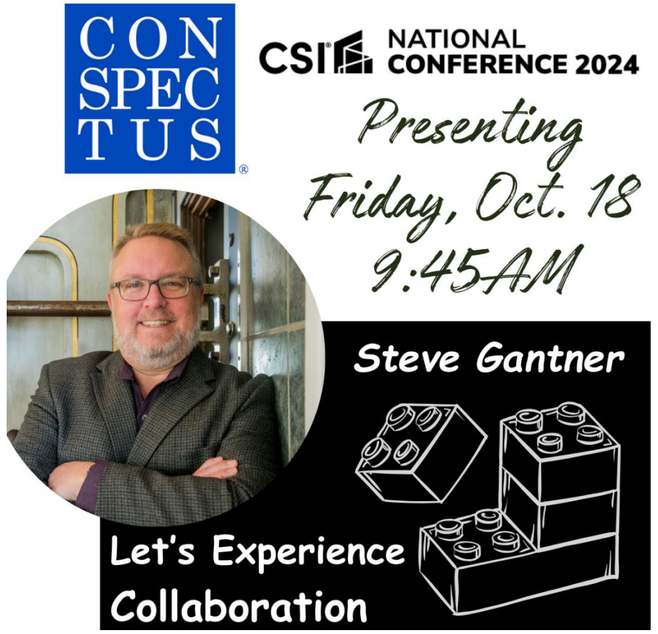
- 6A Develop outline specifications and project manuals.
- 6B Translate design narratives into specification (e.g. UniFormat® to MasterFormat®).
- 6D Translate graphic info presented in drawings into succinct written form.
- 6E Review the procurement and contracting requirements.
- 6J Organize project documents according to CSI formats.
- 6K Prepare documents for publication and distribution.
- 6L Archive electronic files for version control.

Procurement, Contracting, & General Requirements

October 24

No session October 17.

Will we see you at CSI National?



QUESTIONS?

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THANK YOU