



DRAWING REVIEW

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MANAGER OF SYSTEMS

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AGENDA

- Design phases
- Submittal expectations
- DEN reviews
- Comment resolution process
- Q&A

DESIGN PHASES

- See DSM Standards & Criteria, Chapter 2: Design Phases
- Project Manager may modify phases
- DEN Reviews (project dependent):
 - Design Analysis/Programming
 - Schematic Design
 - Design Development
 - 30% CD
 - 60% CD
 - 90% CD
 - 100% CD

Architectural, Landscape Architecture, Signage and Graphics

- A. Design analysis programming
- B. Schematic design
- C. Design development
- D. Contract documents
 - a) 30% submittal
 - b) 60% submittal
 - c) 90% submittal
 - d) 100% submittal
- E. Bid phase
 - a) Bid documents
 - b) Bid evaluation
- F. City plan review
- G. Construction
 - a) Issue conformed document
 - b) Construction overview (administration)
 - c) Record documents

DESIGN PHASES

- Programming/Design Analysis
 - Initial programming submittal
 - Design analysis report
- Schematic Design
 - Based on programming submittal
 - Illustrate design concepts
 - Systems relationships
 - Site plans
- Design Development
 - Size, scope, character
 - Material composition
 - Sequence of operation
 - Equipment arrangements

DESIGN PHASES


- 30% Construction Documents
 - Refine elements from prior submittals into contract documents
 - Resolve interdisciplinary relationships
 - Cost estimating
 - Preliminary specification
- 60% Construction Documents
 - Continue development of contract documents
 - Finalize system concepts, arrangements, sequences
 - Detailed cost estimates
 - Redline specifications
- 90% Construction Documents
 - Finalize design progression from 60%
- 100% Construction Documents
 - Resolve comments from 90% submittal

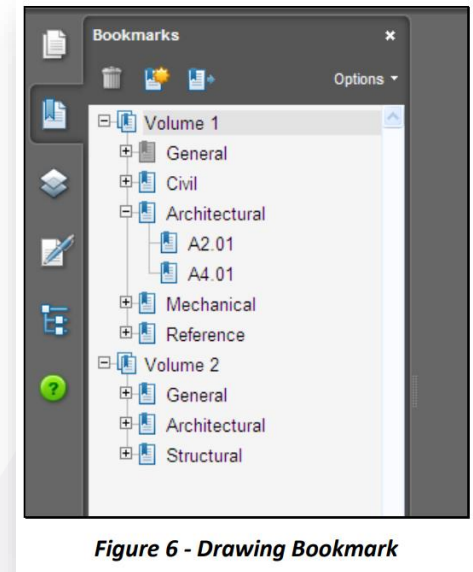
SUBMITTALS

- See DSM Standards and Criteria, Chapter 32 for general requirements
- See discipline-specific chapters for additional requirements

- [Chapter 16 - Architectural Drawings](#)
- [Chapter 17 - Structural Drawings](#)
- [Chapter 18 - Mechanical Drawings](#)
- [Chapter 19 - Plumbing Drawings](#)
- [Chapter 20 - Fire Protection Drawings](#)
- [Chapter 21 - Electrical Drawings](#)
- [Chapter 22 – Communications/Electronic Systems](#)
- [Chapter 23 - Signage and Graphics Drawings](#)
- [Chapter 24 - Specialty Systems](#)
- [Chapter 25 - GIS/CADD Requirements](#)

SUBMITTALS

- DSM Standards & Criteria, Chapter 32: Submittals
- Submit Electronic files
- Bookmark all PDFs 
- Include Redline specifications on review submittals
 - All submittals except final
- Include reviews in design schedule
 - Standard: 14 or 18 calendar days (see DSM)
 - Verify with your project manager



REVIEW BY DEN - OVERVIEW

- Consultant submits deliverable
- DEN Project Manager (PM) conducts initial review
- Subject Matter Experts (SMEs) conduct technical review
- PM compiles, returns comments to consultant
- Consultant reviews and responds to comments
- Meetings, as necessary
- Comments resolved prior to next submittal

3200.4. Review by DEN

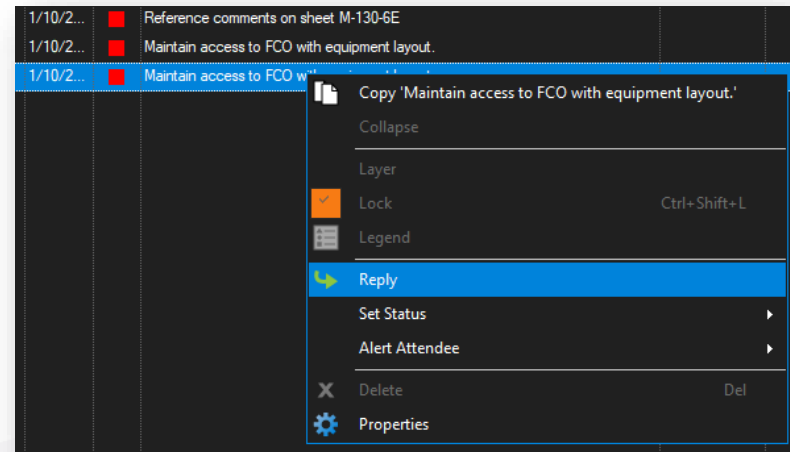
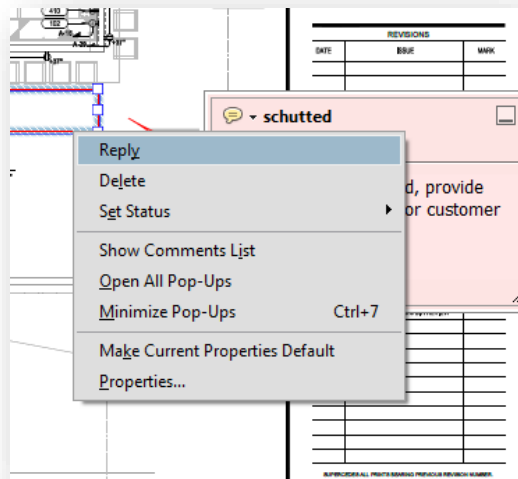
Review and comments by DEN do not relieve the consultant from liabilities of providing complete design services and is not an acceptance of any errors or omissions that may be contained in the documents. Review by DEN shall NOT be construed by the consultant as replacing the consultant's quality control program. Submittals by the consultant must be reviewed by the consultant and corrected PRIOR to submittal to DEN.

REVIEW BY DEN

- Consultant Submits Deliverable
 - Electronic files (PDF, BIM, etc. as required)
 - Unifier submittal
- PM verifies submittal
 - Submittal may be rejected if missing major components
 - If PM accepts, submittal is routed to SMEs
- SME review
 - Architectural, Civil, Mechanical, Electrical, Security, Operations, etc.
- Review Focus
 - Maintainability, operability, simplicity, etc.
 - Alignment with DEN design principles
 - Integration with existing facilities
 - Apply lessons learned from similar projects
 - Conflicting info, errors, etc.

REVIEW BY DEN

- All comments collected in shared documents
- Comments Provided Electronically in PDFs
- Use “Reply” feature to respond



- Reply features are available in Adobe Acrobat & Bluebeam Revu
- Other PDF handling software may offer same functionality

COMMENT RESOLUTION

- Reply to all DEN comments
 - Responses required within (7) days after receipt of comments
 - DSM Standards & Criteria 3200.7
 - Merged PDF(s) with comment replies
 - Submitted to PM
- Schedule meetings to resolve comments
 - Coordinate with PM for scheduling
- Resolve comments prior to next submittal



DENVER INTERNATIONAL AIRPORT

DEN