



**City of Seattle**

# CAD Review Standards



# Introduction

The purpose of this document is to serve as a comprehensive guide on how to create CAD Review in BlueBeam® and includes links to essential training resources. Titled "CAD Review" this document is intended as a supplementary resource designed to enhance the user's proficiency within the specific context of SPU Technical Resources. It aims to provide valuable insights and practical advice that complement existing training by focusing on workflows and standards pertinent to Seattle Public Utilities (SPU).

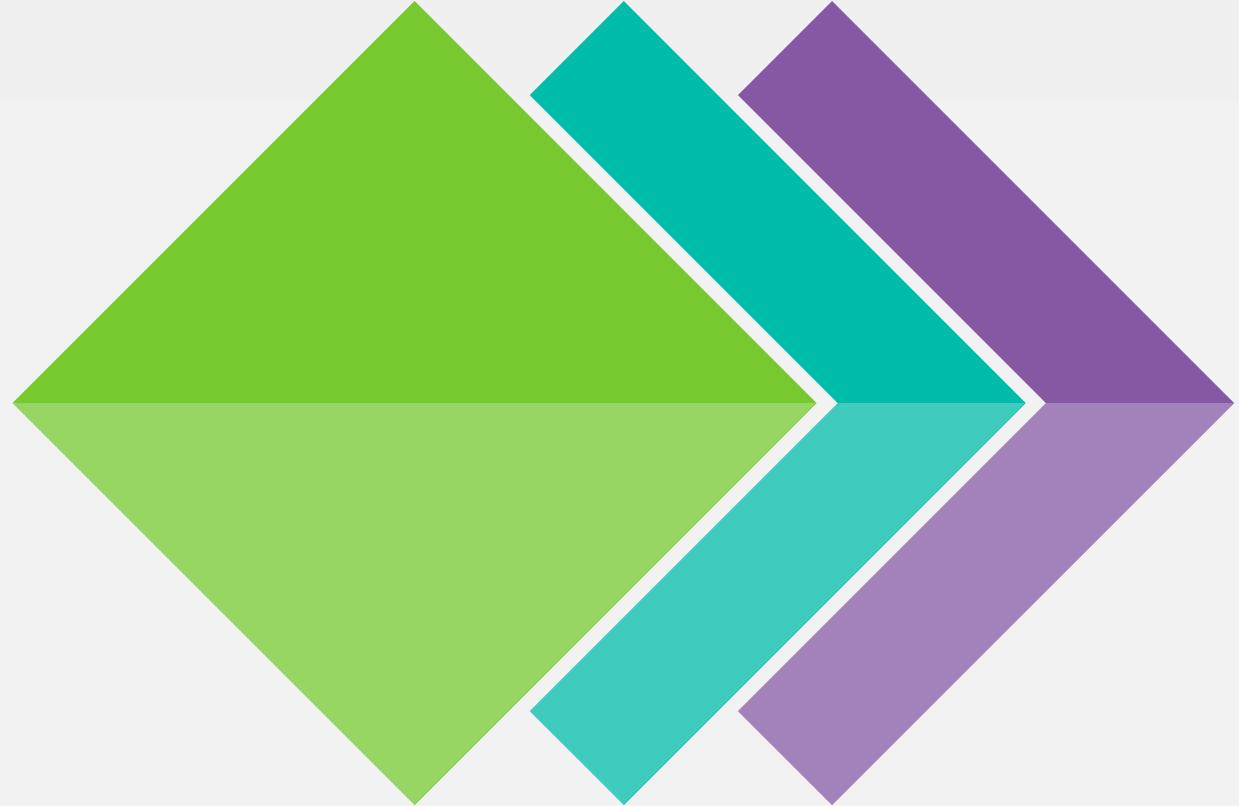
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# CAD Review

## Criteria for CAD Review

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**City of Seattle**

# CAD Review Practices



# 1.0 CAD Review Folder Structure

## Location:

[\\05-DesignDrawings\G-ConsultantFiles\](\\05-DesignDrawings\G-ConsultantFiles)

This directory serves as a centralized location for organizing and managing design documentation throughout the lifecycle of a project. It contains CAD files & CAD reviews with subfolders for the 30%, 60%, 90%, and 100% milestone reviews. Each milestone folder is used to track design progress and ensure consistency in document quality and formatting. The structure supports clear communication between design consultants, project managers, and reviewers.

## Purpose:

To ensure all design documents are properly organized, version-controlled, and compliant with City of [or COS] standards at each key project milestone. Regular reviews help identify and correct issues early, maintaining project timelines and quality. This system promotes accountability and improves collaboration across teams by providing transparent access to up-to-date design files.

Name	Name	Name	Name
_Shortcuts	A-XREFS	CAD Files	CAD Files
01-Estimates	B-Sheets	30% CAD Files	CAD Reviews
02-Images	C-Models	60% CAD Files	30% CAD Review
03-PERC	D-WIP	90% CAD Files	60% CAD Review
04-Survey	E-Correspondence	100% CAD Files	90% CAD Review
<b>05-DesignDrawings</b>	F-AgencyFiles	As-Builts	100% CAD Review
06-RecordDrawings	<b>G-ConsultantFiles</b>		



## 1.1 Milestone Reviews

The CAD review process is structured around four key design milestones: 30%, 60%, 90% and 100%. Each stage serves a specific purpose in ensuring the design progresses smoothly and remains compliant with City of [or COS] CAD standards.

- **30% Review:**

The primary goal is to identify and address major design issues early in the process. This includes layout conflicts, missing components, or any critical design flaws that could impact the project downstream.

- **60% Review:**

At this stage, teams verify that all comments from the 30% review have been resolved. Additional elements such as profiles, cross-sections, and construction details are introduced and reviewed for compliance with COS CAD standards.

- **90% Review:**

The final design submission is reviewed for accuracy, completeness, and full adherence to standards. This ensures that all documentation is ready for final approval, permitting, or construction.

- **100% Review:**

While uncommon, you may be asked to perform a final or 100% CAD review of the consultant files just prior to project advertisement/award. If so, the 100% review CAD files should also be copied to \\05-DesignDrawings\G-ConsultantFiles\CAD Files\100% CAD Files.



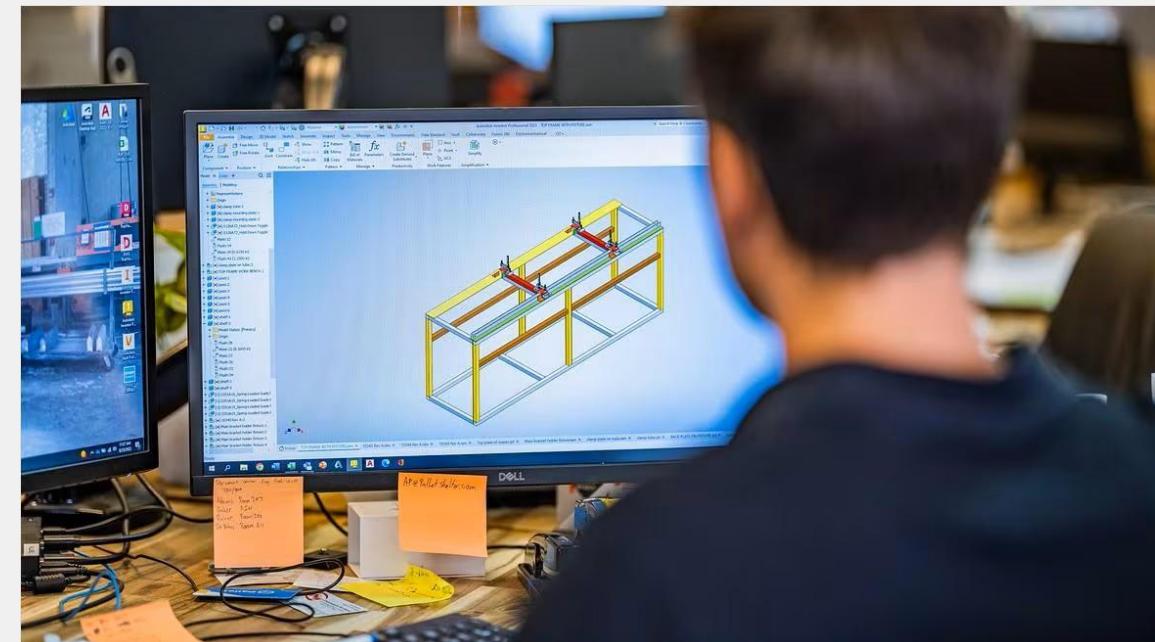
## 1.2 Over-the-Shoulder Clarification

- **Purpose:**

The Over-the-Shoulder (OTS) Clarification process is designed to resolve outstanding questions and ensure that the CAD files are fully aligned with project requirements and COS standards. It provides an opportunity for real-time discussion and clarification after the formal review stages have been completed.

- **Process:**

This informal, yet critical, step is typically conducted after the 90% review. It allows design consultants and reviewers to sit together—virtually or in person—to walk through specific CAD elements, address final concerns, and verify that revisions have been made accurately. The OTS review ensures there are no ambiguities before final submission or project handoff. It improves collaboration and helps avoid unnecessary rework by catching misunderstandings early. This step supports better communication, reinforces design intent, and ultimately strengthens the quality and compliance of the final deliverables.





## 1.3 COS CAD Resources

[CAD Resources - Utilities | seattle.gov](#)

### Access:

The CAD Resources page is the central hub for all current standards, templates, and support files related to City of [COS] projects. Users can access:

- **COS BIM Standards** - Guidelines for consistent model structure and coordination
- **2025 Templates** - Updated drawing templates for all project types
- **2025 Support Files** - Includes title blocks, linetypes, fonts, and standard details
- **Contract Documents** - Reference materials to align design work with project scopes

### Purpose:

The goal of the CAD Resources page is to ensure that all project files adhere to the latest COS standards and specifications. By using the most up-to-date templates and support materials, design teams can improve efficiency,

reduce errors and maintain consistency across all deliverables. This resource supports high-quality, standardized documentation that meets internal and regulatory expectations throughout the project lifecycle.

### CAD Requirements

If you are performing computer-aided-drafting services for Seattle Public Utilities, you must adhere to the requirements in the following document:

[CAD Requirements](#) (PDF)

### Documentation

- [COS-BIM Standards](#) (PDF)

### 2025 Templates

- [Civil 3D Reference Templates](#) (ZIP)
- [Civil 3D Sheet Set Manager Template & Support Files - Legacy](#) (ZIP)

### 2025 Support Files

- [SPU Title Block](#) (ZIP)
- [SPU Cover Sheet w/Vicinity & Project Location Maps](#) (ZIP)  
\*Sample
- [As-Built & Record Drawing Stamps](#) (ZIP)
- [Standard Blocks](#) (ZIP)
- [Hatch Patterns](#) (ZIP)
- [CTBs](#) (ZIP)
- [AutoCAD Plotter Configuration Files](#) (ZIP)
- [Fonts](#) (ZIP)
- [Linetypes](#) (ZIP)
- [Reference Drawings That Can Be Used To Match Properties In AutoCAD](#) (ZIP)
- [Survey Line Code Set](#) (ZIP)
- [Survey Figure Prefix Library](#) (ZIP)



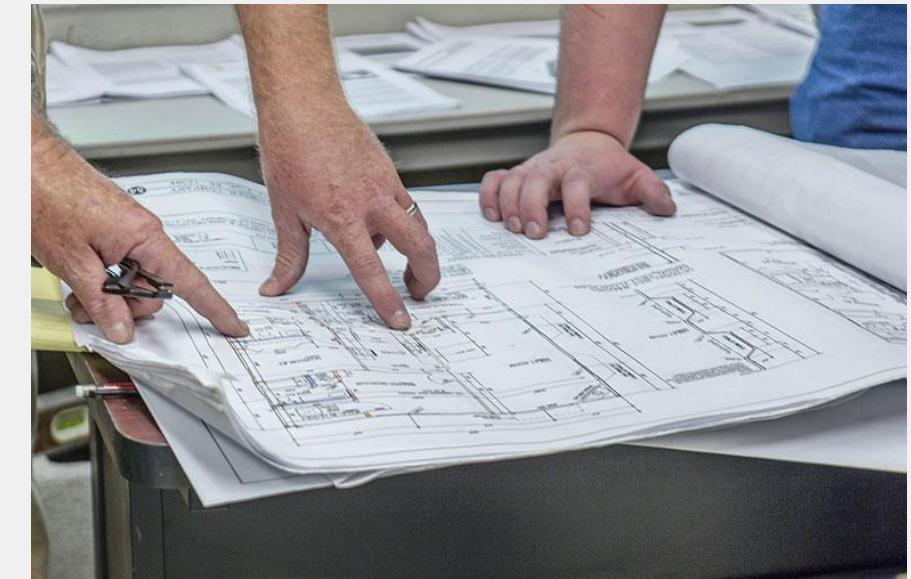
## 1.4 PE Correspondence Expectations

### **Communication:**

Clear and timely communication between the Project Engineer (PE) and design consultants is essential for a smooth CAD review process. The PE is responsible for notifying consultants of upcoming review deadlines, providing guidance on expectations, and sharing any relevant updates or requirements ahead of each milestone.

### **Goal:**

The primary goal is to ensure that consultants are adequately prepared for CAD reviews and can respond to comments in a timely and effective manner. Proactive communication helps reduce delays, improve coordination, and foster a collaborative working environment. It also ensures that all parties remain aligned with project goals and COS standards. By maintaining regular contact and open lines of communication, the PE plays a key role in facilitating high-quality design submissions and keeping projects on track.





## 1.5 Sheet Set Manager (SSM) Blocks

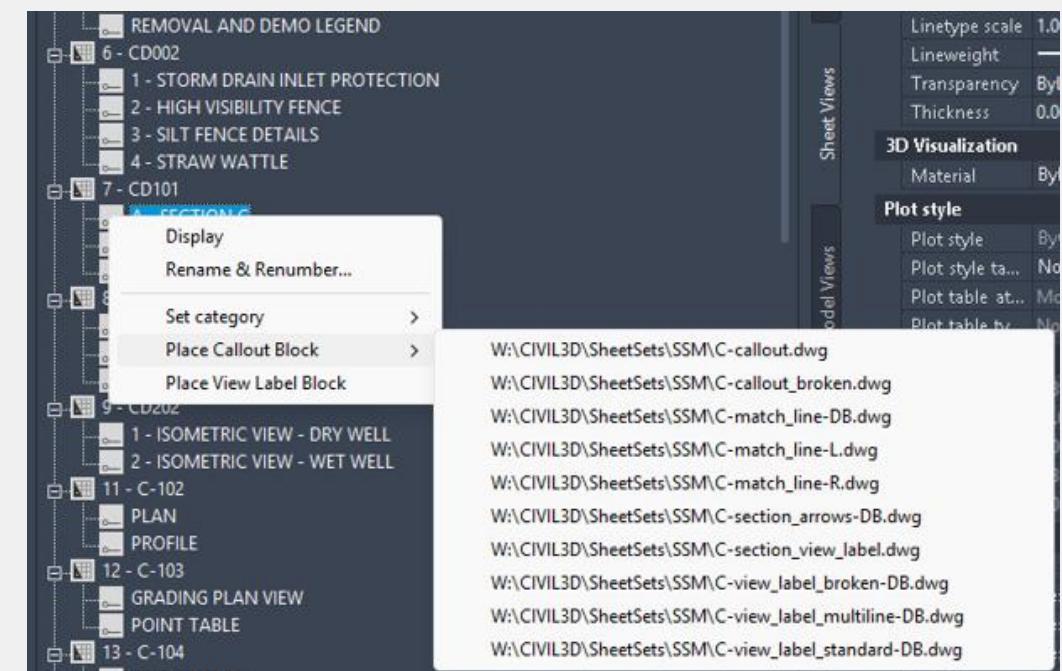
### Usage:

Sheet Set Manager (SSM) blocks are a powerful tool within Civil 3D that help streamline project organization and maintain consistency with COS CAD standards. By using standardized SSM blocks, teams can efficiently manage sheet data, automate title block information, and ensure uniformity across all project deliverables.

### Setup:

To effectively use SSM blocks, configure your Sheet Set Manager to reference the correct COS-approved block libraries for your project. This setup ensures that all fields (such as project titles, sheet numbers, and revision dates) are automatically populated and formatted correctly. Proper use of SSM blocks reduces manual errors, saves time, and improves document control.

By integrating SSM blocks into your workflow, you enhance collaboration, simplify sheet management, and ensure that all project documentation aligns with COS expectations from start to finish.





## 1.6 COS Compliance Overview

**Objective:**

The primary objective of the compliance process is to ensure that all CAD files submitted to the City of Seattle at the end of a project meet the established CAD and BIM standards. Compliance is critical for maintaining quality, supporting future asset management, and aligning with city-wide documentation practices.

**Process:**

Compliance is achieved through structured milestone reviews—at 30%, 60%, 90%, and 100% - where drawings are assessed for accuracy, formatting, and adherence to COS requirements. Any discrepancies identified during these reviews must be addressed promptly by the design team. Final submissions should reflect a complete, accurate, and standards-compliant set of documents.

Consistent compliance checks throughout the project lifecycle reduce rework, ensure smoother approvals, and support efficient integration into city systems. This process not only ensures deliverable quality but also reinforces accountability across project teams.



## 1.7 CAD Review Steps 1 of 2

### 1. Prepare the CAD Files

- Export your CAD drawings (e.g., from AutoCAD, Revit) as **PDF files**.
- Ensure layers, scale, and viewports are properly set up before exporting.

### 2. Open Files in Bluebeam Revu

- Launch **Bluebeam Revu**.
- Use **File > Open** to open your exported PDFs.
- Enable the **Layers Panel** if you want to review layers (especially for CAD-originated PDFs).

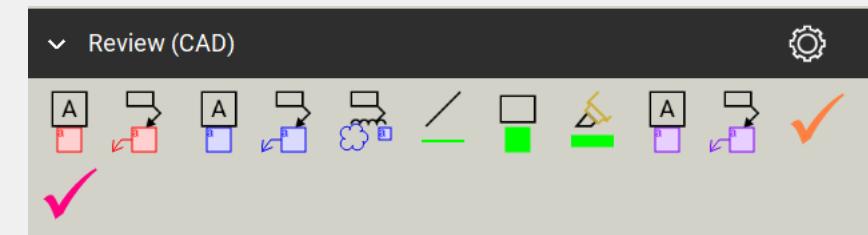
### 3. Set Up Review Environment

- Use **Profiles** like "Review" for a streamlined interface.
- Open the **Tool Chest** and **Markup** panels.
- Create or load any custom **tool sets** needed for standard markups.

### 4. Review (CAD) Markup Tools

- Utilize markup tools such as:
  - **Cloud** - highlight changes or issues.
  - **Callout** - add notes and comments.
  - **Text Box, Highlight, Pen, Arrow** - for various annotations.
  - **Check marks** - review completion.
- Customize color, thickness, and author info for clarity.
- A customized toolbox can be located here W:\Bluebeam\SPU. (See fig 1).

fig 1





## 1.7 CAD Review Steps 2 of 2

### **5. Use Layers and Viewports (if applicable)**

- Toggle **layers** on/off to isolate drawing elements.
- Set or review **viewports** for scale accuracy (important for measurement tools).

### **6. Add Comments and Use Markups List**

- The **Markups List** (bottom panel) tracks all annotations.
- Sort and filter by author, page, status, etc.
- Assign statuses (e.g., "Accepted," "Rejected") for review tracking.

### **7. Finalize and Export**

- Flatten markups if you want to make them permanent.
- Export the **Markups Summary** (PDF, CSV, or XML).
- Save the reviewed document and distribute as needed.



## 1.8 CAD Review Edit Colors

In **Bluebeam Revu**, the **Red**, **Blue**, and **Green** edit colors are often used in **document markups** to visually distinguish different types of comments, revisions, or reviewers during a drawing or CAD file review. While the colors themselves don't enforce rules, they serve as a **visual communication standard**—especially in engineering, architectural, and construction workflows.

Here's an articulate breakdown of their typical meanings and usage:

### Red - Modifications or Revisions

- **Purpose:** Red typically shows elements that are being **changed, modified, or updated**.
- **Usage Examples:**
  - Altered dimensions or relocated components.
  - Design refinements based on feedback.
- **Interpretation:** Signifies an **adjustment** rather than a full addition or deletion—an evolution of existing elements.



### Green - Deletion or Removal

- **Purpose:** Green is commonly used to indicate elements that should be **deleted, removed, or rejected**.
- **Usage Examples:**
  - Marking obsolete dimensions, notes, or design elements.
  - Highlighting errors or conflicts.
- **Interpretation:** A visual cue that a component is **no longer valid** and must be taken out of the design.



### Blue - Comments to Technician

- **Purpose:** Blue represents **communication** from the design team to the technician and vice versa.
- **Usage Examples:**
  - Suggested design features or layout changes.
  - New notes, dimensions, or structural elements.
- **Interpretation:** Indicates **what could be added or deleted**, providing clarity on growth or improvement.



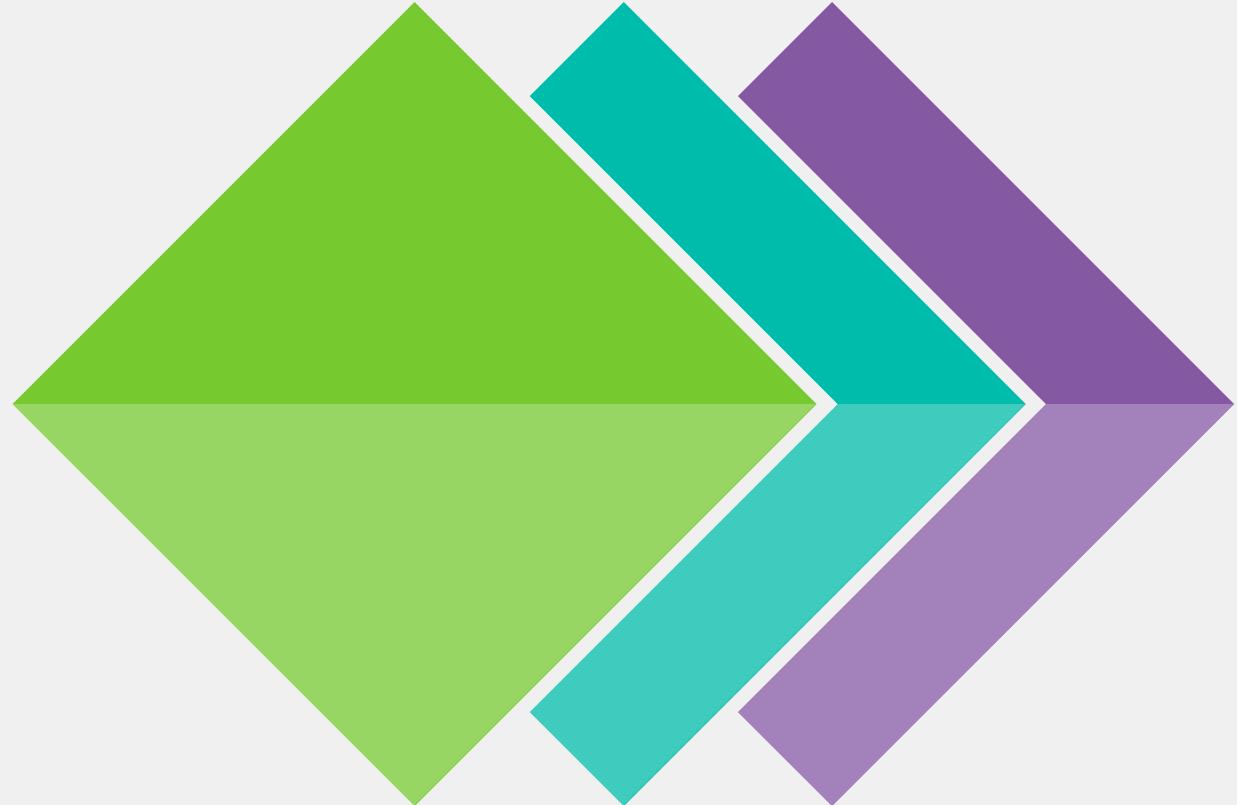
## 1.9 Text Height Standards

The Standard Text Heights Overview provides a clear guideline for text sizing to ensure consistency and readability across drawings and documents. The largest text size, **0.375 inches**, is designated for titles and sheet names, making them easily identifiable. **Main headings** use a slightly smaller size of **0.25 inches**, suitable for section titles or major headers that need to stand out but not overpower the title. For more detailed organization, **subheadings** are set at **0.1875 inches**, marking subsections clearly without dominating the page.

The smallest sizes, **0.125 inches**, serve multiple purposes: general notes and labels, dimension text, and revision or detailed notes. This size is optimal for conveying information that needs to be present but not distracting. Adhering to these standardized text heights improves document clarity, helps maintain professional presentation standards, and ensures that important information is prioritized visually.'

### **Standard Text Heights Overview**

Text Type	Typical Height (Inches)	Purpose
Title	0.375"	Drawing titles, sheet names
Main Headings	0.25"	Section titles, large headers
Subheadings	0.1875"	Subsection titles
General Notes / Labels	0.125"	General information, callouts
Dimensions / Data	0.125"	Dimension text, small notes
Revision Notes / Details	0.125"	Limited-use areas, detailed callouts



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# Credits



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