

# ADMINISTRATIVE PROCEDURE CLASSE-005

REVISION 0  
REVISION 1 (RE-RELEASED)  
REVISION 2 (EDITED, RELEASED)  
REVISION 3 (EDITED, RELEASED)

## DRAWING RELEASE & REVISION PROCEDURE

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Director Engr/Design Date

Approved by: Gregory L. Abbott April 24, 2020  
Machine Shop Supervisor Date

Approved by: Yulin Li May 18, 2020  
Vacuum Scientist Date

Approved by: Ernie Fontes July 21, 2020  
Technical Director Date

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**A. Introduction**

The Cornell Laboratory for Accelerator-based Sciences and Education (CLASSE) is engaged in variety of research activities that use complex mechanical/electrical systems, high voltage/current power systems, and ultra clean high vacuum systems. Since the Laboratory fabricates a wide range of components, a system to ensure that all engineering and design requirements are up to date is essential.

**B. Scope**

This procedure defines the requirements for releasing and editing approved/issued drawings, individual responsibilities and vendor contacts. This procedure applies to all CLASSE personnel and design documents under the control of the CLASSE Design-Drafting Office. Critical components (research programs) that are being fabricated or modified in a strict configuration-control process are included.

**C. Procedure for Releasing and Revising CLASSE Drawings**

As any given design matures from concept through to completion, it is important to follow a semi-formal review process prior to initial release to fabrication. This should be true even in our research and development environment. Important aspects of the design to be considered **should include, but are not limited to:**

- **Manufacturability in a machine shop**
- **Value engineering (\$)**
- **Vacuum properties**
- **Synchrotron radiation power management, and all other power and heat loads**
- **Compatibility for beam operations (beam aperture, beam impedance, etc.)**
- **Physical stresses and strains**
- **Installation procedure and tooling**
- **Welding (including EBW) and/or braze joint design**
- **Utilities integration**

## Cornell Laboratory for Accelerator-based Sciences and Education

In addition to providing a WBS account to charge labor, the author or originator of the design is responsible for consultation and review of the afore mentioned properties and obtain explicit approvals where applicable.

When a new design or concept moves past initial sketching stage, (i.e. – Sandbox concept) and effort will be put forth to move the design forward, even for R&D and single use applications, a WBS account for labor (supplied by the requestor) and a CLASSE drawing number needs to be assigned by the CLASSE Design Office to then organize and track the design in the Vault Data Management Server. This process allows for the data to be secured and backed up as well as be searched and referenced by CLASSE staff in a convenient and logical manner. Assigning a drawing number attaches the author's name, an agreed upon drawing series location and project title, dates for origination and subsequent revision, as well as release status.

A design develops to a point where the initial drawings have been completed and thoroughly reviewed by stakeholders. The author (defined as originator of the design or originator of subsequent design changes) communicates to the Design-Drafting Office when they have been approved and are ready to be released and issued for fabrication, either by the Newman Machine Shop or by outside vendors.

Once a drawing has been released and issued into the CLASSE design-drafting system through the CLASSE design office it is very important to understand and follow a best practice for changing those drawings, writing revisions (rev letter increments), and releasing/issuing those revised drawings. Please note that drawings that have not been released through the CLASSE Design-Drafting Office must not be sent for fabrication, especially to outside vendors, except with explicit permission by the P.I./co-P.I. in charge or project CAM plus one of Engineering/Fabrication Director, Technical Director, CHESS/ERL/SRF project director.

The Design-Drafting Office posts PDFs of the drawings and enters the initial release data, from the drawing title block, into the drawing database (called NUMO). This release data includes the release/plot date, the author's name (Drawn For), the drawing titles and sheet quantities. At this time, the plot date on every sheet's title block reflects the date that any sheet of the drawing was last revised or released. There is no revision letter used at the initial release, either in the title block or the revision history in the upper right hand corner of every drawing sheet. However, the date and approval fields for the Initial Release should be filled out by the drafting office to show that the sheet has been released and is OK to send to the shop or outside vendors. (See figures 1 & 2).

	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY			
D	PRINT DISTR.	PLOT DATE: 3/6/2017 CAD FILE NAME: 6096-018.idw								
6096-018 SH. NO. 1 OF 9	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON: .3 ± .02 .03 ± .010 .005 ± .005 FRACTIONS ± 1/100 ANGLES ± 0.5 ALL SURFACES ✓		Cornell Laboratory for Accelerator-based ScienceS and Education (CLASSE)			A			
				Pit Cover North Mezzanine Specifications Pit Cover North Overview						
REV.	6096-018	CHECKED BY: D Burke	DRAWN BY: S Hartman	DRAWN FOR: J Relly	DATE: 2/14/2017	SCALE: D	6096-018		REV.	SH. NO. 1 OF 9

Figure 1. Title Block

2				
REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APP
		Initial Release	2/21/17	SWH

Figure 2. Revision History (Upper Right Corner of Sheet)

Changing any drawing after it has been released necessitates writing a revision to the affected sheet(s). This revision could be as minor as adding a missing dimension or as major as total part re-designs. The same approval process for releasing drawings initially is also followed for approving the revised drawings. The author communicates to the Design-Drafting Office when the revisions have been approved and are ready to be released and issued. At this time, the title block and revision history sections of the drawing have been edited to show an incremental revision letter distinguishing the revised sheet from the initial release. The plot date is also changed to reflect this revision release date, further distinguishing it from the initial release. (See figures 3 & 4).




	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY			
	PRINT DISTR.	PLOT DATE: 3/6/2017 CAD FILE NAME: 6096-018.idw								
	6096-018 SH. NO. 2 OF 9	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓	 Cornell Laboratory for Accelerator-based ScienceS and Education (CLASSE)			Pit Cover North Mezzanine Specifications Pit Cover North Dimensions & Openings			
REV. A		CHECKED BY: D Burke	DRAWN BY: S Hartman	DRAWN FOR: J Reilly	DATE: 2/14/2017	SCALE: D	6096-018		REV. A	
	APPROVED BY: J Reilly					SH. NO. 2 OF 9				

Figure 3. Revised Title Block

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APP
		Initial Release	2/21/17	SWH
A		Moved Opening in West From 104" to 14.50" (SWH)	4/6/17	JPS

Figure 4. Revision History Updated

It is the author's responsibility to secure approval for the revisions from the original drawing approver (if available) and to secure any relevant system approvals for SR Power, Aperture Checkout, HOM Heating, Vacuum Properties and Installation Procedure if/when applicable. It is then the responsibility of the author to make sure a hard copy of the revised drawing goes to the Newman Machine Shop or to the CLASSE Purchasing Office for relay to the outside vendor. If requested by the designated contact person for the order, the CLASSE Design-Drafting Office will forward these drawings electronically to the vendor. The CLASSE Purchasing Office will be copied on this electronic transfer and, if needed, a change order will be negotiated and issued.

This process is repeated each time a released drawing needs to be revised.