HARVARD
University Planning and Design
PROPERTY INFORMATION RESOURCE CENTER

# Capital Project Closeout
# Construction Documentation Requirements

Guidelines for Architects, Contractors, and Project Managers

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# Preface

The Harvard University Property Information Resource Center, after January 1, 2021, will no longer be accepting hard-copy materials for construction project close-out.

The Capital Project Closeout Construction Documentation Requirements were updated on January 1, 2021. All contracts sealed prior to this date should use the prior requirements date February 10, 2014, which are available from the PIRC website: https://home.planningoffice.harvard.edu/project-close-out

The PIRC will accept digital-only closeouts from projects which pre-date the change in close-out requirements provided there is a contract amendment referencing the change in requirements.

## Significant Changes

The following table highlights the major changes in close-out requirements between the pervious and new versions of The Capital Project Closeout Construction Documentation Requirements. Please review this entire document and address any questions you may have to pirc@harvard.edu

| 2014 Closeout Requirements | 2020 Closeout Requirements |
|---|---|
| Hard copy submissions required | Digital Only submissions. No hard copy documents will be accepted |
| Digital Drawing Formats: PDF, TIF and DWG | Digital Drawings Formats: PDF/A and DWG |
| Harvard 2009 CAD Standard | Current NCS with Harvard specific requirements |
| No photos, submittals, or shop drawings | Voluntary submission of shop drawings, submittals, and photos |

# I. Introduction

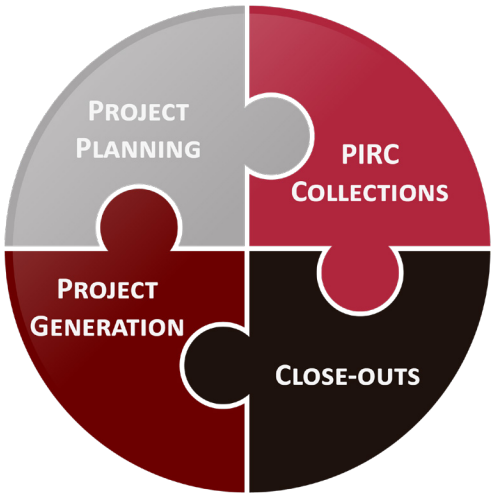
The Capital Project Closeout Construction Documentation Requirements is for the use of project managers, architects, and contractors working on Harvard University capital projects. This document provides a detailed description of the Harvard University Standards requirement identified in the Basic information Section (BIS) of each Architectural, Design, Construction, Construction Management and Consulting Agreement

## A. Documentation Required

Harvard University has specific requirements for capital project documentation which must be submitted to the Property Information Resource Center (PIRC) prior to project close. These requirements are specified in this document.

Materials submitted to the PIRC should be coordinated with the Harvard Project Manager assigned to the project. Project documentation must be clear, consistent, and complete. The quality of the documentation will be reviewed by PIRC staff within two (2) weeks of receipt. Project documentation deliverables deemed incomplete or non-conforming will not be accepted.

Autodesk Revit (and other BIM) requirements for deliverables must adhere to the BIM Execution Plan (BEP), if a plan was created for the project. The existence of a BEP does not supersede these closeout requirements; they are in addition to these requirements. If there is no BEP and there are Autodesk Revit or other BIM files, they may be provided in addition to requirements outlined herein.



## B. Project Manager Responsibilities

It is the responsibility of the Harvard University project manager or consultant acting as a project manager for Harvard University to convey all close-out requirements to the architect, consultant and/or contractor(s) at the beginning of the project.

All documents required as part of project close-out must be submitted in the formats described herein. To ensure consistency of data, the Project Manager should confirm compliance with the standards and requirements outlined in this document.

Additional requirements for Project Managers are outlined in the Harvard University Project Delivery Guidelines (PDG):
https://wiki.harvard.edu/confluence/display/hppmcaps/Project+Delivery+Guideline

## C. Transmittal Templates

Below is a brief description of the templates required for close-out transmittal. Completed templates should be delivered in PDF format with the close-out.

- **Materials Checklist & Transmittal for Materials (Template 1)**

  The architect or contractor should use this checklist as a transmittal, which lists all materials required at project close. The completed transmittal forms, including an official submission of close-out materials letter on the submitting firm's letterhead should accompany the submission of deliverables to the PIRC.

- **Project Dossier (Template 2)**

  The Project Dossier serves to document various other types of information about the project. **The Project Dossier is the responsibility of the lead architect or engineer.**

- **Capital Project Contact List (Template 3)**

  The Project Manager should provide information for each person or firm (architects, contractors, sub-contractors, etc.) involved in the project.

- **Electronic File Quality Assurance Checklist (Template 4)**

  The architect or contractor must sign and submit this checklist, which ensures that all electronic materials adhere to the standards and guidelines set forth.

- **Electronic Files Indices Guidelines (Template 5)**

  Architects and contractors must supply indices for all drawings that conform to the contents and formats presented in this guideline.

## D. Referenced Standards

- **CAD Standards**

The United States National CAD Standards (NCS) provide best-practice guidance on lines, layering, drawing organization, and BIM integration.

Projects should adhere to the version of the United States National CAD Standards (NCS) https://www.nationalcadstandard.org in place when the contract is signed with the following exceptions:

- All CAD drawings submitted should be compatible with the most current version of AutoCAD at the time of submission
- Use of special fonts, which are not packaged with AutoCAD, will not be accepted
- All text should be no less that 1/8" in height and be able to be read if the sheet is printed.
- Harvard requires that the following general rules be employed when handling block entities:
    - All entities within a block must be created on layer 0.
    - Drawing entities translated into blocks from non-AutoCAD systems must revert to layer 0 when exploded.
    - File translation from other systems which result in wall blocks within the .DWG file are unacceptable
- Harvard requires that each CAD file submitted as a project deliverable contains only one drawing model with one title block, using either of the following setup methods.
    - Model Space Only. Both the drawing model and the drawing's title block are contained in the same model space environment within a single CAD file. The paper space environment is not used.
    - Model Space and Paper Space Combined. Each CAD file is set up to contain only one title block in paper space which references the building model contained in model space.
- All drawings must include the following disclaimer (already placed on the Harvard border template): "Warning: This document may contain sensitive and/or proprietary information and therefore must be treated as a confidential document. Acceptance of this document constitutes an agreement that this document and the information contained herein shall be maintained and transmitted in a confidential manner. No part of this document shall be reproduced, released or distributed without the express written permission of Harvard University and any distribution to non-Harvard entities or persons must be subject to a written confidentiality agreement."
- **Survey Specifications (2016 version)**

http://planningoffice.harvard.edu/pages/standards-and-guidelines

This document describes the coordinate system used by Harvard University and the basic

standards that need to be followed to insure compatibility with the University GIS.

- **Green Building Standards**

https://green.harvard.edu/topics/green-buildings/green-building-standards

Harvard University is committed to responsible design and construction practices. The Harvard University Green Building Standards apply to all capital level projects at Harvard University and should be included in all Requests for Proposals.

- **Building Information Modeling (BIM) Resource Site**

http://planningoffice.harvard.edu/pages/standards-and-guidelines

These documents provide guidance for utilizing BIM in your capital level construction project.

## E. Definitions

- **As-Built Drawings:**

Construction Drawings revised by the Constructor to show all significant modifications made during the construction process.

- **BIM Execution Plan (BEP):**

Is a framework for strategically implementing BIM using consensus-built best practices, standards, and protocols. A Harvard University BIM Execution Plan (BEP) should accompany all BIM files submitted.

https://home.planningoffice.harvard.edu/building-information-modeling-bim

- **PDF/A:**

PDF/A is an ISO-standardized version of the Portable Document Format (PDF) specialized for use in the archiving and long-term preservation of electronic documents.

- **Project Manual:**

The set of documents assembled for the project which includes, but is not limited to, Specifications, Contract Documents, Bidding Requirements, Sample Forms, Condition of the Contract, and the General Requirements

- **Record Drawings:**

The final set of drawings prepared by the A/E consultant to show changes and amendments to the design which took place during construction.

- **Shop Drawings:**

Diagrams, schedules, drawings, and other types of data prepared specifically by a distributor, supplier, manufacturer, subcontractor, or contractor to show some part of the work.

- **Specifications:**

These technical standards are set of documented requirements for materials, equipment, and construction systems, as well as standards for products, workmanship, and the construction services required to produce the work. All specifications submitted to Harvard University for capital projects should adhere to the guidelines set forth by the Construction Specifications Institute (CSI): https://www.csiresources.org

# II. Documentation Requirements

## A. Project Administration Documents (required formats: PDF, PDF/A, or Excel)

**Transmittal**

Complete the Materials Checklist & Transmittal, Template 1. If a required submission is not applicable to your project please indicate such with "N/A"

**Contact List**

Use Capital Project Contact List Template 2

**Debarment Certification**

Signed debarment certification must be included for all capital level projects with contracts executed after February 10, 2014. The form can be supplied by your Harvard Project Manager.

**Quality Assurance Checklist(s)**

Use Electronic File Quality Assurance Checklist Template 4

**Indices of electronic files**

Use Electronic Files Indices Template 5. Please include all requested data.

**Project Dossier**

Use Template 3

This document which is a post construction narrative description of the work which was completed must be submitted by the lead architect or engineer on the project. If no architect or engineer was employed this requirement is not applicable.

**Regulatory Approvals**

All copies of permits and certificates attained by the project should be delivered in PDF format

- Building permit application (submitted by project team)
- Building permit (issued by City)
- Occupancy permit application (submitted by project team)
- Occupancy permit (issued by City)
- Final cost affidavit for building permit
- Certificate of inspection

**Contracts**

Copies of executed contracts should be signed by all parties and delivered in PDF/A format.

Information relating to payment amounts may be redacted.

Include all contracts with Architects, Engineers, Consultants, Contractors and Construction Managers, if applicable.

## B. Project Drawings (required formats: PDF/A and .dwg)

All A/E firms, consultants, and contractors are expected to deliver a final version of their drawings. All digital files, associated data, and other products generated under any Harvard University design and construction contract become the property of the institution. Drawings determined to be incomplete will not be accepted.

**Architects/Engineers/Designers:** submit Record Drawings, as defined by the American Institute of Architects. All drawings delivered at project close must be delivered in PDF/A, and DWG formats (1:1 for each drawing) and should be scaled to fit a standard 24" x 36" or 30" x 42" printed sheet.

**Consultants:** submit stamped and signed As-Built Drawings reflecting as-built conditions which incorporate all changes made in the field as the final record deliverable. All drawings delivered at project close must be delivered in PDF/A, and DWG formats (1:1 for each drawing) and should be scaled to fit a standard 24" x 36" or 30" x 42" printed sheet.

**Contractors/Fabricators:** Shop Drawings are not required documents for the PIRC. If Shop Drawings are submitted as a part of the final close-out package, they should conform to the drawing requirements outlined herein and be delivered in PDF/A, and DWG formats (1:1 for each drawing).

**All drawings submitted must contain the following information in the title block for each sheet:**

- Harvard University project name and project number
- Harvard University building name, building number, and street address
- Submission date, stage, and percent (for example, 100 percent construction documents)
- A/E firm name(s)
- Sheet Identification Number
- Key plan and North arrow
- Graphic scale
- Drawing date and revision dates
- Drawing title (type of drawing and contents) and drawing number
- Drawing scale (plot scale of sheet file) and sheet size
- A/E firm internal project number

**Drawing File Format Specific Requirements**

**CAD files:** All drawings submitted must comply with all requirements in the Harvard University CAD and Image Standards, must be “error free” .dwg files.

Examples of error messages include: font not found, xrefs not found, image xref resolution errors, and proxy object errors. The PIRC must be able to open the file without being prompted with error messages. An error free quality control report generated by the AutoCAD Standards Checker, or equivalent, should be submitted with the files.

All .dwg extracted from CAD software should meet the following requirements:

- All unused geometry should be deleted
- All unused layers should be deleted
- All invisible objects should be deleted
- All unused layer filters should be deleted
- Bind all xrefs
- All .jpg should be embedded into the .dwg drawing file, not delivered as separate files.
- Delete and purge all unused data (text, blocks, nested objects)
- Audit the file for any drawing database errors and correct the errors
- All text settings in the authoring software shall utilize True Type fonts. We will not accept SHX fonts, RSC fonts, or Vector based text
- All drawings should be created using vector-based lines (not raster).

All .dwg extracted from BIM softwares should meet the following requirements:

- Purge all unused families, materials and other objects
- Set the path for links to “Relative”
- Include dependent files which are linked
- Detach the model and associated files from the local server
- All components and sub-components should be consolidated into their related layers
- All layers should have their color set “ByLayer”
- All layering should conform to the listed layer standard
- All duplicate entities should be removed

**PDF/A files:**

- All drawings submitted should be exported to PDF/A in a manner which preserves the data layers.
- All drawings should be exported using “Maintain Output Scale”; do not use “Fit to Page”
- All lines must be clear and unpixellated when zooming into drawings, this is best achieved by using vector-based lines when drafting.
- Descriptive metadata shall be added to each sheet’s document properties including:
    - Drawing title
    - Authoring A/E firm name
    - Sheet Identification Number, e.g. A2.0
- Abode Preflight inspection, available with Adobe Pro or equivalent inspection tool, for PDF/A should be used to check for errors in all files. All files must be error free prior to acceptance by the PIRC.
- The PIRC will verify that all PDF submitted are PDF/A compliant. Non-conforming files will be returned.

## C. Project Specifications / Project Manual (required format: PDF/A)

**Architects/Engineers/Designers:** Complete specifications or project manual are expected with the delivery of the close-out package. Specification information may be contained within the drawing set or issued as a separate document. It should be noted when the specifications are included within the drawing set.

**Specifications File Format Specific Requirements**

When a separate volume of specifications or a project manual is generated for the project work

**PDF/A files:**

- All specifications/project manual should be delivered with a clear title page which includes:
    - Document Title
    - Authoring Firm
    - Date of issuance
- All specifications/project manual must be submitted with a Table of Contents.
- All specifications/project manual delivered at project close must be delivered in a single volume, Division tabbed, PDF/A file format.
- Tab delineation should follow the Construction Specifications Institute (CSI) Masterformat divisions.

- Descriptive metadata shall be added to the document properties including:
    - Document title
    - Authoring A/E firm name
- We wish to receive the specifications annotated to show the actual selected products that are incorporated into the project, particularly where a choice of two or more products was permitted.

## D. Operation and Maintenance (O+M) Manuals (required format: PDF/PDF/A)

**Construction Managers/Consultants/Contractors:** Complete operation and maintenance manual(s) are expected with the delivery of the close-out package.

- All As-Built drawings should be submitted separately, following the guidelines for drawings submission. Do not include As-Built drawings in the O+M Manual.
- All manuals should contain: Phone Lists of subcontractors, suppliers, manufacturers' representatives, Manuals of Systems Components to be specified by Architect, and Warranties/Guarantees.
- This manual must include, as applicable, the Manufacturer's printed installation and operating instructions: technical specifications and instructions (not "sales" brochures/promotional material). Instructions shall include all modes of operation in sufficient detail to be readily understood by maintenance personnel.
- Complete information on actual equipment installed as described in the manufacturers' instructions, including dimensional drawings, model, type, size, capacity, performance parameters such as curves, efficiencies, power requirements, operating ranges, etc. (Only one manual is needed for multiple, identical equipment).
- Serial numbers for all equipment
- Detailed Parts List showing manufacturers' parts numbers and such other identification as necessary to facilitate procurement of spare or renewal parts and Owner-Manufacturer communications.
- Schedules showing proper time intervals for lubrication, adjustment, calibration or checking. Contractor shall consolidate manufacturers' schedules with a single master schedule of required maintenance. This requirement is for the Contractor's as well as the Owner's protection to insure proper early maintenance during the warranty period.

**Specifications File Format Specific Requirements**

***PDF and PDF/A files:***

- All Operation and Maintenance (O+M) Manuals delivered at project close must be delivered in a single volume, Division tabbed, PDF/A file format.
- Copies of all permits and regulatory approvals may be submitted as scanned PDF files
- Tab delineation should follow the Construction Specifications Institute (CSI) Masterformat divisions.
- O+M Manual must be submitted with a Table of Contents
- Descriptive metadata shall be added to the document properties including:
    - Document title
    - Authoring firm name
- O+M should not include embedded video files.

## E. Additional Documentation

**Building Information Model (BIM)**

- All projects which use BIM and deliver a model to PIRC should also deliver a BIM Execution Plan in PDF/A format.
- BIM submissions are adjunct to and do not replace the requirements for drawing documentation
- BIM deliveries should follow the guidance of the U.S. National CAD Standards recommendations for BIM including the following:
    - All model files within a project should share the same coordinate system.
    - All model files within a project should share coordinated units and unit tolerance.
    - All model files within a project should share the same basic level names and vertical reference datum.
    - Model(s) should be free of any unused or unnecessary views, links, references, or temporary content. All links or references should maintain portability and reusability (i.e. use relative paths and avoid embedding or binding content).
    - Model(s) should be free of any erroneous and/or duplicate geometry that cause errors in quantities (i.e. two identical chairs placed in the exact same location in the model may appear fine but will be an error in quantities). This also applies to content in aggregate where quantities should not be duplicated when derived from a collection of models that represent the building.
    - Model(s) should be free of warnings or errors identified by the BIM software.

- One composite model per building should be provided. Separate model files (i.e. discipline specific or separated by level, etc.) are insufficient when BIM is a deliverable. A holistic composite model is necessary even if the composite model is only used as a container for links and/or references (i.e. a means of packaging all related files for delivery).
- If Contract (Construction) Documents are derived from the model(s). Avoid drafting 2D lines for modeled data but rather use 2D linework to embellish the model when necessary to convey intent. Sections and Details and other enlarged and more detailed views should utilize model content to the greatest extent possible.

**Final Commissioning Report / Systems Manual**

- All projects which engage a Commissioning Authority (CxA) must deliver a single volume, tabbed, PDF/A version of the report. The final Commissioning Report/Systems Manual must be formatted in accordance with the Harvard University Office for Sustainability and ASHRAE requirements (See Referenced Standards)

**Land Survey**

- All surveys completed for a project must be submitted in .dwg and PDF/A formats following the standards set forth in this document in the section on Drawings.
- All surveys, completed in Cambridge or Boston should reference the survey control guidelines.

**Soil or Environmental Reports**

- If testing or remediation was performed all geotechnical and geochemical reports and related plans should be submitted in PDF/A and .dwg formats following the standards set forth in this document in the section on Drawings.
- Soil and Environmental Reports should not be submitted within the specifications volume.

**Arc Flash Study and Hazard Analysis**

- A PDF/A format of the report must be included in the close-out package if an Arc Flash Study was produced for NEC/NFPA compliance on the project.

**Construction Photos:** Construction photos are not required documents for the PIRC. If photos are submitted as a part of the final close-out package, they should be delivered in .JPG or .JP2 formats

- .jpg or .jp2 formats
- Each image should be a single file
- Files should include metadata descriptive metadata including, Title, Creator, Creation Date
- Files should follow a naming convention. Detailed explanation of the naming convention and index should be included with the submission

**Submittals:** Submittals are not required documents for the PIRC. If a project manager would like to include submittals in the final close-out package, PIRC requests that:

- PDF or PDF/A formats; no physical samples will be accepted.
- Named and organized by specification (MasterFormat) section. Include an index.

# III. Documentation Delivery

All documentation should be delivered to the PIRC in digital only formats. The PIRC preference is to receive documentation via Sharepoint. PIRC will setup the Sharepoint site and file structure for a project and initiate the transfer for the project team, please contact pirc@harvard.edu for this service.

If the project team, construction manager, or project manager chooses to collect documentation and initiate the documentation transfer themselves. the following folder structure and naming conventions must be used and the documentation must be submitted on either an external USB drive or via a secure FTP site:

**Each project should have only one (1) file structure and transfer to the PIRC**

- Transmittal Forms
    - Contact List
    - Debarment Certification
    - Project Dossier
    - Regulatory Approvals
        - Permits
        - Certificates
        - Affidavits
    - Contracts
- Drawings
    - Record drawings (all drawing genres, sheets, and file types in a single folder)
        - Index of files
    - As-Built drawings (all drawing genres, sheets, and file types in a single folder)
        - Index of files
    - Shop drawings* (all drawing genres, sheets, and file types in a single folder)
        - Index of files
- Project Specifications / Project Manual (One single PDF/A volume)
- Operations + Maintenance Manual (One single PDF/A volume)
- BIM*
- Commissioning Report
- Land Survey
- Geotechnical Report
- Arc Flash Study
- Construction Photographs*
    - All photographs in a single folder
    - Index of files
- Submittals*
    - All submittals named according to specification/MasterFormat section
    - Index of submittals

**All documentation types noted with a * are voluntary submissions.**

**TEMPLATE 1**

## MATERIALS CHECKLIST & TRANSMITTAL FOR MATERIALS

| | |
|---|---|
| **Project Name:** | **Date** |
| **Harvard Project Manager:** | **Submitted by:** |
| **Harvard Capital Project Number:** | **Consultant Project Number:** |
| **Building Number (s):** | **Building Root Number (s):** |

**All materials submitted at close-out must be accompanied by this form for submission to the PIRC.**

Effective for all contracts executed after July 1, 2020

| Project Materials | Required Format | Delivered to PIRC<br>Initials of submitter |
|---|---|---|
| **Transmittal** (See section II.A for complete details)<br>Complete this Materials Checklist & Transmittal, Template 1. If a required submission is not applicable to your project please indicate such with "N/A" | PDF | |
| **Contact List** (See section II.A for complete details)<br>Use Capital Project Contact List, Template 2 | PDF | |
| **Debarment Certification** (See section II.A for complete details)<br>Contact your Harvard Project Manager for this form | PDF | |
| **Quality Assurance Checklist(s)** (See section II.A for complete details)<br>Use Electronic File Quality Assurance Checklist, Template 4 | PDF | |
| **Indices of electronic files** (See section II.A for complete details)<br>Use Electronic Files Indices Template located on PIRC website | MS Excel | |
| **Project Dossier** (See section II.A for complete details)<br>This information must be submitted by the lead architect or engineer on the project. If no architect or engineer was employed this requirement is not applicable. See Template 3 | PDF | |
| **Regulatory Approvals** (See section II.A for complete details)<br>All permits, certificates, and documentation of variances should be submitted in PDF format | PDF | |
| **Contracts** (See section II.A for complete details)<br>A copy of the signed prime contract should be included at closeout | PDF | |
| **Drawings** (See section II.B for complete details)**:**<br>•**Architects, Engineers, and Design firms:** Submit a complete, final Record Drawing set, including ALL genres issued. This set should incorporate all design changes and revisions and not include separate sketches or revision clouds. All sheets in the set should be submitted as individual files.<br>•**Consultants:** Submit all As-Built drawing sheets as individual files. All drawings should be stamped and signed As-Built Drawings reflecting As-Built conditions. | PDF/A & DWG | |

| Project Materials | Required Format | Delivered to PIRC<br>Initials of submitter |
|---|---|---|
| **Shop Drawings:** Are voluntary submissions. (See section II.B for complete details): | PDF/A & DWG | |
| **Specifications** (See section II.C for complete details) | PDF/A | |
| **Operation and Maintenance Manuals** (See section II.D for complete details) | PDF/A | |
| **Building Information Models (BIM)** Are voluntary submissions. (See section II.E for complete details)<br><br>**Architects, Engineers, & Consultants:** The submission of a 3D model is not in lieu of 2D drawing submission requirements. Submit one composite model file per software platform per project, e.g. one Revit file, one Navisworks file, etc. | RVT or native file type | |
| **Final Commissioning Report / Systems Manual** (See section II.E for complete details) | PDF/A | |
| **Land Survey** (See section II.E for complete details) | PDF/A & DWG | |
| **Soil or Environmental Reports** (See section II.E for complete details) | PDF/A & DWG | |
| **Arc Flash Study and Hazard Analysis** (See section II.E for complete details) | PDF | |
| **Construction Photos** Are voluntary submissions. (See section II.E for complete details) | .JPG | |
| **Submittals:** Are voluntary submissions. (See section II.E for complete details) | PDF or PDF/A | |

**TEMPLATE 2**

## CAPITAL PROJECT CONTACT LIST

Information must be provided for each person or firm (architects, contractors, sub-contractors, etc.) involved in the project.

| | |
|---|---|
| **Project Name:** | **Date** |
| **Harvard Project Manager:** | **Submitted by:** |
| **Harvard Capital Project Number:** | **Consultant Project Number:** |
| **Building Number(s):** | **Building Root Number(s)** |
| **Building Number (s):** | **Building Root Number (s):** |

| Role | Organization | Contact Name | Company | Company Project Number | Phone | E-Mail |
|---|---|---|---|---|---|---|
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**TEMPLATE 3**

## PROJECT DOSSIER-PLEASE COPY AND SUBMIT THIS ON FIRM LETTERHEAD

| | |
|---|---|
| **Project Name:** | **Project Location and Address:** |
| **Harvard Capital Project Number:** | **Consultant Project Number:** |
| **Contact Type / Delivery Method:** | **Extent (gsf/nasf):** |
| **LEED Project?** | **Building Systems Impacted::** |
| **Project Start Date"** | **Project End date** |

Project Description

**TEMPLATE 4**

## ELECTRONIC FILE QUALITY ASSURANCE CHECKLIST

**.DWG documents delivered at closeout of a capital project must be accompanied by this checklist and a signed letter on firm letterhead stating that** all materials adhere to the standards and guidelines set forth in National CAD Standards.

All electronic materials (CAD files, PDF, index table files, etc.) must be delivered either via USB or via another secure means of electronic file transfer.

### CAD FILE FORMAT AND SETUP

- ☐ Electronic File Format
- ☐ Scale, Units, & Tolerances
- ☐ Fonts and Text Styles
- ☐ Blocks
- ☐ Title Blocks
- ☐ Policy on Model Space and Paper Space
- ☐ Policy on External Reference Files (XREFs)

### CAD LAYERING

- ☐ Standard Layer List
- ☐ Layer Name Formatting
- ☐ General Rules about Naming and Uses
- ☐ Layer Attributes (Colors, Pens, Linetypes)

### FILE NAME CONVENTIONS

- ☐ Building and Floor Identification Codes
- ☐ Discipline Identification Codes
- ☐ Drawing Type Codes
- ☐ Drawing Numbers

### POLICY ON CAD FILE TRANSLATION

- ☐ Full AutoCAD Compliance
- ☐ Translation Testing Procedures (if applicable)

### POLICY ON BIM FILE TRANSLATION

- ☐ Files are compliant with Harvard guidelines

### POLICY ON PDF FILE TRANSLATION

- ☐ Files must be PDF/A compliant
- ☐ Files must be uncompressed

| | |
|---|---|
| Name of Accountable Vendor Representative (please print) | Signature of Accountable Vendor Representative |
| Phone Number: | Date: |

**TEMPLATE 5**

## ELECTRONIC FILE INDEX

Indices for all drawing sheet files submitted must be included in the close-out package. These should be in both PDF and Microsoft Excel. A blank template of this form is available on the PIRC website. Indices must contain the following information:

1. Project Name
2. Name of Harvard University Project Manager
3. Harvard Building Number
4. Harvard CAPS Activity Number
5. Harvard CAPS Project Number
6. Firm Author
7. Firm Role
8. Genre of the drawing
9. Drawing Sheet Number
10. Title of Drawing- DO NOT ALL CAPS title block attributes
11. Drawing Date
12. Scale - indicate the scale of the original drawing (examples: 1”=20’ or NTS)
13. Paper Size - measured in inches, indicate the width of the output printed drawing at its widest horizontal and vertical dimensions.
14. File Name for each file type (.DWG, .PDF, and .TIF) All files should for the same sheet should have the same name, using the drawing sheet number with a different file-type extension.
15. Name of the drafting software used to create the original CAD file
16. Version of the drafting software used to create the original CAD file