CPCCo
Central Plateau Cleanup Company

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Administrative Procedure

CPCC-PRO-EN-440

Engineering Documentation Preparation and Control

Revision 0, Change 5

Published: 06/11/2024
Effective: 06/11/2024

Program: Engineering
Topic: Engineering Program

Technical Authority: Lovelace, John C
Functional Manager: Clare, Aaron T

Use Type: Administrative

USQ Facility	USQ Review	Screener
105 KW Facility	GCX-2 (Editorial Changes)	Hoopes, Canyon E
324 Building	GCX-2 (Editorial Changes)	Hoopes, Canyon E
Canister Storage Building/Interim Storage Area	GCX-2 (Editorial Changes)	Hoopes, Canyon E
Capsule Storage Area	GCX-2 (Editorial Changes)	Hoopes, Canyon E
Solid Waste Operations Complex	GCX-2 (Editorial Changes)	Hoopes, Canyon E
Waste Encapsulation Storage Facility	GCX-2 (Editorial Changes)	Hoopes, Canyon E

JHA: Administrative
Periodic Review Due Date:09/14/2026
Rev. 0, Chg. 5

Change Summary

Description of Change

Editorial changes.
Applicable Facilities
100K Area Project
400 Area
Canister Storage Building
Central Waste Complex
Environmental Restoration Disposal Facility
Integrated Disposal Facility
Liquid Waste and Fuels Storage
Plutonium Finishing Plant
Soil and Groundwater Remediation Project
Solid Waste Storage and Disposal
T Plant
TRU Project
Waste Encapsulation and Storage Facility
Waste Receiving and Processing Facility
Maintenance and Storage Facility
200 West Pump and Treat
Central Plateau S&M
324 Facility
Capsule Storage Area
300 Area

Engineering Documentation Preparation and Control

Published Date: 06/11/24 **Effective Date: 06/11/24**

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1.0 INTRODUCTION

1.1 Purpose

This procedure describes the process for preparation, review, approval, and release of engineering documentation (drawings, specifications, calculations, etc.) for the Central Plateau Cleanup Company (CPCCo).

This procedure also describes the change control methods used for previously released engineering documentation.

1.2 Scope

This procedure applies to engineering documentation created and maintained by CPCCo personnel for CPCCo work scope. Documentation to which this procedure applies is considered formal engineering documentation that includes the following types:

1. Drawings
2. Specifications
3. Calculations
4. Engineering Test Plans, Specifications, Procedures, and Reports
5. Design Requirements Documentation (e.g., Functional Design Criteria [FDC])
6. System Design Description (System Design Description [SDD])
7. Vendor Information (VI) Files
8. Support Documents (e.g., Engineering Study, Engineering Analysis, Technical Basis, etc.)

This procedure applies to engineering documentation intended to be released into the Document Management and Control System (DMCS) and Integrated Document Management System (IDMS) as records.

1.3 Applicability

Applicability of this procedure is as follows:

- Engineering documentation previously released into the DMCS is accepted as is and does not require revision to comply with this procedure.
- Changes or revision made to previously released engineering documentation shall comply with this procedure. Revisions to legacy documents not prepared using a specified standard shall comply with this procedure for release and change control. Use of the specified standard for legacy documentation is recommended as guidance.
- Engineering drawings prepared for CPCCo by offsite architectural/engineering firms or vendors which are intended to be released into DMCS and IDMS shall comply with CPCC-STD-EN-40279, *Engineering Drawing Standards*, and are released and controlled in accordance with this procedure.

- This procedure does not apply to engineering documentation prepared for CPCCo by offsite architectural/engineering firms or vendors unless those documents are intended to be released into DMCS/IDMS.
- This procedure does not apply to non-engineering technical and administrative documentation or other documentation that does not need to be placed under formal change control. These types of documents are managed in accordance with CPCC-PRO-IRM-9679, *Administrative and Technical (Non-Engineering) Document Control*.
- Engineering documentation prepared for use in formal construction projects shall be prepared in accordance with this procedure but are issued and controlled in accordance with CPCC-PRO-EN-8016, *Design Change Notice Process* for the life of the project. Upon project turnover and acceptance by Operations, engineering documentation to be placed under configuration control for operations shall be released and controlled in accordance with this procedure.

1.4 Implementation

This procedure is effective upon publication.

2.0 RESPONSIBILITIES

All responsibilities associated with this procedure are identified in the process steps.

3.0 PROCESS

This section describes the process for creating new engineering documentation, changing existing engineering, and superseding or cancelling previously released change documentation.

This section is organized as follows:

Section 3.1 Preparation of New Engineering Documentation including the following subsections:

- Subsection 3.1.1 Drawings
- Subsection 3.1.2 Specifications
- Subsection 3.1.3 Calculations
- Subsection 3.1.4 Engineering Test Documentation
- Subsection 3.1.5 Design Requirements Documentation
- Subsection 3.1.6 System Design Description (SDD)
- Subsection 3.1.7 Engineering Vendor Information Files
- Subsection 3.1.8 Supporting Documents

Section 3.2 Change Control of Existing Engineering Documentation including the following subsections:

- Subsection 3.2.1 Drawings
- Subsection 3.2.2 Calculations
- Subsection 3.2.3 Engineering Text Documents (includes specifications, test documentation, design requirements, SDDs, and supporting documents)
- Subsection 3.2.4 Vendor Information

Section 3.3 Supersedure or Cancellation of Change Documents

Section 3.4 Preparation of Release/Change Documentation

Section 3.5 Submittal for Release

The following table summarizes relevant information pertaining to the various types of engineering documentation:

Table 1 – Engineering Documentation Summary

Type	Media	Format	Preparation Standard	Initial Release Via	Change Via
Drawings	Graphical	CAD	CPCC-STD-EN-40279, *Engineering Drawing Standards*	Engineering Package (EP), or Facility Modification Package (FMP)	EP or FMP
Specifications	Textual	Standalone or EP/FMP Section	CPCC-STD-EN-40280, *Engineering Specifications*	EP, FMP, or Engineering Document Change (EDC)	EP, FMP, or EDC
Calculations	Calculation	Standalone or EP/FMP Section	CPCC-STD-EN-40259, *Engineering Calculations*	EP, FMP or EDC	EP, FMP, or EDC
Engineering Test Documentation	Textual	Standalone or EP/FMP Section	CPCC-STD-EN-40281, *Engineering Test Documentation*	EP, FMP, EDC, or Work Package	EP, FMP, EDC, or Work Package
Design Requirements Document (e.g., FDC)	Textual	Standalone or EP/FMP Section	CPCC-STD-EN-40255, *Design Requirements Documentation*	EP, FMP, or EDC	EP, FMP, or EDC
System Design Description (SDD)	Textual	Standalone	DOE-STD-3024, *Content of System Design Description*	EP, FMP, or EDC	EP, FMP, or EDC
Engineering Vendor Information (VI) Files	Various	File	NA	EP, FMP, or EDC	EP, FMP, or EDC
Supporting Documents	Textual	Standalone	NA	EP, FMP, or EDC	EP, FMP, or EDC

All CPCCo engineering documentation to be entered into the Hanford configuration management (DMCS) and records management (IDMS) systems shall use either an EP, FMP, or Design Change Notice (DCN), or EDC form to authorize the release. See Section 3.4 for additional information.

Standalone engineering documents have their own number and stand on their own. Engineering documentation released with an EP or FMP as a section are considered an integral part of the EP/FMP.

Approvals for engineering documentation may be provided per telecom or email. The individual documenting the remotely obtained approval shall sign and date next to the required approvers name and shall identify the method used to obtain the approval (e.g., “John Doe for B.N. Frank per telecom”).

3.1 Preparation of New Engineering Documentation

This section describes the process for preparing, approving, and releasing new engineering drawings, calculations, vendor information, and the various types of text based engineering documents. Each major type of engineering document will be discussed in its own section.

3.1.1 Drawings

All new engineering drawings are required to be released using an EP/FMP in accordance with CPCC-PRO-EN-2001*, Facility Modification Package Process*, or a DCN in accordance with CPCC-PRO-EN-8016, *Design Change Notice Process*.

New engineering drawings are created using the site standard CAD software package identified in CPCC-STD-EN-40279. CAD data files are configuration controlled using DMCS.

Altered item drawings (new engineering drawings created form vendor drawings contained in VI files) shall also be prepared as new drawings.

Actionee	*Step*	*Action*
Engineer/ Designer/ Drafter	1.	OBTAIN new drawing number from the Hanford Document Numbering System (HDNS). Refer to CPCC-STD-EN-40279 for selection of correct drawing number prefix (i.e., H-1, H-2, etc.).
	2.	CREATE new CAD data file AND PREPARE new drawing in accordance with CPCC-STD-EN-40279.
	3.	WHEN drawing is considered finished, THEN OBTAIN a Drafting Check.
Drafting Checker	4.	CHECK drawing for clarity, completeness, and compliance with Hanford drawings standards as described in CPCC-STD-EN-40279.
Engineer/ Designer/ Drafter	5.	UPDATE drawing with results from the Drafting Check AND SUBMIT for inclusion in the EP/FMP or DCN.
	6.	PERFORM the following to release the new drawing:
		a. IDENTIFY the approvers in the Title Block of the new drawing in accordance with Table 2 and as described CPCC-STD-EN-40279. Additional approvals are as specified by the Design Authority (DA) using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.

Actionee	*Step*	*Action*
Engineer/ Designer/ Drafter	b.	SUBMIT the new drawings CAD data file into the DMCS Check-in process.
	c.	PLOT the new drawing AND ENSURE the same PLOTID number is shown on the CAD data file and the hardcopy plot.
	d.	OBTAIN drawing approvals.
	e.	PREPARE release documentation as described in Section 3.4 AND SUBMIT approved drawing along with the release documentation in accordance with Section 3.5.

Table 2 – New Drawing Approval Summary

Title Block Approval	Approver Identification	Reason	Notes
Drawn By	Name	Identify drawing creator	Designer or Drafter who created the new drawing
Drafting Approval	Name	Indicates drawing complies with Hanford Drawing Standards	Cannot be the Drafter/Designer
Engineer	Name	Approves the technical content of the drawing	Engineer responsible for the technical content.
Design Authority (DA)	Name	Indicates the new drawing adequately reflects the technical baseline, meets the design requirements, has the necessary reviews and approvals, and is ready for release	DA responsible for the affected SSC.
Additional Approvals (if specified)	Name	Indicates approval of the drawing revision for functional area requirements.	As specified by the DA

3.1.2 Specifications

The following options are available for specifications:

- Prepare the specification as a section of an EP/FMP.
- Prepare the specification as a standalone document and release with an EP, FMP, DCN., or EDC.

Actionee	*Step*	*Action*
Engineer/ Author	1.	DETERMINE if the specification will be a standalone document or will be an FMP section.
	2.	IF the specification is to be a standalone, THEN OBTAIN a specification number and release coversheets from the HDNS.
	3.	PREPARE the new specification in accordance with CPCC-STD-EN-40280.
	4.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals needed for an engineering specification is the Author, Design Authority/Technical Authority (DA/TA), and the DA/TA Manager. Required approvals are identified on the releasing document.
		b. Additional approvals may be requested based on organizational requirements.
	5.	PREPARE release documentation as described in Section 3.4.

3.1.3 Calculations

Calculations may be prepared using electronic worksheets (e.g., Mathcad, Excel) or hand-prepared worksheets.

The following options are available for calculations:

- Prepare the calculation as a section of an EP/FMP.
- Prepare the calculation as a standalone document and release with an EP, FMP, DCN, or EDC.

For Office of Civilian Radioactive Waste Management (OCRWM)-related calculations, the following requirements apply:

- The Calculation Author and Checker shall meet the applicable indoctrination, training, and qualification requirements described in CPCC-PRO-QA-20765, *OCRWM Personnel Training*.

- OCRWM-related calculations shall be issued and controlled as standalone documents.
- OCRWM-related calculations shall have a *CPCCo Engineering Review Checklist* (Site Form A-6004-797) prepared and the *CPCCo Engineering Review Checklist* shall be included with the calculation in accordance with CPCC-STD-EN-40259.
- The Calculation Checker shall provide comments on a calculation copy or shall provide comments on a *Review Comment Record (RCR)* (Site Form A-6004-835). If comments are to be provided on a calculation copy, all pages of the calculation copy shall be initialed by the Checker.

Actionee	*Step*	*Action*
Engineer/ Author	1.	DETERMINE if the calculation will be a standalone document or will be an EP/FMP section.
	2.	OBTAIN the calculation number in accordance with CPCC-STD-EN-40259.
	3.	PREPARE the new calculation and a *Calculation Cover Sheet* (Site Form A-6004-793) in accordance with CPCC-STD-EN-40259.
	4.	OBTAIN calculation check from a qualified checker as required in CPCC-STD-EN-40259.
Calculation Checker	5.	PERFORM a technical check of the calculation. The calculation check shall include checking of all sections of the calculations (purpose, approach, assumptions, inputs, equations, references, conclusions, etc.) for adequacy, accuracy, and completeness.
	6.	DOCUMENT the check on a copy of the calculation as follows:
		a. **For OCRWM Calculations:** Use one of the following two methods:
		1) PROVIDE markups/comments on the calculation copy as needed. INITIAL each page of the calculation copy.
		2) PREPARE Site Form A-6004-835 to document the review and comments.
		b. **For other Calculations**: MARK UP a copy of the calculation, PREPARE a documented list of the comments, <u>OR</u> PREPARE Site Form A-6004-835 <u>AND</u> PROVIDE to the Calculation Author.

Actionee	Step	Action
Engineer/ Author	7.	RESOLVE comments with the Checker AND REVISE the calculation per the agreed upon resolution.
	8.	COMPLETE the RCR form if one is provided.
		a. WHEN complete, THEN SIGN AND DATE Site Form A-6004-793 AND OBTAIN the Checker's signature.
	9.	ENSURE Site Form A-6004-797 is provided in accordance with CPCC-STD-EN-40259. Each OCRWM calculation shall include Site Form A-6004-797.
	10.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals for the Calculation Cover Sheet are the Calculation Author and Checker as identified in CPCC-STD-EN-40259.
		b. Minimum approvals needed for the calculations releasing document is the Calculation Author, Design Authority/Technical Authority (DA/TA), and the DA/TA Manager.
		c. Additional approvals may be required based on organizational requirements or DA/TA determination.
	11.	PREPARE release documentation as described in Section 3.4.

3.1.4 Engineering Test Documentation

Engineering test documentation can include any single or combination of the following types:

- Test Plan
- Test Specification
- Test Procedure
- Test Report

The following options are available for engineering test documentation:

- Prepare the test documentation as a section of an EP/FMP.
- Prepare the test documentation as a standalone document and release with an EP, FMP, DCN, or EDC.
- Prepare the test documentation as a section of a work package (WP).

Actionee	Step	Action
Engineer/ Author	1.	DETERMINE if the engineering test documentation will be a standalone document or will be an FMP or WP section. See CPCC-PRO-EN-286, Testing of Equipment and Systems, Table 2 for the different document types. a. IF the engineering test documentation is to be a standalone, THEN OBTAIN an engineering test documentation number and release coversheets from the HDNS.
Engineer/ Author	2.	PREPARE new engineering test documentation in accordance with CPCC-STD-EN-40281.
	3.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web. a. Minimum approvals needed for engineering test documentation is the Author, DA/TA, and the DA/TA Manager. Required approvals are identified on the EP, FMP, DCN, or EDC. b. Additional approvals may be requested based on organizational requirements.
	4.	PREPARE release documentation as described in Section 3.4 or for inclusion in a WP in accordance with CPCC-PRO-WKM-12115, *Work Management*.

3.1.5 Design Requirements Documents

Design requirements documents contain design basis information; functional requirements, design criteria, design constraints, and applicable codes and standards. Typical design requirements documents included Functional Requirements Documents (FRD), Functional Design Criteria (FDC), etc.

The following options are available for design requirement documents:

- Document the requirements as a section of an EP/FMP.
- Prepare as a standalone document and release with an EP, FMP, or EDC.

Actionee	Step	Action
Engineer/ Author	1.	DETERMINE if the design requirements document will be a standalone document or an FMP section. a. IF a standalone document, THEN OBTAIN a documents number and release coversheets from HDNS
	2.	PREPARE new design requirements document in accordance with CPCC-STD-EN-40255.

Engineer/ Author	3. DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web. a. Minimum approvals needed is the Author, DA/TA, and the DA/TA Manager. Required approvals are identified on the EP, FMP, or EDC. b. Additional approvals may be requested based on organizational or project requirements. 4. PREPARE release documentation as described in Section 3.4.

3.1.6 System Design Descriptions

SDDs are standalone document that are typically released with an EP or EDC. SDDs should be considered as configuration baseline documentation for a configuration managed structure, system, or component (CM SSC).

Actionee	*Step*	*Action*
Engineer/ Author	1.	OBTAIN an SDD number and release coversheets from the HDNS.
	2.	PREPARE new SDD using DOE-STD-3024 as guidance. SDDs may be tailored to meet the requirements of the system and facility.
	3.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web. a. Minimum approvals needed for an SDD is the Author, DA/TA, and the DA/TA Manager. Required approvals are identified on the EP or EDC. b. Additional approvals may be requested based on organizational or facility requirements.
	4.	PREPARE release documentation as described in Section 3.4.

3.1.7 Engineering Vendor Information Files

Vendor information for plant equipment and components may be captured in DMCS as Engineering vendor information (VI). Vendor information may need to be captured for existing equipment or components. Vendor information received as contract submittals shall be reviewed by the appropriate DA/TA for capture as Engineering VI.

Engineering VI Files are contained in DMCS. Engineering VI Files are released into DMCS via an EP, FMP or EDC.

An Engineering VI File consists of the following items:

- Vendor-provided information arranged in a logical manner.

- An *Engineering Vendor Information (VI) Form* (Site Form A-6004-969) listing the contents of the VI File.

Engineering VI File numbers are obtained from DMCS. The Engineering VI Form provides data about the VI File and provides an index to the file.

Vendor information should be obtained in electronic format whenever possible. Vendor information that is available only in hardcopy form will be scanned to an electronic format for inclusion in DMCS.

Actionee	*Step*	*Action*
DA/TA	1.	OBTAIN an Engineering VI File Number from DMCS or Document Control.
	2.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals needed for a VI File is the Author, DA/TA, and the DA/TA Manager. Required approvals are identified on the EP, FMP or EDC.
		b. Additional approvals may be requested based on organizational requirements.
	3.	PREPARE the Engineering VI File.
		a. IDENTIFY contents AND ARRANGE in a logical manner.
		b. PREPARE Site Form A-6004-969 to identify associated equipment, Manufacturer info, System where installed, and other related data.
		1) IDENTIFY AND INDEX the contents of the Engineering VI File on the form.
		2) REFER to Appendix C, “Engineering Vendor Information (VI) Form,” for instructions on preparing an Engineering VI Form.
		c. OBTAIN DA approval on the Engineering VI Form.
	4.	PREPARE release documentation as described in Section 3.4.

3.1.8 Supporting Documents

Supporting documents are standalone documents which are prepared for specific purposes. Supporting documents include the following:

- Engineering Reports
- Engineering Studies
- Engineering Analysis
- Interface Control Documents (ICD)
- Technical Basis Documentation
- Conceptual Design Reports (CDR)/Definitive Design Packages
- Safety Basis Documentation
- Code of Record (COR)
- Other technical reports or documentation needing to be configuration controlled.

Supporting documents may be released with an EP, FMP, or EDC.

Actionee	*Step*	*Action*
Engineer/ Author	1.	OBTAIN a supporting document number and release coversheets from the HDNS.
	2.	PREPARE new supporting documentation. Format and content for supporting documentation will vary depending on the type and purpose of the document.
	3.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals needed for a supporting document is the Author, DA/TA, and the DA/TA Manager. Required approvals are identified on the releasing document.
		b. Additional approvals may be requested based on organizational or facility requirements.
	4.	PREPARE release documentation as described in Section 3.4.

3.2 Changing Released Engineering Documentation

This section describes the process for changing and revising engineering drawings, textual documents, and vendor information.

Based upon the scope of the change, some of the organizations approving the original document may be affected by the change and are required to approve the change also. In addition, the DA/TA may require additional approvers based upon the Review guidelines for Engineering. These approvals are captured on the change authorization form being used.

3.2.1 Drawings

Drawings are revised using the site standard CAD software package identified in CPCC-STD-EN-40279.

CAD data files for drawings are configuration controlled using DMCS. Revisions to existing CAD based drawings require the CAD data file to be checked out of DMCS. The revised CAD data file is checked backed in with the next higher revision number upon completion and approval of the drawing.

Manual drawings may be revised by obtaining a TIFF file of the drawing from DMCS or a hardcopy from IRM Central Files. Manual drawings shall be converted to electronic CAD files prior to revision. This can be accomplished with either a complete redraw or conversion to a compound drawing (electronic drawing consisting of raster image and vector data). Refer to Appendix D, “Compound Drawing Creation,” for more information on compound drawings.

The following are two special types of drawing revision actions with specific requirements:

- Supersedure: Developing or revising a drawing that replaces a previously released drawing requires the older drawing to be superseded. Both drawings are revised to provide two-way traceability between the superseding and superseded drawings

- Void: Drawings placed into Void status shall not be revised, referenced, or used for any activity. Voiding a drawing requires the drawing to be marked as Void and revised up to the next revision number. Voiding of a drawing may be performed by Document Control using the Administrative Void process.

Drawings may also be placed into inactive status in DMCS. Drawings may be inactivated without requiring a revision. Inactivation is performed by setting the Drawing Status in DMCS to “Inactive” using a DMCS Change Notice. Inactive drawings shall not be revised, referenced, or used for any activity while in this status. Inactive drawings may be reactivated at a later date if needed.

Actionee	*Step*	*Action*
Engineer/ Designer/ Drafter	1.	Upon work completion of the EP or FMP, CHECK OUT drawing to be revised: a. For a CAD drawing, CHECK OUT the CAD data file from DMCS. b. For a manual drawing, OBTAIN a TIFF File from DMCS or hardcopy from IRM Central Files. 1) CREATE a new electronic CAD file or a compound drawing in accordance with Appendix D.
	2.	PREPARE drawing revision in accordance with CPCC-STD-EN-40279.

Actionee	*Step*	*Action*
Engineer/ Designer/ Drafter		a. For drawing supersedure, PROVIDE supersedure information on both superseding and superseded drawings in accordance with CPCC-STD-EN-40279. b. To void a drawing, MARK drawing as Void in accordance with CPCC-STD-EN-40279.
	3.	PERFORM the following to approve the revised drawing: a. ENTER the drawing revision into the DMCS Drawing Approval Workflow (recommended), OR b. APPROVE the drawing revision using the standard approval process as follows: 1) IDENTIFY the approvers in the Title Block of the revised drawing in accordance with Table 3 and as described CPCC-STD-EN-40279. 2) SUBMIT the revised drawings CAD data file into the DMCS Check-in process. 3) PLOT the revised drawing AND ENSURE the same PLOTID number is shown on the CAD data file and the hardcopy plot. 4) OBTAIN required approvals on the hardcopy plot. 5) SUBMIT the revised drawing to Document Control for release in accordance with Section 3.5.

Table 3 – Drawing Revision Approval Summary

Title Block Approval	Approver Identification	Reason	Note
Drawn By	Name	Identify drawing creator	Designer or Drafter making the change
Drafting Approval	Name	Indicates drawing complies with Hanford Drawing Standards	Only required for major redraws/ revisions Cannot be the Drafter/Designer
Engineer	Name	Approves the technical content of the change	Engineer responsible for the technical change
Design Authority	Name	Indicates the drawing change reflects the technical baseline, meets the FMP requirements, has the necessary reviews and approvals, and is ready for release.	DA responsible for the affected SSC
Additional Approvals (if specified)	Name	Indicates approval of the drawing revision for functional area requirements.	As specified by the Design Authority

3.2.2 Calculations

Calculations shall be revised when corrections need to be made. Revisions made to the calculation shall be performed by using a copy of the original calculation and strikeout method whenever possible.

The following requirements apply to revised calculations prepared for OCRWM activities:

- The Calculation Author and Checker shall meet the applicable indoctrination, training, and qualification requirements described in CPCC-PRO-QA-20765.
- OCRWM-related calculations shall be issued and controlled as standalone documents.
- OCRWM-related calculations shall have Site Form A-6004-797 prepared and included with the calculation in accordance with CPCC-STD-EN-40259.
- The Calculation Checker shall provide comments on a calculation copy or shall provide comments on Site Form A-6004-835. If comments are to be provided on a calculation copy, all pages of the calculation copy shall be initialed by the Checker.

Actionee	*Step*	*Action*
Engineer/ Author	1.	MAKE required changes to the calculation. Changes to released calculations shall be performed using one of the following methods appropriate for the method used to prepare the original calculation: **For Handwritten Calculations:** a. MAKE corrections or changes on a copy of the original. USE a single line strike out to make the correction, ADD the new entry, AND INITIAL/DATE next to the correction. **For Electronic Calculations:** b. USE a strikeout option if available. Otherwise, MAKE the change AND PROVIDE a brief description within the worksheet of what the change is for each correction.
	2.	ENSURE the calculation complies with the requirements of CPCC-STD-EN-40259 and includes Site Form A-6004-793.
	3.	OBTAIN calculation check from a qualified Checker.
Calculation Checker	4.	PERFORM a technical check of the calculation. The calculation check shall include checking of all sections of the calculations (purpose, approach, assumptions, inputs, equations, references, conclusions, etc.) for adequacy, accuracy, and completeness. DOCUMENT the check on a copy of the calculation as follows: **For OCRWM Calculations**: Comments shall be documented using one of the following two methods: a. PROVIDE markups/comments on the calculation copy as needed. INITIAL each page of the calculation copy. b. PREPARE Site Form A-6004-835 to document the review and comments. **For other Calculations**: a. MARK UP a copy of the calculation AND PREPARE a documented list of the comments. OR b. PREPARE Site Form A-6004-835 AND PROVIDE to the calculation author.

Actionee	Step	Action
Engineer/ Author	5.	RESOLVE comments with the Checker AND REVISE the calculation per the agreed upon resolution.
		a. COMPLETE the RCR form if one is provided.
		b. WHEN complete, THEN SIGN AND DATE Site Form A-6004-793 AND OBTAIN the Checker's signature.
	6.	ENSURE Site Form A-6004-797 is provided in accordance with CPCC-STD-EN-40259. OCRWM Calculation shall include Site Form A-6004-797.
	7.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals for the Calculation Cover Sheet are the Calculation Author and Checker as identified in CPCC-STD-EN-40259.
		b. Minimum approvals needed for the calculations releasing document is the Calculation Author, DA/TA, and the DA/TA Manager.
		c. Additional approvals may be requested based on organizational or facility requirements.
	8.	PREPARE release documentation as described in Section 3.4.

3.2.3 Engineering Text Documents

Engineering text documents include specifications, engineering test documentation, design requirements documents, SDDs, or supporting documents.

Engineering text documents in electronic form are **revised** by making the changes to the native electronic file and incrementing the revision number (e.g., Rev 1, Rev 2, etc.). When approved, the following shall be provided to the Document Control Station for inclusion into DMCS:

- Approved revised document in pdf format including revised coversheets from HDNS
- Native file used to revise the document

Engineering text document may be **voided** when no longer needed. Voiding a document will set its status to "Void" in DMCS and the voided documents cannot be revised, referenced, or used for any activity. To void a document, revise only the Title Page to the next revision number, and prepare a Record of Revision stating the new revision voids the document. When approved, the following shall be provided to the Document Control Station for inclusion into DMCS:

- Title Page of the voided document in pdf format (a native file is not required)
- Record of Revision in pdf format

Engineering text documents that are only available in hardcopy form are recommended to be converted to electronic and revised as described above. Those documents for which it is impractical to convert to electronic format can use the **page change** method of revision. The page change method requires the hardcopy to be scanned in total and submitted, along with the changed pages, for inclusion into DMCS. Page changes shall be numbered with alphanumeric designation (e.g., 0A, 0B, 1A, 1B, etc.). New or additional pages shall use decimal numbering (e.g., new pages 6.1 and 6.2 to go between existing pages 6 and 7). When approved, the following shall be provided to the Document Control Station for inclusion into DMCS:

- Electronic copy of the hardcopy document being revised in pdf format
- Electronic copy of the individual pages being changed or added in pdf format
- Updated coversheets from HDNS

Contact Document Control for information or help in scanning of hardcopy documents for placement into DMCS.

Actionee	*Step*	*Action*
Engineer/ Author	1.	DETERMINE the type of revision method:
		a. Revision – REVISE the document AND PROVIDE the whole document in the change package.
		b. Page Change – REVISE individual pages of a document AND PROVIDE the individual pages in the change package.
		c. Void – REVISE the document Title Page with the next revision number AND PROVIDE the Title Page only in the change package.
	2.	PREPARE the document revision in accordance with the appropriate standard for the document type as defined in Table 1.
	3.	If voiding a document:
		a. PREPARE a Record of Revision to describe the change in accordance with Appendix B, “Record of Revision.”
		b. If not, PROCEED to step 4.
	4.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals needed for an engineering text document is the Author, DA/TA, and the DA/TA Manager.

Actionee	Step	Action
Engineer/ Author		b. Additional approvals may be requested based on organizational or facility requirements.
	5.	PREPARE release documentation as described in Section 3.4.

3.2.4 Engineering Vendor Information

Engineering VI Files are changed either through adding additional documentation or replacing existing vendor data or documentation with newer versions. Engineering VI Files are revised by providing the vendor information in pdf file format, either obtained from the vendor or scanned from a hardcopy. Since Engineering VI Files are complete revisions, the file in its entirety shall be provided to Document Control for release into DMCS. This may be provided as individual pdf files of the contents of the Engineering VI File or one file with all elements included.

If a scanned pdf file of an existing VI File is not available in DMCS, contact Central Files to have the file scanned and entered into DMCS.

NOTE: *Changes to vendor drawings require creation of altered item drawings as described in Section 3.1.1 of this procedure and CPCC-STD-EN-40279.*

Actionee	Step	Action
Engineer/ Author	1.	OBTAIN the vendor information in pdf file format either directly from the vendor, creating a pdf of the document, or scanning a hardcopy of the document.
	2.	COMPILE the Engineering VI File incorporating the changes or additions.
	3.	PREPARE Site Form A-6004-969 in accordance with Appendix C.
	4.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals needed for an Engineering VI File is the Author, DA/TA, and the DA/TA Manager.
		b. Additional approvals may be requested based on organizational or facility requirements.
	5.	PREPARE release documentation as described in Section 3.4.

3.3 Revision or Cancellation of Change Documents

Engineering Packages are revised or cancelled using the Engineering Package Workflow in DMCS. See DMCS-HLP-0093 for additional information.

Previously released FMPs may be revised or cancelled using the Engineering Package Workflow in DMCS.

Previously released EDCs may be cancelled with a new EDC.

Actionee	*Step*	*Action*
Engineer/ Author	1.	DETERMINE whether the change document will be revised or cancelled via EP, FMP, or EDC.
	2.	PREPARE the EP, FMP or EDC that will revise or cancel the previously released change document. An EP, FMP or EDC whose sole purpose is to revise or cancel the previous change document may be prepared, or the revision/cancellation information may be included on an EP/FMP/EDC performing other scope.
	3.	DETERMINE reviews and approvals needed for release using the Review Guidelines for Engineering provided on the CPCCo Central Engineering Web.
		a. Minimum approvals needed for an EP, FMP or EDC revision cancellation is the Author, DA/TA, and the DA/TA Manager. Required approvals are identified on the EP, FMP or EDC.
		b. The Review Guidelines for Engineering provides guidance for reviews. Additional approvals may be requested based on organizational or facility requirements.
	4.	OBTAIN document approvals as identified on the EP/FMP/EDC.
	5.	SUBMIT the new change documentation and EP/FMP/EDC to Document Control for release in accordance with Section 3.4.

3.4 Preparation of Release/Change Documentation

The following types of release/change documentation are used to release new documentation or authorize changes to existing documentation:

- Engineering Package (EP) in accordance with CPCC-PRO-EN-2001 (for physical modifications) or this procedure for document actions only. This is the preferred method. See DMCS-HLP-0093, *Engineering Package Workflow Guide* for additional information for processing Engineering Packages.
- Facility Modification Package (FMP) using site form A-6004-683 in accordance with CPCC-PRO-EN-2001.
- Engineering Document Change (EDC) using site form A-6004-684 in accordance with Appendix A of this procedure.
- Design Change Notice (DCN) in accordance with CPCC-PRO-EN-8016.

Documentation may be standalone (released as a separate document) or integrated as a section within an EP or FMP.

Actionee	*Step*	*Action*
Engineer/ Author	1.	PREPARE release/change documentation for the document as follows: a. For EP or FMP integration, ADD the document as a section to the EP/FMP. b. For a standalone document: 1) For immediate release with an EP, FMP, or EDC, IDENTIFY the document in the EP/FMP's Document Index AND DESIGNATE it as "N" (New) for new documents, or "R" (Revised) for revised documents. 2) For release when the EP or FMP is work complete (for physical modifications), IDENTIFY the document in the EP/FMP's Document Index AND DESIGNATE it as "NWC" (New Work Complete) for new documents or "RWC" (Revise Work Complete) for revised documents. c. For construction projects, USE a DCN to issue in accordance with CPCC-PRO-EN-8016.
	2.	OBTAIN document approvals as identified on the releasing document.
	3.	SUBMIT the document and EP/FMP/DCN/EDC for release in accordance with Section 3.5. Construction documentation to be issued with a DCN are submitted to Construction Document Control.

3.5 Submittal for Release

Documentation to be issued for construction projects using a DCN are submitted to Construction Document Control and managed in accordance with CPCC-PRO-CN-40354, *Construction Document Control*.

All other engineering documentation to be released are submitted to Hanford Document Control. Documents to be released into DMCS require the following electronic files:

- Native file used to prepare the document, if available
- A pdf of the document
- A pdf of the document's approval page
- A pdf of the HDNS coversheets if not included as part of the document for Engineering Text Documents (See 3.3.2 for definition)
- A pdf of the approved change authorization (FMP or EDC) if not using the EP process.

The electronic files shall be saved with the following file naming convention:

- The native file shall use the document number and revision with the file format extension as the file name (e.g., CPCC-12345-01.doc).
- The pdf file shall use the document number and revision with the pdf file extension as the file name (e.g., CPCC-12345-01.pdf).
- The approval page shall use the document number, revision, and CVR with the pdf file extension as the file name (e.g., CPCC-12345-01-CVR.pdf).
- The change authorization (e.g., EP, FMP, EDC) shall use the change authorization number with the pdf file extension as the file name (e.g., ECR-12-123456.pdf).

Native and pdf files may be emailed to Hanford Document control or dropped into the CPCC Document Control Release Records Staging area in IDMS. This area is located at:

Or they can be accessed following this hierarchy in IDMS:

Enterprise: Site Cleanup/Science & Technology: Plateau Remediation: Plateau Remediation Shared Projects: CPCC Document Control Release Records Staging

In the staging area, create a new folder with the document number and revision as the folder name (e.g., CPCC-12345-01) and add all the documents into the folder by selecting the "Add Document" button and browsing to the document files.

Once the files are added to the staging area, send an email to the ^RIM DC mailbox (or ^RIM VI mailbox for Vendor Information) with the subject line "Document 'xxx' in Staging Area Ready for Release." Substitute the actual document number (e.g., CPCC-12345-01) for "xxx" in the subject. A link to the folder in IDMS can be provided in the body of the message.

4.0 FORMS

A-6004-684, *Engineering Document Change*
A-6004-786, *Record of Revision (ROR)*
A-6004-793, *Calculation Cover Sheet*
A-6004-797, *CPCCo Engineering Review Checklist*
A-6004-835, *Review Comment Record (RCR)*
A-6004-969, *CPCCo Engineering Vendor Information (VI) Form*

5.0 RECORD IDENTIFICATION

All records are required to be managed in accordance with CPCC-PRO-IRM-10588, *Records Management Processes*.

Records created during the performance of OCRWM activities shall be managed and additionally submitted to the OCRWM Records Coordinator in accordance with CPCC-PRO-QA-19579, *OCRWM Records Management.*

Records Capture Table

Name of Record	Submittal Responsibility	Retention Responsibility
Drawings	Preparer/DA	IRM Service Provider
Drawings (OCRWM)	Preparer/DA	OCRWM Records Coordinator
Specifications	Preparer/DA/TA	IRM Service Provider
Specifications (OCRWM)	Preparer/DA	OCRWM Records Coordinator
Calculations	Preparer/DA/TA	IRM Service Provider
Calculations (OCRWM)	Preparer/DA	OCRWM Records Coordinator
Acceptance Test Documentation	Preparer/DA/TA	IRM Service Provider
Acceptance Test Documentation (OCRWM)	Preparer/DA	OCRWM Records Coordinator
Design Requirements Document (e.g., FDC)	Preparer/DA/TA	IRM Service Provider
Design Requirements Document (e.g., FDC) (OCRWM)	Preparer/DA	OCRWM Records Coordinator
SDD	Preparer/DA/TA	IRM Service Provider

Name of Record	Submittal Responsibility	Retention Responsibility
SDD (OCRWM)	Preparer/DA	OCRWM Records Coordinator
VI Files	Preparer/DA/TA	IRM Service Provider
VI Files (OCRWM)	Preparer/DA	OCRWM Records Coordinator
Supporting Documents	Preparer/DA/TA	IRM Service Provider
Supporting Documents (OCRWM)	Preparer/DA	OCRWM Records Coordinator

6.0 SOURCES

6.1 Requirements

10 CFR 830, *Nuclear Safety Management*
CPCC-RD-EN-1819, *Engineering Requirements*
DOE O 433.1B Chg 1 (Admin Chg), *Maintenance Management Program for DOE Nuclear Facilities*
DOE O 414.1D, Chg 1 (Admin Chg), *Quality Assurance*

6.2 References

CPCC-PRO-CN-40354, *Construction Document Control*
CPCC-PRO-EN-2001, *Facility Modification Package Process*
CPCC-PRO-EN-8016, *Design Change Notice Process*
CPCC-PRO-EN-8336, *Design Verification*
CPCC-PRO-IRM-10588*, Records Management Processes*
CPCC-PRO-IRM-9679, *Administrative and Technical (Non-Engineering) Document Control*
CPCC-PRO-NS-062, *Unreviewed Safety Question Process*
CPCC-PRO-QA-19579, *OCRWM Records Management*
CPCC-PRO-QA-20765, *OCRWM Personnel Training*
CPCC-PRO-WKM-12115, *Work Management*
CPCC-STD-EN-40255, *Design Requirements Documentation*
CPCC-STD-EN-40259, *Engineering Calculations*
CPCC-STD-EN-40279, *Engineering Drawing Standards*
CPCC-STD-EN-40280, *Engineering Specifications*
CPCC-STD-EN-40281, *Engineering Test Documentation*
DMCS-HLP-0093, *Engineering Package Workflow Guide*
DOE-STD-3024, *Content of System Design Description*

Appendix A - Engineering Document Change (EDC) Form

An EDC form may be used when releasing or revising standalone engineering textual documents. An EDC form is available on Site Form A-6004-684.

EDC are typically issued for single documents. If warranted, multiple related documents may be issued with a single EDC.

NOTE: *EDC page numbers are for the form only. Included documentation is paginated separately from the form.*

The following instructions provide guidance for preparing an EDC:

Block Number	***Block Title***	***Instructions***
Header	ECR-__-_____	Enter the EDCs ECR number obtained from the Document Management and Control System (DMCS).
1	Change Title/Key Words	Enter a Title that describes the action being made by this EDC (e.g., “Initial Release of CPCC-XXXX”). Provide related Key Words that will aid future searches or queries in DMCS/IDMS.
2	Project No. /Work Package No.	Identify the Project Number and/or associated Work Package Number(s) if applicable. If not, enter NA.
3	Area	Identify the associated Area(s).
4	Building	Identify the associated Building(s).
5	Facility	Identify the associated Facility(s).
6	System No.	Identify the associated System(s). Use the SystemID from DMCS.
7	Release	For use by the Document Control Station. The Document Control Station release stamp shall be placed here.
8	USQ Required?	If within the scope of the USQ process (see CPCC-PRO-NS-062, *Unreviewed Safety Question Process*), check either the USQ or GCX box, enter the USQ or GCX Number, and the name/initials of the person performing the determination. If not within the scope of the USQ process, enter NA and have the DA/TA initial and date.
9	Distribution	Enter the names and MSIN of persons on distribution for the EDC.
10	Change Description	Provide text that describes the purpose of the EDC (e.g., initial release, change, void). If the EDC is for the initial release of a document, provide a summary. If the EDC changes a document, describe the reason for the change.

Appendix A - (Cont.)

Block Number	***Block Title***	***Instructions***
11	Approvals	Identify the Approvers needed for the EDC. Minimum approvals needed are the Author (or EDC Originator), DA/TA (Design Authority/Technical Authority), and the Engineering Manager/TA Manager (or DA/TA Manager). Add additional approval rows as needed.
12	Document Index	Identify the document(s) released, changed, voided, superseded or cancelled by this EDC. Indicate in the Action column which of the following actions is being performed by the EDC for each item listed in the Document Index: • New (N) -- The EDC issues a new text document into the DMCS. • Direct Revision (DR) -- The EDC issues a complete revision of the document in its entirety. • Page Change (PC) -- This EDC changes only individual pages of a document. Only the individual changed pages are provided with the EDC. • Cancel (C) -- This EDC cancels another EDC. • Supersedure (S) -- This EDC supersedes another EDC. • Void (V) – The EDC voids the document. Provide the Number and Title of the affected document. Provide the Rev (being issued) revision number of the document being issued or changed. New document are Rev. 0, revised documents use the next higher revision number. For a "Page Change" EDC, identify the pages being changed in Change Page(s) (NOTE: leave this field blank for other Actions). Check the Config Baseline box to indicate if the document is to become part of CM SSCs configuration baseline. (NOTE: To be included in a CM SSCs configuration baseline, the correct SystemID must be identified in Block 6).
13	Potentially Affected Documents	Identify other documents that may be affected by the EDC. If no documents are identified, enter NA.

Appendix A - (Cont.)

Block Number	*Block Title*	*Instructions*
		Completion of this block is not mandatory but is encouraged. Information included will assist Technical Authorities for documents affected.

Appendix B - Record of Revision

(ROR) (Site Form A-6004-786)

Block Number	***Block Title***	***Instructions***
1	Document Number	Enter the Number of the Engineering Document.
2	Title	Enter the Title of the Engineering Document.
3	Revision	Enter the revision number of the revised document. The revision number for the initial issue of a document is Rev. 0. Page Changes use the current revision number plus alpha characters (e.g., Rev. 0A, Rev. 0B, Rev. 1A, Rev. 1B, etc.). Direct Revision use the next numerical number in the sequence (e.g., Rev. 1, Rev.2, etc.).
4	Description of Change	Provide a brief summary of the change(s) made to the document. Identify page changes, addition, and deletions.
5	DA/TA Authorization	Obtain the Design Authority/Technical Authority approval signature.
6	Date	Obtain date of the Design Authority/Technical Authority approval signature.

Appendix C - Engineering Vendor Information (VI) Form

An Engineering VI Form may be used when releasing or revising Vendor Information Files. A VI form is available on Site Form A-6004-969.

The following instructions provide guidance for preparing an Engineering VI Form:

Block Number	***Block Title***	***Instructions***
1	VI No.	Enter the VI Number obtained from the Document Control Station.
2	FMP/EDC No.	Enter the FMP or EDC number authorizing release of the VI data into DMCS.
3	Rev. No.	Enter the revision number of the FMP/EDC.
4	Cost Center	Provide the number of the Cost Center funding the entry of the VI data into DMCS.
5	CACN/COA	Provide the charge code for entry of the VI data.
6	Date	Enter the date.
7	Page	Enter the page number and total number of pages of the form. Page numbers are for the form only. Included VI data is paginated separately from the form.
8	Supplemental No.	If the VI action is to supplement or add to an existing VI file, enter the supplemental or addendum number. IRM Central Files can provide this number if needed.
9	Project Number	If associated with a formal EPC project, enter the Project Number.
10	PO Number	Identify the Purchase Order (PO) Number authorizing the purchase.
11	Equipment No./Title	Enter the equipment number and title.
12	Bldg./Area No.	Enter the building number(s) and Area(s) where the equipment is installed.
13	System No.	Enter the System ID of the system(s) in which the equipment is installed.
14	Manufacturer/Vendor Name	Enter the complete name of the manufacturer (NOTE: The supplier name is not entered).
15	DA/SE/TA Name	Print the Design Authority/System Engineers/Technical Authority (DA/SE/TA) name. The DA/SE/TA signs and enters the date the form is signed.
16	Phone No.	Enter the Phone Number of the DA, SE or TA listed in Block 15.

Appendix C - (Cont.)

Block Number	*Block Title*	*Instructions*
17	Distribution	Provide the number of copies, Name, and MSIN of those on distribution for the VI File.
18	Item	Provide a sequential number for Items in the VI File.
19	Format	Identify the format of the VI data: • DWG = AutoCad drawing file • MSFT = Microsoft Format file (Word, Excel, Access, PowerPoint) • PDF = Portable Document Format • HC = Hardcopy
20	Document Description	Enter the description of the Vendor Information
21	Reference	Identify the engineering document detailing where the item is installed/schematically located or the specification and paragraph that authorized the procurement.

Appendix D - Compound Drawing Creation

Compound Drawings are a combination of a raster image and vector data for a specific electronic drawing. Compound Drawings are created from manual drawings and provide a cost effective method for converting manual drawings into electronic drawings when needed for CPCCO activities. Compound Drawings are stored as .tif files (raster image) and .dwg files (vector data) in a common folder. Once created, Compound Drawings are configuration controlled within the Document Management and Control System (DMCS).

AutoDesk's Raster Design is imaging software that extends AutoCAD so that it can display and plot raster images along with a CAD files vector data. While the normal AutoCAD image is vector data, raster images are obtained by scanning a manual drawing and saving the file in a raster image format (e.g., .tif, .jpg, etc.). One can use various raster image editing software to change, modify, or use these scanned drawings but Raster Design allows editing and viewing of both the vector and raster image together transparently within AutoCAD, giving the appearance these images are one file. The AutoCAD command used will determine which image is edited.

AutoDesk does not provide a method to "bind, explode, or convert" these two files into one image file. Therefore, the final output will be a Compound Drawing consisting of two files:

- One .dwg file containing the vector image/data.
- One .tif file containing the raster image/data.

These two files are combined into one folder and stored in DMCS as the Compound Drawing. The raster image part of a Compound Drawing is quite large and will take longer to "Final Plot" as compared to a conventional AutoCAD drawing. Compound Drawings can be viewed and plotted on any AutoCAD workstation but can only be revised using Raster Design.

Creation of a Compound Drawing

The following steps provide guidance on creating a Compound Drawing:

Actionee	*Step*	*Action*
Designer/ Drafter	1.	OBTAIN the manual drawing to be converted to a Compound Drawing from IRM Central Files.
	2.	SCAN the manual drawing with a high resolution scanner (300 pixels/inch or higher) to obtain a scanned image. The scanned image may be saved as .tif, .jpg, or other similar file type. Compressed .tif is preferred.
	3.	CREATE a new drawing in AutoCAD using the appropriate discipline template.
	4.	IMPORT/INSERT the raster image into AutoCAD. This will start Raster Design.

Appendix D - (Cont.)

Actionee	*Step*	*Action*
Designer/ Drafter	5.	SAVE this drawing AND RASTER image to a common folder using the drawing number less extension for the folder name (e.g., H-4-123456). SAVE the two image files to this folder using the drawing name and appropriate file extension for each file (e.g., H-4-123456.dwg and H-4-123456.tif).
	6.	PERFORM the following actions, saving often as AutoCAD's autosave only saves the AutoCAD file and not the image file: a. CLEAN UP the image using Raster Design Cleanup commands Deskew and Despeckle. b. RESIZE the raster image to 28"x40" and move origin to 0,0 using AutoCAD commands. c. REMOVE raster image of title, drawing number and sheets, building numbers, index numbers and last revision number. REPLACE these items with AutoCAD text and metadata using HTP. d. MOVE around the image removing speckles, unwanted lines, and smudges captured in the scan using Raster Design Remove commands. CHECK the image for unreadable geometry and text. USE AutoCAD vectors, text, and lines to replace raster data, OR USE Raster Design to copy readable raster images.
	7.	REVISE the drawing as needed.
	8.	WHEN revision is complete, THEN RELEASE these two files into DMCS as a "Compound Drawing" with HTP.