


Normal Operating Procedures

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|---|--------------------------|--|---------------------------------|-----------|
|  | Drawings Standard | | Doc. No.: ESD-020 | |
| | | | Page - 1 of 5 | Rev. 1.00 |
| | | | Date Issued: 1 September 2021 | |
| Created By: Dac Moore | | | Date Reviewed: 1 September 2021 | |
| Approved By: Ray Brown | | | Date Revised: 1 September 2021 | |

| RECORD OF CHANGE | | |
|------------------|--------|------------------------|
| Rev. no. | Author | DESCRIPTION OF CHANGES |
| 1.0 | RWB | Issued |
| | | |

1. Purpose

The purpose of this Procedure is to document CUC's CAD standards.

2. Scope

- 2.1. This procedure applies to all CUC equipment that is used for ongoing operational purposes.
- 2.2. This procedure does not apply to concepts and reports however if useful this procedure may be used for other drawings as well, to promote conformity.
- 2.3. This procedure is applicable to the following systems:
 - 2.3.1. Not Used.

3. Definitions

CAD: Computer Aided Drafting


CUC: Caribbean Utilities Company, Ltd.

HSE: Health, Safety & Environment

4. Responsibilities and Authorities

- 4.1. The CUC Engineering Services Manager shall:
 - 4.1.1. Review the efficacy of this procedure and review it every two years.
- 4.2. CUC Department Managers shall:
 - 4.2.1. Ensure that this procedure is communicated and adhered to within their respective departments.

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- 4.2.2. Ensure staff are adequately trained on the procedure.
- 4.2.3. Ensure that appropriate resources and personnel are assigned for implementing and maintaining the functionality of the documentation system.
- 4.2.4. Ensure work is completed according to this approved drawing procedure including attached documentation and reviewers conditions of approval.
- 4.2.5. Institute corrective action plans for continuous program improvement.

4.3. Initiator shall:

- 4.3.1. Not Used


5. Procedure – Drawings Standard

5.1. Standard Sheet Sizes

All CUC drawings shall be on one the following standard sheet sizes unless approved otherwise by the Engineering Services Manager.

- 24x36
- 17x22
- 24x36
- 11x17
- 8.5x11

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5.2. Sheet Block Information


All CUC produced drawings shall have the minimum following information in the title block.

| | |
|--------------------------------|----------------|
| Project Name | Project Number |
| Drawing Name | Drawing Number |
| Sheet Number | Date |
| Scale (if applicable) | Drawn By |
| Checked By | Approved By |
| Revision Number | Revision Date |
| Drawing Status (if applicable) | |

5.3. Drawing Files, Layers and Levels

- Where practical, all CUC drawings shall be produced in AutoCAD 2018 or later and be supplied as .DWG file. If it is not practical to provide an AutoCAD file, the file shall be compatible with AutoCAD. Contractors are required to notify CUC if they are unable to provide AutoCAD files, before a contract is executed between CUC and the contractor.
- As-built or final stamped drawings shall also be supplied as .PDF files with drawing metadata. For clarity: final drawings shall be provided to CUC as two copies, one as an AutoCAD .DWG file and the other as a .PDF file.
- All drawing(s) produced by CUC shall be properly “layered” & “leveled” where applicable.
 - All layers shall be named as: F01-XXXX where “F01” prefix designates level and “XXXX” designates name short name of layer.
 - Layer names shall be exactly “four letters or numbers” and levels as “F##” as per the following example:
 - Correct: G01-WOIL = Layer “WOIL” on Level 1
 - Incorrect: G01-OIL
 - Levels shall be ordered so that levels are groups of levels (i.e. Ground floor level, Second floor level)

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| Level Prefix | Level Designation |
|--------------|-------------------|
| F01-XXXX | Ground Level |
| F02-XXXX | Second Level |
| F03-XXXX | Undergrounds |
| F04-XXXX | Spare |
| F05-XXXX | Future |
| F06-XXXX | Overlays |

5.4. Drafting Settings

- All CUC internally produced drawing(s) shall be:
 - Drawn 1:1 and scaled in sheet viewport
 - Units shall be Architectural
 - Only “World Coordinate System (WCS)” shall be used
 - Autosaves shall be set at 15 minutes intervals
 - Drawing(s) files shall be saved as [drawing name]- [drawing number], in relation to type of drawing. i.e., P&I of Lube Oil System = P&I of Lube Oil System-PI-1
 - Ideally but not necessarily; one drawing or page per .DWG file.
- All Drawings shall:
 - Have only one page per .PDF file (this is required for archiving and search purposes).
 - Only standard scales shall be used
 - No drawings shall have “Xref’s” to other drawing(s) or data sources
 - Revision date and number shall be kept current
 - Be supplied in Black on White
 - Have all relevant stamps & seals (where applicable)
 - Indicate drawing status, i.e. Asbuilt, Construction, etc.
 - Be supplied with a digital file (MS Access or MS Excel file) of drawing metadata matching the drawing with the following minimum metadata

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- Drawing Title
- Drawing Name
- Drawing Number
- Drawing Type
- Sheet Number
- Project Name
- Project Number
- Date

5.5. Drawings Type Index


- All CUC produced drawing(s) shall use the following Type index codes

| Type Of Drawing | Code |
|------------------------|-------------|
| Fabrication/Shop | FB |
| Mechanical | M |
| Electrical | E |
| Control | CL |
| Fire | F |
| Civil | C |
| Structural | S |
| Layout | L |
| Architectural | A |
| Schematic | SC |
| P&I | PI |
| Plumbing | P |
| Survey | SU |

5.6. Hard Copy

- No hard copy of future drawings shall be stored by CUC except as required within equipment manuals. The master copy shall be the master softcopy.

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- Where a drawing is an original of a stamped or sealed drawing, said drawing(s) shall be scanned and stored PDF format in accordance with section **Error! Reference source not found.**, then disposed.
- Irrespective of this procedure a contract between CUC and a contractor may require hard copies of drawings. If the contract does not specify that hard copies are required then none need be provided by the contractor, and soft copies only are required.

5.7. Externally Produced Drawings

- Shall follow this procedure unless otherwise approved by the Engineering Services Manager.

5.8. Internal CUC Drawing Requirements

See Attachment 1 for further internal CUC drawing requirements.

6. Review Process

The Project Manager or respective personnel shall review all drawings to ensure compliance with the procedure prior to submission to Engineering Services.

7. Documents and Records

Not used

8. Training

Not used

9. Performance Metrics

Not used


10. References

Not used

11. Attachments

- 1 Internal CUC Drawing Requirements (for internal CUC use)

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Attachment 1 - Internal CUC Drawing Requirements (for internal CUC use)**11.1. Digital File Archiving**

- All drawings shall be archived within CUC in the following location:
<U:\DEPT081\Acad\Drawings\>
- All final drawings whether produced internally or externally submitted shall be archived digitally on CUC's data drive with the following folder filing structure:

Year\Project No.\Type of Drawing

- All externally submitted soft copy drawing(s) shall retain their original file name.
- Archived drawing file names or final locations shall not be modified.
- All drawings are to be submitted to the Manager, Engineering Services by the following procedure:
 - Drag and drop each drawing into the Engineering and Business Development SharePoint Intranet Documents Drawing Submission folder
<https://sharepoint.cuc.ky/DEPT042/Shared%20Documents/Drawing%20Submissions>
 - Email the Manager, Engineering Services with a list of drawings that have been downloaded to the Drawing Submissions folder.

11.2. Drawings Website and Register

- Link to drawings website:
<http://cucspps/websites/operations/Drawing%20Register/Advanced%20Search.aspx>
- CUC I.T. shall maintain and support drawings search site
- CUC I.T. shall maintain and support a database of all archived drawings
- CUC ESD shall be responsible for populating all database metadata fields in Section 2.2
- Refer to CUC Drawings Website & Database Management Documentation for additional information