
USACE UFGS 01 78 24.00 10 (May 2016)

Preparing Activity: USACE New

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated April 2016

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OPERATIONS AND MAINTENANCE FACILITY DATA REQUIREMENTS

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SECTION 01 78 24.00 10

OPERATIONS AND MAINTENANCE FACILITY DATA REQUIREMENTS
05/16

NOTE: This guide specification covers the requirements for maintenance and turnover of electronic Facility Data for use by O&M personnel and systems of record.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

NOTE: Consult the appropriate Administering Public Works Office on all construction contracts under the stated threshold values to determine if insertion of this guide specification is required.

Always use and include UFGS 01 78 23, OPERATION AND MAINTENANCE DATA, with this section.

This specification may be included in design-build or design-bid-build (construction-only) contracts. Remove all specification requirements for design deliverables in construction-only Contracts.

NOTE: Operations and Maintenance Facility Data Requirements are divided into two primary

deliverables:

a. Facility Data Workbook (FDW): A pre-formatted spreadsheet template used by the Contractor to compile data on facility Assets and Attributes that the Government wishes to manage via electronic means.

b. Facility Document Set (FDS): An electronically compiled O&M manual containing the following project information:

(1) All Government-Approved Data Packages required by 01 78 23 OPERATION AND MAINTENANCE DATA and associated technical specifications.

(2) Final, Government-Approved Record Drawings

NOTE: The Facility Document Set (FDS) is archived with and serves as a supplement to the Facility Data Workbook (FDW). Together, these two documents comprise the Facility Data deliverables required by this specification.

See "DEFINITIONS" listed in this specification for more information regarding these deliverables.

NOTE: Thoroughly edit this section throughout and coordinate with any other electronic data requirements stipulated by the project and Owner requirements.

NOTE: Facility Data Exchange information is available at <https://cadbim.usace.army.mil>.

PART 1 GENERAL

NOTE: Proper procurement of deliverables described in this specification requires a high degree of coordination between this specification, 01 33 00 SUBMITTAL PROCEDURES, 01 78 00 CLOSEOUT SUBMITTALS, and 01 78 23 OPERATION AND MAINTENANCE DATA. Ensure that submittal and deliverable content and formatting requirements are organized in a manner that do not present conflicting requirements. Edit these specifications as necessary to present requirements that build on one another. Do not include requirements that are redundant or are duplicated elsewhere in the project specifications.

This specification requires the collection, organization, and turnover of

electronic Operation and Maintenance (O&M) Facility Data for specific assets designed and constructed as part of this contract. Provide a Facility Document Set (FDS) and Facility Data Workbook (FDW) as defined in this specification. See Sections[01 33 00 SUBMITTAL PROCEDURES,][and][01 78 00 CLOSEOUT SUBMITTALS,][and][01 78 23 OPERATION AND MAINTENANCE DATA] for additional Facility Data delivery requirements.

1.1 REFERENCES

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 19005-3	(2012) Document Management -- Electronic Document File Format for Long-Term Preservation -- Part 3: Use of ISO 32000-1 with Support for Embedded Files (PDF/A-3)
ISO 32000-1	(2008) Document Management -- Portable Document Format -- Part 1: PDF 1.7

1.2 DEFINITIONS AND ABBREVIATIONS

1.2.1 Assets

Assets are specific items of property or equipment for which the Government requires electronic O&M Facility Data.

1.2.2 Attributes

Attributes are individual pieces of Facility Data that the Government identifies and records for specific facility assets.

1.2.3 Facility Data

Non-graphical data attached to surface and subsurface components for both

building and site elements that describe various facility characteristics such as parametric values that drive physical sizes, material definitions (e.g. wood, metal), manufacturer data, industry standards (e.g. AISC steel properties), location, and project identification numbers. Facility Data can also define supplementary physical entities that are not shown graphically in a design model, such as the system of a duct, hardware on a door, content of conduit, site surface, alignment, levee, channel or transformer properties.

1.2.4 Facility Document Set (FDS)

An electronically compiled and organized O&M manual comprised of an electronic copy of project Operation and Maintenance Data Packages and Government-Approved Record drawings.

1.2.5 Facility Data Workbook (FDW)

A pre-formatted spreadsheet template used to compile Asset, Attribute, Facility, and Space Data that the Government wishes to manage via electronic means. The FDW also contains all requirements associated with proper collection, organization, and turnover of the Facility Data.

1.2.6 FDW Requirements

Content, formatting, organizational, and data integrity prerequisites as described within all worksheets of the FDW.

1.2.7 O&M Facility Data Project Execution Plan (O&M FD PxP)

A document that describes the clear and organized plan for the collection, organization, and turnover of the Facility Data deliverables required by this specification to the Government.

1.3 UNITS OF MEASURE

**NOTE: For DBB, choose the first bracketed option.
For DB, choose the second bracketed option for
Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER
AWARD).**

Provide Facility Data deliverables utilizing the units of measure
[identified in the Contract documents.][required by 01 33 16.00 10 DESIGN
DATA (DESIGN AFTER AWARD).]

1.4 SUBMITTALS

**NOTE: Review Submittal Description (SD) definitions
in Section 01 33 00 SUBMITTAL PROCEDURES and edit
the following list to reflect only the submittals
required for the project.**

The Guide Specification technical editors have designated those items that require Government approval, due to their complexity or criticality, with a "G". Generally, other submittal items can be reviewed by the Contractor's Quality Control

System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

An "S" following a submittal item indicates that the submittal is required for the Sustainability Notebook to fulfill federally mandated sustainable requirements in accordance with Section 01 33 29 SUSTAINABILITY REPORTING.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

NOTE: If desired, it is possible (but not required) that Facility Data Progress and Final submittals be duplicated and individually named for ease of tracking by the Government. Each facility named in "Part 2" will require a separate FDW and FDS delivered to the Government. Tracking, review, and approval of those deliverables may be easier if they are tracked individually for each facility.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

O&M Facility Data Project Execution Plan; G[, [_____]]

SD-10 Operation and Maintenance Data

Facility Data Workbook, Progress Submittal; G[, [_____]]

Facility Document Set, Progress Submittal; G[, [_____]]

SD-11 Closeout Submittals

Facility Data Workbook, Final Submittal; G[, [____]]

Facility Document Set, Final Submittal; G[, [____]]

1.5 QUALITY ASSURANCE

NOTE: As described in this guide specification, all Facility Data is obtainable during the construction phase of a project. For Design-Build Contracts, there is no necessity for the Designer of Record to maintain Facility Data during project design.

A Design-Build Contractor may require that a Designer of Record assemble or maintain Facility Data in order to meet Contract Requirements, but that should be treated as an extension of construction services. A properly constructed O&M FD P&P should address this working relationship and Government reviewers should consider this when reviewing that documentation.

1.5.1 O&M Facility Data Project Execution Plan (O&M FD P&P)

Provide the Government with a plan for the collection, organization, and turnover of the Facility Data deliverables to the Government. At a minimum, include the following items in the O&M FD P&P:

1.5.1.1 Front Matter

Provide a Cover Page, Table of Contents, and Executive Summary/Objectives.

1.5.1.2 Project Information

List the Project Owner, Project Name, Project Location and address, Contract Type, Project Description, Project/Contract Number, Project Milestones.

1.5.1.3 Submittal Schedule

Identify delivery schedule for all Facility Data Progress and Final submittals in compliance with the submission requirements identified in this specification.

1.5.1.4 Personnel

Identify key personnel involved in the development of the Facility Data deliverables. This includes Contractor and Government personnel.

1.5.1.5 Facility Data Workbook(s)

Identify Facility and Space Data as applicable at time of O&M FD P&P submission. Individually list every asset group from the FDW Requirements that will require Facility Data collection. No attribute data is required at this time. Identify any asset groups from the FDW Requirements that are not required within the scope of this Contract. Document the version of FDW to be used through the duration of the project.

1.5.1.6 Facility Document Set(s)

Define structure and format of the submittal. Provide a comprehensive outline of the final FDS to be delivered. Organize the outline with headings, titles, and descriptions such that the Government may ascertain that working documents comply with the formatting requirements defined by this specification.

1.5.1.7 Protocols

Detailed procedures for implementation:

- a. Facility Data collection process.
- b. Facility Document Set development process.
- c. Collaboration procedures including strategy, meetings, communication, and subcontractor involvement.
- d. Quality Control, including site verification of FDW.
- e. File and Folder Naming Strategy.
- f. Hardware and software being used for collection and organization of Facility Data. Identify type, format, and anticipated organization of digital storage media to be provided as part of Progress and Final submittals. Include means and methods for checking deliverables for malicious content.

1.5.2 Meetings

In order to assure that Facility Data requirements are being met through the duration of the project, organize the following meetings and discuss the subsequent topics:

1.5.2.1 [Pre-Construction Meeting] [Post-Award Kickoff Meeting]

**NOTE: For Design-Bid-Build, choose the
Pre-Construction Meeting bracketed option. For
Design-Build, choose the Post-Award Kickoff Meeting
bracketed option.**

At a minimum, discuss the following during this meeting:

- a. The requirement for Facility Data deliverables under this contract.
- b. Primary roles and responsibilities associated with the development and delivery of the Facility Data deliverables under this Contract.
- c. Identify and agree upon a date and attendance list for the meetings described below:

1.5.2.2 O&M FD PxP Coordination Meeting

NOTE: For DBB projects, choose Pre-Construction

Meeting. For DB projects, choose Post-Award Kickoff meeting.

Choose the Commissioning Authority bracketed option below when Commissioning is required for this project.

Choose Designer of Record (DOR) for DB projects only.

- a. Facilitate a meeting following submission and Government review of the O&M FD PxP. Include the Facility Data Preparer(s), Designer of Record (DOR), Quality Control (QC) Manager, [Commissioning Authority (CA),] Government's Facility Data Proponent, Contracting Officer's Representative, and Directorate of Public Works (DPW) Facilities Management Specialist (FMS). [Also include any Government personnel required for obtaining security clearances and waivers for proper Facility Data collection in this meeting.]
- b. The purpose of this meeting is to coordinate the efforts necessary by contract parties to ensure an accurate collection, preparation, quality control, and submittal of these deliverables.
- c. The O&M FD PxP serves as the primary guide and agenda for this meeting. At a minimum, discuss the following during this meeting:
 - (1) Processes and methods of gathering facility data during construction. Discuss and obtain special permissions and waivers as necessary (photo waivers, data encryption, etc.);
 - (2) Contractor Quality Control practices and procedures;
 - (3) Corrective actions necessary for Government approval of O&M FD PxP.
 - (4) Necessity for additional or recurring Facility Data Coordination Meetings outside of those required by this specification, as requested by the Contractor. Intent of these meetings would be to maintain regular contact between responsible parties of the Contractor and Government with regard to development of the facility data deliverables. Conduct status meetings with a frequency agreed upon at this meeting.

1.5.2.3 Progress Submittal Coordination Meeting

- a. Facilitate a meeting following submission and Government review of the Facility Data Workbook, Progress Submittal and Facility Document Set, Progress Submittal. Include the Facility Data Preparer(s), Designer of Record (DOR), Quality Control (QC) Manager, [Commissioning Authority (CA),] Government's Facility Data Proponent, Contracting Officer's Representative, and Directorate of Public Works (DPW) Facilities Management Specialist (FMS). Include Mechanical, Electrical, and Fire Protection subcontractors as applicable.
- b. The purpose of this meeting is to demonstrate ongoing compliance with the requirements identified in this specification.
- c. The FDS and FDW Progress Submittals, along with Government remarks associated with review of these submittals serve as the primary guide and agenda for this meeting. At a minimum, discuss the following

during this meeting:

- (1) Review assets, attributes, facility, and space data in FDW at time of submittal;
- (2) Demonstrate Quality Control and site verification procedures by Contractor QC;
- (3) Review contents and organization of FDS at time of submittal;
- (4) Discuss Government review comments and unresolved items preventing completion and Government approval of the Facility Data Workbook, Progress Submittal and Facility Document Set, Progress Submittal.

1.5.3 Facility Turnover and Contract Closeout

Include the Facility Document Set, Final Submittal as a deliverable in Facility Turnover and Contract Closeout procedures as defined in 01 78 00 CLOSEOUT SUBMITTALS.

1.5.4 Facility Data Workbook Quality Requirements

For each submittal, ensure that the information contained in the FDW(s) reflects the minimum content requirements defined in the PART 3 EXECUTION portion of this section. Ensure that information provided as part of the FDW(s) conforms to the standards described below:

- a. Compile FDW(s) using approved spreadsheet templates. Do not alter the formatting or organizational layout of the templates in any way. For this Contract, templates are [available for download from the USACE CAD/BIM Technology Center website, site information provided in the PART 2 PRODUCTS portion of this section][attached to this specification. Editable copies of the templates will be provided upon Contract Award].
- b. Instructions for the proper maintenance and completion of these FDWs are contained in the FDW Requirements.

1.5.5 Facility Document Set Quality Requirements

NOTE: The paragraph below contains bracketed options for submittal quality requirements. Unless 01 33 00 SUBMITTAL REQUIREMENTS and 01 78 23 OPERATION AND MAINTENANCE DATA clearly identify submittal quality requirements across all project submittals, select the "below:" bracket and include all quality requirements listed below. Quality metrics are default values and may be edited to suit project needs.

Ensure that information provided as part of each FDS conforms to the electronic and data formatting standards identified[in 01 33 00 SUBMITTAL REQUIREMENTS and 01 78 23 OPERATION AND MAINTENANCE DATA.][below:]

[1.5.5.1 Document Files

Utilize PDF file format in accordance with ISO 32000-1 and ISO 19005-3 for

all document-based files. Provide files from original sources, text-searchable, and saved in "Standard" (uncompressed) resolution whenever possible. Bookmark and label files as defined in the PART 2 PRODUCTS portion of this section.

][1.5.5.2 Photograph Files

If photographs are required, utilize JPEG file format for all photograph and image files. Provide full-color photos with photo resolution of not less than 4 megapixels and not more than 12 megapixels.

Provide a scanned copy of any installation-specific letters or waivers allowing permission to take installed equipment photographs on this Contract. Waivers need not be attached to every photo, only one copy of each permission letter need be included in the Government deliverables.

][1.5.5.3 Drawing Files

Provide shop drawings, record drawings and other drawings required by this specification in full-size PDF format in accordance with ISO 32000-1 and ISO 19005-3. Produce PDF files from original sources, text-searchable, and saved in "Standard" (uncompressed) resolution whenever possible. Bookmark and label files as defined in the PART 2 PRODUCTS portion of this section.

Submission of scanned or photocopied drawing files is prohibited. Only vector-preserved PDF files are acceptable.

]1.5.6 Facility Document Set Integrity Requirements

Ensure that information provided as part of each FDS conforms to the integrity standards identified below:

1.5.6.1 File Protection

Do not restrict data files, document files or photographic files from being printed, exported, modified or copied. Do not deliver files with any restrictions (expiration date, locks, etc.) for access, viewing, archiving, or editing.

1.5.6.2 Manufacturer-Specific Documents

Provide text-searchable, vector-based document files from the manufacturer's online or electronic documentation. Color documents are preferred. Provide documents specific to the product(s) installed under this Contract. When possible, do not submit document files containing multiple product catalogs from the same manufacturer, or product data from multiple manufacturers in the same file. Provide documents directly from the manufacturer whenever possible. Do not provide scanned copies of hardcopy documents.

1.6 DELIVERY, STORAGE, AND HANDLING

NOTE: The paragraph below contains bracketed options for submittal delivery requirements. Unless 01 33 00 SUBMITTAL REQUIREMENTS and 01 78 23 OPERATION AND MAINTENANCE DATA clearly identify submittal delivery requirements across all project submittals, include both bracketed options in this

paragraph.

Deliver facility data submittals in an organized and legible manner. Provide submittals adhering to the requirements of [01 33 00 SUBMITTAL REQUIREMENTS and 01 78 23 OPERATION AND MAINTENANCE DATA][described below].

1.6.1 Number of Copies

Provide [three] [_____] identical copies of discs for approval; for each submittal and each facility required. Provide on approved electronic media (one copy per disc or set of discs) as defined below. Provide submittal files on electronic storage media in compliance with the quality requirements identified in this specification.

1.6.2 Malicious Content

Scan all files for malicious viruses using a commercially available scanning program that is routinely updated to identify and remove current virus threats.

1.6.3 Storage Media

Provide facility data on disc-based (DVD-R/RW) media. Any deviations from the required storage media must be approved by the Government. Select and apply technology used for electronic data transmission to ensure that the full Facility Data submittal for each facility is provided on one single disc, whenever possible. When separation of the submittal is required, first separate the FDS and the FDW onto separate media. Second, separate FDS "O&M Data" from FDS "Record Drawings." Any further divisions must be documented in the O&M FD PxP and approved by the Government.

1.6.3.1 Disc-Based Media

- a. Apply a label directly printed to storage media. Do not provide adhesive, paper-based labels. List the name of the facility, Project, Project location, Contract number, Designer of Record firm/Prime Contractor company's name, title of submission, and security classification (in accordance with the appropriate security classification labeling regulations) on the label. If multiple discs are provided, clearly document the contents of each disc on the label.
- b. Include the name and contact information of the individual who produced the final data disc to ensure that any problems with the data or media can be easily resolved.
- c. When browsed on any computer, display the following folders and their associated content:
 - (1) Facility Data Workbook (containing 1 FDW per facility)
 - (2) Facility Document Set (containing 1 FDS per facility)
 - (3) O&M FD PxP (containing 1 PxP per contract)
 - (4) Readme (Containing 1 TXT, PDF, or HTML file with general use information, organizational instructions, and basic preparer contact information. Include all information included on the storage media label.)

[1.6.4 Encryption

NOTE: The paragraph contains bracketed options for data encryption. Data encryption is only required if expressly required by the project.

Add detailed encryption requirements if available.

Encrypt deliverable data as directed by [Area][Resident][Project] Office Engineer. Document the encryption to be used in the O&M FD PxP.

]PART 2 PRODUCTS

2.1 FACILITIES

NOTE: The paragraph below requires the Designer of Record to identify the individual facilities for which Facility Data deliverables be separated under this Contract. For simple projects (single-building, site, etc.) there need be only one facility listed. For more complex projects (multiple-building, building complex, multiple sites, etc.) multiple facilities may be identified.

For each facility listed, one each FDS and FDW will be delivered to the Government under this specification. The Designer of Record must consider this and coordinate with the appropriate Administering Public Works and/or Real Property Office(s) to determine the best way to identify facilities, and by extension, the number of deliverables required for this Contract.

Provide clear designations of facilities. Include facility name (as identified on form DD1391), PN, RPUID and/or other appropriate designations in the paragraph below.

Facilities that require individual (separate and complete) Facility Data deliverables as described in this specification are as follows:

- a. [_____]
- [b. [_____]]
- [c. [_____]]
- [d. [_____]]

2.2 FACILITY DATA WORKBOOK(S)

NOTE: The Facility Data Workbook(XLSX format) templates are located at the following location: <https://cadbim.usace.army.mil>. Require the Contractor to use the most current FDW template unless specific Project constraints are identified.

Complete all portions of each FDW including facility, space, asset, and attribute data in compliance with the FDW Requirements. Download the current FDW template from the USACE CAD/BIM Technology Center website at <https://cadbim.usace.army.mil>.

2.2.1 Assets

- a. Provide one compiled FDW for each facility identified above, containing the data on all applicable asset types described in the "Required Assets" portion of the FDW template. Populate each FDW with every instance of equipment within the scope of the contract fitting the asset descriptions identified therein. This includes all assets in contract scope including assets inside and outside of the building footprint, as well as on the site, underground, and anywhere within the project extents.
- b. "Sub-component" assets that are an integral and functional part of another "component" (e.g. An electric motor that serves as part of an air-handling unit) need not be duplicated or listed separately as its own asset.
- c. Definitions, descriptions, and formatting requirements for these assets can be found in the FDW Requirements.
- d. If an asset is not included in the scope of the Project, no Facility Data (assets or attributes) are to be included in the FDW (even as a placeholder) for that asset type.

2.2.2 Attributes

- a. Populate each individual asset with all required attributes defined in the "Required Attributes" portion of the FDW template.
- b. Definitions, descriptions, and formatting requirements for these attributes can be found in the FDW Requirements. A completed FDW must have all fields for each piece equipment filled with data, even if that field is not applicable.
- c. If an attribute is not applicable to a piece of equipment, populate that field with "[N/A][_____]." Do not leave it blank.

2.3 FACILITY DOCUMENT SET

2.3.1 Organization

Organize the FDS in a hierarchical manner as follows. Use electronic bookmarks to create an easily navigable document. The first and primary hierarchical level must contain the following bookmarks:

- a. "O&M Data" - See subordinate hierarchical requirements in the "O&M DATA HIERARCHY" paragraph.
- b. "Record Drawings" - See subordinate hierarchical requirements in paragraph RECORD DRAWINGS HIERARCHY.

2.3.2 O&M Data Hierarchy

Under "O&M Data" provide all Government-Approved O&M Data Packages as

defined in 01 78 23 OPERATION AND MAINTENANCE DATA and as required by technical specifications contained within this Contract. Further organize this information under the following hierarchical levels:

- a. The Contract specification and title under which the Data Package and the associated equipment or system references. (e.g. 26 23 00 LOW-VOLTAGE SWITCHGEAR)
- b. The Data Package Number as defined in 01 78 23 OPERATION AND MAINTENANCE DATA. (e.g. Data Package 2)

2.3.3 Record Drawings Hierarchy

Under "Record Drawings" provide an electronic copy of the Government-Approved record drawings, as specified in 01 78 00 CLOSEOUT SUBMITTALS, for the project in PDF format. Further group discipline sheets under the following hierarchical levels:

- a. The full discipline heading represented by the contents of the sheet and as shown in the Record Drawing Sheet Index. Organize these headings in the order that the drawings set is organized. (General, Civil, Structural, Architectural, Interiors, Plumbing, Mechanical, Electrical, Telecommunications, etc.)
- b. The Sheet ID and Sheet Name as found in the Record Drawing Sheet Index and in accordance with the AEC CAD Standard referenced in 01 78 00 CLOSEOUT SUBMITTALS. (e.g. G-001 - LEGEND; CS101 - SITE PLAN AREA 101; A-101 - OVERALL FIRST FLOOR PLAN; P-601 - FIRST FLOOR DWS WATER RISER DIAGRAM, etc.)

PART 3 EXECUTION

3.1 PROGRESS SUBMITTALS

NOTE: For Progress FDW submittal, recommended delivery is 60 days prior to BOD for small projects and 90 days prior to BOD on large projects. Designer of Record may insert alternative delivery date if project requirements dictate differently.

Submit the Facility Data Workbook, Progress Submittal and Facility Document Set, Progress Submittal together. Meet the following completeness and formatting requirements listed below:

- a. Provide Facility Data Workbook, Progress Submittal(s) when all assets are identified, but not later than [60][90][_____] days prior to Beneficial Occupancy Date (BOD) as identified in the Government-Approved construction schedule. Clearly identify any assets or asset groups missing in the "variations" section of the ENG Form 4025 Transmittal Form provided with the submittal. Populate assets with any front-loaded attribute data that is available at the time of asset input. See the FDW Requirements for a list of attributes to be completed for this submittal. Intent of this submittal is to allow the Government to evaluate the quantity and type-distribution of assets being tracked for the project.
- b. Submit individual FDW templates for each facility identified in the

"FACILITIES." While FDWs are not required to be complete for this submittal, any data provided must be accurate and formatted correctly according to the FDW Requirements.

- c. Submit a sample or working Facility Document Set, Progress Submittal containing "draft" or "example" documents that are organized in the manner defined by this specification. Draft or example documents need not be technically accurate or complete in their content, but defined and separated in a manner such that all organizational and formatting requirements defined by this specification may be evaluated.

3.2 FINAL SUBMITTALS

NOTE: Unlike the Progress Submittal, it is unlikely that the Contractor will be able to submit the full Final Submittal at one time. The FDW(s) are most beneficially submitted during commissioning of building systems, prior to the Beneficial Occupancy Date (BOD). Components of the FDS can only be compiled and finalized after Government Acceptance of its individual components (Record Drawings, O&M Data Packages). This will likely not occur until after BOD. Designer of Record should edit this specification with this understanding and tailor this paragraph as necessary to comply with individual project requirements.

NOTE: For Facility Data, Final Submittal, recommended delivery is 60 days after BOD for small projects and 90 days after BOD on large projects. Designer of Record may insert alternative delivery dates if project requirements dictate differently.

Submit the Facility Data Workbook, Final Submittal and Facility Document Set, Final Submittal as they are completed. Coordinate the FDW submittal with data verification procedures as defined in the accepted O&M FD PxP. Provide the FDS submittal only after Government acceptance of its individual components as defined by [01 78 00 CLOSEOUT SUBMITTALS][and] [01 78 23 OPERATION AND MAINTENANCE DATA].

3.3 FACILITY DATA WORKBOOK VERIFICATION

NOTE: Choose the Commissioning Authority bracketed option below when Commissioning is being required by this project. Insert the appropriate commissioning specification number and title used on this project.

NOTE: On-site verification of Facility Data contained in the FDW(s) is required for assurance of quality data. The best time to verify this data is during facility commissioning procedures. If commissioning of building systems is part of the

scope of this project, require that the Contractor align verification of FDW with commissioning. If commissioning is not required for the project, Data Verification is most beneficial during Contract Closeout, prior to BOD.

Verify the FDW through the quality control personnel and procedures as defined in the O&M FD PxP.[Coordinate and conduct verification with commissioning procedures defined in [____].] One-hundred percent accuracy of FDW information is required for Government acceptance of the Facility Data Workbook, Final Submittal.

-- End of Section --