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01 June 2020

Proje c t N am e , Project Location 017823 - 1

D esign Pro fessio na l Na m e , Project No. OPERATION AND MAINTENANCE DATA

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1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
1. Operation and maintenance documentation directory
2. Emergency manuals
3. Operation manuals for systems, subsystems, and equipment
4. Product maintenance manuals
5. Systems and equipment maintenance manuals

1.3 DEFINITIONS
A. System: An organized collection of parts, equipment, or subsystems united by regular interaction. B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS A. Manual Content: Operations and maintenance manual content is specified in individual specification sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
1. Where applicable, clarify and update reviewed manual content to correspond to modifications and field conditions.
B. Format: Submit operations and maintenance manuals in the following format: a. PDF electronic file. Assemble each manual into a composite electronically-indexed file. Submit on digital media acceptable to Design Professional. a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically-linked operation and maintenance directory. b. Enable inserted reviewer comments on draft submittals. b. One (1) paper copy. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Design Professional will return. C. Initial Manual Submittal: Submit draft copy of each manual to Owner and Design Professional at least thirty
(30) days before commencing demonstration and training. Design Professional, Owner, and Commissioning Agent will comment on whether general scope and content of manual are acceptable. D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least fifteen (15) days before commencing demonstration and training. Design Professional and Commissioning Agent will return copy with comments.
1. Correct or modify each manual to comply with Design Professional's and Commissioning Agent’s comments. Submit copies of each corrected manual within fifteen (15) days of receipt of Design Professional's and Commissioning Agent’s comments and prior to commencing demonstration and training.

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E. Identification: In the documentation directory and in each operation and maintenance manual, identify each
system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no
designation exists, assign a designation according to ASHRAE Guideline 4-2008, "Preparation of Operating
and Maintenance Documentation for Building Systems".
2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS
A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system
and subsystem, and a separate section for each piece of equipment not part of a system. Each manual
shall contain the following materials, in the order listed:
1. Title page
2. Table of contents
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b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes
and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten
pages indicating drawing titles, descriptions of contents, and drawing locations.
2.3 EMERGENCY MANUALS
A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency
2. Emergency instructions
3. Emergency procedures
B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions
and procedures for each system, subsystem, piece of equipment, and component:
1. Fire
2. Flood
3. Gas leak
4. Water leak
5. Power failure
6. Water outage
7. System, subsystem, or equipment failure
8. Chemical release or spill
C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar
codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer,
supplier, and manufacturer to maintain warranties.
D. Emergency Procedures: Include the following, as applicable:

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G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

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3.1 MANUAL PREPARATION AND DELIVERY A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated. C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work. D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel. E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems. F. Drawings: Prepare drawings supplemen