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| **~~~~ SPECIFIER NOTES ~~~~~**  This specification guidelines, its sections, and text included, is intended to be used in the preparation of Contract Documents. It contains **Specifier Notes** which shall guide editing by the A/E consultant for the uniqueness of each project during the preparation of the Project Manual. Where **[Optional]** appears in this document, it indicates requirements which may/may not be relevant to the subject project depending upon the project complexity, scope, and unique conditions. For **DRAFT** specifications prepared during the design process, use Microsoft Word, Track Changes. Set Criteria so that deletion show as strikethrough. Deletions and additions are to be in red text.  Notes unique to this section:  *1. This section includes procedural requirements for preparation and submittal of project record documents, operation and maintenance data required in individual sections of specifications, and warranties.*  *2. Specify detailed data requirements for specific products and items of work in individual product sections. Cross reference back to this section from each section requiring operation and maintenance data. Consult with the Owner to determine specific requirements.*  *3. A/E should consult with Owner, submittal of digital documents or hard copies and revise the following specification accordingly.*  ***~~~ END OF SPECIFIER NOTES ~~~~*** |

SECTION 01 7800 - CLOSEOUT SUBMITTALS & PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closeout

B. Project Record Documents

C. Operation and Maintenance Data

D. Warranties

E. System Startup

F. Demonstration and Instruction

G. Final Cleaning

1.02 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, including the General Conditions for Washington State Facilities Construction and other Division 01 specification sections, apply to this section.

B. Section 01 3000 - Administrative Requirements: Submittal procedures, shop drawings, product data, and samples

C. Section 01 7000 - Execution Requirements

D. Individual Product Sections: Specific requirements for operation and maintenance data

E. Individual Product Sections: Warranties required for specific products or work

F. Section 01 9113 General Commissioning Requirements

1.03 CLOSEOUT PROCEDURES

A. Make any submittals requested by AHJ or any other regulatory agencies.

1. Provide copies to A/E

2. Include copies in Record Documents

B. A/E will conduct a Construction Closeout Meeting when the work is approximately 75% complete. A/E will issue the Substantial Completion Checklist to the Contractor for use in project closeout.

C. Contractor shall submit a written Notice of Substantial Completion certifying that the work has been inspected, and that work is complete in accordance with the Contract Documents and ready for A/E Punch List Inspection. Prior to submitting Contractor's Notice of Substantial Completion, the Contractor shall complete the following.

1. Submit all outstanding Field Authorization's (FA) and Change Order Proposals (COP) for review.

2. LEED submittals and reports completed and uploaded to USGB (if applicable).

3. Submit written notice of substantial completion with list of remaining incidental corrective work (punch list)

4. Submit all required permits (occupancy, elevator, boiler, fire marshal, Dept of Health, etc.)

5. Submit final Operations and Maintenance Manuals

6. Staff training and provide training materials

7. Submit final warranties

8. Submit all specified spare parts, tools, and extra stock

9. Submit keys and key schedules

10. Submit all specified required test reports

11. Accompany A/E and Owner on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List.

12. All work other than incidental corrective or punch list work.

13. Provide draft As-Built markup of contract documents

D. Upon receipt of Contractor's Notice of Substantial Completion, A/E will schedule and prepare punch list. If the A/E deems remaining punch list work to be incidental they will issue the Final Correction Punch List and the Certificate of Substantial Completion.

E. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

F. Final Acceptance: After receipt of Certificate of Substantial Completion, the following must be completed by the contractor before the project will be considered complete and closed out by DES.

1. Submit written notice that all incomplete work noted on the Certificate of Substantial Completion has been completed.

2. All work shall be complete and acceptable to A/E and Owner’s Representatives prior to Final Acceptance.

3. Confirm all FAs resolved, approved, and all change orders processed.

4. Confirm any and all claims and/or disputes are resolved.

5. Provide final “As-Built” project record documents.

6. Confirms affidavit of wages paid, approved by L&I, for the contractor and subcontractors, all tiers, that performed work on the project.

7. Confirm all payments to subcontractors have been accurately reported via B2GNow.

8. Submit retainage invoice.

G. LEED Certification Compliance

1. Comply with the requirements of section 01 3329.02.

1.04 CLOSEOUT SUBMITTALS

A. Project Record Documents: Submit documents to A/E a minimum of 14 days prior to Contractor's anticipated Notice of Substantial Completion.

1. When electronic Record Documents are permitted by the Owner, they shall receive submittals in PDF format for review, unless otherwise approved by the Owner.

B. Operation and Maintenance Data:

1. When electronic Operations and Maintenance manuals are permitted by the Owner, they shall be provided as a single PDF document following the same procedures as noted in Part 3 Execution.

2. Submit 2 copies of DRAFT Operation and Maintenance Manuals to A/E when project is deemed 75% complete (per submitted application for payment). Revise content as required prior to final submission. The revision will be provided to the Owner for use until receipt of final documents.

3. Contractor shall submit final Operation and Maintenance Manuals properly tabbed in PDF format and 2 hard copy binders to A/E two weeks prior to substantial completion. Subject to Owner’s format preference.

C. Warranties:

1. When electronic Warranties are permitted by the Owner, they shall be provided as a single PDF document following the same procedures as noted in Part 3 Execution. A hard copy of all warranties with original documents will also be required.

2. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 14 days after acceptance.

3. Contractor shall submit DRAFT Warranties at the Construction Closeout meeting when construction is approximately 75% complete..

4. Submit FINAL Warranties to A/E prior to substantial completion.

D. Staff Training:

1. Completion of specified operations and maintenance training of Client Agency facility representatives no later than two weeks prior to substantial completion.

2. Submit training materials to the A/E.

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| **~~~~ SPECIFIER NOTES ~~~~~**  *Consult with Owner to determine documentation that is desirable and useful. Edit the following section as appropriate for project scope and complexity.*  ***~~~ END OF SPECIFIER NOTES ~~~~*** |

PART 2 DOCUMENTATION

2.01 PROJECT As-Built DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the work:

1. Drawings

2. Specifications

3. Addenda

4. Change Orders and other modifications to the Contract

5. Reviewed shop drawings, product data, and samples

6. Manufacturer's instruction for assembly, installation, and adjusting

7. Tests and Inspections Log and Reports

8. LEED submittal documentation

9. Commissioning Report

10. Post Construction Survey (when required by other sections of the Project Manual)

11. Permits

12. Progress Photographs

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store As-Built documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. Manufacturer's name and product model and number.

2. Product substitutions or alternates utilized.

3. Changes made by Addenda and modifications.

4. Changes made by executed Change Orders.

F. As-Built Drawings and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured depths of foundations in relation to finish first floor datum.

2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

3. Field changes of dimension and detail.

4. Details not on original contract drawings.

5. Changes made by Addenda and modifications.

6. Changes made by executed Change Orders.

G. Permits

1. Include copies of all signed off permits with Project Record Document Submittal.

2. Provide original versions of all signed-off permits to the Owner.

3. Any other submittal required or requested by AHJ.

PART 3 OPERATIONS AND MAINTENANCE

3.01 OPERATION AND MAINTENANCE DATA

A. Provide data as indicated by individual specification sections.

B. Source Data: For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

E. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

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| **~~~~ SPECIFIER NOTES ~~~~~**  *Edit the following section as appropriate for project scope and complexity.*  ***~~~ END OF SPECIFIER NOTES ~~~~*** |

3.02 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. Provide data as indicated by individual specification sections.

B. For Each Product, Applied Material, and Finish:

1. Product data, with catalog number, size, composition, and color and texture designations.

2. Information for re-ordering custom manufactured products.

C. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

D. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

E. Additional information as specified in individual product specification sections.

F. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

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| **~~~~ SPECIFIER NOTES ~~~~~**  *Edit the following section as appropriate for project scope and complexity.*  ***~~~ END OF SPECIFIER NOTES ~~~~*** |

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. Provide data as indicated by individual specification sections.

B. For Each Item of Equipment and Each System:

1. Description of unit or system, and component parts.

2. Identify function, normal operating characteristics, and limiting conditions.

3. Include performance curves, with engineering data and tests.

4. Complete nomenclature and model number of replaceable parts.

C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

D. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

E. Include color coded wiring diagrams as installed.

F. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.

G. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

H. Provide servicing and lubrication schedule, and list of lubricants required.

I. Include manufacturer's printed operation and maintenance instructions.

J. Include sequence of operation by controls manufacturer.

K. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

L. Provide control diagrams by controls manufacturer as installed.

M. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

N. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

O. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

P. Include test and balancing reports.

Q. Additional Requirements: As specified in individual product specification sections.

3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11-inch three D side ring binders with durable plastic covers; 2-inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of A/E, Consultants, Contractor and subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20-pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text, fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:

1. Project Directory

2. Table of Contents, of all volumes, and of this volume

3. Operation and Maintenance Data: Arranged by system, then by product category

a. Source data

b. Product data, shop drawings, and other submittals

c. Field quality control data

d. Photocopies of warranties

3.05 WARRANTIES

A. All warranties shall start from date of Substantial Completion.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties until time specified for submittal.

E. Manual: Bind in commercial quality 8-1/2 by 11-inch three D side ring binders with durable plastic covers.

F. Cover: Identify each binder with typed or printed title WARRANTIES with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

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| **~~~~ SPECIFIER NOTES ~~~~~**  *Edit the following to align with project scope and complexity. If the project included detailed commissioning specification section beyond 01 9113, consider adding a reference here and deleting the remainder of this section.*  ***~~~ END OF SPECIFIER NOTES ~~~~*** |

3.06 SYSTEM STARTUP

A. Coordinate with requirements of Section 01 9113 - General Commissioning Requirements.

B. Coordinate schedule for start-up of various equipment and systems.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

G. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

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| **~~~~ SPECIFIER NOTES ~~~~~**  *Edit the following to align with project scope and complexity. Provide direction for any instruction requirements. i.e., location, documentation, video, etc.*  ***~~~ END OF SPECIFIER NOTES ~~~~*** |

3.07 DEMONSTRATION AND INSTRUCTION

A. See individual specification sections for specific demonstration and instruction requirements.

B. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

1. Owner will prepare a Change Order to address demonstration provided outside of the Contract Time. No additional compensation will be due the Contractor for work associated with the Change Order.

D. Provide a qualified person who is knowledgeable about the project to perform demonstration and instruction of Owner's personnel.

3.08 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.09 FINAL CLEANING

A. Execute final cleaning prior to submitting Contractor's Notice of Substantial Completion.

1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Replace filters of operating equipment.

F. Clean site: sweep paved areas, remove stains, spills and any foreign deposits, rake clean landscaped surfaces. Reseed ground areas damaged by construction activity.

G. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

END OF SECTION 01 7800 - CLOSEOUT SUBMITTALS & PROCEDURES