

PART 1 - GENERAL

1.1 Section Includes

- .1 Procedures for demonstration and instruction of equipment and systems as per Contract Administrator.

1.2 Description

- .1 Demonstrate operation and maintenance of equipment and systems prior to Substantial Performance. See Section 01700 – Project Closeout and Section 01730 – Operation and Maintenance Requirements.
- .2 Provide 3 day notice to Contract Administrator on operation and maintenance instruction to be given. Contract Administrator will provide list of City of Winnipeg’s personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

1.3 Quality Control

- .1 When specified in individual Sections, require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct City of Winnipeg’s personnel, and provide written report that demonstration and instructions have been completed.

1.4 Submittals

- .1 Commissioning: Submit schedule indicating time and date for commissioning each item of equipment and each system a minimum of 1 week prior to submitting request for commissioning for Contract Administrator’s approval.
- .2 Demonstration/training: Submit schedule indicating time and date for each item of equipment and each system prior to submitting request for Substantial Performance, for Contract Administrator’s approval.

1.5 Conditions for Training/Demonstrations

- .1 Equipment has been inspected and put into operation in accordance with applicable Section.
- .2 Testing, adjusting, and balancing have been performed and equipment and systems are fully operational.
- .3 Provide copies of completed (after Contract Administrator’s review) operation and maintenance manuals for use in demonstrations and instructions.

1.6 Preparations

- .1 Verify that conditions for demonstration and instructions comply with requirements.
- .2 Verify that designated personnel are present.

1.7 Demonstrations and Instructions

- .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at scheduled times. Demonstration to include instructions on the operation, control, valve positions, adjustments, trouble-shooting,

- servicing, maintenance and switch over between the flow to drain and re-circulation operating configurations of the splash pad.
- .2 Produce a detailed written plan for the start-up and initial operation under both the flow to drain and re-circulation splash pad operating configurations for the equipment and systems installed and constructed under the contract. The document, after review and approval by the Contract Administrator, will serve as the guidance manual for the commissioning process. The document shall be prepared and submitted to the Contract Administrator for review.
 - .3 When the installation Work has been completed and before any equipment is operated, carry out the start-up of the equipment in coordination with the suppliers and carry out the following Work:
 - .1 Service all equipment in accordance with the manufacturer's instructions as required for initial operation of the equipment.
 - .2 Check the installation as to its workmanship.
 - .3 Check the controls including the supply voltage and wiring connections.
 - .4 Perform further tests as directed by the Contract Administrator to confirm that the equipment is in accordance with the intent of the specifications.
 - .4 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction. Operation and Maintenance manuals to provide operating instructions of the splash pad as a flow to drain system and as a re-circulation system using the splash pad pump.
 - .5 Review contents of manual in detail to explain all aspects of operation and maintenance.
 - .6 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.
 - .7 Include digital photos on CD and in paper form that demonstrates and describes various aspects and equipment instruction.
 - .8 Upon completion of start-up, submit to the Contract Administrator the suppliers' certificates stating that:
 - .1 The equipment has been installed in accordance with the supplier's recommendations.
 - .2 The equipment was commissioned in the presence of the supplier and is now ready for permanent operation.
 - .3 The equipment has been properly lubricated, primed or serviced.
 - .4 Plant personnel have been instructed in the operation and maintenance of the equipment.
 - .5 Manufacturers' data have been provided to the Contractor for inclusion in Operating and Maintenance Manual.
 - .9 Once systems have been started up and accepted, complete winterizing. Ensure O&M manual contains all information required for winterizing equipment, follow instructions and update as required to ensure final instructions as printed are clear and concise.

1.8 Start-up

- .1 Initial start up to occur prior to the date of Substantial Performance as stated in D13 SUBSTANTIAL PERFORMANCE.

- .2 Initial start up consisting of starting pumps and circulation systems and ensuring water chemistry controller is in operation prior to the date stated in D13 SUBSTANTIAL PERFORMANCE. NOTE: The inground pool will be filled and in operation by others by the date listed in D13 SUBSTANTIAL PERFORMANCE prior to commencing start-up.
- .3 Complete start-up as part of commissioning, Works to include:
 - .1 NOTE: Inground pool must be full of water by others and in operation prior to start-up and commissioning Works, assume mid June 2015.
 - .2 Ensure all equipment and valve tag Works are complete.
 - .3 Operate valves and install spool piece to operate the splash pad using the splash pad pump and pool filtration water to supply the features.
 - .4 Prime pumps and set flow to spray features. Run the splash pad for a duration long enough to ensure valves, level controller and pumps are operating as specified.
 - .5 Determine pump running amps and shut off head.
 - .6 Simulate an emergency shut-down of the splash pad by engaging the emergency shutdown button to ensure control sequence and valve positions operate as specified.
 - .7 Control and automation systems (manufacturer).
 - .8 Instrumentation and meters (manufacturer).
 - .9 Pumping systems.
 - .10 Winterizing- fully winterize systems.
- .4 Final start up and commissioning to occur prior to date stated in D13 SUBSTANTIAL PERFORMANCE. Work completed as part of final start up applies to:
 - .1 Operate splash pad in both re-circulation and flow to drain for a 1 day period. Start/stop of the splash pad features to be as determined by Public that utilize the system.
 - .2 Ensure all systems are functional and automatic.
 - .3 Instrumentation and meters have been calibrated and functional.
 - .4 Pumping systems are fully operational.
 - .5 Winterizing systems are in place.

1.9 Training

- .1 Final training completed prior to date stated in D13 SUBSTANTIAL PERFORMANCE, applies to:
 - .1 Normal operating settings.
 - .2 Procedure to follow for emergency shutdown to stop recirculation system and switch to flow to drain.
 - .3 Control and automation systems.
 - .4 Instrumentation and meters.
 - .5 Pumping systems.
 - .6 Strainers/filter basket (cleaned at end of each day).

- .7 Checks to ensure operating flow rates are normal and strainers do not need service.
- .8 Winterizing.
- .2 Complete training reports after final start up as applicable to:
 - .1 Control and automation systems.
 - .2 Instrumentation and meters.
 - .3 Pumping system.
- .3 Training reports to include specific procedures and instructions for
 - .1 Spring start-up.
 - .2 Daily shut down.
 - .3 Daily start up.
 - .4 Daily operational procedures.
 - .5 Change over from the flow to drain to automatic operation of the splash pad using the pumping system.
 - .6 Winterization duties.

1.10 Winterizing

- .1 In fall 2015 complete winterizing and related training:
 - .1 Drain all system within the building related to pumping, water treatment and circulation.
 - .2 Blow out drain lines.
 - .3 Review previous written instructions on winterizing procedures and update accordingly. Ensure all drain valves are tagged such as Drain-1, Drain-2, etc and referred to in the instructions.

1.11 Time Allocated
For Instructions

- .1 Ensure amount of time required for instruction of each item of equipment is as required; provide a minimum of 1 hour of instruction.

End Section 01820