1. GENERAL

1.1 SCOPE

.1 Testing adjusting and balancing of all hydronic and air systems will be done by an independent testing agent:

.2 Prior to the start of balancing the contractor is to ensure all systems are:
   ♦ Piped, ducted, wired and wireless services and systems, including all components and equipment forming part thereof, and
   ♦ Manually and mechanically operated, including all components and equipment forming part thereof.

.3 Testing, adjusting and balancing will not be started until after all static checks have been completed for the system being balanced and signed off on the commissioning check sheets.

.4 Contractor is to ensure systems operated at designated times, and under conditions required for proper testing, adjusting, and balancing.

.5 Report any deficiencies or defects which may effect the balancing or noted during testing, adjusting and balancing, which cannot be promptly corrected.

.6 Balancing contractor shall advise mechanical contractor of required revised pulleys, sheaves and impellor shavings to allow proper balancing of systems.

.7 Where pump impellors require shaving, this shall be the responsibility of the mechanical contractor. All adjustments shall be by qualified millwright. All changes shall be documented and included as part of the balancing report.

.8 The contractor is to allow sufficient time in the construction / commissioning schedule to complete the balancing, correct deficiencies arising from testing and balancing and retesting.

1.2 QUALITY ASSURANCE

.1 During the one year warranty period, the owner may request re-check or re-setting of outlets or fans as listed in test report. Provide technicians and equipment required to assist the balancer during visits for seasonal adjustments.
1.3 SITE VISITS

.1 Cooperate with the balancer during regular site visits to review the installation of ducting and piping systems requiring balancing and testing.

.2 A review of the installation and access to all valves, dampers, and equipment shall be made during site visits and any additional dampers or valves required for proper balancing will be reviewed by the Engineer.

.3 Balancing will start after equipment start-up and testing and after systems have been completed and are in full working order. Place all systems and equipment into full operation and continue operation during each working day of balancing.

.4 The contractor is to clearly identify the location of all balancing devices required for balancing the systems.

1.4 BALANCING AGENDA

.1 Co-operate with the balancer to allow for completion of the balancing agenda within the first 30 days of award of contract to the balancer.

.2 Provide the balancer with all the necessary documentation, including:

♦ Fan curves
♦ Pump curves
♦ Shop drawings

1.5 BUILDING PRESSURIZATION

.1 The final balanced condition of each area will include testing and adjusting of pressure conditions. Cooperate with the balancer to complete detailed testing of building pressurization.

.2 Complete balancing to achieve positive building pressure unless otherwise instructed. A positive pressure relative to outside of 10 Pa minimum and 20 Pa maximum shall be achieved, measured with negligible outside wind velocity.
1.6 FIRE DAMPER/FIRE STOP FLAP VERIFICATION

.1 All fire dampers and fire stop flaps will be visually inspected by the balancer as follows:

♦ Installation is straight.
♦ Wall angles properly installed.
♦ Duct has break away connection.
♦ Fire stopping material where used is properly installed.
♦ Adequate access.
♦ Clearance between sleeve and wall.

.2 Sheet metal trade to clean all dirty dampers and tracks to satisfaction of balancer prior to testing.

.3 Testing of 10% of the fusible links shall be performed. Provide sufficient quantity of fusible links for replacement.

1.7 BALANCING OF HYDRONIC SYSTEMS

.1 All piping to be completed prior to balancing.

.2 Air balancing will be completed prior to initiating hydronic balance.

.3 Remove temporary strainers and install permanent sheaves prior to balancing of hydronic systems (Refer to Section 15044, Coordination With Balancing Agency).

.4 Adjust flows through each boiler or chiller to ensure equal flow.

.5 Identify the location of all devices required for balancing the hydronic systems.

END OF SECTION