Comfort. Under control.

DEL MAR NORA DISTRICT (W PALM BEACH FL)

Testing, Adjusting, Balancing

○ PRE-BALANCE

Prior to arrival on site, the following actions will take place to ensure an efficient balance process can be achieved.

- ❖ Review of contract documents to gain in-depth knowledge of the facility's mechanical systems. This review allows the early detection of components that may not have been deemed necessary but should be considered to provide a properly balanced system. Additional review of mechanical equipment submittal, performance curves, and test data shall be performed and information coordinated to all appropriate associates.
- ❖ Preliminary reports and pertinent project documents shall be generated to provide a collaborative understanding across all internal team members.
- ❖ Preliminary site visits shall be performed to identify possible discrepancy as it relates to the installation of all system components.
- ❖ Final coordination with prime contractors shall take place to ensure an efficient and timely procedure coinciding with the construction schedule.

○ TEST & BALANCE PROCESS

Air **H**andling **U**nits

Each AHU in scope will be balanced in accordance with NEBB guidelines. Specific procedures are expressed for each AHU below.

- ❖ AHU-1 is a constant volume AHU serving diffusers in the group dining area. The unit is designed for 800 cfm with 115 cfm OA which will be provided by DOAS-3. The unit total shall be determined via hood reading summation. Motor speed adjustments will be made prior to balancing diffusers and final unit testing. All NEBB standard final data shall be recorded and presented with the final test and balance report.

- ❖ AHU-2 is a constant volume AHU serving diffusers in the Dining 1 area. The unit is designed for 1,200 cfm with 250 cfm OA which will be provided by DOAS-3. The unit total shall be determined via hood reading summation. Motor speed adjustments will be made prior to balancing diffusers and final unit testing. All NEBB standard final data shall be recorded and presented with the final test and balance report.

- ❖ AHU-3 thru 5 are constant volume AHUs serving diffusers in the Bar Dining area. The units are designed for 2,000 cfm with 370 cfm OA which will be provided by DOAS-3. The unit total shall be determined via hood reading summation. Motor speed adjustments will be made prior to balancing diffusers and final unit testing. All NEBB standard final data shall be recorded and presented with the final test and balance report.

- AHU-6 is a constant volume AHU serving diffusers in the Dining 2 area. The unit is designed for 2,000 cfm with 370 cfm OA which will be provided by DOAS-3. The unit total shall be determined via hood reading summation. Motor speed adjustments will be made prior to balancing diffusers and final unit testing. All NEBB standard final data shall be recorded and presented with the final test and balance report.

- AHU-7&8 are constant volume AHUs serving diffusers in the Expo Dining area. The units are designed for 2,000 cfm with 405 cfm OA which will be provided by DOAS-3. The unit total shall be determined via hood reading summation. Motor speed adjustments will be made prior to balancing diffusers and final unit testing. All NEBB standard final data shall be recorded and presented with the final test and balance report.

- AHU-9 is a constant volume AHU serving diffusers in the PDR area. The unit is designed for 3,000 cfm with 550 cfm OA which will be provided by DOAS-3. The unit total shall be determined via hood reading summation. Motor speed adjustments will be made prior to balancing diffusers and final unit testing. All NEBB standard final data shall be recorded and presented with the final test and balance report.

- DOAS-1 provides 100% outside air to the diffusers in the BOH area and office. Design airflow is 3780CFM. Total flow shall be measured at the diffusers, primary duct traverse, or a combination of these.

- DOAS-2 provides 100% outside air to the diffusers in the kitchen area. Design airflow is 3780CFM. Total flow shall be measured at the diffusers, primary duct traverse, or a combination of these.

- DOAS-3 provides 100% outside air to the AHUs throughout the space. Design airflow is 3780CFM. Total flow shall be measured via traverse of the individual outside air ducts, primary duct traverse, or a combination of these.

Exhaust Fans

- Exhaust systems shall be measured at terminal inlets, primary duct traverse, or a combination of these. The sum of these readings shall provide the assumed total flow of each system. Adjustments to variable pitch sheave, variable speed drives, or unitary speed controllers shall be made to provide a total flow that is within +/-10% of the design. All terminal inlets shall be adjusted to within +/-10% of the design unless the design total flow is considered unachievable. If design total flow is unable to be maintained the terminal devices will be balanced proportionally. All NEBB standard final data will be provided within the final TAB report.

○ Final Controls/AHU Testing & Facility Testing & Resolution

A light commissioning of the controls for major assets will be performed after the systems are balanced to ensure the units operate as commanded. We will also review pressures throughout the space with all systems in operation in various modes to make sure there is no adverse effect caused by any of the systems. We will monitor reaction time, stability, random space temperature(s) achieved, and pressures will be measured in the spaces at critical areas.

The completed balance process shall be determined by the final set of all mechanical systems within design criteria and data provided according to NEBB standards for documentation. Systems that do not meet the engineer's design requirements shall be noted within the report's summary. Systems that are intentionally left outside of design tolerances to satisfy space comfort or system load will also be identified within the summary section of the test and balance report.