The following is a listing of **minimum** schedule information to include for select equipment.

**All Equipment:**
- **Mark/Tag**
- **System Served Name/Description**
- **Equipment Location** (room number, area, etc.)

**Expansion tanks:**
- **Mark/Tag**
- **System Name/Description**
- **Tank Location** (room number) and elevation within building
- **Fluid Type** (water or % propylene glycol)
- **Calculated System Volume**
- **As-Built System Volume** (leave blank so can be filled in during as-builts)
- **Design System Volume** (calculated + 40% margin)
- **System Design Cold Temperature & System Design Hot Temperature**
  - Chilled water system: 40 deg F, 90 deg F
  - Heating water systems: 55 deg F, 190 deg F (even if designed for 140 deg F operating temperature)
- **Initial Fill Pressure** (need 15 psig at building highest elevation air bleed point plus static elevation difference, with pumps off and system at room temperature (or cold in case for chilled water system)
- **Final Fill Pressure** (i.e. expected worst-case pressure that is acceptable when system is at hot temperature)
- **Required Acceptance Volume**
- **Tank Total Volume**
- **Tank Type and Liner Material**
- **Tank Manufacture & Model No.**
- **System Relief Valve Setting** (all closed systems get a relief valve, piped back to glycol feed tank when one is part of the system)
- **Weight**

**Pumps:**
- **Mark/tag**
- **System Name/Description**
- **Pump Location** (room number) and elevation within building
- **Fluid Type** (water or % propylene glycol)
MISC EQUIPMENT SCHEDULE REQUIREMENTS

- **Fluid Operating Temperature**
- **Pump Type** (end suction, inline, vertical, etc.)
- **Pump Design GPM & Head**
- **Pump Sizing** (2x100%, 2x60%, 3x50%, etc.)
- **Operating Point as % of Runout** (if pump will often run at a backed-down condition (VFD turned down), is typically good to select operating point to the right of the efficiency sweet spot)
- **Shutoff Head**
- **Impeller Cut Diameter**
- **Min & Max Impeller Diameters** (good to select pump to no more than 90% of max diameter incase need to put in larger diameter down the road)
- **Pump RPM**
- **Pump Efficiency**
- **Pump Manufacturer & Model No.**
- **Motor Information** (HP, voltage/phase)
- **Suction Diffuser** (if part of system) model no. & size, and max pressure drop
- **Weight**
- **Remarks:**
  - 3-Phase motors VFD-driven to be NEMA MG1 Part 31.4.4.2 (1,600 V), and to have Helwig (no equals) shaft-grounding

***Split Systems:***

- **Mark/tag**
- **System name/description**
- **Indoor & Outdoor locations** (room number, north roof, south exposure, etc.)
- **Type** (wall mounted, ceiling mounted, discharge direction, etc.)
- **Airflow CFM**
- **External Static Pressure (ESP)**
- **Capacities** (Sensible-Only, Total Cooling, Heating)
- **Manufacturer & Model No.** (Mitsubishi per DG’s)
- **Electrical Information** (voltage/phase, FLA, etc)
- **Remarks:**
  - Provide low ambient (negative 20 deg f) temperature kit, plus advanced wind baffle (WB-PA1, 2 per condenser) kit (for AC units), and base pan heater MAC-640BH-U (for HP units).
  - Units to have enable relay, but no controls communications cards.
  - Provide with simple wired t-stat (PAC). UNL will provide a separate UNL t-stat for room temperature monitoring.
  - Provide with condensate high level alarm.
  - Refrigerant R-410A.
  - Pipe routing, sizing, and needed accessories per Manufacturer’s recommendations.
**MISC EQUIPMENT SCHEDULE REQUIREMENTS**

**Fan Coils:**

- Mark/Tag
- System Served Name/Description
- Equipment Location (room number, area, etc.)
- Type (wall mounted, ceiling mounted, discharge direction, etc.)
- Airflow CFM
- External Static Pressure (ESP)
- Capacities (Sensible-Only, Total Cooling, Heating)
- Heating EWT/LWT
- Heating GPM
- Heating Coil Rows (how many rows)
- Cooling EWT/LWT
- Cooling GPM
- Cooling Coil Rows (how many rows, specify with ideally 6 rows)
- Chilled Water Delta T
- Casing (type, finish, inlet/outlet requirements)
- Motor Type (provide with ECM variable speed)
- Manufacturer & Model No.
- Electrical Information (HP, voltage/phase, FLA, etc.)
- Remarks:
  - Provide with extended and/or secondary SS drain pan & condensate overflow/high switch.
  - Provide with 1” pleated filter, MERV 8
  - Provide with ¼” closed cell insulation
  - Coordinate right-hand/left-hand configuration with Contractor.
  - 3-Phase motors VFD-driven to be NEMA MG1 Part 31.4.4.2 (1,600 V), and to have Helwig (no equals) shaft-grounding

**Fans (not packaged with an AHU):**

- Mark/Tag
- System Name/Description
- Fan Location (room number, north roof, etc.)
- Fan Type (end suction, inline, vertical, etc.)
- Drive (direct, belt), we prefer direct when possible
- Air Operating Temperature (if not obvious)
- Fan Design CFM
- External Static Pressure (ESP)
- Fan Class (I, II, III, N/A)
- **Fan Sizing** (2x100%, 2x60%, 3x50%, etc.)
- **Operating Point as % of Runout** (if fan will often will run at a backed-down condition (VFD turned down), is typically good to select operating point to the right of the efficiency sweet spot)
- **Fan RPM**
- **Fan Efficiency**
- **Impeller/propeller diameter**
- **Wheel type** (backwards inclined, mixed, axial, etc)
- **Sound data** (if needed)
- **Variable Control** (VFD, ECM, etc) & control location (BMS, local dial, etc.)
- **Fan Manufacturer & Model No.**
- **Electrical Information** (HP, voltage/phase, FLA, NEMA MG1 Part 31 rated (if has VFD))
- **Weight**
- Add to remarks:
  - 3-Phase motors VFD-driven to be NEMA MG1 Part 31.4.4.2 (1,600 V), and to have Helwig (no equals) shaft-grounding
  - Provide with extended lube lines, motor cover, drive guard, quick opening access door, bird screen, L-10 XX,000 hours bearings (use each when applicable)