

MECHANICAL – ELECTRICAL
SCHEMATIC DESIGN NARRATIVE
For
CLEVELAND CORPORATE SERVICES

PREPARED BY:
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CONSULTING ENGINEERS

JANUARY 2011

MEP NARRATIVE

CLEVELAND CORPORATE SERVICES

PLUMBING & FIRE PROTECTION

A. WATER

1. Building has existing 3" incoming water service. Backflow preventer will be installed at inlet location.
2. Water distribution will extend to all new toilet rooms, kitchen and all other miscellaneous fixtures. And water heaters.

B. SANITARY

1. Sanitary piping will extend and connect to existing.
2. Contractor to survey existing sanitary line for any damage and run a snake to clean the existing line prior to connecting new.

C. GAS

1. Existing gas line shall remain. New taps to new equipment shall be as requires by design documents.
2. A new connection past the meter will be for Stand-By Power generator.
3. Fuel gas will be piped from the meters to boilers, domestic water heaters, kitchen equipment.

D. WATER HEATERS

1. Domestic Hot Water will be generated at each main boiler room for kitchen and domestic use by commercial gas fired water heaters of high efficiency and sealed combustion.
2. An array of hydronic solar panel will generate hot water to be circulated to the HW storage tank. A secondary HW heater will increase temperature as required to set point.
3. HW supply shall be looped to various use points. General public spaces will have separate loop with tempering valve to reduce water temperature to 120 Deg. F. Showers will have an individual thermostatic valve for anti-scalding conditions.

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E. PLUMBING FIXTURES

1. Plumbing fixtures shall be all new as shown on architectural drawings. Public area fixtures shall be with battery operated sensor. Water closets shall be of the flush valve type. Private toilet rooms will have tank-type low flow fixtures. Lavatories will be hand operated fixtures.
2. Kitchen fixtures will be relocated with owner's relocated kitchen cabinets.

F. FIRE PROTECTION

1. Building has an existing Fire Suppression wet sprinkler system in warehouse section. System will be extended to existing office area with new sprinkler distribution. New sprinklers shall be dropped in warehouse area to spaces that will receive new ceilings.

HVAC

A. HVAC

1. The Main Mechanical Room there will be two (2) modular Sealed Combustion gas fired boilers system that will be used to provide heat to terminal units for space heating. Two (2) pumps will circulate the water to the building loop.
2. The Warehouse/Assembly area will be heated and cooled from three (3) existing Roof Top Units. Units have gas fired heat exchanger and are of the constant volume type. A new control panel will connect the units to a new building automation system.
3. Office area will be heated and cooled from three (3) or four (4) roof top units. Units will be cooling only with back-up gas fired heat exchanger. Fan motors will be of the Variable Speed Drive type to adjust to variation of air volume. Individual perimeter spaces will be served by terminal Fan-Powered-VAV units with hydronic reheat coil. Individual interior spaces will be served by terminal VAV units with hydronic reheat coils.
4. Server room will have a dedicated AC unit to operate 24/7.
5. Miscellaneous fan will be installed for toilet exhaust, kitchen exhaust, storage, Warehouse ventilation and mechanical room ventilation.

B. FACILITY MANAGEMENT CONTROL SYSTEM

1. A Direct Digital Control (DDC) building automation system will provide inter-connectivity of the entire building mechanical systems. DDC controls systems are inherently expandable and adaptable, and will facilitate the growth of the system in the future.

ELECTRICAL & TECHNOLOGY

A. PRIMARY ELECTRICAL SERVICE

1. The primary service voltage to the site is 480 volt system. This is an existing service to the building which will be modified to provide a new 1600-2000 amp 480 volt distribution system (estimated).
2. Dry type Transformers will be provided to reduce voltage to 208/120 for receptacle and equipment power as required.
3. Branch circuit panelboards will be located throughout the space as required.
4. Provisions for possible supplemental solar power to primary electrical system, including but not limited to hot water system.

B. STAND-BY ELECTRICAL POWER

1. The stand-by power system will be a natural gas generator to supply life safety, server room, accounting offices, refrigerator and other select loads.
2. Select loads will be fed via emergency branch circuit panelboards.

C. LIGHTING

1. The site lighting is existing and in general will be cleaned and relamped. Additional exterior and site lighting may be required.
2. Any designed landscape lighting will be 120 volt with the power derived from the building.
3. All site and landscape lighting will be controlled via contactors controlled by the lighting control system (LCS). The LCS will be programmed to respond to inputs from photocells, time of day, or astronomic clock.
4. Interior lighting will consist of various luminaires as indicated on the plans. Lighting will be controlled with an automatic Lighting Control System as required by current energy codes. The LCS will be programmed to respond to inputs from occupancy sensors, daylight sensors or time of day. Daylight sensors will be utilized in the warehouse area to work with skylighting layout.

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D. FIRE ALARM

1. The building will have a wet sprinkler system throughout. Provisions for monitoring the sprinkler system via phone lines and additional devices as required by code shall be provided.

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E. COMMUNICATION SYSTEM

1. Coordination of requirements for new phone lines into the building.
2. Provide all IT/Data backboards and power as required.
3. Coordination of all IT/Data grounding requirements.
4. Coordination of all rough-in locations for AV, furniture feeds and individual drops.

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AAI #6143

SCHEMATIC DESIGN Jan 2011

Page 4

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ELECTRICAL SPECIFICATIONS

1. Refer to attached specifications.
2. Specifications to be edited as design progresses, includes Lighting Controls shall be updated to Hubbell as basis of design. UPS system at this time is existing and being relocated, to be reviewed as design progresses. Telephone communication system, to be reviewed with owner's representative. Fire alarm at this time shall be limited to sprinkler monitoring. Electrical services shall be sized and coordinated with utility company as design progresses.

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