OMIC Additive Manufacturing Center

Electrical
Systems Narrative

Prepared for:

AKAAN Architecture + Design, LLC
101 St. Helens Street
St. Helens, OR 97051

Prepared by:

MKE & Associates, Inc.
6915 SW Macadam Avenue, Suite 200
Portland, OR 97219

May 21, 2020

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GENERAL

This narrative describes the proposed electrical systems to serve the OMIC Additive Manufacturing Center project.

STUDY LIMITATIONS

Our equipment and systems evaluation was limited to areas that were accessible and visible to the eye. No equipment was utilized that viewed unseen conditions, Equipment was given a visual review and no testing was performed. Where costs are noted below, these are rough in nature only in order to present an order of magnitude.

ELECTRICAL SYSTEMS

Normal Power

Power Distribution

A. The primary power source will be 408V, 3 Phase rated at 1600A. The power will originate on the northside of the site.

B. Transformers (dry type) will be provided at various locations to provide 400V, 240V, and 208V power for various types of machinery.

C. Feeders in the building will be aluminum alloy above 60A. All feeders below 60A will be copper.

D. Panelboards throughout shall be a bolt-on style NQOB type with door-in-door fronts. Panelboards will be installed at key locations throughout to minimize length of branch circuits.

E. Branch circuits shall be stranded CU conductors installed in EMT conduit. Metal Clad (MC) cable will be used pending owner approval to reduce cost.

F. All conduits installed below grade shall be PVC. No PVC conduit allowed above grade.

Lighting

A. Lighting throughout shall be LED. The LED light source will be 80 CRI+ and have capability for a dimmable driver.

B. All luminaires will have capability to be controlled via local occupancy sensors. Sensors will be either internal to the luminaire or control entire rooms.

Lighting *(continued)*

C. Luminaires that have natural daylight present shall be equipped with a time delay photocell to save energy/cost and lengthen life of luminaire.

D. Exterior luminaires shall be LED and will be controlled via digital time clock and photocell. Exterior illumination will be installed to prevent light spillage on adjacent property.

E. Emergency lighting will be provided on the egress path to provide one (1) footcandle of illumination for 90 minutes. Backup power will either be central inverters or batteries in individual luminaires.

Communication Systems

Datacom

A. A main distribution room (MDC) will be established to act as a hub for data cabling throughout. The primary cable will be CAT 6 to data outlets at work stations and selected equipment.

B. Data cabling may be run open above accessible ceilings. Data cable in open ceilings can be exposed above 10 ft.

Fire Alarm

A. Fire alarm system will be an addressable American with Disabilities (ADA) compliant system. The fire alarm system shall provide horn/strobes throughout to provide alarm actuation for all personnel.

B. Fire alarm initiation will be via fire water flow, smoke at HVAC units, smoke detectors, or manual pull stations.

C. Fire alarm cable will be run open in area above 10 ft. All cabling below 10 ft. will bee installed in EMT conduit.

Access Control

A. Access control utilizing FOB's of keycards will be provided at key entry/exit points in the building.

Close Circuit Television (CCTV)

A. Closed circuit (CCTV) cameras will be placed in key locations to monitor activity. A digital recorded (DVR) will be provided for security as well as liability.

End of Electrical Systems Narrative

HB/heo