

Note: The buildings on the UCCS campus are divided into two categories: General Fund and Auxiliaries. General Fund Buildings include academic and administrative functions. Auxiliary buildings include residence halls, athletic, and dining facilities. In some cases, construction standards differ depending on the building category. Confirm building category with Facilities Services Project Manager.

CONSTRUCTION REQUIREMENTS

- Electrical General Requirements
- Medium-Voltage Electrical Distribution
- Interior Lighting and Lamps
- Exterior Lighting and Lamps
- Interior Floor Boxes
- Lighting Control System – Refer to separate Division 26 document
- Labeling
- Coordination with Third Party Vendors
- Access Panels
- Fire Alarm

DIVISION TWENTY-SIX: ELECTRICAL

A. Electrical General Requirements

1. Contractor to provide all required state electrical permit and CSFD plan review/permit fees.
2. No work should commence until State plan review/permitting process is approved.
3. Coordinate temp power needs with UCCS Project Manager and Facilities Electrical Supervisor.
4. For renovation projects of existing buildings, design Engineer to confirm existing panel schedules.
5. Where fire rated assemblies exist, fire caulk all penetrations.
6. All other assemblies – provide acoustic sealant at all penetrations.
7. Conceal cables in finished walls, ceilings, and floors.

B. Medium Voltage Electrical Distribution

1. Provide commercial grade, back and side wired, 20 amp receptacles with brushed aluminum or stainless steel wall plates. Gray colored receptacles preferred, if plate is stainless steel.
2. Provide 4" concrete housekeeping pads for all electrical distribution equipment
3. K rated transformers; preferred copper windings
4. Provide conduit at all exposed areas, unless exposed conduit is desired by project.

5. Preferred Electrical Gear Manufacturers:
 - Square D
 - Cuttler Hammer
 - Siemens
 - Substitutions to be reviewed with UCCS Project Manager
6. Cabling should be #10 for the first 75' for runs that exceed 75'
7. Minimize use of MC cable; Runs longer than 25' to be in conduit.
8. ¾" EMT or larger only.
9. Provide at least (4) spare conduits out of each electrical panel extending into the adjacent corridor.
10. Steel set screw and compression fittings only.
11. Site Trench Backfill – Backfill per soils report requirements. Backfill should not commence until all work has been inspected, tested and accepted.
12. Provide cabinet with a set of spare fusers for each rated load type.

C. Interior Lighting and Lamps

Interior Lighting

1. LED lighting preferred.
2. Provide lighting in classrooms that minimizes glare. Dimmable or Bi-Level direct/indirect lighting for all office and classroom fixtures.

Lamps to Avoid

1. T5 (due to high heat gain)
2. "U" tube fluorescents

D. Exterior Lighting and Lamps

Exterior Lighting

1. Pedestrian Light Poles: Kim Lighting Inc, Vertical Lamp VL Series, Post Top Configuration, Flush Mount, Dark Bronze, single luminaire, 17" diameter, Kim Curve Linear LED, full cut-off light distribution. Poles to be 5" diameter, PRA non-tapered, 16 feet high. Color: Dark Bronze. Mount on poured concrete base with beveled edges: 18" diameter, 6" above finished grade.
2. Street and Parking Lighting: KIM Lighting, Inc., ALT 120 Altitude LED, Optic – Distribution – Type III, Voltage – 240v, Finish – Dark Bronze; Valmont Round Tapered Steel Pole DS210, 30' overall height, Finish – Dark Bronze; Concrete light pole bases in parking lot to be 36" above finished grade, where exposed to vehicular traffic. Pole bases in all other hardscape areas to be 6" above finished grade. Light pole bases to have a rubbed concrete finish.
3. Step Lighting: Fully recessed, cast aluminum or brushed stainless steel finish. Step lighting is discouraged as it is a maintenance issue.
4. Bollards: KIM VRB1 LED Round bollard, flat top
5. LED lighting preferred.

E. Interior Floor Boxes

1. Floor boxes are discouraged. If needed, provide steel floor boxes; plastic not allowed.

F. Lighting Controls – REFER To Lighting Controls Division 26 Standards

G. Labeling

1. Equipment, panels, receptacles, raceway cabling should be labeled.
2. Receptacles should have panel and circuit designation.
3. Label all junction boxes with panel designation and circuit number.

H. Coordination with Third Party Vendors

1. Verify rough-in locations through “Box Walk” with contractor and UCCS Project Manager.
2. Allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
3. Provide for ease of disconnecting the equipment with minimum interference to other installations.
4. Allow right of way for piping and conduit at required slope.
5. Allow connecting raceways, cables, wire ways, cable trays, and busways to be clear of obstructions and or the working and access space of other equipment.
6. Coordinate with other site utilities, future utilities and equipment.
7. Coordinate installation of required supporting devices and sleeves through concrete, masonry and other structural walls.
8. Coordinate chases, sleeves, and openings with general construction.
9. Schedule building shutdowns or loss of power with UCCS parties ahead of scheduled activities.
10. Coordinate electrical service connections with CSU.
11. Coordinate location of access panels for electrical items with general construction and UCCS Project Manager.
12. Coordinate locations of switches and other electrical devices so that they are not placed behind doors, casework, etc.

I. Access Panels

1. Provide locking powder coated access panels at ALL locations. All access panels are to be keyed to the same keyway across all general fund and auxiliary buildings. Coordinate with UCCS Project Manager.

J. Fire Alarm

1. Provide class B fire alarm system.
2. Provide Simplex 4100U fire alarm control panel (NO SUBSTITUTIONS).
3. Connect to intelligent devices (no zoned detection permitted).
4. Connect to main control panel in Public Safety Building via fiber optics.

5. System must be compatible for monitoring by Simplex True Site workstation.
6. Fire Alarm Interruption
 - i. Where detection is not required during construction, detectors shall not be installed until after all other construction trades have completed cleanup (NFPA 72 17.7.1.3). This section of the standard does not prohibit the installation of the detector wiring or the mounting of the detector base.
 - ii. Any detectors found to be installed in violation of the above referenced requirement must be cleaned, recalibrated, and recertified by the manufacturer or the smoke detector is to be replaced (NFPA 72 17.7.1.1).
 - iii. Once the fire alarm system has been inspected and accepted by the AHJ at that point the university would require coordination of shutdowns and or interruption. These would need to be scheduled three (3) working days in advance with UCCS Department of Public Safety (255-3111) and the UCCS Project Manager.
7. Provide AED cabinet tied to fire alarm system on all new construction projects.