SECTION 11000
GENERAL INFORMATION & BUILDING MAIL CENTER

PART 1 - GENERAL

1.1 SUMMARY

A. This section provides general information standards for equipment.

1.2 REFERENCES

1.3 SYSTEM PERFORMANCE REQUIREMENTS

A. Fixed and Movable Equipment:
   1. Fixed equipment shall generally be furnished and installed by the General Contractor as part of the construction contract.

B. Building Mail Center:
   1. Provide a Mail Center that is rear loading and accessible on a public side via a lock. The public side should have slot to put 8 ½” x 11” campus mailing envelopes.
   2. The mail station shall include multiple central mail drops.
   3. Main mail drop will include sleeves and locking cabinets.
   4. Architect / Engineer should work through UC Denver mailing services and UC Denver Project Manager on exact needs. A sample mail center is included at the end of this section.

1.4 DEFINITIONS

1.5 SUBMITTALS

1.6 QUALITY ASSURANCE

A. Quality Assurance shall be provided in accordance with Division 1.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery, storage, and handling shall be provided in accordance with Division 1.

1.8 WARRANTY

A. Product and system warranties shall be provided in accordance with Division 1

PART 2 - PRODUCTS

2.1 MANUFACTURERS

2.2 MATERIALS, GENERAL

PART 3 - EXECUTION

3.1 EXAMINATION
3.2 INSTALLATION, GENERAL

3.3 TESTING, CLEANING, AND CERTIFICATION

3.4 COMMISSIONING (DEMONSTRATION)

3.5 SCHEDULES

END OF SECTION
SECTION 11140

VEHICLE SERVICE EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This section provides standards for vehicle service equipment.

1.2 REFERENCES

1.3 SYSTEM PERFORMANCE REQUIREMENTS

1.4 DEFINITIONS

1.5 SUBMITTALS

1.6 QUALITY ASSURANCE

A. Quality Assurance shall be provided in accordance with Division 1.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery, storage, and handling shall be provided in accordance with Division 1.

1.8 WARRANTY

A. Product and system warranties shall be provided in accordance with Division 1.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

2.2 MATERIALS, GENERAL

A. General Information:

1. Fuel islands must have high volume pumps and be capable of pumping diesel fuel.

2. Pumping stations for Alternative Fuels to include cascade pumping with pressure control.

3. Pumping stations shall meet NEC, NFPA-30 and UFC 79.

PART 3 - EXECUTION

3.1 EXAMINATION

3.2 INSTALLATION, GENERAL

3.3 TESTING, CLEANING, AND CERTIFICATION

3.4 COMMISSIONING (DEMONSTRATION)

3.5 SCHEDULES

END OF SECTION

VEHICLE SERVICE EQUIPMENT

11140-1
SECTION 11600
LABORATORY EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This section provides standards for laboratory equipment.

1.2 REFERENCES

A. Section 15850 Air Handling.
B. Section 15900 Building Management Systems
C. Section 15990 Testing, Adjusting and Balancing.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

A. Laboratory Fume Hoods:

1. Acceptable types of fume hoods include bypass with constant volume and conventional with variable air volume control. Unacceptable types include conventional with constant volume and auxiliary air.

2. Biological safety cabinets are not fume hoods and have a different set of design parameters. Biological safety cabinets and fume hoods cannot be connected with common ductwork or fans.
   a. Contact the UC Denver EHS through the UC Denver Project Manager for specifications.

3. Other types of exhaust devices such as canopy hoods, storage cabinets, slot hoods, snorkels, etc. are generally not accepted as substitutes for fume hoods.

4. Design and installation of fume hoods is strictly controlled according to the following procedures:
   a. User identifies to the UC Denver Project Manager requirements for fume hoods which include types, size, number, and list chemicals and compatibilities.
   b. The UC Denver Project Manager submits requirements and chemical list to the UC Denver EHS for classification of hood. Hood classification identifies acceptable uses for the fume hood and required face velocity.
   c. The Classification and chemical list is submitted to mechanical engineer to use in designing the exhaust duct and fan system and selection of suitable materials.

5. Fume hoods require outside air makeup through the central system or with dedicated HVAC systems. Fume hood exhaust systems shall not be connected to general building exhaust systems. However, exhaust systems dedicated to laboratory where hood is located can be connected to hood exhaust.

6. All fume hoods shall have face velocity audible and visual alarms.
7. Other standards for the exhaust system, ductwork, air balance, controls and utilities are identified in Section 15900 – Building Mgmt Systems and Section 15990 - Testing, Adjusting and Balancing.

B. Storage Cabinets:
1. Storage cabinets shall be provided to eliminate the storage of chemical in fume hoods.
2. Storage cabinets under fume hoods should be vented into exhaust systems. Do not provide cabinet fans. Typical exhaust rates should be 50 cfm.
3. Provide adequate space in room layout for storage cabinets.

C. Sterilizing Equipment:
1. Sterilizers can be provided with new steam generators supplied with DI water for clean steam. Power plant steam should be used as primary energy source. Plant steam can also be used with DI water-to-steam heat exchangers. It must be verified that adequate plant steam is available for specified sterilizer.
2. Sterilizers should be specified based upon the users required operational temperature.
3. Contractor shall notify the UC Denver Project Manager to set up service schedule for the sterilizing equipment.
4. Adequate exhaust and ventilation should be supplied to maintain sterilizer specifications for temperatures in space provided for installation.
5. Adequate space of no less than 2’ clearance on all sides and back of unit for maintenance and repairs shall be provided.

D. Chemical Fume Hood: Chemical fume hood exhaust applications must be considered as an entire system that includes both supply air and exhaust air needs. If an entire building systems is evaluated, then variable airflow with microprocessor based control strategy and manifolded exhaust systems should be considered (this type of system is desirable). However, if fume hood systems are considered on an individual basis (retrofit within an existing facility), a constant airflow system with dedicated exhaust fan may be the preferred option. Consider the following issues to be applied to all retrofit fume hood applications, not on a select basis.
1. Ventilation air for fume hood make-up must be provided to the laboratory space. The make-up air should not be recirculated space air and should be 100% outside air. The laboratory environment must be under negative pressure, at about a 90% airflow ratio.
2. The preferred fume hood superstructure should be a bypass type configuration (constant face velocity with varying sash height) with a vertical sash and balanced and adjusted to provide 100 fpm face velocity. The hood manufacturer should be similar to Kewaunee and ideally a 4 foot nominal length (700 cfm), with specified optional services; such as compressed air, vacuum, or natural gas -- if necessary. The hood must include a low velocity alarm, similar to Kewaunee No. 839.
3. The exhaust fan should be a utility set specifically designed for the proposed application, similar to New York Blower GP series fan (airfoil wheel). Special fan coatings and dark resistant construction are not necessary unless out-of-the-ordinary circumstances are present. The fan should include a weather cover, belt guard, spring vibration isolators, housing drain with cap, bolted cleanout door with gasket, TEFC motor with fixed pitch belt drive (use variable pitch sheave for balancing, record this setting and obtain the
4. The exhaust fan must be labeled per the UC Denver Equipment Identification Number Standards.

5. The exhaust fan must be provided with an up-blast discharge with stack termination at a minimum of 10 feet above the roof. The stack must be supported with an adequate framing structure and the stack must be connected to the exhaust fan with a flexible connector. The exhaust stack exit velocity must be about 3,000 fpm which is achieved by using a discharge cone or transition fitting to increase the velocity. The stack diameter should be full sized until the termination cone.

6. The fume hood exhaust riser will require a leakage test per SMACNA standards at the specified negative pressure. In most cases, the duct riser will be galvanized steel, spiral seam construction - use stainless steel only if required by special circumstances. The ductwork fittings must be sealed air tight per welded seams or some other suitable means. Adjustable gore fittings are not acceptable for fume hood applications.

1.4 DEFINITIONS

1.5 SUBMITTALS

1.6 QUALITY ASSURANCE

A. Quality Assurance shall be provided in accordance with Division 1.

1.7 DELIVERY, STORAGE, AND HANDLING

Delivery, storage, and handling shall be provided in accordance with Division 1.

1.8 WARRANTY

A. Product and system warranties shall be provided in accordance with Division 1.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Manifolded hoods
   a. Hamilton
   b. Kewaunee
   c. Baker.

2. Biological Safety Cabinets (ducted)
   a. Baker (or equal)

2.2 MATERIALS, GENERAL
PART 3 - EXECUTION

3.1 EXAMINATION

3.2 INSTALLATION, GENERAL

3.3 TESTING, CLEANING, AND CERTIFICATION

3.4 COMMISSIONING (DEMONSTRATION)

3.5 SCHEDULES

END OF SECTION