

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work by Owner.
5. Work under separate contracts.
6. Access to site.
7. Coordination with occupants.
8. Work restrictions.
9. Specification and drawing conventions.

- B. Related Sections include the following:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Delaware Technical and Community College – Owens Campus - Jason Technology Center Lab Addition

1. Project Location: Tax Parcel 135-14.00-41.00, 18800 Seashore Highway, Georgetown, Delaware 19947.

- B. Owner: Delaware Technical and Community College

1. Owner's Representative: Mr. Linford P. Faucett, Director of Administrative Services

- C. Architect: Fearn-Clendaniel Architects, Inc.

- D. The Work consists of the following:

- E. Architectural Statement:

1. Fearn-Clendaniel Architects, Inc. has been retained to provide professional design services for a new Laboratory Addition, located in the courtyard of the existing Jason Technology Center of the DTCC Owens Campus, Georgetown, Delaware.

F. Scope of Work by Discipline:

1. **SITE:**

- a. **Stormwater Management:** Stormwater management practices are required to treat the storm water runoff from all new impervious areas (walks and building). Provide stormwater management measures per DNREC requirements and as shown and specified on the contract documents.
- b. **Erosion and Sediment Control:** Provide erosion and sediment control measures for all disturbed areas per DNREC requirements and as shown and specified on the contract documents. Additional Erosion and Sediment Control measures may include but are not limited to a combination of the following: inlet protection, silt fencing, straw mulching, erosion control matting, and temporary diversion swales et.al.
- c. **Grading and Drainage:** The new building and site construction will require grading and drainage improvements to provide proper drainage away from the proposed building. New storm inlets and piping will convey the runoff to the approved storm water management facilities. The roof will drain via underground rain-water conductor piping system.
- d. **Utilities:** Water, sanitary, storm (including downspout piping), power, communications, and HVAC piping will be installed as required for the building design.
- e. **Site Features:** Walkway system, landscaping, and other elements will be constructed as required for the building design.

2. **ARCHITECTURAL:**

- a. **Addition:** Construction of a new classroom/laboratory addition in the courtyard of the existing Jason Technology Center. The addition will total approximately 4800 sq ft, and will include 2 new instructional laboratories serving approximately 24 students each. Laboratories will be served by an adjoining work/preparation room.
- b. **Renovations:** Demolition and renovation of the existing preparation room into a corridor for access to the new addition. Renovation of existing corridor area to provide secure egress from the courtyard to the building exterior. Renovations will total approximately 500 sq ft.
- c. **Construction - Exterior:** In general, the project will be constructed of cast-in-place concrete foundations and floor slabs on grade, cold-formed light gage metal framing and roof trusses, brick veneer and metal wall panels, standing-seam metal and EPDM membrane roofing systems, and aluminum storefront and entrances.
- d. **Construction - Interior:** The project interior construction will include cold-formed light gage metal partitions, gypsum wallboard, paint and other finishes, carpet, resilient sheet flooring, doors and hardware, acoustical panel ceiling and grid systems, casework, trim, and other items.

3. MECHANICAL

- a. Fume Hood Exhaust System: Provide fume hood exhaust system for each Lab and Prep room.
 - 1) Labs: Provide a pressure independent exhaust system for each Lab. Each exhaust system shall consist of a manifold ducted collection system (stainless steel) with each Fume hood connected with a venturi air valve (similar to Phoenix Controls). Utility fan, located in the attic space shall be for each collection system and discharge exhaust through the roof at a proper discharge height. Fans shall have variable speed drives (VFDs) for modulate exhaust airflow (dependent on how many air vent for open) to maintain a constant static duct static pressure.
 - 2) Prep: Provide constant volume exhaust system for Prep Room's fume hood. System shall consist of Stainless Steel ductwork, utility fan, located in the attic space and discharges exhaust through the roof at a proper discharge height.
 - 3) Any chemical storage cabinets that need venting shall be connect to one of the system describe above.
- b. Ventilation/ Make-up : Provide a 100% outside air handler located on the roof to provide conditioned ventilation and make-up air to each room. Unit's fan shall be operate on variable speed drives (VFDs) to modulate air flow to maintain Lab/ Prep room at negative pressure to adjacent spaces. Unit's airflow shall not modulate below code required ventilation rate. A barometric damper ducted from each space to the outside shall be provided to prevent over pressurizing the building. Ventilation air shall be conditioned by hot water and chilled water extended from the building's existing systems. Provide minimum 26 gauge ductwork supply and return/exhaust insulated.
- c. Heating and Cooling: Provide a variable refrigerant volume system consisting of ceiling cassettes (2 per Lab and 1 per prep room), refrigerant piping, branch selector boxes and outdoor inverter heat recovery unit. (total capacity of 15 tons). All condensate shall be extended to new storm or exterior down spouts.
- d. Provide ceiling radiation panels over large windows with hot water circulation.
- e. Controls: Provide a complete system of Direct Digital Controls to monitor and operate all new exhaust fans, make-up air unit, and variable refrigerant volume system. Controls shall monitor room pressurizations and be an extension of the existing BMS. System shall be Siemens controls.

4. PLUMBING

- a. Service Water: Service (hot and cold) water piping shall be extended from the existing building systems to each fixture and fume hood (as required). Existing building hot water return system shall to extend to the farthest fixture in each Lab. All service water piping shall be copper for potable water and the insulation as required by code.

- b. Lab Services: All Lab service piping, which includes natural gas, compress air, vacuum shall be extended from the existing building systems to each fume hood and/or workstation as required.
- c. Emergency natural gas shut-off switch shall be provided at the entrance of each room.
- d. Fixtures: Each sink shall be provided with a manual operated faucet with a vacuum break gooseneck spout.
- e. Emergency safety shower/ eyewash shall be provided in each Lab. Each safety shower shall have a thermal mixing valve to provide tempered water. Floor drains shall be provided under each shower (refer to sanitary/ vent section).
- f. Sanitary/ Vent: Existing sanitary is located under where the new addition shall be modified as follows:
 - 1) Remove existing manhole.
 - 2) Replace existing 6" sanitary (terra cotta) from existing building and extend to opposite side of addition. Provide clean-out at grade outside the west side of the addition.
 - 3) Disconnect and re-connect existing 4" sanitary from adjacent building to the new 6" sanitary. Provide a clean-out in the existing 4" sanitary on grade outside the north side of addition.
 - 4) Remove existing Containment/Dilution Tank, to avoid new addition. Disconnect and re-connect existing 4" sanitary from the existing Labs as required. Provide new discharge piping to new 6" sanitary.
- g. Each sink shall be piped to an under-bench dilution tank/ trap (similar to Orion Fittings 'Style 8'). Where sink configuration allows, a common tank shall be used for multiple sinks. Dilution tanks discharge (sanitary) shall be manifolded and extended to the new 6" sanitary described above.
- h. Polypropylene acid waste drainage piping shall be used for all sanitary piping before dilution tank.
- i. Floor drains shall be provided under each safety shower and as requested by owner. Drain shall be the piping to new 6" sanitary.
- j. Each dilution tank and floor drain shall be vented to a manifold system above the ceiling. Vent system shall have a single termination though the roof.

5. ELECTRICAL

- a. General: The following is a preliminary electrical scope document for the proposed Jason Technology Center, Lab Addition.

- b. Refer to architectural, mechanical, scope specifications for general information regarding general room layouts, equipment arrangements and mechanical equipment information.
- c. Electrical Service: The existing lab building electrical service is adequate to handle the new lab addition.
- d. A new 400A, three phase, 480volt electrical service will be extended to the area of the new lab addition.
- e. A new MCC will be provided to provide power requirement for hood exhaust fans, Ventilation units and Heating and Air Conditioning systems and other major pieces of equipment.
- f. Electrical Distribution: The electrical distribution will consist of a 150KVA transformer fed from the MCC. The transformer will in turn feed a 400A distribution panel for 120/208 volt power requirements.
- g. The 150 KVA transformers will feed 120/208-volt power panels that will power miscellaneous utilization equipment and receptacles throughout the facility. The 150 KVA transformer will provide power to (2) 200A panels. One panel dedicated to each lab/prep area.
- h. Each lab will be equipped with power shut down capabilities. The power shut down will disconnect power to electrical receptacles and equipment.
- i. Emergency Power: Emergency and Exit lighting will be provided through the use of individual self-contained battery units installed throughout the facility as required. The fire alarm system shall have a battery back-up as required.
- j. Lighting: Lighting in the new lab addition will be provided by recessed fluorescent light fixtures utilizing T-5 lamps and electronic ballast.
- k. Lighting Control: Lighting control will be provided by using local light switches. For energy savings motion detectors will be used in area where practical.
- l. Fire Alarm: A fire alarm system will be installed throughout the new facility. The existing building fire alarm system will be extended to accommodate the new addition. It shall be a fully point addressable, voice alarm system with intelligent analog detectors.
- m. The operation of any smoke detector, sprinkler water flow device, or manual fire alarm shall automatically activate a voice alarm system. Activation of the system shall automatically sound an alert signal of the desired areas.
- n. Activation of the system shall automatically shut down all HVAC equipment over 2000 cfm. Duct smoke detectors are to be installed as required.
- o. Manual pull stations shall be installed at all building exits.

- p. The system shall be continuously electrically supervised against component failure.

6. FIRE PROTECTION

a. Sprinklers:

- 1) An automatic wet pipe sprinkler system shall be installed throughout the building in accordance with NFPA and all state and local codes.
- 2) The sprinkler system will be designed on occupancy in accordance with the requirements of NFPA and all state and local codes. Sprinkler piping shall be Schedule 40 piping.
- 3) Sprinkler system shall be connected to existing and distributed throughout the building as shown and specified.

7. DISPLAY AND DATA TECHNOLOGY

a. Display Technology In Laboratories:

- 1) The two (2) new laboratory spaces included in this renovation will function both as collaborative work spaces, and as instructional presentation spaces in which educational presentations will be enhanced by audiovisual technology systems. Both rooms shall be outfitted with a data/video front projection system along with an audio reinforcement system. Source selection, system input, and digital annotation will be available at the teaching location. A small equipment rack shall be located at the front of each laboratory space to house all AV system sources, components, and connections.
- 2) Visual presentation material will be displayed by means of a ceiling mounted front projection system, excluding a projection screen. Images shall be displayed directly on a painted wall. Wall color and paint type shall be coordinated to optimize the performance of this projection system. Any source shall be able to be routed to the projector. Program audio will be provided via ceiling-mounted loudspeaker(s). Voice reinforcement shall also be made available through a wireless lapel microphone. The presentation system will be controllable by a single handheld push-button remote control, to make AV system control possible while wearing gloves. This remote will control all system components through a central control processor. Unique infrastructure requirements for this space include a multi-service floor box to be located at the instructor's desk to provide connectivity for desktop components.

b. Telecommunications Structured Cabling:

- 1) The Telecommunications Structured Cabling systems to be specified shall extend the current campus voice and data connectivity to the two (2) Laboratory spaces and the two (2) Preparation rooms included in this renovation. The Structured Cabling System will include cabling,

- infrastructure, pathways, terminations and hardware, as well as grounding and bonding for all voice and data locations.
- 2) Each laboratory space shall feature data outlet wall plates at regular intervals, approximately six feet (6') to eight feet (8') apart on each wall of the space, for the connection of owner-furnished student computer workstations to the campus LAN. One (1) additional data outlet location shall be provided in each Laboratory for connection of an owner-furnished printer. Each data outlet wall plate shall consist of a single-gang wall plate with four (4) female RJ45 jacks, and electrical conduit stubbed up to above finished ceiling.
 - 3) Additional telecommunications floorbox infrastructure will be provided for data cabling at each student work table in the Laboratory spaces. Conduit from these floorbox locations shall stub up to above finished ceiling. Data cabling at each of the student work tables shall be terminated in female RJ45 outlet jacks mounted directly to the furniture, beneath a protective lip to prevent damage from liquid spills. Each student work table will require four (4) furniture-mounted data outlets.
 - 4) Each laboratory and preparation room will also feature one (1) wall telephone location, and each laboratory will include one (1) emergency phone location. These telephone locations shall include a single-gang wall plate with one (1) female RJ45 jack. Electrical conduit from these locations shall stub up to above finished ceiling.
 - 5) All data and voice cabling shall be Category 6, four-pair unshielded twisted pair cabling, per campus standards. All station cabling in the Laboratory and Preparation Rooms shall be routed to the existing two-post telecommunications rack located in the open storage room on the Mezzanine level of the Jason Building, approximately 100 feet to the south-west of the Laboratories. All Category 6 cabling shall follow the existing suspended non-continuous cable support pathway from this two-post rack to the existing corridor outside of Biology Lab 119, where it shall be routed to the new laboratory spaces using the existing twelve-inch (12") ladder rack located AFC in this corridor. New ladder rack shall be specified for the new corridor leading to the Preparation and Laboratory rooms, and station cabling shall be routed from this new ladder rack to the stubbed conduit with a suspended non-continuous cable support pathway. Additional cabling shall be specified for two (2) OFE wireless access point locations.

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.

1.5 WORK PHASES/SEQUENCING

- A. Construction is expected to commence on or about 02 May of 2012 and continue through substantial completion on or about 15 August 2012. The general contractor shall take all appropriate precautions to protect the property and occupants of the adjacent buildings during construction operations when the adjacent buildings are occupied.

1.6 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.
 - 1. No additional or related Contracts have been identified at this time.

1.7 USE OF PREMISES

- A. General: Each Contractor shall have limited use of premises for construction operations as indicated on Drawings or determined after award of contract.
- B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine constructions operations to those areas as needed to complete the work.
 - a. Limit site disturbance, including earthwork and clearing of vegetation, to 20 feet (6.1 m) beyond building perimeter; 10 feet (3 m) beyond surface walkways, patios, surface parking, and utilities less than 12 inches (300 mm) in diameter; 15 feet (4.5 m) beyond primary roadway curbs and main utility branch trenches; and 25 feet (7.6 m) beyond constructed areas with permeable surfaces (such as pervious paving areas, stormwater detention facilities, and playing fields) that require additional staging areas in order to limit compaction in the constructed area.
- C. Site Access: The Addition site is located within a fully enclosed courtyard in the Jason Technology Center. Access will be through adjacent egress area via opposing pairs of double doors, approximately 60 inches wide by 84 inches high. Owner anticipates temporarily dedicating this access to Contractor use during construction. Items and materials not able to be moved through this access point must be lifted over the adjoining building into the courtyard. Contractor must coordinate all truck, crane, or pump boom deliveries with Owner in advance to determine acceptable times and locations. Contractor will be responsible for returning any damaged items or areas, including site access, to original condition.

1.8 OWNER'S OCCUPANCY REQUIREMENTS

- A. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
 - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.

3. Before Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.
4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

1.9 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed inside the existing building during normal business working hours of 7:00 a.m. to 4:00 p.m., Monday through Friday, except as otherwise indicated or negotiated with the Owner.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 1. Notify Owner not less than five business days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Owner's written permission.
- C. Nonsmoking Building: Smoking is not permitted within the building or within the building site.

1.10 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat" numbering system.
 1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
 2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor.

Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

- a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000