SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

1. GENERAL
	* + 1. SUMMARY

Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

* + - * 1. Related Sections:

Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

* + - 1. USE CHARGES

General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Whether services are furnished by the utility company or from OHSU's existing facilities, it is the Contractors responsibilities for the installation and removal of service lines. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

* + - 1. SUBMITTALS

Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

* + - * 1. Fire-Safety Program: Show compliance with requirements of NFPA 241, NFPA 99, NFPA 101, and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.
			1. QUALITY ASSURANCE

Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

* + - * 1. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
				2. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
			1. PROJECT CONDITIONS

Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

1. PRODUCTS
	* + 1. TEMPORARY FACILITIES

Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

Visitor Safety Equipment: Provide personal protective equipment (PPE) for at least 6 visitors. All equipment shall be new and in good working order, and shall at a minimum, meet all current OSHA, ANSI or other Federally mandated safety requirements. These shall include, but not limited to:

Adjustable band protective headwear.

Safety eyewear.

Hearing protection.

Safety vests.

PPE as determined by General Contractor's current published safety program.

Minimum of one chair at primary entrance to each Work area.

* + - * 1. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
			1. EQUIPMENT

Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

* + - * 1. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures".

1. EXECUTION
	* + 1. INSTALLATION, GENERAL

Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

* + - 1. TEMPORARY UTILITY INSTALLATION

[Note to A/E: Clearly identify: 1) sources of temporary utilities to be used during construction and 2) who is responsible for the cost of the utility use.

General: Install temporary service or connect to existing service.

Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

Schedule all service interruptions for connection and removal of temporary utilities with enough advanced notice to meet the requirements of OHSU’s Utility Shut Down procedures.

Main Utility shut-offs in and around the Work area should be identified prior to the start of work.

Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

* + - * 1. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

Exercise measures to conserve water. Use for the following, but not limited to:

Construction processes.

Fire protection.

Drinking water.

Sanitary facilities.

Cleaning.

Plant and lawn watering.

Provide separate metering and reimburse Owner for cost of water used.

* + - * 1. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

[Note to A/E: Any plan to utilize existing HVAC equipment for temporary heating, cooling and ventilation during construction needs to be pre-approved by OHSU Facilities prior to final CD submittal.]

* + - * 1. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
				2. Electric Power Service: Connect temporary service to OHSU's electric power system with procedures recommended by OHSU's Representatives and local electric company officials. Provide necessary primary cutouts, fuses, transformers, etc. for temporary power for lighting, miscellaneous power for tools, crane power, welders, etc. Coordinate with OHSU's Physical Plant.

Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible construction-type power cords as required. located at 100 foot intervals.

Provide main service disconnect and over-current protection at convenient locations.

Permanent convenience receptacles may be utilized during construction.

Provide adequate distribution equipment, wiring, and outlets to provide single phases branch circuits.

Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.

Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.

Provide and maintain 0.25 watt/sq ft H.I.D. lighting to interior work areas after dark for security purposes.

Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

Maintain lighting and provide routine repairs.

Permanent building lighting may be utilized during construction.

* + - 1. SUPPORT FACILITIES INSTALLATION

General: Comply with the following:

Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.

Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

Traffic Controls: Comply with requirements of authorities having jurisdiction.

Contractor shall utilize MUTCD guidelines for development and implementation of a traffic control plan appropriate for the location and type of work duration.

Written traffic control plan shall be submitted to the Owner in advance of work.

Plan shall address all pedestrian and vehicular access in immediate vicinity of construction, including areas to be impacted by construction activities.

Plan shall show accommodation for construction equipment.

Plan shall also include contingency plans giving priority to presence of emergency vehicles.

Owner's representative will provide any additional restrictions or requirements of traffic control plan that are particular to this site and project, including interface with other established traffic control plans for other on-going construction project.

Only qualified individuals valid certification recognized in the state of Oregon shall be utilized to plan and execute vehicle traffic control.

Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

Parking:

Availability of parking on OHSU campus is severely restricted. Contractors, workers and subcontractors are required to park in off campus areas, or within area(s) designated for Contractor's use.

Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

Locate as indicated.

* + - * 1. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

Remove snow and ice as required to minimize accumulations.

Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

Contractor shall securely post the required warning signs (as required by the Owner and OSHA) for the Project area(s).

All signs must be approved by your Owner Representative. Consult your Owner representative regarding facility specific informational signs.

Signs that warn of impending danger (i.e., DANGER - CONSTRUCTION AREA - DO NOT ENTER).

Signs that communicate the level of personal protective equipment that is required (i.e., HARD HATS AND SAFETY GLASSES REQUIRED).

All necessary permits (i.e., Hot Work Permits, Indoor Air Quality Permit, ILSMPECO plan, and/or other State/Local Regulatory Agency Permits as required by law).

These postings must consist of the required color, size, and character size lettering and/or symbols as required by OSHA and/or State/Local regulations.

Signs must be made from a sturdy material that resists tearing and fading. Laminated signs are acceptable for indoor postings.

All exterior Projects must contain the above noted required postings in all locations that warrant these warning signs and postings.

Required postings shall be displayed conspicuously and in a manner that provides adequate forewarning. Exterior postings should be protected from the elements by covering them in a laminate or waterproof material.

Contractor shall install and maintain any additional signs, barricades, warning devices, and traffic warnings.

Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

* + - * 1. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

* + - * 1. Existing Elevator Use: Construction Elevator: will be identified for use by the Contractor for daily activity. See Section 01 14 00, D, 3. CONTRACTOR USE OF SITE AND PREMISES for specific details regarding- location, elevator weight rating, availability and restricted hours of use. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.

Do not load elevators beyond their rated weight capacity.

Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

* + - * 1. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

* + - 1. SECURITY AND PROTECTION FACILITIES INSTALLATION

Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

All storage must be confined to the areas indicated on the Drawings, or in Contractor's off-campus storage areas and must be properly marked, enclosed, fenced or barricaded.

Storage of materials or equipment in corridors or areas reserved for simultaneous use by the public is not permitted.

Do not store materials or equipment in any location that will impair or interfere with exiting or access to any building, public access, traffic or parking areas.

Contractor shall obtain and pay for additional off-site storage as required to execute the Work and store materials.

Materials and equipment shall be used and stored in a manner preventing the overloading or damage to support structures.

When workers are not present in rooms or areas of on-going work, the areas shall be secured by locked doors and windows or any other method required to control access by unauthorized persons.

Doors must be locked with an OHSU 152 cylinder to allow access to the site by facilities employees in the event of an emergency or required maintenance or inspection.

All persons, including OHSU personnel entering the site: must first check-in with superintendent in person, or by phone after hours, and follow all posted worksite requirements.

* + - * 1. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
				2. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
				3. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
				4. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
				5. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

Extent of Fence: 6 foot high around construction site; equip eith vehicular and pedestrian gates with locks.

Within five days of Commencement of Work, Contractor shall provide fencing plan for approval by Owner. Plan shall indicate existing fencing to remain, new fencing required and type, location and sequencing of temporary barriers or fencing required for fencing outside primary site.

Owner reserves right to require fencing of areas considered particularly hazardous. At no time shall site be without fencing of areas deemed hazardous by Owner.

Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

Coordinate with Owner's security program.

Maintain security program continuously throughout project, until Owner occupancy or Owner acceptance precludes, need for security program. Provide control of all persons or vehicles leaving and entering project site and maintain log of visitors. Owner will provide control and coordination of deliveries and vehicles related to Owner's existing operations.

* + - * 1. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
				2. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
				3. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

Construct dustproof partitions with two layers of 6-mil (0.14-mm) polyethylene sheet on each side. Cover floor with two layers of 6-mil (0.14-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.

Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.

Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.

Insulate partitions to control noise transmission to occupied areas.

Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.

Protect air-handling equipment.

Provide walk-off mats at each entrance through temporary partition.

Maintain 6 foot minimum corridor widths. Coordinate with Owner.

Paint surfaces exposed to view from Owner-occupied areas.

Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241, NFPA 99, and NFPA 101; manage fire prevention program.

Prohibit smoking in construction areas.

Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires.

Provide supervision of welding operations, combustion type temporary heating units and similar sources of ignition for fire.

Contractor shall ensure that contractor's employees are familiar with Owner fire procedures and location of fire hydrants and extinguishers in adjacent parts of buildings or areas near construction area.

Until fire protection needs may be fulfilled by permanent facilities, install and maintain temporary fire protection facilities of types needed to adequately protect against reasonably predictable and controllable fire losses.

Comply with applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers".

Locate fire extinguishers where they are most convenient, visible and effective for their intended purpose, but provide no less than one extinguisher on each floor or in each general work area, at or near each usable stairwell.

Store combustible materials in containers in recognized fire-safe areas.

Where temporary water outlets are available, provide hoses of sufficient length to reach construction areas. Hang hoses with warning sign, to effect that hoses are for fire protection purposes and are not to be removed. Match hose sizes with outlet sizes and equip with suitable nozzles.

Coordinate with Owner for documentation of INTERIM LIFE SAFETY MEASURES (ILSM) for each phase of work.

The existing standpipe, hose cabinets and portable fire extinguishers shall remain in service and be maintained and kept accessible during construction. Notify City Fire Marshal and the Owner's Representative a minimum of 48 hours prior to each time the automatic sprinkler system will be shut down.

Except for utilization of existing fire protection facilities, do not change over from use of temporary fire and security facilities to use of permanent facilities until Substantial Completion or as directed by Architect to Owner.

* + - 1. MOISTURE AND MOLD CONTROL

Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

* + - * 1. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.
				2. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.

Keep interior spaces reasonably clean and protected from water damage.

Discard or replace water-damaged and wet material.

Discard, replace, or clean stored or installed material that begins to grow mold.

Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

Control moisture and humidity inside building by maintaining effective dry-in conditions.

Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

* + - 1. OPERATION, TERMINATION, AND REMOVAL

Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

* + - * 1. Maintenance: Maintain facilities in good operating condition until removal.

Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

* + - * 1. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION