

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of each prime contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.

- B. Temporary utilities include, but are not limited to, the following:

- 1. Water service and distribution.
- 2. Temporary electric power and light.
- 3. Temporary heat.
- 4. Ventilation.
- 5. Sanitary facilities, including drinking water.
- 6. Storm and sanitary sewer.

- C. Support facilities include, but are not limited to, the following:

- 1. Field offices and storage sheds.
- 2. Temporary roads and paving.
- 3. Dewatering facilities and drains.
- 4. Temporary enclosures.
- 5. Hoists and temporary elevator use.
- 6. Temporary project identification signs and bulletin boards.
- 7. Waste disposal services.
- 8. Rodent and pest control.
- 9. Construction aids and miscellaneous services and facilities.

- D. Security and protection facilities include, but are not limited to, the following:

- 1. Temporary fire protection.
- 2. Barricades, warning signs, and lights.
- 3. Sidewalk bridge or enclosure fence for the site.
- 4. Environmental protection.
- 5. Construction enclosure fence and gates
- 6. Temporary exitways

1.3 REGULATIONS

- A. Comply with applicable laws and regulations.

- B. Storage and Fabrication Sheds: Install sheds, equipped to accommodate materials and equipment involved. Sheds may be open shelters or enclosed spaces within the building.
- C. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures. Install where facilities will best serve the Project. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- D. Toilets: Install self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Use of pit-type privies will not be permitted.
- E. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up. Dispose of drainage properly. Supply cleaning compounds.
- F. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units.
- G. Collection and Disposal of Waste: Collect waste daily. Comply with NFPA 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner.

1.4 USE CHARGES

- A. General: cost or use charges for temporary facilities are **not** chargeable to the Owner or the Architect. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- B. Water, Sewer, and Electric Power Service: Pay use charges for water, sewer, and electric power use by all entities for construction operations.
- C. Other entities using temporary services and facilities include, but are not limited to, the following:
 - 1. Sub- contractors.
 - 2. The Owner's work forces.
 - 3. The Architect.
 - 4. **The Construction Manager.**
 - 5. Testing agencies.
 - 6. Personnel of government agencies.

1.5 SUBMITTALS

- A. Temporary Utilities: The contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal

of the Contractor's Construction Schedule, the contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the contractor is responsible.

1.6 QUALITY ASSURANCE

- A. Regulations: The contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, fire department and rescue squad rules.
 - 5. Environmental protection regulations.
- B. Standards: The contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
 - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Temporary Utilities: The contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: The Installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: The contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
 - 1. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 - 2. For fences and vision barriers, provide minimum **3/8-inch** thick exterior plywood.
 - 3. For safety barriers, sidewalk bridges, and similar uses, provide minimum **5/8-inch** thick exterior plywood.
 - 4. For temporary interior partitions and enclosure walls provide 1/2" thick fire rated plywood one side, over 1/2" type "X" gypsum board securely fastened to both sides of 20 Ga. 4" metal studs at 16" o.c. – (1) hr fire rating. Run the plywood up to 8'-0" AFF. Run the gypsum boards up to the deck above. Doors and frames to be (1) hr rated hollow metal knock down type – "B" label. Provide R-11 fiberglass batt insulation at temporary partitions and enclosure walls located at exterior walls.
- C. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- D. Paint: Comply with requirements of Division 9 Section "Painting."
 - 1. For sign panels and applied graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
 - 2. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- E. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- F. Water: Provide potable water approved by local health authorities.
- G. Open-Mesh Fencing: Provide **0.12-inch** thick, galvanized **2-inch** chainlink fabric fencing **8 feet** high with galvanized looped-wire top strand (not barbed) and galvanized steel pipe posts, **1-1/2 inches** I.D. for line posts, bottom and top rails and **2-1/2 inches** I.D. for corner posts.

2.2 EQUIPMENT

- A. General: The contractor shall provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide **3/4-inch** heavy-duty, abrasion-resistant, flexible rubber hoses **100 feet** long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge. It shall be the Contractor's responsibility to provide the necessary measures to keep the water hoses, along with the temporary water system piping, from freezing. The Contractor shall also be responsible to shut down the temporary water system at the supply valve at the end of each day's work for as long as

temporary water is provided. No contractor shall modify the temporary water system without consulting with, and obtaining approval in writing from the Contractor.

- C. **Electrical Outlets:** Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. **Electrical Power Cords:** Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. **Lamps and Light Fixtures:** Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. **Heating Units:** Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- G. **Temporary Offices:** The contractor shall provide its own mobile units as specified elsewhere in this Section.
- H. **Temporary Toilet Units:** Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. **Fire Extinguishers:** Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required at no additional cost to the Owner.
- B. The Contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. **General:** Engage the appropriate local utility company to install temporary service or connect

to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with the company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
- B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
1. Sterilization: Sterilize temporary water piping prior to use.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.
1. Install electric power service underground, except where overhead service must be used.
 2. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 V, ac 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
- D. Temporary Lighting: When an overhead floor or roof deck has been installed, provide temporary lighting with local switching.
1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
- E. Temporary Heat: Provide temporary heat 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 safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize energy consumption.
1. Temporary heat shall be provided after enclosure of building in accordance with the activity milestone schedule. Building enclosure means a completely weathertight building. The General Contractor shall furnish and pay for all costs including but not limited to fuel and standby personnel as may be required for providing temporary heat, cooling and humidity control via the permanent heating system until Substantial Completion.
- F. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel-oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open flame, or salamander-type heating units is

- prohibited.
2. The Owner will pay the cost for the temporary heat from the point in time when the building's permanent heating system is used to provide temporary heating. The Mechanical Contractor shall replace the filters and thoroughly clean the HVAC units used for temporary heat. Filters used for this purpose shall not be taken from the number required by the Contract Documents.
- G. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
- H. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
1. Provide separate facilities for male and female personnel.
- I. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
1. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
- J. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within **30 feet** of building lines. Comply with requirements of NFPA 241.
- C. Field Offices: The General Contractor shall provide an insulated, weathertight temporary office of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small meetings. Furnish and equip offices as follows:
1. Furniture: Furnish with a desk and chairs, a 4-drawer file cabinet, plan table, plan rack, and a 6-shelf bookcase.
 2. Equip with a water cooler and private toilet complete with water closet, lavatory, and medicine cabinet unit with a mirror.

3. The Contractor's field office shall be a new or reconditioned trailer. Minimum size 10' x 40'
 - a. Provide heating sufficient to maintain a minimum of 70F interior temp during the winter. Provide air conditioning sufficient to maintain a maximum of 75F interior temp during the summer.
 - b. Provide adequate space for a meeting area and provide the following furnishings:
One 12' x 3' conference table and twenty padded folding chairs.
 - c. Provide adequate furnishings and equipment to meet all contract requirements of your work.
- D. Construction Manager Field Office: The Contractor shall also provide in his base bid, the cost to provide and maintain in good condition one (1) field office trailer for the exclusive use by the Construction Manager. The field office shall be ready no later than thirty (30) days after Notice to Proceed, and it is estimated that the field office will be required until such time that interior construction will allow for a space to be used for a temporary field office.

The Construction Manager's Field Office trailer shall have a floor area of not less than 420SF (12' x 35') and a ceiling height of 7 ½ feet, having two (2) partitions and doors providing three (3) rooms, two (2) for offices and the other to hold meetings. The field office shall have one (1) clothes closet of ample size and all stairs shall have safety rails installed. The bathroom should be **winterized and** in good working order for the project duration. The Contractor will be responsible to install and pay for all utilities for the trailer for the project duration and will be required to disconnect all utilities upon project completion. Doors and windows shall be equipped with adequate locks and all keys shall be given to the Construction Manager.

The Contractor shall also provide the following items and equipment in the Construction Manager's Field Office as part of the Contractor's Base Bid.

1. Trailer delivery, permit as required, setup, and removal of all at the end of the project. The trailer is to include stairs, ramp and self-contained toilet room with weekly service and supplies.
2. Provide heating sufficient to maintain a minimum of 70F interior temp during the winter. Provide air conditioning sufficient to maintain a maximum of 75F interior temp during the summer.
3. Provide the following equipment and services:
 - a. One (1) programmable Masterlock Model # 175-D locks or equal
 - b. Water cooler / refrigerator combination with bottled water service.
 - c. Weekly cleaning/ janitorial service of the trailer.
 - d. Electric, and internet service, including use charges.
 - e. Provide coffee machine with coffee service for project duration.
 - f. 1.1 cubic foot or larger microwave oven.**
 - g. 4.5 cubic foot or larger refrigerator**
4. Provide the following equipment and services:
 - a. Two Hon 38000 series 3'x6' metal desks or equal.
 - b. Two Hon executive high-back swivel chairs and two Hon side chairs or equal.
 - c. Two Mayline Ranger 3' x 5' drafting tables with a swivel stool or equal.

- d. One Safeco or equal mobile plan rack with twelve 30" sticks and twelve 36" sticks
 - e. Two Hon 600 series or equal 36" wide legal 4 drawer lateral file cabinets with locks and hanging file folders.
 - f. One 36"x48" commercial grade melamine dry-erase board and a four (4) pack of assorted color dry-erase markers.
 - g. One metal bookshelf with 4 shelves (min of 201f).
 - h. One Acme 300 or equal First Aid kit.
 - i. Two (2) trash receptacles.
 - j. Conference table and 10 folding chairs
 - k. Fire extinguishers
5. Provide the following equipment for the construction manager's exclusive use:
 - a. Telephone equipment and service:
 - b. An internet service provider (ISP) account with FIOS, cable modem or broadband service, with a static IP. Address and wifi capability..
 - c. One surge protector, with 6 ac outlets and 1 tele/fax protection.
 - d. One commercial grade MFP copier/scanner (J lxl 7, 30ppm) **including 11"x17" paper capacity**, automatic feeder, 10 bin sorter, stapler and stand.
 - e. One HP OfficeJet Pro 7740 All in One office machine or equal
 - f. One Linksys WRT3200ACM AC3200 MU-MIMO Gigabit Wi-Fi Router or equal.
 - g. One trash receptacle.
 6. Provide, pay, assemble, install and maintain all service, support, supplies, bathroom supplies, cables, consumables, ink, paper, folders, utilities, film and development, usage charges, warranty and maintenance required to operate aforementioned equipment and facility.
 7. All facilities, equipment and furnishings are to be provided, assembled and installed within fourteen (14) days of the Notice to Proceed. No payments will be released to the Contractor until this contract requirement is satisfied and all facilities are fully operational. All facilities, equipment and furnishing are to remain on site until thirty days after punch list completion, or sooner if directed by the Construction Manager and, at that time, all furnishings and equipment as previously listed will be transferred to the Owner.
- E. Web-based Project Software: The Contractor is required to utilize the Construction Manager's Project Management Software: **Autodesk** Contract Management Program) through the entire duration of the project for the submission of all documents which include but are not limited to RFI's and submittals. **Autodesk** will be administered by the Construction Manager for the project.
- F. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
- G. Temporary Paving: Construct and maintain temporary roads and paving in and around the construction area as necessary to accommodate delivery and storage of materials and equipment usage during the construction period. Locate temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Review proposed modifications to

permanent paving with the Architect.

1. Paving: Comply with Division 2 Section "Hot-Mixed Asphalt Paving" for construction and maintenance of temporary paving.
 2. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
 3. Install temporary paving to minimize the need to rework the installations and result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
 4. Delay installation of the final course of permanent asphalt concrete paving until immediately before Substantial Completion. Coordinate with weather conditions to avoid unsatisfactory results.
- H. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, use the same facilities. Maintain the site, excavations, and construction free of water.
- I. Temporary Enclosures: Provide temporary enclosure for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of **25 sq. ft.** or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds **100 sq. ft.** in area, use UL labeled, fire-retardant-treated material for framing and main sheathing.
- J. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- K. Temporary Site Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
- L. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than **7 days** during normal weather or **3 days** when the temperature is expected to rise above **80 deg F**. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing

properly. Dispose of material lawfully.

- M. Rodent and Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- N. Project Identification Sign: Prepare a project identification sign of the size indicated below, and install where directed to inform the public of the Project. Support on posts or framing of preservative treated wood. Do not permit installation of unauthorized signs.

1. Project Identification Sign: The Contractor shall prepare (1) project identification sign. Engage an experienced sign painter to paint graphics on sign. Graphics to be provided by Architect at shop drawing stage of project. Construct sign of treated wood framing and posts, 3/4" plywood panels of exterior type Grade B-C sanded two sides, 4'-0" high x 8'-0" wide in size.

Sign shall be hand painted or digital printed image with white background, black letters, name and location of project, name of Owner, listing of Owner board members and/or trustees, listing of project Engineers, and the Architects logo. Structure and supports shall be suitable for size of sign, and shall be detailed by sign manufacturer. The Contractor shall obtain all permits and variances if necessary for sign. Fabricate only after shop drawing has been approved. Do not permit installation of unauthorized signs.

If Owner does not require Project Sign, Contractor shall provide credit back to the Owner via change order.

2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10, "Standard for Portable Fire Extinguishers," and NFPA 241, "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.

4. If required by the Local Authority Having Jurisdiction, Contractor is responsible to furnish and install a Temporary Standpipe during Construction.
- C. If required by the Local Authority, Contractor shall provide for uniformed police officers to direct traffic during roadway closures.
- D. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- E. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- F. Enclosure Fence: When excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.
 1. Provide 8'-0" high open-mesh, chainlink fencing with posts set in a compacted mixture of gravel and earth. Provide fencing with no exposed barbs at top of fence.
- G. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
 1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- H. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid using tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities and good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 1. 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.

2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when 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 the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of the Contractor. The Owner reserves the right to take possession of project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
 3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

After the permanent heating, cooling and humidity control system is generally ready for use and the conditions of construction requires continuous 24 hour heat and cooling and humidity control in the building, the Contractor's HVAC Subcontractor shall provide, operate and maintain temporary systems to provide required temperatures and humidity for the conduct of the work. This service shall be continued until the permanent system has been completely installed and in operation and the project completed. The Contractor's HVAC Subcontractor is to provide all warranties beginning from date of Substantial completion, not the date of temporary heating / cooling. Additional costs (if required) for extending these warranties are to be included in the contractors bid.

**END OF SECTION
01500**