

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
 - 3. Heating and cooling facilities.
 - 4. Ventilation.
 - 5. Electric power service.
 - 6. Lighting.
 - 7. Telephone service.
- C. Support facilities include, but are not limited to, the following:
 - 1. Waste disposal facilities.
 - 2. Field offices.
 - 3. Storage and fabrication sheds.
 - 4. Lifts and hoists.
 - 5. Temporary elevator usage.
 - 6. Temporary stairs.
 - 7. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Site fence.
 - 2. Barricades, warning signs, and lights.
 - 3. Temporary enclosures.
 - 4. Temporary partitions.
 - 5. Fire protection.
- E. Related Sections include the following:
 - 1. Section 01330, "Submittal Procedures," for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 2. Section 01700, "Execution Requirements," for progress cleaning requirements.
 - 3. Divisions 2 through 16 for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.02 USE CHARGES

- A. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
- B. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

1.03 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 - 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

1.04 PROJECT CONDITIONS

- A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall 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.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat.
 - 2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Heating Units: Provide temporary heating units of type acceptable to the Owner that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed, and that are acceptable to authorities having jurisdiction for use inside this occupied building. Provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control. Do not use gasoline-burning space heaters, open flame, or salamander type heating units.
- C. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- D. Water: Potable.
- E. Site Fence and Gate Materials: 8'-0" high chain link fence, fabricated from 11-gage, galvanized 2-inch mesh, chain link fabric; mounted on galvanized steel pipe posts anchored by moveable concrete bases.

1. Gate Hardware: Hanging and latching hardware, with padlock hasp and padlock. Galvanized steel or other non-corroding material. Furnish 2 padlock keys to Architect.

2.02 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- C. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- D. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
- E. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- F. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

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

3.02 TEMPORARY HEAT DURING CONSTRUCTION

- A. After the addition or a portion of the addition is completely enclosed by either permanent construction or temporary enclosure, provide heat and ventilation to maintain the temperature within the enclosure between 55°F and 75°F, for curing or drying of completed installations, and for protecting installed construction from adverse effects of high humidity. Maintain heat and ventilation continuously in the enclosed area until Substantial Completion.
 1. These requirement is in addition to specific requirements elsewhere in the specifications for temperatures to be maintained during storage, application or installation, curing, and after installation.

- B. Humidity Control: Maintain humidity in the enclosed structure within limits which will not dampen, warp, or otherwise damage building materials, or support mold growth. If visible water is condensing on interior surfaces, the humidity is too high, and the Contractor shall immediately provide dehumidification as necessary to reduce the humidity, either by using the building systems, or by providing and using temporary dehumidification equipment as required, or as directed by the Architect or the Owner's Project Manager.
- C. Maintain such heat, ventilation, and humidity control 24 hours a day, where required to achieve specified results and prevent damage to the Work.
 - 1. Evidence of "damage" may include, but is not limited to the following:
 - a. failure to develop compressive strength, bond strength, or adhesion.
 - b. warping.
 - c. mold.
- D. To monitor temperatures, furnish and install one accurate Fahrenheit thermometer at each work area up to 2,000 square feet in area, and one additional accurate Fahrenheit thermometer for every additional 2,000 square feet of enclosed space.
 - 1. Record temperatures throughout the building every two hours; at the end of the day, sign the record and deliver 3 copies to the Architect and the Owner's Project Manager. Place one copy of the daily temperature records into the Project Record Document files.
- E. Whenever heating and ventilating systems are in operation, also provide labor for continuous direct attendance of these systems, 24 hours a day, 7 days per week, Saturdays, Sundays, and holidays included, throughout the progress of the work, for frequent inspection of the system, for emergency repairs, and for recording temperatures.
- F. Comply with applicable safety regulations, including provisions for adequate ventilation and fire protection, when installing and operating heating devices. Do not use heating devices which may cause damage to finish surfaces.

3.03 OTHER TEMPORARY UTILITIES

- A. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Provide rubber hoses as necessary to serve Project site.
- B. Sanitary Facilities: Provide temporary toilets and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 - 2. Toilets: Use of Owner's existing toilet facilities will not be permitted. Provide self-contained toilets for use by Contractor's personnel.

3. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
- C. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- D. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
- E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Provide one 100-W incandescent lamp per 500 sq. ft. (45 sq. m), uniformly distributed, for general lighting, or equivalent illumination. Provide one 100-W incandescent lamp every 50 feet (15 m) in corridors. Provide one 100-W incandescent lamp per story in stairways and ladder runs, located to illuminate each landing and flight.
 3. During application of interior finishes, including but not limited to resilient flooring and paints, and for architect's inspection of interior finishes, have permanent lighting in operation, or provide temporary lighting which simulates the permanent lighting.
- F. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities. Cell or mobile phones will be acceptable.
 1. Prepare and distribute a list of important telephone numbers; also post this list beside hard-wired telephones, and at central locations for ready reference by individuals with cell or mobile phones.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Architect's home office.
 - e. Owner's Project Manager's office.
 - f. Principal subcontractors' field and home offices.
 2. Provide an answering machine on superintendent's telephone.

3.04 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
 2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.

3. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Waste Disposal Plan/Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Section 01700, "Execution Requirements" for progress cleaning requirements.
1. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
 2. Make provision for separation of recyclable materials at the point of collection (Material Specific Resource Recovery), for example, by placing and maintaining color-coded and labeled collection containers for each type of recyclable material on each level of the construction site to facilitate separation of materials.
 3. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for other types of waste material.
- C. Contractor's Field Office: Provide a trailer on site, outfitted as Contractor's Field Office.
- D. Storage Trailers: Provide trailers equipped to accommodate materials and equipment involved. Coordinate location on site with Owner.
- E. Lifts and Hoists: Provide facilities for hoisting materials; hoists or cranes at Contractor's option. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Elevator Usage: Do not use permanent elevators for construction purposes unless expressly authorized by the Owner in writing. If such authorization is given, take care to protect elevators and hoistway entrances from damage as described below.
1. New Elevator: When using the new permanent elevator, install temporary enclosure within or in place of the finished enclosure. After car finishes have been installed, protect as for existing elevator.
 2. Existing Elevator: Install protective blankets and provide other protection necessary to protect elevator car and entrance doors and frame from damage.
 3. If, despite such protection, the existing elevator or hoistway entrances are damaged, at or before the date of Substantial Completion restore to pre-construction condition.
- G. Existing Stair Usage: Limit construction access to Stair No. 6. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings on landing floors, treads, railings, and walls, as required to protect stairs from damage by Construction activities. If, despite such protection,

stairways are damaged, at or before the date of Substantial Completion restore to pre-construction condition.

3.05 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- B. Site Fence and Gate: Secure the Contractor's staging and trailer area to prevent unauthorized entry by installing an 8-foot high chain link enclosure fence with lockable entrance gates at location indicated on Drawings.
- C. 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 public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- D. 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. (These requirements are intended to supplement but not replace OSHA safety requirements.)
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 - 2. Vertical Openings: Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
 - 3. Horizontal Openings: Close openings in floor and roof decks with load-bearing wood framed construction.
 - 4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
 - 5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. (9.2 sq. m) in area, use fire-retardant-treated material for framing and main sheathing.
- E. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise. Provide plastic sheets or tarps with taped edges to contain dust and debris. Enclose new openings with plastic or plywood until permanent partitions and doors are in place.
 - 1. Locate and install temporary partitions in accordance with Section 01732 to separate selective demolition areas from occupied areas.
 - 2. During construction of the addition, provide dustproof partition isolating the existing building for the duration of construction.

- F. Temporary Fire Protection: Until completion of the work, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, visible and accessible from space being served, with sign mounted above.
 - a. Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
 - b. Locate fire extinguishers where convenient and effective for their intended purpose; provide 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 firefighting. Prohibit smoking in hazardous fire-exposure areas.
 4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
 5. Develop and supervise an overall fire-prevention and first-aid fire-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.
 6. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

3.06 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Environmental Controls: Operate and maintain heating, cooling, humidity control, and ventilation on a 24-hour per day, 7-days a week basis, where required to maintain appropriate temperatures for conditioning, installation, and curing, and to avoid the possibility of damage after installation.
- D. 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.
- E. 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.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities and exterior staging areas used during construction period. Comply with final cleaning requirements in Section 01770, "Closeout Procedures."

END OF SECTION 01500