

## SECTION 01 50 00 - TEMPORARY FACILITIES AND UTILITIES

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.02 SUMMARY

- A. This Section specifies requirements for temporary services and facilities including utilities, Construction and support facilities, security and protection, as specified below. The Scope of work includes installation, maintenance and removal of utilities.
- B. Temporary Construction and Support Facilities required include, but not limited to:
  - 1. Sanitary facilities shall be provided by General Trades Contractor.
  - 2. Each Prime Contractor shall provide for his own hoisting and scaffolding.
  - 3. Each Prime Contractor shall furnish safety and first aid supplies.
- C. Security and Protection Facilities required included, but are not limited to:
  - 1. General Trades Contractor shall provide temporary fire protection and extinguishers.
  - 2. The General Trades Contractor shall provide barricades, warning signs and lights for all areas other than those provided by the Site Contractor.
  - 3. Environmental protection shall be provided by all Trades.
  - 4. Securing of the project area shall be provided by General Trades Contractor.
  - 5. General Trades Contractor to provide temporary fencing on site where indicated.
- D. Quality Assurance:
  - 1. Regulations: All trades shall comply with industry standards and applicable laws and regulations of authority having jurisdiction, including but not limited to:
    - a. State Building Codes.
    - b. Health and Safety Regulations.
    - c. Utility Company Regulations.
    - d. Police, Fire Department, and Rescue Squad rules.
    - e. Environmental Protection Regulations.

#### 1.03 PROJECT CONDITIONS

- A. Conditions of Use: Each Prime Contractor shall keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities or permit them to interfere with progress. Do not allow hazardous or unsanitary conditions or public nuisances to develop or persist on the site. Report any unsafe conditions noticed to the General Trades Contractor.

### PART 2 - PRODUCTS

## 2.01 MATERIALS

- A. General: Provide new materials or, if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used for temporary construction. Provide materials suitable for the use intended.
- B. Water: Provide potable water approved by local Health Authorities. Each Prime Contractor is responsible for providing potable water as approved by local health authorities for their personnel.
- C. Construction Safety Fence: Four-foot (4') high plastic orange fence, supports as required.
- D. Site Security Fence: Provide six foot (6') high chain link fence with movable bases as applicable for each condition.

## 2.02 EQUIPMENT

- A. Electrical Outlets: The Electrical Contractor shall provide properly configured NEA polarized outlets to prevent insertion of 110-120 volt 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.
- B. Electrical Power Cords: Each Prime Contractor shall 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.
- C. Lamps and Light Fixtures: The Electrical Contractor shall provide and maintain rough service light fixtures and lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where light fixtures are exposed to potential breakage. Electrical Contractor shall provide a minimum of one 150 watt light fixture in each room. Electrical Contractor shall provide sufficient temporary lighting to provide a minimum of 20 foot candles as measured at floor level, in all indoor work areas. Lighting and receptacles will not be on the same circuits.
- D. Task Lighting: Each contractor shall provide their own temporary task lighting to provide additional lighting as may be required in work areas where the 20 foot candles of lighting provided by the Electrical Contractor is in-sufficient.
- E. 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.
- F. Temporary Office: Provide prefabricated or mobile units or similar job built Construction Offices with lockable entrances, operable window and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

- G. Temporary Toilet Units: Provide self-contained single occupant toilet units of the chemical, aerated re-circulation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material. Provide one (1) unit for every fifteen (15) workmen on the project.
- H. First Aid Supplies: All Contractors shall comply with governing regulations. All Contractors shall have a first aid kit and comply with all governing regulations.
- I. Fire Extinguishers: Provide hand carried, portable UL rated, Class "A" Fire extinguishers for temporary office 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 classed for the exposures. Comply with NFPA 10 classification, extinguishing agent and size required by location and class of fire exposure.

## PART 3 - EXECUTION

### 3.01 TEMPORARY UTILITY 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.
- B. Permanent Facility Permanent Facility Warranties: Use of permanent facilities prior to substantial completion shall not reduce the one (1) year warranty period for permanent facilities from the date of substantial completion.
- C. General Trades Contractor shall pay all project related monthly water usage fees.
- D. Temporary Electric Power Distribution:
  - 1. As soon as the Architect notifies the Electrical Contractor after the start of the work at the project site, the Electrical Contractor shall provide temporary electrical power distribution system, sufficient to accommodate temporary lighting and construction operations including the use of power tools, but not including heavy duty electrical welding units, electric hoists, terrazzo grinders, electrical heating units and start up of specified building equipment which must be tested, started or placed into use prior to completion of its permanent power connections, Provide weatherproof, grounded wiring with overload protection, with direct wired connections, where feasible, and for all voltages over 120 volts. Locate multiple outlets, not less than 5 gang, spaced so that entire area of construction can be reached by power tools on a single extension cord of 100' maximum length.
    - a. The Owner shall pay for all building project related electrical power usage via existing metering at the existing switchboard located at the High School.
    - b. The Electrical Contractor shall provide service with ground fault circuit interrupter feature activated from each circuit of 20 amp or less rating.
    - c. Where a service of a type other than herein mentioned is required, the Contractor requiring the same shall install and pay all costs for such special service, including power requirements for temporary offices. Each Contractor shall also be responsible for their own generator for temporary electric where power cannot be obtained within a reasonable distance from the temporary

electric services indicated on the Site Utilization Plan.

- d. As permanent power distribution system is accepted as substantially complete, either entire system or usable portions thereof, the Electrical Contractor shall make suitable provisions for temporary use thereof, and remove unused portions of temporary system.
- e. The Electrical Contractor shall maintain and operate permanent electrical supply and distribution system until time of final acceptance and transfer of operation to Owner's personnel.

E. Temporary Lighting:

1. As permanent lighting system is substantially complete, for each area or usable portion thereof, make suitable provisions for temporary use thereof and remove unused portions of temporary lighting system.
2. Electrical Contractor shall maintain and operate permanent lighting system until time of final acceptance and transfer of operation to Owner's personnel.
3. Electrical Contractor shall replace all lamps in permanent light fixtures that are burned out or noticeably dimmed by substantial use.

F. Storm Sewers and Drainage:

1. Comply with the soil erosion and sedimentation control plan and locate authorities having jurisdiction. Site Contractor to notify the County Conservation District three (3) days prior to start of construction.

### 3.02 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. General:

1. Locate field offices, storage, sanitary facilities, and other temporary construction and support facilities for easy access and as directed by the Architect.
2. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet of building lines.

B. Temporary Heating, Ventilating and Air Conditioning:

1. The HVAC Contractor shall provide temporary heat, ventilation, dehumidification as necessary or required by construction activities, for curing or drying of completed installation or protection of installed construction from adverse effects of low or high temperatures or high humidity.
2. 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 consumption of energy once the structure is enclosed.
3. Once the structure is enclosed, maintain acceptable temperatures to allow for the installation of all finishes and a minimum temperature of 55 degree F inside temperature when the outside temperature is 0 degree F.
4. Provide temporary humidity control for installation of materials requiring permanently conditioned spaces.
5. Except where use of the permanent system is authorized, provide vented self contained LP gas or fuel oil heaters with individual space thermostatic control. Use of gasoline burning space heaters, open flame, or salamander type heating units is prohibited.
6. After the permanent heating and air conditioning system are generally ready for

use and the conditions of construction requires continuous 24 hour heat in the building, the HVAC Contractor shall provide temporary heat using the permanent heating system. The entire building shall be conditioned so that final finishes can be applied. The Owner shall pay for all fuel and monthly electric usage bills required for providing temporary heat and air conditioning after the HVAC system are generally ready for use. It shall be the HVAC Contractor's responsibility to ensure that the permanent HVAC system is generally ready for use within 30 days after equipment start-up for that area as defined in the most current project schedule. After the permanent HVAC system is functioning adequately to provide the necessary minimum temperature requirements in each area, the temporary heating systems provided by the HVAC Contractor shall be removed and the HVAC Contractor shall assume responsibility for maintaining the permanent heat, air conditioning and dehumidification systems.

7. All permanent heating and air conditioning equipment used to supply temporary heat and air conditioning shall be completely cleaned and reconditioned by the HVAC Contractor prior to final acceptance. The Owner may elect to inspect all equipment and systems before final acceptance. Install new disposable filters and clean non-disposable filter prior to final acceptance. The one (1) year warrantee for permanent heating and air conditioning equipment shall become affective from the date of substantial completion. HVAC Contractor shall pay charges for extended warrantee for use of permanent systems prior to substantial completion.
  8. The HVAC Contractor shall replace the filters in the air handlers during the temporary heat and A/C period on an as needed basis as determined by the Construction Manager.
  9. The HVAC Contractor shall remove all soot, smudges, and other deposits from the walls, ceilings, and all exposed surfaces that are the result of the use of temporary heating equipment including the use of the permanent heating system for temporary heat purposes. The General Trades Contractor shall not do any finish work until all such surfaces are properly cleaned.
- C. Temporary Ventilation: The trade requiring ventilation for work to expel fumes or to provide circulation of air is required to provide their own methods to induce the circulation or ventilation.
- D. Field Offices:
1. Prime Contractors may, at their own option and expense including utilities, provide offices for their personnel. Each Prime must maintain on the site a copy of all Contract Documents, Change Orders, supplemental drawings, shop drawings, and submissions and a set of as-built prints.
  2. Each Contractor shall maintain in their field office all OSHA required up to date Hazardous Communications Standards, MSDS information and emergency phone numbers and contract information.
- E. Sanitary Facilities:
1. General Trades Contractor shall provide temporary toilets. 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 at a rate of one (1) unit for every fifteen (15) workmen.
    - a. Provide toilet tissue and similar disposable materials for each facility.

2. Toilets: Install self contained toilet units of appropriate quantity dictated by manpower on site. Shield toilets to ensure privacy. Use of pit type privies will not be permitted. Provide means of locking toilet facilities when construction is not in progress.
  - a. Provide separate facilities for male and female personnel when both sexes are working in any capacity at the project site.
3. Drinking Water Facilities: Each Prime Contractor shall provide containerized tap dispenser bottle water type drinking water units, including paper supply for his personnel. Where power is accessible, the General Trades Contractor shall provide one electric water cooler in his trailer that maintains dispensed water temperature between 45 degrees and 55 degrees.

F. Temporary Enclosures:

1. The General Trades Contractor shall provide temporary enclosure, which shall include window openings, door openings, unit ventilator openings or any other openings in the exterior wall or roof. The definition of enclosed structure shall mean the block walls shall have been run and the roof decking and the roof insulation will have been installed before temporary heat and enclosures are to begin. It is not necessary for the exterior brickwork to be installed before enclosure work to begin. All activities are to be under the approval of the Construction Manager and building enclosures shall take place in the time frame as determined by the Construction Manager.
2. Where heat is needed and the permanent building enclosure is not complete, each Prime Contractor shall provide temporary enclosures where there is not other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
3. Install tarpaulins securely with fire retardant wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials.
4. Dust control partitions are to be provided by the Contractor who is creating dust and dirt in order to protect the surrounding conditions. Contractors are required to clean up debris caused by any operation.
5. Temporary partitions, including relocation and removal, will be provided by the General Trades Contractor for phased construction, as directed by the Construction Manager.
6. Interior temporary partitions will be constructed as directed by the Construction Manager to include 5/8" plywood on 2" x 4" framing, insulated, with plastic to contain dust (if required) from floor to deck (if required).

G. Temporary Lifts and Hoists: Truck cranes and similar devices used for hoisting materials are considered "tools and equipment", and shall be provided by the Contractor requiring same.

H. Project Identification and Temporary Signs:

1. General Trades Contractor shall provide project identification and other signs of the size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
2. Provide one (1) sign erected on the site, where directed to identify the project. Sign shall include Project Name, Owner's Name, Architect's Name, Construction

Managers Name, and name of all Prime Contractors. Architect to approve sign layout and design prior to fabrication and erection.

3. Engage an experienced sign painter to apply graphics.
4. Temporary Signs: Furnish and install signs to provide directional information to construction personnel and visitors.
5. Project Safety Sign: General Contractor shall provide a 4' x 8' plywood temporary safety sign mounted on Two (2) each 4" x 4" x 10' high posts. Sign shall be professionally painted and shall contain safety language as agreed upon with the Construction Manager.

I. Collection and Disposal of Waste:

1. The General Trades Contractor shall serve as the lead contractor for coordinating and maintaining a clean project site.
2. Each Prime Contractor is responsible for general clean up and trash removal resulting from the work or employees of that contract. The General Trades Contractor shall provide dumpster(s) as required for the purpose of trash removal for all Prime Contractors, except the Masonry and Roofing Contractors, who shall remove their own debris. Hazardous materials shall not be placed in dumpster but should be removed from site by Prime Contractor responsible for the material. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80 degrees F. (27 degrees C). Handle hazardous, dangerous, or unsanitary water material separately from other waste, by containerizing properly. Dispose of material in a lawful manner.
3. Each prime contractor is responsible to maintain a clean, safe and organized site. This includes, but is not limited to, clean-up on an as needed basis, but not less than weekly as coordinated by the Construction Manager.
4. It shall be the General Trades Contractor's responsibilities to broom sweep the project on a weekly basis. Identify cost of labor as separate line items on schedule of values for clean-up and trash removal. This requirement for the General Trades Contractor to provide weekly cleaning, does not eliminate the responsibility of other Contractors for clean up of material and waste caused by their actions or installation of work.
5. In a case where a Prime Contractor fails to adequately clean up, the General Trades Contractor shall notify the Architect in writing. The notification shall include the name of the Prime Contractor(s), and indicate the areas of the project that are in violation. Upon review, the Construction Manager may take corrective action and back-charge the responsible Prime Contractor.

### 3.03 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Do not change over from use of temporary security and protection facilities to permanent facilities until substantial completion or longer if requested by the Architect, except for the use of the permanent fire protection which shall be put into use as soon as available.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, the General Trades Contractor shall install and maintain temporary fire protection facilities of the types needed to protect against reasonable predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers".

1. Locate fire extinguishers where convenient and efficient for their intended purpose, but not less than two (2) extinguishers on each floor or 1 at each usable stairwell whichever is greater.
  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. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
  5. Each Prime Contractor is responsible for providing fire protection mats, a man assigned to fire watch, temporary fire extinguishers, and proper notification to other trades during any welding process.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the project, the respective Prime Contractor shall complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities
- D. Barricades, Warning Signs and Lights: The General Trades Contractor shall comply with standards and code requirements for erection of structurally adequate barricades. And install graphics, and warning signs to inform personnel and the public of potential hazards.
- E. Security Enclosure and Lock Up:
1. The General Trades Contractor shall install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security. If the site is indicated to be fenced in, it will be the General Trades Contractor's responsibility to lock all the gates each night.
  2. Each Prime Contractor is responsible for the secure storage of their own material and equipment both on and off the site.
- F. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and methods that comply with environmental regulations. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons near the site.

### 3.04 OPERATION, TERMINATION AND REMOVAL

- A. Remove each temporary facility when the need has ended.
- B. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period. Including but not limited to:
  1. The HVAC Contractor shall replace air filters and clean inside of ductwork and housings.
  2. The Electrical Contractor shall replace lamps that are burned out or noticeably dimmed by substantial hours or use.

END OF SECTION