

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Contractor shall provide all construction facilities and temporary controls specified in this Section and as necessary for the proper and expeditious prosecution of the Work.
- B. Contractor shall make or have made and pay all charges for all connections to and distribution from existing services and sources of supply.
- C. Contractor shall ascertain requirements of service and utility authorities relating to the Work. Comply with all such requirements, including those relating to continued protection and maintenance until completion of Work.
- D. Materials and construction for construction facilities and temporary controls may be new or used, must be adequate in capacity for required usage, and must not create unsafe conditions. Comply with requirements of Federal, State and Local authorities having jurisdiction.
- E. Construction facilities and temporary controls shall be maintained by Contractor in usable condition at all times until completion of Work or their removal is authorized by A/E or Owner's Representative.
- F. Relocate temporary services and facilities as required by progress of construction, by storage or work requirements, to accommodate legitimate requirements of Owner and other contractors employed at the Site, and when directed by Owner's Representative.
- G. When any portions of permanent systems are in operating condition, that part of the system may be used for construction purposes provided that the Contractor:
 - 1. Obtains Owner's approval.
 - 2. Assumes full responsibility for the system used.
 - 3. Pays all costs for operation, maintenance, cleaning, and restoration of the system to as-new condition.
 - 4. Operates the system under the supervision of the subcontractor responsible for system installation and ultimate performance.
 - 5. Does not affect specified warranty.
 - 6. Completely remove temporary services and facilities when their use is no longer required and at completion of Project, when directed by Owner's Representative.
- H. Clean and repair damage caused by temporary services and facilities to new condition for new work and to a condition as good as or better than existed prior to start of Work for existing construction, services, and facilities.

- I. Protection of Existing Improvements and Property: Unless otherwise required, water, gas, lighting, power and telephone conduits and wires, sewer lines, streets, curbs, driveway approaches, trees, landscaping, buildings and other surface and subsurface structures and lines, openings, finishes, furnishings, equipment, and similar improvements items, shall be protected by Contractor and shall not be disturbed, disconnected or damaged by him during progress of Work.
- J. Repair of Damage to Existing Improvements and Property: Should Contractor in performance of Work disturb, disconnect or damage any of the above items, remove, repair, or replace such disconnected or damaged items with materials, construction, and improvements matching existing undamaged work and restore to a condition as good as or better than existed prior to such disturbance, disconnection or damage at no additional expense to Owner.

1.3 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 - 1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.4 TEMPORARY UTILITIES AND SERVICES

- A. General: Arrange and pay for connections, materials and appurtenances required to provide temporary utilities and services.
- B. Payment: Pay the cost of services used (gas, water, and electricity) monthly.
- C. Temporary Utilities and Services: Provide the following temporary utilities and services for proper execution and protection of the Work.
 - 1. Metering: Arrange and pay for separate metering of utilities and services at this Project. Arrange for meters will be removed when temporary utilities and services when no longer required.
 - 2. Partial Substantial Completion: In the event that the Owner assumes the use (Substantial Completion) of one building or a part of a building or site, the Owner will assume responsibility for that portion of all utility costs as mutually agreed.
- D. Temporary Electrical Service:
 - 1. Contractor shall install all temporary electrical wiring, lamps, including meter pole and meter loop, for temporary lighting and power required to perform work of this Contract.
 - 2. Install and maintain temporary electrical systems in accordance with the current addition of the National Electric Code.
- E. Temporary Water:
 - 1. Contractor shall install all temporary water service, piping and control valves, including meters, for temporary water required to perform work of this Contract.

2. Install and maintain temporary water service systems from an approved domestic supply for all construction purposes in accordance with requirements of local authorities having jurisdiction.
- F. Temporary Heat and Ventilation: Provide temporary heat and ventilation, including installation, maintenance, operation and removal of systems, and costs of fuel, to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for installation of materials, for making necessary tests, and to protect materials and finishes from damage due to temperature and humidity.
1. For not less than 7 days prior to drywall erection and during application and taping operations, provide sufficient heat to maintain building temperature of not less than 55 deg. F., while maintaining adequate ventilation for drying of taping compounds.
 2. Before wood doors and any millwork are delivered to the building, for not less than 5 days prior to installing wood, and throughout the placing of this finish and other finishing operations such as painting, provide sufficient heat to maintain building temperature at 65 deg. F.
 3. Provide ventilation of enclosed areas to cure materials, control humidity, and prevent accumulations of dust, fumes, vapors and gas.
- G. Temporary Telephone Service: Provide and maintain telephone service with a minimum of one direct line instrument in the Contractor's field office and one direct line instrument in the Owner Representative's field office. Pay for costs of installation, maintenance and removal and service charges for local calls. Party who places the call shall pay toll charges, except toll calls made by Owner's and Architect's personnel related to project business shall be paid for by Contractor.
- H. Temporary Toilets and Sanitation: Provide service, clean, and maintain sanitary conveniences with proper enclosures, in conformance with requirements of local laws and ordinances governing such installations. Post notices, take such precautions as may be necessary, and do cleaning necessary to keep the building and the premises in a sanitary condition. From start of the Work, provide suitable temporary toilets and enclosures for the use of the workmen on the Job. Maintain same in a sanitary condition. Use of Owner's existing toilet facilities will not be permitted.
- I. Temporary Fire Protection: Construction practices, including cutting and welding, and fire protection during construction shall be in accordance with applicable requirements of Federal, State, and Local authorities having jurisdiction. Provide temporary portable firefighting equipment complying with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations" for classification, extinguishing agent, and size required by classes of fire exposure required by the Work. Provide prominently located multi-purpose type portable fire extinguishers, at least one in each wing on each floor.
1. Gasoline and other flammable liquids shall be stored in Underwriter's Laboratories listed safety containers. Do not store gasoline and other flammable liquids anywhere within the building.
 2. Do not light fires of any kind in or about the premises. Prohibit the use of salamanders.
 3. Schedule the Work so that the permanent fire protection system is installed and made operable at the earliest possible date. At such time, the Contractor shall furnish sufficient hose to provide adequate coverage of each floor.
 4. All tarpaulins that may be used for any purpose during the construction of the Work shall be made of material that is resistant to fire, water, and weather.

1.5 CONSTRUCTION AIDS

- A. Temporary Stairs, Ladders, Scaffolds, Runways, and Similar Facilities:
1. Provide and maintain all temporary equipment and construction such as temporary stairs, ladders, ramps, scaffolds, hoists, runways, derricks, chutes, and similar facilities as necessary for the proper execution of the Work. Derricks, cranes, and similar facilities shall comply with local airport restrictions.
 2. Provide temporary protective treads, handrails, and wall coverings at stairways.
 3. Scaffolding shall be furnished, installed, maintained, and removed as necessary for proper execution of the Work and shall be erected on the side of the wall on which facing work occurs. Scaffolding shall not be built into any finish facing material.

1.6 BARRIERS AND ENCLOSURES

- A. General: Construct temporary barricades, warning signs, hazard and warning lights, walks, passage-ways, and similar temporary barriers and enclosures that are necessary to protect persons and property from hazards or damage due to construction operations, and required by City, State or Federal laws, ordinances or codes.
- B. Construction Fences: Contractor shall furnish and install construction fences and gates within the limits of construction, prior to beginning of work so as maintain area free of unauthorized personnel, which includes Project working area and storage locations allocated by the Owner to the Contractor. Keep adjacent property free from disturbance, dust, and noise as much as feasible. Existing fences and gates that comply with the construction fence requirements may be used by Contractor providing they are turned over to Owner in usable condition without damage at Substantial Completion.
- C. Non-Movable Fences: Fencing and gates shall be minimum 6'-0" high, new material, chain link fabric tightly stretched between line posts (1-5/8" O.D. galvanized iron) at not more than 10 foot centers (tree protective posts 8 foot centers). Posts in earthen areas shall be plumbed and aligned, and firmly anchored in the ground at least 24" deep. Corner and gate posts (2-3/4" O.D. galvanized iron) shall have line posts within 6' and braced using clamps at posts. Posts that are machine pounded must be cut off flush and level at top. Gates shall be substantially constructed of materials similar to fence, equipped with hinges of adequate size and strength for operation and to maintain gate level. Provide security chain and padlock at each gate with 2 keys furnished to Owner's Representative. Fence posts in permanently paved and sidewalk areas shall be set in 4" thick concrete bases, 24" square or 30" round.
- D. Movable Fences: Fences that need to be moved frequently for access to the Site or to be movable tree protection shall be 6' high posts, using 5" non-climb wire fabric, 12.5 gage galvanized wire, 2" wide x 4" high openings, attached to posts set in concrete within an old tire to prevent post bases from marring pavements and sidewalks.
- E. Tree and Plant Protection: Provide barricades, fences, and guards as necessary to prevent damage to existing trees and shrubs indicated to remain including, but not limited to, the following:
1. Compaction of root area by equipment or material storage.
 2. Trunk damage by moving equipment, material storage, nailing or bolting.
 3. Strangling by tying ropes or guy wires to trunks or large branches.

4. Poisoning by pouring solvents, gas, paint and other toxic materials on or around trees and roots.
 5. Cutting roots by excavating, ditching and similar operations.
 6. Damaging branches by improper pruning; notify Owner's Representative for required pruning.
 7. Drought from failure to water or by cutting or changing normal drainage pattern past roots.
 8. Changes in soil pH factor by disposal of lime and other alkali based materials such as cement, fly ash, plaster, concrete, mortar and grout.
 9. Restrict machine excavating within the dripline of trees; conduct all excavating within dripline by hand. Do not cut roots 1-1/2" in diameter and over.
- F. Fence Maintenance and Removal: All fencing and gates shall be maintained deep straight and level, having a neat and uniform appearance during the construction period and upon completion, before acceptance of the Work, shall be removed from the Site and post hole filled to original condition.
- G. Temporary Enclosures and Protection:
1. Provide temporary weather-tight enclosure of exterior walls for successive areas of the building as work progresses, as necessary to provide acceptable working conditions, provide weather protection for interior materials, allow for effective temporary heating, and to prevent entry of unauthorized persons.
 2. Temporary Partition and Ceiling Enclosures: Framing and sheet materials that comply with structural and fire rating requirements of applicable codes and standards.
 - a. Close joints between sheet materials, and seal edges and intersections with existing surfaces, to prevent penetration of dust or moisture.
 - b. Provide temporary doors with self-closing hardware and padlocks as required for security.
 - c. Provide removable portions of enclosures as necessary for work and for handling of materials.
 3. Protection of Installed Work: Provide protection for installed work so that it will be without damage at time of acceptance by Owner. Control traffic in immediate area to minimize damage. Provide protective coverings at walls, projections, jambs, sills and soffits of openings. Protect finish floors and stairs from traffic, movement of heavy object, storage and similar construction operations. Prohibit traffic and storage on waterproofed and roofed surfaces, on lawn and landscaped areas.
 - a. Concrete, cement, mortar, grout, sludge, plaster and similar materials shall not be placed in or washed down storm and sanitary sewers, plumbing lines or fixtures.
 4. Protect improvements on Owner's and adjoining properties.
- H. Site Improvements: Unless otherwise specified or directed, carefully protect existing walks, lawns, other buildings, and other work on Site, whether specifically indicated on the Drawings or not. Damaged areas of curbs, walks and paving will not be permitted to be patched; remove entire section between expansion joints in which the damage occurs and replace with construction to match existing adjacent work.

- I. Responsibility for Injury and Damage: The Contractor is responsible for injury to the Work and persons due to failure of barrier and enclosure work to protect it; and wherever evidence is found of such injury, the Owner may order the work so injured to be immediately removed and replaced by the Contractor. All costs and expenses for such occurrences shall be the responsibility of the Contractor at no additional expense to Owner. Contractor's responsibility for maintenance of barrier and enclosure work shall not cease until the Project has been completed and is accepted by Owner.

1.7 SECURITY

- A. Provide security program and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program. Project security within limits of construction is Contractor's responsibility.

1.8 PARKING, ACCESS DRIVES, AND TRAFFIC

- A. Parking: Parking for workmen employed on the Site may be provided within construction limits or at a remote location if needed to the extent that space for that purpose may be available without interference with the activities related to performance of the Work. On-site parking other than within construction limits shall only be as approved by Owner's Representative. Contractor shall pay all associated parking fees.
 1. Reserved Parking: Allocate two spaces convenient to offices for use of the Owner's Representative and A/E.
- B. Traffic Control: Prior to start of Work, examine construction vehicle routing, and safeguards and procedures necessary to carry out the Work. In addition, be responsible for and observe the following:
 1. Be responsible for controlling construction traffic within and adjacent to the Site.
 2. Provide all entrances, lifts and safeguards required or necessary to the progress of the Work, and effectively control such traffic to provide minimum hazard to the Work and all persons.
 3. Route all construction equipment, trucks, and similar vehicles on existing public streets to and from the Site as approved by the Owner's Representative, and on Site as indicated on the Drawings.
 4. Construct and maintain temporary walks for pedestrians. Keep streets adjacent to the Site open to vehicular and pedestrian traffic.
 5. Maintain constant access for police, fire and ambulance service.
 6. Provide and maintain for proper control of traffic and safety of all concerned:
 - a. All necessary barricades, suitable and sufficient lights, reflectors, and danger signals.
 - b. Warning and closure signs, directional, and detour signs.
 - c. All traffic control devices furnished and installed in compliance with the Texas Manual on Uniform Traffic Control Devices as prepared by the State Department of Highways and Public Transportation.
 7. Provide on a 24-hour basis for all restricted and dangerous conditions existing on or adjacent to the Site:
 - a. Illuminate barricades, danger signals, warning signs and obstructions at night.
 - b. Keep warning lights burning from sunset until sunrise.

1.9 TEMPORARY CONTROLS

- A. **Cleaning During Construction:** Contractor at all times shall keep the premises free from accumulation of waste materials and rubbish caused by operations for the entire Work. Provide a collection can at each area used for eating. Pick up garbage daily. Keep Project Site free of garbage, trash, vermin and rodent infestation. Contractor, by agreement, shall require each subcontractor to collect and deposit waste and rubbish caused by subcontractor operations at pre-designated location. Clean interior areas prior to start of finish work. Maintain areas free of dust and other contaminants during finishing operations.
- B. **Traffic Control:** Conduct construction operations and the removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- C. **Noise Control:** In and around occupied areas, minimize use of noise producing equipment. Work with noise producing is subject, at all times, to Owner's approval of entire procedure. Use only on a scheduled basis as agreed with Owner's Representative prior to start of Construction operations.
- D. **Pollution Control:**
 - 1. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by discharge of noxious substances from construction operations.
 - 2. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soil or liquids. Excavate and dispose of contaminated earth off site and replace with suitable compacted fill and topsoil.
 - 3. Take special measures to prevent harmful substances from entering public waters. Prevent disposal of wastes, effluents, chemicals or other such substances adjacent to streams or in sanitary or storm sewers.
 - 4. Provide systems for control of atmospheric pollutants. Prevent toxic concentrations of chemicals. Prevent harmful dispersal of pollutants into atmosphere.
- E. **Dust Control:** Provide positive methods and apply dust control materials to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.10 FIELD OFFICES AND SHEDS

- A. Contractor shall provide its own field office and storage sheds within the premises, maintain same, and remove it upon completion of the Work. Temporary offices and storage rooms may be provided within building spaces if approved in writing by Owner's Representative prior to bid, or without Owner's approval, as follows:
 - 1. Provide weathertight construction office for Contractor with sufficient light, heating, air conditioning, ventilation, and insulated roof. General arrangement, construction, and equipment for office shall be reviewed with A/E and approved by Owner prior to starting construction. Provide adequate table, plan rack, desk chairs, file cabinets of sufficient capacity to accommodate a copy of submittals and correspondence concerning the Project, and non-pay telephone.

- a. Separate Direct Line Telephone: Contractor shall pay for installation, maintenance, removal and all charges for use of this telephone including long distance calls. The telephone shall remain until the full completion of the Work and shall be removed when directed by Owner's Representative.
 - b. Heating: Automatic heating to maintain 70 degrees F. (air conditioner may contain required heating element).
 - c. Cooling: Automatic air conditioner (window type) to maintain 75 degrees F.
 - d. Office Desk: 30" x 60" minimum size with swivel chair.
 - e. Layout Counter: 30" x 60" minimum size with drafting stool.
 - f. Filing Cabinet: One four-drawer letter size with lock.
 - g. Plan Rack: One plan rack to hold minimum of (6) 30" x 42" sets of drawings.
 - h. Light Fixture: One 4-tube exposed lamp fluorescent light fixture.
 - i. Convenience Outlets: Two duplex convenience outlets.
 - j. Window: One operable window minimum equal in size to 10% of the floor area, located to provide view to construction area.
 - k. Waste Basket: one.
 - l. Shelving: Six feet of 10" deep shelving.
 - m. Maintenance: Keep office weathertight, warm, comfortable, and swept clean and remove refuse twice weekly. Provide soap, paper towels, and toilet paper.
2. Provide and maintain suitable, substantial, weathertight storage facilities of acceptable appearance in which to store materials that would be damaged by the weather. Storage space shall be of sufficient size to hold all such materials required on Site at one time, and if the storage space is outside the building, it shall have floors raised at least 6" above the ground on heavy joists or sleepers.
 3. Provide fenced areas for storage of materials and workmen's parking of the sizes and of locations designated on the drawings. Should the Contractor require additional storage area beyond that indicated on the Site, contractor shall arrange for such storage facilities off-campus, at no additional cost to Owner. Contractor may use areas within the immediate construction area for storage only with the approval of the Owner's Representative. However, such approval will not be given if such storage encumbers the working space, loads the structure prematurely, or exceeds the design live load for the specified area of the structure.
 4. Building materials, Contractor's equipment and similar items necessary for prosecution of the Work, may be stored on the premises, the placing and handling of same shall be such that they can be inspected at all times.
 5. When any area in the building is used for a storeroom, shop or similar use, the Contractor shall be responsible for repairs, patching, and cleaning arising from such use. All such replacement costs and expenses shall be borne by contractor at no additional expense to Owner.

1.11 RELATED WORK

A. Related Work of Other Sections:

1. Section 01 11 00 – Summary of Work: Requirements for use of the site, sequence of Work.
2. Section 01 60 00 – Product Requirements: General procedures for delivery, storage, handling and installing materials and equipment, and substitution procedures after receipt of Bids.

3. Section 01 71 16 – Acceptance of Conditions: Requirements for examination of the Site and existing facilities, concealed utilities and services, and protection of existing facilities and services.
4. Section 01 77 00 –Closeout Procedures: Closeout procedures, record drawings, maintenance manuals, warranties and other closeout submittals.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Provide new materials. Undamaged, previously used materials in serviceable condition may be used as approved by the Architect. Provide materials suitable for the use intended.

PART 3 - EXECUTION

3.1 INSTALLATION

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

3.2 MAINTENANCE

- A. Keep temporary facilities, services, and controls clean and neat; relocate as required by progress of the Work; and completely remove temporary facilities, services, and controls when their use is no longer required.

3.3 CLEAN-UP AND REPAIR

- A. Clean and repair damage caused by temporary facilities, services and controls to new condition for new work and as good as or better than existing conditions prior to start of the Work.

END OF SECTION 01 50 00