

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements for temporary facilities and controls.

1.2 GENERAL REQUIREMENTS

- A. The General Contractor shall provide and maintain all temporary facilities, controls, and construction aids as specified here-in, until they are replaced by permanent work, or until Project Substantial Completion, as appropriate.
 - 1. Temporary facilities removed from the Project shall remain the property of the Contractor, except as otherwise specified.
- B. Except where specifically noted otherwise, cost or use charges for temporary facilities, utility services, controls, and construction aids and similar items specified in this Section or as required to perform the Work, are not chargeable to the Owner or Architect, and will not be accepted as a basis of claims for a Change Order.
- C. Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time when they are no longer needed, or when permanent facilities have, with authorized use, replaced the temporary facilities.
 - 1. Locate temporary facilities where they will serve Project adequately and result in minimum interference with performance of the Work.

1.3 SUBMITTALS

- A. Submit the following under provisions of Section 01 33 00 SUBMITTAL PROCEDURES:
 - 1. Reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.
 - 2. Schedule showing implementation and termination of each temporary utility within 15 days of commencement of the Work.
 - 3. Shop drawings:
 - a. Temporary signage.
 - b. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.4 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 REFERENCES.
 - 1. ANSI A 10 -Safety Requirements for Construction and Demolition.
 - 2. NFPA 70 -National Electrical Code.
 - 3. NFPA 241 -Building Construction and Demolition Operations.

1.5 TEMPORARY UTILITIES, GENERAL REQUIREMENTS

- A. General Installation: Install temporary utility service(s), or connect to existing service(s) as indicated, and as specified. Comply with all applicable laws, regulations, and requirements of authorities having jurisdiction.

- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 TEMPORARY UTILITIES, ELECTRICITY

- A. Temporary electricity: The Owner will pay for electrical energy required for temporary light and power. The Contractor is required to hire an electrician licensed where project is located to provide temporary feeders of sufficient capacity from the facility's power lines, at the point coordinated with the Owner, to furnish electric light and power requirements for the work, while under construction.
 - 1. Metering: The Owner reserves the right to require separate metering and for the Contractor to pay for electricity used, if, in the Owner's opinion, electricity is being wasted.
 - 2. Electric power service: Use of existing electric power service will be permitted, as long as equipment is sufficient for Contractor's needs and is maintained in a condition acceptable to Owner. Provide additional weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics as required to furnish temporary electricity for construction operations. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
 - a. Connect temporary service to Owner's existing power source, as directed by Owner.
 - b. Heavy electrical loads such as welding and other equipment with similar special power requirements must be powered by individual installers using portable electric generators at each users own cost.
 - 1) Except as otherwise specifically provided, all additional costs resulting from such use shall be borne by the Contractor.
 - 3. Distribution: A grounded receptacle (outlet) for an extension cord shall be provided by the Contractor within one hundred (100) feet of any part of the building. Each user is responsible for its own work lamps and extension cords.

1.7 TEMPORARY UTILITIES, LIGHTING

- A. Temporary lighting: Provide lighting with local switching to fulfill security requirements and provide illumination for construction operations and traffic conditions. Maintain lighting and provide routine repairs.
 - 1. Maintain a minimum lighting intensity of at least one 200 watt lamp per 1000 square feet of floor area of building. Provide higher lighting intensities necessary for finish work or special construction operations, when required.
 - 2. Permanent building lighting may be utilized. Immediately prior to the Architect's inspection for substantial completion the Contractor is required to replace all used lamps which are broken or have burned out.
 - 3. Install and operate temporary lighting with switching, that fulfills security and protection requirements without operating entire system.

1.8 TEMPORARY UTILITIES, TELEPHONE

- A. Temporary telephone service: Provide telephone service at time of project mobilization, and pay all costs for installation, maintenance, and removal. The Contractor shall pay service charges for local calls; toll charges shall be paid by party who places call. Service and equipment required includes the following:
 - 1. For Contractor's Field Office.
 - a. Provide one direct line service dedicated for use by the Contractor, and personnel engaged in construction.
 - b. Cellular (mobile) phone service for Contractor's Superintendent, continuously maintained until Project Substantial Completion.
 - c. One (direct) separate line for facsimile (FAX) machine.

1.9 TEMPORARY UTILITIES, WATER

- A. Temporary water: Contractor is permitted to use existing hose bib(s). Owner will pay for water necessary for the Work; exercise measures to conserve water.
 - 1. Protect piping and fittings against freezing.

1.10 TEMPORARY HEATING AND COOLING

- A. Temporary heat: Provide heat for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Provide vented self-contained liquid propane gas or fuel oil heaters with individual space thermostatic control, UL approved and acceptable to local fire department. Use of gasoline-burning space heaters, open flame, or salamander type units is prohibited.
 - 1. Vent heaters directly to outside air, in areas where concrete is less than 15 days old.
 - 2. In enclosed areas, maintain a minimum temperature of 50 degrees Fahrenheit; provide higher temperatures where required by individual specification sections.

1.11 TEMPORARY VENTILATION AND HUMIDITY CONTROL

- A. General:
 - 1. Humidity Control: Monitor and regulate relative humidity as required for the installation of all interior products. Relative humidity shall be maintained within the limits set by manufacturers of all interior materials and equipment. Refer to individual specification sections in Divisions 6, 8, 9, and 10 for additional environmental requirements.
 - a. Contractor shall enclose interior work areas, protect from weather, and maintain specified temperature and humidity prior to commencement of construction activities relating to interior finishes.
 - 2. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.
 - a. During construction, Contractor shall meet or exceed the minimum requirements of the SMACNA IAQ Guideline for Occupied Buildings under Construction 1995, Chapter 3.
- B. Monitor Humidity: Provide Hygrometer to measure temperature and relative humidity in each construction area.
 - 1. Provide dehumidifier(s), as required to maintain humidity of enclosed areas below 70 percent. Humidity level shall be maintained in all areas where interior finish work is being performed, and all areas where interior finishes has been completed.
 - 2. Provide fans as specified herein, and as required to eliminate significant variation in humidity levels within enclosed spaces.
- C. Temporary Construction Ventilation: Contractor shall maintain sufficient temporary ventilation of areas where materials are being used that emit VOC's and maintain ventilation continuously during installation and until emissions dissipate after installation. If continuous ventilation is not possible via the building's HVAC system(s) then Contractor shall supply ventilation via open windows and temporary fans, sufficient to provide no less than three air changes per hour.
 - 1. Vent all areas directly to outside. Areas shall not be vented to other enclosed areas.
 - 2. During dust producing activities (e.g. drywall installation and finishing) Contractor shall turn off ventilation system and protect openings in supply and return HVAC system from dust infiltration. Provide temporary ventilation as required.
 - 3. Dissipation of VOC's: The period after installation shall be sufficient to dissipate odors and elevated concentrations of VOCs. A minimum time period of 72 hours is required except where longer periods of time are specified under individual specification sections.

- D. Preconditioning: Prior to installation, Contractor shall allow products which have odors and VOC emissions to off-gas in dry, well-ventilated space outside of building for 14 calendar days, in order to allow for reasonable dissipation of odors and emissions.

1.12 FIELD OFFICES AND SHEDS

- A. General: Designated existing spaces may be used for field offices and for storage.
 - 1. Availability: Provide offices ready for occupancy within 15 days after date fixed in Notice to Proceed.
 - 2. Availability: Provide offices ready for occupancy within 15 days after date fixed in Notice to Proceed.
 - 3. Location: The location of the field office(s) and storage areas for equipment and materials shall be located where accepted by the Owner's Project Manager.
 - a. Offices and sheds located within the construction area, or within 30 feet of building lines shall be of noncombustible construction. Comply with requirements of NFPA 241.
 - 4. General:
 - a. Contractor shall provide periodic cleaning and maintenance of field offices and storage areas.
 - b. Provide air conditioning and heating to maintain a temperature range of 65 to 78 degrees F.
- B. Contractor's field office(s): Provide habitable office(s) or space, of size to accommodate personnel, include as a minimum the following:
 - 1. Size: For Contractor's needs and to provide space for project meetings.
 - 2. Furnishings:
 - a. Conference table and chairs to seat at least 12 persons;
 - b. Racks and files for Contract Documents, submittals and Project Record Documents.
 - 3. Hard-hats for site visitors.
 - 4. Duplex convenience outlets, at least one per wall.
 - 5. Telephone service as specified herein above.
 - 6. Other equipment and furniture as the Contractor deems necessary.
- C. Storage and fabrication sheds: Provide as required, sheds, equipped to accommodate materials and equipment involved.
 - 1. Subcontractors are responsible for their own storage facilities, coordinate locations.
- D. When permanent facilities are enclosed with operable utilities, relocate offices and storage into building, with written agreement of Owner, and remove temporary buildings.

1.13 SANITARY FACILITIES

- A. Sanitary facilities: Provide self-contained single-occupant chemical toilet units, wash facilities and drinking water fixtures.
 - 1. Existing facilities located in the building may not be used by the Contractor's personnel.
- B. Provide toilet tissue, paper towels, paper cups, cleaning compounds and similar materials.
- C. Maintain facilities and keep clean, provide covered waste containers for used material.

1.14 FIRST AID AND FIRE EXTINGUISHERS

- A. First aid supplies: Comply with governing regulations.
- B. Fire extinguishers: Provide and maintain on site, adequate fire extinguishers UL rated for A-B-C type fires. Provide red-painted plywood standards for each extinguisher. Additionally provide a dry chemical fire extinguisher at each location where welding, torch cutting and other similar hazardous work is in progress.

1.15 CONSTRUCTION AIDS – TEMPORARY HOISTS AND CRANES

- A. Hoisting equipment and machinery: Furnish all hoisting equipment, crane services and lift machinery required to perform the Work of this Contract. Install, operate and maintain in safe condition.
 - 1. Do not charge applicators and installers for these services during normal working hours.

1.16 CONSTRUCTION AIDS – SCAFFOLDING, PLATFORMS, STAGING, CHUTES

- A. Provide all ladders, ramps, runways, platforms, railings, chutes, and other mounted or installed construction aids as specified herein and as required to facilitate the Work. Furnish and erect construction aids and maintain in safe condition for the use of all subcontractors, installers and applicators.
- B. Furnish and erect scaffolds, staging, and maintain in safe condition, dismantle when no longer required. The Contractor shall provide scaffolds, staging, and other similar raised platforms, required to access the Work.
- C. Ladders, temporary stairs, platforms and railings, shall comply with OSHA guidelines.
 - 1. Provide and maintain temporary stairs until permanent stairs are in place and functional. When permanent stairs are erected, provide temporary railings and guards. Protect permanent stairs with temporary covers and protective treads.
 - 2. Portable ladders and mobile platforms of all required heights, shall be provided by individual users.

1.17 VEHICULAR ACCESS AND PARKING

- A. Provide and maintain access to fire hydrants free of obstructions. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.
- B. Vehicular Parking: Designated on-site parking spaces will be made available for the Contractor's use.
- C. The Contractor shall not close or obstruct any portion of any street public or private, without obtaining permits therefore from the proper authorities.

1.18 DUST CONTROL

- A. Provide positive means to prevent air -borne dust from dispersing into atmosphere.
 - 1. Take all necessary measures and provide equipment and materials to minimize dust from rising and blowing across the site and also to control surface water throughout the operation so that it does not run onto paved ways without being filtered. Control all dust created by construction operations and movement of construction vehicles, both on site and on paved ways.
 - 2. During the progress of the work, maintain the areas of construction activities including sweeping and sprinkling of streets as necessary. Provide and use calcium chloride for more effective dust control, when deemed necessary by regulatory agencies, without additional cost to the Owner.
- B. Prevent air -borne dust from dispersing into occupied spaces. Provide interior dust -tight temporary partitions as specified under the Article entitled "Interior enclosures".
 - 1. Provide air filters over openings and grilles in air -return ducts occurring within construction areas.
 - 2. Provide openings in temporary partitions where air -return grilles occur outside of work areas. In each opening, provide standard 2 inch thick, throw -away type filter having a

rated efficiency of 35 percent. Review with Architect size requirements of filtered openings, locations of openings and how many are required.

3. Replace air filters as required to maintain their efficiency.

1.19 NOISE CONTROL

- A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.
- B. Execute construction work by methods and by use of equipment which will reduce excess noise.
 1. Equip air compressors with silencers, and power equipment with mufflers.
 2. Manage vehicular traffic and scheduling to reduce noise
- C. Interior work involving cutting, drilling, hammering or noise generating procedures shall be completed during times schedule with the Owner in advance.

1.20 TEMPORARY WEATHER PROTECTION

- A. Protect building interior and all materials and equipment from weather at all times. Where removal of existing roofing, roof sheathing, windows, doors, and other items is necessary to accomplish work, have materials and workmen ready to provide adequate and approve temporary covering of exposed areas.
 1. Temporary coverings shall be attended as necessary to insure effectiveness and to prevent displacement.
 2. Contractor shall repair or replace all elements of the building damaged by failure to properly protect them from the weather to the satisfaction of the Architect at no additional cost to the Owner.

1.21 TEMPORARY INTERIOR (ISOLATION) ENCLOSURES

- A. Provide temporary partitions and ceilings to separate work areas from adjacent occupied areas, to prevent penetration of dust and moisture into occupied areas and to prevent damage to existing materials and equipment.
 1. Temporary enclosures must seal construction areas and prohibit passage of dust and debris, and inhibit noise transmission.
 2. Temporary enclosures and doors through them, shall be erected in manner to provide code mandated egress from the occupied portions of the building. Provide fire -resistant rated enclosures where required to maintain protected paths of egress.
- B. Construction: Wood or metal framing and gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces with STC rating 35 in accordance with ASTM E90 and with Flame Spread Rating of 75 or less in accordance with ASTM E84.
 1. Where fire-resistant rated enclosures are required, construct barriers utilizing 1 hour fire resistance rated construction, consisting of Type "X" gypsum wallboard and studs. Thickness of wallboard and the type of studs to be used, shall be as required by any of manufacturer's or industry's tests to obtain a 1 hour fire rated wall.
 2. Construct closures, using new materials only, in accordance with the general carpentry requirements in Section 06100 – Rough Carpentry and Section 09250 – Gypsum Board.
 3. Doors in temporary closures must be constructed of solid new lumber and must be positively latching.

1.22 TEMPORARY PROTECTION OF EXISTING FINISHES

- A. General: Take all required measures to protect the existing building (contents, surfaces, or materials) and site from damage of any kind when performing the Work.

1. Take any special steps necessary to protect entrances and areas around building and to prevent persons from coming in contact with material or construction operations.
 2. Protect utility services, pavements, sidewalks, landscaping, and all other site elements scheduled to remain.
- B. Provide all temporary protections as may be required to ensure that all components of existing building indicated to remain are not damaged during the execution of the Work.
1. Protection may be required to remain in place for the duration of the project. As such, materials should be installed to provide adequate protection throughout the full extent of construction activities. Repair or reinstall protection throughout the duration of construction as required.
- C. Dust Protection Path: Areas where demolition work is required.
1. Seal all floor, wall and ceiling openings to prevent the intrusion of dust into these spaces. Provide dust curtains at doors.
 2. Construct temporary partitions surrounding the area of construction in these areas.
 3. Dust-Proof Wrap: Cover surfaces with polyethylene plastic. Seal seams completely with duct tape. Anchor to protection wherever possible. Attach to historic materials with preservation tape. Do not use duct tape or mechanical fasteners on historic materials.
 4. Dust-Proof Temporary Partitions: Comply with Article above entitled TEMPORARY INTERIOR (ISOLATION) ENCLOSURES.

1.23 TEMPORARY BARRICADES

- A. Provide barriers and barricades to prevent unauthorized entry to construction areas.
1. Comply with standards and code requirements for erection of barricades, where required provide lighting, including flashing lights.
 2. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against.
- B. Provide temporary enclosures, as required, for protection of existing facilities and new construction from exposure to weather, other construction operations and similar activities. Where heat is needed and the building envelope is incomplete, provide enclosures where there is no other provision for containment of heat.
1. Provide doors with self-closing hardware and locks.
- C. Provide temporary roofing as needed to maintain the building water tight.

1.24 TREE AND PLANT PROTECTION

- A. Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line.
- B. Provide temporary guards to protect trees and vegetation to be left standing. Protect plant life by placing boards, planks, poles or fencing around them.

1.25 POLLUTION CONTROL

- A. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by, the discharge of noxious substances from construction operations.
1. Comply with all applicable Federal, State, County, and municipal laws regarding pollution.
 2. Prevent pollution of streams, lakes, or reservoirs with fuels, oils, bitumens, calcium chloride, acids, waste products, effluents, chemicals or other harmful substances. Prevent from such substances from entering storm drains and sanitary sewers.

- B. Provide equipment and personnel, perform emergency measures required to contain any spillage and to remove contaminated soils or liquids.
 - 1. Excavate and legally dispose of any contaminated earth off -site, and replace with suitable compacted fill and topsoil.

1.26 FIRE PREVENTION MEASURES

- A. The Contractor shall take all necessary precautions for the prevention of fire during construction. Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes. Ascertain and comply with requirements of Project insurance carrier, local fire department and the state fire marshal.
 - 1. Maintain the area within contract limits orderly and clean.
 - a. Remove combustible rubbish promptly from the site and when required, store combustible materials in containers in fire-safe locations.
 - 2. Maintain clear access to exits from within the building.
 - 3. Smoking is not permitted in the building or adjacent areas.
- B. Establish procedures for fire protection for welding, cutting and open torch work, and other potentially hazardous operations. Obtain permission from local authorities having jurisdiction for such work as required by law. Provide special fire extinguishers at welding and torch cutting work.
 - 1. Maintain a fire watch when existing fire protection and warning systems have been temporarily de-activated. Maintain watch during all working hours for full period of de - activation.
 - 2. The Contractor will assign personnel to inspect all construction areas at the end of each day's work for fire hazards prior to lock-up.
- C. Provide for outside storage of gas tanks, sufficiently clear of any structure. Promptly remove welding and cutting equipment from the building when no longer required. Do not store welding or cutting materials within the building when work is not being performed.
- D. Permanent fire protection system may be activated to meet these requirements. Replace fusible link heads and other expended or discharged components at time of Substantial Completion.

1.27 SECURITY MEASURES

- A. Protect Work, from theft, vandalism, and unauthorized entry.
- B. Initiate a security program in coordination with Owner's existing security system at job mobilization.
- C. Maintain security program throughout construction period until Owner occupancy.

1.28 PROJECT IDENTIFICATION AND TEMPORARY SIGNAGE

- A. General: Signs other than those specified herein are not permitted, except those required by law or expressly authorized by the Owner.
 - 1. At all times during the project, signage must clearly direct occupants and the general public in the safe use of the building. Signs must clearly indicate areas of no admittance, and further must clearly define and direct users to building entries, exits, and [school offices] and other important destinations. All such interim signage must be painted by a professional sign painter on 3/4 -inch medium density overlay plywood with letters no less than 3 inches in height. Coordinate required signage with Architect/Engineer.
- B. Project sign:

1. Provide 8 foot wide by 4 foot high foot project sign of exterior grade MDO plywood and wood frame construction, painted, with self -adhesive color printed text with reproduction of building rendering. Owner's Project Manager will approve signage design.
 - a. Color prints for rendering shall be 3M Scotchprint marking film series 8640 or equal, 4 mil thickness, "ControlTac" vinyl film as manufactured by 3M company having a positionable pressure activated pigmented adhesive.
 - b. Overlay protecting film, Scotchprint Film, clear overlaminating film, as manufactured by 3M company.
 2. List title of project, names of Owner, Architect/Engineer, [professional sub -consultants,] Contractor, [and major subcontractors].
 3. Erect on site at location established by Architect/Engineer.
- C. Signage at perimeter of construction site: Provide clear and visible warning signage with appropriate language such as: "Prohibited Access Hard Hat Only No Admittance Authorized Personnel Only".

1.29 REMOVAL OF TEMPORARY UTILITIES, CONTROLS, AND FACILITIES

- A. Remove temporary materials and construction at Substantial Completion.
- B. Restore existing facilities used during construction to original conditions. Restore permanent facilities used during construction to specified condition.
- C. Clean and repair damage caused by installation or use of temporary work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION