

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Contracting Officer (CO), permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in Contract Sum as required.
- B. Potable Water Service: Potable Water from existing water system is available for use. Provide connections and extensions of services as required for construction operations. Contractor is responsible for metering and payment of use charges with NPS.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with National Electrical Contractors Association (NECA), National Electrical Manufacturers Association (NEMA), and Underwriter Laboratories (UL) standards and regulations for temporary electric service. Install service to comply with National Fire Protection Association (NFPA) 70.
- B. Environmental Protection:
 - 1. Provide environmental protection as required by agency(ies) with jurisdiction and as indicated in Contract Documents. Coordinate with requirements of the following:
 - a. Regulatory Requirements.
 - b. Indoor Air Quality (IAQ) Management.
 - c. Noise and Acoustics Management.
 - d. Environmental Management.
 - e. Construction Waste Management.

- C. Accessible Temporary Egress: Comply with applicable provisions in the United States (U.S.) Architectural & Transportation Barriers Compliance Board's Architectural Barriers Act Accessibility Standard (ABAAS) Accessibility Guidelines.

1.5 PROJECT CONDITIONS

- A. 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 NPS acceptance, regardless of previously assigned responsibilities.
- B. Temporary Facilities: Installer of each temporary facility shall install the facility in the pre-approved staging or work areas as identified by the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Temporary materials may be new or used, but must be adequate in capacity for required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Pavement: Comply with Section 32 12 16, Asphalt Paving, and Section 32 13 13, Concrete Paving.
- C. Chain-Link Fencing: Minimum 2-inch (50-millimeters), 0.148-inch (3.76-millimeters) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 millimeter) high with galvanized steel pipe posts; minimum 2-3/8-inch (60-millimeters) OD (outside diameter) line posts and 2-7/8-inch (73-millimeters) OD corner and pull posts, with 1-5/8-inch (42-millimeters) OD top rails.
- D. Portable Chain-Link Fencing: Minimum 2-inch (50-millimeters), 9-gauge, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 millimeters) high with galvanized steel pipe posts; minimum 2-3/8-inch (60-millimeters) OD line posts and 2-7/8-inch (73-millimeters) OD corner and pull posts, with 1-5/8-inch (42-millimeters) OD top and bottom rails. Provide galvanized steel bases for supporting posts.
- E. Safety Barrier Fence: Orange plastic fence, minimum height, 4 feet.
- F. Barrier Tape:
 - 1. Physical: Medium duty, thickness 4-mil, yellow tape imprinted with "CAUTION: CONSTRUCTION AREA." Imprinted ink shall be permanent and not removable with normal handling. Material and ink shall be chemically inert and not degrade when exposed to acids, alkalies, and other destructive substances.

2. Functional: None.
 3. Performance: None.
- G. Lumber and Plywood: Comply with requirements in Section 06 10 00, Rough Carpentry.
- H. Gypsum Board: Minimum 1/2 inch (12.7 millimeters) thick by 48 inches (1,219 millimeters) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C36/C36M.
- I. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- J. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10 mil (0.25 millimeter) minimum thickness, with flame-spread rating of 15 or less per ASTM E84 and passing NFPA 701 Test Method 2.
- K. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 inches by 60 inches (914 millimeters by 1,624 millimeters).

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Contracting Officers Field Office: Field office shall be a separate structure from Contractor's office.
1. Prefabricated, job built, or a mobile unit; excellent condition, structurally sound, non-flammable exterior construction, weather tight, minimum 300 square feet.
 2. Operable windows and security screens, adjustable ventilation.
 3. Restroom (minimum of lavatory and toilet, with exhaust fan if room is windowless).
 4. Air conditioner and heater.
 5. Interior partition with lockable door to divide office
 6. Paneling or freshly painted walls, acoustical tile or painted ceilings, and resilient flooring.
 7. Two exterior doors with dead bolts keyed from outside,
 8. Minimum 20-square foot landing and steps at each exterior door.
- C. Storage and Fabrication Sheds: Temporary weather tight sheds or other covered facilities for storage of materials subject to weather damage. Number and size of structures shall be subject to Contracting Officer's approval.

- D. Toilets: Sufficiently lighted and ventilated toilet facilities in weatherproof, sight proof, handicap accessible, sturdy enclosures with privacy locks.

- 1. Provide separate toilet facilities for men and women.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

- B. Heating, Ventilation, and Air Conditioning (HVAC) Equipment: Unless Contracting Officer authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

- 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to agency(ies) with jurisdiction, and marked for intended use.
 - 3. Permanent HVAC System: If Contracting Officer authorizes use of permanent HVAC system for temporary use during construction, provide filter with Minimum Efficiency Reporting Value (MERV) of 8 at each return air grille in system and remove at end of construction.

- C. Internet Connection: Furnish, install and maintain a high-speed connection internet through a Contractor furnished internet service provider. Contractor is responsible for maintenance of this connection and costs associated with internet service provider through warranty period of this Contract. Upon completion of warranty period, service shall be transferable to the Government at which time future costs for connection will no longer be the responsibility of Contractor.

- D. Contracting Officers Field Office:

- 1. Outlets: Minimum of two, quad outlets with surge protection.
 - 2. Refrigerator: Under counter, 3.2-cubic foot volume with 0.8-cubic foot freezer with dedicated power receptacle.
 - 3. Fire Extinguisher: UL listed and FM (Fire Pump Motors) approved, minimum rating of 2-A:10-B:C, dry chemical.
 - 4. First-Aid Kit:
 - a. Physical: General office/light industrial kit which includes antiseptic wipes, bandages, disposable gloves, tape, instant cold pack, dressing pads, eye pads, scissors, and acetaminophen tablets.
 - b. Functional: None.
 - c. Performance: None.

5. Two desks with five drawers each and two chairs with casters; two drafting tables (minimum 40 inches wide by 5 feet long) and two stools; drawing rack; two 2-drawer and one 4-drawer legal size locking filing cabinets with keys; 8 feet of 12-inch deep shelving; coat rack; two additional guest chairs; two desk lamps; two drafting table lamps; and a maximum/minimum thermometer.
6. Manufactured computer work station, capable of containing CPU (central processing unit), monitor, keyboard, printer; work station chair.
7. Additional tables necessary for FAX machine and copier.
8. Two 5-gallon trash cans and one 30-gallon trash can with lid.
9. Ceiling mounted general lighting fixtures.

PART 3 EXECUTION

3.1 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 by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 1. Arrange with utility company, NPS, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services. Acquire necessary permits.
- B. Storm Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 1. Provide best management practices for storm runoff and drainage temporary controls.
- C. Reclaimed water for construction is available onsite. Install piping and connections as required.
- D. Potable water is available onsite. Make connections to existing facilities as needed. Facilities must be cleaned and maintained in a condition acceptable to NPS. At Substantial Completion, restore these facilities to condition existing before initial use.

- E. Sanitary Facilities: Provide temporary toilets, and wash facilities for use by construction personnel.
1. Place in approved locations secluded from public observation and convenient to work stations. Relocate as work progress requires.
 2. Maintain and clean toilet facilities at least weekly.
 3. Contractor is responsible for maintenance and disposal of waste.
 4. Completely remove sanitary facilities on completion of work.
 5. Toilets: Use of existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to NPS. At Substantial Completion, restore facilities to condition existing before initial use.
- F. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
1. Use of existing permanent heating and cooling system will not be allowed without written authorization from Contracting Officer.
 2. Provide and maintain adequate approved facilities, as required for safety and construction requirements, during the work. Provide ample clearance around stoves, heaters, chimney and vent connections to prevent ignition of combustible material.
 3. Install and maintain temporary filters when air handing equipment is used for temporary heating and cooling. Install new filters before final acceptance in addition to any extra sets of filters required. Clean coils as determined by Contracting Officer.
 4. Warranties for equipment used for temporary heating and cooling shall start on date of Final Acceptance.
- G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- H. Electric Power Service: Contractor shall coordinate directly with Arizona Public Service for temporary power needs. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
1. Install electric power service overhead or underground, unless otherwise indicated.

- I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- J. Telephone Service: Make arrangements with Telephone Company and pay costs associated with phone service to construction trailer(s).
 - 1. Make arrangements with the telephone company to install two lines, one for the Contracting Officer's trailer, and one for the Contractor's construction trailer. Contractor is responsible for installation costs.
- K. Internet: No internet service is available onsite for Contractor's use. Make arrangements for internet connection and pay costs.

3.3 SUPPORT FACILITIES INSTALLATION

A. General:

- 1. Comply with the following:
 - a. Provide incombustible construction for offices, shops, and sheds located within construction area or within 50 feet of building lines. Comply with NFPA 241.
 - b. Maintain support facilities until near Substantial Completion. Remove structures, equipment, and furnishings, and terminate services after punch list is 100 percent completed or when directed by Contracting Officer. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Contracting Officer.

B. Contracting Officers Field Office:

- 1. Provide Heat, lights, power, air conditioning, temporary water pressure and sewage holding tanks.
- 2. Provide office, furnishings, and utility connections no later than 7 calendar days after date of Notice to Proceed. Exact location will be determined by Contracting Officer.
- 3. Maintain equipment, furnishings, and structures. Provide equipment replacement elements as needed. Provide weekly cleaning services and trash disposal. Maintain and service water and sewer holding tanks as required.

- C. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on the Drawings.
1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.
 2. Construct and maintain temporary roads and paved areas adequate for construction operations.
 - a. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 - b. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Section 32 11 23, Aggregate Base and Subbase Course.
 - c. Recondition base after temporary use, including removing contaminated material, regrading, proof-rolling, compacting, and testing.
 - d. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Section 32 12 16, Asphalt Paving.
 - e. Maintain access roads to storage areas and other areas to which frequent access is required.
 - f. Protect buried vulnerable utilities under temporary roads with steel plates, wood planking, or bridges.
 - g. Maintain onsite access roads free of mud. Under no circumstances shall vehicles leaving the Site track mud off the Site onto the public right-of-way.
- D. Traffic Controls: Erect and maintain barricades, lights, danger signals, and warning signs in accordance with Manual on Uniform Traffic Control Devices (MUTCD), Part IV, latest edition.
1. Protect existing Site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
 3. Illuminate barricades and obstructions at night; keep safety lights burning from sunset to sunrise.
 4. Adequately barricade and post open cuts in or adjacent to thoroughfares.
 5. Protect pedestrian traffic by guardrails or fences.
 6. When pedestrian traffic is detoured onto a roadway, provide temporary walkways with protection as required at ends and overhead. For walkways, use lumber running parallel to direction of traffic movement and provide ramps at changes of elevation.
 7. Cover pipes, hoses, and power lines crossing sidewalks and walkways with troughs using beveled edge boards.

8. Install Barrier Tape where directed by Contracting Officer. Keep a minimum of two rolls onsite.
- E. Parking: Provide temporary parking areas for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of the agency(ies) with jurisdiction. Maintain Project Site, excavations, and construction free of water.
1. Dispose of rainwater in lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- G. Project Identification and Temporary Signs: Provide Project identification and other signs as indicated on the Drawings. Fence, barricade, or otherwise block off the immediate work area to prevent unauthorized entry.
1. Provide temporary, directional signs for construction personnel and visitors.
 2. Maintain and touchup signs so they are legible at all times.
 3. Erect and maintain sufficient detour signs at road closures and along detour routes.
- H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of agency(ies) with jurisdiction.
- I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered “tools and equipment” and not temporary facilities.
- J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- K. Existing Stair Usage: Use of existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Contracting Officer.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- L. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.
- M. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with the environmental

regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. All equipment, including heavy equipment and hand tools, shall be cleaned and free of seeds and seed carrying soil, debris, and mud to prevent the spread of exotic and/or invasive weeds.
2. Equipment may need to be washed if moving between sites within the Park if working in a weedy area to prevent propagation of nuisance weeds.
3. Any equipment leaving the Park must be re-cleaned before re-entry to the Park.
4. Cleaning of Equipment: Mobilize all equipment to the Job Site in a condition free of mud, dirt, and plant material.
 - a. Pressure wash high temperature (minimum 100 degrees F) all construction vehicles and equipment, including the undercarriage, prior to entering the park and between construction sites.
 - b. The Contractor shall coordinate with Contracting Officer for vehicle inspection. Refer to Section 01 35 00, Environmental Protection and Special Controls.

3.4 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 minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Cleaning of Equipment: Contractor shall ensure prior to moving on to Project Area, equipment, is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Ensure equipment has been pressure washed and is free of exotic species. Equipment shall be considered free of soil, seeds, and other debris when visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools are not required.
- C. Temporary Erosion and Sedimentation Control: Refer to Section 01 57 23, Temporary Storm Water Pollution Prevention.
- D. Tree and Plant Protection: Refer to Section 01 11 00, Summary of Work, Section 01 35 00, Environmental Protection and Special Controls, and Section 32 01 90, Tree and Shrub Preservation.
- E. Pest Control: Follow NPS requirements to minimize attraction and harboring of rodents, roaches, and other pests and perform extermination and control procedures at regular intervals so Project will be free of pests and residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

- F. Site Enclosure Fence: Before construction operations begin, furnish and install chain link fencing to prevent people and animals from easily entering Site except by entrance gates.
1. Extent of Fence: As required to enclose entire Project Site or portion determined sufficient to accommodate construction operations as well as staging area as indicated on the Drawings.
 2. Locate vehicular gates to avoid interference with traffic on public thoroughfares.
 3. Locate pedestrian entrance gates as required to provide controlled personnel entry.
- G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- H. Barricades, Warning Signs, and Lights: Comply with Contracting Officer's directives for erecting structurally adequate barricades, including warning signs and lighting.
- I. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Responsible Person: Capable and qualified person shall be placed in charge of fire protection. Responsibilities shall include locating and maintaining fire protective equipment and establishing and maintaining safe torch cutting and welding procedures.
 2. Tobacco Use, Smoking, and Vaping: Smoking within buildings or temporary storage sheds is prohibited.
 3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of NPS. Check with Park; many require "burn permits" for welding.
 4. Develop and supervise overall fire-prevention and -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.
 5. Provide temporary standpipes and hoses for fire protection. Hang hoses with warning sign stating hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
 6. Hazard Control: Take necessary precautions to prevent fire during construction. Do not store flammable or combustible liquids in existing buildings. Provide adequate ventilation during use of volatile or noxious substances. Ensure cleanup procedures and storage requirements are followed at close of every work session.
 7. Spark Arresters: Equip gasoline or diesel powered equipment used during periods of potential fire hazards or in potential forest and grass fire locations

with spark arresters approved by United States Department of Agriculture (USDA) Forest Service.

- a. Written determinations of periods and areas of potential fire hazard will be issued by Contracting Officer.
8. Buildings: Furnish a minimum of one extinguisher for each 1,500 square feet of area or major fraction thereof.
 - a. Travel distance from any work station to nearest extinguisher shall not exceed 75 feet.
9. Vehicles and Equipment: Provide one extinguisher on each vehicle or piece of equipment.
10. Service and Refueling Areas: Locate areas a minimum of 50 feet from buildings. Shut down equipment before refueling.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on 24-hour basis where required to achieve indicated results and avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. 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 property of Contractor. NPS reserves right to take possession of Project identification signs.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period.

END OF SECTION