

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including
- B. General Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.
 - 2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 3. Division 01 Section "Execution" for progress cleaning requirements.
 - 4. Division 01 Section "Erosion and Sediment Control" for basic erosion control measures and requirements.
 - 5. Divisions 02 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
 - 6. Division 26 Section "Basic Electrical Requirements" for additional requirements related to temporary electric and telephone service.
 - 7. Division 31 Section "Dewatering" for disposal of ground water at Project site.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.
- B. Water Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
 - 1. Individual Contractors are responsible for metering and use charges for electricity used at job and storage trailers.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.5 QUALITY ASSURANCE

- A. 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.
- C. Accessible Temporary Egress: Comply with applicable provisions in the DOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: 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, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the Site.
 - 1. Temporary Utilities: Do not permit freezing of pipes, flooding or the contamination of water sources.
 - 2. Temporary Construction and Support Facilities: Maintain temporary facilities in a manner to prevent discomfort to users. Take necessary fire prevention measures. Maintain temporary facilities in a sanitary manner so as to avoid health problems.
 - 3. Security and Protection: Maintain site security and protection facilities in a safe, lawful, publicly acceptable manner. Take measures necessary to prevent site erosion.
 - 4. Take measures necessary to prevent site erosion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete or galvanized-steel bases for supporting posts and as indicated on Drawings.
- B. Trespassing Signage: Metal or plastic sign, minimum size 7"x10" indicating "DANGER CONSTRUCTION SITE NO TRESPASSING" or similar message acceptable to the Architect.
- C. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

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- D. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
- E. 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.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: 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 qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
- C. Heating, Cooling, Ventilating, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
- D. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Temporary facilities and controls shall be installed in such a manner that they do not interfere with the construction.
 - 1. Where interference with construction is unavoidable, coordinate installation and removal with all affected Contractors and restore or complete new construction.
- 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.
- C. Temporary facilities and controls shall be available for use 24 hours a day, 7 days a week for the duration of the installation.
- D. Maintain temporary facilities and controls in working, operating condition at all times.

1. Repair or replace temporary facilities and controls that are not in working order immediately.

E. Remove temporary facilities and controls no sooner than permanent systems are functional or are ready to be utilized if allowed by the project requirements.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.

1. Filter out excessive amounts of soil, construction debris chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
2. Connect temporary sewers to the municipal system as directed by authorities having jurisdiction.
3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, eye wash stations, sanitization stations, hand soap and sanitizer, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.

E. Temporary Heat: Provide temporary heat when building or defined building unit(s) is generally enclosed by walls (exclusive of windows, doors, other openings, and veneers) and roof and the outside temperature is forecasted to, or falls below, 40°F at any time during the day or night.

1. Maintain minimum temperature of 55°F within enclosed area.
2. Provide temporary enclosures in openings and at incomplete construction to maximum temporary heat effectiveness.
3. Provide temporary heating 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.
4. Select equipment that will not have a harmful effect on completed installations or elements being installed.
5. Review temporary heat with authorities having jurisdiction and comply with local, state and federal laws.

F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- G. Temporary Cooling, Ventilation, and Humidity Control: Provide temporary cooling and 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 cooling and ventilation requirements to produce ambient condition required and minimize energy consumption.
1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
- H. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
1. Capacity shall be sufficient for the proper performance of the work, but in no case shall it be sized at less than two (2) watts per square foot of building area .
 2. Service, switches, panels, distribution, feeders, branch circuit, etc., shall be as approved for temporary systems and uses anticipated.
 3. Receptacles shall be provided throughout the project located so that any portion of the building can be reached with a 50 foot extension cord. Receptacles shall be rated 20 amps, 125 volt, protected with a 20 amp circuit breaker, and GFI protection. There shall be no more than four (4) receptacles per circuit. Lighting and receptacles shall not be on the same circuit.
 4. Grounding shall be as required. Establish an assured ground system and maintain all records at the job site.
 5. The Electrical Contractor shall be responsible to maintain and test all temporary power, lighting and emergency lighting in the existing facility as required during the renovations.
 6. Voltage Differences: Provide identification warning signs at power outlets other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets.
 7. Electrical Outlets: Provide properly configured NEMA 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, and GFI breakers.
 8. Temporary power shall be provided at the construction trailers, located per the drawings. The Electrical Contractor shall provide the following:
 - a. Provide a temporary 100A/3P Fused disconnect with 100A fuses at existing distribution panel 'HDP' located in Storage 161A (unit D), and tap the feed to the panel.
 - b. Provide temporary 100A feed (3#1G copper or 3#10/G aluminum) from disconnect to temporary trailers. Feed shall be protected with conduit or other NEC and OSHA approved means for the duration of construction.
 - c. Feed shall be routed above ceiling, out of the way of construction, to nearest storage room, and drop down into crawl space to northeast corner of building. Coordinate routing with Owner and project phasing to ensure power feed can remain operational for the duration of the project.

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- d. Exit crawlspace below finished grade, and set temporary utility pole near corner of the building. Set additional temporary utility pole near trailer parking area. Cable shall rise up pole, and span between poles to reach construction trailers. Provide appropriate messenger and temporary triplex cable with ground (wire sizes as previously identified) to span between poles. Feed shall be high enough to meet all OSHA regulations, and allow truck traffic of at least 13'-6" in height.
 - e. Provide a temporary minimum 75kVA 480V to 120/208V, 3 phase outdoor transformer with ground connection and associated distribution panel to feed up to four (4) construction trailers. Coordinate feed to the construction trailers with each prime.
 - f. Entire installation shall meet all applicable NEC and OSHA regulations, as well as kept safe from the general public with appropriate fencing, etc. The complete installation shall be entirely removed at the completion of the project, all surfaces restored to their original condition, and all grass areas restored and reseeded.
- 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: Provide temporary cellular service in common-use facilities for use by all construction personnel.
- 1. Post a list of the following important telephone numbers:
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Contractor's emergency after-hours telephone number.
 - e. Architect's office.
 - f. Engineers' offices.
 - g. Owner's office.
 - h. Prime Contractors and principal subcontractors' field and home offices.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
- 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
- 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Provide temporary parking areas for construction personnel.
- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

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1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice to maintain access to staging areas, parking areas, the building, and as required to minimize accumulations.
- E. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 3. Maintain and touchup signs so they are legible at all times.
 4. All signage other than directional, information and project identification must be approved by the Owner prior to installation.
 5. Signs installed and not approved will be removed by the appropriate Contractor at no cost to the Owner.
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."
1. Collect waste from the site daily.
 2. Comply with requirements of NFPA 241 for removal of combustible waste material and debris.
 3. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise about 80°F.
 4. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly.
 5. Dispose of material in a lawful manner.
 6. Dumpsters shall be placed in locations directed by the Owner or Architect.
- G. 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.
- H. Temporary Elevator Use: Use of elevators is not permitted.
- I. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
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.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

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- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and the authorities having jurisdiction.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains. Use pumps, drains and other approved methods for continuous removal of all water including rainwater and spring or ground water, to keep foundations, excavations, slabs, and the site free of water.
- E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- F. Grass and Weed Control: Grass cutting and weed control on the project site shall occur in accordance with local regulations during construction.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- H. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will 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 and as indicated on Drawings.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
- I. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- J. Trespassing Signage: Install trespassing signage at the following locations:
 - 1. On each side of each swinging leaf of the construction entrance gates at the temporary construction fence so the signage is visible when gates are in the open and closed position.
 - 2. On the temporary construction fence spaced approximately 50'-0" on center. Signs shall be located on all temporary fence that is within 200'-0" of roads, sidewalks, parking lots, or other public spaces.

3. On doors and at openings where renovated areas are adjacent to occupied areas.
 4. As required by OSHA and other safety standards.
 5. Other locations where work conditions warrant "No Trespassing" signage.
- K. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
1. Provide barricades around construction area.
- L. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- M. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- N. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
1. Where indicated, construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 2. Where indicated, construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
 - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
 3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 4. Insulate partitions to control noise transmission to occupied areas.
 5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 6. Protect air-handling equipment and systems.
 7. Provide walk-off mats at each entrance through temporary partition.
- O. 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; manage fire-prevention program.
1. Prohibit smoking on construction site.
 2. Store combustible materials in containers in fire-safe locations.
 3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 4. Develop and supervise an 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.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

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- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard, replace, or clean stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use temporary dehumidification equipment to control humidity.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 - c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Failure to Provide Temporary Facilities: If any Contractor fails to carry out their responsibilities in providing temporary facilities and services as specified herein, the Owner shall have the right to take action deemed necessary for protection and conduct of the work. Owner shall deduct cost for this action from the amount due the Contractor at fault by use of a change order.

- 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.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

3.7 SCHEDULE OF TEMPORARY FACILITIES AND CONTROLS

- A. General Contractor Responsibilities:
 - 1. Portable chain link fencing.
 - 2. Temporary partitions (both types as required by Drawings), dust control, walk-off mats and isolation of work areas.
 - 3. Fire extinguishers and temporary fire protection.
 - 4. Temporary site stormwater sewer.
 - 5. Temporary sanitary facilities, wash facilities and drinking water.
 - 6. Temporary heat, ventilation and humidity control.
 - 7. Temporary opening enclosures.
 - 8. Temporary, walkways and parking areas.
 - 9. Temporary traffic controls.
 - 10. Dewatering of site excavations.
 - 11. Snow and ice removal to access work and staging areas.
 - 12. Project signs.
 - 13. Protection of existing trees and plants.
 - 14. Temporary erosion and sediment control.
 - 15. Grass and weed control.
 - 16. Pest control.
 - 17. Maintenance of rock construction entrance.
 - 18. Temporary egress.
 - 19. Temporary enclosures.
 - 20. Bulletin boards for posting wage rates and regulations.
 - 21. Engineering and layout for building working point and building layout.
 - 22. Temporary barricades, fencing, warning lights and no trespassing signage.
 - 23. Environmental protection.
 - 24. Temporary railings.
 - 25. Security of new and vertical openings.
 - 26. Broom cleaning of construction dust and dirt.
 - 27. Site security.

- B. Plumbing Contractor Responsibilities:

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1. Installation and maintenance of temporary water service to building and site.
 2. Building stormwater control involving roof drains and rain water conductors.
- C. HVAC Contractor Responsibilities:
1. Disconnect and protect all HVAC supply and returns in work areas.
 2. Installation, maintenance, and removal of filter media on all air systems affected by work.
 3. Protection of existing and new HVAC systems throughout all phases of the Work.
- D. Electrical Contractor Responsibilities:
1. Installation, maintenance of temporary power service to the site and building, including temporary panels and outlets of sufficient quantity to support progress of the work.
 2. Installation of power to Contractors' staging area indicated in this Section for Contractors to connect power for trailers.
 3. Installation and maintenance of temporary lighting to the building and the site.
 4. Maintenance of power, emergency power, lighting, and emergency lighting systems to remain until replacement or as applicable.
 5. Temporary maintenance of existing fire alarm system.
 6. Temporary maintenance of existing security system.
 7. Temporary maintenance of existing access control system.
 8. Temporary maintenance of existing data system.
 9. Temporary maintenance of existing CCTV system.
- E. Temporary facilities and controls to be provided by each Prime Contractor includes the following:
1. Field offices, trailers, fabrication sheds, and storage units.
 2. Utility bills for cellular phone service.
 3. Temporary heat, ventilation and humidity control in excess of requirements in this Section.
 4. Fire extinguishers in all work areas, including fire watch, as required by the Work.
 5. Snow removal not otherwise specified.
 6. Waste disposal facilities.
 7. Lifts, and ladders.
 8. Mockups.
 9. Safety.
 10. Inspection fees.
 11. Printing.
 12. Engineering and layout after General Contractor establishes working point and building layout.
 13. Welding equipment, supplies and power.
 14. Power in excess of requirements in this Section.
 15. Daily cleaning of all work areas, including broom cleaning and removal of all debris.
- F. Owner's Responsibilities:
1. Monthly utility bills for water, sewer, communications, and power.

END OF SECTION 01 50 00