# SECTION 01560

# TEMPORARY BARRIERS AND ENCLOSURES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

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

### 1.2 SECTION INCLUDES

A. Temporary construction barriers, enclosures and passageways.
   1. Dust and debris barriers.
   2. Security barriers.
   3. Temporary chain link fencing.
   4. Covered passageways.

B. Protection of completed Work.

C. Removal of construction facilities and temporary controls.

### 1.3 RELATED SECTIONS

A. Section 01010 - Summary of the Work: Contractor's use of site and premises

B. Section 01510 – Temporary Utilities: Temporary sanitary facilities, power and lighting

C. Section 01500 – Temporary Facilities and Controls: Installation of Construction Facilities

D. Section 01525 - Construction Staging Areas: Submittals, staging and removal

E. Section 01540 – Construction Aids: Temporary lifts, hoists, stairs, scaffolding

F. Section 01541 - Security

G. Section 01550 - Vehicular Access and Parking: Construction parking restrictions

H. Section 01568 - Tree and Plant Protection: Requirements for barriers and covers at existing trees, shrubs and ground covers

I. Section 01570 - Temporary Controls: General requirements for protection of existing conditions and run-off control

J. Section 01580 - Project Identification and Signage: Directional and informational signage.

### 1.4 CODES AND REGULATIONS

A. California Building Code (CBC): Comply with California Building Code (CBC) Chapter 33, Section 3306, Protection of Pedestrians During Construction or Demolition.

B. Fire Regulations: Comply with requirements of fire authorities having jurisdiction, including California Fire

Code (CFC) Article 87 during performance of the Work.

C. Safety Regulations: Comply with requirements of all applicable Federal, State and local safety rules and regulations. Contractor shall be solely responsible for jobsite safety.

D. Barricades and Barriers: As required by governing authorities having jurisdiction, provide substantial barriers, guardrails and enclosures around Work areas and adjacent to embankments and excavations for protection of workers and the public.

## 1.5 PROTECTION OF EXISTING CONDITIONS

A. Protection of Adjacent Facilities: Contractor shall restrict Work to limits indicated on the Drawings and as specified in Section 01010 - Summary of the Work: Protect existing, adjacent facilities from damage, including soiling and debris accumulation.

B. Protection of Existing Furniture, Fixtures and Equipment: As applicable, provide temporary enclosures, barriers and covers to protect existing furniture, fixtures and equipment remaining in Project area during construction.

## 1.6 MAINTENANCE OF CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

A. Maintenance: Use all means necessary to maintain temporary barriers and enclosures in proper and safe condition throughout progress of the Work.

B. Replacement: In the event of loss or damage, promptly restore temporary barriers and enclosures by repair or replacement at no change in the Contract Sum or Contract Time.

## 1.7 TEMPORARY BARRIERS, ENCLOSURES AND PASSAGEWAYS

A. Temporary Barriers, General: Provide temporary fencing, barriers and guardrails as necessary to provide for public safety, to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

1. Refer to temporary fencing and phasing plan in the Drawings. Comply with requirements indicated.

2. Note requirements for continued occupancy and use of existing buildings and site areas during construction.

3. Comply with applicable requirements of California Building Code (CBC) and authorities having jurisdiction, including industrial safety regulations. Review requirements with University's Representative.

4. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting.

5. Paint temporary barriers and enclosures with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard.

6. Where appropriate and necessary, provide warning lighting, including flashing red or amber lights.

B. Temporary Chain-Link Fencing: Provide temporary portable chain-link fencing with windscreen. See Section 01525 - Staging Area for requirements for layout of fencing.

1. Portable Chain-Link Fencing: Minimum 2-inches (50-mm) 11-gauge, galvanized steel, chain-link fabric fencing; minimum 8-feet (2.4 m) high with galvanized steel pipe posts; minimum 2-3/8-inches- (60-mm-) OD line posts and 2-7/8-inches- (73-mm-) OD corner and pull posts, with 1-5/8-inches- (42-mm-) OD top and bottom rails.

a. Provide concrete or galvanized steel bases for supporting posts.
b. Provide protective barriers at bases to prevent tripping by pedestrians.

2. Windscreen on Chain-Link Fencing: For screening of construction activities from view, equivalent to the following:
   a. b. Acceptable manufacturers: None identified. Equivalent products of other manufacturers will be considered in accordance with the "or equal" provision specified in Section 01610 - Basic Product Requirements.
   c. Windscreen fabric: Closed mesh weave of 30 warp by 16 fills per square inch.
      1) Fiber: 5.6 ounce per square yard polypropylene fiber.
      2) Shade factor: 78 percent.
      3) Tensile strength: 360 pounds for warp and 190 pounds for fill, when tested according to ASTM D1682, grab method.
      4) Tear strength: 110 pounds for warp and 70 pounds for fill, when tested according to ASTM D2263, trapezoidal method.
   d. Fabric fabrication:
      1) Reinforce hems and seams with 2-3/4 inch black polypropylene folded binding tape, with tensile strength of 300 pounds.
      2) Provide center reinforcing tape in addition to reinforced perimeter hems and panel seams.
      3) Sew hems and seams with UV light resistant polyester thread.
      4) Provide 9/32-inch brass grommets spaced at 12-inches on center in perimeter hems and center reinforcing tape.
   e. Secure windscreen to fence at all grommets.
   f. Locate windscreen on outside of fence.

C. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.

D. Covered Passageways: Erect a structurally adequate, protective, covered walkways for passage of persons along adjacent passageways.

1. Coordinate installation details with University's requirements for continuing operations in adjoining facilities.

2. Review design and details with University's Representative.

3. Comply with applicable regulations of authorities having jurisdiction.

4. Construct covered walkways using scaffold or shoring framing.

5. Provide wood-plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.

6. Extend back wall beyond the structure to complete enclosure fence.

7. Paint and maintain in a manner as directed by University's Representative.

E. Temporary Wood Fencing: Erect a structurally adequate, protective wood fencing in compliance with California Building Code (CBC) Chapter 33, Section 3306.7 - Pedestrian Protection. Wood fencing shall be provided as required by Table 33-A.
   1. Materials: As required by CBC Section 3306.7.

   2. Finishes: As acceptable to University's Representative. Fence where exposed to public view shall receive minimum of one coat wood primer and one coat semi-gloss paint, color(s) as directed by University's

Representative.

F. Temporary Closures: Provide temporary closures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate closures with ventilating and material drying or curing requirements to avoid dangerous conditions and effects such as mold.

2. Vertical openings: Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.

3. Horizontal openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.

4. Install tarpaulins securely using wood framing and other suitable materials.

5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. (9.2 sq. m) in area, use fire-retardant-treated material for framing and main sheathing.

G. Temporary Partitions: Erect and maintain temporary partitions and temporary closures to limit dust and dirt migration, including migration into existing facilities, to separate areas from fumes and noise and to maintain fire-rated separations.

1. Dust barriers: Construct dustproof, floor-to-ceiling partitions of not less than nominal 4-inch (100-mm) studs, 2 layers of 3-mil (0.07-mm) polyethylene sheets, inside and outside temporary enclosure.
   a. Overlap and tape full length of joints.
   b. Include 5/8-inch thick gypsum board at temporary partitions serving as noise barrier.
   c. Insulate partitions to minimize noise transmission to adjacent occupied areas.
   d. Seal joints and perimeter of temporary partitions.

2. Dust barrier passages: Where passage through dust barrier is necessary, provide gasketed doors or heavy plastic sheets that effectively prevent air passage.
   a. Construct a vestibule and airlock at each entrance to temporary enclosure with not less than 48 inches (1219 mm) between doors.
   b. Maintain water-dampened foot mats in vestibule where passage leads to existing occupied spaces.
   c. Equip doors with security locks.

3. Fire-rated temporary partitions: Maintain fire-rated separations, including corridor walls and occupancy separations, by construction of stud partitions with gypsum board faces.
   a. Construction details shall comply with recognized time-rated fire-resistive construction. Typically, 1-hour rated partitions shall be 2x4 wood studs at 16-inches on center or 3-1/2 inch metal studs at 16-inches on center, with 5/8-inch thick Type X gypsum board at both faces, with joints filled, taped and topped.
   b. Seal partition perimeters with acceptable fire stopping and smoke seal materials.
   c. Construct fire-rated temporary partitions whenever existing time-rate fire-resistive construction is removed for 12 hours or more.

H. HVAC Protection: Provide dust barriers at HVAC return grilles and air inlets to prevent spread of dust and clogging of filters.

I. Temporary Floor Protection: Protect existing floors from soiling and damage.
1. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheets, extending sheets 18 inches (460 mm) up the side walls.

2. Cover polyethylene sheets with 3/4-inch (19-mm) fire-retardant plywood.

3. Provide floor mats to clean dust from shoes.

J. Landscape Barriers: Provide barriers around trees and plants designated to remain. Coordinate with requirements specified in Section 01568 - Tree and Plant Protection.
   1. Locate barriers as directed outside of drip lines of trees and plants.

   2. Protect entire area under trees against vehicular traffic, stored materials, dumping, chemically injurious materials, and puddling or continuous running water.

   3. Contractor shall pay all costs to restore trees and plants within barriers that are damaged by construction activities. Restoration shall include replacement with plant materials of equal quality and size. Costs shall include all fines, if any, levied by authorities having jurisdiction.

K. Barricades, Warning Signs and Lights, General: Comply with standards and code requirements for erection of structurally adequate barricades. Paint barricades with appropriate colors, graphics and warning signs to inform personnel and the public when protecting them against a hazard. Where appropriate and needed provide lighting, including flashing red or amber lights.

L. Guard Rails: Provide guard rails along tops of embankments and excavations. Along public walkways and areas accessible by the public, adjoining excavations, provide guardrails in addition to fencing.
   1. Guardrails shall be substantially and durably constructed of lumber, firmly anchored by posts embedded in concrete, and complying with Code requirements for temporary barriers.

   2. Guardrails shall comply with dimensional requirements and accommodate loads as prescribed by California Building Code (CBC) for permanent guardrails.

M. Security Closures and Lockup: Provide substantial temporary closures of openings in exterior surfaces and interior areas as appropriate to prevent unauthorized entrance, vandalism, theft and similar violations of security. Provide doors with self-closing hardware and locks.

   1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

N. Weather Closures: Provide temporary weather-tight closures at exterior openings to prevent intrusion of water, to create acceptable working conditions, to protect completed Work and to maintain temporary heating, cooling and ventilation. Provide access doors with self-closing hardware and locks.

O. Temporary Access, Passage and Exit Ways: Construct temporary stairs, ramps, and covered walkways, with related doors, gates, closures, guardrails, handrails, lighting and protective devices, to maintain access and exit ways to existing facilities to remain operational.

   1. Design and location of temporary construction shall be by Contractor, subject to review by University's Representative and authorities having jurisdiction.

   2. Provide temporary lighting, illuminated interior exit signage, non-illuminated directional and instructional signage, and temporary security alarms for temporary exits and exit passageways.

   3. Temporary measures shall suit and connect to existing building systems, and shall be approved by University's Representative and authorities having jurisdiction.

**1.8 PROTECTION OF INSTALLED WORK**

A. Protection of Installed Work, General: Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.

B. Protective Coverings: Provide protective coverings at walls, projections, jambs, sills, and soffits of openings as necessary to prevent damage from construction activities, such as coatings applications, and as necessary to prevent other than normal atmospheric soiling.

C. Traffic Protection:
   1. Protect finished floors, stairs and other surfaces from traffic, soiling, wear and marring.

   2. Provide temporary covers of plywood, reinforced kraft paper or temporary rugs and mats, as necessary. Temporary covers shall not slip or tear under normal use.

   3. Prohibit traffic and storage on waterproofed and roofed surfaces and on landscaped areas.

   4. Protect newly fine graded, seeded and planted areas with barriers and flags to designate such areas as closed to pedestrian and vehicular traffic.

**1.9 REMOVAL OF TEMPORARY BARRIERS AND ENCLOSURES**

A. Removal of Temporary Barriers and Enclosures: Unless otherwise mutually agreed by University's Representative and Contractor, remove temporary materials, equipment, services, and construction prior to Contract Completion review. Coordinate removal with requirements specified in Section 01510 - Temporary Utilities, Section 01500 - Temporary Facilities and Controls, Section 01550 - Vehicular Access and Parking and Section 01560 - Temporary Barriers and Enclosures.

B. Cleaning and Repairs: Clean and repair damage, soiling and marring caused by installation or use of temporary barriers and enclosures.

**PART 2 - PRODUCTS**

Not applicable to this Section.

**PART 3 - EXECUTION**

Not applicable to this Section.

**END OF SECTION**