



DENVER
THE MILE HIGH CITY

CITY AND COUNTY OF DENVER

DEPARTMENT OF PUBLIC WORKS
Development Engineering Services

Public Works Permit Operations
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Pedestrian Walkway Entrance Requirements

Authority:	Revised Municipal Code <ul style="list-style-type: none"> ✚ Chapter 49, Article X, Section 49-271 ✚ Chapter 49, Article VII, Private Designing, Planning, Construction, Reconstruction & Remodeling of General Public Improvements II, Requirement of Professional Engineer for Construction Drawings.
Purpose of Authority:	Protection of citizens and property during the course of construction, and to define the responsibility of public compliance to permit issuance, and regulate the permitting processes.
Document Date:	October 6, 2008
Permit Types:	Revocable Street Occupancy Permit
Permit Dates:	Date specified by customer
Customer Interface:	<i>Most</i> communication between the City and the customer will be done through Public Works DES Construction Engineering & PWPO
Affiliated Departments & Agencies, & Roles:	Approval of the engineered drawings, traffic control plan(s), and street occupancy request is done by the DES Construction Engineering staff engineers, through PWPO.
Walkway Definition:	<p>For definition, the inside edge of the walkway is the edge nearest the building, structure, utility, construction, or demolition equipment. Sites that must provide covered walkways, according to these standards, shall provide the covered walkways from the start of construction when overhead work exceeds the 1:1 ratio in height. In cases of unique construction problems, while the work is at or below grade, short portions of covered walkways may be omitted, provided that standard fence details and gates are used for these openings in the covered walkway.</p> <p>COVERED PEDESTRIAN WALKWAY: Covered pedestrian walkways shall be provided when the building, structure, or utility to be constructed or demolished, or the equipment used in such construction or demolition is:</p> <ul style="list-style-type: none"> ✚ Less than 10-foot 0-inches to the inside edge of the walkway ✚ When the height of the building, structure, utility, construction, or demolition equipment exceeds the horizontal distance from the building, structure, utility, construction, or demolition equipment; to the inside edge of the walkway. <p>FENCED PEDESTRIAN WALKWAYS: Fences may be used to edge each side of pedestrian walkways when all of the construction or demolition activity is at or below grade, and at least 1-foot 0-inches away from the inside edge of the walkway. Covered pedestrian walkways may be required, even in these cases, if the construction or demolition activity is especially hazardous to pedestrians in the walkway.</p>
Submittal Process:	Applicant must submit to DES Construction Engineering: <ul style="list-style-type: none"> ✚ Drawings and specifications with original seal and signature of a Colorado licensed P.E. ✚ Request for Street Occupancy form. ✚ Traffic Control Plan(s)
Permitting:	<p>COVERED PEDESTRIAN WALKWAY:</p> <p>A professional engineer, registered in the State of Colorado, shall prepare the design of covered pedestrian walkways. The design shall conform to the following specifications, and shall be submitted on one or more 8.5-inches x 11-inches drawings in sufficient detail to illustrate all the construction information, including gates, foundations, materials, etc. Each drawing shall be stamped and signed by the design engineer.</p> <p>In addition, the design engineer shall field inspect the finished walkway, and shall submit a letter to the Traffic Engineering Division within seven (7) calendar days after completion of the walkway. Said letter shall include the date of inspection, and a statement that to the best of the design engineer's knowledge, the walkway has been constructed according to his design. Following the required inspection, the permittee will be solely and personally responsible for maintaining the walkway in its original inspected condition for the duration of the project.</p>

- ✚ **Inside Height:** The inside clear height shall be at least 7-foot 6-inches.
- ✚ **Inside Width:** The inside clear width should be at least 4-foot 0-inches. In cases where a bus stop must be retained in service, the inside clear width shall be at least 10-foot 0-inches. The splashboard and handrail are omitted for the required length of the bus stop.
- ✚ **Total Length:** The total length of the covered walkway shall be as necessary to completely surround the street side perimeter of the construction or demolition site, and the covered walkway shall be turned and extended to the property line at the corners of the site.
- ✚ **Splashboard & Handrail:** A 4-foot 0-inches high splashboard with a handrail along the top edge shall be provided along the street side of the walkways. Said splashboard shall be at least 1/2-inch plywood. A plexi-glass splashboard is suggested but not required.
- ✚ **Rear Walls:** Solid rear walls shall be built and placed on the side of the walkway nearest to the construction or demolition. Said walls shall be at least 1/2-inch plywood. Openings in the rear wall for “sidewalk superintendents” are not permitted.
- ✚ **Bulkhead:** The outside edges and ends of the roof deck, of the covered walkway, shall be provided with a bulkhead, at least 42-inches above the roof deck of the walkway. Said bulkhead shall be at least 1/2-inch plywood.
- ✚ **Flooring:** The flooring of a covered walkway shall consist of planking at least 2-inches in thickness, closely laid, or may be covered with at least 3/4-inch plywood. In either case, the floor shall be smooth. All members of the covered walkway shall be braced and connected to resist displacement of members or distortion of the framework.
- ✚ **Roof:** The roof of all covered walkways shall be made weatherproof and shall be at least 3/4-inch plywood.
- ✚ **Structure & Wind Load:** The entire structure shall be designed to carry the live and dead loads to be imposed, provided that every structure shall be designed to carry a minimum live load of at least 150 pounds per square foot, uniformly loaded, and 20 pounds per square foot wind load. Uplift forces due to wind shall be included.
- ✚ **Lighting:** The interior covered walkways shall be provided with lighting from sunset to sunrise. This lighting shall provide a minimum of 60 watt bulbs spaced every 10-feet. Flashing amber lights with a minimum of 100 watt bulbs shall be provided on the exterior of the walkway located at each end or corner, and at 50-foot to 75-foot intervals between the ends and corners when the walkway is located in the street. These lights shall flash continuously, 24-hours a day.
- ✚ **Site Access:** Covered walkway openings for access to the site shall be covered with a roof equal in width to the adjoining roof areas, and the opening shall be secured on the site side with hinged, rolling, or overhead track gates covered with at least 1/2-inch plywood, or the gates may be constructed with a suitable frame covered with 2-inch by 2-inch mesh, 0 gauge galvanized steel fabric or equivalent. The roof and gate structure shall be designed to carry the live and dead loads to be imposed, provided that the roof and gate structure shall be designed to carry a minimum live load of at least 50 pounds per square foot, uniformly loaded, and 20 pounds per square foot wind load. Uplift forces due to wind shall be included.
 - The roof should be placed at a height as necessary to clear the tallest vehicle or load that will enter the site. The gate must completely protect the opening when closed, and shall be kept closed at all times, except during the actual ingress of vehicles and equipment to and from the site. When the gate is open for site ingress or egress, a police officer or certified flag person will be required to direct vehicle and pedestrian traffic.
- ✚ **Traffic Control Signs:** Standard XR9-10 “Sidewalk Closed – Pedestrians Use Walkway” signs shall be placed at each end of covered pedestrian walkways, and at other locations where pedestrians are permitted to enter the walkway, such as, the corner of two walkways at the street intersection.
 - Standard XW5-10F “Watch For Trucks” signs shall be placed in the ceiling area of covered walkways facing pedestrian traffic approaching each side of the openings in the walkway at site access locations. Signs must be placed to maintain 7-feet 0-inches head clearance.
 - Standard SW1-8 black arrow on yellow background signs shall be placed on the street side of walkways to face approaching traffic whenever the walkway is placed in the street.
- ✚ **Corner Sight Distance:** Covered pedestrian walkways must be angled at 45-degrees whenever the walkway will obstruct sight distance at alley or street intersection. This angle shall provide at least a 15-foot by 15-foot clear triangle at alley intersections, and at least a 25-foot by 25-foot clear triangle at traffic signal controlled street intersections.
- ✚ **Stop sign controlled street intersections:** The walkway shall be placed to provide a sight distance line equal in length to 5-feet per mile per hour of posted speed limit on the through street, as measured from a point on the centerline of the through street lane, nearest the curb or walkway, to a point on the centerline of the cross street approach lane, nearest the walkway, at a distance of 20-feet from the flow line of the through street. Any obstruction of the traffic signal or pedestrian signal will require the placement of temporary signals on the outside of the walkway. An approved traffic contractor must be

hired to do the work and work inspected and coordinated with TES Traffic Operations.

FENCED PEDESTRIAN WALKWAYS:

Fences used for pedestrian walkways and site security shall conform to the following specifications, and other industry standard construction and installation procedures. All materials used shall be galvanized steel.

- ✚ **Fence Heights:** The basic security fencing around the work site, including the interior (next to the site) fence of a pedestrian walkway shall be at least 6-feet 0-inches high. The exterior (next to the street) fence of a pedestrian walkway shall be 4-feet 0-inches high.
- ✚ **Fence Fabric:** The fence fabric shall be 2-inch by 2-inch mesh, 9 gauge galvanized fabric with knuckled selvage. Vinyl coated galvanized fabric may be used at the permittee's option. The fabric shall be wired at 24-inch intervals to the top rail, and at 12-inch intervals to line posts, and the wire ends shall be bent or positioned so as to avoid hazard to pedestrians. The fabric shall be connected to end and gate posts with flat tension bars and tension brackets, and shall be stretched to provide a flat plane free of sags and bulges.
- ✚ **Top Rail:** The entire top perimeter of the fencing shall have a 1 5/8-inch O.D. top rail. The top rail shall be attached to line posts with standard loop caps, and shall be attached to end and gateposts with tension brackets and top rail end brackets.
- ✚ **Posts:** All line posts shall be 2-inch O.D., and shall be imbedded at least 24-inches into a minimum 6-inch diameter by 24-inch deep concrete foundation. All end posts shall be 2 1/2-inch O.D., and shall be imbedded at least 30-inches into a minimum 6-inch diameter by 30-inch deep concrete foundation. All gate posts and their concrete foundations shall be sized to carry the loads to be imposed. Space all line posts evenly, but not more than 10-feet apart.
- ✚ **Lighting:** Flashing amber lights with a minimum of 100-watt bulbs shall be provided on the fence nearest the street and located at each end or corner and at 50-foot to 75-foot intervals, between the ends and corners, when the fence is located in the street. These lights shall flash continuously, 24 hours a day.
- ✚ **Site Access:** Fence openings in the 6-foot security fence for access to the site must be secured with hinged, rolling, or overhead track gates. These gates must be constructed to the same specifications as the rest of the fence, or better, as necessary to support the loads imposed, and must completely protect the opening when closed. Fenced walkway gates shall be kept closed at all times, except during the actual ingress or egress of vehicles to and from the site. When the gates are opened for site ingress or egress, a police officer or certified flag person will be required at each walkway opening, to direct vehicular and pedestrian traffic. Fence openings in the 4-foot fence nearest the street will be a simple gap in fence without gates, and equal in width to the gate opening in the 6-foot fence.
- ✚ **Fire Hydrants:** Walkways must be designed and have a KKK panel for Denver Fire to access the hydrant.
- ✚ **Traffic signal cabinet:** TSC's must be accessible for TES Traffic Operations.
- ✚ **Drainage:** Walkways that are placed in the roadway/flow line must compensate for storm drainage conditions. Pedestrians must be provided an elevated path as to not walk in water diverted down the core and gutter. The flow of water must not be impeded by the design of the walkway and all manholes and inlets must be accessible for maintenance.

NOTE: Engineered scaffolding may be considered in place of plywood pedestrian walkways. The DES Construction Engineering Engineer and or City Traffic Engineer should be contacted as to what is required for each site.

Emergency Waiver:

Where emergency demolition is necessary to remove a dangerous building, structure, or utility, the pedestrian walkway requirement may be waived the Traffic Engineering Division. In this case, additional traffic control methods and police officers or certified flag persons must be used to detour pedestrian traffic away from the demolition site to the other side of the street. Contact the Construction Engineering Inspector for particular area (map located at www.denvergov.org/des)