DESIGN INFORMATION BULLETIN

City of Long Beach
Department of Public Works
Engineering Bureau

PEDESTRIAN ACCESSIBILITY GUIDELINES
FOR
LONG BEACH PUBLIC WORKS
Design Information Bulletin 01-18, Issue 2

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Table of Contents

Section **Page**

1.0 Background **1**

2.0 Definitions **1**

3.0 Procedures **3**

3.1 Applicability and Review Process 3

4.0 Design Guidance and Best Practices for Pedestrian Facilities **3**

4.1 Pedestrian Accessibility 3

4.1.1 New Construction 4
4.1.2 Alterations 4
4.1.3 Accessibility Requirements on 3R Projects 5
4.1.4 Minimum Accessibility 5
4.1.5 Historic Preservation 6
4.1.6 Program Accessibility 6

4.2 Placement of Pedestrian Facilities 6

4.3 Accessibility Design Standards 6

4.3.1 Surface 6
4.3.2 Vertical Clearance 7
4.3.3 Clear Width 7
4.3.4 Grade 8
4.3.5 Cross Slope 8
4.3.6 Grates and Railroad Tracks 9
4.3.7 Ramps 9
4.3.8 Curb Ramps 9
4.3.9 Medians and Islands 11
4.3.10 Handrails 10
4.3.11 Warning Curb and Guardrail 11
4.3.12 Curb or Barrier 11
4.3.13 Landings 12
4.3.14 Detectable Warning Surface 12
4.3.15 Grooves 13
4.3.16 Bus Stops 14
4.3.17 Parking 14
4.3.18 Trails 15
4.3.19 Protruding Objects 15

4.4 Shared Facilities 18

4.5 Alternate Standards 18

4.6 Temporary Traffic Control 18

ATTACHMENTS

Exception to Accessibility Design Standards 19
Pedestrian Facilities Closure Form 21
Pedestrian Access During Construction Projects Standards 23

TABLES

Table **Page**

Table 4.3.7 – Helical Radius Requirements 9
Table 4.3.8 – Curb Ramp Runs for Sidewalks with 2% Cross Slopes 10
Table 4.3.17 – Off Street Accessible Parking Requirements 15

1.0 BACKGROUND

The Americans with Disabilities Act (ADA) of 1990, along with its implementing regulations, and the California Government Code Sections 4450 et seq. prescribe that facilities shall be made accessible to persons with disabilities. To comply with the ADA, the 2010 ADA Standards, as adopted by the United States Department of Justice (DOJ), shall apply to the design of pedestrian facilities in public rights-of-way that are under the jurisdiction of the City of Long Beach. Although the 2010 ADA Standards are not specifically written for public rights-of-way projects, some of the provisions can apply to the City streets and roadways environment and are included in this Design Information Bulletin (DIB). Until the draft Public Rights-of-Way Accessibility Guidelines (PROWAG) are adopted and binding, the 2010 ADA Standards are to be used as the primary basis of accessibility standards for public rights-of-way. However, certain portions of PROWAG, as agreed to by the Federal Highway Administration (FHWA), are used in this DIB.

In addition to the 2010 ADA Standards, other Federal documents on designing accessible pedestrian facilities in public rights-of-way were used to develop this DIB. For example, the publication Designing Sidewalks and Trails for Access is referred to several times and is available on the Internet at:

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/tranmemo.cfm

Title 24 of the California Code of Regulations is similar to the 2010 ADA Standards in that it prescribes accessibility design standards for the State of California; in Part 2, the California Building Code. The Department of General Services - Division of the State Architect (DSA) oversees California Building Code compliance for construction under its jurisdiction; however, for transportation facilities on the City's street and roadway system, the City of Long Beach Department of Public Works (in addition to DSA) is authorized to certify, on a project-by-project basis, that a project complies with State pedestrian accessibility design standards. Rail and transit stations are the exception. Rail and transit stations are to be reviewed and require an approval from DSA that they comply with the State pedestrian accessibility code.

Please note, this DIB has been written to provide general design guidance on how to comply with the various Federal laws and State codes on pedestrian accessibility for public use. The accessibility requirements, typically associated with projects constructed in public rights of-way have been presented in this DIB as "accessibility design standards" only to facilitate City of Long Beach Department of Public Works processes and procedures. It is not the intent of this DIB to discuss all of the various Federal laws and State codes that apply to making buildings and public facilities accessible; nor is it the intent of this DIB to diminish the importance of and the requirement to comply with those accessibility standards not specifically mentioned in this DIB and as may be required on a project-by-project basis. See Section 3.1 of this DIB for further guidance on the review process for projects.

2.0 DEFINITIONS

The following words and phrases that are shown in bold text are used in this DIB and are defined as shown. As appropriate, reference documents are mentioned within the brackets to indicate the source of the definition.

3R: Roadway resurfacing, restoration, and rehabilitation projects consisting of non-freeway transportation projects that extend the service life and enhance the safety of a roadway. In addition to the work described under resurfacing and restoration, the activities include upgrading the geometric design and safety of the facility. Work may include the upgrading of geometric features such as roadway widening, minor horizontal realignment, and improving bridges to meet current standards for structural loading and to accommodate the approach roadway width. It should be noted that localized asphalt roadway repairs and slurry sealing are maintenance activities which are <u>not</u> considered a 3R activity.

Accessibility Standards: Federal and state accessibility laws, including the 2010 Americans with Disabilities Act (ADA) Accessibility Standards for Accessible Design (2010 ADA Standards), including both the Title II regulations at 28 CFR 35.151 and the 2004 ADAAG at 36 CFR part 1191, appendices B and D, and Title 24 of the California Building Code ("Title 24").

Accessible: A site, building, facility, or portion thereof that complies with this part (of the 2010 ADA Standards) and is approachable and usable by persons with disabilities in compliance with Title 24 of the California Building Code ("Title 24"), as applicable.

Certified Access Specialist (CASp): A professional who has passed an examination and has been certified by the State of California to have specialized knowledge of the applicability of state and federal construction-related accessibility standards and can provide "qualified defendant" status in a construction-related accessibility lawsuit.

City Alley: A narrow lane, path, or passageway, not designated as a street or roadway per the Street and Highways Code, intended to provide access to the rear or side of lots or buildings in urban areas and not intended for the primary purpose of pedestrian access and through vehicular traffic.

City Streets and Roadways: A traversable street and roadway adopted as or designated in the Streets and Highways Code as principal arterials (rural and urban), minor arterials (rural and urban), major collector (rural and urban), minor collector and local and/or a traversable streets and roadways adopted or designated by the City as Scenic Expressway, Smart-Street. Major Arterial, Primary Arterial, Hillside Primary Arterial, Secondary Arterial, Hillside Secondary Arterial, Collector Street, Hillside Collector Street, and Local Street.

Citywide ADA Coordinator: The City representative designated to oversee tasks relating to the development and implementation of the City's Transition Plan, the City's policies and procedures regarding the accessibility of the City's Pedestrian Facilities, and the City's efforts to maintain the accessible features of its Pedestrian Facilities.

Element: An architectural or mechanical component of a building, facility, space, site. or public right-of-way. [PROWAG]

Facility: All or any portion of buildings, structures, improvements, elements. and pedestrian or vehicular routes located in a public right-of-way. [PROWAG]

Historic Property/Historical Resources: Under Federal law [36 CFR 800.16(1)} the term used is "Historic Property" and includes any building, structure, site, object or facility that is listed in or eligible for listing in the National Register of Historic Places.

Under State law [CEQA Guidelines 15064.5 and California Public Resources Code 5020] the term used is "Historical Resources" and includes any building, structure, site, object or facility that meets one of the following:

- Listed in or eligible for listing in the National Register of Historic Places,
- Listed in or eligible for listing in the California Register of Historical Resources,
- Has been identified as significant for purposes of the California Environmental Quality Act (CEQA) by the lead agency because it meets the eligibility criteria of the California Register,
- Is listed in a local register of historical resources or has been identified as significant in an historical resource survey meeting the California Office of Historic Preservation's standards.

Path or Pathway: A track or route along which people are intended to travel. [*Designing Sidewalks and Trails for* Access]

Pedestrian: A person who travels on foot or who uses assistive devices, such as a wheelchair, for mobility. [*Designing Sidewalks and Trails for Access*]

Pedestrian Facility or **Pedestrian Facilities:** Any sidewalk, crosswalk, curb, curb ramp, walkway, pedestrian right of way, pedestrian undercrossing, pedestrian overcrossing, or other pedestrian pathway or walk of any kind that is, in whole or in part, owned, controlled or maintained by or otherwise within the responsibility of the City.

Public Right-of-Way: Public land or property, usually in interconnected corridors, that is acquired for or devoted to transportation purposes. [PROWAG]

Sidewalk: A surfaced pedestrian way contiguous to a street used by the public. [Title 24 11B-106.5] Also, see the discussion in Section 4.3.1, "Surface" of this DIB.

Standard Plan or **Standard Plans:** The engineering standard plans prepared by the City's Public Works Department for the guidance of engineers, contractors and developers who have an interest in the preparation of plans and the construction of facilities and improvements under jurisdiction of the City.

Structurally Impracticable: Rare circumstances when the unique characteristics of terrain prevent the incorporation of accessibility features. [28 CFR 35.151(a)(2)(i)]

Technically Infeasible: With respect to an alteration of a building or a facility, something that has little likelihood of being accomplished because existing structural conditions would require removing or altering a load-bearing member that is an essential part of the structural frame; or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements. [2010 ADA Standards]

Transition Plan: The City of Long Beach Department of Public Works written commitment to accomplish ADA compliance in its services, programs, and activities.

Walk or Walkway: An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts. [2010 ADA Standards]

3.0 PROCEDURES

3.1 Applicability and Review Process

Every street and roadway project (Capital and Maintenance; including all Encroachment Permit projects) within the City of Long Beach streets or roadways right-of-way, regardless of the project sponsor, that proposes to construct pedestrian facilities [See Section 4.1], must be designed in accordance with the policies and standards of this DIB. Per City of Long Beach requirements and Public Works Standard Plans and Details, all projects within streets and roadways right of way shall be designed and constructed in compliance with ADA and California accessibility requirements. Accessibility design standards are listed in Section 4.3. The City will provide copies of the applicable Accessibility Standards to all entities, including private developers, performing new construction or Alterations involving Pedestrian Facilities. Documentation of project compliance with this DIB will be at approval and acceptance by the City of Long Beach Department of Public Works, or at encroachment permit issuance, whichever is applicable.

The City uses an encroachment permit process to regulate the use of sidewalks by private entities for activities such as outdoor dining, vending carts and stands, and street fairs in order to control protruding objects and maintain the clear width of pedestrian access routes. This process shall be used to enforce the City's current code requirements ensuring access to pedestrian facilities that are used by third parties, including but not limited to, barriers caused by signage, tables and chairs, and other items installed or erected by third-parties. See Section 4.3.19.

If it is found that an accessibility design standard cannot be fully incorporated in a design, an accessibility design exception will be required. For an accessibility design exception to be approved. it will be necessary to document that, in the case of alterations to existing facilities, it is technically infeasible to do so. For new construction, the accessibility design standard must be structurally impracticable. Approval of accessibility design exceptions shall occur prior to project approval or as soon as the recommended alternative is identified. Accessibility design exceptions shall be submitted, using the Exception to Accessibility Design Standards document format [See Attachment], to the Design Reviewer for comments and are ultimately approved by the Design Coordinator. The City of Long Beach Department of Development Services Building and Safety Bureau will determine the compliance with accessibility design standards related to building projects. Please note: the external site work not part of the building PS&E will be subject to the procedures in this DIB.

4.0 DESIGN GUIDANCE AND BEST PRACTICES FOR PEDESTRIAN FACILITIES

4.1 Pedestrian Accessibility

All pedestrian facilities on all projects are to be accessible in accordance with State and Federal laws. In addition, it is the intent of this DIB to ensure that the City, and any entities acting on the City's behalf, install curb ramps which meet the Accessibility Standards in effect at the time the work is performed whenever City Pedestrian Facilities are newly constructed or altered. This DIB requires that compliant curb ramps are to be provided at all corners of intersections for all

New Construction or Alterations to City streets or roads, or alleys with pathways intended for pedestrian use, on one or more of the blocks that make up the intersection.

The following guidance and best practices are an attempt to capture the lessons learned through the years since the passage of the ADA and to document the Federal and State regulatory standards that apply. Early consultation with the Design Reviewer or Design Coordinator is recommended to discuss pedestrian accessibility issues and their resolution.

4.1.1 New Construction

State and Federal regulations require that each facility or part of a facility constructed on City of Long Beach's public right-of-way shall be designed and constructed in such a manner that the facility or part of the facility is readily accessible to and usable by individuals with disabilities.

4.1.2 Alterations

State and Federal regulations require that each facility or part of a facility altered in the City of Long Beach public right-of-way in a manner that affects or could affect the usability of the facility or part of the facility shall, to the maximum extent feasible, be altered in such manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities.

Where existing elements or spaces are altered, each altered element or space within the scope of the project shall comply with the applicable requirements for new construction. The work that will physically impact a pedestrian feature is due to the scope of the project identified in the project initiation document or the project report.

More specifically, the following types of Street Roadway work are considered to be alterations of existing facilities:

1. Pavement reconstruction.

2. Pavement resurfacing, restoration, and rehabilitation (3R) work. Work that will physically impact or is scoped to alter existing sidewalks (including those crossing driveways), curb ramps, and crosswalks shall be evaluated for pedestrian accessibility and comply with the guidance in Section 4.1.3 of this DIB. When determining the scope of a 3R project, the following shall be assumed to be within the scope of the project:

   a. Altering existing curb ramps immediately adjacent to the 3R work;

   b. Providing new curb ramps where street level pedestrian walkways immediately adjacent to the 3R work cross curbs and no curb ramps exist; and

   c. Crosswalks constitute distinct elements of the right-of-way intended to facilitate pedestrian traffic. Regardless of whether there is curb-to-curb resurfacing of the street or roadway in general, resurfacing of a crosswalk also requires the provision of curb ramps at that crosswalk. [source: https://www.ada.gov/doj-fhwa-ta.htm

   Resurfacing is an alteration that triggers the requirement to add curb ramps if it involves work on a street or roadway spanning from one intersection to another, and includes overlays of additional material to the road surface, with or without milling. Examples include, but are not limited to the following treatments or their equivalents: addition of a new layer of asphalt, reconstruction, concrete pavement rehabilitation and reconstruction, open-graded surface course, micro-surfacing and thin lift overlays, cape seals, and in-place asphalt recycling. [source: https://www.ada.gov/doj-fhwa-ta.htm

3. Traffic signalization work that will physically impact or is scoped to alter sidewalks, curb ramps and crosswalks are to comply with the pedestrian accessibility guidance in this DIB.

4. Any other work that will physically impact or is scoped to alter a pedestrian facility requires that the pedestrian facilities comply with the pedestrian accessibility guidance in this DIB.

Capital preventive maintenance (CapM) projects, preventive maintenance, or routine maintenance work, such as localized asphalt repairs and slurry seal projects, are not considered alterations. These types of projects may be designed following

the guidance in this DIB, but they are not required to unless the work affects access, circulation, or use of a pedestrian facility.

The FHWA has determined that maintenance activities include actions that are intended to preserve the system, retard future deterioration, and maintain the functional condition of the roadway without increasing the structural capacity. These activities include, but are not limited to, joint repair, pavement patching (filling potholes), shoulder repair, signing, striping, minor signal upgrades, and repairs to drainage systems.
[source: https://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.cfm Q&A Item 18]

Treatments that serve solely to seal and protect the road surface, improve friction, and control splash and spray are considered to be maintenance because they do not significantly affect the public's access to or usability of the road. Some examples of the types of treatments that would normally be considered maintenance are: painting or striping lanes, crack filling and sealing, surface sealing, chip seals, slurry seals, fog seals, scrub sealing, joint crack seals, joint repairs, dowel bar retrofit, spot high-friction treatments, diamond grinding, and pavement patching. In some cases, the combination of several maintenance treatments occurring at or near the same time may qualify as an alteration and would trigger the obligation to provide curb ramps. [source: https://www.ada.gov/doj-fhwa-ta.htm

4.1.3 Accessibility Requirements on 3R Projects

3R projects are considered to be alterations of existing facilities (see Section 4.1.2). Altered portions of pedestrian facilities shall, to the maximum extent feasible, incorporate improvements in such manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities., unless doing so is shown to be "technically infeasible" (see Section 2.0 "Definitions"). The City's Certified Access Specialist (CASp) must agree with the finding that the work is technically infeasible and then approve a supporting Exception to Accessibility Design Standards document. In addition, the accessibility needs of the communities and street, roadway and highway users, in particular the needs of customers with disabilities, need to be considered on each project. Early stakeholder participation, as appropriate to identify accessibility deficiencies, is recommended.

Any pedestrian facility work that needs to be completed outside of the scope of the alteration project should be added to the Transition Plan through the following process. The pedestrian facility needing accessibility improvements must be specifically identified and documented on the Transition Plan. The project sponsor for the work shall contact the Citywide ADA Coordinator, who will oversee addition of this information to the Transition Plan. The Citywide ADA Coordinator will coordinate between relevant City departments regarding installation, repairs, and replacements to Pedestrian Facilities to ensure the enforcement of consistent standards and policies for such improvements throughout the City, and the Citywide ADA Coordinator will track and maintain a record of all work performed and completed under the Transition Plan.

Externally sponsored work that is not being designed by the City of Long Beach Department of Public Works is not exempt from this requirement. The City of Long Beach representative who is working with the external sponsor for the work is required to contact the Citywide ADA Coordinator and assist them in submitting any such work for inclusion in the Transition Plan.

4.1.4 Minimum Accessibility

Newly constructed or altered (see Section 4.1.2) streets and roads must contain curb ramps or other sloped areas at any intersection having curbs or other barriers to entry from a street level pedestrian walkway. This context refers to entry to a sidewalk or pedestrian path from a street level pedestrian walkway.

To the maximum extent feasible.at least one accessible route must be provided from one facility to another. If a more direct route exists that is not an accessible route, the accessible route must be in the same vicinity as the other route.

Whether the project is for new construction or for alteration of an existing facility, full compliance with the design standards contained herein are not required where it can be demonstrated that it is structurally impracticable (for new construction) or technically infeasible (for alterations) to meet the requirements. An exception would be required as explained in Section 3.1. Any portion of the new facility that can be made accessible to persons with disabilities shall comply to the extent that it is not structurally impracticable. Also, any elements or features of the facility that are being altered and can be made accessible shall be made accessible within the scope of the alteration.

4.1.5 Historic Preservation

In meeting the aforementioned requirements of "Minimum Accessibility," a design that would alter or destroy the historic significance of a historic property/historical resource should not be constructed. Historic property/historical resource is any property listed or eligible for listing in the National Register of Historic Places, or properties designated as historic under State or local law. In order to comply with Public Resources Code 5024 and CEQA, the City's Planning Department should be contacted as early as possible in the planning process in order to initiate the required consultation. Non-construction strategies may be an option. See Section 4.1.6, "Program Accessibility" of this DIB.

The fourth item under Section 4.3.7 in this DIB may be used to maintain historic preservation of a historic property/historical resource based on the California Historical Building Code (CHBC), which is the mandatory code for State-owned historical resources. An approved accessibility design exception must be obtained to use this standard. Additionally, consultation with the State Historical Building Safety Board is required

4.1.6 Program Accessibility

Program accessibility applies only to existing pedestrian facilities that were constructed on or before specific dates as early as January 26, 1992; August 9, 1980; or June 3, 1977. Program accessibility does not apply to newly constructed or altered facilities. If you have questions regarding whether program accessibility applies to the specific pedestrian facilities, contact appropriate Public Works personnel and/or the City of Long Beach's ADA Coordinator. If program accessibility applies, an operational solution may achieve accessibility without the need for construction. Existing facilities, to which program accessibility applies, do not have to be made accessible if other methods of providing access are effective. Non-construction approaches may include alternate accessible routings, relocating services or activities to accessible locations, or taking the service or benefit directly to the individual. Coordination with State and Federal agencies, transit agencies, or other affected entities may be required to achieve these strategies.

4.2 Placement of Pedestrian Facilities

Vehicular lanes and shoulders are not required to be designed as accessible pedestrian routes. Where vehicular lanes and shoulders are intended by the City for pedestrian use, thus rendering them walkways, they shall be made accessible. Some small communities in the City of Long Beach do not have pedestrian facilities, which were the result of decisions in the past prior to adoption of the ADA. As a community grows, and the presence of pedestrians become prevalent, street and roadway improvements that include pedestrian facilities should be considered as part of a street and roadway project.

Deciding to construct pedestrian facilities and elements where none exists is an important consideration. In built-up urban areas with pedestrians present, pedestrian facilities should be constructed. In rural areas where few or no pedestrians exist, it may not be reasonable or cost effective to construct pedestrian facilities. For situations between these two extremes the designer should consult with the affected local agency, and special interest groups. Any decision made should be clearly documented in the project files.

All pedestrian facilities proposed within the City of Long Beach streets and roadways right-of-way shall follow the guidance in the City of Long Beach standard plans and requirements.

Pedestrian facilities proposed by outside entities within City of Long Beach and State Highway access controlled right of way shall also comply with City of Long Beach standard plans and requirements and Chapter 17 "Encroachments in Caltrans' Right-of-Way," in the Caltrans *Project Development Procedures Manual*, as applicable.

4.3 Accessibility Design Standards

The most current version of the City of Long Beach *Standard Plans* should be used for designing accessible facilities. Modifying the features shown on the *Standard Plans* or designing pedestrian facilities not covered by the *Standard Plans* shall be in accordance with the following standards and best practices. Following each accessibility design standard is a reference to the applicable Federal and/or State regulation.

4.3.1 Surface

(1) All surfaces on an accessible route shall be stable, firm, and slip resistant.
[2010 ADA Standards 302.1 and Title 24 11B-302.1]

(2) Changes in level up to ¼ inch may be vertical and without edge treatment.
[2010 ADA Standards 303.2 and Title 24 11B-303.2]
(3) Changes in level between ¼ inch and ½ inch shall be beveled with a slope no greater than 1V:2H.
[2010 ADA Standards 303.3 and Title 24 11B-303.3]
(4) Changes in level greater than ½ inch shall be accomplished by means of a ramp.
[2010 ADA Standards 303.4 and Title 24 11B-303.4]

It should be noted that the change in level standards in (2) and (3) do not apply to the curb ramp – gutter transition; it should be flush (no lip).

Surface types on City of Long Beach streets and roadways right-of-way can vary due to the type of facility served. Normally, sidewalks are made of Portland cement concrete, or in some situations asphalt concrete. Surface type selection is a decision made by the designer. Design factors to consider for surface materials are discussed in *Designing Sidewalks and Trails for Access* published by the US Department of Transportation.

The use of paving units, stamped concrete, or stamped asphalt concrete, although within the surface uniformity requirements of an accessible route, could lead to a vibration effect causing repeated jarring to a wheelchair user. No roughness index exists for walkways, as it does for roadway surfaces. Until such guidance becomes available, engineering judgment must be used; the City's CASp can be consulted for further assistance. As a general rule, cobblestone or similar treatments should not be used.

If paving units are used, they must meet the specification requirements of the American Society for Testing and Materials (ASTM) C936.

All walkway surfaces shall have a broom finish texture or an equivalent. Regardless of surface type, if the walkway encroaches onto a roadway, as in the case of a crosswalk, the surface must have a coefficient of friction not less than 0.35 as determined by using California Test Method 342.

At present, no particular color requirement is prescribed in Federal guidelines for an accessible route; see the Detectable Warning Surface section of this DIB regarding the color specification. However, material used to provide contrast on detectable warnings on walkway surfaces should have a contrast by at least 70%. This is intended to assist the visually impaired pedestrian. This contrast is calculated by [(Bl-B2)/B1] x 100, where B1=light reflectance value (LRV) of the lighter area, and B2=light reflectance value (LRV) of the darker area. Visual contrast can be quantified with a luminance meter that measures the amount of light reflected by each subject (where zero is total darkness and 100 is theoretical complete light reflection). This contrast may be used to distinguish elements of a walkway, such as to differentiate a curb ramp from the sidewalk, or the crosswalk from the rest of the pavement. Also, crosswalk or sidewalk surfacing shall not cause glare to the user.

4.3.2 Vertical Clearance

(1) Walks shall have 80 inches minimum clear headroom.
[2010 ADA Standards 307.4 and Title 24 11B-307.4]

It should be noted that the *California Manual on Uniform Traffic Control Devices (CA MUTCD)* requires a vertical clearance at pedestrian pathways to the bottom of signs to be at least 7 feet. This will cover most pedestrian vertical clearance needs. Pedestrian pathways that are part of a shared facility, i.e., bicyclists and equestrians, shall follow the appropriate guidance in the *Highway Design Manual.* See Section 4.4, "Shared Facilities" of this DIB for further information.

4.3.3 Clear Width

Highway Design Manual (HDM) Index 105.2 states, as an Advisory Design Standard, that the "minimum width of a sidewalk should be 8 feet between a curb and a building when in urban and rural main street place types. For all other locations the minimum width of sidewalk should be 6 feet when contiguous to a curb or 5 feet when separated by a planting strip." [source: http://dot.ca.gov/design/manuals/hdm/chp0100.pdf]

In addition to the standards referenced above, the following Accessibility Design Standards are to be followed:

(1) If an accessible route has less than 60 inches clear width, then passing spaces at least 60 inches by 60 inches shall be located at reasonable intervals not to exceed 200 feet.
[2010 ADA Standards 403.5.3 and Title 24 11B-403.5.3]
(2) The clear width for sidewalks and walks shall be 48 inches minimum, exclusive of the width of the curb.
[Title 24 11B-403.5.1.3 and PROWAG R302.3]
(3) When, because of right-of-way restrictions, natural barriers or other existing conditions, the enforcing agency determines that compliance with the 48·inch clear sidewalk width would create an unreasonable hardship, the clear width may be reduced to 36 inches.
[Title 2411B-403.5.1.3]

Regarding (3) above, an unreasonable hardship must be concurred with by the Design Coordinator and documented using the Exception to Accessibility Design Standards format (see attached). In the exception document under Reason for Exception, the following factors for an unreasonable hardship are to be discussed for each location:1) the cost of providing access, 2) the impact of proposed improvements on financial feasibility of the project, 3) the nature of the accessibility which be gained or lost, and 4) the nature of the use of the facility under construction and its availability to persons with disabilities.

4.3.4 Grade

(1) All walks with continuous gradients shall have resting areas, 5 feet in length, at intervals of 400 feet maximum.
[Title 24 11B-403.7]
(2) Where pedestrian access routes are contained within a street or highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or highway. Where pedestrian access routes are not contained within a street or highway right-of-way, the grade of pedestrian access routes shall be 5.0% maximum.
[PROWAG R302.5]
(3) When pedestrian access routes are contained within pedestrian street crossings, the grade of the pedestrian route shall be 5.0% maximum.
[PROWAG R302.5.1]

The accessibility standard in (1) above does not apply to sidewalks, but (2) does. The grade or slope of an accessible route should be as flat as possible. Since exterior facilities must drain, walkway can be at 2.0% and still be considered level. The practical use of the accessibility standard in (1) above is thus applied for grades exceeding 2.0%; the "resting areas" are considered level, not exceeding 2.0%. Any part of an accessible route with a slope greater than 1V:20H (5.0%) shall be considered a ramp, and must comply with the standards of a ramp. See Section 4.3.7 of this DIB, "Ramps,' for further information.

A profile of the pedestrian pathway should be developed to ensure compliance with grade and other design parameters.

4.3.5 Cross Slope

(1) Except as provided in Section 4.3.5(2) and (3), the cross slope of pedestrian access shall be 2.0% maximum.
[PROWAG R302.6]
(2) Where pedestrian access routes are contained within pedestrian street crossings without yield or stop control, the cross slope of the pedestrian access route shall be 5.0% maximum.
[PROWAG R302.6.1]
(3) Where pedestrian access routes are contained within midblock pedestrian street crossings, the cross slope of the pedestrian access route shall be permitted to equal the street or highway grade.
[PROWAG R302.6.2]

A maximum cross slope of 2 percent is specified for pedestrian access routes, except for pedestrian access routes contained within certain pedestrian street crossings in order to allow for typical roadway geometry. A 5 percent maximum cross slope is specified for pedestrian access routes contained within pedestrian street crossings without yield or stop control to avoid any unintended negative impacts on the control and safety of vehicles, their occupants, and pedestrians in the vicinity of

the intersection. Pedestrian street crossings without yield or stop control are crossings where there is no yield or stop sign, or where there is a traffic signal that is designed for the green phase. At pedestrian street crossings without yield or stop control vehicles can proceed through the intersection without slowing or stopping. The cross slope of pedestrian access routes contained within midblock pedestrian street crossings is permitted to equal the street or highway grade.

Drainage is always a design consideration for exterior facilities. Walkways shall be designed so that water will not accumulate on the surface.

4.3.6 Grates and Railroad Tracks

(1) If gratings are located in walks, then they shall have spaces no greater than ½ inch in one direction. If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel.
[2010 ADA Standards 302.3 and Title 24 11B-302.3]

(2) Where a path crosses tracks, the opening for wheel flanges shall be permitted to be 2 -½ inches maximum.
[2010 ADA Standards 810.10 and Title 24 11B-810.10 Exception]

Walks shall be free of grating whenever possible.

4.3.7 Ramps

(1) Slopes that are greater than 1V:20H (5.0%) will be considered ramps and must not exceed a 30 inch rise without landings.
[2010 ADA Standards 106.5, 405.6 and Title 24 11B-403.3, 11B-405.6]

(2) The maximum slope of a ramp shall not exceed 1V:12H (8.33%).
[2010 ADA Standards 405.2 and Title 24 11B-405.2]

(3) The cross slope of ramp surfaces shall be no greater than 2.0%.
[2010 ADA Standards 405.3 and Title 24 11B-405.3]

(4) In the case of a historic property/historical resource, ramps no greater than 1V:10H, cannot exceed a horizontal distance of 5 feet. Or, ramps of 1V:6H slope cannot exceed a horizontal distance of 13 inches. Signs shall be posted at upper and lower levels to indicate steepness of the slope.
[Title 24 8-603.5]

This standard should only be used with an approved exception.

It should be noted that a sidewalk is not bound by the requirements of a ramp. Curved (or helical) ramps shall be subject to the same design standards as straight ramps. However, because of the complexity, curved ramps should not be constructed if a straight ramp can accomplish the same accessibility. If a curved ramp is sloped at the maximum 1V:12H (8.33%), then the minimum radius needed is 50 feet; otherwise, a smaller radius will provide a path that exceeds the maximum 2% cross slope. Table 1 shows the minimum radius required for a given ramp slope:

TABLE 4.3.7 – HELICAL RADIUS REQUIREMENTS

Slope	Minimum Radius Required to Inner Side of Ramp
5%	30 feet
8.33%	50 feet

4.3.8 Curb Ramps

(1) Perpendicular and parallel curb ramps shall have a running slope not steeper than 1V:12H (8.3%) maximum but shall not require the ramp length to exceed 15 feet. Blended transitions shall have a running slope not steeper than 1V:20H (5.0%).
[2010 ADA Standards 406.1, 405.2 and Title 24 11B-406.2.1, 406.3.1, 406.4.1, PROWAG R304.2.2, R304.3.2 and R304.4.1]

(2) The clear width of curb ramp runs (excluding any flared sides), blended transitions, and turning spaces shall be 48 inches minimum.
[Title 24 11B-406.5.2]

(3) Landings shall be provided at the tops of curb ramps and blended transitions. The landing clear length shall be 48 inches minimum. Exception: parallel curb ramps shall not be required to comply with the top landing requirement.
[2010 ADA Standards 406.4 and Title 24 11B-406.5.3 including Exception]

(4) Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1V:20H (5.0%). The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
[2010 ADA Standards 406.2 and Title 24 11B-406.5.8]

(5) Where provided, curb ramp flares shall not be steeper than 1V:10H (10.0%).
[2010 ADA Standards 406.3 and Title 24 11B-406.2.2]

(6) Diagonal curb ramps with flared sides shall have a segment of curb 24 inches long minimum located on each side of the curb ramp and within the marked crossing.
[2010 ADA Standards 406.6 and Title 24 11B-406.5.10]

(7) Diagonal curb ramps provided at marked crossings shall provide the 48 inches minimum clear space within the markings.
[2010 ADA Standards 406.6 and Title 24 11B-406.5.9]

(8) The cross slope of curb ramps, blended transitions, and turning spaces (landings) shall be 2.0% maximum. At pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings, the cross slope shall be permitted to equal the street or highway grade.
[PROWAG R304.5.3]

Regarding (6) above, this standard applies only on flared sides.

Regarding (8) above, the designer should strive to hold a 2.0% cross slope before deciding to match the street or highway grade. In most cases, the 2.0% can be held and a detail would be needed to show the transition and pavement/sidewalk conformance. To accomplish this, the gutter pan must be warped before additional slope, beyond the 2.0%, is introduced outside of the curb ramp itself (on the pavement and sidewalk). The crosswalk must comply with Section 4.3.5 (also see Section 4.1.2); therefore, cross slope of curb ramps should not exceed that of the crosswalk regardless of roadway profile grade.

The ramp width shall be consistent with the width of an accessible route. Flares are needed if the curb ramp is located where pedestrians may traverse across the ramp.

Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush. See Title 24 11B-406.5.6.

In addition to the curb ramp slope, the cross slope of a sidewalk will determine the horizontal length of the curb ramp run, since anything more than a flat surface (no slope) will require more length to intercept the sidewalk surface. Table 4.3.8 can be used as a design aide when the sidewalk has a 2.0% cross slope.

TABLE 4.3.8 – Curb Ramp Runs for Sidewalks with 2.0% Cross Slopes

Height of Curb Face	**Curb Ramp Run** (Horizontal Length)
4 inches	63 inches
5 inches	78 inches
6 inches	95 inches
7 inches	111 inches
7-1/2 inches	118-1/2 inches
8 inches	126 inches

4.3.9 Medians and Islands

(1) Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides.
[2010 ADA Standards 406.7]

The width of the cut through raised medians or islands should be consistent with the widths required in Section 4.3.3 in this DIB. Since the cut for the path through the raised median or island is adjacent to traffic and without a "barrier," it must have a detectable warning surface as described in Section 4.3.14 in this DIB. The detectable warning surface width and placement shall follow the details in City of Long Beach *Standard Plans.*

4.3.10 Handrails

Handrails are not required on curb ramps or along sidewalks. In all other situations, the following applies:

(1) Ramp runs shall have handrails unless the ramp is located at a door landing and has less than 6 inches in rise or 72 inches in length. Handrails shall be provided on both sides of stairs and ramps.
[2010 ADA Standards 405.8, 505.2 and Title 24 11B-405.8, 11B-505.2]

(2) Handrails shall be continuous within the full length of each stair flight or ramp run. Inside handrails on switchback or dogleg stairs and ramps shall be continuous between flights and runs.
[2010 ADA Standards 505.3 and Title 24 11B-505.3]

(3) Clearance between handrail gripping surfaces and adjacent surfaces shall be 1-½ inches minimum.
[2010 ADA Standards 505.5 and Title 24 11B-505.5]

(4) Gripping surfaces shall be continuous.
[2010 ADA Standards 505.6 and Title 24 11B-505.6]

(5) Top of handrail gripping surfaces shall be mounted 34 inches minimum and 38 inches maximum vertically above walking surfaces, stair nosings and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, and ramp surfaces.
[2010 ADA Standards 505.4 and Title 24 11B-505.4]

(6) Handrails shall not rotate within their fittings.
[2010 ADA Standards 505.9 and Title 24 11B-505.9]

(7) Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1¼ inches minimum and 2 inches maximum. Handrail gripping surfaces with a non- circular cross section shall have a perimeter dimension of 4 inches minimum and 6¼ inches maximum, and a cross-section dimension of 2¼ inches maximum.
[2010 ADA Standards 505.7.1, 505.7.2 and Title 24 11B-505.7.1, 505.7.2]

(8) Ramp handrails shall extend horizontally above the landing for 12 inches minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.
[Title 24 11B-505.10.1]

4.3.11 Warning Curb and Guard

Guard as used in this section is defined in the *California Building Code* [Title 24 202] as a building component or a system of building components located at or near the open sides of elevated walking surfaces that minimizes the possibility of a fall from the walking surface to the lower level. It should be noted that where guards serve as edge protection pursuant to the ADAS and CBC, they are accessibility design features subject to the ADA and CBC (See 2016 CBC 11B-303.5; 2016 CBC 11B-405.9; and ADAS 405.9). A guard is a fire and life safety design feature for elevated pedestrian paths. The guard standards in this DIB do not apply to bridge structures and railings. The City of Long Beach Department of Public Works / Engineering Bureau guidance on bridge structures applies.

(1) Abrupt changes in level exceeding 4 inches in a vertical dimension between walks, sidewalks or other pedestrian ways and adjacent surfaces or features shall be identified by warning curbs at least 6 inches in height above the walk or sidewalk surface. Exception: a warning curb is not required between a walk or sidewalk and an adjacent street or driveway.
[Title 24 11B-303.5 including Exception #1]

(2) A warning curb is not required when a guard or handrail is provided with a guide rail centered 2 inches minimum and 4 inches maximum above the surface of the walk or sidewalk.

[Title 24 11B-303.5 Exception #2]

(3) Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings that are located more than 30 inches measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side.
[Title 24 1013.2]

(4) Required guards shall not be less than 42 inches high, measured vertically as follows: 1) From the adjacent walking surfaces; 2) On stairs, from the line connecting the leading edges of the tread nosings; and 3) On ramps, from the ramp surface at the guard.
[Title 24 1013.3]

(5) Required guards shall not have openings which allow passage of a sphere 4 inches in diameter from the walking surface to the required guard height.
[Title 24 1013.4]

Chain link fence Type CL-4 satisfies the requirements of a guard, see the *Standard Plans* for details.

4.3.12 Curb or Barrier

Where the ramp surface is not bounded by a wall, the ramp shall comply with the following requirements:

(1) A curb, 2 inches high minimum, or barrier shall be provided that prevents the passage of a 4-inch diameter sphere, where any portion of the sphere is within 4 inches of the finish floor or ground surface. To prevent wheel entrapment, the curb or barrier shall provide a continuous and uninterrupted barrier along the length of the ramp.
[2010 ADA Standards 405.9.2 and Title 24 11B-405.9.2]

This requirement is not applicable to sidewalks or curb ramps.

4.3.13 Landings

A level landing is allowed to be sloped up to 2.0% to accommodate drainage. For curb ramp landing guidance, see Section 4.3.8 of this DIB. This DIB does not discuss the situation where a door opens onto a landing at a building entrance. For this situation, as well as with any building egress design, refer to *California Building Code* Chapter 10 and confer with the Building and Safety Bureau in the Department of Development Services.

Landings shall be designed as following:

(1) Ramps shall have landings at the top and the bottom of each ramp run.
[2010 ADA Standards 405.7 and Title 24 11B-405.7]

(2) The landing clear width shall be at least as wide as the widest ramp run leading to the landing.
[2010 ADA Standards 405.7.2 and Title 24 11B-405.7.2]

(3) The landing clear length shall be at least 60 inches long minimum. However, the bottom landing length shall be not less than 72 inches.
[2010 ADA Standards 405.7.3 and Title 24 11B-405.7.3, 11B-405.7.3.1]

(4) Top landings shall be not less than 60 inches wide.
[Title 24 11B-405.7.2.1]

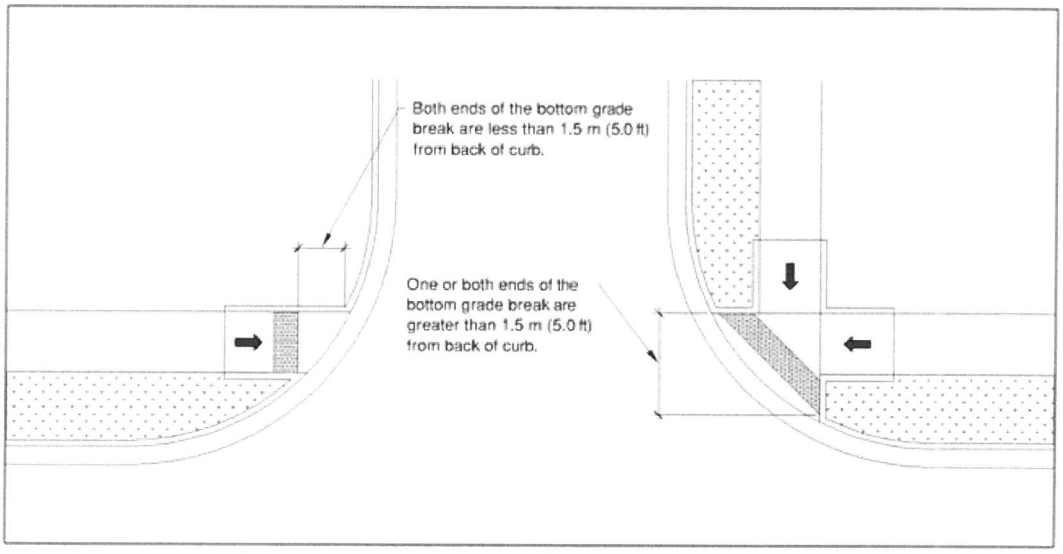
(5) Ramps that change direction between runs at landings shall have a clear landing 60 inches minimum by 72 inches minimum in the direction of downward travel from the upper ramp run.
[2010 ADA Standards 405.7.4 and Title 24 11B-405.7.4]

4.3.14 Detectable Warning Surface

(1) Detectable warnings at hazardous vehicular areas shall be 36 inches in width.
[Title 24 11B-705.1.2.5]

(2) On perpendicular curb ramps, detectable warning surfaces shall be placed as follows (also see figure below):

(a) Where the ends of the bottom grade break are in front of the back of curb, detectable warning surfaces shall be placed at the back of curb.
(b) Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade break to back of curb is 5.0 ft or less, detectable warning surfaces shall be placed on the ramp run within one dome spacing of the bottom grade break.
(c) Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade break to the back of curb is more than 5.0 ft, detectable warning surfaces shall be placed on the lower landing at the back of curb.
[PROWAG R305.2.1]



Detectable warnings shall consist of raised truncated domes as shown on the City of Long Beach *Standard Plans*. Curb ramps shall contain detectable warning surfaces according to these *Standard Plans*. Detectable warning surfaces are not normally placed at driveways. However, in some cases driveways at high traffic generators are designed similarly to street intersections; including curb returns and curb ramps. Detectable warning surfaces may be necessary in these instances.

4.3.15 Grooves

Curb ramps shall have a grooved border 12 inches wide along the top of the curb ramp at the level surface of the top landing and at the outside edges of the flared sides. The grooved border shall consist of a series of grooves ¼ inch wide and ¼ inch deep, at ¾ inch on center. Exceptions: 1) At parallel curb ramps, the grooved border shall be on the upper approach immediately adjacent to the curb ramp across the full width of the curb ramp. 2) A grooved border shall not be required at blended transitions.

See Standard Plan 122 for grooving detail.

4.3.16 Bus Stops

(1) Bus Stop boarding and alighting areas shall provide a clear length of 96 inches minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 inches minimum, measured parallel to the vehicle roadway.
[2010 ADA Standards 810.2.2 and Title 24 11B-810.2.2]

(2) Where provided, new or replaced bus shelters shall be installed or positioned so as to permit a wheelchair or mobility aid user to enter from the public way and to reach a location, having a minimum clear floor area of 30 inches by 48 inches, entirely within the perimeter of the shelter.
[2010 ADA Standards 305.3 and Title 24 11B-810.3]

(3) Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by an accessible route. Newly constructed bus stop pads shall provide a square curb transition between the pad and roadway elevations or detectable warnings.
[Title 24 11B-810.2.3]

(4) Parallel to the roadway, the slope of the bus stop boarding and alighting area shall be the same as the roadway, to the maximum extent practicable. Perpendicular to the roadway, the slope of the bus stop boarding and alighting area shall not be steeper than 2.0%.
[2010 ADA Standards 810.2.4 and Title 24 11B-810.2.4]

4.3.17 Parking

The following applies to off street accessible parking.

(1) For off street parking, Table 4.3.17 establishes the number of accessible parking spaces required.
[2010 ADA Standards 208.2 and Title 24 11B-208.2]

(2) For every six or fraction of six accessible parking spaces, at least one shall be a van parking space.
[2010 ADA Standards 208.2.4]

(3) Car and van parking spaces shall be 216 inches (18 ft) long minimum. Car parking spaces shall be 108 inches (9 ft) wide minimum and van parking spaces shall be 144 inches (12 ft) wide minimum, shall be marked to define the width, and shall have an adjacent access aisle. Exception: Van parking spaces shall be permitted to be 108 inches (9 ft) wide minimum where the access aisle is 96 inches (8 ft) wide minimum.
[Title 24 11B-502.2 including Exception]

(4) Access aisles serving car and van parking spaces shall be 60 inches wide minimum.
[2010 ADA Standards 502.3.1 and Title 24 11B-502.3.1]

(5) Access aisles shall be at the same level as the parking spaces they serve. Changes in level are not permitted. Exception: Slopes not steeper than 2.0% shall be permitted.
[2010 ADA Standards 502.4 including Exception and Title 24 11B-502.4 including Exception]

Parking spaces that serve a particular building or facility shall be located on the shortest accessible route from the parking to an entrance. Where parking serves more than one accessible entrance, parking spaces shall be dispersed and located on the shortest accessible route to the accessible entrances. In parking facilities that do not serve a particular building or facility, parking spaces shall be located on the shortest accessible route to an accessible pedestrian entrance of the parking facility.

In each parking area, a bumper or curb shall be provided and located to prevent encroachment of cars over the required width of walkways. Also, the space shall be so located that persons with disabilities are not compelled to wheel or walk behind parked cars other than their own. Pedestrian ways which are accessible to persons with disabilities shall be provided

from each such parking space to related facilities, including curb cuts or ramps as needed. Ramps shall not encroach into any accessible parking space or the adjacent access aisle.

TABLE 4.3.17 – OFF STREET ACCESSABLE PARKING REQUIREMENTS

Total Number of Parking Spaces In Lot or Garage	Minimum Number of Spaces Required
1-25	1
26-50	2
57-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1,000	See Note 1
1,000 and over	See Note 2

1. Two percent of total.
2. Twenty plus one for each 100, or fraction over 1,000.

Signing and striping for on and off street parking shall conform to the design details shown on the City of Long Beach *Standard Plans*. Consult with the Department of Public Works Traffic Reviewer/Liaison regarding proposed signing and striping changes.

4.3.18 Trails

Trails within the City streets or roadways right-of-way are considered to be pedestrian facilities if pedestrians may traverse the path, either for their exclusive use or shared with other users. Trails that are intended for non-pedestrian use only, e.g., equestrian or for mountain bikes, are not subject to the guidance in this section.

(1) This DIB adopts the trail guidance provided in Section F247 and in Sections 1016 through 1018 of the Federal Guide on "Outdoor Developed Areas" as found on the US Access Board website: www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas

Any proposed exception to the design standards in the "Outdoor Developed Areas Guide" must make reference to those applicable sections in the exception request. The conditions described in Section 1019 Conditions for Exceptions may be used, as specified in the provisions, to support an exception.

4.3.19 Protruding Objects

(1) Objects with leading edges more than 27 inches and not more than 80 inches above the finish floor or ground shall protrude 4 inches maximum horizontally into the circulation path. Exception: Handrails shall be permitted to protrude 4½ inches maximum.
[2010 ADA Standards 307.2 and Title 24 11B-307.2 including Exception]

(2) Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches high. The leading edge of such guardrail or barrier shall be located 27 inches maximum above the finish floor or ground. Where a guy support is used parallel to a circulation path, including but not limited to sidewalks, a guy brace, sidewalk guy or similar device shall be used to prevent an overhanging obstruction.
[2010 ADA Standards 307.4 and Title 24 11B-307.4]

(3) Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches maximum when located 27 inches minimum and 80 inches maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than

12 inches, the lowest edge of such sign or obstruction shall be 27 inches maximum or 80 inches minimum above the finish floor or ground.

[2010 ADA Standards 307.3 and Title 24 11B-307.3]

(4) Protruding objects shall not reduce the clear width required for accessible routes.

[2010 ADA Standards 307.5 and Title 24 11B-307.5]

In general, street furniture or any item placed within the pedestrian environment must be cane detectable. Objects that protrude over a pedestrian pathway above a height of 27 inches are not considered detectable by cane. A critical zone, which is not considered detectable, is between 27 inches and 80 inches above the pedestrian pathway surface. Many transportation elements within the pedestrian pathway are cane detectable, such as electrical systems hardware, and these are specified in the City of Long Beach *Standard Plans.*

This DIB adopts the guidance provided in Section R210 of the PROWAG:

R210 Protruding Objects. Objects along or overhanging any portion of a pedestrian circulation path shall comply with R402 and shall not reduce the clear width required for pedestrian access routes.

Advisory R210 Protruding Objects. Protruding objects can be hazardous for pedestrians, especially pedestrians who are blind or have low vision. The requirements for protruding objects in R402 apply across the entire width of the pedestrian circulation path, not just the pedestrian access route. In addition, objects must not reduce the clear width required for pedestrian access routes. State and local governments must comply with the requirements for protruding objects and maintain the clear width of pedestrian access routes when installing or permitting the installation of street furniture on sidewalks, including street lights, utility poles and equipment cabinets, sign posts and signs, parking meters, trash receptacles, public telephones, mailboxes, newspaper vending machines, benches, transit shelters, kiosks, bicycle racks, planters and planted trees, and street sculptures. The American Association of State Highway and Transportation Officials (AASHTO) recommends that local governments use an encroachment permit process to regulate the use of sidewalks by private entities for activities such as outdoor dining, vending carts and stands, and street fairs in order to control protruding objects and maintain the clear width of pedestrian access routes. See AASHTO, Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004), section 3.2.3.

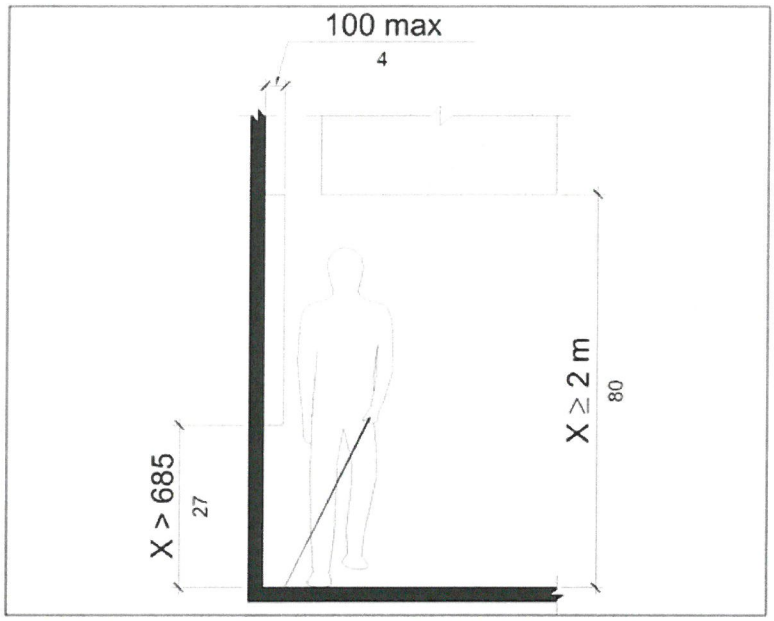
[PROWAG - R210 Protruding Objects and Advisory R210 Protruding Objects]

R402 Protruding Objects

R402.1 General. Protruding objects shall comply with R402.

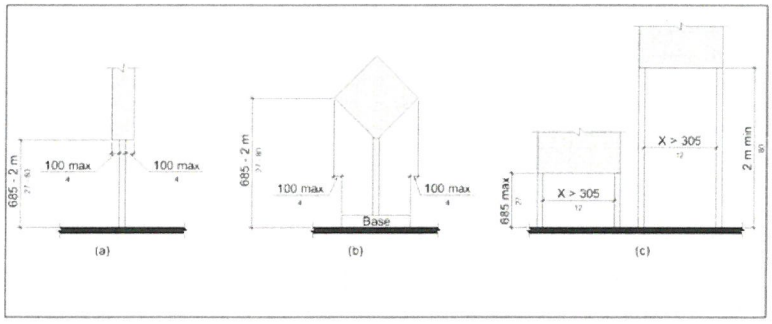
R402.2 Protrusion Limits. Objects with leading edges more than 685 mm (2.25 ft) and not more than 2 m (6.7 ft) above the finish surface shall protrude 100 mm (4 in) maximum horizontally into pedestrian circulation paths.

Figure R402.2 Protrusion Limits



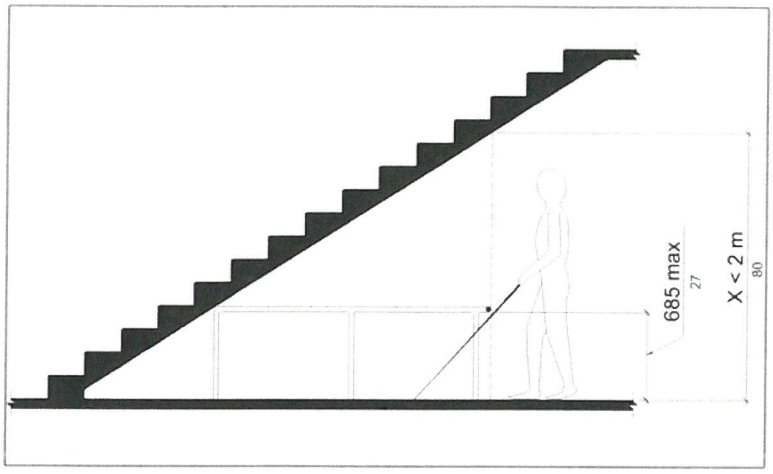
R402.3 Post-Mounted Objects. Where objects are mounted on free-standing posts or pylons and the objects are 685 mm (2.25 ft) minimum and 2030 mm (6.7 ft) maximum above the finish surface, the objects shall overhang pedestrian circulation paths 100 mm (4 in) maximum measured horizontally from the post or pylon base. The base dimension shall be 64 mm (2.5 in) thick minimum. Where objects are mounted between posts or pylons and the clear distance between the posts or pylons is greater than 305 mm (1.0 ft), the lowest edge of the object shall be 685 mm (2.25 ft) maximum or 2 m (6.7 ft) minimum above the finish surface.

Figure R402.3 Post-Mounted Objects



R402.4 Reduced Vertical Clearance. Guardrails or other barriers to pedestrian travel shall be provided where the vertical clearance is less than 2 m (6.7 ft) high. The leading edge of the guardrail or barrier shall be located 685 mm (2.25 ft) maximum above the finish surface.

Figure R402.4 Reduced Vertical Clearance



[PROWAG – R402 Protruding Objects]

Where it is decided to prohibit pedestrian crossings at an intersection or ramp crossing, a pedestrian barricade should be used. Consult with your Department of Public Works Traffic Reviewer/Liaison for further guidance.

4.4 Shared Facilities

Pedestrian facilities that are part of nonmotorized transportation facilities must be designed in accordance with the *Highway Design Manual* for the appropriate bikeway classification, and the *Designing Sidewalks and Trails for Access* for best practice equestrian design.

Designers of pedestrian-shared facilities must consider the geometric requirements that are most critical for the intended users. In some cases, designing for pedestrians may govern the geometric features. For example, a designated Class 1 bikeway may legally be used by pedestrians and bicycles. But, it may not be practical to design for both users at certain segments of the path. In such cases, a design exception will either be needed for a bicycle standard in Chapter 1000 of the *Highway Design Manual* or for a pedestrian accessibility standard in this DIB; consult with the City's CASp.

4.5 Alternate Standards

Federal regulations allow the use of other accessibility standards, if they provide substantially equivalent or greater access to the facility system, as the minimum Federal accessibility standards. Similarly, the *California Building Code* allows the enforcing agency to make design judgments as to equivalent designs. Local Agency standards that provide equivalent or greater accessibility than the Federal 2010 ADA Standards and the *California Building Code* may be used in lieu of the minimum standards in this DIB. Those standards not in this DIB should be discussed with the Design Coordinator and the justification documented in the project files. In the case of a historic property/historical resource, use of the California Historical Building Code is mandatory for State-owned facilities as well as consultation with the State Historical Building Safety Board.

4.6 Temporary Traffic Control

Temporary traffic control (TTC) zones can impact a wide range of City of Long Beach streets and roadways right-of-way users, including persons with disabilities. During the design phase, a decision must be made whether or not to include plans to accommodate pedestrians and/or special provisions consistent with the CA MUTCD. If plans and/or special provisions are provided for this purpose, the Transportation Management Plan Guidelines must be followed. If it is elected to close any sidewalk(s) due to construction or other temporary conditions, including temporary events, a temporary route for use by the public shall be identified, and the various provisions for pedestrian accommodation as set forth in the CA MUTCD Part 6 must be followed. These requirements include, but are not limited to, the following:

(1) Temporary facilities, including pedestrian routes around worksites, are also covered by the accessibility requirements of the Americans with Disabilities Act of 1990 (ADA) (Public Law 101-336, 104 Stat. 327, July 26, 1990. 42 U.S.C. 12101-12213 (as amended)).

[California MUTCD 2014 Edition (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California), Section 6A.01 General, Subsection 11]

(2) If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided. If the TTC zone affects an accessible and detectable pedestrian facility, the accessibility and detectability shall be maintained along the alternate pedestrian route.

[California MUTCD 2014 Edition (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California), Section 6D.01 Pedestrian Considerations, Subsection 4]

(3) *Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" (see Section 1A.11), and should not be used as a control for pedestrian movements.*

[California MUTCD 2014 Edition (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California), Section 6D.01 Pedestrian Considerations, Subsection 28]

(4) When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Where pedestrians with visual disabilities normally use the closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.

[California MUTCD 2014 Edition (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California), Section 6D.02 Accessibility Considerations, Subsection 3]

(5) Where it has been determined that the accommodation of pedestrians with disabilities is necessary, signs shall be mounted and placed in accordance with Section 4.4 of the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)"

[California MUTCD 2014 Edition (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California), Section 6D.03 Sign Placement, Subsection 9]

(6) When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

[California MUTCD 2014 Edition (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California), Section 6D.05 Work Affecting Pedestrian and Bicycle Facilities, Subsection 9]

For projects under construction, the Design Coordinator must discuss the provisions of the CA MUTCD with the contractor prior to the beginning of work during the preconstruction meeting, as required in the Construction Manual.

Approval of a pedestrian facilities closure shall occur prior to project approval or as soon as the recommended alternate pedestrian route is identified. Pedestrian facilities closures shall be submitted, using the Pedestrian Facilities Closure Form [See Attachment], to the Design Reviewer for comments and are ultimately approved by the Design Coordinator. This Form requires submission of a diagram that includes the following:

(1) Alternate paths when the ordinary pedestrian accessible route, such as the sidewalk, is obstructed by a temporary work zone.
(2) Signage at nearest intersections surrounding a work zone that facilitates pedestrians making appropriate travel decisions.
(3) Appropriate signage at curbs, crosswalks, intersections, or any other area affected by the work zone. Provide signage (Go to http://www.longbeach.gov/citymanager/ada/resources/ and select Temporary Accessibility Signage) directing persons with disabilities to accessible temporary routes.
(4) Scheduling and tracking routine sunrise and sunset inspections of affected accessible path(s) of travel.
(5) A statement affirming that the City's "Pedestrian Access During Construction Projects" Standards [See Attachment] and "Meetings and Public Events ADA Accessibility Checklist" have been reviewed and shall be followed in association with all pedestrian paths of travel associated with meetings, public events, and around work zones, as applicable.
(6) A statement affirming that all pedestrian paths of travel around work zones shall be accessible and compliant with Federal, California and local laws, including the ADA.

Street Name _____
From _____
To _____
Project ID or Encroachment Permit Number _____

EXCEPTION TO ACCESSIBILITY DESIGN STANDARDS

Prepared by:

_____
(Name), Registered Civil Engineer [3]

Submitted by: _____ Date: _____
(Name), Design Engineer

Recommended by: _____ Date: _____
(Name), Project Manager

Concurrence [1] by: _____ Date: _____
(Name), City CASp

Approved [2] by: _____ Date: _____

Notes:
1. Must be a Supervising Transportation Engineer or higher Civil Service Engineering Classification.
2. Delete this signature line for Rail or Transit Station projects (DSA is the approving entity).
3. A Licensed Architect or Licensed Landscape Architect may prepare this document and sign and seal it in lieu of a Registered Civil Engineer, provided the same Licensed Architect or Licensed Landscape Architect designed the on-site improvements. Use the seal of the appropriate licensed person in responsible charge.

Street Name _____
From _____
To _____
Project ID or Encroachment Permit Number _____

This documentation shall be filed in the City of Long Beach Department of Public Works project history files. A copy shall be sent to the City Engineer attention Design Report Routing. Attach, as necessary, the information discussed in Item Number 3. At a minimum, the Exception to Accessibility Design Standards should contain the following sections:

1. Project Description

Describe the overall project scope and the proposed pedestrian facility design portion. Provide geographic project limits and lengths. Also, describe the existing highway facility as well as the existing pedestrian facilities.

If using an accessibility standard not listed in DIB 01-18, describe the accessibility standard and its reference of origin.

2. Project Costs

Provide the total capital cost estimate of the project. Also, provide an estimate of the capital cost of the proposed pedestrian features.

3. Nonstandard Feature(s)

Describe the nonstandard accessibility feature(s) to be constructed or to be maintained in an alteration. Provide sufficient information in written and graphic (layouts, cross sections, profiles, details, etc.) format to convey the extent of noncompliance with accessibility standards.

4. Standard(s) for Which Exception is Requested

State the accessibility standard from DIB 01-18.

5. Reason for Exception

The request for exception to accessibility design standards must state the reason why the facility or element is in whole or in part structurally impracticable (for new construction) or technically infeasible (for alterations) to comply with DIB 01-18 standards. Exceptions must be based on factors which may include historical significance, existing terrain, environmental issues, right of way constraints, conflicts with other design standards, and/or other significant considerations. Excessive cost may be supplemental information but cannot be used to support an exception related to a structural impracticability or technical infeasibility. The four (4) factors for unreasonable hardships related to Clear Width, discussed in Section 4.3.3 of DIB 01-18, are to be documented in this section.

6. Work Required to Make Standard

Provide a description of the additional work in excess of the proposed project work required to meet the subject accessibility standard.

7. Reviews and Concurrence

As appropriate, provide the names of the Project Design and City of Long Beach personnel who have discussed and concurred with this document; and include date of their concurrence

PEDESTRIAN FACILITIES CLOSURE FORM

(Street(s), Sidewalks, Bike Paths, Bike Parking, or Parking)

Date Submitted:

Street(s), Sidewalks, Bike Path, Bike Parking, or Parking to be Closed:

Reason for Closure:

Project On-Site Contact Person: Phone Number:

Public Works (PW) Project Manager (PM): Public Works (PW) PM Phone Number:

Date of Closure: Expected Time of Closure:

Date of Re-opening: Expected Time of Re-opening:

Work Order No. (if used): City Contract No.:

Is Traffic re-routing necessary? If so, who should be involved?

Will Pedestrian/bicycle traffic be affected? If so, will the sidewalk be closed?

Will ADA audible/visual warnings and barriers be provided? Will pedestrian traffic be routed safely?

Are additional safety precautions needed?

Yes	No	
☐	☐	Is barricading required? If so, indicate the barricade locations on the diagram.
☐	☐	Will Public Works (PW) staff place the barricades? If the barricades will be placed by others, give the name of person responsible and the telephone number:
☐	☐	Will police be necessary to direct the traffic? If so, name jurisdiction times, dates and location of each officer needed:
☐	☐	Will this street closure affect campus parking meters on the street or in the parking lots in this area?

Please provide a diagram noting signage, re-routing, safety features, etc. with related explanations. Diagram is required. ***fn1**

***fn1** The diagram, at minimum, shall indicate the following:

1. Alternate paths when the ordinary pedestrian accessible route, such as the sidewalk, is obstructed by a temporary work zone.
2. Signage at nearest intersections surrounding a work zone that facilitates pedestrians making appropriate travel decisions.
3. Appropriate signage at curbs, crosswalks, intersections, or any other area affected by the work zone. Provide signage (Go to http://www.longbeach.gov/citymanager/ada/resources/ and select Temporary Accessibility Signage) directing persons with disabilities to accessible temporary routes.
4. Scheduling and tracking routine sunrise and sunset inspections of affected accessible path(s) of travel.
5. A statement affirming that the City's "Pedestrian Access During Construction Projects" Standard and "Meetings and Public Events ADA Accessibility Checklist" have been reviewed and shall be followed in association with all pedestrian paths of travel associated with meetings, public events, and around work zones, as applicable.
6. A statement affirming that all pedestrian paths of travel around work zones shall be accessible and compliant with Federal, California and local laws, including the ADA.

Date approved: Approved By:

Department of Public Works: Marianne Alferez Habal
Phone: (562) 570-6383 · E-Mail: marianne.habal@longbeach.gov

PEDESTRIAN ACCESS DURING CONSTRUCTION PROJECTS STANDARDS

Department of Public Works: Marianne Alferez Habal
Phone: (562) 570-6383 · E-Mail: marianne.habal@longbeach.gov

- The purpose of these **standards** for **construction** in the public right-of-way is to ensure pedestrian safety and access.
- **Standards** apply to City of Long Beach crews, **Contractors** with the City, and all others working in the **right-of-way**.
- Each project is unique and requires **thorough** review to ensure complete, safe, usable and accessible paths of **travel**.

MAINTENANCE OF A CLEAR AND ACCESSIBLE PEDESTRIAN CORRIDOR

The Contractor or permittee shall maintain an accessible corridor that provides at least one safe path of travel for all pedestrians at all times for the duration of the project.

- Pedestrian corridor shall be a nominal width of 6' whenever feasible, and shall conform to Federal ADA and California access standards. It shall not be less than 48" wide at single point of contact or obstruction.
- Accessible pedestrian corridor shall connect with facilities throughout the project area.
- Equipment, debris, construction materials or vehicles shall not obstruct the corridor.
- No parked vehicles can obstruct blue curb parking spaces unless permitted by the City.
- Temporary closure of designated pedestrian routes and crossings shall be allowed only when flaggers are present and safely directing pedestrians around hazards.

CONSTRUCTION OF SIGNPOSTS, BARRICADES AND FENCING

Barricades that are impenetrable shall be used to separate pedestrians from hazards on all sides of excavations that may be exposed to pedestrians. Use materials and methods suitable to site conditions. Signs and fencing material shall not protrude into the clear pathway.

- A-frames used for defining path of travel (not barricading trenches) shall be placed end-to-end without spacing, shall be connected and maintained to ensure stability to help a person who is blind negotiate a safe path while using a cane.

CONSTRUCTION OF SIGNPOSTS, BARRICADES AND FENCING (CONT'D)

- Caution Tape shall NOT be used by itself to delineate the path of travel or create a barricade.
- Fencing material requires a minimum 3" height, solid, uninterrupted toe-board.
- Signposts, scaffolding and fencing supports shall be placed entirely outside the pedestrian path of travel, minimum 4' wide and 80" high without obstruction.
- Construction barriers shall be maintained in a sound, neat and clean condition.

SURFACING OF PEDESTRIAN CORRIDORS

During construction, tripping hazards and barriers for people with mobility impairments must be removed to maintain an accessible pedestrian corridor.

- Any change of level, which exceeds 1/4" height, must be beveled not steeper than 1:2 and not exceed ½" height for a smooth transition.
- Closed trenches, temporary paving surfaces, walking surfaces, steel plates; etc. shall have a smoothly finished, firm walking surface made even w/surrounding walkways.

TEMPORARY RAMPS CONFORMING TO ACCESSIBLITY STANDARDS

The Contractor or permittee shall install and maintain temporary concrete, asphalt or wood ramps to provide a safe path of travel for mobility-impaired pedestrians at all locations where ramps have been temporarily removed OR needed to route pedestrians.

- Temporary ramps shall be constructed so installation and removal will not damage existing pavement, curb and/or gutter.
- Ramps shall have a minimum 4' wide walking surface and a slope not to exceed 8%.
- Ramps shall snugly meet existing surfaces without gaps. When required for drainage, Schedule 40 PVC pipe minimum 2" diameter shall be installed through ramp.
- Transitions between ramps and the street surface shall be smooth such that no lip exists at the base of the ramp.
- Sides of a ramp shall be protected where there is any drop-off.

IDENTIFICATION OF SAFE PATH OF TRAVEL

If a portion of the pedestrian way is rerouted due to construction, the path of travel shall be clearly defined. Traffic Engineer shall review any pedestrian access limitations and notification requirements for pedestrians with mobility or vision impairments.

- Paths of travel that DO NOT continue to the next corner or to a safe crosswalk

IDENTIFICATION OF SAFE PATH OF TRAVEL (CONT'D)

shall be closed to pedestrian traffic. Signs a minimum of 36" x 36" must be posted stating the sidewalk is closed and detour pedestrians to accessible sidewalk.

- Pedestrian access corridors shall be clearly delineated with cones or barricades, as approved by the Engineer.
- If a crosswalk is closed, curb ramps leading into that crosswalk must be barricaded in such a manner that walkways that are not closed remain accessible to use.
- Caution Tape shall NOT be used by itself to delineate the path of travel or create a barricade.

RESTORATION OF PEDESTRIAN ROUTES

After construction, the site shall be returned to its former condition, or new condition as required.

- Temporary ramps shall be removed as soon as construction and approval of permanent ramp is completed.
- After work is completed, surface of the pedestrian path shall be restored free from all ridges, gaps, bumps and rough edges.

PLEASE NOTE: City of Long Beach Engineers may stop work when any hazardous conditions are present.