

Chapter 11

Industrial Design Guidelines

11.1 INTRODUCTION AND PURPOSE

The following industrial/design guidelines seek to assure high quality development in Santa Ana’s industrial districts by:

- Establishing a consistent quality of design for all types of industrial development;
- Ensuring industrial development considers the function and character of adjacent use;
- Creating industrial development that contributes to the overall design quality of the City of Santa Ana.



Figure 11-1: Example of contemporary industrial/ business park

11.2 GENERAL DESIGN OBJECTIVES

The design of industrial development in Santa Ana should:

- Establish attractive, inviting, and functional siting of buildings and parking areas.
- Contribute to reinforcing or establishing a distinct architectural image.
- Consider the scale, proportion and character of adjacent development.



Figure 11-2: Example of appropriate industrial design

11.3 SITE PLANNING GUIDELINES

General Guidelines

- a. The City’s zoning code should always be consulted as the first step of any industrial development project.
- b. Building orientation and positioning of other elements on a site (e.g., entrances, parking lots, and driveways) should be planned to assure both a viable, safe, and attractive site design.

- c. Extensive landscaping, increased setbacks and appropriate building orientation and massing should provide adequate buffering between industrial and residential uses.
- d. Site planning for Industrial development should be sensitive to adjacent development.
- e. The main elements of a good industrial site design should include (Refer to Figure 11-3):
 - clearly defined site ingress and egress (1);
 - service areas located at the sides and/or rear of buildings (2);
 - convenient public access and visitor parking (3);
 - screening of storage, work areas, and mechanical equipment and buffering from adjacent land uses (4);
 - storage and service area screen walls, as required by the Zoning Ordinance (5); and
 - emphasis on the main building entry and landscaping (6).

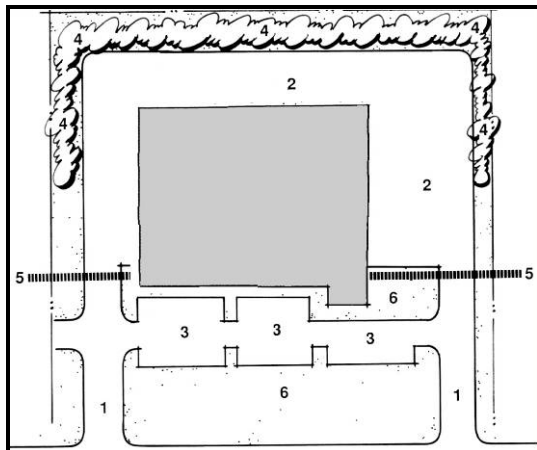


Figure 11-3: Example of appropriate industrial site layout

11.4 ARCHITECTURAL GUIDELINES

The following guidelines are not intended to specifically control any particular architectural style. Rather, they encourage a quality and completeness of design that will contribute to the overall quality of development.



Figure 11-4: Building entry should be clearly visible to pedestrians and motorists

11.4.1 Architectural Imagery

- a. Building entries should be clearly identifiable and integrated within the overall building design. Use projections, columns, distinctive materials and colors to articulate entrances (Refer to Figure 11-4).
- b. Avoid long, blank facades. The same or compatible design features should be continued or repeated on all building elevations. Side and rear views of a building should be given similar design attention (Refer to Figures 11-5 and 11-6).

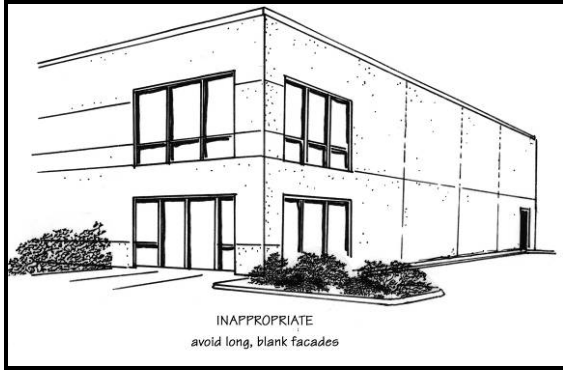


Figure 11-5: Avoid the use of long, blank facades with a variety of design treatments

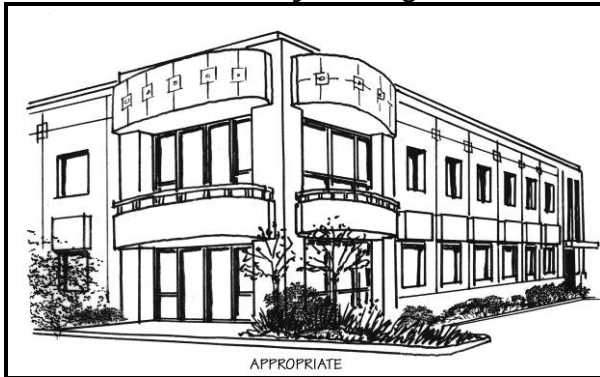


Figure 11-6: Avoid the use of long, blank facades with a variety of design treatments

- c. Vary building heights/massing and setbacks to define different functions such as offices and warehousing is encouraged.
- d. When adjacent to residential uses, uses or activities above the first floor should consider the privacy of residents when placing windows, balconies or other accessible spaces.

11.4.2 Scale and Mass

- a. New industrial development or redevelopment should be similar in scale and massing of adjacent development and should establish a smooth transition between uses. If a different scale for new development is required for functional reasons, the new development should provide a transition between adjacent buildings.
- b. Vertical and horizontal offsets should be integrated within building facades to minimize building bulk (*Refer to Figure 11-7*).

11.4.3 Roof Articulation

Roofs should be given design considerations and treatment equal to that of the rest of the building’s “exterior” and should be integrated within the architectural theme of industrial buildings. Rooflines of industrial buildings should include variations to avoid long, continuous planes, demonstrating special design treatments where there is a major change in an element of a building elevation.

- a. Rooflines of industrial buildings should include variations to avoid long horizontal rooflines. Long, horizontal rooflines should be minimized through articulating a building’s facade, alternating roof heights, providing variations in materials and color’s or other appropriate methods (*Refer to Figure 11-7*).



Figure 11-7: Provide roofline variation whenever possible

- b. Roofline elements including parapet walls should be developed along all elevations,

regardless of orientation away from the right-of-way.

- c. Dependant upon the architectural style of a structure, industrial buildings are encouraged to use decorative roof elements such as cornices to enhance a building’s roof edge.
- d. When sloped roofs are incorporated into a design, equipment wells should be used to continue the existing pitch and roofline.

11.4.4 Materials and Colors

- a. All exterior materials, textures and colors should be appropriate for the architectural style or theme of the building and should contribute towards the quality of the streetscape (*Refer to Figure 11-8*).



Figure 11-8: Use a variety of compatible materials and textures to create visual interest

- b. Materials should be chosen to withstand vandalism, accidental damage, and exposure to the elements. Avoid materials with

high maintenance such as stained wood, clapboard, or shingles.

Bright or contrasting colors should be used for trim or accents only.

- c. Use various materials (i.e. masonry, concrete texturing, cement or plaster) to produce effects of texture and relief that provide architectural interest (*Refer to Figure 11-9*).



Figure 11-9: Use materials and colors complimentary to surrounding buildings

- d. Compatible colors on a single facade or composition should add interest and variety while reducing building scale and breaking up plain walls. Light, neutral colors should be used on industrial buildings to help reduce their perceived size. Contrasting trim and color bands can help break up blank surfaces (*Refer to Figure 11-10*).
- e. Building additions and other exterior structural modifications should be consistent with the materials and colors of the primary structures on a site.
- f. Brightly colored industrial park buildings are strongly discouraged.



Figure 11-10: Utilize colors, trim to help reduce building scale

- g. Large expanses of highly reflective surfaces should be minimized to reduce heat and glare onto adjacent development.

11.5 PARKING AND CIRCULATION GUIDELINES

11.5.1 General Guidelines

- a. Parking lots and cars should not be the dominant visual elements of industrial sites. Large expansive paved areas located between the street and the building should be avoided in favor of smaller multiple lots separated by landscaping (Refer to Figure 11-11).

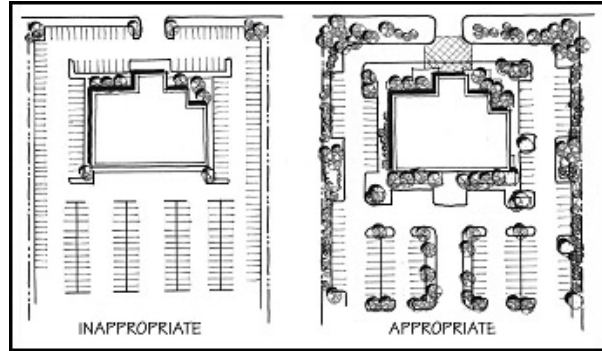
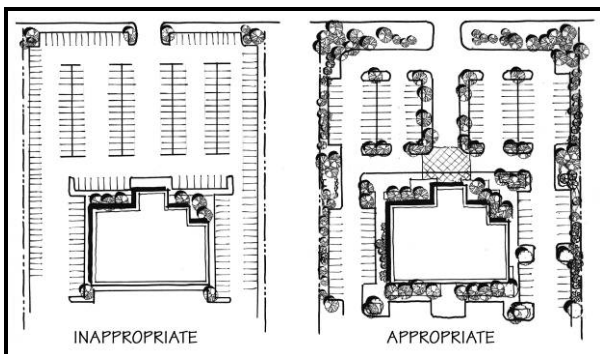


Figure 11-11: Avoid large expanses of paved areas. Utilize landscaping and creative lot design

- b. Parking lots adjacent to and visible from public streets should be screened from view through the use of rolling earth berms, low screen walls, and changes in elevation, landscaping or combinations thereof. Parking lot entries should be distinguished by high quality entry statements (Refer to Figure 11-12).
- c. Unobstructed sight lines at corners and mid-block are important to improve visibility for vehicles exiting and entering the site and to reduce potential conflicts with other vehicles, bicycles, and pedestrians.

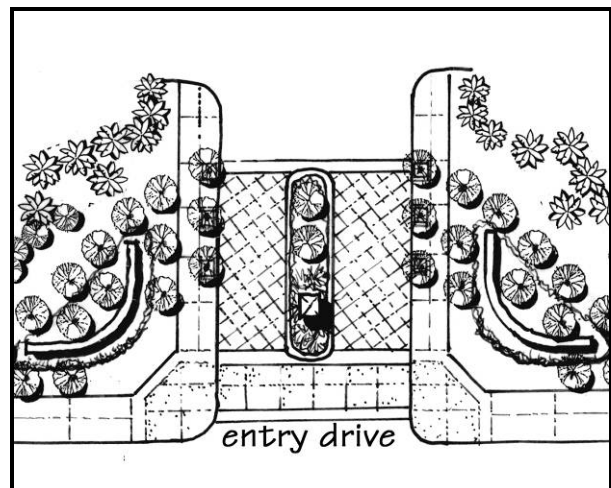


Figure 11-12: Parking lot entryways in industrial parks should be distinguished by high quality entry design features

- d. On-site circulation and parking are to be designed to assure that vehicles need not exit onto the street and then re-enter the site to find another parking space.

11.5.2 Vehicular Circulation

- a. The circulation system of industrial sites should be designed to reduce conflicts between vehicular and pedestrian traffic.
- b. On-site circulation should provide adequate space for vehicle maneuvering, including sufficient turning radii for large trucks when appropriate.
- c. Sufficient space should be provided to allow vehicle stacking on-site. Parking areas should be designed to avoid vehicle stacking onto adjacent roadways.
- d. Parking and building access should be designed in consideration of emergency vehicle access.
- e. The driveway throat from the intersection with an adjacent street to the first internal drive aisle should be of sufficient length and width to prevent stopped vehicles from blocking internal circulation.
- f. Dead-end aisles are not acceptable and should be avoided because they restrict the flow of on-site traffic and may

cause traffic congestion on the street.

- g. Travel aisles should be designed so that they align with on another. Travel aisles that are offset are inappropriate (Refer to Figure 11-13).

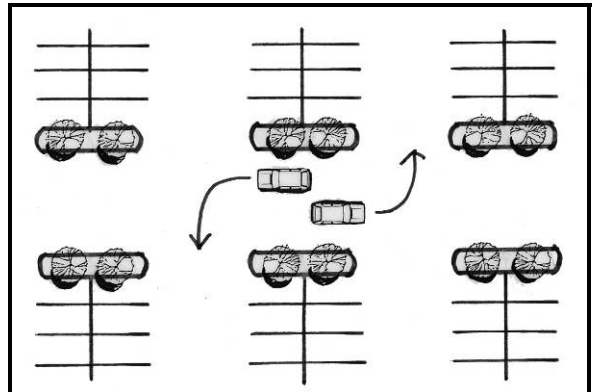


Figure 11-13a: Encouraged travel aisle alignment

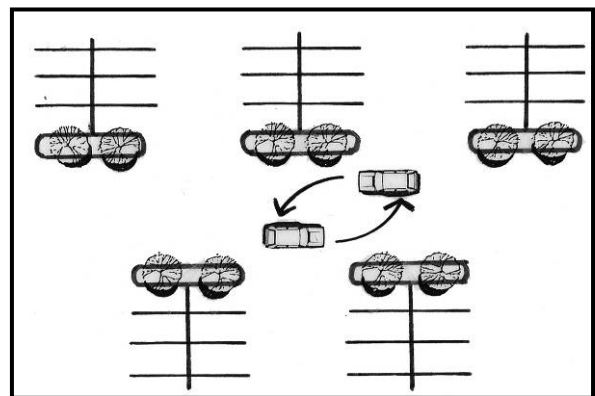


Figure 11-13b: Discouraged travel aisle alignment

11.5.3 Pedestrian Circulation

- a. Safe and convenient pedestrian walkways should be provided between buildings, at building

entrances and within parking areas.

- b. Pedestrian walkways should be accessible, safe, visually attractive, and well defined by decorative pavement, landscaping, low walls, and low-level lighting (Refer to Figure 11-14).



Figure 11-14: Pedestrian walkways should provide features such as decorative paving, landscaping, low walls, and low-level lighting

- c. Pedestrian access should be provided between building entrances and parking. Where appropriate, transit shelters should be provided (Refer to Exhibits 11-15 and 11-16).

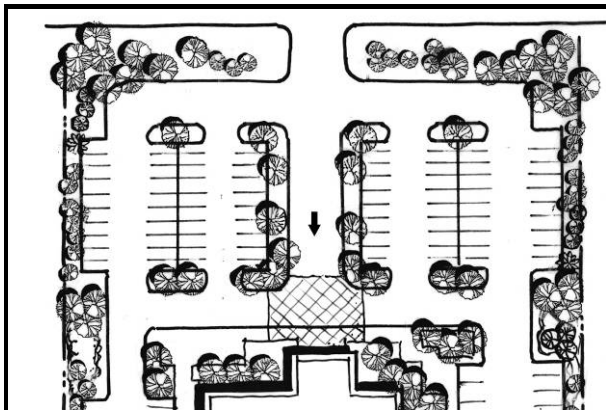


Figure 11-15: Pedestrian walkways should be provided between building entrances and parking areas



Figure 11-16: Pedestrian walkways should be safe, attractive, and well-defined

11.6 LANDSCAPING GUIDELINES

11.6.1 General Guidelines

- a. Landscaped areas should be planned and designed as an integral part of the project. The type, quantity and placement of plant material should be selected for its structure, texture, color and compatibility with the building design and materials (Refer to Figure 11-17).



Figure 11-17: Landscaping should be planned and designed as an integral part of a development

- b. Industrial buildings should provide a high level of landscaping at the street frontage (20 foot setback on arterials and 10 foot setback on non-arterials). When designing landscaping, consideration should be given to the compatibility with the adjacent street frontage and adjacent properties (Refer to Figure 11-18).
- c. Where fences or walls are visible from public streets, a combination of trees, hedges, shrubs and vines should be planted along the street-facing side. Fences should be located behind property setbacks.



Figure 11-18: Landscape berms can be used to screen on-site parking

- d. Areas used for loading, refuse, storage and equipment should be screened with a combination of walls and landscaping.

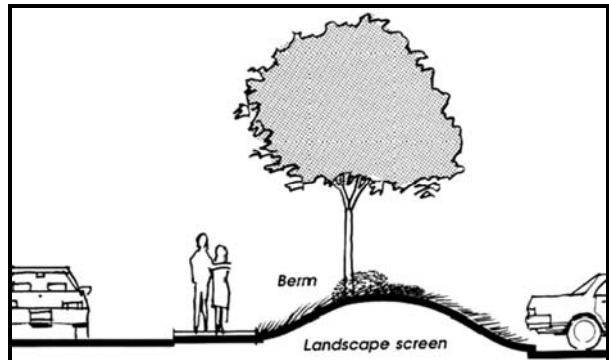


Figure 11-19: Parking lots should be designed to minimize direct exposure at the street frontage

11.6.2 Parking Lot Landscaping

- a. Parking areas should be buffered and landscaped to reduce visual impacts and, when possible, located at the rear of industrial buildings. Landscaped parking areas should be designed to avoid direct views of parked vehicles, minimize noise, light, exhaust fumes and other negative effects to pedestrians, and to shade parking spaces (Refer to Figure 11-19).



Figure 11-20: Landscaping in parking lots should reduce visual impacts and provide shade

- b. Landscape buffer strips should be planted with trees at a quantity equivalent to one for each 30 linear feet and with suitable shrubs, groundcovers and berms.
- c. Parking areas located within or abutting residential areas should be developed with landscaped buffers and attractive walls along property lines to help screen the visible presence of cars.
- d. Landscape planters are required in parking lots at a ratio of one planter to every ten parking stalls. Planters should be dispersed throughout the parking lot.
- e. Employee parking lots should provide tree cutouts throughout the parking area. One cutout for

every five parking spaces is required.

11.7 LIGHTING

- a. Lighting fixture placement should provide the best illumination for outdoor areas such as parking, shipping and receiving, pedestrian walkways, and work areas. Lighting should be provided in a relatively even pattern with ground-level foot-candle illumination levels not varying by more than four to eight foot-candles (Refer to Figure 11-21).



Figure 11-21: Lighting for industrial use should be placed to provide illumination for parking, loading, and pedestrian walkways

- b. The type and location of lighting should preclude direct glare onto adjoining property, streets, or skyward. All artificial illumination should be installed, directed and shielded to confine all direct rays within the property. High-mounted, widely spaced pole fixtures that illuminate large areas from a single source are discouraged.
- c. The design of the light fixtures and their structural support should be architecturally compatible with the

theme of the development. If possible, a light standard theme should be provided throughout industrial areas to reinforce a cohesive image.

- d. Energy conservation should be considered when selecting lighting fixtures for a development project.
- e. Lighting fixtures should never have exposed bulbs.
- f. Fixtures that emit yellow light should be avoided.
- g. Decorative accenting lighting and fixtures above the minimum 1-foot candle illumination levels of surrounding parking lots should be provided at vehicle driveways, entry throats, pedestrian paths, plaza areas, and other activity areas.
- h. Lighting should be provided to accent on-site public art, specimen trees, architectural features and other on-site amenities (Refer to Figure 11-22).
- i. Illumination to a minimum maintained one-foot candle should be provided at steps, ramps and other potentially hazardous grade differentials. Grade changes, steps, or other potential hazardous features along pedestrian circulation routes should be illuminated for safety.



ACCENT LIGHTS

Figure 11-22: Lighting should be provided to accent on-site features

- j. Exterior doorways and entries should be fully illuminated to a minimum of one foot-candle over the entire face and frame of the opening. When wall packs or other wall-mounted fixtures are used, they should be complementary with the architectural style of the building (Refer to Figure 11-23).

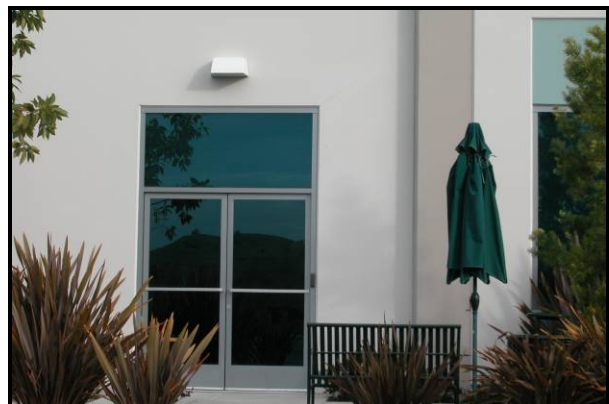


Figure 11-23: Exterior doorways and entries should be fully illuminated

- k. Lighting should not be animated.
 - l. Exterior lighting should be designed through placement and fixture type to avoid direct glare in the eyes of on-site pedestrians and drivers.
 - m. Wall mounted lights may not extend above the height of the wall or parapet to which they are mounted.
 - n. Parking lot lighting standards should be placed so that the illumination spread will not conflict the growth of trees in required parking lot planters.
 - o. Parking lot light standards should be designed with raised bases to reduce likelihood of damage by vehicles *(Refer to Figure 11-24)*.
- provide raised bases that exceed the irrigation spray line.



Figure 11-24: Parking lot lighting should provide raised bases to avoid vehicle damage and irrigation spray

- p. Parking lot light standards, when located within planters, should

11.8 MISCELLANEOUS

11.8.1 Walls and Fences

- a. Walls and fences provide security and privacy in addition to screening uses such as parking lots, loading areas, refuse storage, and equipment. Where used, walls and fences should be complimented with landscaping. The colors, materials and appearance of walls and fences should complement the architecture of the buildings.
- b. All peripheral screening of industrial sites should be constructed of decorative masonry block or similar opaque material. The use of materials such as chain link fencing is not appropriate.
- c. The use of barbed wire on any fence or wall is prohibited, except as approved by the Planning Manager. If approved, barbed wire must be on private property away from public view.

11.8.2 Public Amenities

- a. Building placement that creates opportunities for plazas, courtyards, and outdoor dining is strongly desired. Setback areas may be used to provide space for such areas (*Refer to Figure 11-25*).



Figure 11-25: Building design should seek to create public amenities

11.8.3 Refuse, Storage and Equipment Areas

- a. Refuse, storage and equipment areas should be screened from view from adjacent uses with a solid wall.
- b. All installed equipment, electrical rooms and services rooms should be placed within the footprint of the structure. No equipment of any kind shall be permitted to be attached to the outside of the structure.
- c. For existing structures, additional or new equipment, including electrical rooms, should be screened with an enclosure. Equipment at grade-level should also be screened with appropriate landscaping.



Figure 11-26: Loading, trash and storage facilities should be screened from view

- d. All screening devices should be compatible with the architecture, materials and colors of the building.
- e. Landscaping should be incorporated into the design of refuse, storage and equipment areas to screen from public and private view.

cover/screen to mitigate unsightly views. The covering structure should be compatible with the architectural theme of the site's buildings.

- g. Trash enclosures should have minimum dimensions of six feet in depth and seven feet two inches in width. Refer to *Figure 11-28* for trash enclosure standards.
- h. Roof ladders should be designed to be compatible with the architectural design of the building. Equipment used to retract and store roof ladders should not be mounted to the exterior of the structure.

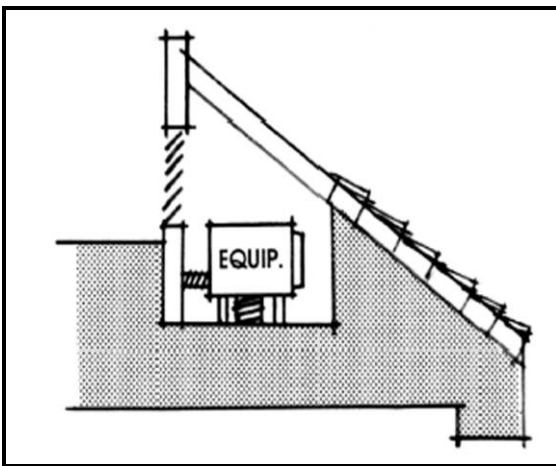


Figure 11-27: Rooftop equipment should be screened from view

- f. Trash enclosures that are visible from upper stories of adjacent structures should have an opaque or semi-opaque horizontal

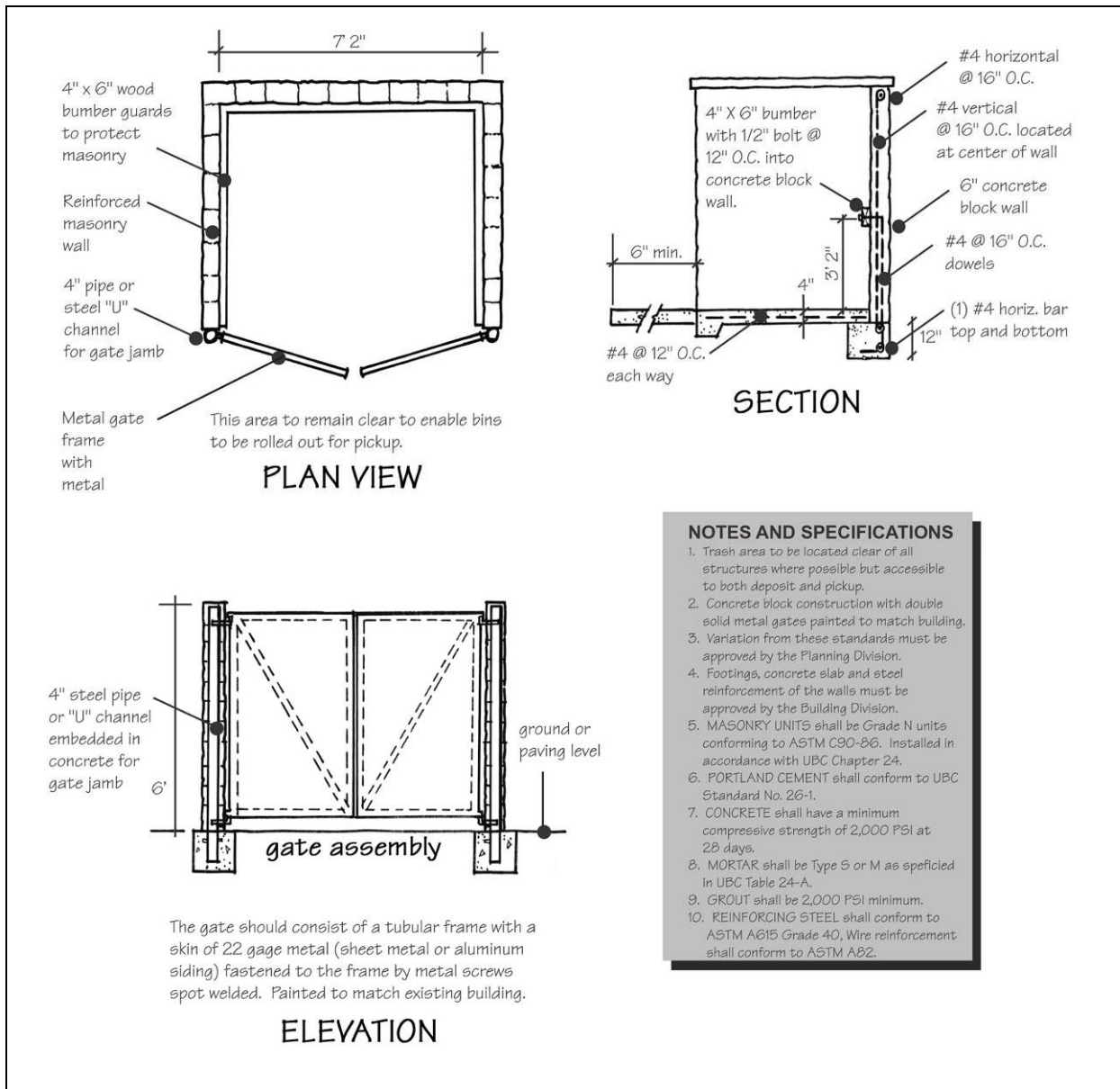


Figure 11-28: Trash enclosure standards

11.8.4 Service/Loading

- a. The primary consideration in planning loading and unloading facilities for motor transport equipment is to provide adequate space for maneuvering into and out of a loading position. For safety, efficiency and appearance, these areas must be well-designed and integrated with the total development project.
- b. The design of loading facilities must take into consideration the specific dimensions required for maneuvering the combinations of trucks and tractor-trailers into and out of loading position at docks or in stalls and driveways (Refer to Figures 11-29a and 11-29b).

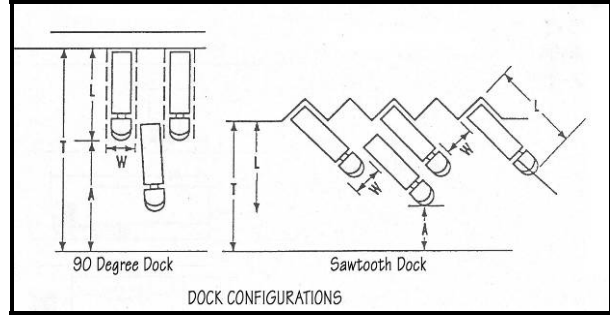


Figure 11-29a: Loading dock dimensions



Figure 11-29b: Loading/unloading facilities should be designed in consideration of the scale of transport vehicle

Design Vehicle	Length (ft) (L)	Dock Angle (a)	Clearance (ft) (D)	Berth Width (W)	Apron Space (A)	Total Offset (T)
WB-40	50'	90°	50'	10' 12' 14'	63' 56' 52'	113' 106' 102'
		60°	44'	10' 12' 14'	46' 40' 35'	90' 84' 79'
		45°	36'	10' 12' 14'	37' 32' 29'	73' 68' 65'
WB-50	55'	90°	55'	10' 12' 14'	77' 72' 67'	132' 127' 122'
		60°	48'	10' 12' 14'	55' 51' 46'	103' 99' 94'
		45°	39'	10' 12' 14'	45' 40' 37'	84' 79' 76'

Service/loading facilities should be given design attention equal to that of the primary structures on a site.

Loading areas should be located and designed to minimize direct exposure to public view. These areas should be buffered with landscaping to reduce the visual impact whenever possible (Refer to Figure 11-30).

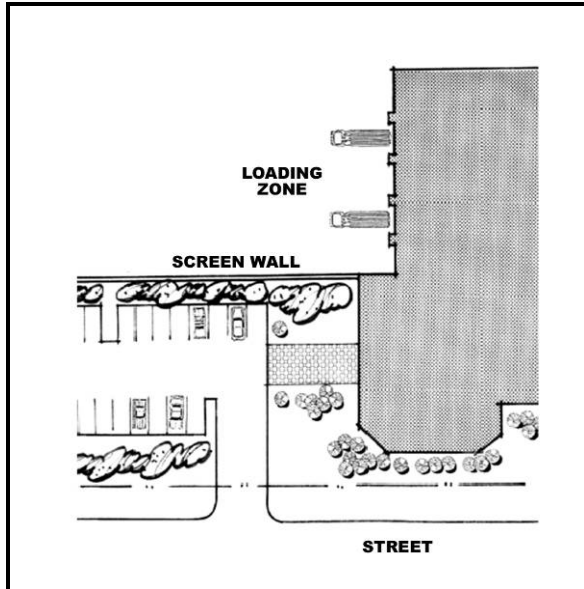


Figure 11-30: Loading zones should be located at the rear of the building or behind a screen wall to minimize visual impacts

- e. Screen walls adjacent to service/loading areas should not be opaque. Screen walls at service/loading locations should provide a complete visual screen.



Figure 11-31: Loading door design should be a part of building's overall design

- f. The design and location of service/loading facilities should minimize the interaction between service vehicles and automobiles.

- g. In multiple building developments requiring multiple service/loading facilities, the design of such facilities should be located adjacent to each other to reduce visual and noise impacts.
- h. Loading door design should be incorporated into the overall design of the primary structure. Materials should be highly durable and weather resistant (*Refer to Figure 11-31*).

11.8.5 Roof Drainage

- a. Roof drainage should be integrated into the design of the building. Drains, scuppers or other components of the roof drainage system should be designed as an integral component to the overall building design.
- b. Scupper and other devices used to convey rainwater should be located at the base of a building.