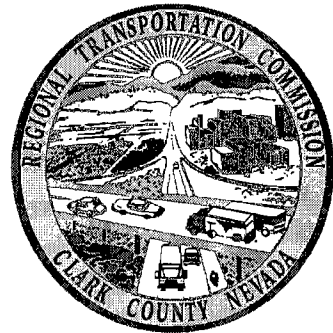

CITIZENS AREA TRANSIT BUS STOP GUIDELINES

Prepared by:
**REGIONAL TRANSPORTATION COMMISSION
OF CLARK COUNTY, NEVADA**
Metropolitan Planning Organization Division

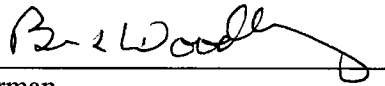


APPROVED: MARCH 10, 1994

**REVISIONS APPROVED: APRIL 10, 1997
APRIL 8, 1999
JULY 8, 1999**

**RESOLUTION AUTHORIZING THE ADOPTION OF THE REVISIONS TO
CITIZENS AREA TRANSIT BUS STOP POLICIES AND GUIDELINES**

This is to certify that the Commissioners of the Regional Transportation Commission of Clark County approved and adopted the revisions to the Citizens Area Transit (CAT) Bus Stop Guidelines, which is attached, at their regularly scheduled meeting on July 8, 1999.



Chairman

July 8, 1999

Date

ACKNOWLEDGMENTS

REGIONAL TRANSPORTATION COMMISSION

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TABLE OF CONTENTS

Page No.

SECTION 1: BUS STOP SPECIFICATIONS	1
Introduction	1
Bus stop spacing	1
Location priorities	2
Placement of stops	3
New development	9
Bus turnouts	11
Bus stop loading pads	16
Signs	16
Transfer policy	17
Mitigation of impacts on bus stops during construction	17
Mitigation of impacts on bus stops due to street closure during special events	18
SECTION 2: REMOVAL AND RELOCATION OF BUS STOPS	19
Conditions for removal and relocation bus stops	19
Complaint process	19
Relocation costs	20
SECTION 3: AMENITIES	21
Bus shelters	21
Bus benches	21
Trash receptacles	21
Bus shelter and bench installation	22
Sidewalk clearance on the Strip	23
Material for construction of bus shelters and benches	23
APPENDIX	26
BIBLIOGRAPHY	33

LIST OF FIGURES

Figure	Page No.
1 Standard bus stop locations	4
2 Standard bus stop locations (Far-side Case 1, Dual lefts turning into two through lanes)	5
3 Standard bus stop locations (Far-side Case 2, Single left turning into two through lanes)	6
4 Standard bus stop locations (Far-side Case 3, Dual lefts into three through lanes or two through lanes and a parking/break down lane)	7
5 Standard bus stop locations (Far-side case 4, After a right turn)	8
6 Bus stop locations near parcels with multiple driveways	10
7 Typical bus turnout	13
8 Far-side bus turnouts	14
9 Bus stop placement within dedicated right-turn lanes	15
10 Single bus shelter dimensions	25

SECTION 1: BUS STOP SPECIFICATIONS

Introduction

The following guidelines and standards detail the Regional Transportation Commission's (RTC) method of establishing bus stops on Citizens Area Transit (*CAT*) routes. The guidelines provide information on bus stop spacing, types of stops, location preferences, lengths of bus stop zones, and parking restrictions. The guidelines are intended to expedite and provide consistency in the location and placement of bus stops within the Las Vegas Metropolitan Area.

Each entity shall be provided with a list of all proposed bus stop locations within the entity's jurisdiction. The list shall include route numbers, route names, stop description (i.e. far-side, mid-block, near-side), bench and shelter requirements, and information on exact location of bus stop signs (i.e. distance from adjacent intersection or existing bus stop). The traffic engineering department within each entity shall review and respond to the list within fifteen (15) working days of receipt of the list. Only after approval by the entity can a bus stop sign be installed.

Following the approval of a bus stop location, bus stop signs and any other bus stop related amenities required shall be installed by the entity in whose jurisdiction the bus stop is located, or by an RTC contractor. If a sign is installed by an entity, the entity shall be reimbursed by the RTC for each sign installed based on the interlocal agreement between the RTC and the entity. The entity shall be responsible for any signs that are incorrectly installed by the entity. The RTC shall be responsible for incorrect installation of any sign by an RTC contractor.

Bus Stop Spacing

Bus stop spacing is a major determinant in transit system availability and reliability. To make the transit system accessible and useable, stops should preferably be spaced no more than one-quarter mile apart to minimize walking distance. Further, the spacing of stops has a significant impact on bus operating speeds, passenger travel time and smooth flow of vehicular traffic. Therefore, to ensure passenger convenience and desirable bus operating speeds, the following guidelines have been established:

<u>Density</u>	<u>Number of Bus Stops</u>
High (over 4000 persons per sq. mile)	Every 500-700 ft. (8-10 per mile)
Medium (2000-4000 persons per sq. mile)	Every 700-1100 ft. (5-8 per mile)
Low (under 2000 persons per sq. mile)	Every 1100-1500 ft. (3-5 per mile)

A minimum of 450 feet may be used in special cases based on adjacent development such as educational institutions, senior citizen housing, hospitals and other medical facilities.

Location priorities

Bus stops should be located as close to intersections as possible. The proximity to intersections provides convenience and increased safety to transit patrons, minimizes mid-block pedestrian crossings, and reduces walking distance at transfer locations. Other factors such as type and density of adjacent development and lane usage may dictate placement away from intersections.

Typically, there are three types of bus stops locations -- far-side stops, mid-block stops and near-side stops. Far-side stops are located immediately after intersections, in the direction of bus travel. Near-side stops are located prior to intersections in the direction of bus travel, and mid-block stops are located at least 400 feet away from intersections.

The primary criteria in locating bus stops are based on route network (grid, radial, etc.), number of transfer points, safety and traffic operations. Consistency in stop locations minimizes confusion to transit patrons, bus operators and other vehicular traffic.

Far-side stops are preferable to Citizens Area Transit (*CAT*) because they typically pose fewer potential conflicts with other vehicular traffic and pedestrians. Mid-block stops should be used to minimize walking distance where long block lengths exist, and adjacent to special or heavy passenger generators. Near-side stops are the least preferable to *CAT*, and should be used where certain site constraints preclude far-side and mid-block stops. Major advantages of far-side stops are listed below:

- Buses can safely enter traffic stream with minimum delay at signalized intersections by taking advantage of gaps created by the traffic signal.
- Passengers boarding and alighting are less likely to cross in front of the bus.
- Less interference with traffic at intersections where there are heavier traffic volumes on the approach than on the departure leg.

- Stopped buses do not obstruct sight lines to the left for vehicles entering the intersection from a side street.
- Sight distance is improved for pedestrians.

Mid-block stops are desirable in situations such as adjacent to major passenger generators and special developments such as educational facilities, senior citizen housing, and medical facilities. However, mid-block stops encourage pedestrian jay-walking, and usually result in the removal of considerable number of curb parking spaces.

Near-side stops may be desirable in special cases such as proximity to major transit generators, and at high volume transfer locations where it may require pedestrians to cross fewer legs of busy intersections. They may also be desirable at a busy intersection where heavy dual left-turn volumes from a side street turn onto a bus route having only two through lanes with no shoulders in the direction of bus travel. Buses at near-side stops tend to obscure traffic signals, and encourage pedestrian crossings in front of buses, thus posing safety problems. Buses also block right-turn traffic, thus deteriorating traffic operations at busy intersections with heavy right-turn volumes.

Placement of stops

Placement of bus stops shall be in accordance with the standards set below, and as depicted in Figures 1 through 5.

Far-side stops - shall be placed 70 - 200 feet from the curb return (CR). A minimum of 30 feet clearance should be provided between the rear of the bus and the curb return. If a bus makes a left turn from a cross street onto a street with a far-side bus stop, the far-side stop shall be placed according to Figures 2 , 3 and 4. If a bus makes a right turn from a cross street onto a street with a far-side bus stop, the far-side stop shall be placed according to Figure 5. If there are free right-turn movements from a side street onto the street where the far-side stop is located, the far-side stop shall be placed 150 - 200 feet from the curb return (see Figure 5). If more than one bus uses a bus stop concurrently, 40 feet shall be added for each additional standard bus, and 60 feet for each additional articulated bus.

Mid-block stops - a bus zone of 110 feet shall be provided. If more than one bus uses a bus stop concurrently, 40 feet shall be added for each additional standard bus and 60 feet for each additional articulated bus. Crosswalks can be constructed at mid-block bus stops if it is determined by the entity having jurisdiction over that bus stop location. The entity may further perform additional analysis to determine if a pedestrian signal are warranted.

Figure 1

REGIONAL TRANSPORTATION COMMISSION

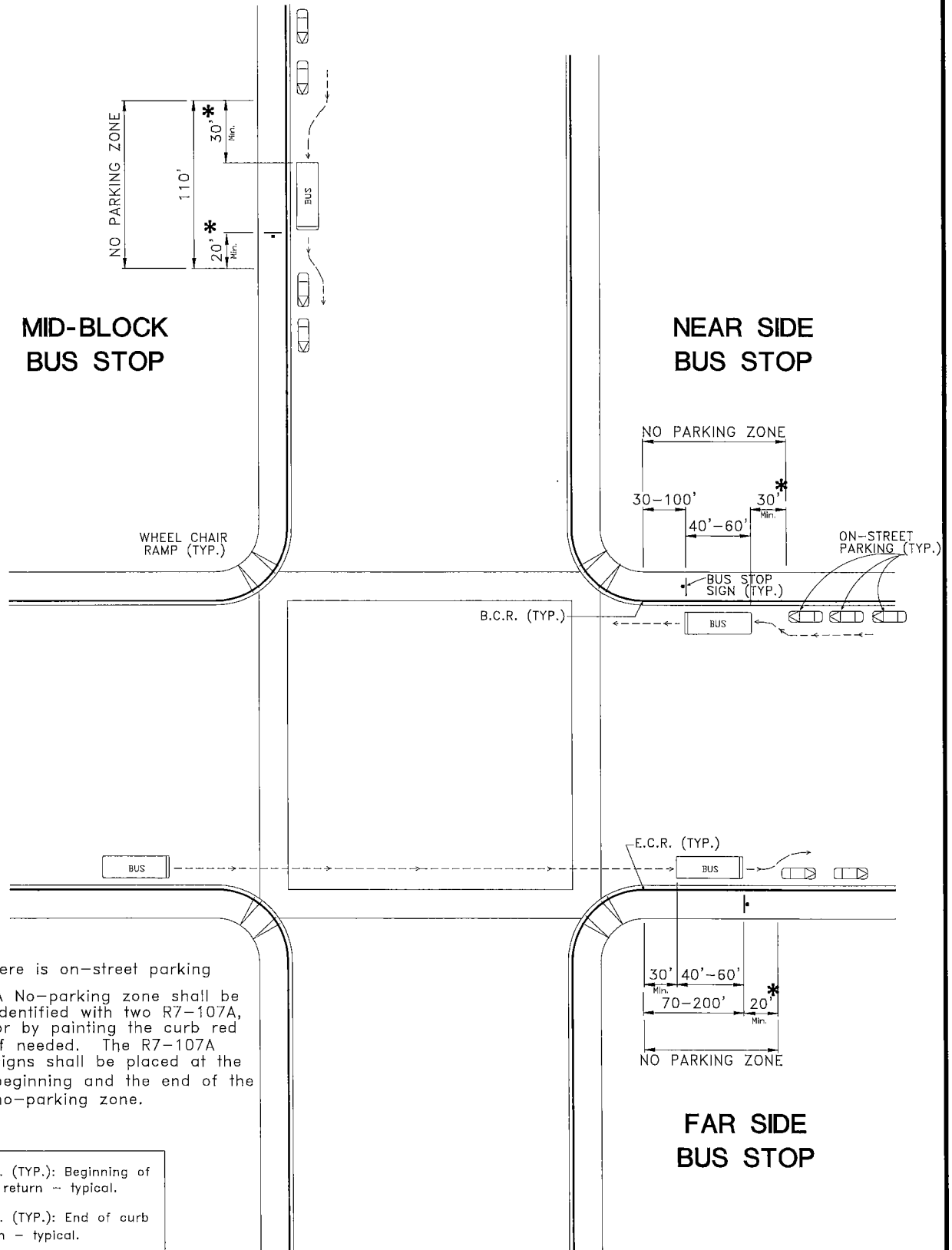
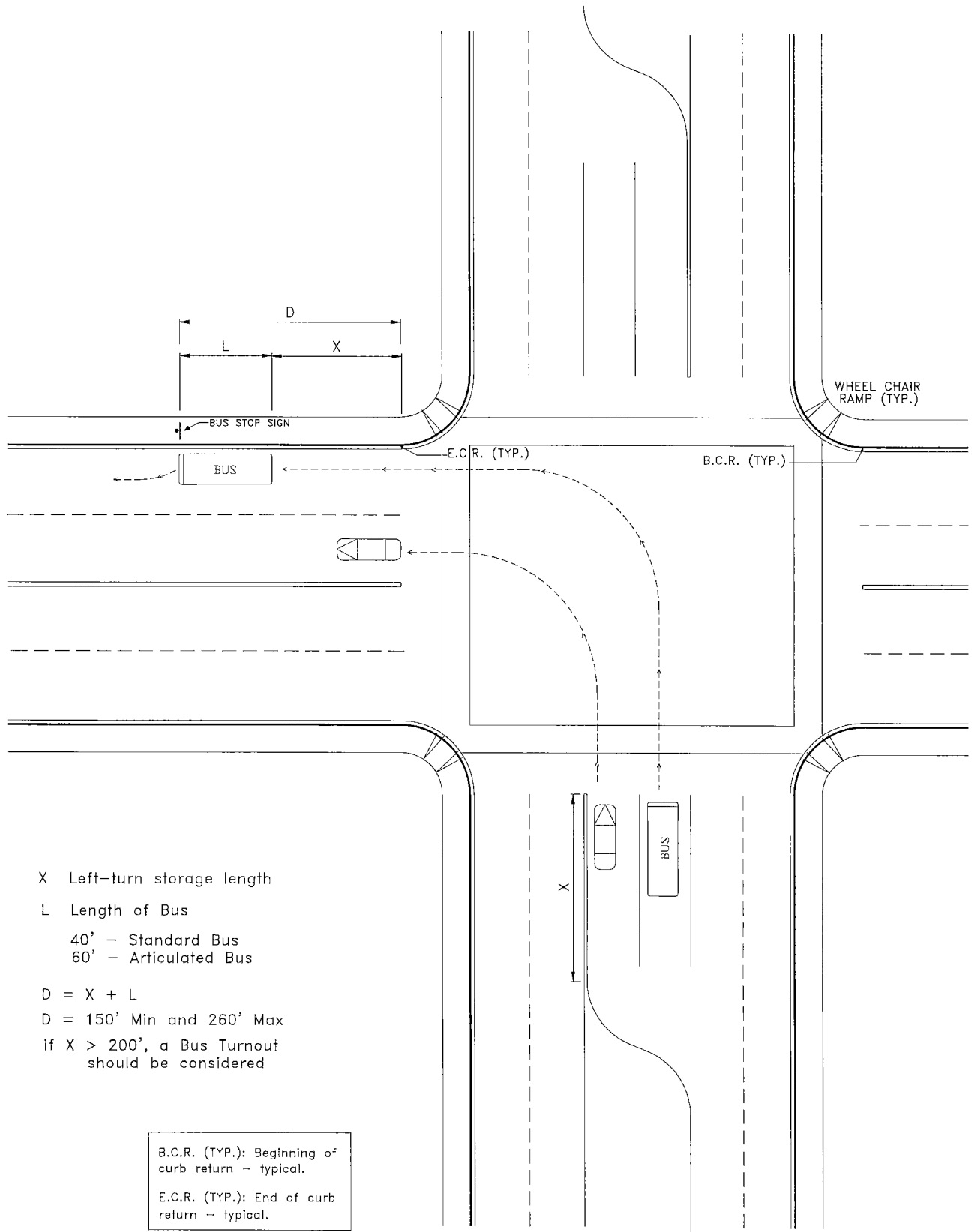


Figure 2

REGIONAL TRANSPORTATION COMMISSION



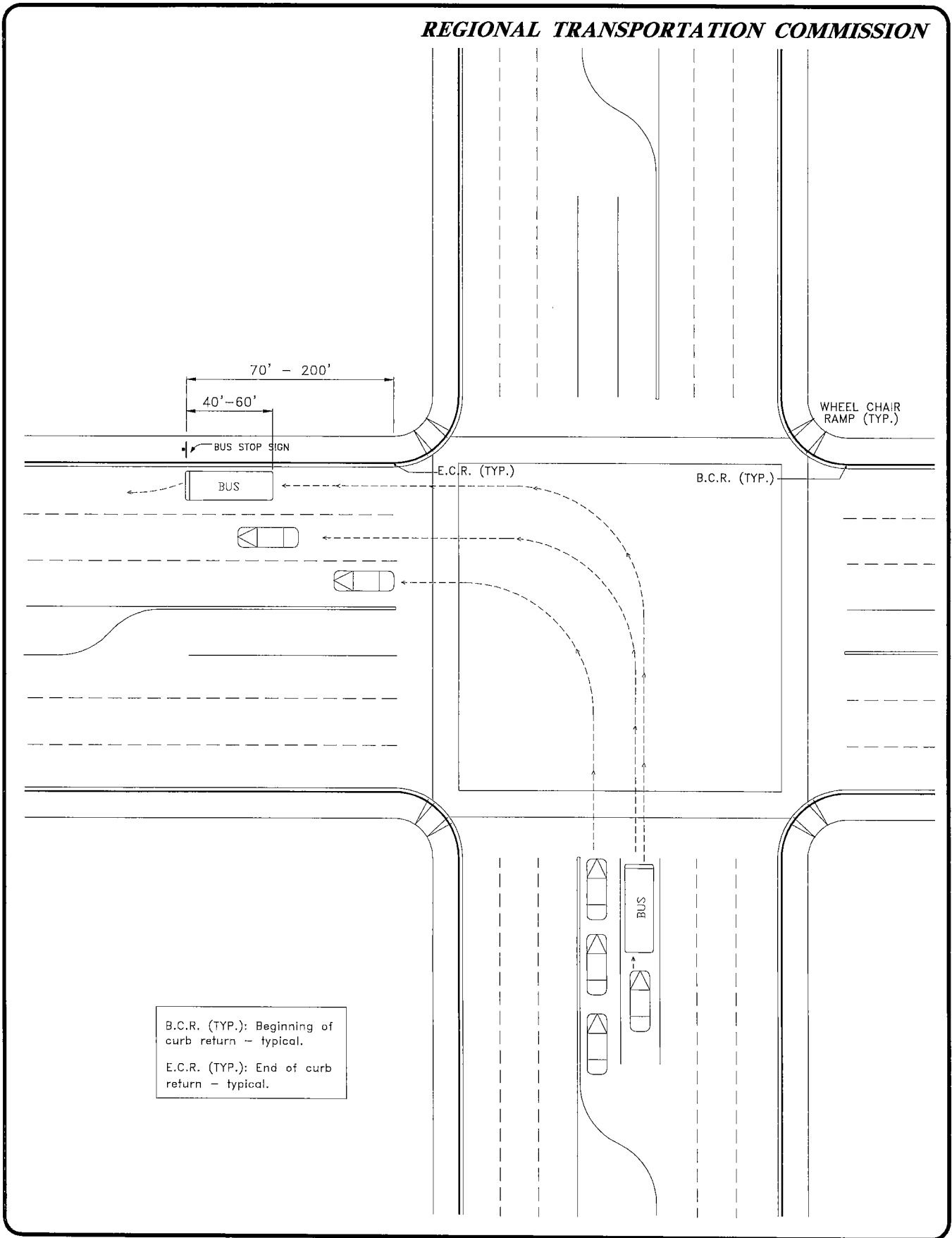
RTC PLANNING DIVISION
 DECEMBER, 1996

STANDARD BUS STOP LOCATIONS
 FAR SIDE BUS STOP LOCATION - CASE 1
 (Dual lefts turning into 2 through lanes)

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Figure 4

REGIONAL TRANSPORTATION COMMISSION



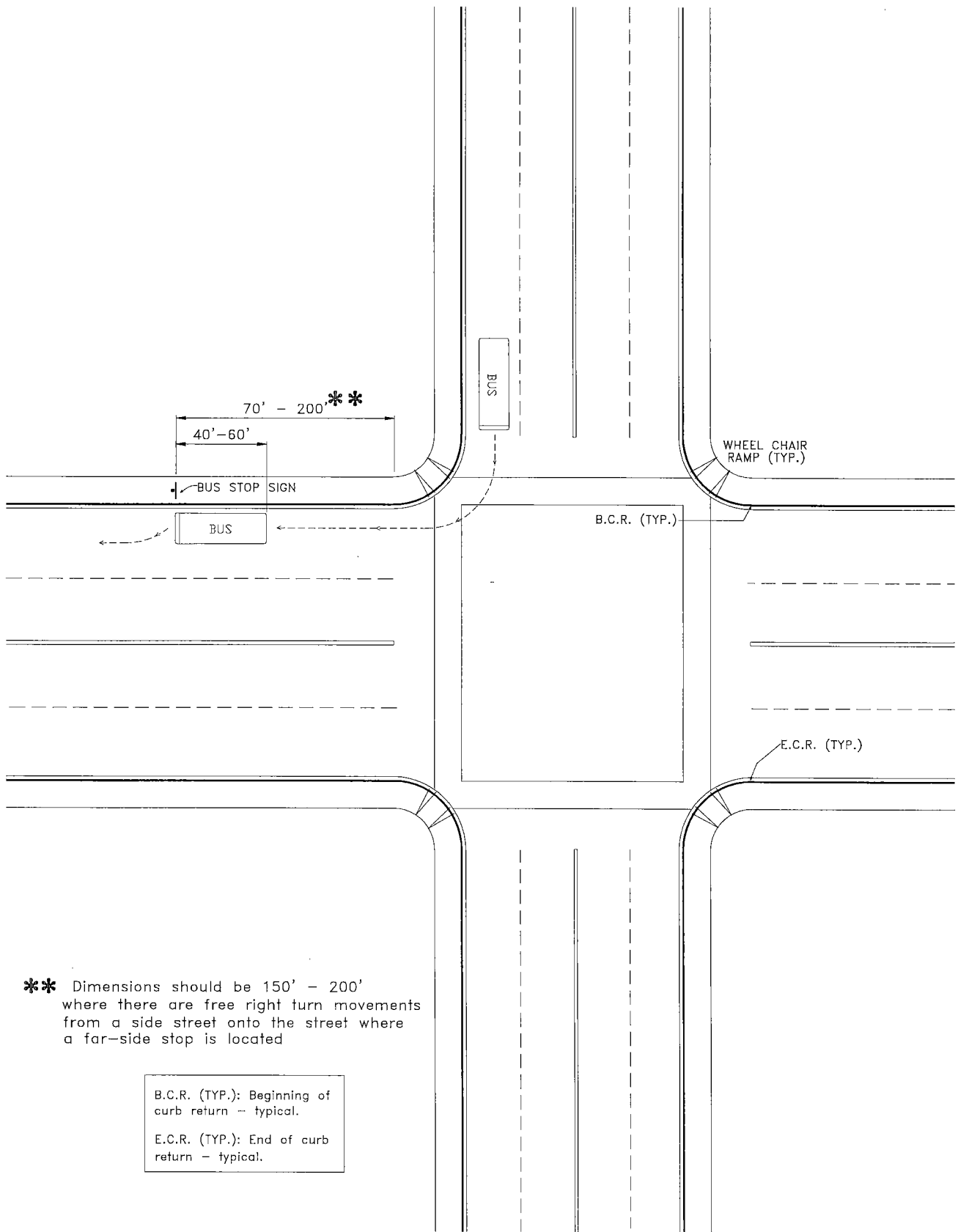
B.C.R. (TYP.): Beginning of curb return - typical.
E.C.R. (TYP.): End of curb return - typical.

RTC PLANNING DIVISION
DECEMBER, 1996

STANDARD BUS STOP LOCATIONS
FAR SIDE BUS STOP LOCATION - CASE 3
(Dual lefts turning into 3 through lanes or 2 through lanes and parking/break down lane)

A:\BS-38.dwg--12/96

REGIONAL TRANSPORTATION COMMISSION



** Dimensions should be 150' - 200' where there are free right turn movements from a side street onto the street where a far-side stop is located

B.C.R. (TYP.): Beginning of curb return - typical.
 E.C.R. (TYP.): End of curb return - typical.

RTC PLANNING DIVISION
 DECEMBER, 1996

STANDARD BUS STOP LOCATIONS
 FAR SIDE BUS STOP LOCATION - CASE 4
 (After a right turn)

Near-side stops - shall be placed 30 - 100 feet from the curb return. If more than one bus uses a bus stop concurrently, 40 feet shall be added for each additional standard bus and 60 feet for each additional articulated bus.

At railroad crossings, bus stops shall be placed on the nearside of the tracks. An exception is if the bus stop serves an industry, shopping center, mall or other facility that is on the far side of the railroad tracks. In this case, if the bus stop is placed on the nearside of the railroad crossing, the disembarking passengers may cross the tracks on foot, thus putting the pedestrians at unnecessary risk. Under such circumstances, the bus stop shall be placed on the far side of the track, and shall be installed at least one block (400 feet minimum) past the crossing.

Parking shall be prohibited within entire length of bus stop zones if a parking problem exists.

Where more than one driveway exists within a bus stop zone, the bus stop sign should be placed to allow access onto adjacent property from one of the driveways. Desirable and undesirable bus stop locations along roadway segments with multiple driveways are depicted in Figure 6.

New Development

When a project is constructed adjacent to a bus stop location, whether existing or future, the driveways shall be designed and located to avoid relocation of the bus stop, where practical. However, bus stops relocated as result of the project shall conform to the Bus Stop Guidelines. Developers shall develop site plans to accommodate bus stop loading pads and bus shelters, and when determined, bus turnouts.

RTC member entities shall require all new development site plans to show existing bus stops or future bus stops as determined by the RTC and require the developers' site plans to be designed to avoid the relocation of existing bus stops and placement of future bus stops where practical. If the site plan does not meet this requirement and the developer cannot reach an agreement with the RTC on the bus stop location, the Traffic Engineering Division of the entity having jurisdiction over that location shall review the site plan and render a decision on the location of the bus stop. If a bus stop is relocated as a result of a new development, the developer shall be responsible for the cost of removing and relocating the bus stop. Relocation costs shall include the cost of relocating an existing bus shelter and may include costs for construction of a bus shelter pad, a bus passenger loading pad and a bus stop sign.

Bus Turnouts

Bus turnouts should generally be placed on the far-side of intersections to provide safe boarding and unloading of bus passengers, to take advantage of gaps created at signalized intersections which allow buses to re-enter the traffic stream with minimum delay and to limit impact to right-turn traffic and traffic through the intersection. However, some areas may require mid-block installation.

Bus turnouts should be provided on arterials, section-line streets, collectors and quarter-section-line streets which are currently serviced by the CAT fixed route system or on which service is planned in the future. The guidelines outlined below shall be used for installing bus turnouts.

Bus Turnout Guidelines

Bus turnouts should be considered where one or more of the following conditions is satisfied;

- Transfer point between existing or future bus routes
- Average peak period boarding exceeds or is projected to exceed 10 passengers per bus
- Three or more buses use or are planned to use the bus stop within an hour
- Peak hour volume-to-capacity (V/C) ratio of 0.8 or higher (existing or projected)
- Where the number of single occupancy vehicles queued behind the bus will cause recurring blockage of side street traffic at the intersection.
- Where vehicles from dual left-turn lanes from a side street turn onto a bus route having only two through lanes with no shoulder or emergency/breakdown lane.

In order to facilitate the construction of bus turnouts to accommodate future routes, they should be considered on:

- All section-line or arterial streets at intersections of another section-line or arterial street, quarter-section-line or collector street, or other street on which a future route has been identified.
- All other streets on which a route exists or a future route is proposed at intersections of a section-line or arterial street, quarter-section-line or collector street, or other street on which a future route has been identified.

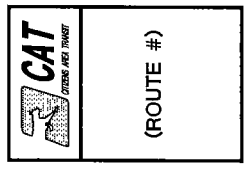
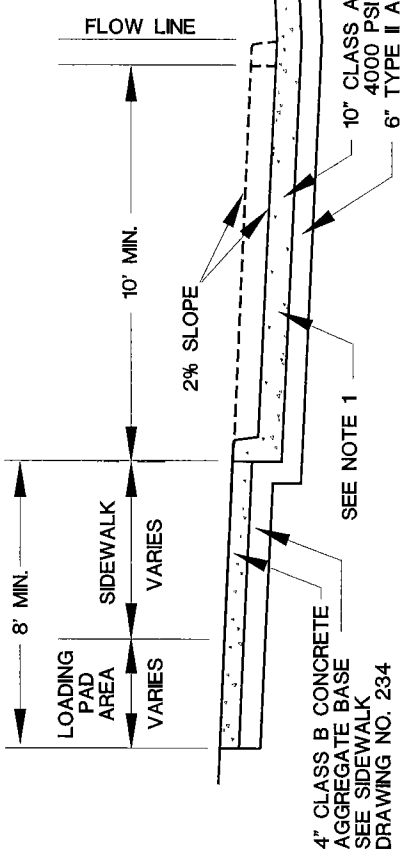
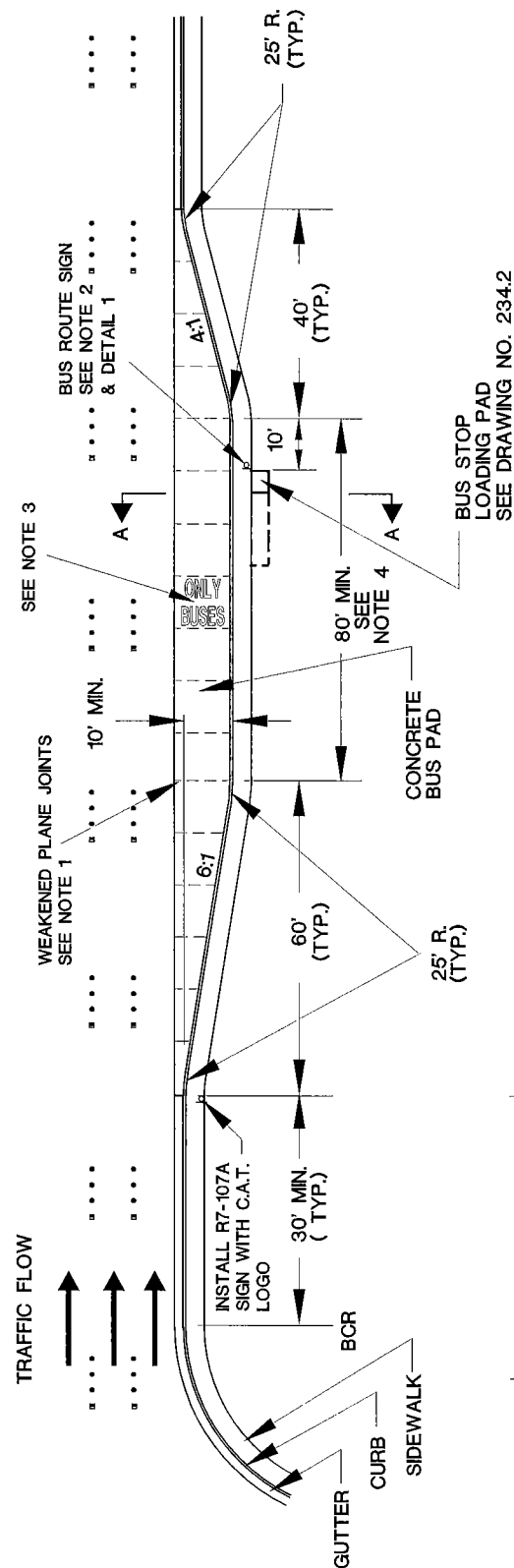
Additional traffic operational analysis may be required of a developer by the Traffic Engineering Division having jurisdiction over the bus stop, whether existing or future, to evaluate the impact of curbside bus stop versus a bus turnout. If the Traffic Engineering Division determines that a curbside bus stop will increase traffic delay or degrade intersection level-of-service, a bus turnout may be required. At existing and future locations, the entities and the RTC will work cooperatively to perform the traffic operational analysis.

Bus turnouts may also be desirable where buses are expected to layover at the end of the routes. Entities should include the installation of bus turnouts as part of the conditions of approval for new developments.

The standards for bus turnouts are shown on Figures 7 and 8. Either Figure 7 or Figure 8 may be used for far-side bus turnouts, with Figure 7 being the preferred option. If Figure 8 is used, traffic signal timing modification may be required to increase the pedestrian crossing time due to the added walking distance. Figure 8 shall be permitted only when approved by the Traffic Engineer of the governing local entity. Design details for constructing bus turnouts are shown in Drawing Nos. 234.1 and 234.3 of the Uniform Standard Drawings for Public Works' Construction Off-site Improvements, Clark County Area, Nevada, Volume I. Driveways should not be permitted within bus turnouts.

Figure 9 indicates bus stop placement within dedicated right-turn lanes into commercial or hotel-casino developments. This case should only be allowed where site constraints preclude installing the bus turnout as depicted in Figure 7. RTC review and approval shall be required prior to installation.

FIGURE 7



DETAIL 1
BUS ROUTE SIGN

NOTES:

1. CONCRETE BUS PAD SHALL BE MONOLITHIC. TRANSVERSE WEAKENED PLANE JOINTS SHALL BE INSTALLED AT 10' INTERVALS AND AS DETAILED IN STANDARD DRAWING NO. 233, TYPE "C".
2. BUS ROUTE SIGN SHALL BE INSTALLED AT THE DOWNSTREAM END OF BUS STOP LOADING PAD.
3. A MINIMUM OF ONE SET OF PAVEMENT MARKINGS CONTAINING THE "BUSES ONLY" SYMBOL SHALL BE PLACED IN THE TURN-OUT AREA. EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.
4. ADDITIONAL STORAGE AREA WILL BE REQUIRED WHEN MORE THAN ONE BUS IS EXPECTED TO OCCUPY THE TURN-OUT AT THE SAME TIME.
5. ALTERNATE CONCRETE AND BASE THICKNESSES MAY BE SUBSTITUTED, BUT MUST BE SUPPORTED BY ENGINEERING ANALYSIS AND APPROVED BY THE ENGINEER.
6. TURN-OUT SURFACE SHALL BE TEXTURED IN ACCORDANCE WITH UNIFORM STANDARD SPECIFICATION NO. 409.03.08. FLOW LINE SHALL NOT BE TEXTURED, BUT SHALL BE A TROWELED SURFACE.

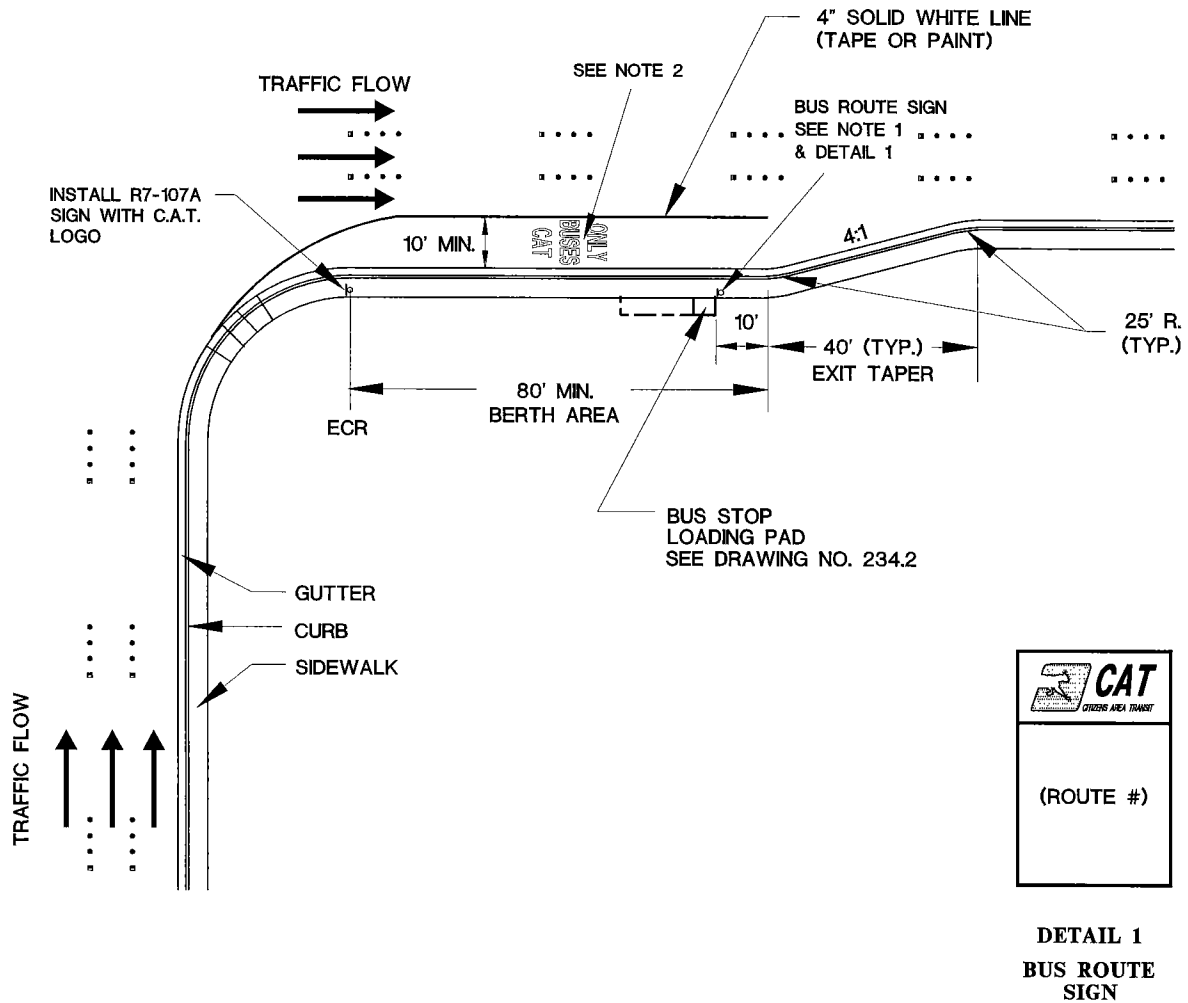
SPECIFICATION REFERENCE	
302	AGGREGATE BASE
501	CONCRETE
502	CONCRETE STRUCTURES

**UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA**

TYPICAL BUS TURN-OUT

DATE 6-9-94	DWG. NO. 234.1	PAGE 40.1
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FIGURE 8

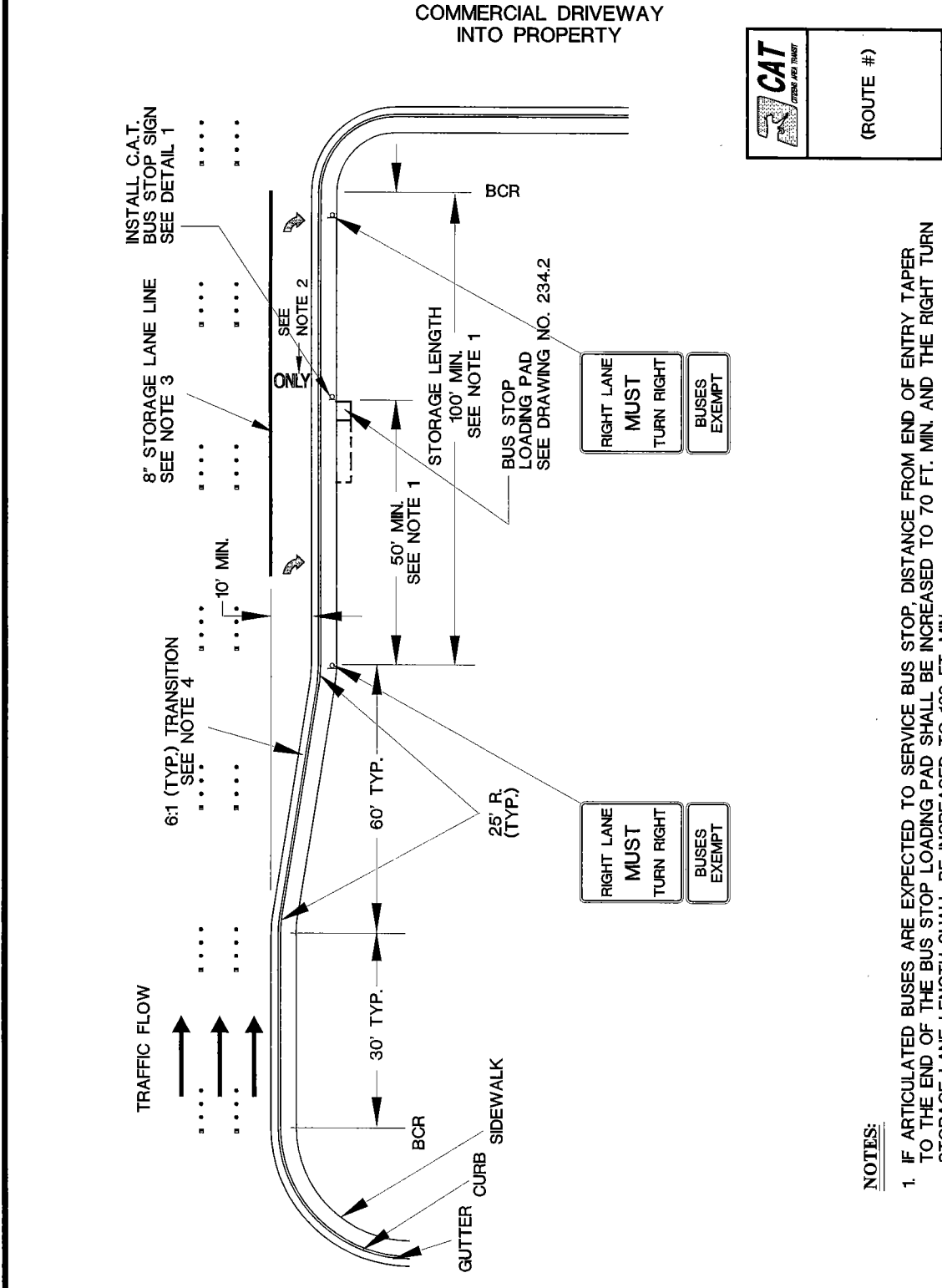


NOTES:

1. BUS ROUTE SIGN SHALL BE INSTALLED AT THE DOWNSTREAM END OF BUS STOP LOADING PAD.
2. A MINIMUM OF ONE SET OF PAVEMENT MARKINGS CONTAINING THE "BUSES ONLY" SYMBOL SHALL BE PLACED IN THE TURN-OUT AREA. EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

SPECIFICATION REFERENCE		UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA		
		FAR-SIDE BUS TURN-OUT (WITHOUT ADEQUATE SPACE FOR APPROACH TAPER)		
		DATE	DWG. NO.	PAGE

FIGURE 9



(ROUTE #)

DETAIL 1
BUS ROUTE SIGN

- NOTES:**
1. IF ARTICULATED BUSES ARE EXPECTED TO SERVICE BUS STOP, DISTANCE FROM END OF ENTRY TAPER TO THE END OF THE BUS STOP LOADING PAD SHALL BE INCREASED TO 70 FT. MIN. AND THE RIGHT TURN STORAGE LANE LENGTH SHALL BE INCREASED TO 120 FT. MIN.
 2. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE ENGINEER, INSTALL ARROW AND "ONLY" SYMBOL PAVEMENT MARKINGS FOR THE LENGTH OF THE STORAGE LANE. SYMBOLS SHALL BE APPROVED TYPE I PAVEMENT MARKING FILM.
 3. STORAGE LANE LINE SHALL BE APPROVED TYPE II PAVEMENT MARKING FILM, OR IF APPROVED BY THE ENGINEER, RAISED PAVEMENT MARKERS MAY BE USED.
 4. REVERSE CURVE TRANSITION MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

SPECIFICATION REFERENCE	
302	AGGREGATE BASE
501	CONCRETE
502	CONCRETE STRUCTURES
628	PAINTING TRAFFIC STRIPING, PAVEMENT MARKINGS...

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

**BUS STOP PLACEMENT WITHIN
EXCLUSIVE RIGHT TURN LANE
FOR COMMERCIAL PROPERTIES**

DATE 4-8-99	DWG. NO. 234.3	PAGE 40.3
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Bus Stop Loading Pads

Bus stop loading pads should be constructed at all bus stop locations where feasible. The standard size of loading pads shall be a minimum of 8 feet in width (measured from the back of curb) by a variable length (5 ft. minimum), depending upon passenger volume and available right-of-way or easement. The slope of the pad should match the slope of the adjacent sidewalk, and allow drainage of the pad. The slope of the loading pad shall be a maximum of 2% per the Americans with Disabilities Act of 1990 (ADA). Construction of a sidewalk ramp may be required at locations where the bus stop would otherwise be inaccessible as defined by the ADA. Design details of a typical bus stop loading pad and an optional sidewalk ramp are shown in Drawing No. 234.2 of the Uniform Standard Drawings for Public Works' Construction Off-site Improvements, Clark County Area, Nevada, Volume I. A copy of the drawing is included in the Appendix.

When a new development is constructed adjacent to an existing or proposed bus stop, the entity should require the developer to construct the bus loading pad as part of offsite improvements. In addition, bus stop loading pads should be included at all bus stops where street improvements are planned.

Signs

Bus stop signs shall be mounted in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) and in accordance with the following conditions;

- Bus stop signs shall be placed at all designated bus stops, and shall be oriented to provide maximum visibility.
- Bus stop signs shall visibly display bus route number(s) using the bus stop. At major transfer points, additional information on schedules may be provided.
- The signs shall be erected independently on their own posts or on leading face of shelter. However, if a bus stop sign is to be located within 10 feet of a street light pole or another sign post, then the bus stop sign should be located on the street light pole or sign post.
- A minimum of 2 feet clearance shall be provided between the outside edge of the sign and face-of-curb. Where sidewalks exist, post mounted signs shall be placed to provide a minimum of 4 feet clearance between the back-of-curb and the sign post, and must satisfy any minimum clearances specified by the Americans with Disabilities Act of 1990 (ADA). Where no curbs and sidewalks exist, a minimum clearance of 6 feet shall be provided between the sign and edge of travel lane.

- Bus stop signs and any other bus stop related signs required may be installed by the entity in whose jurisdiction the bus stop is located, or by an RTC Contractor. If a sign is installed by an entity, the entity shall be reimbursed by the RTC for each sign installed based on the interlocal agreement between the RTC and the entity. The entity shall be responsible for any signs that the entity has incorrectly installed. The RTC shall be responsible for incorrect installation of any sign by an RTC contractor.
- The size of sign panels, background color, and size of text shall be as specified by CAT and in accordance with the MUTCD. Sheeting for all signs shall be high intensity Class 4 in accordance with RTC specifications.

Transfer Policy

The RTC in January 1996 adopted a transfer policy governing requests to "hold" buses on intersecting routes at transfer points. The policy allows buses on routes that operate on one hour headways to continue to hold for transferring passengers. The adopted policy is outlined below:

1. *CAT* buses shall not stop, stand or layover in a travel lane for any purpose or period of time except for the loading or unloading of passengers or when waiting a maximum of five (5) minutes for transfers. No bus shall wait longer than five (5) minutes after their scheduled departure time.
2. *CAT* buses shall not wait for transfers on routes with scheduled service of more frequency than one hour.
3. *CAT* buses shall not stop on one lane streets except to load and unload passengers.

Mitigation of Impacts on Bus Stops During Construction

Due to the impact of road construction on *CAT* bus stops, the procedures listed below shall be followed in order to minimize or mitigate construction impacts on bus stops.

1. Temporary closure of bus stops shall comply with the requirements of Subsection 107.07, "Traffic and Access" of the Clark County Area Uniform Standard Specifications.
2. When the mitigation of construction impacts are included in the Special Provisions of a contract, the following provisions should be included. Prior to advertising the contract, RTC staff shall be notified and given the opportunity to provide comments on the draft Special Provisions.

- a. RTC staff shall provide a listing of all existing bus stops within or adjacent to the project limits that may be impacted by construction activities or placement of traffic control devices.
- b. The Contractor shall not close down any two consecutive *CAT* bus stops in the same direction of travel.
- c. The Contractor shall relocate existing bus stop signs at designated areas utilizing the bid item "Relocate Traffic Sign".
- d. Temporary bus stops may be considered upon approval by the RTC staff. The temporary bus stop shall be placed to minimize construction conflicts and shall provide a safe, accessible and convenient boarding area for passengers. The Contractor may call the Regional Transportation Commission at 455-4481 with any questions.
- e. The Contractor shall schedule his work to minimize impacts and the duration of impacts to *CAT* bus service operations and passengers.
- f. RTC staff shall be notified and given the opportunity to comment on street closures that affect a bus route. When streets are closed, appropriate bus route detour signs and temporary bus stop signs shall be provided by the contractor.

Mitigation of Impacts on Bus Stops Due to Street Closure During Special Events

1. RTC staff shall be notified and given the opportunity to comment on street closures that affect a bus route. When streets are closed, appropriate bus route detour signs and temporary bus stop signs shall be provided by the applicant.
2. RTC staff shall provide a listing of all bus stops within or adjacent to the project limits that may be impacted by the special event or placement of traffic control devices.
3. The RTC should be notified at least 10 working days prior to the special event.

SECTION 2: REMOVAL AND RELOCATION OF BUS STOPS

Conditions for removal and relocation bus stops

This section provides guidelines for removing and relocating bus stop signs, and provides procedures for addressing public complaints. Bus stops may be considered for removal or relocation where:

- bus stops do not satisfy or are in conflict with the guidelines and standards detailed in this manual;
- permanent route changes are made to enhance overall transit service;
- traffic safety problem exist;
- frequent safety related incidents are reported by bus operators, transit monitors, and the general public;

Complaint process

Property owners requesting removal or relocation of bus stops on or adjacent to their property may file an oral complaint with the RTC. The complaint shall be reviewed and addressed by RTC staff within 5 working days of receipt of the complaint. If the property owner is not satisfied with the response received, a formal written complaint may be filed by the property owner to the RTC at 600 S. Grand Central Parkway, Suite 350, Las Vegas, Nevada, 89106-4512. The complainant shall identify his name, address, telephone number, date, time and nature of the complaint. In describing the complaint, the complainant shall clearly and concisely state the grounds of the complaint.

The RTC Administrative Panel shall review the complaint and invite the complainant before the Board for a hearing within 15 working days of receipt of the complaint. At the hearing, the complainant shall present his case, and the Administrative Panel shall then render its decision. The Administrative Panel's decision shall be final unless appealed in writing to the Regional Transportation Commission by the complainant. Such appeal must be delivered to the Executive Assistant to the General Manager of the RTC at 600 S. Grand Central Parkway, Suite 350, Las Vegas, Nevada, 89106-4512, within 7 working days from the date of the final decision of the Administrative Board. Appeals will be scheduled at the next regularly scheduled meeting of the RTC Commission which shall be no sooner than 20 working days after receipt of the appeal.

At the meeting scheduled for appeal, the RTC will only consider the record established at the Administrative Board hearing and the findings of fact as determined by the Administrative Board.

No oral arguments will be allowed unless specifically requested by a majority vote of the RTC. The decision of the Commission shall be final.

All parties to the grievance and appeals process have the right to be represented by counsel at both the administrative hearing and the appeal hearing before the Commission.

Relocation Costs

If the RTC approves a request by an individual to remove and relocate a bus stop adjacent to their property, the individual shall be required to pay for the cost of removing and relocating the bus stop.

SECTION 3: AMENITIES

Bus Shelters

Bus shelters are structures used by bus passengers while waiting for a bus. Bus shelters are very important in that they protect the transit patron from vehicular traffic and the elements. The goal of *CAT* is to provide this protection at all bus stops that warrant this improvement to make transit appealing and encourage ridership.

Bus shelters should be placed at all bus stops where feasible. Characteristics that will render a site not suitable include sidewalks with widths less than 5 feet, locations with no possibility of obtaining an easement for placement of the shelters, and locations with no curb and gutter. For the locations where shelter placement is not suitable, bus benches should be provided. If the daily number of passengers using stop is greater than 200, then a double shelter shall be required.

Bus Benches

Bus benches will be provided at every bus shelter and may be provided as stand alone fixtures where placement of bus shelters are not be feasible. Bus benches will be limited to placement where they do not interfere with pedestrian circulation. The RTC will provide a list of bus stop locations to the entity in which the stops are located, and the entity will designate the contractor of its choice for the bench installation. Damaged furniture should be tended to within twenty four hours to create a positive impression for transit patrons and the general public.

Trash Receptacles

Well maintained bus stops are crucial to the image of the transit system. Trash build-up should be tended to within twenty four hours to create a positive impression for transit patrons and the general public. Trash receptacles should be designed to be compatible with other bus stop components and with removable plastic garbage bags of 30 gallon minimum capacity. Ideally, every bus stop location approved for a bus shelter or bench shall have a trash can. Bus stop locations with 50 to 200 boardings per day shall have 1 - 3 trash cans. Similarly, bus stop locations with 200 or more boarding per day shall have 3 - 5 trash cans. Trash and litter shall be removed by the bus shelter company. Trash and litter shall be removed from within a 10 foot zone on each side of the bus stop location once every 24 hours or as needed.

Maintenance frequency of not less than once every two weeks should include the following:

- 1. full wash down of shelter, benches and accessories
- 2. removal of all dirt, graffiti, and pasted material

3. squeegee wipe down of glass surfaces on bus shelters
4. removal and replacement of trash bags from trash cans as needed
5. litter pick up around bus stop or shelter/benches/accessories to a distance of ten feet as needed
6. manual or chemical removal of weeds
7. touch up of paint scratches on bus shelters and benches
8. repair items that pose safety problems within twenty-four hours
9. repair items that do not pose safety problems within three days
10. check lighting levels and replace bulbs and ballasts as required

Bus Shelter and Bench Installation

The RTC will provide a list of bus stop locations to the designated contractor for the placement of bus shelters and bus benches. The contractor/franchisee shall locate bus shelters and bus benches together with any transit information at designated bus stop locations within the RTC's member entity's right-of-way. All bus shelter and bus bench model selection and placement shall require the approval of the Regional Transportation Commission. At no time shall the bus shelter or bus bench obstruct pedestrian movement, wheelchair or vehicle travel. In the event that the contractor elects to encroach on private property, the contractor shall obtain written permission of the property owner and fulfill the requirements of existing County/City codes, ordinances, regulations and standards. Shelters and benches shall be moved, removed or relocated for various reasons including private development, public works projects, public convenience, transit stop/route changes, repeated vandalism or at the direction of the Regional Transportation Commission. The contractor shall bear the full cost of moving, removing and relocating of shelters/benches. All RTC directed shelter/bench relocations must commence within five working days from receipt of a written notice to move, remove or relocate the shelter/bench. No more than 5% of shelters in locations which meet these guidelines can be moved in any one year.

The Contractor shall submit a shelter and bench installation schedule, along with a preliminary plan to the RTC to install shelters and benches at bus stop locations approved by the RTC.

The contractual arrangements with a contractor for bus shelters and bus benches will be the obligation of Clark County and the Cities of Las Vegas, Henderson, North Las Vegas, Boulder City and Mesquite. These entities are authorized and empowered by provisions of their County and City Charters to execute contracts with bus shelter companies. The contract as a minimum should encompass the following:

1. basic services
2. shelter and bench locations
3. shelter and bench installation schedule
4. advertising, advertising rates and contracts
5. maintenance requirements

6. accounting records
7. satisfactory performance provisions
8. insurance and indemnification
9. terms of contract
10. payments
11. entity's responsibilities
12. general conditions
13. special provisions

A uniform bus shelter design will be applied to all installations throughout the urban area and therefore the design must comply with aesthetic as well as technical and economic considerations.

Typical dimensions of a single bus shelter are shown on Figure 10. A bus shelter shall be placed at the back of a sidewalk to provide adequate space for the movement of pedestrians and wheelchairs. The width that is left for the movement of pedestrians on the sidewalk shall not be less than three feet so as to allow a minimum pedestrian flow of 35 persons per minute and for wheelchair access to meet the Americans with Disabilities Act (ADA) requirements. The placement of bus shelters shall not compromise sight distance.

A bus bench on a sidewalk shall be placed at the back of a sidewalk to provide adequate space for the movement of pedestrians and wheelchairs. The minimum width for the movement of pedestrian flow and wheelchair access shall be identical to the width requirements for bus shelters.

Sidewalk Clearance on the Strip

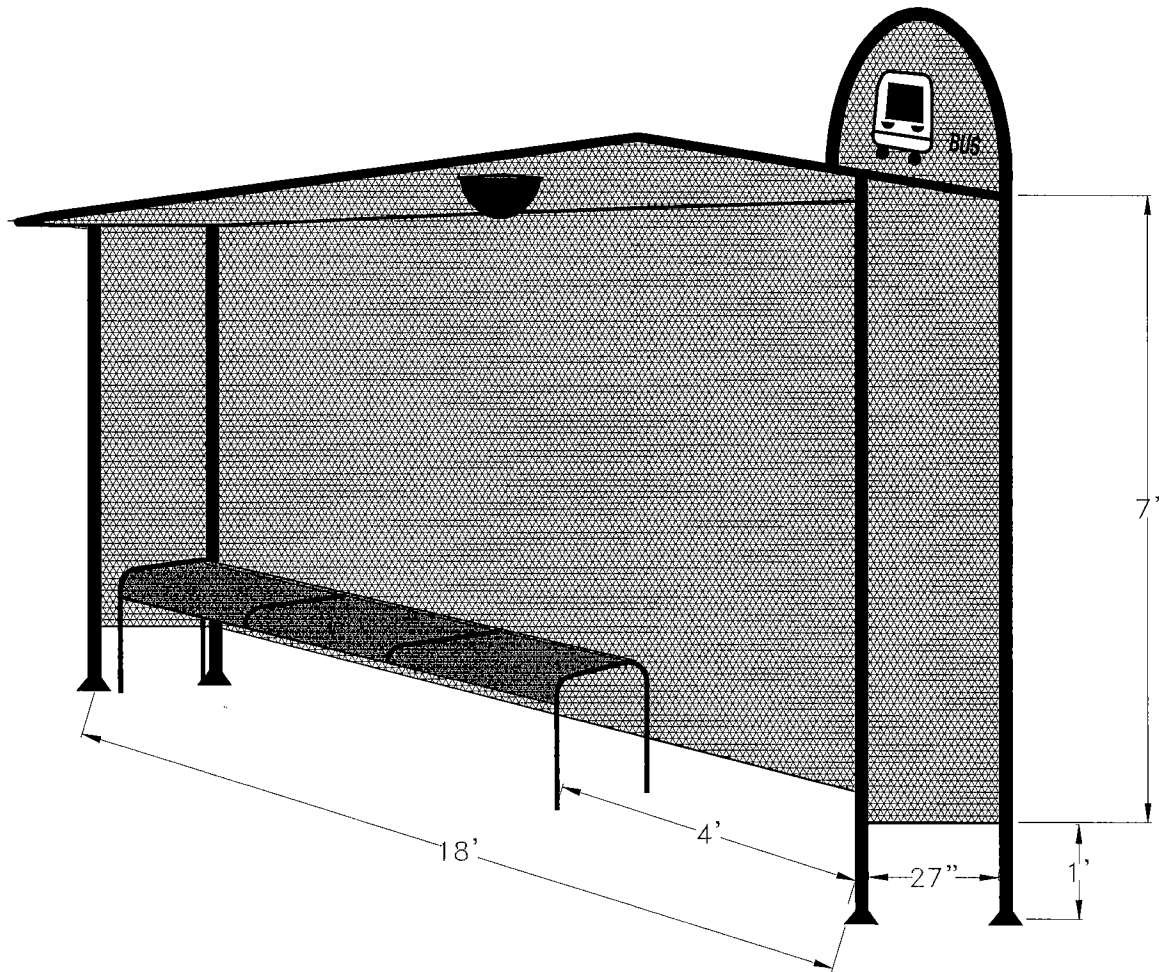
In accordance with the County's Pedestrian Capacity Management Program, a Level of Service "C" shall be maintained for pedestrians on sidewalks within the Resort Corridor. The Level of Service "C" has been adopted in the County's Obstructive Use Ordinance. Therefore, placement of bus shelters and benches on sidewalks within the resort corridor shall comply with the Obstructive Use Ordinance. A copy of the Ordinance may be obtained from Clark County.

Material for constructing bus shelters and benches

The bus shelters and benches shall be constructed of material previously approved by the RTC and manufactured with bent pipe or square tubing and perforated steel vertical shade screens. The shade screens shall allow for protection from inclement weather and sun shield for lower sun angles of morning and afternoon sun, allowing cooling air circulations through the perforations. The perforated surfaces also provide increased cooling comfort due to reduced surface area exposed to the sun's rays.

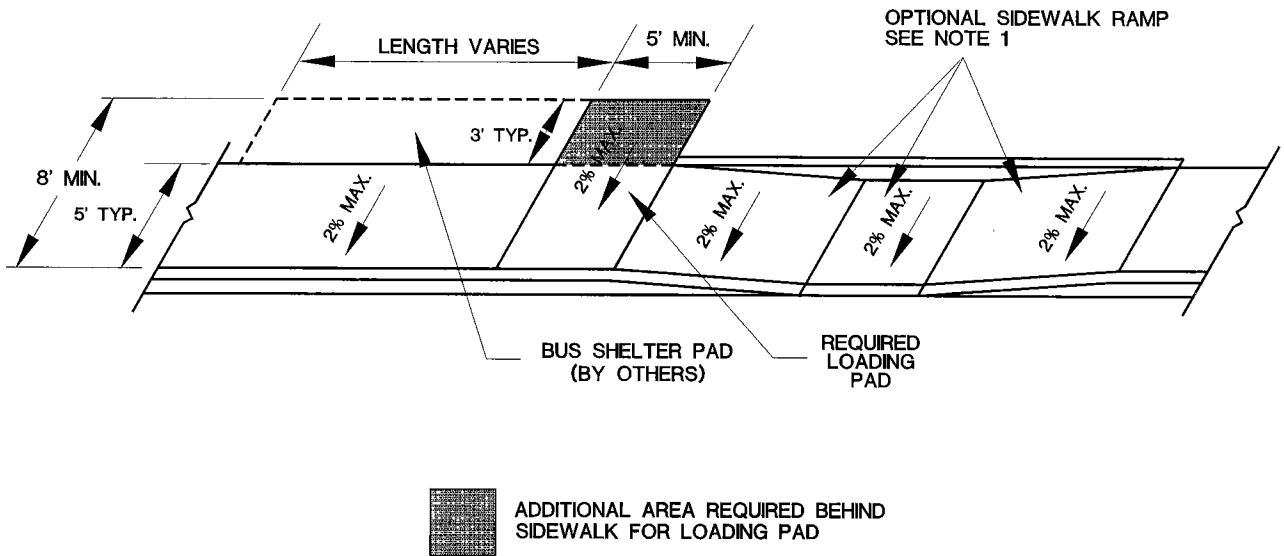
The solid roof shall be of galvanized steel clad and latex reflective top surface or approved equal. Ceiling lighting should be incandescent or fluorescent fixture with polycarbonate injection molded prismatic refractor and automatic dusk-to-dawn solar or conventional lighting electricity. Steel surfaces to be treated with V-thane, high bond, chemical resistant marine polypaint, with complete epoxy undercoating primer. Aluminum surfaces to be anodized aluminum. Benches to be constructed of fiber glass or perforated metal, minimum of seven feet in length with center divider. Colors of both shelter and benches must be approved by the entities and the RTC.

REGIONAL TRANSPORTATION COMMISSION



- Shelters installed on existing sidewalks must have a minimum of 36" clear walkway from face of curb to any part of shelter or bench
- Bench must be a minimum of 7' in length with a center divider

APPENDIX



NOTES:

1. SIDEWALK RAMP MAY BE REQUIRED TO BE CONSTRUCTED IN THOSE LOCATIONS WHERE THE BUS STOP WOULD OTHERWISE BE INACCESSIBLE AS DEFINED BY THE AMERICANS WITH DISABILITIES ACT. SEE DRAWING NO. 235, SHEET 4 OF 5 FOR SIDEWALK RAMP DETAILS.
2. ADDITIONAL RIGHT-OF-WAY OR EASEMENT IS REQUIRED FOR LOADING PAD AND VARIABLE HEIGHT CURB AT BACK OF SIDEWALK RAMP.
3. AGGREGATE BASE AND CONCRETE FOR LOADING PAD SHALL BE THE SAME AS REQUIRED FOR SIDEWALK. SEE DRAWING NO. 234.

SPECIFICATION REFERENCE		UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA	
302	AGGREGATE BASE	BUS STOP LOADING PAD AND OPTIONAL SIDEWALK RAMP	
501	CONCRETE		
502	CONCRETE STRUCTURES		
		DATE 6-9-94	DWG. NO. 234.2
		PAGE 40.2	

10.0 Transportation Facilities

(a) at least one public entrance shall allow a person with mobility impairments to approach, enter and exit including a minimum clear door width of 32 in (815 mm).

(b) sleeping space for homeless persons as provided in the scoping provisions of 9.1.2 shall include doors to the sleeping area with a minimum clear width of 32 in (815 mm) and maneuvering space around the beds for persons with mobility impairments complying with 9.2.2(1).

(c) at least one toilet room for each gender or one unisex toilet room shall have a minimum clear door width of 32 in (815 mm), minimum turning space complying with 4.2.3, one water closet complying with 4.16, one lavatory complying with 4.19 and the door shall have a privacy latch; and, if provided, at least one tub or shower shall comply with 4.20 or 4.21, respectively.

(d) at least one common area which a person with mobility impairments can approach, enter and exit including a minimum clear door width of 32 in (815 mm).

(e) at least one route connecting elements (a), (b), (c) and (d) which a person with mobility impairments can use including minimum clear width of 36 in (915 mm), passing space complying with 4.3.4, turning space complying with 4.2.3 and changes in levels complying with 4.3.8.

(f) homeless shelters can comply with the provisions of (a)-(e) by providing the above elements on one accessible floor.

9.5.3. Accessible Sleeping Accommodations in New Construction.

Accessible sleeping rooms shall be provided in conformance with the table in 9.1.2 and shall comply with 9.2 Accessible Units, Sleeping Rooms and Suites (where the items are provided). Additional sleeping rooms that comply with 9.3 Sleeping Accommodations for Persons with Hearing Impairments shall be provided in conformance with the table provided in 9.1.3.

In facilities with multi-bed rooms or spaces, a percentage of the beds equal to the table provided in 9.1.2 shall comply with 9.2.2(1).

10. TRANSPORTATION FACILITIES.

10.1 General. Every station, bus stop, bus stop pad, terminal, building or other transportation facility, shall comply with the applicable provisions of 4.1 through 4.35, sections 5 through 9, and the applicable provisions of this section. The exceptions for elevators in 4.1.3(5), exception 1 and 4.1.6(1)(k) do not apply to a terminal, depot, or other station used for specified public transportation, or an airport passenger terminal, or facilities subject to Title II.

10.2 Bus Stops and Terminals.

10.2.1 New Construction.

(1) Where new bus stop pads are constructed at bus stops, bays or other areas where a lift or ramp is to be deployed, they shall have a firm, stable surface; a minimum clear length of 96 inches (measured from the curb or vehicle roadway edge) and a minimum clear width of 60 inches (measured parallel to the vehicle roadway) to the maximum extent allowed by legal or site constraints; and shall be connected to streets, sidewalks or pedestrian paths by an accessible route complying with 4.3 and 4.4. The slope of the pad parallel to the roadway shall, to the extent practicable, be the same as the roadway. For water drainage, a maximum slope of 1:50 (2%) perpendicular to the roadway is allowed.

(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. Such shelters shall be connected by an accessible route to the boarding area provided under paragraph (1) of this section.

(3) Where provided, all new bus route identification signs shall comply with 4.30.5. In addition, to the maximum extent practicable, all new bus route identification signs shall comply with 4.30.2 and 4.30.3. Signs

10.3 Fixed Facilities and Stations

that are sized to the maximum dimensions permitted under legitimate local, state or federal regulations or ordinances shall be considered in compliance with 4.30.2 and 4.30.3 for purposes of this section.

EXCEPTION: Bus schedules, timetables, or maps that are posted at the bus stop or bus bay are not required to comply with this provision.

10.2.2 Bus Stop Siting and Alterations.

(1) Bus stop sites shall be chosen such that, to the maximum extent practicable, the areas where lifts or ramps are to be deployed comply with section 10.2.1(1) and (2).

(2) When new bus route identification signs are installed or old signs are replaced, they shall comply with the requirements of 10.2.1(3).

10.3 Fixed Facilities and Stations.

10.3.1 New Construction. New stations in rapid rail, light rail, commuter rail, intercity bus, intercity rail, high speed rail, and other fixed guideway systems (e.g., automated guideway transit, monorails, etc.) shall comply with the following provisions, as applicable:

(1) Elements such as ramps, elevators or other circulation devices, fare vending or other ticketing areas, and fare collection areas shall be placed to minimize the distance which wheelchair users and other persons who cannot negotiate steps may have to travel compared to the general public. The circulation path, including an accessible entrance and an accessible route, for persons with disabilities shall, to the maximum extent practicable, coincide with the circulation path for the general public. Where the circulation path is different, signage complying with 4.30.1, 4.30.2, 4.30.3, 4.30.5, and 4.30.7(1) shall be provided to indicate direction to and identify the accessible entrance and accessible route.

(2) In lieu of compliance with 4.1.3(8), at least one entrance to each station shall comply with 4.14, Entrances. If different entrances to a station serve different transportation fixed routes or groups of fixed routes, at least one entrance serving each group or route shall

comply with 4.14, Entrances. All accessible entrances shall, to the maximum extent practicable, coincide with those used by the majority of the general public.

(3) Direct connections to commercial, retail, or residential facilities shall have an accessible route complying with 4.3 from the point of connection to boarding platforms and all transportation system elements used by the public. Any elements provided to facilitate future direct connections shall be on an accessible route connecting boarding platforms and all transportation system elements used by the public.

(4) Where signs are provided at entrances to stations identifying the station or the entrance, or both, at least one sign at each entrance shall comply with 4.30.4 and 4.30.6. Such signs shall be placed in uniform locations at entrances within the transit system to the maximum extent practicable.

EXCEPTION: Where the station has no defined entrance, but signage is provided, then the accessible signage shall be placed in a central location.

(5) Stations covered by this section shall have identification signs complying with 4.30.1, 4.30.2, 4.30.3, and 4.30.5. Signs shall be placed at frequent intervals and shall be clearly visible from within the vehicle on both sides when not obstructed by another train. When station identification signs are placed close to vehicle windows (i.e., on the side opposite from boarding) each shall have the top of the highest letter or symbol below the top of the vehicle window and the bottom of the lowest letter or symbol above the horizontal mid-line of the vehicle window.

(6) Lists of stations, routes, or destinations served by the station and located on boarding areas, platforms, or mezzanines shall comply with 4.30.1, 4.30.2, 4.30.3, and 4.30.5. A minimum of one sign identifying the specific station and complying with 4.30.4 and 4.30.6 shall be provided on each platform or boarding area. All signs referenced in this paragraph shall, to the maximum extent practicable, be placed in uniform locations within the transit system.

4.2.4* Clear Floor or Ground Space for Wheelchairs

4.2.4* Clear Floor or Ground Space for Wheelchairs.

4.2.4.1 Size and Approach. The minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 30 in by 48 in (760 mm by 1220 mm) (see Fig. 4(a)). The minimum clear floor or ground space for wheelchairs may be positioned for forward or parallel approach to an object (see Fig. 4(b) and (c)). Clear floor or ground space for wheelchairs may be part of the knee space required under some objects.

4.2.4.2 Relationship of Maneuvering Clearance to Wheelchair Spaces. One full unobstructed side of the clear floor or ground space for a wheelchair shall adjoin or overlap an accessible route or adjoin another wheelchair clear floor space. If a clear floor space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearances shall be provided as shown in Fig. 4(d) and (e).

4.2.4.3 Surfaces for Wheelchair Spaces. Clear floor or ground spaces for wheelchairs shall comply with 4.5.

4.2.5* Forward Reach. If the clear floor space only allows forward approach to an object, the maximum high forward reach allowed shall be 48 in (1220 mm) (see Fig. 5(a)). The minimum low forward reach is 15 in (380 mm). If the high forward reach is over an obstruction, reach and clearances shall be as shown in Fig. 5(b).

4.2.6* Side Reach. If the clear floor space allows parallel approach by a person in a wheelchair, the maximum high side reach allowed shall be 54 in (1370 mm) and the low side reach shall be no less than 9 in (230 mm) above the floor (Fig. 6(a) and (b)). If the side reach is over an obstruction, the reach and clearances shall be as shown in Fig. 6(c).

4.3 Accessible Route.

4.3.1* General. All walks, halls, corridors, aisles, skywalks, tunnels, and other spaces

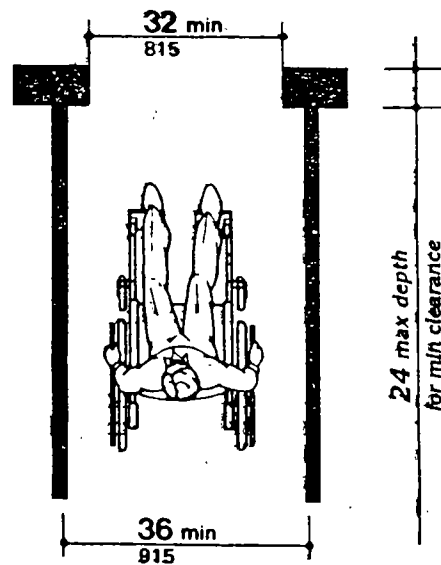


Fig. 1
Minimum Clear Width
for Single Wheelchair

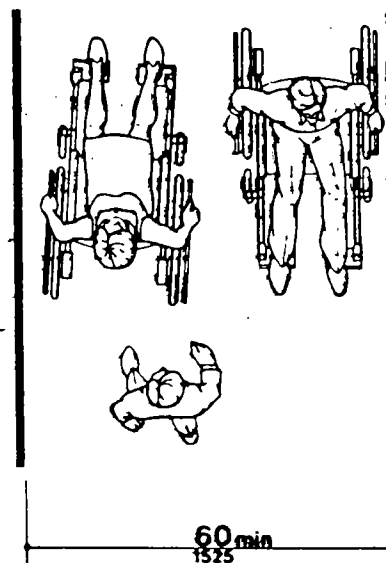


Fig. 2
Minimum Clear Width
for Two Wheelchairs

4.3 Accessible Route

that are part of an accessible route shall comply with 4.3.

4.3.2 Location.

(1) At least one accessible route *within the boundary of the site* shall be provided from public transportation stops, accessible parking, and accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance they serve. *The accessible route shall, to the maximum extent feasible, coincide with the route for the general public.*

(2) At least one accessible route shall connect accessible buildings, facilities, elements, and spaces that are on the same site.

(3) At least one accessible route shall connect accessible building or facility entrances with all accessible spaces and elements and with all accessible dwelling units within the building or facility.

(4) An accessible route shall connect at least one accessible entrance of each accessible

dwelling unit with those exterior and interior spaces and facilities that serve the accessible dwelling unit.

4.3.3 Width. The minimum clear width of an accessible route shall be 36 in (915 mm) except at doors (see 4.13.5 and 4.13.6). If a person in a wheelchair must make a turn around an obstruction, the minimum clear width of the accessible route shall be as shown in Fig. 7(a) and (b).

4.3.4 Passing Space. If an accessible route has less than 60 in (1525 mm) clear width, then passing spaces at least 60 in by 60 in (1525 mm by 1525 mm) shall be located at reasonable intervals not to exceed 200 ft (61 m). A T-intersection of two corridors or walks is an acceptable passing place.

4.3.5 Head Room. Accessible routes shall comply with 4.4.2.

4.3.6 Surface Textures. The surface of an accessible route shall comply with 4.5.

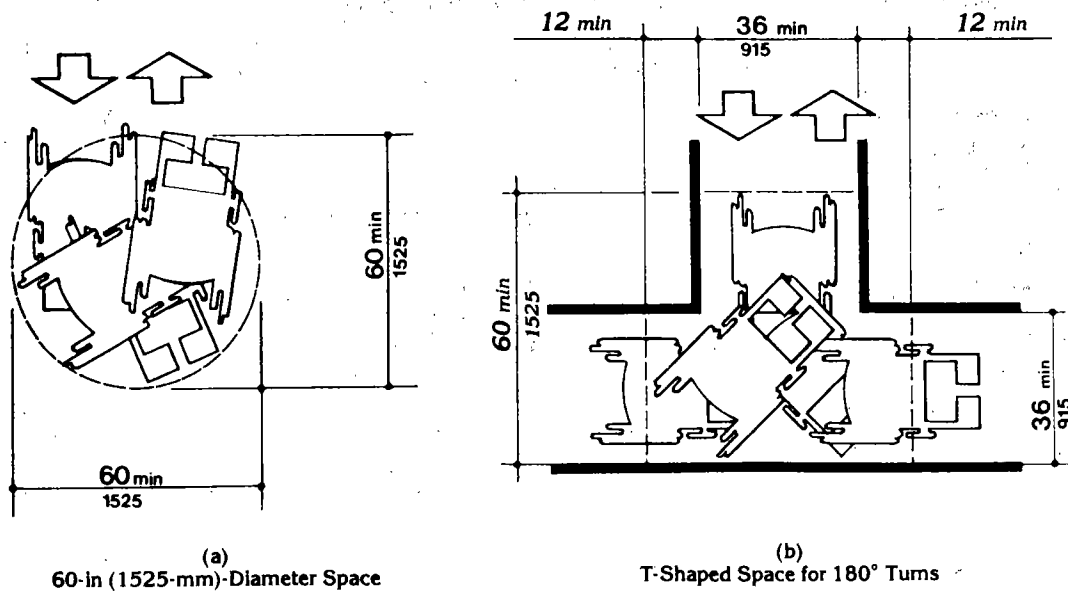


Fig. 3
Wheelchair Turning Space

4.3.7 Slope

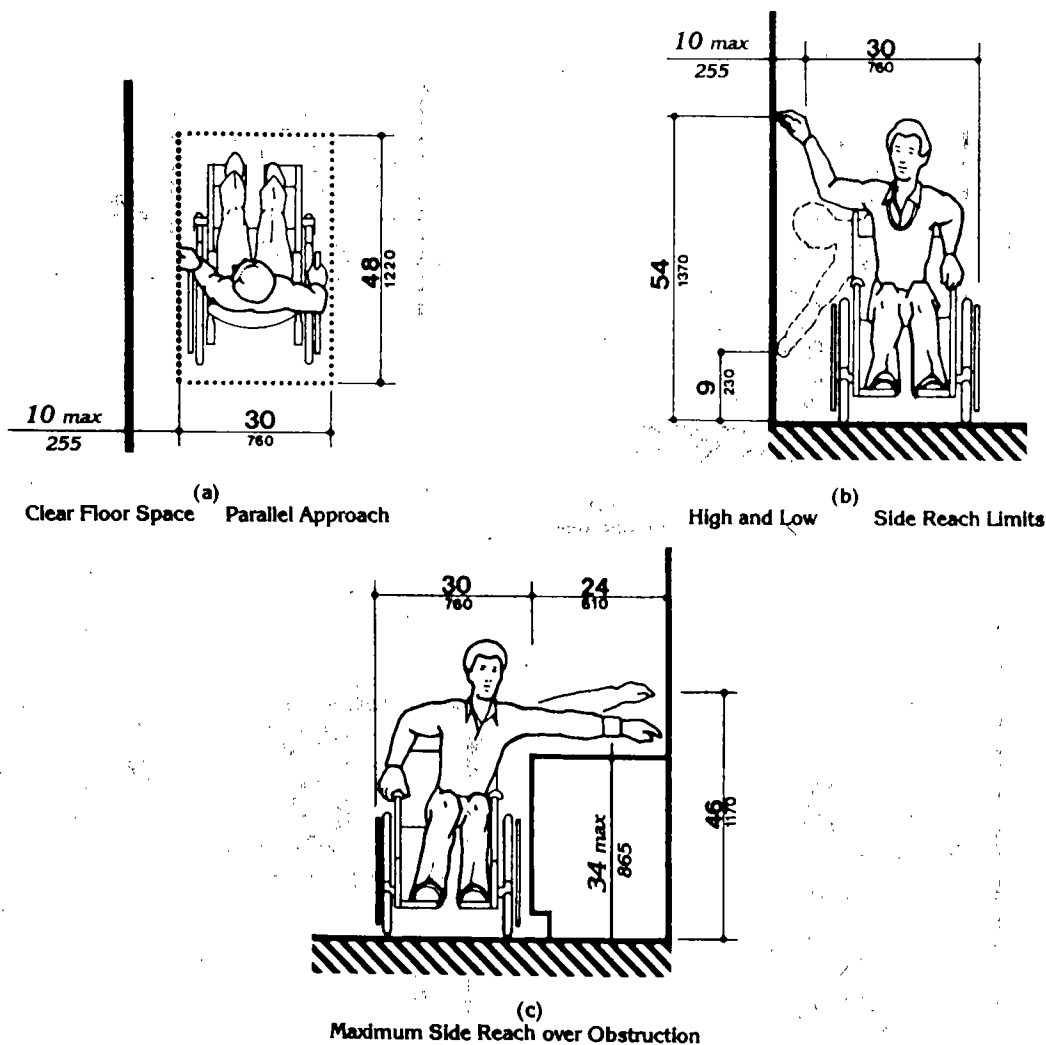


Fig. 6
Side Reach

4.3.7 Slope. An accessible route with a running slope greater than 1:20 is a ramp and shall comply with 4.8. Nowhere shall the cross slope of an accessible route exceed 1:50.

4.3.8 Changes in Levels. Changes in levels along an accessible route shall comply with 4.5.2. If an accessible route has changes in level greater than 1/2 in (13 mm), then a curb

ramp, ramp, elevator, or platform lift (as permitted in 4.1.3 and 4.1.6) shall be provided that complies with 4.7, 4.8, 4.10, or 4.11, respectively. An accessible route does not include stairs, steps, or escalators. See definition of "egress, means of" in 3.5.

4.3.9 Doors. Doors along an accessible route shall comply with 4.13.

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