

# **Guidelines to Improve Barrier-Free Access for Public Transport Passenger Facilities**

**August 2001**

**Foundation for Promoting Personal  
Mobility and Ecological Transportation  
(ECOMO Foundation)**

## Foreword

In Japan, the population continues to age and it is also increasingly important for the physically impaired to go out and participate in social activities. Thus, ensuring barrier-free access for elderly persons, the physically impaired, and others to transportation-related facilities is increasingly urgent.

The Foundation has long been engaged in a research study to promote the availability of public transportation that is comfortable and safe for the elderly, the physically impaired, and others. We are pleased to see that the Transport Accessibility Improvement Law was put into effect in November 2000 and thus the construction and improvement of transport facilities to satisfy the new requirements was forced to begin.

Such circumstances made it necessary to review practical guidelines that should be referred to by public transport providers in the construction and improvement of their facilities and to make them meet the needs of the new age. Thus, the Ministry of Land, Infrastructure and Transport decided to review "Guidelines on the Construction and Improvement of Facilities for the Aged, the Physically Handicapped, and the Like at Public Transportation Terminals" (established in 1983 and revised in 1994). Accordingly, a committee for the review of guidelines on the improvement of transport accessibility to elderly persons, the physically impaired, and similarly disadvantaged persons at public transportation terminals was set up in October 2000 with this Foundation as its secretariat. This committee, made up of experts in various fields, has organized this new "Guidelines to Improve Barrier-Free Access for Public Transport Passenger Facilities."

In the preparation of the guidelines, care was taken to make them deal with not only the construction and improvement of passenger facilities of each type but also on the idea of transportation accessibility improvement applied to all public transportation terminals. Care was taken also to make the guidelines include the idea of what was called "universal design," which enabled passenger facilities to be easily used by people who were in some way restricted in their accessibility to the facilities, such as elderly persons, the physically impaired, pregnant women, foreigners, and also easily used by all other persons. Moreover, special emphasis was placed on guidance and information facilities and toilets (rest rooms) that tended to be behind other facilities of public transportation terminals in this type of improvement. It is expected that the use of public transportation by elderly persons, the physically impaired, and others will be promoted because passenger facilities are steadily constructed and improved according to these guidelines.

The accomplishment of these guidelines owes much to the guidance and cooperation of transport authorities, the committee headed by Tetsuo Akiyama, a professor at the postgraduate school of Tokyo Metropolitan University, and its subcommittees, one of which was the toilet subcommittee led by Kazumasa Kodaki, professor at Yokohama National University. Part of the work was achieved with the cooperation of Mitsubishi Research Institute.

It was decided that the guidelines should be published by this Foundation, which served as the secretariat. The Foundation extends its heart-felt thanks to committee chairman Akiyama, every committee member, and to other persons concerned for their earnest discussion and cooperation in the preparation. We hope that these guidelines are widely used by interested people.

August 2001

Hiroshi Oba  
President

Foundation for Promoting Personal Mobility and Ecological Transportation  
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# INTRODUCTION

**Outline of "Guidelines  
to Improve Barrier-Free Access for  
Public Transport Passenger Facilities"**

## 1. Background

"The Law for Promoting the Improvement of Public Transportation Accessibility to the Aged, the Physically Handicapped and the Like (or the Transport Accessibility Improvement Law)" became effective on November 15, 2000. The purposes of the law are (1) to promote the improvement of barrier-free access of public transportation passenger facilities, vehicles, and related facilities to elderly persons, the physically impaired, and similarly disadvantaged persons, and (2) to selectively and consistently promote the improvement of the accessibility of passenger facilities, roads around the facilities, station plazas, and similar places to elderly persons, the physically impaired, and similarly disadvantaged persons according to the plan that is prepared by the local government in the area containing the facilities. Furthermore, based on this law, the transportation accessibility improvement standards were established. Public transport providers should satisfy these standards in the construction and improvement of passenger facilities or in the introduction of cars and other vehicles.

The enforcement of the transportation accessibility improvement law and the transportation accessibility improvement standards made it necessary to review the contents and the character of "Guidelines on the Construction and Improvement of Facilities for the Aged, the Physically Handicapped and the Like at Public Transportation Terminals" (established in 1983 and revised in 1994).

## 2. Character

The transportation accessibility facilitating standards based on the law are obligatory standards that should be met. These guidelines show an ideal state of public transportation passenger facilities that can meet various needs of various passengers and, therefore, be easily used by everyone. Although public transport providers are not required to follow these guidelines, it is desirable that they should use the guidelines as a yardstick in the construction and improvement of their facilities.

Because they are not obligatory standards and they do not show contents that should be observed, the guidelines do not have an exceptive clause for each of their items. However, there may be cases where structural and other reasons prevent some facilities from being constructed or improved in conformity with these guidelines. On the other hand, there may be cases where public transport providers should make positive efforts to construct or improve their facilities in ways that are beyond the scope of these guidelines.

### 3. Facilities and Users

These guidelines apply to passenger facilities (railway stations, street car and monorail stations, bus terminals, passenger ship terminals, passenger facilities of air terminals) that are designated by the Transport Accessibility Improvement Law. It is desired that the accessibility of cars and similar vehicles should be improved by referring to separately prepared model design for the vehicles of public transportation.

Persons who are in some way restricted in their accessibility to passenger facilities, such as elderly persons, the physically impaired, foreigners, and pregnant women were chosen as the special users of the facilities for specific consideration in the preparation of these guidelines; however, these guidelines include the idea of universal design, which means that everyone should be able to easily use the facilities. All users should find that the resulting improvements of the passenger facilities are helpful.

#### Applicable users and the condition assumed applicable to the guidelines

Applicable users	Applicable condition
Elderly persons	<ul style="list-style-type: none"> <li>• having difficulty in walking</li> <li>• having poor eyesight</li> <li>• having difficulty in hearing</li> </ul>
The physically impaired (wheelchair users)	<ul style="list-style-type: none"> <li>• using a wheelchair</li> </ul>
The physically impaired (non-wheelchair users)	<ul style="list-style-type: none"> <li>• using a walking stick and the like</li> <li>• having difficulty in walking for a long time, going up and down stairs, and in crossing a step or change in floor level</li> </ul>
Persons suffering from an internal disorder	<ul style="list-style-type: none"> <li>• having difficulty in walking and standing for a long time</li> <li>• ostomate persons (i.e., those who use an artificial anus or artificial bladder)</li> </ul>
The visually impaired	<ul style="list-style-type: none"> <li>• completely blind</li> <li>• having weak eyesight</li> </ul>
Persons suffering from a hearing or speech disorder	<ul style="list-style-type: none"> <li>• completely deaf</li> <li>• having difficulty in hearing</li> <li>• having a speech disorder</li> </ul>
The mentally impaired	<ul style="list-style-type: none"> <li>• using the facilities with no one attending the person</li> </ul>
Foreigners	<ul style="list-style-type: none"> <li>• having difficulty in understanding Japanese</li> </ul>
Others	<ul style="list-style-type: none"> <li>• pregnant</li> <li>• accidentally injured</li> <li>• accompanied by infants</li> <li>• carrying heavy baggage</li> <li>• visiting the station for the first time</li> </ul>

#### Fundamental dimensions in the guidelines

##### Wheelchair-related dimensions

Width of a wheelchair: 65 cm, assuming it is either a manually-run or a motor-driven wheelchair.

- The width of a wheelchair has been set at 65 cm because many of the manually-run and motor-driven wheelchairs on the market are not greater than 65-cm wide. The maximum wheelchair width in JIS is 70 cm.

Overall length of a wheelchair: 110 cm, assuming it is either a manually-run or a motor-driven wheelchair.

- The overall length of a wheelchair has been set at 110 cm because many of the manually-run and motor-driven wheelchairs on the market are not greater than 110-cm in overall length. The maximum overall length of a wheelchair in JIS is 120 cm.

The minimum width of a doorway: 80 cm

- The minimum width of a doorway for a manually-run wheelchair should be 80 cm, which is the sum of the width of the wheelchair and the 15-cm wide space necessary for its user to turn the rim by hand in order to run the wheelchair.

- A motor-driven wheelchair requires no turning of the rim by hand, but users of such wheelchairs tend to be more seriously handicapped than those that use manually-run wheelchair. Furthermore, space is required for the switch box on such wheelchairs. Therefore, the minimum width for the wheelchair of this type should also be 80 cm.

The minimum width of the doorway with a fair margin: 90 cm

- The minimum width of a doorway necessary for a manually-run wheelchair to pass through it with a fair margin is 90 cm, which is the sum of the wheelchair width and a comfortable width, hereafter latitude-allowed space, of 25-cm necessary for its users to easily turn the rim by hand.

- A motor-driven wheelchair requires no turning of the rim by hand, but users of such wheelchairs tend to be more seriously handicapped than those that use manually-run wheelchair. Furthermore, space is required for the switch box on such wheelchairs. Therefore, the minimum latitude-allowed width for the wheelchair of this type should also be 90 cm.

The width of a pathway for a wheelchair: 90 cm

- With its shaking motion taken into account, a wheelchair should have a 90-cm-wide pathway.

The minimum width of a space necessary for a wheelchair to go past a person: 135 cm

- To go past a person, a wheelchair needs a latitude-allowed width of 70 cm, which is the sum of its shaking distance, the breadth of a man's shoulders, and its own width of 65 cm.

The minimum width necessary for a wheelchair to go past another wheelchair: 180 cm

- To go past another wheelchair, a wheelchair needs a width of 180 cm, which is determined by allowing a little latitude in the space for the side-by-side pathway of two wheelchairs.

The space necessary for a wheelchair to turn round or the minimum space for a 180-degree turn: 140 cm

- A wheelchair on the market needs a space of 140-cm wide and 170-cm long to make a 180-degree turn in one motion.

The space necessary for a wheelchair to turn round: or the minimum space for its 360-degree turn: 150 cm

- A wheelchair on the market needs a round space 150-cm in diameter to make a 360-degree turn in one motion.

The space necessary for a motor-driven wheelchair to turn round: or the minimum space for its 360-degree turn: 180 cm

- A motor-driven wheelchair on the market needs a round space 180-cm in diameter to make a 360-degree turn in one motion.

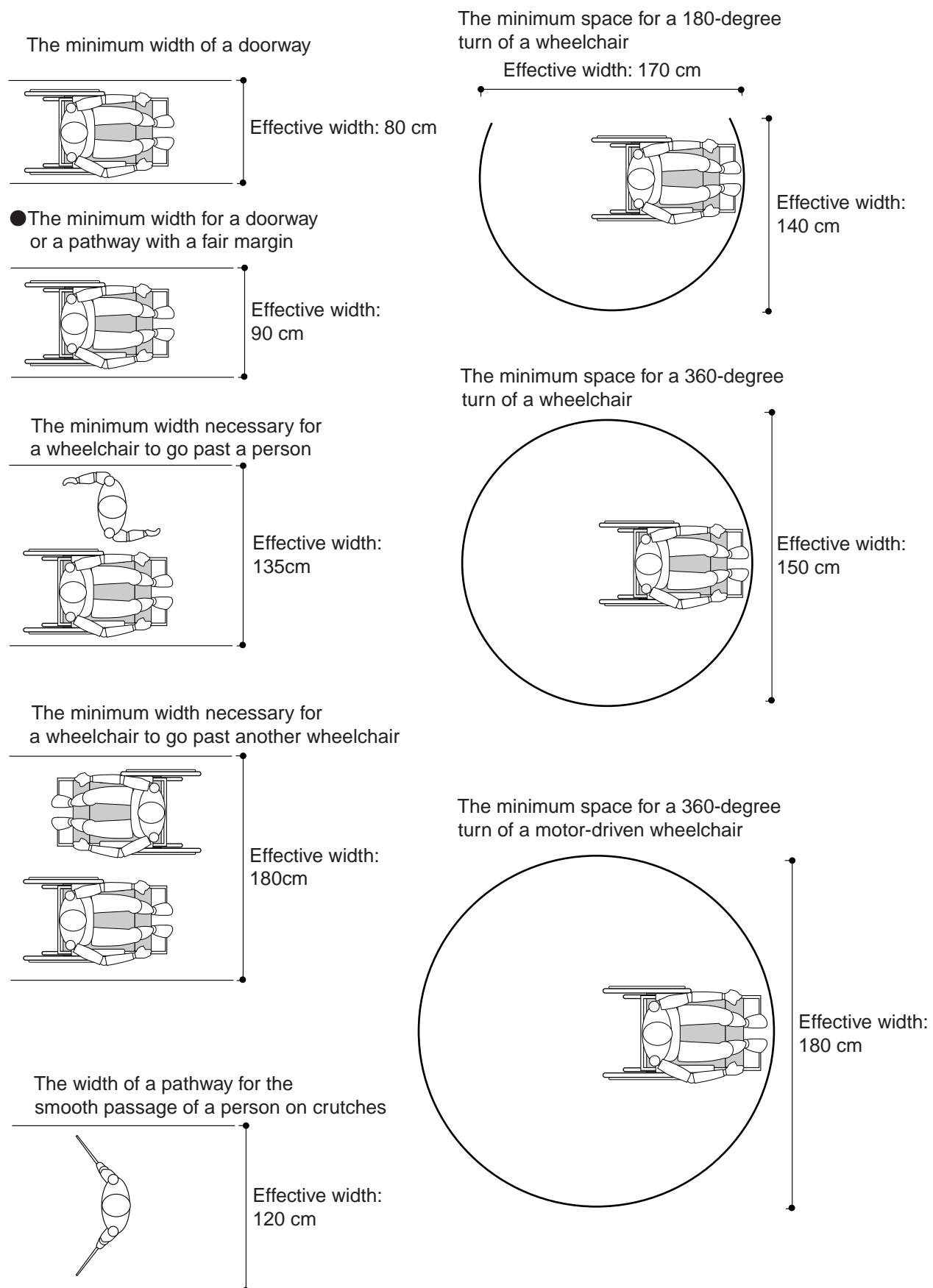
##### Crutch-related dimensions

The width of a pathway for the smooth passage of a person on crutches: 120 cm



## 4. Practical Use of Guidelines

### Reference: fundamental dimensions in the guidelines



In the guidelines, a standard item is prefixed with the mark **●** and a desirable item with the mark **○**. These marks indicate priorities to an improvement item.

Each public transport provider sets priorities for improvements according to the characteristics, users, and improvement funds of the facilities.

There may be cases where improvement in compliance with the guidelines is impossible. An example of this is an existing aboveground or underground station where there is not enough space for improvements because of structural restrictions. Even in such a case, it is desirable that the transportation accessibility improvement should be attained somehow, based on the concept and principles given in the guidelines.

The matters prescribed by the accessibility improvement guidelines should be reflected appropriately on the improvement plan according to conditions of each space, with the following principles kept in mind.

1. Pathway easy to follow  
A pathway should be so composed as to be shortest and easy to understand so that elderly persons, the physically impaired, and other disadvantaged persons follow it safely and comfortably in public transportation passenger facilities.
2. Easy-to-understand guidance  
To assist elderly persons, the physically impaired, and other disadvantaged persons to get about in public transport passenger facilities, the area should be organized such that anyone can know his or her way about in them and they should be provided with appropriate guidance.
3. Facilities and equipment easy to use  
Facilities and equipment should be safe, easy to use, and easily accessible for elderly persons, the physically impaired, and other disadvantaged persons.

◆本整備ガイドラインの見方

## 2. Entrance and Exit Facing a Public Road

An entrance and exit of passenger facilities which opens into a public road should provide barrier-free access so that it is easily found and approached from the outside of the facilities (i.e., from a station plaza or public road) by elderly persons, the physically impaired, the pregnant, and all other persons. In particular, care should be taken to provide barrier-free access to the public road for wheelchair users.

<b>&lt;Guidelines&gt;</b>	
<b>Width of an entrance and exit</b>	These should have an effective width of 90 cm or more, which allows a little latitude in the maneuver of a wheelchair. It is more desirable to have an effective width of 180 cm or more in case a wheelchair needs to go past another wheelchair there.
<b>Difference in floor level</b>	No difference in floor level should be allowed. Particular care should be taken not to allow a difference in floor level at the boundary between a

The guidelines show the improvement concept.

The guidelines describe what is important, what should be done, and for whom should they be done.

<b>Door</b>	A door should have the following structure.
<b>Width</b>	It should have an effective width of 90 cm or more to allow latitude in the maneuver of a wheelchair.
<b>Opening and closing structure</b>	At least one door should be an automatic sliding door. The control of the automatic door should not be of a push-button type but of a type that needs no manipulation, such as a sensor type, for the convenience of wheelchair users and the blind. In this case, the opening and closing speed of the door should be so set as to be convenient for the physically impaired, elderly persons, and other disadvantaged persons. (It is better to make the door open quickly but close slowly)
<b>Glass door</b>	A transparent door should be made discernible by providing it with horizontal lines or some patterns to prevent persons from bumping against it.
<b>Horizontal area</b>	A horizontal width of 120 cm or more, where one wheelchair can stand still, should be established both in front and behind the door. It is more desirable that, when the door is not automatic, the horizontal width is 150 cm because this allows a wheelchair user to turn the wheelchair and open the door.
<b>Doorframe and doorsill</b>	A lower doorframe or doorsill should not introduce a difference in floor level, which would impede wheelchair traffic.
<b>Floor finish and drains</b>	A floor should be finished in such a way as to be level and not slippery even when wet.
<b>Cover of a drain</b>	A drain with a cover should be structured in such a way as to keep the wheels of a wheelchair and the tip of a stick held by a visually impaired person from falling into it.
<b>Overhang to shed precipitation</b>	It is more desirable that the entrance and exit of passenger facilities that open into the outside of the facilities should have a large overhanging roof

The mark signifies a satisfactory and typical item.  
The mark signifies a more desirable item.

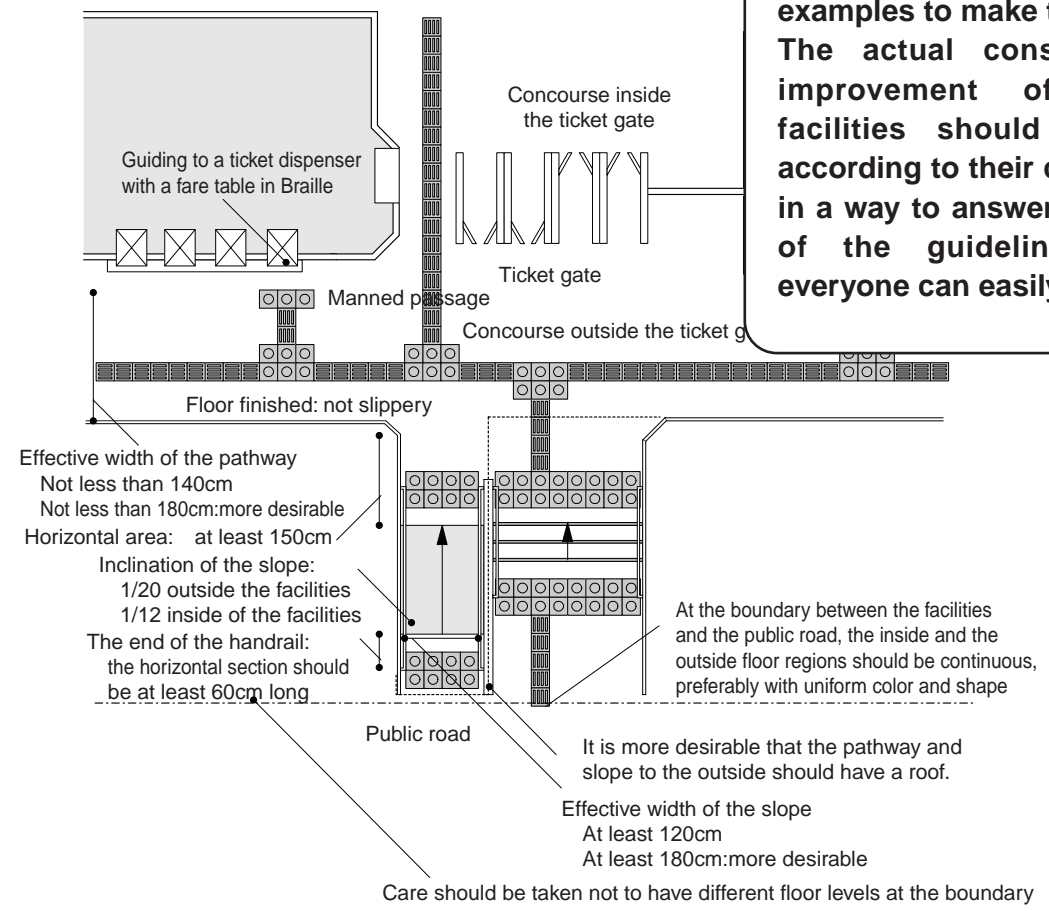
### <Accessibility facilitating standards>

[Pathways with facilitated accessibility]

4. An entrance/exit of a pathway with facilitated accessibility and a public road shall conform to the following standards.
  - 1) The effective width shall be 90 cm or more. However, when the structure does not allow this width, 80 cm or more can be applied.
  - 2) When a door is provided, it shall conform to the following standards.
    - i) The effective width shall be 90 cm or more. However, when the structure does not allow this width, 80 cm or more can be applied.
    - ii) The door should automatically open and close, or should have a structure that allows the physically impaired and the like to open, close, and pass the door.
  - 3) Except for the case prescribed in the following paragraph, there shall be no step at the entrance/exit of the passage of wheelchair users.
  - 4) If a step is installed due to a structural reason, a ramp shall be provided as well.

The guidelines include the standards to facilitate accessibility.

Reference 1-1: Example of entrance and exit opening into a public road



References in the guidelines show images of improvement examples to make them clearer. The actual construction and improvement of passenger facilities should be planned according to their conditions and in a way to answer the purposes of the guidelines, so that everyone can easily use them.

# PART I

## **General Guidelines for Passenger Facilities**

Chapter 1. Guidelines concerning Passenger  
Movement

## 1. Pathways with Barrier-Free Access

In order to make it possible for elderly persons, the physically impaired, the pregnant, and all other persons to go into passenger facilities from the outside, for example from a station plaza or public road, and get into and out of a car or vehicle with ease, every endeavor should be made to secure a continuous traffic line in every part of the pathway. The pathway most commonly used by passengers, hereafter the main traffic line, should be barrier free, and it is desirable that other pathways should do the same as far as possible.

### <Guidelines>

<b>Pathway with barrier-free access</b>	<p>&lt;Concept of securing a pathway&gt;</p> <p>For traffic lines that connect an entrance and exit opening into a public road with platforms (including pathways taken to change from one line to another of the same transportation company), the main traffic line should be barrier free.</p> <p>A public road is defined as a road, station plaza, or pathway that is located outside the passenger facilities and always open to general traffic during business hours of the facilities.</p> <p>Other pathways also should be barrier free as far as possible. It is more desirable that, when the local area of the facilities is divided into sections by railway tracks, a pathway that connects a major entrance and exit of the section with platforms should have barrier-free access.</p> <p>Also, it is more desirable that consideration is given to barrier-free access of pathways for changing to lines of other companies and to other public transportation.</p> <p>&lt;Priority of vertical transportation equipment&gt;</p> <p>As a rule, passenger facilities should be provided with elevators for the unaided use of the facilities by wheelchair users.</p> <p>Elevators in adjacent facilities can be used. In this case, the elevators should always be easily available for passenger traffic between public roads and platforms during business hours of the passenger facilities and meet the requirements of the guidelines.</p>
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### <Accessibility facilitating standards>

[Pathways with facilitated accessibility]

Article 4

1. At least one pathway that facilitates the movement of the aged and the physically impaired must be provided between a public road (which is for general traffic use within business hours and provided outside passenger facilities) and getting on/off places. Hereafter, this pathway is referred to as "accessibility facilitated pathway".
2. When there is a level difference on the floor of the accessibility facilitated pathway, a ramp or an elevator must be installed. However, if they are structurally unfeasible, an escalator or another kind of lift suitable for wheelchair users can be used.
3. In case the passenger facilities is integrated with an adjacent facility with a ramp or an elevator that can be used by the aged, the physically impaired and the like to facilitate their mobility between the public road and getting on/off place of vehicles, the above paragraph does not apply. The same applies to the case where a lift cannot be installed for a management reason.

## 2. Entrance and Exit Facing a Public Road

An entrance and exit of passenger facilities which opens into a public road should provide barrier-free access so that it is easily found and approached from the outside of the facilities (i.e., from a station plaza or public road) by elderly persons, the physically impaired, the pregnant, and all other persons. In particular, care should be taken for barrier-free access for the entrance and exit on the main traffic line used by wheelchair users.

### <Guidelines>

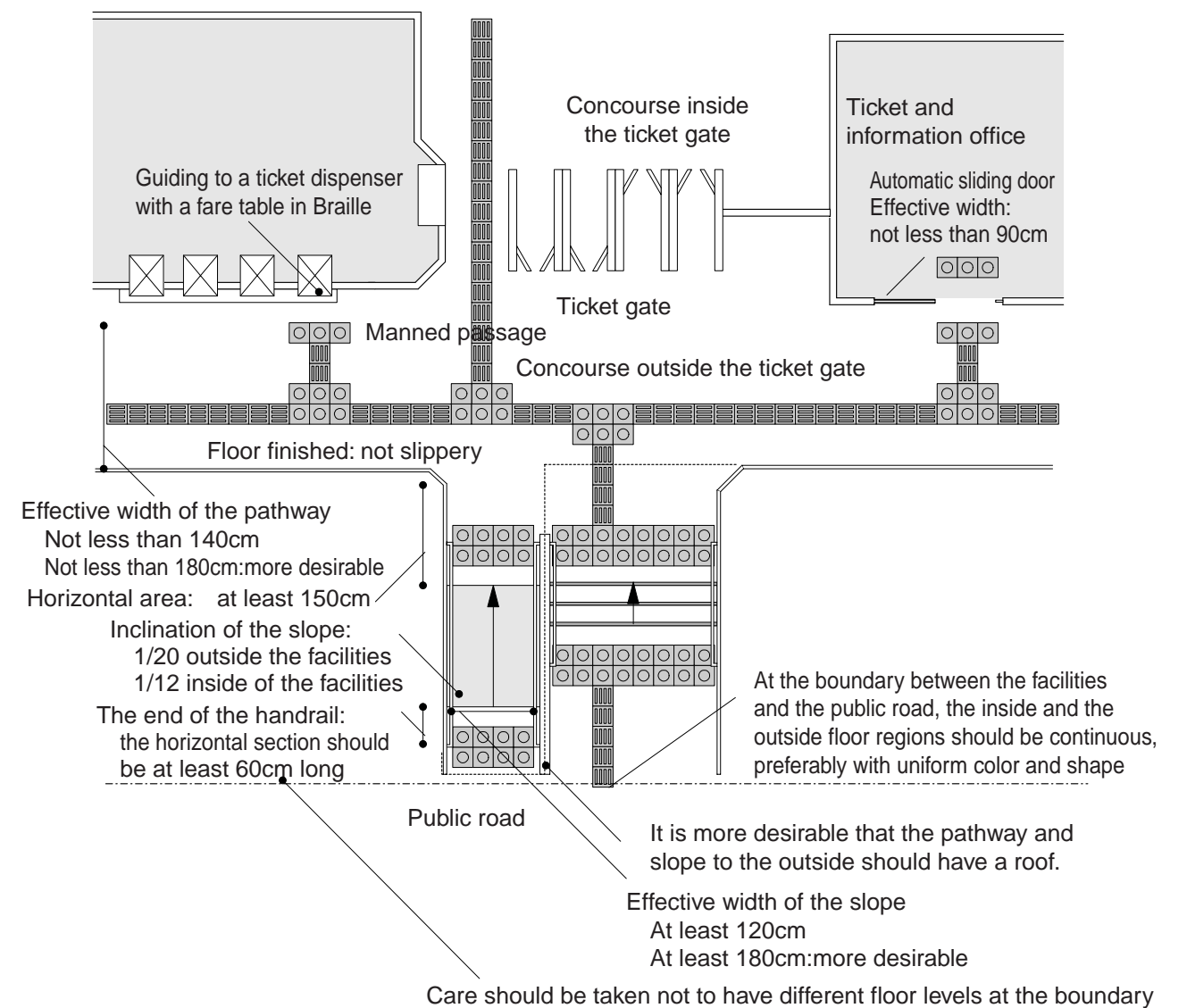
<b>Width of an entrance and exit</b>	These should have an effective width of 90 cm or more, which allows a little latitude in the maneuver of a wheelchair. It is more desirable to have an effective width of 180 cm or more in case a wheelchair needs to go past another wheelchair there.	Reference 1-1
<b>Difference in floor level</b>	No difference in floor level should be allowed. Particular care should be taken not to allow a difference in floor level at the boundary between a public road and passenger facilities by the mere fact that they are controlled and constructed by different entities. A small difference in floor level caused by the water content and expansion of floor material is better prevented from occurring by providing a slope or by other measures.	
<b>Door</b>	A door should have the following structure.	
<b>Width</b>	It should have an effective width of 90 cm or more to allow latitude in the maneuver of a wheelchair.	
<b>Opening and closing structure</b>	At least one door should be an automatic sliding door. The control of the automatic door should not be of a push-button type but of a type that needs no manipulation, such as a sensor type, for the convenience of wheelchair users and the blind. In this case, the opening and closing speed of the door should be so set as to be convenient for the physically impaired, elderly persons, and other disadvantaged persons. (It is better to make the door open quickly but close slowly)	
<b>Glass door</b>	A transparent door should be made discernible by providing it with horizontal lines or some patterns to prevent persons from bumping against it.	
<b>Horizontal area</b>	A horizontal width of 120 cm or more, where one wheelchair can stand still, should be established both in front and behind the door. It is more desirable that, when the door is not automatic, the horizontal width is 150 cm because this allows a wheelchair user to turn the wheelchair and open the door.	
<b>Doorframe and doorsill</b>	A lower doorframe or doorsill should not introduce a difference in floor level, which would impede wheelchair traffic.	
<b>Floor finish and drains</b>	A floor should be finished in such a way as to be level and not slippery even when wet.	
<b>Cover of a drain</b>	A drain with a cover should be structured in such a way as to keep the wheels of a wheelchair and the tip of a stick held by a visually impaired person from falling into it.	
<b>Overhang to shed precipitation</b>	It is more desirable that the entrance and exit of passenger facilities that open into the outside of the facilities should have a large overhanging roof because wheelchair users, the physically impaired, and persons having bad sight have difficulty using umbrellas.	

### <Accessibility facilitating standards>

[Pathways with facilitated accessibility]

4. An entrance/exit of a pathway with facilitated accessibility and a public road shall conform to the following standards.
  - 1) The effective width shall be 90 cm or more. However, when the structure does not allow this width, 80 cm or more can be applied.
  - 2) When a door is provided, it shall conform to the following standards.
    - i) The effective width shall be 90 cm or more. However, when the structure does not allow this width, 80 cm or more can be applied.
    - ii) The door should automatically open and close, or should have a structure that enables wheelchair users, the aged, the physically impaired and the like to open, close, and pass the door easily.
  - 3) Except for the case prescribed in the following paragraph, there shall be no level difference that hinders the passage of wheelchair users.
  - 4) If a step is installed due to a structural reason, a ramp shall be provided as well.

Reference 1-1: Example of entrance and exit opening into a public road



### 3. Doorway to the Ticket Office, Waiting Room, or Information Office

The doorway to the ticket office, waiting room, or information office should be easily accessible to elderly persons, the physically impaired, the pregnant, and all other persons. In particular, care should be barrier-free doorway on that traffic line that is not a roundabout way for wheelchair users. The doorway to the ticket office, waiting room, or information office should be easily accessible to elderly persons, the physically impaired, the pregnant, and all other persons. In particular, care should be barrier-free doorway on that traffic line that is not a roundabout way for wheelchair users.

#### <Guidelines>

<b>Width of the doorway</b>	It should have an effective width of at least 90 cm, which allows latitude in the maneuver of a wheelchair.	Reference 1-2
<b>Difference in floor level</b>	No difference in floor level should be allowed. Slight differences in floor level caused by the water content and expansion of floor material is best prevented from occurring and impeding wheelchair traffic by adding a ramp or by other measures.	
<b>Door</b>	A door should have the following structure.	
<b>Width</b>	It should have an effective width of at least 90 cm, which allows latitude in the maneuver of a wheelchair.	
<b>Doors and doorways</b>	At least one door should be an automatic sliding door. The control of the automatic door should not be a push-button type but of a type which needs no active manipulation, such as a sensor type, for the convenience of wheelchair users and the blind. In this case, the opening and closing speed of the door should be so set as to be convenient for the physically impaired, elderly persons and the like. (It is better to make the door open quickly but close slowly)	Reference 1-3
<b>Glass door</b>	A transparent door should be made discernible by adding horizontal lines or some patterns to it so that people do not accidentally bump into it.	
<b>Horizontal area</b>	A horizontal width of 120 cm or more, where one wheelchair can stand still, should be established both in front and behind the door. It is more desirable that, when the door is not automatic, the horizontal width is 150 cm because this allows a wheelchair user to turn the wheelchair and open the door.	Reference 1-4 Reference 1-5
<b>Doorframe and doorsill</b>	A lower doorframe or doorsill should not introduce a difference in floor level, which impedes wheelchair traffic.	
<b>Floor finish</b>	A floor should be finished in such a way as to be level and not slippery even when its surface is wet.	

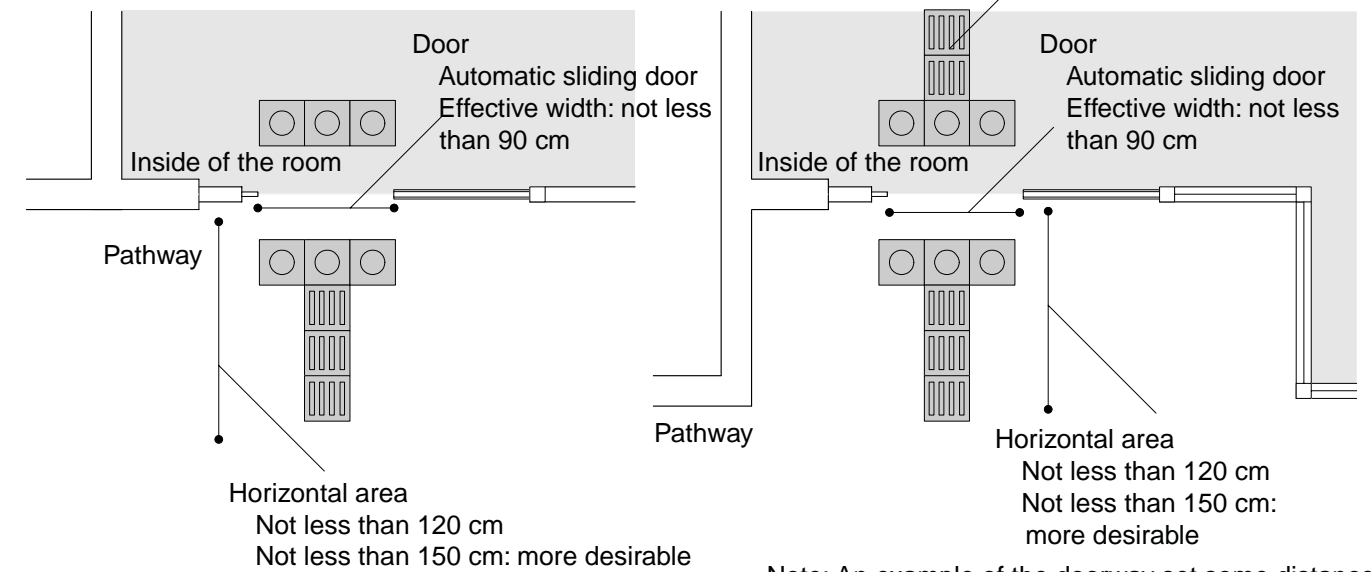
#### <Accessibility facilitating standards>

[Pathways with facilitated accessibility]

Article 15

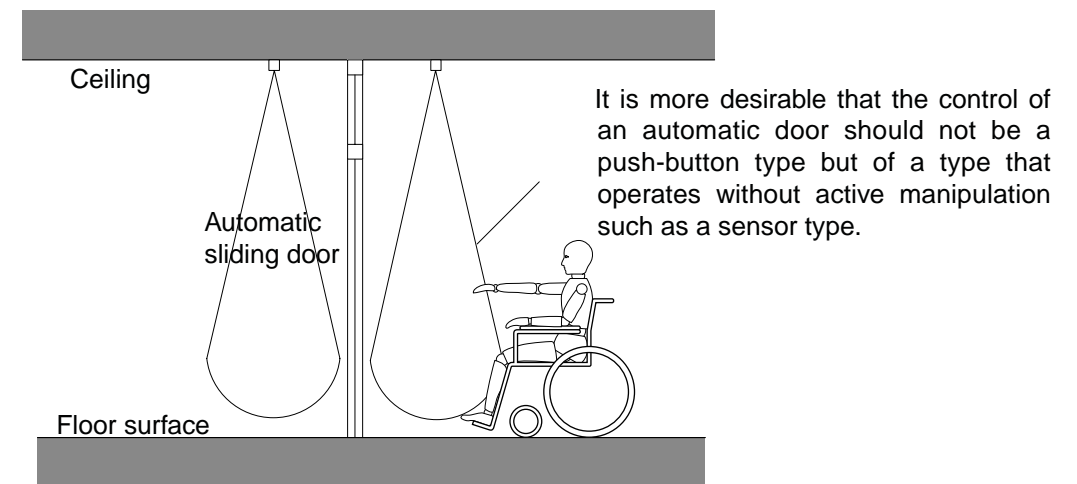
1. When a ticket selling places are installed, at least one of them shall conform to the following standards.
  - 1) At least one pathway between a pathway with barrier-free access and a ticket selling place shall conform to standards prescribed in Article 4 Item 5.
  - 2) At least one entrance/exit, when installed, shall conform to the following standards.
    - i) The effective width shall be 80 cm or more.
    - ii) When a door is installed, it shall conform to the following standards.
      - i. The effective width shall be 80 cm or more.
      - ii. The structure shall allow wheelchair users, the aged, the physically impaired and the like to open/shut and pass easily.
    - iii) Excepting for a case prescribed in the following paragraph, there shall be no level difference that hinders the passage of wheelchair users.
    - iv) When a level difference is unavoidable, a ramp shall be installed.
2. The above items also apply to waiting rooms and information offices.

Reference 1-2: Example of a doorway

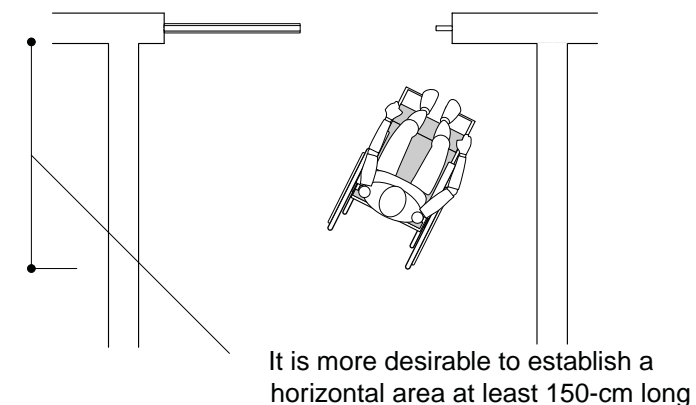


Note: An example of the doorway set some distance back from the pathway with some space formed

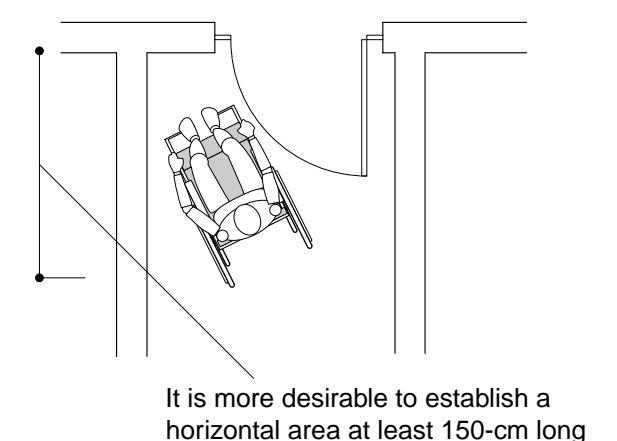
Reference 1-3: Essential points in an automatic door



Reference 1-4: Essential points in a manual sliding door



Reference 1-5: Essential points in a hinged door



## 4. Pathway

It is essential to make a continuous traffic line in passenger facilities that enables elderly persons, the physically impaired, the pregnant, and all other persons to follow with ease. Care should be taken to make the traffic line be as clear and simple as possible and free of zigzags and projecting walls, columns, incidental equipment, and other things.

### <Guideline>

<b>Surface</b>	The surface of a pathway floor should not be slippery.	Reference 1-6
<b>Width</b>	An effective width of not less than 140 cm should be secured to make it possible for a wheelchair to make a 180-degree turn there It is more desirable to have an effective width of at least 180 cm to allow a wheelchair to go past another wheelchair there.	
<b>Difference in level</b>	Each floor should not have different levels. When a difference is inevitable, a ramp should be established.	Reference 1-7
<b>Overhang</b>	Overhangs should be set in such a way as to prevent a person having bad sight from bumping against it as he or she cannot detect it with his or her stick.	
<b>Handrails</b>	It is more desirable to install handrails for users who have difficulty walking. A double handrail is even more desirable.	Reference 1-8 Reference 1-9 Reference 1-9 Reference 1-10 Reference 1-10
<b>Height</b>	Height from the finished surface of a floor to the center of a handrail: Upper handrail H = about 85 cm, Lower handrail H = 65 cm A single handrail: H = 80-85 cm	
<b>Form</b>	Round cross-section with a diameter of about 4 cm	
<b>Material quality</b>	It is more desirable that a handrail should not feel cold in winter.	
<b>Position</b>	When a handrail is fixed to a wall surface, the space between them should be about 5 cm.	
<b>End</b>	The end of a handrail should be bent towards the wall or downward.	
<b>Braille</b>	The handrail of the pathway that guides persons having bad sight should be marked with the destination in Braille. It is more desirable that the mark in Braille should be accompanied by its decoded version. When the handrail is the double handrail, its upper handrail should have the mark. The mark in Braille should be hard to peel off.	
<b>Lightness of a pathway</b>	Lighting and illumination for a concourse or pathway should be bright enough for elderly persons, the physically impaired, the pregnant, and all other persons to go through it smoothly.	

### <Accessibility facilitating standards>

[Pathways with facilitated accessibility]

Article 4

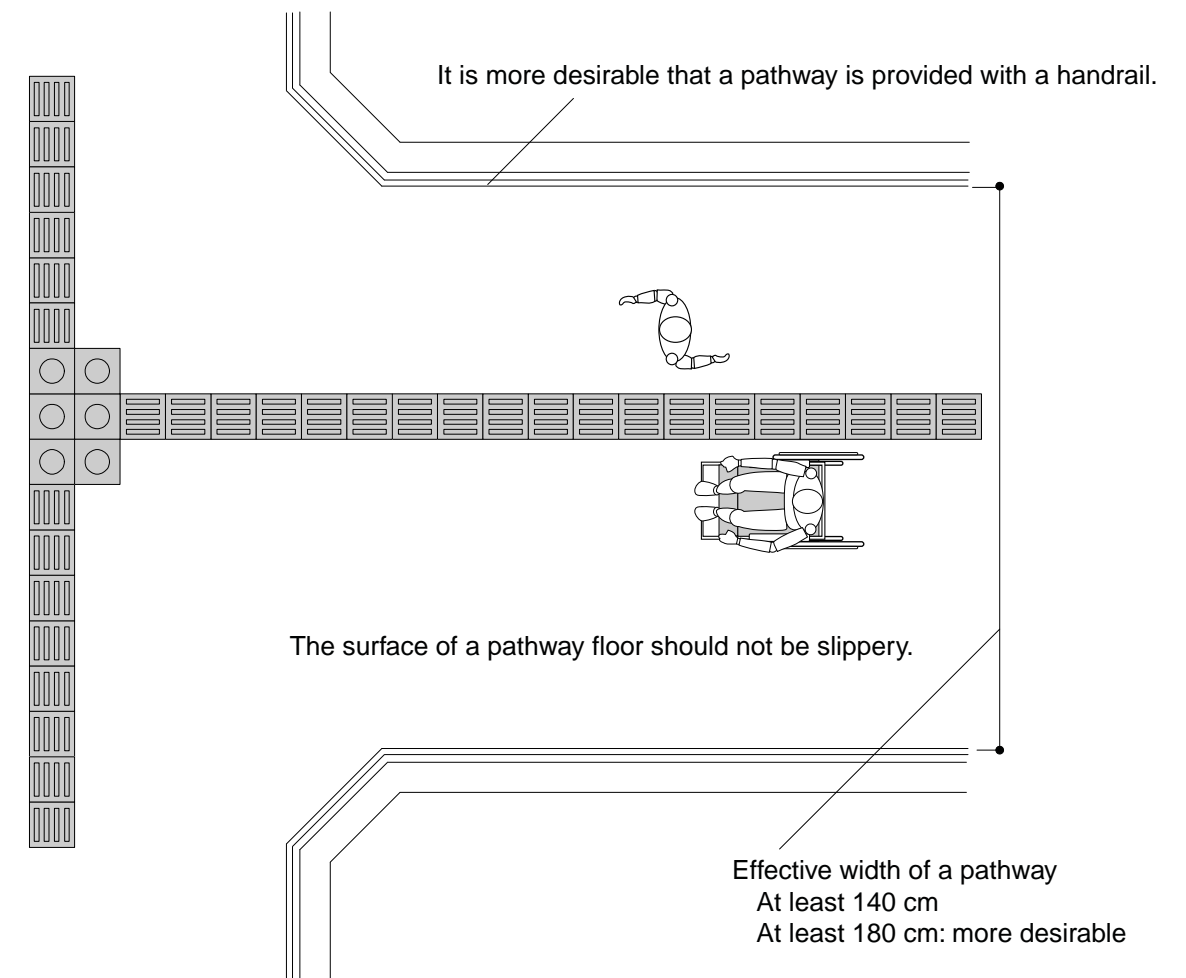
5. The routes composing the accessibility facilitated pathway shall conform to the following standards.
  - 1) The effective width shall be 140 cm or more. However, when the structure does not allow such a width, the effective width can be 120 cm or more if a space for a wheelchair to turn is provided for every 50 m or less and near the end of the route.
  - 2) When a door is installed, it shall conform to the following standards.
    - i) The effective width shall be 90 cm or more. However, when the structure does not allow this, 80 cm or more can be applied.
    - ii) The door should be automatically opened and shut, or should have a structure that enables wheelchair users, the aged, physically impaired, and the like to open, shut, and pass the door easily.
  - 3) Excepting for the case prescribed in the following paragraph 4), there shall be no level difference that hinders the passage of wheelchair users.
  - 4) If a step is installed due to a structural reason, a ramp shall be provided as well.

[Passages]

Article 5

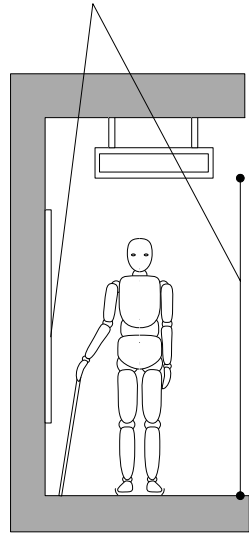
1. A passage shall conform to the following standards.
  - 1) The surface shall not be slippery.
  - 2) When steps are provided, such steps shall conform to the following standards.
    - i) Steps shall be easily identified by a sharp color contrast between a treadboard and its surrounding part.
    - ii) To avoid stumbling, the treadboard shall not have any projecting parts.

### Reference 1-6: An example of a pathway

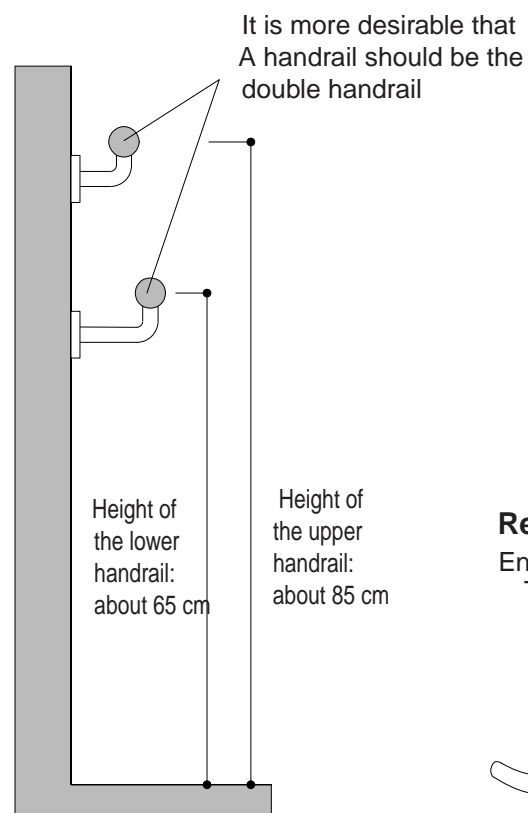


### Reference 1-7: Essential points in an overhang

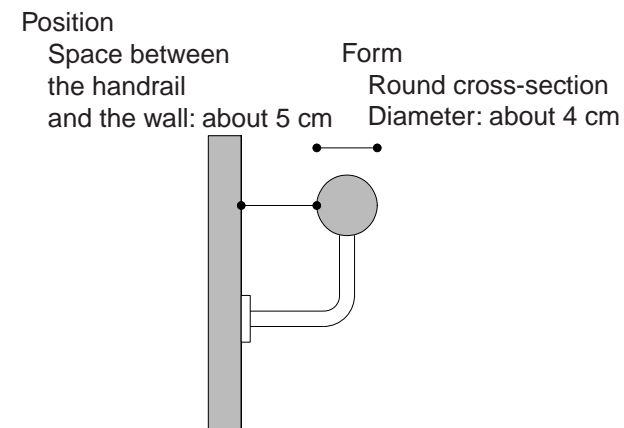
Any overhang should be positioned such that a person having bad sight cannot bump against it as he or she cannot detect it with his or her stick.



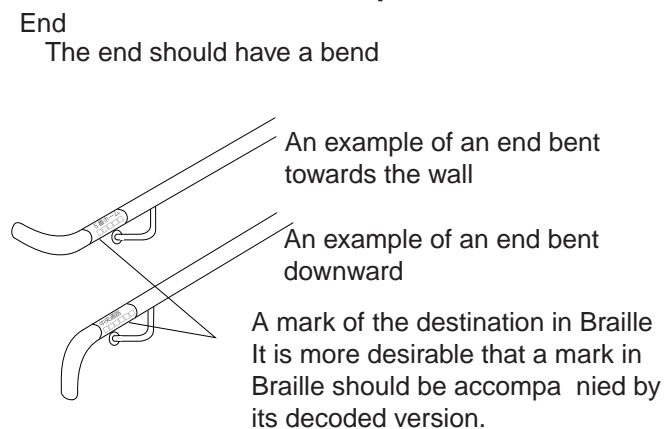
### Reference 1-8: Height of the handrail



### Reference 1-9: An example of the position and form of the handrail



### Reference 1-10: An example of the end of a handrail



## 5. Slope

For the convenience of wheelchair users, difference in level should be connected by a ramp. This ramp should be located on the traffic line used even by all people, and its width and inclination should be as liberal and loose as possible.

### <Guideline>

<b>Width</b>	The effective width of a slope should be at least 120 cm It is more desirable that the effective width be at least 180 cm in case a wheelchair goes past another wheelchair there.	Reference 1-11
<b>Inclination</b>	The inclination of a slope should not exceed 1/12 inside and 1/20 outside of the building It is more desirable that the inclination should not exceed 1/20 even inside the building	
<b>Landing</b>	A slope should be provided with a landing at least 150-cm long for every 75 cm or less of its elevation change in the inside and every 60 cm or less of its elevation change outside of the building. This is so that wheelchair users can take a rest while going up or down a slope.	
<b>End</b>	The structure of a slope should be such that its ends smoothly merge with the floor.	
<b>Horizontal area</b>	A horizontal area at least 150-cm long is needed where the slope meets another pathway. This is to prevent a wheelchair from bumping into people walking along the pathway. Horizontal area of at least 180-cm long is more convenient for wheelchair users.	
<b>Side wall</b>	The slope should have walls or rises on both sides of it. When there is no wall, it should have a continuous, washboard-like wheelchair stop of 35-cm in rise on both sides of it.	
<b>Handrail</b>	The slope should be provided with handrails on both sides of it. The handrail should be a double handrail.	
<b>Height</b>	Height from the floor to the center of a handrail: Upper handrail H = about 85 cm, Lower handrail H = 65 cm	Reference 1-8
<b>Form</b>	Round cross-section with diameter of about 4 cm	Reference 1-9
<b>Material quality</b>	It is more desirable that the handrail does not feel cold in winter.	
<b>Position</b>	When the handrail is fixed to a wall surface, the space between them should be about 5 cm.	Reference 1-9
<b>End</b>	The end of the handrail should be bent toward the wall or downward. The handrail should have a horizontal section about 60-cm long at both ends (head and tail).	Reference 1-10
<b>Braille</b>	The upper handrail of the double handrail for a pathway that guides persons having poor eyesight should have the slope's destination written in Braille. It is more desirable that the Braille should be accompanied by its decoded version. The mark in Braille should be hard to peel off.	Reference 1-10
<b>Roof to shed precipitation</b>	When a slope is outside of a building, it should be provided with a roof or shed roof over it because wheelchair users, the physically impaired, and persons with poor eyesight have difficulty using umbrellas.	



## <Accessibility facilitating standards>

[Pathways with facilitated accessibility]

Article 4

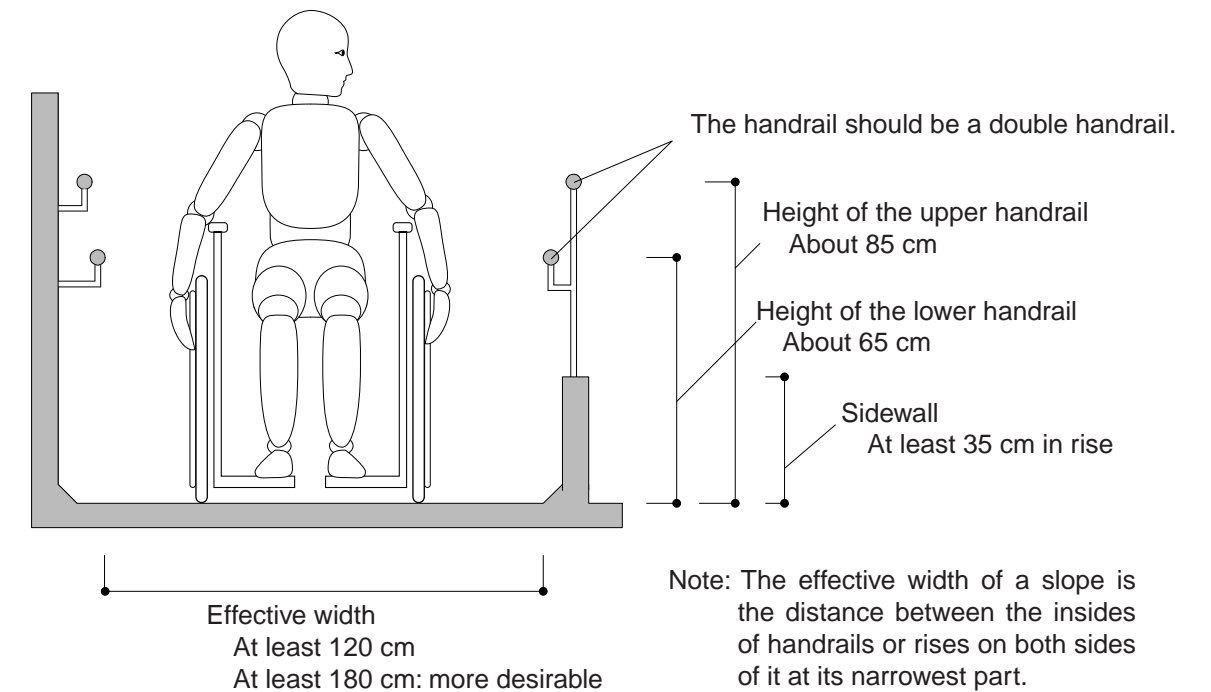
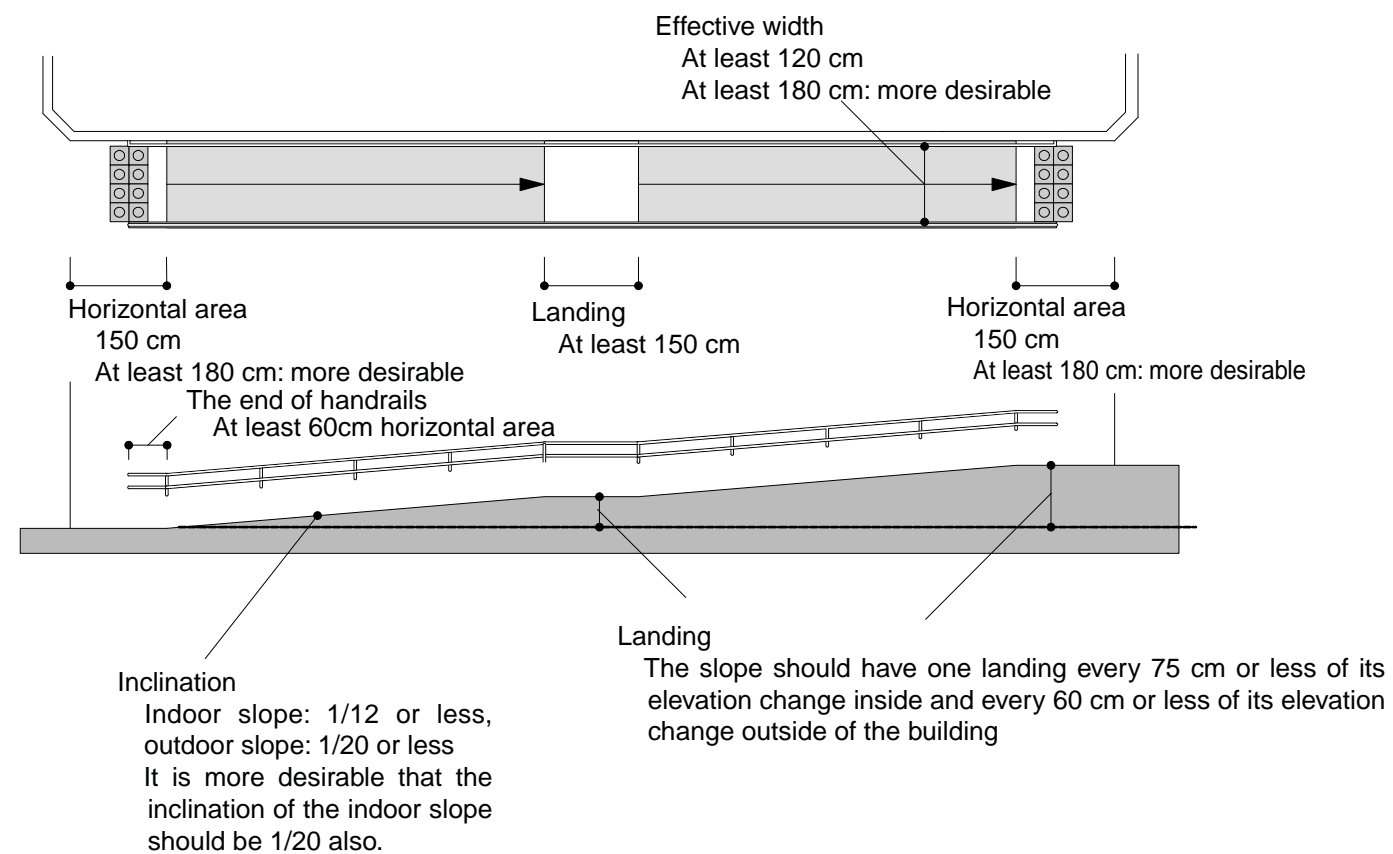
6. A ramp or a slope composing the pathway with facilitated accessibility shall conform to the following standards, excepting for a case with an unavoidable structural reason.
  - 1) The effective width shall be 120 cm or more. However, when it is installed in addition to steps, the width shall be 90 cm or more.
  - 2) The inclination shall be smaller than 1/12. However, when the height of the slope is 16 cm or less, 1/8 can be applied.
  - 3) For a slope with the height exceeding 75 cm, a landing with a footboard width of 150 cm or more shall be provided for every 75 cm or less of height.

[Slope]

Article 6

1. A slope shall conform to the following standards.
  - 1) Handrails shall be provided on both sides. However, this rule does not apply when it is structurally unfeasible.
  - 2) The floor shall have a non-slip finish.
  - 3) Both sides of a slope shall have a raised region. However, this rule does not apply when both sides are walls.

### Reference 1-11: Details of the slope



## 6. Staircase

Staircases impose the greatest obstacle for users, and thus their difficulty should be reduced. To this end, special consideration should be given to making staircases more accessible for older persons, the visually impaired, and the physically impaired who cannot go without their canes. Improvements should include such items as adjusting the height of the staircase handrail and making staircase steps non-slip. These improvements are effective for everyone.

### <Guidelines>

<b>Type</b>	Because its steps are not uniform in shape, a winding staircase including spiral staircases should not be adopted; either a straight staircase or L-shaped staircase should be used.	Reference 1-12	
<b>Width</b>	The effective width of a staircase should be at least 120 cm. For persons on crutches, it is more desirable that the effective width should be at least 150 cm.		
<b>Handrails</b>	A staircase should be provided with a double handrail on each side. A staircase more than 4-m wide should also have a handrail in the middle.		
<b>Height</b>	Height from the finished surface of the floor to the center of a handrail: Upper handrail H = about 85 cm; Lower handrail H = about 65 cm	Reference 1-8	
<b>Shape</b>	The cross-section of a handrail should have a round shape that is about 4-cm in diameter.	Reference 1-9	
<b>Quality</b>	It is more desirable that a handrail should be of a quality that does not feel cold in winter.		
<b>Position</b>	The space between a wall and handrail should be about 5 cm if the handrail is attached to the wall.	Reference 1-9	
<b>End</b>	The end of a handrail should be bent toward the wall or downward. The handrail should have horizontal sections about 60-cm long at both ends (head and tail).	Reference 1-10	
<b>Braille</b>	For the convenience of the visually impaired, the upper handrail of a double handrail should be marked with the name of the staircase's destination in Braille. It is more desirable that the name in Braille should be accompanied by its decoded version. The Braille markings should be hard to peel off.	Reference 1-10	
<b>Rise and tread</b>	<b>Size</b>	Rise: about 16 cm or less, tread: about 30-cm wide or more	Reference 1-13
	<b>Footboard</b>	There should be no projection, and the riser should not be omitted.	
	<b>Finish and brightness of the tread</b>	The finished surface of a tread should not be slippery. The edge of a tread should have a sufficiently bold outline throughout its whole length and thus each step should be discernible by the difference in the brightness of its color from that of the surroundings or by another means.	Reference 1-14
<b>Sidewall</b>	A staircase should be provided with a sidewall or a rise on each side. When there is no sidewall, there should be a rise of up to about 5-cm high.		
<b>Clear space at each end of a staircase</b>	It is more desirable that each end of a staircase should be set about 120-cm back from the passage, preferably with a clear space around it.		
<b>Landing</b>	A staircase should be provided with a landing for every 3 m or less of its height. The landing should be at least 120-cm long. The handrail on the wall side of the staircase should be continuous even on a landing.		
<b>Lighting</b>	Lighting and illumination for a staircase should be bright enough for the aged or persons with poor eyesight to go through smoothly.		
<b>Downstairs</b>	A space with a ceiling that is not high enough should not be established where one goes downstairs. This is because the visually impaired cannot detect it with their white sticks and may bump against the ceiling. If its establishment is inevitable, the space should have a fence or other measures to keep the visually impaired away.		

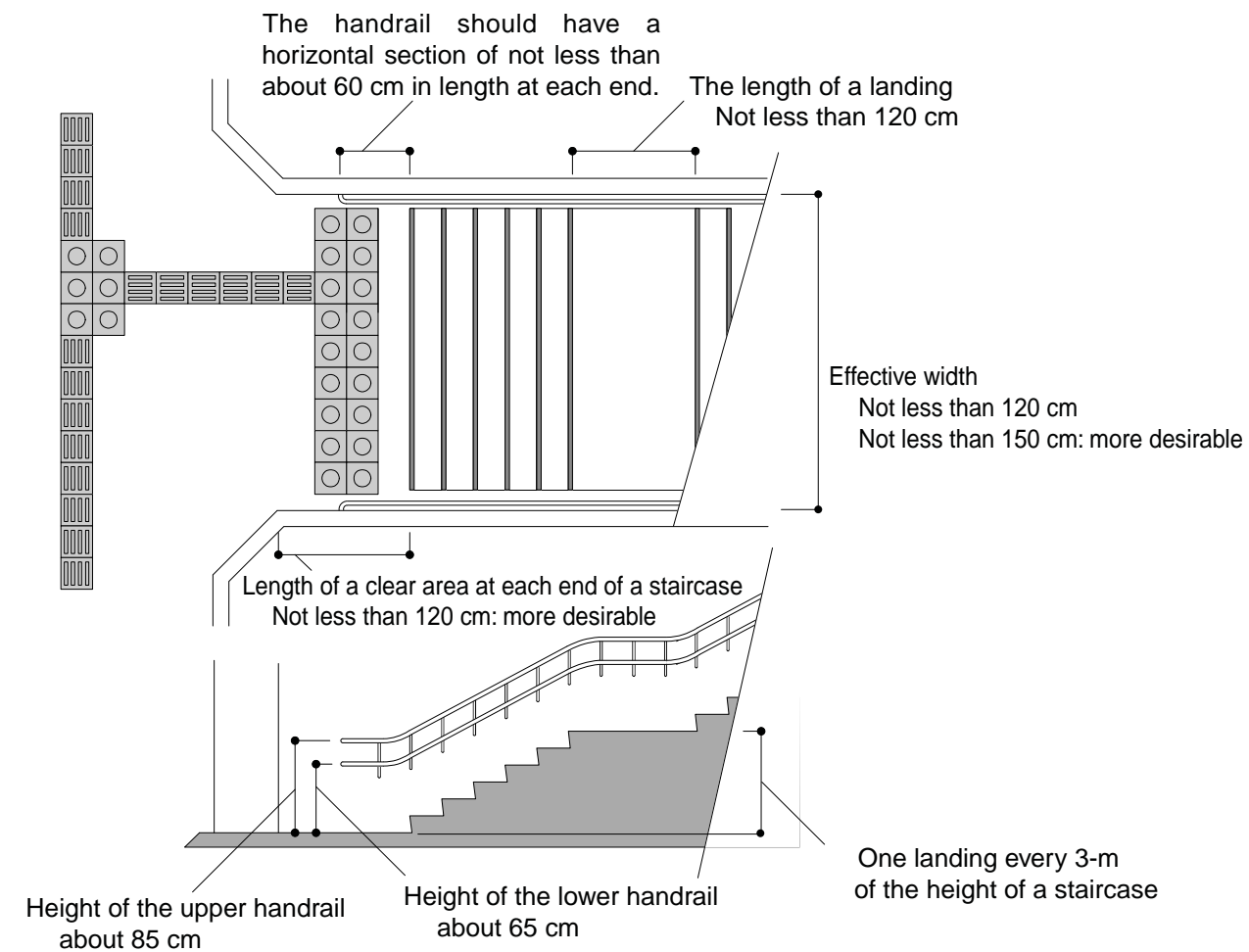
### <Accessibility facilitating standards>

[Stairs]

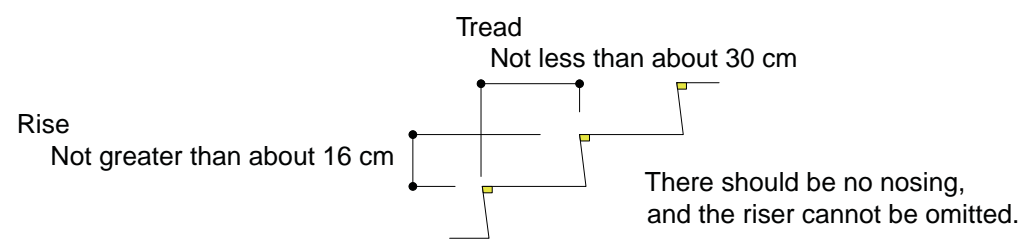
Article 7

1. Stairs including the landing shall conform to the following standards.
  - 1) Handrails shall be provided on both sides. However, this rule does not apply when it is structurally unfeasible.
  - 2) Braille shall be attached near the end of a handrail to show the stairs' destination.
  - 3) Treadboards with a curve shall be avoided. However, this rule does not apply to a case where it is structurally unavoidable.
  - 4) The surface of treadboards shall be non-slip.
  - 5) The edge of a treadboard and surrounding parts shall be easily distinguished with a sharp contrast in color.
  - 6) Projected edges shall be avoided to prevent walkers from stumbling.
  - 7) Both sides of the stairs shall have a raised region. However, this rule does not apply to a case where both sides are walls.

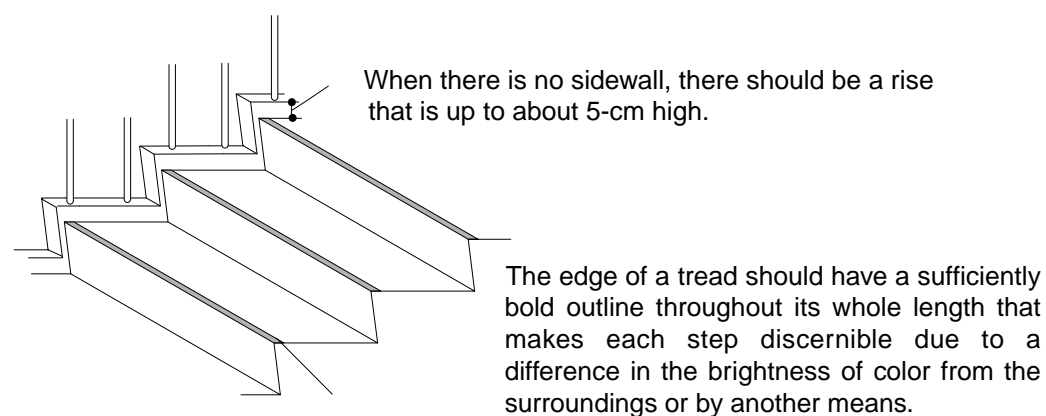
### Reference 1-12: Details of the staircase



### Reference 1-13: Details of the rise and tread



### Reference 1-14: An example of the edge of the tread



## 7. Elevator

An elevator is a means of vertical transport that is useful for everyone including unattended wheelchair users. Therefore, meticulous care should be used to make the elevator safe and easily accessible to every user. The location of the elevator should be such that people can easily find it from the main flow of people and use it without difficulty. The elevator should have an area in front of it that is separate from the main flow of people. Consideration should be given to using a through-type or a two-directions-at-right-angles-type of elevator, when these appear to be more efficient at transporting people.

### <Guidelines>

<b>Size</b>	<p>An elevator of a type other than the through type and the two-directions-at-right-angles type should have a carrying capacity of at least 11 persons (or a space 140-cm wide and 135-cm deep), which allows a wheelchair to turn 180 degrees inside it.</p> <p>It is more desirable that an elevator should have a carrying capacity of at least 15 persons (or a space 160-cm wide and 150-cm deep), which allows a wheelchair to turn around smoothly and the wheelchair user to be accompanied by an attendant.</p>	Reference 1-15
<b>Width of the doorway</b>	<p>The effective width of the elevator doorway should at least 80 cm.</p> <p>It is more desirable that the effective width should be at least 90 cm, to allow for space to maneuver the wheelchair user.</p>	
<b>Mirror</b>	<p>An elevator of a type other than the through type and the two-directions-at-right-angles type should have a mirror inside of an appropriate size at an appropriate place on the wall facing the door to make the condition of the doorway known to people in it. The mirror should have a stainless surface or be a wired mirror.</p>	
<b>Contact with the outside</b>	<p>The structure of an elevator should be such that its inside can be seen from its outside through a glass window or by other means. This is to ensure the safety of people inside it in the case of a crime or accident.</p> <p>For emergencies, it is more desirable that an elevator should be provided with the following equipment that are effective even for persons with difficulty in hearing:</p> <ul style="list-style-type: none"> <li>• A camera that enables persons outside the cage to monitor its inside.</li> <li>• A device that informs the responsible persons outside the cage of the elevator trouble and displays the fact in the inside of the cage, or an emergency button that informs people inside the cage of the trouble.</li> <li>• A display inside should show that information on the elevator trouble is being sent to persons in charge or that persons in charge are on their way to the elevator.</li> </ul>	Reference 1-16
<b>Handrail</b>	<p>Handrails should be fixed to walls on all sides except the doorway side of the cage.</p> <p>They should be fixed at the height of 80 to 85-cm from the cage floor.</p> <p>They should be in a shape easy to grip.</p>	Reference 1-17
<b>Indication</b>	<b>Indication</b>	<p>An elevator should have inside its cage a display that shows the floors where it is going to stop and its current position.</p> <p>An elevator should have inside its cage a device that orally announces the floor where the cage is going to stop next and when the door is closing.</p>
	<b>Oral announcement</b>	<p>An elevator of the through type should be provided inside it with the equipment which orally announces the door to be used next.</p>

<b>Elevator and its control board in the lobby</b>	<b>Button</b>	The control board of an elevator should not be of a electrostatic control type but of a push-button type. It is more desirable that a button should have a shape that allows users having difficulty in moving their fingers to operate it. It is more desirable that when a person pushes a button, that button should be able to inform by sound to persons with poor eyesight and inform by light to persons with poor hearing that he or she has pressed it. It is more desirable that the floor number or the like on each button of the control board inside an elevator cage should be made easily knowable to all persons even the visually impaired by giving it in relief or by another means. It is more desirable that the character on each button should be easily readable and, therefore, useable to persons having weak sight in operating the control board, for instance by making significantly different in brightness with the surroundings.	Reference 1-17
	<b>Consideration for wheelchair users</b>	A control board should be fixed near the center of each of the left and the right wall of the elevator cage so that it can be used by wheelchair users. The control board should be fixed at the height of about 100 cm from the cage floor. The control board should allow a person to keep the door open.	
	<b>Braille</b>	Each button of a general control board, inter-phone and the like should have its own identifier in Braille usually on the button. But if this leads to the button being accidentally pushed, the identifier should be next to the button.	
<b>Photoelectric safety device</b>	A device that controls the closing of the door should be installed in the doorway section of an elevator cage to ensure the safety of its users. The closing of the door should be made controllable on the basis of both the height of the footrest section and the height of the user's body section of a wheelchair. Moreover, the mechanical safety shoe should be accompanied by one of the safety shoes of the three other types: photoelectric, electrostatic, and ultrasonic.		
<b>Controlled operation</b>	An elevator with the function of controlled operations that is used at the time of an earthquake, fire, and power failure should have a device to announce its controlled stoppage using a voice and characters.		
<b>Lobby</b>	<b>Width</b>	A lobby should be wide enough to allow a wheelchair to turn around, that is, at least 150 cm x 150 cm. It is more desirable that a lobby should be wide enough to allow a motor-driven wheelchair to turn around, that is, at least 180 cm x 180 cm.	
	<b>Voice</b>	A lobby should be provided with a device that announces the arrival of the elevator cage at its floor and whether it is going up or down.	

<Accessibility facilitating standards>

[Pathways with facilitated accessibility]

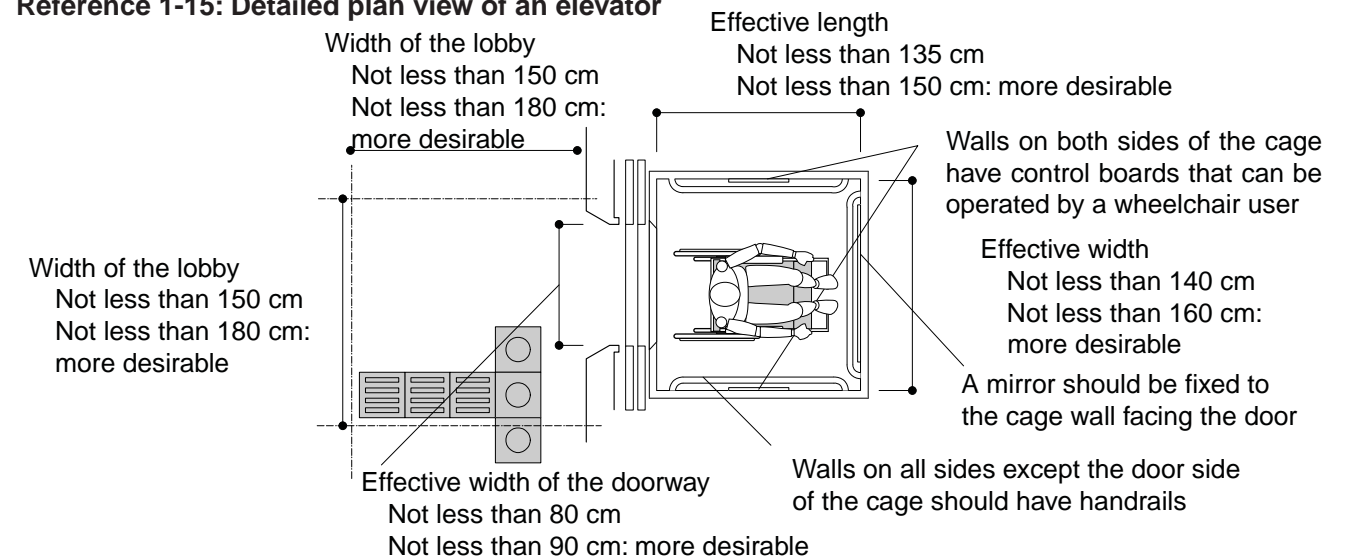
Article 4

7. An elevator composing a pathway with facilitated accessibility shall comply with the following standards.

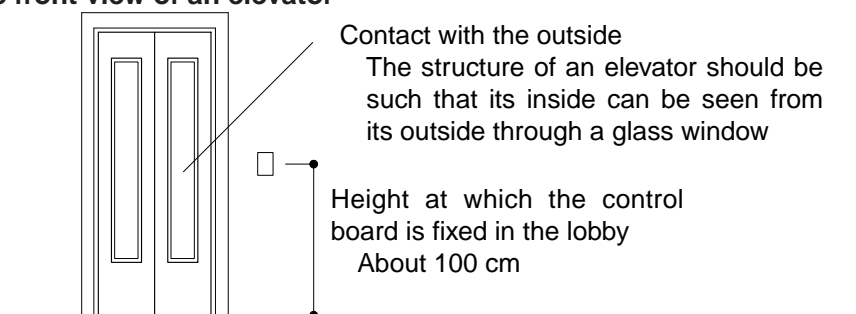
- 1)The effective width of the entrance to the elevator shall be 80 cm or more.
- 2)The inner width of the elevator shall be 140 cm or more and the inner depth shall be 135 cm or more.  
However, this rule does not apply to an elevator with more than one entrance with a structure that allows wheelchair users to get on/off easily, as long as an auditory guide is provided to indicate whereabouts of the entrance of the opening/closing door.
- 3)A mirror shall be provided so that a wheelchair user can check the elevator and the entrance, though this rule is exempted for a case prescribed in the latter half of the preceding paragraph.
- 4)Glass or other materials shall be used for an entrance door so that the inside of the elevator can be visually checked from the outside of the elevator.
- 5)A handrail shall be provided inside the elevator.

- 6)The elevator system shall have a function that enables the door to stay open for a longer time.
- 7)A display system shall be provided within the elevator showing the present floor and the floors it will stop at.
- 8)A system for voice information shall be installed to tell which floor the elevator is arriving at as well as opening and shutting of the door.
- 9)An operation panel shall be provided within the elevator and the waiting lobby at a position where wheelchair users can smoothly operate.
- 10)Among the operation panels installed within the elevator and the waiting lobby, more than one shall have a structure that enables the visually impaired to operate them easily; for example by Braille.
- 11)The effective width and the effective depth of the waiting lobby shall be 150 cm or more.
- 12)An auditory guide system shall be provided at the waiting lobby to inform the direction of the arriving elevator. However, this rule does not apply to the case in which an auditory guide system inside the elevator tells the direction of the cage when the door is open, or if there are only two floor levels that the elevator stops at.

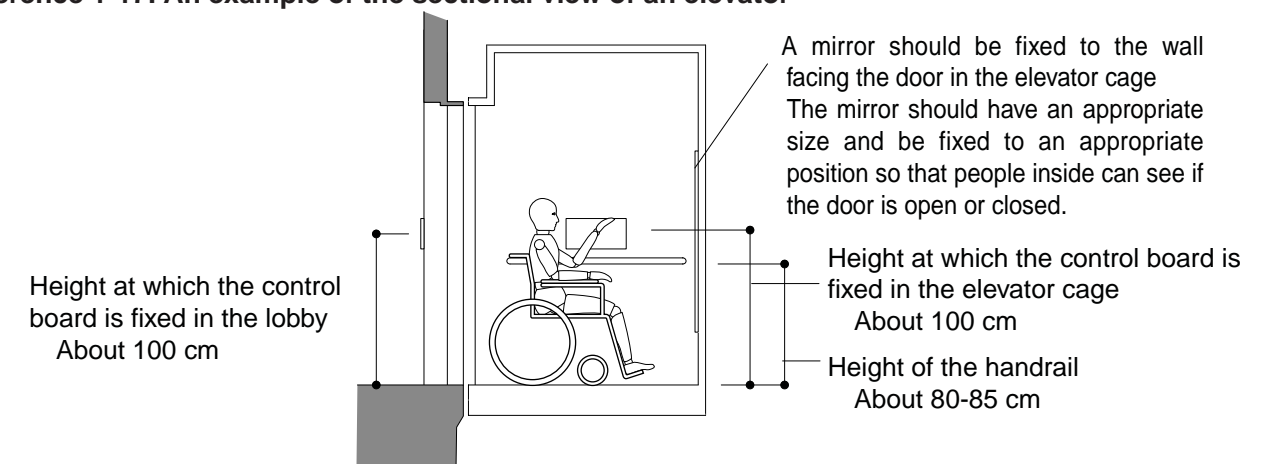
Reference 1-15: Detailed plan view of an elevator



Reference 1-16: An example of the front view of an elevator



Reference 1-17: An example of the sectional view of an elevator



## 8. Escalator

### <Escalator in general>

Consideration should be given to the horizontal section at both ends as well as to the speed of the escalator in view of the use of it by the elderly and physically impaired.

### <Escalator used instead of an elevator>

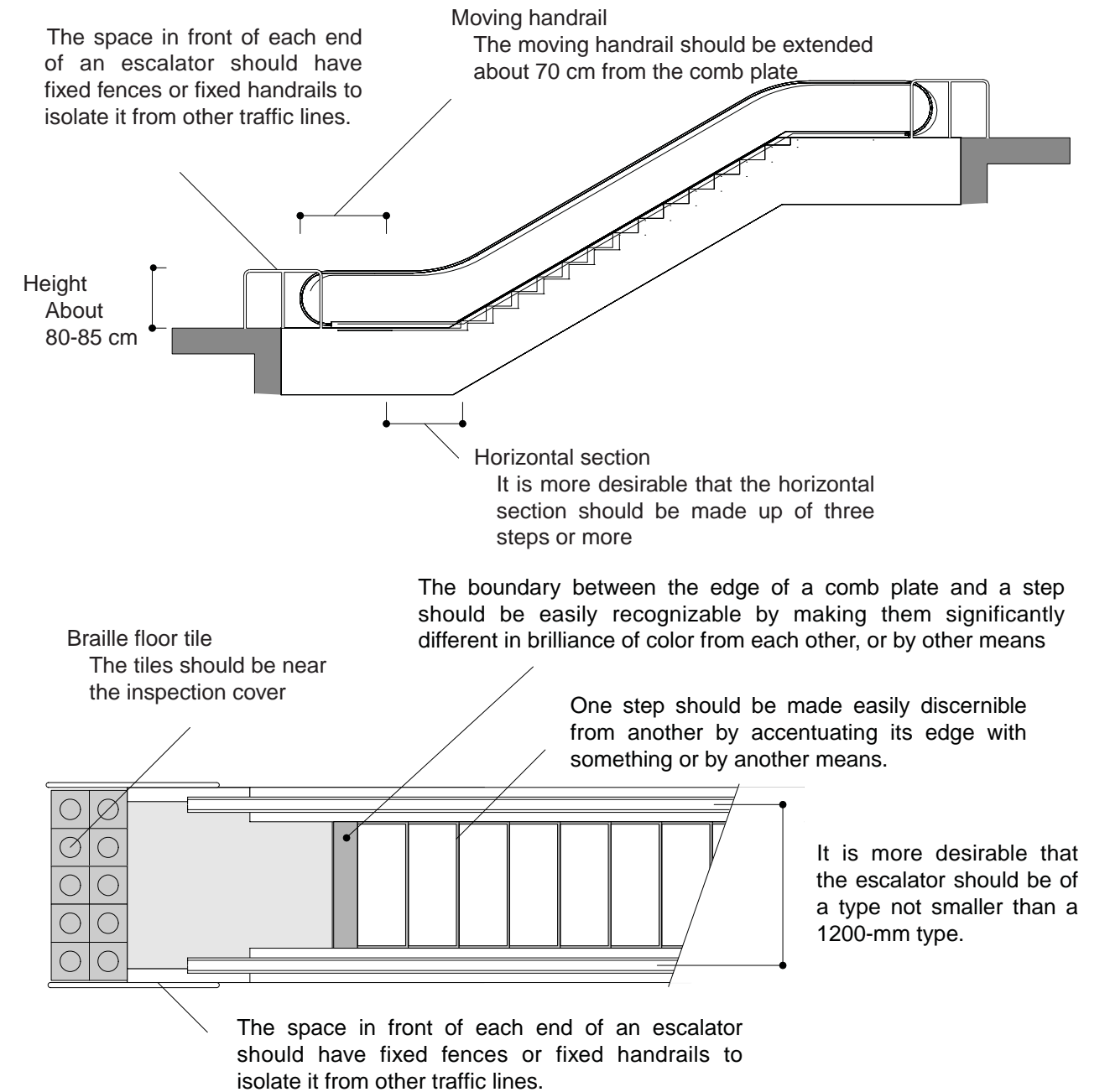
Basic equipment for vertical transport is the elevator. The installation of escalators capable of carrying wheelchairs should be considered as an alternative measure for securing the traffic line for wheelchair users only when it is difficult to install elevators. The use of the escalator step for a wheelchair requires a person in charge of the operation of the escalator. In its operation, an escalator needs to be switched from going up to going down and vice versa. Attention should be paid to the fact that the use of an escalator for a wheelchair keeps other users waiting, which burdens the mind of the wheelchair user very much about inconveniencing others.

### <Guidelines>

#### <Escalator in general>

<b>Direction</b>	It is more desirable that an escalator used exclusively for going up should be installed separately from the one used exclusively for going down. It is more desirable that the escalator should be of a type not smaller than a 1200-mm type.	Reference 1-18
<b>Width</b>	The surfaces of a step and the comb plate should be so finished that they are not slippery.	
<b>Discernment</b>	<b>Step</b> Each step should be easily discernible from the others by accentuating its edge with something or by other means.	
	<b>Comb plate</b> The boundary between the edge of a comb plate and a step should be rendered easily recognizable by making them significantly different in brightness of color.	
<b>Horizontal section at each end</b>	It is more desirable that the horizontal section at each end of an escalator should be three steps or more.	
<b>Handrail</b>	The moving handrail should be extended about 70 cm from the comb plate. The space in front of each end of an escalator should have fixed fences or fixed handrails of about 80 to 85 cm in height to isolate it from other traffic lines.	
<b>Speed</b>	It is more desirable that at least one escalator be run at a speed of 30 m/minute or less should be installed..	
<b>Indication</b>	In the case of an escalator used exclusively for going up or for going down, each of the passages leading to its upper and lower end should have on the floor or somewhere else an indication of whether the approach is correct or not.	

### Reference 1-18: Details of a general escalator



<Escalator used instead of an elevator>

<b>Direction</b>	Escalators used exclusively for going up should be installed separately from those used exclusively for going down.	
<b>Width</b>	The escalator should be of a type not smaller than a 1200-mm type.	
<b>Surface</b>	The surfaces of a step and comb plate should be so finished that they are not slippery.	
<b>Discernm</b>	<b>Step</b>	One step should be made easily discernible from another by accentuating its edge with something or by another means.
	<b>Comb plate</b>	The boundary between the edge of a comb plate and a step should be rendered easily recognizable by making them greatly differ in brilliance of color from each other, or by other means.
<b>Horizontal section at each end</b>	The horizontal section at each end of an escalator should be three steps or more.	
<b>Handrail</b>	The moving handrail should be extended about 70-cm from the comb plate. The space in front of each end of an escalator should have fixed fences or fixed handrails 80 to 85-cm high to isolate it from other traffic lines.	
<b>Speed</b>	It is more desirable that at least one escalator that can be run at a speed of 30 m/minute or less should be installed.	
<b>Breadth of a step</b>	The structure of an escalator should be such that its step can be given so broad a surface area as to allow a wheelchair user to get on and off it smoothly.	
<b>Wheelchair stopper</b>	An escalator should be provided with a wheelchair stopper that is in a shape capable of preventing the wheelchair from getting over it.	
<b>Weight</b>	An escalator should be able to bear the weight of a motor-driven wheelchair (or maximum live load of 200 kg or more).	
<b>Stop device</b>	An escalator should have a stop device that can be easily operated in emergency to stop its run with a wheelchair on it.	
<b>Call-up button</b>	A button for calling up a person in charge should be installed near the space in front of each end of an escalator.	
<b>Indication</b>	In the case of an escalator used exclusively for going up or for going down, each of the passages leading to its upper and lower end should have, on the floor or somewhere else, an indication of whether or not the approach is correct.	

<Accessibility facilitating standards>

[Pathways with facilitated accessibility]

Article 4

8. An escalator composing the accessibility facilitated pathway shall conform to the following standards. As for 7) and 8), however, the standards are applicable to one escalator when there are more than one escalator side by side.
  - 1) Escalators exclusively ascending and descending shall be installed. However, this rule does not apply to the case where all passengers move in the same direction at a given time.
  - 2) The surface of the treadboards and comb plates shall be finished non-slip.
  - 3) At the points of getting on or off, there shall be more than three treadboards on the same plane.
  - 4) The boundary between two treadboards shall be clearly distinguished by a sharp contrast of color lightness between the treadboard edge and the surrounding parts.
  - 5) The boundary between a treadboard and a comb plate shall be clearly distinguished by a sharp color contrast between them.
  - 6) Entry direction to an escalator shall be shown on the floor near the upper ends and the lower ends of the escalator. This does not apply, however, if the escalator is sometimes reversed.
  - 7) The effective width shall be 80 cm or more.
  - 8) The surface of a treadboard shall have a sufficient space for a wheelchair user to get on/off easily. The escalator shall have a wheelchair stopper.

## Chapter 2. Guidelines for Location Guides

# 1. Visual Display Facilities

The onset of weakening vision generally starts in one's 40' to 50's, and vision rapidly deteriorates after age 60. Eyesight level for a wheelchair user is approximately 40-cm lower than the one for walkers of typical height. Hearing-impaired persons have a hard time understanding audio messages. Also, many foreigners visiting Japan do not understand Japanese. These considerations show the challenges in conveying information to everyone. In installing visual display guides for a barrier-free access in a public space, it is necessary not only to maximize the proper function of the communication facilities but also to find a way for the same facilities to allow persons with various handicaps to read the relevant information. A sign is one communication medium that has three properties, information, format, and its exhibit position in the area. To ensure that the message is easy to see and understand, it is essential for one to consider the information content, display format (display method and design), and the exhibit position of the display (its height, its spot on the flat surface, etc.). In addition, to provide easy-to-understand information on signs to people in motion, a basic condition is to put the sign's information content, display format, and exhibit position into a well coordinated system and to add a display that changes to update the information.

## <Guideline>

### Sign system

#### ●Basic guidelines

<b>Types of sign</b>	<p>Four kinds of signs — guidance, location, information, and warnings — have to be placed at appropriate points along the pathway to provide relevant information to people in motion.</p> <ul style="list-style-type: none"> <li>• Guidance sign: The sign to give direction to facilities, etc.</li> <li>• Location sign: The sign to show where the facilities, etc. are located.</li> <li>• Information sign: The sign to show conditions for getting on and off and relation between locations, etc.</li> <li>• Warning signs: signs to control users' behavior.</li> </ul>	
<b>Display Methods</b>	<p>Indication for primary facilities such as an entrance, exit, ticket gate, passenger facilities, etc. should also be displayed in English.</p> <p>Depending on the region and visitors profiles, it is desirable to display in foreign languages in addition to Japanese and English.</p> <p>When a proper noun alone is translated into English, it is desirable that the appropriate suffix, such as bridge or river, follows it to show what the object is.</p> <p>The font should be square-gothic for ease of reading.</p> <p>The size of the letters should be adjusted to the distance so that people with poor eyesight can read them.</p> <p>For people with weak eyesight, it is even better for the sign with big letters to be installed at eyesight level.</p> <p>Safety-related color alerts comply with the attached Table 2-1. Exit sign is yellow in compliance with the JIS spec.</p> <p>For the benefit of the elder people often with cataracts, don't use blue-black combinations or yellow-white combinations.</p>	<p>Reference 2-1</p> <p>Reference 2-2</p> <p>Attached Table 2-1</p>



	<p>It is even better to provide maximum brightness difference between the background color and the sign's figure color to make recognition easier.</p> <p>The sign should be made of a material that allows necessary brightness. Signs seen at close distance should have minimal glare.</p> <p>Pictographs should use the standard information symbols in the attached Table 2-2, which were set by the general information picture-sign study committee.</p>	<p>Reference 2-3</p> <p>Reference 2-4</p> <p>Attached Table 2-2</p>
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**Guidance, location signs**

<b>Contents of information displayed</b>	<p>The information displayed on guidance signs are available from the attached Table 2-3.</p> <p>If the information to be displayed on a guidance sign is too much, priority shall be given to key facilities along the pathway and the facilities equipped to promote barrier-free access.</p> <p>If the target is far away, it is desirable to write the distance on the sign.</p> <p>The information on a location sign is available from the attached Table 2-4 beside the facilities that are also equipped for smoother movement.</p> <p>If the information to be displayed on the location sign is too much, priority shall be given to key spaces consisting of the pathway in addition to the above-mentioned facilities.</p>	<p>Attached Table 2-3</p> <p>Attached Table 2-4</p>
<b>Design of the display and tool</b>	<p>The design of guidance signs and location signs should be simple, and it is even better to make a uniform design for each sign category.</p>	Reference 2-5
<b>Direction the display surface and height of the display position</b>	<p>Guidance and location signs should face the path that the viewer's follow.</p> <p>The height of the guidance and location sign position should minimize the look-up angle of the viewer as well as enabling a wheel-chair user with lower eyesight level to see it without being blocked too much by a crowd of people walking in front.</p> <p>When two signs are placed with one closely after another facing the path of the viewers, there should be enough distance between them so that one in front does not block the view of the one in the back.</p>	Reference 2-6
<b>Sign locations and distance in between</b>	<p>Primary guidance signs indicating the routes should be placed at the entrance, exit, boarding location, unloading location, and various spots in between. This is to allow continuous provision of necessary information to the people.</p> <p>Individual guidance signs would be placed at forks in the pathway, between the entrance/exit, and getting-on/off places, at the starting points, both upward and downward, of the staircase, and at turns in the pathway.</p> <p>Along a long passage, even without a fork, guidance signs should be put at appropriate intervals.</p> <p>Individual location sign should be placed close to the facility it guides to.</p>	

**Information sign**

<b>Content of the information displayed</b>	<p>The information of the facilities location guide is available from the attached Table 2-5 beside the facilities equipped to ease the movement of people.</p> <p>The facilities location guide should clarify the routes to and from the facilities also equipped to promote barrier-free access.</p> <p>The display contents of the map of the passenger facilities, if provided, should be picked up from the attached Table 2-6 when needed.</p> <p>For the traffic services with network system, it is desirable to post the network routes at the ticket gate or other places.</p>	<p>Attached Table 2-5</p> <p>Attached Table 2-6</p>
<b>Design of the display and tools</b>	<p>The design of the information sign should be simple, and it is even better to have a uniform design for each sign category.</p> <p>For the facilities location guide or other guides for the area around passenger facilities within walking distance, it is even better for the sign to be oriented such that left and right on the map correspond to left and right in the actual area.</p> <p>For the wide-area map around passenger facilities, it is even better to display the direction in a geographical manner with north pointing up.</p>	Reference 2-7
<b>The display direction and position height of the sign</b>	<p>The signs should face the flow of people so as not to obstruct the smooth movement of the people.</p> <p>If the sign is oriented parallel to the flow due to space limitations, the attract people's attention in advance.</p> <p>The position height of the area map around passenger facilities, timetable, and facilities location guide should be at a height that is easy to see for typical walkers and wheelchair users.</p> <p>For the fare table above the ticket vending machine, make its exhibit height as low as possible for wheelchair users to be able to see it without looking up with a large angle and minimize the chances of it being blocked by people making a line in front to the ticket machine. Also, avoid reflection of light off the sign board.</p> <p>The width of the fare table above the ticket machine should be fixed within a range such that people can read it even from a slight angle to the side.</p>	<p>Reference 2-8</p> <p>Reference 2-9</p> <p>Reference 2-10</p>
<b>Where to place the signs and the distance in between</b>	<p>Facilities location guides should be placed at the spots posing no obstruction for the smooth flow of the people and visible from near the entrance, exit, and ticket gate.</p> <p>The location guide that indicates the transfer route or transfer entrance should also be placed at the point where the route to the transfer entrance branches off.</p> <p>The area map around passenger facilities should be placed at the point where the route to the ticket gate or entrance/exit branches off.</p> <p>In a large passenger facility, it is desirable to put facilities location guides at various spots.</p>	

### Display with changeable contents

The variable display device is a system that visually shows changing information, either by mechanical methods such as flaps or by electronic methods such as LEDs.

<b>Contents of the display</b>	<p>At normal times, the information displayed consists of traffic service information for places such as railways and ships. The service information includes departure track numbers, departure times, vehicle types, and destinations.</p> <p>If there is a traffic problem, it is desirable to provide the information concerning the delay situation, reason for the delay, expected time the operation resumes, available change-over transportation, and related information for the passengers. It is useful to be prepared with a display menu for an emergency. It is also desirable to state the availability of alternative networked transportation.</p> <p>It is desirable to continuously indicate any abnormal situations by having a flicker lamp to keep people informed that the display for abnormal situations is operating.</p>	
<b>Display method</b>	<p>For the display, ensure that letters are clear and are uniformly bright. Also, make recognition easy by making the brightness of the figures on the sign significantly different from that of the background.</p>	
<b>Locations to place them</b>	<p>In the case that places for getting on and off frequently change according to operation of traffic service, changeable displays for the traffic should be placed at each spot in the pathway where the passage to such getting-on/off place branches off. This is for the benefit of many people including hearing-impaired people who are largely dependent on visual information. Displays should also be put near the ticket gate, getting-on/off places, and waiting rooms where it is easy for people to decide where to go.</p> <p>The height of the exhibit position for the changeable display should be same with guidance signs and location signs.</p>	Reference 2-11

### <Accessibility facilitating standards>

[Systems to provide operation information]

Article 9

1. Facilities to provide information on services for trains, boats, and planes shall be installed with a visual display or auditory guidance. However, this rule does not apply when electricity is not available or for other technical reasons.

[Display]

Article 10

1. There shall be a display that shows major facilities for barrier-free access near lifts, toilets, and ticket selling places.

[Guidance for major facilities for barrier-free access]

Article 11

1. A display board indicating the locations of major barrier-free access shall be provided near an entrance/exit leading directly to a public road. However, this rule does not apply when the layout of such facilities is easily recognized visually.





















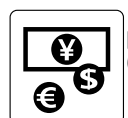


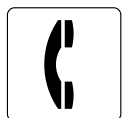













Attached Table 2-1: JIS Z9103-1995 safety-related colors for signs. Display rules and where to use them. (Extracts related to the sign system)

Safety color	Indications	Where to use	Examples where it is used
<b>Red</b>	<ol style="list-style-type: none"> <li>a. Fire prevention</li> <li>b. Prohibition</li> <li>c. Stop</li> <li>d. High-level danger</li> </ol>	<p>The places related to fire prevention, prohibition, stopping, and where high-level danger exists.</p>	<ol style="list-style-type: none"> <li>a. Alarm sign for fire. Fire plug. Fire extinguisher. Fire alarm.</li> <li>b. Prohibition sign. Barricade (no trespassing)</li> <li>c. Emergency stop button. Stop signal flag. Color light signal "stop."</li> <li>d. Gunpowder sign. Gunpowder indication.</li> </ol>
<b>Yellow red</b>	<ol style="list-style-type: none"> <li>a. Danger</li> <li>b. Safety facilities for sea traffic</li> </ol>	<ol style="list-style-type: none"> <li>a. Areas in danger of causing a disaster or a trouble</li> <li>b. A mark easy to identify in the sea for safety facilities or shipwreck rescue in sea traffic.</li> </ol>	<ol style="list-style-type: none"> <li>a. Danger signal. Danger warning. Danger display.</li> <li>b. Life raft. Life-saving devices. Life buoy. Waterway mark.</li> </ol>
<b>Yellow</b>	<ol style="list-style-type: none"> <li>a. Caution</li> <li>b. Clear display</li> </ol>	<ol style="list-style-type: none"> <li>a. Areas where a collision, fall, or stumble could occur.</li> <li>b. Things or areas requiring warnings, especially clear indications for such.</li> </ol>	<ol style="list-style-type: none"> <li>a. Caution sign. Warning.</li> <li>b. Color light signal "caution." Exit signs in the station building, at tickets gate and on platforms.</li> </ol>
<b>Green</b>	<ol style="list-style-type: none"> <li>a. Safety</li> <li>b. Evacuation</li> <li>c. Health care. First aid.</li> <li>d. Go ahead signal</li> </ol>	<p>Areas related to raising safety concern, related to emergency evacuation, related to health care and first aid, and indicating "go ahead."</p>	<ol style="list-style-type: none"> <li>a. Safety flag and safety guidance signal.</li> <li>b. The sign indicating the direction to the emergency exit.</li> <li>c. Industrial health flag and hygiene guidance sign. The sign and signal to show direction to and location of protection tool boxes, stretchers, first-aid boxes, and first aid station.</li> <li>d. Go-ahead signal flag. Color light signal "go ahead."</li> </ol>
<b>Blue</b>	<ol style="list-style-type: none"> <li>a. Instruction</li> <li>b. Precaution</li> <li>c. Guidance</li> </ol>	<p>Protection wear and others things that only persons in charge of instructions for health and safety can handle.</p>	<ol style="list-style-type: none"> <li>a. Background color for signs instructing using safety glasses and gas measuring.</li> <li>b. The sign indicating "under repair."</li> <li>c. Indicating direction to and location of the parking lot</li> </ol>
<b>Red purple</b>	<p>Radiation</p>	<p>Radiation-isotope. Its disposal room, storage facilities, and fence surrounding the controlled area.</p>	

**Attached Table 2-2: Standard picture signs**

(\* marked is the sign adopted for standard guidance by the general picture sign study committee. Signs other than \*marked are creations of the same committee.)










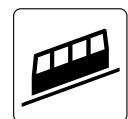







**1 Public, general facilities: 38 items**

Recommendation level: A					
	Information counter	Information corner	Hospital	First aid station	Police
					
	Restroom	Men's	Women's	Facilities for the physically impaired	Wheelchair slope
			(Remarks) In the region where local fire law enforces the left hand side sign, you should comply.		
	Drinking water	Smoking area	Smoking area		
Recommendation level: B					
	Check in /Receptionist	Lost and found	Hotel /Lodging	Ticket sales /Fare adjustment	Luggage office
					
	Coin locker	Lounge /Waiting room	Meeting point	Bank /Exchange	Cash service
					
	Mail	Phone	Fax	Cart	Elevator
					
	Escalator	Staircase	Facilities for infants	Cloak	Dressing room
					
	Dressing room (women)	Shower	Bathroom	Drinking fountain	Trash can













Collection of recycled materials

**2 Traffic facilities: 17 items**















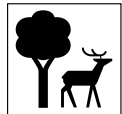




Recommendation level: B					
	Airplane /Airport	Railway /Railway station	Ship /Ferry/Port	Helicopter /Heliport	Bus /Bus stop
					
	Taxi /Taxi stand	Rent-a-car	Bicycle	Ropeway	Cable car
					
	Parking lot	Departure	Arrival	Transfer	Baggage claim area
					
	Customs /Baggage clearance	Emigration/Immigration /Quarantine/Document check			

**3 Commercial facilities: 10 items**




Recommendation level: B					
	Restaurants	Coffee shop /Light meals	Bar	Gasoline station	Cashier

Recommendation level: C					
	Store/Kiosk	Newspaper /Magazine	Pharmacy	Barber /Beautician	Home delivery luggage






















**4 Sight-seeing, culture, sports facilities: 17 items**

















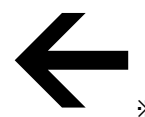
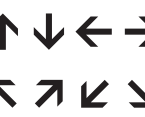
Recommendation level: B					
	Panoramic view /Picturesque place	Track and field stadium	Football stadium	Baseball stadium	Tennis court
					
	Beach/Pool	Skiing area	Campsite	Hot spring	
Recommendation level: C					
	Park	Museum /Art gallery	Historic building	Application example 1	Application example 2
Additional examples for your reference:					
	Nature protection ※	Sports activities ※	Squash court ※	T-bar lift ※	chairlift ※






**5 Safety. 5 items**

Recommendation level: A					
	Fire extinguisher	Emergency phone	Emergency button	Emergency exit ※	Wide-area shelter ※

**6 Things not to do. 20 items**

Recommendation level: A				(Remarks) In the region where local fire law enforces the left hand side sign, you should comply.
	Prohibition-general ※	No smoking	No smoking ※	
				
	Caution /Flammable ※	No entry	No parking	No bicycle entry
				
	Keep out	No running /No rushing	Don't touch	Don't throw away things
				
	No drinking	No mobile phone use allowed	No use of electronic equipment allowed [Note 1] (To be supplemented with letters)	No picture taking allowed
				
	Flash use prohibited			
Recommendation level: B				
	No baby cart allowed [Note 1] (To be supplemented with letters)	No swimming	No camping	
Recommendation level: C				
	No drinking /eating	No pets allowed		

<b>7 Warning. 8 items</b>						
<b>Recommendation level: A</b>	 ※ Caution-general	 [Note 1] (To be supplemented with letters) Caution-Obstacles ahead	 Caution-Up in the level ahead	 Caution-Down in the level ahead		
	 Slippery surface	 [Note 1] (To be supplemented with letters) Caution-Fall	 Watch out for low ceiling	 [Note 1] (To be supplemented with letters) Caution-Electric shock		
	<b>8 Warning. 10 items</b>					
	<b>Recommendation level: A</b>	 ※ Instructions-general	 Be quiet			
		 Keep left	 [Note 1] (To be supplemented with letters) Application example (Keep right)			
		<b>Recommendation level: B</b>	 [Note 1] (To be supplemented with letters) ※ Make two rows	 [Note 1] (To be supplemented with letters) Application example (Make a single row)	 [Note 1] (To be supplemented with letters) Application example2 (Make three rows)	 [Note 1] (To be supplemented with letters) Application example3 (Make four rows)
			 ※ Arrow	 Application examples		

<b>Additional examples for your reference</b>	 ※ Pull down the safety lever	 ※ Pull up the safety lever	 ※ Walkers go down	 ※ Lift the tip of your skis	 ※ Skiers go down
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### Points you need to be careful of when using the guidelines

- The guidelines provide the following levels of recommendation regarding the use of the picture signs. Please comply with them in practice.
  - Recommendation level A: The items included in this level concerns safety and emergency, affecting many users and relating to the service for people having difficulties in movement. We must insist that you use the picture without change.
  - Recommendation level B: It would benefit many users in normal actions and operations to uniformly use the picture sign and use the same picture for the sign. We recommend that you use the picture without change.
  - Recommendation level C: For many users in normal actions and operations, it is necessary to uniformly use the picture sign. You can change pictures as you see fit so long as you keep to the basic concept.
- The picture sign with [Note 1] should be supplemented with words. Don't use the picture sign alone. Please use the words accompanying each picture sign as the example for making your own words.
- The picture sign with [Note 2] has the currencies used in the picture sign interchangeable.
- The picture sign in this guideline has 35 mm as its minimum dimension when looked at from 1-m away, and 8 mm as the minimum for a map you can hold in your hands. Please don't make them any smaller than that.
- The picture sign in this guideline made adjustment in dimensions so that squares, circles, and triangles look the same size. You need to keep this rule in mind when enlarging or shrinking the combination of these three shapes.
- Colors of the picture signs in which red, yellow, green, and blue are used comply with [JIS Z 9101-1995 Safety colors and safety signs]. When you use them, please take note of the following Munsell values.
  - Safety color. Red: 7.5R 4/15, Yellow: 2.5Y 8/14, Green: 10G 4/10, Blue: 2.5PB 3.5/10
  - Contrast color. White: N9.5 Black: N1
- The picture sign in which black is used on a white background can be changed to any colors other than above-listed safety colors, red, yellow, green, or blue. You can interchange the picture color with the background color, too.
- When you adjust colors or brightness, make sure you have adequate contrast between background and picture not to sacrifice easiness to see. Brightness difference should be greater than 5.
- For the picture signs for a restroom, facilities for the physically impaired, escalator, staircase, departure and emergency exits, the right and left are interchangeable depending on the guidance direction or surrounding facilities.

Note) For the detail, refer to "guideline for standard guidance picture signs" published by the general guidance picture sign study committee.

**Attached Table 2-3: Contents displayed in the guidance sign**

Contents of the information	Examples
Location of the key facilities along the route	Entrance/Exit. Ticket gate. Getting on/off places. Transfer entrance
Primary facilities for barrier-free access	Elevator. Rest room. Ticket selling place.
Facilities providing information	Information desk.
Traffic accesses	Railway station. Bus stop. Ship terminal. Air terminal. Taxi stand. Rent-a-car. Parking lot.
Adjacent commercial area map	Large store building. Department store. Basement shopping mall.

**Attachment 2-4: Contents displayed in location signs**

Contents of the information	Examples
Location of the key facilities along the route	Entrance/Exit. Ticket gate. Getting on/off places. Transfer entrance
Primary facilities for barrier-free access	Elevator. Escalator. Slope. Restroom. Ticket selling place.
Facilities providing information	Information desk
Facilities for first aid and help	First aid station. Lost and found
Facilities for the convenience of passengers	Exchange. Coin locker. Public phone booth.
Facility to manage facilities	Office

**Attached Table 2-5: Contents displayed in the facilities location guide**

Contents of the information	Examples
Location of the key facilities along the route	Entrance/Exit. Ticket gate. Getting on/off places. The route in between. Staircase. Connection route. Transfer entrance. Route to the facilities for barrier-free access.
Primary facilities for barrier-free access	Elevator. Escalator. Slope. Rest room. Ticket selling place.
Facilities providing information	Information desk. Information corner.
Facilities for first aid and help	First aid station. Lost and found.
Facilities for the convenience of passengers	Exchange. Coin locker. Public phone booth.
Facility to manage facilities	Office
Traffic accesses	Railway station. Bus stop. Ship terminal. Air terminal. Taxi stand. Rent-a-car. Parking lot.
Adjacent commercial area map.	Large store building. Department store. Basement shopping mall.

**Attached Table 2-6**

Contents of the information		Examples
<b>Streets, roads, places</b>	<b>Geographical features</b>	Mountain. Bay. Island. Peninsula. River. Lake. Pond. Moat. Port. Pier. Canal. Wharf.
	<b>Streets, zones, etc.</b>	City. Ward. Town. Street.
	<b>Roads</b>	Motorway. National road. Prefectural and municipal roads. Roads with well-known popular names.
	<b>Places</b>	Interchange. Well-known crossings. Well-known bridge.
	<b>Traffic facilities</b>	Railway station. Bus stop. Ship terminal. Air terminal. Taxi stand. Rent-a-car. Parking lot
	<b>Facilities for barrier-free access around the passenger facilities</b>	Public rest room. Elevator. Escalator. Slope.
<b>Sight-seeing. Shopping facilities</b>	<b>Information site</b>	Information booth
	<b>Sightseeing places</b>	Picturesque places. Historic spots. Historic buildings. Large parks. Places well-known nationwide.
	<b>Large scale facilities attracting many people</b>	Large-scale mall. International exposition site. International conference hall. Theme park. Large-scale playground. Large-scale zoo.
<b>Culture, life facilities</b>	<b>Shopping facilities</b>	Large-scale store building. Basement shops. Department store. Famous stores. Wholesales market.
	<b>Culture facilities</b>	Museum. Art gallery. Theater. Hall. Municipal hall. Conference hall. Public library.
	<b>Sports facilities</b>	Large stadium. Gymnastics. Martial arts hall. General sports facilities.
	<b>Lodging and gathering places</b>	Hotels. Wedding ceremony halls. Funeral hall.
	<b>Government facilities</b>	Central ministries and their agencies. Prefectural office. Municipal office. Ward office. Police station. Fire station. Court. Tax office. Legal bureau. Post office. Driver license office. Public employment office. Embassy. Consul.
	<b>Medical welfare facilities</b>	Public hospital. General hospital. University hospital. Health office. Welfare office. Large-scale welfare facilities.
	<b>Industrial facilities</b>	Broadcasting station. Newspaper company. Large-scale factories. Large-scale office buildings.
<b>Education, research facilities</b>	Universities. High-school. Middle-school. Primary school. Other large-scale schools. Large research institutes.	

### Reference2-1: Examples of the letters in square-gothic

- Following are the examples of square-gothic letters in Japanese or alphabet. (Font is shown in brackets.)

**出口案内**  
(New Go B)

**出口案内**  
(New Go M)

**出口案内**  
(New Go R)

**出口案内**  
(Type bnk B)

**出口案内**  
(Type Bank DB)

**出口案内**  
(Nau GB)

**Express**  
(Helvetica bold)

**Express**  
(Helvetica medium)

**Express**  
(Helvetica regular)

**Express**  
(Universe 65 bold)

**Express**  
(Accident grotesque medium)

**Express**  
(Accident grotesque regular)

### Reference 2-2: Size of the letter and criteria for choice

- Generally, viewing distance should be more than 20 m for a hanging-type guidance or location sign seen from a far distance, less than 4-5 m for a self-standing or wall fixed type information sign looked at from a near-by spot, and about 10 m for the heading of the information sign.
- The table below shows the effective letter size that can be normally read from respective distances based on the above assumption.
- If the large-size letter sign for a far distance is held up at the same exhibit height as a wall-fixed type, it would help the people with weaker sight to approach and read it.

Seeing distance	Height of Japanese letter	Height of English letter
30 m	More than 120 mm	More than 90 mm
20 m	More than 80 mm	More than 60 mm
10 m	More than 40 mm	More than 30 mm
4-5 m	More than 20 mm	More than 15 mm
1-2 m	More than 9 mm	More than 7 mm

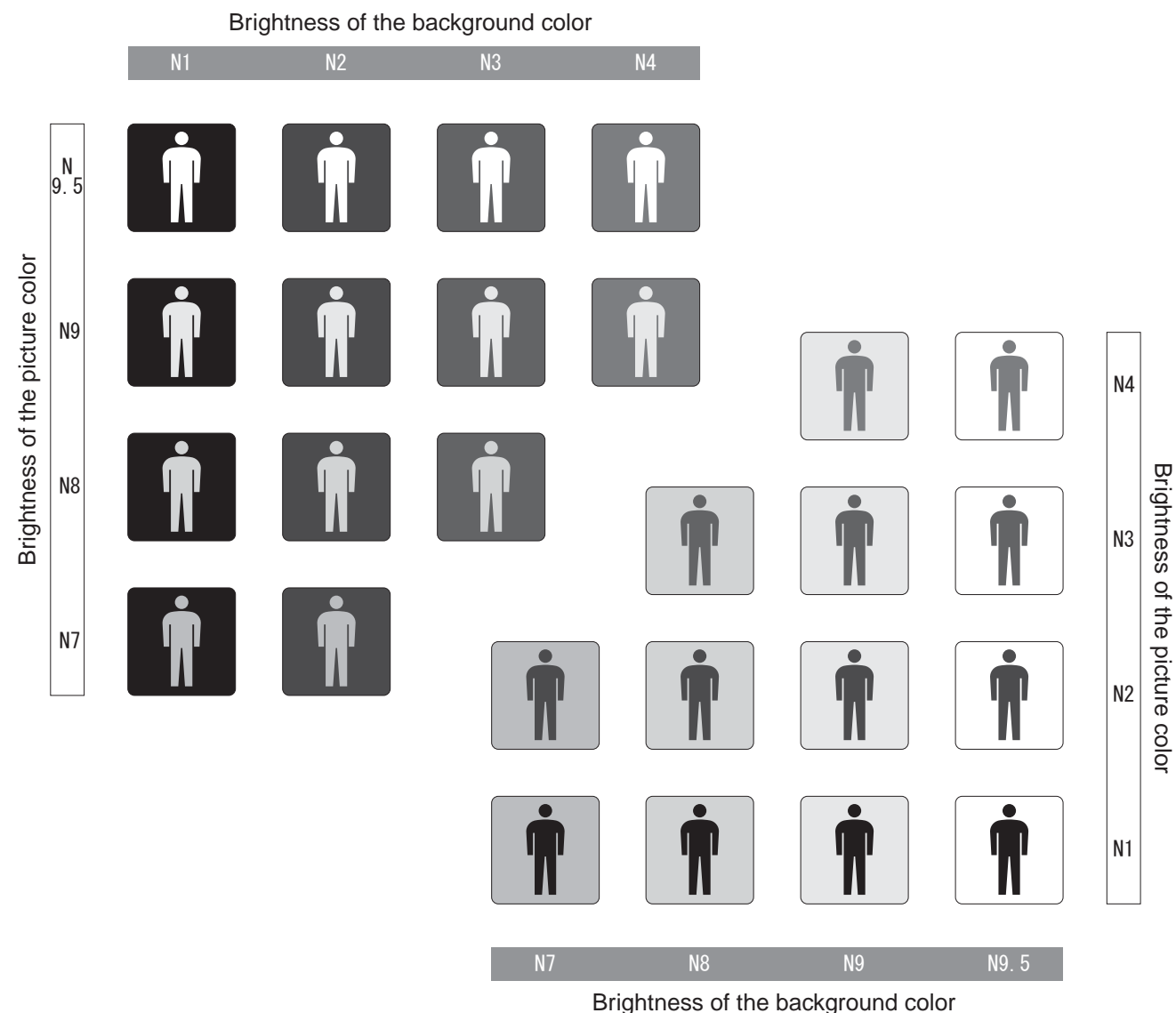
- Height of the letter means the height of the letter "木" for Japanese, and "E" for English.

Height of Japanese letter **木 のりば 出口**

Height of English letter **Gates Exit**

### Reference 2-3: The examples of the brightness contrast between the picture color and background color

- Recognition is easy if the picture color and background color in the sign has the following difference.



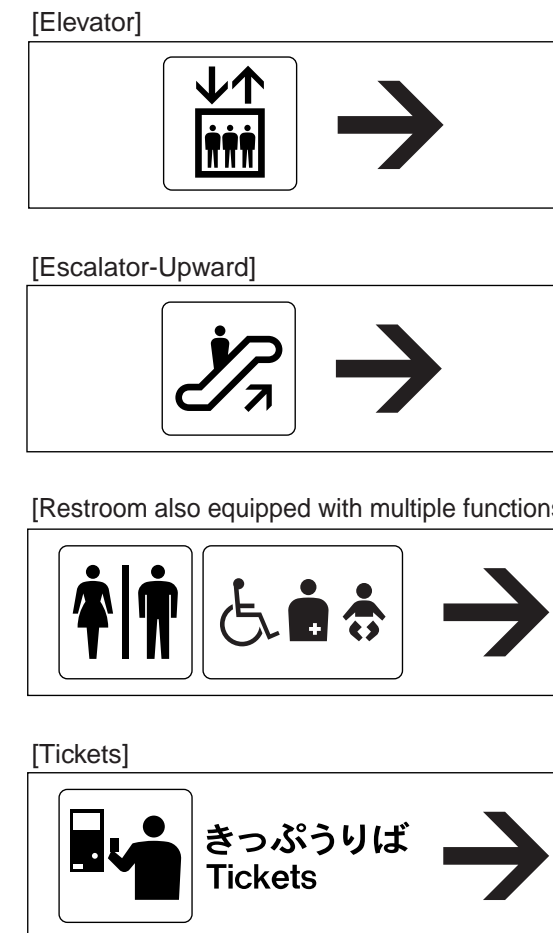
### Reference 2-4: How to consider the sign tools from the viewpoint of the brightness

- To assure easy visibility of the sign, make sure to have a certain level of brightness on the display surface. For a display surface brightness on the sign installed indoors, the readability improves as the brightness increases up to around 1000 cd/m<sup>2</sup>, beyond which glare impairs readability.
- If we categorize the sign tools by how we get the display surface brightness, there are an inside-lighting type that incorporates light inside, an outside-lighting type that has lighting attached outside of the sign board, and a no-lighting type that depends on other general lighting fixtures similar to indoor light.
- If we consider that the viewers include the aged with weaker eyesight, inside-lighting type is suitable to keep the necessary brightness to be seen from afar, however, glare interferes for near-by viewers. Glare is controlled with outside-lighting type, but it needs more lighting devices than inside-lighting type to maintain the necessary brightness to be seen from afar. No-lighting type can get necessary brightness only when there is enough light from other sources in the surrounding area, and it is prone to lack of brightness because it depends on the other general lighting devices in the absence of natural light.

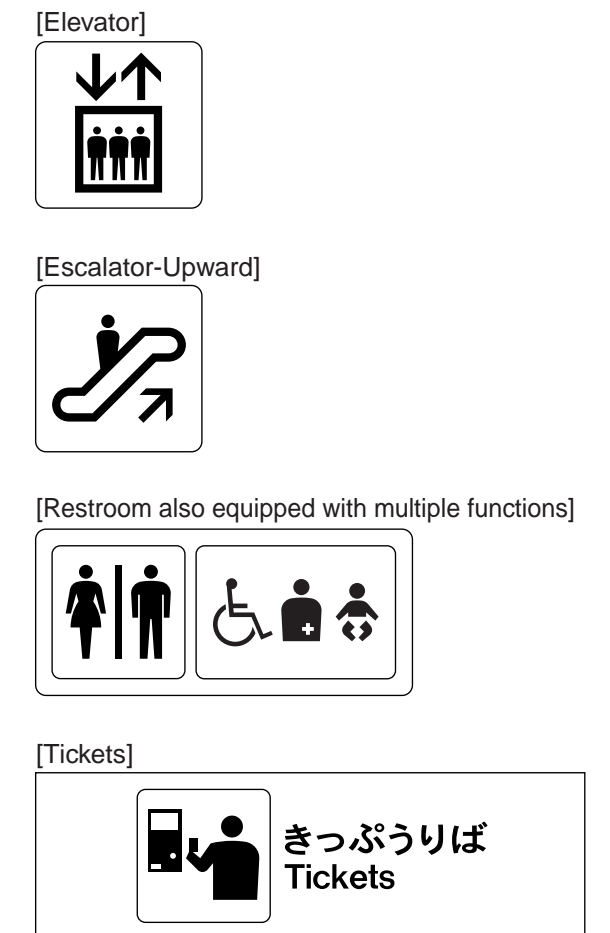
### Reference 2-5: Display examples for guidance signs and location signs

- Following are examples of guidance signs for primary facilities for barrier-free access and respective location signs.
- As picture signs for elevator, escalator, restroom and facilities for the physically impaired are well known, only the picture signs themselves are shown.
- Picture sign for ostomate is not included in the "standard guidance picture signs" formulated by the general guidance picture sign committee.

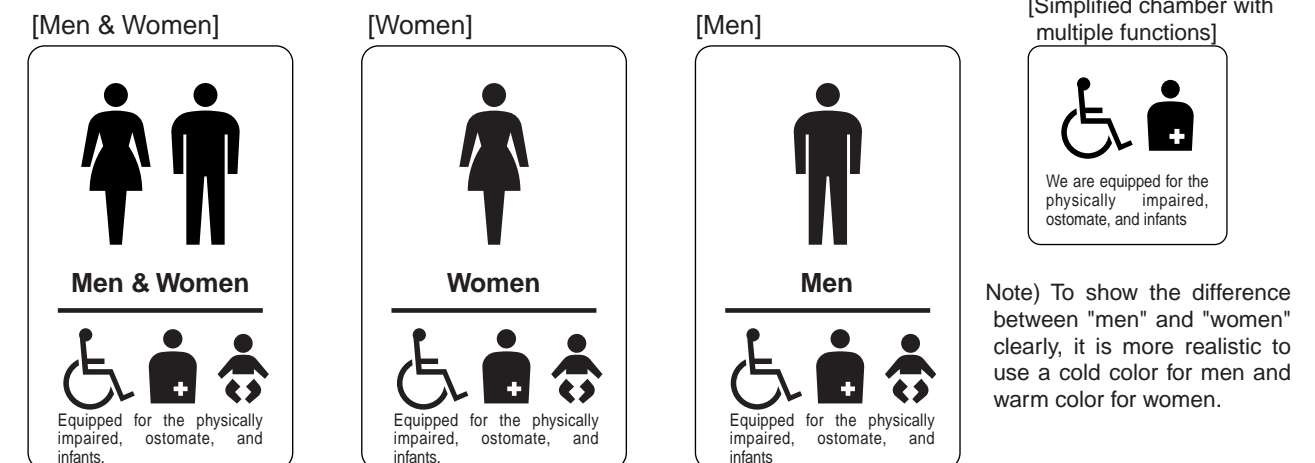
#### Guidance sign (assuming a hanging type)



#### Location sign (assuming a hanging type)



#### Location sign for the restroom with multiple functions (assuming a door-fixed type)





**Reference 2-6: How to think about the exhibit height of the sign to be seen from afar**

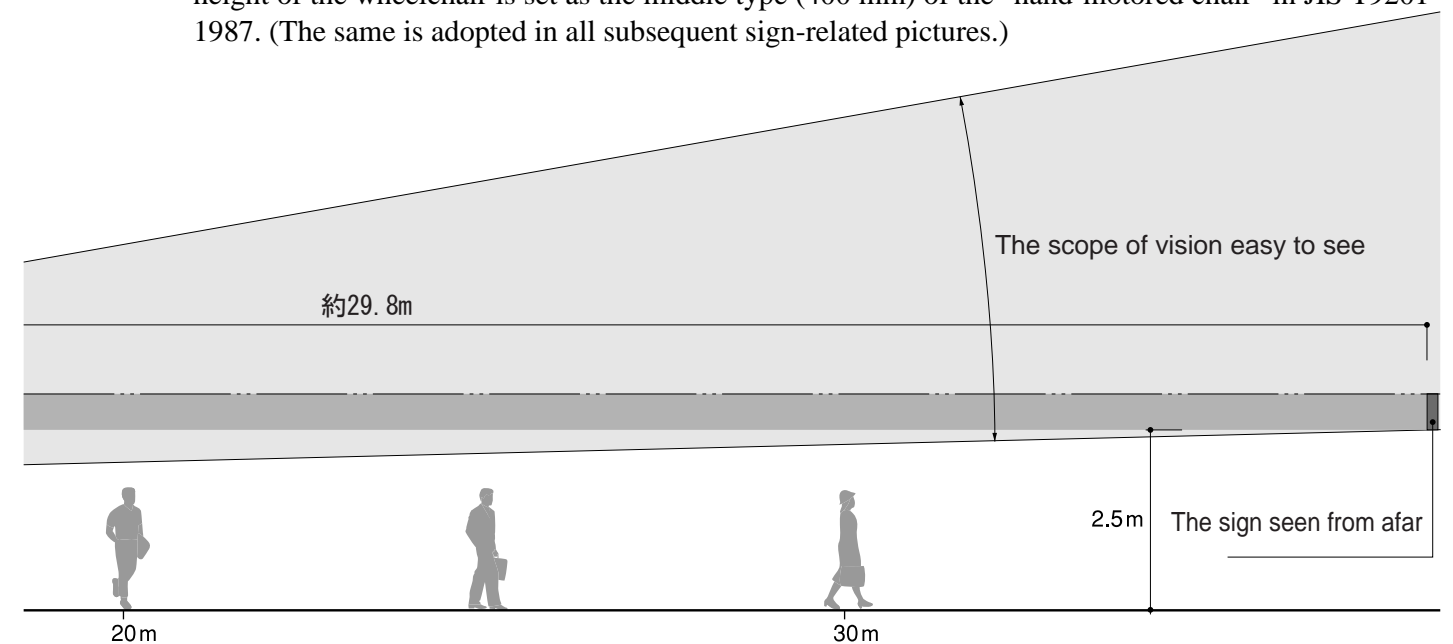
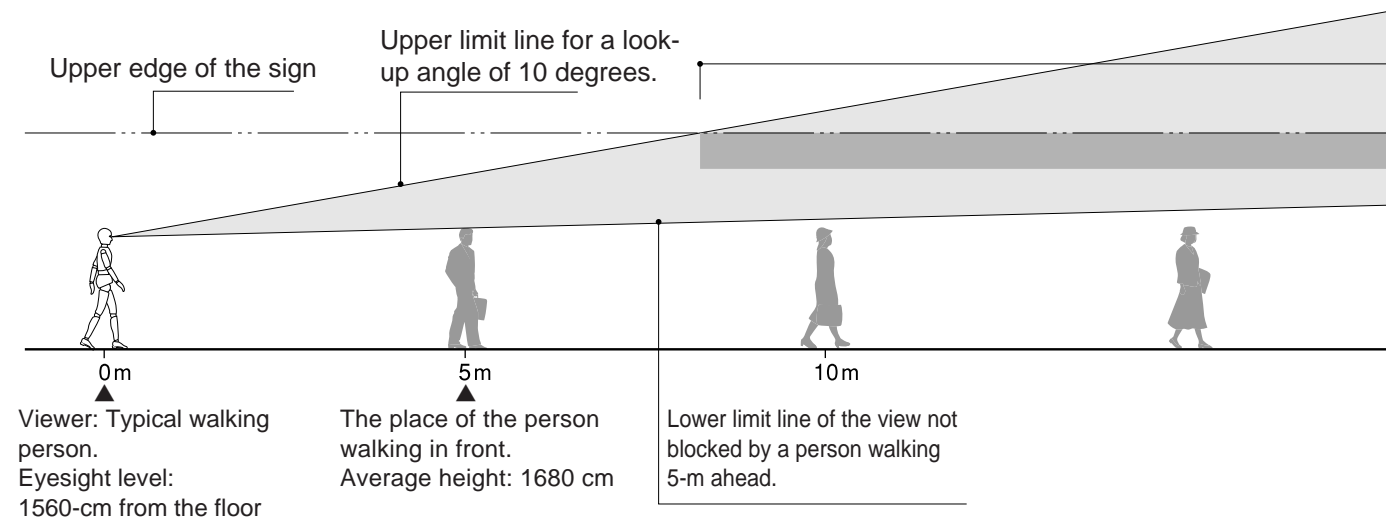
- For moving viewers, things above a particular level of height tend to be missed. The effective range of vision is generally said to be up to 10 degree in angle of elevation, (look-up angle). Also, in passenger facilities, one must assume other passengers in front are blocking one's view; therefore, one should be able to see the sign above those passengers.
- Wheelchair users have a lower eyesight level, which makes the scope of their vision much narrower than that of normal passengers. The range of distance that wheelchair-bound persons can read a sign placed at a fixed height while they are moving is extremely small.
- As shown in the following pictures, assuming other people are walking 5 m ahead of oneself at a crowded time, the distance from which the wheelchair user can read a sign 50-cm in length while moving is 0.9 m, 2.0 m, 3.8 m, and 7.5 m when the height of the sign's bottom edge is 2.2-m, 2.5-m, 3.0-m, and 4.0-m from the floor, respectively. They translate to the time he can see the sign, assuming the speed is 1.1 m/sec, to be about 0.8 seconds, 1.8 seconds, 3.5 seconds, and 6.8 seconds, respectively. (For normal passengers, the coverage of the distance they can see the sign is about 29.8 m translating to about 27 seconds, assuming the exhibit height is 2.5 m.)

- When the time available for seeing the sign is short, chances are greater to miss the information.
- Taking the discussion into consideration, the exhibit height of the sign to be seen from afar should be set as high as possible within the scope below the 10 degree look-up angle from the area of the viewer, after selecting the letter size matching the viewing distance.

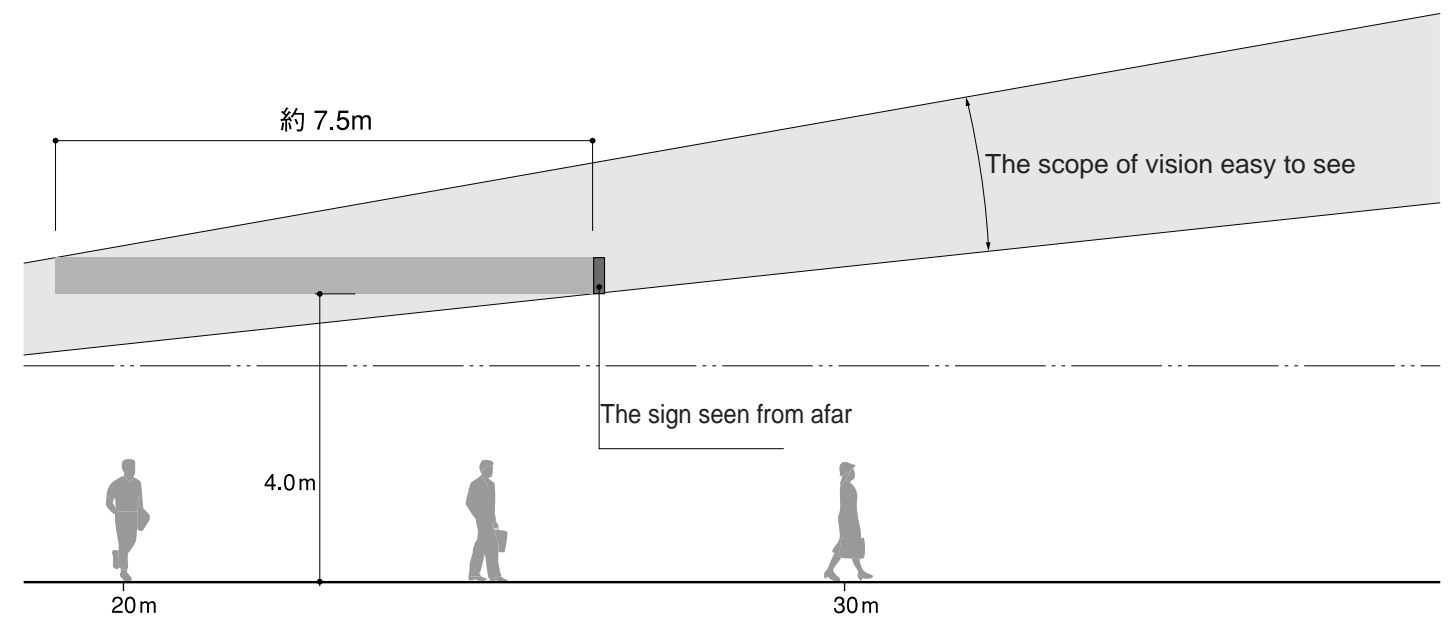
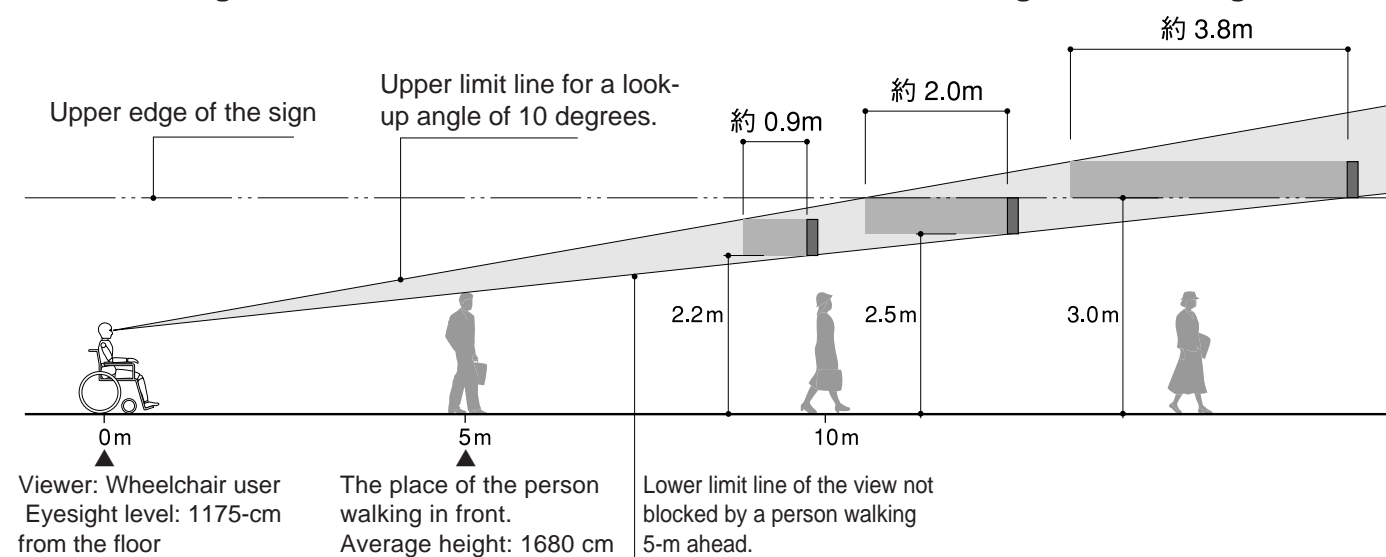
Note 1) The look-up angle (effective scope of vision) is mentioned as 8 degrees upward to be able to detect specific information from noise instantly in "Ergonomics in diagrams" 1990 (Japan specification association) edited by Eiyu Noro.

Note 2) Dimensions of the human body in the picture below has a source in "Life engineering industrial technology research institute's research report" by the industrial engineering institute. Sitting level height of the wheelchair is set as the middle type (400 mm) of the "hand-motored chair" in JIS T9201-1987. (The same is adopted in all subsequent sign-related pictures.)

**The coverage of the distance that the normal passenger can see the sign while moving.**



**The coverage of the distance that the wheelchair user can see the sign while moving.**



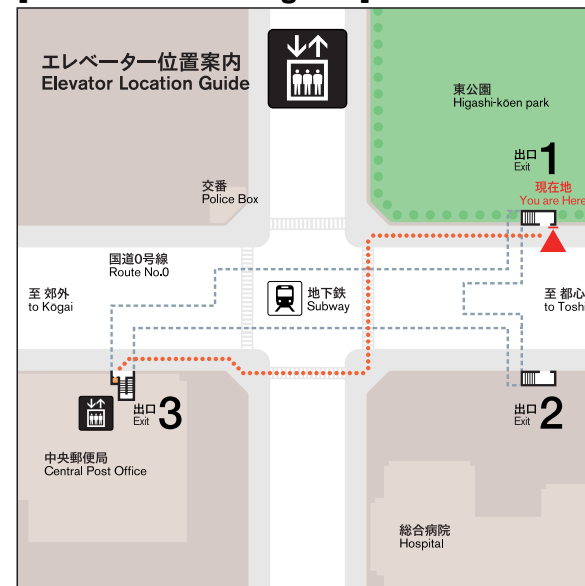
### Reference 2-7: Display examples of the information sign

- Shown here are the display examples for the elevator location guide posted at the subway's entrance/exit on the ground, the station map matching each entry pathway set up at the spot where entrance/exit pathway leads to the concourse, the station map matching each exit pathway set up at the spot in the concourse inside the ticket gate where the ticket gate exit pathway has a fork spreading in two directions, and the area map based on the model of a core local station.
- Shown here are the display examples for the elevator location guide posted at the subway's entrance/exit on the ground, the station map matching each entry pathway set up at the spot where entrance/exit pathway leads to the concourse, the station map matching each exit pathway set up at the spot in the concourse inside the ticket gate where the ticket gate exit pathway has a fork spreading in two directions, and the area map based on the model of a core local station.

#### Elevator location guide

- This picture example shows the surrounding landmarks, the main roads and their destination to give you a sense of direction; these are beside the route on the background from the present location to the entrance/exit where the elevator is.

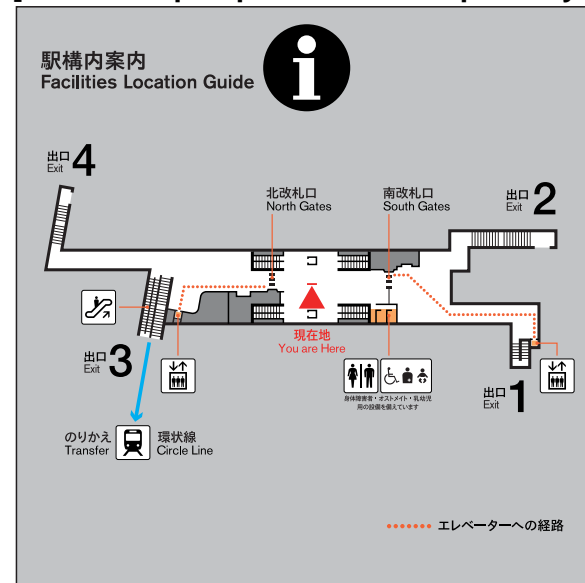
[Elevator location guide]



[Station map to put at each entrance pathway.]



[Station map to put at each exit pathway.]



[Area Guide]



#### Facilities location guide

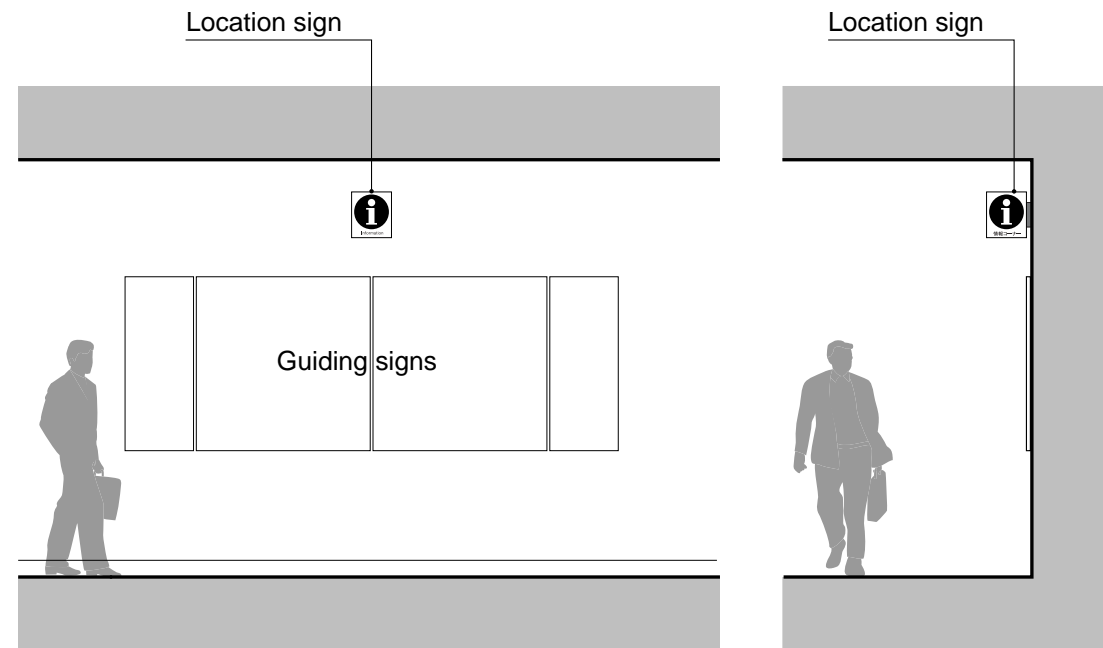
- In this picture example, the structure of the station is shown in as simple a form as possible, indicating in pictographs the locations of the primary facilities that are equipped for the disabled along the entrance pathway and exit pathway.

#### Area map

- This picture example shows, for a core local town, the scope of the walking distance (about 1.3-km square) from the station to the large park, a landmark of the town, centering around the busy streets attracting many visitors. Pictographs are used to indicate primary city facilities.

### Reference 2-8: Display example of the information corner

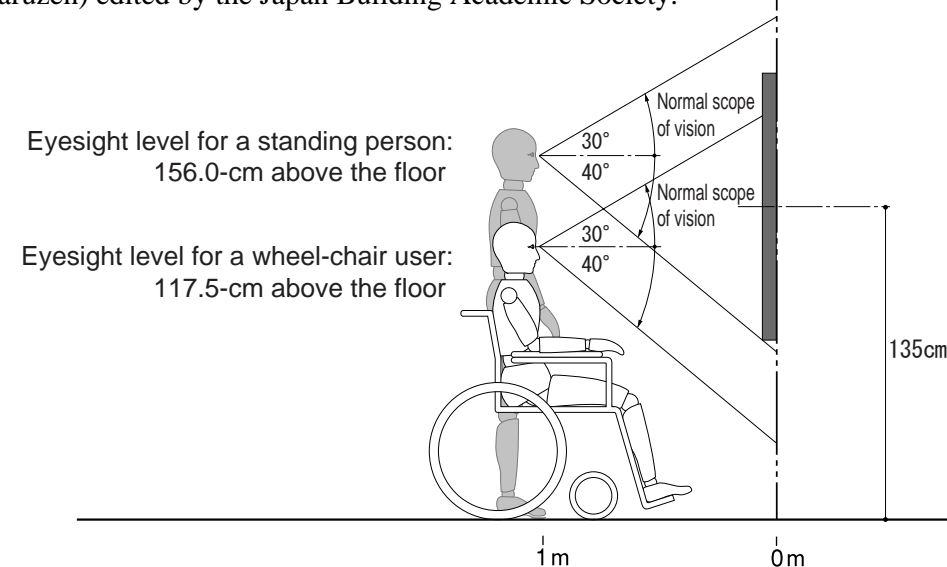
- We make here a setting (information corner) where the guides are collectively shown in a manner easy to see from the moving direction of the pathway. Display examples of the location sign at the information corner are shown.



### Reference 2-9: How to determine the exhibit height of the sign to be seen from nearby

- When the sign is facing the viewer at close range, the scope of the vision that a wheelchair user feels is easy to see is lower than that from a standing person by about 40 cm.
- Therefore, when we want to set such a close-range sign for viewing by both standing persons and wheelchair users, the height from the floor to the center point of the sign should be 135 cm, the midpoint between the eyesight level of the standing person and that of the wheelchair user.

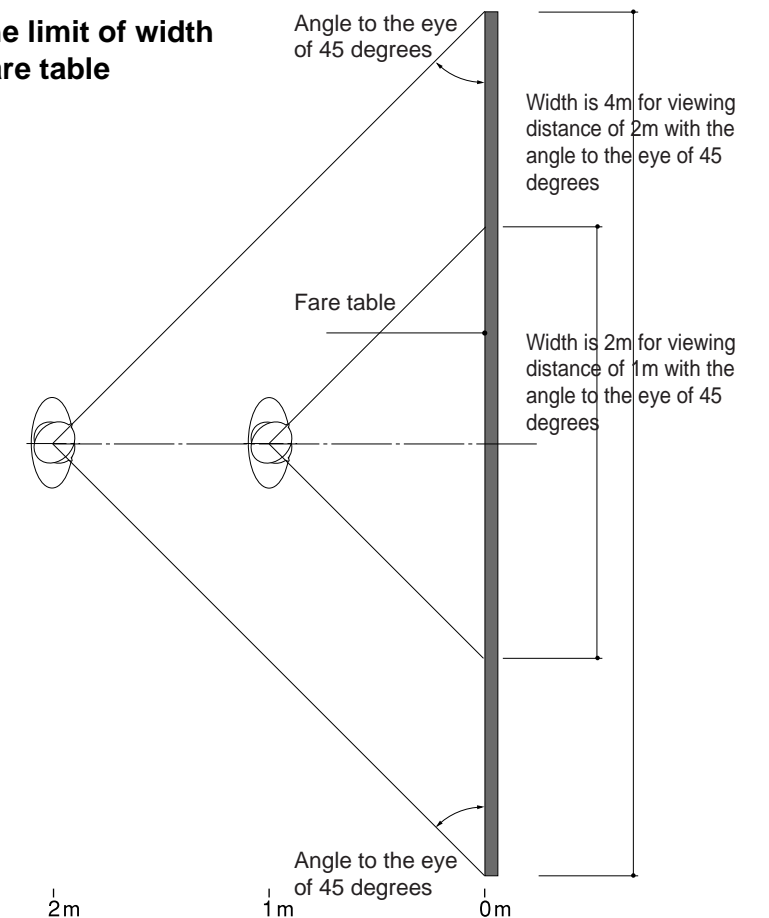
Note) The normal scope of vision in the picture below is from "Building design data collection 3" 1980 (Maruzen) edited by the Japan Building Academic Society.



### Reference 2-10: How to determine the limit of width dimension for the fare table

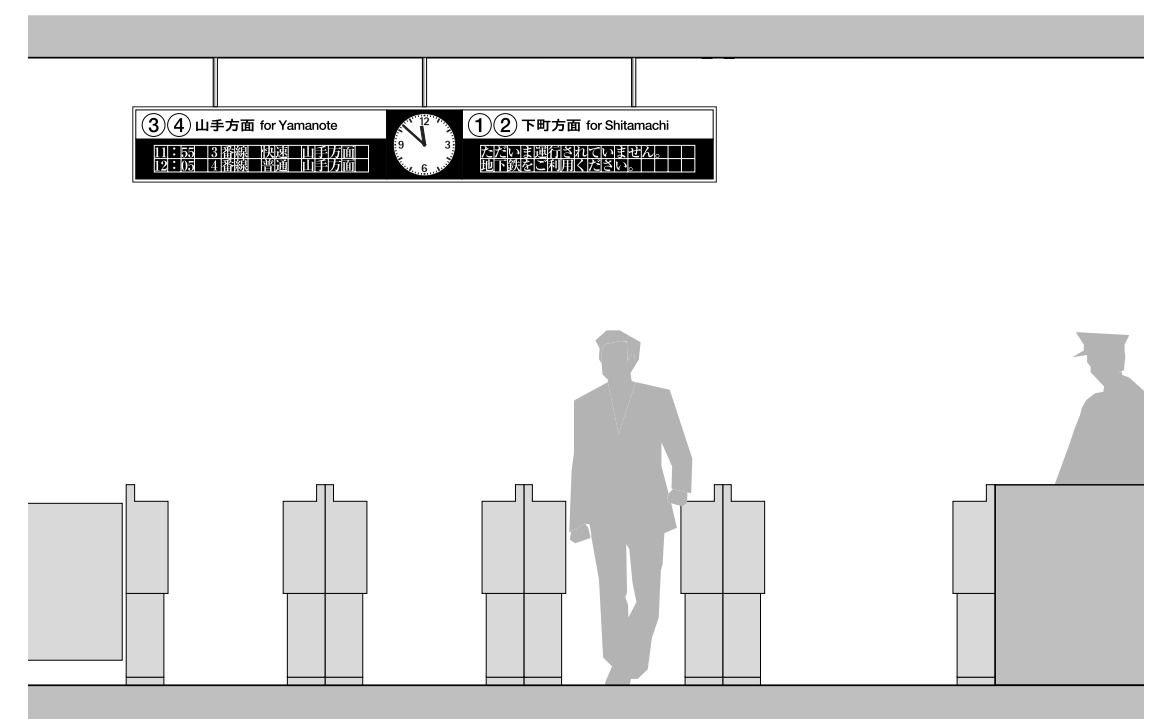
- The design of the fare table should consider not only the volume of information exhibited and the required size of the letters but also the eyesight scope that accommodates reading without error. According to the literature, if the angle to the eye is smaller than 45 degrees, error rate in reading the fare table increases.
- As passengers tend to approach the ticket machine without checking the fare, the distance to the fare table becomes much closer.
- Taking into consideration the limit in the angle to the eye, the width dimension of the fare table should be within about 2 and 4 m, assuming viewing distances of 1 and 2 m, respectively.

Note) According to the steel labor research on monitoring graphic panels in "Ergonomics in diagrams" (Japan Specification Association, ed. Kageyu Noro, 1990) that it is not desirable to make the angle to the eye less than 45 degrees since the error rate in reading the display contents increases at smaller angles.



### Reference 2-11: Display examples for changeable contents display

- We show here the display example for changeable contents display set up at the ticket gate.



## 2. Guidance Facilities for Visually Impaired People

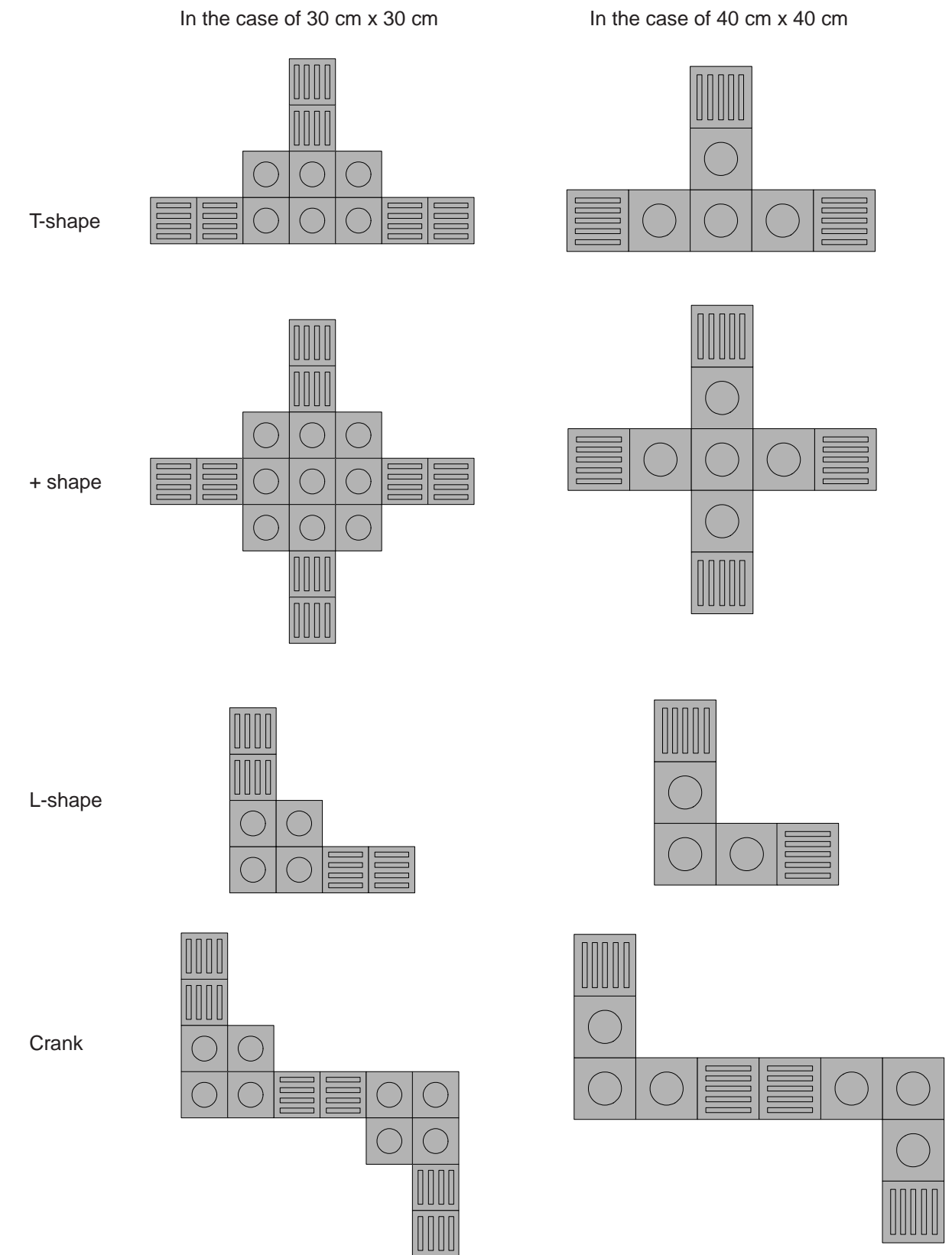
Use of guide blocks for the visually impaired is the most effective means for guiding the visually impaired. We have to make it easy for them to walk, taking into consideration the floor space plan of the passenger facilities. Especially when building it, we have to set up the guided pathway beforehand, clarify the spots to guide to, and avoid making detours in the pathways. Also, we have to pay attention to a finishing touch on the surrounding floor materials, so that it becomes easier for the visually impaired to sense the guide blocks. To guide the visually impaired, guidance by voice and sound is effective.

### <Guideline>

<b>Method of guidance</b>	We provide guidance to the visually impaired by placing along their pathway the blocks for guidance of the visually impaired (consisting of line blocks and point blocks), sound and voice guidance devices (indicating direction or the location of the facilities by sound or voice, or describing the traffic), guide plate in Braille (indicating direction or location of the facilities by Braille or tactile sensation) and Braille expressions (indicating destination and fares).
<b>Guide blocks for the visually impaired</b>	
<b>The route for line blocks</b>	<p>We place line blocks by making a guided pathway for the visually impaired from the entrance or exit to the public road or from the ticket gate to the getting-on/off places.</p> <p>Branching off from the above pathway, there should be a guided route with the blocks leading to the primary facilities also equipped for the disabled such as elevator, restroom, ticket selling office (including ticket machine) and a guide plate in Braille. Such a branch route has a single pathway for traffic both ways.</p> <p>Line block pathway should not cross with the passageway of the normal passengers and it should be a safe, simple, and continuous path with minimum number of turns.</p> <p>Priority is given to indicate a safe and simple pathway when building line blocks. Also, the line block pathway should be built an appropriate distance away from walls and pillar; otherwise, utensils should be put on the floor to secure a passage for walkers.</p>
<b>Where to place point (warning) blocks</b>	Point(warning) blocks are placed where a warning is due for the visually handicapped to make a break in their continuous passage; for example, at an entrance/exit (with door), a staircase, right in front of a Braille guide plate, in front of the ticket machine or other ticket selling office, in front of an elevator, in front of an escalator, ea slope, near the edge of platforms; and where a line block pathway branches off, bends, or stops. (Details will be shown later.)
<b>Form</b>	Its form complies with JIS specifications. (Refer to the note)
<b>Color</b>	The color should be yellow. Yet it can be some other color if yellow cannot provide adequate brightness contrast or difference compared to surrounding floor materials and cannot indicate a safe and continuous pathway.
<b>Materials</b>	Materials should be sufficiently strong, slip-proof, and strong against wear and tear with excellent durability.

Reference 2-13

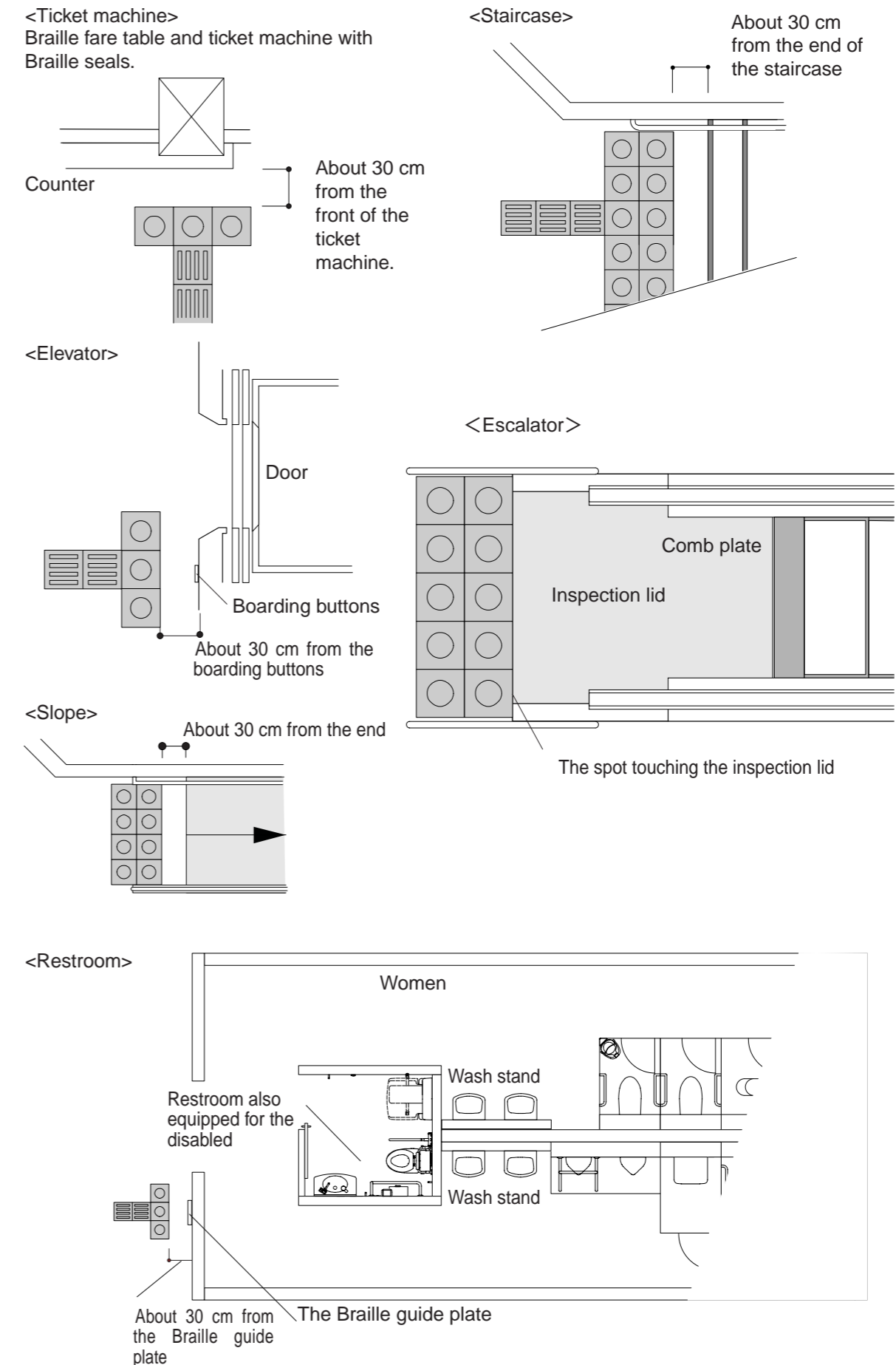
### Reference 2-12: How to install branches and bends.



<Detail of how we install guide blocks>

<b>Entrance from or exit to a public road</b>	The entrance from or exit to a public road should be built to ensure a continuous passage between inside and outside of the passenger facilities. Uniformity of the colors and forms is preferred.	
<b>Ticket gate</b>	Line block pathway to the ticket gate should lead to the one attended by a person, if such is available.	
<b>Ticket machine</b>	The line block pathway to the ticket machine should lead to the machine equipped with a Braille fare table and Braille expressions. This pathway should branch off from the line block pathway to the ticket gate in a simple form with minimum distance. For a ticket machine, the point(warning) block should be about 30-cm before the machine. Preferably, the machine should be the one closest to the ticket gate.	Reference 2-13
<b>Staircase</b>	The line block pathway on the staircase should be installed close enough to the handrail for the person to grab the rail. The point block should be about 30-cm from the end of the staircase.	
<b>Elevator</b>	Line block pathway to the elevator should lead to the boarding buttons equipped with a Braille guide. The point block should be 30-cm from the boarding buttons equipped with a Braille guide.	
<b>Escalator</b>	The point block is installed at the spot touching the inspection lid at the end of the escalator.	
<b>Slope</b>	The point block is installed about 30-cm from the end of the slope.	
<b>Restroom</b>	The line block pathway to the restroom should lead to the Braille guide plate on the wall at the entrance of the rest room. The place where the point block is installed before the Braille guide plate is about 30-cm from the Braille guide plate.	
<b>Braille guide plate</b>	The line block pathway to the Braille guide plate should lead to the spot right in front of the Braille guide plate installed near the entrance/exit or ticket gate. The place where the point block is installed before the Braille guide plate is about 30-cm from the front edge of the guide plate.	

Reference 2-13: Examples of how we install guide blocks to guide the visually impaired



<b>Voice guide as a companion to the guide plate</b>	<p>Preferably, a voice guide is installed by setting up a speaker inside the Braille guide plate that a person can operate by push buttons.</p> <p>For the user facing and operating the device, directions to the facilities is best given in easy terms like "forward, backward, right, left."</p>
<b>The information broadcast on the traffic of</b>	<p>The announcement of the departure track number, departure time-table, destination, connection, and arrival for vehicles and trains should be broadcast and repeated in volume and quality of the voice easy to hear.</p> <p>On the same platform, difference in track number should be indicated by a difference in voice.</p>
<b>Sound guide device</b>	<p>It is desirable to install the sound guide device to tell where the Braille guide plate is.</p>
<b>Braille guide</b>	<p>We install the Braille guide plate to indicate direction and location of primary facilities located along the pathway in Braille in an easy to read form near the entrance/exit, or near the ticket gate (if there is much distance between the entrance/exit and ticket gate).</p> <p>For the passenger facilities having a connection, it is best to place a Braille guide plate in the pathway where the route to the connection entrance branches off.</p> <p>Braille guide plates are installed with exhibit height and angle to make it easily readable with finger-tips.</p> <p>There is installed a Braille statement to indicate men or women and the structure of the place at the spot should be easy for the visually impaired to approach the entrance of the restroom.</p> <p>The contents of easy-to-understand expressions on a guide plate are different between a blind person and a person who can see, which makes it impractical to have a guide plate of common expression for both. However, it is preferable to have a regular letters in the same expression so that people who can see can understand what is on the Braille plate.</p>
<b>Braille expression on the handrail</b>	<p>Destination should be given in Braille on the handrail of the staircase, and the guided pathway for the visually impaired.</p> <p>Braille expressions should have a companion in letters indicating the same message.</p> <p>When there are two tier handrails, Braille should be on the upper handrail.</p> <p>Braille expressions on the handrails should use metal or something durable.</p>
<b>Braille fare table</b>	<p>The Braille fare table is installed near the ticket machine that the line block pathway leads up to.</p> <p>It is even better to use letters as large as possible on the Braille fare table to help weak-sighted people easily read the fare.</p>
<b>Braille expression on the ticket machine</b>	<p>Braille tape indicating the amount of money is glued to the ticket machine that the line block pathway leads up to.</p> <p>It is even better to glue Braille tape indicating the amount of money to the ticket machine.</p> <p>In stations with more than one company with service, Braille tape should be pasted on the connection button.</p>

### <Accessibility facilitating standards>

[Guide blocks for visually impaired people]

Article 8

1. Either guide blocks shall be installed on a pathway between a public road and a getting on/off places to vehicles or auditory or other systems shall be provided to guide the visually impaired. However, this rule does not apply when there are more than two places with an attendant person who properly guides the visually impaired between the two locations.
2. Guide blocks for the visually impaired shall be provided i) at the places stipulated in the above paragraph, ii) at operation panels in lobbies as prescribed in Article 4 Item 7-10, iii) at guide plates with Braille or other facilities prescribed in Article 11 Item 2, and iv) on pathways between an entrance/exit of a toilet and a ticket selling place prescribed in Article 15. However, this rule does not apply to a case applicable to the provision in the above paragraph.
3. Dotted (warning) blocks shall be installed on stairs, slopes, and passages close to upper and lower ends of an escalator.

[Guidance for major facilities for barrier-free access]

Article 11

2. A display board with Braille or other system to show the composition of passenger facilities and the locations of major barrier-free access shall be provided for the visually impaired near an entrance/exit leading directly to a public road.

Note: Forms, dimensions, and arrangements of protrusions of the block to guide the visually impaired are currently being studied for registration in JIS specifications. It is expected to be registered in JIS in 2001.

## Chapter 3. Guidelines for Facilities and Devices

# 1. Restroom

Restrooms (i.e., rooms with toilet and sink) should be built at a place easy to access, and be designed for easy access of everybody. The toilet for the impaired should be located in a place that is convenient for the physically impaired. Also, the wheelchair users should be able to use it without problems. How they use these toilets depends on the part of the body disabled; for example, handrails should be provided for both for right-handed and left-handed persons. Careful design of the toilet shape is needed so that the height of the toilet seat fits the user and the wheelchair footrest does not hit the toilet.

Also, for users not to slip on the floor, the drainage on the floor should ensure that the floor does not remain wet. Especially for the wheelchair user, there should be no floor level difference (which would hinder their approach). Electromotive doors are best, and it should be possible to unlock them from the outside in an emergency. An emergency button should be placed within the reach of the user's hand even if one falls off the wheelchair.

Also, the ostomate (people having an artificial anus, or artificial bladder) might need to wash their pouch or dispose of a feces leak.

## <Guidelines>

### Toilets in general

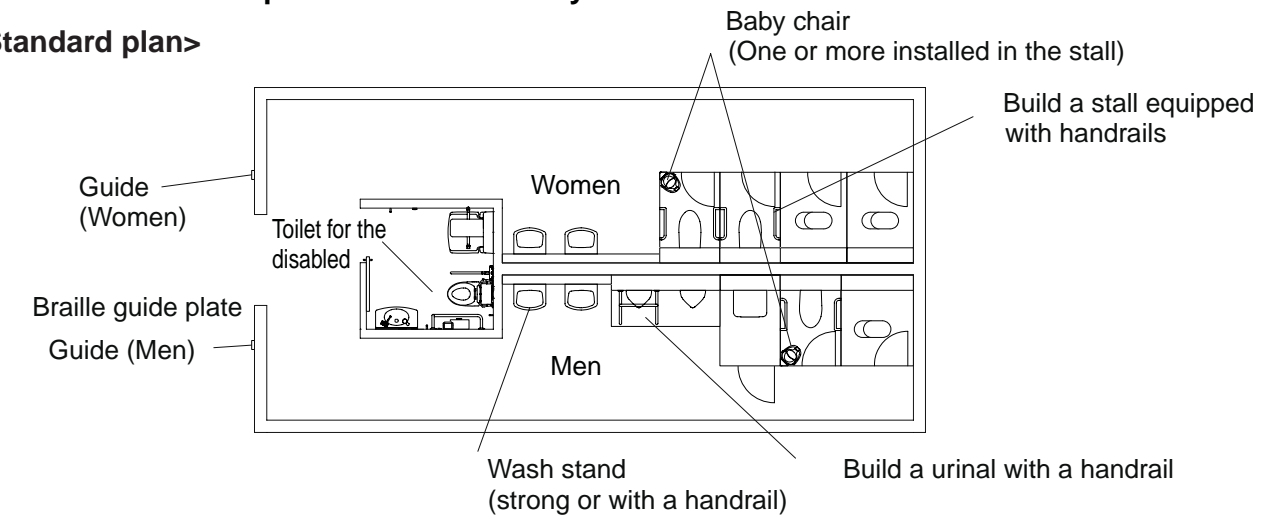
<b>Layout</b>	<p>The disabled toilet is for the physically impaired, ostomate, elderly, pregnant women, and people carrying an infant. It is built at a place convenient for such people to use. One or more of them should be for common use by both men and women.</p> <p>Because sometimes a person of the opposite sex helps a disabled person, one or more for common use should be built.</p> <p>When one builds two or more toilets for common use of any disabled person, some should be for a right-handed person in a wheelchair to move to the toilet seat and the other should be for a left-handed person.</p> <p>It is even better to have one chamber of a simple type toilet for the impaired in each of the men's and women's room.</p>	<b>Reference 3-1</b>
<b>What are displayed on the guide plate</b>	<p>Near the entrance, men or women is clearly displayed.</p> <p>Men or women, and the feature of the toilet are put on the Braille guide plate at a place that the visually impaired can easily locate.</p> <p>Guide blocks should guide the visually impaired persons to the front of Braille guide plate.</p> <p>The height from the floor to the center of the Braille guide plate should be 140 - 150 cm.</p>	
<b>Urinal</b>	<p>Inside the restroom, build one or more of the floor-setting type urinal or a low lip, wall-hanging type urinal (lip height should be less than 35 cm). Either type should be equipped with a handrail to help cane users keep standing</p> <p>It is best if these are the ones that are closest to the entrance.</p>	<b>Reference 3-2</b>
<b>Toilet bowl</b>	<p>One or more of sitting style stools are built inside the toilet and vertical and horizontal handrails are built around the stool.</p> <p>It is even better to build vertical and horizontal handrails on the wall in front of the Japanese style stool.</p>	<b>Reference 3-3</b>



<b>Wash stand</b>	The washstand should be strong enough to bear one's weight when leaned on, or one can build one or more washstands equipped with a handrail. It is even better to build one about 55-cm above the floor for kids 3-4 years old.
<b>Features for infants</b>	Build a baby-chair inside the toilet stall for persons carrying an infant, one or more in the restroom, or one or more for each of men's room and women's room when they are separate. When there is enough space, they should be installed in more than one stall and it is even better to have one close to the wash stand.
<b>Floor surface</b>	The floor surface should be nonslip. When you build a drainage channel, care should be taken so it does not cause the visually impaired or physically impaired to stumble or be hindered. There should be no difference in the floor level, which can obstruct the motion of the elderly and physically impaired.
<b>Call button</b>	A call button should be installed so that a person can push it while sitting on the toilet seat, in the wheelchair before moving over to the stool, and from a fallen position on the floor. The features of the button include confirmation by a sound or light that the button has been pressed. For the visually impaired to be able to identify the call button by Braille, make its form different from that of the other switches such as the flush. It must be easy to use even for the person having difficulty moving their fingers.

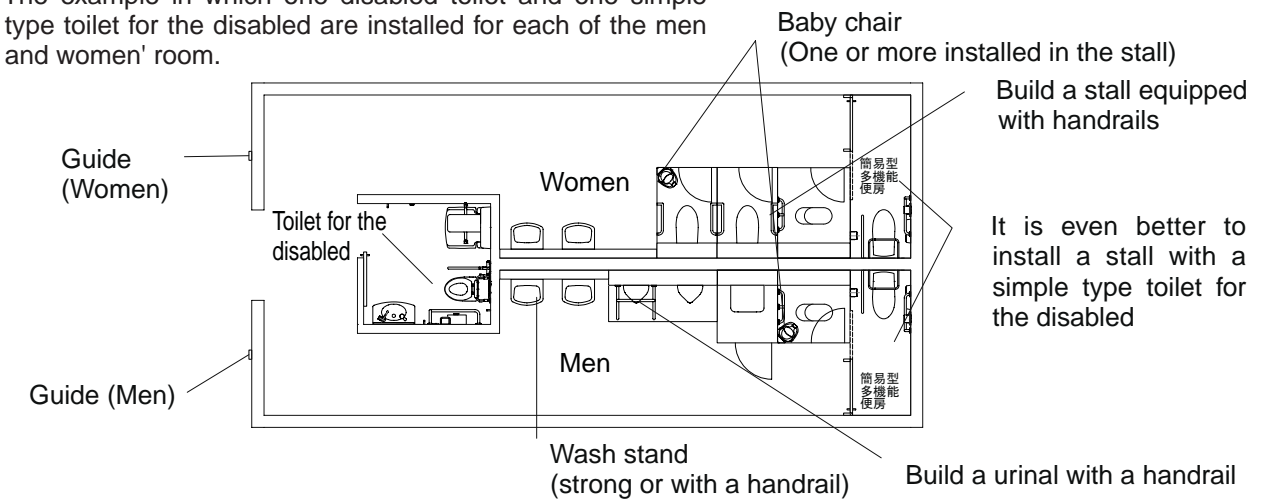
**Reference 3-1: Example of the restroom layout.**

**<Standard plan>**

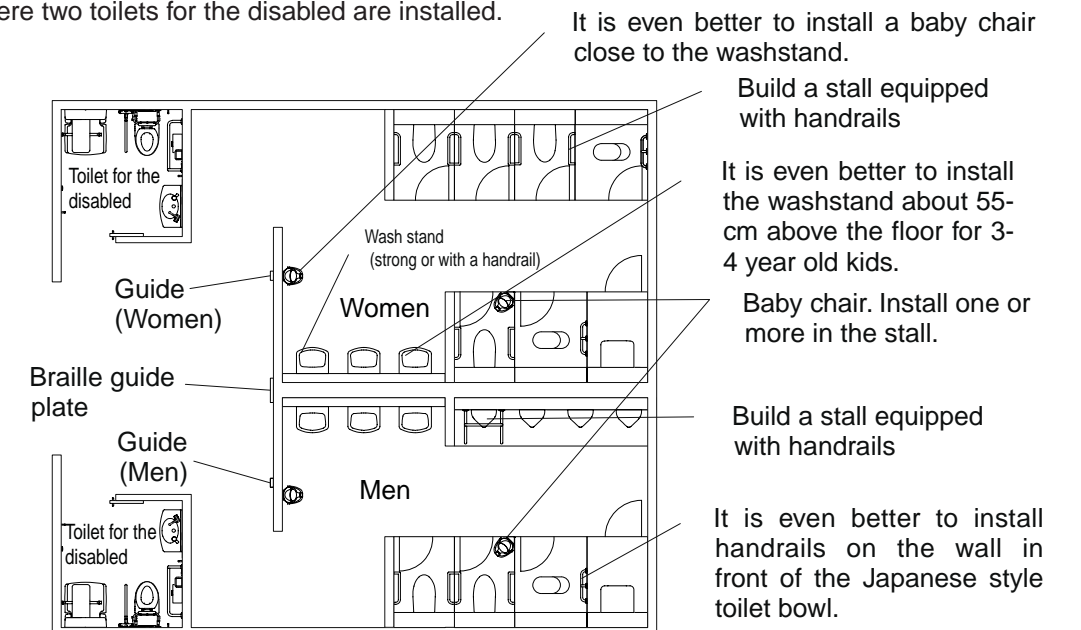


**<The plan that is even better>**

The example in which one disabled toilet and one simple type toilet for the disabled are installed for each of the men and women' room.



The example where two toilets for the disabled are installed.



**Stall with a simple type toilet for the handicapped**

The stall with a simple type toilet for the disabled should have enough space for a small hand-operated chair. The following assumes the total length is about 85 cm and the total width is about 60 cm.

For the type entered from the front, the space should be over 190-cm long, over 90-cm wide, and have an effective width over 80 cm for the entrance. For the type entered from the side, the stall should be over 220-cm long, over 90-cm wide, and have effective width over 90 cm for the entrance.

When you build a stall and have enough space, it is even better to secure the space needed for a standard type hand-operated chair. For this, assume a total length of about 110 cm and total width of about 65 cm.

The space should be the same as that above for the small chair when the stall is entered from the front, but it should be over 220-cm long, over 110-cm wide, and have an effective width over 90 cm for the entrance for stalls entered from the side.

It is even better to put one door grip close to the right end and the other close to the left end of the door inside.

Install a sitting type toilet bowl in the stall with a simple type toilet for the handicapped. The bowl should be designed so that the footrest of the wheelchair does not hit the bowl.

It is even better to install a backrest.

It is even better to install a washbasin for the ostomate to wash their pouch.

Install handrails around the stool and install a washbasin, an emergency call button, and a wastebasket, all of which can be reached when the user is sitting on the toilet or when the user is in their wheelchair before moving over to the toilet seat. The switch of the sink is a hand-flushing type, or the easier-to-use push-button type, or shoe-horn type. As some persons have difficulty using hand-flushing lever, there must be a companion to the push-button or hand-lever handle when you install a hand-flushing type of lever.

It is even better to have the toilet paper within the user's reach when the user is sitting on the toilet or on their wheelchair before moving over to the stool.

Install one or more hooks to hang one's baggage. The shape and the position of each hook should be designed so it does not pose any danger to the face of the user standing on the floor or sitting on their wheelchair.

There should be no level difference on the floor of the stall or at the entrance.

Reference 3-4

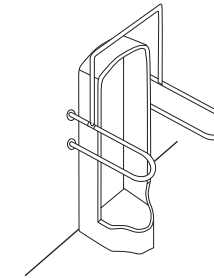
**<Accessibility facilitating standards>**

[Toilets]

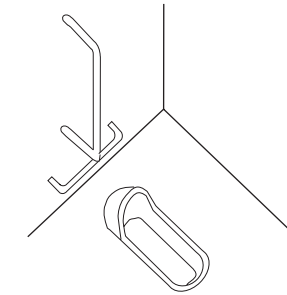
Article 12

1. When a restroom (toilet) is installed, it shall conform to the following standards.
  - 1) There shall be a Braille guide board or other system for the visually impaired near an entrance/exit of the restroom indicating the men's and women's room and the layout of the restroom.
  - 2) The floor shall have a non-slip finish.
  - 3) When a urinal for men is provided, at least one shall be the floor-type.
  - 4) A handrail shall be provided for such a urinal as prescribed in the previous paragraph.

**Reference 3-2:  
Example of the urinal's handrai**

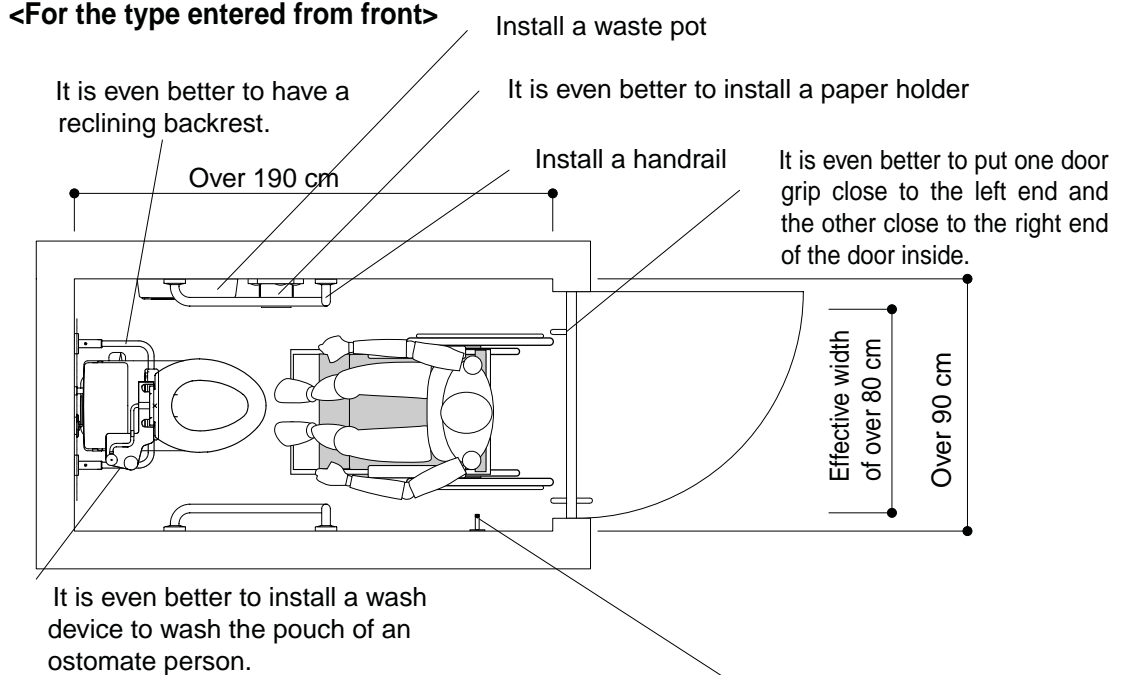


**Reference 3-3:  
Example of the handrail for the Japanese style toilet**

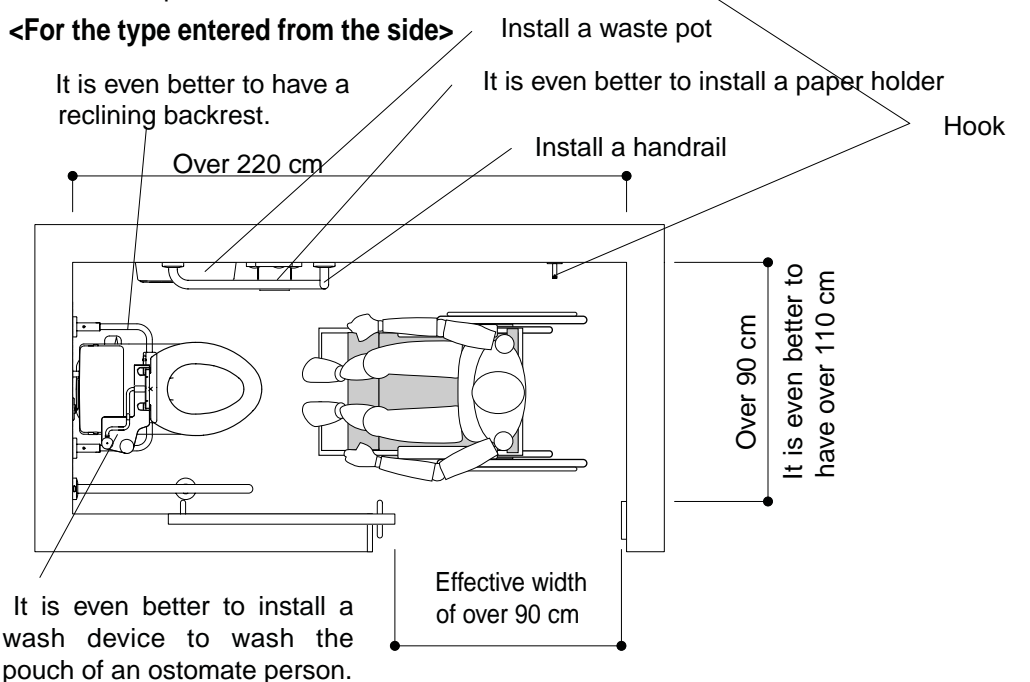


**Reference 3-4: Example of a stall for a simple type toilet for the handicapped**

**<For the type entered from front>**



**<For the type entered from the side>**



### Toilet for the disabled

<b>Guide</b>	At the entrance of the restroom having a toilet for the handicapped, a sign should be posted to indicate that the restroom is usable by the physically impaired, the elderly, pregnant women, and persons carrying an infant	<b>Reference 3-5</b> <b>Reference 3-6</b>
<b>Entrance / exit</b>	Ensure that there is no level difference or other obstacles in the pathway to or entrance/exit of the restroom equipped for the handicapped. Install a Braille guide plate for the visually impaired to easily identify the toilet.	
<b>Door</b>	The door should be either an electromotive sliding door or a sliding door hand-operated with a light pull. The hand-operated door should not automatically close, and the grip should be a handle in a cylinder shape. It is even better to put one door grip close to the right end and the other close to the left end of the door inside. Allow 80 cm for the effective width It is even better to have an effective width of over 90 cm	
<b>Door lock</b>	The door should have a lock that even people who have difficulty in moving fingers can easily use. Also, one should be able to unlock it from the outside in an emergency.	
<b>Door opening and closing disk</b>	The door opening/closing disk should be installed inside the stall and more than 70-cm from the door so that the wheelchair user can operate it after he has fully entered inside the door. The height is about 100 cm. Install a display device to indicate "in use."	
<b>Space dimension</b>	Make sure there is enough space to change the direction of a hand-operated chair. (Standard requirement is 200 cm x 200 cm) For new toilet stalls, make sure there is enough space for one on an electromotive chair to change direction to move over to the stool. (Standard requirement is 220cm x 220cm)	
<b>Toilet bowl</b>	The bowl should be a sitting type. The form of the bowl should be designed so that the footrest of the wheelchair does not hit the bowl, which would make it hard to maneuver the wheelchair. Do not install a lid on the bowl, but put a reclining prop in the back. The height of the bowl should be 40-45 cm. As the person may decide to sit facing the rear of the toilet, clear all devices hindering him from doing that.	
<b>Address ostomate</b>	Install a washbasin for the ostomate to wash their pouch or chamber pot. It is even better to install a filth sink to the above washbasin for washing a pouch and disposing of various filth. When you install the above filth sink, it is even better to install a hot water tap, in case the ostomate wipes his abdomen with paper.	

<b>Handrail</b>	Install a handrail. Fix it tight. Use non-corrosive materials that are easy to grip. Provide more than 5.0 cm between the wall and handrail to allow room for one's hand. The handrail on the wall next to the bowl should be L-shaped. The other handrail should be movable and strong enough to support a person moving from their wheelchair to the bowl. The reach of the movable handrail from the wall should approximately extend to the tip of the bowl. The height of the handrail is 65-70 cm and the distance between the left and right handrails is 70-75 cm.
<b>Accessories</b>	Install the flush switch such that the person can use it either when he is on or near the toilet seat. It should be a hand-flashing sensor type that detects hand motion to activate, hereafter hand-motion type, or an easy-to-use push button, or a type in the shape of a shoe-horn. As some persons have difficulty in using it, when you install a hand-flashing type, either a push button or a hand lever should be installed. It is even better to install a small washbasin near the person so that he can use it while sitting on the toilet seat. It should have a drain release of a simple sensor type or a push button type that can be easily handled. The toilet paper holder should allow the paper to be torn by hand and the person should be able to use it either when he is on the stool or when he is near the stool without moving over to it. Install a hook to hang one's baggage. The shape of the hook should be designed and positioned so that it does not pose any danger to the face of the user standing or sitting on their wheelchair. One or more of them should be usable by a person in a wheelchair. Secure a space to install a shelf to place baggage.
<b>Washbasin</b>	Its form and position should be determined not to hinder the person from moving over to the stool from the wheelchair either from front or from the side. The bottom of the washbasin should be 60-cm above floor and, for the convenience of wheelchair users, make the standard height of the upper end of the basin lower than 80 cm. The installation should have enough strength to bear one's weight when leaned on. The drain plug should be a sensor type or lever type that can be operated by a person disabled in the upper part of their body. It is even better to install a hot water tap for diaper changes and so an ostomate can wipe his abdomen with paper. When installing a hot water tap, it should be designed not to hinder approach by a wheelchair. The mirror should have its bottom end low enough and the top end high enough for a person to use it from either standing on the floor or sitting in a wheelchair.

<b>Filth pot</b>	A filth basket should be installed with a size large enough for a person to throw away a pouch and diapers.
<b>Mirror</b>	It is even better to install a full-length mirror in addition to the mirror at the washstand.
<b>Diaper table</b>	Install a diaper table to be used for changing an infant's diaper. But it is not needed when such sheets are provided in both the men's and women's restrooms. It is even better to install a folding type diaper change sheet for the diaper change of the seriously handicapped. It should have such a design that the person on the wheelchair can reach and fold up the sheet to clear the way for the wheelchair if a previous user forgot to fold it.
<b>Floor finish</b>	The floor should be non-slip even when wet. When you build a drainage channel, design the layout so it does not trip the visually handicapped or physically disabled. There should be no difference in the level of the floor as it obstructs the move of the aged and physically handicapped.
<b>Call button</b>	A call button should be installed so that a person can press it from 1) the toilet seat, 2) the wheelchair before moving over to the toilet, and 3) a fallen position on the floor. It should have a sound or light to confirm that the button has been pressed. For the visually handicapped to be able to identify the call button by Braille, make its form distinct from the other switches. It must have a form easy to use even for a person having difficulty moving their fingers

**<Accessibility facilitating standards>**

[Toilets]

Article 12

2. At least one of the restrooms, when installed, shall conform to one of the following standards.

- 1) A toilet booth with barrier-free access shall be provided for wheelchair users, the aged, the physically impaired and the like, one each for men and women if they are separated.
- 2) A restroom shall have the structure with barrier-free access for wheelchair users, the aged, the physically impaired and the like.

Article 13

1. A restroom with a toilet booth as prescribed in Article 12 Item 2-1) shall conform to the following standards.

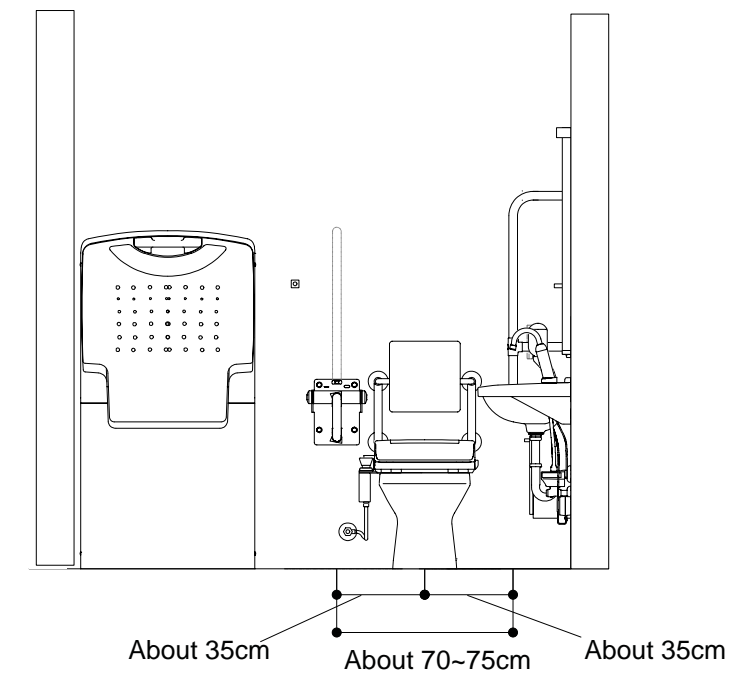
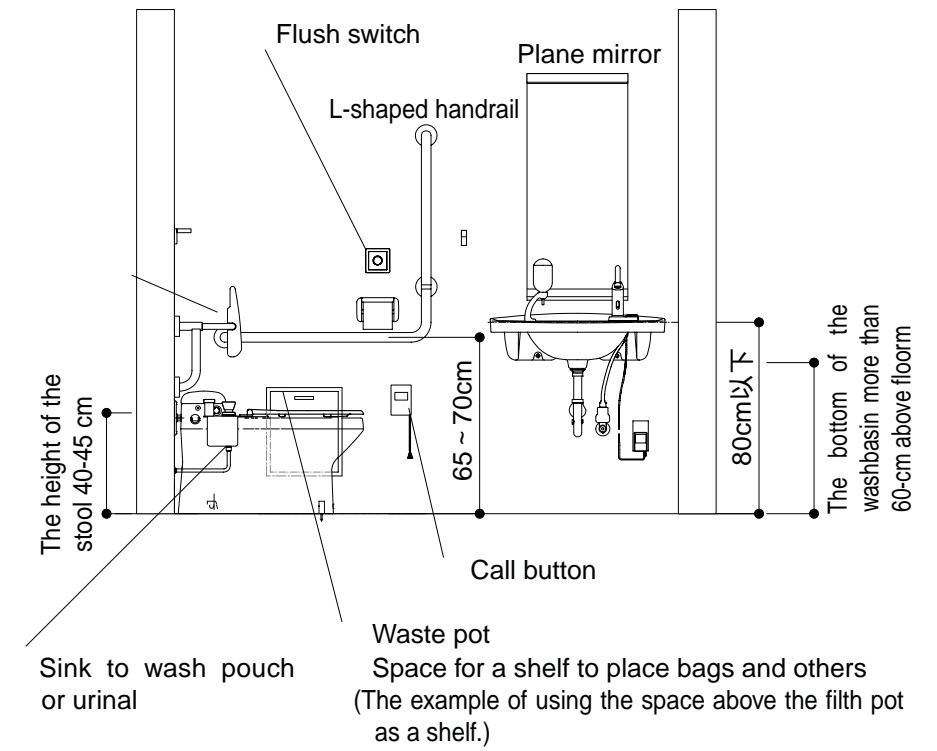
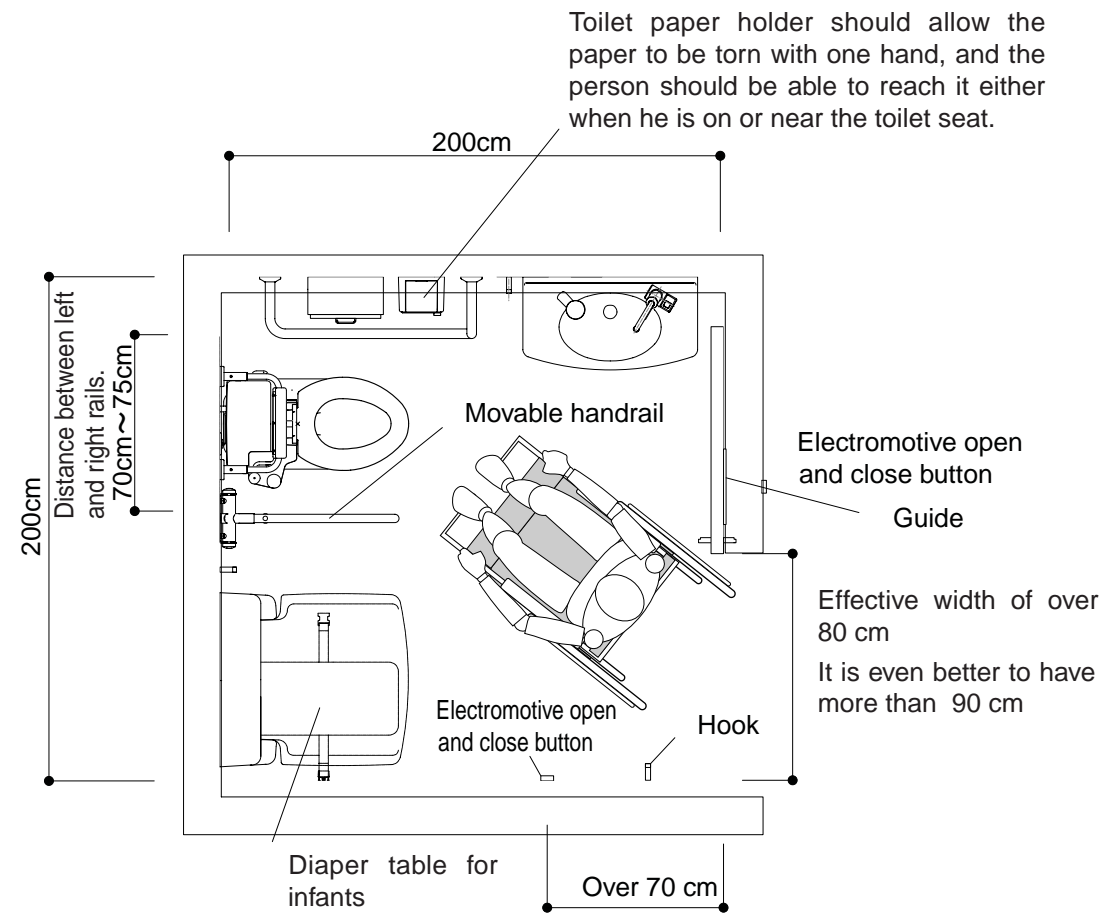
- 1) At least one passage between a pathway with barrier-free access and the pathway to a restroom shall conform to standards prescribed in Article 4 Item 5.
- 2) The effective width of the entrance/exit shall be 80 cm or more.
- 3) There shall be no level difference at the entrance that hinders the passage of wheelchair users. However, this does not apply when there is a ramp.
- 4) There shall be a display at the entrance showing that there is a toilet booth with barrier-free use for wheelchair users, the aged, the physically impaired and the like.
- 5) When a door is provided at the entrance, it shall conform to the following standards.
  - i) The effective width shall be 80 cm or more.
  - ii) The door shall have a structure for wheelchair users, the aged, the physically impaired and the like to open/shut and pass easily.
  - iii) A toilet booth shall have a sufficient space for a wheelchair user.

2. A toilet booth prescribed in Article 12 Item 2-1) shall conform to the following standards.

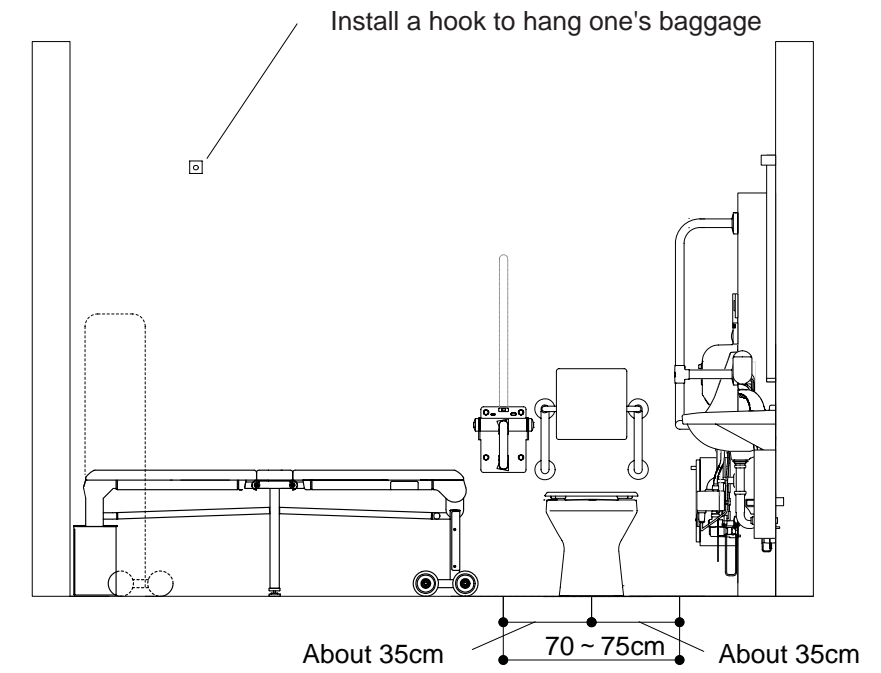
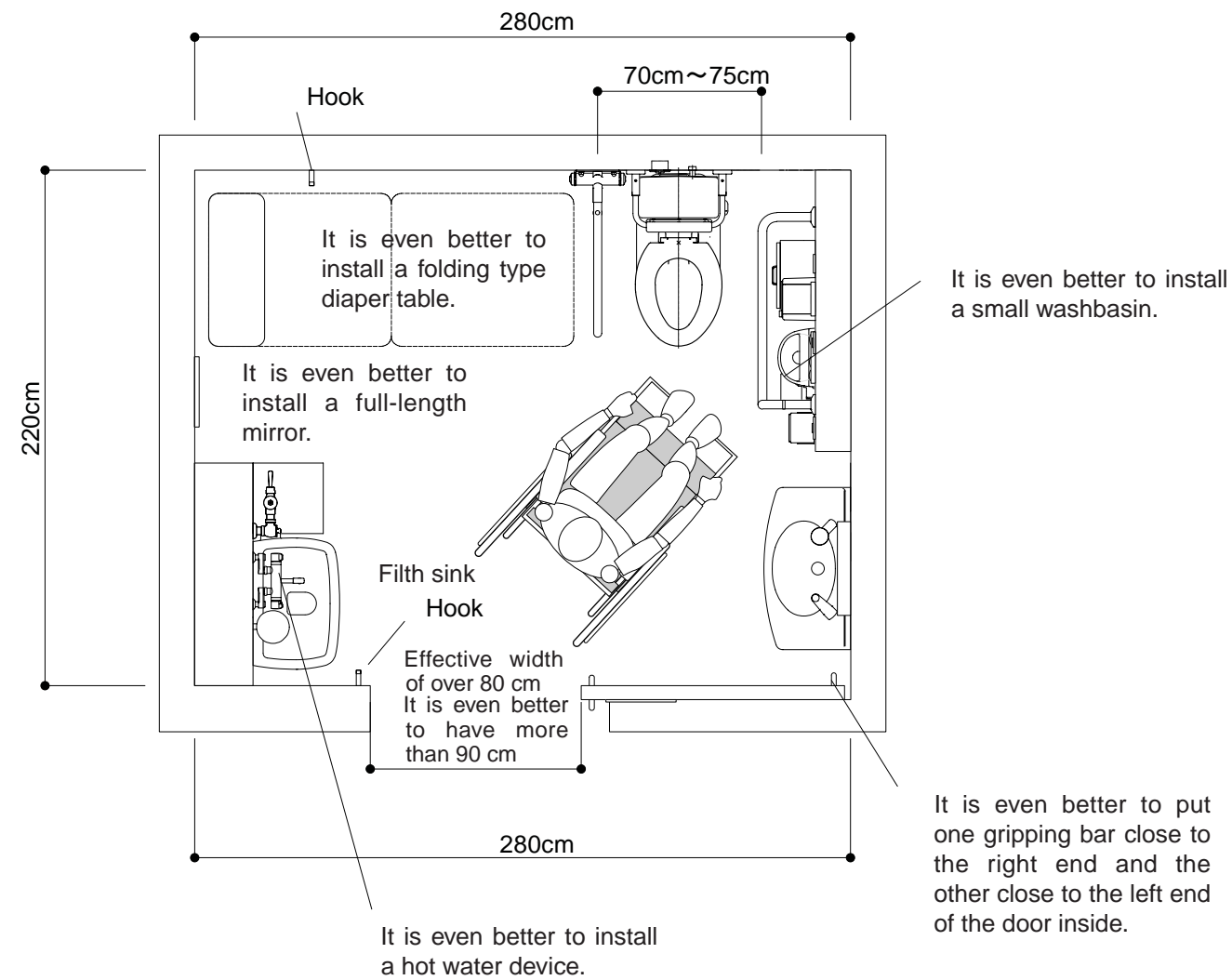
- 1) There shall be no level difference at an entrance that hinders the passage of wheelchair users.
- 2) There shall be a display at an entrance that shows there is a toilet booth with barrier-free use for wheelchair users, the aged, the physically impaired and the like.
- 3) A toilet seat and a handrail shall be installed.
- 4) A toilet booth with a barrier-free structure shall be provided for wheelchair users, the aged, the physically impaired and the like.

3. Items 1-2), 1-5) and 1-6) shall be applied correspondently to the toilet booth prescribed in the previous paragraph.

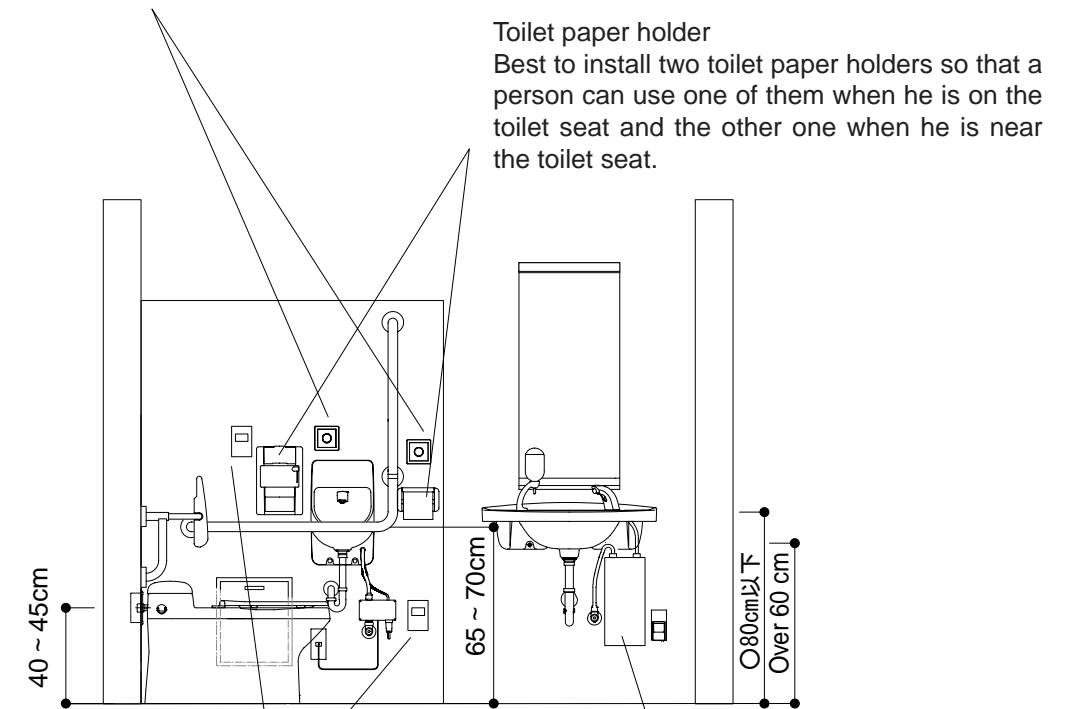
Reference 3-5: The example 1 of the toilet for the handicapped (a standard plan)



Reference 3-6: Example 2 of a handicapped toilet (an even better plan)



Install a flush switch  
Best to install two switches so that a person can handle one of them when he is on the toilet seat or the other when he is near the toilet seat.



Install a call button  
Best to install two call buttons so that the person can use one of them when he is on the toilet seat and the other one when he is near the toilet seat.

It is even better to install a hot water device.

## 2. Ticket Selling Office and Information Desk

Ticket counters for selling tickets and the information booth are often troublesome for wheelchair users, especially in regard to the height of the counter and the space under the counter. We must design the lower part of the counter not to hit the knee of a wheelchair user and not hit the footrest of a wheelchair.

### <Guideline>

<b>Space under the counter</b>	Part of the lower space for the ticket selling and information counter should be over 60-cm high, with the counter lip overhang the lower wall by at least 40 cm.	Reference 3-7
<b>Guidance for the visually handicapped</b>	Guide blocks should be put at the ticket and information counter to guide the visually handicapped.	
<b>Guide for the hearing-impaired</b>	Be prepared with a memo paper for communication by writing with the hearing-impaired.	
<b>Height</b>	Part of the ticket-selling and information counter should have the height of about 75 cm for discussions with wheelchair users.	
<b>Depth</b>	The counter should overhang by 30-40 cm, considering the communication with a wheelchair user.	

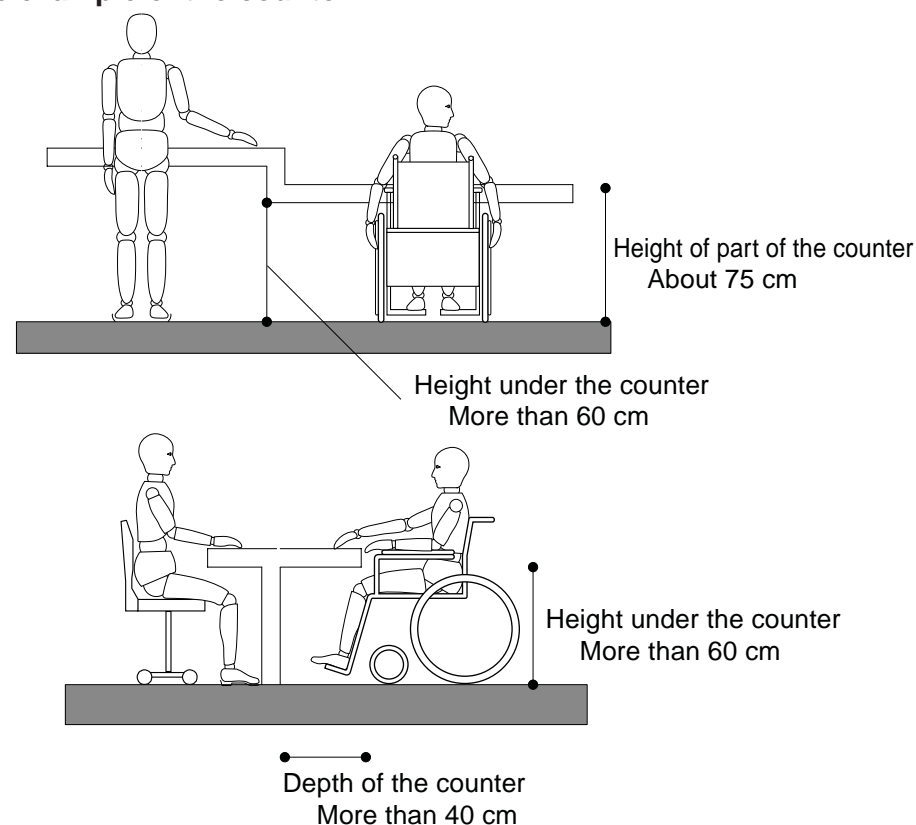
### <Accessibility facilitating standards>

[Ticket selling place, waiting room, and information office]

Article 15

1. When a ticket selling places are installed, at least one of them shall conform to the following standards.
- 3) At least one of the counters, when provided, shall have a structure for wheelchair users to use easily. However, this rule does not apply when an attendant is always available outside the counter.
2. The above items also apply to waiting rooms and information offices.

### Reference 3-6: The example of the counter



## 3. Ticket Machine

If the coin slot of the ticket machine is too high, many of the aged or wheelchair users are denied of its use. Thus, one should consider lowering the height of at least one machine. Also a space under the counter is needed for the wheelchair user to approach the machine with ease. For easiness of handling, a ten-key board or something else should be installed because a touch-panel cannot be handled by the visually handicapped.

### <Guideline>

One or more ticket machines should have the following features.		Reference 3-8
<b>Height</b>	Coin slot position should allow the wheelchair user to reach it with ease.	
<b>Coin slot</b>	It is even better for the height of the coin slot to be about 110 cm. The coin slot should be able to accept more than one coin at a time.	
<b>Space under the counter</b>	Install a space under the counter more than 60 cm in height at the lower part of the counter for the wheelchair user to easily approach the machine.	
<b>Button</b>	Main buttons should be arranged around the center point and about 110-cm high. An intercom or call button should be placed at the height and with the design for a person to use them with ease.	
A ticket machine specially advertised to attract the visually handicapped should have the following features.		
<b>Braille expressions</b>	Braille tape should be pasted on the main buttons such as for the fare. Braille can be put on the button itself. But if there is a risk of pushing the button by error, the tapes may be put next to the buttons. The bond should be strong and not easily removed.	
<b>Button</b>	It is even better to have a relatively bright fare display on the Braille button for the benefit of the people with weak eyesight.	
<b>Braille fare table</b>	Install a Braille fare table adjacent to the ticket machine. In the Braille fare table, use letters as large as possible to indicate the contents for the benefit of people with weak eyesight.	
<b>Ten-key</b>	If a touch-panel type is installed, ten-key with Braille expression should be installed. A voice guide should be installed to the ticket machine to which the ten-key is installed.	

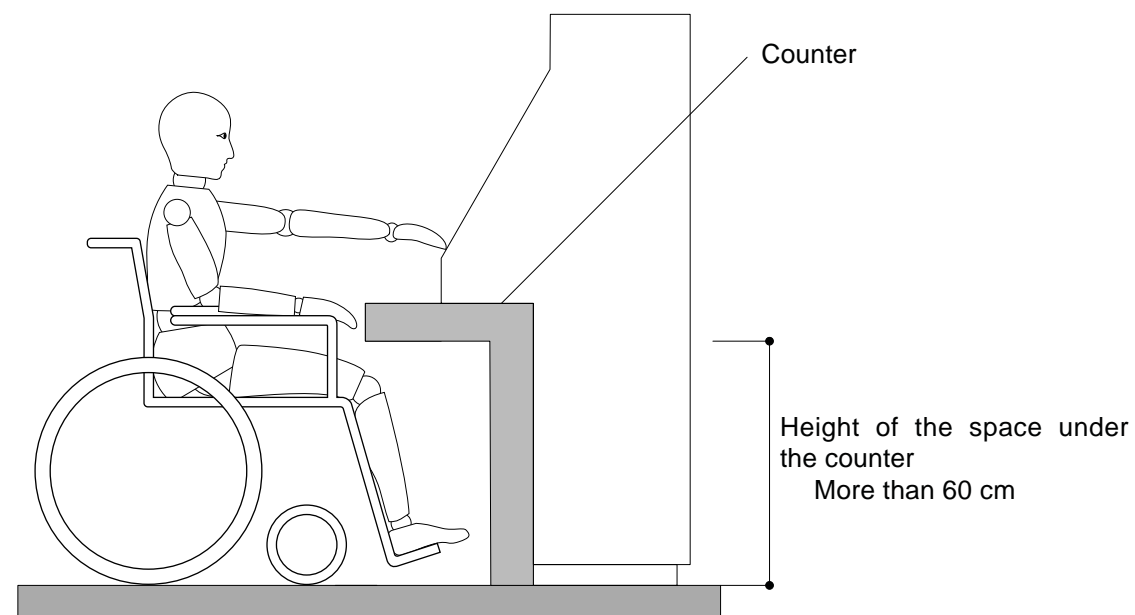
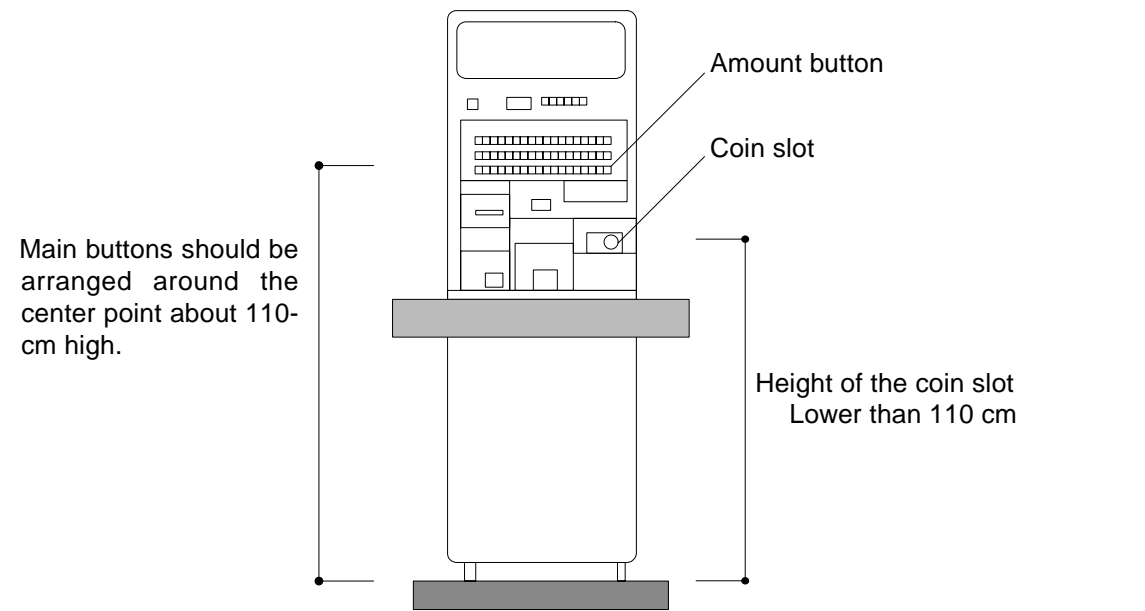
### <Accessibility facilitating standards>

[Ticket machine]

Article 16

1. When a ticket machine is provided at a ticket selling place, at least one of them shall have a structure that facilitates accessibility by the aged, the physically impaired and the like. However, this rule does not apply when ticket-selling personnel are always attending a ticket window.

**Reference 3-7: The example of the ticket**



Install a space under the counter for the wheelchair user to approach the machine with ease.

## 4. Facilities for Rest

Because of the size of large-scale passenger facilities, it is necessary to install facilities for the aged, physically handicapped, or pregnant women to use for resting. Also it is better to install facilities for passengers with an infant companion. In addition, it is better to have facilities for calm rest in case there are people who suddenly became ill. A public phone booth denies the use of the wheelchair user due to the position of the coin slot and the dial is too high. Also, the visually handicapped, hearing-impaired, aged and foreigners generally have difficulty in using the telephone. Something should be done to improve this situation, although it is up to the communication company to install telephones and arrange the conditions for mobile phones.

**<Guideline>**

<b>Benches, seats</b>	Install benches for the rest along the major routes so that they do not get in people's way.
<b>Drinking stand</b>	When installing a drinking stand, ensure that it does not get in people's way. It should be 70-80-cm high and 35-40-cm long, if fixed to the wall, for the convenience of the wheelchair user.
<b>Breast feeding room</b>	Arrange a place with baby beds and a hot water tap for breast feeding and diaper changing.
<b>First aid station</b>	It is even better to set up a first aid room where people with sudden illness or injury can rest.
<b>Environment Lightness</b>	In the main facilities within the passenger facilities, adequate lighting should be provided for the aged and disabled to see things clearly.
<b>Telephone</b>	When installing a phone booth, pay attention not to get in people's way.
<b>Height</b>	Telephone stand should be about 70 cm and the bottom of the stand should be more than 60-cm above the floor for at least one telephone device.
<b>Height of buttons, etc.</b>	Position of the dial and buttons should be 90-100-cm above the floor.
<b>Space under the counter</b>	Inside depth of the space under the counter should be more than 45 cm.
<b>Telephone equipment</b>	It is even better for one or more telephone devices to be equipped with a voice amplifier. A guide to use it should be placed at an obvious position. Install a telephone capable of an English display in passenger facilities popular with foreigners.
<b>FAX equipment &amp; Communication environment</b>	It is even better to install a public FAX that can be freely used by the hearing-impaired to communicate with the outside, and create an environment to make mobile and PHS usable.

**<Accessibility facilitating standards>**

[Resting facility]  
Article 17

1. At least one resting facility shall be installed for the aged, the physically impaired and the like. However, this rule does not apply when such a facility hinders the smooth flow of passengers.