

# **Enabling Accessibility Fund: Flat Rate Information, 2025-2026** Large print, braille, MP3 (audio), e-text and DAISY formats are available on demand by <u>ordering online</u> or calling 1 800 O-Canada (1-800-622-6232). If you use a teletypewriter (TTY), call 1-800-926-9105. © His Majesty the King in Right of Canada, 2025 $For information \ regarding \ reproduction \ rights: {\color{blue}\underline{droitd auteur.copyright@HRSDC-RHDCC.gc.ca.}}$

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# Flat rate description for construction projects

When applying to the Enabling Accessibility Fund, an interactive calculator guides you through a series of options. This will help you determine the amount of eligible funding for:

- ramps
- accessible doors
- accessible washrooms
- accessible lifts
- elevators
- pool lifts
- multi-sensory environments
- accessible playgrounds
- accessible parking
- accessible drop-off areas
- accessible electric vehicle charging stations
- accessible kitchens
- accessible drinking fountains and hand-wash stations
- accessible multi-purpose rooms

# **How do flat rate costs work**

The flat rate costs take many factors into consideration, such as:

- the essential items and components needed to meet accessibility standards
- the fair market value for materials and labour
- the construction materials that are standard commercial grade
- project location
- necessary permits and professional fees

# **How will project location impact funding amounts**

Flat rate adjusts costs based on the project location. Using the Region tool in the calculator, you will enter the postal code of your project location, and the tool will assign a Region to your project accordingly. Flat rate costs will adjust based on how remote your project location is or how difficult it is to access.

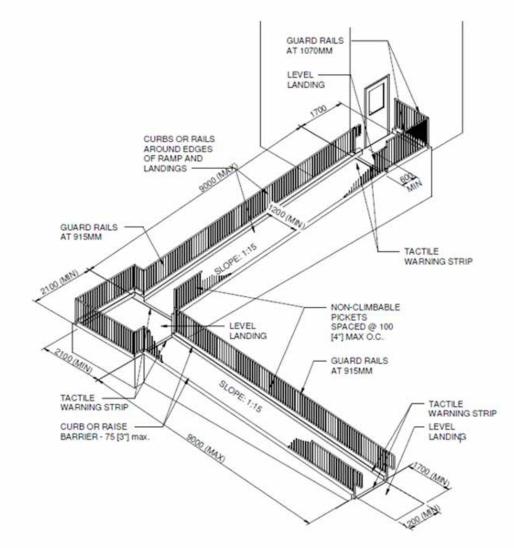
# **Project planning and contingency**

The flat rate costing model provides cost estimates with plus or minus 20% accuracy, as they are based on Class D estimates. Refer to this <u>manual</u> for more information on the difference between Class A, B, C, and D estimates. As a result, we recommend that you have a contingency budget of approximately 20% of your total project costs to offset unexpected costs. If you have remaining funds following the completion of your project, we will work with you to find additional accessibility features to add to your project, up to the approved value in the agreement you signed with ESDC. In addition, unexpected situations and costs are common with construction projects. We recommend that you consult certified professionals to scope your project.

**Please note:** Supply chain issues and labour shortages have the potential to impact construction projects beyond normal industry standards. Additional due diligence confirming project timelines, scope and costs with certified professionals is recommended when planning your accessibility project.

# **Ramps**

Figure 1: Ramps



Source: Figure 34(a), CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

A ramp is a slope or incline joining 2 different levels, at the entrance or between floors of a building. Ramps allow wheelchairs and other mobility aids to more easily access a building or navigate between areas of different heights. Along the ramp, there are safety features such as curbs, guard rails, handrails, pickets, and tactile warning strips.

These features help people go up and down the ramp safely. For example, tactile warning strips indicate the change in flooring at the entrance of the door and where the ramp curves:

- the grade of the ramp is no more than 1:15
- the width is a minimum of 3'9" (1200 mm) wide
- guard rails are 3' (915 mm) high
- pickets are no more than 4" (100 mm) apart

# Ramps include:

- ramp and landings
- curbs, guard rails, handrails and pickets
- structural framing

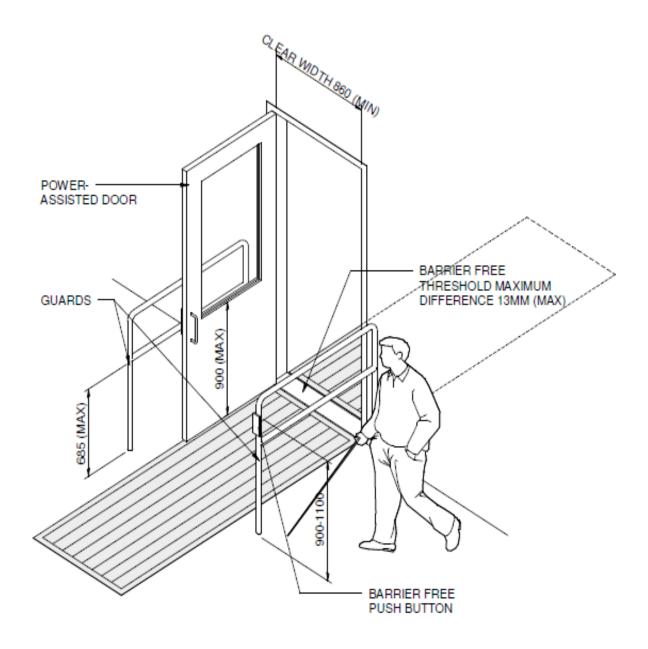
- tactile warning/colour contrasting strips
- supportive foundation

# Optional accessibility feature:

• weather cover for exterior ramp

# **Accessible doors**

Figure 2: Accessible doors



Source: Figure 23, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

Accessible doors have windows low enough for persons in assistive devices, such as wheelchairs and scooters, to be seen from the other side. They have an automatic door operator with push button or sensor controls powered by electricity. The controls are located either on a guard rail or wall. Guards or guard rails are on either side of the door, and are an optional accessibility and safety feature for persons with visual or mobility disabilities. Painting the door and door frame in contrasting colours helps with depth perception for those with visual disabilities.

If you are retrofitting or building a double door, please only enter 1 door into the calculator. The EAF only funds accessibility improvements to 1 out of the 2 doors.

### **Exterior doors include:**

- insulated door with insulated glass window
- insulated steel frame
- door hardware set

- automatic door operator and controls
- electrical power connection
- colour contrasting painting and finishing

### Interior doors include:

- non-insulated hollow metal door with non-insulated glass window
- non-insulated pressed steel frame
- door hardware set

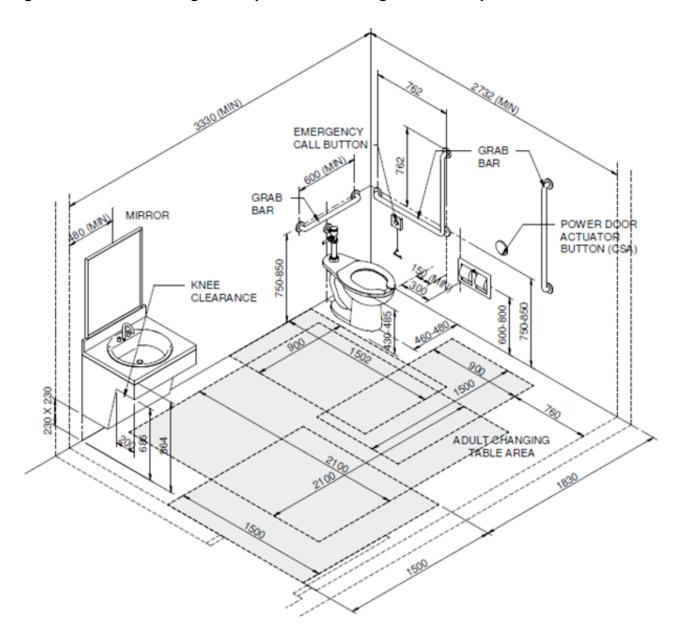
- automatic door operator and controls
- electrical power connection
- colour contrasting painting and finishing

# **Optional accessibility feature:**

cane detectable guardrails

# **Accessible washrooms**

Figure 3: Accessible single occupant washroom general floor plan



Source: Figure 49(a), CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

The size of an accessible single occupant washroom is approximately 9' by 10'11" (2732 mm by 3330 mm). The sink or vanity has space underneath for a person with an assistive device to fit their knees. Insulated pipes protect the knees from the hot water supply. Beside the sink, there is a clear area for a person to move from their assistive device onto the toilet, which has a backrest and is surrounded by grab bars for support. Walls painted in a different colour than the door frames, floor, adjacent wall, or plumbing fixtures helps with depth perception for those with visual disabilities.

### Accessible washrooms include:

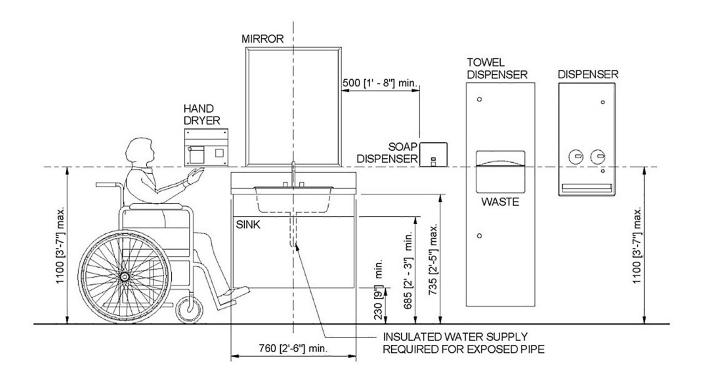
- barrier-free toilet with 2 grab bars
- barrier-free sink and vanity with knee protection
- accessible angled mirror
- washroom accessories:
  - soap dispenser
  - toilet paper dispenser
  - automatic paper towel dispenser or hand dryer
  - napkin disposal
- sound insulation for walls and colour contrasting paint
  - does not include new wall construction, only includes sound insulation and colour contrasting paint for new or existing walls
  - sound insulation to a minimum rating of STC 42<sup>1</sup>
- non-slip flooring
  - minimal glare, no strong visual patterning
  - colour contrasted to walls, door, etc.

- optimised HVAC (above code minimums)
  - improved air quality
  - acoustic absorption to a minimum rating of STC 45 and CAC 40¹
  - in room controls at accessible level
- optimised lighting (above code minimums)
  - anti-glare lighting with dimmer
  - in room controls at accessible level
- optimised electrical (above code minimums)
  - occupancy sensor
  - increased capacity for receptacles and circuits
  - minimum of 4 duplex receptacles in room
- room signage with text, graphic, and braille
  - directional wayfinding sign placed elsewhere to direct users

### **Optional accessibility features:**

- accessible urinal
- emergency call button
- power assisted adult change table
- barrier-free shower
- automatic door operator with controls and electrical hookup

Figure 4: Washroom accessory heights



Source: Figure 44, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

All washroom accessories are approximately at eyesight level for wheelchair users. The sink's insulated water supply and drainpipes protect persons in wheelchairs from leg injuries.

### **Accessories include:**

- an automatic hand dryer
- a soap dispenser
- an automatic paper towel dispenser
- waste bin
- a dispenser for various items (for example, menstrual products)

2120 820 (MIN) CLEAR 2100 460 (MIN) 460 (MIN) AREA 860 MIN 30 (MIN 1390 (MIN) CLEAR CLEAR 1500 (MIN) 2100 MIN 600 (MIN) AREA AREA 1200 CLEAR AREA 1700 (MIN) 2100 MIN 860 (MIN) 330 1500 (MIN) 900 (MIN) 460-480 1600 (MIN)

Figure 5: Multi-stall washroom with accessible stall general floor plan

Source: Figure 42(a), CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

The size of the multi-stall washroom with an accessible stall is approximately 90 sq ft (8.4 sq m). There are clear areas that separate the sinks and the stalls. This gives enough space for a person with an assistive device, such as a wheelchair, to move around.

### The barrier-free stall has:

- a door that opens outward, which provides space for a person with an assistive device to enter the stall
- a "D" type door pull on the inside and one on the outside

### Accessible stalls include:

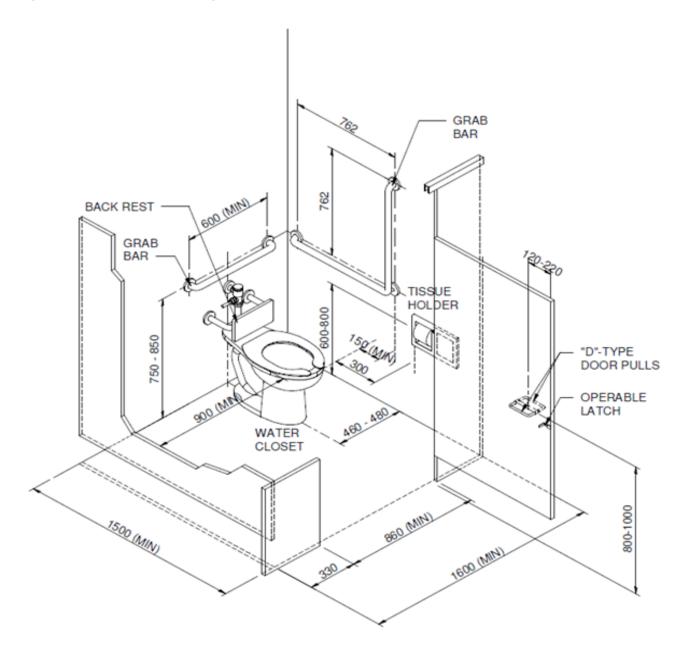
- barrier-free toilet with 2 grab bars
- barrier-free sink and vanity with knee protection
- accessible angled mirror
- washroom accessories
  - soap dispenser
  - toilet paper dispenser
  - automatic paper towel dispenser or hand dryer
  - napkin disposal
- sound insulation for walls and colour contrasting paint
  - does not include new wall construction, only includes sound insulation and colour contrasting paint for new or existing walls
  - sound insulation to a minimum rating of STC 42<sup>1</sup>
- non-slip flooring
  - minimal glare, no strong visual patterning
  - colour contrasted to walls, door, etc.

- optimised HVAC (above code minimums)
  - improved air quality
  - acoustic absorption to a minimum rating of STC 45 and CAC 40¹
  - in room controls at accessible level
- optimised lighting (above code minimums)
  - anti-glare lighting with dimmer
  - in room controls at accessible level
- optimised electrical (above code minimums)
  - occupancy sensor
  - increased capacity for receptacles and circuits
  - minimum of 4 duplex receptacles in room
- room signage with text, graphic, and braille
  - 1 directional wayfinding sign placed elsewhere to direct users

### **Optional accessibility features:**

- accessible urinal
- emergency call button
- power assisted adult change table
- barrier-free shower
- automatic door operator with controls and electrical hookup

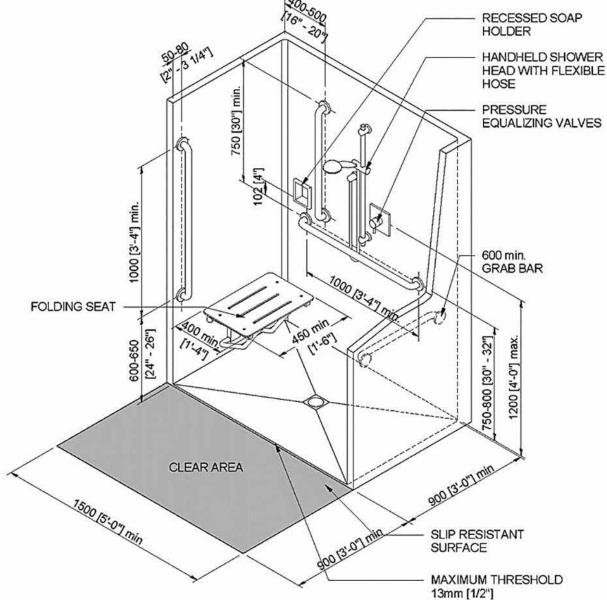
Figure 6: Accessible stall general floor plan



Source: Figure 46, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

The accessible stall has a door that opens outward with a "D" shape door pull on the outside to accommodate a wide range of users, including persons with assistive devices.

Figure 7: Barrier-free shower general floor plan



Source: Figure 51, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

### Accessible showers include:

- shower kit
  - handheld shower head and accessible controls
- recessed soap holder

- folding seat
- 4 grab bars
- non-slip flooring

# **Accessible lifts**

Figure 8: How to choose between an accessible lift and an elevator to best suit your access needs

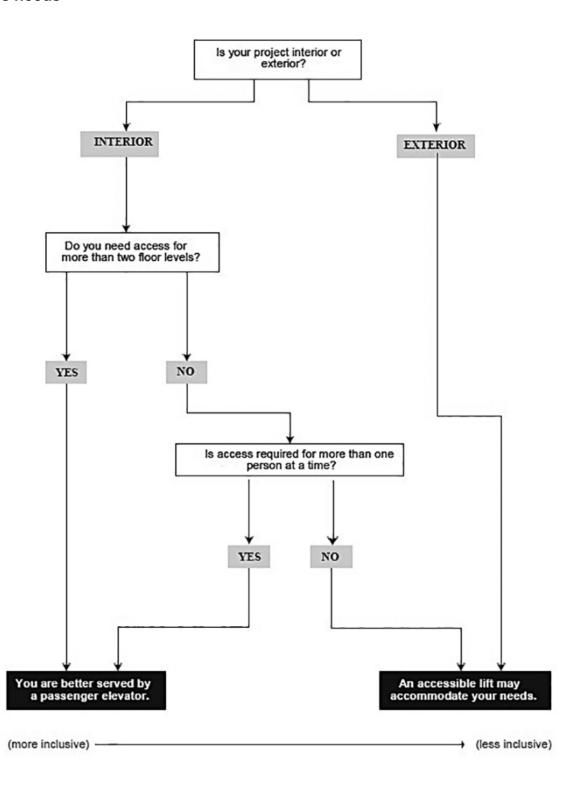
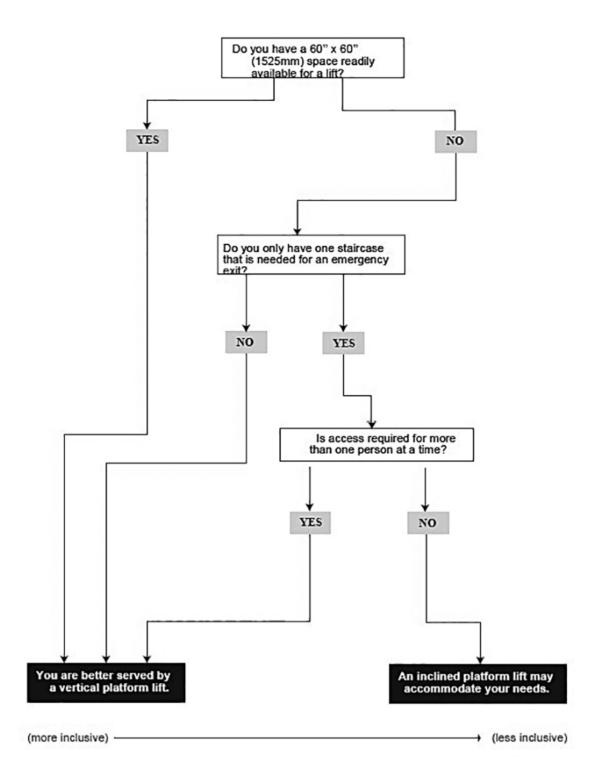


Figure 9: How to choose the accessible lift that best suits your accessibility needs



Call Station Drive System Audio-Visual Alert Upper Stop (Min Clearance) Intermediate Landing Inclined Rails Call Station Platform Lift (Max Height)

Figure 10: Inclined platform lift

Source: NBC 2015 / CSA/ASC B651:23 / CSA B355:19

A platform lift is attached by inclined rails to sets of stairs. At the bottom of the stairs is a call station button for assistance when needed. At the top of the landing is an audio visual alert to let people know the lift is in use. At the top of the second flight of stairs is another call button as well as the drive system machinery.

# Interior and exterior platform lifts include:

- platform lift unit
- controls

- inclined rails
- electrical power connection

Lower Stop

# **Optional accessibility features:**

- fire alarm integration
- lighting

- fold-down seat with seatbelt
- directional braille signage

Upper Stop

Enclosure Door
Lift Platform

Lift Platform

Lift Platform

Lift Platform

Lift Platform

Lift Platform

Figure 11: Vertical platform lift (with enclosure option)

Source: NBC 2015 / CSA/ASC B651:23 / CSA B355:19

Lower Stop

# Vertical platform lifts include:

- platform lift unit
- controls
- electrical power connection

- pit
- lift mast

For lifts that are over 8' (2.5 m) or exposed to rain and snow, an enclosure will be automatically calculated in the flat rate cost.

# **Optional accessibility features:**

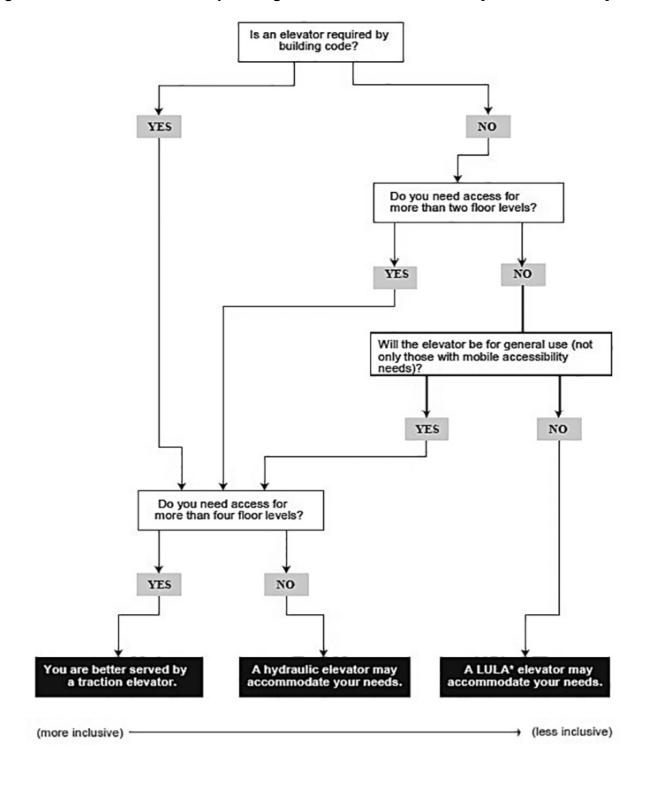
- fire alarm integration
- lighting

• directional braille signage

# **Elevators**

A panel of elevator controls should be located at eyesight level for better accessibility for persons with assistive devices, such as a wheelchair.

Figure 12: How to choose the passenger elevator that best suits your accessibility needs



Upper Stop

Hoistway Enclosure
Elevator Doors
Elevator Cab

Lower Stop

Lower Stop

Figure 13: Limited use, limited application elevator

Source: NBC 2015 / CSA/ASC B651:23 / CSA B44:16

LULA elevators provide direct vertical access between two or more levels. The elevator cab can accommodate a limited number of occupants. These elevators require smaller pits and machine rooms, and are suitable for confined spaces.

# Limited use, limited application elevators include:

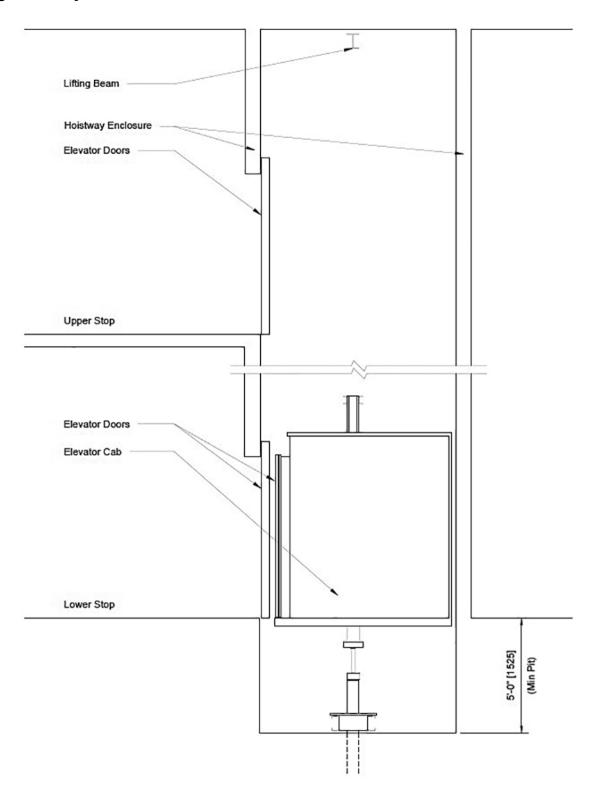
- doors
- controls
- hydraulic cylinder, motor and tank
- rails
- electrical power connection

- pit
- machine room
- hoist way (the enclosure of an elevator or shaft)
- elevator cab where the passengers ride

# Optional accessibility feature:

• directional braille signage

Figure 14: Hydraulic elevator



**Source:** NBC 2015 / CSA/ASC B651:23 / CSA B44:16

Hydraulic elevators provide direct vertical access between two or more levels. The elevator cab can be sized to accommodate a range of occupants. These elevators are suitable for low to mid-rise applications (up to approximately five stops).

# Hydraulic elevators include:

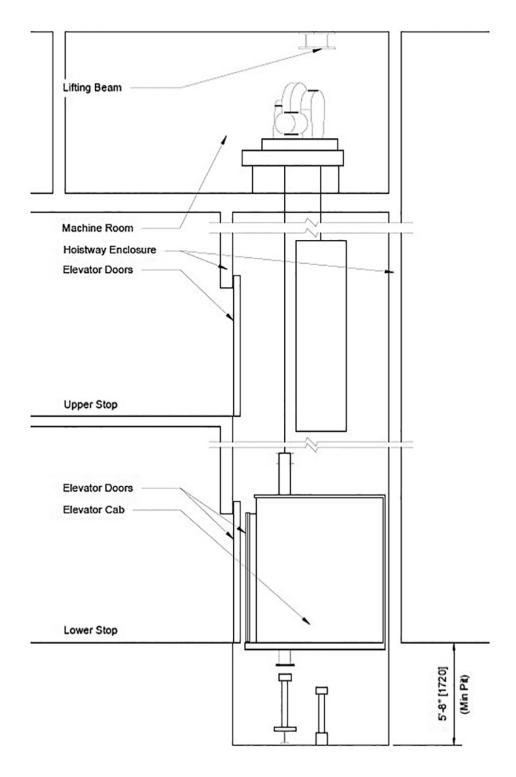
- doors
- controls
- hydraulic cylinder, motor and tank
- guide rails
- hoist way (the enclosure of an elevator or shaft)
- electrical service
- pit, fixed ladder, drain and sump
- machine room
- elevator cab with handrail and emergency telephone

# **Optional accessibility features:**

- directional braille signage
- hearing loop

fold-down seat

Figure 15: Traction elevator



**Source:** NBC 2015 / CSA/ASC B651:23 / CSA B44:16

Traction elevators provide direct vertical access between two or more levels. The elevator cab can be sized to accommodate a range of occupants. These elevators are suitable for mid to high-rise applications (approximately five or more stops).

### **Traction elevators include:**

- elevator cab with handrail and emergency telephone
- doors
- controls
- motor, counterweight
- guide rails
- suspension ropes
- travelling cable

- hoist way (the enclosure of an elevator or shaft)
- lifting beam
- electrical service
- pit
- fixed ladder, drain and sump
- machine room

# **Optional accessibility features:**

- directional braille signage
- hearing loop

fold-down seat

# **Pool lifts**

Figure 16: How to choose the pool lift that best suits your accessibility needs

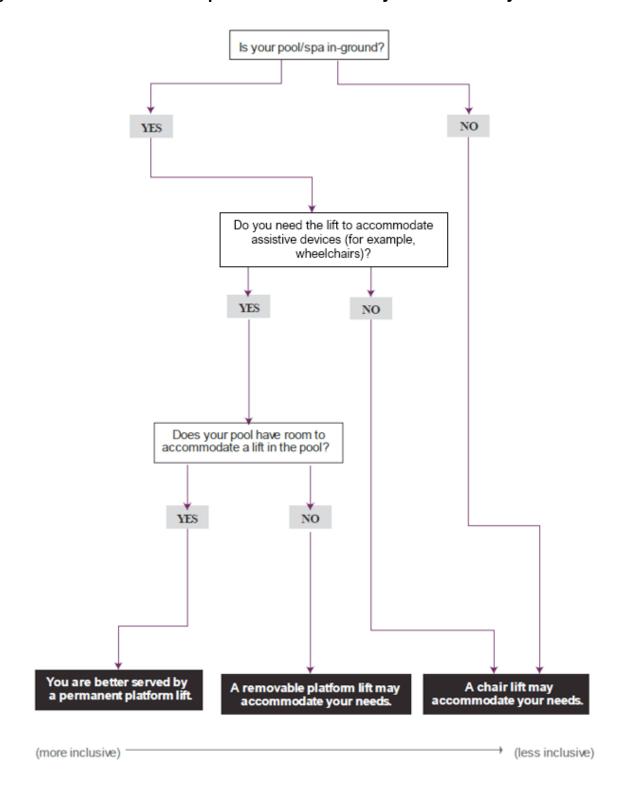
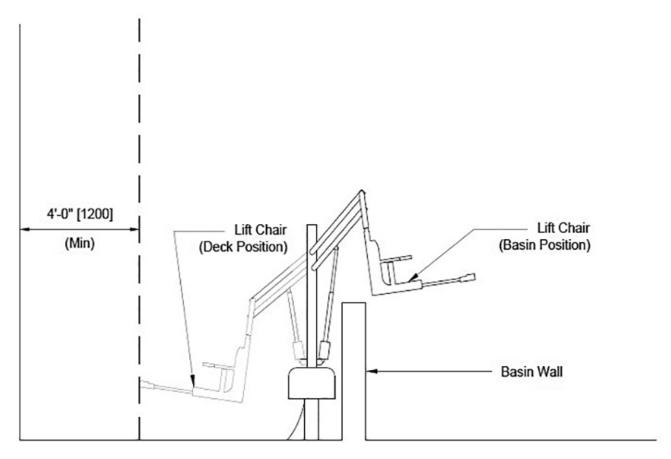


Figure 17: Above-ground pool chair lift



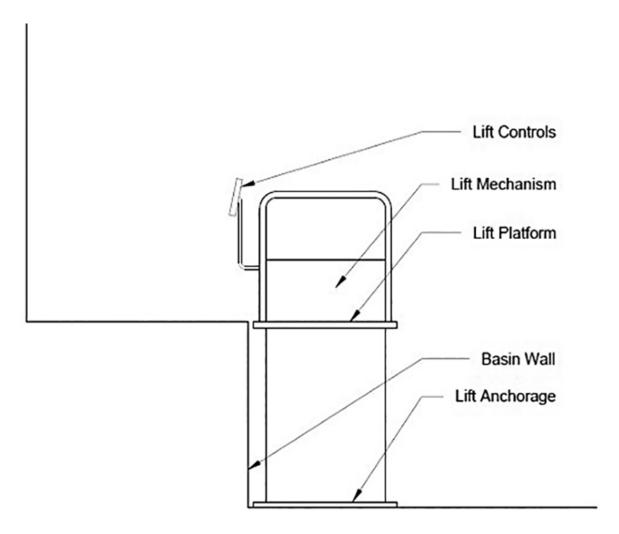
Source: NBC 2015 / CSA/ASC B651:23

A pool chair lift is a hard seat designed to carry a person in a seated position from the pool deck to the above-ground or in-ground pool. The chair swivels and lowers close to the basin wall to allow the person to exit.

# Above-ground and in-ground pool chair lifts include:

- chair lift unit
- pool deck anchor

Figure 18: Permanent in-ground pool lift



Source: NBC 2015 / CSA/ASC B651:23

Platform pool lifts provide direct access between the pool deck and in-ground pool. The lift platform is designed to carry a person with a mobility device, so they can easily and autonomously get into the water. The lift controls can be operated by the occupant or attendee. The lift mechanism lowers the lift platform into the water along the edge of the basin wall.

# Permanent and portable platform pool lifts include:

- platform lift unit
- pool deck anchor
- pool wheelchair

# **Multi-sensory environments**

Where possible, a multi-sensory room is the preferred environment to create a controlled space that is adaptable to the needs of a variety of participants.

Figure 19: How to choose the multi-sensory space that best suits your accessibility needs

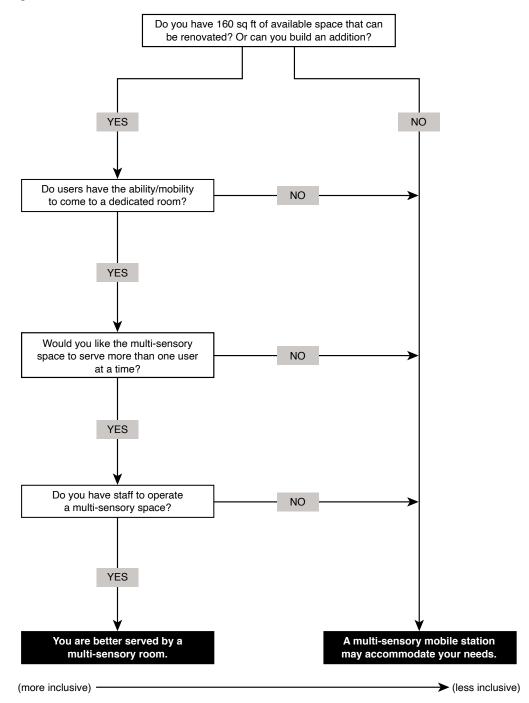
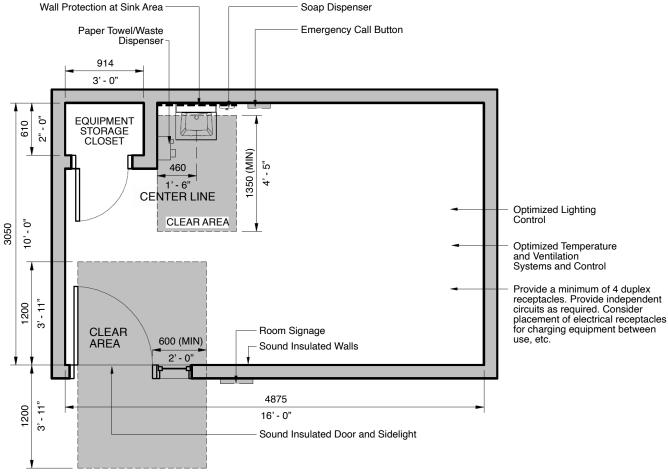


Figure 20: Multi-sensory room



Multi-sensory rooms create a controlled, safe space devoted to stimulating or calming the senses. They can be relaxing spaces to help reduce agitation and anxiety. They can also engage the user to participate in activities, stimulate reactions, and encourage communication. Generally, the room is adaptable to a wide range of participant needs.

It is important to consult professionals, such as architects, mechanical and electrical engineers to optimise the soundproofing, and systems within the space. Professional fees are included in the flat rate cost.

A multi-sensory room includes finishing for approximately a 160 sq ft (15 sq m) or 10' by 16' room that includes a clear area to enter and exit the room. There is also a clear area to give access to the handwash area. The sink has enough space underneath for persons in assistive devices to fit their knees, as well as protection from the hot water supply.

# Multi-sensory rooms include:

- acoustic non-slip flooring
  - rubber or non-slip vinyl with sound insulation layer underneath
  - colour contrasted to walls, door, etc.
- sound insulation for walls and colour contrasting paint
  - does not include new wall construction, only includes sound insulation and colour contrasting paint for new or existing walls
  - sound insulation to a minimum rating of STC 48<sup>1</sup>
- sound insulated door
  - insulated steel frame
  - door hardware set
  - automatic operator with controls
  - electrical power connection
  - barrier free transition
  - colour contrasting painting
- optimised HVAC (above code minimums)
  - improved air quality
  - acoustic absorption to a minimum rating of STC 45 and CAC 40¹
  - in room controls at accessible level
- optimised lighting (above code minimums)
  - anti-glare lighting with dimmer
  - in room controls at accessible level

- optimised electrical (above code minimums)
  - increased capacity for receptacles and circuits
  - minimum of 4 duplex receptacles in room
- wall-mounted hand-wash sink
  - installed with modifications to existing plumbing
  - insulated piping or shroud
  - wall protection
  - soap dispenser
  - paper towel dispenser
  - waste bin
- storage closet for sensory equipment
  - hollow metal door with steel frame
  - door hardware set
- room signage with text, graphic, and braille
  - 1 directional wayfinding sign placed elsewhere to direct users

# Sensory tools and equipment

The following packages give examples of items you could purchase with the amount of funding included with each package selected. These are examples only. You may purchase similar sensory items of an equivalent value that best suits your users. The packages you select will depend on the needs of the users of the multi-sensory room.

It is important to consult specialists, such as an occupational therapist, physical therapist, speech pathologist among others, when purchasing sensory equipment to customize the space and programming for the intended users.

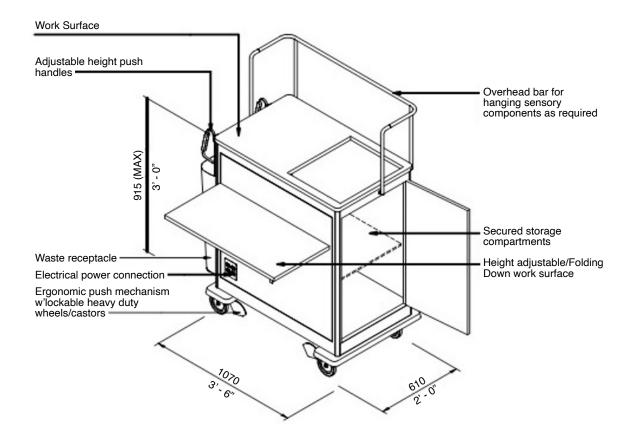
- Auditory package: Items that produce music, tones, or other noises.
  - 5 toy musical instruments, 4 games, 1 sound machine
- Visual package: Items that produce light or other visual input.
  - 1 light table, 4 games, 2 lamps, 4 light panels, 1 projector package, 1 fibre optic light
- **Vibration or Vibroacoustic package:** Items designed to produce vibration. Vibroacoustic combines vibration and sound.
  - 1 vibroacoustic chair, 1 vibrating cushion, 1 vibrating pillow, 1 vibrating mat,
     1 vibrating oral toy, 1 vibrating handheld toy
- Muscle sense (Proprioception) package: Items that activate joint and muscle involvement.
  - 1 mini trampoline, 1 bouncy chair, 3 body socks (small, medium, large),
     1 squeeze machine, 1 weighted blanket with adjustable weights,
     1 weighted vest with adjustable size, 1 weighted toy for lap or over shoulders
- Movement (Vestibular) package: Items designed to cause movement.
  - 1 swing, 1 spinner, 1 beam, 1 scooter, 1 wobble cushion, 1 therapy ball, 1 rocker seat, 1 balance board
- Sensory Dampening package: Items that allow user to reduce noise, visual input or other stimuli
  - 4 sets of noise cancelling headphones, 4 adjustable size eye masks

# **Optional accessibility features:**

- acoustic ceiling treatments
  - option 1) suspended acoustic ceiling tile in a grid, covering 100% of the ceiling area
  - option 2) suspended acoustic ceiling baffles, covering approximately 50% of the ceiling area
  - with either of these options, ensure that the acoustic ceiling treatment is rated to a minimum of NRC 0.55 and CAC 351

- hygienic wall cladding
- specialized seating and work surfaces
  - a selection of chairs, mats, wedges
  - tables or decks that are height adjustable
- emergency call button
- additional sound insulated emergency exit door

Figure 21: Multi-sensory mobile station



A mobile station offers a multi-sensory environment where space or mobility of the users may be a consideration. The cart should be height adjustable to engage users while seated or standing.

#### A multi-sensory cart includes:

- height adjustable work surface
- height adjustable push handles
- heavy duty, locking wheels
- secure storage compartments

- overhead bar for hanging sensory components, as required
- electrical power connection with 4 outlets
- waste bin

## Sensory tools and equipment

The following packages give examples of items you could purchase with the funding included with each package selected. These are examples only. You may purchase similar sensory items of an equivalent value that best suits your users. The packages you select will depend on the needs of the users of the multi-sensory station.

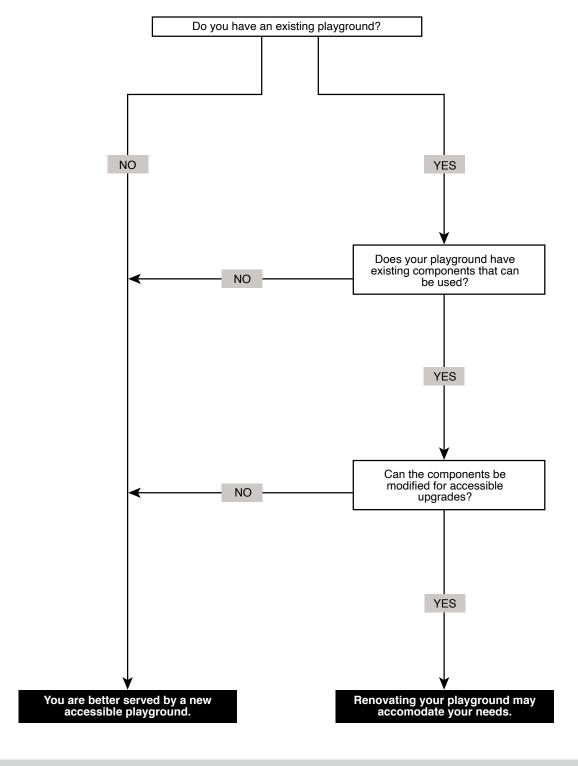
It is important to consult specialists, such as an occupational therapist, physical therapist, speech pathologist, among others, when purchasing sensory equipment to customize the space and programming for the intended users.

- Auditory package: Items that produce music, tones or other noises.
  - 5 toy musical instruments, 3 games, 1 sound machine
- Visual package: Items that produce light or other visual input.
  - 4 games, 1 lamp, 1 tabletop light panel or box, 1 projector package, 1 fibre optic light
- **Vibration or Vibroacoustic package:** Items that produce vibration. Vibroacoustic combines vibration and sound.
  - 1 vibrating cushion, 1 vibrating pillow, 1 vibrating mat, 1 vibrating oral toy,
     1 vibrating handheld toy
- Muscle sense (Proprioception) package: Items that activate joint and muscle involvement.
  - 3 body socks (small, medium, large), 1 weighted blanket with adjustable weights,
     1 weighted vest with adjustable size, 1 weighted toy for lap or over shoulders
- Movement (Vestibular) package: Items designed to cause movement.
  - 1 wobble cushion, 1 rocker seat, 1 balance board
- Sensory Dampening package: Items that allow user to reduce noise, visual input or other stimuli
  - 2 sets of noise cancelling headphones, 2 adjustable size eye masks

# **Accessible playgrounds**

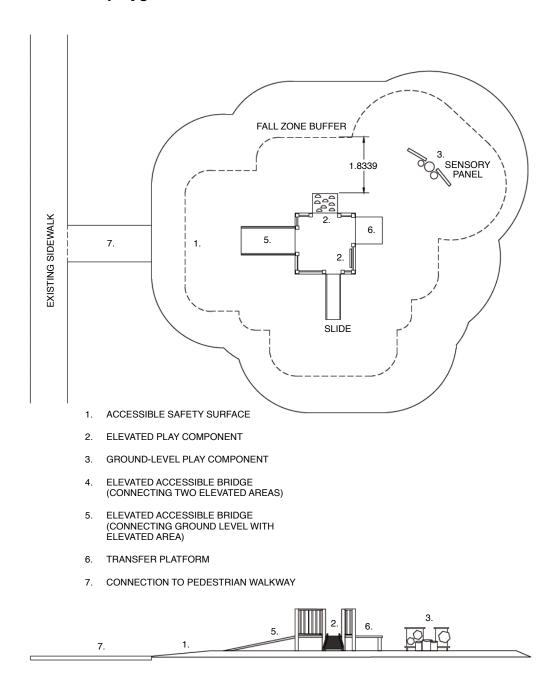
Accessible playgrounds promote engagement and participation for all ages and abilities. They should provide a variety of play components. These components should give opportunities to challenge user's abilities and play types, such as social, physical, and mental experiences. A number of ground-level play components should be included for persons who cannot access elevated areas. It is important to consult with a landscape architect or playground designer when designing, building, or renovating your accessible playground.

Figure 22: How to choose the accessible playground that best suits your accessibility needs



Note that if you are renovating a playground and removing all the existing playground equipment to build a new playground, the costs of removing the existing equipment will be automatically calculated in the flat rate cost.

Figure 23: Accessible playground - small



A path connects to an existing pedestrian walkway or sidewalk. It must be at least 150 mm wide and have a slope of no more than 5%. The accessible safety surface needs to be a certain depth based on fall heights and for drainage. The surfacing has a minimum border or "fall zone buffer" area that outlines the playground. Accessible bridges connect elevated areas to ground-level components. A transfer platform allows persons to transfer from their assistive mobility devices to elevated play components. A tactile orientation map allows users with visual impairments to navigate the play area.

## Accessible playgrounds include:

- accessible safety surfacing
  - engineered wood fibre
  - pour-in place rubber (most accessible option for assistive devices, such as wheelchairs)
- elevated play components and/or ground-level play components such as,
  - elevated
    - · climbers
    - · slides
    - sensory play panels

- ground
  - swings
  - · spring riders
  - bouncers
  - · sensory play panels
- elevated bridge and/or transfer platform to give access from the ground level to elevated play components
- path connection to pedestrian walkway

## Optional accessibility features:

- tactile orientation map
- sensory play panels
- accessible seating

Figure 24: Accessible playground - medium

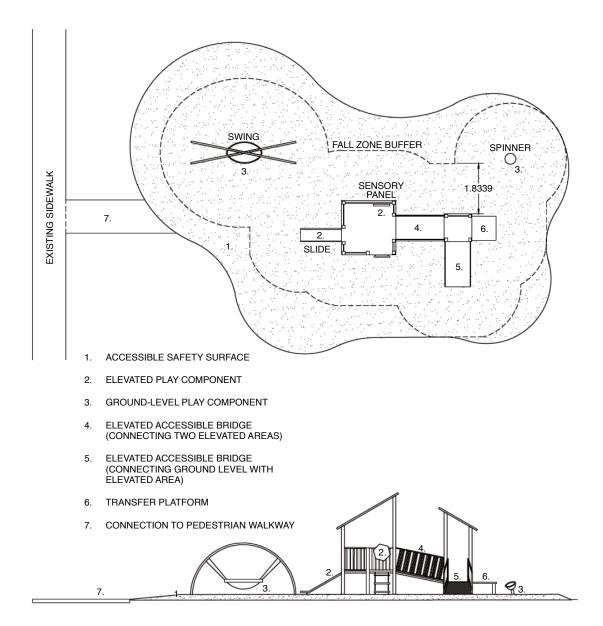
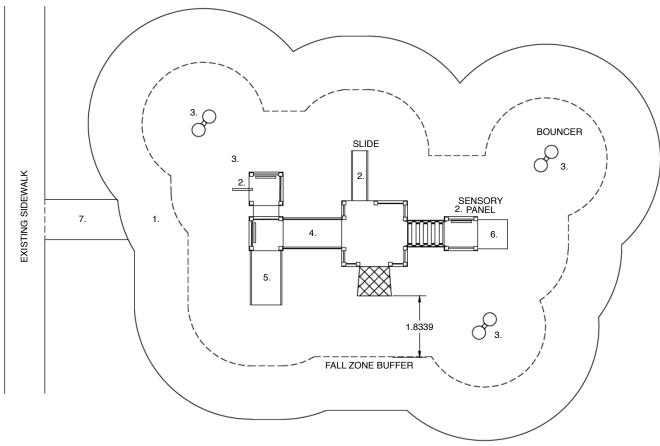
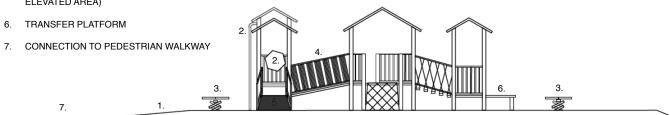


Figure 25: Accessible playground - large



- 1. ACCESSIBLE SAFETY SURFACE
- 2. ELEVATED PLAY COMPONENT
- 3. GROUND-LEVEL PLAY COMPONENT
- 4. ELEVATED ACCESSIBLE BRIDGE (CONNECTING TWO ELEVATED AREAS)
- 5. ELEVATED ACCESSIBLE BRIDGE (CONNECTING GROUND LEVEL WITH ELEVATED AREA)



## **Accessible parking**

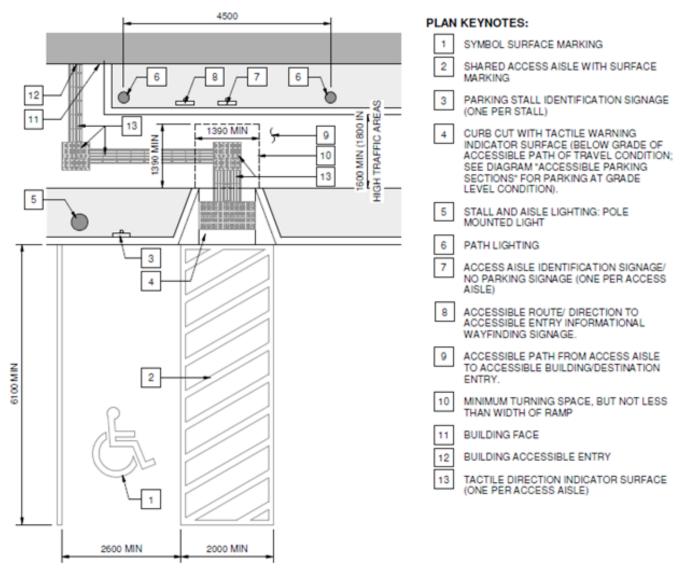
To determine the recommended number of accessible parking stalls in relation to your existing number of parking stalls, see table below. Note that flat rate costs will only calculate up to 6 accessible parking stalls. Costs for more than 6 accessible parking stalls are the responsibility of the applicant.

| Number of parking stalls | Number of accessible parking stalls |
|--------------------------|-------------------------------------|
| 2 to 50                  | 1 to 3                              |
| 51 to 100                | 2 to 4                              |
| 101 to 200               | 4 to 8                              |
| 201 to 300               | 5 to 10                             |
| 301 to 500               | 6 to 12                             |

Source: Table 10, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association

Accessible parking spaces should be located as close as possible to the accessible building/destination entrance, but no more than 164' (50 m) away (best practice is no more than 98'5" (30 m) away).

Figure 26: Accessible parking – single – below grade



Source: Figure 67, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association.

4500 PLAN KEYNOTES: SYMBOL SURFACE MARKING 2 SHARED ACCESS AISLE WITH SURFACE MARKING 6 PARKING STALL IDENTIFICATION SIGNAGE HIGH TRAFFIC AREAS (ONE PER STALL) 600 MIN (1800 IN 1390 MIN CURB CUT WITH TACTILE WARNING 9 INDICATOR SURFACE (BELOW GRADE OF ACCESSIBLE PATH OF TRAVEL CONDITION; 10 SEE DIAGRAM "ACCESSIBLE PARKING 13 SECTIONS\* FOR PARKING AT GRADE LEVEL CONDITION). 5 STALL AND AISLE LIGHTING: POLE MOUNTED LIGHT PATH LIGHTING 3 3 ACCESS AISLE IDENTIFICATION SIGNAGE/ NO PARKING SIGNAGE (ONE PER ACCESS AISLE) ACCESSIBLE ROUTE/ DIRECTION TO ACCESSIBLE ENTRY INFORMATIONAL WAYFINDING SIGNAGE. ACCESSIBLE PATH FROM ACCESS AISLE TO ACCESSIBLE BUILDING/DESTINATION 6100 MIN 2 MINIMUM TURNING SPACE, BUT NOT LESS THAN WIDTH OF RAMP BUILDING FACE BUILDING ACCESSIBLE ENTRY 12 TACTILE DIRECTION INDICATOR SURFACE (ONE PER ACCESS AISLE)

Figure 27: Accessible parking - multiple - below grade

Source: Figure 67, CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association.

2600 MIN

#### Accessible parking stalls include:

2600 MIN

 surface markings in high contrast paint for accessible stall and access aisle

2000 MIN

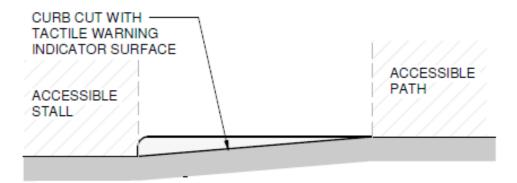
- 2 posts and 1 wheel stop per stall OR
   1 curb cut per access aisle
  - depends on whether the parking stall is at grade (posts/wheel stop) or below grade (curb cut)
- 1 parking stall sign per stall

- 1 access aisle sign per access aisle
- 1 wayfinding sign per access aisle to direct people to accessible building/ destination entrance
- architectural wayfinding leading people to accessible building/destination entrance
  - for example, colourful painted arrows, tactile bumps or lines on ground

## **Optional accessibility features:**

- surfacing in either concrete or asphalt
- lighting
- orientation cues/directional indicators at accessible building entrance
  - for example, high contrast colour or material on building façade
- accessible path connecting the access aisle to accessible building/ destination entrance, with options for:
  - path lighting
  - path edge detection
  - additional curb cuts

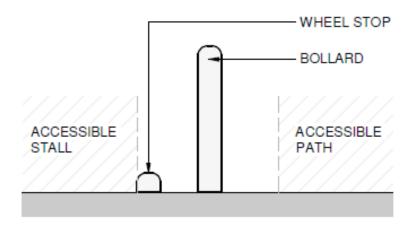
Figure 28: Accessible parking – below grade vs at grade



#### NOTE:

ANY SLOPED WALKWAY STEEPER THAN 1:20 IS DESIGNED AS A RAMP

#### A. ACCESSIBLE PARKING BELOW GRADE



### B. ACCESSIBLE PARKING AT GRADE

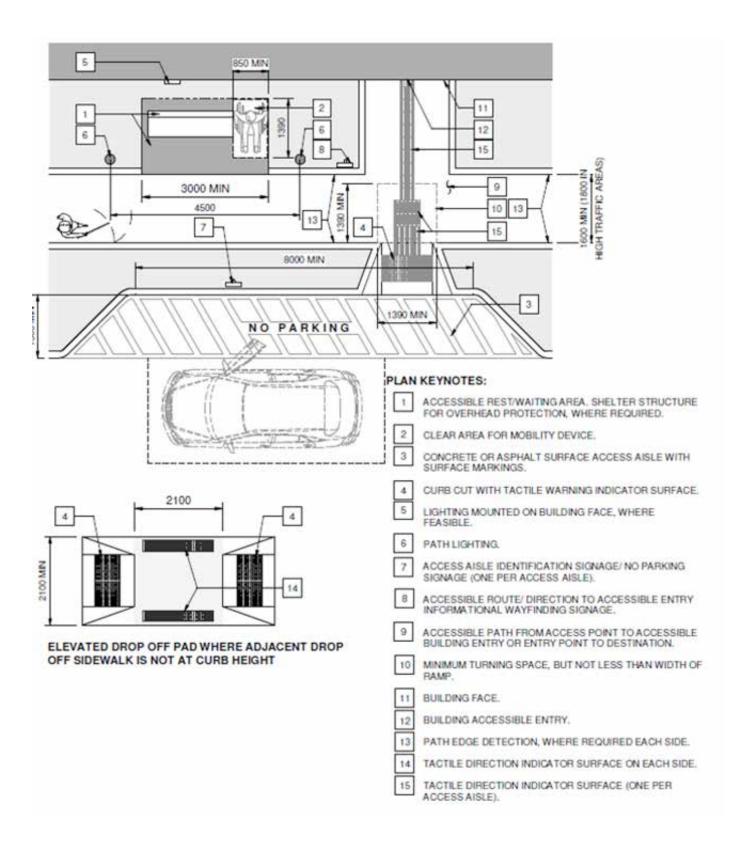
If your accessible parking stall is below grade, an additional curb cut with tactile bumps will be automatically included in flat rate costs. If your accessible parking stall is at grade, 1 wheel stop and 2 posts/bollards will be automatically included in flat rate costs.

# **Accessible drop-off areas**

Accessible drop-off areas allow safer drop-off and pick-up of people who have difficulty walking long distances or have limited stamina, users of mobility aids, and people who travel with caregivers (for example, a person with vision loss).

Accessible drop-off areas should be located within 98'5" (30 m) of the accessible building/destination entrance, and away from traffic flow.

Figure 29: Accessible drop-off area



## Accessible drop-off areas include:

- surfacing in concrete or asphalt (including removal of existing surfacing)
- surface markings in high contrast paint
- 2 posts and 1 wheel stop per stall OR
   1 curb cut to join the drop-off area to a path
  - depends on whether the drop-off area is at grade (posts/wheel stop) or below grade (curb cut)

- 1 accessible drop-off area sign
- 1 wayfinding sign to direct people to accessible building/destination entrance
- architectural wayfinding leading people to accessible building/destination entrance
  - for example, colourful painted arrows, tactile bumps or lines on ground
- 1 rest/waiting area with accessible seating

### **Optional accessibility features:**

- lighting
- orientation cues/directional indicators at accessible building entrance
  - for example, high contrast colour or material on building façade
- accessible path connecting the accessible drop-off area to accessible building/ destination entrance, with options for:
  - path lighting
  - path edge detection
  - additional curb cuts

- elevated drop-off pad
  - where curb height is not high enough to accommodate accessible transport (bus/van) lifts
  - at least 6" (150 mm) thick concrete or asphalt with concrete curb, and curb cuts on either end
- overhead protection in steel or wood for rest/waiting area
  - at least 5'11" by 9'10"
     (1800 mm by 3000 mm), with foundation

## **Accessible electric vehicle charging stations**

Accessible electric vehicle charging stations allow independent use by drivers with disabilities, including people who have limited hand dexterity, limb differences, or limb amputations that require use of adaptive driving controls.

Figure 30: Accessible EV charging station - single - at grade

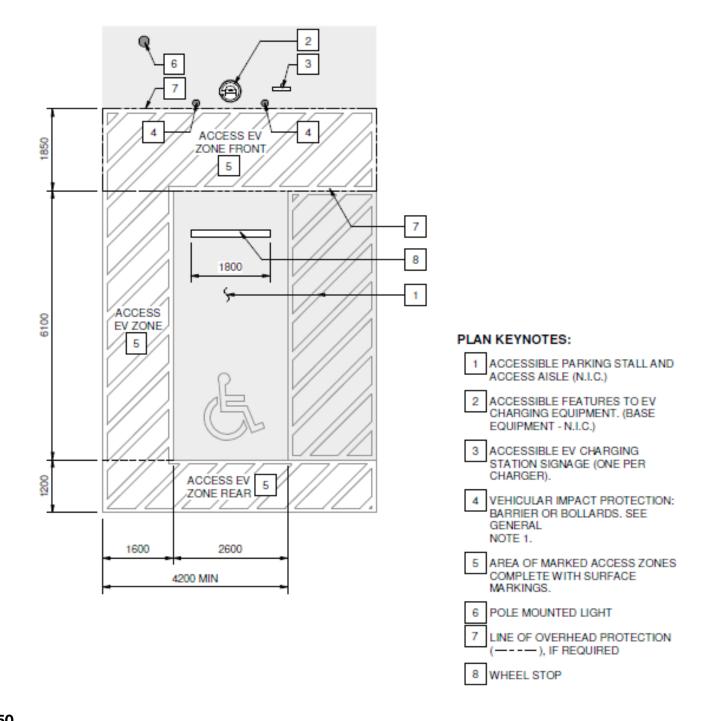


Figure 31: Accessible EV charging station – multiple – at grade

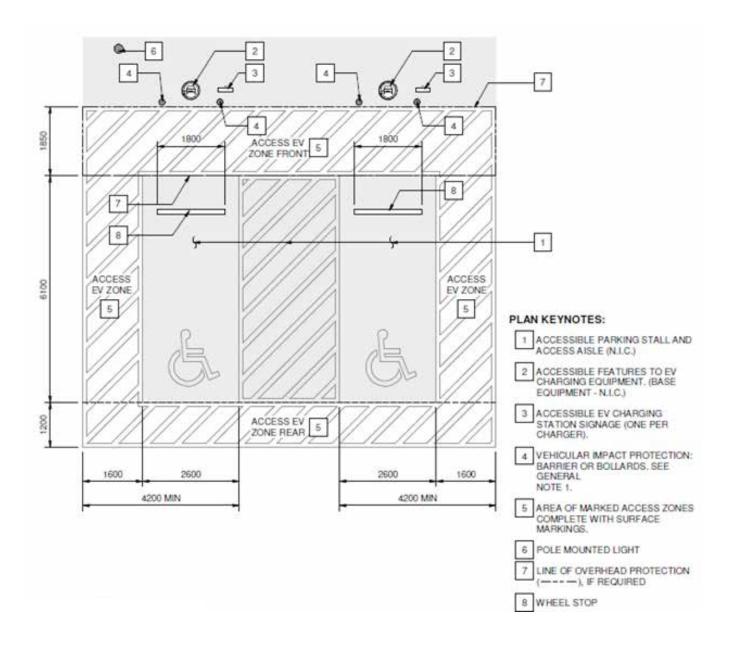
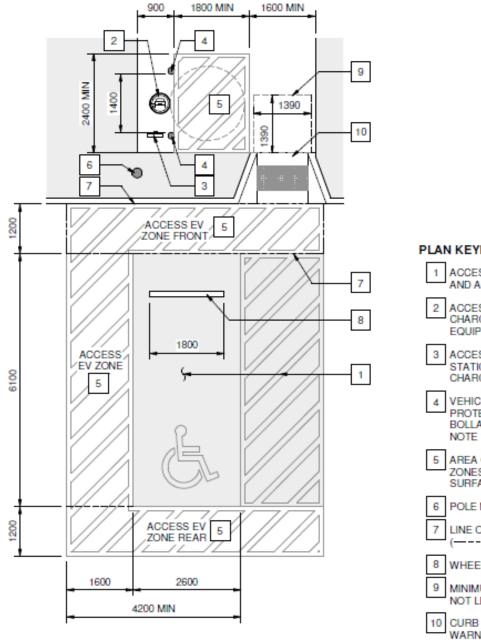


Figure 32: Accessible EV charging station – single – below grade



#### PLAN KEYNOTES:

- 1 ACCESSIBLE PARKING STALL AND ACCESS AISLE (N.I.C.).
- ACCESSIBLE FEATURES TO EV CHARGING EQUIPMENT (BASE EQUIPMENT - N.I.C.).
- ACCESSIBLE EV CHARGING STATION SIGNAGE (ONE PER CHARGER).
- VEHICULAR IMPACT PROTECTION: BARRIER OR BOLLARDS. SEE GENERAL NOTE 1.
- 5 AREA OF MARKED ACCESS ZONES COMPLETE WITH SURFACE MARKINGS.
- POLE MOUNTED LIGHT.
- LINE OF OVERHEAD PROTECTION (----), IF REQUIRED.
- WHEEL STOP.
- MINIMUM TURNING SPACE, BUT NOT LESS THAN WIDTH OF RAMP.
- CURB CUT WITH TACTILE WARNING INDICATOR SURFACE.

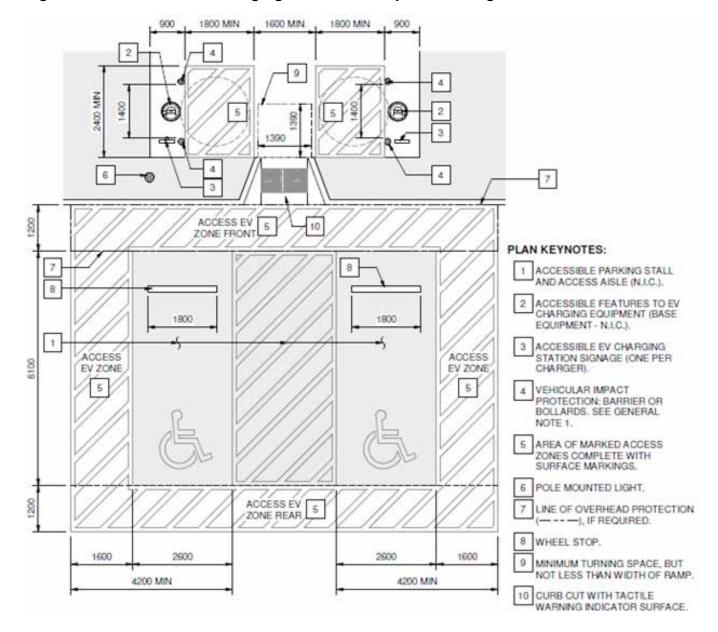


Figure 33: Accessible EV charging station – multiple – below grade

## Accessible electric vehicle charging stations include:

- surface markings in high contrast paint for the area surrounding the accessible EV charger
- accessibility features of EV charger (not the entire EV charger) (refer to the below section "How to choose an accessible EV charger" for these features)
- wheel stop and posts to protect the charger from other vehicles
  - 1 curb cut if the accessible EV charging station is below grade
- 1 accessible EV charging station sign per charger

### **Optional accessibility features:**

- surfacing for Access Zones in concrete or asphalt
- lighting

- overhead protection in steel or wood covering Front Access Zone only
  - includes maximum height clearance sign

## How to choose an accessible EV charger\*:

- Look for chargers with:
  - Charging cable cord reel:
    - a cord reel on the charging cable help reduce the weight of the cable should someone have difficulty carrying it to their vehicle
  - Reduced force needed to release the handle from the charger:
  - ensure the releasing mechanism of the plug requires no more than 5lbs of pressure
- Avoid chargers with:
  - Perfectly round handles:
    - can be difficult to grasp for someone with mobility issues
  - Bright flashing lights:
    - · can disorient people (especially at night)

## Additional things to consider\*\*:

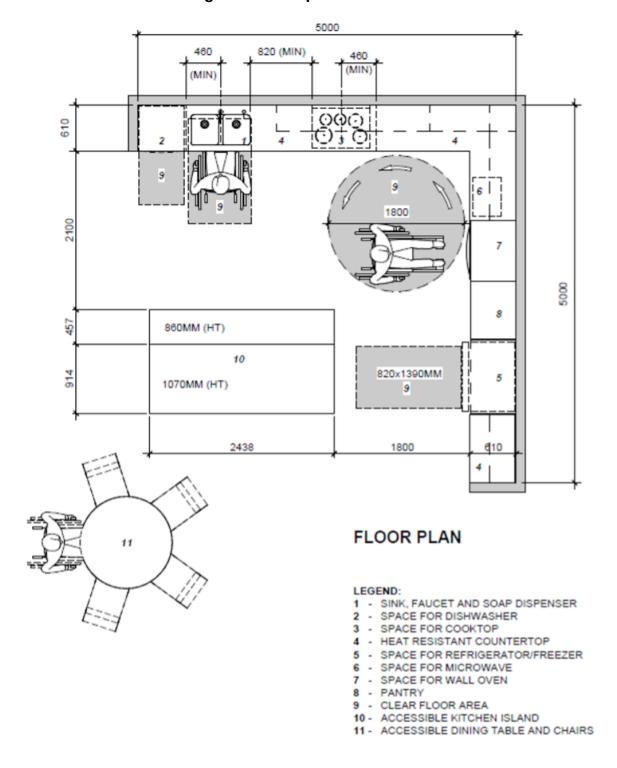
- Look for chargers with:
  - speech output
  - volume control
  - braille instructions
  - wireless or inductive chargers as they become available (currently there are no manufacturers that produce accessible wireless or inductive chargers)

<sup>\*</sup>Note that the above features of an accessible EV charger are covered by flat rate costs.

<sup>\*\*</sup>Note that the above things to consider are not covered by flat rate costs.

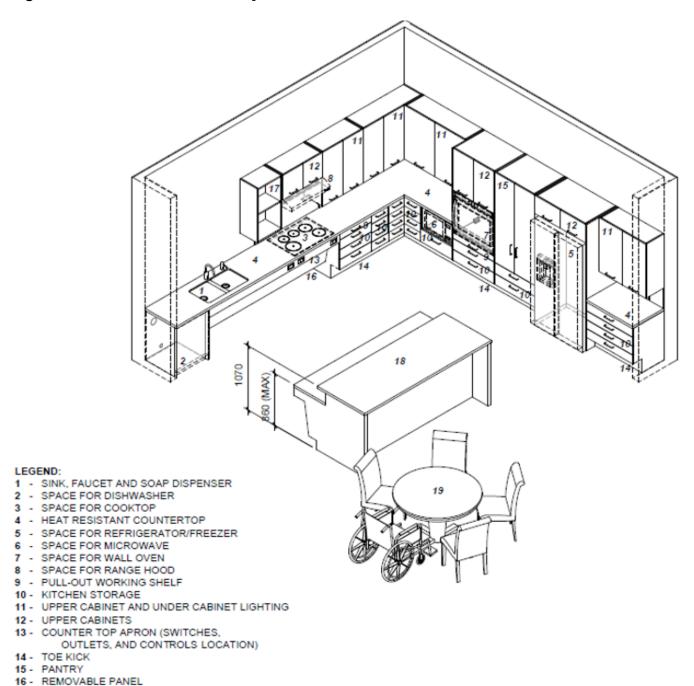
## **Accessible kitchens**

Figure 34: Accessible kitchen general floor plan



Source: Figure 35(f), CSA/ASC B652:23 Accessible dwellings. © 2023 Canadian Standards Association.

Figure 35: Accessible kitchen layout



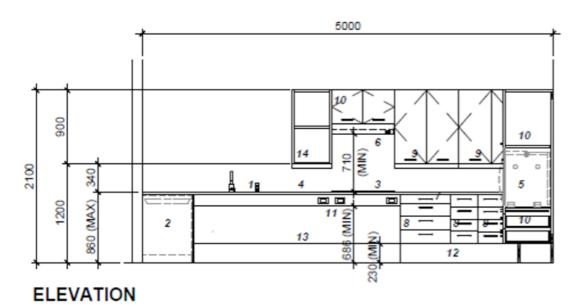
18 - ACCESSIBLE KITCHEN ISLAND 19 - ACCESSIBLE DINING TABLE AND CHAIRS

13 - ACCESSIBLE DIMING TABLE AND CHAIRS

 17 - UPPER CABINET - OPEN SHELVES AND UNDER CABINET TASK LIGHTING

Source: Figure 35(a), CSA/ASC B652:23 Accessible dwellings. © 2023 Canadian Standards Association.

Figure 36a: Accessible kitchen - heights and clearances

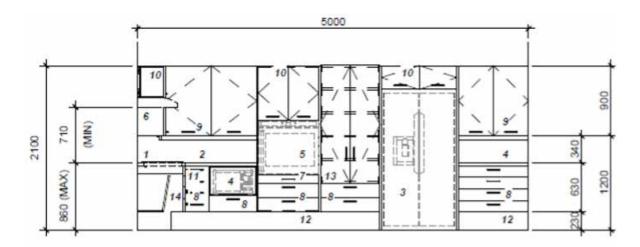


#### LEGEND:

- 1 SINK, FAUCET AND SOAP DISPENSER
- 2 SPACE FOR DISHWASHER
- 3 SPACE FOR COOKTOP
- 4 HEAT RESISTANT COUNTERTOP
- 5 SPACE FOR WALL OVEN
- 6 SPACE FOR RANGE HOOD
- 7 PULL-OUT WORKING SHELF
- 8 KITCHEN STORAGE
- 9 UPPER CABINET AND UNDER CABINET LIGHTING
- 10 UPPER CABINETS
- 11 COUNTER TOP APRON (SWITCHES,
  - OUTLETS, AND CONTROLS LOCATION)
- 12 TOE KICK
- 13 REMOVABLE PANEL
- 14 UPPER CABINET OPEN SHELVES AND UNDER CABINET LIGHTING

Source: Figure 35(d), CSA/ASC B652:23 Accessible dwellings. © 2023 Canadian Standards Association.

Figure 36b: Accessible kitchen - heights and clearances



### **ELEVATION**

#### LEGEND:

- 1 SPACE FOR COOKTOP
- 2 HEAT RESISTANT COUNTERTOP
- 3 SPACE FOR REFRIGERATOR/FREEZER
- 4 SPACE FOR MICROWAVE
- 5 SPACE FOR WALL OVEN
- 6 SPACE FOR RANGE HOOD
- 7 PULL-OUT WORKING SHELF
- 8 KITCHEN STORAGE
- 9 UPPER CABINET AND UNDER CABINET LIGHTING
- 10 UPPER CABINETS
- 11 COUNTER TOP APRON (SWITCHES,
  - OUTLETS, AND CONTROLS LOCATION)
- 12 TOE KICK
- 13 PANTRY
- 14 REMOVABLE PANEL

Source: Figure 35(d), CSA/ASC B652:23 Accessible dwellings. © 2023 Canadian Standards Association.

An accessible kitchen includes finishing for an approximately 270 sq ft (25 sq m) room. The kitchen floor space has clear areas to give enough room for persons using mobility devices, such as wheelchairs, to move around. The sink and cooktop have enough space underneath for persons in wheelchairs to fit their knees, as well as removable panels for protection from the sink's hot water supply and cooktop's wiring. The oven is mounted on the wall with a nearby pull-out heat resistant shelf. The microwave is under the counter and integrated within the lower cabinets to ensure it is at an accessible height for seated users.

#### Accessible kitchens include:

- non-slip flooring
  - minimal glare, no strong visual patterning
  - colour contrasted to walls, cabinets, appliances, etc.
- 30' (9100 mm) of cabinetry with openings for appliances
  - upper cabinets: if more than 1100 mm above floor, includes drop-down mechanism (manual or automatic)
  - lower cabinets: drawer-style
  - "D" shape drawer/door pulls and soft close hinges on all cabinets
- quartz countertops
- barrier-free sink
  - stainless steel undermount sink
  - manual or automatic telescopic faucet
  - temperature indicator that limits hot water to 49 degrees C to prevent burns for users with sensory loss
  - hands-free soap dispenser
- plumbing for sink and dishwasher
- optimised lighting (above code minimums)
  - task lighting above countertops and sink (750 lumens) and overhead lighting (300 lumens) for rest of kitchen
  - anti-glare lighting with dimmer
  - in room controls at accessible level

- optimised electrical (above code minimums)
  - increased capacity for receptacles and circuits
  - wiring to accommodate appliances
- optimised HVAC (above code minimums)
  - improved air quality
  - acoustic absorption to a minimum rating of STC 45 and CAC 40¹
  - in room controls at accessible level
- sound insulation for walls and colour contrasting paint
  - does not include new wall construction, only includes sound insulation and colour contrasting paint for new or existing walls
  - sound insulation to a minimum rating of STC 42<sup>1</sup>
- 2 signs with text, graphics, and braille
  - 1 sign at kitchen, and 1 sign elsewhere that directs people to kitchen
- large and small appliances are NOT included (refer to the below section "How to choose accessible kitchen appliances" for more information)

## **Optional accessibility features:**

- kitchen island
  - option 1) fully at lower height
  - option 2) at 2 heights:
    - full length of one side of island at lower height to accommodate seated users
    - other half of island at higher height to accommodate standing users
  - clear space (no lower cabinets) under countertop
  - task lighting above countertop (750 lumens)
- sound-insulated automatic door
  - insulated steel frame
  - door hardware set
  - automatic operator with controls
  - electrical power connection
  - barrier-free transition
  - colour contrasting paint

- Wi-Fi infrastructure/cabling to accommodate smart appliances
  - smart appliances include those that can be controlled from a mobile device or voice-activated, with safety features (for example, automatic shut-off, cool-to-touch, etc.)
  - includes 1 data outlet, 8 m cable to data room, and 1 wireless router
  - assumes facility/building has existing Wi-Fi
- accessible dining tables with seating
  - at least 1 accessible seat with backrest per table
  - located along barrier-free path of travel, with at least 2000 mm of clear area around all sides of table

## How to choose accessible kitchen appliances:

Large and small kitchen appliances are not covered by flat rate costs. Costs of these appliances are your responsibility. The list below includes considerations to keep in mind when choosing accessible appliances.

- General:
  - look for "smart" appliances that can be controlled from a mobile device, or voice-activated (can be controlled by virtual assistants)
  - include safety features (for example, automatic shut-off, cool-to-touch, etc.)
  - include high contrast, tactile, front-mounted controls with large print and/or graphics
- Refrigerator/Freezer:
  - full-size, either side-by-side OR freezer integrated as pull-out drawer at bottom of refrigerator
    - freezers integrated at top of refrigerator do not accommodate reach range of seated users
  - have additional "smart" capabilities such as:
    - internal cameras and sensors to view food items in real time and get alerts when they are running low or expiring
    - smart home integration to create routines or alerts (assists those with dementia, memory difficulties, etc.)

## Cooktop:

- induction is safest option, instead of electric or gas
- controls located in front or beside hot surface
- mounted in countertop, with separate wall oven

#### Wall oven:

- built-in wall oven, separate from cooktop
- side swing door to accommodate seated users
- self-cleaning for easier cleaning by users with limited strength, mobility, and/or dexterity

#### Range hood:

controls located at accessible level, or via remote control

#### Dishwasher

- side swing door OR drawer-type to accommodate seated users
- controls located on top or front of door
- quiet feature to reduce overall noise levels in kitchen
- water leak detection to avoid slippery surfaces

#### Microwave

- located at accessible height (located on countertop or integrated in lower cabinet design instead of upper cabinet design)
- allow landing area of at least 381 mm by 406 mm on adjacent countertop surface

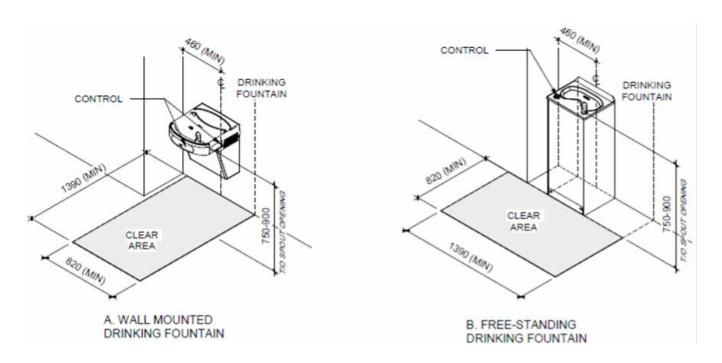
#### Pot filler:

- consider including pot-filler above cooktop where cooktop cannot be located adjacent to sink
  - enables users with limited strength, mobility, and/or dexterity to fill pots without needing to transport to cooktop when full

## **Accessible drinking fountains and hand-wash stations**

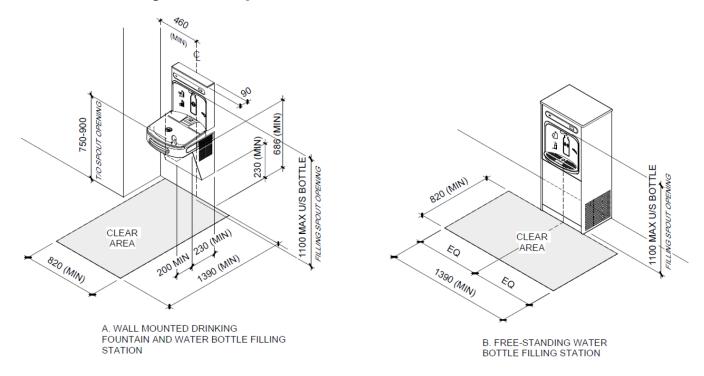
Accessible drinking fountains should be located along a barrier-free path of travel, in alcoves to avoid blocking the path. Ensure the fountains and controls are colour contrasted to their surrounding environment, to help with depth perception for those with visual impairments. Automatic controls are preferred over hand-operated controls, to increase accessibility for persons with mobility or dexterity disabilities. Outdoor drinking fountains should be within 15 m of a heated building to avoid freezing of pipes.

Figure 37: Indoor drinking fountain – wall-mounted versus free-standing



Source: Figure 39(a), CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association.

Figure 38: Indoor drinking fountain – drinking fountain with bottle filling station versus bottle filling station only



Source: Figure 39(a), CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association.

### Accessible indoor water fountains include:

- indoor drinking fountain (wall-mounted or free-standing) or drinking fountain with bottle filling station, colour contrasted to surrounding environment with automatic or push button controls
- 2 signs with text, graphics, and braille
  - 1 sign at fountain, and 1 sign elsewhere that directs people to fountain

### **Optional accessibility features:**

• lighting at 300 lumens

Figure 39: Outdoor drinking fountain – drinking fountain with bottle filling station versus drinking fountain only

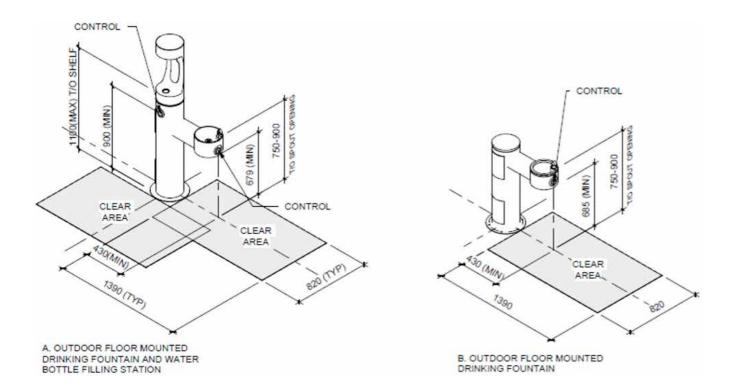
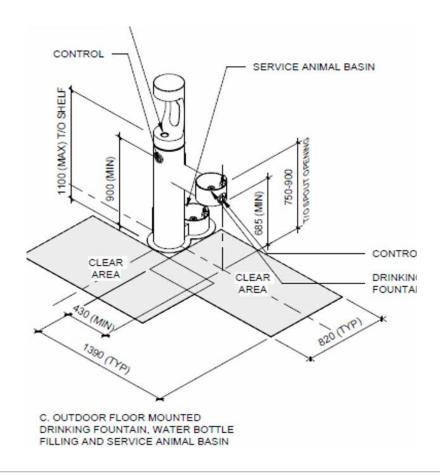


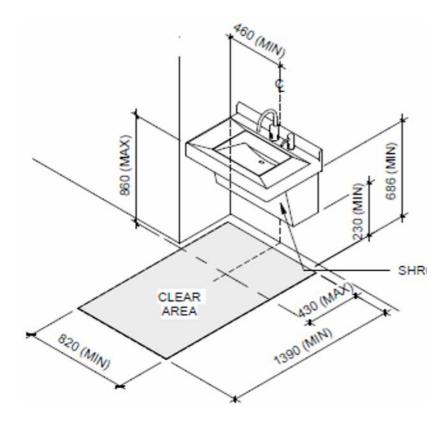
Figure 40: Outdoor drinking fountain – drinking fountain with bottle filling station and service animal basin



## Accessible outdoor water fountains include:

- outdoor drinking fountain or drinking fountain with bottle filling station or drinking fountain with bottle filling station and service animal basin, colour contrasted to surrounding environment with automatic or push button controls
- 2 signs with text, graphics, and braille
  - 1 sign at fountain, and 1 sign elsewhere that directs people to fountain

Figure 41: Hand-wash station



**Source:** Figures 43(a) and 43(b), CSA/ASC B651:23 Accessible design for the built environment. © 2023 Canadian Standards Association.

The sink has enough space underneath for persons in mobility devices to fit their knees, as well as protection from the hot water supply. If you are installing 2 or more hand-wash stations in a row, the centre line of each sink should be at least 820 mm apart.

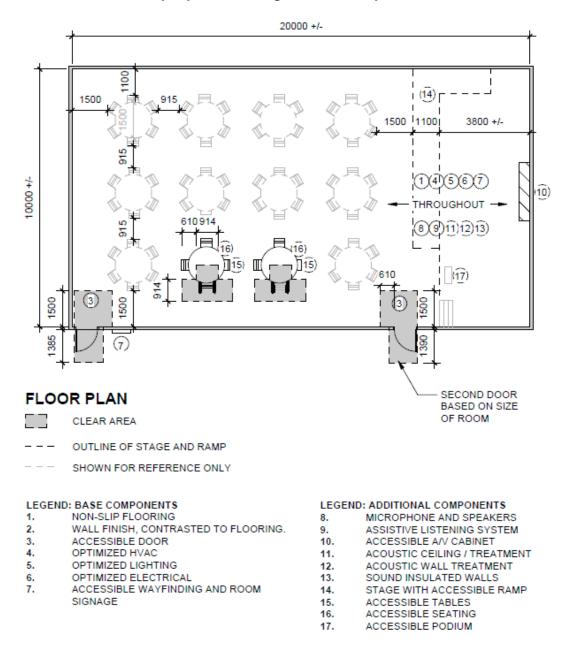
#### Accessible hand-wash stations include:

- wall-mounted barrier-free sink
- hands-free faucet with temperature limit of 49 degrees C
- knee protection from plumbing
- wall protection (100 mm backsplash)
- hands-free soap dispenser, attached to counter

- hands-free paper towel dispenser, attached to wall
- lighting at 300 lumens, with controls mounted at accessible level
- 2 signs with text, graphics, and braille
  - 1 sign at station, and 1 sign elsewhere that directs people to station

## **Accessible multi-purpose rooms**

Figure 42: Accessible multi-purpose room general floor plan



Accessible multi-purpose rooms can vary in size between 25 sq m and 200 sq m. The diagram above shows an example configuration for the largest room size available under flat rate costs (200 sq m). It is important to consult certified professionals, such as architects and mechanical/electrical engineers, to optimise the soundproofing systems within the space. Professional fees are included in the flat rate cost.

## Accessible multi-purpose rooms include:

- non-slip flooring
  - minimal glare, no strong visual patterning
  - colour contrasted to walls, door, etc.
- paint for walls
  - colour contrasted to floor, door, etc.
- sound insulated door(s)
  - insulated steel frame
  - door hardware set
  - automatic operator with controls
  - electrical power connection
  - barrier-free transition
  - colour contrasting painting
  - number of doors (1 or 2) will be automatically calculated according to room size
- optimised lighting (above code minimums)
  - presentation area lighting independently controlled from overhead lighting in rest of room
  - all lighting to be anti-glare and dimmable between 100-750 lumens
  - in room controls at accessible level

- optimised electrical (above code minimums)
  - increased capacity for receptacles and circuits
  - wiring to accommodate audio/visual equipment from seated position, remote control, or voice activation
- optimised HVAC (above code minimums)
  - improved air quality
  - acoustic absorption to a minimum rating of STC 45 and CAC 40¹
  - in room controls at accessible level
- 2 signs with text, graphics, and braille
  - 1 sign outside room, and 1 sign elsewhere that directs people to room

## **Optional accessibility features:**

- sound insulation for walls
  - does not include new wall construction, only includes sound insulation to a minimum rating of STC 45<sup>1</sup>
- · acoustic ceiling treatments
  - option 1) suspended acoustic ceiling tile in a grid, covering 100% of the ceiling area
  - option 2) suspended acoustic ceiling baffles, covering approximately 50% of the ceiling area
  - with either of these options, ensure that the acoustic ceiling treatment is rated to a minimum of NRC 0.8 and CAC 40¹
- acoustic wall treatments
  - acoustic wall panels that cover approximately 50% of the surface of your walls
  - ensure the panels are rated to a minimum of NRC 0.8<sup>1</sup>
- microphone and speakers
  - 1 wireless microphone
  - 1 amplifier
  - 1 transmitter/receiver
  - ceiling-mounted speakers (quantity based on room area)

- assistive listening system with signage in text, graphics, and braille
  - option 1) set of wireless group headphones
    - includes headphones and transmitter with minimum 45 m of range
    - the flat rate calculator limits the number of headphones to 20% of the maximum number of occupants of your multi-purpose room, based on the size of the room
    - works best for people who would benefit from hearing enhancement but do not wear a hearing device (e.g., hearing aid, cochlear implant, etc.)
    - note that shared headphones would have sanitation requirements in between users
  - option 2) hearing loop system:
    - connects a source of sound (e.g., microphone, television) directly to a person's hearing device via an audio frequency induction loop
    - involves installing a wire in the shape of a loop around the perimeter of the seating area in your multi-purpose room
    - more convenient for people using hearing devices, as they can customize their level of sound
    - the number of people who can use the hearing loop system is not limited
    - the costs for an FM loop system are not covered with this option, because an audio frequency induction loop is the preferred hearing loop system for multi-purpose rooms

- cabinet to store audio/visual equipment
  - only available if microphone and speakers or assistive listening system is added to your project
  - reduces tripping hazard of cables (allows for barrier-free path of travel)
  - 1,220 mm wide by 457 mm high by 610 mm deep
  - plastic laminate material
  - grommets (access points) for cables to escape cabinet and plug into outlets or equipment
  - vents to allow heat from audio/visual equipment to escape
  - "D" shape drawer/door pulls and soft close hinges
- accessible stage
  - requires a room size of minimum 150 sq m
  - stage size is 40 sq m
  - height of stage is between 305 mm and 457 mm above floor
  - includes stairs from floor to stage with treads
  - includes sloped walkway from floor to stage (between 6.1 m and 9.14 m long)
  - non-slip surface for stage, stairs, and walkways
  - tactile warning strips at the top of the stairs, and top and bottom of sloped walkway

- accessible tables
  - surface of table is between 730 mm and 860 mm above floor
  - space under the table to fit a wheelchair user's knees (820 mm wide by 685 mm high by 480 mm deep)
  - height adjustable with electrical power connection
- accessible seating
  - seat is between 430 mm and 483 mm above floor
  - backrest included
  - height adjustable with electrical power connection
- accessible podium
  - height adjustable with electrical power connection

#### Inclusive communication:

- consider adding a live captioning system in your multi-purpose room to increase accessibility for people who are deaf or people with hearing loss
- a live captioning system would include:
  - 1 or 2 screens to display captions
  - options for captions:
    - provided manually by a professional captioner
    - · a hardwired encoder/decoder
    - captioning software (note that some applications offer built-in automatically generated live captioning, for example Zoom, Microsoft Teams, Google Chrome, etc.)
- other uses for screens include:
  - display graphics or other visual communication for people who would benefit from non-verbal communication
  - display large format visuals for people with low vision
  - display a sign language interpreter who is providing services virtually

Note that if you wish to include the items under inclusive communication in your project, they are not covered under flat rate costs but may be eligible for funding. Please treat these items as "Other Activities" in the flat rate calculator and follow the requirements outlined in the applicant guide for non-flat rate activities.

#### Additional things to consider:

- ensure a barrier-free path of travel throughout the room by avoiding obstacles on the floor or mounted on the wall
- if there are windows in your multi-purpose room, eliminate glare or other light reflection off the glass by installing window coverings or other treatments
- reserve seating near the front of the room (closest to the stage or presentation area) for people who are deaf, people with hearing loss, and people with low vision
- designate aisle seating with people who use service animals

Note that the above things to consider are not covered by flat rate costs.

## **Endnotes**

Note on sound insulation and acoustics

Several of the items under flat rate costing refer to sound insulation and acoustic treatments. There are 2 ways to improve acoustics in a space:

- 1. sound blocking: refers to the use of insulating materials in the walls, flooring, and ceiling to prevent sound from leaving the room (e.g., being heard outside the room) and from entering the room (e.g., if it's noisy outside your room). Sound Transmission Class (STC) is a rating of sound blocking
- sound absorption: generally, in an untreated room, sound will bounce off the walls, ceilings, floors, and other hard surfaces, making it difficult to hear. Introducing absorptive materials will reduce the level of echo inside your room. Noise Reduction Coefficient (NRC) and Ceiling Attenuation Class (CAC) are ratings of sound absorption

Below are definitions of the rating systems applied to sound insulation and acoustic materials:

- STC ratings range from 0 to 60+, with 38 considered okay, and 45 considered very good. They measure the ability of an entire room (floors, walls, ceiling) to block sound inside the room from being heard outside the room, and vice versa. STC 45 means that sound entering and exiting the space is reduced by 45 decibels
- NRC ratings range from 0 to 1, with 0.5 considered poor and 0.8 considered very good. If your room is filled with low NRC
  materials like concrete and steel, noise will bounce around and make it difficult to hear people speaking. Ensuring a room
  contains materials with high NRC ratings means that sound will be better absorbed and reduce echo
- CAC ratings range from 0 to 50, with 25 considered poor and 40 considered very good. CAC ratings are specific to ceiling
  materials, whereas NRC measures other types of materials in a room. Ensuring the ceiling is built with materials with high CAC
  ratings means that sound will be better absorbed and reduce echo