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COMMUTER RAIL STATION ACCESS
COMMUTER RAIL

Introduction ■

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Introduction

Commuter Rail stations have a set of design considerations not shared by heavy or light rail rapid transit: they are often in rural settings; they share tracks with Amtrak, Conrail, freight and Civil Defense trains; and the elements of the station are not always owned by the MBTA. This chapter covers only those issues which are unique to the commuter rail. Design features which are common to both commuter rail stations and heavy rail stations are covered in Chapter 3. When appropriate, readers will be referred to the appropriate section of that chapter.

All parts of a commuter rail station which are specifically being renovated must comply with applicable access codes. For example, where work is being done to repair or replace existing platforms, an access platform is required by the MAAB. Even when the work does not require full compliance throughout a station, special attention to providing an accessible path of travel to the platform is essential. Station peculiarities may mean that non-standard approaches will be required; where these go beyond the scope of the regulations, variances must be obtained before the design is complete. Differing requirements of the entities owning or controlling rights-of-way and property means that each station project must be coordinated to ensure complete accessibility.

Although the MAAB has made some recent developments in commuter rail station policy, many commuter rail issues are not covered by code. For example, overpass coverings are addressed only in MBTA Design Guidelines or memoranda. It is the goal of these design guidelines to bring the pieces together into an integrated whole.

It is likely that standards will continue to develop even after these guidelines are published. Developments will be published as addenda to this book and should be inserted into this binder.
The Massachusetts Architectural Access Board (MAAB) has established new regulations on commuter rail station accessibility. At newly constructed commuter rail stations, or stations which are being reopened after 5 years or more of providing no passenger service, full-length raised platforms are to be provided. When stations that are currently in use are renovated, an access platform serving at least two cars of the train must be provided. Further details are discussed in the platform section of this chapter. Code references in this chapter refer to the UFAS and MAAB regulations last published before the new additions. (For the text of the new regulations, see Appendix B.)

Ideally, all parts of a station undergoing renovation would be made accessible. However, elements of the station may not belong to the MBTA; parking lots are sometimes owned by the town, and the station house and vendors are frequently privately owned. Before any design work for a new or existing station takes place, ownership of station elements should be determined. Agreements with owners of other properties are necessary to create complete accessibility.

This chapter follows the typical route of travel through the station and onto the train, and is divided into the following sections:

1. Site
   - Station Layout
   - Parking
   - Passenger Loading Zone
   - Pathways
2. Platform
   - Full-Length Raised Platform
   - Access Platform
   - Shelter
3. Track Crossing
4. Station House
Site

Accessible features of a commuter rail station should be grouped when possible. Locating the accessible parking spaces, the access platforms, and the track crossing in close proximity to each other minimizes the length of the route a mobility impaired person must travel to use the station. Such an arrangement minimizes maintenance efforts and provides convenient access to the station. If an overhead track crossing is used, bridging between the two access platforms minimizes the amount of ramp that must be built. Also, people using wheelchairs will be relieved to exit the overhead crossing right at the parking spaces.
Parking

Many commuter rail stations have multiple parking lots, sometimes located on both sides of the tracks. Generally, accessible spaces must be distributed proportionally among all lots unless a special arrangement with the Access Board is made. However, at a commuter rail station, the sum total of the parking spaces required on one side of the tracks may be consolidated in the lot closest to the station. At least one lot on each side of the tracks has to supply the requisite number of accessible parking spaces. To determine the required number of accessible parking spaces, compute the numbers on a lot by lot basis and add them together. Sufficient signage must be used in the auxiliary lots to direct people to the accessible spaces.

The Office of Transportation Access recommends at least one van space in lots with less than 500 spaces, and at least two van spaces in lots with 500 or more spaces. Signage at these spaces should designate them as van spaces. *(For van space dimensions, see “Parking Space Size,” page 26.)*

HP spaces should be conveniently located near the access platforms, the station house or by track crossings. If the main accessible station features are not grouped together, HP spaces can be distributed if greater access is achieved.

In lots where cash boxes are used, one of several ways to assure accessibility should be used: 1) if there is only one location for the cash box, make sure it is on the accessible route of travel; 2) locate and number HP spaces so that their cash box slots are between 36 and 48 inches; 3) if the cash boxes cannot be located on an accessible route of travel, locate cash boxes at the HP spaces.

All HP spaces should be connected to a safe, accessible route of travel that is marked.

The dimensions of the accessible parking spaces at commuter rail stations must meet the same requirements as those in rapid transit parking lots. *(See “Parking Space Size,” page 26.)*

Passenger Loading Zones

An accessible passenger loading zone provides a safe route of travel to the platform without forcing a wheelchair user or any other commuter to cross vehicular traffic.
MAAB regulations require a passenger loading zone within 100 feet of the accessible entrance when it is not possible to have accessible parking spaces 200 feet from the accessible entrance. In commuter rail stations this distance is measured from the station platform to the parking spaces or passenger loading zone. To prevent a long and confusing path of travel, passenger loading zones are best located close to the access platform and/or the accessible station house.

Passenger loading zones at commuter rail stations must meet the same requirements as the rapid transit passenger loading zones. (See “Passenger Loading Zone,” page 31.)
Commuter Rail Site

Pathways
Commuter rail stations are often located in areas with very little pedestrian traffic, yet a safe, accessible path of travel for those not arriving by car must be provided. The new MAAB regulations of September 1990 address accessible routes of travel: "18.6.5 At all newly constructed, reconstructed, altered or remodeled stations, an unobstructed continuous path of travel shall connect all terminal buildings or station houses, platforms, parking areas designated for use by handicapped persons, and street entrances." If the accessible route of travel deviates in any way from the main flow of pedestrian traffic, it should be clearly marked with signs.

Some stations have no "entrance" except where vehicles enter and exit the station. The design should establish an accessible pedestrian route of travel free of stairs or steep slopes from the street to the station and platforms. Careful thought must be given to provide a safe route of travel out of the line of vehicular traffic. Where sidewalks are not provided and pedestrians must travel through the parking lot, it is recommended that a pedestrian aisle be designated with lines painted on the asphalt and signage visible by drivers. This should extend from the parking lot entrance to the accessible elements. This pedestrian aisle would alert drivers to the presence of people in wheelchairs or others who are sometimes difficult to see.

These accessible routes of travel must meet the design requirements described in Chapter 3. (See "Accessible Route," page 33.)

MAAB 18.6.5 At all newly constructed, reconstructed, altered or remodeled stations, an unobstructed continuous path of travel shall connect all terminal buildings or station houses, platforms, parking areas designated for use by handicapped persons, and street entrances.

UFAS 43.2 (1) At least one accessible route within the boundary of the site shall be provided from public transportation stops, accessible parking, and accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance they serve. (2) At least one accessible route shall connect accessible buildings, facilities, elements, and spaces that are on the same site. (3) At least one accessible route shall connect accessible building or facility entrances with all accessible spaces and elements...

MAAB 22.2 Such walks and walkways shall have continuous common surfaces, not interrupted by steps or abrupt changes in level greater than 1/2 inch.
Platform

Standard platform design features covered in Chapter 3 must be observed. (See "Platform," page 107.) However, commuter rail platforms have some unique challenges which are discussed in this section. On several lines, commuter rail platforms must provide access while accommodating wide load clearances. Some freight trains and civil defense (Stracnet*) trains require clearances greater than the standard 5'7". Exact clearances for all stations should always be obtained from the MBTA prior to design. This section contains options for resolving the access question.

Clearance Requirements: Non-Standard Stations

<table>
<thead>
<tr>
<th>Line</th>
<th>Station</th>
<th>Clearance*</th>
<th>Reason</th>
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<tbody>
<tr>
<td>Gardner</td>
<td>Ayer</td>
<td>8'6&quot;</td>
<td>Freight</td>
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<td>Fitchburg</td>
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<td>Shirley</td>
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<tr>
<td>Haverhill</td>
<td>Andover</td>
<td>8'6&quot;/6'6&quot;</td>
<td>Freight/Stracnet</td>
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<tr>
<td></td>
<td>Ballardvale</td>
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<td>Bradford</td>
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<td>Lawrence</td>
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<tr>
<td>Lowell</td>
<td>Lowell</td>
<td>8'6&quot;/6'6&quot;</td>
<td>Freight/Stracnet</td>
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<tr>
<td></td>
<td>Mishawum</td>
<td>6'6&quot;</td>
<td>Stracnet</td>
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<td>North Billerica</td>
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<td>Winchester</td>
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* from edge of platform to centerline of tracks

* Stracnet refers to the Civil Defense train system which requires a 6'6" minimum clearance.
Full-length raised platforms and access platforms both provide platform-to-vehicle access suitable for people who use wheelchairs or other mobility aids. But access platforms serve only two coaches of the train while full-length raised platforms extend for the total length of the train. The MAAB now requires full length raised platforms at all new stations while permitting access platforms at renovated, rebuilt or remodeled stations. Because they increase accessibility, cut dwell time, and improve boarding safety for all passengers, full-length raised platforms may also be appropriate at larger existing stations. However, their high cost and difficulties regarding track rights, freight clearance, and property control sharply limit their use at existing stations.

Access Platform vs. Full-Length Raised Platform

Although full-length raised platforms provide the greatest amount of access, they are sometimes infeasible because of the different platform widths mandated by track uses. Full-length raised platforms are to be provided under the following circumstances:

- when new stations are built
- when platforms are completely relocated
- when stations are reopened after having been closed for 5 years or more

Access platforms must be constructed at stations which are not required to have a full-length raised platform when the station is being renovated.
MMAB 18.6.4 The edge of all platforms at newly constructed, reconstructed, altered or remodelled stations shall have a yellow band of a different texture, distinguishable underfoot, and at least 24 inches in width, warning of a danger zone.

Full-length raised platforms must meet the criteria defined for rapid transit stations in Chapter 3. (See "Platform," page 107.)

Access platforms must also meet the standard requirements for platforms defined in Chapter 3 including the 24 inch tactile and visual edge treatment. (See "Platform," page 108.) Issues which are unique to access platforms are discussed below.

Location of access platforms must be consistent throughout the commuter rail system so that passengers relying on them know which cars to board at full-length stations (such as the terminals at North Station, South Station and Back Bay). Consistency also facilitates the placement of accessible coaches equipped with wheelchair tie-downs at the access platform. For operational and safety reasons, the MBTA has chosen to place the access platforms at the "country end" of the station: the first two cars of an outbound train and last two cars of an inbound train stop at the access platform. Markers for positioning trains are utilized to help place a set of double doors at the access platform.

Placement of Access Platform at "Country End"
Commuter Rail Platform

Operational policy requires all trains to stop at the access platform. Because trains differ in length, the train itself or the operating cars of non-rush hour trains may stop some distance from the “city end” of the station. For this reason, station amenities such as shelters should be biased towards the country end of the station where the train will always stop. This should also be considered when designing routes of travel.

Access Platform Height

The surface of access platforms must be 48 inches above the top of the rails. At 48 inches, the platform will be level with the floor of the car, making it easy for a person with a mobility impairment to board the train.

Access Platform Dimensions

The access platform shall be 48 inches above the top of the rail. A length of 45 feet is required to provide service to adjacent doors.

The access platform must have at least 5 feet of clear width. Careful placement of platform amenities should ensure that the 5 foot clear width is maintained along the entire length.

Standing dimension for a wheelchair is 30 x 48 inches. Where turns must be made, maintain at least a 60 x 60 inch space or a T-shaped space.

There should be a 30 x 48 inch clear space next to seating so that a person seated in a wheelchair can pull up alongside a friend.

MAAB 18.6.2 Such platforms shall be at least 45 feet in length and at least 5 feet in clear width...

UFAS 4.2.4.1 The minimum clear floor or ground space required to accommodate a single, stationary wheelchair occupant is 30 by 48 inches...

UFAS 4.2.3 The space required for a wheelchair to make a 180-degree turn is a clear space of 60 inches diameter or a T-shaped space.
MAAB 18.6.3 The distance between the raised platforms... or the raised access platform... and the floor of the entrance to the rail coach shall not exceed 4 inches in the horizontal plane and 2 inches in the vertical plane. Where construction constraints result in platform to vehicle gaps that exceed these standards, a bridge plate designed to eliminate such gaps shall be made available at every door of the vehicle where passengers are boarding or disembarking.

The standard distance between the centerline of the tracks and the edge of the platform is 5 feet 7 inches, unless wide load passage or track curvature necessitates a greater clearance. (See chart, page 161.) The maximum car/platform gap allowable by the MAAB is 2 inches in the vertical plane and 4 inches in the horizontal. When the distance from the platform to the centerline of the tracks is greater than 5 feet 7 inches, resulting in a greater gap between the car and the platform, some means of closing the gap must be used. On-train bridge plates, currently in use on commuter rail coaches, are generally the preferred option for closing the gap between the car and the platform.
A second set of tracks which could provide clearance around the access platform has also been considered. Another possibility is a folding edge on the access platform. In most circumstances, wide loads can be scheduled in advance, leaving an opportunity to manually fold up the edge. Designers should be aware of the latest developments when designing an access platform.

**Stairs and Ramps**

Stairs and ramps must supplement each other because ramps alone do not meet everyone’s access needs. People using crutches or prostheses often have more difficulty accommodating their gait to a ramp’s sloping surface than they do climbing stairs. For this reason, the MBTA requires stairs as well as a ramp at the access platform. Stairs and ramps must be code compliant. (See “Stairs,” page 75, and “Ramps,” page 71.) For level changes from grade to the platform, and for pedestrian overpasses, ramps and stairs must be roofed. For all other cases, it should be determined for each site individually whether stairs and ramps at platforms should be roofed. (See “Accessible Route,” page 34.) Vertical or inclined platform lifts are not an option, since they are prone to mechanical failure and vandalism.

**Canopy**

The MBTA requires a canopy over the entire access platform and all means of vertical circulation. The distance from the edge of the canopy to the centerline of the track is site-specific, and must be determined on a case by case basis.
Access platform railings are not covered by the MAAB or UFAS. The railings should be set along three sides of the platform at a height between 3 to 42 inches to the top of the rail. Gaps between horizontal, vertical or other rail elements should be no more than 6 inches wide.

The access platform should be attractive to all riders so that people using wheelchairs do not feel isolated and "on stage." All amenities provided at the station must also be provided on the access platform. These may include newspaper machines, telephones, and police call boxes.

The amenities should not reduce the effective clear width of the platform. They should not be placed in front of signage. (See "Platforms," page 109; "Telephone," page 125; "Signage," page 117.)
Shelter Location

Shelter is important for the safety and comfort of all commuters. In addition to the shelter above the access platform (See "Canopy," page 166), the new MAAB regulations call for 150 feet of overhead shelter at all full-length, high-level platforms. (See Appendix B for the new regulations.)

Existing Shelters

Many existing shelters are raised up from the platform level and are inaccessible. Even if there is a covered access platform, existing shelters should be made accessible or an additional shelter should be provided for people who are waiting for the train but not boarding it.

Level Change at Shelter

There should be no level change greater than 1/2 inch between the platform and the shelter unless a ramp is provided. Between 1/4 inch and 1/2 inch, the level change must be beveled with a maximum slope of 1:2.

Overhead Shelter Dimensions

Roofs should be at least 5 feet deep so that a person using a wheelchair will be completely covered. The higher the shelter roof, the greater the depth should be to prevent rain and snow from falling under the shelter.

UFAS 4.5.2 Changes in Level. Changes in level up to 1/4 inch may be vertical and without edge treatment. Changes in level between 1/4 inch and 1/2 inches shall be beveled with a slope no greater than 1:2. Changes in level greater than 1/2 inch shall be accomplished by means of a ramp that complies with 4.7 or 4.8.
UFAS 4.2.4.1 Size and Approach. The minimum clear floor or ground space required to accommodate a single, stationary wheelchair occupant is 30 by 48 inches...

UFAS 4.2.3 Wheelchair Turning Space. The space required for a wheelchair to make a 180-degree turn is a clear space of 60 inches diameter or a T shaped space...

If the shelter has walls, the plan should allow maneuvering space and a resting space for a person using a wheelchair. The layout should allow at least two people in wheelchairs to use the shelter without blocking other users. If a turn must be made to position oneself in the shelter, provide a 5 foot diameter maneuvering space. A wheelchair requires a 30 x 48 inch space in the resting position. If seating is provided, leave a 30 x 48 inch clear space at the end of the seat so that a person using a wheelchair can sit next to a friend.
Track Crossing

Track crossings serve as a link in the accessible route of travel through the station. Achieving both safety and convenience in track crossing is the subject of much discussion between the commuters, the access community, transit authorities and operating railroads. There are three methods of track crossing: at-grade crossings, overpasses, and underpasses.

The MBTA operates on two high speed lines: the Framingham line and the Providence line. Ultimately, the MBTA will eliminate all at-grade crossings on these lines because of the danger a 110 m.p.h. train poses. Whether the crossing is at- or above-grade, the MBTA is considering the use of bells to signal an approaching train so that people will not be startled by a high speed train. As with most aspects of commuter rail access, track crossing methods are determined on a case-by-case basis.

### Pros & Cons of Track Crossing Methods

<table>
<thead>
<tr>
<th>AT-GRADE CROSSINGS</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Short and convenient path of travel</td>
<td>• Minimal pedestrian safety</td>
</tr>
<tr>
<td></td>
<td>• No level changes</td>
<td>• Flange gap between the crossing and the rail</td>
</tr>
<tr>
<td></td>
<td>• Costs the least</td>
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</tbody>
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<table>
<thead>
<tr>
<th>OVERPASSES</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Provides pedestrian safety from high speed trains</td>
<td>• Expensive, usually only one per station is feasible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Extremely long path of travel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Path of travel is further increased by the level change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Level change may be impossible for some people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Potentially a security problem</td>
</tr>
</tbody>
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<thead>
<tr>
<th>UNDERPASSES</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Provides pedestrian safety from high speed trains</td>
<td>• Security problem</td>
</tr>
<tr>
<td></td>
<td>• May be smaller level change than overpass</td>
<td>• Expensive</td>
</tr>
</tbody>
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Crossings should be viewed as the connection between elements of the accessible route. Since it is possible to have more than one at-grade crossing, minimize travel distances by strategic placement of the track crossings, such as adjacent to the passenger loading zone, accessible parking spaces, or access platforms.

At-grade crossings must provide a smooth path of travel from one side of the tracks to the other. Level changes between materials should be no greater than 1/2 inch. If the crossing is lower than the platform, the approach should be a curb cut with flared sides and no slope greater than 1:12. (See “Curb Cuts,” page 38.) The curb cut must be painted and roughened to distinguish it visually and texturally from the rest of the platform. This is an extremely important safety feature for people with visual impairments who may otherwise walk onto the track inadvertently.

At-grade crossings are usually made of wood ties, laid perpendicular to the path of travel. Care must be taken to ensure that the lumber is installed level, with no gaps that could trap a cane tip or front wheelchair roller. The flange gap between the crossing and rail must be minimized. In no case should the gap be greater than 4 inches (less whenever possible). It is particularly critical for the surface to be non-slip because a fall on the train tracks could be deadly. The crossing should be a minimum of 96 inches wide.
Safety
Trains do not always travel at a slow speed through commuter rail stations. Some Conrail trains travel at high speeds, and Amtrak trains can travel up to 110 m.p.h. People are often surprised at how quickly these trains can come upon a station. There is often little visual or audible warning. Even a slow-moving train cannot brake effectively for a person on the tracks. Hence, at-grade crossings pose a significant safety hazard. For the two high speed lines, Providence and Framingham, at-grade crossings are being replaced with overpasses.

Overpass Location
To avoid an excessively long path of travel, the overpass should be located close to the accessible parking spaces and/or the access platform. In some cases, the access platforms may provide the best location for the overpass because the level change is reduced by the two raised platforms. The overpass can then be part of the same accessible route established at the access platforms.

Overpass Bridging Access Platforms
To bridge the over 20 feet of rise at most stations, hundreds of feet of ramp and walkway must be constructed. For a wheelchair user or for someone with low stamina, as well as for people with packages or strollers, such a distance, no matter what the slope, is difficult to travel. Consider using a lesser slope, even though it lengthens the ramp. Also, many people would benefit from a bench at the switchbacks.

Although some ramps must be covered, care must be taken to ensure that the length of pathway is clear of all snow, ice, and debris. Some localities fear that an overpass could become a crime hazard, just as an underpass could.

Overpass design must meet the standard ramp, stair and pathway requirements described in Chapter 3. (See “Ramps,” page 71; “Stairs,” page 75; “Accessible Route,” page 92.) A ramp must always be incorporated into the design; however, many people find a ramp difficult to travel over a long distance. Therefore, stairs should always be used in conjunction with a ramp. An elevator provides for the most people’s abilities and should be included at major terminals. Elevators cannot be used at stations which do not have MBTA personnel present during all operating hours.

The overpass and its ramps and stairs must be covered for their entire lengths. Fully enclosing the overpass is not recommended because of safety issues and the excessive heat that can build up in the enclosure.

Underpasses must meet the same slope and surface requirements as overpasses. From the perspective of a wheelchair user, an underpass may be preferable to an overpass because the level change is not as great. (See “Pros and Cons of Track Crossing Methods,” page 170.)
Station House

Many existing station houses have neither accessible entrances nor accessible interior facilities (such as toilet rooms, vendors, ticket booths, etc.). New station houses should be designed barrier-free and, when possible, existing station houses should be renovated to provide access to all features of the station. When the station house or parts of it are privately owned, cooperation from these owners may be necessary to produce a fully accessible station. Many station houses are considered historic landmarks. Historic designation does not exempt a building from being accessible, but alternate means of access may be allowed.

Entrance

(See “Entrance,” page 47, and “Doors and Doorways,” page 95.)

Vendors

(See “Vendors,” page 130.)

Ticket Windows

The ticket window should be made accessible by having enough floor space to allow wheelchair approach, no level change upon approach to the window, and a counter height no more than 40 inches above the floor or ground. Some of the design standards for fare collection booths may apply. (See “Fare Collection,” page 55.)

Floor Surfaces

(See “Floor Surfaces,” page 101.)

Toilet Rooms

(See “Public and Employee Toilet Rooms,” page 133.)
MAINTAINING ACCESS
Maintaining Access

Accessibility is not ensured just because the building has been designed barrier-free. Building management and maintenance practices will need to be examined to see that they contribute to, rather than erode, the accessible features of the station. This chapter highlights some common problems that arise once a building is in use.

Maintenance is especially important to protect people with disabilities. People with disabilities are particularly vulnerable to a crack in a sidewalk, a stiff door, or a broken elevator. When stations are routinely inspected, the accessible features below should be examined.

A hard-packed smooth surface needs to be maintained at the handicapped parking area and along the accessible route from the parking spaces to the station. Also check to see that painted lines designating handicapped parking spaces and the adjacent 5 foot wide aisle are plainly visible. The lines and the International Symbol of Accessibility painted on the ground at the parking space should be redone if they have faded significantly.

Signs at handicapped parking spaces keep non-disabled drivers from using spaces and allow drivers to easily spot the accessible parking spaces. Check to see that the original signs designating the accessible spaces are still posted at each space or pair of spaces and that they are not obstructed.

The wheelchair-accessible route from the sidewalk, accessible parking spaces, or accessible passenger loading zone to the station should be kept free of cracks and level changes from settling materials. Cracks greater than 1/2 inch should be filled in. Level changes between 1/4 inch and 1/2 inch should be beveled with a slope of 1:2. Level changes greater than 1/2 inch need to be eliminated by repairing the materials around it, or by regrading if the problem is extensive.
Entrance

The accessible entrance must be kept unlocked and open during operating hours. When entrances are being closed, be careful to identify and maintain the accessible entrance.

The pressure required to open the doors should not exceed 15 pounds. Closers should be adjusted if necessary. Stiff hinges should be repaired or replaced. Check to see that the threshold has not pulled up. It should be no more than 1/2 inch high and beveled with a slope of 1:4.

Fare Collection

The fare collection booth closest to the accessible entrance should be kept open to minimize travel distances for people with disabilities.

Elevators and Escalators

Elevators are essential to people using wheelchairs. Escalators are also necessary for those persons with stamina or respiratory problems. It is important that any required repairs be completed as quickly as possible.

Elevators are currently being equipped with an alerting system which rings the fare collector and Central Control when the elevator breaks down. The "Elevator Update Line" should be updated as soon as possible and a speedy repair should be scheduled.

Alarm systems and telephones inside elevators need to be inspected periodically for effectiveness.

Telephones

Pay phones are installed by the New England Telephone Company and should comply with UFAS 4.31 and MAAB 37. The telephone company should be contacted immediately if an accessible telephone is out of order. Unobstructed clear space at all accessible telephones needs to be maintained.
• At least one phone per bank should be accessible
• The highest operable part is no higher than 54 inches
• Receiver equipped with inductive coil
• Volume control is provided
• Telephone books, if provided, are within reach of a person seated in a wheelchair
• The cord length from the telephone to the handset is at least 29 inches long
• TDD provided at each station

Several types of tactile and visual materials are used to warn people of the platform edge. Since these warning materials are critical to the safety of passengers, they should be well maintained at all times. The material should periodically be cleaned or repainted to preserve the contrasting color, and tactile edge treatment discernable underfoot should be inspected for signs of wear.

Once in place, visually impaired riders rely heavily upon tactile warning materials. If the material were to suddenly be removed, an extremely dangerous situation would be created. Therefore tactile materials should not be removed. The material should be maintained at all times. If the material must be temporarily removed for repairs, consider working on small sections of the platform which can be repaired in one day. Place a series of barriers at right angles to the platform edge. With such a barrier, passengers can still enter and exit the train, and visually impaired riders walking along the platform will be warned of a construction zone. Be careful to leave ample space for wheelchair maneuvering around the barriers.

A contrasting color should be maintained on step edges to alert people to the depth and height of stairs. Rubber flooring on stairs needs to be kept fastened to the back edge of the tread. Stair coverings can come loose and should be physically inspected.

Separating thresholds or loose rubber flooring can trip passengers and are especially dangerous for people using a walking aid. Re-anchor these materials as necessary.
Many elderly people and people with visual impairments do not perceive much light with their eyes. For them, adequate levels of lighting may determine their ability to use the station. Where bulbs or fixtures are burnt out or dirty, they should be cleaned and replaced. Consider improving lighting at older stations. Care should be taken to maximize lighting level but minimize glare on signs, and to minimize changes in the lighting level as one walks through the station.

Many passengers with visual impairments may need to read signs at a very close proximity. All signs need to have a clear space around and underneath them to allow passengers to view them up close. Trash barrels, newspaper vending machines, and benches should never be placed in front of signs. Signs should also be cleaned regularly to maintain clear contrast and readability.

New England’s four seasons demand diligent maintenance techniques. Snow and ice create hazards for people with crutches or canes and for older people. Leaves that build up in catch basins in autumn cause flooding and puddles that inconvenience wheelchair users.

Following are some actions that can be taken:

- Remove the snow and ice along the accessible routes
- Watch for icy buildups which may indicate runoff problems
- Keep catch basins clear of leaves and debris

While ambulatory people can trudge over the snow, people using canes, walkers, or wheelchairs cannot. Accessible routes (curb cuts, ramps, walkways, and platforms) must be kept free from snow and ice. It is particularly important to keep overhead pedestrian track crossings free from ice and snow. Watch for areas with water or ice buildup which may indicate runoff or drainage problems.
Maintaining an accessible route is imperative in those stations which are designated accessible. If construction barriers are unavoidable, alternative accessible routes must be provided.

It is important for construction area barriers to be cane-detectable by visually impaired people. Barriers placed within 27 inches of the ground are cane-detectable. If sawhorses are used to designate construction areas, consider running plastic ribbon across the legs of the sawhorse within the cane-detectable zone.

Passengers with visual limitations or with poor balance are dependent on handrails to guide them on stairs and through the station. Keep handrails clean and also free of splinters and debris. Maintenance contractors should be alerted to this requirement since it may often be overlooked in the cleaning process. Caution should be used when cleaning around delicate electrical equipment, such as TDDs, to avoid shorting out the wiring.
6
DESIGN REVIEW CHECKLIST
How to Use the Checklist

This checklist is intended for use by station designers and MBTA project managers. It is recommended that the checklist be used at the 30%, 60% and 90% checkpoints. At the end of the design process, the completed checklist should be submitted to the MBTA project manager.

The checklist has two major sections: the Site and the Station. Within each section the questions are divided by element and drawing type (example: Indoor Ramp Plans).

The checklist questions are based on the Rules and Regulations of the Massachusetts Architectural Access Board (MAAB), the Uniform Federal Accessibility Standards (UFAS), and MBTA policy. Those items marked “MBTA” are additional requirements established by the MBTA. This checklist does not replace the codes in any way.

References to the appropriate UFAS, MAAB, or MBTA regulations are provided with each question. The reviewer can explore these references for additional information when necessary.

If all the questions can be answered “yes,” the station should be accessible. Those questions which are checked “no” require further resolution. At the end of the design process, any code requirement which has not been met must be granted a variance from the code authorities before construction begins.

Do not rely exclusively on the checklist. The main body of this guidebook discusses issues which cannot be reduced to yes or no questions.
### Design Review Checklist

<table>
<thead>
<tr>
<th>Yes</th>
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<tbody>
<tr>
<td></td>
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<td>MAAB</td>
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<tr>
<td><strong>Parking Area Plan:</strong></td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is parking currently provided or is it in the prospective plans? If yes, proceed with these parking requirements.</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Are there enough accessible parking spaces?</td>
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<td>☐</td>
<td>☐</td>
<td>Are the accessible parking spaces closest to the accessible entrance (or the platform at commuter rail stations)?</td>
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<td>☐</td>
<td>Are the accessible parking spaces within 200 ft. of the entrance? (option: drop-off within 100 ft. of the entrance)</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is there an accessible path of travel without obstructions, steps, or other barriers from the parking area to the station entrance?</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Are accessible parking spaces located along a safe pedestrian path of travel?</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Are walkways protected by bumpers or curb stops that prevent encroachment of cars into the walkways?</td>
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<tr>
<td>☐</td>
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<td>Is each accessible parking space 13 ft. wide? Or, are there two 8 ft. wide spaces with a 5 ft. wide aisle between them?</td>
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<tr>
<td>☐</td>
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<td>Is there a curb cut leading to a sidewalk at each accessible space or pair of spaces?</td>
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<td>☐</td>
<td>At each accessible parking space, is there a sign posted between 5 ft and 8 ft from the ground with the universal symbol of accessibility?</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>In addition to a sign on a post, is the universal symbol of accessibility painted on the ground in each parking space?</td>
</tr>
<tr>
<td><strong>Parking Area Section:</strong></td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is there at least 9 ft. 6 in. vertical clearance along the vehicle routes to accessible van parking spaces?</td>
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<tr>
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<td>☐</td>
<td>Is there at least 9 ft. 6 in. vertical clearance at the accessible van parking spaces?</td>
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<tr>
<td><strong>Drop-Off Area Plan:</strong></td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is a drop off area currently provided or in the prospective plans? If yes, proceed with the following questions.</td>
</tr>
<tr>
<td>☐</td>
<td>☐</td>
<td>If the drop-off area has curbs, is there a curb cut leading to a walkway?</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is there an accessible path of travel without obstructions, steps or other barriers from the drop-off to the entrance (or platform at commuter rail)?</td>
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<tr>
<td><strong>Drop-Off Area Section:</strong></td>
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<td>☐</td>
<td>☐</td>
<td>Is there at least 9 ft. 6 in. of vertical clearance provided at the drop-off area?</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is there at least 9 ft. 6 in. of vertical clearance provided along vehicular access to the drop-off?</td>
</tr>
</tbody>
</table>

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### Design Review Checklist

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Reference</th>
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<tr>
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<td><strong>Route of Travel Plan:</strong></td>
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<tr>
<td></td>
<td></td>
<td>Are all walkways at least 48 in. wide?</td>
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<td></td>
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<td>Is a passing space 60 in. by 60 in. available at least every 200 feet?</td>
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<td></td>
<td></td>
<td>If there are pedestrian bridges, underpasses, or overpasses, do they meet the criteria for walkways and ramps? (Check the overpass with the Route of Travel Details section of this checklist and the Exterior Ramps section if necessary.)</td>
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<td>22.5</td>
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<tr>
<td></td>
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<td>If outdoors, has the option of overhead protection for ramps and pedestrian bridges been submitted for MBTA review?</td>
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<tr>
<td></td>
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<td>Are ramps located close to the main circulation route?</td>
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<td>MBTA</td>
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<tr>
<td></td>
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<td>Are there curb cuts on all corners at each intersection of roads and walkways?</td>
<td></td>
<td>21.1.1</td>
<td>4.7.1</td>
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<tr>
<td></td>
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<td>Are there two curb cuts at each corner, one located within each crosswalk?</td>
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<tr>
<td></td>
<td></td>
<td>Does every curb cut have another curb cut on the opposite side of the street?</td>
<td></td>
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<tr>
<td></td>
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<td>If driveways intersecting sidewalks have side curbs, are there curb cuts provided?</td>
<td></td>
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<td></td>
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<td>Do street islands have street level pathways cut through them?</td>
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<td>4.7.11</td>
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<td></td>
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<td><strong>Route of Travel Section:</strong></td>
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<td></td>
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<td>Do all walkways have clear headroom of at least 80 in.?</td>
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<td>26.6</td>
<td>4.4.2</td>
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<tr>
<td></td>
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<td>Are there permanent walls or barriers below free-standing staircases and escalators to prevent people from walking under the stairs?</td>
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<td>4.4.2</td>
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<td><strong>Route of Travel Details:</strong></td>
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<tr>
<td></td>
<td></td>
<td>Is the walkway surface either paved or hard-packed?</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Is the surface non-slip?</td>
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<td>22.2</td>
<td>4.5.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is the walkway made with a continuous surface with no abrupt changes in level greater than 1/2 in.?</td>
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<td>22.2</td>
<td>4.3.8</td>
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<tr>
<td></td>
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<td>Where walkway materials change, is the vertical height between the two materials less than 1/2 in.?</td>
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<td></td>
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<td>Where jointed surfaces are used (pavers, brick, etc.), is the underlying base firm, and are joints narrow and set to close tolerances?</td>
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<tr>
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<td>Are level changes between 1/4 in. and 1/2 in. beveled with a maximum slope of 1:2?</td>
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## Design Review Checklist

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<tr>
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<td>21.1.4</td>
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<td>☐</td>
<td>☐</td>
<td>22.1</td>
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</tbody>
</table>

- **Is the site graded to avoid flow of water onto pathways and driveways?**
- **Is the area on either side of walkways firmly compacted so wheelchairs will not sink in?**
- **Are the walkway edges flush with adjoining surfaces?**
- **Are catch basins and utility covers located out of the path of travel?**
- **Are catch basins located away from the curb cuts, so that the curb cuts are not flooded in wet weather?**
- **Are openings in gratings no more than 1/2 in. wide, and is the long dimension faced perpendicular to the usual direction of travel?**
- **Are exterior drinking fountains and public telephones located where they do not impede the path of travel?**
- **Are all walkways and steps well lit for night use?**

### Curb Cut Details:
- **Is the slope of curb cuts 1:12 or less?**
- **Is the maximum slope of any surface adjoining the curb cut such as a gutter, parking lot, or sidewalk, 1:20 or less?**
- **Is the curb cut at least 36 in. wide, not including the flared sides?**
- **Does the curb cut have flared sides?**
- **Do the flared sides extend at least 24 in. at the curb edge?**
- **If possible, is there a 48 in. wide level section of pavement at the top and bottom of each curb cut?**
- **Is the curb height at each intersection less than 7 in.?**
- **Is the surface a non-slip material?**
- **Is the texture roughened in the direction of the slope or is the curb cut painted yellow?**
- **Does the slope of the curb cut blend (less than 1/2 in. lip) to meet the street?**

### Grading:
- **Is the slope of sidewalks, walkways, and parking areas not more than 1:20 (5%)?**
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Question</th>
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<th>UFAS</th>
<th>MBTA</th>
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<tr>
<td></td>
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<td>Is the cross slope of the sidewalk less than 2%?</td>
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<td><strong>Outdoor Ramp Plan:</strong></td>
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<tr>
<td></td>
<td></td>
<td>Are ramps straight, not curved?</td>
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<td>25.7</td>
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<tr>
<td></td>
<td></td>
<td>Is the slope of the ramp 1:12.5 or less?</td>
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<td></td>
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<td>Is there a level platform located within every 30 in. of rise or within</td>
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<td>4.8.2</td>
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<td>every 30 ft. of ramp?</td>
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<td>MBTA</td>
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<td>Are the level platforms at least 60 in. wide by 60 in. long where ramps</td>
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<td>25.6</td>
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<td>change direction?</td>
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<td>4.8.4</td>
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<td>Are there 60 in. long level platforms at the top and bottom of the ramp?</td>
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<td>25.6</td>
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<td></td>
<td></td>
<td>Are the level platforms as wide as the ramp (at least 48 in.) and 60 in.</td>
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<td>25.6</td>
</tr>
<tr>
<td></td>
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<td>long where no change of direction occurs?</td>
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<td>4.8.4</td>
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<tr>
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<td></td>
<td>Do ramps have handrails on both sides?</td>
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<td>25.4</td>
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<tr>
<td></td>
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<td>Is the ramp at least 48 in. wide, measured between the handrails?</td>
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<tr>
<td></td>
<td></td>
<td>Is there a 12 in. horizontal extension of the handrail at the top landing</td>
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<td>25.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and at the bottom landing?</td>
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<td>4.8.5</td>
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<td>Are handrails continuous at landings, except where they would be an</td>
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<td>obstruction?</td>
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<td>Is there a space of 1-1/2 in. between the handrail and the wall?</td>
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<tr>
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<td>Is the ramp surface non-slip?</td>
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<tr>
<td></td>
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<td>Are ramps and their approaches designed so that water will not accumulate</td>
<td></td>
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<td>4.5.1</td>
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<td></td>
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<td>on walking surfaces?</td>
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<td><strong>Outdoor Ramp Section:</strong></td>
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<td></td>
<td>Do ramps have at least 80 in. headroom?</td>
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<tr>
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<td>Are there two handrails, one at 34 in., the other at 19 in. above the</td>
<td></td>
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<td>4.4.2</td>
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<td></td>
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<td>surface of the ramp?</td>
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<td>Are the handgrips either round or oval in cross-section?</td>
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<td>Is the handgrip diameter between 1-1/4 in. and 1-1/2 in.?</td>
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<td><strong>Outdoor Stairs Plan:</strong></td>
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<td></td>
<td>Are there permanent walls or barriers below free-standing staircases</td>
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<td>4.4.2</td>
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<td></td>
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<td>to prevent people from walking under them?</td>
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<td></td>
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<td>Do steps have handrails on both sides?</td>
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<td></td>
<td></td>
<td>Are wall handrails continuous at landings, except where they would be an obstruction?</td>
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<td>Do the handrails extend 12 in. horizontally beyond the last riser at the top and bottom steps?</td>
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<td>4.9.4</td>
</tr>
<tr>
<td></td>
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<td>Do stair nosings contrast in color value from the treads, or does the stair stringer color contrast with tread and riser color?</td>
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<td>Outdoor Stairs Section:</td>
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<tr>
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<td>Are the handrails mounted 34 in. above the intersection of the tread and riser?</td>
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<td>28.3</td>
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<tr>
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<td>Is a second handrail provided on stairs at 19 in.?</td>
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<td>MBTA</td>
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<td>Are handrail gripping surfaces uninterrupted by newel posts, wall brackets or supports, construction elements or other obstructions?</td>
<td></td>
<td></td>
<td>4.9.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are the handrail ends rounded or returned smoothly to the wall, floor or post?</td>
<td></td>
<td></td>
<td>4.9.4</td>
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<tr>
<td></td>
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<td>Is there a space of 1-1/2 in. between the handrail and the wall?</td>
<td></td>
<td>28.5</td>
<td>4.26.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are the handrails either round or oval in cross-section?</td>
<td></td>
<td>28.4</td>
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<tr>
<td></td>
<td></td>
<td>Do stairs have closed risers?</td>
<td></td>
<td>28.2</td>
<td>4.9.2</td>
</tr>
<tr>
<td></td>
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<td>Are stairs free of nosing projections?</td>
<td></td>
<td>28.2</td>
<td>4.9.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are stair treads at least 11 in. wide?</td>
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<td></td>
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<td>Is the intersection of the tread and the riser 70 degrees or less?</td>
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<td>28.2</td>
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<td>Entrance Plan:</td>
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<td>Is each primary entrance accessible?</td>
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<td>Is the approach to the entrance a paved ramp or walkway, with a non-slip surface?</td>
<td></td>
<td>26.2</td>
<td>4.3.2</td>
</tr>
<tr>
<td></td>
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<td>Is the approach to the accessible entrance free of barriers such as steps or stairs?</td>
<td></td>
<td>26.2</td>
<td>4.3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Is there an accessible pathway from each primary entrance to the elevators?</td>
<td></td>
<td>26.4</td>
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<tr>
<td></td>
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<td>Is overhead protection or a snow-melting device provided at the headhouse entrance?</td>
<td></td>
<td>18.2</td>
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<tr>
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<td>Is there a 60 in. by 60 in. level space inside and outside the entry door?</td>
<td></td>
<td>26.2</td>
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<td>If there is an inaccessible revolving door, is there an adjacent, accessible door?</td>
<td></td>
<td>27.10</td>
<td>4.13.2</td>
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<tr>
<td>Yes</td>
<td>No</td>
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<td>Reference</td>
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<td>Are the doors at the accessible entrance at least 36 in. wide,</td>
<td>27.3</td>
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<td>with 34 in. minimum clear opening?</td>
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<td>If there are any pivot doors, can they be opened 34 in. clear?</td>
<td>27.2</td>
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<td></td>
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<td>In entry vestibules, is there at least 48 in., clear of door swings,</td>
<td>26.3</td>
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<td>between the sets of doors?</td>
<td>4.13.7</td>
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<td>Are directions to the accessible entrance posted at each inaccessible</td>
<td>26.7</td>
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<td>entrance?</td>
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<td>Is there at least 18 in. beside the latch on the pull side of every door</td>
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<td>in the building?</td>
<td>4.13.6</td>
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<td>Entrance Details:</td>
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<td>Are entrance thresholds no higher than 1/2”?</td>
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<td>Are thresholds beveled with a slope no greater than 1:2?</td>
<td>4.13.8</td>
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<td>Are the interior doorways free of thresholds?</td>
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<td>Is hardware on all doors operable with one hand?</td>
<td>27.11</td>
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<td>Are glass doors distinguishable from adjacent floor to ceiling windows?</td>
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<td>Circulation:</td>
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<td>Are all changes in floor elevations accommodated by ramps, lifts,</td>
<td>35.1</td>
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<td></td>
<td></td>
<td>or elevators?</td>
<td>4.3.8</td>
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<td>Are corridors at least 36 in. wide?</td>
<td>5.12</td>
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<td>Are there 60 in. wide passing areas within every 200 ft.?</td>
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<td>Drinking Fountains:</td>
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<td>At every drinking fountain location, is at least one drinking fountain</td>
<td>36.1</td>
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<td></td>
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<td>accessible to wheelchair users? (Basin rim 34 in. above the floor,</td>
<td>4.15</td>
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<td></td>
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<td>hand-operated push-button or lever, stream of water as parallel to the</td>
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<td>front of the basin as possible.)</td>
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<td>Are wall mounted drinking fountains located so that they do not protrude</td>
<td>4.4.1</td>
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<td>more than 4 inches into the path of travel or do they have wing walls</td>
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<td>or sides which extend to within 27 in. of finished floor?</td>
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<td>For recessed installations, is the recess at least 30 in. wide and</td>
<td>36.2</td>
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<td>no deeper than the depth of the fountain?</td>
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<td>For floor mounted installations, is there a clear floor space of at least</td>
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<td>30 in. by 48 in. in front of the fountain?</td>
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<td>Public Telephones:</td>
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<td>Wherever public telephones are provided, is at least one telephone</td>
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## Design Review Checklist

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<td>37.2</td>
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<td>4.31.3/4.2.6</td>
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<td>4.31.3/4.2.5</td>
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**Indoor Stairs Plan:**

| ☐   | ☐  | 4.4.2      |
| ☐   | ☐  | 28.3       |
| ☐   | ☐  | MBTA       |
| ☐   | ☐  | 28.3       |
| ☐   | ☐  | 4.9.4      |

**Indoor Stairs Section:**

| ☐   | ☐  | 28.3       |
| ☐   | ☐  | MBTA       |
| ☐   | ☐  | 28.3       |
| ☐   | ☐  | 28.5       |
| ☐   | ☐  | 28.4       |
| ☐   | ☐  | 28.2       |
| ☐   | ☐  | 28.2       |
| ☐   | ☐  | 4.9.2      |
| ☐   | ☐  | 4.9.3      |
| ☐   | ☐  | 4.9.2      |
| ☐   | ☐  | 28.2       |
Indoor Ramp Plan:

- Are ramps straight, not curved? [ ] Yes [ ] No
- Is the slope of the ramp 1:12.5 or less? [ ] Yes [ ] No
- Is there a level platform located within every 30 in. of rise or within every 30 ft. of ramp? [ ] Yes [ ] No
- Are the level platforms at least 60 in. wide by 60 in. long where ramps change direction? [ ] Yes [ ] No
- Are there 60 in. long level platforms at the top and bottom of the ramp? [ ] Yes [ ] No
- Are the level platforms as wide as the ramp (at least 48 in.) and 60 in. long where no change of direction occurs? [ ] Yes [ ] No
- Does the ramp have handrails on both sides? [ ] Yes [ ] No
- Is the ramp at least 48 in. wide, measured between the handrails? [ ] Yes [ ] No
- Is there a 12 in. horizontal extension of the handrail at the top landing and at the bottom landing? [ ] Yes [ ] No
- Are handrails continuous at landings, except where they would be an obstruction? [ ] Yes [ ] No
- Is there a space of 1-1/2 in. between the handrail and the wall? [ ] Yes [ ] No
- Is the ramp surface non-slip? [ ] Yes [ ] No
- Is each platform free from obstructions from door swings or other projections? [ ] Yes [ ] No

Indoor Ramp Section:

- Do ramps have at least 80 inches headroom? [ ] Yes [ ] No
- Are there two handrails, one at 34 in. and the other at 19 in. above the surface of the ramp? [ ] Yes [ ] No
- Are the handgrips either round or oval in cross-section? [ ] Yes [ ] No
- Is the handgrip diameter between 1-1/4 in. and 1-1/2 in.? [ ] Yes [ ] No

Elevators:

- Is the highest hallway call button centered no more than 42 in. above the floor? [ ] Yes [ ] No
- Are the call buttons at least 3/4 inches in the smallest dimension? [ ] Yes [ ] No
- Do the hall call buttons have visual signals to indicate when each call is registered and answered? [ ] Yes [ ] No

Reference:

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<tr>
<th>MAAB</th>
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<td>21.1.4</td>
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1. **Is the button designating the up direction on top?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.3  
2. **Are the buttons raised or flush with the wall?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.3  
3. **Is there no obstacle placed directly below or above the call buttons?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;35.7  
4. **Is there a visible and audible signal at each hoistway entrance to indicate which car is answering a call?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.4  
5. **Do audible signals sound once for up and twice for down, or do they have verbal annunciators that say “up” or “down”?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;35.8  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.4  
6. **Are the visual signals: mounted at least 72 inches above the floor? at least 2 1/2 inches in the smallest dimension? visible from the vicinity of the hall call button?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.4  

#### FOR EXISTING ELEVATORS

**Door Jamb and Threshold:**

1. **Does the floor of the elevator car come within 1/2 inch of the hallway floor at each stop?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.2  
2. **Is the horizontal gap between the car floor platform and the landing sill no greater than 1-1/4 inch?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.9  

**Doors:**

1. **Do the elevators doors open and close automatically? Do they re-open automatically if they become obstructed?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;35.3.2  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.6  
2. **Do the elevators doors remain fully open for a minimum of 3 seconds?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.8  
3. **Do the doors provide at least a 36 in. clear opening? (In a retrofit situation, 32 in. clear opening is acceptable.)**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;35.3  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.9  

**Elevator Cab:**

1. **In a new station, is the interior cab size either at least 54 x 80 inches wall-to-wall?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Elevator Board 17.4.0  
2. **In a retrofitted station, is the interior cab size:**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.9 (a)  
   - at least 51 x 80 inch wall-to-wall with a centered door?  
   - at least 51 x 68 inch with an off-centered door?  
   - as close to those dimensions as possible, but not less than 54 x 54 inches?  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;35.4  
3. **Are the floors in and around the elevator stable, firm, and slip-resistant?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;35.11  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.5.1  

**Elevator Control Panels:**

1. **If the cars have central opening doors are the controls located on the front wall?**  &nbsp;&nbsp;&nbsp;&nbsp;&nbsp;4.10.12  

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194  **DESIGN REVIEW CHECKLIST**
## Design Review Checklist

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<tr>
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<td>If the cars have side opening doors are the controls located on the side or front wall adjacent to the doors?</td>
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<td>4.10.12</td>
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<td>If the elevator has two doors, is a control panel provided at each?</td>
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<td>MBTA</td>
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<tr>
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<td>Are the controls no higher than 48 in.? (If there is a substantial increase in cost, 54 in. is acceptable.)</td>
<td>☑</td>
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<td>4.10.12</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Are the controls no lower than 35 in. above the floor measure from the centerline of the buttons?</td>
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<td>35.5 4.10.12</td>
</tr>
<tr>
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<td>☐</td>
<td>Are the emergency buttons grouped at the bottom of the panel with centerlines no less than 35 in. above the floor?</td>
<td>☑</td>
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<td>35.5 4.10.12</td>
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<tr>
<td>☐</td>
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<td>Is there a visual car position indicator above the car control panel or over the door and an audio signal to indicate the passing floor level?</td>
<td>☑</td>
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<td>35.6 4.10.13</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Is the highest operable part of an emergency two-way communication system no more than 48 in.?</td>
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<td>4.10.14</td>
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<tr>
<td>☐</td>
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<td>If the system uses a handset, then the length of the cord from the panel to the handset at least 29 in.?</td>
<td>☑</td>
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<td>4.10.14</td>
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<tr>
<td>☐</td>
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<td>If the system is in a closed compartment, is the hardware on the compartment door operable with one hand, and does its operation not require tight grasping, pinching, or twisting of the wrist?</td>
<td>☑</td>
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<td>☐</td>
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<td>Is the emergency intercommunication usable without voice communication?</td>
<td>☑</td>
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<td>Platforms:</td>
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<td>Is the platform free of obstructions for a distance of 5 ft. from the platform edge?</td>
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<td>☐</td>
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<td>Is the platform clear space at least 60 in. at points where it is necessary to make a turn?</td>
<td>☑</td>
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<td>4.34</td>
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<td>Is there a minimum of 36 in. clear width between platform elements such as walls and columns?</td>
<td>☑</td>
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<td>Is the platform surface a non-slip material?</td>
<td>☑</td>
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<td>22.3 4.3</td>
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<td>Is the horizontal gap between the platform edge and the car less than 4 in.?</td>
<td>☑</td>
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<td>18.3.1</td>
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<td>Is the vertical gap between the platform edge and the car less than 2 in.?</td>
<td>☑</td>
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<td>Is the slope of the platform parallel to the tracks 5% or less?</td>
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<td>22.1 4.3.7</td>
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<td>Is the cross slope perpendicular to the tracks 2% or less?</td>
<td>☑</td>
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<td>4.3.7</td>
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<td>☐</td>
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<td>Is there a tactile warning strip on the platform edge, at least 24 in. wide which is detectable by stepping upon it?</td>
<td>☑</td>
<td>☑</td>
<td>MBTA</td>
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<tr>
<td>☐</td>
<td>☐</td>
<td>Are there seats provided every 250 ft. or less?</td>
<td>☑</td>
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<td>18.3.3</td>
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### Design Review Checklist

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**Additional Requirements for Commuter Rail:**

- Does an unobstructed continuous path of travel connect all terminal buildings, station houses, platforms, accessible parking space areas, and street entrances? **MAAB (new)**
- Do track crossings (at, above, or below grade) meet the Route of Travel requirements and ramp and stair requirements if they apply? **MAAB** **UFAS**
- Are full-length raised platforms provided at newly constructed stations or stations which are being re-opened after being out of operation for 5 years or more? **MAAB (new)**
- Are access platforms provided at any reconstructed, altered or remodeled stations? **MAAB (new)**
- Is overhead shelter provided for 150 ft. of the low level platform? **MAAB (new)**
- Is the access platform at least 45 ft. long and 5 ft wide? **MAAB (new)**
- Is the access platform surface 48 in. above the top of the rails? **MBTA**
- Is overhead shelter provided for the entire access platform and its ramp? **MAAB (new)**
- Do all platforms have a yellow tactile edge treatment detectable underfoot and at least 24 inches wide? **MAAB (new)**
- Where the gap between the coach and the platform exceeds 4 in. in the horizontal plane or 2 inches in the vertical plane, is a bridged plate used? **MAAB (new)**
- Is seating provided at intervals not exceeding 250 ft.? **MAAB (new)**

**Public and Employee Toilet Rooms:**

- Are the toilet rooms located on a route which is accessible to people in wheelchairs? **4.22.1**
- Is there at least 18 in. beside the latch on the pull side of the door(s) to the bathroom? **27.4** **4.13.6**
- Does the vestibule have at least 48 in. between the swing of one door and the face of the other? **26.3** **4.13.7**
- Is there at least a 60 in. clear turning space in the bathroom? **30.3** **4.13.3**
- In each toilet room, is at least one water closet and one lavatory accessible? **30.1** **4.22.4**
- Does the accessible stall door either swing out of the stall or slide? **30.5.2**
- Is the accessible stall door at least 36 in. wide? **30.5.2**
- Is there at least 18 in. beside the latch on the pull side of the accessible stall door? **30.5.2** **4.13.6**
<table>
<thead>
<tr>
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<tr>
<td>In the accessible stall, is there 18 in. from the centerline of the toilet to the nearest side wall?</td>
<td>30.5.3</td>
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<tr>
<td>Is there at least 42 in. from the centerline of the toilet to the far side wall?</td>
<td>30.5.3</td>
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<tr>
<td>Is the seat of the accessible toilet 17 in. to 19 in. above the floor?</td>
<td>30.5.3</td>
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<tr>
<td>Are there 2 grab bars 42 in. long, one on the wall in back of the water closet and one on the side wall closest to the water closet?</td>
<td>30.5.4</td>
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<tr>
<td>Are the ends of the grab bars 6 in. away from the corner of the wall?</td>
<td>30.5.4</td>
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<tr>
<td>Are the grab bars 1-1/4 in. in outside diameter?</td>
<td>30.5.4</td>
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<tr>
<td>Is there 1-1/2 in. clearance between the bar and the wall?</td>
<td>30.5.4</td>
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<tr>
<td>Are the grab bars 30 in. above and parallel to the floor?</td>
<td>30.5.4</td>
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<tr>
<td>Are the grab bars acid-etched or roughened?</td>
<td>30.5.4</td>
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<tr>
<td>Is the toilet paper dispenser located on the side wall closest to the toilet?</td>
<td>30.9</td>
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<tr>
<td>Is the toilet paper dispenser 24 in. above the floor?</td>
<td>30.9</td>
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<tr>
<td>Does at least one sink have hardware operable with a closed fist?</td>
<td>30.4 4.27.4</td>
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<tr>
<td>Is the top edge of the accessible sink 32 in. above the floor?</td>
<td>30.4</td>
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<tr>
<td>Are all sinks mounted at the same height?</td>
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<tr>
<td>Is there a knee space beneath the accessible sink at least 22 in. deep, 30 in. wide, and 29 in. high measured from the floor to the bottom of the apron?</td>
<td>30.4 4.19.2</td>
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**Locker Rooms:**

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<td>Are the aisles at least 36 in. wide?</td>
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<tr>
<td>Is there at least 60 in. between banks of lockers, or if benches are provided, 42 in. between benches and accessible lockers?</td>
<td>MBTA</td>
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<tr>
<td>Is there at least 42 in. of unobstructed aisle space in front of the lockers used by handicapped people?</td>
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<td>Is there a 60 in. diameter turning space at accessible lockers?</td>
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<tr>
<td>In locker rooms, is one bench provided against a wall, with a seat 24 in. wide and 60 in. long?</td>
<td>MBTA</td>
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<tr>
<td>Is one shower accessible in all gang showers, or is a private accessible shower room provided?</td>
<td>MBTA</td>
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# Design Review Checklist

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<tr>
<td>Do vendor specifications require at least one counter, or a 30 in. long portion of one counter to be between 28 in. and 34 in. a.f.f. (preferably 32 in.)?</td>
<td>7.2</td>
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<table>
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<tr>
<th>Cafeterias and Restaurants:</th>
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<th>MBTA</th>
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<tr>
<td>Are aisles in the serving line at least 36 in. wide (preferably 42 in.)?</td>
<td>17.4.1</td>
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<tr>
<td>Is the tray slide continuous from the tray stack all the way to the cashier?</td>
<td>MBTA</td>
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<tr>
<td>Is the tray slide no more than 34 in. above the floor?</td>
<td>5.2</td>
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<tr>
<td>Is there at least a 36 in. aisle between tables?</td>
<td>17.3</td>
<td>4.3.3</td>
<td></td>
</tr>
<tr>
<td>Are movable chairs and tables provided in addition to fixed seating?</td>
<td>MBTA</td>
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<tr>
<td>If seating is fixed, are at least 5% of all seating or tables accessible?</td>
<td>17.6</td>
<td>5.1</td>
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</table>

<table>
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<tr>
<th>Personnel/Employment Offices:</th>
<th>MAAB</th>
<th>UFAS</th>
<th>MBTA</th>
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<tr>
<td>Do employee areas—except for mechanical rooms—comply with UFAS standards?</td>
<td>4.1.4</td>
<td></td>
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<tr>
<td>Do employee bathrooms meet UFAS and MAAB standards for accessible toilet rooms?</td>
<td>4.1.4</td>
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</tbody>
</table>
APPENDIX
Appendix A: Glossary

Access gate: The gate provided adjacent to turnstiles. It is used by people who cannot pass through turnstiles such as people using wheelchairs, walking aids, or strollers.

Access platform: A raised platform which is level with the train car floor. Access platforms extend for a partial length of the train and are usually about 45 feet long providing access to two cars of the train. A ramp and stairs provide vertical circulation up to the access platform. Access platforms are used by people who cannot board the train from the low level platform, or who prefer not to. (See definition below.)

Accessible: Describes programs and physical spaces which can be safely approached, entered, and used by people with disabilities.

Accessible route: A continuous, unobstructed path connecting all accessible elements and spaces within or between buildings, facilities or walks, that can be travelled by a disabled person using a wheelchair, and which is also safe and usable by people with other disabilities.

Assistive Listening System: Designed for people who are hard of hearing. There are a variety of systems which will allow people to hear sound in a noisy situation. The system can be used indoors or out of doors and may use infrared, FM or audio loop equipment to bring sound directly to the individual.

ATBCB, Architectural and Transportation Barriers Compliance Board: A federal board that establishes and enforces minimum guidelines for accessibility for all facilities constructed, leased, or financed by the federal government. It also provides technical assistance.

Barrier-free: Describes a structure without physical impediments to individuals with disabilities.

Busway: An off-street passenger loading zone for MBTA buses.
City end: The end of a commuter rail platform which is closest to Boston.

Country end: The end of a commuter rail platform which is furthest from Boston.

Cross slope: The slope across a pathway or outdoor travel surface, generally perpendicular to the usual direction of travel.

Disabled: See Physically disabled.

Disability: A physical condition that substantially limits one or more major life activities. (See Physically disabled.)

Full-length raised platform: A platform which is level with the floor of the train car for the full length of the platform.

Headhouse: The roofed structure above grade which houses the entrance to a subway station.

Hearing impairment: A partial or total loss of hearing. The means and methods of communication vary between individuals. Some hearing impaired people compensate with hearing aids and use spoken English. Some deaf people communicate in American Sign Language (ASL) and consider English primarily a written language. Others use signed English or lispers.

HP: An abbreviation for Handicapped Person, often used on signs to identify an accessible element.

International Symbol of Accessibility: A pictograph of a person in a wheelchair used on signs to indicate accessible building elements, such as entrances and bathrooms.

Level landing: A ramp landing with no more than a 1:50 slope for drainage.

Low level platform: A platform which is below the level of the train car floor. It is usually about 8 inches above the top of the rails. Passengers use stairs to board the train.
MAAB, Massachusetts Architectural Access Board: The nine person board established under state law, M.G.L. Chapter 22, Section 13A. It enforces regulations governing building accessibility, reviews complaints and requests for waivers, and provides training and technical assistance on accessibility issues. This board was previously known as the Architectural Barriers Board and was amended by legislation Chapter 642 of the Acts of 1986 which became effective July 10, 1987.

Mobility impaired: People who cannot walk or walk with difficulty, who must walk slowly or who cannot walk long distances. Mobility impairments can be caused by a gait problem, lack of balance or stamina, cardiac or respiratory conditions, artificial legs, braces, canes, walkers, special shoes, etc.

Non-slip: A condition in which a rubber heel, cane tip, or crutch tip will not slip when pressure is applied at an angle on a level, wet surface.

Physically disabled: Describes a person who has a physical condition that substantially limits one or more major life activities, including but not limited to performing daily tasks, walking, seeing, hearing, speaking, breathing, and learning. Physically handicapped persons also include persons who lack coordination or stamina, people who are unable to reach and manipulate objects, or unable to interpret and react to sensory information, and people who are extreme in physical size.

Tactile warning material: A bright yellow textured material which is discernable underfoot from the floor materials adjacent to it. Protrusions at least 3/8 of an inch high are generally accepted as “discernable underfoot.”

TDD, Telecommunication Device for the Deaf: A device for telephone service which sends and receives typed messages through a small display screen and a keyboard. It is used with a standard telephone, by placing the receiver onto the base of the TDD and typing messages. Some models include a paper printout.

TTY, Teletypewriter: Similar to a TDD. The term TTY is still preferred by many hearing impaired individuals.
UFAS, Uniform Federal Accessibility Standards: A set of standards adopted by the four federal standard-setting agencies to ensure uniformity between federal agency requirements for accessibility in buildings constructed, leased, or financed by the federal government. It covers new construction and alterations. The format and technical provisions of UFAS are modeled on ANSI A117 and there is an ongoing process to conform both standards.

Visual impairment: Some loss of vision ranging from moderate distortions or reduction in visual field to total blindness. In the Boston area 97% of visually impaired people have some vision. Some may not be able to read print, even with glasses; others may have a reduced visual field. Ability to perceive colors may be reduced, and “normal” illumination may be insufficient. Many people with partial sight use a long cane, swept from side to side or held diagonally, to aid in wayfinding. People who are totally blind may use a guide dog.
Appendix B: New MAAB Regulations

18.6 To facilitate access to commuter rail vehicles, the following shall be provided:

18.6.1 At newly constructed stations serving commuter rail coaches, access shall be provided to all passengers and to all coaches of the train by means of a raised platform. Such platforms shall be at least five feet (5') in clear width and shall have overhead shelter from rain and snow along a total of at least one hundred and fifty feet (150') of their length and at all access ramps.

For the purposes of this section, a newly constructed station is defined as any station stop where passenger service has not heretofore been provided or where no regularly scheduled passenger service has been provided for five (5) or more years.

18.6.2 Any reconstructed, altered or remodeled stations serving commuter rail coaches shall afford access to at least two coaches of a train by means of a raised access platform. Such platforms shall be at least forty-five feet (45') in length and at least five feet (5') in clear width and shall, along their full length and at all access ramps provide overhead shelter from rain and snow. For the purposes of this section "reconstructed" shall have the definition of "reconstruction" in 521 C.M.R. Section 5.17, "altered" shall have the definition of "alteration" in 521 C.M.R. Section 5.4, and "remodeled" shall have the definition of "remodeling" in 521 C.M.R. Section 5.18.

18.6.3 The distance between the raised platforms described in 18.6.1 or the raised access platform described in 18.6.2 and the floor of the entrance to the rail coach shall not exceed four inches (4") in the horizontal plane and two inches (2") in the vertical plane. Where construction constraints result in platform to vehicle gaps that exceed these standards, a bridge plate designed to eliminate such gaps shall be made available at every door of the vehicle where passengers are boarding or disembarking.
18.6.4 The edge of all platforms at newly constructed, reconstructed, altered or remodeled stations shall have a yellow band of a different texture, distinguishable underfoot, and at least twenty-four inches (24") in width, warning of a danger zone.

18.6.5 At all newly constructed, reconstructed, altered or remodeled stations, an unobstructed continuous path of travel shall connect all terminal buildings or station houses, platforms, parking areas designated for use by handicapped persons and street entrances.

18.6.6 Within the station there shall be seating at intervals not to exceed two hundred fifty (250) feet.

Access Platform Stations
Providence Line
  Attleboro
  S. Attleboro
  Canton Center
  Canton Junction
  Hyde Park
  Mansfield
  Route 128
  Sharon
  Stoughton

Milford/Franklin Line
  Dedham Corp.
  Forge Park
  Franklin (expedited)
  Norfolk
  Norwood Central
  Norwood Depot
  Readville
  Walpole
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<td>Needham Center</td>
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<td>Needham Heights</td>
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<td>Needham Junction</td>
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<td>Roslindale Village</td>
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<td><strong>Worcester Line</strong></td>
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<td>Wellesley Farms</td>
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<td>Wellesley Hills</td>
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<td>West Natick</td>
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<td>Yawkey Station</td>
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<td><strong>Fitchburg Line</strong></td>
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Newburyport/Rockport Line
Beverly Depot
Beverly Farms
Chelsea
Gloucester
Hamilton/Wenham
Ipswich
Manchester
Montserrat
North Beverly
Rockport
Salem
Swampscott

Plymouth Line/Old Colony
Abington

Greenbush Line/Old Colony
Weymouth Landing

Full Length Platform Stations
Providence Line
Back Bay
Forest Hills
Providence
Ruggles
South Station

Milford/Franklin Line
Bellingham
Milford

Needham Line
Veterans of Foreign Wars (V.F.W.)

Worcester Line
Ashland
Framingham (Relocated)
Grafton
Southboro/Westboro
Worcester
### Fitchburg Line
- Kendal Green (Relocated)
- Littleton (Relocated)

### Lowell Line
- New Mishawum

### Haverhill Line
- Lawrence (Relocated)
- Malden Center
- North Station

### Newburyport/Rockport Line
- Lynn
- Newburyport
- Rowley

### Middleboro Line/Old Colony
- Braintree
- Bridgewater
- Brockton
- Campello
- Holbrook/Randolph
- Middleboro
- Montello

### Plymouth Line/Old Colony
- Kingston/Route 3
- Halifax
- Hanson
- Plymouth
- South Weymouth
- Whitman

### Greenbush Line/Old Colony
- Cohasset
- East Hingham
- Greenbush
- North Scituate
- Nantasket Junction
- West Hingham
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