This is the first in a series of 3 courses we are offering.
Each webinar is being given twice.
Today’s presenters are:
Rick Wilder, Director of Design Services Bureau (DSB)
Kara Phillips, Associate Landscape Architect in DSB and manager of the NYSDOT HDM
Brian DeWald, Acting Co-Director of the Office of Construction
While ADA applies to all public facilities, regardless of funding, this course is targeted to Construction Inspection Staff working on NYSDOT projects, Highway Work Permits on State Highways, and Local Federal Aid Projects.

The inspection staff should have some familiarity with the Americans with Disabilities Act (ADA) and the Public Rights-of-Way Accessibility Guidelines by reading ED 15-004, portions of HDM Chapter 18, the Section 608 Specs, and the 608 series standard sheets.
The Americans with Disabilities Act (ADA) was signed over 25 years ago.

It is a wide-ranging law that prohibits discrimination based on any disability.
Guidelines for accessibility are developed by an independent federal agency called the United States Access Board. (it was formed in 1973 after the Architectural Barriers Act of 1968).

The 1991 ADAAG is primarily for buildings.

In 2006 a guide was developed for transportation facilities.

Even though the latest copy is dated 2011 and is only a proposed guide, it has been adopted by FHWA as a standard.

Implementing ADA is relatively complex and this short webinar is not going to answer all of your questions. But it should give you a basic understanding of the requirements and where to go for more information.
Why is NYSDOT spending so much attention to ADA.

First, it’s the right thing to do.

Rebuilding pedestrian facilities is costly in terms of money and resources.

Facilities must be designed and built correctly the first time.

Important both financially and legally.
To date, we’ve identified 43,000 curb ramps, but the number is closer to 50,000.

As shown in this map, they are statewide.

Although there are ramps at most locations, they do not meet the 1991 or the 2011 standards.
- Over 2,100 miles of sidewalk
- As shown in this map, they are statewide
- Many sections do not meet all of the 1991 or the 2011 standards.
Until 2011, ADAAG served as the guidelines for our facilities, and they still do when evaluating existing facilities on 1R jobs.

All new construction must meet the requirement of the Public Right of Way Accessibility guidelines – still, technically, “proposed” but FHWA has adopted them as the standard.

There is NO tolerance on values outside the range. A range is when there is a maximum value, such as 2% Max. Cross Slope. Construction tolerance must be “built in”
To ensure that pedestrian facilities are fully compliant with the law, ED 15-004 was issued. It is effective for all ongoing and future contracts. ED 15-004 applies to all Locally administered projects. It also applies to all HWP on State Highways.
While the contractor is responsible for compliance with the contract documents, Inspectors need to verify forms are set properly prior to the pour.
ED 15-004 established lower design and layout values to allow for construction tolerances.

This table shows a few examples.

Although the ADA limits haven’t changed, FHWA recently informed the Department that there are no tolerances beyond the ADA acceptance values.

For example, 2.1% cross slopes for sidewalks are not acceptable.
Department has designated staff to help manage ADA and pedestrian facility planning, design and construction.

The RD-designated licensed professionals to provide:
1. Field reviews.
2. Technical assistance, and
3. process NSF justifications for pedestrian facilities

These are the “ADA Specialists”
This table shows the ADA and pedestrian staff.

<table>
<thead>
<tr>
<th>Region</th>
<th>Regional ADA Specialists</th>
<th>ADA Regional Project Coordinators</th>
<th>Bike/Ped Coordinators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tanya Thorne</td>
<td>Rob Cherry</td>
<td>John Franchini/Pete Flea</td>
</tr>
<tr>
<td>2</td>
<td>Dave Sadekosi</td>
<td>Joseph Kaczor</td>
<td>Joseph Kaczor</td>
</tr>
<tr>
<td>3</td>
<td>Karen Missell</td>
<td>Erin Cole</td>
<td>Jeff Sterly</td>
</tr>
<tr>
<td>4</td>
<td>Mert Edwards</td>
<td>Jon Harman</td>
<td>Jon Harman (Ped)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bruce Cunningham (Ped)</td>
</tr>
<tr>
<td>5</td>
<td>Michael Christner</td>
<td>Kim Forrest</td>
<td>Chris Church</td>
</tr>
<tr>
<td>6</td>
<td>Jeff Spencer</td>
<td>Jeff Spencer</td>
<td>Pauline Burns</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jeffrey Spencer</td>
</tr>
<tr>
<td>7</td>
<td>Lynn Godek</td>
<td>Jon Adams</td>
<td>Lynn Godek</td>
</tr>
<tr>
<td>8</td>
<td>Steve MacAvery</td>
<td>Steve MacAvery</td>
<td>James Rapnili</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lisa Mondello</td>
</tr>
<tr>
<td>9</td>
<td>Michael Retzlaff</td>
<td>Kris Gilbert</td>
<td>Kathryn Mangani</td>
</tr>
<tr>
<td>10</td>
<td>Robb Smith</td>
<td>Sheref Fathi</td>
<td>Larry Wexler</td>
</tr>
<tr>
<td></td>
<td>Ray Webler</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Veronika Celin</td>
<td>Mark Maglienti</td>
<td>Mark Maglienti</td>
</tr>
<tr>
<td>MO</td>
<td>Kara Phillips</td>
<td>Vanessa Saari</td>
<td>Tom Berware</td>
</tr>
</tbody>
</table>
This is an example contract set for a bridge replacement. It has 11”x17” plans. 1R projects will have 8½” x 11” proposal sized details. More detail on the development of the documents will be covered in the design webinars. But the next few slides will provide insight on what will be provided in future contracts.
Curb ramp locations will be called out on the General Plans
Curb Ramp locations will also be shown on the utility plans. Pay special attention to elevations where utilities will be within or under pedestrian facilities.
Design has begun laying out curb ramps in 3D where terrain information is available
Design has begun creating special details for curb ramps.

If you do not have details in the plans, the curb ramps are to be constructed using the standard sheets.

If you have difficulties applying the standard sheets, contract the EIC, the Designer and the ADA Specialists.
The details show the elevations on the back side of the curb line and the required grades and slopes. Back of sidewalk elevations are not shown. The slopes and grades shown on the detail control. The back of the forms should be set using a digital level. Standard survey equipment is not accurate enough to ensure a slope to within 1/10th of a percent. This is only 48/1,000ths of an inch over a 4’ width.
In the miscellaneous tables, most plans on state highways will have a table of sidewalk and/or curb ramps. If it's not in the plans, it should be in the supplemental information and in the construction folder in ProjectWise.
The table includes the information needed for curb ramps along state owned highways. It allows the Department to update our transition plan.

The coordinates are Northings and Westings based on Google earth and not state plane coordinates.

These coordinates are easier to get from programs like Google Earth.

If your plan set does not have this table, contact the EIC or Designer.

The table is required by HDM Chapter 7.
The 608 Standard Sheets have been revised to reflect the design and layout values in ED 15-004.
Changes include 3D views and new details.
Where the standard sheets can not be used directly, the sheets provide the notes and other information needed for the contractor and construction inspectors.
Details should not duplicate notes on the standard sheets.
Inspectors should be familiar with the specifications used on the project. Concrete is paid for by the cubic yard under the current standard specifications. NYSDOT has special specifications that pay for sidewalk by the square foot, linear foot. Special specifications pay for curb ramps by the square foot or each.

We are in the process of reviewing our specifications, and may update them in the future. The design webinars will cover selecting the appropriate specification.
Some of the terminology used in the current ADA guidelines differs from some of the terminology used by previous guidelines and by the Department.
Note the **turning space** at the top and the **clear space** at the bottom. Neither of these is referred to a landing. They have different names because they have different functions.

The turning space is a level area required where a turning maneuver is needed to orient to the direction of travel.*

The clear space is a place to rest or wait before proceeding with a road crossing. It’s located below the beyond the bottom grade break, entirely within the crosswalk markings, and outside of the parallel vehicular travel lane.

*{(Ref.  R304.2.1 and R304.3.1 Guidelines require a turning space at the top of a perpendicular ramp; require turning space at the bottom of a parallel ramp)}
The parallel travel lane is the vehicular travel lane that runs parallel to the direction of pedestrian travel.
In the case of a diagonal curb ramp, where the direction of pedestrian travel is radial, the clear space must be outside of both parallel vehicle travel lanes and still within the crosswalk markings.
The clear space can overlap a depressed curb and/or detectable warning.
The clear space and turning space can partially overlap or entirely overlap, as they do in the case of this parallel curb ramp. The area surrounded in orange allows pedestrians to orient themselves to the ramps or crosswalk, while also furnishing a clear space to pause before crossing.
Slopes that are discussed in the guidelines are:
Running slope – parallel to pedestrian direction of travel (what we usually refer to as longitudinal grade)
Cross slope – perpendicular to direction of pedestrian travel
Flare slope – unique in that it’s measured parallel to the curb line
Counter slope – runs back toward the running slope, at the bottom of the ramp
Grade breaks - such as those at the top and bottom of the ramp – should be perpendicular to the ramp run, straight, and not rounded off.

All ramp surfaces should be flat or planar. Concave or convex surfaces, and rounded grade breaks, make it difficult for people to distinguish level areas from flat areas.
Detectable Warnings, or truncated domes, are areas with a relief pattern to assist visually impaired pedestrians.

There is some confusion about the function of these. Before curb ramps were commonly used, the curb let people know they were leaving the sidewalk and entering the road. Curb ramps took that cue away, so the sole purpose of detectable warnings is to give the visually impaired a warning that can be detected underfoot.

They are not a wayfinding device. They are not intended to give the visually impaired any indication of the direction they should travel.

They are used not only at street crossings and refuge islands, but also at at-grade rail crossings.

They should contrast visually with the surrounding surface – light on dark or dark on light.
Detectable warnings are required at all street crossings. They shouldn’t be placed on most residential or commercial driveways since the pedestrian right-of-way continues across driveways. However, they are required at commercial driveways that are stop or yield controlled.
The orientation of the domes is dictated by the slope of the ramp, so wheelchairs wheels can pass between the domes without resistance. The orientation is less critical if the running slope is less than 5%.

The revised 608 standard sheets offer more detail on the placement and orientation of detectable warnings.
On pedestrian refuge islands, detectable warnings are only required when the path through the island is 6’ or longer. Otherwise, it’s difficult for those who rely on them to distinguish the end of one detectable warning field from the beginning of the next.
A blended transition is a curb ramp with a slope of less than 5%.

It requires a detectable warning in the same conditions that a curb ramp would require them. Because the slope is less than 5%, the orientation of the domes is not as critical.

A blended transition is essentially an extension of the sidewalk. Doesn’t require a turning space but does require a clear space.

*(Reference R304.4)*
Crosswalk slopes
Running slope – parallel to pedestrian direction of travel (the cross slope of the road)
Cross slope – perpendicular to direction of pedestrian travel (the grade of the road)
NYSDOT uses three basic types of crosswalk markings. There are other varieties, but we’ll focus on the most common types.

**S types** are usually used for side streets and highways with low volumes and low speeds.  
**L types** are common in cities.  
**LS types** are used for higher speed or higher volume crossings.
These marking types are found in the 685-01 standard sheets

Minimum inside width of a crossing is 6’ wide. The curb ramp’s width (excluding flares) and the clear space must fit entirely within the marked crossing. 6’ is only the minimum width – crossings can be made wider to accommodate clear spaces and wider curb ramps.

There should be no gaps greater than ½” within the surface of the crossing. This includes grates – they can be located under the outside (transverse) lines, but preferably not under the bars. Any grates with openings greater than ½” shouldn’t be located within the Pedestrian Access Route.
The Pedestrian Access Route is a continuous, unobstructed path of travel provided for pedestrians with disabilities

Example of a relatively new walk on Rt 11 in Canton
The term sidewalk isn’t interchangeable with the Pedestrian Access Route, and not everything that’s paved behind the curb is necessarily part of the Pedestrian Access Route.

The guidelines require Pedestrian Access Route with a continuous clear width of 48”, excluding the curb.

Where the clear width of the Pedestrian Access Route is less than 5 ft. wide, a 5 ft. x 5 ft. passing space is required every 200’ – driveways, crosswalks and other paved areas can serve as passing spaces.

It should be noted that the Department’s preferred sidewalk width is 5 ft. The minimum width of 4 ft should be used when 5 ft isn’t practicable.
The Pedestrian Access Route is sometimes within a larger Pedestrian Circulation Path. This other paved areas, outside of the Pedestrian Access Route, that are part of the Pedestrian Circulation Path. This is where people might be expected to walk, but it may not meet all of the surface, slope and dimensional requirements of the continuous Pedestrian Access Route.
The Pedestrian Circulation Path has to be considered for curb ramp flares. If the flares are within the pedestrian circulation path – if people are likely to walk perpendicular across the ramp – the flares can’t exceed a 10% slope.
If the flares are clearly outside of the paved Pedestrian Circulation Path, they can be steeper than 10%, or a vertical surface can be used.
All of the required values for these elements are listed on the Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities sheet (“Critical Elements” sheet).

This sheet is a reference tool. It doesn’t have to be formally filed, but running through it for each facility will ensure that all of the bases are covered, and it is strongly encouraged.

It can be used electronically or as a hard copy. The Excel file for the sheet is located on the HDM Chapter 18 web page.

Two headings
- Brown heading - existing ramps that will remain on 1R jobs ONLY. These are required to meet 1991 ADAAG values. These facilities will be covered in the upcoming Preliminary Design webinar
- Blue heading - replaced or newly built ped. facilities on any type of job, including crosswalks on 1R projects. These facilities are required to meet the newer PROWAG values.
Today we’ll focus on requirements under the blue heading, for new and replacement facilities on 1R, 2R or 3R jobs.

You’ll see that there is a reference, column, followed by a column for design and layout limits and a column for work acceptance limits.

The design and layout value is generally a more conservative value, that allows for a “built-in” construction tolerance.

The work acceptance value is the value stated in the ADA Guidelines, that will absolutely be required for the facility to be acceptable as ADA compliant.
The next column over is inspection methods. The letter in this column is a reference to a standard method of measurement for each element of a facility.

Detailed descriptions of the methods are found on the opposite side of the sheet, in the notes at the bottom.
The other tools the ones needed are for actual measurements.

- Digital level (4 ft.)
- Tape measure
- Wheel or reel
- Straight edge – if digital level isn’t long enough for a measurement, e.g., measuring forms

Don’t use total station or auto-level – not accurate enough
The use of them is described in the Inspection Methods, and we’ll run through the critical measurements now
Measurements must be taken before and after concrete is poured, per ED 15-004

Check the forms, and again before acceptance.
Today we will cover new curb ramps. In future training we will cover existing curb ramps that can remain on 1R projects.
Measure running slope and average
Measure running slope
Example shown has a 10.22% ramp, but it meets PROWAG since the ramp length is at least 15’ long.
Measure cross slope
Measure cross slope
Measure cross slope
Measurement of a Curb Ramp - Width

1. Width perpendicular to CL at restriction or narrowest point.
2. If ramp is longer than 10 ft., take a second measurement 10 ft. away and average the two measurements.

4’ min. width for layout and work acceptance

Measure width
Measure turning space

1.5% maximum cross slope in any direction for layout
2.0% maximum cross slope in any direction for work acceptance
Turning space dimensions

**Perpendicular curb ramp** – 4’ x 4’ turning space. If turning space is constrained at BACK of sidewalk, turning space must be 4’ x 5’ (with the 5’ furnished in the direction of the ramp run).
**Parallel curb ramp** - 4’ x 4’ turning space without constraints.

The Guidelines require a 4’ x 5’ dimension for a constrained turning space on a parallel ramp, but there is conflicting information on the direction of the 5’ dimension. For the time being, a 5’ x 5’ turning space is recommended.
Measure counter slope

Measure from pavement side of depressed curb
Measure turning space

Beyond bottom grade break, can include curb/transition
Measure flares parallel to curb line.

Only flares within the Pedestrian Circulation Path need to meet max. slope.
Grading can be minimized by using an optional curb as shown in the 608 Standard Sheets. Very useful where a grading release has not been obtained and the ramp is close to the Highway Boundary.
# Measurement of a Sidewalk

<table>
<thead>
<tr>
<th>Sidewalk Category</th>
<th>Width (inches)</th>
<th>Required Width</th>
<th>Minimum Width</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Width (excluding curb)</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>O</td>
</tr>
<tr>
<td>Running slope/Grade where Hill Grade is 5% or less</td>
<td>1.5% max</td>
<td>1.5% max</td>
<td>1.5% max</td>
<td>A</td>
</tr>
<tr>
<td>Running Slope/Grade where Hill Grade is 6% or More</td>
<td>2% max</td>
<td>2% max</td>
<td>2% max</td>
<td>B</td>
</tr>
<tr>
<td>Cross Slope</td>
<td>2% max</td>
<td>2% max</td>
<td>2% max</td>
<td>B</td>
</tr>
<tr>
<td>Parking Area/Spacing (if sidewalk less than 63’ Wide)</td>
<td>12’ max</td>
<td>12’ max</td>
<td>12’ max</td>
<td>E</td>
</tr>
<tr>
<td>Parking Area</td>
<td>4’ Eco min</td>
<td>4’ Eco min</td>
<td>4’ Eco min</td>
<td>E</td>
</tr>
<tr>
<td>Turning Area for changes in direction</td>
<td>23’ Eco min</td>
<td>23’ Eco min</td>
<td>23’ Eco min</td>
<td>O.B.O</td>
</tr>
</tbody>
</table>
Running slope is a max of 5% where the highway grade is 5% or less. Measure 3 times and average.
Running slope can match highway, regardless of the grade.
Cross slope
Measure every 10’ and average
Width

Particular attention at restriction points
Common Issue

Slopes and grades of finished concrete that exceed the ADA limits.
Transitions to Existing Pedestrian Facilities to Remain

5 to 10 ft. length, as needed.

Cross slope, grade and width to be adjusted to transition from new work to existing facility.

Allows new ramps and sidewalks to meet ADA and only have the transition piece removed when doing future sidewalk improvements
## Joints and Grates

<table>
<thead>
<tr>
<th>Item</th>
<th>TIDIE T</th>
<th>IWA or IRC</th>
<th>Firm, Level and Slope</th>
<th>Boxed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Openings in Sidewalk and Joints</td>
<td>0.05 T</td>
<td>0.5&quot; max</td>
<td>0.5&quot; max</td>
<td>X</td>
</tr>
<tr>
<td>Vertical Discontinuities</td>
<td>0.05 T</td>
<td>0.5&quot; max</td>
<td>0.5&quot; max</td>
<td>X</td>
</tr>
<tr>
<td>Round (1&quot; inside) vertical discontinuities</td>
<td>0.05 T</td>
<td>0.5&quot; max</td>
<td>0.5&quot; max</td>
<td>X</td>
</tr>
</tbody>
</table>

Critical Elements are those which must be accepted by inspection.

[Department of Transportation logo]
Joints can be filled with Sealant / Caulking

- Maximum opening 0.5” in direction of travel
- Maximum vertical lip is 0.25”
- Lips beveled at 1:2 can be up to 0.5”
Reticuline grate openings are around 2.5”.

Bottom image is an ADA compliant grate for a pedestrian Access Route.
Common Issue

- Typical Highway Grates within the crosswalk
- Pedestrian Compliant Grates not properly oriented to allow for wheel chairs
### Crosswalks

#### C. Crosswalks (Pedestrian Street Crossing)

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>0902.0</td>
<td>12&quot;</td>
<td>48&quot;</td>
</tr>
<tr>
<td>Cross Slope with Pedestrian</td>
<td>0902.5</td>
<td>1.5%</td>
<td>2%</td>
</tr>
<tr>
<td>Cross Slope without Pedestrian</td>
<td>0902.6</td>
<td>2.5%</td>
<td></td>
</tr>
<tr>
<td>Cross Slope at Medians</td>
<td>0902.6</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Curve (Highway crossover)</td>
<td>0902.6</td>
<td>.9%</td>
<td></td>
</tr>
<tr>
<td>Minimum Turning Radius</td>
<td>National</td>
<td>.8, 9, 10', equi</td>
<td>.8, 9, 10', equi</td>
</tr>
<tr>
<td>Minimum Offset, Offset Width</td>
<td>0902.6</td>
<td>60&quot;</td>
<td>60&quot;</td>
</tr>
</tbody>
</table>
Crosswalks

Cross slope of the crosswalk is the grade of the highway.

At stop and yield controlled intersections, **maximum cross slope is 2%**.

At signal controlled intersections, **maximum cross slope is 5%**.

At midblock crossings, **maximum cross slope is the highway grade.**

Grade of highway is cross slope of crosswalk
Running slope or grade of crosswalk is the cross slope of the highway. Many shoulders are sloped at 6% and superelevated sections are sloped up to 8%.
Normal closed stormwater design allows 10 year rain events to pond water between the curb and half a travel lane width.

Once all the surface water has drained, there should not be ponding/low points at the curb ramp.
# Detectable Warnings

## Table: Tactile Warning Device

<table>
<thead>
<tr>
<th>Requirement</th>
<th>R12-1.3</th>
<th>ADA-1.48.c</th>
<th>ADA-1.49.a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>As grade crease, if any, always at back of curve from curb, otherwise 4 ft. 3/4 in. long.</td>
<td>Mitigated 1 in. at 4 in. long.</td>
<td>Mitigated 1 in. at 4 in. long.</td>
</tr>
<tr>
<td>Where not required</td>
<td>R12-1.4</td>
<td>As grade crease, if any, always at back of curve from curb, otherwise 4 ft. 3/4 in. long.</td>
<td>Mitigated 1 in. at 4 in. long.</td>
</tr>
</tbody>
</table>
NOT a wayfinding device – only notify visually impaired that they’re crossing a curb
Should be oriented to the running slope – chair wheels can pass between domes without
going off camber
DWs are to be the full width of ramp

Install at grade break unless the grade break is more than 60” from the curb line. In such cases, install the DWs at the curb line.
Common Issue

- Domes that are not the full width of the curb ramp opening
- No Detectable Warnings at Controlled Intersection/Driveways
Common Issue

Domes that are not oriented radially or in the direction of the curb ramp grade
Many other pedestrian elements, including stairs, ramps and railings are covered in the table and are handled in a similar manner.
What to do if the final work acceptance measurements can’t meet the ADA compliance limits.
Find during inspection of forms that something won’t meet one of the limits

Most obvious thing is to adjust the forms. If it’s not as easy as that, need to talk with the EIC, designer, or ADA Specialist. May need to talk to all three of them.

If it’s determined that it’s a physical constraint (rather than a layout issue or a design issue) the noncompliant element can be formally justified. We’ll cover how to do that in a minute.
Find during your inspection after the concrete’s in that something doesn’t meet one of the limits.

Talk to the EIC- if it’s a minor, may be able to grind the concrete or make an adjustment.

If it’s a matter of not meeting limits when they could have been met, it’ll need to be replaced.

If it’s a little more complicated than a replacement – redesign is needed or there’s some constraint that preventing full compliance – contact the ADA Specialist.

When a valid constraint is identified, the noncompliant element is justifiable.
There’s a column on the Critical Elements sheet for Compliance with ADA Limits.

Enter a Y or Yes if the values are met. Enter an N or No if they aren’t.

If you’re filling out the sheet prior to construction, you need to meet the Design and Layout Limits.

After construction, you need to meet the ADA Limits for Work Acceptance.
If there’s an “N” in the Compliance column, the feature is noncompliant.

It has to either be justified or fixed.

If it has been (or can be) justified, enter a Y or yes, in the “Justified” column.

A Nonstandard Feature Justification form needs to be done for the feature if it wasn’t justified during design.

Design will try to catch as many as possible, but there will be times that a constraint or problem isn’t identified until construction, and these will need to be done then.

If the feature can’t be justified, it has to be corrected.
There are 7 basic justifications for a nonstandard feature + one “Other” category. These are listed in the Notes, by letter, on the back of the Critical Elements sheet.

A. Underlying terrain – too steep or grade separation too great to achieve compliant slope

B. ROW Availability – permission to access private property is denied or sufficient ROW can’t be acquired
C. Underground structures – e.g., there’s a vault or other underground feature that can’t be moved or adjusted within the scope of the project, and it will dictate the elevation of features above it.

D. Adjacent developed facilities – includes existing steep roads. Not able to achieve 5% running slope sidewalk in close proximity to a road with a 12% grade.
E. Drainage – standing or frozen water negates the purpose of an accessible facility, and debris deposited by water is also a problem. In situations where a facility won’t drain reliably at compliant slopes, steeper slopes are justified.

F. Presence of a Notable Natural Feature – An example would be preserving some large, highly-valued street trees. Short segments of walk that are less than 48” wide may be justified in order to keep the trees.
G. Presence of a Notable Historic Feature – e.g., in a case where a historic structure or retaining wall would have to be removed to accommodate a 4 ft. wide accessible route, a narrower route may be justified.

H. Other – any unavoidable constraint of technical infeasibility that doesn’t fit into the other criteria e.g., cemetery or religious site.
A Justification of Nonstandard Features form has to be completed for each noncompliant feature.

The form is electronic, and can be found on webpage for Highway Design Manual Chapter 2.

It includes the 8 types of justifications, A through H.

Only one form is needed per feature, even if it has multiple noncompliant elements. If a curb ramp is too steep, too narrow and has too much of a cross slope, only one form is needed for that particular ramp.
Approval if each NFJ form is required.

Instructions are provided in the last section of the form.

Regional Director approval for NYSDOT-let and permit projects using criteria “A” through “G”

Deputy Chief Engineer approval for “H. Other”

Responsible Local Official approval for Locally Administered Projects (copy to region)
The next column concerns the Department’s ADA Transition plan.

Elements that could be made compliant at some point in the future are added to the transition plan to be fixed in the future.

This column does not need to be filled out by construction.
ADA Compliance is a concern on temporary facilities as well as permanent ones.

Navigating through or around construction in the public right-of-way can be hazardous to pedestrians with visual or mobility impairments.

Caution tape, traffic cones and “sidewalk closed” signs don’t meet ADA requirements.
Alternate pedestrian access routes are required (to the maximum extent feasible) when the existing pedestrian access route is blocked by construction, alteration, maintenance, or another temporary condition.

For the most part, ADA guidelines refer to Part 6 of the MUTCD (National Manual on Uniform Traffic Control Devices) for accessibility requirements on these temporary routes.

These requirements have been included in the 619 Standard Sheets for Work Zone Traffic Control.
WZTC and Alternate PARs

Temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing facility.

Detours are permitted where there are no other practicable alternatives.

The standard sheets require that temporary facilities must be detectable, and, at a minimum, they need to be consistent with the features present in the existing facility.

This means that if the existing pedestrian accommodation is a three foot sidewalk on one side of the road, the temporary route during construction only needs to be a three foot sidewalk on one side of the road. Detours are permitted when there’s no practicable alternative.

The final product, after construction, has to be fully compliant or justified.
Making the route detectable includes detectable edging – this is regardless of the existing facility.

It should be at least 36-42 inches high and continuous, within 6 inches of the ground, in order to be detectable by blind people using a cane to navigate. If the barrier will need to overwinter, something more substantial than orange snow fence and wooden supports may be needed to withstand plows.

When the route extends into the roadway, a crashworthy barrier is needed.
To tie up the ADA process for Inspection-

Copies of the completed “Critical Elements” sheets should be kept in the contract files

Any Nonstandard Feature Justification Forms for facilities on state highways are to be placed in ProjectWise by the Regional ADA Specialists (the filing instructions on are on the form)

Once the contract work is completed, the ADA reporting table of constructed sidewalks and curb ramps along State Highways should be completed (in Excel format) and sent to Regional ADA Coordinator. These are used to update the ADA Transition Plan.
References

- Engineering Directive 15-004
- HDM Chapter 18 web page
  - FAQ on ADA Topics
  - Critical Elements for the Design and Layout of Pedestrian Facilities Sheet
- 608 Standard Specs – Sidewalks, Driveways, etc.
- 608 Standard Sheets – Sidewalks, Driveways, etc.
- 619 Standard Sheets – WZTC
- ADA Specialists

References that may be useful
Resources include

Accessibility Board Website – guideline we use most often for the public ROW
DOJ website – Guidelines for Government sites and facilities – tends to apply more to
buildings
Our own website for Highway design Manual Chapter 18 - Pedestrian Facilities
Quiz – 20 Questions

1. Is a new ramp that has just been poured with a grade of 7.7% compliant?
1. Yes. The ADA Limit for Work Acceptance is 8.3%.
2. No. The ADA Limit for Work Acceptance is 2%. The sidewalk would have to be fixed or justified.
3. Yes. There’s no need for a ramp to chase grade for more than 15 ft.
4. No. The completed sheets should be kept with the contract files.
5. **No.** Domes should be oriented to the running slope (grade break) of the ramp.
Quiz

6. Can a total station or auto-level and rod be used to accurately measure cross slopes?
6. No. A digital level is the only tool that should be used to measure slopes on pedestrian facilities.
Quiz

6. Can a total station or auto-level and rod be used to accurately measure cross slopes? **No. Use a digital level**
7. Does ED 15-004 apply to Highway Work Permits on state highways? **Yes**
8. Should the Inspector take measurements before the concrete pour?

7. Yes.
8. Yes. Forms should be measured for slopes and dimensions prior to pouring concrete.
9. Yes. They have different functions, but the same area can serve both purposes.
10. No. Slopes and grades will determine whether the constructed facility is compliant or not
Quiz

11. When can a crosswalk cross slope be 4%?
A crosswalk cross slope can be up to 5% anywhere that vehicles can travel without slowing down, including at a signal with a green phase.
At a midblock crosswalk, the cross slope can match the highway grade.
12. The maximum gap is ½”. A filler can sometimes be used to fill noncompliant openings.
13. Yes. An S-type crosswalk has just the two outside lines. As long as none of the grate is between the lines, it’s outside of the pedestrian route.
14. No. The pedestrian right-of-way carries across driveways. Detectable warnings are only required if driveways are stop or yield controlled.
11. When can a crosswalk cross slope be 4%? 
   For crossing at a signal or midblock crossing.
12. What is the maximum gap permitted for a 
   transverse opening? 0.5”
13. Can drainage grates be under the crosswalk 
   marking for an S type marking? Yes
14. Do driveways without a stop, yield or signal 
   need a detectable warning? No
15. If the grade break is more than 60” from the 
   curb line, where should the detectable warning 
   be placed? At the curb line

15. The effectiveness of the detectable warning is reduced after 60”, so if the grade break is more 
   than 60” from the curb, the detectable warning goes at the curb.
Quiz

16. When is a 48” x 48” clear space needed at the bottom of a curb ramp?
16. Always. A clear space is always required beyond the bottom grade break.
17. The maximum vertical lip is ¼”, but it can be beveled.
18. Yes. The 10% maximum is only needed if people may travel perpendicular across the ramp.
19. No. Grade breaks should be straight and discernible to help pedestrians distinguish level areas from sloped areas.
20. The minimum width is 48”. It should be noted that the Department’s preferred sidewalk width is 5 ft. 4 ft should be used when 5 ft isn’t practicable.
More Questions?

Copies of this presentation and webinar will be posted on the NYSDOT Highway Design Manual Chapter 18 Internet page by February 16, 2016.

https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/chapter-18
The End