

40-8.02(01) Level One [Rev. Feb. 2014]

Level One controlling design criteria are those highway design elements which are judged to be the most critical indicators of a highway's safety and its overall serviceability. Not all of the design information described in this Part qualifies as a Level One criterion. The Department and FHWA have identified the following design elements as Level One. The formal documentation and approval process for a design exception or waiver described in Section 40-8.04 must be followed if these criteria are not satisfied.

1. design speed for mainline or interchange ramp *;
2. lane width;
3. shoulder width for uncurbed section or curb offset for curbed section;
4. bridge width for new, rehabilitated, or existing bridge to remain in place;
5. structural capacity for new, rehabilitated, or existing bridge to remain in place;
6. horizontal curvature (i.e., minimum radius);
7. superelevation-transition length;
8. application of stopping sight distance to a horizontal curve or a vertical curve;
9. maximum grade;
10. travel-lane cross slope;
11. superelevation rate;
12. minimum vertical clearance;
13. Americans with Disabilities Act (ADA) compliance **; and
14. bridge-railing safety performance criteria.

* An exception to design speed is not allowed. Instead, the designer will use the Department's applicable criteria for the project design speed and will, if needed, seek an exception to each individual design element which does not satisfy the design-speed requirement (e.g., a horizontal or vertical curve).

** Requires a determination of technical infeasibility. See Section 40-8.04(01).

It is not necessary to submit a Level One checklist for an S-line that does not exceed the work necessary to build the appropriate public-road approach, including the required taper distance to account for transitioning to the existing pavement width. This requirement does not relieve the designer of having the S-line satisfy all critical design elements in the area (i.e., maximum grade, vertical stopping sight distance, and intersection sight distance).

The existing minimum vertical clearance dimension for a structure carrying a roadway over a railroad should be field measured. Standard track maintenance procedures performed by a railroad company often result in an increase in the rail elevation. Therefore, the minimum vertical

clearance dimension shown on prior construction plans will not be a true indication of the current minimum vertical clearance. Each report or plan identifying the existing minimum vertical clearance dimension over a railroad should indicate the date of the field measurement. This dimension should be shown on the profile view of the General Plan sheet with a corresponding note identifying the date of the field measurement.

Each Level One criterion must be satisfied for the entire project length, including all paving exceptions. If a criterion is not satisfied, the designer must apply for a design exception or revise the plans.

The Level One Criteria Checklist is to be submitted with each submittal. If there are no changes to the plans from the previous submittal that affect the Level One criteria, it is permissible to copy the previous Checklist form and add a comment. The comment should indicate that there are no changes to the plans that affect Level One criteria. Such statement should be initialed and dated for the current submittal. A completed Limited Review Certification should be submitted at the Final Check Prints and Final Tracings stages. These forms are available at www.in.gov/dot/div/contracts/design/dmforms.

40-8.04(01) Department Procedure [Rev. Feb. 2014]

2. ADA Compliance. Compliance with the ADA is a requirement to the maximum extent feasible whether a project includes federal funds, 100% state funds, 100% local funds, or a combination thereof. When an element of a pedestrian access route cannot be constructed due to an existing constraint, that element must be documented as technically infeasible.

A determination of technical infeasibility does not constitute a waiver of the ADA requirements, but rather serves as a process of sufficiently documenting alternatives considered, existing constraints, and costs associated with compliance for later use, if necessary, as the basis for a defense regarding a complaint or litigation.

The Department's ADA Committee will review requests for determination of technical infeasibility in accordance with the Technical Infeasibility Policy. The Committee will review requests for determination of technical infeasibility for projects that contain federal funds or are 100% State-funded. The determination of technical infeasibility is the responsibility of the Local Public Agency (LPA) for 100% locally-funded projects.

A request for determination of technical infeasibility should be sent to the Director of Highway Design & Technical Services. In addition, the Title VI/ADA Program Manager must receive a copy of the request. The request submission should include the following:

- 1) DES Number, if available;
- 2) project location and description of the scope of the project;
- 3) a detailed explanation of the element and ADA standard that cannot be met.
- 4) a detailed explanation of the technical infeasibility, i.e. why the standard cannot be met;
- 5) a detailed explanation of at least two options considered before requesting a determination of technical infeasibility and why these options were not pursued further;
- 6) a recommendation for a proposed solution. This should include an explanation why the proposed solution is the best fit for the given circumstances and how it provides accessibility to the maximum extent feasible;
- 7) an itemization of the costs to construct the element to be ADA-compliant and comparison to the overall project cost; and
- 8) pictures and/or drawings of the actual project location and proposed solutions.

51-1.08 Sidewalk Curb Ramp [Rev. Feb. 2014]

Highway or street resurface, rehabilitation, or improvement work in a suburban, intermediate, or urban (built-up) area in a city or town often requires the providing of adjacent curbs and sidewalks, or the repair or replacement of these facilities. In such an area, especially an urban (built-up) area, the faces of commercial or public buildings are often constructed on or close to the right-of-way or property line.

The Department, along with each local public agency, under Americans with Disabilities Act (ADA) Title II, is required to provide ADA-accessible facilities within the public right of way where a public facility such as a public building, curb and sidewalk, a rest area, a weigh station, etc., are currently located or are to be provided.

Each private business which is considered to be a place of public accommodation such as a retail business, restaurant, doctor's office, law office, etc., is required under ADA Act Title III to provide an ADA-accessible facility on its private property.

Curb or sidewalk repair or replacement may require a change in the sidewalk elevation within the public right of way. INDOT is responsible for ascertaining that ADA requirements are addressed on INDOT right of way. A business that serves the public and has a building with the building face on or nearly on the right-of-way or property line is responsible for ensuring that each building entrance or walk, etc., is ADA-compliant and compatible with the adjacent public right-of-way sidewalk.

A project which includes curbs and sidewalks at pedestrian crosswalks will require sidewalk curb ramps to eliminate physical barriers for ease of access to such crosswalks. A pedestrian crosswalk is defined as the portion of a street ordinarily included within the prolongation or connection of lateral lines of sidewalks at an intersection. It also includes any portion of a highway or street distinctly indicated as a crossing for pedestrians by means of lines or other markings on the pavement surface.

A curb ramp provides a sloped area within a public sidewalk that allows pedestrians to accomplish a change from sidewalk level to street level. A curb ramp typically includes the ramp and flared sides and specific surface treatments, but does not include the landings at the top and bottom of the ramp.

A curb ramp should be placed at each crosswalk which extends from a paved sidewalk in each intersection with a curbed public roadway or curbed signalized commercial drive. A curb ramp should not be used at a private drive, alley, or unsignalized commercial drive. Instead, a sidewalk elevation transition as shown on the INDOT *Standard Drawings* should be placed. At

a T-intersection, the designer should ensure that curb ramps are located on the side opposite the minor intersecting road if a sidewalk is present or is to be provided.

For project activities deemed as alterations in accordance with the Department of Justice/Department of Transportation Joint Technical Assistance on the Title II of the Americans with Disabilities Act guidance, ADA-compliant curb ramp installation or retrofit must be included within the scope of the project. See Figure [51-11](#) for a list of Alteration vs. Maintenance activities.

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Alteration	Maintenance
Open-Graded Surface Course	Crack Sealing and Filling
Mill and Fill, Mill and Overlay	Surface Sealing
Hot-in-Place Recycling	Chip Seal
Microsurfacing, Thin-Lift Overlay	Slurry Seal
Addition of New Layer of Asphalt	Fog Seal
Asphalt and Concrete Rehabilitation and Reconstruction	Scrub Seal
New Construction	Joint-Crack Seal
	Joint Repair
	Dowel Bar Retrofit
	Spot High – Friction Treatment
	Diamond Grinding
	Pavement Patch

ALTERATIONS VS. MAINTENANCE ACTIVITIES

Figure 51-1 I

56-2.0 ENGINEERING ASSESSMENT [REV. FEB. 2014]

The district Office of Design, in cooperation with the Planning Division and its Office of Pavement Engineering, will determine the need for and propose partial 3R work on a given route. The district will make a recommendation and justification regarding the type of partial 3R project. The recommendation will be reviewed by the Planning Division's Safety Team and Mobility Team. The Teams will use their Pavement Management System to determine the needs of the pavement and to document the condition of the pavement prior to approving the appropriate type of treatment. The Teams will then discuss their findings with the district. The Planning Division and the district are to ultimately concur in whether the partial 3R project should be designed as a preventative maintenance, functional, or structural treatment, or instead, a full 3R project. The Safety Team leader may make recommendations relative to highway safety needs. The Planning Division then authorizes the project. This information is provided to the district's Office of Design, which then begins the design process.

Right-of-way acquisition should not be required for partial 3R work.

Partial 3R work deemed an alteration must include curb ramps in the scope of work. See Section 51-1.08.

The following defines the scope of work to be performed for each type of partial 3R project.

56-4.06(06) Sidewalk [Rev. Feb. 2014]

This work may be incorporated into a partial 3R project as shown in Figure 56-4F. Partial 3R work deemed as an alteration must include curb ramps in the scope of work. See Section 51-1.08.

56-4.09 Design Exception Criteria [Rev. Feb. 2014]

56-4.09(01) Level One Criteria Subject to Design Exception

If a work item is shown in Figure [56-4E](#) or Figure [56-4F](#) as A for a given type of treatment, a Level One or Level Two design exception request is required. A Level One exception is subject to approval of the Production Management Division director. Such work items are listed below.

1. Preventative Maintenance Treatment, A
 - a. Sidewalk curb ramp, place in existing sidewalk or retrofit existing per ADA requirements

2. Functional Treatment, A.
 - a. Cross-slope correction to 2%
 - b. Sidewalk curb ramp, place in existing sidewalk or retrofit existing per ADA requirements

3. Structural Treatment, A.
 - a. Cross-slope, convert tilt section to crown section
 - b. Cross-slope correction to 2%
 - c. Sidewalk curb ramp, place in existing sidewalk or retrofit existing per ADA requirements
 - d. Superelevation rate, improve to standard

56-4.09(02) Level One Criteria Not Subject to Design Exception

Some work items shown in Figure [56-4E](#) or Figure [56-4F](#) as B or C for a given type of treatment are Level One criteria, but a design exception request is not required. Such B work items are listed below.

1. Preventative Maintenance Treatment, B.
 - a. Cross-slope correction to 2%

2. Functional Treatment, B.
 - a. Cross-slope, convert tilt section to crown section
 - b. Shoulder width
 - c. Superelevation rate, improve to standard

3. Structural Treatment, B.
 - a. Lane width
 - b. Shoulder width

The C work items are listed below.

4. Preventative Maintenance Treatment, C.
 - a. Bridge railing, upgrade to current standards
 - b. Cross-slope, convert tilt section to crown section
 - c. Lane width
 - d. Shoulder width
 - e. Superelevation rate, improve to standard

5. Functional Treatment, C.
 - a. Bridge railing, upgrade to current standards
 - b. Lane width

6. Structural Treatment, B.
 - a. Bridge railing, upgrade to current standards

Pavement Treatment →	Prvnt. Maint.	Func-tional	Structural
<i>Culvert,</i>			
Extend	B	B	A
Modify	B	B	A
Place New	C	C	C
Repair and Clean	B	B	A
Replace	B	B	A
Headwalls, Remove	C	B	A
<i>Eroded Area,</i>			
Grade and Seed or Sod	B	B	A
<i>Guardrail End Treatment,</i>			
Repair Damaged	A	A	A
Replace product not on appvd. list with appvd. prod.	B	B	B
Replace type I with type MS or OS as required.	B	A	A
<i>Highway Sign,</i>			
Replace	C	C	B
<i>Impact Attenuator,</i>			
Repair Damaged	A	A	A
Replace product not on appvd. list with appvd. prod.	B	B	B
<i>Linear Grading</i>	C	C	B
<i>Mailbox,</i>			
Adjust Mounting Height Where Required	A	A	A
Replace Where Required	B	B	A
<i>Obstruction-Free-Zone Clearance,</i>			
Remove Fixed Object > 4 in. Above Ground ³	C	B	B
<i>Pavement Markings and Delineation,</i>			
Pavement Markings, Place	A	A	A
Roadside Delineators, Place or Replace	B	B	B
Raised Pavement Markers, Place	C	B	B
Raised Pavement Markers, Replace	B	B	B
<i>Side Ditch,</i>			
Reshape or Riprap	B	B	B

Key to work incidental to paving is shown at the end of the table.

PARTIAL 3R WORK
Roadside, Culvert, and Traffic Considerations

Figure 56-4F
(Page 1 of 2)

Pavement Treatment →	Prvnt. Maint.	Func-tional	Structural
<i>Side Slope,</i> Flatten to Traversable Level	C	C	B
<i>Sidewalk,</i> Repair or Replace per ADA requirements	B	B	B
<i>Sidewalk Curb Ramp at Intersection,</i> Upgrade existing to ADA requirements Place in exist. sdwk. per ADA requirements	A A	A A	A A
<i>Traffic Barrier,</i> Bridge Railing, Upgrade to Current Standards Guardrail, Repair or Replace Damaged Guardrail, Replace Obsolete ¹ or Weathered Guardrail, Place or Lengthen to Current Standards ² Guardrail to Bridge Railing, Connect Guardrail Transition, Upgrade to Current Standards	C A C C C C	C A B B A C	C A B B A C
<i>Traffic Signal,</i> Add or Upgrade Detector Loop or Handhole, Perpetuate	C A	C A	B A

Key to work incidental to paving:

A = Item should be included as part of the project.

B = Item may be included.

C = Item should not be included. If it is considered, it should be programmed separately as a spot improvement.

Notes:

¹ Obsolete guardrail should be treated as shown in Section 49-4.02.

² Treat as described in Section 55-5.04.

³ For example, tree, bush, post, rock, private sign, etc. See Section 55-5.02 for obstruction-free-zone information.

PARTIAL 3R WORK
Roadside, Culvert, and Traffic Considerations

Figure 56-4F
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