Nebraska Department of Transportation (NDOT)

Roadway Design Division – Policy Letter

Policy Number: **DES 23–02**

Approval Date: _____ By: 2023.08.11 11:50:54-05'00' NDOT Roadway Design Engineer

Approval Date: 8-11-2023 By: _____ FHWA – Nebraska

This policy affects Roadway Design Manual: Chapter One: Roadway Design Standards, Section 1

3R Standards for Expressways with Access Only at Interchanges

Program

This Nebraska Department of Transportation (State) program will allow State to use newly established 3R Project Standards (Resurfacing, Restoration, and Rehabilitation) for projects on highway segments functionally classified as Expressway but limited to such expressway segments that allow access only from interchanges. (Please note this classification is "Freeway" under the national functional classification system.) (See attached Table of specific 3R Standards.) For purposes of this policy, as noted on the Table, the design standard allowing "existing" refers to design features as per the most recent construction plans. The Board's current design standards do not include 3R Project Standards for either rural or municipal segments of "Expressway (Access Only at Interchanges)."

Standards and Intent

This Program will impact the following current Board standards: 428 NAC Chapter 2, 001.02O – Rural, and 428 NAC Chapter 2, 001.02U -- Municipal. This program is expected to be an interim program until completion of an expected revision to the Board's Rules and Regulations to expressly allow 3R Standards for the applicable Expressway projects. The FHWA has only recently given its approval to State to use 3R Standards on applicable Expressway projects using federal-aid funds.

General Conditions applicable to this Program

(1) It is understood that it is appropriate to allow 3R Standards on Expressway projects because the expressway segments on which the 3R projects will be constructed were initially designed and constructed to modern and well accepted design standards. Allowing 3R projects on these highway segments is also practical because it allows the State to extend the useful life of these modern expressway segments.

(2) As a part of the development of a 3R Expressway Project, State will complete a crash history review using a standard crash analysis model to determine whether there is any existing significant need for **making additional improvements with the project related to any Board non-complying geometric feature**. Any geometric change made from this analysis would meet or exceed 3R standards for that geometric feature.

Sent to: NDOT Roadway Design, NDOT "Distribution B", and selected consultants.

(3) Program 22-1, Bridge or Culvert Replacement Projects may also be used to make bridge or culvert improvements as a part of an Expressway 3R project.
(4) If State decides to replace a bridge or a culvert under this Program on **a State Expressway within the corporate limits of a Municipality**, State will coordinate with the Municipality through normal processes.

If the above conditions are not met, then State would not move forward with an Expressway 3R project; in that case, State reserves the right to request a relaxation of standards from the Board.

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State Functional Classification: Expressway (Access Only At Interchanges)
National Functional Classification: Principal Arterial – Other Freeways and Expressways

Design Speed	Posted Speed Limit
Lane Width	12 ft.
Shoulder Width	4-Lane: Lt. = 3 ft. pvd/ Rt. = 8 ft. pvd ≥ 6-Lane: Lt. = Existing/ Rt. = 8 ft. pvd
Horizontal Alignment	
Maximum Superelevation	8%
Minimum Radius (Based on Maximum Superelevation)	Existing
Vertical Alignment	
Crest K Value	Existing
Sag K Value	Existing
Maximum Grade	Existing
Stopping Sight Distance	Existing
Cross Slope	
Lane	1.5% to 2.5% (D)
Shoulder	2% to 6% (B)
Clear Zone	
Fixed Obstacle Clearance	Existing (5)
Lateral Offset to Obstruction	Nominal Shoulder Width (P)
Vertical Clearance	16 ft. (7)

Bridges	
Clear Bridge Width	37.5 ft. (N)
Structural Capacity	(F)

Note: "Existing" refers to design features as per the most recent construction plans.

(5) This area, measured from the edge of the through travel lane, may have crashworthy or break-away obstacles and shall be free of non-shielded obstacles except:

1. Traffic signal poles, railroad signals, railroad tracks, bridge rails, ditches, side slopes, driveways, intersections, bike/pedestrian paths, earth dikes, parallel drainage culverts, curbs, raised islands, guardrails, median barriers, crash cushions, drainage inlets, drainage flumes, culverts with flared end sections, erosion control devices, fire hydrants, and traffic control devices;

2. Other obstacles if the NDOT, in its sole discretion, determines based upon an accident review and a Roadside Safety Analysis Program (RSAP) review or a comparable AASHTO approved economic analysis, that the cost to remove or treat such obstacle exceeds the benefits from such removal or treatment.

(7) Vertical clearance shall be provided over the entire roadway including traveled lanes and paved shoulder width.
For sign trusses and pedestrian overpasses, the vertical clearance is 1 ft. greater.

(B) The surfaced shoulder slope should not be less than the slope of the adjacent lane.

(D) On roadways where there are more than two lanes inclined in the same direction, the cross slope may be increased by 0.5% to 1% for each additional lane, up to a maximum of 3%.

(F) The Design Loading used shall be the original design loading or, if unknown, use HS20.

(N) For rehabilitated bridges it is desirable to use the new and reconstructed clear bridge width.

(P) The "nominal shoulder width" is defined as the shoulder width presented in this table.

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