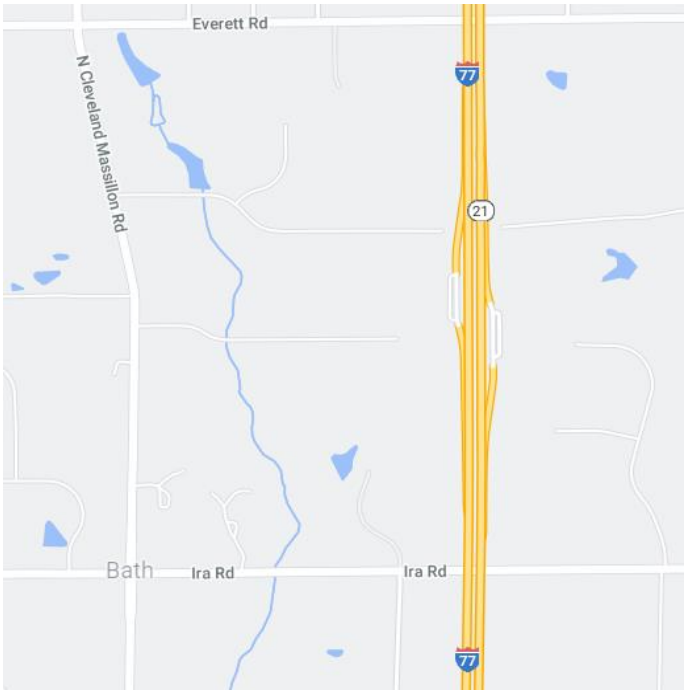
Design Exception Request

SUM-77-24.12

PID: 111404; Request 03

Letting Type: ODOT-Let

Design Designation			
Ramps A, B, C, D (I-77 Rest Area); -			
Current ADT (2025)	0	Td	0
Design Year ADT (2040)	0	Design Speed	0
Design Hourly Volume ()	0	Legal Speed	0
Directional Distribution	0	Design Functional Class	1 - Interstates
Trucks (24hr B&C)	0	Functional Class Area Type	Urban
		NHS Project	No



Submitted By:

E-SIGNED by Mark Grossman
on 2021-10-30 13:23:27 EST

Mark Grossman
(Engineer of Record)

M.G.

Engineer of Record Seal

Approved by:

E-SIGNED by Brenton Bogard
on 2021-11-01 05:02:34 EST

Brenton Bogard Approval Date: 10/28/2021

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Controlling Criteria Identification			
Section: Ramps A, B, C, D (I-77 Rest Area); -			
Controlling Criteria	**Standard**	**Existing (a.)**	**Proposed**
Lane Width			
Shoulder Width			
Horizontal Curve Radius			
Maximum Grade			
SSD (Horizontal & Crest Vertical)			
Pavement Cross Slope			
Superelevation Rate	Dc = 9^00" emax = 0.051 (35	No super provided	Dc = 9^00" emax = 0.037 (25 mph per Fig. 202-10)
Vertical Clearance			
Design Loading Structural Capacity			
(a.) "Existing" may be N/A (i.e. New alignment or new ramp)			

Project Description

Full depth reconstruction and widening of 4.6 miles of IR-77 to six lanes, including drainage, lighting signing and signal improvements. Project also includes reconstruction of ramps at the Ghent Road interchange and Rest Area.

Section Description

Rest Area Ramp superelevation

Proposed Mitigation

Lighting provided within the existing and proposed Rest Area.

Support for Deviation (Benefit-cost, R/W, Environmental, Constructability, Coordination with Other Projects, Relationship between any crash patterns and proposed design exception, etc.):

Per L&D Volume 1 Figure 503-1 and Section 503.2, for a 70 mph mainline design speed on I-77, the lower range of 35 mph must be provided on ramps or a design exception should be processed. For the Rest Area ramps, the curve closest to the Rest Area parking lots can only meet a super rate of a 25 mph design speed while maintaining full super for 1/3 of the horizontal curve length. This is an improvement over the existing condition as no super is provided. The project proposes to match the existing widened shoulders to allow for parked vehicles along each ramp. For the exit ramps Ramp A and Ramp C, the existing deceleration length of 1050'+/- is being maintained which is greater than the 800' minimum required per L&D Volume 1 Fig. 503-3a thru 503-3c. For the entrance ramps Ramp B and Ramp D, a parallel length of 570' is being provided to meet the requirements of L&D Volume 1 Fig. 503-2a thru 503-2c. In a preliminary geometrics meeting with GPD, ODOT and ORE on 2-10-21, it was decided the current alignments matching existing at the low speed end was sufficient and an improvement over the existing condition while improving the geometrics of the high speed terminals. The impacts to improve these curves to 35 mph would potentially result in widening the embankment impacting environmental wetlands requiring sliver fill embankment construction and possibly impact the Rest Area parking lots which was beyond the objective of the project.

Does the requested Design Exception location fall within a Safety Integrated Project (SIP) Map Location?

No

Does the crash analysis (GCAT and CAM Tool) show any patterns that would be adversely impacted by the proposed Design Exception?

There were 3 documented crashes pulled for the years 2017-2019 within the project limits. The following are listed as accidents:

- 1 accident with serious injury involving a parked vehicle
- 2 accidents with no injury reported
- 1 of the accidents was classified as fixed object with a tree being the object struck.
- 1 of the accidents was classified as sideswipe-passing.

None of the identified accidents establish a pattern which could be attributed to a deficient superelevation rate. The geometric improvements on the high speed end of each of the ramp terminals will enhance the safety.