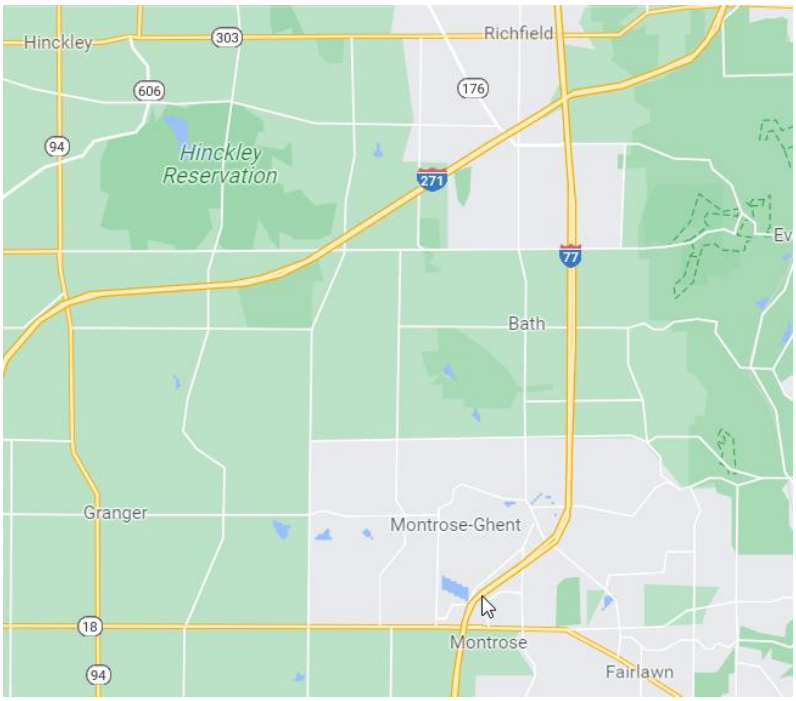
Design Exception Request

SUM-77-24.12

PID: 111404; Request 01

Letting Type: ODOT-Let

Design Designation			
IR-77; 24.17-28.77			
Current ADT (2025)	42,440	Td	3%
Design Year ADT (2040)	73,600	Design Speed	70
Design Hourly Volume (2040)	3,890	Legal Speed	65
Directional Distribution	65%	Design Functional Class	1 - Interstates
Trucks (24hr B&C)	7%	Functional Class Area Type	Urban
		NHS Project	Yes



Submitted By:

E-SIGNED by Mark Grossman
on 2021-10-30 13:19:41 EST

Mark Grossman
(Engineer of Record)

M.G.

Engineer of Record Seal

Approved by:

E-SIGNED by Brenton Bogard
on 2021-11-01 05:01:47 EST

Brenton Bogard Approval Date: 10/28/2021

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Controlling Criteria Identification			
Section: IR-77; 24.17-28.77			
Controlling Criteria	**Standard**	**Existing (a.)**	**Proposed**
Lane Width			
Shoulder Width	10' treated width LT/median (Fig. 301-3)	4' treated width LT/median	4' treated width LT/median
Horizontal Curve Radius			
Maximum Grade			
SSD (Horizontal & Crest Vertical)			
Pavement Cross Slope			
Superelevation Rate			
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

IR-77 Northbound and Southbound median/left shoulder

Proposed Mitigation

The proposed shoulder width matches the width of the existing median shoulder. Treated shoulder width recommended in the approved PBPD report with the intent to provide the standard graded shoulder width in the median/left side. Safety grading provided where NB-77 and SB-77 are split at the southern end of the project. Median grading criteria per L&D Volume 1, Figure 304-1 provided for I-77 north of the existing SUM-77-2519L/R bridges over Yellow Creek Road for the 60' median. Median cable barrier and rumble strips provided.

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

For the length of the project, the mainline existing shoulder widths are a consistent 4’ for the median treated shoulder. The proposed treated shoulder widths will match the existing condition as recommended within the approved PBPD report for the project. The report, titled SUM-77-24.18 Feasibility Study (PID 97536), and subsequent ODOT approval letter are attached. The project will improve capacity and reduce congestion by adding the third lane in each direction. The proposed MOT scheme allows for the permanent NB-77 median shoulder to be constructed up to the Item 302 asphalt base which eliminates the need for 4.6 miles of full depth temporary pavement which is a significant cost savings. The lessened overall treated shoulder width on the median/left side will also be a cost savings. The structures within the project limits were previously widened for a third lane and 12’ inside lateral clearance with only minor rehabilitation being provided on this project. This project will be constructed around the same time as the northern project SUM-77-28.75 PID 111405 which is also proposing 4’ median treated shoulders.

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

Yes, Blue Location;#Yes, Red Location

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

There were 185 documented crashes pulled for the years 2017-2019 within the project limits. The following are listed as accidents:

- 3 accidents with fatalities; 1 rear end and 2 fixed objects (ditch and tree struck)
- 129 accidents with no injury reported
- 75 of the accidents were classified as rear end crashes with 2 of the crashes resulting in serious injuries.
- 67 of the accidents were classified as sideswipe-passing.
- 43 of the accidents were classified as fixed objects struck with 2 resulting in serious injuries. Predominate item struck was guardrail (17).
- 33 of the accidents were classified as ran off road left with 3 resulting in serious injuries or fatalities with the vehicles overturning/rolling over. One fatality was a result of unsafe speed with a ditch being the item struck. The other two were a result of improper lane change with a tree (fatality) and guardrail (serious injury) being the items struck.

None of the identified accidents establish a pattern which could be attributed to a narrow median shoulder. The 142 accidents classified as sideswipe-passing and rear end crashes is an indication that congestion is a safety issue. The added third lane will enhance the safety and reduce congestion.