

Design Exception Request

SUM-77-24.12

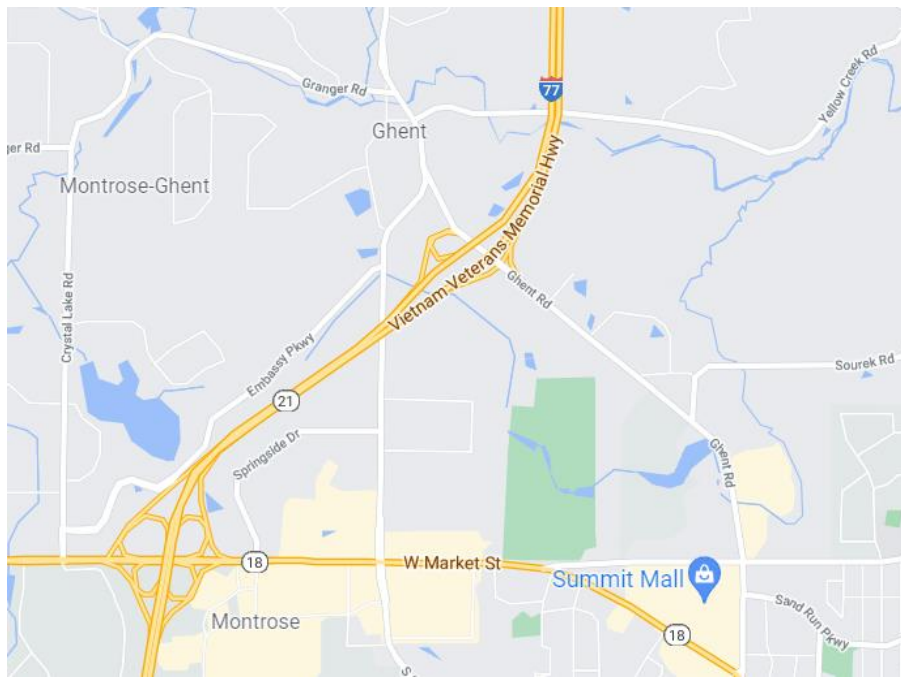
PID: 111404; Request 02

Letting Type: ODOT-Let

Design Designation

Ghent Road; -

Current ADT (2025)	16,050	Td	0
Design Year ADT (2040)	16,610	Design Speed	40
Design Hourly Volume (2040)	1,827	Legal Speed	40
Directional Distribution	55%	Design Functional Class	4 - Minor Arterial Roads
Trucks (24hr B&C)	4%	Functional Class Area Type	Urban
		NHS Project	No



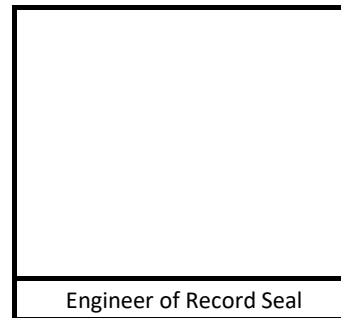
Submitted By:

 Mark Grossman
 (Engineer of Record)

Approved by:

 Brenton Bogard

Approval Date: 10/28/2021



Engineer of Record Seal

Design Exception Request

SUM-77-24.12

PID: 111404; Request 02

Controlling Criteria Identification

Section: Ghent Road; -

Controlling Criteria	Standard	Existing (a.)	Proposed
Lane Width			
Shoulder Width	8' treated width (Fig. 301-3)	12' treated width within 100'+/- of each end of the bridges over I-77 / 4' treated width beyond those limits	6' treated width typical (5.3' minimum)
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

Ghent Road shoulder width

Proposed Mitigation

Lighting provided within the existing and proposed Ghent Road / I-77 interchange.

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

In a 2013 project, Ghent Road structures SUM-77-2472R (over I-77 NB) and SUM-77-2472L (over I-77 SB) were reconstructed and widened to provide 2 lanes in each direction with 12' paved shoulders on Ghent Road within approximately 100' of the end of each structure.

Interchange Operations Study (IOS) performed by GPD in February 2021 for the Ghent Road interchange recommended the following to reduce congestion and delay at both ramp terminal intersections of the Ghent Road / I-77 interchange:

1. Modify the slip ramp pavement markings at the Ghent Road / Cleveland Massillon Road intersection to lengthen the weave area.
2. Restripe the WB Ghent Road lanes as a dedicated left turn lane for vehicles turning on the I-77 SB Ramp
3. Reconfigured the I-77 SB exit ramp leg of the intersection for vehicles turning onto EB Ghent Road is an add lane
4. Restripe the section between the I-77 SB and I-77 NB ramp terminals to implement a 5-lane section including the section widened in the 2013 project.
5. Implement an EB Ghent Road left turn lane for vehicles turning onto the I-77 NB Ramp
6. Implement a NB left turn lane on the I-77 NB exit ramp for vehicles turning onto Ghent Road
7. Replace the existing WB to NB free-flow ramp with a WB right turn lane for a free-flow movement
8. Widen the I-77 NB ramp to two lanes for approximately 350' to accept the free-flow movement from WB Ghent Road.

To provide the 5-lane section with left turn lanes on Ghent Road in both directions, the shoulder widths will be reduced to 6' in the area reconstructed in 2013 including the bridges. Per L&D Volume 1, Figure 302-3, the existing Ghent Road (arterial) bridges over I-77 which are to remain require a 6' lateral clearance which can be obtained with the project design. Therefore, a design exception is not required for lateral clearance on the existing structures but is required within the roadway limits providing a 6' treated shoulder width (matching the clearance provided on each structure).

In addition to the additional lane provided in each direction on I-77, these Ghent Road interchange improvements listed above will contribute to reducing congestion and increasing safety.

Does the requested Design Exception location fall within a Safety Integrated Project (SIP) Map 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 12 documented crashes pulled for the years 2017-2019 within the Ghent Road project limits. The following are listed as accidents:

- None of the accidents resulted in fatalities nor serious injuries
- 8 of the accidents were classified as rear end crashes with 3 of the crashes resulting in minor injuries.
- 2 of the accidents were classified as angle.
- 1 of the accidents was classified as sideswipe-passing.
- 1 of the accidents was classified as left turn.

None of the identified accidents establish a pattern which could be attributed to a narrow outside shoulder. The 12 accidents classified as sideswipe-passing, rear end and left turn crashes is an indication that congestion is a safety issue. The added turn lanes at each ramp terminal will enhance the safety and reduce congestion.