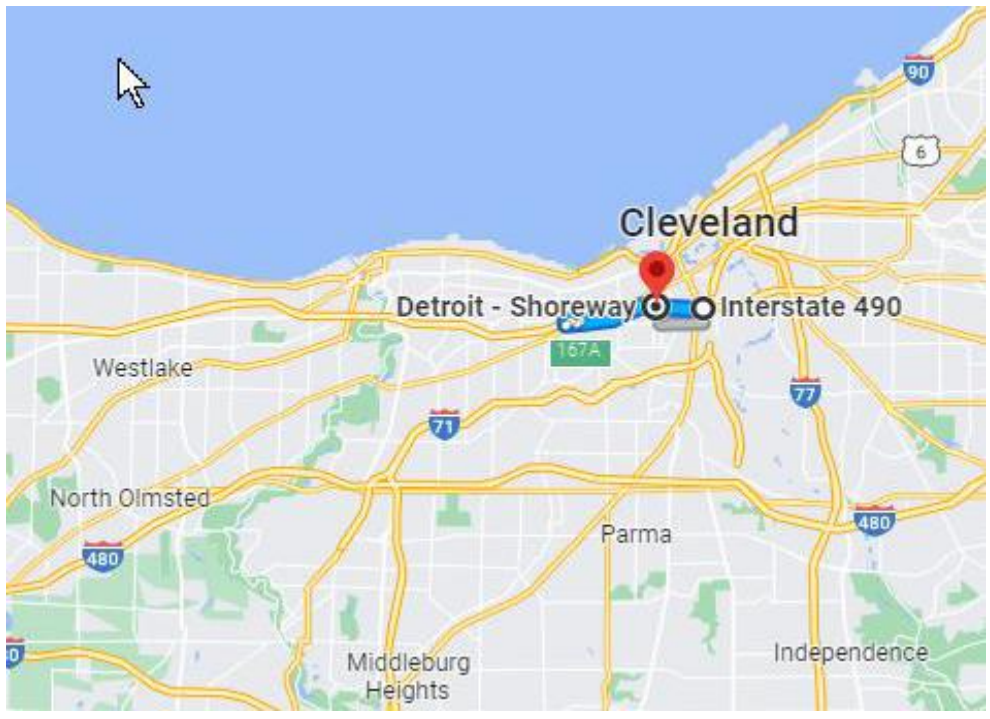
Design Exception Request

CUY-90-6.83

PID: 76779; Request 09

Letting Type: ODOT-Let

Design Designation			
I-90; 6.84-14.94			
Current ADT (2025)	163,000	Td	0
Design Year ADT (2045)	217,000	Design Speed	60
Design Hourly Volume (2045)	21,500	Legal Speed	60
Directional Distribution	58	Design Functional Class	1 - Interstates
Trucks (24hr B&C)	6	Functional Class Area Type	Urban
		NHS Project	Yes



Submitted By:

E-SIGNED by Jim Sima
on 2023-06-01 11:51:25 EST

Jim Sima
(Engineer of Record)

J.S.

Engineer of Record Seal

Approved by:

E-SIGNED by Adam Koenig
on 2023-06-01 13:56:33 EST

Adam Koenig

Approval Date: 3/2/2023

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Controlling Criteria Identification			
Section: I-90; 6.84-14.94			
Controlling Criteria	**Standard**	**Existing (a.)**	**Proposed**
Lane Width			
Shoulder Width	10 feet	6 feet	6 feet
Horizontal Curve Radius	24°45'00"	28°00'00"	28°00'00"
Maximum Grade			
SSD (Horizontal & Crest Vertical)			
Pavement Cross Slope			
Superelevation Rate	5.7%	3.2%	3.6%
Vertical Clearance			
Design Loading Structural Capacity			
(a.) "Existing" may be N/A (i.e. New alignment or new ramp)			

Project Description

Full depth pavement reconstruction of Interstate 90 from the Hilliard Blvd to I-490 in the cities of Rocky River, Lakewood and Cleveland, OH. Project includes full depth ashpalt concrete pavement for mainline I-90, and full depth concrete pavement for service interchange ramps. Project also includes drainage upgrades including replacement of portions of storm sewer trunk line and laterals, signing, pavement marking and ITS upgrades.

Section Description

For RAMP 17 IR 90 WB to LORAIN AVE., the Shoulder width, horizontal curve radius and superelevation rate for Ramp 17 are deficient.

Proposed Mitigation

None

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

Providing a wider shoulder would impact the existing retaining wall that supports Grace Ave. and the cul-de-sac at Grace Ave./W. 73rd St.
The western horizontal curve meets 25 mph which is less than 30 mph criteria from Figure 503-1. The proposed curvature matches the existing curvature. The proximity of this curve to the intersection with Lorain Ave./W. 81st St. does not provide enough length for the development for a full superelevation rate of 5.7%. The proposed superelevation rate (3.6%) exceeds the existing rate (3.2%).
The geometry of this ramp is constrained by the wall abutment of the W. 73rd St. overpass (CUY-10-03984), the retaining wall on the north edge of shoulder, the proximity of W. 80th St. and Nordica Ct. and to ability to align with W. 81st St.

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?

No