

TO: Jennifer Lloyd, P.E., Director, Roadway Design Division

FROM: Ron Swanson, P.E., Public Works Director

DATE: 4/8/2017

SUBJECT: DESIGN EXCEPTION REQUEST AND JUSTIFICATION

State Project No. 95LPLM-F3-011
 PIN 129888.00
 Termini: SR-141 (Hartsville Pike), from E. High Street to Lealand Drive
 NHS YES NO
 State Route YES NO

DESIGN CONTROLLING CRITERIA FOR WHICH EXCEPTION IS REQUESTED:

APPLICABLE FOR ALL NHS ROADWAYS

Design Speed Design Loading Structural Capacity

APPLICABLE FOR NHS ROADWAYS WITH DESIGN SPEED ≥ 50 MPH

Lane Width Cross Slopes
 Horizontal Curve Radius Vertical Clearance
 Stopping Sight Distance Superelevation Rate
 Shoulder Width Maximum Grade

DESCRIBE THE REASONING OF THE DESIGN EXCEPTION REQUEST:

SR-141 (Hartsville Pike) currently runs through existing residential properties which the city does not have any existing easements on. To fulfill the design standard of 6 ft shoulders we would have to obtain several pieces of property, including multiple resident's homes. If we were able to keep the existing 5 ft shoulders we would could perform all of the work within existing ROW.

PROJECT DESIGN DATA:

Highway Functional Classification: (Green Book 2011 Section 1.3) Principal Arterial Arterial
 Rural or Urban area: Connector Local road
 Roadway Design Standard Drawing: Urban
RDO1-TS-3C
 Existing Design Speed: 45
 Existing Posted Speed: 45
 Proposed Design Speed: 45
 Proposed Posted Speed: 45
 Type of Terrain: Level Rolling Mountainous
 Traffic Data: ADT (2017): 7230 D: 98%
 ADT (2037): N/A T: 1%
 DHV: 301 vph V: 1%

GEOMETRIC DESIGN DATA FOR LOCATION OF THE REQUESTED DESIGN EXCEPTION:

	Standard	Existing	Proposed	N/A
Cross Slope (tangent section):	<u>2 %</u>	_____	_____	<input checked="" type="checkbox"/>
Max. Superelevation Rate:	_____	_____	_____	<input checked="" type="checkbox"/>
Minimum Radius of Curve:	_____	_____	_____	<input checked="" type="checkbox"/>
Minimum Stopping Sight Distance:	_____	_____	_____	<input checked="" type="checkbox"/>
Passing Sight Distance:	_____	_____	_____	<input checked="" type="checkbox"/>
Crest Vertical Curve "K":	_____	_____	_____	<input checked="" type="checkbox"/>
Sag Vertical Curve K:	_____	_____	_____	<input checked="" type="checkbox"/>
Maximum Grade:	<u>14%</u>	_____	_____	<input checked="" type="checkbox"/>
Design Loading:	_____	_____	_____	

ROADWAY TYPICAL SECTION

	Standard	Existing	Proposed	N/A
Lane Width:	_____	_____	_____	<input checked="" type="checkbox"/>
Outside Shoulder width:	<u>5ft</u>	<u>4ft</u>	<u>4ft</u>	<input type="checkbox"/>
Inside Shoulder width:	_____	_____	_____	<input checked="" type="checkbox"/>
Clear Zone width:	_____	_____	_____	<input checked="" type="checkbox"/>

BRIDGE DESIGN FEATURES

	Standard	Existing	Proposed	N/A
Traffic Lane Widths:	_____	_____	_____	<input checked="" type="checkbox"/>
Outside Shoulder Widths:	_____	_____	_____	<input checked="" type="checkbox"/>
Inside Shoulder Widths:	_____	_____	_____	<input checked="" type="checkbox"/>
Sufficiency Rating:	_____	_____	_____	<input checked="" type="checkbox"/>
Vertical Clearance	_____	_____	_____	<input checked="" type="checkbox"/>
To Navigational Waterway:	_____	_____	_____	<input checked="" type="checkbox"/>
To Other Highway:	<u>16.5 ft.</u>	_____	_____	<input checked="" type="checkbox"/>
To Railroad:	<u>23 ft.</u>	_____	_____	<input checked="" type="checkbox"/>

OTHER FACTORS CONSIDERED FOR THE EXCEPTION REQUEST:

	YES	NO	N/A
SAFETY			
Accident history data has been reviewed.	X		
All roadway and roadside safety mitigation measures have been considered and provided.	X		
The proposed variance from the minimum roadway design standards does not adversely affect the safety of the facility.	X		
The Highway Safety Manual is used to justify the design exception.		X	
OPERATIONS			
The operation of the proposed typical cross-section is comparable with operation of the adjacent cross-sections.			X
The proposed design does not cause a reduction in capacity or adversely affect traffic flow of the facility.	X		
The proposed design does not adversely effect long-term operations.	X		
ROADWAY DESIGN			
It is not feasible to meet the minimum roadway design standards due to right-of-way restrictions, environmental impacts, etc.	X		
The proposed design maintains the same level of service compared to the design based on minimum roadway design standards.	X		
The proposed design results in a significant cost savings compared to the design based on minimum roadway design standards.	X		
The proposed design can meet minimum roadway design standards in the future.		X	

JUSTIFICATION OF DESIGN EXCEPTION:

Please provide detailed justification for the each item checked NO above

Due to the current ROW restrictions it is not feasible to increase the shoulder width. This would not adversely affect safety or service to the section of roadway as the design exception is seeking to maintain the current roadway width.

Attachments

DESIGN EXCEPTION IS REVIEWED AND RECOMMENDED FOR APPROVAL BY:

RON SWANSON

4/8/17

Date

Reviewer Comments Attached

APPROVED BY:

Date