

I-95/Scudder Falls Bridge

Gore to Gore Distances

I-95 Design Speed 70 mph

Roadway	Interchange				Distance	Minimum Gore to Gore Distance*	Standard?	Comments
	Roadway	Entrance/Exit Ramp	to	Entrance/Exit Ramp				
I-95	Rest Area (RA)	Entrance Ramp to I-95 SB from RA	to	Exit Ramp to RA from I-95 SB	2073.56'	1000.00'	OK	
I-95	Taylorville Road (TR)	Entrance Ramp N to I-95 SB from TR EB	to	Exit Ramp to RA from I-95 SB	1559.14'	1000.00'	OK	
		Exit Ramp P to TR from I-95 NB	to	Entrance Ramp R to I-95 NB from TR EB	1271.39'	750.00'	OK	
		Entrance Ramp R to I-95 NB from TR EB	to	Entrance Ramp B to I-95 NB from TR WB	625.87'	1000.00'	OK	Ramp B adds lane to I-95, Min Dist does not apply
		Exit Ramp D to TR from I-95 SB	to	Entrance Ramp N to I-95 SB from TR EB	976.37'	750.00'	OK	
I-95	TR to NJ Rt. 29	Entrance Ramp B to I-95 NB from TR WB	to	Exit Ramp A to NJ29 from I-95 NB	2525.56'	1000.00'	OK	(PA Standard>NJ Standard)
		Entrance Ramp E to I-95 SB from NJ29	to	Exit Ramp D to TR from I-95 SB	3417.03'	1000.00'	OK	
I-95	NJ Rt. 29	Exit Ramp A to NJ29 from I-95 NB	to	Entrance Ramp C to I-95 NB from NJ29	1183.66'	500.00'	OK	
		Exit Ramp G to NJ29 from I-95 SB	to	Entrance Ramp E to I-95 SB from NJ29	762.60'	500.00'	OK	
I-95	NJ Rt. 29 to Bear Tavern Rd	Exit Ramp G to NJ29 from I-95 SB	to	Entrance Ramp to I-95 SB from BTR SB	5801.48'	500.00'	OK	
		Entrance Ramp C to I-95 NB from NJ29	to	Exit Ramp to BTR from I-95 NB	5754.28'	500.00'	OK	
I-95	Bear Tavern Rd (BTR)	Exit Ramp to BTR from I-95 NB	to	Entrance Ramp to I-95 NB from BTR	1977.68'	500.00'	OK	
		Entrance Ramp to I-95 SB from BTR NB	to	Exit Ramp to BTR SB from I-95 SB	303.59'	500.00'	OK	NJDOT Roadway Design Manual, Figure 7-1, **
		Exit Ramp to BTR SB from I-95 SB	to	Entrance Ramp to I-95 SB from BTR SB	875.47'	500.00'	OK	

Notes:

* Interchanges located in PA, governing gore to gore distances from PennDOT DM-2, Chapter 1 - General Design, Section 1.6 - Acceleration and Deceleration (Speed-Change) Lanes. Interchanges located in NJ, governing gore to gore distances from NJ Roadway Design Manual, Section 7 - Interchanges, Figure 7-1.

** As stated in NJ Roadway Design Manual, Section 7 - Interchanges, Figure 7-1, gore to gore length for an entrance terminal followed by exit terminal is NOT applicable to distance between Loop Ramps or Cloverleaf interchanges.

BACKGROUND

The purpose of the I-95 / Scudder Falls Bridge Improvement Project is to relieve congestion and improve safety on I-95 from PA Route 332 in Pennsylvania to Bear Tavern Road in New Jersey. This segment of I-95 includes interchanges at Taylorsville Road and PA Route 332 in Pennsylvania and NJSR 29 and Bear Tavern Road in New Jersey. In addition, PA Route 32 in Pennsylvania and Upper Ferry Road in New Jersey pass under I-95 within the project limits. There are also two overhead bridges in Pennsylvania, at Quarry Road and at Dolington Road.

The project is currently in the Preliminary Engineering phase, with alternatives being developed to address the project's purpose. The purpose of this Technical Memorandum is to identify the desired Roadway Design Criteria that will be used to develop the roadway elements of these alternatives. At this time, we do not anticipate any modifications to PA Route 332 or Bear Tavern Road, although some changes may occur to the ramps at those interchanges, or to the roads on the overhead bridges. A separate technical memorandum will be issued to identify the bridge design criteria, and will include the Scudder Falls Bridge over the Delaware.

ROADWAY DESIGN CRITERIA

The design criteria for the identified roadways and interchanges at the I-95 / Scudder Falls Bridge Improvement Project will follow the guidelines set by AASHTO and FHWA, as summarized in the design manuals for both the New Jersey Department of Transportation (NJDOT), and the Pennsylvania Department of Transportation (PADOT) for an urban area.

On and off ramps are located at the Bear Tavern Road, NJSR29, Taylorsville Road and PA 332 interchanges. The design criteria for the interchanges and the ramp geometry will follow the guidelines set by the AASHTO Green Book as well as those identified in Section 7 of the NJDOT Design Manual, entitled Interchanges, for the NJSR29 and Bear Tavern Road Interchanges, and Chapter 4 of the PADOT Design Manual, entitled Grade separations and Interchanges, for the Taylorsville Road and PA332 Interchanges. As interchange alternatives are developed, applicable design criteria for ramp elements will be documented for approval by the governing agency.

The proposed roadway design criteria are summarized below and will be supplemented by additional criteria listed in the manuals where applicable.

ROADWAY DESIGN CRITERIA

	I-95	SR 2071 Taylorsville Rd.	River Road/PA 32	NJ 29	Upper Ferry Rd.
Classification	Interstate	Principal Arterial	Collector	Urban freeway/Expressway	Local Road
Design Speed	70 mph	50 mph	45 mph	65 mph	50 mph
Lane widths	12 ft	12 ft	12 ft	12 ft	11 ft
Right Shoulder width	14 ft	12 ft	12 ft	12 ft	10 ft
Left Shoulder Width	12 ft	4 ft	4ft	4ft	4ft
Cross Slopes, e-max	6 %	6 %	6%	6 %	6%
Cross Slopes, e-min	PA - 2% NJ - 1.5%*	2%	2%	1.5%*	1.5%*
Vertical Grades, max	4%	7%	7%	4%	7%
Vertical Grades, min	PA - 0.5% NJ - 0.3%	0.5%	0.5%	0.3%	0.3%
Horizontal radius desirable	2,050 ft	1,340 ft	760 ft	1,660 ft	835 ft
Min. Stopping Sight Distance	730 ft	425 ft	360 ft	645 ft	425 ft
Min. Passing Sight Distance	2480 ft	1835 ft	1625 ft	2285 ft	1835 ft
Bridge Width	Pavement width +right shoulder +12' left shoulder	Pavement width +right shoulder +6' left shoulder	Pavement width + shoulders each side	Pavement width +right shoulder +6' left shoulder	Pavement width + shoulders each side
Vertical Clearance	16'-6"	16'-6"	14'-6"	16'-6"	14'-6"
Level of Service	D	D	D	D	D

* The cross slope shall be increased by 0.5% in each successive pair of lanes on the low side of the superelevation when more than two lanes are superelevated in the same direction.