

GENERAL NOTES:

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
 2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)

Seismic Design Category = B

Design earthquake response spectral acceleration coefficient at 1.0 second period, $S_{D1} = 0.275g$.

Acceleration Coefficient (effective peak ground acceleration coefficient), $A_s = 0.236g$.

Design Loading:

Vehicular = HL-93
 Future Wearing Surface = 35 lb/sf
 Earth = 120 lb/cf
 Equivalent Fluid Pressure = 45 lb/cf (Min.)
 Superstructure: Simply-Supported, Non-Composite for dead load.
 Continuous Composite for live load.

Design Unit Stresses:

Class B Concrete (Substructure except Columns) $f'c = 3,000$ psi
 Class B-2 Concrete (Drilled Shafts & Rock Sockets) $f'c = 4,000$ psi
 Class B-1 Concrete (Barrier & Columns) $f'c = 4,000$ psi
 Class B-2 Concrete (Superstructure, except Barrier) $f'c = 4,000$ psi
 Reinforcing Steel (ASTM A706 Grade 60) $fy = 60,000$ psi
 Structural Steel HP Pile (ASTM A709 Grade 50) $fy = 50,000$ psi

Fabricated Steel Connections:

Field connections shall be made with 3/4-inch diameter ASTM F3125 Grade A325 Type 3 bolts and 13/16-inch diameter holes, except as noted.

Neoprene Pads:

Neoprene bearing pads shall be 60 durometer and shall be in accordance with Sec 716.

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

MBS refers to mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 or 710 except that no measurement will be made for mechanical bar splices and they will be considered completely covered by the contract unit price for other items.

Concrete Protective Coatings:

Temporary coating for concrete bents and piers (weathering steel) shall be applied on all concrete surfaces above the ground line or low water elevation on all abutments and intermediate bents in accordance with Sec 711.

Traffic Handling:

Structure to be closed during construction. Traffic to be maintained on other routes. See roadway plans for traffic control.

Miscellaneous:

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

Estimated Quantities				
Item		Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	125		125
Bridge Approach Slab (Minor)	sq. yard		125	125
Drilled Shafts (5 ft. 0 in. Dia.)	linear foot	22.4		22.4
Rock Sockets (4 ft. 6 in. Dia.)	linear foot	26.0		26.0
Video Camera Inspection	each	2		2
Foundation Inspection Holes	linear foot	46.0		46.0
Sonic Logging Testing	each	2		2
Galvanized Structural Steel Piles (12 in.)	linear foot	509		509
Pre-Bore for Piling	linear foot	60		60
Pile Point Reinforcement	each	12		12
Class B Concrete (Substructure)	cu. yard	67.7		67.7
Class B-1 Concrete (Substructure)	cu. yard	29.6		29.6
Type D Barrier	linear foot		705	705
Slab on Steel (with Transparent Forms)	sq. yard		1082	1082
Reinforcing Steel (Bridges)	pound	17,620		17,620
Temporary Coating - Concrete Bents and Piers (Weathering Steel)	lump sum	1		1
Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50W	pound		471,260	471,260
Slab Drain	each		11	11
Vertical Drain at End Bents	each			2
Laminated Neoprene Bearing Pad (Tapered)	each		8	8
Laminated Neoprene Bearing Pad Assembly	each		4	4

All concrete above the lower construction joint in the end bents is included in the Estimated Quantities for Slab on Steel (with Transparent Forms).

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel (with Transparent Forms).

Cost of L4x4 ASTM A709 Grade 36 HP pile anchors and 3/4-inch diameter ASTM F3125 Grade A325 Type 1 bolts, complete in place, will be considered completely covered by the contract unit price for Galvanized Structural Steel Piles (12 in.).

Type of Reinforcing Steel	Type Used (✓)
Galvanized Steel Reinforcing Bars	
Textured Epoxy Coated Steel Reinforcing Bars	

MoDOT construction personnel will indicate the type of reinforcing steel used.

Foundation Data				
Type	Design Data	Bent Number		
		1	2	3
Load Bearing Pile	Pile Type and Size	HP 12x53	-	HP 12x53
	Number	5	-	7
	Approximate Length Per Each	ft 36	-	47
	Pile Point Reinforcement	ea All	-	All
	Min. Galvanized Penetration (Elev.)	ft Full Length	-	Full Length
	Pile Driving Verification Method	DF	-	DF
	Resistance Factor	0.4	-	0.4
Rock Socket	Minimum Nominal Axial Compressive Resistance	kip 554	-	616
	Number	ea -	2	-
	Foundation Material	-	Strong Rock	-
	Elevation Range	ft -	779.5-758.4	-
	Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf -	16.3	-
Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf -	236.60	-	

Load Bearing Pile:

DF = FHWA-modified Gates Dynamic Pile Formula

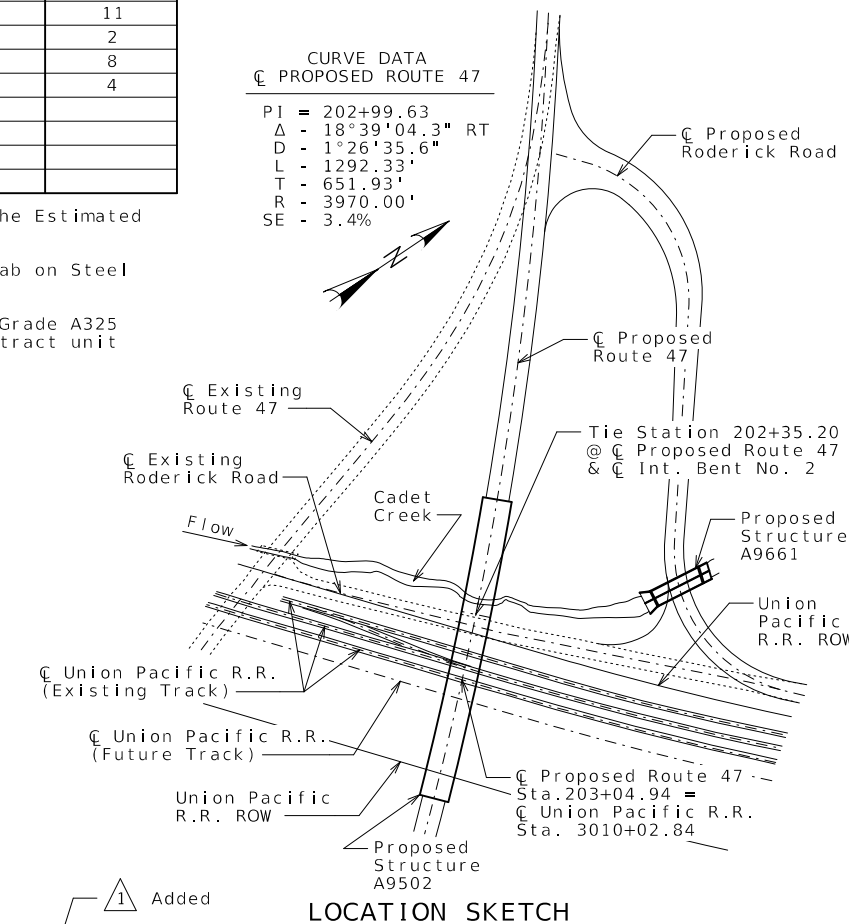
Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$

Rock Socket (Drilled Shafts):

Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$ (Side Resistance)

Drilled shafts and rock sockets shall be constructed per geotechnical report recommendations.

Hydrologic Data	
Drainage Area = 0.5 mi ²	
Design Flood Frequency = 50 years	
Design Flood Discharge = 680 cfs	
Design Flood (D.F.) Elevation = 797.1	
Base Flood (100-year)	
Base Flood Elevation = 797.5	
Base Flood Discharge = 800 cfs	
Estimated Backwater = 0.3 ft	
Average Velocity thru Opening = 4.0 ft/s	
Freeboard (50-year)	
Freeboard = 28.6 ft	
Roadway Overtopping	
Overtopping Flood Discharge = N/A	
Overtopping Flood Frequency ≥ 500 years	
Overtopping Flood Elevation = N/A	



Structural Steel Protective Coatings:
 Protective Coating: System L in accordance with Sec 1080.
 Prime Coat: The cost of the inorganic zinc prime coat will be considered completely covered by the contract unit price for the fabricated structural steel.

1 REVISED

Estimated Quantities for Slab on Steel (with Transparent Forms)		
Item		Total
Class B-2 Concrete	cu. yard	341
Reinforcing Steel (Galvanized)	pound	91,130

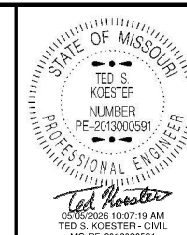
The table of Estimated Quantities for Slab on Steel (with Transparent Forms) represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for transparent forms, conventional forms, all concrete and epoxy coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

Slab shall be cast-in-place with transparent forms. Precast prestressed panels will not be permitted.

See special provisions for transparent form requirements.

Maximum actual weight of transparent forms allowed shall be 5 psf assumed for girder beam loading



DATE PREPARED
 5/5/2026
 ROUTE 47
 DISTRICT BR
 COUNTY WASHINGTON
 JOB NO. JCD0135
 CONTRACT ID.

BRIDGE NO. A9502

DESCRIPTION	DATE

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