

Estimated Quantities				
Item		Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	115		115
Removal of Bridges (R0069)	lump sum			1
Bridge Approach Slab (Major)	sq. yard		249	249
Galvanized Structural Steel Piles (12 in.)	linear foot	1,266		1,266
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	2,950		2,950
Dynamic Pile Testing	each	5		5
Pre-bore for Piling	linear foot	216		216
Pile Point Reinforcement	each	42		42
Class B Concrete (Substructure)	cu. yard	366.3		366.3
Type D Barrier	linear foot		498	498
Slab on Concrete NU-Girder	sq. yard	1,512		1,512
NU 35, Prestressed Concrete NU-Girder	linear foot		1,143	1,143
Conduit System on Structure	lump sum		1	1
Reinforcing Steel (Epoxy Coated)	pound	20,340		20,340
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum			1
Vertical Drain at End Bents	each			2
Plain Neoprene Bearing Pad	each		10	10
Laminated Neoprene Bearing Pad	each		30	30

Cost of L4x4 ASTM A709 Grade 36 HP pile anchors and 3/4-inch diameter ASTM F325 Type 1 Plain bolts, complete in place, will be considered completely covered by the contract unit price for Galvanized Structural Steel Piles (12 in.).

All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in cast-in-place pile at intermediate bent is included in the substructure quantities.

Foundation Data							
Type	Design Data	Bent Number					
		1	2	3	4	5	
Load Bearing Pile	Pile Type and Size	HP 12x53	OECIP 16"	OECIP 16"	OECIP 16"	HP 12x53	
	Number	ea	6	10	10	10	6
	Approximate Length Per Each	ft	107	98	98	99	104
	Pile Point Reinforcement	ea	6	10	10	10	6
	Min. Galvanized Penetration (Elev.)	ft	887	866	869	869	887
	Minimum Tip Penetration (Elev.)	ft	802	811	811	810	806
	Criteria for Min. Tip Penetration		Anticipated	Anticipated	Anticipated	Anticipated	Anticipated
	Downdrag Load (DD)	kip	70	-	-	-	63
	Pile Driving Verification Method		DT	DT	DT	DT	DT
	Resistance Factor		0.65	0.65	0.65	0.65	0.65
Minimum Nominal Axial Compressive Resistance	kip	503	443	443	443	503	

OECIP = Open Ended Cast-In-Place Concrete Pile

DT = Dynamic Testing

DD = Downdrag Load Per Pile

Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}} + \frac{\text{Factored Downdrag Load}}{\text{Resistance Factor}} + \text{Side Resistance in Downdrag Zone}$

Manufactured pile point reinforcement shall be used on all piles in this structure.

Prebore for piles at Bents No. 1 and 5 to elevations 888.0 and 891.0, respectively.

All Piles shall be galvanized down to the minimum galvanized penetration (elevation).

Pile Point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.

The contractor shall make every effort to achieve the minimum tip penetration (elevation) shown on the plans for all piles and achieve the minimum axial compressive resistance which needs to be verified by the specified field verification method.

Review all borings for subsurface driving conditions and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702.

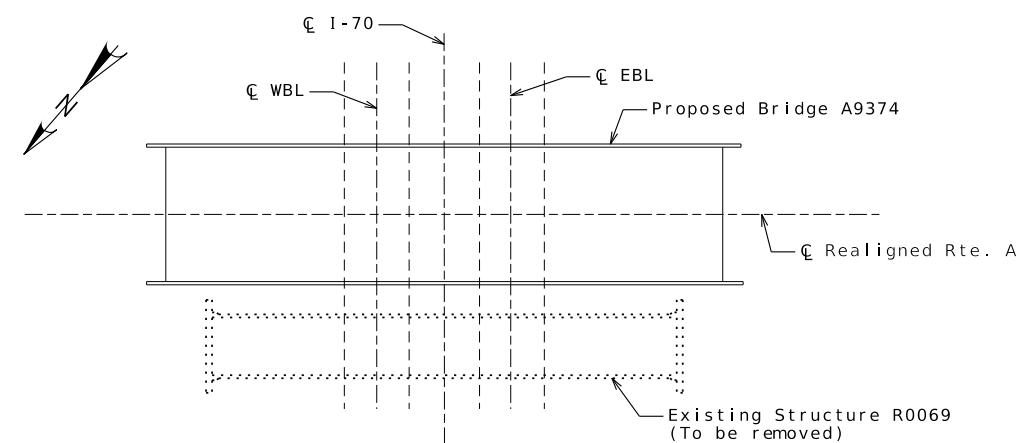
Estimated Quantities for Slab on Concrete NU-Girder		
Item		Total
Class B-2 Concrete	cu. yard	408
Reinforcing Steel (Epoxy Coated)	pound	96,140

The table of Estimated Quantities for Slab on Concrete NU-Girder 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 prestressed panels, 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.

Class B-2 Concrete quantity is based on minimum top flange thickness and minimum joint material thickness.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete NU-Girder.



LOCATION SKETCH

REVISED

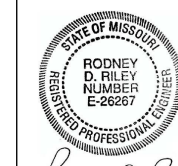
GENERAL NOTES AND QUANTITIES

Detailed July 2024
Checked Oct. 2024

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 32

pw://jacobs-us-va-pw.bentley.com:jacobs-us-va-pw-04/Documents/F3X00900 - I-70 High Hill RR Reali/30 WIP/J2S3438/Bridge/Sheets/B_A9374_002_J2S3438_Notes-01_R001.dgn



RODNEY D. RILEY
NUMBER E-28287
PROFESSIONAL ENGINEER

DATE PREPARED

12-FEB-2025

ROUTE A STATE MO

DISTRICT BR SHEET NO. 2

COUNTY WARREN

JOB NO. J2S3438

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9374

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

JACOBS ENGINEERING GROUP

1001 HIGHLANDS PLAZA DR. WEST SUITE 400

ST. LOUIS, MISSOURI 63110

PHONE: (314) 385-4000

CERTIFICATE OF AUTHORITY #00704

REV.

16:10 12-FEB-2025

Estimated Quantities				
Item		Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	60		60
Removal of Bridges (A0866)	lump sum			1
Bridge Approach Slab (Minor)	sq. yard		196	196
Galvanized Structural Steel Piles (12 in.)	linear foot	540		540
Galvanized Structural Steel Piles (14 in.)	linear foot	2115		2115
Dynamic Pile Testing	each	5		5
Pile Point Reinforcement	each	37		37
Class B Concrete (Substructure)	cu. yard	283.7		283.7
Type D Barrier	linear foot		498	498
Slab on Concrete NU-Girder	sq. yard		1,203	1,203
NU 35, Prestressed Concrete NU-Girder	linear foot		914	914
Conduit System on Structure	lump sum		1	1
Reinforcing Steel (Epoxy Coated)	pound	14,720		14,720
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum			1
Vertical Drain at End Bents	each			2
Plain Neoprene Bearing Pad	each		8	8
Laminated Neoprene Bearing Pad	each		24	24

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

All concrete above the construction joint in the end bents is included in the Estimate Quantities for Slab on Concrete NU-Girder.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

Foundation Data						
Type	Design Data	Bent Number				
		1	2	3	4	5
Load Bearing Pile	Pile Type and Size	HP 12x53	HP 14x73	HP 14x73	HP 14x73	HP 12x53
	Number	ea 5	9	9	9	5
	Approximate Length Per Each	ft 53	78	79	78	55
	Pile Point Reinforcement	ea All	All	All	All	All
	Min. Galvanized Penetration (Elev.)	ft 867	853	853	853	868
	Min. Tip Penetration (Elev.)	ft 837	815	815	815	835
	Criteria for Min. Tip Penetration	Anticipated	Anticipated	Anticipated	Anticipated	Anticipated
	Pile Driving Verification Method	DT	DT	DT	DT	DT
	Resistance Factor	0.65	0.65	0.65	0.65	0.65
	Minimum Nominal Axial Compressive Resistance	kip 292	395	395	395	292

DT = Dynamic Testing

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

Manufactured pile point reinforcement shall be used on all piles in this structure.

All Piles shall be galvanized down to the minimum galvanized penetration (elevation).

Pile Point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.

The contractor shall make every effort to achieve the minimum tip penetration (elevation) shown on the plans for all piles and achieve the minimum axial compressive resistance which needs be verified by the specified field verification method.

HP piles are anticipated to be driven to refusal on rock at the intermediate bent locations. Review all borings for subsurface driving conditions and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702. When pile refusal on rock occurs, as approved by the engineer, the minimum nominal axial compressive resistance is verified and no additional pile driving verification method is required.

Estimated Quantities for Slab on Concrete NU-Girder		
Item		Total
Class B-2 Concrete	cu. yard	1,392.7
Reinforcing Steel (Epoxy Coated)	pound	79,360

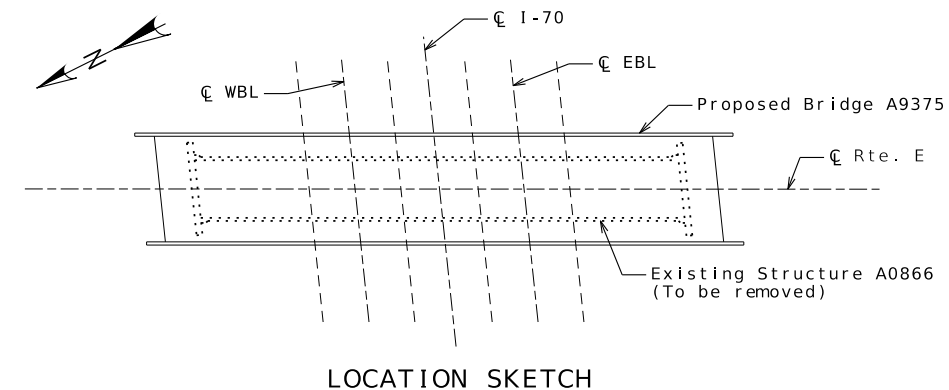
The table of Estimated Quantities for Slab of Concrete NU-Girder represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for prestressed panels, 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.

The Estimated Quantities for Slab on Concrete NU-Girder are based on skewed precast prestressed end panels.

Class B-2 Concrete quantity is based on minimum top flange thickness and minimum joint material thickness.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete NU-Girder.



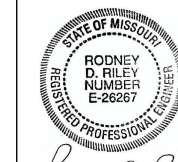
GENERAL NOTES AND QUANTITIES

Detailed July 2024
Checked Sep. 2024

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 31

REVISED



RODNEY D. RILEY
PROFESSIONAL ENGINEER
02/12/2025 8:13:53 PM
Rodney D. Riley, PE
MO-026267

DATE PREPARED
12-FEB-2025

ROUTE E STATE MO

DISTRICT BR SHEET NO. 2

COUNTY
MONTGOMERY

JOB NO.
J2S3439

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9375

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
MoDOT
105 WEST CAPITOL JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Jacobs
JACOBS ENGINEERING GROUP
1001 HIGHLANDS PLAZA DR. WEST SUITE 400
ST. LOUIS, MISSOURI 63110
PHONE: (314) 385-4000
CERTIFICATE OF AUTHORITY #00704