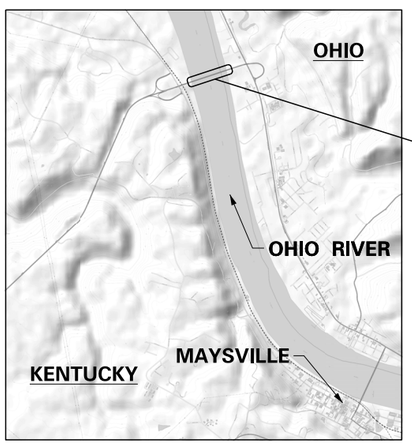
TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

MASON COUNTY
US 62 / 68 OVER OHIO RIVER
WILLIAM H. HARSHA BRIDGE
081B00069N

ESTIMATE OF QUANTITIES

BID ITEM CODE	2003	02562	02568	02569	02650	02775	02898	03171	03225	06514	06549	06550	06551	08903	26214EC	26214EC	26215EC	26216EC	26216EC	26217EC	26217EC	26217EC	26217EC	26218EC	26218EC	26219EC	26220EC	26221ED	26225ED	26226ED
BID ITEM	Relocate Temp Conc Barrier	Temporary Signs	Mobilization	Demobilization	Maintain and Control Traffic	Arrow Panel	Relocate Crash Cushion	Concrete Barrier Wall Type 9T	Tubular Markers	Pave Striping – Perm Paint – 4 IN	Pave Striping – Temp Rem Tape – B	Pave Striping – Temp Rem Tape – W	Pave Striping – Temp Rem Tape – Y	Crash Cushion TY VI Class BT TL3	Stay Cable Free Length Repair – Type A	Stay Cable Free Length Repair – Type B	Friction Damper	Void Repair LCS	Void Repair UCS	Connection Sleeve Repair LCS	Connection Sleeve Repair UCS	Connection Sleeve Repair LCS – Couplers Only	Connection Sleeve Repair UCS – Couplers Only	Grease Replacement LAC	Grease Replacement UAC	Neoprene Boot Replacement	Stay Cable ① Protective Tape Repair	Wind Tie Removal	PT Anchorage Blockout Repair	Tower Permanent Access Platforms
UNIT	L.F.	SQFT	L.S.	L.S.	LS	EACH	EACH	L.F.	EACH	L.F.	L.F.	L.F.	L.F.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	L.S.	L.S.	EACH	EACH
BRIDGE TOTALS	3020	149	1	1	1	1	2	3020	125	10000	5000	6666	5000	2	16	4	80	80	20	2	2	78	78	80	80	80	1	1	608	64

① Estimated Length of Stay Cable Protective Tape Repair = 25,600 LF



US 62 / 68 OVER THE OHIO RIVER

PROPOSED WORK: WILLIAM H. HARSHA BRIDGE REPAIR PLANS

INDEX OF SHEETS

SPECIAL NOTES

Special Note for Remedial Grouting of the Lower Connection Sleeves (LCS) and Upper Connection Sleeves (UCS) Voids

Special Note for Repair of Lower Connection Sleeve (LCS) and Upper Connection Sleeve (UCS) Exteriors

Special Note for Replacement of Grease in the Lower Anchorage Caps (LAC) and Upper Anchorage Caps (UAC)

Special Note for Stay Cable Protective Tape Repair

Special Note for Replacement of Upper Neoprene Boots

Special Note for Free Length Repair

Special Note for Friction Damper Retrofit

Special Note for Traffic Control

Special Note for Pre-Bid Conference

Special Note for Contract Completion Date and Liquidated Damages on Bridge Repair Contracts

Special Note for The Rehabilitation of Post-Tensioned (PT) Anchorage Blockouts

Special Note for Permanent Access Platforms

SPECIAL PROVISIONS

STANDARD DRAWINGS

TTC-115-03	Lane Closure Multi-Lane Highway Case I
TTC-160-02	Temporary Pavement Marker Arrangements for Lane Closures

SPECIFICATIONS

2019 Standard Specifications for Road and Bridge Construction with Current Supplemental Specifications

9th Edition AASHTO LRFD Bridge Design Specifications (2020)

Scott Ribble

Digitally signed by Scott Ribble
DN: cn=Scott Ribble, o=Burgess & Niple, ou, email=scott.ribble@burgessniple.com, c=US
Date: 2024.07.10 20:47:56 -04'00'

STATE OF KENTUCKY
SCOTT T RIBBLE 22304 LICENSED PROFESSIONAL ENGINEER

BY _____

DATE July 10, 2024

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

KENTUCKY TRANSPORTATION CABINET

REVISION	DATE
1 - Revised quantities	7-10-2024

PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023		CHECKED BY
DESIGNED BY: D. Montgomery		S. Ribble
DETAILED BY: L. Bridwell		S. Ribble

TITLE
CROSSING
Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S1	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 18, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\SI-TITLE.DGN

SPECIFICATION NOTES

SPECIFICATIONS: References to the specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, including any current supplemental specifications. All references to the AASHTO Specifications are to the AASHTO LRFD Bridge Design Specifications, 9th Ed.

GENERAL SPECIFICATION NOTES

QUALIFICATIONS: The Contractor that works on any portion of the stay cable system of the structure shall submit references that they have successfully completed two (2) prior cable stay rehabilitation projects over navigable waterways of similar or greater complexities than this project within the past ten (10) years.

ON SITE INSPECTION: Each contractor submitting a bid for this work shall make a thorough inspection of the bridge and the work site prior to submitting a bid and shall be thoroughly familiarized with existing conditions so that work can be expeditiously performed after a contract is awarded. A suitable method of performing the work described herein should be investigated. Submission of a bid will be considered evidence of this inspection having been made. Any claims from site conditions will not be honored by the Department of Highways.

INCIDENTAL ITEMS: The Contractor is required to complete the proposed work in accordance with the plans and specifications. Material and labor not otherwise specified are to be considered incidental to the contract.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the construction in accordance with the plans and specifications. Material, labor, or construction operations, not otherwise specified, are to be included in the bid item most appropriate to the work involved. This may include but not be limited to incidental materials, disposal of waste off the right-of-way, incidental labor, or anything else that may be required to complete the construction.

BRIDGE PLANS: A copy of the available existing bridge plans (Drawing Number 23172), shop drawings, William H. Harsha Cable Stay Bridge Inspection and Testing Report, and RWDI Wind Data Analysis Report will be made available to prospective bidders upon their written request to the Division of Maintenance. The completeness of these documents is not guaranteed.

FIELD VERIFICATION: The Contractor shall verify elevations and dimensions, including thickness of components and diameters of stay cable components, with field measurement prior to ordering materials or fabricating steelwork. Any discrepancies shall be brought to the attention of the Engineer. New material that is unsuitable because of variations in the existing structure shall be replaced at the Contractor's expense.

DAMAGE TO THE STRUCTURE: The Contractor is responsible for any and all damage to the existing structure during the construction should damage result from the Contractor's actions. After the completion of construction, the structure and site shall receive a final cleaning up. The Contractor shall clear the right-of-way and all ground the Contractor occupies in connection with the work of all rubbish, equipment, and excess materials. Place rubbish and all waste of whatever nature, other than hazardous materials, on either public or private property in a location out of the view from the roadway and in a manner to the Department that does not present an unsightly appearance. Restore to its original condition all property, both public and private, that was damaged in the prosecution of the work.

DIMENSIONS: Dimensions shown on these plans are taken from the drawings listed under "Bridge Plans" above and do not necessarily reflect revisions made during construction. All plan dimensions are for a normal temperature of 60°F. Layout dimensions are horizontal dimensions. Deck width is measured at the top of the concrete deck below the overlay.

SHOP DRAWINGS: The Contractor is to submit detailed shop drawings and material specifications for any details or materials that vary from these plans to the Department for approval in accordance with Section 607.03.01 of the Standard Specifications. When any changes are proposed by the fabricator or supplier, the shop drawings reflecting these changes shall be submitted to the Department through the Contractor.

MAINTAINING TRAFFIC: Traffic shall be maintained at all times in accordance with the Special Note for Traffic Control.

UTILITY PROTECTION: If present, any active utility ducts and electrical conduits shall be adequately protected. Any damage to utilities caused by the Contractor shall be repaired at the Contractor's expense.

REMOVED MATERIALS: All existing material removed from the structure that will not be reinstalled on the structure will be considered waste material. This will include, but not be limited to, connection sleeves, fusion couplers, void debris, excess grout, excess protective tape wrap, and existing anchorage cap grease. All material removed shall become the property of the Contractor and shall be removed from the bridge site. The cost of removal shall be incidental to the most applicable bid items.

CONSTRUCTION SEQUENCE: The Contractor shall follow the construction and phasing sequences detailed in the plans and Special Notes. The Contractor may propose alternate construction sequences to the Engineer for approval no later than five working days prior to the start of work on a given work item.

MATERIAL SPECIFICATION NOTES

MATERIALS: ASTM, AASHTO, or PTI Specifications, current edition, as designated in the Special Notes and plan notes shall govern the materials furnished.

SUPERSTRUCTURE NOTES

CLEANING EXISTING STEEL: All areas of existing steel that are to be in contact with new steel shall be cleaned of all dirt, rust, paint, and other foreign matter before installing the new steel. The cost of this cleaning is to be incidental to the unit price bid for the most appropriate bid item.

PROHIBITED FIELD WELDING: Except as noted in these plans and in the Special Notes, no welding of any nature shall be performed on the load carrying members of the bridge without the written consent of the Director, Division of Structural Design, and then only in the manner and at the locations designated in the authorization.

WELDING: No welding shall be permitted without written permission of the Engineer. All welding shall conform to Section 607.03.07 of the current Standard Specifications for Road and Bridge Construction. Modifications and additions as stated in the plans and special notes shall supersede the AASHTO/AWS Specifications. Welding procedures shall be submitted to the Engineer and approved prior to the start of fabrication and repairs. Work shall be completed by an AWS certified welder. The cost of the welding and welding materials is to be incidental to the unit price bid for the most appropriate bid items.

RIVER NAVIGATION: Continuous maintenance of safety of river navigation throughout the term of the project shall be a prime consideration. All work involving the installation or removal of structural elements beneath the bridge deck shall cease when there is approaching river traffic. This work shall not resume until the river traffic is clear of the bridge area.

The Contractor must advise the Coast Guard of the Contractor's proposed schedule of work at least 10 days prior to the commencement of any field operations.

Commander
2nd Coast Guard District
1430 Olive Street
St. Louis, Missouri 63103
(314) 425-4607

WIND DATA ANALYSIS:

Data was copied from the report referenced below:

Company Name: RWDI
Report Number:2305459
Wind Data Analysis Information
Date: 9/7/2023
Authors: Mark Istvan, M.A.Sc., P.E.
Guy Larose, Ph.D., P.E.
Ben Riley, P.E.
Address: 600 Southgate Drive
Guelph, ON N1G 4P6
T: 519-823-1311

CONSTRUCTION SEQUENCE

The following is a general sequence of construction. The Contractor may perform multiple activities concurrently with permission of the Engineer.

1. Contractor shall field verify all dimensions and existing conditions and inform the Engineer of any variance from the plans and existing shop drawings three (3) weeks prior to construction.
2. Contractor shall repair all existing connection sleeves per Special Note for the Repair of Lower Connection Sleeve (LCS) and Upper Connection Sleeve (UCS) Exteriors.
3. Contractor shall perform repairs to the connection sleeves voids per Special Note for the Remedial Grouting of Lower Connection Sleeves (LCS) and Upper Connection Sleeves (UCS).
4. Contractor shall perform repairs to the stay cable free length, if necessary, per Special Note for Free Length Repair.
5. Contractor shall install the protective tape wrap on the stay cable per Special Note for Stay Cable Protective Tape Repair. Contractor shall remove existing wind ties before commencing installation of the protective tape.
6. Contractor shall install upper neoprene boots per Special Note for Replacement of Upper Neoprene Boot.
7. Contractor shall install friction damper per Special Note for Friction Damper Retrofit.
8. Contractor shall install permanent access platforms in the four tower legs per Special Note for Permanent Access Platforms.
9. Contractor shall replace grease in the lower and upper anchorage caps per Special Note for the Replacement of Grease in the Lower Anchorage Caps (LAC) and Upper Anchorage Caps (UAC).

At any time, Contractor shall repair the existing anchorage blockouts of the four tower legs per Special Note of Post-Tensioned (PT) Anchorage Blockouts.

ABBREVIATIONS

The following abbreviations may have been used in the preparation of these plans:

CL	Center Line
Dia.	Diameter
DS	Downstream
E	East
HDPE	High Density Polyethlene
IB	Inboard
LCS	Lower Connection Sleeve
OB	Outboard
PT	Post-Tensioned
Typ.	Typical
W	West
UCS	Upper Connection Sleeve
US	Upstream

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

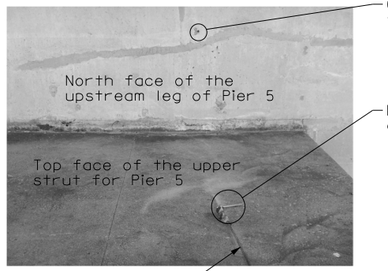
PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

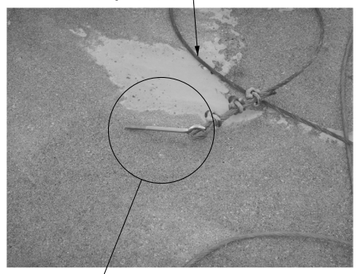
DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

GENERAL NOTES
CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S2	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S2-GENERAL NOTES.DGN





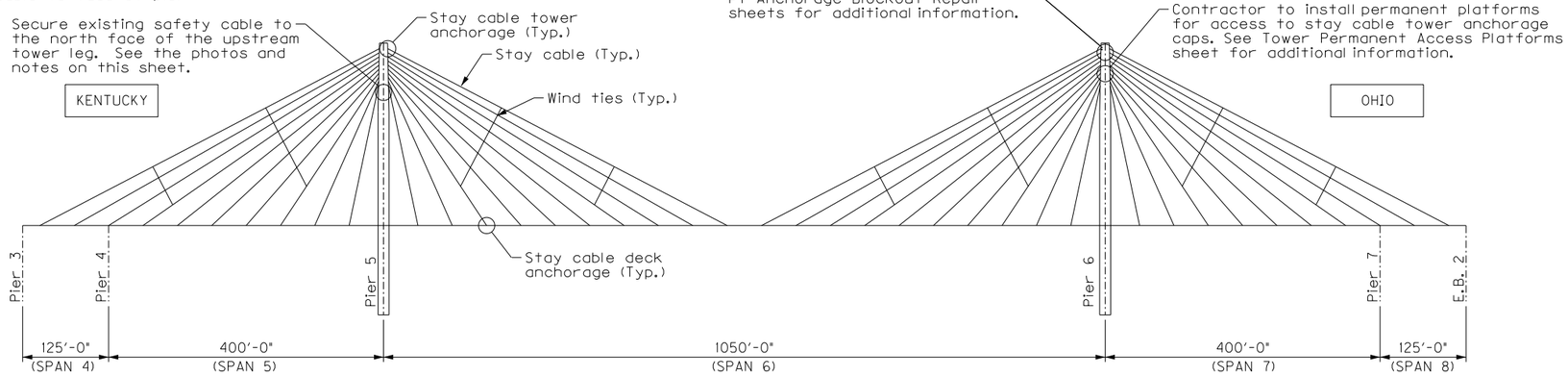
Original anchorage hole for safety cable

Eyebolt to anchor safety cable to face of pier

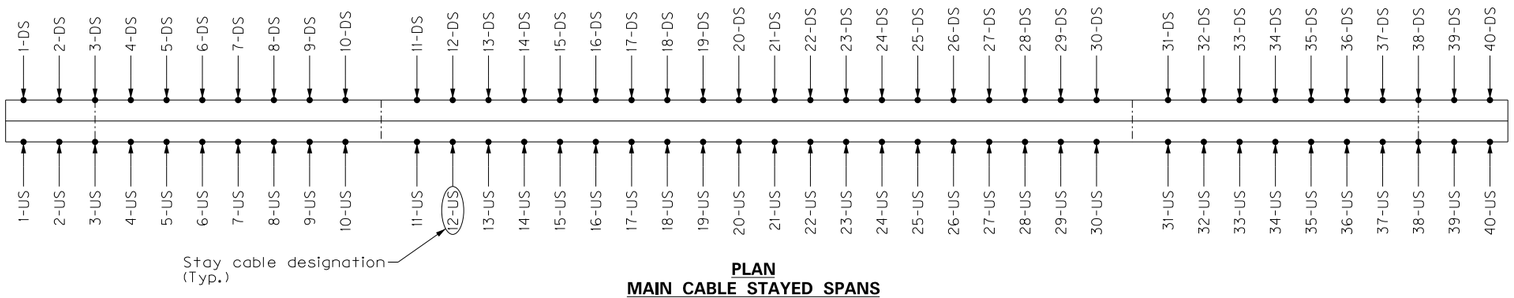
Safety cable

Eyebolt to anchor safety cable to face of pier

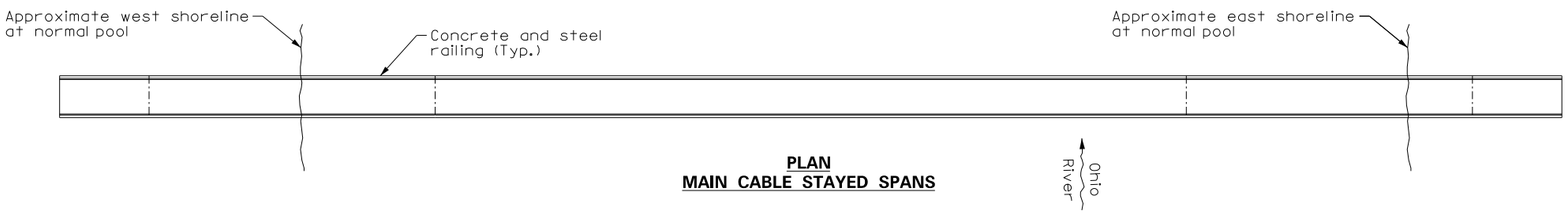
Contractor to secure the safety cable on top of the upper strut for Pier 5 to the north face of the upstream pier leg using an epoxy adhesive that achieves a minimum ultimate pullout strength of 5,000 pounds. The existing hole in the pier shall be reused, if possible, or a new hole may be drilled, taking all due caution to avoid reinforcing steel in the pier. The manufacturer's recommendations shall be followed for the application of the epoxy and drilling of a new hole, if applicable. This work shall be incidental for the unit bid cost for Remove Wind Tie System.



ELEVATION
MAIN CABLE STAYED SPANS



PLAN
MAIN CABLE STAYED SPANS



PLAN
MAIN CABLE STAYED SPANS

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

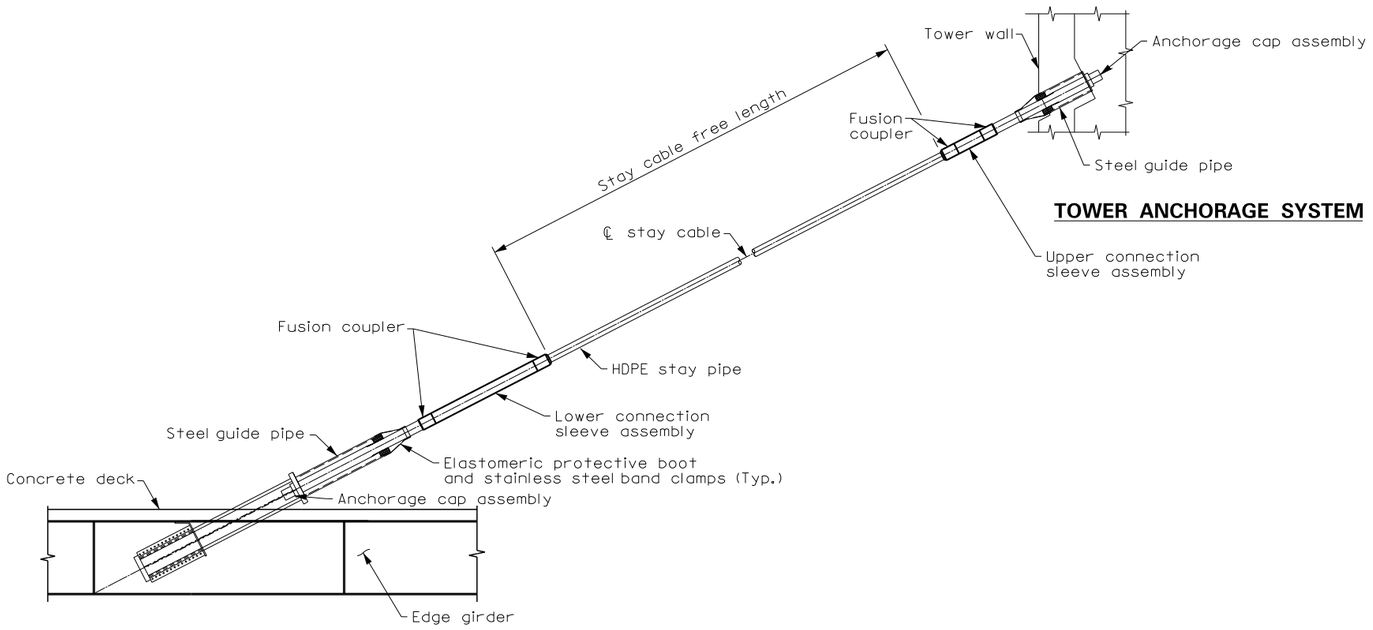
PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

LAYOUT
CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S3	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S3-LAYOUT.DGN

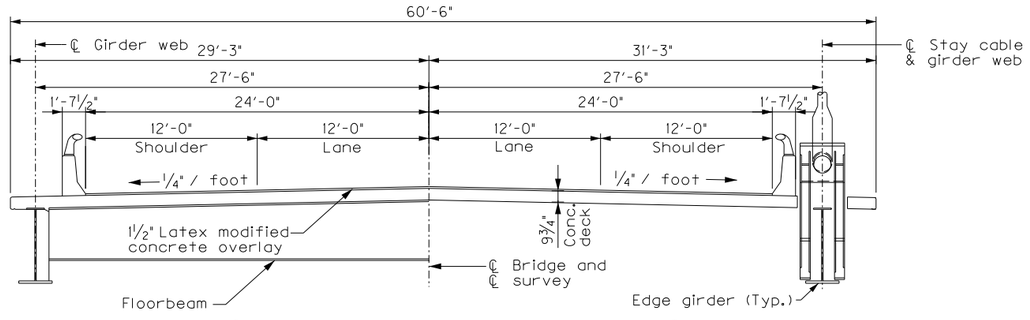


TOWER ANCHORAGE SYSTEM

DECK ANCHORAGE SYSTEM

(Railing not shown for clarity)

EXISTING STAY CABLE ELEVATION



Between Cables **At Cables**

TYPICAL SECTION

Main Spans

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION / DATE	PREPARED BY **BURGESS & NIPLE** Engineers ■ Architects ■ Planners	DATE: December 15, 2023	CHECKED BY	***TYPICAL SECTIONS***	ROUTE US 62/68	ITEM NO. 9-10013.1 SHEET NO. S4	COUNTY OF MASON DRAWING NUMBER 28861
			DESIGNED BY: D. Montgomery	S. Ribble	CROSSING Ohio River			
			DETAILED BY: L. Bridwell	S. Ribble				

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: November 6, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S4-TYPICAL SECTIONS.DGN

Table - Harsha Cable Deficiencies					
US/DS	Cable	Side	Defect	Location	Type
US	10	IB/OB	Hairline x 10" crack/gouge	Near the second to top pipe splice	A
	11	OB	Minor damage to HDPE pipe	Approx. 20' from top of cable	A
	20	IB	1/4" x 12" crack	At pipe splice approx. 190' above deck	B*
		OB	1/4" x 22" crack	At pipe splice approx. 95' above deck	B*
		OB	9/16" x 20 1/2" crack	At pipe splice approx. 93' above deck	B*
	26	N/A	22" long by 1 1/2" gouge taped over	Near a pipe splice approx. 35' above deck	B*
	28	N/A	Hairline x 11" crack taped over	Middle of pipe segment approx. 125' above deck	A
		OB	Hairline x 13" crack/gouge	Near a pipe splice approx. 100' above deck	A
		OB	Hairline x 4" crack/gouge	Above 6" guardrail post	A
	33	OB	Hairline x 9" crack/gouge	Mid-length of cable	A
	34	IB	Hairline x 10" crack/gouge	One-third length of cable	A
		IB	Hairline x 10" crack/gouge	Mid-length of cable	A
DS	4	IB	Deep gouge through white PVC	Above the lower wind tie approx. 20' above deck	A
	7	N/A	Hairline x 12 1/2" crack taped over	Middle of pipe section approx. 110' above deck	A
	12	IB	Small gouge	Near a pipe splice approx. 120' above deck	A
	13	OB	Small gouge	Near a pipe splice approx. 30' above deck	A
	14	OB	Small gouge	Near a pipe splice approx. 125' above deck	A
		OB	Hairline x 3 1/2" crack	Near a pipe splice approx. 95' above deck	A
		OB	Long scrape/gouge	Near a pipe splice approx. 30' above deck	A
		OB	Long scrapes/gouges (2 locations)	Near deck end of cable	A

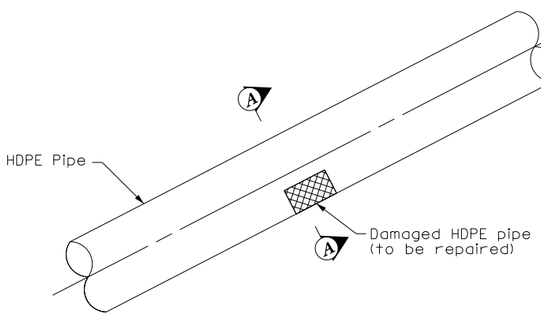
Note: Defiencies were catalogued at time of inspection on May 9-12, 2022. Deficiencies may have grown since time of inspection.

NOTES:

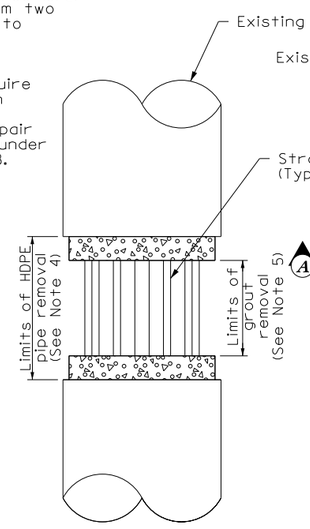
1. Details shown on this sheet are schematic. The actual number of strands, strand bundle configuration, strand bundle location relative to existing HDPE pipe, damage limits, and annular space vary by location.
2. The HDPE pipe shall not be subjected to additional loads or forces not specified due to the Contractor's operations during the repair.
3. Additional repair locations may be required as directed by the Engineer. Payment for additional locations shall be per the unit contract bid price for Bid Item - Stay Cable Free Length Repair.
4. The upper and lower limits of HDPE pipe removal shall be positioned not less than four (4) inches beyond limits of damaged HDPE pipe or unsound grout. Repair limits shall be approved by the Engineer prior to performing work.
5. It is recommended to assume existing grout between the HDPE pipe and strand bundle will be removed over the full circumference of the stay cable. Actual limits of existing grout removal shall be determined by the Engineer after inspection of the exposed repair area.
6. All work associated with cable repairs shall be paid for under the unit bid price for Stay Cable Free Length Repair. It is recommended to assume that three (3) LF of the existing HDPE pipe will be removed. The actual length may vary from two (2) to four (4) LF. Grout pumped beyond the three (3) LF shall be incidental to "Special Note for Free Length Repair."
7. It is assumed that the four (4) defects with an * in the Type column of the "Harsha Cable Deficiencies" are the only four (4) defects that will require this repair and the remaining defects can be repaired and paid per each under the unit bid price for Stay Cable Free Length Repair - Type A. Additional defects found by the Contractor that require the type of repair on this sheet shall require the approval of the Engineer and will be paid under the unit bid price for Bid Item - Stay Cable Free Length Repair - Type B.

Table - Inner Diameter of New HDPE Sleeve			
Cable Type	Cables		Internal Dia. (In.)
	ID	# of Locations	DI
Type I	-	(0)	6 1/2"
Type II	26-US	(1)	7 1/2"
Type III	20-US	(3)	8 1/2"

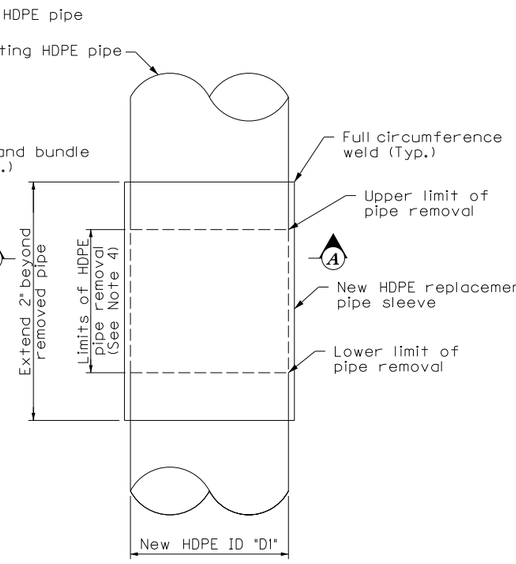
Contractor shall verify all dimensions in field.



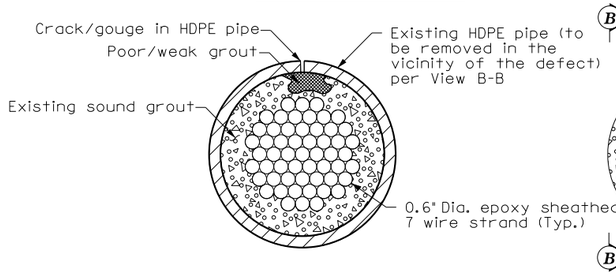
HDPE PIPE REPAIR



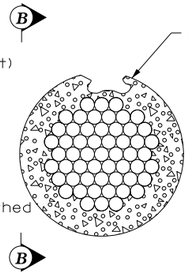
VIEW B-B



VIEW C-C



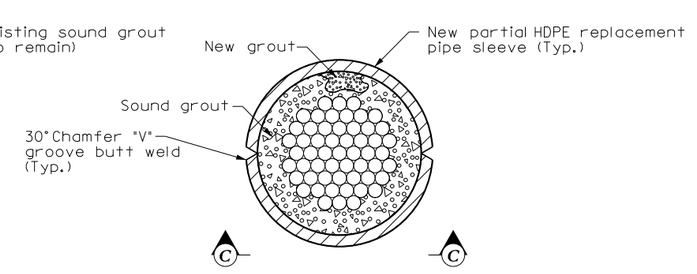
EXISTING DAMAGED CONDITION



REPAIR STAGE 1

SECTION A-A

TYPE B REPAIR



REPAIR STAGE 2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

Stay Cable Free Length Repair
CROSSING
Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S5	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S5-FREE LENGTH.DGN

NOTES:

1. The numbered photographs display some of the more extensive deficiencies found in the free length found during the testing operation. These deficiencies consist of cracks in the HDPE connection sleeves.

2. The photographs below are indicative of the serious types of deficiencies that are to be repaired. It is anticipated that the defects in Photographs 1, 2, & 3 will require Repair Type B as listed in Special Note for Free Length Repair.

3.

Photo Number	Deficiency Description
1.	12" crack approx. 190' above the deck and 1.25 anchorages away from the tower on the IB face.
2.	22" x 1/4" crack approx. 95' above the deck and 5.25 lower anchorages away from the tower on the IB face.
3.	20 1/2" x 9/16" crack approx. 93' above the deck and 5.5 lower anchorages away from the tower on the OB face.
4.	Typical top of tower view of structure looking down.

Photo 1.

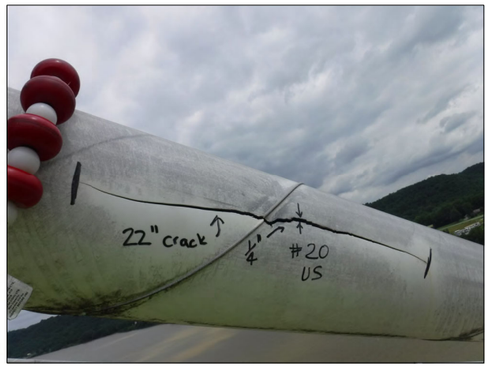


Photo 2.

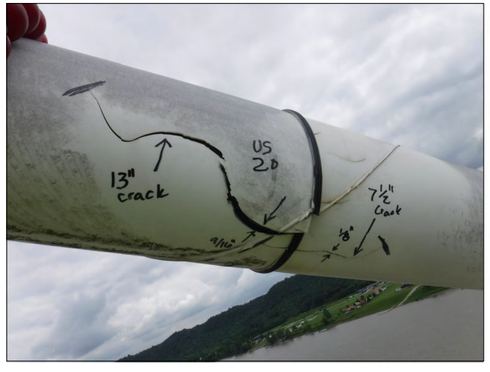
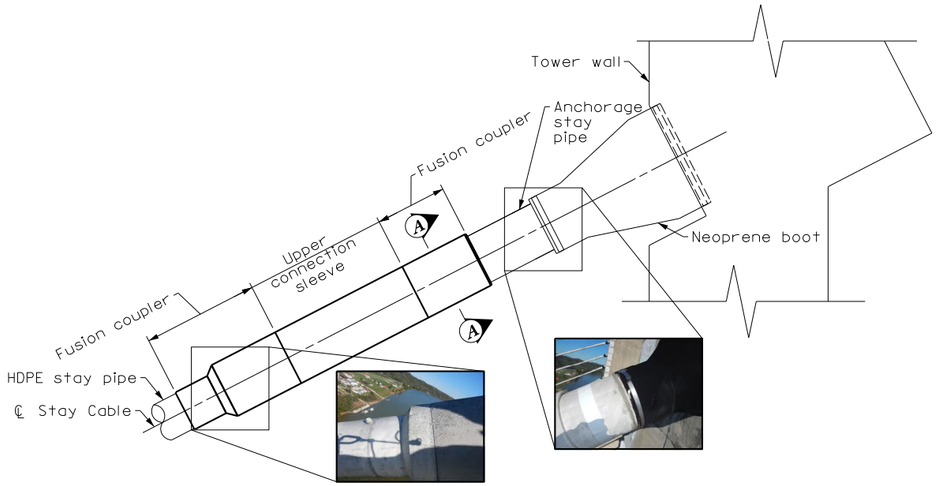


Photo 3.

Photo 4.

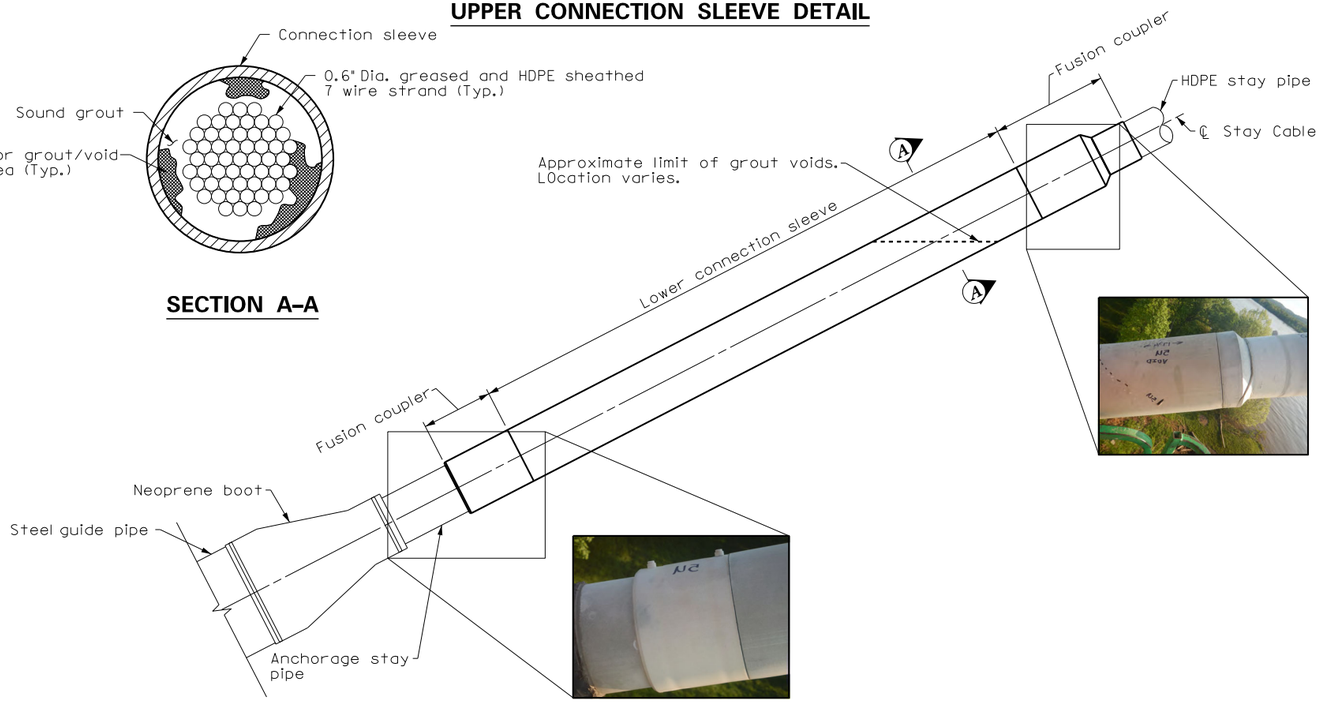
COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION	DATE	PREPARED BY				ROUTE	ITEM NO.	COUNTY OF
			BURGESS & NIPLE Engineers ■ Architects ■ Planners	DATE: December 15, 2023	CHECKED BY	***Stay Cable Free Length Repair***	US 62/68	9-10013.1	MASON
				DESIGNED BY: D. Montgomery	S. Ribble	CROSSING Ohio River		SHEET NO. S6	DRAWING NUMBER 28861
				DETAILED BY: L. Bridwell	S. Ribble				

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S6-FREE LENGTH.DGN



UPPER CONNECTION SLEEVE DETAIL

SECTION A–A



LOWER CONNECTION SLEEVE DETAIL

TYPICAL CONNECTION SLEEVE DEFICIENCIES

1. These deficiencies consist of cracks in the HDPE connection sleeves, failed fusion welds, failed fusion couplers, failed grout port plugs, and other potential deficiencies.
2. The lower connection sleeves (LCSs) at deck level are cracked at majority of the 80 locations, primarily at the upper and lower fusion couplers.
3. At the tower level, a majority of the 80 upper connection sleeves (UCSs) are cracked, primarily at the upper and lower fusion couplers.
4. The adjacent photographs are indicative of the serious type of typical deficiencies that are to be repaired.
5. The majority of the cracked upper and lower fusion couplers have been caused by voids near the upper portion of the HDPE LCS, as well as potential voids near the upper portion of the HDPE UCS, as shown in the adjacent photographs.
6. See Special Note for the Repair of Lower Connection Sleeve (LCS) and Upper Connection Sleeve (UCS) Exteriors for additional information.
7. Upon completion of the connection sleeve repairs, the existing voids will be cleaned and remedial grouted per Special Note for the Remedial Grouting of the Lower Connection Sleeves (LCS) and Upper Connection Sleeves (UCS) Voids.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

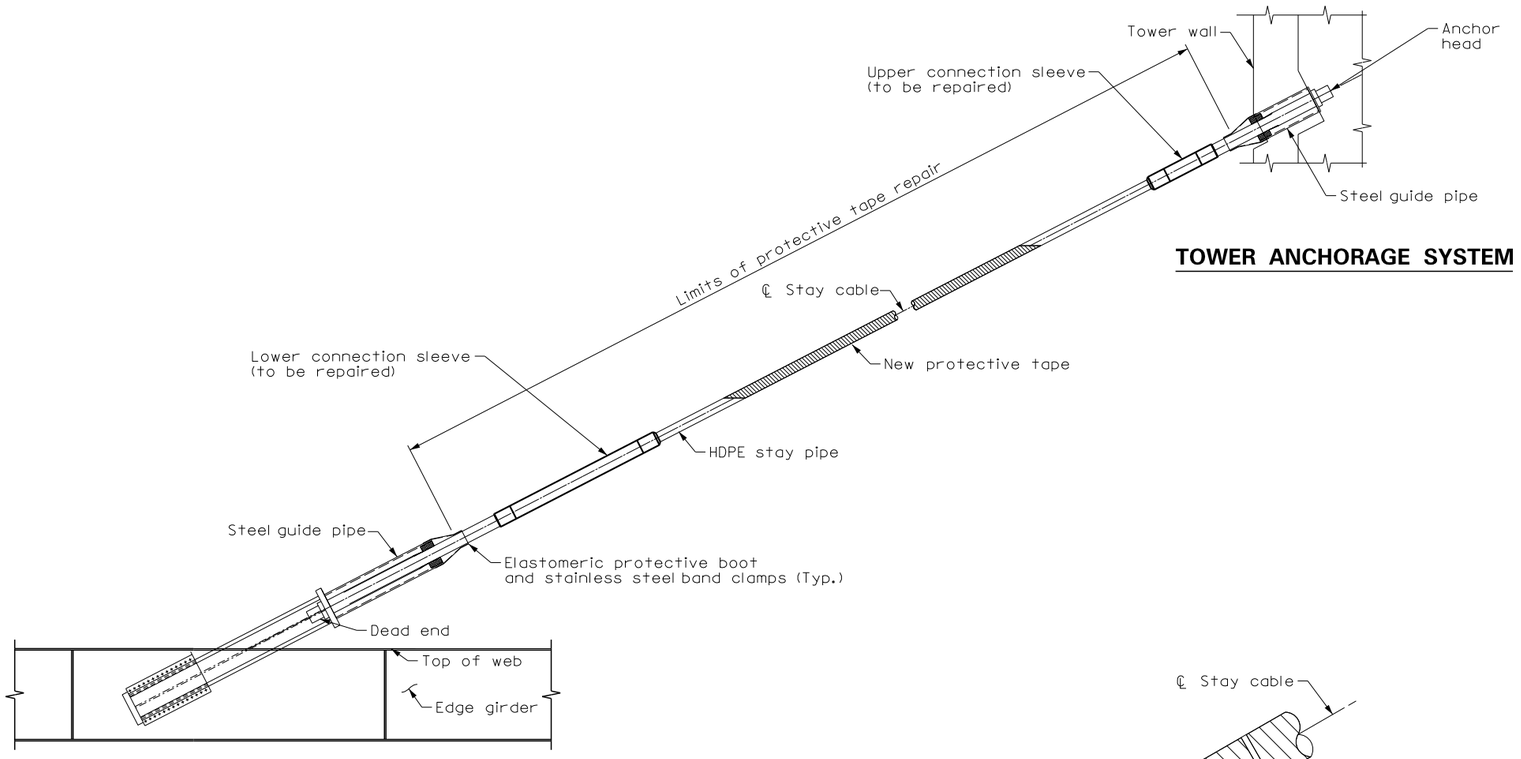
PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

Connection Sleeve and Grout Repair
CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO.	DRAWING NUMBER
	S7	28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: November 6, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S7-UCS-LCS.DGN



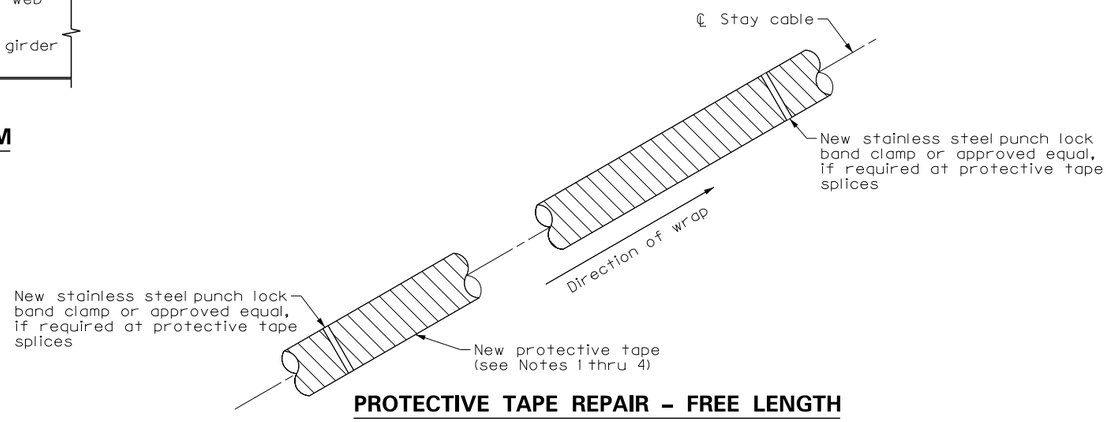
TOWER ANCHORAGE SYSTEM

DECK ANCHORAGE SYSTEM

(Railing not shown for clarity)

NOTES:

1. The protective tape operation shall not commence until all of the free length of the pipe has been repaired, remedial grouted, the upper/lower connection sleeves have been repaired.
2. The new protective tape shall be an elastomeric cable wrap system or Butyl rubber wrap system designed to encapsulate and be adhered to the existing stay cable. Refer to Special Notes for the Stay Cable Protective Tape Repair for additional information.
3. See Special Note for the Stay Cable Protective Tape Repair and Special Note for Free Length Repair for additional information.
4. Protective tape extends 6" under new upper neoprene boots and 6" under friction damper new neoprene boots.



PROTECTIVE TAPE REPAIR – FREE LENGTH

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

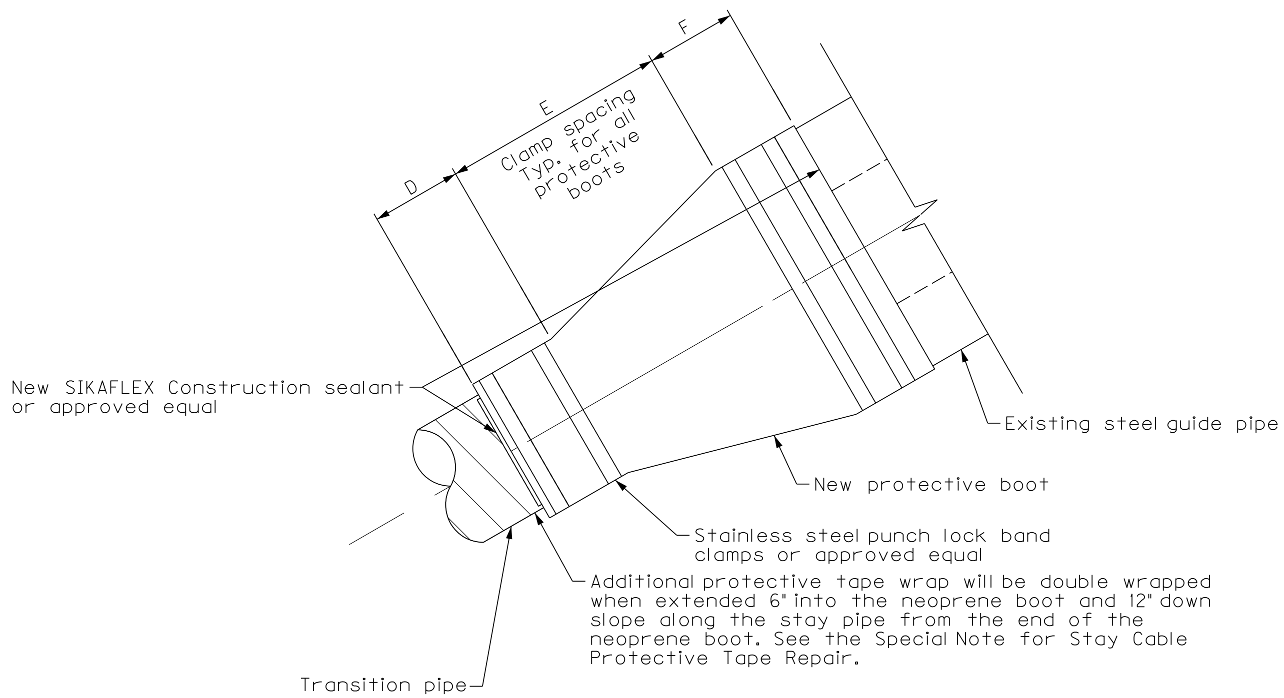
PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

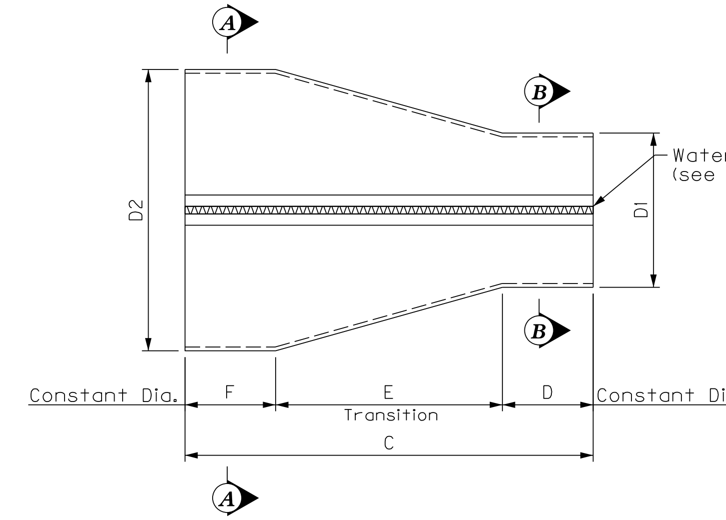
Stay Cable Protective Tape Repair
CROSSING
Ohio River

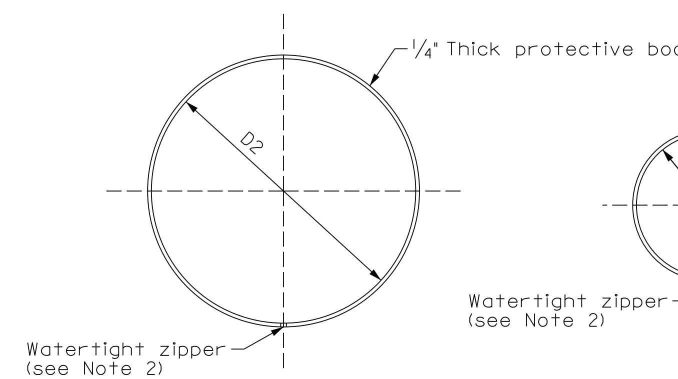
ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO.	DRAWING NUMBER
	S8	28861

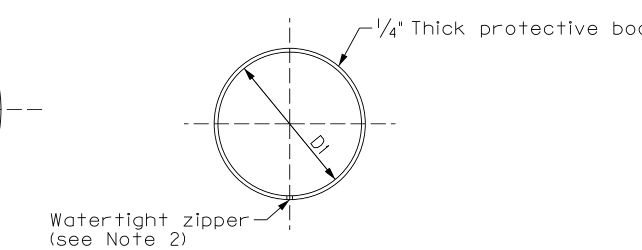
MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: November 6, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S8-PROTECTIVE TAPE REPAIR.DGN


D
E
F
Clamp spacing Typ. for all protective boots
New SIKAFLEX Construction sealant or approved equal
Existing steel guide pipe
New protective boot
Stainless steel punch lock band clamps or approved equal
Additional protective tape wrap will be double wrapped when extended 6" into the neoprene boot and 12" down slope along the stay pipe from the end of the neoprene boot. See the Special Note for Stay Cable Protective Tape Repair.
Transition pipe

UPPER NEOPRENE BOOT REPLACEMENT DETAIL







SECTION A–A

SECTION B–B

NEW PROTECTIVE BOOT DETAIL

NOTES:

This retrofit shall be performed after the exterior protective tape is installed.

1. The protective boots shall have dimensions "D1" and "D2" as shown in the table after completely zipping the watertight zipper.

2. See the Special Note for Replacement of Upper Neoprene Boots for additional information.

Table - Dimensions for new protective boots

Protective Boot Type	Cables		Internal Dia. (In.)		Neoprene Boot Dimensions (in.)			
	ID	# of Locations	D1	D2	C	D	E	F
Type I	7-14,27-34	(32)	6 3/4"	16 1/8"	2'-3"	6"	1'-3"	6"
Type II	4-6,15-17,24-26,35-37	(24)	8 3/4"	18 1/8"	2'-3"	6"	1'-3"	6"
Type III	1-3,18-23,38-40	(24)	8 3/4"	20 1/8"	2'-3"	6"	1'-3"	6"

Contractor shall verify all dimensions in field.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

REVISION	DATE

PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

	CHECKED BY
DATE: December 15, 2023	
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

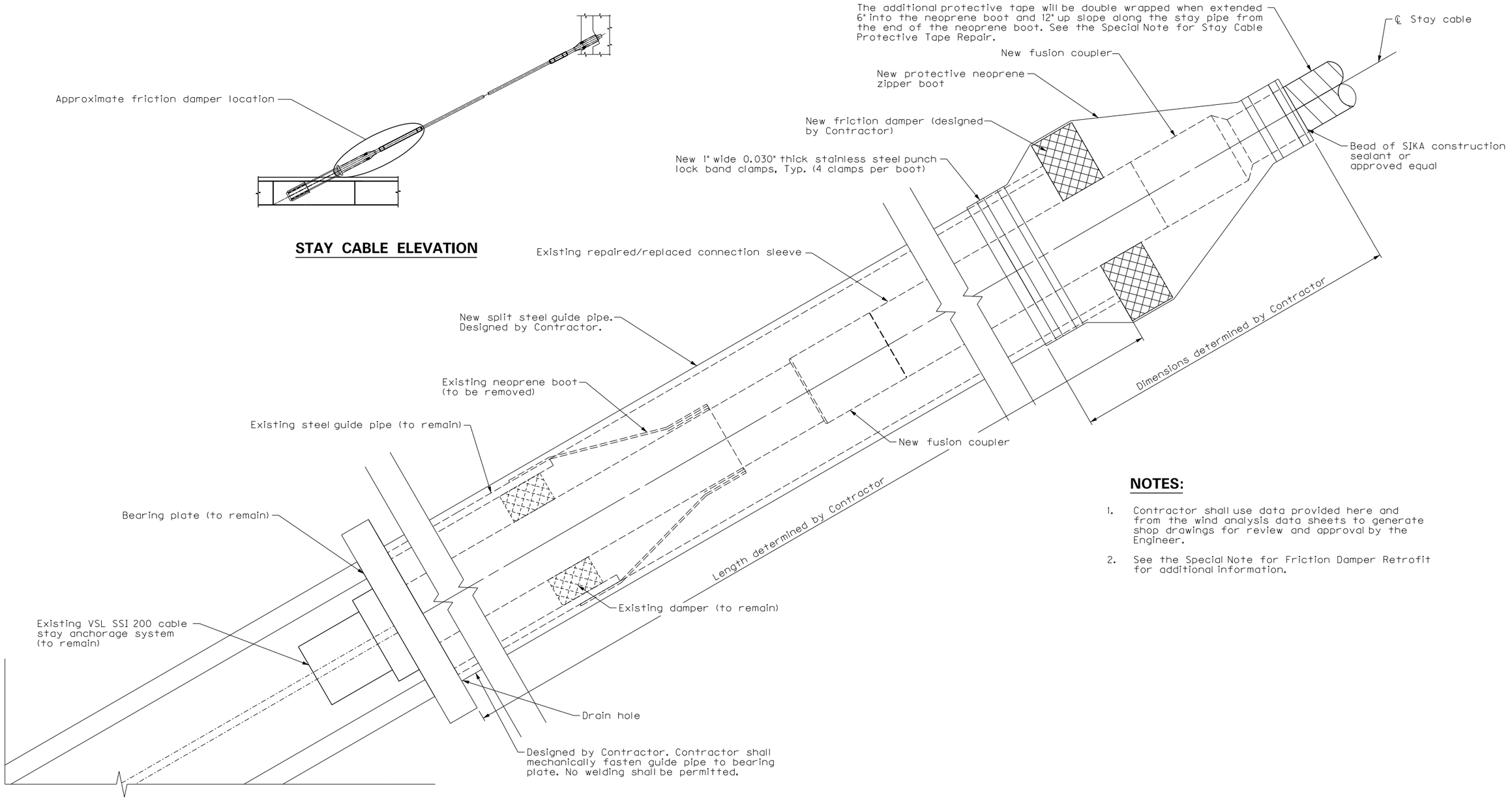
Upper Neoprene Boot Replacement

CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO.	DRAWING NUMBER
	S9	28861

MicroStation v8.11.9.919   USER: Bridwell   DATE PLOTTED: November 6, 2023   FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S9-NEOPRENE BOOTS.DGN

STAY CABLE ELEVATION



NOTES:

1. Contractor shall use data provided here and from the wind analysis data sheets to generate shop drawings for review and approval by the Engineer.
2. See the Special Note for Friction Damper Retrofit for additional information.

NEW FRICTION DAMPER RETROFIT SCHEMATIC DRAWING

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	REVISION / DATE	PREPARED BY **BURGESS & NIPLE** Engineers ■ Architects ■ Planners	DATE: December 15, 2023	CHECKED BY	***New Friction Damper Retrofit Schematic***	ROUTE	ITEM NO.	COUNTY OF
			DESIGNED BY: D. Montgomery	S. Ribble	CROSSING Ohio River	US 62/68	9-10013.1	MASON
			DETAILED BY: L. Bridwell	S. Ribble			SHEET NO. S10	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: November 6, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S10-NEW FRICTION DAMPER SCHEMATIC.DGN

Cable ID	Angle (deg)	Length (ft)	Outer Cable Dia. (in.)	Steel Area (in)	Weight (lb/ft)	Tension (kips)	Expected Sc ζ=0.03%	Estimated frequencies (Hz)						Required ζ (%) to reach			Recommended min. damping, ζ (%)	Governing excitation source
								f1	f2	f3	f4	f5	f6	Sc=2.5	Sc=5.0	Sc=10.0		
1-DS	24.7	528.0	8.86	9.33	76.4	964	0.55	0.64	0.66	1.25	1.25	1.89	1.89	0.14	0.27	0.55	0.55	RWIV
2-DS	26.5	480.9	8.86	9.33	76.4	880	0.55	0.64	0.66	1.28	1.28	1.92	1.92	0.14	0.27	0.55	0.55	RWIV
3-DS	28.6	434.6	8.86	9.33	76.4	803	0.55	0.72	0.74	1.40	1.40	2.11	2.11	0.14	0.27	0.55	0.55	RWIV
4-DS	31.1	388.9	7.87	8.03	62.0	722	0.56	0.82	0.84	1.65	1.65	2.47	2.47	0.13	0.27	0.53	0.53	RWIV
5-DS	34.3	345.6	7.87	7.60	60.9	576	0.56	0.85	0.87	1.68	1.68	2.50	2.50	0.14	0.27	0.54	0.54	RWIV
6-DS	38.5	302.5	7.87	7.60	60.9	558	0.56	0.95	0.96	1.89	1.89	2.84	2.84	0.14	0.27	0.54	0.54	RWIV
7-DS	44.1	262.0	6.30	5.21	39.8	483	0.57	1.25	1.26	2.50	2.50	3.78	3.78	0.13	0.26	0.53	0.53	RWIV
8-DS	51.7	224.8	6.30	5.21	39.8	464	0.57	1.43	1.44	2.84	2.84	4.30	4.30	0.13	0.26	0.53	0.53	RWIV
9-DS	61.9	192.8	6.30	5.21	39.8	315	0.57	1.39	1.39	2.78	2.78	4.18	4.18	0.13	0.26	0.53	0.53	RWIV
10-DS	75.1	165.1	6.30	5.21	39.8	457	0.57	1.95	1.95	3.91	3.91	5.88	5.88	0.13	0.26	0.53	0.24	Ice Galloping
11-DS	75.0	164.3	6.30	5.21	39.8	301	0.57	1.59	1.59	3.20	3.20	4.82	4.82	0.13	0.26	0.53	0.29	Ice Galloping
12-DS	61.6	191.4	6.30	5.21	39.8	457	0.57	1.68	1.68	3.36	3.36	5.04	5.04	0.13	0.26	0.53	0.53	RWIV
13-DS	51.3	222.9	6.30	5.21	39.8	466	0.57	1.47	1.47	2.90	2.90	4.35	4.35	0.13	0.26	0.53	0.53	RWIV
14-DS	43.6	259.8	6.30	5.21	39.8	452	0.57	1.22	1.23	2.44	2.44	3.72	3.72	0.13	0.26	0.53	0.53	RWIV
15-DS	37.9	300.1	7.87	7.60	60.9	540	0.56	0.95	0.96	1.88	1.88	2.81	2.81	0.14	0.27	0.54	0.54	RWIV
16-DS	33.6	343.0	7.87	7.60	60.9	655	0.56	0.90	0.91	1.80	1.80	2.69	2.69	0.14	0.27	0.54	0.54	RWIV
17-DS	30.3	387.5	7.87	7.60	60.9	690	0.56	0.82	0.84	1.63	1.63	2.44	2.44	0.14	0.27	0.54	0.54	RWIV
18-DS	27.7	433.4	8.86	9.33	76.4	769	0.55	0.70	0.73	1.37	1.37	2.08	2.08	0.14	0.27	0.55	0.55	RWIV
19-DS	25.6	479.7	8.86	9.33	76.4	792	0.55	0.64	0.67	1.25	1.25	1.89	1.89	0.14	0.27	0.55	0.55	RWIV
20-DS	23.9	526.8	8.86	9.33	76.4	929	0.55	0.63	0.64	1.24	1.24	1.86	1.86	0.14	0.27	0.55	0.55	RWIV
21-DS	23.9	526.8	8.86	9.33	76.4	944	0.55	0.63	0.64	1.25	1.25	1.86	1.86	0.14	0.27	0.55	0.55	RWIV
22-DS	25.6	479.7	8.86	9.33	76.4	741	0.55	0.63	0.66	1.22	1.22	1.83	1.83	0.14	0.27	0.55	0.55	RWIV
23-DS	27.7	433.4	8.86	9.33	76.4	798	0.55	0.70	0.72	1.40	1.40	2.11	2.11	0.14	0.27	0.55	0.55	RWIV
24-DS	30.3	387.5	7.87	7.60	60.9	677	0.56	0.81	0.82	1.62	1.62	2.41	2.41	0.14	0.27	0.54	0.54	RWIV
25-DS	33.6	343.0	7.87	7.60	60.9	611	0.56	0.89	0.90	1.74	1.74	2.59	2.59	0.14	0.27	0.54	0.54	RWIV
26-DS	37.9	300.1	7.87	7.60	60.9	573	0.56	0.98	0.99	1.92	1.92	2.90	2.90	0.14	0.27	0.54	0.54	RWIV
27-DS	43.6	259.8	6.30	5.21	39.8	499	0.57	1.28	1.29	2.53	2.53	3.85	3.85	0.13	0.26	0.53	0.53	RWIV
28-DS	51.3	222.9	6.30	5.21	39.8	381	0.57	1.31	1.32	2.63	2.63	3.94	3.94	0.13	0.26	0.53	0.53	RWIV
29-DS	61.6	191.4	6.30	5.21	39.8	475	0.57	1.71	1.71	3.42	3.42	5.13	5.13	0.13	0.26	0.53	0.53	RWIV
30-DS	75.0	164.3	6.30	5.21	39.8	490	0.57	2.03	2.03	4.06	4.06	6.13	6.13	0.13	0.26	0.53	0.23	Ice Galloping
31-DS	75.1	165.1	6.30	5.21	39.8	566	0.57	2.17	2.17	4.33	4.33	6.49	6.49	0.13	0.26	0.53	0.21	Ice Galloping
32-DS	61.9	192.8	6.30	5.21	39.8	344	0.57	1.45	1.45	2.90	2.90	4.36	4.36	0.13	0.26	0.53	0.53	RWIV
33-DS	51.7	224.8	6.30	5.21	39.8	425	0.57	1.37	1.38	2.75	2.75	4.12	4.12	0.13	0.26	0.53	0.53	RWIV
34-DS	44.1	262.0	6.30	5.21	39.8	442	0.57	1.19	1.20	2.40	2.40	3.63	3.63	0.13	0.26	0.53	0.53	RWIV
35-DS	38.5	302.5	7.87	7.60	60.9	583	0.56	0.98	0.99	1.92	1.92	2.90	2.90	0.14	0.27	0.54	0.54	RWIV
36-DS	34.3	345.6	7.87	7.60	60.9	598	0.56	0.85	0.87	1.71	1.71	2.56	2.56	0.14	0.27	0.54	0.54	RWIV
37-DS	31.1	388.9	7.87	8.03	62.0	722	0.56	0.82	0.84	1.66	1.66	2.47	2.47	0.13	0.27	0.53	0.53	RWIV
38-DS	28.6	434.6	8.86	9.33	76.4	699	0.55	0.66	0.68	1.31	1.31	1.95	1.95	0.14	0.27	0.55	0.55	RWIV
39-DS	26.5	480.9	8.86	9.33	76.4	822	0.55	0.63	0.65	1.28	1.28	1.84	1.84	0.14	0.27	0.55	0.55	RWIV
40-DS	24.7	528.0	8.86	9.33	76.4	996	0.55	0.64	0.66	1.28	1.28	1.92	1.92	0.14	0.27	0.55	0.55	RWIV

NOTES:

Data was copied from the report referenced below:

Company Name: RWDI
Report Number: 2305459
Wind Data Analysis Information
Date: 9/7/2023
Authors: Mark Istvan, M.A.Sc., P.E.
Guy Larose, Ph.D., P.E.
Ben Riley, P.E.
Address: 600 Southgate Drive
Guelph, ON N1G 4P6
T: 519-823-1311

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

Wind Analysis Data – Downstream

CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S11	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: November 6, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S11-WIND ANALYSIS.DGN

Cable ID	Angle (deg)	Length (ft)	Outer Cable Dia. (in.)	Steel Area (in)	Weight (lb/ft)	Tension (kips)	Expected Sc ζ=0.03%	Estimated frequencies (Hz)						Required ζ (%) to reach			Recommended min. damping, ζ (%)	Governing excitation source
								f1	f2	f3	f4	f5	f6	Sc=2.5	Sc=5.0	Sc=10.0		
1-US	24.7	528.0	8.86	9.33	76.4	933	0.55	0.61	0.63	1.25	1.25	1.86	1.89	0.14	0.27	0.55	0.55	Ice Galloping
2-US	26.5	480.9	8.86	9.33	76.4	794	0.55	0.64	0.67	1.28	1.28	1.92	1.92	0.14	0.27	0.55	0.55	RWIV
3-US	28.6	434.6	8.86	9.33	76.4	733	0.55	0.67	0.70	1.34	1.34	2.01	2.11	0.14	0.27	0.55	0.55	RWIV
4-US	31.1	388.9	7.87	8.03	62.0	722	0.56	0.82	0.84	1.65	1.65	2.47	2.47	0.13	0.27	0.53	0.53	RWIV
5-US	34.3	345.6	7.87	7.60	60.9	545	0.56	0.82	0.85	1.63	1.63	2.44	2.50	0.14	0.27	0.54	0.54	RWIV
6-US	38.5	302.5	7.87	7.60	60.9	558	0.56	0.95	0.96	1.89	1.89	2.84	2.84	0.14	0.27	0.54	0.54	RWIV
7-US	44.1	262.0	6.30	5.21	39.8	508	0.57	1.28	1.29	2.56	2.56	3.91	3.78	0.13	0.26	0.53	0.53	RWIV
8-US	51.7	224.8	6.30	5.21	39.8	485	0.57	1.47	1.47	2.90	2.90	4.40	4.30	0.13	0.26	0.53	0.53	RWIV
9-US	61.9	192.8	6.30	5.21	39.8	367	0.57	1.50	1.50	2.99	2.99	4.50	4.18	0.13	0.26	0.53	0.53	RWIV
10-US	75.1	165.1	6.30	5.21	39.8	450	0.57	1.92	1.92	3.88	3.88	5.83	5.88	0.13	0.26	0.53	0.24	Ice Galloping
11-US	75.0	164.3	6.30	5.21	39.8	357	0.57	1.74	1.74	3.48	3.48	5.25	4.82	0.13	0.26	0.53	0.29	Ice Galloping
12-US	61.6	191.4	6.30	5.21	39.8	522	0.57	1.80	1.80	3.57	3.57	5.37	5.04	0.13	0.26	0.53	0.53	RWIV
13-US	51.3	222.9	6.30	5.21	39.8	411	0.57	1.37	1.38	2.72	2.72	4.09	4.35	0.13	0.26	0.53	0.53	RWIV
14-US	43.6	259.8	6.30	5.21	39.8	475	0.57	1.25	1.26	2.50	2.50	3.82	3.72	0.13	0.26	0.53	0.53	RWIV
15-US	37.9	300.1	7.87	7.60	60.9	586	0.56	0.98	0.99	1.95	1.95	2.93	2.81	0.14	0.27	0.54	0.54	RWIV
16-US	33.6	343.0	7.87	7.60	60.9	632	0.56	0.89	0.90	1.77	1.77	2.63	2.69	0.14	0.27	0.54	0.54	RWIV
17-US	30.3	387.5	7.87	7.60	60.9	651	0.56	0.79	0.81	1.59	1.59	2.37	2.44	0.14	0.27	0.54	0.54	RWIV
18-US	27.7	433.4	8.86	9.33	76.4	798	0.55	0.70	0.72	1.40	1.40	2.11	2.08	0.14	0.27	0.55	0.55	RWIV
19-US	25.6	479.7	8.86	9.33	76.4	741	0.55	0.61	0.64	1.22	1.22	1.83	1.89	0.14	0.27	0.55	0.55	Ice Galloping
20-US	23.9	526.8	8.86	9.33	76.4	951	0.55	0.64	0.66	1.25	1.25	1.89	1.86	0.14	0.27	0.55	0.55	RWIV
21-US	23.9	526.8	8.86	9.33	76.4	957	0.55	0.64	0.66	1.25	1.25	1.89	1.86	0.14	0.27	0.55	0.55	RWIV
22-US	25.6	479.7	8.86	9.33	76.4	741	0.55	0.61	0.64	1.22	1.22	1.83	1.83	0.14	0.27	0.55	0.55	Ice Galloping
23-US	27.7	433.4	8.86	9.33	76.4	834	0.55	0.73	0.75	1.43	1.43	2.14	2.11	0.14	0.27	0.55	0.55	RWIV
24-US	30.3	387.5	7.87	7.60	60.9	703	0.56	0.82	0.84	1.65	1.65	2.44	2.41	0.14	0.27	0.54	0.54	RWIV
25-US	33.6	343.0	7.87	7.60	60.9	655	0.56	0.92	0.93	1.80	1.80	2.69	2.59	0.14	0.27	0.54	0.54	RWIV
26-US	37.9	300.1	7.87	7.60	60.9	513	0.56	0.92	0.94	1.83	1.83	2.75	2.90	0.14	0.27	0.54	0.54	RWIV
27-US	43.6	259.8	6.30	5.21	39.8	499	0.57	1.28	1.29	2.56	2.56	3.88	3.85	0.13	0.26	0.53	0.53	RWIV
28-US	51.3	222.9	6.30	5.21	39.8	443	0.57	1.43	1.44	2.81	2.81	4.24	3.94	0.13	0.26	0.53	0.53	RWIV
29-US	61.6	191.4	6.30	5.21	39.8	408	0.57	1.59	1.59	3.17	3.17	4.78	5.13	0.13	0.26	0.53	0.53	RWIV
30-US	75.0	164.3	6.30	5.21	39.8	513	0.57	2.08	2.08	4.15	4.15	6.23	6.13	0.13	0.26	0.53	0.23	Ice Galloping
31-US	75.1	165.1	6.30	5.21	39.8	566	0.57	2.17	2.17	4.33	4.33	6.53	6.49	0.13	0.26	0.53	0.21	Ice Galloping
32-US	61.9	192.8	6.30	5.21	39.8	322	0.57	1.40	1.41	2.81	2.81	4.21	4.36	0.13	0.26	0.53	0.53	RWIV
33-US	51.7	224.8	6.30	5.21	39.8	451	0.57	1.42	1.42	2.81	2.81	4.24	4.12	0.13	0.26	0.53	0.53	RWIV
34-US	44.1	262.0	6.30	5.21	39.8	436	0.57	1.19	1.20	2.38	2.38	3.60	3.63	0.13	0.26	0.53	0.53	RWIV
35-US	38.5	302.5	7.87	7.60	60.9	608	0.56	0.98	0.99	1.98	1.98	2.96	2.90	0.14	0.27	0.54	0.54	RWIV
36-US	34.3	345.6	7.87	7.60	60.9	619	0.56	0.87	0.89	1.74	1.74	2.59	2.56	0.14	0.27	0.54	0.54	RWIV
37-US	31.1	388.9	7.87	8.03	62.0	694	0.56	0.82	0.84	1.62	1.62	2.41	2.47	0.13	0.27	0.53	0.53	RWIV
38-US	28.6	434.6	8.86	9.33	76.4	779	0.55	0.70	0.72	1.37	1.37	2.08	1.95	0.14	0.27	0.55	0.55	RWIV
39-US	26.5	480.9	8.86	9.33	76.4	744	0.55	0.61	0.64	1.22	1.22	1.83	1.84	0.14	0.27	0.55	0.55	Ice Galloping
40-US	24.7	528.0	8.86	9.33	76.4	1061	0.55	0.67	0.68	1.31	1.31	1.98	1.92	0.14	0.27	0.55	0.55	RWIV

NOTES:

Data was copied from the report referenced below:

Company Name: RWDI
Report Number: 2305459
Wind Data Analysis Information
Date: 9/7/2023
Authors: Mark Istvan, M.A.Sc., P.E.
Guy Larose, Ph.D., P.E.
Ben Riley, P.E.
Address: 600 Southgate Drive
Guelph, ON N1G 4P6
T: 519-823-1311

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

Wind Analysis Data – Upstream

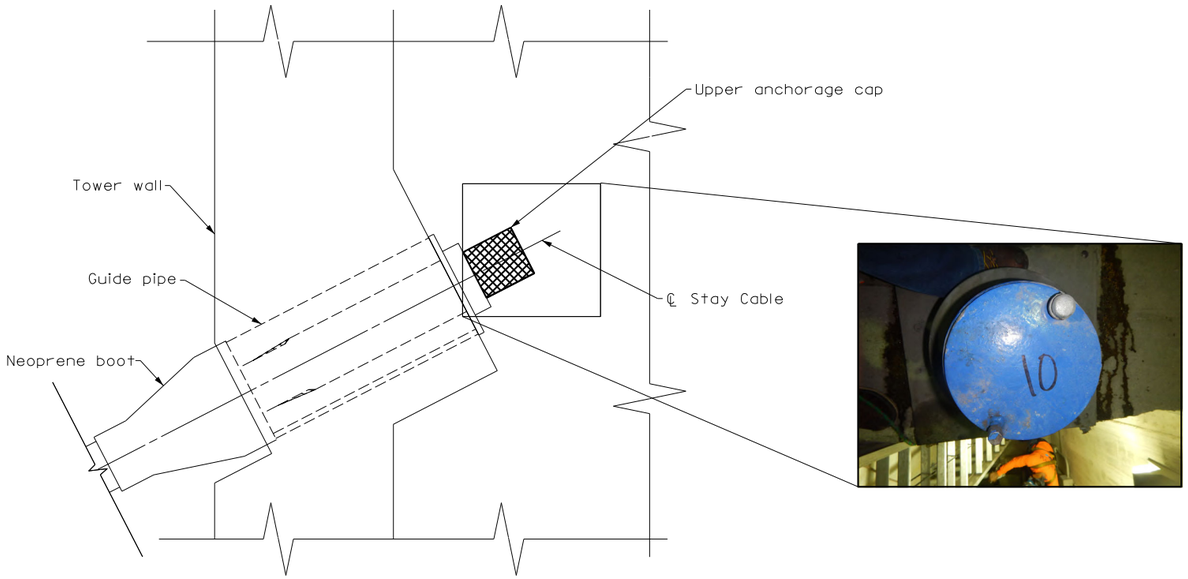
CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S12	DRAWING NUMBER 28861

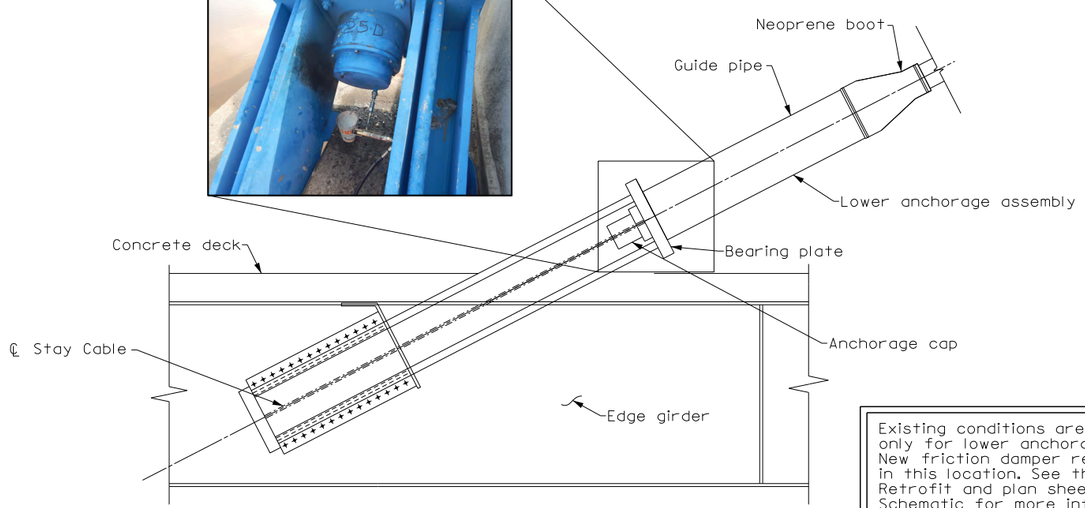
ANCHORAGE CAP GREASE REPLACEMENT

The existing stay cable system is VSL SSI 200.

1. The anchorage caps removal and new grease installation shall not commence until all of the planned repairs to the stay cable system have been completed and the stay cable exteriors are impervious to the elements.
2. See Special Note for the Replacement of Grease in the Lower Anchorage Caps (LAC) and Upper Anchorage Caps (UAC) for any additional information.



UPPER ANCHORAGE ASSEMBLY DETAIL



Existing conditions are shown for illustration purposes only for lower anchorage assembly detail. New friction damper retrofit will be installed in this location. See the Special Note for Friction Damper Retrofit and plan sheet S10 New Friction Damper Retrofit Schematic for more information.

LOWER ANCHORAGE ASSEMBLY DETAIL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

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Engineers ■ Architects ■ Planners

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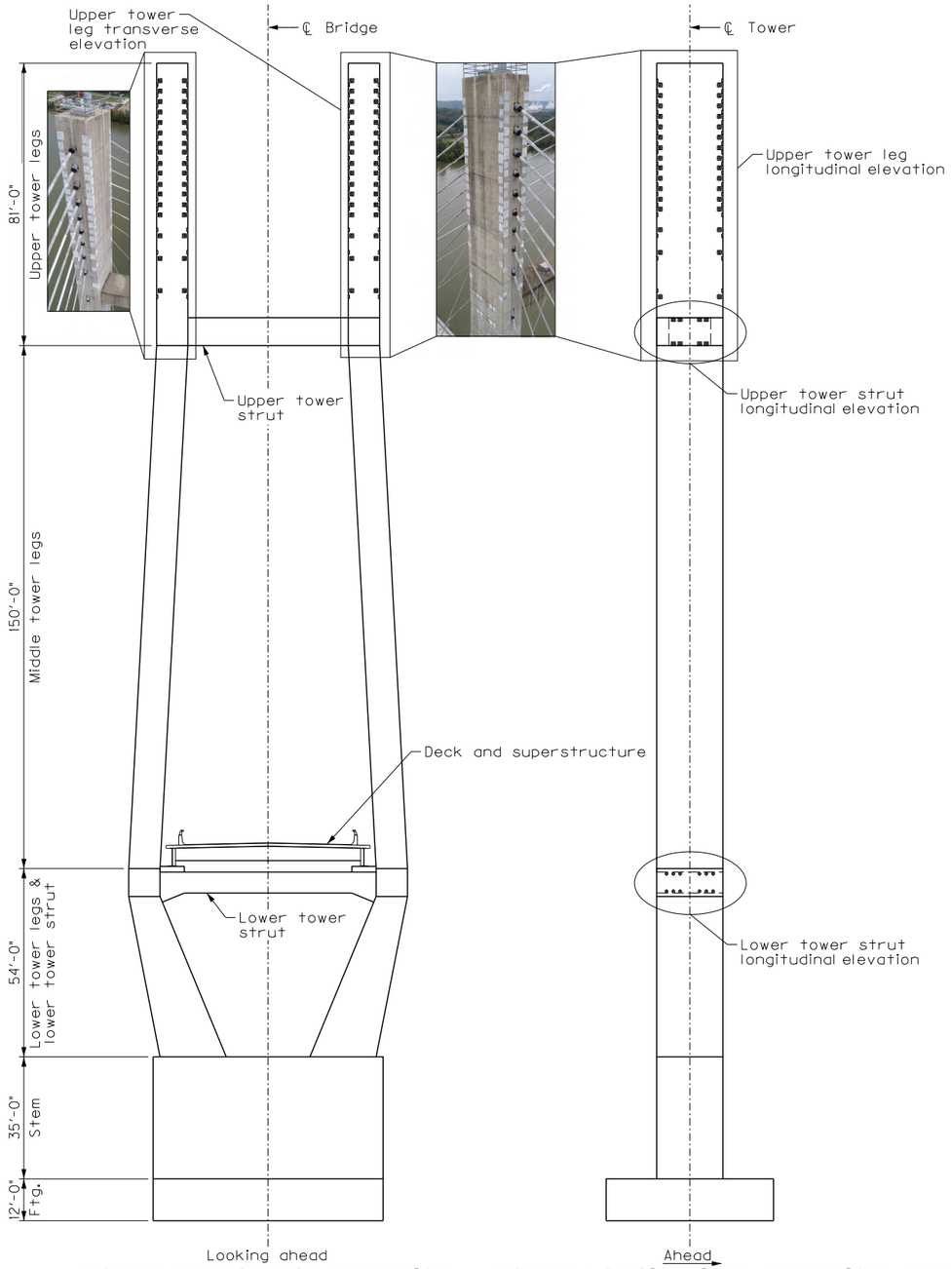
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

Upper and Lower Anchorage Caps
CROSSING
Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO.	DRAWING NUMBER
	S13	28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: November 6, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S13-UPPER-LOWER ANCHORAGE CAP.DGN

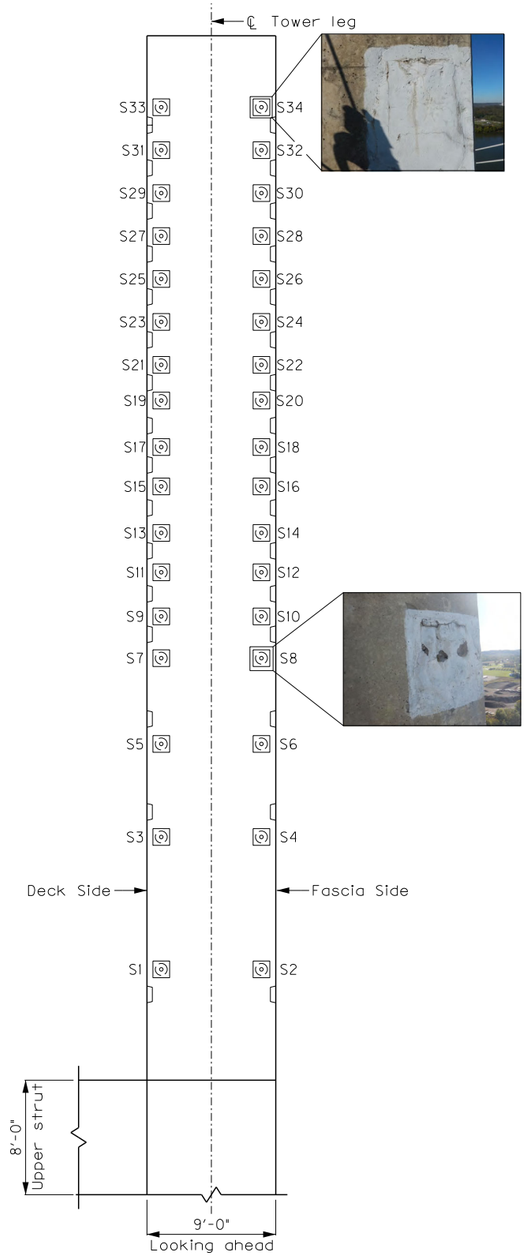


TOWER TRANSVERSE ELEVATION

Stay cables not shown for clarity.
Opposite face same as shown.
Pier 5 same as Pier 6.

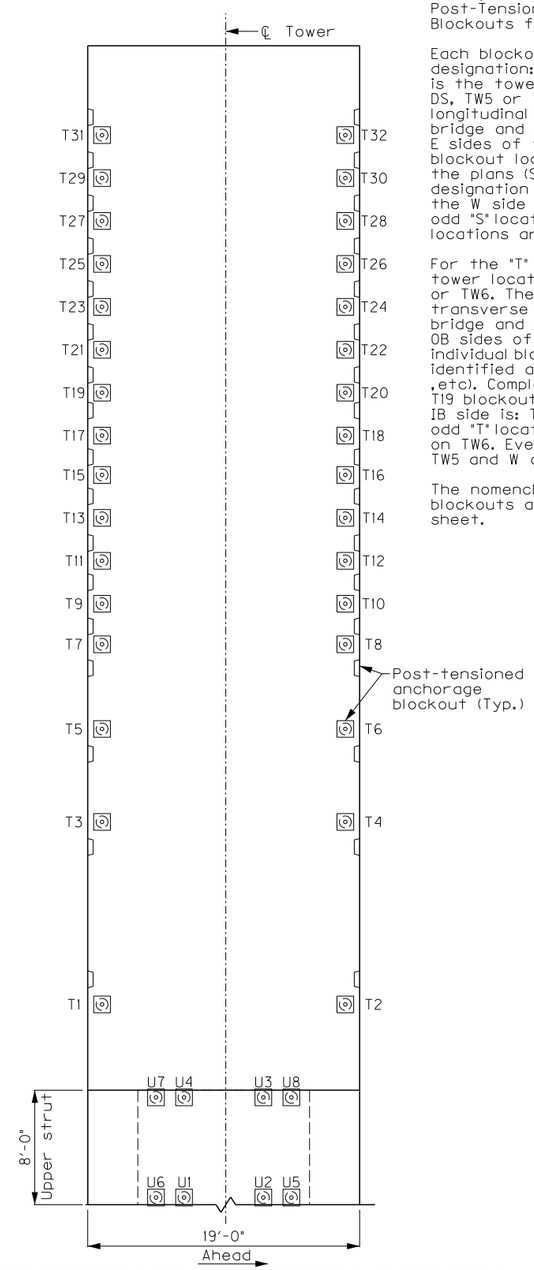
TOWER LONGITUDINAL ELEVATION

Stay cables not shown for clarity.
Opposite face same as shown.
Pier 5 same as Pier 6.



UPPER TOWER LEG TRANSVERSE ELEVATION

Longitudinal tendon blockouts shown above.
Stay cables not shown for clarity.
Opposite face same as shown.



UPPER TOWER LEG LONGITUDINAL ELEVATION

Transverse tendon blockouts shown above
Stay cables not shown for clarity.
Opposite face same as shown above the strut.

NOTES:

See Special Note for Rehabilitation of Post-Tensioned (PT) Anchorage Blockouts for additional information.

Each blockout has a unique designation: For the "S" blockouts, TW is the tower location per leg, US or DS, TW5 or TW6. The "S" blockouts are longitudinal to the centerline of the bridge and are located at the W or E sides of the towers. Each individual blockout location is identified as per the plans (S1, S2, etc). Complete designation for the S28 blockout on the W side is: TW6US-W-S28. Note that odd "S" locations are IB and even "S" locations are OB.

For the "T" blockouts, TW is the tower location per leg, US or DS TW5 or TW6. The "T" blockouts are transverse to the centerline of the bridge and are located at the IB or OB sides of the towers. Each individual blockout location is identified as per the plans (T1, T2 ,etc). Complete designation for the T19 blockout at Tower 5, US on the IB side is: TW6US-IB-T28. Note that odd "T" locations are W on TW5 and E on TW6. Even "T" locations are E on TW5 and W on TW6.

The nomenclature for the "U" and "L" blockouts are on the following sheet.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

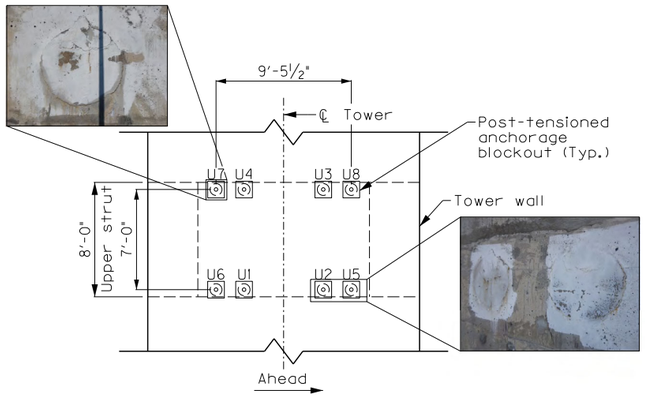
PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

PT Anchorage Blockout Repair
CROSSING
Ohio River

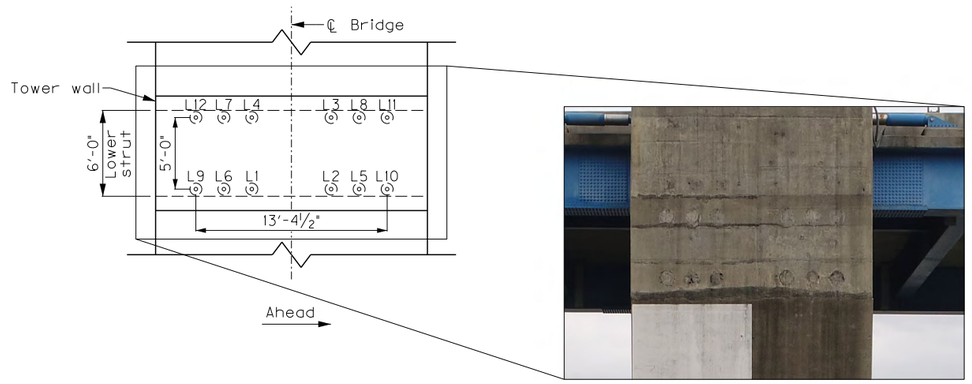
ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S14	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S14-PT ANCHORAGE BLOCKOUT REPAIR.DGN



UPPER TOWER STRUT LONGITUDINAL ELEVATION

Transverse tendon blockouts shown above.



LOWER TOWER STRUT LONGITUDINAL ELEVATION

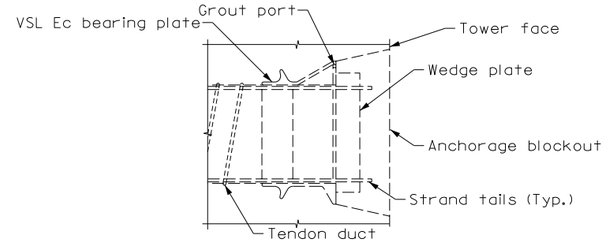
Transverse tendon blockouts shown above.
Opposite face same as shown.

NOTES:

See Special Note for Rehabilitation of Post-Tensioned (PT) Anchorage Blockouts for any additional information.

For the "L" lower strut blockouts, TW is the tower location per leg, US or DS, TW5 or TW6. The "L" blockouts are transverse to the centerline of the bridge and are located at the US or DS sides of both towers. Each individual blockout location is identified as per the plans (L1 through L12). Complete designation for the L9 blockout at Tower 6, US side is: TW6US-L9.

For the "U" upper strut blockouts, TW is the tower location per leg, US or DS, TW5 or TW6. The "U" blockouts are transverse to the centerline of the bridge and are located at the US or DS sides of both towers. Each individual blockout location is identified as per the plans (U1 through U8). Complete designation for the U7 blockout at Tower 6, US side is: TW6US-U7.



TENDON ANCHORAGE DETAIL

Detail shown above is a schematic for bidding purposes. The Contractor shall verify the schematic in the field and report to the Engineer their findings.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
KENTUCKY TRANSPORTATION CABINET

REVISION	DATE

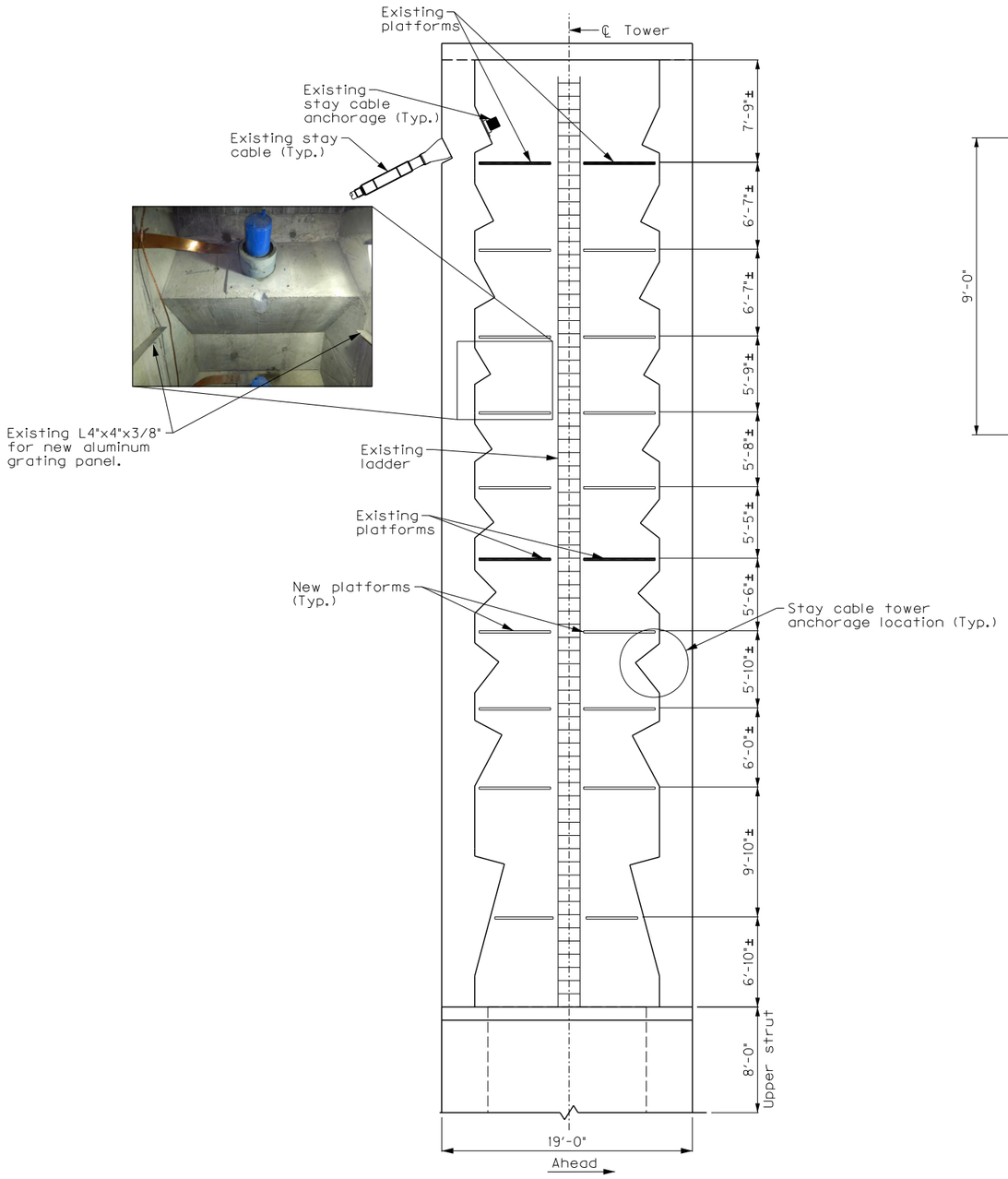
PREPARED BY
BURGESS & NIPLE
Engineers ■ Architects ■ Planners

DATE: December 15, 2023	CHECKED BY
DESIGNED BY: D. Montgomery	S. Ribble
DETAILED BY: L. Bridwell	S. Ribble

PT Anchorage Blockout Repair
CROSSING
Ohio River

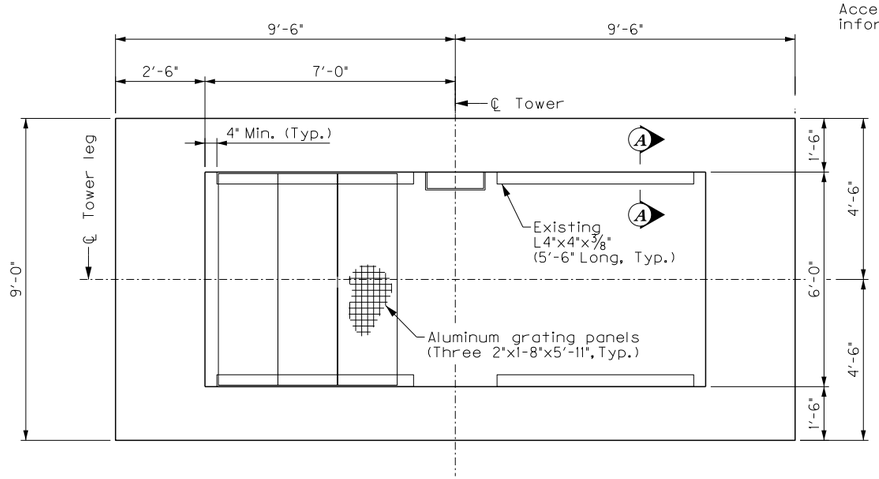
ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO.	DRAWING NUMBER
	S15	28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S15-PT ANCHORAGE BLOCKOUT REPAIR.DGN



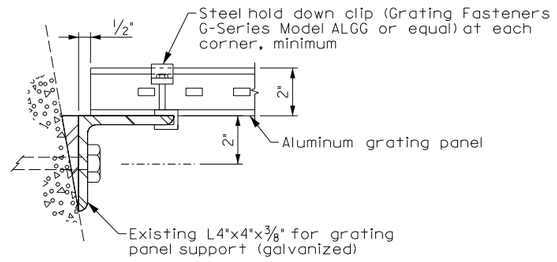
UPPER TOWER LEG LONGITUDINAL ELEVATION

Other stay cables and anchorages are omitted for clarity.



TYPICAL PLAN OF NEW UPPER PLATFORM

Contractor shall field verify all dimensions at platform locations.



SECTION A–A

NOTES:

See Special Note for Permanent Access Platforms for any additional information.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

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DETAILED BY: L. Bridwell	S. Ribble

Tower Permanent Access Platforms
CROSSING: Ohio River

ROUTE	ITEM NO.	COUNTY OF
US 62/68	9-10013.1	MASON
	SHEET NO. S16	DRAWING NUMBER 28861

MicroStation v8.11.9.919 USER: Bridwell DATE PLOTTED: December 15, 2023 FILE NAME: P:\PR60034\CADD\SHEETS\HARSHA\S16-TOWER PERMANENT PLATFORM.DGN