Montgomery County

Department of Transportation

Division of Transportation Engineering

2019 BRIDGE INSPECTION REPORT

November 5, 2019

BRIDGE NO. M-K-02X01

FREDERICK AVENUE

OVER

SILVER CREEK

Prepared by

AECOM

Montgomery County

Department of Transportation

Division of Transportation Engineering

2019 BRIDGE INSPECTION REPORT

BRIDGE NO. M-K-02X01

FREDERICK AVENUE

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Prepared by

AECOM

Inspection Team Leader: JORDAN LAIR, P.E. — Date: 02 0 2020

Quality Assurance: MITCHELL R. ELBEN, P.E. — Date: 02 0 2020

Professional Engineer: JORDAN LAIR, P.E. — Date: 02 0 2020

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No.: 35187
Expiration Date: 06/06/2020

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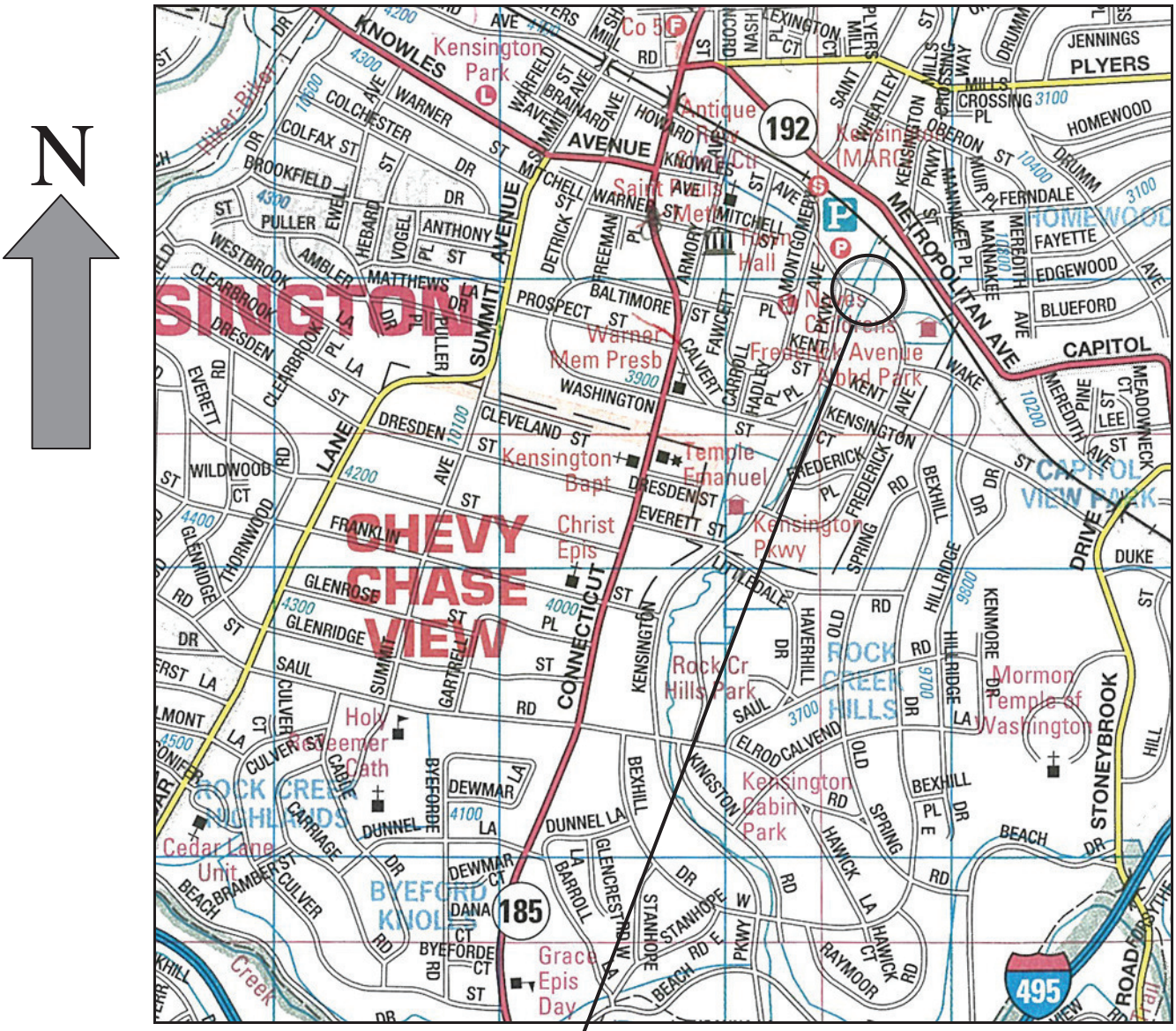
2019 BRIDGE INSPECTION REPORT

BRIDGE DESCRIPTION SUMMARY

Roadway	FREDERICK AVENUE
Bridge Orientation	East-West
Crossing	Silver Creek
Crossing Orientation	North-South
Inspection Date	11/05/2019
Inspected By	AECOM
Spans	1
Type	Concrete Slab
Structure Organization	The numbering convention for reporting purposes is from the north and west
Deck	Concrete
Railing	Concrete Jersey Barrier
Abutments	Concrete Cantilever
Wing Walls	Concrete / Brick & Mortar
Piers	N/A
Overall Length	18'-0" +/-
Clear Roadway	26'-3" +/-
No. of Lanes	2
Out-to-Out Width	41'-4" +/-
Year Built	1920
Year Reconstructed	1990 (structure replaced with concrete slab bridge)
Approach Section	26'-3" +/- wide asphalt roadway
Shoulders	No
Alignment	The approach roadways are on slight curves to the bridge
Profile	The roadway is on a slight downgrade to the bridge from both approaches
Guardrail	None
Current Postings	52,000 lbs GVW Single Unit 70,000 lbs GCW Combination Unit
Overall Condition	Satisfactory
Remarks	The bridge is posted for 52,000 lbs GVW single unit capacity and 70,000 lbs GCW combination unit capacity. These load postings were based on a prestressed design which was replaced with a reinforced concrete slab design during construction. These postings shall remain per the county's instruction.



Bridge No. M-K-02X01
Frederick Avenue over
Silver Creek

ADC Street Grid Location: 5285-J-7
2010 Edition

ADC Street Grid Location: 36-D-4
Previous Editions

LOCATION MAP

SCALE: 1" = 2,000'

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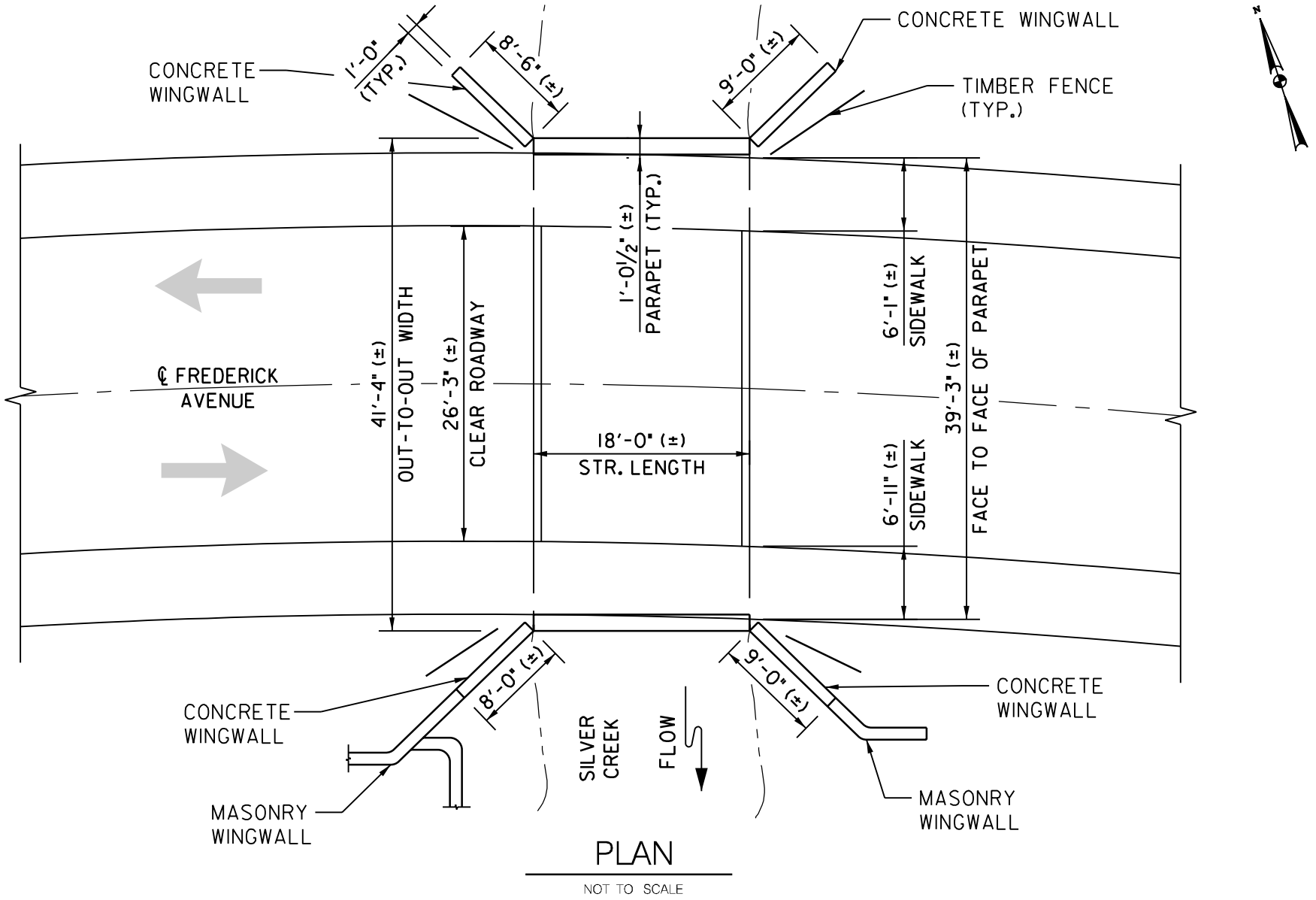
MONTGOMERY COUNTY
BRIDGE INSPECTION REPORT

BRIDGE NO. M-K-02	FREDERICK AVENUE OVER SILVER CREEK

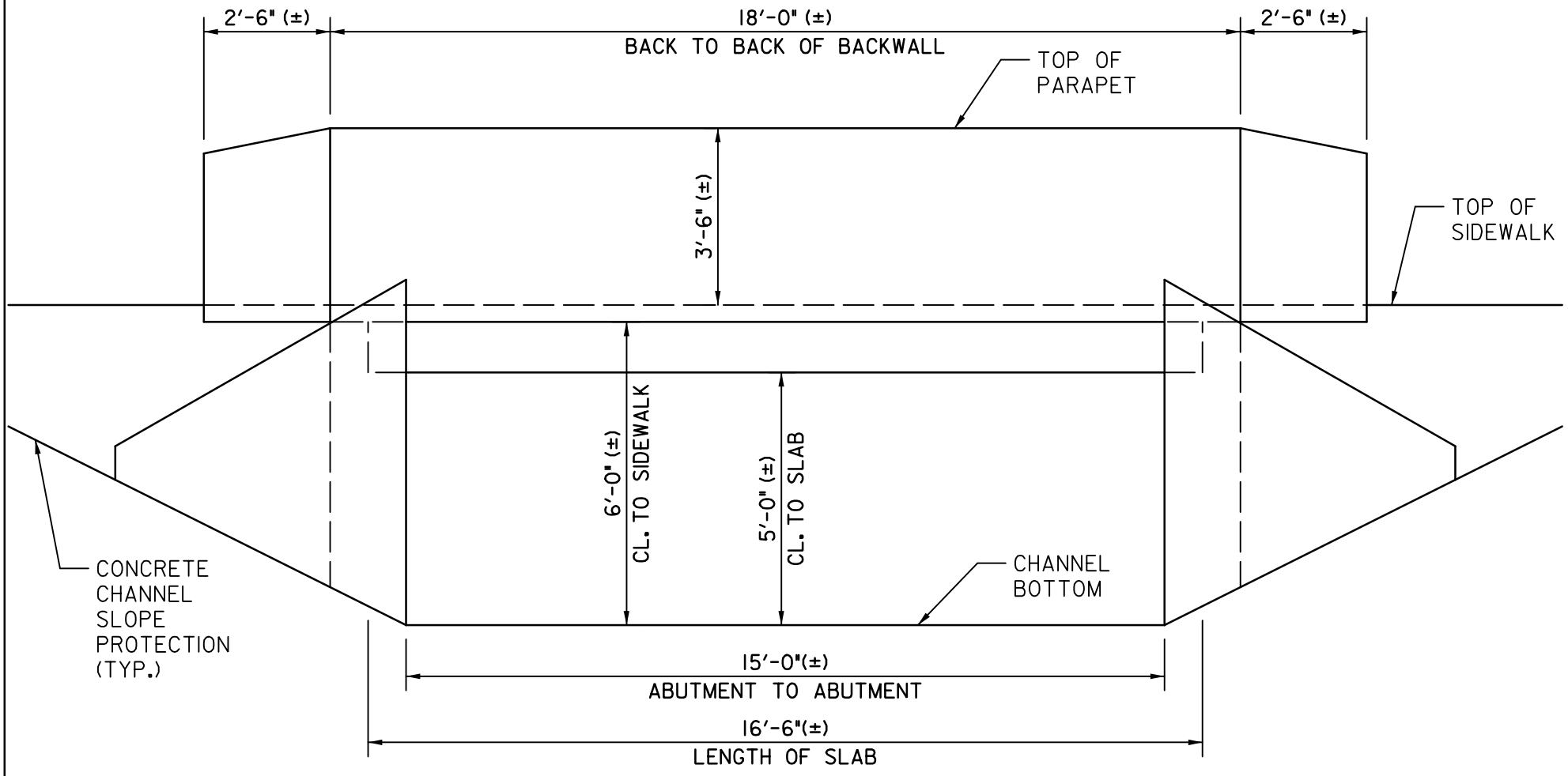


PLAN

NOT TO SCALE

MONTGOMERY COUNTY
BRIDGE INSPECTION REPORT

BRIDGE NO. M-K-02	FREDERICK AVENUE OVER SILVER CREEK

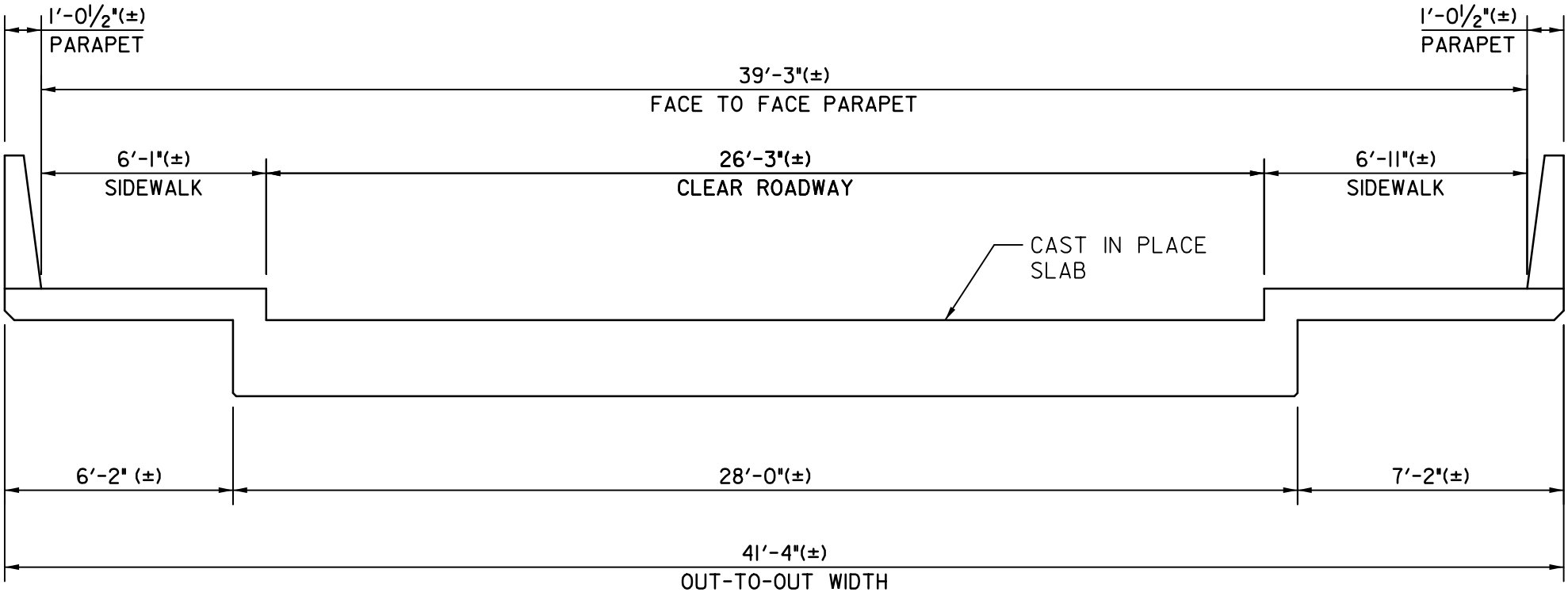


NORTH ELEVATION

NOT TO SCALE

MONTGOMERY COUNTY
BRIDGE INSPECTION REPORT

BRIDGE NO. M-K-02	FREDERICK AVENUE OVER SILVER CREEK



SECTION

NOT TO SCALE

COMPARATIVE EVALUATION SUMMARY TABLE

PONTIS ELEMENT	STATUS	CONDITION	REMARKS
Roadway Approach (8322)		Good	Roadway approaches have been repaved
Reinforced Concrete Bridge Railing (331)		Good	Parapets are in good condition
Reinforced Concrete Slab (38, 8359)		Satisfactory	
Sidewalks (8062)		Satisfactory	Cracking in topside and underside of sidewalks
Pourable Joint Seal (300)		Poor	Joint seal is missing or debonded
Abutments (215)		Satisfactory	
Wingwalls (8251 & 8253)		Satisfactory	
Backwalls (8257)		Satisfactory	
Protected Slope (8260)		Satisfactory	
Gabion Wall (8246)		Fair	
Stream Channel (8345)		Good	
Overall		Satisfactory	

= Condition Improved

= Condition Unchanged

= Condition Worse

CONDITION SUMMARY

Roadway Approach (8322) — 26'-3" +/- wide asphalt roadway with no shoulders

The approach roadways are in good condition and have been repaved since the previous inspection. There is 1/16” wide alligator cracking in the East Approach roadway within 15’ of the bridge. The bridge does not require posting based on the Load Rating Summary; however, the county has decided to maintain the current postings according to previous inspection reports. There is no advance posting sign at the East Approach. There are no approach traffic barriers at any of the four corners.

Reinforced Concrete Bridge Railing (331) — Reinforced concrete parapet

The parapets are in good condition with no significant defects noted.

Reinforced Concrete Slab (38, 8359) — Concrete slab with concrete overlay

The concrete wearing surface is in satisfactory condition. There is cracking in the wearing surface and edge spalling along the top of both abutment backwalls. The underside of the slab is in satisfactory condition. There are cracks with efflorescence in the deck soffit that are reflective of cracks in the wearing surface. At the southwest corner of the deck, there is a 2” wide gap between the deck and the West Abutment backwall.

Sidewalks (8062) — Concrete panels

The concrete sidewalks are in satisfactory condition. There are isolated cracks in the North Sidewalk and Northwest Approach Sidewalk. The Northeast Approach Sidewalk has been replaced since the previous inspection. There are isolated spalls in both curbs. There are isolated cracks with efflorescence in the sidewalk soffits.

Pourable Joint Seal (300) — Pourable joint seal

The West Abutment joint seal is missing or debonded for 75% of its length and is in poor condition.

Abutments (215) — Reinforced concrete

The abutments are in satisfactory condition. There are several vertical and horizontal cracks, some with efflorescence, throughout the abutments. There are delaminated areas in both abutments.

Wingwalls (8251 & 8253) — Reinforced concrete with brick wingwalls from previous structure.

The wingwalls are in satisfactory condition. There are two types of wingwalls on the south side of the structure. There are brick, stone and mortar wingwalls from a previous structure and reinforced concrete wingwalls constructed with the current bridge. There is missing mortar up to 1/4” wide, vertical cracks, and missing bricks in the Southeast and Southwest Wingwalls. There are hollow sounding areas in the Southeast and Southwest Wingwalls. There is a corner spall in the Southeast Wingwall.

CONDITION SUMMARY

Backwalls (8257) — Reinforced concrete

The abutment backwalls are in satisfactory condition. There are a few small spalls in the tops of both abutment backwalls. There is a full width x 1'-3" long x 2 1/2" deep spall on the top of the West Backwall in the middle of the westbound lane.

Protected Slope (8260) — Reinforced concrete in the upstream channel

The concrete channel is in satisfactory condition. There are settled and spalled panels at the Northeast Slope Protection.

Gabion Wall (8246) — Gabion walls in the downstream channel

The downstream channel bottom and banks are lined with gabions for approximately 100' after the end of the concrete lined channel. The gabions in the channel bottom have missing rocks, broken mesh and bulging throughout. There are displaced gabions lying in the channel within 30’ of the downstream channel protection.

Stream Channel (8345) — Concrete channel

There is a 15’ long x 10’ wide x up to 2’-6” deep scour hole in the downstream channel, beginning approximately 20’ downstream. There is a 2'-0" long x 1'-0" high x 2" deep spall on the vertical face of the downstream concrete apron step.

BRIDGE DESCRIPTION SUMMARY

LOAD RATING SUMMARY

Bridge M-K-02X01 is currently not posted for weight restrictions. Information necessary to rate the bridge is unavailable, as a complete set of plans are not on file. Since the bridge is a concrete structure with unknown structural details, an evaluation of an approximate load rating has been established in accordance with PPM D-97-47(4) and Section 6.1.4 of the MBE. The bridge has been carrying normal traffic for an appreciable period of time and current field conditions observed during the 2019 hands-on inspection indicate no signs of structural distress from loads. Therefore, by engineering judgment, the inventory and operating factor for each legal load are considered 1.0.

The load ratings for the Maryland Legal Load Vehicles are as follows:

Vehicle	Gross Vehicle Weight (Tons)	Inventory Rating (Tons)	Operating Rating (Tons)
H-15	15	15	15
HS-20	36	36	36
MD Type 3	33	-	-
MD Type 3S2	40	40	40

Note: MD Type-3 is no longer considered legal per SHA

Vehicle	Gross Vehicle Weight (Tons)	Inventory Rating (Tons)	Operating Rating (Tons)
MD Type-4	35	35	35

Based on the above chart and in accordance with Montgomery County's current posting policy, no posting is required.

The bridge is posted for 52,000 lbs GVW single unit capacity and 70,000 lbs GCW combination unit capacity. These load postings were based on a prestressed design which was replaced with a reinforced concrete slab design during construction. No posting is required, but these signs shall remain per the county's instruction.

REVIEW OF ITEM 113 - SCOUR POTENTIAL RATING

Item 113 is rated 8P. This indicates that the bridge is a culvert-type structure with a paved bottom. Based on the observed conditions, this rating is still valid and does not require reevaluation.

GUARDRAIL REQUIREMENT FORM

Corners	Bridge Railings Meet SHA Standard		Transition					Approach Guardrail									Approach Rail Ends				
			Approach Guardrail at Corners of Struct.		Attached to Bridge		Average Post Spacing Near Struct.	Type of Posts			Type of Rail			Spacing of Approach Guardrail			Flared	Buried	Shielded	Hazard	Breakaway
	Yes	No	Yes	No	Yes	No		Timber	Steel	Jersey	Cable	Steel	Timber	12'-6"	6'-3"	Other					
1	✓			✓		✓															
2	✓			✓		✓															
3	✓			✓		✓															
4	✓			✓		✓															

Bridge No.: M-K-02X01

County: Montgomery

Road Carried: FREDERICK AVENUE

Crossing: SILVER CREEK

Date Inspected: 11/05/2019

Inspector: J. Lair, S. Scheine

DOES THE APPROACH GUARDRAIL EXTEND A LONG ENOUGH DISTANCE TO PROTECT TRAFFIC AT BRIDGE AREA FROM EMBANKMENT?

☐ YES ☑ NO

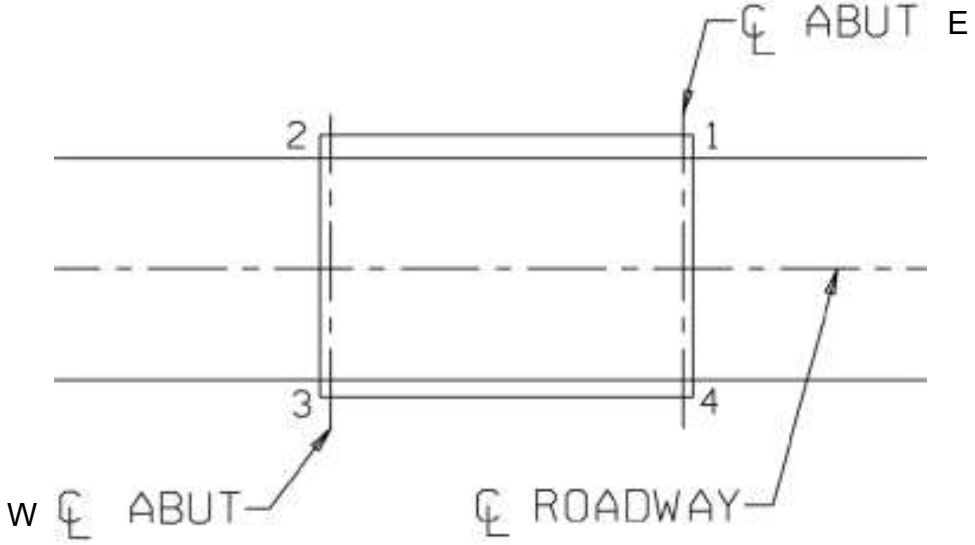
IS THE FACE OF THE GUARDRAIL MORE THAN 6" BACK FROM THE GUTTER LINE AT THE BRIDGE?

☐ YES ☑ NO

IF YES, SUCH AS WHERE A SIDEWALK IS ON THE BRIDGE, HAS A RAMP OF CONCRETE BEEN PROVIDED TOWARD TRAFFIC?

☐ YES ☐ NO ☑ N/A

Comments: There are no approach traffic barriers at any of the four corners.



Montgomery County, MD Dept. of Transportation Bridge Coating Rating Form

Bridge No. M-K-02X01 Name FREDERICK AVENUE Date 11/05/2019

Weathering Steel NO Crossing SILVER CREEK

Inspectors J. Lair, S. Scheine

COMPONENTS

	% Rating 1	% Rating 2	% Rating 3	% Rating 4	Total
Girders					
Fascias					
Bearings					
Edges					
End Dam					
Deck Pans (☐Galv ☐Paint)					
Railings					
Other					
1)					
2)					
3)					
4)					
5)					
				Overall Rating	

Comments:

Concrete slab bridge.

Recommendations:

BRIDGE INSPECTION NOTES

VISUAL INSPECTION NOTE

The condition report and recommendations presented herein are based upon a visual/hands-on inspection of accessible portions of the existing structure. No responsibility is assumed by AECOM for the presence of any latent structural defects that cannot be detected by such visual/hands-on inspection.

BRIDGE SKETCHES NOTE

The bridge sketches included in the report were created by AECOM based on field measurements obtained during the 2019 inspection cycle.

INSPECTION ACCESS NOTE

The following equipment was used to access Bridge No. M-K-02X01:

Waders

Bridge No. M-K-02X01 (Frederick Avenue over Silver Creek)

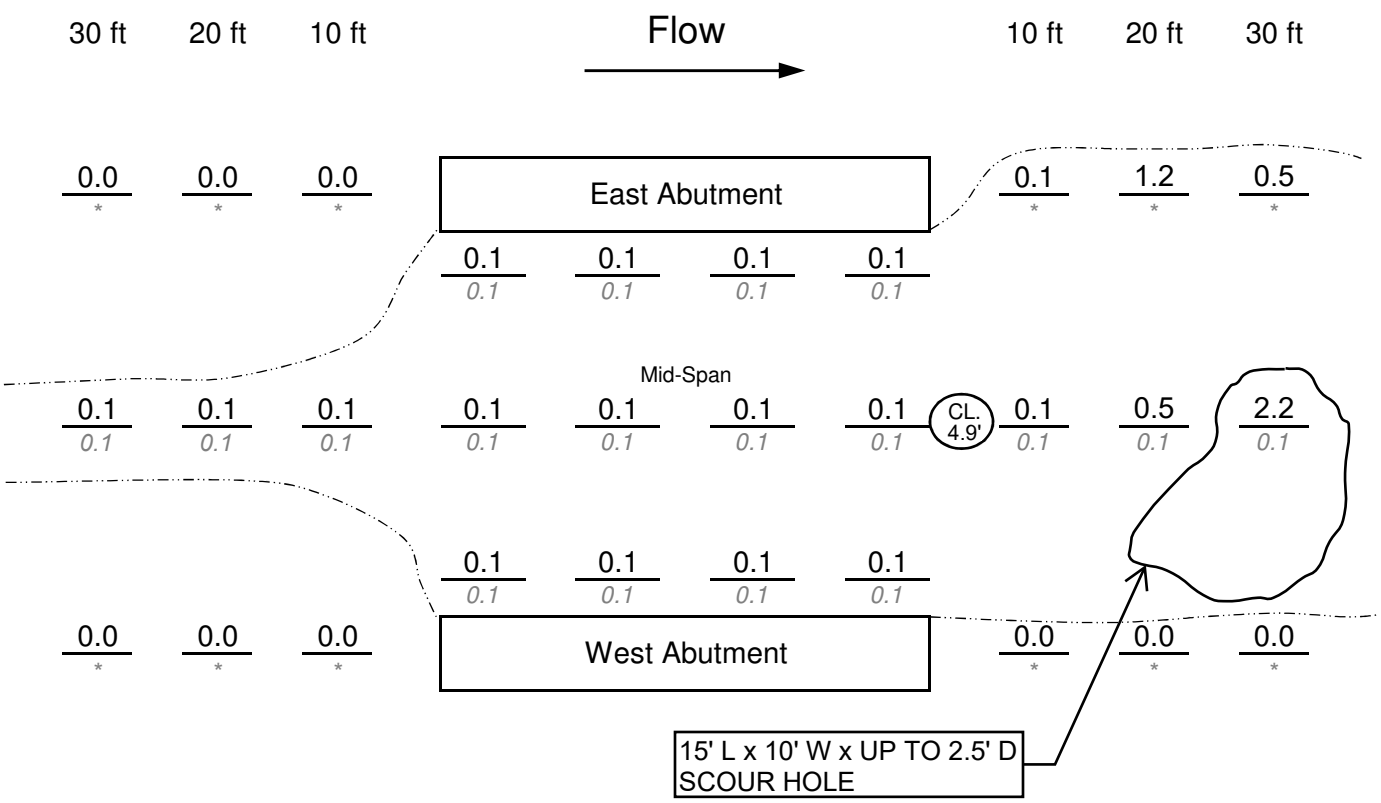
SOUNDING SHEET

(All measurements are in feet)

North

Clearance Location: Bottom of Slab at Midspan, Downstream End Inspectors: JL/SS

Clearance is the distance measured from the water surface to the clearance location.



Note: Concrete lined channel with concrete slope protection in the upstream channel and gabion walls in downstream channel

Legend:
- X.X - Current soundings
- *X.X* - 2007 Base Year Sounding (Adjusted for difference in water surface elevation)
- CL. X.X' - Clearance
- Edge of Stream
- * - No base year sounding

Note: 2007 is considered the base year since there are no clearance measurements provided for the 2003 soundings. 2007 base year soundings were dry.

SOUNDING SHEET

(All measurements are in feet)

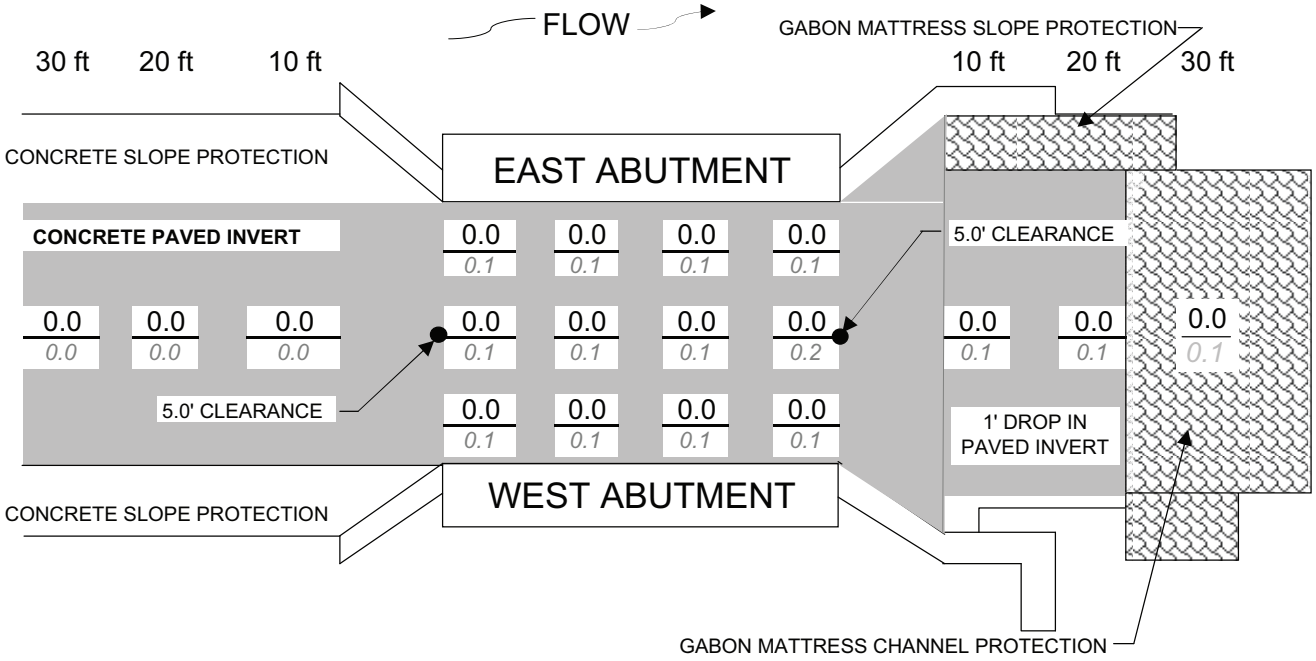
Bridge No. MK-02B

Sheet 1 of 1

Date: 10/13/2007 Inspectors: HAS/MSC Clearance Location: MIDSPAN/BOT. OF SLAB

Clearance is the measured distance from the surface of the water to the clearance location.

North



			0.0 / 0.1	0.0 / 0.1	0.0 / 0.1	0.0 / 0.1						
0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	0.0 / 0.1	0.0 / 0.1	0.0 / 0.1	0.0 / 0.2	0.0 / 0.1	0.0 / 0.1	0.0 / 0.1			
			0.0 / 0.1	0.0 / 0.1	0.0 / 0.1	0.0 / 0.1						

0.2 Denotes 2007 soundings

0.1 Denotes 2003 benchmark soundings

2019 BRIDGE INSPECTION REPORT

Bridge No. M-K-02X01 Inspection Crew J. Lair, S. Scheine Date 11/05/2019

Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

BRIDGE NO. M-K-02X01 - FREDERICK AVENUE OVER SILVER CREEK

1. West Approach Looking East

2. West Approach Looking West

3. East Approach Looking West

4. East Approach Looking East

5. Looking North (Upstream)

6. Looking South (Downstream)

7. North (Upstream) Elevation

8. South (Downstream) Elevation

9. Longitudinal crack in the wearing surface, 7' from the North Curb

10. Typical edge spall in the wearing surface along the abutment backwalls (eastbound lane at East Abutment shown)

11. Diagonal hairline crack with efflorescence in the northeast corner of the deck soffit

12. Vertical hairline crack in the South Fascia at the East Abutment, 9” from the backwall

13. Gap between the deck and the West Abutment backwall at the southwest corner of the deck

14. Moderate efflorescence along the construction joint at the centerline of the slab

15. Northeast Approach Sidewalk has been replaced since the previous inspection

16. West Abutment joint seal is missing or debonded at the centerline of the bridge

17. Delamination and cracking with efflorescence in the East Abutment at the south end

18. Delamination and cracking with efflorescence in the East Abutment at the north end

19. Missing mortar and vertical cracks in the Southeast Wingwall

20. Spall on the top of the West Backwall in the middle of the westbound lane

21. Differential settlement between the 2nd and 3rd sections of the Northeast Slope Protection

22. Spall in the 1st section of the Northeast Slope Protection

23. Displaced gabions lying in the channel within 30’ of the downstream channel protection

24. Approach roadways have been repaved since the previous inspection (West Approach shown)

25. Load posting sign at the northeast corner of the bridge

26. Load posting sign at the southwest corner of the bridge

27. Advanced posting sign at the West Approach is obscured by vegetation

28. Steep drop-off at the northeast corner of the bridge

2019 BRIDGE INSPECTION REPORT

Bridge No. M-K-02X01 Inspection Crew J. Lair, S. Scheine Date 11/05/2019

Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

58 DECK

	CONDITION RATING	
1. Wearing Surface (302)	6	Concrete Overlay
2. Deck - Topside (301)	-	
3. Deck - Underside (301)	6	Concrete
4. Curbs (304)	6	Concrete
5. Median (304)	-	
6. Sidewalks (304)	6	Concrete
7. Parapets (303)	7	Concrete
8. Railing (303)	-	
9. Roadway Joints	4	Compression seal on west side
10. Drainage System (314)	-	
11. Lighting Standards	-	
12. Utilities	-	Overhead electric on north side
13. Other	-	

Inspector's Condition Rating (58) 6

Note: The bridge was replaced with a cast-in-place reinforced concrete slab in 1990.

58.1 - The concrete wearing surface is in satisfactory condition. There is a 6'-0" long diagonal hairline crack in all four (4) corners of the wearing surface. There are two full-length longitudinal hairline cracks in the wearing surface at 7'-0" and 21'-0" from the North Curb [Photo 9]. There is minor scaling throughout the wearing surface. There is up to 1'-4" long x 4" wide x 1" deep edge spalling in the wearing surface along the top of both abutment backwalls [Photo 10].

58.3 - The underside of the slab is in satisfactory condition. Most soffit cracks are reflective of cracks noted in the topside of the deck (see section 58.1). There is a 4'-0" long diagonal hairline crack with efflorescence in the northeast corner of the deck soffit [Photo 11]. There are two full-length hairline cracks with efflorescence in the deck soffit reflective of the cracks in the wearing surface. There is a 6'-0" long diagonal hairline crack with efflorescence at the southeast corner of the deck soffit. There is a 1'-0" long vertical hairline crack in the South Fascia at the East Abutment, 9" from the backwall [Photo 12]. At the southwest corner of the deck, there is a 2" wide gap between the deck and the West Abutment backwall [Photo 13]. There is moderate efflorescence along the longitudinal construction joint at the centerline of the slab [Photo 14].

58.4 - The west end of the North Curb has a 6" wide x full height x 1" deep spall. The east end of the South Curb has a 1'-0" long x 1'-0" wide x 1/2" deep spall on the top face. There are minor spalls at the west end of the South Curb.

58.6 - The concrete sidewalks are in satisfactory condition. There are 2'-6" long diagonal hairline cracks in the North Sidewalk at both ends. There are two diagonal hairline cracks with efflorescence in underside of the South Sidewalk at the east end measuring 3'-0" and 4'-0" long. There is a 1'-6" long

diagonal hairline crack in the underside of the South Sidewalk at the west end. There are two 2'-6" long diagonal hairline cracks with efflorescence on the underside of the North Sidewalk, one near the East Abutment and one near the West Abutment.

There is a full width transverse hairline crack at the Northwest Approach Sidewalk, 3'-0" from the bridge. The Northeast Approach Sidewalk has been replaced since the previous inspection [Photo 15].

58.7 - The parapets are in good condition with no significant defects noted.

58.9 - The West Abutment joint seal is missing or debonded for 75% of its length [Photo 16].

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Bridge No. M-K-02X01 Inspection Crew J. Lair, S. Scheine Date 11/05/2019

Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

59 SUPERSTRUCTURE

Number of Spans 1

Type of Construction Cast-in-place

	CONDITION RATING	
1. Bearing Devices (311)	-	
2. Girders or Beams (312)	-	
3. Stringers (312)	-	
4. Floor Beams (312)	-	
5. Diaphragms/Crossframes	-	
6. Paint (313)	-	
7. Other Slab	6	Cast-in-Place
8. Rivets or Bolts	-	
9. Welds - Cracks	-	
10. Rust	-	
11. Timber Decay	-	
12. Concrete Cracking	6	
13. Collision Damage	-	
14. Deflection Under Load	7	
15. Alignment of Members	7	
16. Vibrations Under Load	7	
17. Fracture Critical Members (325)	-	

Inspector's Condition Rating (59) 6

Note: The superstructure is a cast-in-place reinforced concrete slab. See item 58.3.

2019 BRIDGE INSPECTION REPORT

Bridge No. M-K-02X01 Inspection Crew J. Lair, S. Scheine Date 11/05/2019

Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

60 SUBSTRUCTURE

		CONDITION RATING
1. Abutments	-Wingwalls	6
	-Backwalls	6
	-Stems	6
	-Footings	-
	-Piles	-
	-Scour/Erosion	7
	-Settlement	-
Overall Abutment Rating (322)		6
2. Piers or Bents	-Caps	-
	-Columns	-
	-Footings	-
	-Piles	-
	-Scour/Erosion	-
	-Settlement	-
Overall Pier Rating		-
3. Pile Bents	-Caps	-
	-Piles (324)	-
4. Concrete Cracking or Spalling		6
5. Steel Corrosion		-
6. Timber Decay		-
7. Other		-
8. Debris on Seats		-
9. Paint		-
10. Collision Damage		-
11. Overall Undermining/Scour		7

Abutment Type Reinforced Concrete

Pier Type None

Inspector's Condition Rating (60) 6

60.1 - The abutments are in satisfactory condition. There are several vertical and horizontal hairline cracks throughout the abutments with moderate efflorescence from the joint with the deck. There are up to 1/16” wide x 5'-0" high vertical cracks in the West Abutment Stem at each end of the deck slab. There is a 2’-6” wide x 1’-0” high delaminated area with efflorescence on the top of the West

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Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

Abutment Stem near the mid-length. There are two delaminations in the East Abutment; a 5’-0” wide x 5’-0” high delamination 7’-0” from the north end and a 9’-0” wide x 4’-0” high delamination 1’-0” from the south end. Both delaminations have vertical hairline cracks and map cracks with efflorescence [Photos 17-18].

The wingwalls are in satisfactory condition. There are no significant defects at the Northeast and Northwest Wingwalls. There are two types of wingwalls on the south side of the structure. There are brick, stone and mortar wingwalls from a previous structure and reinforced concrete wingwalls constructed with the current bridge. There are storm drain pipes, 1'-0" and 2'-0" in diameter, extending out from both brick wingwalls. There is missing mortar up to 1/4” wide, vertical cracks, and missing bricks in the Southeast and Southwest Wingwalls [Photo 19]. There is 3'-0" long x 3'-0" wide area of hollow sounding concrete in the Southeast Wingwall near the brick wingwall. There is a 2'-0" long x 2'-0" wide area of hollow sounding concrete in the Southwest Wingwall near the abutment. At the Southeast Wingwall, there is a 1’-4” long x 8” wide x 1 1/2” deep corner spall at the joint between the masonry and concrete wingwalls.

The abutment backwalls are in satisfactory condition. There are a few small spalls in the tops of both abutment backwalls. There is a full width x 1'-3" long x 2 1/2" deep spall on the top of the West Backwall in the middle of the westbound lane [Photo 20].

2019 BRIDGE INSPECTION REPORT

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Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

61 CHANNEL AND CHANNEL PROTECTION

	CONDITION RATING	
1. Channel Scour	6	
2. Embankment Erosion	7	
3. Drift/Debris	7	
4. Vegetation	6	
5. Channel Alignment	7	
6. Fender System	-	
7. Spur Dikes and Jetties	-	
8. Riprap/Slope Protection	6	Concrete Slope Protection (Upstream) and Gabions with Class I Riprap (Downstream)

Inspector's Condition Rating (61) 6

61.1 - There is a 15’ long x 10’ wide x up to 2’-6” deep scour hole in the downstream channel, beginning approximately 20’ downstream.

61.4 - There is vegetation growing out of the joints and weepholes along the upstream concrete slope protections.

61.8 - The concrete channel is in satisfactory condition. There is up to 1/2" deep scaling throughout the concrete channel protection. There are chips and spalls in the bottom edge of the upstream concrete channel protection. There is up to 5" of differential settlement between the 2nd and 3rd Northeast Slope Protection sections from the bridge [Photo 21]. There is a 6’-0” long x 1’-6” wide spall in the 1st section from the bridge of the Northeast Slope Protection [Photo 22]. There are full height cracks with associated up to 3” of settlement in the 1st section of the Northeast Slope Protection.

The downstream channel bottom and banks are lined with gabions for approximately 100' after the end of the concrete lined channel. The gabions in the channel bottom have missing rocks, broken mesh and bulging throughout. There are displaced gabions lying in the channel within 30’ of the downstream channel protection [Photo 23]. There is a 2'-0" long x 1'-0" high x 2" deep spall on the vertical face of the downstream concrete apron step.

2019 BRIDGE INSPECTION REPORT

Bridge No. M-K-02X01 Inspection Crew J. Lair, S. Scheine Date 11/05/2019

Name FREDERICK AVENUE Crossing SILVER CREEK

Bridge Type Concrete Slab Year Built 1920

71 WATERWAY ADEQUACY

Opening	Good	Fair	Poor	
Alignment	Good	Fair	Poor	
Frequency of Overtopping	Remote	Slight	Occasional	Frequent

Inspector's Condition Rating (71) 8

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72 APPROACH ROADWAY ALIGNMENT APPRAISAL RATING

1. Vertical Alignment	E	[Good]	Fair	Poor	Slight downgrade to the bridge
	W	[Good]	Fair	Poor	Slight downgrade to the bridge
2. Horizontal Alignment	E	[Good]	Fair	Poor	Slight curve to the south
	W	[Good]	Fair	Poor	Slight curve to the south

3. Speed Limit Reduction [None] Minor Substantial Shopping center entrance on West Approach

4. Sight Distance [Adequate] Not Adequate

Inspector's Condition Rating (72) [8]

APPROACH ROADWAY

	CONDITION RATING
5. Approach Guardrail	-
6. Approach Pavement	7
7. Approach Embankments	7
8. Approach Slabs	-
9. Relief Joints	-

10. Signing - Legibility and Visibility Good [Fair] Poor Load Posting Signs

11. Posted Load Limits 52,000 lbs GVW Posted Bridge Speed Limit [-] MPH

70,000 lbs GCW Normal Roadway Speed Limit 25 MPH

12. Traffic Safety Features (36)

a. Bridge Railing	0	[1]	N	Concrete Parapet
b. Transitions	[0]	1	N	No approach traffic barriers
c. Approach Traffic Barrier	[0]	1	N	No approach traffic barriers
d. Approach Traffic Barrier Ends	[0]	1	N	No approach traffic barriers

72.6 - The approach roadways have been repaved since the previous inspection [Photo 24]. There is 1/16" wide alligator cracking in the East Approach roadway within 15' of the bridge. There are no significant defects in the West Approach roadway.

72.10 - There are no bridge end markers.

72.11 - There are load posting signs on each side of the bridge, and an advanced posting sign is

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located at the West Approach [Photos 25-27]. The bridge does not require posting based on the Load Rating Summary; however, the county has decided to maintain the current postings according to previous inspection reports. The advanced posting sign at the West Approach is obscured by vegetation. There is no advance posting sign at the East Approach.

72.12 - There are no approach traffic barriers at any of the four corners. There are timber fences at all four corners of the structure at the ends of the parapets. There are steep drop-offs along the northwest, northeast and southeast corners of the approaches [Photo 28].

Bridge Inspection Report
Element Form

Bridge No: M-K-02X01 | Inspection Date: 11/05/2019

FREDERICK AVENUE OVER SILVER CREEK | Milepoint: 0000490

(58) Deck	6	(59) Superstructure	6	(60) Substructure	6
(61) Channel	6	(62) Culvert	N		

Element	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
38 - Reinforced Concrete Slab	1 - Ben.	604	sq. ft.	561	43	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
510 - Wearing Surfaces		420	sq. ft.	410	0	10	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
215 - Reinforced Concrete Abutment	1 - Ben.	56	ft.	27	29	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
301 - Pourable Joint Seal	1 - Ben.	27	ft.	7	0	0	20
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
331 - Reinforced Concrete Bridge Railing	1 - Ben.	36	ft.	36	0	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8062 - Sidewalk, Reinforced Concrete	1 - Ben.	36	Ft.	34	2	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8251 - Wingwalls, Reinforced Concrete	1 - Ben.	35	Ft.	28	5	2	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8253 - Wingwalls, Other Material	1 - Ben.	24	Ft.	0	24	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8257 - Reinforced Concrete Abutment Backwall	1 - Ben.	56	Ft.	44	10	2	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8260 - Slope, Protected	1 - Ben.	1	Each	0	0	1	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8322 - Roadway Approach Transition	1 - Ben.	2	Each	2	0	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8345 - Stream Channel	1 - Ben.	1	Entire Bridge	1	0	0	0
☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments							
8346 - Gabion Wall	1 - Ben.	200	Ft.	0	0	200	0

Bridge Inspection Report
Element Form

Bridge No: M-K-02X01 Inspection Date: 11/05/2019

FREDERICK AVENUE OVER SILVER CREEK Milepoint: 0000490

(58) Deck	6	(59) Superstructure	6	(60) Substructure	6
(61) Channel	6	(62) Culvert	N		

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

8359 - Soffit (underside) of concrete decks and slabs	1 - Ben.	1	Entire Bridge	0	1	0	0

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER: M-K-02X01

IDENTIFICATION — FORM 1 OF 13

(8) STRUCTURE NUMBER: 2 | 0000X | Small Structure | M- | K-02 | 07 | Bridges <= 20' 0" | 0 | Single Structure

(8) FHWA NUMBER: 20000XM-K-02070

(7) FACILITY CARRIED: FREDERICK AVENUE

(6) FEATURE INTERSECTED: SILVER CREEK

(255) FEDERAL SUBMITTAL INDICATOR: N — No

(262) NAME OF STRUCTURE:

(27) YEAR BUILT: 1920 (106) YEAR RECONSTRUCTED: 1990

(263) ADDITIONAL RECONSTRUCTION YEARS: N N

(1) STATE CODE: 243 — Maryland (2) DISTRICT CODE: 03 — 03

(3) COUNTY CODE: 031 — Y (4) PLACE CODE: 43500

(5) INVENTORY ROUTE: 1 — Route carried "on" the structure | 5 — City Street (Route Prefix) | 1 — Mainline (Level of Service) | 00120 (Number) | 0 — Always (Direction)

(9) LOCATION: 1 MI E OF JC SR 193

(11) MILEPOINT: 0000490

(12) BASE HIGHWAY NETWORK: 0 — Inv. Route is NOT on the Base Network

(266) GIS ROUTE ID: 15085MU00120 01EE**********

(267) GIS MILEPOINT: 0.49

(268) SCENIC ROUTE: N

(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:

(16) LATITUDE: (A) 39012922 (B) 39012894 (C) 39012878 (D) 39012911

(17) LONGITUDE: (A) 077041486 (B) 077041513 (C) 077041480 (D) 077041461

(28) LANES ON: 02 LANES UNDER: 00

(42) TYPE OF SERVICE ON: 5 — Highway-Pedestrian

TYPE OF SERVICE UNDER: 5 — Waterway

(98) BORDER STATE: BORDER STATE'S SHARE %:

(99) BORDER STATE'S NUMBER:

CLASSIFICATION — FORM 2 OF 13

(104) HWY SYSTEM: N — No, Inventory Route is not on the NHS

(105) FEDERAL LANDS HWYS: 0 — Not applicable

(26) FUNCTIONAL CLASS: 19 — Urban Local

(100) DEFENSE HWY: 0 — The inventory route is not a STRAHNET route

(101) PARALLEL STRUCTURE: N — No parallel structure

(102) DIRECTION: 2 — 2-way traffic

(103) TEMPORARY STRUCTURE:

(110) NATIONAL NETWORK: N — No, the inventory route is not part of the national network for trucks.

(20) TOLL: 3 — On free road

(21) MAINTENANCE: 04 — City or Municipal Highway Agency

(22) OWNER: 04 — City or Municipal Highway Agency

(37) HISTORICAL SIGNIFICANCE: 5 — Not eligible

BRIDGE NUMBER: M-K-02X01

TRAFFIC

FORM 3 OF 13

(19) DETOUR:	01	(109) TRUCK ADT %:	05
(29) ADT:	000356	(30) ADT YEAR:	2019
(114) FUTURE ADT:	000420	(115) FUTURE ADT YEAR:	2039

STRUCTURE TYPE AND MATERIAL

FORM 4 OF 13

(43) STRUCT TYPE:	A	Concrete	01	Slab		
(44) STRUCT TYPE - APPR:	0	Not Applicable	00	Other		
(232) BOX CULVERT ON PILES:	0	None	0	Entire Structure		
(208) STRUCT TYPE - WIDENED/EXTENDED:	N		N		N	
(219) SLOPE PROTECTION:	0	None				
(228) FOOTING - ABUTMENT:	1	Concrete	0	None	0	Entire Structure
(229) SUBSTRUCT ABUTMENT:	1	Concrete	8	Gravity	0	Entire Structure
(230) FOOTING - PIER:	N	Not Applicable				
(231) PIER TYPE:	N	Not Applicable				
(242) BEARING TYPE:	N	None or N/A				
(108) WEARING SURFACE:	1	Concrete	0	None	0	None
(243) JOINT TYPE:	A	Pourable Seal	N	None	N	None

(206) STRUCT SUBTYPE - MAIN:	N	Not Applicable	(207) STRUCT SUBTYPE - APPR:	N	Not Applicable
(257) SCOUR PROTECTION:	4		(270) CONC. DECK SPECIAL TYPE:	N	Not Applicable
(221) STRUCTURAL STEEL:	N	Not Applicable	(233) DECK - COMP/NON-COMP:	0	Non-Composite
(107) DECK STRUCTURE TYPE:	1	Concrete Cast-in-Place	(259) STAY-IN-PLACE FORMS:	N	

(235) PARAPET:	02	Concrete-Rectangular						
(236) RAILING:	0	None	0	- None	0	None	0	- None
(237) FENCING:	0	None	0	- None				
(278) PAINT SYSTEM:	N	Not Applicable						
(344) PAINT COLOR/NUMBER:	N	Not Applicable						
(345) YEARS PAINTED:	N	N						

BRIDGE NUMBER: M-K-02X01

GEOMETRICS

FORM 5 OF 13

(112) NBIS BRIDGE LENGTH:	N	(49) STRUCTURE LENGTH:	0000180
(210) NUMBER OF SPANS:	0001	(45) # SPANS IN MAIN UNIT:	001
(46) # APPROACH SPANS:	0000	(209) CONTINUOUS SPANS:	N
(48) LENGTH MAX SPAN:	0015	(238) # STRINGERS - ORIGINAL:	00
(240) SPACING - ORIGINAL:	N	(239) # STRINGERS - WIDENED:	00
(241) SPACING - WIDENED:	N	(33) BRIDGE MEDIAN:	0
(50) CURB/SIDEWALK WIDTHS:	069 061	(205) MEDIAN WIDTH:	000
(51) DECK CURB-CURB WIDTH:	0263	(32) APPROACH ROAD WIDTH:	00 026 00
(52) DECK OUT-OUT WIDTH:	0413	(10) INVENT ROUTE, MIN VERT CLEAR:	9999
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	9999	(47) INVENT ROUTE, TOTAL HORIZ CLEAR:	263
(54) MIN. VERT. UNDERCLEARANCE:	N	Feature not a highway or a railroad	A < 10'
(55) MIN. LAT. CLEARANCE (RIGHT):	N	Feature not a highway or a railroad	000
(56) MIN. LAT. CLEARANCE (LEFT):	000	(342) HORIZ CLEARANCE (ON):	02603
(34) SKEW, IN DEGREES:	00	(280) HORIZ CLEARANCE (UNDER):	N
(35) STRUCTURE FLARED:	N	(253) NUMBER OF CELLS:	N
(256) SPAN OF CELLS:	N	(254) RISE:	N
		(258) EARTH FILL:	N
		(343) CENTERLINE LENGTH (Culverts/Pipes):	N

(223) SHOULDER WIDTHS: N N N 0000

(264) TYPE AND SPAN: CS 16'-6"

LOAD RATINGS AND POSTINGS

(41) STATUS: P Posted for load

(31) DESIGN LOAD: 5 HS 20

(398) PEDESTRIAN LOADING: N

(399) RAILROAD LOADING: N

(70) POSTING: 5 Equal to or above legal loads

(224) WEIGHT POSTED: 52 70 (New Split)

(66) INVENTORY RATING: 360

(64) OPERATING RATING: 360

(400) DATE OF RATING: 05 2020

(65) METHOD USED TO DETERMINE INVENTORY RATING: 0 Field Evaluation and Documented Engineering Judgment

(63) METHOD USED TO DETERMINE OPERATING RATING: 0 Field Evaluation and Documented Engineering Judgment

	INVENTORY RATING		OPERATING RATING	
HL-93 Vehicle	(402)		(401)	
H-15 Vehicle	(404)	150	(403)	150
T3 (Dump Truck) Vehicle	(406)		(405)	
T4 Reduced Lift Axle Vehicle	(408)	350	(407)	350
HS Vehicle	(410)	360	(409)	360
3S2 Vehicle	(412)	400	(411)	400
150K Vehicle	(414)		(413)	
90K Permit Combination Vehicle	(416)		(415)	
90K Mobile Crane Vehicle	(418)		(417)	
90K Cargo Vehicle	(420)		(419)	
80K Cargo Vehicle	(422)		(421)	
120K Vehicle	(424)		(423)	
108K Mobile Crane Vehicle	(426)		(425)	
120K Mobile Crane Vehicle	(428)		(427)	

(225) SPEED LIMIT ON STRUCTURE: N

(226) MIN VERT CLEARANCE OVER ROADWAY POSTED: X Posting signs not required

(227) MIN VERT UNDERCLEARANCE POSTED: X Posting signs not required

BRIDGE NUMBER: M-K-02X01

CONDITION INSPECTION

FORM 7 OF 13

	Inspection Month	(91) Frequency	Due Date	(90) Inspection Date	(290) Inspection Report Completion Date
Routine Inspection	09	48	11/05/2023	11/05/2019	02/08/2016

Critical Feature Inspections	(291) Inspection Month	(92) Frequency	Due Date	(93) Critical Feature Inspection Date
(A) Fracture Critical Members		N		
(B) Underwater Inspection		N		
(C) Special Inspection		N		
(D) Hands-on Railroad		N		
(E) Confined Space		N		
(F) Ultrasonic Testing (UT) Pin		N		
(G) Ultrasonic Testing (UT) Anchor		N		
(H) Post Tensioning Bar		N		
(I) Cathodic Protection		N		
(J) Consultant		N		
(K) Movable Bridge		N		
(L) Suspension Bridge		N		
(M) Cable		N		
(N) Monitor		N		
(P) Flood				
(Q) Damages				
(R) Inquires				

(58) DECK: 6 Satisfactory Condition

(59) SUPERSTRUCTURE: 6 Satisfactory Condition

(60) SUBSTRUCTURE: 6 Satisfactory Condition

(61) CHANNEL/PROTECTION: 6 Bank slump. widespread minor damage

(62) CULVERTS: N Not Applicable

(310) INSPECTION DATA UPDATE DATE: 06/21/2016

(312) LEAD INSPECTOR: JORDAN LAIR, P.E.

(311) INSPECTION TEAM: YAEC

(313) BRIDGE INSPECTOR: SCOTT SCHEINE, P.E.

(314) HOURS TO INSPECT: 012

(316) DECK PLANKING %: 00

(315) DECK PUNCTURES %: 00

(317) DECK PATCHING %: 00

(318) BLOCKING: N

(319) POWER WASHING: N

(320) IDENTIFICATION NO.: N

(321) INVENTORY DIRECTION: WEST

(323) PERMIT: N

(324) NIGHT WORK: N

(325) WEEKEND WORK: N

(322) LOOKING TOWARD: KENSINGTON PKWY

(326) MAINTENANCE OF TRAFFIC STANDARDS: N

(327) MOT COMMENTS:

(328) LOCATION OF MIN. VERT. UNDERCLEARANCE: N

BRIDGE NUMBER: M-K-02X01

(329A) CRITICAL FINDINGS: N (329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: X Posting signs not required

(340) INSPECTION EQUIPMENT:

W Waders		

(333) MHOI: N (334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION: N

(336) ADVANCED NOTIFICATION COMMENTS:

BRIDGE NUMBER: M-K-02X01

APPRAISAL

FORM 8 OF 13

(67) STRUCTURAL EVALUATION:	6	BSR	(68) DECK GEOMETRY:	5
(69) UNDERCLEARANCE:	N	92.5	(72) APPROACH ALIGNMENT:	8
(71) WATERWAY ADEQUACY:	8			

(36) TRAFFIC SAFETY FEATURES

RAILINGS:	1	Meets Standards
TRANSITIONS:	0	Does NOT meet Standards
APPROACH BARRIER:	0	Does NOT meet Standards
APPROACH BARRIER ENDS:	0	Does NOT meet Standards

(113) SCOUR EVALUATION: 8P — Bridge is a culvert-type structure with paved bottom.

(DT) DEDUCT CODE: Z

(STAT) STATUS: 0 — Not Deficient

NAVIGATION

FORM 9 OF 13

(38) NAVIGATION CONTROL:	0	(39) NAV VERT CLEARANCE:	000
(40) NAV HORIZONTAL CLEARANCE:	0000		
(111) PIER/ABUTMENT PROTECTION:			
(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:			
(247) DESIGN YEAR STORM:	000	(248) RUN-OFF Q:	000000
(249) DRAINAGE AREA:	000000	(250) STRUCTURE IN TIDAL AREA:	N No
(251) HIGH WATER ELEVATION:	0000		
(252) YEAR HIGH WATER ELEVATION - LATEST:	0000		

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 13

(201) CONTRACT NUMBERS:						
(203) SHA SPEC- YEAR:	0000	N	N	N		
(204) AASHTO SPEC-YEAR:	0000	N	N	N		
(75) TYPE OF PROPOSED WORK:			(76) LENGTH OF IMPROVEMENT:	000000		
(94) BRIDGE IMPROVE COST:	000000		(95) ROADWAY IMPROVE COST:	000000		
(96) TOTAL PROJECT COST:	000000		(97) YEAR OF IMPROVEMENT:			

BRIDGE NUMBER: M-K-02X01

MISCELLANEOUS

FORM 11 OF 13

(244) SIGNS ON STRUCTURE: N No

(245) BRIDGE ROADWY LIGHTING: N No

(246) PROVISION FOR ROADWAY LIGHTING: N No

(260) UTILITIES - ON:

- 0 Not Applicable
- 0 Not Applicable
- 0 Not Applicable
- 0 Not Applicable
- 0 Not Applicable

(261) UTILITIES - UNDER:

- E Electric
- T Telephone
- 0 Not Applicable
- 0 Not Applicable
- 0 Not Applicable

REMARKS:

1988 ADT = 275; 2019 estimated ADT and Future ADT values were revised based on an MNCPPC annual growth rate of 0.83%

NOISE BARRIER

FORM 12 OF 13

(501) TYPE:

(502) ALIGNMENT:

(503) LENGTH:

(504) MAXIMUM HEIGHT:

(505) FOUNDATION TYPES:

(506) FOUNDATION LENGTH:

(507) PANEL WIDTH:

(508) NUMBER OF SPECIAL PANEL(S):

(509) PANEL MATERIAL:

(510) FACING (Acoustic Treatment):

(511) PANEL FINISH:

(512) PANEL COLOR:

(513) FEDERAL COLOR:

(514) STACKED PANELS:

(515) NOISE BARRIER POST MATERIAL:

(516) ACCESS DOORS:

(517) FIRE HYDRANTS:

(518) RETROFITS:

RETAINING WALL

FORM 13 OF 13

(550) TYPE:

(551) ALIGNMENT:

(552) SEGMENT LENGTH(S):

(553) MAX. EXPOSED HEIGHT:

(554) FOUNDATION TYPES:

(555) TIEBACK:

(556) FACING:

(557) WITH FENCE OR RAIL:

(558) WITH NOISE BARRIER:

(559) PURPOSE:

Montgomery County, Maryland
Department of Transportation
Division of Transportation Engineering
100 Edison Park Drive, 4th Floor
Gaithersburg, Maryland 20878