Routine and NSTM Member Inspection Report

Submitted to:

Ohio Department of Transportation, District 8
505 S. State Route 741
Lebanon, Ohio 45036

HAM-71-0248L
2025 Routine and NSTM Member Inspection Report
(VAR-District 8 Bridge Inspections for Steel Pier Caps)
SFN: 3106780, PID: 109781

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INTRODUCTION

Bridge Description

Bridge HAM-71-0248L is a seven span welded steel plate girder structure that carries IR 71 southbound over Eden Park Drive and Reading Road (US 42) (See Figure 1). The 755'-0" bridge was constructed in 1970 and has a deck width of 54'-0".

Figure 1: Bridge Location Map

Three NSTM pier caps are supported by concrete columns at Piers 1, 2 and 3 (See Figure 2). The caps are simply supported welded box members with cantilever ends up to 10'-6" in length. Six welded plate girders frame into the box sections. The girder webs are bolted by vertical double angles to the cap webs. At Piers 1, 2, and 3, the top flange splice plates are bolted to the top flanges of the pier caps and to the girders on each side of the cap. At Piers 1 and 2, the bottom flange splice plates are bolted to the bottom flanges of the pier caps and to the girders on each side of the cap. At Pier 3, the bottom flange splice plates pass through the web plates of the pier cap and are bolted to the bottom flanges of the girders on each side of the cap. Refer to Appendix A for existing pier cap plans and Appendix B plans for the rehabilitation project.

A previous rehabilitation project performed the following repairs on this structure:

- Cleaning and painting portions of the interiors of all the caps
- Removal of interior diaphragm knee braces on the caps at Piers 1 and 2
- Bolted retrofit of welded drainage bracket and lateral bracing gusset connections to the web plates of all pier caps
- Grinding of intersecting fillet welds on the web stiffeners and the cap flanges at Piers 1 and 2
- Grinding of miscellaneous tack welds on the caps at Piers 1 and 2
- Drilling and saw-cutting of pressure relief holes in the web plates of the cap at Pier 3

A 2017 rehabilitation project performed the following repairs on this structure:

- Removed and replaced wearing surface with Superplasticized Dense Concrete (SDC)
- Replaced torn expansion joint seal at rear expansion joint and intermediate expansion joint
- Cleaned existing drainage system to the first manhole both on structure and below the ground
- Repaired fatigue cracks in Steel Pier Cap 3

Figure 2: NSTM Pier Cap Locations

Inspection and Access Methods

Between June 9 and 24, 2025, Gannett Fleming performed a routine and NSTM member inspection of the Bridge HAM-71-0248L. A 46-foot bucket truck and extension ladders were used to access the NSTM steel pier cap interiors and perform the "arms-length" exterior inspection. A&A Safety was responsible for installing traffic control devices to close lanes of northbound Reading Road (US 42) and directing traffic around the work zones on Reading Road and the Southbound IR 71 ramp:

- SB IR 71 Ramp – One shoulder of this one lane ramp was closed between the hours of 8:30 AM and 3:30 PM to inspect the caps at Piers 2 and 3.
- NB Reading Road (US 42) – Single lane closures between the hours of 8:30 AM to 3:30 PM were necessary on NB Reading Road to inspect the cap at Pier 3.
- Eden Park Drive – Single lane closures between the hours of 8:30AM to 3:30PM were necessary to inspect Pier 5.

OSHA confined space entry procedures were followed while inspectors were working inside the pier cap. Entry was performed in accordance with complete permit-required confined space entry procedures per GF SOP #10 and 29 CFR 1910.146. This included the use of an entry permit system, pre-entry air monitoring, continuous air monitoring, the designation of qualified entrants, attendants, and supervisor(s), and available emergency response. OSHA compliant safety harnesses and lanyards were worn by inspectors when working in the lift bucket and when implementing bridge climbing techniques. The bolts securing the pier cap hatches were removed and reinstalled with an impact wrench and the hatches were sealed with exterior-grade caulking once the interior inspection was complete. Various socket sizes from ½" to 22mm were required to remove the hatch bolts.

Field measurements were taken using tape measures, calipers, and an ultrasonic thickness gauge to verify structural component dimensions. Observed deficiencies were recorded on member-specific field inspection forms. Digital photographs were taken of the fatigue prone details and other areas of interest or concern to further document the physical condition of the pier caps.

Inspection Team
The following individuals were part of the inspection team:

- Daniel E. Kent, Jr., PE, CBI — Team Leader
- Matthew McFadden, EI, CBI — Inspector
- Rob Parker, CBI — Inspector

Condition Rating
Our inspection team utilized the rating system given in the ODOT Bridge Inspection Manual to evaluate the current condition of the HAM-71-0248L pier caps. This system is summarized in the following table. To maximize accuracy of the ratings, the NBIS scoring system has been used for all rating scores.

Summary Items (NBIS)	Condition	Defects
9	Excellent	Excellent Condition.
8	Very Good	No problems noted.
7	Good	Some minor problems.
6	Satisfactory	Structural elements show some minor deterioration.
5	Fair	All primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.
4	Poor	Advanced section loss, deterioration, spalling, or scour.
3	Serious	Loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	"Imminent" Failure	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may put it back in light service.
0	Failed	Out of service-beyond corrective action

The inspection of this bridge was performed in accordance with the following documents:

1. *Manual of Bridge Inspection*, Ohio Department of Transportation (ODOT), 2025.
2. *Manual for Bridge Element Inspection*, AASHTO, 2019.
3. *Bridge Inspector's Reference Manual*, U.S. Department of Transportation, 2002 (rev 2012).
4. *Inspection of Fracture Critical Bridge Members*, U.S. Department of Transportation, 1986.
5. *National Bridge Inspection Standards*, U0.S. Department of Transportation, 2004.

AASHTO National Bridge Element Quantities:

NATIONAL BRIDGE ELEMENTS RECORDING SHEET[1]									
Element	Defect	Env	Element/Defect Description	Total Qty	Units	Condition State Quantity			
						CS1	CS2	CS3	CS4
Superstructure									
PIER 1									
231		3	Steel Pier Cap	50	FT	34	16		
PIER 2									
231		3	Steel Pier Cap	50	FT	44	6		
PIER 3									
231		3	Steel Pier Cap	60	FT	52	8		
515		3	Steel Protective Coating[2]	3356	SQ FT	3311	35	10	
Substructure									
PIER 1									
205		3	Reinforced Concrete Column	2	EA	2			
PIER 2									
205		3	Reinforced Concrete Column	2	EA	2			
PIER 3									
205		3	Reinforced Concrete Column	2	EA	2			

[1] Includes only the defects for the portions of the elements that were inspected during the NSTM inspection

[2] Protective Coating system total quantity is for the three NSTM Pier Caps. Protective coating defects are included in the overall condition state quantities

PIER CAP 1

Pier Cap 1 is in Good condition [7] (Photo 1). There are isolated areas of light surface rust on the interior surfaces of the cap. At the time of inspection, the pier cap interior was dry.

Photo 1: Pier Cap 1 Elevation

Pier Cap Interior

A discontinuous fillet weld was observed at the stiffener east of the Girder B diaphragm. The knee braces at Girder C and D diaphragms were removed and the fillet welds were ground from the bottom flange (Photo 2). There is a 1-1/8" L tack weld west of the stiffener between Girder C and D diaphragms on the north web (Photo 3). There are several ground tack welds on both web plates, three of which were not completely removed.

Photo 2: Knee Braces Removed and Fillet Welds Ground Out at Girder C Diaphragm

There are six total gouges caused by tack weld removal between Girder D and E diaphragms, three on each web (Photo 4). Between Girder E and F diaphragms, there is one moderate gouge and 3 minor gouges from tack weld removal along the south web, and one on the north web.

There is a 9” minor grinding scrape on the north web just east of Girder D.

Weld porosity was observed in the fillet weld between the north web and the top flange just west of Girder F.

The interior paint is in Good condition [7] with isolated areas of light rust spots on the top flange and at the top of the web plates (Photo 7) and at the bottom flange between diaphragm and end caps (Photo 8). There is a minor gap above Girder E and top flange of steel pier cap.

Photo 3: 1-1/8” Tack Weld on North Web Between Girder C and D

Photo 4: Gouge in South Web Between Girder D and C from Tack Weld Removal

Photo 7: Typical Corrosion Along Upper Flange and Top of Webs Near Web Flange Interface

Photo 5: Typical Diaphragm Bracing

Photo 8: Typical Pitting in Bottom Flange Between Diaphragm and End Cap Openings

Photo 6: Girder B connection

Pier Cap Exterior

The exterior of the pier cap is in Very Good [8] Condition. During previous rehabilitations, tack welds were removed from the bottom surface of the pier cap bottom flange and the edges of the girder fill plates. Tack welds exist along the edges of the pier cap bottom flange and the girder fill plates. The welded lateral bracing connections were removed from the web plates and replaced with bolted connections (Photo 9).

The exterior paint is in Very Good Condition [8]. The nuts are missing from the anchor bolts on all three of the pot bearings (Photo 10). The pot bearings appear to function properly.

Photo 9: Retrofitted with Bolted Connections in Lateral Bracing

Photo 10: Nuts Missing from Anchor Bolts at Pot Bearings, Typical

Fatigue Prone Details

Fatigue Prone Detail 1
Fillet welds between diaphragms or stiffeners and web plates.
Category: C'
Location: All girder diaphragms and web stiffeners.

Fatigue Prone Detail 3
Tack welds, less than 2", on web and flange
Category: C
Location:

- One tack weld on the interior of the north web plate between Girder C and D; One tack weld on interior of the north web plate between Girder D and E; One tack weld on the interior of the south web plate between Girder E and F (3 total-all previously ground, but not completely removed).
- One tack weld along each edge of the bottom flange plate and the fill plates of Girder C and D (4 total).

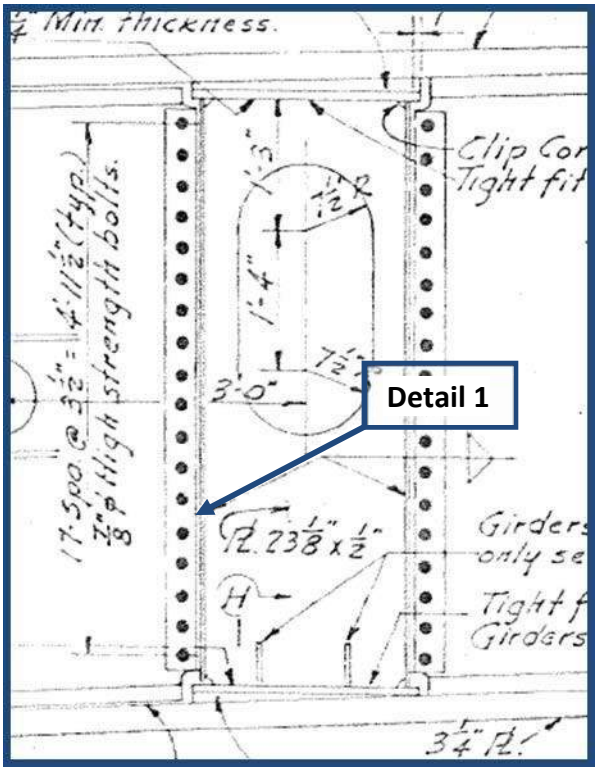


Figure 3: Section of Pier Cap 1

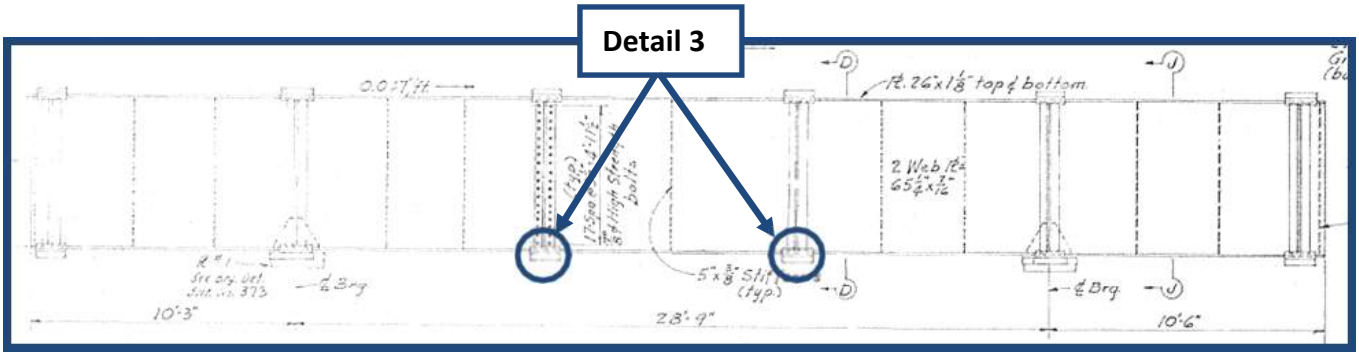


Figure 4: Elevation of Pier Cap 1

PIER CAP 2

Pier Cap 2 is in Good Condition [7] (Photo 11). At the time of inspection, the pier cap interior was dry.

Pier Cap Interior

Knee braces have been removed from the diaphragms at the interior girders. At multiple locations in the tension zones, the fillet welds between the web and flange plates intersect the fillet welds between the web plates and vertical web stiffeners/diaphragms. The cope is ineffective for the intersecting weld between the top of the vertical web stiffener and the top flange plate at various locations (Photo 12). Multiple weld passes over single welds can be observed in isolated locations throughout the pier cap between the vertical web stiffeners and the web (Photo 13). A 1/4" and a 1/2" diameter weld spot exists on the bottom flange at the Girder C diaphragm. There are two tack welds up to 3/4" L on the north web between the west bearing and Girder B diaphragm, which are ground but not completely removed. There is one 1/2" L shallow gouge in the north web just east of the east bearing diaphragm (Photo 14).

The interior paint is in Very Good Condition [8]. The lower flange and portions of web at the end caps were painted during a previous rehab, however corrosion is reactivating along the lower flange (Photo 15).

Photo 11: General Elevation Pier Cap 2

Photo 12: Ineffective Weld Coping Between Web Stiffener and Web Plates

Photo 13: Multiple Weld Passes Between Web Stiffener and North Web Between Girder B and C

Photo 14: ½" L Gouge in North Web, East of East Bearing Diaphragm

Photo 15: Reactivating Corrosion Along Lower Flange at Cap Ends

Pier Cap Exterior

The exterior of the pier cap is in Good Condition [7]. During previous rehabilitation, tack welds were removed from the bottom surface of the pier cap bottom flange and the edges of the girder fill plates.

The west access hatch is missing the south middle bolt and the north lower bolt. The anchor nut for one of the bolts that secure the cover plate on the west access hatch is detached from the end plate. The east access hatch is missing two bolts out of six.

Welds exist between the web and angled mounting brackets of the girders (Photo 16). Tack welds remain along the edges of the pier cap bottom flange and the girder fill plates throughout. Two tack welds, on the interior of the north web plate between the west bearing and Girder B, have been previously ground, but not completely removed (Photo 17). A bolted connection of the lower lateral bracing on the north web has been retrofitted at Girder B. There are drilled stress relief holes connected by saw cuts at all girders throughout Pier Cap 2.

The exterior paint is in Very Good Condition [8]. There is typical cracking in the paint along the lower portions of the web stiffener and the bottom flange. The nuts are missing from the anchor bolts at all bearings (Photo 18); however, the pot bearings appear to function properly.

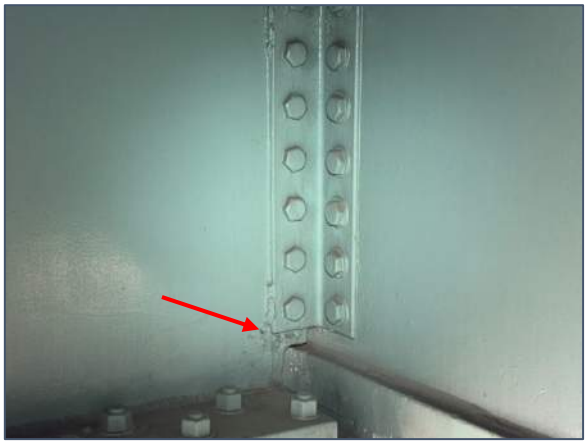


Photo 16: Welds to Bolted Angle Bracket

Photo 17: Tack Welds Ground but Not Removed at the West Face of Girder B and North Web

Photo 18: Typical Pot Bearing; Missing Nuts from Anchor Bolts

Fatigue Prone Details

Fatigue Prone Detail 1
Fillet welds between diaphragms or stiffeners and web or flange plates.
Category: C'
Location: All girder diaphragms and web stiffeners.

Fatigue Prone Detail 3
Tack welds, less than 2", on web and flange
Category: C
Location:

- Two tack welds on the interior of the north web plate between the west bearing and Girder B (previously ground, but not completely removed).
- Two tack welds along each edge of the bottom flange plate and the fill plates of the interior girders (16 total).
- Two weld spots on the bottom flange on the east side of Girder C.

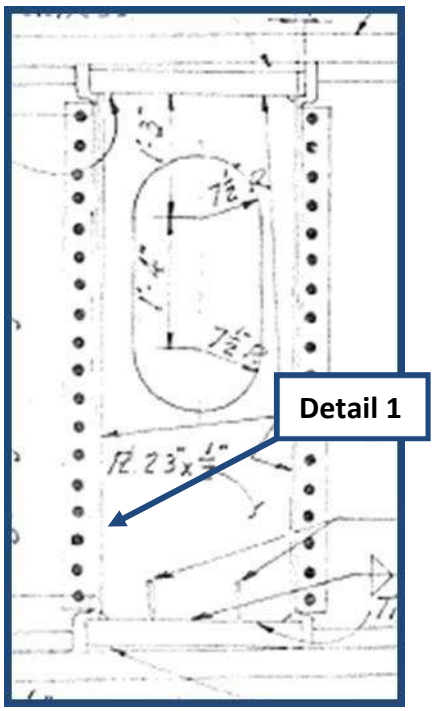


Figure 5: Section of Pier Cap 2

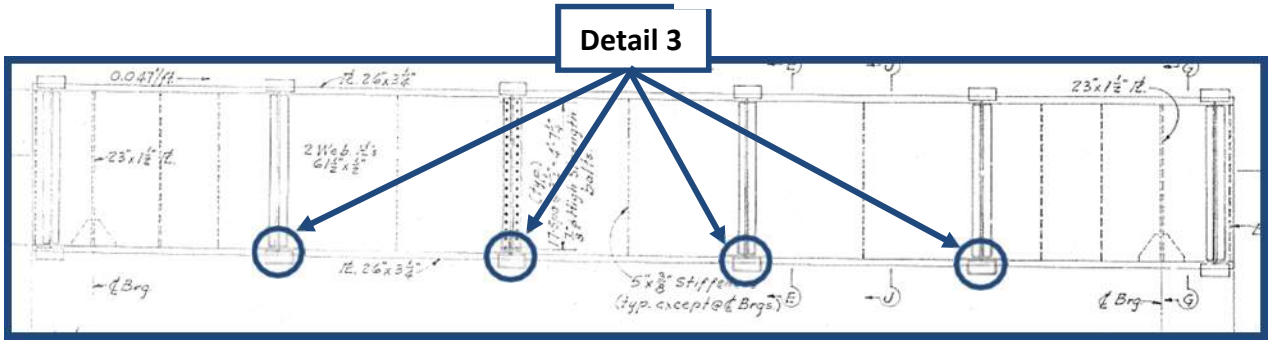


Figure 6: Elevation of Pier Cap 2

PIER CAP 3

Pier Cap 3 is in GOOD condition [7] (Photo 19) with isolated areas of heavy pitting and section loss. At the time of inspection cap was dry.

Pier Cap Interior

The interior of the cap is in GOOD [7] condition. Painted over laminating corrosion at both ends of the pier cap on the bottom flange adjacent the access hatches are beginning to reactivate (Photo 20). The fillet welds between the Girder A diaphragm and the bottom flange tie plate and south web intersect the fillet weld of the tie plate and web. Fillet welds intersecting under the tie plate for the girders, each girder web and the diaphragms have been drilled, coped, in the lower corners, and painted (Photo 21).

Photo 19: General Elevation Pier Cap 3

Photo 20: Active Rust Along Bottom Flange Between East Access Hatch and East Bearing Diaphragm

Photo 21: Corners of Girder Diaphragms Coped and Painted

Pier Cap Exterior

The exterior of the pier cap is in Very Good [8] Condition. The east access hatch cover is missing both middle bolts, bolt holes have been caulked over to seal the hatch. The West hatch door gasket seal is missing.

During previous rehabilitation, the web plates were retrofit with stress relief drilled holes connected by vertical saw cuts adjacent to the welded connections of the girder bottom flange tie plates (Photo 22).

The top flange exhibits painted over pitting with no corrosion. The welded connection for the drainpipe support bracket on the north web was replaced with a bolted connection. The welded lateral bracing connections were removed from the pier cap web plates and replaced with bolted connections.

The 2" L tack weld on the north web below Girder B was ground off, after the 2017 inspection it was painted. Tack welds are typical along the bolted connection from the Girder Web to the Pier Cap (Photo 24).

The exterior paint is in Very Good Condition [8]. The anchor bolts are missing all nuts. The pot bearings have light rust spots and corrosion starting along the lower edge of the masonry plate but appear to function properly (Photo 25).

Photo 23: West Hatch, Left and Right top bolts have been sealed over

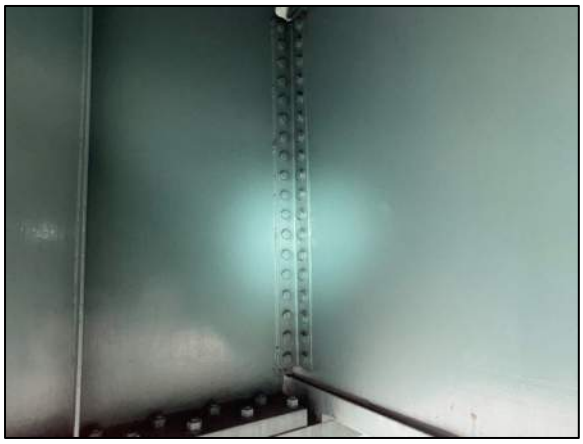


Photo 24: Typical Tack Welds Along Bolted Connection Between Girder C and Pier Cap Webs

Photo 22: Typical Dog Bone Retrofit

Photo 25: Typical, West Column Pot Bearing

Fatigue Prone Details

Fatigue Prone Detail 1
Fillet welds between diaphragms or stiffeners and web plates.
Category: C'
Location: All girder diaphragms and web stiffeners.

Fatigue Prone Detail 2
Full Penetration groove weld of flange splice.
Category: B
Location: Two bottom flange splices.

Fatigue Prone Detail 4
Tack welds, greater than or equal to 2" and less than or equal to 4", on the flange plates.
Category: D
Location: One tack weld on the exterior of the north web plate below Girder B.

Fatigue Prone Detail 8
Intersection of fillet welds.
Category: E
Location:

- Fillet welds of the web plates and the Girder A and C bottom flange tie plates, intersecting the fillet welds between the girder diaphragms and the tie plates and web plates.

Fatigue Prone Detail 9
Drilled hole stress relief retrofit in web plates.
Category: B
Location: Both web plates on each side of all interior girder connections.

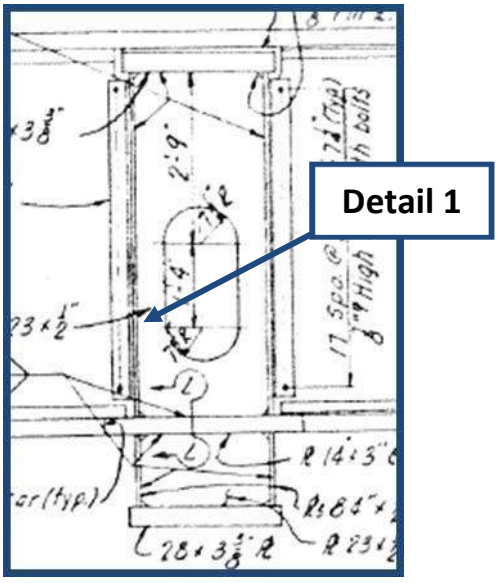


Figure 7: Section of Pier Cap 3

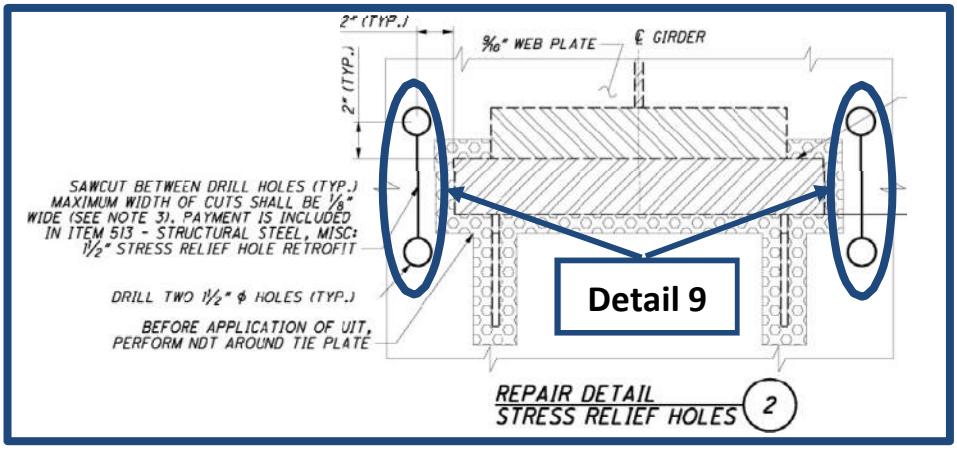


Figure 8: Web Plate Retrofit on Pier Cap 3

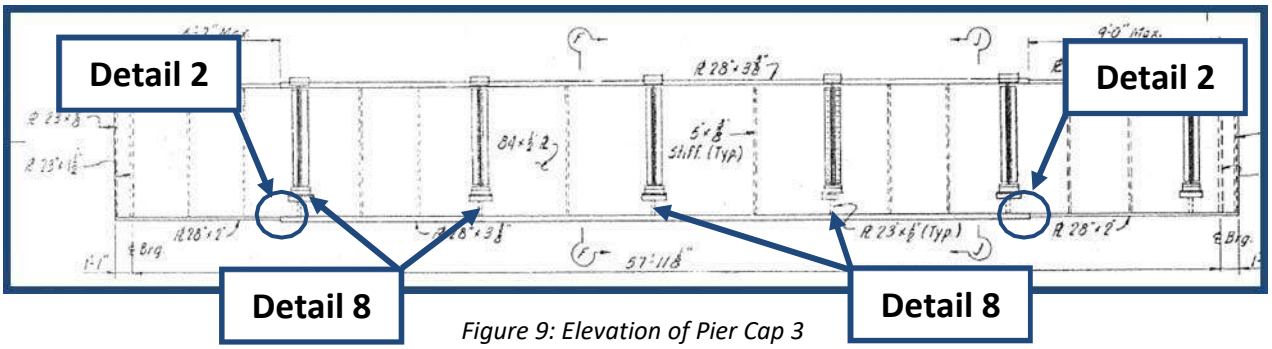


Figure 9: Elevation of Pier Cap 3

ROUTINE INSPECTION FINDINGS

Deck (6, Satisfactory Condition)

The deck is in satisfactory condition. The top of deck was inspected from the deck corners and from a manlift adjacent to the east deck edge in span 4 during the 2021 routine inspection. Many of the ratings for the components were carried over from the last routine inspection since our team had limited top of deck access. A new superplasticized dense concrete overlay was applied during a 2017 rehab. See rehab plans in Appendix B for details.

Floor (Fair Condition)

The soffit is in fair condition. There is minor paint over-spray along the concrete haunches from the painting of the top flanges of the girders. Random exposed reinforcement chairs exist throughout. Some form boards remain near Girder F at the north face of Pier 3.

The soffit has longitudinal, transverse and map cracking. Cracks are typically hairline in width, and exhibit efflorescence (Photos 26). Minor efflorescence was observed in Span 3, between Girders C and D, and moderate efflorescence north of Pier 4. Previously noted water infiltration at crack locations was not observed although conditions were dry at the time of inspection. The worst case of efflorescence was noted in Span 5 (Photo 27). Honeycombing was in isolated areas. Isolated areas of spalling were observed, the worst case of spalls along the east side of Girder E at Pier 4, 3’ L x full haunch width with 1’ of delamination (Photo 28).

Edge of Floor/Slab (Fair Condition) The edge of the floor is in fair condition with vertical cracks noted along the edge

Photo 26: Underside of Deck in Bay 3, Span 2, Near Pier 2, Cracks with Efflorescence

Photo 27: Efflorescence and Cracking in Span 5

Photo 28: 3’ L X Full Haunch Spall With 1’ Delamination

Wearing Surface (Good Condition) The wearing surface was inspected from the deck corners and from a manlift adjacent to the east deck edge in span 4 during the 2021 routine inspection. The wearing surface is in GOOD [7] condition after the SDC overlay in 2017. Widespread map cracking is evident in some locations. See rehab plans in Appendix B for details.

Railing (Fair Condition)
The railing was inspected from the deck corners and from a manlift adjacent to the east deck edge in span 4 during the 2021 routine inspection (Photo 29). The concrete parapet has been sealed and minor staining has occurred throughout due to a porous finish. The parapet also exhibits minor cracking at most joints.

Drainage (Fair Condition)
The drainage is in fair condition. Downspouts are mounted to the east columns of the piers. The previously welded brackets to the pier cap webs have been removed as part of past rehabilitation efforts. There are painted over corrosion holes through the bottom edge of the downspouts at the bell connection for the drainpipes but appear to still function as intended, though the corrosion is active (Photo 30).

Expansion Joints (Good Condition) The expansion joints are in good condition. The deck joint over Pier 4 appears to have been leaking along the full-length due to the staining along the concrete pier cap underneath (Photo 31). However, this seal was replaced during a rehab in 2017. The joint seal over Abutment 1 was replaced, and. the joint seal over Abutment 2 is in good condition. (Photos 32 and 33).

Superstructure (6, Satisfactory Condition)

Alignment of Members (Good Condition)
The alignment of the superstructure is in good condition. No significant deficiencies were noted during the 2021 inspection.

Photo 29: Typical View of Rail Cracking

Photo 30: Typical Condition of Downspout to Bell Connection at Pier 5

Photo 31: Full Length Staining of Pier 4 Underneath Deck Joint

Beams/Girders (Fair Condition)

The girders are in fair condition. Areas of previous section loss were noted on the fascia girders and on the girders beneath the deck joints. All these locations have been cleaned and painted (Photos 34 - 35). There is no change in the 6" H x 1.5" W corrosion hole through the end of the Girder C web adjacent to the web stiffener over the bearing at Pier 4 for Span 4. There is also no change in the 1.25" diameter corrosion hole through the web of Girder F over the bearing at Pier 4 for Span 4, adjacent to the bearing web stiffener.

Tack welds are present in between the bottom flange and the bottom flange splice plate for Girder A in Span 2. There is a poor-quality tack weld at the bottom of the west connection angle for Girder B at the north side of Pier 2 cap in Span 3. There are steel angles welded to the webs of Girder B and Girder C in Span 4 near Pier 3. There are steel angles welded to the webs of Girder B and Girder C in Span 4 near Pier 3.

Diaphragms or Cross Frames (Good Condition)

The cross-frames are in good condition. The cross frames are welded and bolted to the vertical stiffeners of the girders. The lower lateral bracing is bolted to the webs of the pier caps. Span 4, east web of Girder F near Pier 4 has a painted over 3" diameter corrosion hole in the bottom of the cross-frame bracing angle. Painted over corrosion holes and section loss are typical in the lower corners of the cross frames over Pier 4.

Pack rust is reactivating between the welded connections for the components of the cross frame between Girder B and Girder C at Pier 4. The upper bolted connection at the West side of Girder C, just north of Pier 5 is broken off. The upper bolted connection at the West side of Girder C, just South of Pier 5 is not completely tight.

Bearing Devices (Fair Condition)

The bearings are in fair condition. Debris build up is typical at the bearings at Abutment 1 (Photo

Photo 32: Typical condition of underside of Abutment 2 Joint

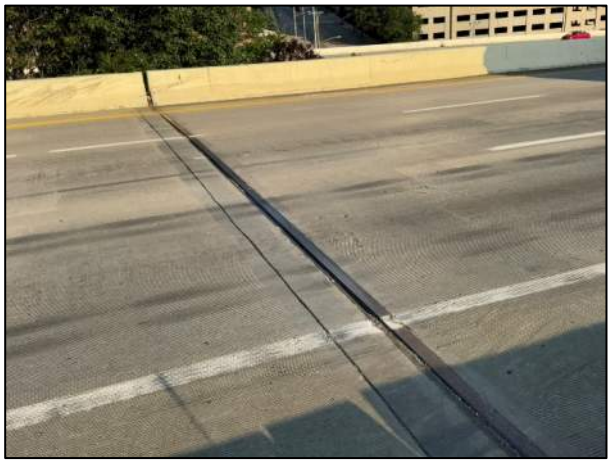


Photo 33: Abutment 2 Expansion Joint

Photo 34: Typical Condition; East Face Girder A, South of Pier 4

36). The pot bearings for Pier Caps 1, 2, and 3 are in good condition and appear to be functioning as intended. Minor peeling paint and freckling corrosion exists along the vertical faces of the masonry plate for the Pier Cap 3 pot bearings (Photo 37). Anchor bolts exist through the masonry plates of all the pot bearings, but they are not threaded to receive anchor bolt nuts. Peeling paint and surface corrosion is present on the sliding plate bearings for the girders at Pier 4 for Spans 4 and 5 (Photo 38). Minor peeling paint with surface corrosion exists along the bottom edge of the masonry plate for the fixed bearings at Pier 5. Anchor bolts pass through the masonry plates of the fixed bearings, but they are not threaded to receive anchor bolt nuts. The sliding plate bearings for Pier 6 are in good condition with no significant deficiencies. Painted over pitting and localized areas of peeling paint with surface corrosion on the masonry plates is typical for the sliding plate bearings at Abutment 2. The east anchor bolt is missing for Girder F at Abutment 2.

The movement of all expansion bearings at both abutments appear consistent with design expectations except for Abutment 2 Girder F bearing. The sliding plate on Girder F bearing is out of alignment in contraction compared to the other bearings at Abutment 2. This has been noted on previous inspection cycles and should be monitored during future inspections for any increase in severity. The expansion angles observed was approximately 4° at 88°F.

<u>Protective Coating System (Good Condition)</u>
The protective coating system is in good condition. Isolated areas of reactivating corrosion exist at isolated connections.

<u>Fatigue Prone Details (Good Condition)</u>
The fatigue prone details are in Good condition. This is an increase from the 2017 Inspection, as the cracks in the interior of Pier Cap 3 have been retrofitted and the corners coped. For a detailed list of fatigue prone details see Pier Caps 1, 2, and 3.

Photo 35: General view of Superstructure

Photo 36: Typical Debris Build Up at Abutment 1; Girder A

Photo 37: Minor Pitting and Corrosion on West Column Bearing for Pier 3

Substructure (6, Satisfactory Condition)

Abutment Walls (Fair Condition)
The abutment walls are in fair condition. Debris and staining still present on the abutment walls due to joint tears and leakage.

Abutment 1:
The east end of the bearing seat has a deck drainpipe that is embedded within the concrete stem. Up to 100% section loss along the end of the pipe was noted in past reports and during this inspection. It appears that the drainpipe is no longer blocked inside the stem though staining of the abutment seat and vertical face of the stem were noted (Photo 39). In Bay 4, 1' below the bearing seat, there is a 3' L x 1/32" W horizontal crack with a 6" H x 3" L delamination. In Bay 5, there is a 4' L x up to 1/4" W crack and delamination along the stem and bearing seat edge with corrosion staining (Photo 40). Graffiti was located along the full length of the stem below bay 1 and 2.

Abutment 2:
Abutment 2 has staining on the stem just east of Girder B. Poor consolidation is typical along the back of the abutment seat (Photo 41).

Pier Caps (Good Condition)
The pier caps are in good condition. The web plates have been retrofit with stress relief drilled holes connected by vertical saw-cuts adjacent to

Photo 38: Peeling Paint an Active Corrosion on Sliding Bearings at Pier 4

Photo 39: Drainpipe on East End of Abutment 1; Staining on Vertical Face of Stem

Photo 40: Abutment 1 Stem in Bay 5; 4' L X ¼" W Crack and Delamination with Rust Staining

Photo 41: Typical Poor Consolidation Along Back of Seat at Abutment 2

the welded connections of the girder bottom flange tie plates at all girders.

Pier Caps 1, 2, 3 (Steel)
See the NSTM Pier Cap Inspection Findings for Pier 1-3.

Pier Caps 4, 5, and 6 (Concrete)
The concrete pier caps are in good condition with no significant deficiencies. The sealant on Pier 3 columns is slightly porous. Evidence of joint leakage with water and debris staining exists on Pier 4 (Photo 42). There was no active leakage through the deck joint at the time of the inspection. Minor staining was evident on the east face of Pier 5 and 6 (Photo 43). Staining was also observed on the west face of Pier 6.

Pier Columns (Good Condition)
The pier columns are in good condition with no significant deficiencies noted. The bridge identification placard is located on the west face of the east column of Pier 3 (Photo 44).

Backwalls (Fair Condition)
The backwalls are in fair condition. There is poor consolidation with up to 1" D voids throughout the Abutment 1 backwall (Photo 45). The deck joint armor of Abutment 2 is missing a section of concrete 1' H x 1' W at the top east corner of the back wall with a timber plank remaining in place. Hairline vertical cracks are typical throughout all bays in Abutment 2 (Photo 46). Between Girder E and F at Abutment 2, there is one horizontal and one diagonal crack. Staining from the leaking deck joint is present on the Abutment 2 backwall at the vertical control joint between Girders C and D (Photo 47).

Photo 42: Moderate Staining Along Pier 4

Photo 43: Minor Staining on Pier 6

Photo 44: Bridge Placard on Pier 3

Photo 45: Poor Consolidation and up to 1” D Voids in Abutment 1 Backwall

Photo 46: Typical View of Cracking in Backwall at Abutment 2

Photo 47: Rust Staining on Abutment 2 Backwall between Girder C and D

Wingwalls (Good Condition)

The wingwalls are in good condition. There is vegetation growth along the southeast wingwall for Abutment 1 and both wingwalls for Abutment 2. Full height vertical cracking is typical in the wingwall cold joints that are designed to crack. There is a 3' H x 2' W area of missing sealant exposing graffiti below on the northwest wingwall for Abutment 2 (Photo 48). The northwest wingwall can be considered a continuation of the backwall.

There is a rough and jagged construction joint between Abutment 2 and the cheek wall on the northeast wingwall (Photo 49).

Photo 48: Missing Sealant and Graffiti on Abutment 2 North West Wingwall

Slope Protection (Fair Condition)

The concrete slope protection is in fair condition. Light vegetation growth is present near Abutment 1 between the joints along the fascia of the bridge. There is an accumulation of debris and tree trimmings south of Pier 1 along the entrance ramp (Photo 50). There is cracks and broken slope protection at Abutment 2 near Pier 5 column (Photo 51). Vegetation growth is present along the full height of the joints on the west side of the slope protection near Abutment 2. The corrugated metal drainpipes are corroded with section loss (Photo 52).

There is 1" of slope wall settlement along the Abutment 2 stem (Photo 53).

Photo 49: Abutment 2 NE Wingwall; Rough Transition to Cheek Wall

Photo 50: Debris Along Slope Protection Next to Pier 1

Photo 51: Cracked and Broken Slope Protection at Bottom next to Pier Column

Photo 52: Typical Section Loss in Drainpipes in Slope Protection at Abutment 2.

Photo 53: Up to 1" Settlement Along Full Length of Abutment Stem

Approaches Summary (6, Satisfactory Condition)

Approach Wearing Surface (Good Condition)
The approach wearing surface was inspected from the deck corners during the 2021 routine inspection. Previously noted rutting in the wheel lines was noted in the travel lanes and a vertical difference up to 1 1/2" at the interface of the approach wearing surface and both approach slabs have been corrected. Map cracking is evident in the new wearing surface.

Approach Slabs (Fair Condition)
The approach slabs were inspected from the deck corners during the 2021 routine inspection. No significant deficiencies were noted.

Embankment (Good Condition)
The embankments are in good condition. Heavy vegetation growth was noted at each corner of the bridge with no significant deficiencies noted.

Guardrail (Good Condition)
The approach slabs were inspected from the deck corners during the 2021 routine inspection. Settlement was previously noted in the concrete parapet along the east side of the north approach slab.

General Appraisal and Operations Status (6, Satisfactory Condition; A, Open with No Restriction)

Utilities (Good Condition)
The utilities for the lighting are in good condition with no significant deficiencies. No significant deficiencies were noted.

Conclusions and Recommendations

Based on the results of this inspection, the NSTM pier caps and associated fatigue prone details of Bridge No. HAM-71-0248L are in Good condition [7] overall.

The recommendations for maintenance of the pier caps are presented in the following four categories:

Priority Repairs (Within 1 Year Period)
Work which should be performed as soon as possible to address deficiencies which affect the capacity of the structure or public safety

Rehabilitation/Evaluation (Within 5 Year Period)
Recommendations for large-scale deficiencies which are extensive in nature and require engineering analysis.

Maintenance (Within 2-4 Month Period)
Recommendations that are minor in nature and can be performed by maintenance personnel or through small maintenance repair contracts.

Monitoring (As Recommended)
Regular field observations of deficiencies which are not currently in need of repair but will require corrective action if deterioration continues.

Pier Cap 1 – Recommendations:

Priority Repairs:	None
Rehabilitation/Evaluation:	Consider retrofits of Category E details of intersecting welds. Simple drilled and ground retrofit at intersection recommended.
Maintenance:	None
Monitoring:	Continue to monitor fatigue prone details at a 24-month cycle.

Pier Cap 2 – Recommendations:

Priority Repairs:	None
Rehabilitation/Evaluation:	Consider retrofits of Category E details of intersecting welds. Simple drilled and ground retrofit at intersection recommended.
Maintenance:	Replace the detached anchor nut at the west access hatch and ensure that the hatch cover plate can be removed.
Monitoring:	Continue to monitor fatigue prone details at a 24-month cycle.

Pier Cap 3 – Recommendations:

Priority Repairs:	None
Rehabilitation/Evaluation:	Consider retrofits of Category E details of intersecting welds. Simple drilled and ground retrofit at intersection recommended.
Maintenance:	Replace the missing cover plate anchor bolts and rubber gasket seal on the west access hatch. Clean and paint the areas of active laminating corrosion on the bottom flange inside the ends of the Pier Cap.
Monitoring:	Continue to monitor fatigue prone details at a 24-month cycle.

Routine Inspection – Recommendations:

Priority Repairs:	None
Rehabilitation/Evaluation:	Continue to clean out drainpipe that penetrates the Abutment 1 stem and repair downspout. Repair the settlement of the slope protection adjacent to Pier 1, Column 2.
Maintenance:	Replace the missing cover plate anchor bolts and rubber gasket seal on the west access hatch. Clean up debris, and trees near Pier 1 on Slope Protection. Replace broken bolt in cross frame brace at Girder C and Pier 5.
Monitoring:	Continue to monitor fatigue prone details at a 24-month cycle. Monitor settlement of slope protection at Abutment 2.

APPENDIX A

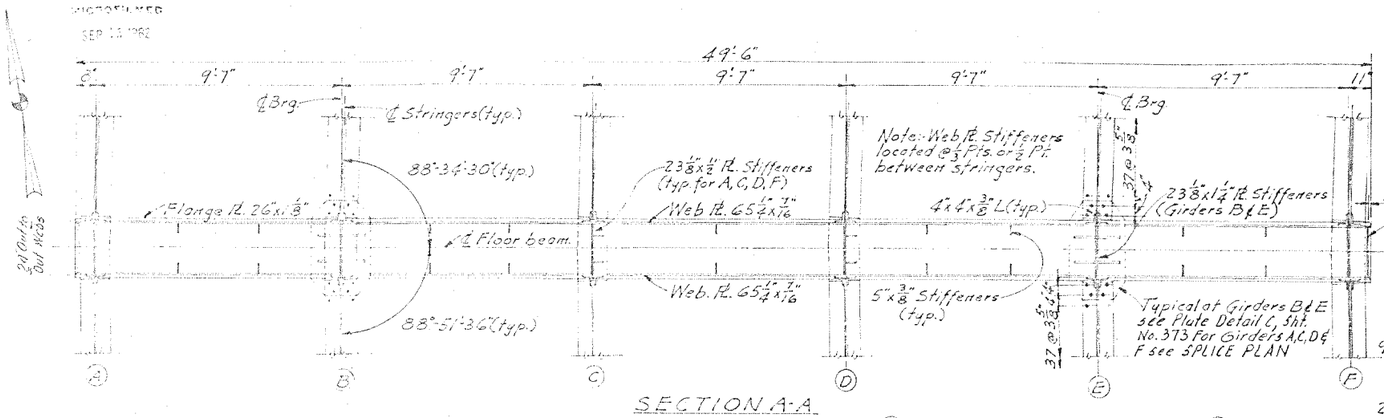
EXISTING PLANS

MICROFILMED
SEP 13 1982

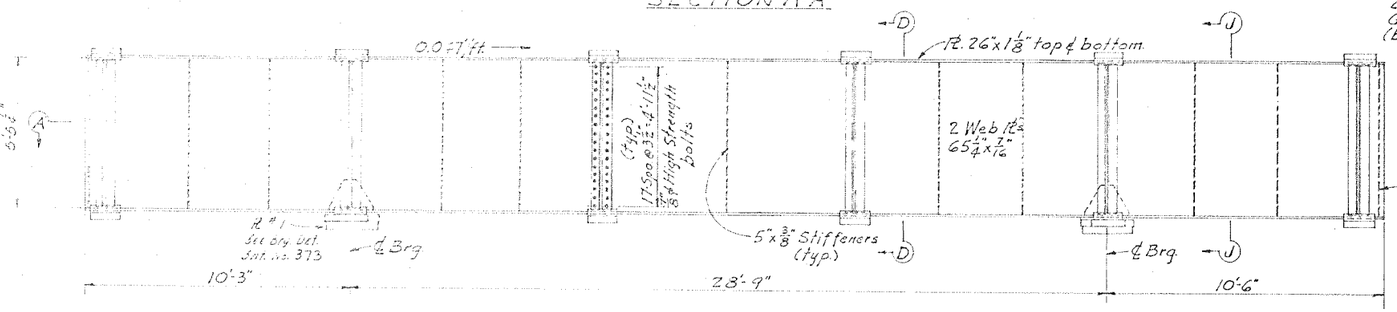
DIST.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

370
460

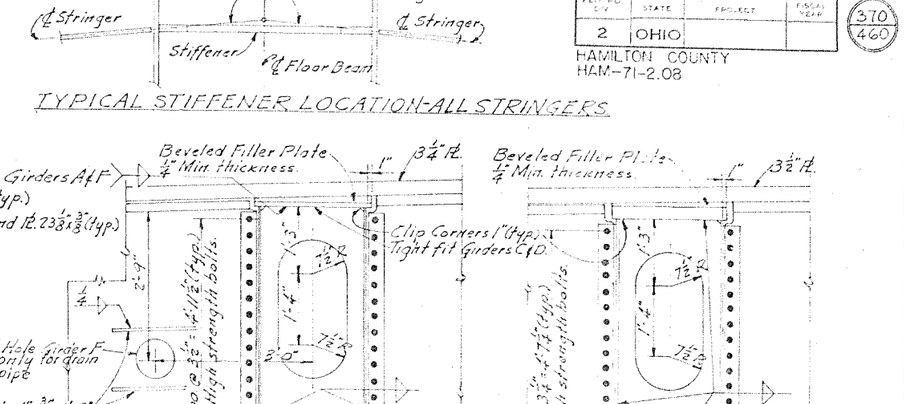
HAMILTON COUNTY
HAM-71-2.08



SECTION A-A



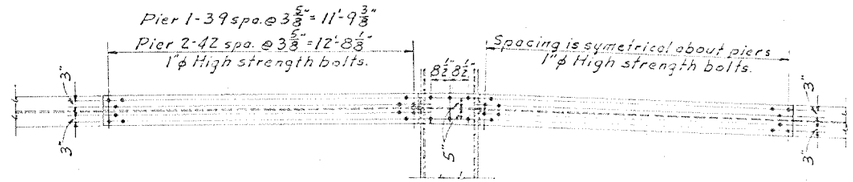
ELEVATION PIER NO. 1



TYPICAL STIFFENER LOCATION-ALL STRINGERS

SECTION D-D (@ Girders A, C, D, & F)

SECTION E-E

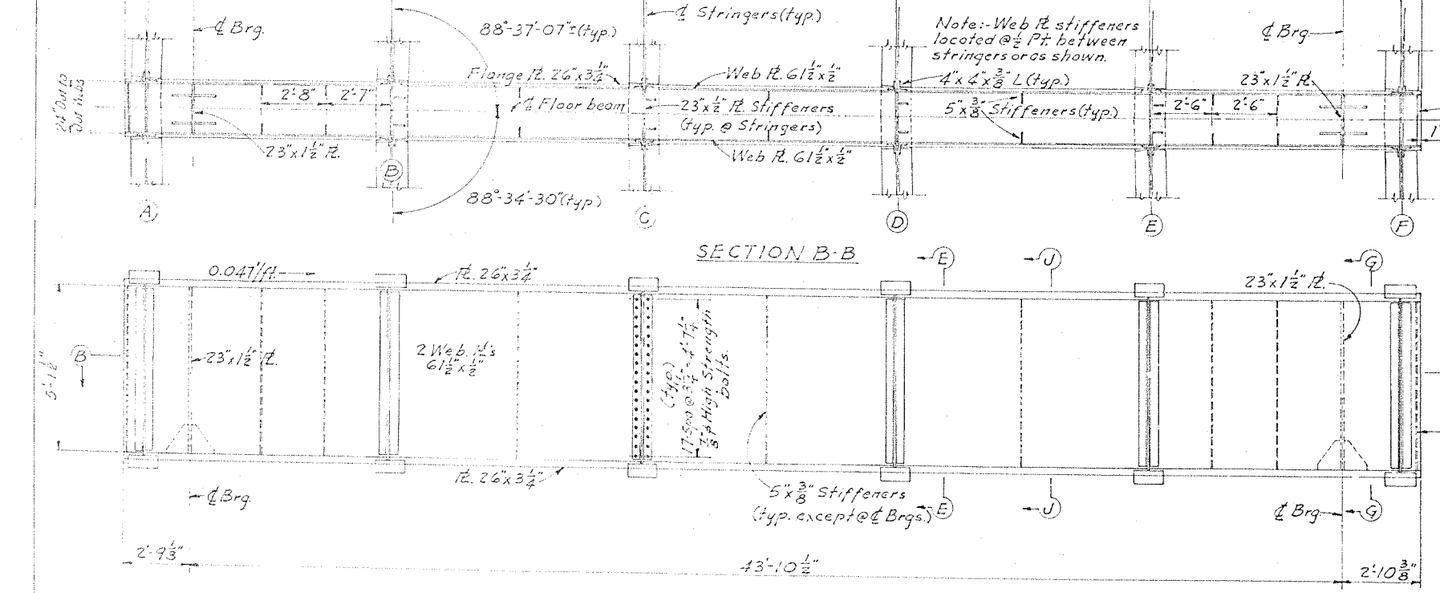


SPLICE PLAN

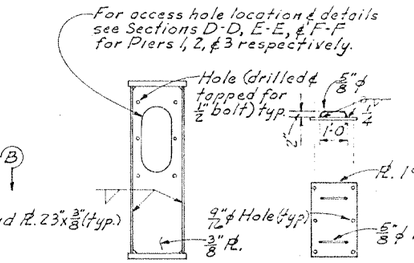
Bottom splice plate at Girders B & E, Pier #1 modified from this detail.
Refer to Sections A A & D D for detail.

SECTION B-B

ELEVATION PIER NO. 2

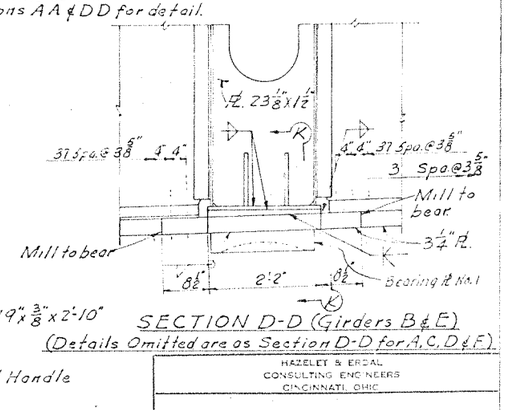


For access hole location & details see Sections D-D, E-E, & F-F for Piers 1, 2, & 3 respectively.



END VIEW (For each end of floor beams.)

COVER PLATE (For access hole)



SECTION D-D (Girders B & E)
(Details Omitted are as Section D-D for A, C, D & F)

For Sections G-G, H-H, J-J, & K-K See Sheet No. 371
For Fillet Weld Sizes See "Table of Fillet Weld Sizes," Sheet No. 427

HAZELET & ERDAL
CONSULTING ENGINEERS
CINCINNATI, OHIO

STRUCTURAL STEEL DETAILS
UNIT NO. 1
BRIDGE No. HAM-71-0226
H&E BRIDGE No. 17

DESIGNED	DRAWN	TRACED	CHECKED	REVISED DATE	REL. NO.
CRK	RBS	LMH	ELW	3/80	

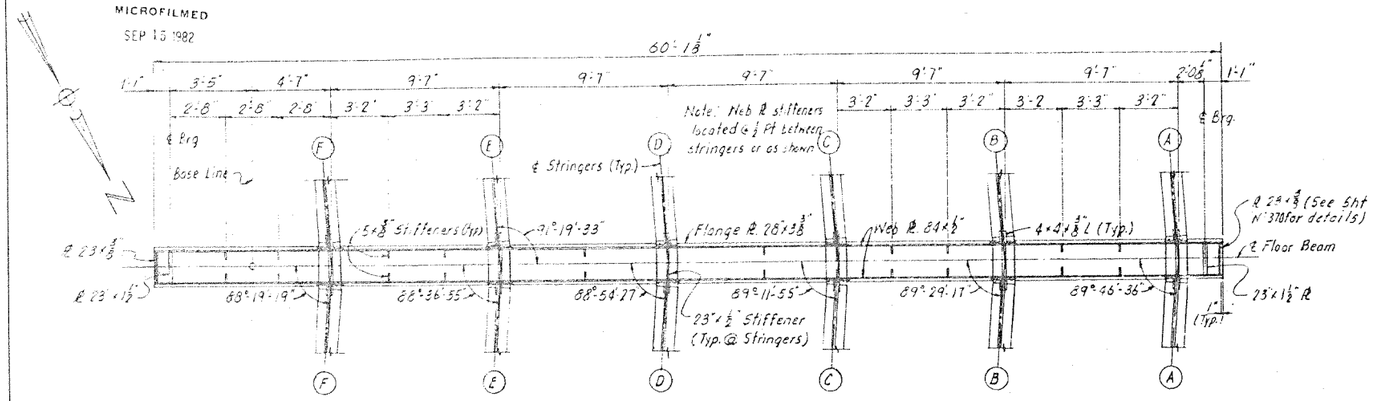
SFN 3106780

MICROFILMED
SEP 15 1982

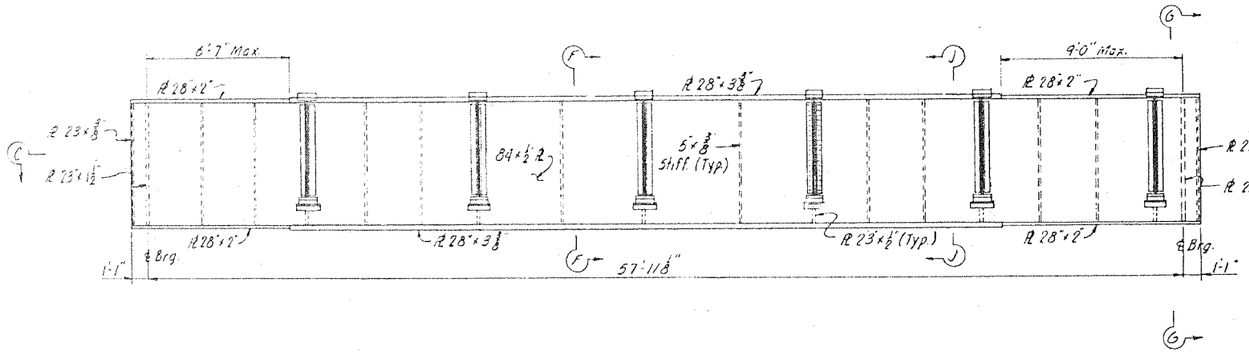
FED. RD. DIV.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

371
460

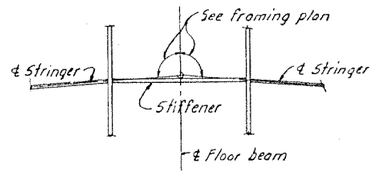
HAMILTON COUNTY
HAM-71-2.08



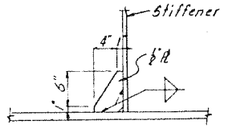
SECTION C-C - PIER N° 3



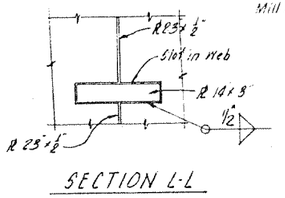
ELEVATION



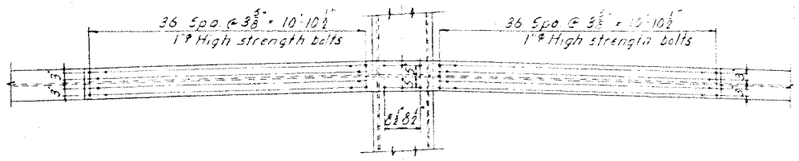
TYPICAL STIFFENER LOCATION



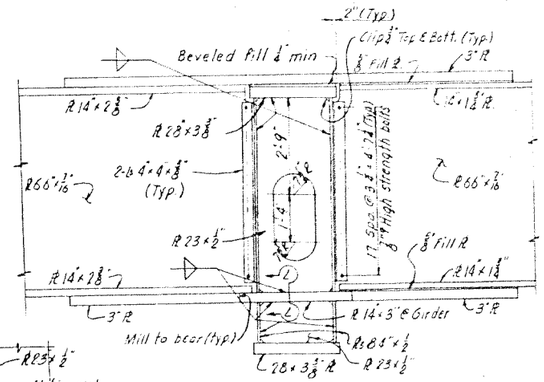
SECTION H-H
(Typ. Top & Bott.)



SECTION L-L

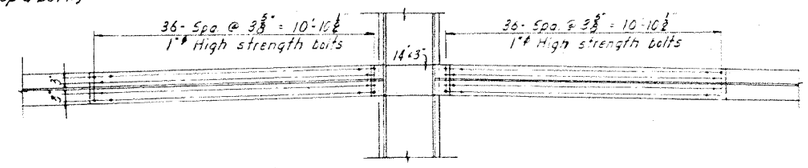


TOP SPLICE PLAN - PIER-3



SECTION F-F

Note: Milled ends of compression splice on bottom flanges of girders shall be brought to full bearing against milled ends of pier girder brackets before bolts are tightened



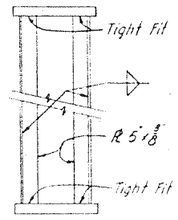
BOTTOM SPLICE PLAN - PIER 3

For end view of floor beam see Sht. N° 370
For fillet weld sizes see TABLE OF FILLET WELD SIZE sht. N° 427

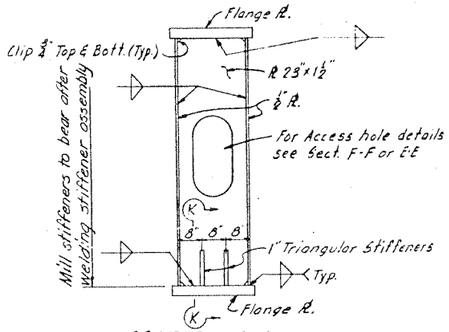
Notes:
Convexity includes variations due to vertical curvature, superelevation and horizontal curvature.
Girder web plates shall be cut to a parabolic crown.
Pier N°1 has no meaningfull deflections.

DEFLECTION and CAMBER for UNIT N° 1

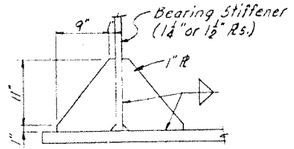
Beam	Span 1			Span 2			Span 3			Span 4			Pier 2		Pier 3		
	¼	½	¾	¼	½	¾	¼	½	¾	¼	½	¾	B	C	D	C	D	E
Deflection due to weight of steel	½	11/16	½	15/16	1 3/16	15/16	15/16	1 3/8	15/16	15/16	7/16	5/16	-	1/16	1/16	1/16	1/8	1/16
Deflection due to remaining dead load	11/16	7/8	3/8	3/8	3/4	3/8	1/2	13/16	9/16	1/8	7/16	1/8	1/8	1/4	3/16	5/16	3/8	5/16
Convexity required for vertical curve	7/8	1 1/16	7/8	1/4	1/8	1/4	9/16	-7/16	-3/8	-1/4	-1/16	-1/16	-1/16	—	—	—	—	—
Sum of deflections & convexity	2 1/16	2 3/8	1 1/8	2 7/16	3 3/16	1 7/8	1 1/16	1 15/16	1 1/4	3/8	13/16	5/16	1/8	5/16	1/4	3/8	1/2	3/16
Required Camber	2 3/4			3 1/16			2			7/8			–			–		



SECTION J-J
(Typ. all intermediate stiffeners)



SECTION G-G
(Showing Bearing Stiffener)



SECTION K-K

HAZELET & ERDAL
CONSULTING ENGINEERS
CINCINNATI, OHIO

STRUCTURAL STEEL DETAILS
UNIT NO. 1
BRIDGE No. HAM-71-0226

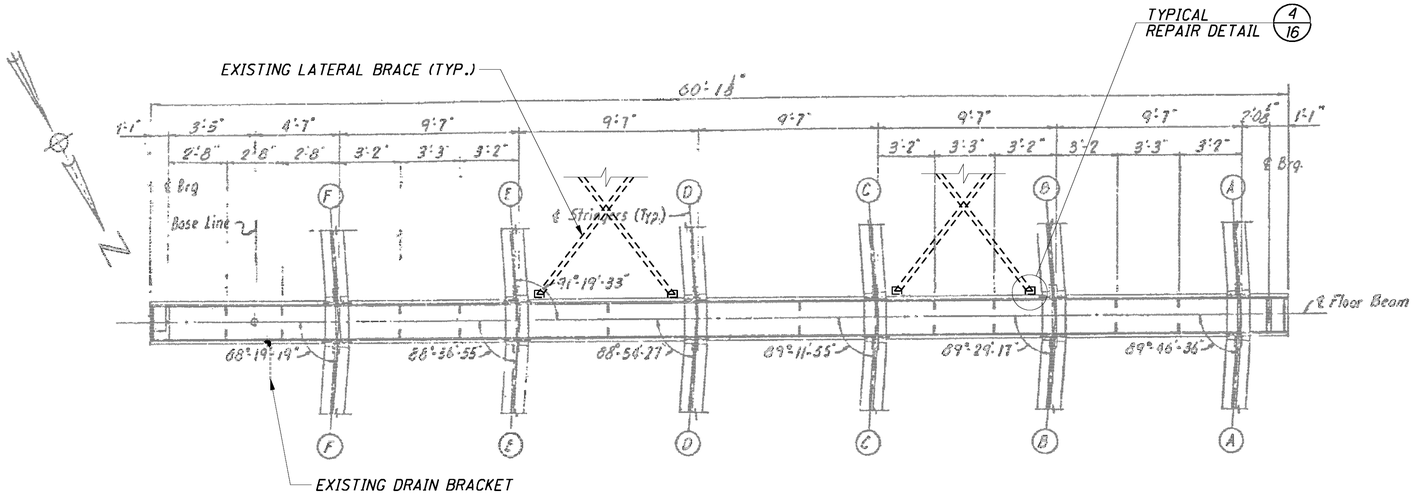
H&E BRIDGE No. 17

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
DPK	RLW/F		ELW	3/82	

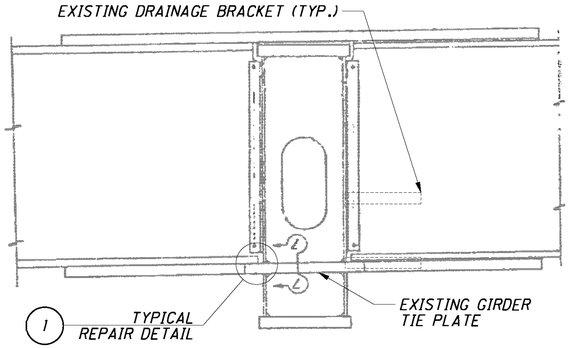
SFN 3106780

APPENDIX B

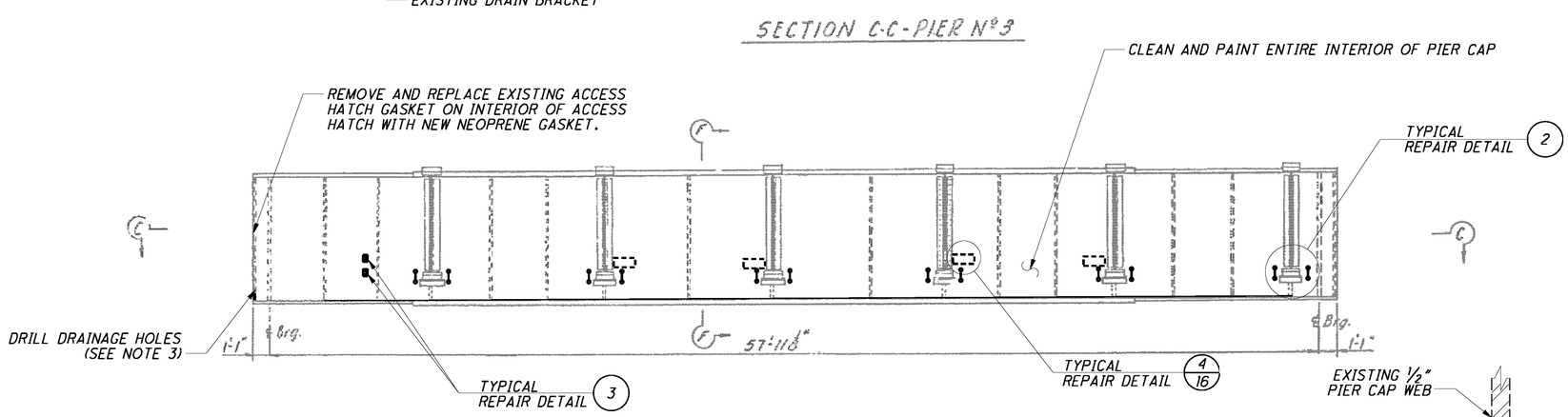
REHABILITATION PLANS

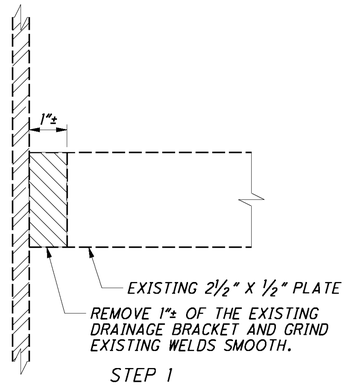


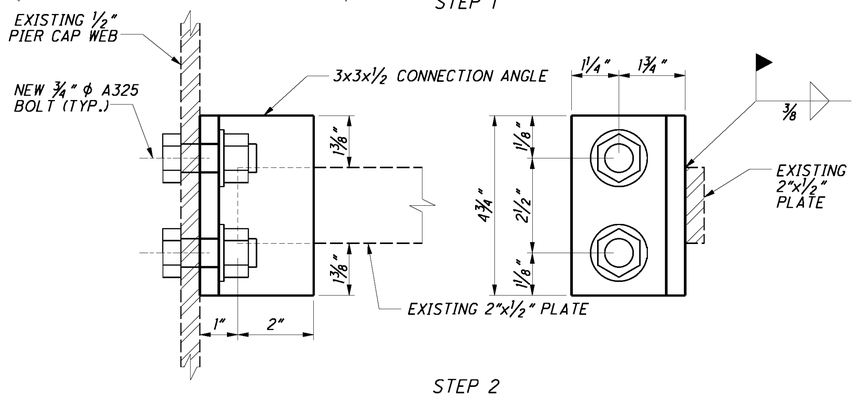
SECTION C-C - PIER N°3



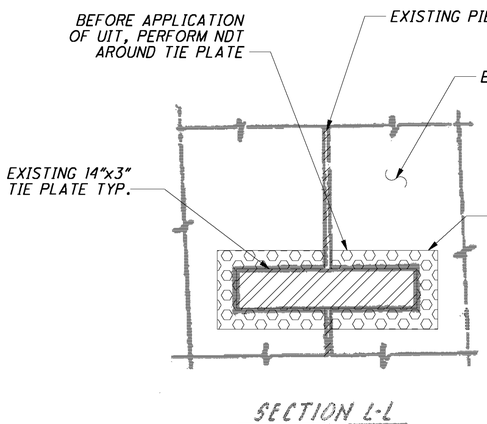
SECTION F-F







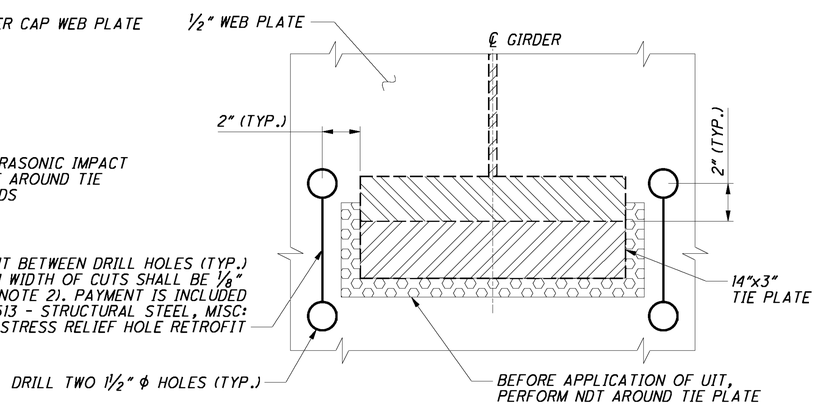
REPAIR DETAIL
DRAIN BRACKET RETROFIT 3



SECTION L-L

REPAIR DETAIL
INTERIOR TIE PLATE TREATMENT 1

ELEVATION



REPAIR DETAIL
STRESS RELIEF HOLES 2

(FOR GIRDERS A THROUGH F AT NORTH AND SOUTH WEB PLATES)

- LIMITS OF ½" WIDE ULTRASONIC IMPACT TREATMENT (UIT)

NOTES:

1. PIER ELEVATION AND SECTIONS C-C, F-F, AND L-L ARE TAKEN FROM THE ORIGINAL PLANS.
2. CARE SHALL BE TAKEN NOT TO OVERCUT SAWCUT BEYOND DRILLED HOLES. FLAME CUTTING IS NOT PERMITTED.
3. DRILL TWO ½" ϕ HOLES THROUGH THE EAST END PLATE. THE BOTTOM OF THE HOLES SHALL BE FLUSH WITH THE PIER CAP BOTTOM FLANGE. HOLES SHALL NOT PENETRATE OR GOUGE PIER CAP WEB PLATES OR FLANGE PLATE.

DESIGN AGENCY: TranSystems, 55 PUBLIC SQUARE, SUITE 1900, CLEVELAND, OHIO 44113

DESIGNED	DRAWN	REVIEWED	DATE
NBR	NBR	WRW	12-04-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BKC		3106780	

PIER 3 CAP RETROFIT DETAILS

BRIDGE NO. HAM-71-0248L

SOUTHBOUND I-71 OVER US 42 AND EDEN PARK DRIVE

HAM-BH-VAR

PID No. 25374

32/38

4/17/2008
P:\2426.03-ODOT 8 Pier Cap\2007 PID25374 DRAWINGS\(#5) HAM-71-0248L\HAM-71-0248L P3.dgn

RFI – 005 --- Box Girder Pier Cap Issues – HAM-71-0248R, etc.

To: ODOT District 8

From: HAM-71-1.97 Design Team

RE: Notes concerning Field Visit on 7/27/17

Date: July 28, 2017

On Thursday, July 27th members of the consultant design staff met with District and Contractor personnel on the project site to discuss clarification of plan details for work being done to steel pier caps on bridges HAM-71-0248R, HAM-71-0248L, and HAM-71-0264R. Notes from the meeting follow. This memo, once reviewed and confirmed by all parties, will help guide the remaining work.

HAM-71-0248R

PIER CAPS 9, 10, and 12:

1. ITEM 513 – MISC. 2" STRESS RELIEF HOLE RETROFITS – some locations cannot be completed using a mag drill due to lack of clearance. Any specified holes in these three caps that cannot be accessed using a mag drill will be completed using a torch with the resulting holes ground smooth. Any specified hole locations that are inaccessible by torch will receive UIT. Any hole locations that are also inaccessible to UIT will be non-performed.
2. All weld material and remnants of knee braces removed in previous rehabilitations will be removed completely as specified in ITEM 513 – STRUCTURAL STEEL MISC: GRINDING PER FOOT, AS PER PLAN. However, the plan note should be revised to include removal of remains of knee braces and welds on the (vertical) web plate. ONLY knee braces removed previously are subject to this item. Any existing, intact knee braces are not included.
3. The Fillet Weld Crack Retrofit specified to repair two cracks in Pier Cap 9 will be non-performed as it was determined that these were not cracks in the weld.

PIER CAP 11:

1. All work on this cap has been completed according to the plans except for UIT.

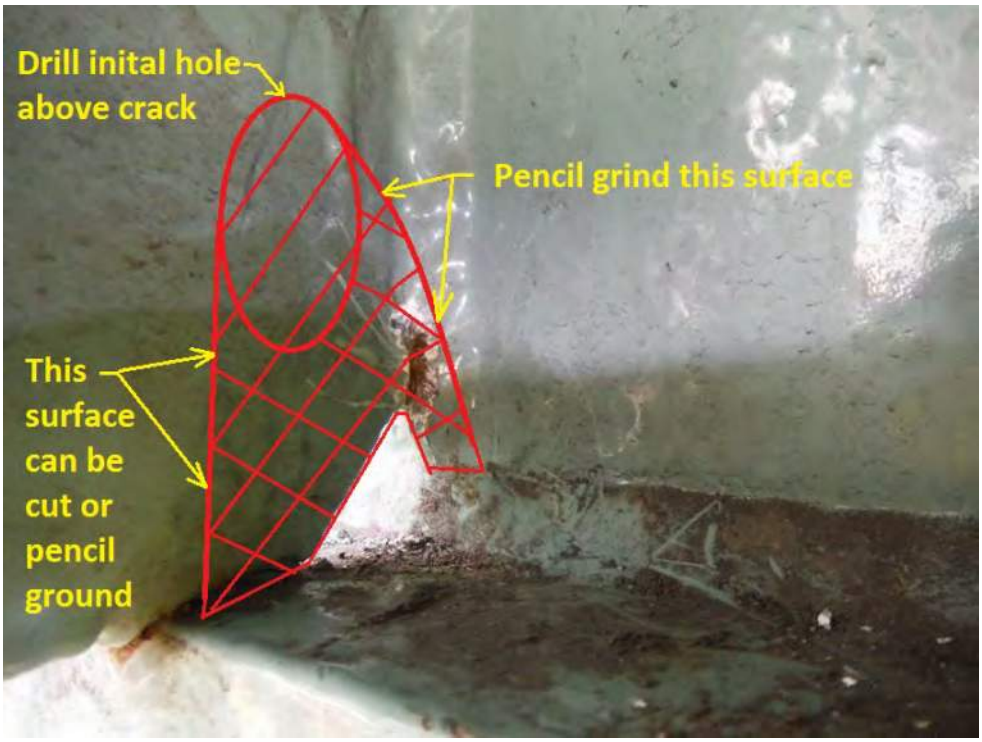
HAM-71-0248L

NO concerns or issues with the work being done on this bridge.

HAM-71-0264R

PIER CAPS 2, 3, AND 4

1. ITEM 513 – MISC. 2” STRESS RELIEF HOLE RETROFITS will be non-performed at all three caps since the plates that would be drilled are discontinuous and only welded on the vertical leg.
2. The location of the cracked fillet weld in Pier Cap 2 is shown correctly on sheet 275. A more desirable method of repair is depicted below:

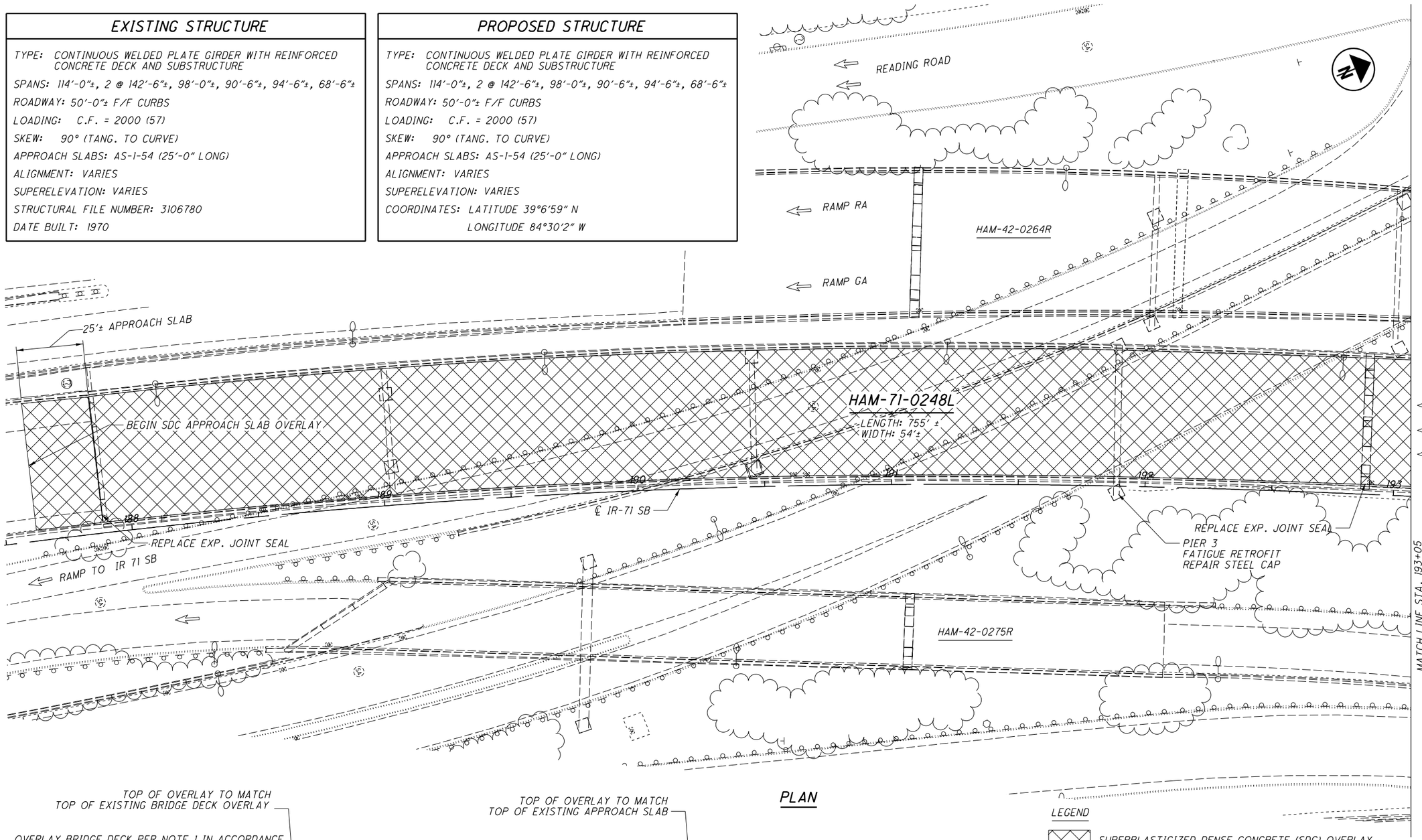


EXISTING STRUCTURE

TYPE: CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 114'-0"±, 2 @ 142'-6"±, 98'-0"±, 90'-6"±, 94'-6"±, 68'-6"±
ROADWAY: 50'-0"± F/F CURBS
LOADING: C.F. = 2000 (57)
SKEW: 90° (TANG. TO CURVE)
APPROACH SLABS: AS-1-54 (25'-0" LONG)
ALIGNMENT: VARIES
SUPERELEVATION: VARIES
STRUCTURAL FILE NUMBER: 3106780
DATE BUILT: 1970

PROPOSED STRUCTURE

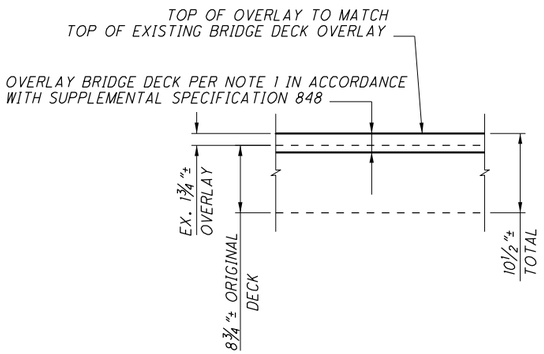
TYPE: CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 114'-0"±, 2 @ 142'-6"±, 98'-0"±, 90'-6"±, 94'-6"±, 68'-6"±
ROADWAY: 50'-0"± F/F CURBS
LOADING: C.F. = 2000 (57)
SKEW: 90° (TANG. TO CURVE)
APPROACH SLABS: AS-1-54 (25'-0" LONG)
ALIGNMENT: VARIES
SUPERELEVATION: VARIES
COORDINATES: LATITUDE 39°6'59" N
LONGITUDE 84°30'2" W



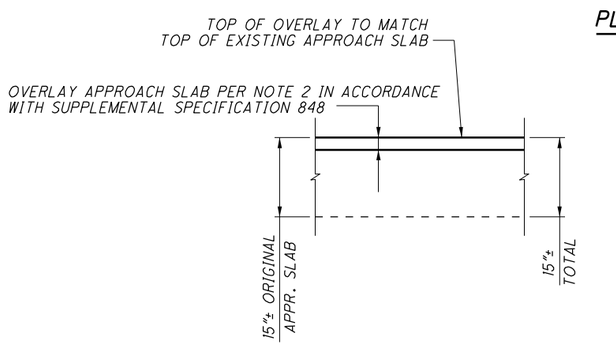
PLAN

LEGEND

SUPERPLASTICIZED DENSE CONCRETE (SDC) OVERLAY



DECK SLAB OVERLAY DETAIL



APPROACH SLAB OVERLAY DETAIL

PROPOSED WORK:

1. REMOVE EXISTING 1¾" LATEX MODIFIED CONCRETE (LMC) WEARING SURFACE AND 1" OF THE ORIGINAL DECK USING HYDRODEMOLITION AND REPLACE WITH 2¾" THICK SUPERPLASTICIZED DENSE CONCRETE (SDC).
2. REMOVE 1¾" OF THE ORIGINAL APPROACH SLAB AND TOP OF BACKWALL USING HYDRODEMOLITION AND REPLACE WITH 1¾" OF SUPERPLASTICIZED DENSE CONCRETE (SDC).
3. REPLACE THE TORN EXPANSION JOINT SEAL AT THE REAR EXPANSION JOINT AND THE INTERMEDIATE EXPANSION JOINT. JOINT SEAL = D.S. BROWN #SE-400 OR APPROVED EQUAL.
4. CLEAN EXISTING DRAINAGE SYSTEM TO THE FIRST MANHOLE, BOTH ON THE STRUCTURE AND BELOW THE GROUND.
5. PRESSURE WASH BEAM SEATS, BACKWALLS, AND STRUCTURAL STEEL WITHIN 10 FEET OF ABUTMENT EXPANSION JOINTS.
6. REPAIR FATIGUE CRACKS IN PIER 3 STEEL PIER CAP.
7. ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

DESIGNED	DRAWN	REVIEWED	DATE
SJA	SJA	JSB	8/31/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
XAC	XXX	3106780	

GENERAL PLAN - 1
HAM-71-0248L
I-71 SB OVER NB US 42 AND EDEN PARK DRIVE

HAM-71-1.97
PID No. 82975

1 / 3

267
292

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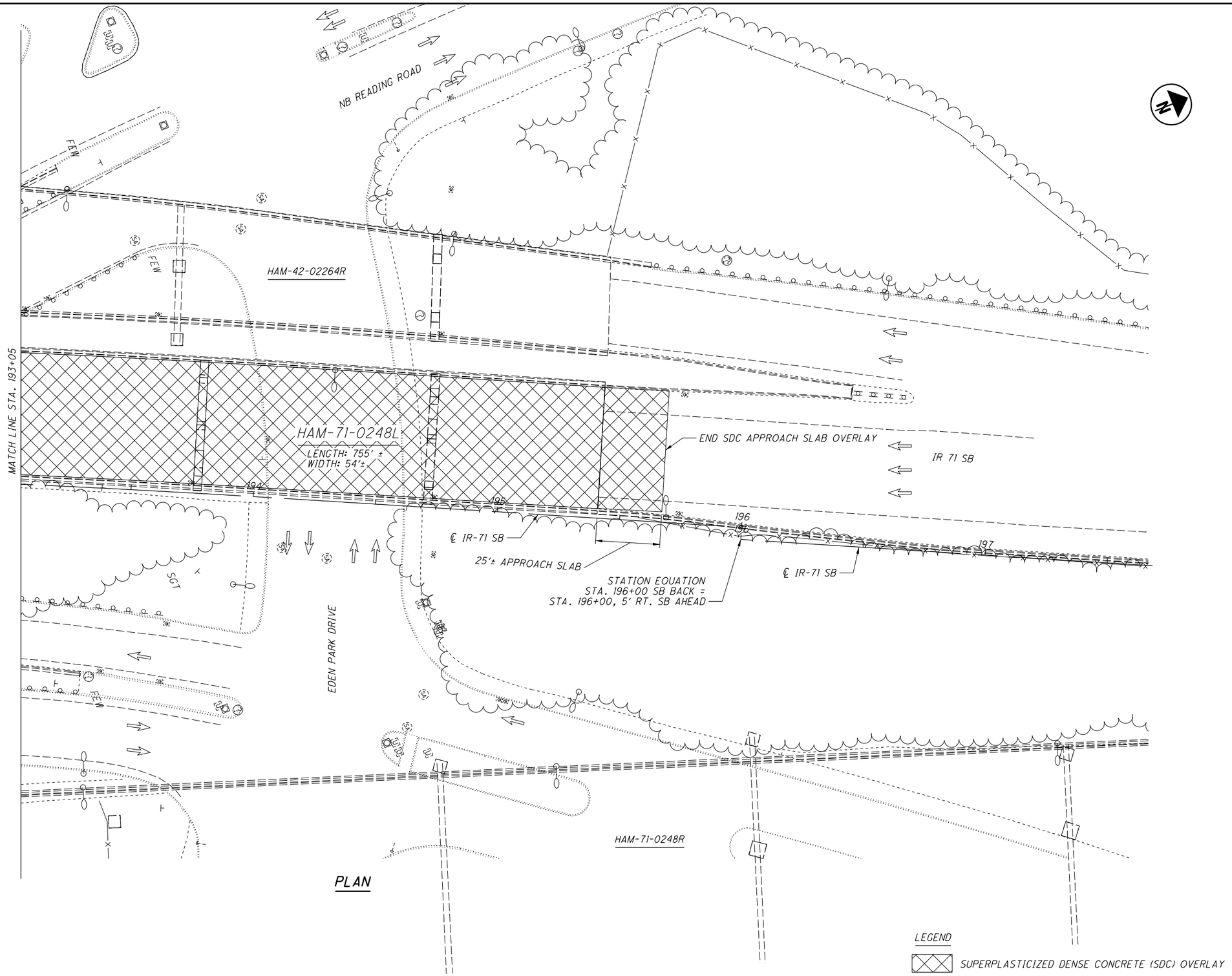

PLAN

LEGEND

SUPERPLASTICIZED DENSE CONCRETE (SDC) OVERLAY

DESIGNED SJA	DRAWN SJA	REVIEWED JSB	DATE 8/31/2016
CHECKED XAC	REVISED XXX	STRUCTURE FILE NUMBER 3106780	

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

GENERAL PLAN -2
HAM-71-0248L
I-71 SB OVER NB US 42 AND EDEN PARK DRIVE

HAM-71-1.97
PID No. 82975

2 / 3

268
292

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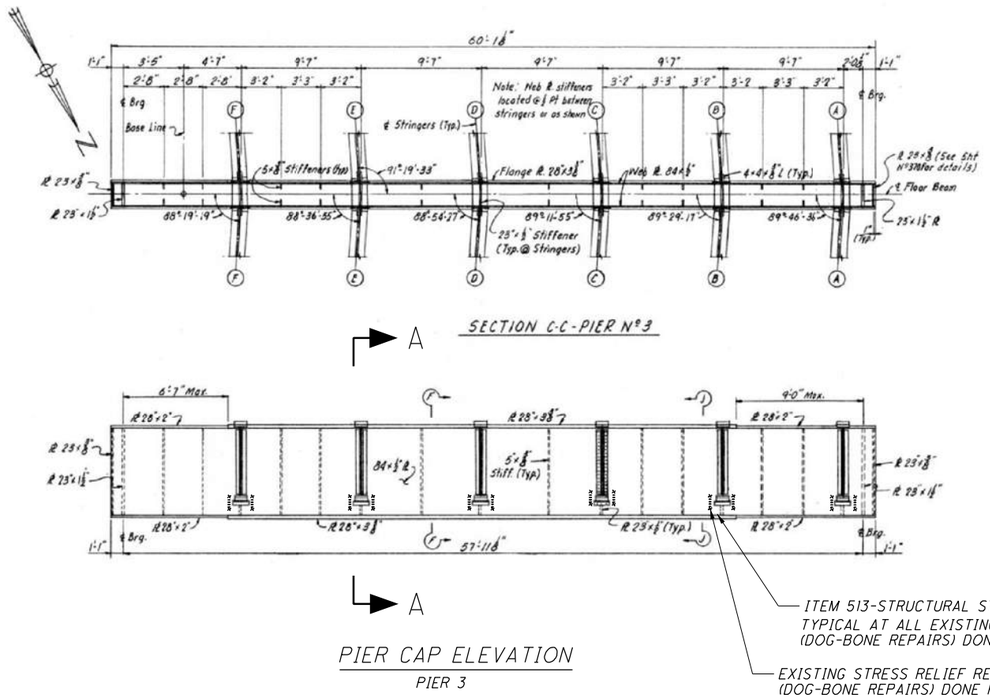
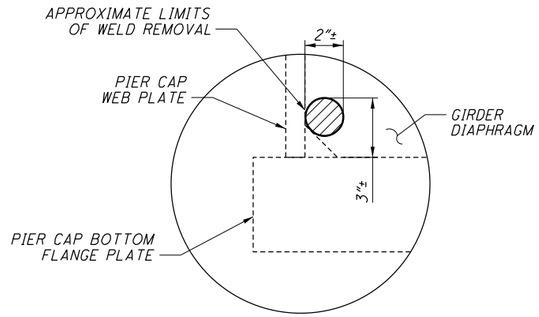
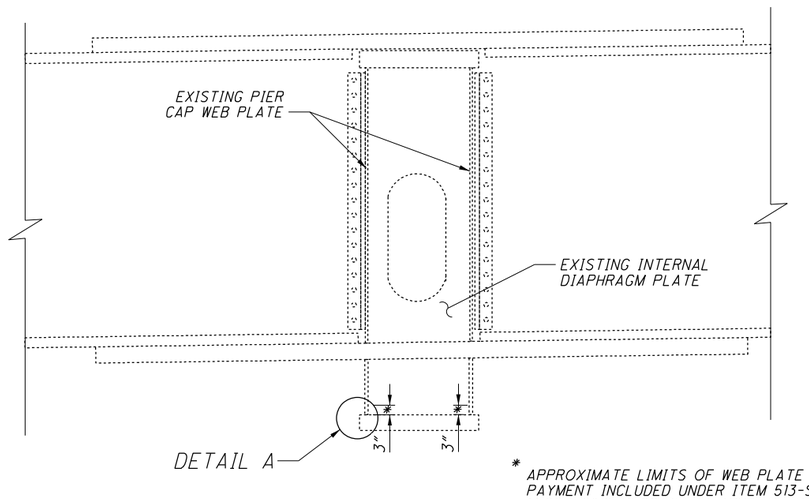




DETAIL A

ITEM 513-STRUCTURAL STEEL, MISC.: 2" STRESS RELIEF HOLE RETROFIT TYPICAL AT ALL EXISTING STRESS RELIEF RETROFIT LOCATIONS (DOG-BONE REPAIRS) DONE PREVIOUSLY.

EXISTING STRESS RELIEF RETROFIT LOCATIONS (DOG-BONE REPAIRS) DONE PREVIOUSLY.



* APPROXIMATE LIMITS OF WEB PLATE WELD REMOVAL. PAYMENT INCLUDED UNDER ITEM 513-STRUCTURAL STEEL, MISC.: 2" STRESS RELIEF HOLE RETROFIT.

SECTION A-A

ITEM 513-STRUCTURAL STEEL, MISC.: 2" STRESS RELIEF HOLE RETROFIT

PERFORM THE REPAIRS DESCRIBED BELOW AT 12 LOCATIONS AT PIERS 3.

REPAIR PROCEDURE:
1) DRILL A 2" DIA. HOLE THROUGH THE GIRDER DIAPHRAGM TO REMOVE THE WELD BETWEEN THE PIER CAP WEB PLATE AND THE GIRDER DIAPHRAGM AT ALL EXISTING STRESS RELIEF RETROFIT LOCATIONS. ELONGATE THE HOLE VERTICALLY DOWN TO THE BOTTOM OF THE WELD. GRIND THE WEB SURFACE SMOOTH TO REMOVE WELD MATERIAL. DO NOT DISTURB THE WELD BETWEEN THE CAP BOTTOM FLANGE AND THE WEB PLATE.

2) TREAT THE REMAINING DIAPHRAGM WELD BETWEEN THE DRILLED HOLE AND THE GIRDER BOTTOM FLANGE TIE PLATE AT ALL LOCATIONS WITH ULTRASONIC IMPACT TREATMENT (UIT). SEE GENERAL NOTES FOR ULTRASONIC IMPACT TREATMENT FOR REQUIREMENTS OF THE PROCEDURE. THE COST OF THE LABOR AND EQUIPMENT ASSOCIATED WITH THIS WORK IS INCIDENTAL TO ITEM 513-STRUCTURAL STEEL, MISC.: 2" STRESS RELIEF HOLE RETROFIT.

3) PAINT ALL RETROFITTED/UIT TREATED AREAS PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

DESIGNED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJA	SJA	JSB	8/31/2016	3106780
CHECKED	REVISED			
XAC	XXX			

PIER CAP RETROFIT DETAILS

HAM-42-0248L
I-71 SB OVER NB US 42 AND EDEN PARK DRIVE

HAM-71-1.97
PID No. 82975

3 / 3

269
292

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APPENDIX C

OHIO BRIDGE INSPECTION SUMMARY REPORT (FIELD REPORT)

Inspector: Parker,Robert
Inspection Date: 06/24/2025

Structure Number: 3106780
Facility Carried: SB IR 71

Ohio Bridge Inspection Summary Report

HAM-00071-0248L (3106780)

B.L.04: District	District 08 15000 - CINCINNATI (HAM county)	
B.CL.02: Major Maint	01 - State Highway Agency	/
225 Routine Main A/B	01 - State Highway Agency	/
221 Inspection A/B	01 - State Highway Agency	/

Condition

B.C.01: Deck	**6**
58.01: Wearing Surface	6
B.C.08: Joint	6
B.C.02: Superstructure	**6**
59.01: Paint & PCS	7
B.C.03: Substructure	**7**
B.C.09: Channel	**N**
B.C.11: Scour	**N**
B.C.10: Channel Prot.	**N**
B.C.05: Bridge Railing	**7**
B.C.06: Transitions	**7**
B.C.07: Bearings	**7**
B.C.04: Culverts	**N**
Ohio GA	**6**

Appraisal

B.AP.03: Scour Vul.	Not over Waterway

Geometric

48: Max Span Length (ft)	142.0
49: Structure Length (ft)	755.0
52: Deck Width, Out-To-Out (ft)	54.3
424: Deck Area (sf)	40996.5
32: Appr Roadway Width (ft)	48.0
51: Road Width, Curb-Curb (ft)	50.0
50A: Curb/SW Width: Left (ft)	0
50A: Curb/SW Width: Right (ft)	0
34: Skew (deg)	30
33: Bridge Median	0 - No median
54B: Min Vert Underclearance (ft)	33.08
336A: Min Vert Clrnce IR Cardinal (ft)	99
336B: Min V Clr IR Non-Cardinal (ft)	0
578: Culvert Length (ft)	0

Load Posting

41: Op/Post/Closed	A - Open
70: Posting	5 - Equal to or above legal loads
70.01: Date	
70.02: Sign Type	
734: Percent Legal (%)	140
704: Analysis Date	11/01/2019
63: Analysis Method	8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

5A: Inventory Route	1	00071
7: Facility On	SB IR 71	
6: Feature Ints	US42*N&RMP;EDEN PARK ENT	
9: Location	.2 MI N OF US 42	
Lat, Lon	39.116511	,-84.5005

Structure Type

43: Bridge Type	3 - Steel 03 - Girder and Floorbeam System N- Not Applicable
45: Spans Main / Approach	7 / 0
107: Deck Type	1 - Concrete Cast-in-Place
408: Composite Deck	U - Unknown
414A Joint Type 1	8 - Elastomeric Strip Seal
414B: Joint Type 2	N - None
108A: Wearing Surface	2 - Integral Concrete (separate non-modified layer of concrete added to structural deck) 1 - Super Plasticized Dense Concrete (SDC)
422: WS Date	01/01/2018
423: WS Thick (in)	1.7
482: Protective Coating	5 - Paint System OZEU
483: PCS Date	07/01/2010
453: Bearing Type 1	3 - Sliding (Bronze)
455: Bearing Type 2	N - None
528: Foundn: Abut Fwd	1 - Steel H Piles (Other size)
533: Foundn: Abut Rear	1 - Steel H Piles (Other Size)
536: Foundn: Pier 1	1 - Steel H Piles (Other size)
539: Foundn: Pier 2	N - None (Such as most Culverts)

Age and Service

27: Year Built/ 106 Rehab	1970 / 0000
42A: Service On	1 - Highway
42B: Service Under	1 - Highway, with or w/out pedestrian
28A: Lanes on	04
28B: Lanes Under	07
19: Bypass Length	0
29: ADT	49038
109: % Trucks (%)	14

Inspections

		Months	
B.IE.03 Routine Insp.		12	06/24/2025
B.IE.03: NSTM Insp.	Y	24	06/24/2025
B.IE.03: UW Insp.	N	0	
B.IE.03: Special Insp.			
UBIT Insp.	N	0	
Drone Insp.	N	0	

Inspector Parker,Robert

Inspector: Parker,Robert
Inspection Date: 06/24/2025

Structure Number: 3106780
Facility Carried: SB IR 71

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12-Reinforced Concrete Deck	3 - Mod.	41021	sq. ft.	20456	20050	515	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Several areas of minor cracks with light efflorescence is present on the deck underside of the bridge. There are random and minor areas of delaminations on the underside. Overall no major changes. (20,050 SF) CS3: Several areas of haunch spalling along the top flange of the beams, particularly near supports. (100 SF) Some areas of saturation are present in Span 2, bay 3 and Span 5, bays 1-3, (415sf).						
510-Wearing Surfaces		39260	sq. ft.	35333	3362	565	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Widespread cracking is typical in the wearing surface (3362 SF) CS3: Medium to wide cracks are present at isolated locations and minor potholes are present in the lanes (25 SF). Areas of transverse cracking with <1' spacing. Total (565sf)						
107-Steel Open Girder/Beam	3 - Mod.	4530	ft.	4487	40	3	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ Tack welds are present in between the bottom flange and the bottom flange splice plate for Girder A in Span 2. There is a poor□quality tack weld at the bottom of the west connection angle for Girder B at the north side of Pier 2 cap in Span 3. There are steel angles welded to the webs of Girder B and Girder C in Span 4 near Pier 3. Overall, no major changes. CS2: Some isolated areas of painted over pitting/section loss, mostly near supports (40'). This was up to 1/8” deep at isolated pits with 1/16” typical at these areas. No changes overall. The upper bolted connection at the West side of Girder B, just south of Pier 5 is not completely tight. Overall, no major changes. CS3: Small corrosion holes previously noted on the Girder C and F webs at Pier 4 (3'). These have not grown.						
515-Steel Protective Coating		99509	sq. ft.	98469	0	1040	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS3: Isolated areas of reactivating corrosion continue at isolated connections on the beams, approx. 1% (1040 SF).						

Inspector: Parker,Robert
Inspection Date: 06/24/2025

Structure Number: 3106780
Facility Carried: SB IR 71

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
152-Steel Floor Beam	3 - Mod.	160	ft.	130	30	0	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ The pier caps have been retrofit with stress relief drilled holes connected by vertical saw-cuts adjacent to the welded connections of the girder bottom flange tie plates at all girders, 2017. Retrofits were installed at Pier 3 to remove fatigue prone detail and known cracks, 2019. Floor beams overall are in good condition. See the 2025 NSTM report for specifics. CS2: Typical minor to moderate areas of corrosion are present on the interior and exterior of the steel caps. Minor gouges, weld defects, and isolated scrapes and impact damage are present (30').						
515-Steel Protective Coating		3356	sq. ft.	3311	35	10	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Pier 1: Isolated areas of light rust spots on the top flange and at the top of the web plates, at the bottom flange between diaphragm and end caps. Pier 2: Some cracking of exterior paint. CS3: Pier 2: The lower flange and portions of web at the end caps were painted during a previous rehab, however corrosion is reactivating along the lower flange. Pier 3: Painted over laminating corrosion at both ends of the pier cap on the bottom flange adjacent the access hatches are beginning to reactivate. No major changes overall.						
205-Reinforced Concrete Column	3 - Mod.	15	each	13	2	0	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ The bridge identification placard is located on the west face of the east column of Pier 3. CS2: Two piers have hairline cracks sealed over (2).						
215-Reinforced Concrete Abutment	3 - Mod.	126	ft.	101	15	10	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Abutment 1 - Ponding water on the east side of bearing seat is causing corrosion stains on the stem below (2'). Abutment 2 - Minor ponding water on beam seat in bay 2 (3') and scaling on beam seat near girder E (2'). No major changes overall. CS3: Abutment 1 - corner delamination/spall in top of stem in bay 5 (2'). Only slight change from prior inspection. Several cracks along the stem of Abutment 1 with associated delaminations (8').						
234-Reinforced Concrete Pier Cap	3 - Mod.	160	ft.	160	0	0	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ Staining is present on the east face of Pier 5 and both faces of Pier 6. No change.						
300-Strip Seal Joint	3 - Mod.	162	ft.	128	14	20	0

Inspector: Parker,Robert
Inspection Date: 06/24/2025

Structure Number: 3106780
Facility Carried: SB IR 71

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Forward joint has soil and debris in the joint and along the shoulder area. CS3: Rear header has a small area breaking out and settled near the joint seal. Some leakage is present in the forward joint and evidence of leakage of the Pier 4 joint. This continues for this inspection. Could see gland torn or loose in intermediate joint.						
311-Movable Bearing	3 - Mod.	42	each	29	12	1	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Several bearings throughout have minor freckled corrosion (12). The Girder F bearing at Abutment 2 is in contraction in June; all other bearings are in expansion (1). Several pot bearings missing nuts on the anchor bolts. These are old comments that have not changed.						
321-Reinforced Concrete Approach Slab	3 - Mod.	1950	sq. ft.	1932	10	8	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Cracking along edge of forward slab (10 SF). No change from the prior inspection. CS3: At the edge of the forward slab for the asphalt to slab transition joint, there is a failing patch with an 8' spall/pothole (8SF). A spall is present in the rear slab at the pavement to slab joint (1SF). This continues for this inspection.						
331-Reinforced Concrete Bridge Railing	3 - Mod.	1510	ft.	775	735	0	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: The parapet exhibits minor cracking, frequently at the joints. A few collision scrapes are present, and impact gouges are present on the left railing, and right rear section of rail is deteriorating (735').						
815-Drainage	3 - Mod.	7	each	0	0	7	0
	No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information. ++ CS2: Minor to moderate corrosion at some downspouts, some with minor perforations (2 total). CS3: All the grates were clogged.						

Inspector: Parker,Robert
Inspection Date: 06/24/2025

Structure Number: 3106780
Facility Carried: SB IR 71

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
830-Abutment Backwall	3 - Mod.	126	ft.	101	10	15	0

No significant changes observed during the GF 2025 NSTM & Routine Inspection. Reference attached NSTM Summary Report for Additional Information.
++

CS2: Abutment 1 backwall - typical minor cracks throughout (3'). Abutment 2 backwall - Typical minor cracking in each bay (7').
CS3: Several spalls/delams under joint along top of fwd. BW.

Inspector:	Parker,Robert	**Structure Number:**	3106780
Inspection Date:	06/24/2025	**Facility Carried:**	SB IR 71

HAM-00071-0248L_(3106780)

ODOT District:	District 08					Date Built:	07/01/1970
Major Maint:	01 - State Highway Agency	Facility Carried:	SB IR 71	Traffic On:	1 - Highway	Rehab Date:	
Routine Maint:	01 - State Highway Agency	Feature Inters:	US42*N&RMP;EDEN PARK ENT	Traffic Under:	1 - Highway, with or w/out pedestrian	Insp. Resp A:	01 - State Highway Agency
FIPS Code:	15000 - CINCINNATI (HAM county)	Location:	DISTRICT 08 .2 MI N OF US 42			Insp Resp B:	

Inspector Parker,Robert Inspection Date 06/24/2025 Reviewer Not Approved

Inspector Comments - Deck and Approach

Deck, Wearing Surface, Joints, Railing

NO SIGNIFICANT CHANGES OBSERVED DURING THE GF 2025 NSTM & ROUTINE INSPECTION. REFERENCE ATTACHED NSTM SUMMARY REPORT FOR ADDITIONAL INFORMATION.

++

Floor/Deck

The deck is in fair condition. There are cracks with efflorescence on the underside. Haunch spalls are present along the top flange of girders near supports. Some areas of saturation in span 2 and 5. Overall no major changes.

Bridge Wearing Surface

The wearing surface is in fair condition with widespread cracking typical throughout, some areas of transverse cracking with <1' spacing. A few cracks are of a larger width. A few potholes are present in the travel lanes.

Bridge Railing

Concrete railing is in fair condition with vertical cracking along the length, heavier near the rail joints. Honeycombing, impact gouges, and minor deterioration are present along both sides.

Deck Drainage

Some corrosion and perforations on a couple downspouts. All the grates were clogged.

Expansion Joints

Soil and debris are present in the joints. The rear slab header is breaking up and settled. Leakage is present in isolated areas along the left forward joint and evidence of prior leakage at Pier 4; the Pier 4 joint was replaced in 2017 but gland appears torn or loose in 2024. The deck joint armor of the forward joint is missing a section of concrete at the top east corner of the header with a timber plank in its place. These are old comments that have not changed.

Approach

NO SIGNIFICANT CHANGES OBSERVED DURING THE GF 2025 NSTM & ROUTINE

INSPECTION. REFERENCE ATTACHED NSTM SUMMARY REPORT FOR ADDITIONAL INFORMATION.

++

Approach Roadway

Approach roadway in good condition, only minor defects
noted.

Approach Slab

Approach slab visible and in fair condition. Cracks are present along the edge of the forward slab. At the edge of the forward
slab for the asphalt to slab transition joint, there is a failing patch with an 8’ spall/pothole. A spall is present in the rear slab at the pavement to slab joint.
Minor cracks throughout.

Approach Guardrail

Approach guardrail is in good condition, no defects
noted.

Inspector Comments - General Appraisal

Superstructure, Bearings

NO SIGNIFICANT CHANGES OBSERVED DURING THE GF 2025 NSTM & ROUTINE INSPECTION. REFERENCE ATTACHED NSTM SUMMARY REPORT FOR ADDITIONAL INFORMATION.

++

Beams/Girders

Superstructure is in fair condition. Minor active corrosion with isolated painted over pitting (section loss) present on the webs, normally over near the joints where prior leakage allowed the deterioration.
There are two areas with small corrosion holes (Girder C and F webs at Pier 4).

Diaphragms/X-Frames

Bearing Devices

Bearings are in fair condition with minor corrosion throughout. The bearing for Girder F at Abutment 2 bearing is in contraction at 80F, opposite direction of rest of bearings (contraction in June, others in expansion).
This is an old condition that continues.

Steel Floor Beams

The pier caps have been retrofit with stress relief drilled holes connected by vertical saw-cuts adjacent to the welded connections of the girder bottom flange tie plates at all girders, 2017. Retrofits were installed at Pier 3 to remove fatigue prone detail and known cracks,

2019. Floor beams overall are in good condition. See the 2025 NSTM report for specifics.

Protective Coating System

Isolated areas of reactivating corrosion exist at
isolated connections and random areas on beams, 1% (1000 SF). No major changes for this inspection.

Substructure

NO SIGNIFICANT CHANGES OBSERVED DURING THE GF 2025 NSTM & ROUTINE INSPECTION. REFERENCE ATTACHED NSTM SUMMARY REPORT FOR ADDITIONAL INFORMATION.

++

Abutments

Abutments are in fair condition. There are cracks along the stem of Abutment
1, with small delaminations along these cracks. Corrosion staining is present on the east side of the Abutment 1 bearing
seat on the stem. There is a corner spall on the top of the stem in Bay 5.
Water is ponding on the Abutment 2 beam seat in Bay 2, which has caused scaling on the beam seat near Girder E. There
is vegetation growth along the southeast wingwall for Abutment 1 and both wingwalls for Abutment 2.

Pier Columns

Piers are in good condition with hairline cracks to a
couple columns.

Concrete Pier Caps

No issues.

Backwalls

Vertical cracks in both walls. Shallow spalling under forward
joint armor. Spall in forward backwall behind Girder F.

Slope Protection

Light vegetation growth is present near Abutment 1
between the joints along the fascia of the bridge. There is an accumulation of debris and tree trimmings south of Pier 1 along the entrance ramp. There are cracks and a broken slope protection near the Pier 5 column. Vegetation growth is present along the full
height of the joints on the west side of the slope protection near Abutment 2. There is 1" of slope wall settlement
along the Abutment 2 stem.

Culvert

Inspector:	Parker,Robert	**Structure Number:**	3106780
Inspection Date:	06/24/2025	**Facility Carried:**	SB IR 71

Inspector Comments - Waterway

Channel Protection

Channel

Scour

Inspector: Robert Parker **Structure Number:** 3106780

Inspection Date: 06/24/2025 **Facility Carried:** SB IR 71

Bridge Inspection Report

Pictures

PHOTO 1

Description Typical deck

PHOTO 2

Description Typical deck and approach slab

Pictures

PHOTO 3

Description Typical superstructure and underside of deck

PHOTO 4

Description South abutment

Pictures

PHOTO 5

Description North abutment

PHOTO 6

Description Typical Pier 5

Pictures

PHOTO 7

Description Typical steel pier cap, pier 3

PHOTO 8

Description Typical abutment bearing

Pictures

PHOTO 9

Description Typical sign support

PHOTO 10

Description Bridge elevation, west fascia

Pictures

PHOTO 11

Description Bridge elevation, east fascia

PHOTO 12

Description Pier 4 bearings under joint

GANNETT FLEMING
8890 Lyra Road, Suite 110
Columbus, OH 43240