

## Engineer's Report

### Bridge No. RIC-30-1642

**Carrying Reed Road over US Route 30, Richland County, OH**

**Bridge Hit on Span 3 - Beam 1**

**PID 122937 & 122940**

#### General Information

- (1) **Bridge No.:** RIC-30-1642 **SFN:** 7001517
- (2) **Bridge Location:** Reed Road over US Route 30, Mifflin TWP, Richland County, OH; for Location Map, see Attachment A
- (3) **Date & Time of Crash:** Wednesday, November 13, 2024 5:13 PM

#### Crash and Damage Information

- (1) **Police Report:** The Ohio State Highway Patrol is pending submission at the time of this report. The District will obtain a copy and make it available on request when it is completed. The responsible party of the hit to the bridge appears to be Superior Logistics, LLC, PO Box 668 Hallandale Beach, FL 33008. The driver was Andrey Mikhay, of Hallandale, FL.
- (2) **Damage Details:** See Attachment A for identification of bridge members.

The collision occurred on Wednesday, November 13, 2024 5:13 PM when a westbound unpermitted oversized load carried on a flatbed semitruck struck the inside surface of Span 3, Beam 1, on the structure named above. It is likely that the load struck the inside of the far fascia beam due to rising roadway profile and minor contact with the previous beams causing the load, a large tank-like container, to rise and rotate up to meet the location of impact. Beam 1 sustained deformative damage, primarily rotational, causing significant separation of the top flange from the haunch. Six of 7 steel angle crossframe assemblies connecting Beam 1 to Beam 2 in Span 3 had all three members fractured at or near welds, and the five over westbound traffic were subsequently removed. At least three of these fractures tore portions of the attached web away. Significant spalling of the haunch was sustained along both sides of Beam 1 and 2 throughout Span 3, as well as approximately 25' along Beam 1 in Span 4.

#### Beam 1

Beam 1 is deformed over a length of approximately 80' to within a few feet of the fixed bearing at Pier 2 and a few feet of the rocker bearing at Pier 3, with points of inflection

roughly at the bottom flange moment plates. The exact dimensions and extent of the deformation are scheduled to be measured ODOT District 3 Survey no later than 15 DEC 2024. The impact to the beam was to the inner side bottom flange and web, up to about half the height of the beam, and was spread to almost the full width between crossframes 4 and 5. Local gouging and flange rotation at the point of impact is present but minimal; we believe that the impact load was primarily distributed across the surface of the web, minimizing point damage. The bottom portion of Beam 1 exhibits a sweep likely in excess of 6” at the point of impact, and spanning almost all of the beamline is Span 3, appearing to end roughly at the moment plates. This sweep is primarily rotational, as the top flange, while rotated out of contact with the haunch, exhibits little to no transverse deformation. The inside of the top flange has rotated up to 2.5” from its prior contact with the deck at the point of impact, and is separated throughout the deformation; the deck must be assumed to be bearing only minimally on Beam 1 in Span 3.

Section loss to the lower portion of the web was sustained at Crossframes 4, 5, and 7, due to material being torn out with the diagonal crossframe member. At Crossframe 7, the material welded to the crossframe member was torn out through the full thickness of the web.

While there is evidence of major spalling on both sides of the beam from prior incidents, freshly exposed concrete and the locations of fallen spall indicate spalling on both sides of the haunch throughout Span 3 and up to 24’ in Span 4. A large loose spall on the fascia side was removed by ODOT personnel.

Neither of the adjacent bearings, fixed at Pier 2 and rocking at Pier 3, exhibit any indication of movement or damage.

### Beam 2

Beam 2 exhibits no visible deformation. Superficial scraping is evident on the bottom flange. Section loss was sustained in the lower portion of the web at Crossframe 4, due to material welded to the horizontal crossframe member being torn out. Fresh spalling is evident on both sides of the beam in Span 3.

### Span 3 Bay 1 Crossframes

Crossframe 1: Appears to be undamaged

Crossframe 2: All three welded connections to Beam 1 fractured. Left in place as not over traffic.

Crossframe 3: All three welded connections to Beam 1 fractured. Assembly removed by ODOT Maintenance forces.



- Crossframe 4: Both diagonal welded connections to Beam 1 fractured. Horizontal welded connection to Beam 2 fractured. Assembly removed by ODOT Maintenance forces.
- Crossframe 5: All three welded connections to Beam 1 fractured. Assembly removed by ODOT Maintenance forces.
- Crossframe 6: All three welded connections to Beam 1 fractured. Assembly removed by ODOT Maintenance forces.
- Crossframe 7: All three welded connections to Beam 1 fractured. Assembly removed by ODOT Maintenance forces.

Roadway

At three locations in the Westbound driving lane, the pavement is gouged through the surface course, each approximately 6’ long. Richland County forces filled these locations with cold patch asphalt material.

(See photos – Attachment D)

- (3) **District Follow-Up:** ODOT’s Richland County forces were on site shortly after the crash. District Bridge Engineer Kent Kapustar also was on site during the post-crash cleanup and accident reporting, where he directed County teams to close the Southbound shoulder of the bridge above the struck beam pending detailed inspection. Richland County forces drove the District platform truck to the site the following morning, and allowed the Assistant District Bridge Engineer Joseph Clark and Bridge Inspector 2 Rich Harding to inspect the damage at arm’s length. The imminent concern was the partially attached angles from the crossframes in Span 3, Bay 1. Richland County forces removed those detached angles that threatened traffic on US 30. The bridge shoulder above Beam 1 remains closed at this time.
- (4) **Disposition:** Based on the immediate post-collision inspection, and the subsequent removal of the loose crossframes, the Bridge Engineer permitted the roadway below the bridge to open without restriction. Reed Road roadway on the bridge also remained open with the shoulder above Beam 1 closed pending repairs.

**Site Conditions Prior to Incident**

**(1) Condition of structure prior to bridge hit:**

- a) **Type:** Continuous steel beam with reinforced concrete deck and substructure.
- b) **Span:** 4 spans for a total length of 289.50 feet.
- c) **Clear Width:** Bridge Roadway Width – 42.50 feet. O/O Deck – 46’
- d) **Overhead Clearance:** 14’-3” Posted; 14’-6” Actual
- e) **Type & Condition of Wearing Surface:** Monolithic Concrete, 1977; Condition Rating – 7 Good Condition.
- f) **Height of Roadway Above Water:** N/A.

- g) **Year Built:** 1977.
  - h) **Overall Condition:** Satisfactory Condition – General Appraisal = 7. Structural elements and deck haunches show evidence of prior bridge strikes. Superstructure is in “7 - Good” condition; Protective Coating System is 1%-5% degraded and is rated “7 - Good”.
  - i) **Warning Signs Present:** No.
  - j) **Previous History:** Bridge has been struck four times previously by over-height loads. Repairs for these strikes were carried out under PIDs: 79352 (2010), 97639 (2014), 110382 (2019), and 114029 (2023). Beam 1 in Span 3 was repaired via grinding in 2010, and heat straightened in 2014, 2019, and 2021. See Attachment C for details of these repairs.
- (2) **Conditions of Approaches Prior to Crash:** Satisfactory. The U.S. Route 30 pavement near and under the bridge was recently resurfaced and is in good condition.
- (3) **Previous Inspection Reports:** See Attachment E for 2023 & 2021 Inspection Reports, the last two Bridge Inspection Reports prior to the crash damage. In 2021 and 2023, the bridge was rated in “7 – Good” condition and the deck in “7 – Good” condition.
- (4) **Average Daily Traffic:**
- USR 30: 2024 AADT = 19,500 (from SHIFT)  
 Reed Road: 2024 AADT = 2050 (from TIMS)
- (5) **Future Maintenance and Repair Projects:** The bridge is not currently programmed for any maintenance or repair projects.

**Repair Project Planning**

- (1) Two projects are proposed to repair the bridge, PIDs 122937 & 122940. The former PID will encompass immediate action to stabilize the damaged beam; the later will include comprehensive repair efforts.
- a. PID: 122937 – Proposed Immediate Work:
    - i. Immediate Intervention: Following consultation with Office of Structural Engineering (OSE), the District proposes to seek a contractor to install temporary struts to substitute for the removed crossframes to brace the compression flange of Beam 1 across Span 3. These will remain in place until a permanent repair contract is executed.
  - b. PID: 122940 – Proposed Comprehensive Repair work:
    - i. Beam 1: Heat straighten overall sweep and rotation of beam and the localized collision damage at the bottom flange. Minor grinding on the bottom flange at the point of impact. Repair locations of section loss due to tearing by removing a segment of web including the damaged weld and replacing with a field welded steel coupon with drilled holes at the corners. Field painting the beam where the protective coating was

damaged. Epoxy injection throughout areas of top flange separation and spalling.

- ii. Bay 2: Epoxy injection throughout areas of top flange separation and spalling.
- iii. Bay 1: Remove remaining damaged crossframe assembly. Install six new crossframe assemblies between Beams 1 and 2. Shop prime and paint the angles.

- (2) Estimated Construction Cost: The proposed projects have planning-level construction cost estimates of \$50,000 for immediate action, and \$355,000 for comprehensive repairs. The extent of required repairs extends over the entirety of US 30 Westbound. See Attachment F for estimate breakdown by bid item.
- (3) MOT: Individual sequential lane closures will be utilized for the emergency project for installation of temporary struts and various other items of work.

A full detour of US 30 WB may be required for heat straightening, impacting nearby interchanges; further research may indicate that individual sequential lane are sufficient. Individual sequential lane closures will likely be utilized for installation of crossframes, painting, and various other items of work. It should be possible to maintain one or both lanes of Reed Road during repair operations.

- (4) District Field Work to Date: The District Bridge Engineer was on site after the collision on November 13, 2024. The District Assistant Bridge Engineer and Bridge Inspector were able to assess the damage at arm's length using a platform truck the following morning. The items in need of repair were cataloged and damaged crossframes over traffic removed.

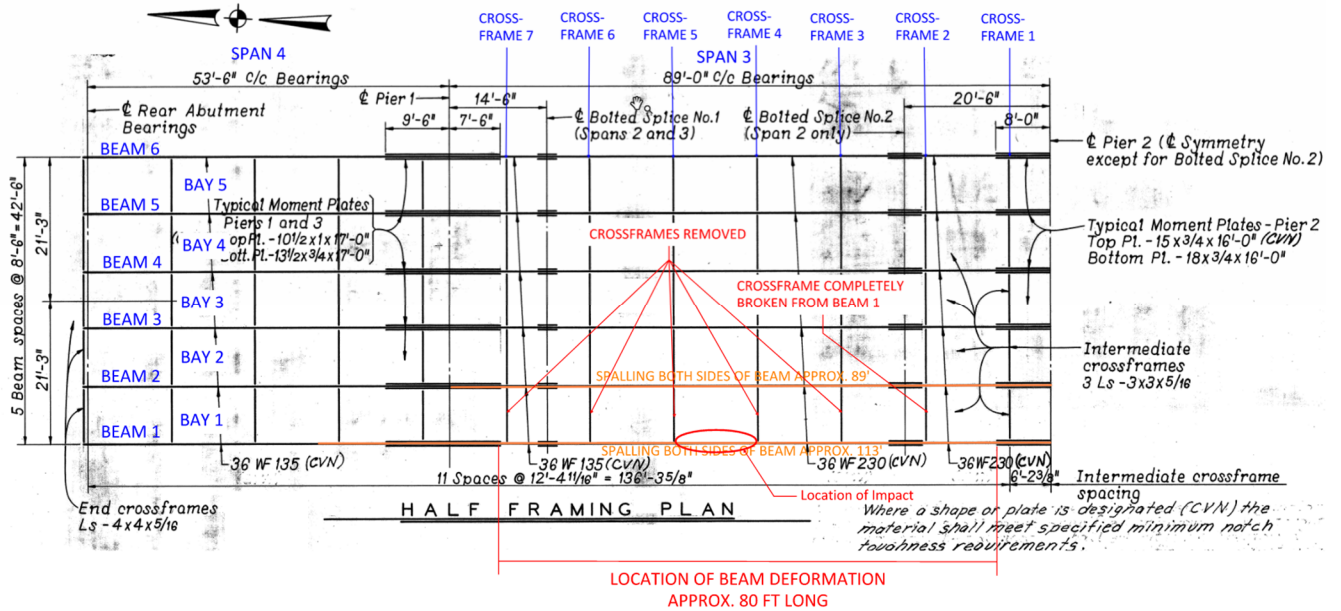
The District Survey Department will collect a 3-D point cloud scan of the site to more exactly determine the limits of deformation on the beams.

The District will design and prepare the construction plans.

- (5) Anticipated Schedule: The District would like to have this bridge repaired as soon as practical, and intends to apply for a Type 2 Emergency project for immediate stabilization of the beam, engaging a contractor immediately to install struts to stiffen the compression flange. Following this, with expedited plan preparation commencing shortly and an expedited 8-week letting schedule, a more comprehensive project would be sold mid-February. A 12-week letting would lead to a mid-March sale. Work would not likely begin until a March-April timeframe due to weather, as the heat-straightening and painting work is temperature sensitive. Because the damage is not under the driving lanes, it likely does not justify the use of expensive heated enclosures to ensure the work is completed before Spring 2025.

The District would like to sell the project through an expedited 8-week letting with an early Spring 2025 construction start. The preferred sale date is February 27, 2025 with an award of March 10, 2025. This would require a plan file of December 23, 2024.

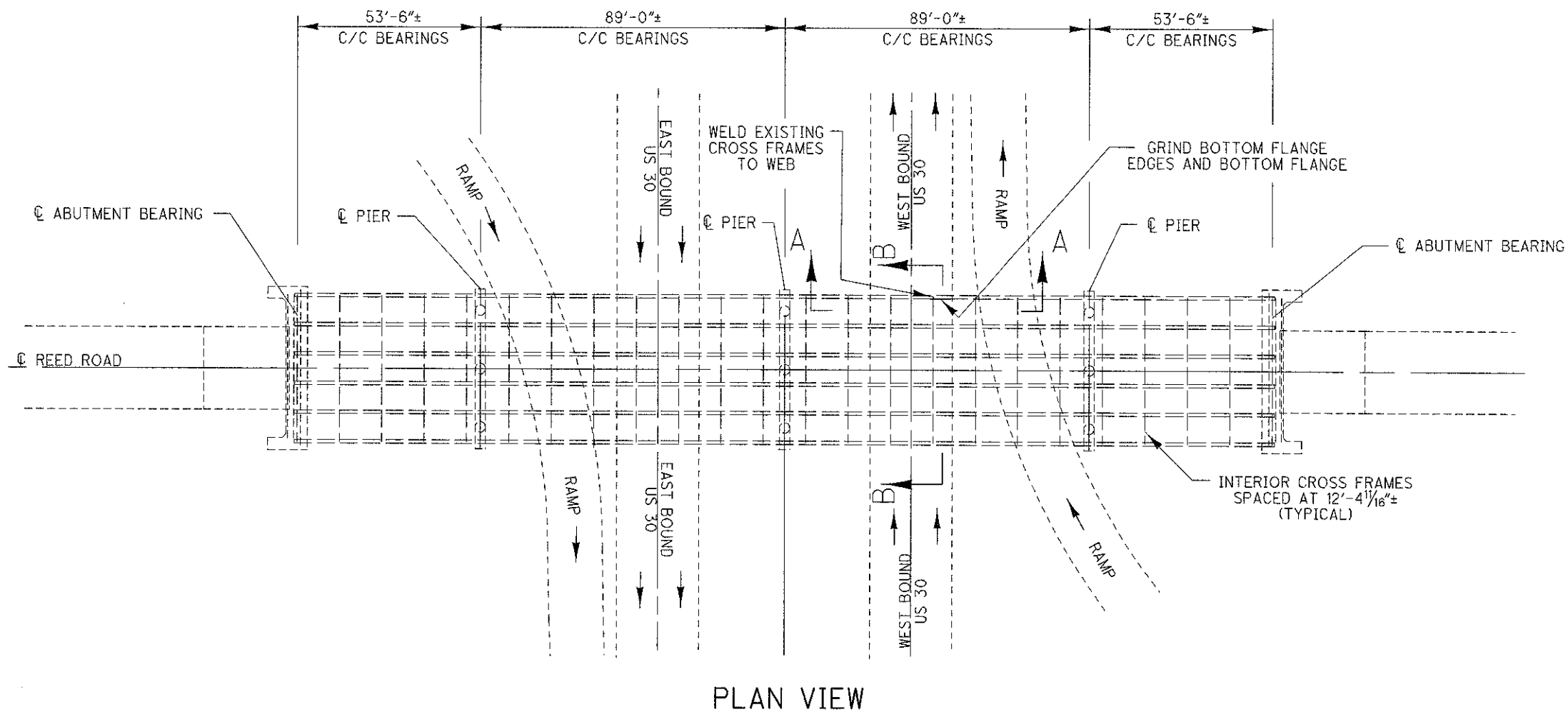
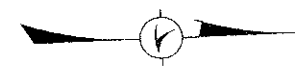
# Attachment A Location Map & Bridge Diagram



**Attachment B**  
**Ohio State Highway Patrol Department**  
**Incident Report**

**(PENDING COMPLETION – Request from District)**

**Attachment C**  
**Selected Details from Previous**  
**Bridge Hit Repairs**



PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
513	LUMP		STRUCTURAL STEEL, MISC.: REWELDING EXISTING CROSS FRAME MEMBERS
514	62	SQ FT	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN
849	LUMP		SURFACE PREPARATION
849	3	HOUR	REPAIRING DAMAGED MEMBERS BY GRINDING

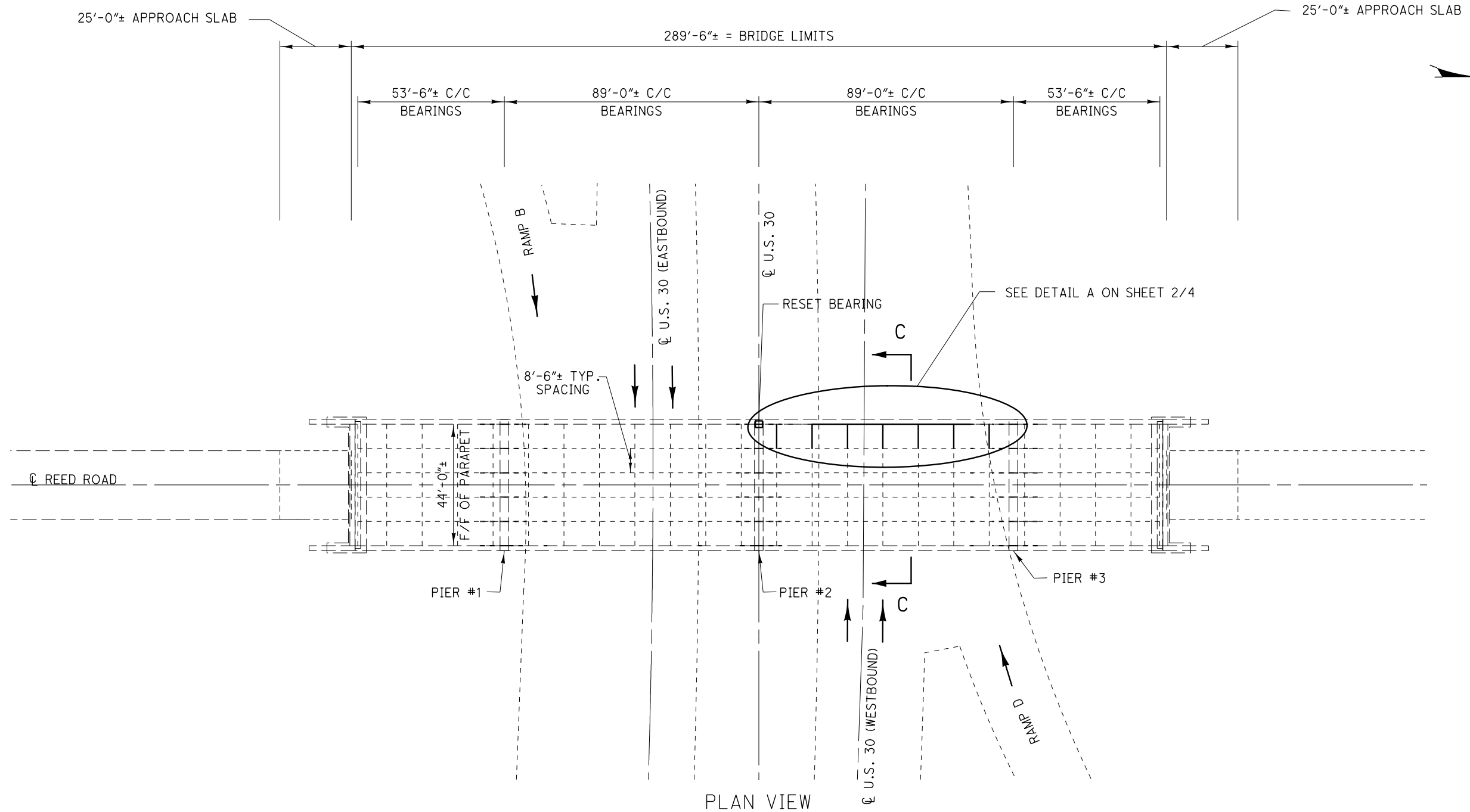
ALL QUANTITIES CARRIED TO SHEET 1/4.

- NOTES:
- SEE SHEET 4/4 FOR SECTIONS A-A AND B-B.
  - GRIND BOTTOM FLANGE AND BOTTOM FLANGE EDGES USING ITEM 849-REPAIRING DAMAGED MEMBERS BY GRINDING.
  - PERFORM SURFACE PREPARATION AS PER ITEM 849-SURFACE PREPARATION.
  - GRIND OFF EXISTING WELDS AND REWELD TWO CROSS FRAME MEMBERS AT LOCATIONS SHOWN BY USING ITEM 513-STRUCTURAL STEEL, MISC.: REWELDING EXISTING CROSS FRAME MEMBERS.
  - PAINT AREAS THAT ARE DAMAGED BY THE GRINDING AND WELDING USING ITEM 514-FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN.

DESIGN FILE: I:\projects\79352\structures\RIC301640.dgn  
 WORKSTATION:Kknapp DATE: 7/12/2010  
 MODELNAME: Design

DESIGNED DCM	CHECKED DUJ	DRAWN DCM	REVIEWED RCN	DATE 6/10	DESIGN AGENCY ODOT DISTRICT THREE OFFICE OF PRODUCTION
COLLISION REPAIR DETAILS RIC-30-1640 UNDER REED ROAD				STRUCTURE FILE NUMBER 7001517	
RIC / ASD-30-13.18 / 0.00 RIC-42-13.74					
3 / 4					
104					
116					





PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
512	21	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	178	FT	CONCRETE RREPAIR BY EPOXY INJECTION
512	21	SQ YD	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES
513	1,115	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN
514	656	SQ FT	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (THREE COAT)
516	1	EACH	RESET BEARING
516	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPPERSTRUCTURE, AS PER PLAN
849	LUMP		DAMAGE ASSESSMENT
849	LUMP		SURFACE PREPARATION
849	8	HOUR	REPAIRING DAMAGED MEMBERS BY GRINDING
849	LUMP		STRAIGHTENING DAMAGED MEMBERS

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

PROPOSED WORK:

- REMOVE EXISTING CROSS FRAME ASSEMBLIES THAT ARE TO BE REPLACED. COST INCLUDED IN ITEM 513.
- HEAT STRAIGHTEN BEAM PER ITEM 849.
- INSTALL NEW CROSS FRAME ASSEMBLIES PER ITEM 513, SEE SHEET 4/4 FOR DETAILS.
- JACK BRIDGE TO RESET BEARING AS DETAILED IN THE PLANS.
- PAINT ALL REPAIR AREAS, TO INCLUDE THE RESET BEARING, AND NEW ANGLES PER ITEM 514-FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (THREE COAT).
- EPOXY INJECT AREA BETWEEN BEAM AND DECK USING ITEM 512. ANY EXPOSED REINFORCEMENT ON THE BOTTOM OF THE DECK SHALL BE BRUSHED WITH GALVANIZING AS PER ASTM A 780 PRIOR TO THE EPOXY APPLICATION. ALL COSTS INCLUDED IN ITEM 512.
- SEAL AREA OF DECK EDGE AS SHOWN ON SHEET 3/4 USING ITEM 512.

NOTES:

FOR SECTION VIEW C-C, SEE SHEET 4/4.

DESIGN FILE: \\projects\97639\structures\RIC-30-16.4.2.dgn  
 WORKSTATION: foster DATE: 5/12/2014 MODELNAME: Design

DESIGN AGENCY  
 ODOT DISTRICT THREE  
 OFFICE OF  
 PLANNING AND ENGINEERING

DATE  
 05/14  
 REVIEWED  
 RDN  
 STRUCTURE FILE NUMBER  
 7001517

DESIGNED  
 NRF  
 CHECKED  
 DJV

PLAN VIEW  
 U.S. 30 UNDER REED ROAD.

RIC-30-16.42

WELDED MOMENT PLATES  
 TOP PL.:  $15 \times \frac{3}{4} \times 16'-0"$   
 BOTT. PL.:  $18 \times \frac{3}{4} \times 16'-0"$

WELDED MOMENT PLATES  
 TOP PL.:  $10\frac{1}{2} \times 1 \times 17'-0"$   
 BOTT. PL.:  $13\frac{1}{2} \times \frac{3}{4} \times 17'-0"$

RESET BEARING

BOLTED SPLICE

A

A

36WF230 STEEL BEAM TO  
 BE HEAT STRAIGHTENED

REPLACE INTERMEDIATE CROSSFRAMES  
 3 Ls -  $3 \times 3 \times \frac{5}{16}"$

DETAIL A

B

B

PARAPET

CONCRETE DECK

EXISTING CROSS FRAMES  
 ON BACK SIDE OF BEAM  
 (TO BE REPLACED)

EXISTING CROSS FRAMES  
 ON BACK SIDE OF BEAM  
 (TO BE REPLACED)

EXISTING  
 36 WF 135  
 STEEL BEAM

EXISTING  
 36 WF 230  
 STEEL BEAM

EXISTING  
 36 WF 230  
 STEEL BEAM

PIER 3

MOMENT PLATE

BOLTED BEAM SPLICE

BOTTOM FLANGE

SEE DETAIL B ON SHEET 3/4.

MOMENT PLATE

PIER 2

RESET & PAINT BEARING  
 REPLACE END CAP

56'-0"  
 HEAT STRAIGHTENING

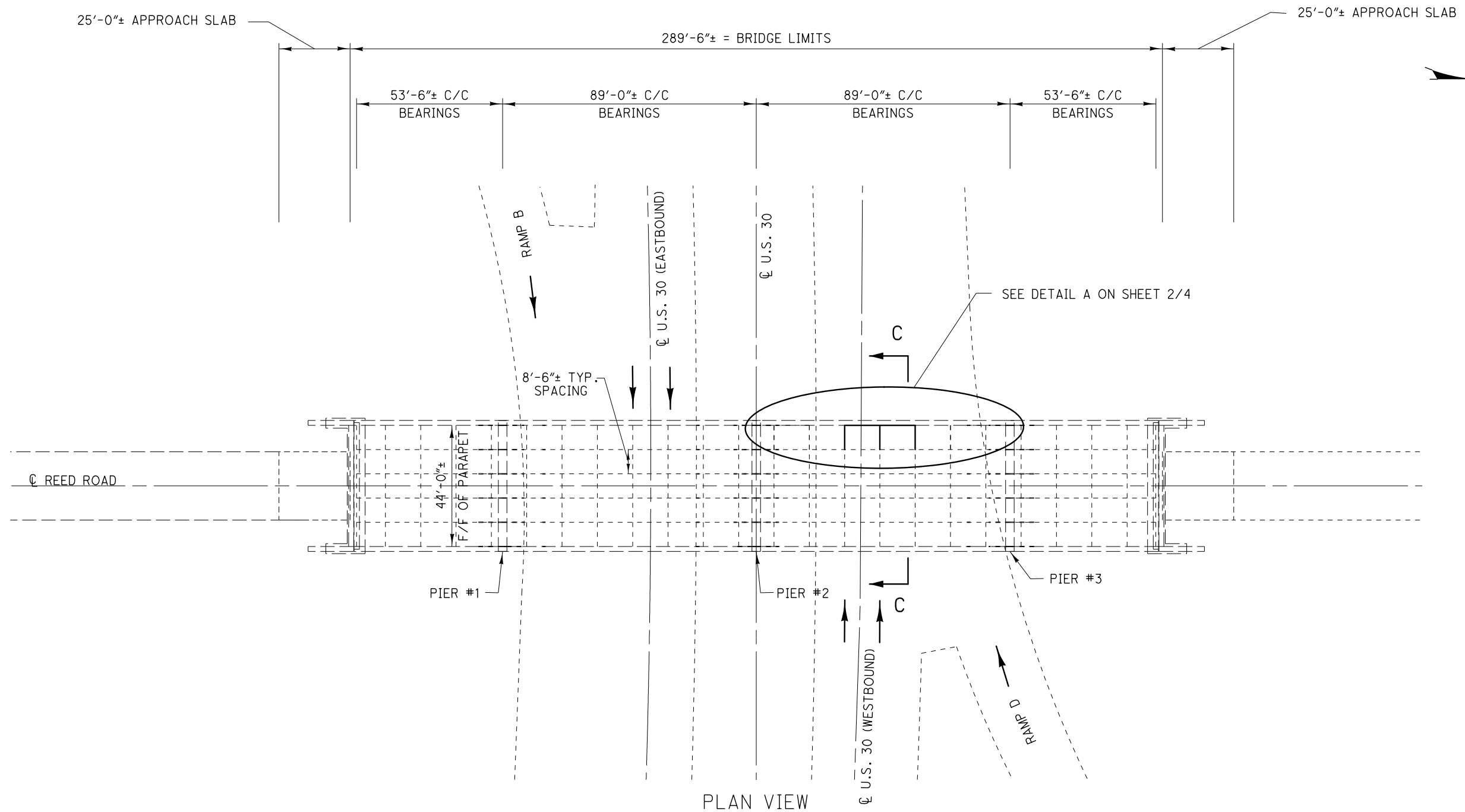
89'-0"  
 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)  
 EPOXY INJECTION

SECTION A-A

- NOTES:  
 1) REPLACE ALL SEVEN (7) CROSS FRAMES  
 ILLUSTRATED IN SECTION VIEW A-A.  
 1) FOR SECTION VIEW B-B, SEE SHEET 3/4.

DESIGN FILE: \\projects\97639\structures\RIC-30-16.42.dgn  
 WORKSTATION: foster DATE: 5/12/2014 MODELNAME: Design

DESIGN AGENCY ODOT DISTRICT THREE OFFICE OF PLANNING AND ENGINEERING	
DATE 05/14	REVIEWED RDN
STRUCTURE FILE NUMBER 7001517	DESIGNED NRF
	DRAWN NRF
	CHECKED DUV
	REVISOR
DETAIL A AND SECTION A-A U.S. 30 UNDER REED ROAD.	
RIC-30-16.42	
2 / 4	
9 11	



PLAN VIEW

PROPOSED WORK:

- REMOVE EXISTING CROSS FRAME ASSEMBLIES THAT ARE TO BE REPLACED. COST INCLUDED IN ITEM 513.
- HEAT STRAIGHTEN BEAM PER ITEM 849.
- INSTALL NEW CROSS FRAME ASSEMBLIES PER ITEM 513, SEE SHEET 4/4 FOR DETAILS.
- PAINT ALL REPAIR AREAS, AND NEW ANGLES PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (THREE COAT).
- EPOXY INJECT AREA BETWEEN BEAM AND DECK USING ITEM 512. ANY EXPOSED REINFORCEMENT ON THE BOTTOM OF THE DECK SHALL BE BRUSHED WITH GALVANIZING AS PER ASTM A 780 PRIOR TO THE EPOXY APPLICATION. ALL COSTS INCLUDED IN ITEM 512.

NOTES:

FOR SECTION VIEW C-C, SEE SHEET 4/4.

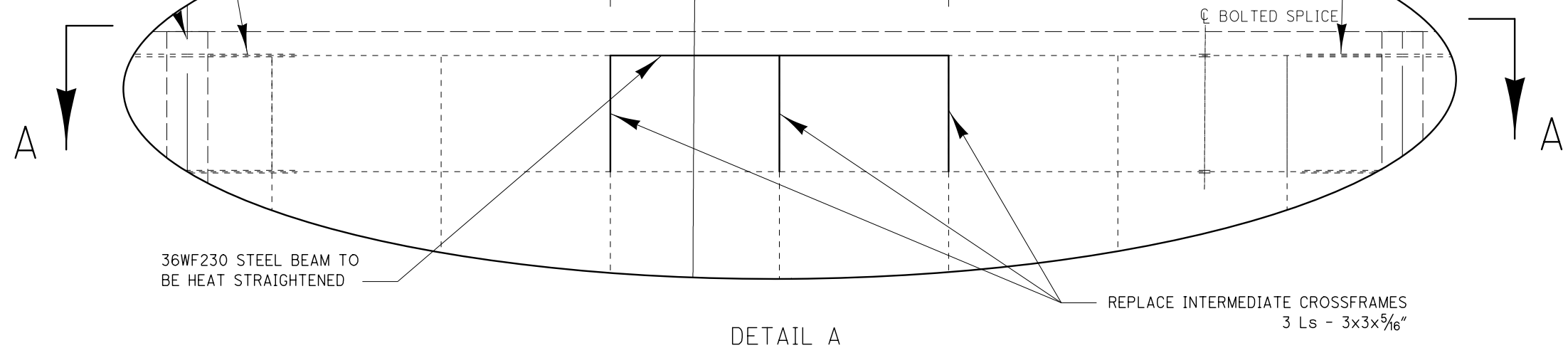
ALL QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN FILE: \\ProjectData\110382\Design\Structures\RIC-30-1642.dgn  
 WORKSTATION: foster DATE: 6/3/2019 MODELNAME: Design

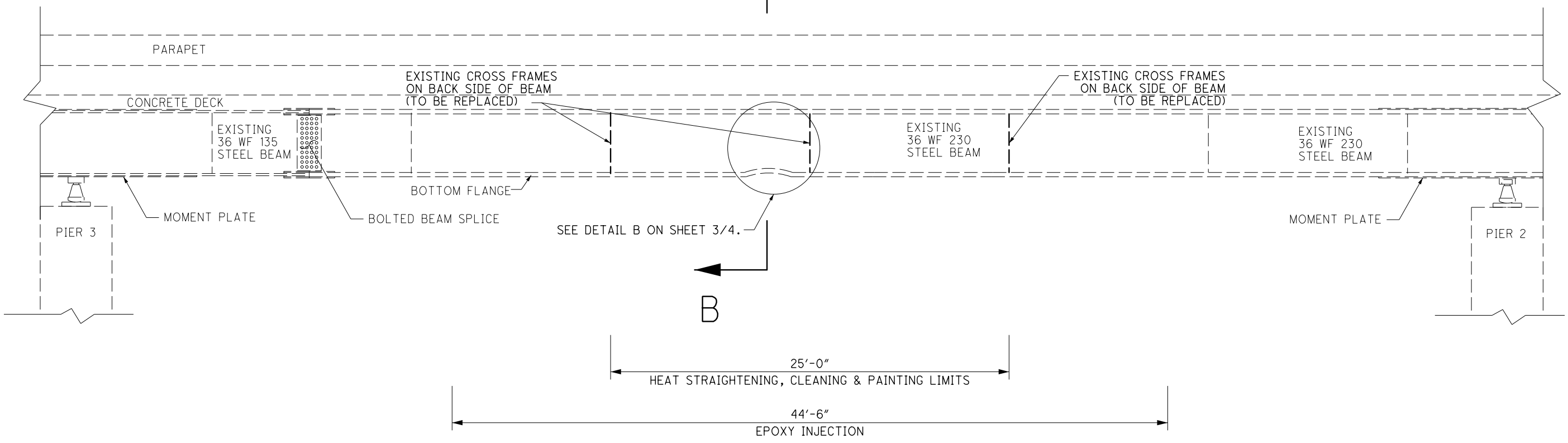
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DESIGNED	DRAWN	REVIEWED	DATE
NRF	NRF	KAK	05/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KCK		7001517	
PLAN VIEW		U.S. 30 UNDER REED ROAD.	
RIC-30-16.42			
1 / 4			
9			
12			

WELDED MOMENT PLATES  
 TOP PL.:  $15 \times \frac{3}{4} \times 16'-0"$   
 BOTT. PL.:  $18 \times \frac{3}{4} \times 16'-0"$

WELDED MOMENT PLATES  
 TOP PL.:  $10\frac{1}{2} \times 1 \times 17'-0"$   
 BOTT. PL.:  $13\frac{1}{2} \times \frac{3}{4} \times 17'-0"$



DETAIL A

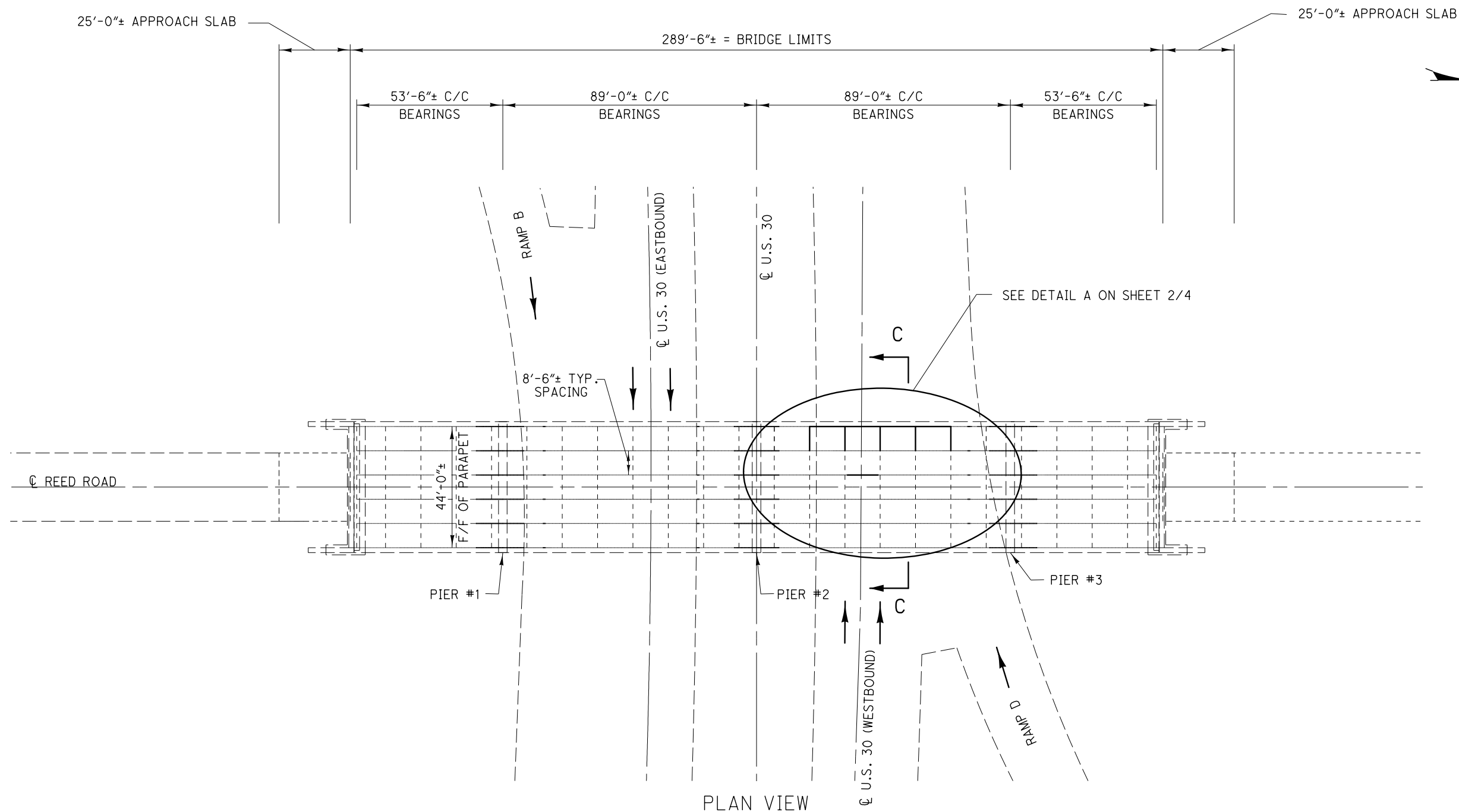


SECTION A-A

- NOTES:  
 1) REPLACE ALL THREE (3) CROSS FRAMES ILLUSTRATED IN SECTION VIEW A-A.  
 1) FOR SECTION VIEW B-B, SEE SHEET 3/4.

DESIGN FILE: \\ProjectData\110382\Design\Structures\RIC-30-1642.dgn  
 MODELNAME: Design  
 WORKSTATION: foster  
 DATE: 6/3/2019

DESIGN AGENCY		ODOT DISTRICT THREE CAPITAL PROGRAMS	
DESIGNED	NR	CHECKED	KCK
DRAWN	NR	REVISED	
REVIEWED	KAK	STRUCTURE FILE NUMBER	7001517
DATE	05/19		
DETAIL A AND SECTION A-A U.S. 30 UNDER REED ROAD.			
RIC-30-16.42			
2 / 4		10 / 12	



PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
512	89	FT	CONCRETE REPAIR BY EPOXY INJECTION
513	796	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN
514	615	SQ FT	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (THREE COAT)
849	LUMP		DAMAGE ASSESSMENT
849	LUMP		SURFACE PREPARATION
849	6	HOUR	REPAIRING DAMAGED MEMBERS BY GRINDING
849	LUMP		STRAIGHTENING DAMAGED MEMBERS

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

PROPOSED WORK:

- REMOVE EXISTING CROSS FRAME ASSEMBLIES THAT ARE TO BE REPLACED. COST INCLUDED IN ITEM 513.
- HEAT STRAIGHTEN BEAMS PER ITEM 849. GRIND GOUGES & TEAR IN ACCORDANCE TO ITEM 849.
- INSTALL NEW CROSS FRAME ASSEMBLIES PER ITEM 513, SEE SHEET 4/4 FOR DETAILS.
- PAINT ALL REPAIR AREAS ON BEAMS 1, 3, 5 AND NEW ANGLES PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (THREE COAT).
- EPOXY INJECT AREA BETWEEN BEAM AND DECK USING ITEM 512. ANY EXPOSED REINFORCEMENT ON THE BOTTOM OF THE DECK SHALL BE BRUSHED WITH GALVANIZING AS PER ASTM A 780 PRIOR TO THE EPOXY APPLICATION. ALL COSTS INCLUDED IN ITEM 512.

NOTES:

FOR SECTION VIEW C-C, SEE SHEET 4/4.

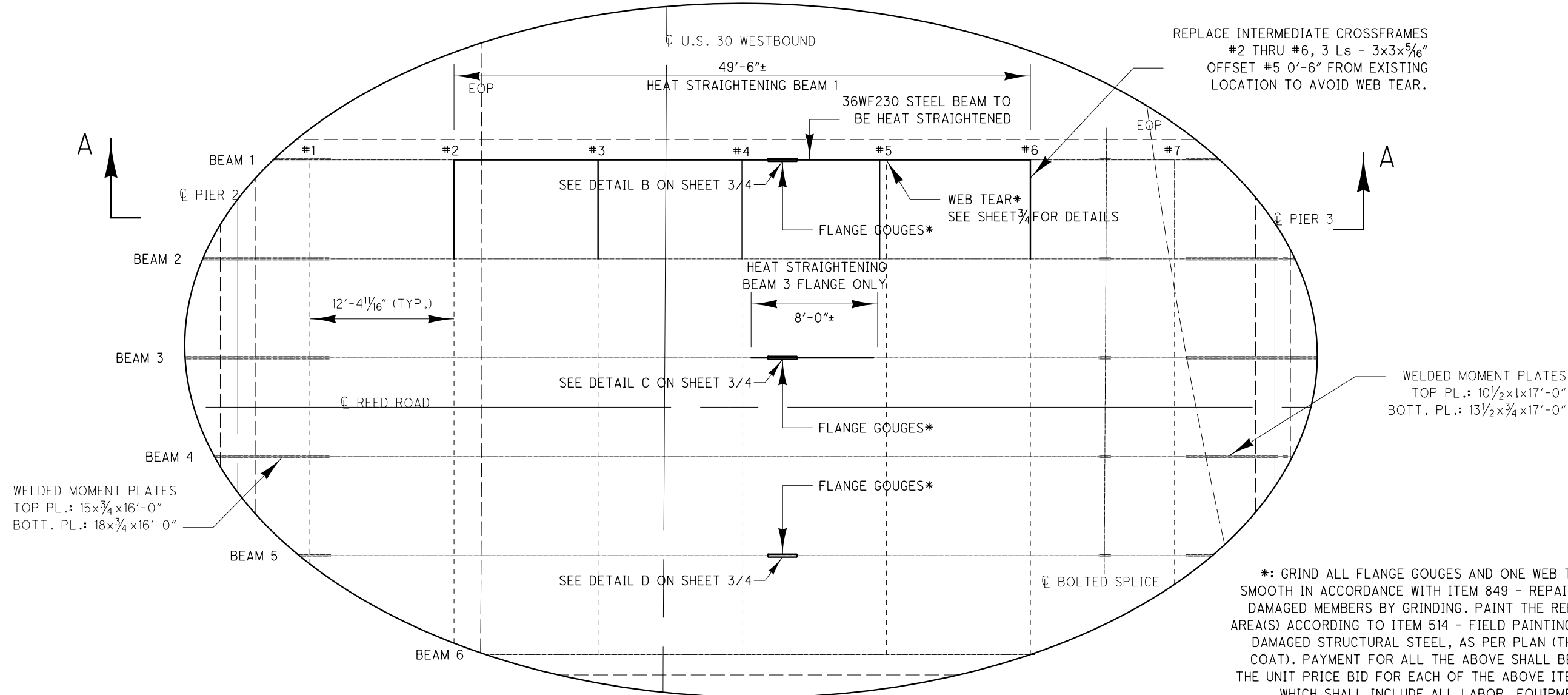
DESIGN AGENCY  
ODOT DISTRICT THREE  
ENGINEERING

REVIEWED  
KAK  
DATE  
01/21  
STRUCTURE FILE NUMBER  
7001517

DRAWN  
NRF  
CHECKED  
KCK  
REVISED

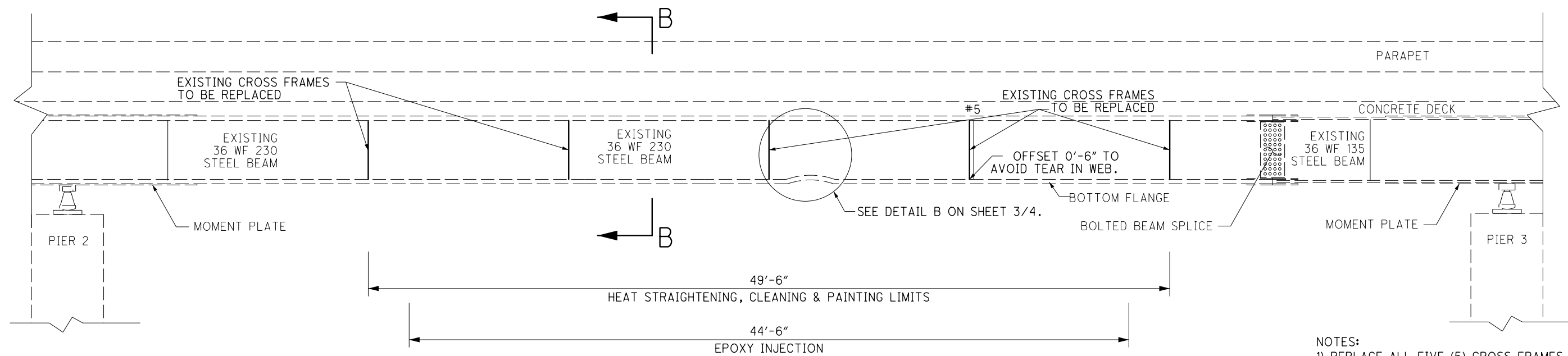
GENERAL PLAN  
RIC-30-1642  
REED ROAD OVER USR 30

RIC-30-16.42  
PID No. 114029



DETAIL A - SPAN 3

\*: GRIND ALL FLANGE GOUGES AND ONE WEB TEAR SMOOTH IN ACCORDANCE WITH ITEM 849 - REPAIRING DAMAGED MEMBERS BY GRINDING. PAINT THE REPAIR AREA(S) ACCORDING TO ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (THREE COAT). PAYMENT FOR ALL THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR EACH OF THE ABOVE ITEMS, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK.



SECTION A-A BEAM 1

NOTES:  
1) REPLACE ALL FIVE (5) CROSS FRAMES ILLUSTRATED IN SECTION VIEW A-A.  
1) FOR SECTION VIEW B-B, SEE SHEET 4/4.

DESIGN AGENCY ODOT DISTRICT THREE ENGINEERING	
DATE 01/21	STRUCTURE FILE NUMBER 7001517
REVIEWED KAK	REVISOR 7001517
DRAWN NRF	CHECKED KCK
STRUCTURE DETAILS I RIC-30-1642 REED ROAD OVER USR 30	
RIC-30-16.42 PID No. 114029	
2 / 4	
10 12	

I:\ProjectData\14029\Design\Structures\RIC-30-1642.dgn

**Attachment D**  
**Damage Photographs**





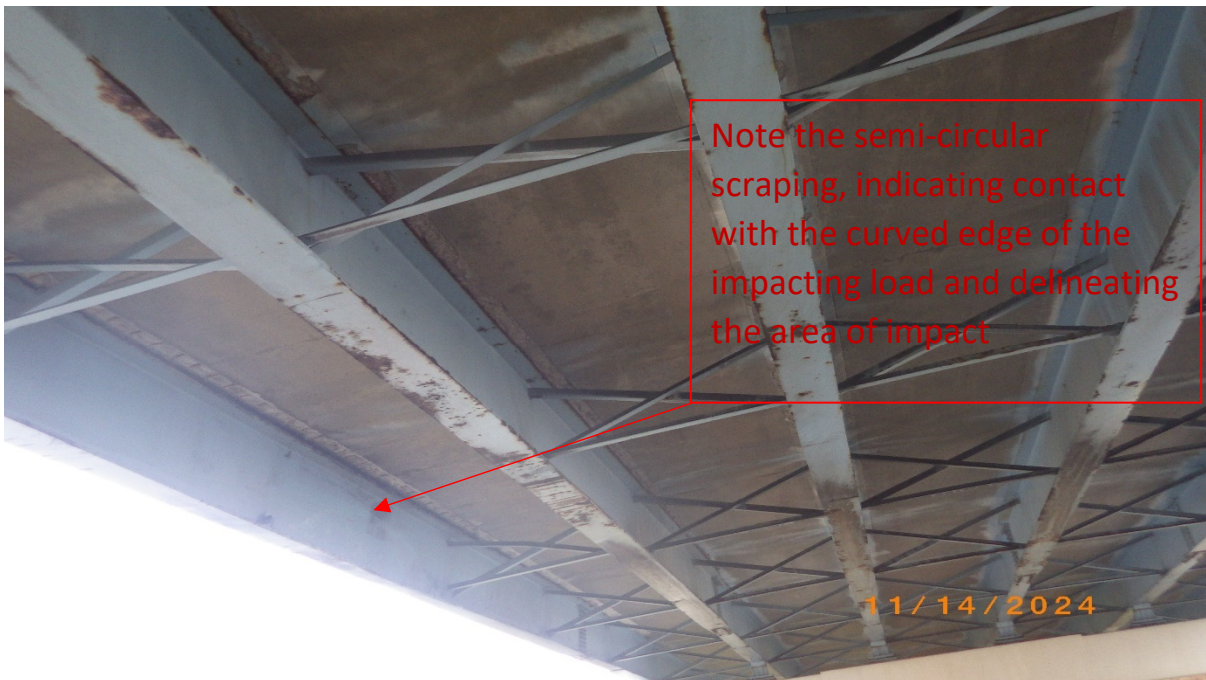
*Photo # 1 - Span 3 Beams 1 and 2, looking south, immediately following impact*

November 19, 2024



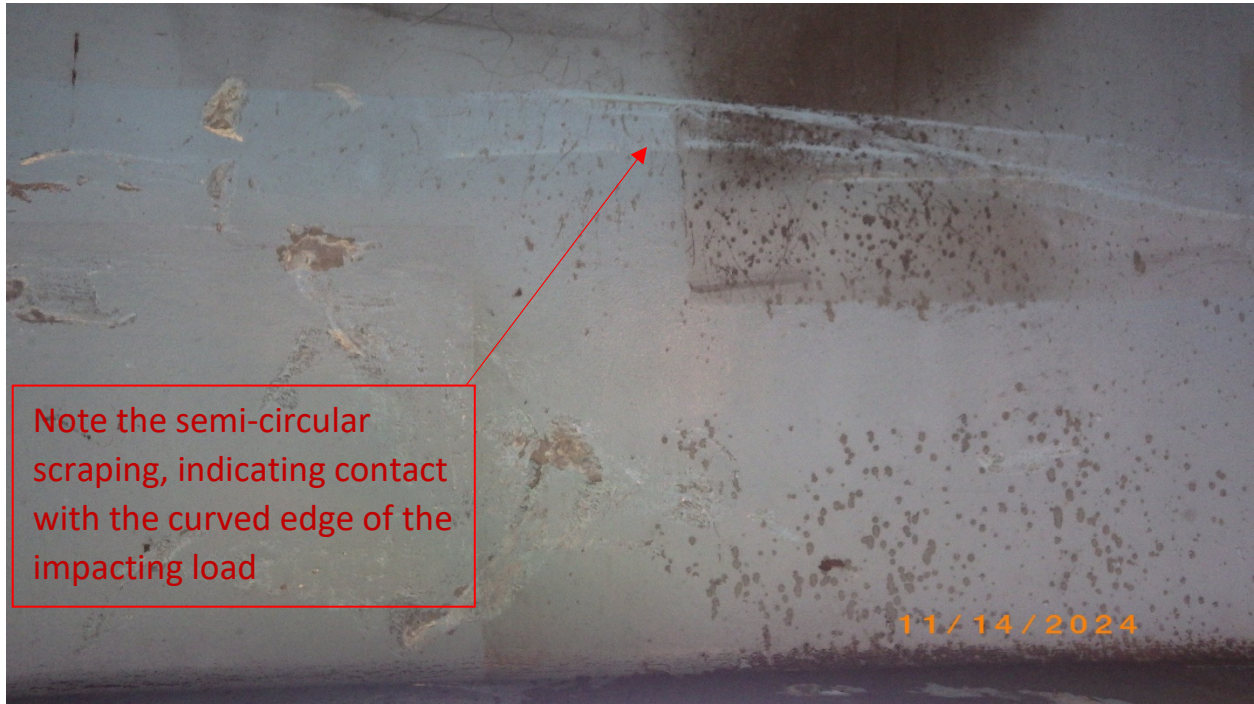


**Photo # 2** - Oversized load that impacted the bridge, loaded for removal



**Photo # 3** - View of point of impact, looking Northwest from median





**Photo # 4** - Beam 1, inside surface of web at point of impact, showing superficial damage



**Photo # 5** - Beam 1, bottom flange condition at point of impact



*Photo # 6 - Beam 1, bottom flange, looking South from point of impact*



**Photo # 7** - Beam 1, bottom flange, looking North from point of impact





**Photo # 8** - Beam 1, looking South from Pier 3



*Photo # 9 - Bay 1, looking South from Crossframe 7 following removal of Crossframes 4-7*



*Photo # 10 - Bay 1, looking North from Crossframe 3, following removal of Crossframes 3-7*





**Photo # 11** – Beam 1, inside of top flange, separation from haunch at point of impact



**Photo # 12** – Beam 1, inside of top flange, separation from haunch at Crossframe 3





**Photo # 13** – Beam 1, inside of top flange, separation from haunch at Crossframe 5



**Photo # 14** – Beam 1, inside of top flange, separation from haunch at Crossframe 6





**Photo # 15** – Beam 1 Span 3 Splice Plate. Note fresh spalling



**Photo # 16** – Bearing 1, Pier 3



**Photo # 17** – Span 3, Beam 1, outside, looking South. Note spalling



**Photo # 18** – Span 3, Beam 1, outside, looking North. Note spalling. The hanging spall was removed by ODOT forces





**Photo # 19** – Fresh spalling on shoulder, South side of Westbound roadway



**Photo # 20** – Fresh spalling on shoulder, North side of Westbound roadway





**Photo # 21** – Beam 2, looking South from point of impact. Note spalling



**Photo # 22:** *Beam 2, looking North from point of impact. Note spalling*



**Photo # 23** – Crossframe 1 & 2, looking south





**Photo # 24** – *Crossframe 2 at Beam 1*



**Photo # 25** – Crossframe 3 at Beam 1





*Photo # 26 – Crossframe 3 at Beam 1, lower welds*



**Photo # 27** – Crossframe 3 at Beam 2



**Photo # 28** – Crossframe 4 at Beam 1, lower diagonal weld. Note ~ 1/4" deep tearout of web material





**Photo # 29** – Crossframe 4 at Beam 2



**Photo # 30** – Crossframe 4 at Beam 2, lower horizontal weld. Note tearout of web material



**Photo # 31** – Crossframe 5 welds at Beam 1





**Photo # 32** – Crossframe 5 at Beam 1, lower welds. Note tearout of web material at horizontal member weld



**Photo # 33** – Crossframe 5 at Beam 2



**Photo # 34** – Crossframe 6 at Beam 1





*Photo # 35 – Crossframe 6 at Beam 2*



**Photo # 36 & 37 – Crossframe 7 at Beam 1**





**Photo # 38** – Crossframe 7 at Beam 1. Note full tearout of the web at the diagonal weld



**Photo # 39** – Existing spall from prior incidents, inside of Beam 1 top flange, shown near point of impact





*Photo # 40 – Pavement gouge in Westbound driving lane*



**Photo # 41** – Pavement gouges in Westbound driving lane, filled with cold patch asphalt

**Attachment E**  
**Bridge Inspection Reports**  
**2023**  
**2021**



Inspector: Harding,Rich  
 Inspection Date: 05/04/2023

Structure Number: 7001517  
 Facility Carried: T-289 REED ROAD

## Ohio Bridge Inspection Summary Report

**RIC-00030-1642 (7001517)**

2: District 50092 - MIFFLIN TWP (RIC county)  
 ict  
 03  
 21: Major Maint A/B 01 - State Highway Agency /  
 225 Routine Main A/B 03 - Town or Township Highway /  
 Agency  
 221 Inspection A/B 01 - State Highway Agency /  
 220: Inv. Location DISTRICT 03

5A: Inventory Route 1 00289  
 7: Facility On T-289 REED ROAD  
 6: Feature Ints OVER RIC-030 -1638  
 9: Location 2.34 MILES EAST OF US 42  
 Lat, Lon 40.778542 , -82.426928

### Condition

**58: Deck 7 - Good Condition**  
 58.01 Wearing Surface 7 - Good (1% distress)  
 58.02 Joint 6- Satisfactory (isolated leaking)  
**59: Superstructure 7 - Good Condition**  
 59.01 Paint & PCS 7 - Good (1-5% corr.)  
**60: Substructure 7 - Good Condition**  
**61: Channel N**  
**61.01 Scour N - Not Applicable**  
**62: Culverts N - Not Applicable**

**67.01 GA 7**

### Appraisal

Sufficiency Rating 96.0 SD/FO 2 - FO  
 36: Rail, Tr, Gd, Term Std 1 0 1 1  
 72: Approach Alignment 8 - Equal to present desirable criteria  
 113: Scour Critical N - Not over waterway  
 71: Waterway Adequacy N - Not Applicable

### Geometric

48: Max Span Length (ft) 89.0  
 49: Structure Length (ft) 290.0  
 52: Deck Width, Out-To-Out (ft) 46.0  
 424: Deck Area (sf) 13340  
 32: Appr Roadway Width (ft) 44.0  
 51: Road Width, Curb-Curb (ft) 42.5  
 50A: Curb/SW Width: Left (ft) 0  
 50A: Curb/SW Width: Right (ft) 0  
 34: Skew (deg) 0  
 33: Bridge Median 0 - No median  
 54B: Min Vert Underclearance (ft) 14.5  
 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 (%) 110  
 704: Analysis Date 02/25/2019  
 63: Analysis Method 8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

### Structure Type

43: Bridge Type 4 - Steel continuous  
 02 - Stringer/Multi-beam or Girder  
 N- Not Applicable  
 45: Spans Main / Approach 4 / 0  
 107: Deck Type 1 - Concrete Cast-in-Place  
 408: Composite Deck N - Non-composite Construction  
 414A Joint Type 1 2 - Sliding Metal Plate Angle  
 414B: Joint Type 2 N - None  
 108A: Wearing Surface 1 - Monolithic Concrete (concurrently placed with structural deck)  
 N- Not Applicable

422: WS Date 01/01/1977  
 423: WS Thick (in) 1.2  
 482: Protective Coating 5 - Paint System OZEU  
 483: PCS Date 08/27/1996  
 453: Bearing Type 1 2 - Rockers & Bolsters  
 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 1977 / 0000  
 42A: Service On 1 - Highway  
 42B: Service Under 1 - Highway, with or w/out pedestrian  
 28A: Lanes on 02  
 28B: Lanes Under 06  
 19: Bypass Length 0  
 29: ADT 2227  
 109: % Trucks (%) 5

### Inspections

	Months	
90: Routine Insp.	24	05/04/2023
92A: FCM Insp.	N	0
92B: Dive Insp.	N	0
92C: Special Insp.	N	0
92D: UBIT Insp.	N	0
92E: Drone Insp.	N	0
Inspector	Harding,Rich	

**Inspector:** Harding, Rich  
**Inspection Date:** 05/04/2023

**Structure Number:** 7001517  
**Facility Carried:** T-289 REED ROAD

Inspector: Harding, Rich  
 Inspection Date: 05/04/2023

Structure Number: 7001517  
 Facility Carried: T-289 REED ROAD

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12-Reinforced Concrete Deck</b>	3 - Mod.	13340	sq. ft.	12931	328	81	0
<p>CS2-2021 Scattered trans. hairlines &amp; cracks, some w/ effl. &amp; minor to moderate sat. areas areas starting to dry out.</p> <p>CS3-2021 Span #3 along top flange of lt. fascia beam (full length): Spalled area (some deep) w/ areas of exposed resteel along inside edge (Sealed w/ repair Proj.</p>							
521-Concrete Protective Coating		1160	sq. ft.	1160	0	0	0
805-Wearing Surface - Monolithic Concrete		12325	sq. ft.	12100	225	0	0
<p>CS2-2021 Scattered trans. cracks &amp; hairlines.; both fwd. &amp; rear @ deck ends along expan. joints: small delam.</p>							
<b>107-Steel Open Girder/Beam</b>	3 - Mod.	1740	ft.	1720	20	0	0
<p>CS2-2021 2020, Beam 1,2,3 w.b. lane damage from overheight load. 2019 Lt. fascia beam over WB driving lane damaged from overheight load - Repaired w/ Proj.# 7036 (19) - Several scrapes &amp; a few gouges along bottom flange of lt. fascia beam over wb driving plus a few scrapes on bottom flange of beam #2 - 2014 Repair Proj.#8014 (14) for span #3 - Previously lt. fascia beam w/ lt. sweep in alignment over both WB driving, passing, &amp; ramp lanes w/ slight twist in bottom flange over driving lane (02 -'14 collision damage) - Previously span # 3, Lt. fascia beam over driving lane: bottom flange bent upward w/ slight sweep in alignment from collision damage plus multiple scrapes &amp; scratches near same area &amp; on next beam plus scraped area over passing lane; beams w/ small areas of minor pitting;</p>							
515-Steel Protective Coating		22416	sq. ft.	20806	1288	322	0
<p>CS2-2021 Span #3, Lt. fascia beam: Bottom flange, portions of web, &amp; x-frames re-painted w/ repair Proj.#8014(14) &amp; Proj.#7036(19).</p> <p>CS3-2021 New scuff &amp; scrape marks in new paint; rust along flanges, bolted splice plate connections, &amp; bearing</p>							
<b>205-Reinforced Concrete Column</b>	3 - Mod.	9	each	9	0	0	0
521-Concrete Protective Coating		1102	sq. ft.	1102	0	0	0
<b>215-Reinforced Concrete Abutment</b>	3 - Mod.	92	ft.	82	10	0	0
<p>CS2-2021 A few vertical hairlines / cracks; wet areas &amp; rust staining - leakage @ expan. joint</p>							
521-Concrete Protective Coating		230	sq. ft.	230	0	0	0
<b>234-Reinforced Concrete Pier Cap</b>	3 - Mod.	138	ft.	132	6	0	0
<p>CS2-2021 Pier #1: Small delam. area on bottom of cap; a few vertical hairlines &amp; cracks.</p>							
521-Concrete Protective Coating		2004	sq. ft.	2004	0	0	0
<b>305-Assembly Joint without Seal</b>	3 - Mod.	92	ft.	47	45	0	0
<p>CS2-2021 Both fwd. &amp; rear: slight offset plus areas of rust, pitting, &amp; minor section loss; both: 2011 rubberized joint sealer applied to open joint - uneven / poor application w/ voids &amp; gaps in material along joints w/ leakage - fwd. w/ section of material missing.</p>							
<b>311-Movable Bearing</b>	3 - Mod.	25	each	17	8	0	0
<p>CS2-2021 Areas of pack rust @ abut. rockers; Pier #2, lt. bolster (fixed) bearing for lt. fascia beam: Previously sole plate w/ broken weld @ side cover plate</p>							
<b>313-Fixed Bearing</b>	3 - Mod.	5	each	5	0	0	0



Inspector: Harding, Rich  
 Inspection Date: 05/04/2023

Structure Number: 7001517  
 Facility Carried: T-289 REED ROAD

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>321-Reinforced Concrete Approach Slab</b>	3 - Mod.	2200	sq. ft.	2150	50	0	0
CS2-2021 Rear: Newer asphalt resurfacing - Fwd.: Some scattered cracks.							
<b>331-Reinforced Concrete Bridge Railing</b>	3 - Mod.	580	ft.	480	100	0	0
CS2-2021 Both epoxy sealed w/ proj.; scattered hairlines, most along toe of parapet; fwd.: one spalled area in top of parapet.							
521-Concrete Protective Coating		3671	sq. ft.	3671	0	0	0
<b>815-Drainage</b>	3 - Mod.	12	each	12	0	0	0
<b>830-Abutment Backwall</b>	3 - Mod.	92	ft.	63	20	9	0
CS2-2021 Both fwd.& rear tops @ w.s. w/ a couple small areas cracked & breaking up; Both tops @ w.s.: previous concrete repairs w/ Proj. CS3-2021 Areas w/ delam., spalls, & rust staining on vertical face;							

# Ohio Bridge Inspection Summary Report

**RIC-00030-1642 (7001517)**

2: District 03 50092 - MIFFLIN TWP (RIC county)  
 21: Major Maint A/B 01 - State Highway Agency /  
 225 Routine Main A/B 03 - Town or Township Highway /  
 Agency  
 221 Inspection A/B 01 - State Highway Agency /  
 220: Inv. Location RIC

5A: Inventory Route 1 C0289  
 7: Facility On T-289 REED ROAD  
 6: Feature Ints OVER RIC-030 -1638  
 9: Location 2.34 MILES EAST OF US 42

Condition	
<b>58: Deck</b>	<b>7 - Good Condition</b>
58.01 Wearing Surface	7 - Good (1% distress)
58.02 Joint	6- Satisfactory (isolated leaking)
<b>59: Superstructure</b>	<b>7 - Good Condition</b>
59.01 Paint & PCS	7 - Good (1-5% corr.)
<b>60: Substructure</b>	<b>7 - Good Condition</b>
<b>61: Channel</b>	<b>N</b>
61.01 Scour	<b>N - Not Applicable</b>
<b>62: Culverts</b>	<b>N - Not Applicable</b>

Structure Type	
43: Bridge Type	4 - Steel continuous
	02 - Stringer/Multi-beam or Girder
	N- Not Applicable
45: Spans Main / Approach	4 / 0
107: Deck Type	1 - Concrete Cast-in-Place
408: Composite Deck	N - Non-composite Construction
414A Joint Type 1	2 - Sliding Metal Plate Angle
414B: Joint Type 2	N - None
108A: Wearing Surface	1 - Monolithic Concrete (concurrently placed with structural deck)
	N- Not Applicable

**67.01 GA 7**

Appraisal	
Sufficiency Rating	96.0 SD/FO 2 - FO
36: Rail, Tr, Gd, Term Std	1 0 1 1
72: Approach Alignment	8 - Equal to present desirable criteria
113: Scour Critical	N - Not over waterway
71: Waterway Adequacy	N - Not Applicable

422: WS Date	01/01/1977
423: WS Thick (in)	1.2
482: Protective Coating	5 - Paint System OZEU
483: PCS Date	08/27/1996
453: Bearing Type 1	2 - Rockers & Bolsters
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)

Geometric	
48: Max Span Length (ft)	89.0
49: Structure Length (ft)	290.0
52: Deck Width, Out-To-Out (ft)	46.0
424: Deck Area (sf)	13340
32: Appr Roadway Width (ft)	44.0
51: Road Width, Curb-Curb (ft)	42.5
50A: Curb/SW Width: Left (ft)	0
50A: Curb/SW Width: Right (ft)	0
34: Skew (deg)	0
33: Bridge Median	0 - No median
54B: Min Vert Underclearance (ft)	14.5
336A: Min Vert Clrnce IR Cardinal (ft)	99
336B: Min V Clr IR Non-Cardinal (ft)	0
578: Culvert Length (ft)	0

Age and Service	
27: Year Built/ 106 Rehab	1977 / 0000
42A: Service On	1 - Highway
42B: Service Under	1 - Highway, with or w/out pedestrian
28A: Lanes on	02
28B: Lanes Under	06
19: Bypass Length	0
29: ADT	2227
109: % Trucks (%)	5

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 (%)	110
704: Analysis Date	02/25/2019
63: Analysis Method	8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

Inspections		
	Months	
90: Routine Insp.	12	03/23/2021
92A: FCM Insp.	N	0
92B: Dive Insp.	N	0
92C: Special Insp.	N	0
92D: UBIT Insp.	N	
92E: Drone Insp.		
Inspector	Harding, Rich	

Inspector: Rich Harding  
 Inspection Date: 03/23/2021

Structure Number: 7001517  
 Facility Carried: T-289 REED ROAD

**Bridge Inspection Report**

**Element Inspection**

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12 - Reinforced Concrete Deck</b>	3 - Mod.	13340	sq. ft.	12931	328	81	0
	<p>CS2-2021 Scattered trans. hairlines &amp; cracks, some w/ effl. &amp; minor to moderate sat. areas areas starting to dry out.</p> <p>CS3-2021 Span #3 along top flange of lt. fascia beam (full length): Spalled area (some deep) w/ areas of exposed resteel along inside edge (Sealed w/ repair Proj.</p>						
805 - Wearing Surface - Monolithic Concrete		12325	sq. ft.	12100	225	0	0
	<p>CS2-2021 Scattered trans. cracks &amp; hairlines.; both fwd. &amp; rear @ deck ends along expan. joints: small delam.</p>						
<b>107 - Steel Open Girder/Beam</b>	3 - Mod.	1740	ft.	1720	20	0	0
	<p>CS2-2021 2020, Beam 1,2,3 w.b. lane damage from overheight load. 2019 Lt. fascia beam over WB driving lane damaged from overheight load - Repaired w/ Proj.# 7036(19) - Several scrapes &amp; a few gouges along bottom flange of lt. fascia beam over wb driving plus a few scrapes on bottom flange of beam #2 - 2014 Repair Proj.#8014(14) for span #3 - Previously Lt. fascia beam w/ lt. sweep in alignment over both WB driving, passing, &amp; ramp lanes w/ slight twist in bottom flange over driving lane (02 -'14 collision damage) - Previously span # 3, Lt. fascia beam over driving lane: bottom flange bent upward w/ slight sweep in alignment from collision damage plus multiple scrapes &amp; scratches near same area &amp; on next beam plus scraped area over passing lane; beams w/ small areas of minor pitting;</p>						
515 - Steel Protective Coating		22416	sq. ft.	20806	1288	322	0
	<p>CS2-2021 Span #3, Lt. fascia beam: Bottom flange, portions of web, &amp; x-frames re-painted w/ repair Proj.#8014(14) &amp; Proj.#7036(19).</p> <p>CS3-2021 New scuff &amp; scrape marks in new paint; rust along flanges, bolted splice plate connections, &amp; bearing</p>						
<b>205 - Reinforced Concrete Column</b>	3 - Mod.	9	each	9	0	0	0
<b>215 - Reinforced Concrete Abutment</b>	3 - Mod.	92	ft.	82	10	0	0
	<p>CS2-2021 A few vertical hairlines / cracks; wet areas &amp; rust staining - leakage @ expan. joint</p>						
<b>234 - Reinforced Concrete Pier Cap</b>	3 - Mod.	138	ft.	132	6	0	0
	<p>CS2-2021 Pier #1: Small delam. area on bottom of cap; a few vertical hairlines &amp; cracks.</p>						
<b>305 - Assembly Joint without Seal</b>	3 - Mod.	92	ft.	47	45	0	0
	<p>CS2-2021 Both fwd. &amp; rear: slight offset plus areas of rust, pitting, &amp; minor section loss; both: 2011 rubberized joint sealer applied to open joint - uneven / poor application w/ voids &amp; gaps in material along joints w/ leakage - fwd. w/ section of material missing.</p>						



Inspector: Rich Harding  
 Inspection Date: 03/23/2021

Structure Number: 7001517  
 Facility Carried: T-289 REED ROAD

**Bridge Inspection Report**

**Element Inspection**

<b>311 - Movable Bearing</b>	3 - Mod.	25	each	17	8	0	0
CS2-2021 Areas of pack rust @ abut. rockers; Pier #2, lt. bolster (fixed) bearing for lt. fascia beam: Previously sole plate w/ broken weld @ side cover plate							
<b>313 - Fixed Bearing</b>	3 - Mod.	5	each	5	0	0	0
<b>321 - Reinforced Concrete Approach Slab</b>	3 - Mod.	2200	sq. ft.	2150	50	0	0
CS2-2021 Rear: Newer asphalt resurfacing - Fwd.: Some scattered cracks.							
<b>331 - Reinforced Concrete Bridge Railing</b>	3 - Mod.	580	ft.	480	100	0	0
CS2-2021 Both epoxy sealed w/ proj.; scattered hairlines, most along toe of parapet; fwd.: one spalled area in top of parapet.							
<b>815 - Drainage</b>	3 - Mod.	12	each	12	0	0	0
<b>830 - Abutment Backwall</b>	3 - Mod.	92	ft.	63	20	9	0
CS2-2021 Both fwd.& rear tops @ w.s. w/ a couple small areas cracked & breaking up; Both tops @ w.s.: previous concrete repairs w/ Proj.  CS3-2021 Areas w/ delam., spalls, & rust staining on vertical face;							

ODOT District: 03

## RIC-00030-1642\_(7001517)

Date Built: 07/01/1977

Major Maint: 01 - State Highway Agency

Facility Carried: T-289 REED ROAD

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 03 - Town or Township Highway Agency

Feature Inters: OVER RIC-030 -1638

Traffic Under: 1 - Highway, with or w/out pedestrian

Insp. 01 - State Highway Agency

FIPS Code: 50092 - MIFFLIN TWP (RIC county)

Location: RIC

2.34 MILES EAST OF US 42

Resp A:

Inspector

Harding, Rich

Inspection Date

03/23/2021

Reviewer

Kapustar, Kent

Insp

Resp B:

### Inspector Comments - Deck and Approach

#### Deck

##### Floor/Slab (SF)

##### Edge of Floor/Slab (LF)

Both fascia & bottom edges epoxy sealed w/ 2011 proj..

##### Bridge Wearing Surface (SF)

##### Bridge Railing (LF)

Both epoxy sealed w/ proj.; scattered hairlines, most along toe of parapet; fwd.: one spalled area in top of parapet.

##### Deck Drainage (EA)

All scuppers clean.

##### Expansion Joint (LF)

Both fwd.& rear: slight offset plus areas of rust, pitting,& minor section loss; both: 2011 rubberized joint sealer applied to open joint - uneven / poor application w/ voids & gaps in material along joints w/ leakage - fwd. w/ section of material missing.

#### Approach

##### Approach Wearing Surface (EA)

2020 Rear w/ newer asphalt resurfacing - Fwd. w/ some scattered cracks; 2018 New asphalt resurfacing; 2011 partial new asphalt resurfacing w/ proj.- both fwd.& rear w/ a few scattered cracks; both fwd.& rear: approx. 6' wide concrete shoulders added w/ proj.#514(10).

##### Approach Slab (SF)

2020 Rear: Newer asphalt resurfacing - Fwd.: Some scattered cracks; 2018 New asphalt resurfacing; both: 2011 new concrete repair @ jct. w/ top of backwall plus new asphalt overlay - a few scattered cracks.

##### Approach Guardrail (EA)

2020 Fwd. rt. & lt. plus rear rt. w/ collision damage & a few rotten & broken posts.

### Inspector Comments - General Appraisal

#### Superstructure

##### Superstructure Alignment (EA)

### **Beams/Girders (LF)**

2020,2019 Lt. fascia beam over WB driving lane damaged from overheight load - Repaired w/ Proj.# 7036(19) - Several scrapes & a few gouges along bottom flange of lt. fascia beam over wb driving plus a few scrapes on bottom flange of beam #2 - 2014 Repair Proj.#8014(14) for span #3 - Previously lt. fascia beam w/ lt. sweep in alignment over both WB driving, passing,& ramp lanes w/ slight twist in bottom flange over driving lane (02 -'14 collision damage) - Previously span # 3, Lt. fascia beam over driving lane: bottom flange bent upward w/ slight sweep in alignment from collision damage plus multiple scrapes & scratches near same area & on next beam plus scraped area over passing lane; beams w/ small areas of minor pitting; 2008 nbis qar decal #03-0014 attached to web of inside face of rt. fascia beam @ fwd. end.

### **Diaphragm/X-Frames (EA)**

2019 X-frames w/ broken welds @ impact area of bridge hit - Repaired w/ Proj.#7036(19); Span #3, bay #1 along lt. fascia beam: Previously all x-frame welds broken plus missing bottom angle over wb driving lane - repaired w/ Proj.#8014(14).

### **Bearing Devices (EA)**

Areas of pack rust @ abut. rockers; Pier #2, lt. bolster (fixed) bearing for lt. fascia beam: Previously sole plate w/ broken weld @ side cover plate - repaired w/ Proj.#8014(14).

### **Protective Coating System (LF)**

Span #3, Lt. fascia beam: Bottom flange, portions of web, & x-frames re-painted w/ repair Proj.#8014 (14) & Proj.#7036(19) - 2020 New scuff & scrape marks in new paint; rust along flanges, bolted splice plate connections, & bearings.

## **Substructure**

### **Abutment Walls (LF)**

A few vertical hairlines / cracks; wet areas & rust staining - leakage @ expan. joint.

### **Pier Caps (LF)**

Pier #1: Small delam. area on bottom of cap; a few vertical hairlines & cracks.

### **Pier Columns/Bents (EA)**

Pier #1: lt. column @ splash line w/ previous vertical cracks, delam. areas, & sat.- concrete repairs w/ 2011 proj..

### **Backwalls (LF)**

Areas w/ delam., spalls, & rust staining on vertical face; Both fwd.& rear tops @ w.s. w/ a couple small areas cracked & breaking up; Both tops @ w.s.: previous concrete repairs w/ Proj..

## **Culvert**

## **Inspector Comments - Waterway**

### **Waterway Adequacy**



**Inspector:** Harding, Rich

**Structure Number:** 7001517

**Inspection Date:** 05/04/2023

**Facility Carried:** T-289 REED ROAD

ODOT District: District 03

**RIC-00030-1642 \_(7001517)**

Date Built: 07/01/1977

Major Maint: 01 - State Highway Agency

Facility Carried: T-289 REED ROAD

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 03 - Town or Township Highway Agency

Feature Inters: OVER RIC-030 -1638

Traffic Under: 1 - Highway, with or w/out pedestrian

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 50092 - MIFFLIN TWP (RIC county)

Location: DISTRICT 03

2.34 MILES EAST OF US 42

Insp Resp B:

Inspector

Harding, Rich

Inspection Date 05/04/2023

Reviewer Kapustar, Kent

## **Inspector Comments - Deck and Approach**

### **Deck**

#### **Floor/Slab (SF)**

#### **Edge of Floor/Slab (LF)**

Both fascia & bottom edges epoxy sealed w/ 2011 proj..

#### **Bridge Wearing Surface (SF)**

#### **Bridge Railing (LF)**

Both epoxy sealed w/ proj.; scattered hairlines, most along toe of parapet; fwd.: one spalled area in top of parapet.

#### **Deck Drainage (EA)**

All scuppers clean.

#### **Expansion Joint (LF)**

Both fwd. & rear: slight offset plus areas of rust, pitting, & minor section loss; both: 2011 rubberized joint sealer applied to open joint - uneven / poor application w/ voids & gaps in material along joints w/ leakage - fwd. w/ section of material missing.

### **Approach**

#### **Approach Wearing Surface (EA)**

2020 Rear w/ newer asphalt resurfacing - Fwd. w/ some scattered cracks; 2018 New asphalt resurfacing; 2011 partial new asphalt resurfacing w/ proj.- both fwd. & rear w/ a few scattered cracks; both fwd. & rear: approx. 6' wide concrete shoulders added w/ proj.#514(10).

#### **Approach Slab (SF)**

2020 Rear: Newer asphalt resurfacing - Fwd.: Some scattered cracks; 2018 New asphalt resurfacing; both: 2011 new concrete repair @ jct. w/ top of backwall plus new asphalt overlay - a few scattered cracks.

#### **Approach Guardrail (EA)**

2020 Fwd. rt. & lt. plus rear rt. w/ collision damage & a few rotten & broken posts.

## **Inspector Comments - General Appraisal**

### **Superstructure**

Inspector: Harding, Rich

Structure Number: 7001517

Inspection Date: 05/04/2023

Facility Carried: T-289 REED ROAD

## **Superstructure Alignment (EA)**

### **Beams/Girders (LF)**

2020, 2019 Lt. fascia beam over WB driving lane damaged from overheight load - Repaired w/ Proj.# 7036(19) - Several scrapes & a few gouges along bottom flange of lt. fascia beam over wb driving plus a few scrapes on bottom flange of beam #2 - 2014 Repair Proj.#8014(14) for span #3 - Previously lt. fascia beam w/ lt. sweep in alignment over both WB driving, passing, & ramp lanes w/ slight twist in bottom flange over driving lane (02-'14 collision damage) - Previously span #3, Lt. fascia beam over driving lane: bottom flange bent upward w/ slight sweep in alignment from collision damage plus multiple scrapes & scratches near same area & on next beam plus scraped area over passing lane; beams w/ small areas of minor pitting; 2008 nbis qar decal #03-0014 attached to web of inside face of rt. fascia beam @ fwd. end.

### **Diaphragm/X-Frames (EA)**

2019 X-frames w/ broken welds @ impact area of bridge hit - Repaired w/ Proj.#7036(19); Span #3, bay #1 along lt. fascia beam: Previously all x-frame welds broken plus missing bottom angle over wb driving lane - repaired w/ Proj.#8014(14).

### **Bearing Devices (EA)**

Areas of pack rust @ abut. rockers; Pier #2, lt. bolster (fixed) bearing for lt. fascia beam: Previously sole plate w/ broken weld @ side cover plate - repaired w/ Proj.#8014(14).

### **Protective Coating System (LF)**

Span #3, Lt. fascia beam: Bottom flange, portions of web, & x-frames re-painted w/ repair Proj.#8014 (14) & Proj.#7036(19) - 2020 New scuff & scrape marks in new paint; rust along flanges, bolted splice plate connections, & bearings.

## **Substructure**

### **Abutment Walls (LF)**

A few vertical hairlines / cracks; wet areas & rust staining - leakage @ expan. joint.

### **Pier Caps (LF)**

Pier #1: Small delam. area on bottom of cap; a few vertical hairlines & cracks.

### **Pier Columns/Bents (EA)**

Pier #1: lt. column @ splash line w/ previous vertical cracks, delam. areas, & sat.- concrete repairs w/ 2011 proj..

### **Backwalls (LF)**

Areas w/ delam., spalls, & rust staining on vertical face; Both fwd. & rear tops @ w.s. w/ a couple small areas cracked & breaking up; Both tops @ w.s.: previous concrete repairs w/ Proj..

## **Culvert**

**Attachment F**  
**Construction Cost Estimate**

November 19, 2024

IMMEDIATE ACTION ESTIMATE							
<b>PID: 122937</b>	<b>PLANNING-LEVEL ESTIMATE</b>	<b>RIC-30-16.42 BRIDGE HIT, CRASH DATE 13NOV2024</b>					
ITEMS, QUANTITIES AND UNIT COSTS BASED ON FIELD DATA AND HISTORICAL BID DATA					PREPARED BY JNC, 16NOV2024		
<b>PROPOSED BID ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>BASE EST. UNIT COST</b>	<b>INFLATION FACTOR</b>	<b>EST. UNIT COST</b>	<b>EST. QTY</b>	<b>EST. COST</b>
103E05000	PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	LS	\$3,604.93	1	\$3,604.93	1	\$3,604.93
202E11401	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LB	\$2.50	1	\$2.50	473	\$1,182.30
513E90000	STRUCTURAL STEEL, MISC.: INSTALLATION OF TEMPORARY CROSSFRAME STRUTS	LB	\$26.00	1	\$26.00	515	\$13,377.00
614E11000	MAINTAINING TRAFFIC	LS	\$15,000.00	1	\$15,000.00	1	\$15,000.00
614E11110	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	HOUR	\$76.00	1	\$76.00	40	\$3,040.00
614E18600	PORTABLE CHANGEABLE MESSAGE SIGN	SNMT	\$1,200.00	1	\$1,200.00	1	\$1,200.00
624E10000	MOBILIZATION	LS	\$2,000.00	1	\$2,000.00	1	\$2,000.00
832E30000	EROSION CONTROL	EACH	\$1.00	1	\$1.00	250	\$250.00
	MISC. & CONTINGENCIES	LS	\$10,000.00	1	\$10,000.00	1	\$10,000.00
<b>TOTAL PROJECT EST. COST =</b>							<b>\$ 49,654.23</b>

November 19, 2024



COMPREHENSIVE REPAIR ESTIMATE							
PID: 122940		PLANNING-LEVEL ESTIMATE		RIC-30-16.42 BRIDGE HIT, CRASH DATE 13NOV2024			
ITEMS, QUANTITIES AND UNIT COSTS BASED ON FIELD DATA AND HISTORICAL BID DATA						PREPARED BY JNC, 16NOV2024	
PROPOSED BID ITEM	DESCRIPTION	UNIT	BASE EST. UNIT COST	INFLATION FACTOR	EST. UNIT COST	EST. QTY	EST. COST
103E05000	PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	LS	\$32,234.70	1	\$32,234.70	1	\$32,234.70
202E11401	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LB	\$5.00	1.29	\$6.45	624	\$4,026.74
512E10601	CONCRETE REPAIR BY EPOXY INJECTION, AS PER PLAN	FT	\$200.00	1.29	\$258.00	89	\$22,962.00
513E10201	STRUCTURAL STEEL MEMBERS, LEVEL UP, AS PER PLAN	LB	\$18.00	1.29	\$23.22	971	\$22,544.67
513E95020	STRUCTURAL STEEL, MISC.: REPAIR OF DAMAGED MAIN MATERIAL BY WELDING	LS	\$7,500.00	1.29	\$9,675.00	1	\$9,675.00
514E20001	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN	SF	\$77.00	1.29	\$99.33	799	\$79,381.21
614E11000	MAINTAINING TRAFFIC	LS	\$40,000.00	1.29	\$51,600.00	1	\$51,600.00
614E11110	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	HOURL	\$76.00	1.29	\$98.04	60	\$5,882.40
614E12420	DETOUR SIGNING	LS	\$10,000.00	1.29	\$12,900.00	1	\$12,900.00
614E18600	PORTABLE CHANGEABLE MESSAGE SIGN	SNMT	\$1,200.00	1.29	\$1,548.00	2	\$3,096.00
619E16000	FIELD OFFICE, TYPE A	MNTH	\$1,500.00	1.29	\$1,935.00	1	\$1,935.00
623E10000	CONSTRUCTION LAYOUT STAKES AND SURVEYING	LS	\$5,000.00	1.29	\$6,450.00	1	\$6,450.00
624E10000	MOBILIZATION	LS	\$8,000.00	1.29	\$10,320.00	1	\$10,320.00
832E30000	EROSION CONTROL	EACH	\$1.00	1	\$1.00	500	\$500.00
849E10001	DAMAGE ASSESSMENT, AS PER PLAN	LS	\$5,000.00	1.29	\$6,450.00	1	\$6,450.00
849E10500	SURFACE PREPARATION	LS	\$12,000.00	1.29	\$15,480.00	1	\$15,480.00
849E10600	REPAIRING DAMAGED MEMBERS BY GRINDING	HOURL	\$450.00	1.29	\$580.50	8	\$4,644.00
849E10700	STRAIGHTENING DAMAGED MEMBERS	LS	\$50,000.00	1.29	\$64,500.00	1	\$64,500.00
<b>TOTAL PROJECT EST. COST =</b>						<b>\$ 354,581.72</b>	

November 19, 2024