IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS
FOR
LEDGES STATE PARK
CCC BRIDGE RAILING AND WALKWAYS

BOONE COUNTY, IOWA

PROJECT # 23-02-08-06
IDOT PROJECT # SP-00SP(13)--7C-00

LICENSED PROFESSIONAL ENGINEER
MANDI L. ALDRICH PETERS
14439
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED UNDER MY SUPERVISION AND THAT ENGINEERING DECISIONS WITH REGARD TO THE DESIGN WERE MADE BY ME UNDER THE LAWS OF THE STATE OF IOWA.

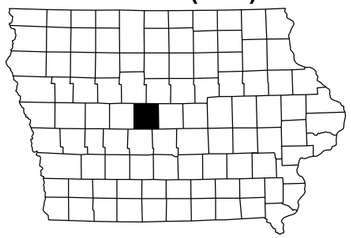
Mandi Lu Aldrich Peters

Digitally signed by Mandi Lu Aldrich Peters
Date: 2026.08.18 14:36:22 -05'00'

SIGNATURE DATE

MANDI L. ALDRICH PETERS
PRINTED OR TYPED NAME

MY LICENCE RENEWAL DATE IS DECEMBER 31, 2027
PAGES COVERED BY THIS SEAL: ALL



IOWA ONE CALL
1-800-292-8989 | 811
www.iowaonecall.com
Know what's below. Call before you dig.

DIRECTORY

PROJECT MANAGER		CONSTRUCTION INSPECTOR	
COMPANY	Iowa Department Of Natural Resources	COMPANY	Iowa Department Of Natural Resources
ADDRESS	6200 Park Ave., Ste 200	ADDRESS	6200 Park Ave., Ste 200
CITY,STATE,ZIP	Des Moines, Ia, 50321	CITY,STATE,ZIP	Des Moines, Ia, 50321
CONTACT	Mandi L. Aldrich Peters	CONTACT	Heath Delzell
TELEPHONE	515-205-1698	TELEPHONE	515-979-0104
FAX		FAX	
EMAIL	Mandi.Aldrich-Peters@dnr.iowa.gov	EMAIL	Heath.Delzell@dnr.iowa.gov

PROJECT DESCRIPTION

This project consists of replacing the wood railing and walkways on 2 CCC Bridges at Ledges State Park in Boone County.

AUTHORIZATION TO BID

Seth Moore

Digitally signed by Seth Moore
Date: 2026.08.18 11:29:33 -05'00'

AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY DATE

Travis Baker

Digitally signed by Travis Baker
Date: 2026.08.18 14:12:00 -05'00'

ENGINEERING BUREAU CHIEF DATE

SHEET INDEX

A.01	COVER SHEET
A.02	LOCATION MAP
B.01	TYPICAL CROSS SECTIONS AND DETAILS
B.02	TYPICAL CROSS SECTIONS AND DETAILS
B.03	TYPICAL CROSS SECTIONS AND DETAILS
B.04	TYPICAL CROSS SECTIONS AND DETAILS
B.05	TYPICAL CROSS SECTIONS AND DETAILS
B.06	TYPICAL CROSS SECTIONS AND DETAILS
B.07	TYPICAL CROSS SECTIONS AND DETAILS
B.08	TYPICAL CROSS SECTIONS AND DETAILS
B.09	TYPICAL CROSS SECTIONS AND DETAILS
B.10	TYPICAL CROSS SECTIONS AND DETAILS
B.11	TYPICAL CROSS SECTIONS AND DETAILS
B.12	TYPICAL CROSS SECTIONS AND DETAILS
C.01	QUANTITIES AND GENERAL INFORMATION

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

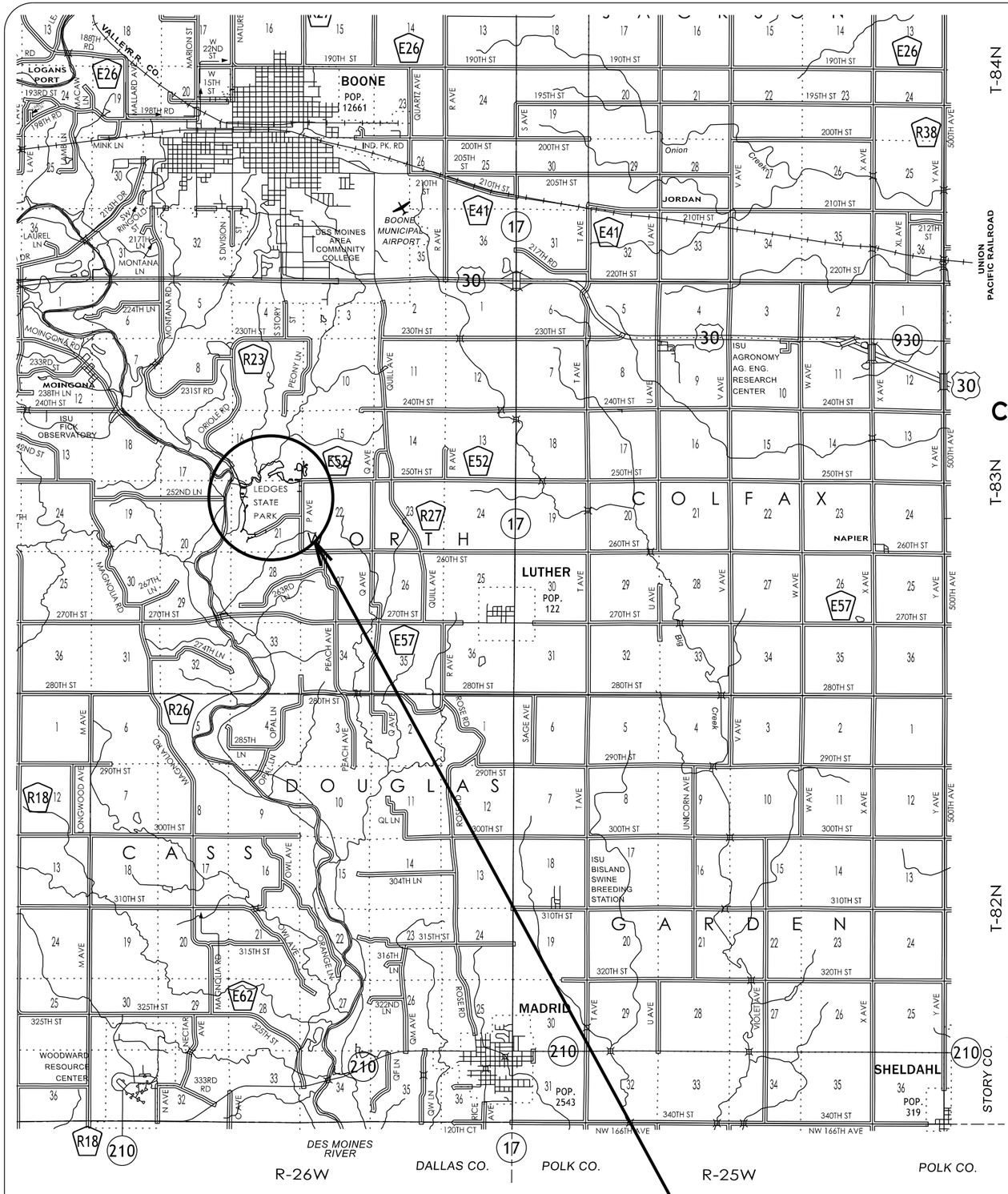
IOWA DNR

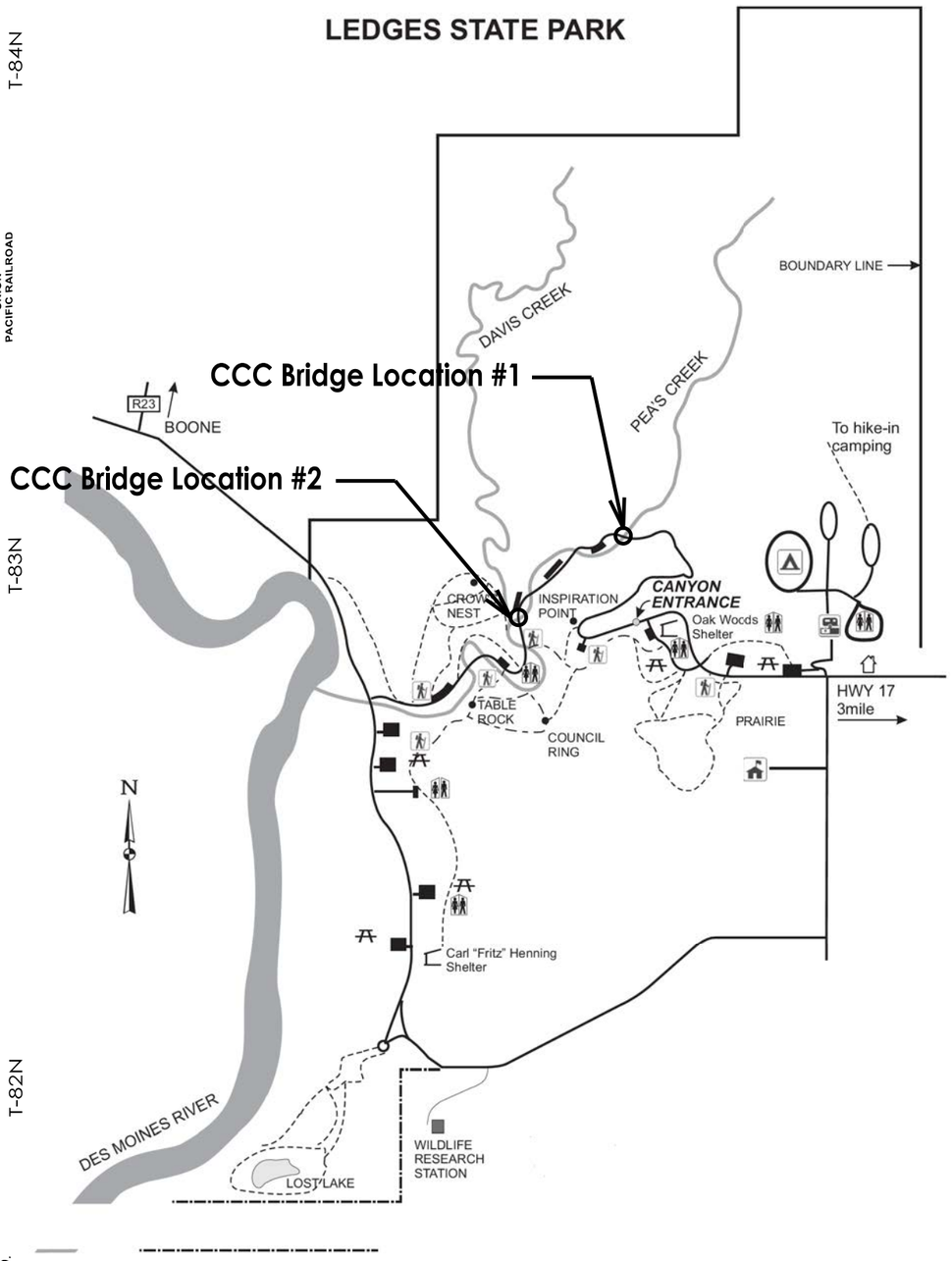
COVER SHEET

CCC BRIDGE RAILING AND WALKWAYS FOR:
LEDGES STATE PARK
BOONE COUNTY

NO	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026
SHEET No: A.01





CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

PROJECT LOCATION MAP

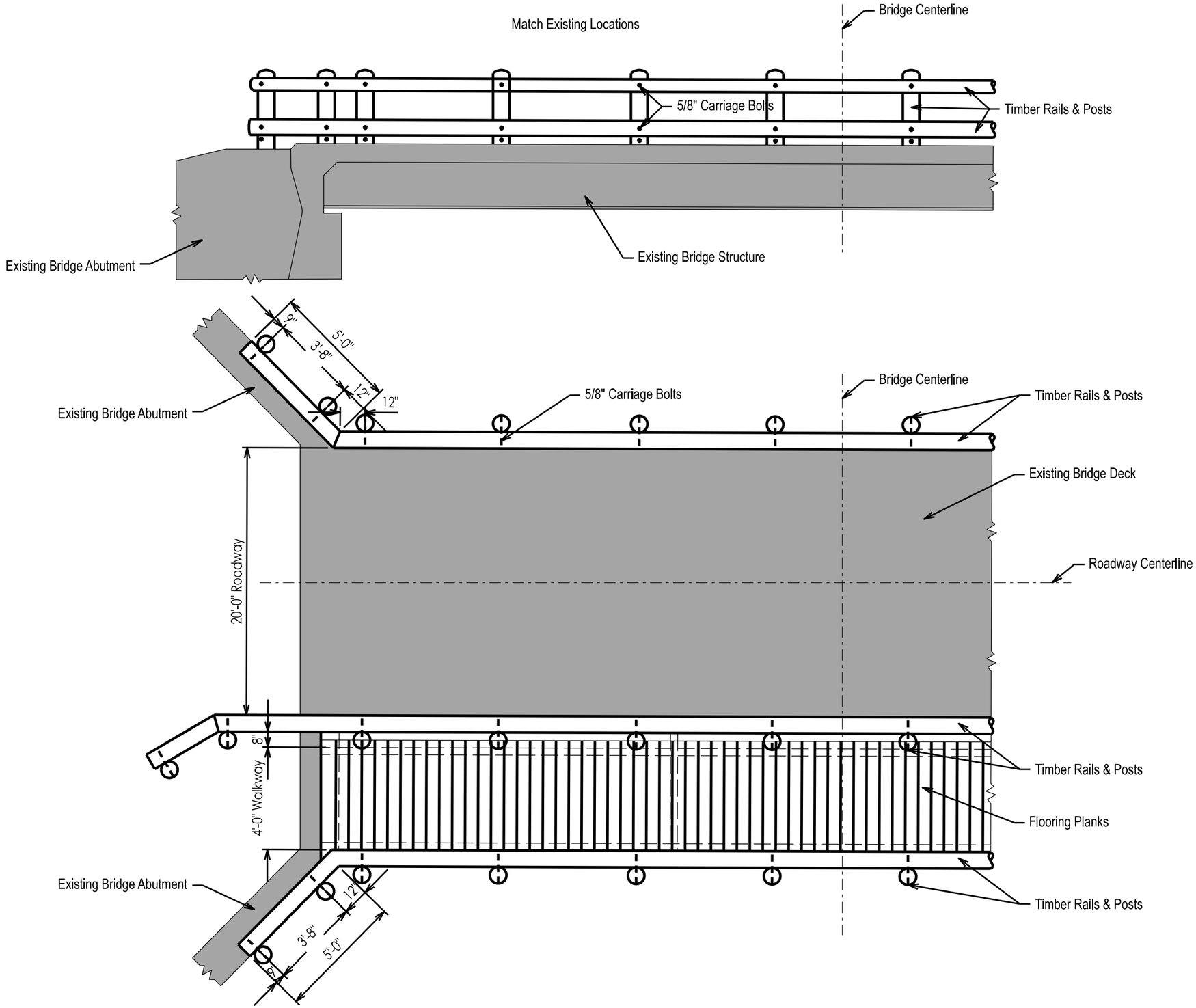
CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026
SHEET No: **A.02**



Bridge #1 - 41' long
Bridge #2 - 43' long

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

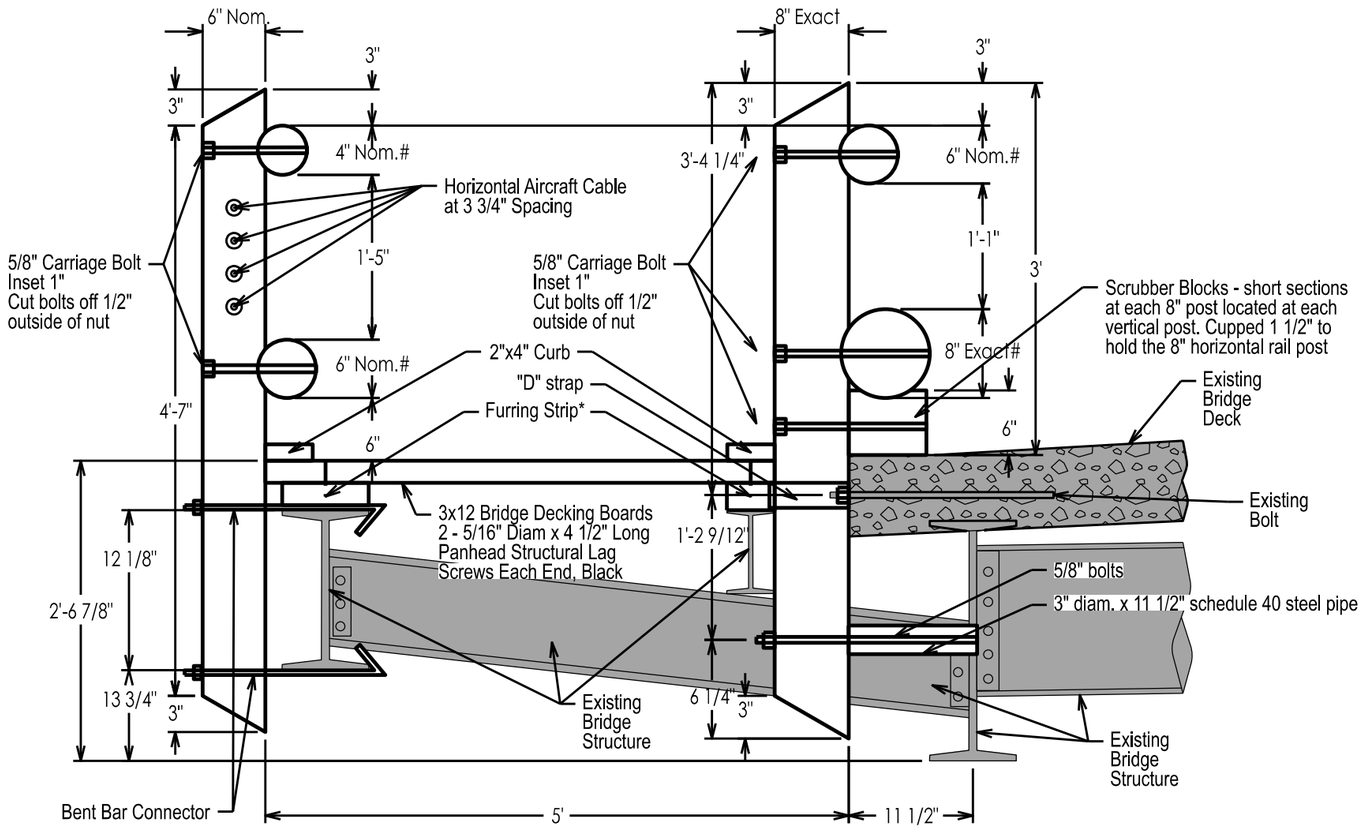
DRAWN BY:

PROJECT NUMBER: 23-02-08-06

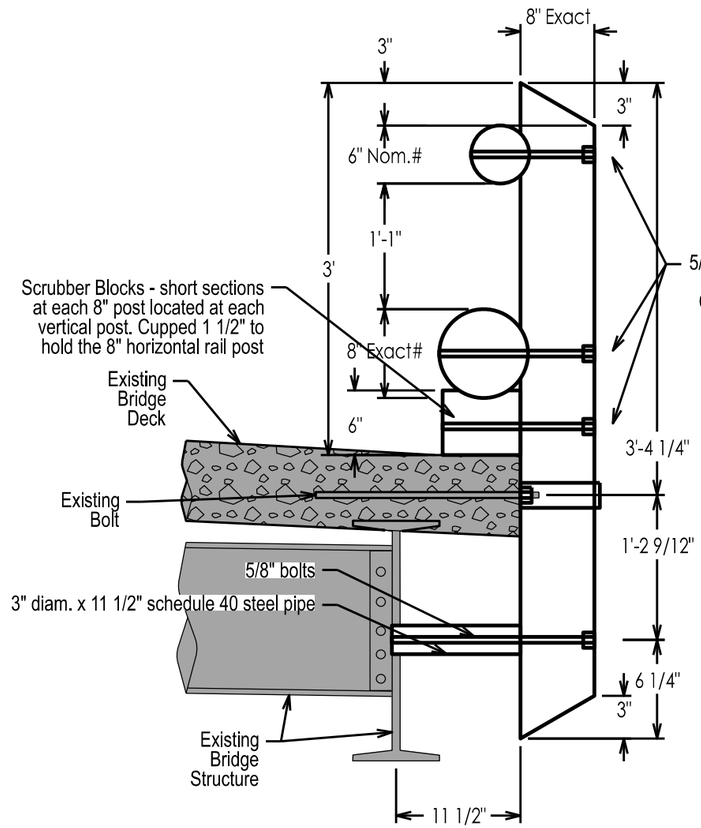
CHK'D BY:

DATE: August 17, 2026

SHEET No: **B.01**



Rail Detail "A"



Rail Detail "B"
At Walkway

Rail Detail "B"
At Outside Of Bridge

*Furring Strip:
Ripped bridge decking boards
1/4-28x4" TEKS 5 Panhead Fasteners
@ spacing alternating side of flange

#Horizontal Rails:
Cup horizontal post 1 1/2" into the vertical posts

CONSULTANT:

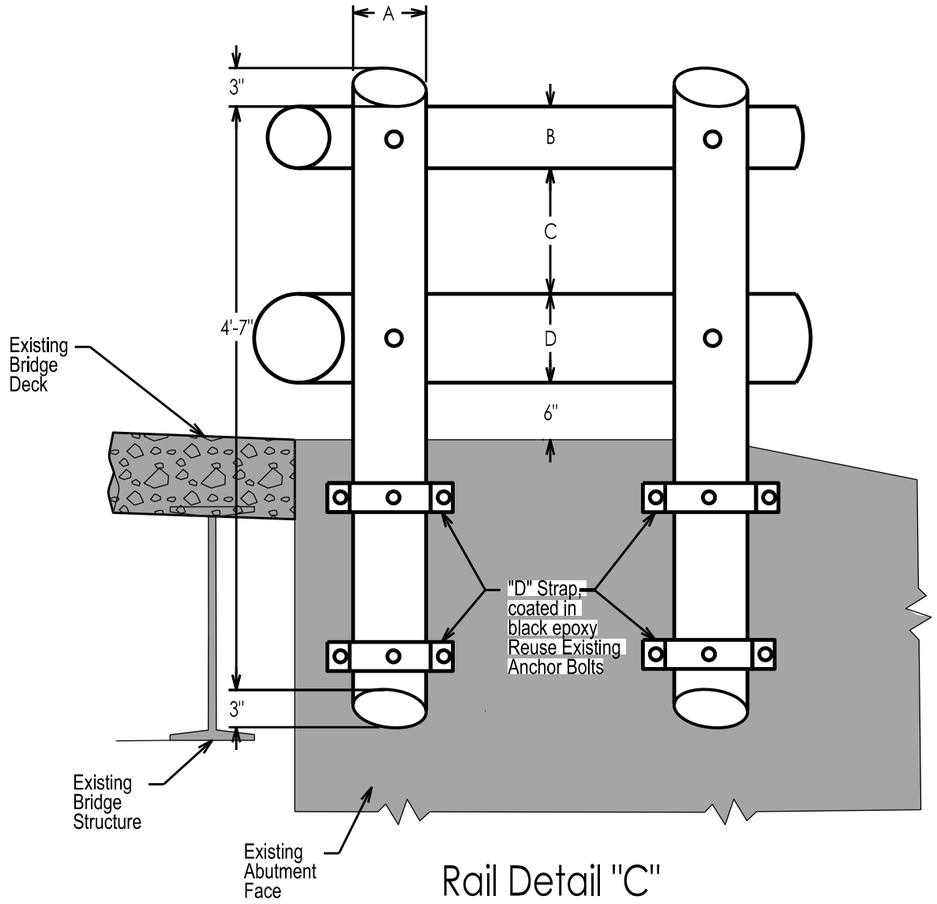
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:
LEDGES STATE PARK
BOONE COUNTY

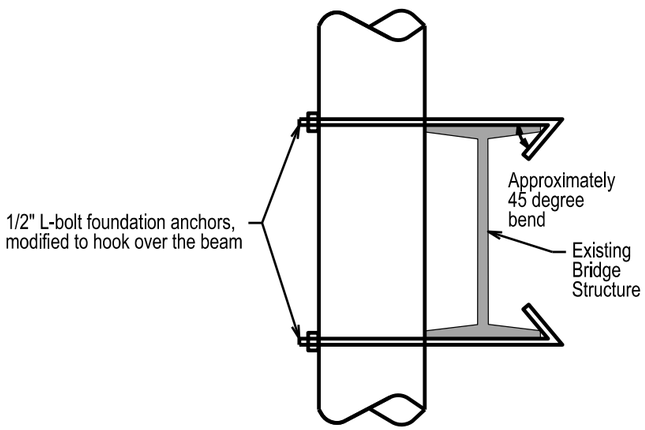
NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026
SHEET No: **B.02**

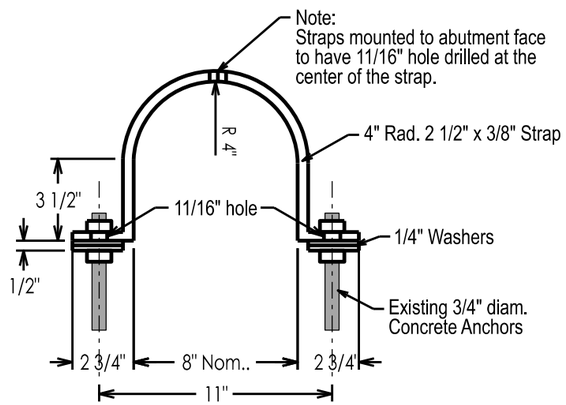


Rail Detail "C"

RAIL DETAIL "C" POSTS			
A	B	C	D
6"	4"	1'-5"	6"
8"	6"	1'-1"	8"

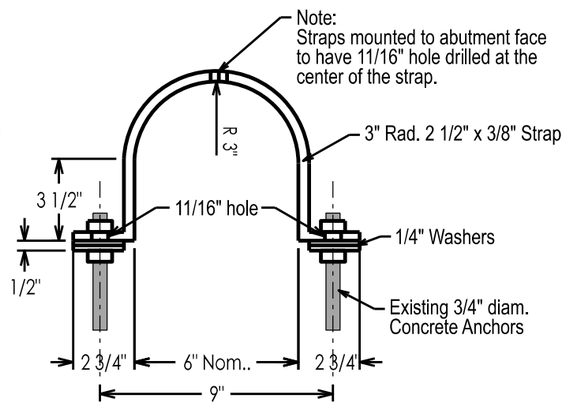


Detail of Walk Post Connection



*Coated in black epoxy

Detail of 8" Nom. Strap "D"



*Coated in black epoxy

Detail of 6" Nom. Strap "D"

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

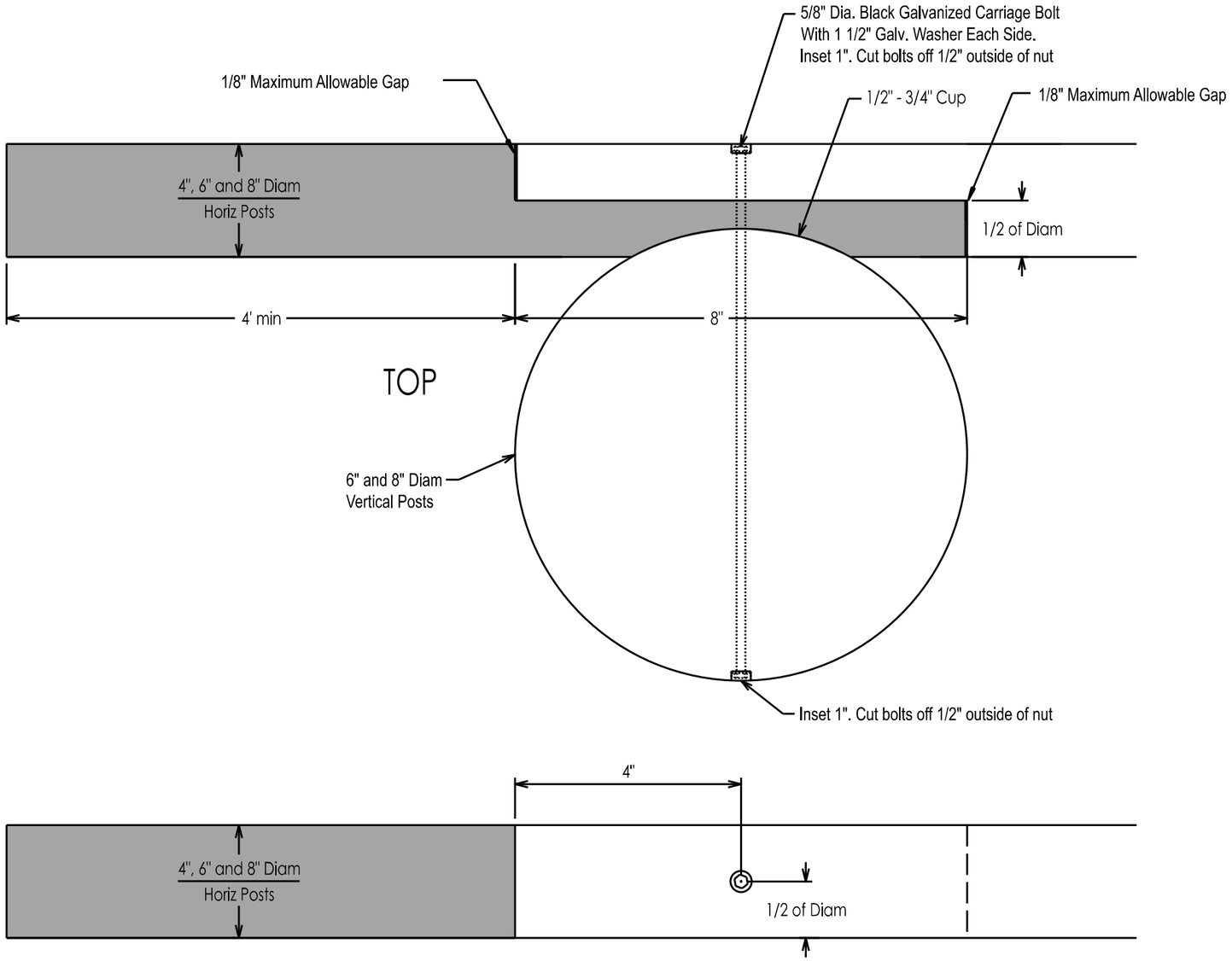
PROJECT NUMBER: 23-02-08-06

CHK'D BY:

DATE: August 17, 2026

SHEET No: **B.03**

NOTE: Coat All Inner Wood Surfaces Of
Splice With Borate Based Penashield(R)
Preservative Prior To Assembling Splice.



ELEVATION

NOTE: Splice is allowed once in each horizontal post in stagered locations for each level.

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

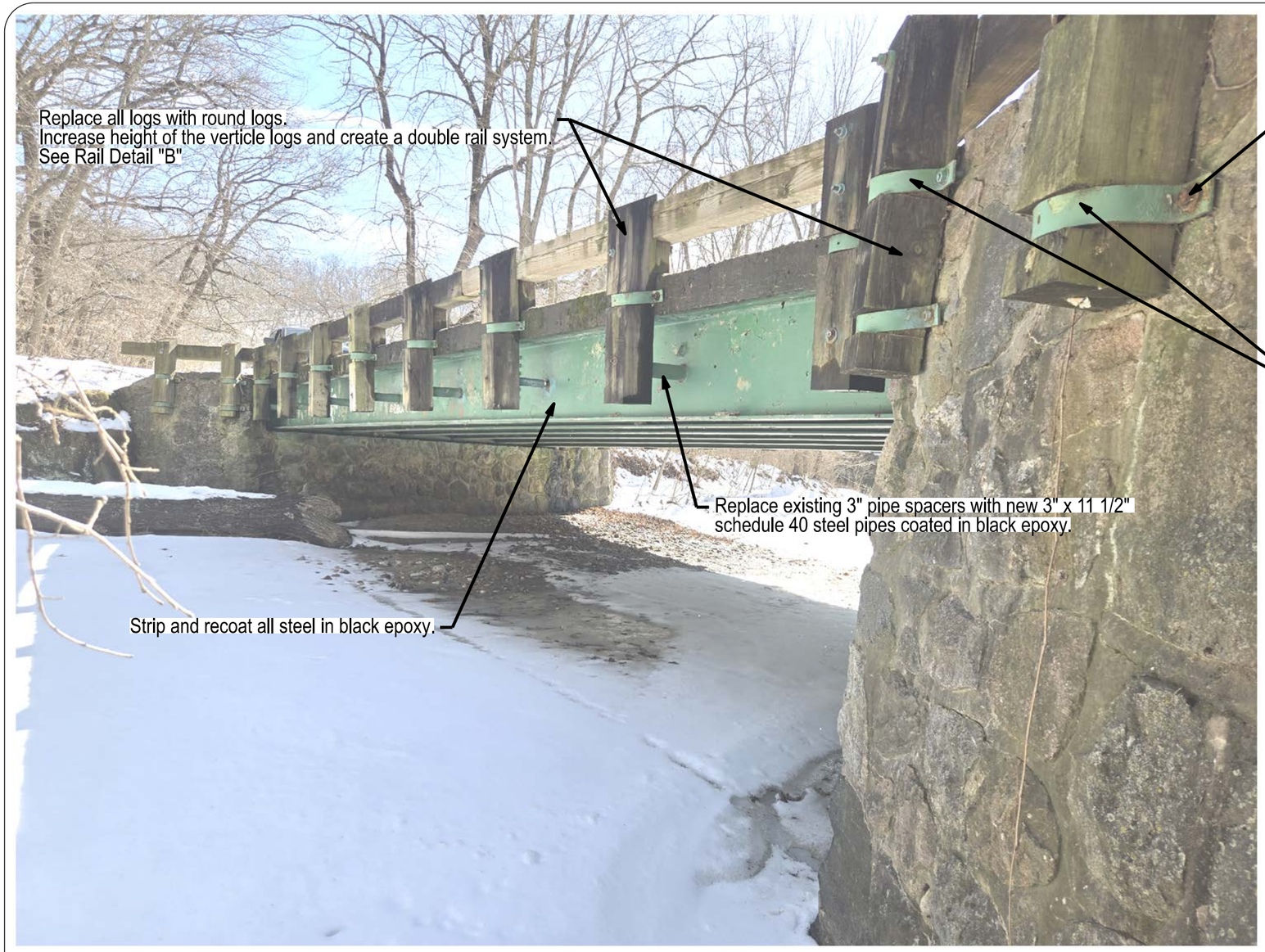
IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:
LEDGES STATE PARK
BOONE COUNTY

NO	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026
SHEET No: **B.04**



Rail on Outside of Bridge

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 23-02-08-06

CHK'D BY:

DATE: August 17, 2026

SHEET No:

B.05



Outside of Walkway

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

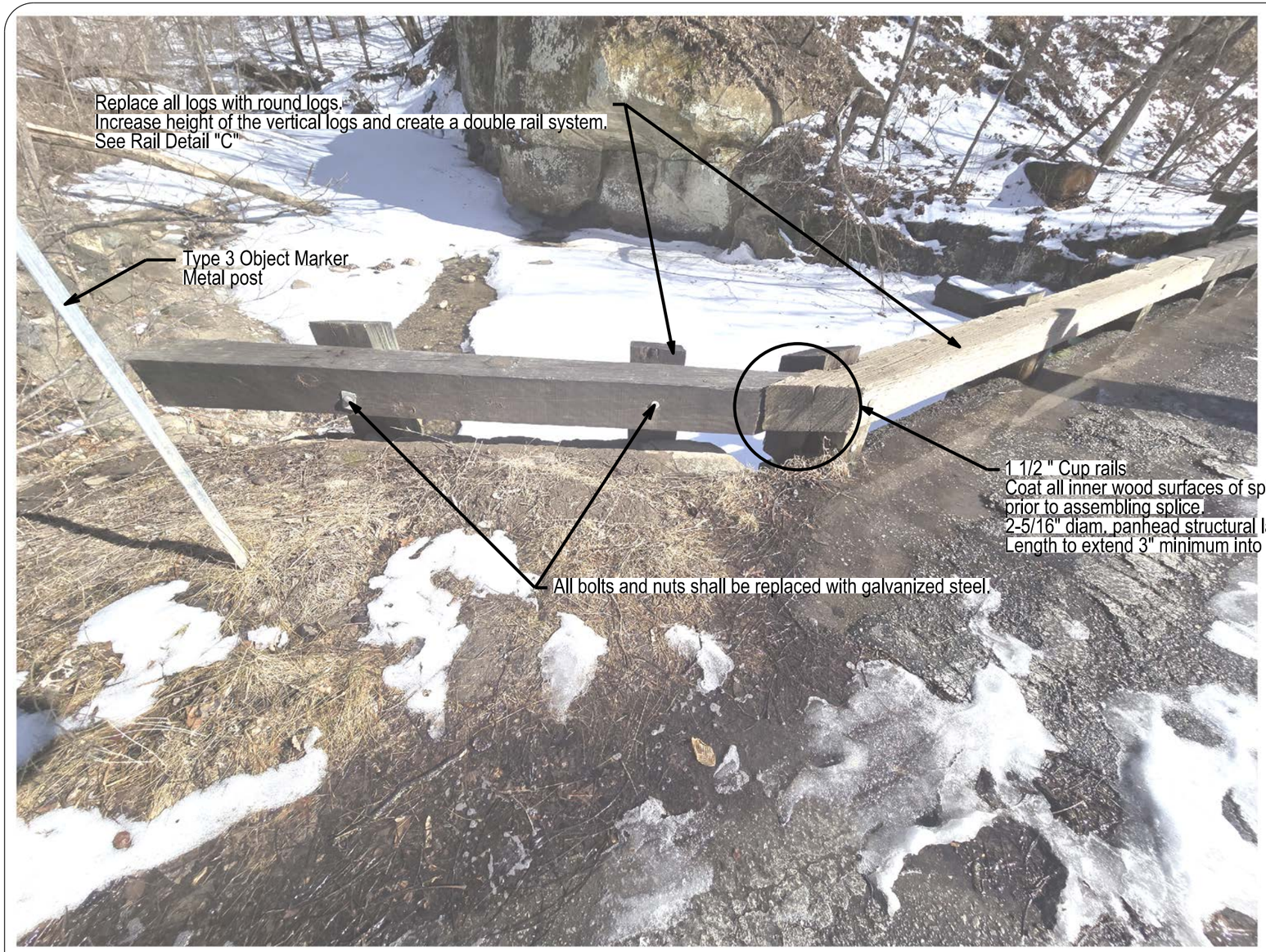
PROJECT NUMBER: 23-02-08-06

CHK'D BY:

DATE: August 17, 2026

SHEET No:

B.06



Rail on Outside of Bridge

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

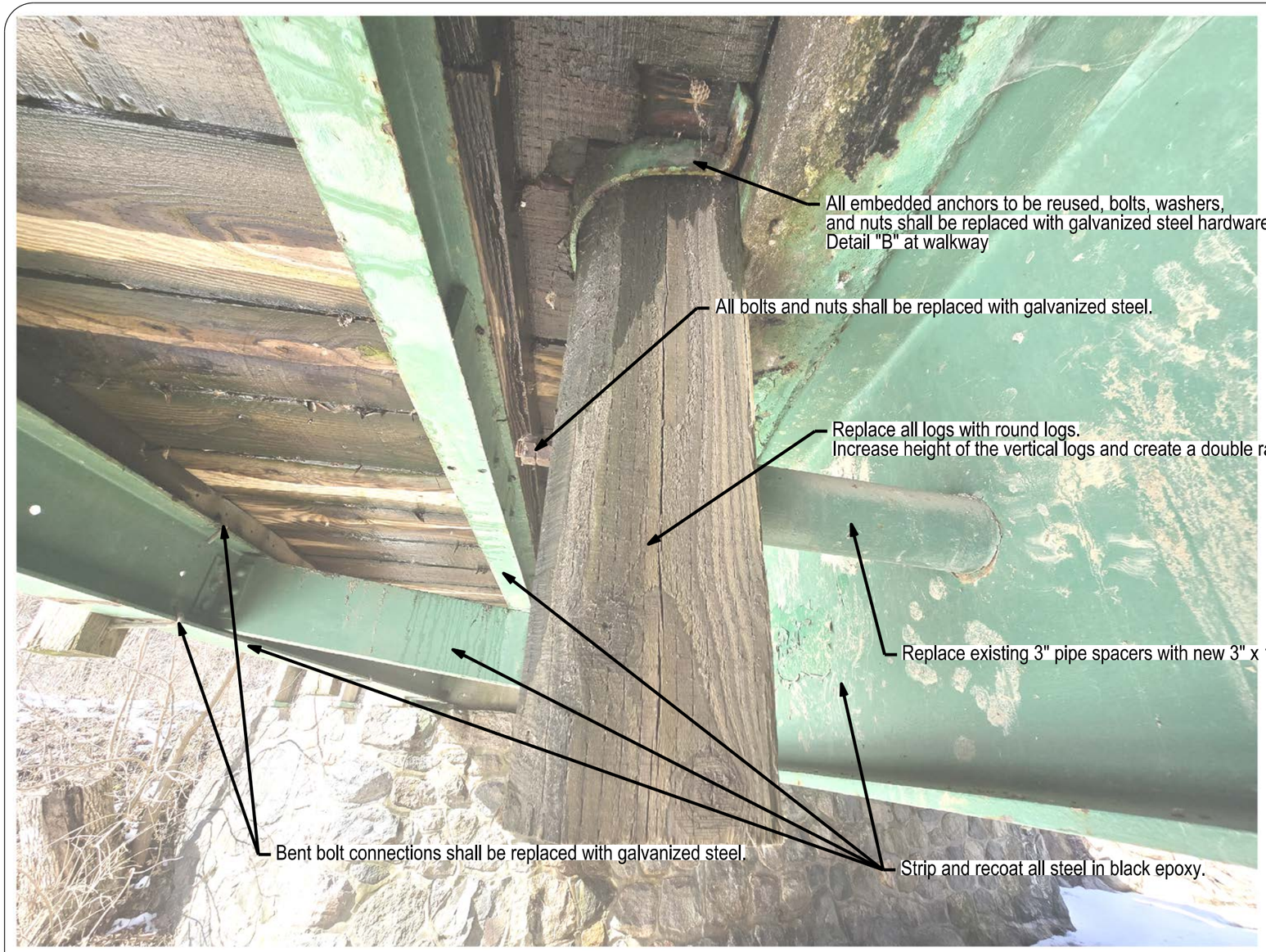
IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:
LEDGES STATE PARK
BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026
SHEET No: **B.07**



Rail on Walkway Side of Bridge

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 23-02-08-06

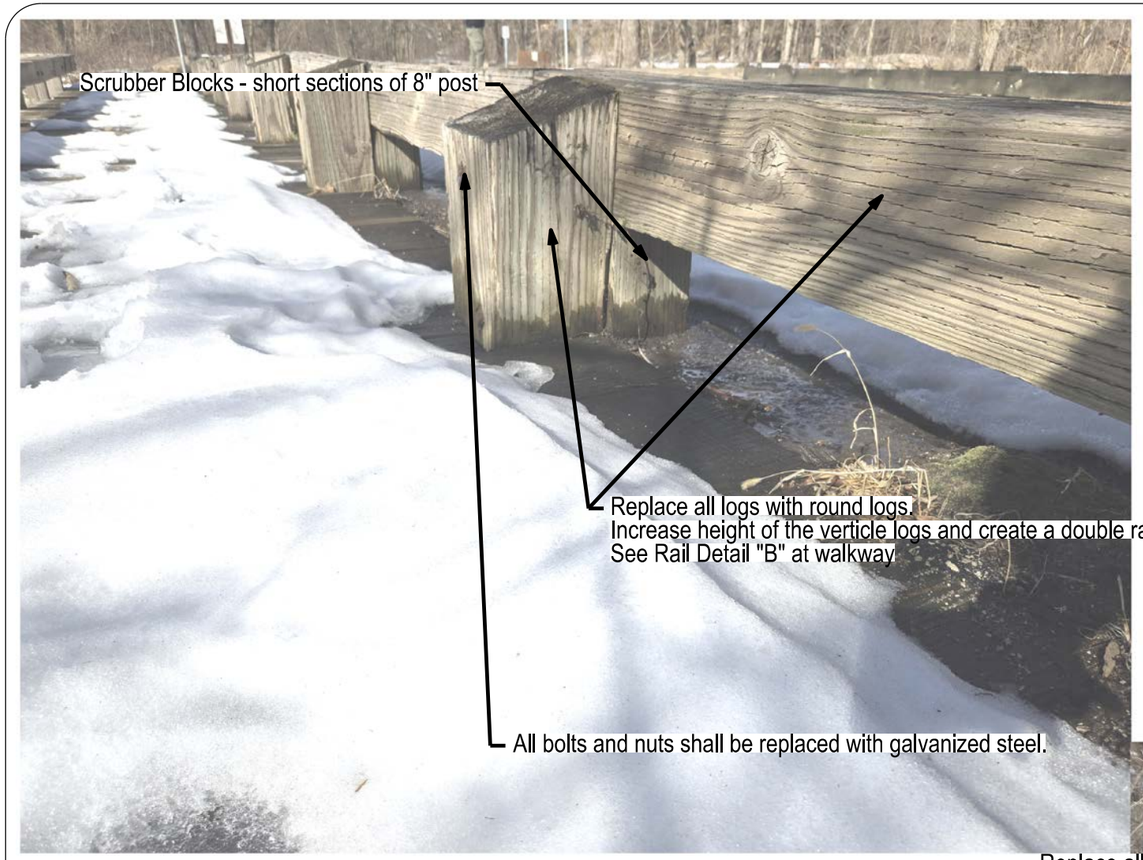
CHK'D BY:

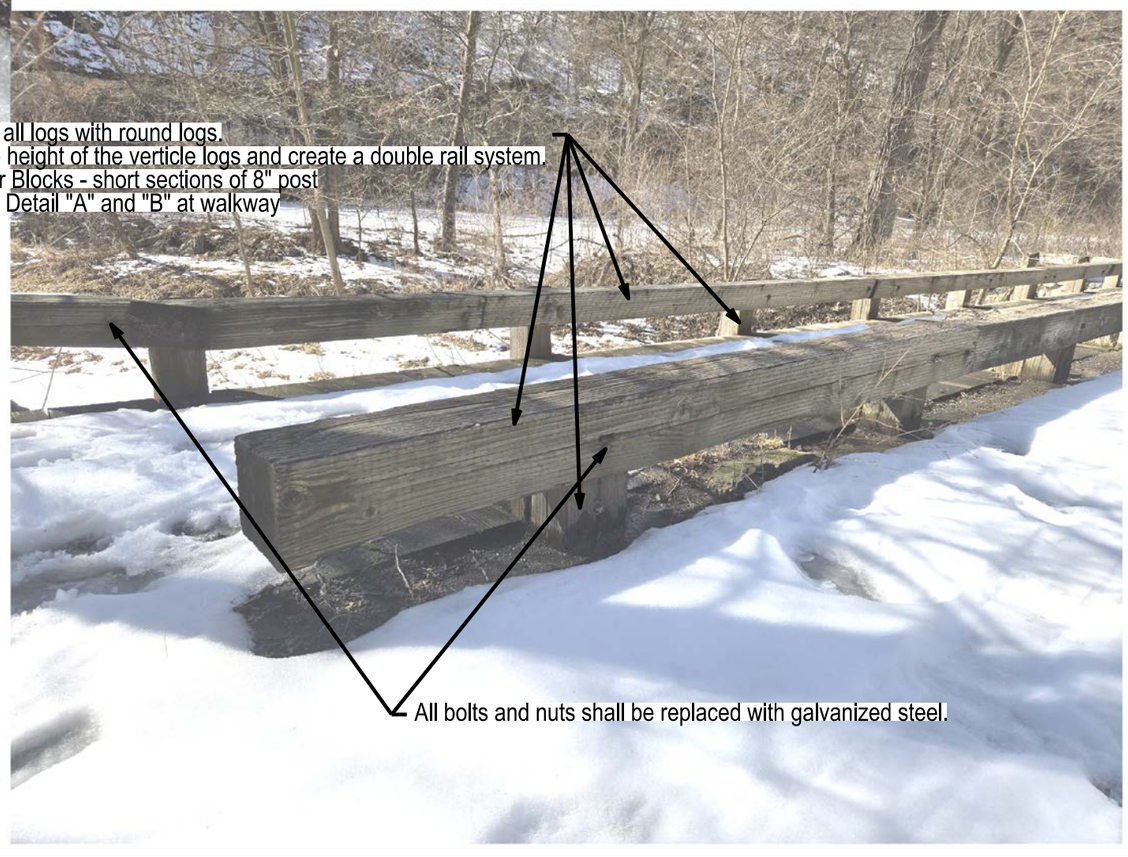
DATE: August 17, 2026

SHEET No:

B.08

Rail on Walkway Side of Bridge





Rail on Walkway Side of Bridge

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:
LEDGES STATE PARK
BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026

SHEET No:
B.09



Rail on Outside of Walkway

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 23-02-08-06

CHK'D BY:

DATE: August 17, 2026

SHEET No:

B.10



Rail on Outside of Walkway

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 23-02-08-06

CHK'D BY:

DATE: August 17, 2026

SHEET No:

B.11



Walkway Side

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

IOWA DNR

TYPICAL CROSS SECTIONS AND DETAILS

CCC BRIDGE RAILING AND WALKWAYS FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY / DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 23-02-08-06

CHK'D BY:

DATE: August 17, 2026

SHEET No:

B.12

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	Demolition	LS	1
2	Bridge Rails and Walkway	EACH	2
3	Concrete Repair	SF	20
4	Object Marker Type 3	EACH	4
5	Mobilization	LS	1

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	Demolition A. Includes the removal and off site disposal of the existing wood, strapping and hardware.
2	Bridge Rails and Walkway A. Hardware {bolts, washers, lock washers, and nuts) shall be hot dipped galvanized steel hardware and include lock washers and washers. C. Existing concrete anchors shall be cleaned and reused and include lock washers and washers. D. Timbers shall be UC4B OR UC4C treated non-tapered timber poles, stained with two coats of TWP 113, Rustic, or approved equal. E. Horizontal members may have one splice. F. Flooring planks shall be ground contact pressure treated lumber matching the size of the existing lumber, stained with two coats of TWP 113, Rustic, or approved equal. G. See B sheets for details.
3	Concrete Repair A. Bridge #1 patch edge concrete on upstream side.
4	Object Marker Type 3 A. Located at the approach ends of both bridges. See Iowa DOT Detail SI-211, Type 3 Installation. B. All signage shall meet the requirements of the MUTCD. C. See Specification Section 2524. D. Includes furnishing, fabricating, and erecting the sign complete, including posts, reflector units, and frames for delineators, posts and reference location signs. E. Includes furnishing all necessary fittings and attachments. F. Includes all labor necessary to complete the work.

SIGNS

LOCATION	COUNT	TYPE
Bridge	2	Type 3 Object Markers
Bridge	2	Type 3 Object Markers

NOTES

1. The weight limits for the two CCC bridges are posted at 40 ton.

GENERAL NOTES

Verify actual locations and elevations with DNR Engineer.

All work shall conform to and be performed in accordance with all applicable codes and ordinances.

The contractor shall visit the site and inspect the project area and thoroughly familiarize themselves with the actual job conditions prior to bidding and the start of work. Failure to visit the project site shall not relieve the contractor from performing the work in accordance to the plans, specification, special provisions and contract.

The contractor shall verify, at the site, all dimensions and conditions shown on the plans and shall notify the DNR Engineer of any discrepancies, omissions, and/or conflicts prior to proceeding with the work.

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the DNR Engineer.

The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of the DNR Engineer.

Unless otherwise directed by the Plans, Specifications, or the DNR Engineer, all trees with a trunk diameter of three inches or greater when measured at breast height, shall be felled between October 1st and March 31st. Brush and debris removal is not restricted by this note.

Where utilities and fixtures are shown as Existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the DNR Engineer of those utilities prior to the beginning of any construction. The contractor shall be afforded access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.

The contractor shall shape graded area to maintain surface drainage. All elevations are to finish grade.

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins or silt dikes.

Existing Condition: Current bridge railings and walkways are non-compliant with the original design aesthetic.

Proposed Improvement: All new railings and walkways will be fabricated to match the specifications of the original structure for historical consistency.

Railing System: Remove and replace all existing railing lumber and connection hardware. Install new CCA-treated timber poles.

Walkway Decking: Remove and replace all walkway lumber and connection hardware. Install new ground-contact pressure-treated flooring planks.

Finish/Stain: Apply two coats of TWP 113 Rustic (or an approved equal) to all new timber and lumber surfaces.

Hardware: Replace all bolts, washers, lock washers, and nuts with hot dipped galvanized steel hardware. Abutment anchors to be reused.

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES
6200 PARK AVE., STE 200 DES MOINES, IA 50321

CCC BRIDGE RAILING AND WALKWAYS FOR:
LEDGES STATE PARK
BOONE COUNTY

NO.	BY	DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 23-02-08-06
CHK'D BY:
DATE: August 17, 2026
SHEET No:
C.01