



Attach.

cc:

C. Purcell  
S. J. Megivern  
M. Nop  
D. R. Tebben  
J. W. Laaser-Webb  
E. C. Wright  
N. M. Miller  
B. E. Azeltine  
S. J. Gent  
J. Selmer  
D. R. Claman  
M. E. Khoda  
D. Bishop  
B. Dolan  
D. Schultz  
M. Wright  
FHWA

M. J. Kennerly  
J. S. Nelson  
M. A. Swenson  
K. Brink  
W. A. Sorenson  
M. E. Ross  
C. C. Poole  
B. D. Hofer  
S. Anderson  
K. K. Patel  
J. Hauber  
K. Olson  
V. Brewer  
T. Huju  
M. K. Solberg

K. D. Nicholson  
B. Walls  
R. A. Younie  
D. L. Newell  
D. E. Sprengeler  
A. A. Welch  
M. J. Sankey  
T. D. Crouch  
P. C. Keen  
S. Godbold  
A. Abu-Hawash  
S. Neubauer  
M. Carlson  
D. Manley  
S. Tymkowicz

## FINAL PROJECT CONCEPT STATEMENT

Iowa 175 Bridge over McCandless Cleghorn Ditch 0.6 mi E of 1-29 in Onawa.

Monona County  
Proj. # BRFN-175-1(73)—39-37  
PIN: 17-67-175-010  
Maint. No. 6706.1s175  
FHWA No. 36840

Highway Division  
Design Bureau

John Bartholomew, P.E.  
515-239-1540

October 9, 2019

### I. STUDY AREA

#### A. Project Description

This project involves the replacement of the IA 175 bridge (Maint. No 6706.1S175) over the McCandless Cleghorn Ditch, 0.6 mi E of 1-29 in Onawa.

It is recommended the existing 80' x 30' continuous concrete slab bridge be replaced with a staged 100' x 44' continuous concrete slab bridge.

#### B. Need for Project

This is an 80' x 30' continuous concrete slab bridge built in 1961 and overlaid in 1989. The overlay has reached the end of its service life. The top and bottom of deck have large hollows with leaching and rust staining. There is heavy leaching and extensive hollows on each abutment with undermining beneath the near abutment. Due to the condition of the deck and abutments, the structure should be replaced.



C. Present Facility

The existing structure is an 80' x 30' continuous concrete slab bridge constructed in 1961.

IA 175 in the project area is 24' wide PCC pavement with 6' wide granular shoulders and 3:1 foreslopes, constructed in 1961.

D. Traffic Estimates

The 2022 construction year and 2042 design year average daily traffic estimates are 5800 ADT with 7% trucks and 7200 ADT with 7% trucks, respectively.

E. Sufficiency Ratings

IA 175 is classified as an "access" route and is a maintenance service level "C" road. The federal bridge sufficiency rating is 67.2.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2014 through December 31, 2018, there were 0 crashes.

## II. PROJECT CONCEPT

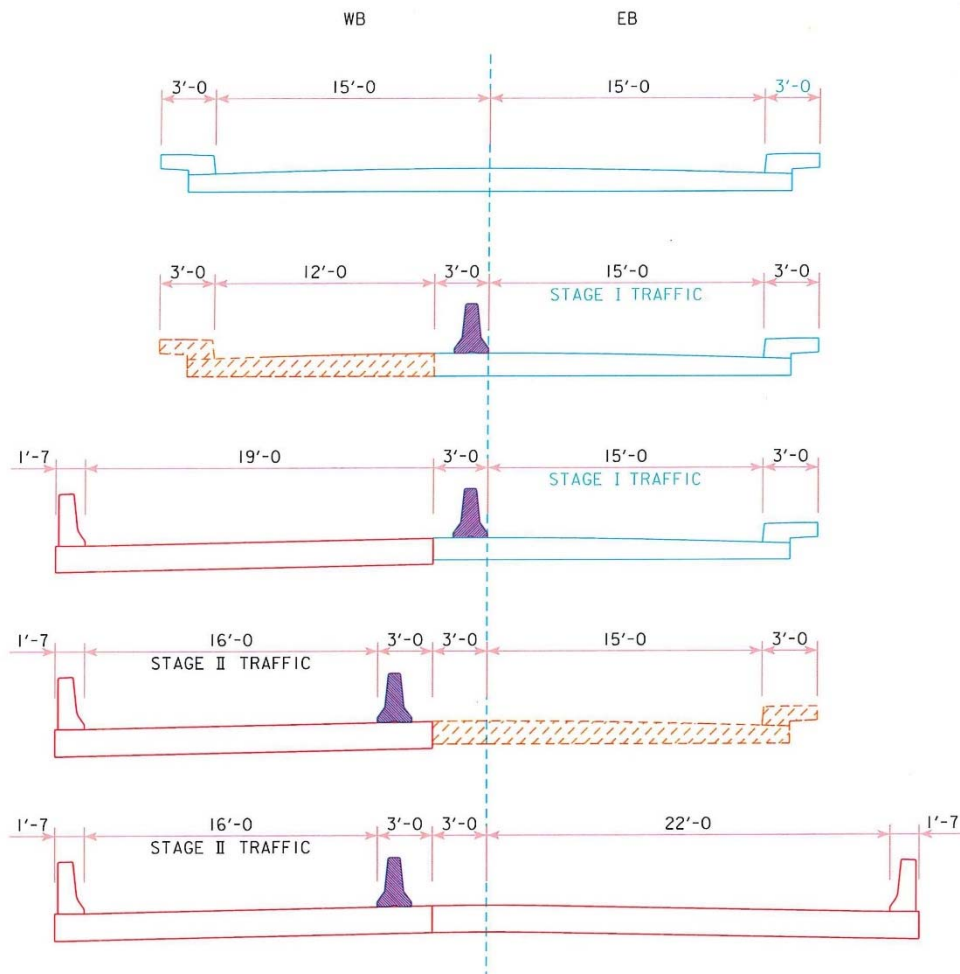
A. Replace with a staged 100'-0 x 44'-0 continuous concrete slab bridge.

The existing structure is an 80'-0 x 30'-0 continuous concrete slab bridge will be replaced with a staged 100'-0 x 44'-0 continuous concrete slab bridge

The typical cross section adjacent to the bridge will consist of a 24 ft. roadway with 8 ft. effective shoulders and 3:1 foreslopes.

This bridge will be constructed on the existing vertical and horizontal alignment. New bridge approaches will be constructed. The existing guardrail will be replaced with new guardrail and the shoulders will be paved 20 ft. beyond the ends of the guardrail. Class 10 will be necessary to flatten the existing foreslopes and to construct the new guardrail blisters. Class E revetment will be placed under the bridge for slope protection. New bridge end drains will be constructed on both ends of the bridge.

The bridge will be built 14 ft. wider (44 ft. vs. 30 ft.) than the existing bridge which meets today's standards and facilitates staged construction. One lane of traffic will be maintained over the bridge via that use of temporary traffic signals. The additional 14 ft. widening will be symmetrical about the centerline. The first stage of the bridge will be cut at 18' ft. with the WB lane and 3 ft. of the EB lane remaining intact, providing a lane width of 15 ft. Three foot wide temporary pavement that is 50 ft. long will also be added to the shoulder at each end of the bridge on WB lane to further facilitate entering and exiting the work area. This shoulder will be 6-inch HMA or 7 inch PCC with 6 inches of special backfill. This shoulder may or may not be removed after stage 1. The second stage will have a lane with of 16 ft. No additional paved shoulder will be required since that side of that bridge should be complete.



EXAMPLE STAGING  
 MONONA COUNTY  
 BRFN-175-1(73)--39-67

Apply erosion control and rural seeding and fertilizing to all disturbed areas.

It appears that no right of way will be required for this project.

| <b>Bridge Items</b>                        | <u>Estimated Costs</u> |
|--|------------------------|
| New Bridge                                 | \$ 396,000             |
| Bridge Removal                             | 16,800                 |
| Revetment                                  | 0                      |
| Mobilization - 10%                         | 45,400                 |
| M & C - 15%                                | <u>74,900</u>          |
| <b>Bridge Costs</b>                        | <b>\$ 574,900</b>      |
| <br>                                       |                        |
| <b>Roadway Items</b>                       |                        |
| Bridge Approaches                          | \$58,500               |
| Removal of Pavement                        | 6,000                  |
| Special Backfill (including temp pavement) | 17,400                 |
| Temporary Pavement (shoulder)              | 1,800                  |
| Guardrail (Includes Removal)               | 12,300                 |
| Paved Shoulders for Guardrail              | 73,100                 |
| Class 10 for Guardrail Blisters            | 44,900                 |
| Bridge End Drains                          | 40,000                 |
| Temp Barrier Rail                          | 7,200                  |
| Temp Traffic Signal                        | 29,800                 |
| Temp Crash Cushion                         | 3,000                  |
| Seeding and Fertilizing                    | 3,200                  |
| Erosion Control                            | 50,000                 |
| Traffic Control - 5%                       | 2,000                  |
| Mobilization - 5%                          | 44,800                 |
| M & C - 30%                                | <u>167,800</u>         |
| <b>Roadway costs</b>                       | <b>\$ 561,800</b>      |
| <br>                                       |                        |
| <b>Project Total</b>                       | <b>\$1,136,700</b>     |

B. Detour Analysis

There will be no off-site detour. Traffic will be maintained via staged construction with traffic reduced down to one lane via the use of temporary traffic signals.

C. Recommendations

It is recommended that the present structure be replaced, as described above.

D. Construction Sequence

It is anticipated that all work on this project will be awarded to one prime contractor. The Bridges and Structures Bureau will coordinate the plan preparation with assistance from the Design Bureau.

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to IA 175; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

This is not a traffic critical project.

The ABC Rating Score of 27 is less or more than the first stage filter threshold of 50, therefore this bridge will not be considered for an ABC approach.

No bike path or sidewalk will be required as part of this project.

Right of Way does not appear to be required for this project.

The Office of Location and Environment has reviewed this project and has noted that the replacement of the existing IA 175 bridge over the McCandless Cleghorn drainage ditch will require a 404 Permit. However, the bridge replacement project should be a routine Nationwide Permit #14 and not require any stream or wetland mitigation.

G. Program Status

Site data has been developed by the Design Bureau. This project is listed in the 2020-2024 Iowa Transportation Improvement Program, with \$1,275,000 for replacement in FY 2023. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

JEB:sh

## Bridge Cost Estimate for Concept Statement

By: Matt Erickson

Date: 10/8/2018

### Location:

IA 175 over McCandless Cleghorn Drainage Ditch 0.6 mi. East of I-29 in Onawa.

County: Monona

Proj. No.: BRFN-175-1(73)--39-67

Des. No.: 0258

Pin No.: 17-67-175-010

Maint. No.: 6706.1S175

FHWA No.: 036840

Section 6,T83N,R45W

Sta.: 1778+78.00

Functional Class: Rural-Minor Arterial

ADT: 5,000 vpd

### Existing Bridge:

Type: CCS

Length x Width: 80' x 30'

Pier Type: Pile Bent

Abut. Type: Stub

Spans: 1 @ 31.2', 2 @ 24.4'

Approach Pavement Width: 30'

Skew: 0

Design Loading: H20-S16

Drainage Area: 69.8 sq. mi.

Existing Bridge Width Acceptable: No

New/Reconstructed Roadway Width: 44.0'

Repair/Remodel by Staging Traffic: Yes

**General Comments:** Existing bridge is a CCS structure that could be staged. Stage 1 lane width would be 12 feet wide and Stage 2 lane width would be approximately 12 feet wide with an additional 3 feet wide bridge. Staging a slab bridge may create constructability issues due to deflection and false-work.

### Commentary:

This project is for the replacement of the IA 175 bridge over McCandless Cleghorn Drainage Ditch (MP 6.1)

### Option A - Stage 100' x 44' CCS Bridge

Type: CCS

Length x Width: 100' x 44'

Pier Type: Pile Bent

Abutment Type: Integral

Spans: 1 @ 39', 2 @ 30.5'

Skew: 0.0

Stage Traffic: Yes, One 12' Lane - Stage 1, One 19' Lane - Stage 2

#### Costs:

Bridge - 100' x 44' @ \$90/sf = \$ 396,000

Remove Exist. Bridge - 80' x 30' @ \$7.00/sf = \$ 16,800

Riprap Berms = \$ 0,000

Staging (10%) = \$ 41,280

Mobilization (10%) = \$ 45,400

Contingency (15%) = \$ 74,900

=====

Total Option A \$ 574,380



Bridge Concept Statement

11/8/2018

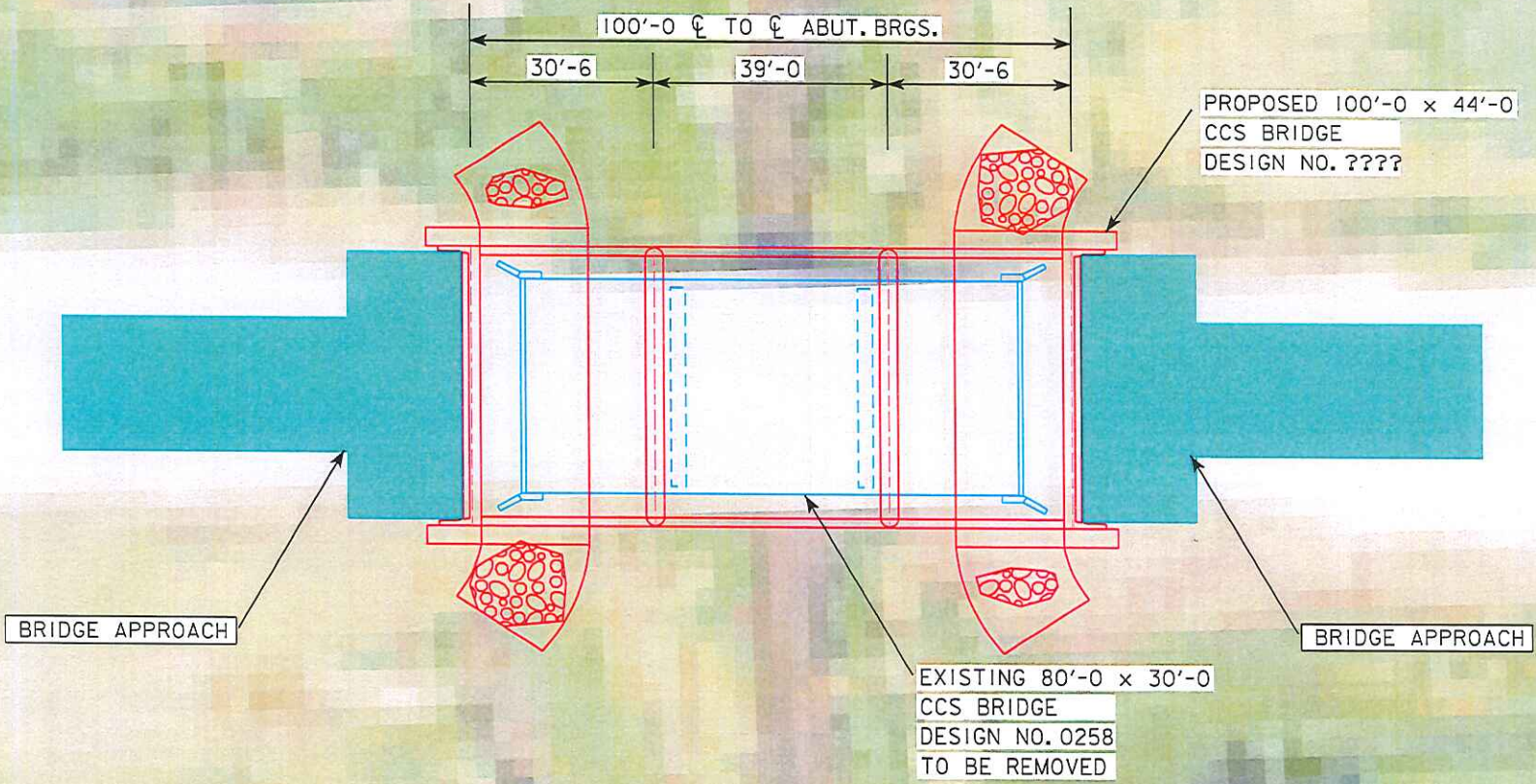
Monona County  
BRFN-175-1(73) --39-67

Comments: Staged CCS bridges may have constructability issues depending upon the contractor.

Revisions:

None

MONONA COUNTY  
BRFN-175-1(73)--39-67  
ON IA 175 OVER  
MCCANDLESS CLEGHORN  
DITCH

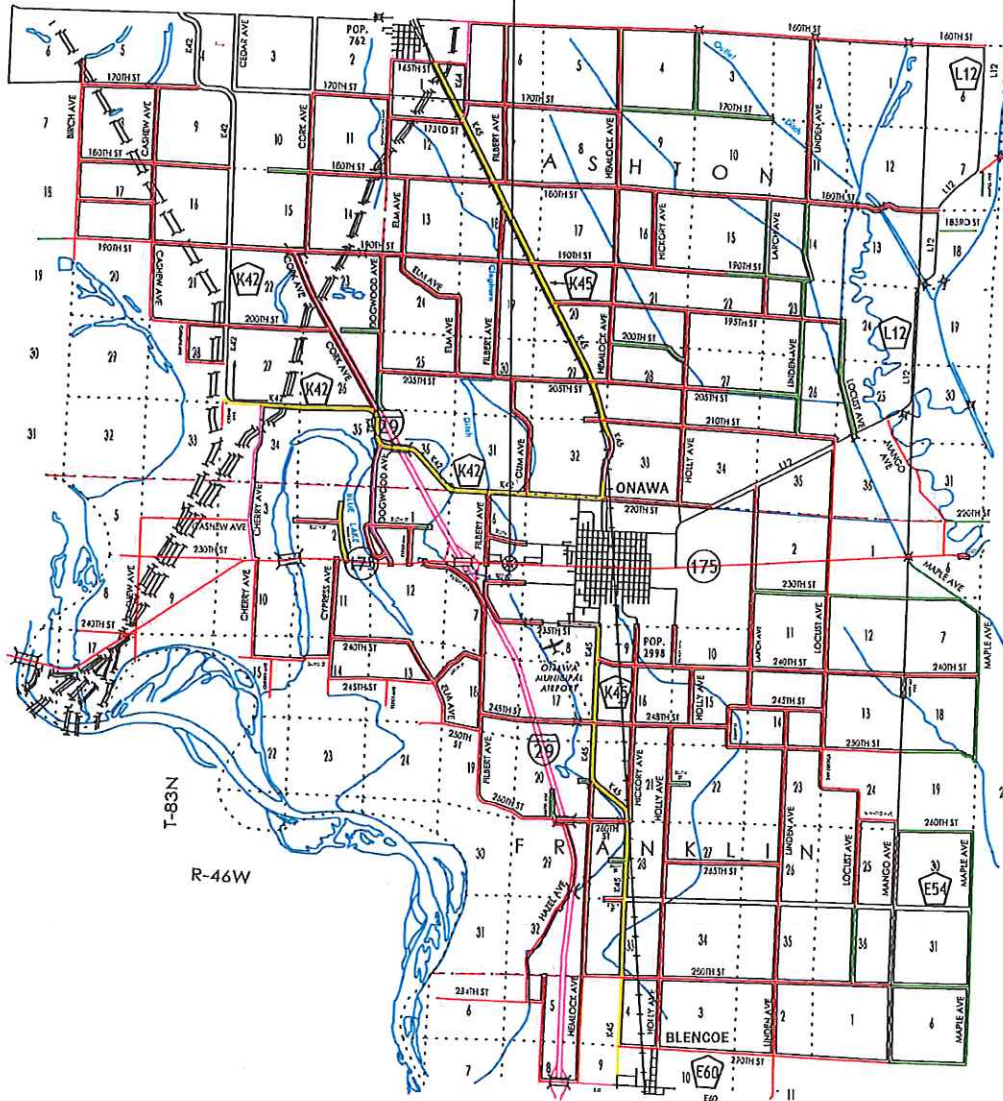


Monona County  
BRFN-175-1(73)-39-67  
IA 175  
FHWA No. 36840  
Maint. No. 6706.1S175  
McCandless Cleghorn Ditch 0.6  
miles east of I-29 in Onawa

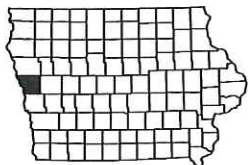


# MONONA COUNTY

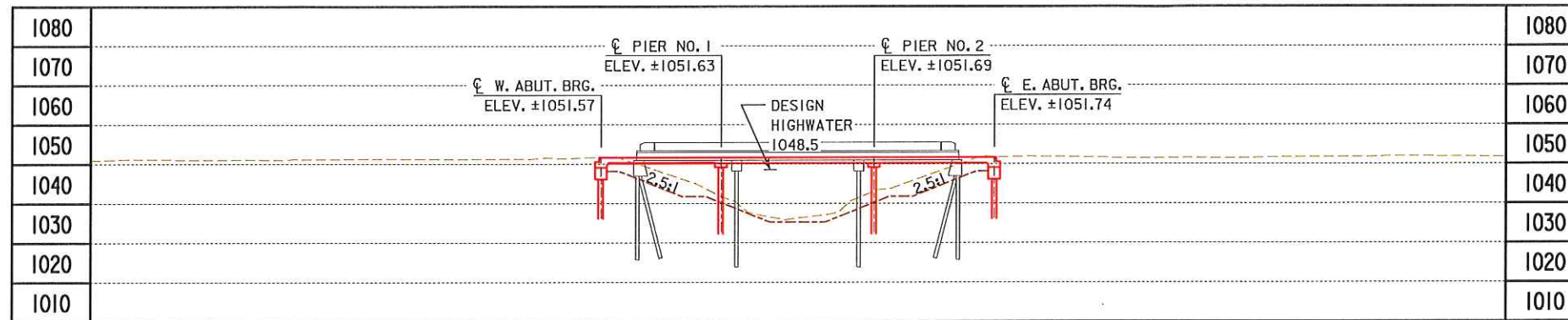
STA 1778+78.00  
 FHWA 36840  
 MAINT. 6706.1S175  
 DESIGN 258



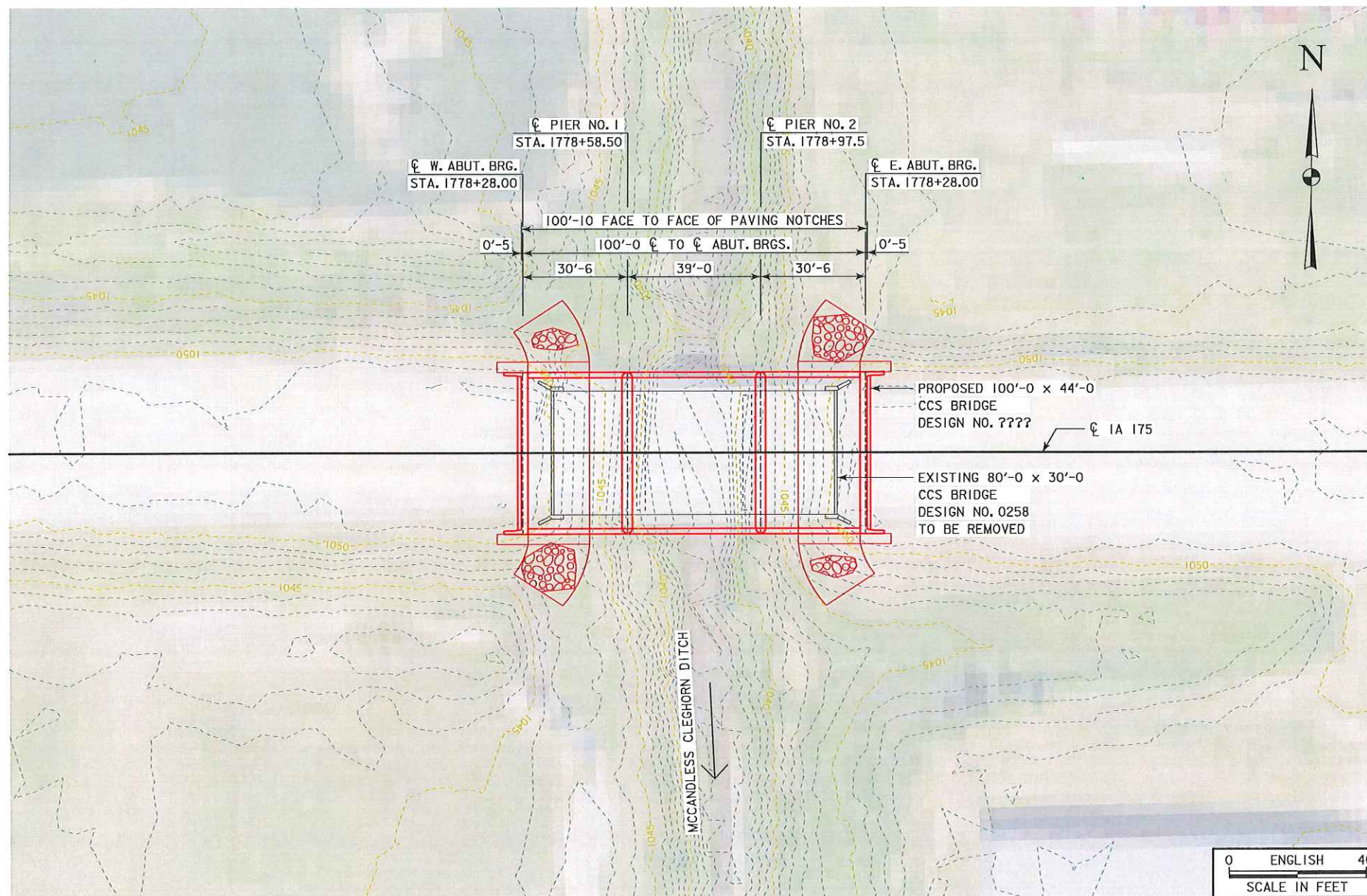
McCandless Cleghorn Ditch  
 0.6 mi of I-29 in Onawa  
 BRFN-175-1(73)-39-67  
 PIN: 17-67-175-010



| <b>Utility Name</b>                  | <b>Contact Name</b> | <b>Phone</b> | <b>E-Mail</b>  |
|--------------------------------------|---------------------|--------------|--|
| (CTLIA01)Centurylink                 | Tom Sturmer         | 720.578.8090 | <a href="mailto:Thomas.sturmer@centurylink.com">Thomas.sturmer@centurylink.com</a> |
| (AT2)AT&T Transmission               | Lenny Vohs          | 816.275.4014 | <a href="mailto:lv212@att.com">lv212@att.com</a>                                   |
| (LBIA02)Long Lines Broadband         | Miles, Patton       | 712.2715550  | <a href="mailto:MILES.PATTON@LONGLINES.BIZ">MILES.PATTON@LONGLINES.BIZ</a>         |
| (OWC) Onawa, City of                 | Elaine              | 712.433.1181 | <a href="mailto:EMILLER@ONAWA.COM">EMILLER@ONAWA.COM</a>                           |
| (P10) Black Hills Engy Council Bluff | Chris Dewey         | 712.325.3022 | <a href="mailto:chris.dewey@blackhillscorp.com">chris.dewey@blackhillscorp.com</a> |
| (WP1)Western Iowa Power Cooperative  | Jason Lee           | 712.263.2943 | <a href="mailto:jason.lee@wipco.com">jason.lee@wipco.com</a>                       |



LONGITUDINAL SECTION ALONG  $\phi$  APPROACH ROADWAY



SITUATION PLAN

NOTE:  
THIS STRUCTURE IS TO BE STAGED

**HYDRAULIC DATA**

DRAINAGE AREA = 69.8 SQ. MI.  
STREAM SLOPE = 2.1 FT./MI.  
  
 $Q_{50} = 2,730$  CFS  
STAGE = EL. 1048.2  
AVG. BRIDGE VELOCITY = 4.1 FPS  
  
 $Q_{100} = 3,280$  CFS  
STAGE = EL. 1048.5  
AVG. BRIDGE VELOCITY = 4.7 FPS

**UTILITIES LEGEND:**

UTILITY SURVEY NOT CONDUCTED

**LOCATION**

ON IA 175  
OVER MCCANDLESS CLEGHORN DITCH  
T-83N R-45W  
SECTION 6  
FRANKLIN TOWNSHIP  
MONONA COUNTY  
FHWA NO. 36840 (EXISTING)  
BRIDGE MAINT. NO. 6706.IS175  
LATITUDE 42.026891°  
LONGITUDE -96.120759°

PRELIMINARY - CONCEPT  
DESIGN FOR 0° SKEW  
**100'-0" x 44'-0" CONTINUOUS  
CONCRETE SLAB BRIDGE**  
30'-6" END SPANS 39'-0" INTERIOR SPAN  
**SITUATION PLAN**  
STA. 1778+78.00 ( $\phi$  IA 175) OCTOBER 2018  
**MONONA COUNTY**  
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. \_ OF ? FILE NO. ? DESIGN NO. ?

**MONONA CO.**  
**BRIDGE REPLACEMENT-CCS**  
**BRFN-175-1(73)--39-67**

LETTING DATE  
 10-18-2022



**Highway Division**

PLANS OF PROPOSED IMPROVEMENT ON THE

**PRIMARY ROAD SYSTEM**  
**MONONA COUNTY**  
**BRIDGE REPLACEMENT-CCS**

McCandless Cleghorn Ditch 0.6 mi E of I-29 in Onawa

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL

21

PROJECT IDENTIFICATION NUMBER

17-67-175-010

PROJECT NUMBER

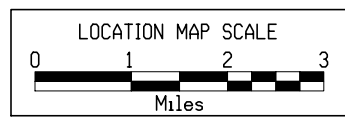
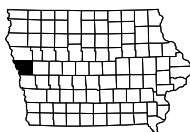
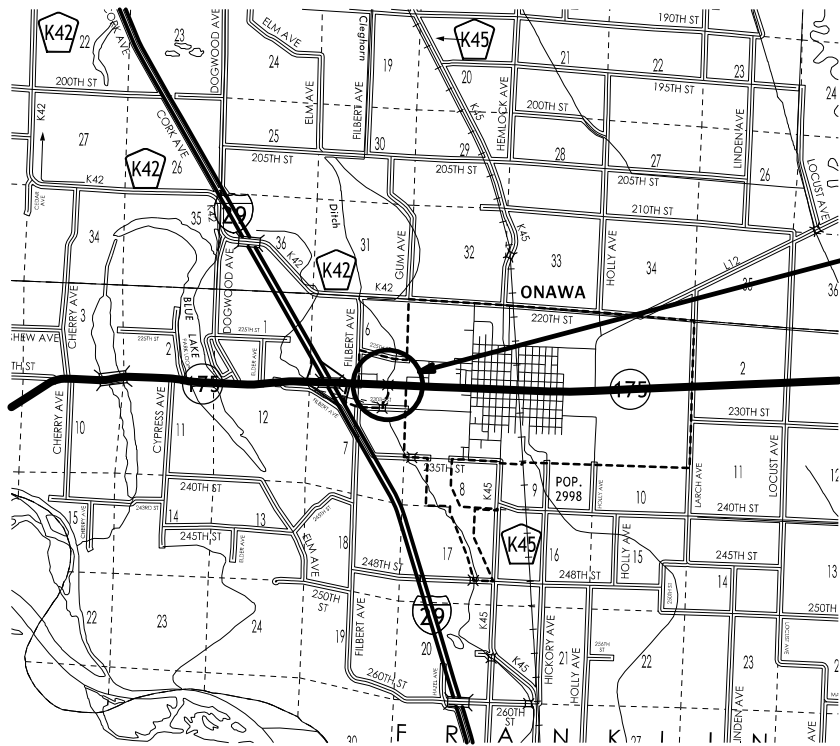
BRFN-175-1(73)--39-67

R.O.W. PROJECT NUMBER

STPN-175-1(74)--2J-67

**INDEX OF SHEETS**

| No.             | DESCRIPTION                                      |
|-----------------|--|
| <b>A Sheets</b> | <b>Title Sheets</b>                              |
| A.1             | Title Sheet                                      |
| A.2 - 11        | Concept  |
| <b>B Sheets</b> | <b>Typical Cross Sections and Details</b>        |
| B.1 - 3         | Typical Cross Sections and Details               |
| <b>D Sheets</b> | <b>Mainline Plan and Profile Sheets</b>          |
| * D.1           | Plan & Profile Legend & Symbol Information Sheet |
| * D.2           | "IA 175"   |
| <b>J Sheets</b> | <b>Traffic Control and Staging Sheets</b>        |
| * J.1           | Traffic Control Plan                             |
| <b>W Sheets</b> | <b>Mainline Cross Sections</b>                   |
| W.1 - 4         | Mainline Cross Sections                          |
|                 | * Color Plan Sheets                              |



**DESIGN DATA RURAL**

|      |              |      |        |
|------|--------------|------|--------|
| 2022 | AADT         | 5800 | V.P.D. |
| 2042 | AADT         | 7200 | V.P.D. |
| 20-- | DHV          | --   | V.P.H. |
|      | TRUCKS       | 7    | %      |
|      | Total        |      |        |
|      | Design ESALs | --   |        |

**INDEX OF SEALS**

| SHEET NO. | NAME          | TYPE                    |
|-----------|---------------|-------------------------|
| A.1       | Kelly C. Bell | Primary Signature Block |
| X         | X             | X                       |
|           |               |                         |
|           |               |                         |
|           |               |                         |

**PRELIMINARY PLANS**

Subject to change by final design.

**D2/3 PLAN - Date: 06-19-2020**

FILE NO.

ENGLISH

DESIGN TEAM **Flattery \ Bell \ Peterson**

MONONA COUNTY

PROJECT NUMBER

**BRFN-175-1(73)--39-67**

SHEET NUMBER

**A.1**





FINAL PROJECT CONCEPT STATEMENT

Iowa 175 Bridge over McCandless Cleghorn Ditch 0.6 mi E of I-29 in Onawa.

Monona County  
Proj. # BRFN-175-1(73)—39-37  
PIN: 17-67-175-010  
Maint. No. 6706.1s175  
FHWA No. 36840

Highway Division  
Design Bureau

John Bartholomew, P.E.  
515-239-1540

October 9, 2019

I. STUDY AREA

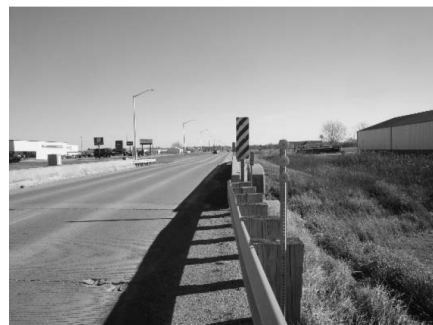
A. Project Description

This project involves the replacement of the IA 175 bridge (Maint. No 6706.1S175) over the McCandless Cleghorn Ditch, 0.6 mi E of I-29 in Onawa.

It is recommended the existing 80' x 30' continuous concrete slab bridge be replaced with a staged 100' x 44' continuous concrete slab bridge.

B. Need for Project

This is an 80' x 30' continuous concrete slab bridge built in 1961 and overlaid in 1989. The overlay has reached the end of its service life. The top and bottom of deck have large hollows with leaching and rust staining. There is heavy leaching and extensive hollows on each abutment with undermining beneath the near abutment. Due to the condition of the deck and abutments, the structure should be replaced.



Monona County  
Proj #BRFN-175-1(73)—39-37  
PIN: 17-67-175-010  
Page 2

C. Present Facility

The existing structure is an 80' x 30' continuous concrete slab bridge constructed in 1961.

IA 175 in the project area is 24' wide PCC pavement with 6' wide granular shoulders and 3:1 foreslopes, constructed in 1961.

D. Traffic Estimates

The 2022 construction year and 2042 design year average daily traffic estimates are 5800 ADT with 7% trucks and 7200 ADT with 7% trucks, respectively.

E. Sufficiency Ratings

IA 175 is classified as an "access" route and is a maintenance service level "C" road. The federal bridge sufficiency rating is 67.2.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2014 through December 31, 2018, there were 0 crashes.

II. PROJECT CONCEPT

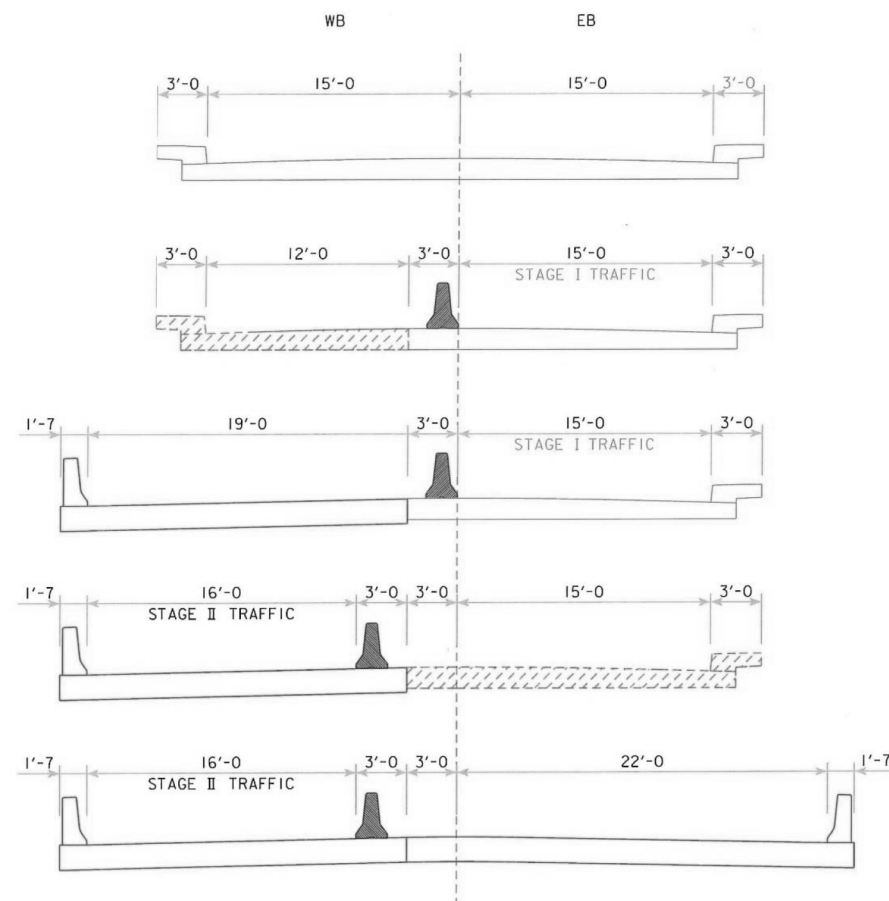
A. Replace with a staged 100'-0 x 44'-0 continuous concrete slab bridge.

The existing structure is an 80'-0 x 30'-0 continuous concrete slab bridge will be replaced with a staged 100'-0 x 44'-0 continuous concrete slab bridge

The typical cross section adjacent to the bridge will consist of a 24 ft. roadway with 8 ft. effective shoulders and 3:1 foreslopes.

This bridge will be constructed on the existing vertical and horizontal alignment. New bridge approaches will be constructed. The existing guardrail will be replaced with new guardrail and the shoulders will be paved 20 ft. beyond the ends of the guardrail. Class 10 will be necessary to flatten the existing foreslopes and to construct the new guardrail blisters. Class E revetment will be placed under the bridge for slope protection. New bridge end drains will be constructed on both ends of the bridge.

The bridge will be built 14 ft. wider (44 ft. vs. 30 ft.) than the existing bridge which meets today's standards and facilitates staged construction. One lane of traffic will be maintained over the bridge via that use of temporary traffic signals. The additional 14 ft. widening will be symmetrical about the centerline. The first stage of the bridge will be cut at 18' ft. with the WB lane and 3 ft. of the EB lane remaining intact, providing a lane width of 15 ft. Three foot wide temporary pavement that is 50 ft. long will also be added to the shoulder at each end of the bridge on WB lane to further facilitate entering and exiting the work area. This shoulder will be 6-inch HMA or 7 inch PCC with 6 inches of special backfill. This shoulder may or may not be removed after stage 1. The second stage will have a lane with of 16 ft. No additional paved shoulder will be required since that side of that bridge should be complete.



EXAMPLE STAGING  
 MONONA COUNTY  
 BRFN-175-1(73)--39-67

Apply erosion control and rural seeding and fertilizing to all disturbed areas.

It appears that no right of way will be required for this project.

| <b>Bridge Items</b> | <u>Estimated Costs</u> |
|---------------------|------------------------|
| New Bridge          | \$ 396,000             |
| Bridge Removal      | 16,800                 |
| Revetment           | 0                      |
| Mobilization - 10%  | 45,400                 |
| M & C - 15%         | <u>74,900</u>          |
| <b>Bridge Costs</b> | <b>\$ 574,900</b>      |

| <b>Roadway Items</b>                       |                   |
|--|-------------------|
| Bridge Approaches                          | \$58,500          |
| Removal of Pavement                        | 6,000             |
| Special Backfill (including temp pavement) | 17,400            |
| Temporary Pavement (shoulder)              | 1,800             |
| Guardrail (Includes Removal)               | 12,300            |
| Paved Shoulders for Guardrail              | 73,100            |
| Class 10 for Guardrail Blisters            | 44,900            |
| Bridge End Drains                          | 40,000            |
| Temp Barrier Rail                          | 7,200             |
| Temp Traffic Signal                        | 29,800            |
| Temp Crash Cushion                         | 3,000             |
| Seeding and Fertilizing                    | 3,200             |
| Erosion Control                            | 50,000            |
| Traffic Control - 5%                       | 2,000             |
| Mobilization - 5%                          | 44,800            |
| M & C - 30%                                | <u>167,800</u>    |
| <b>Roadway costs</b>                       | <b>\$ 561,800</b> |

**Project Total** **\$1,136,700**

**B. Detour Analysis**

There will be no off-site detour. Traffic will be maintained via staged construction with traffic reduced down to one lane via the use of temporary traffic signals.

**Bridge Cost Estimate for Concept Statement**

By: Matt Erickson Date: 10/8/2018

**Location:**

IA 175 over McCandless Cleghorn Drainage Ditch 0.6 mi. East of I-29 in Onawa.  
 County: Monona Proj. No.: BRFN-175-1(73)--39-67  
 Des. No.: 0258 Pin No.: 17-67-175-010  
 Maint. No.: 6706.1S175 FHWA No.: 036840  
 Section 6, T83N, R45W Sta.: 1778+78.00  
 Functional Class: Rural-Minor Arterial ADT: 5,000 vpd

**Existing Bridge:**

Type: CCS Length x Width: 80' x 30'  
 Pier Type: Pile Bent Abut. Type: Stub  
 Spans: 1 @ 31.2', 2 @ 24.4' Approach Pavement Width: 30'  
 Skew: 0 Design Loading: H20-S16  
 Drainage Area: 69.8 sq. mi.  
 Existing Bridge Width Acceptable: No  
 New/Reconstructed Roadway Width: 44.0'  
 Repair/Remodel by Staging Traffic: Yes

**General Comments:** Existing bridge is a CCS structure that could be staged. Stage 1 lane width would be 12 feet wide and Stage 2 lane width would be approximately 12 feet wide with an additional 3 feet wide bridge. Staging a slab bridge may create constructability issues due to deflection and false-work.

**Commentary:**

This project is for the replacement of the IA 175 bridge over McCandless Cleghorn Drainage Ditch (MP 6.1)

**Option A - Stage 100' x 44' CCS Bridge**

Type: CCS Length x Width: 100' x 44'  
 Pier Type: Pile Bent Abutment Type: Integral  
 Spans: 1 @ 39', 2 @ 30.5' Skew: 0.0  
 Stage Traffic: Yes, One 12' Lane - Stage 1, One 19' Lane - Stage 2

|  |              |
|--|--------------|
| <b>Costs:</b>                                |              |
| Bridge - 100' x 44' @ \$90/sf                | = \$ 396,000 |
| Remove Exist. Bridge - 80' x 30' @ \$7.00/sf | = \$ 16,800  |
| Riprap Berms                                 | = \$ 0,000   |
| Staging (10%)                                | = \$ 41,280  |
| Mobilization (10%)                           | = \$ 45,400  |
| Contingency (15%)                            | = \$ 74,900  |
|  | =====        |
| Total Option A                               | \$ 574,380   |

**C. Recommendations**

It is recommended that the present structure be replaced, as described above.

**D. Construction Sequence**

It is anticipated that all work on this project will be awarded to one prime contractor. The Bridges and Structures Bureau will coordinate the plan preparation with assistance from the Design Bureau.

**E. ADA Accommodations**

There are no bike paths or sidewalks adjacent to IA 175; therefore, no ADA accommodations are planned in conjunction with this project.

**F. Special Considerations**

This is not a traffic critical project.

The ABC Rating Score of 27 is less or more than the first stage filter threshold of 50, therefore this bridge will not be considered for an ABC approach.

No bike path or sidewalk will be required as part of this project.

Right of Way does not appear to be required for this project.

The Office of Location and Environment has reviewed this project and has noted that the replacement of the existing IA 175 bridge over the McCandless Cleghorn drainage ditch will require a 404 Permit. However, the bridge replacement project should be a routine Nationwide Permit #14 and not require any stream or wetland mitigation.

**G. Program Status**

Site data has been developed by the Design Bureau. This project is listed in the 2020-2024 Iowa Transportation Improvement Program, with \$1,275,000 for replacement in FY 2023. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

JEB:sh

Bridge Concept Statement

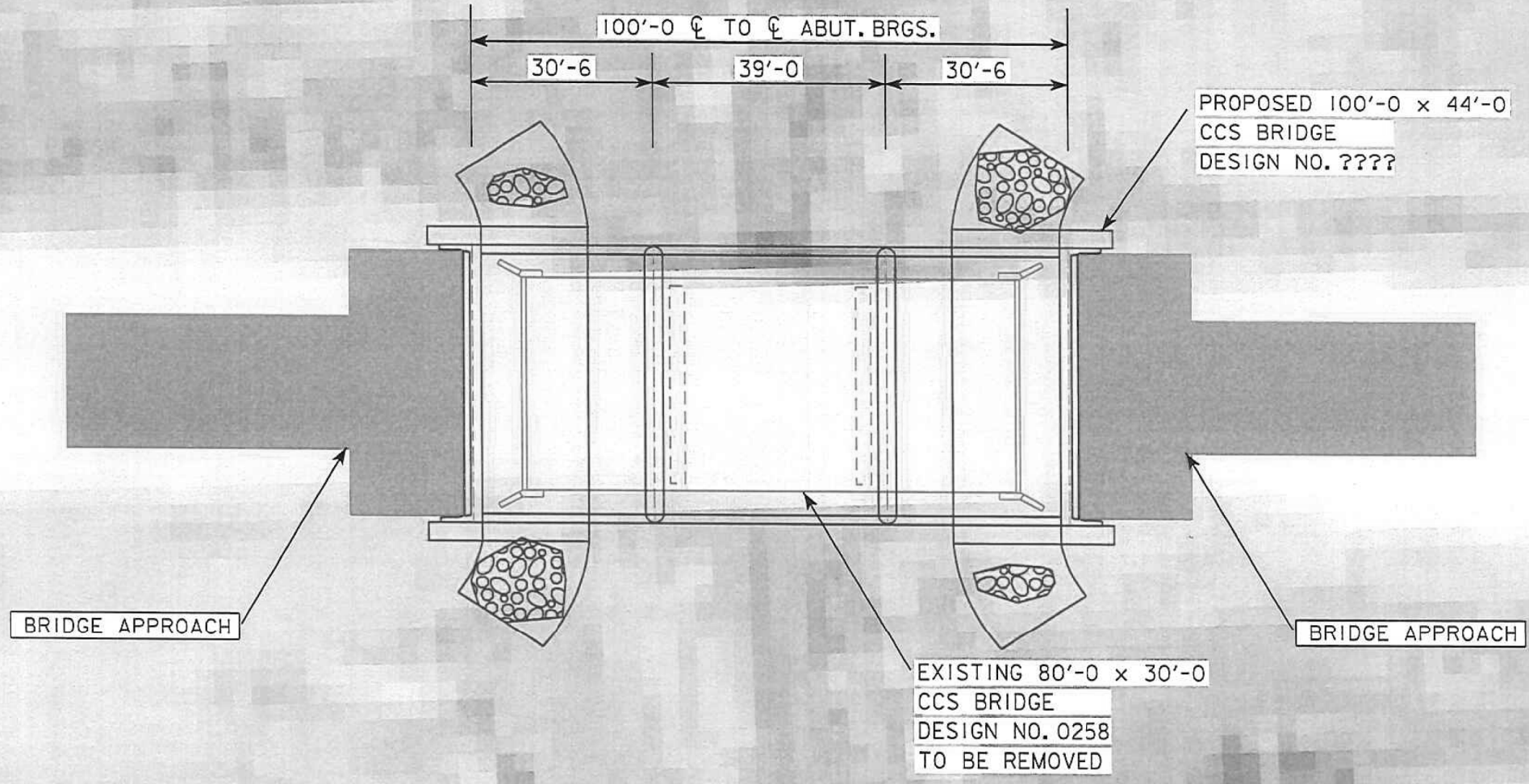
11/8/2018

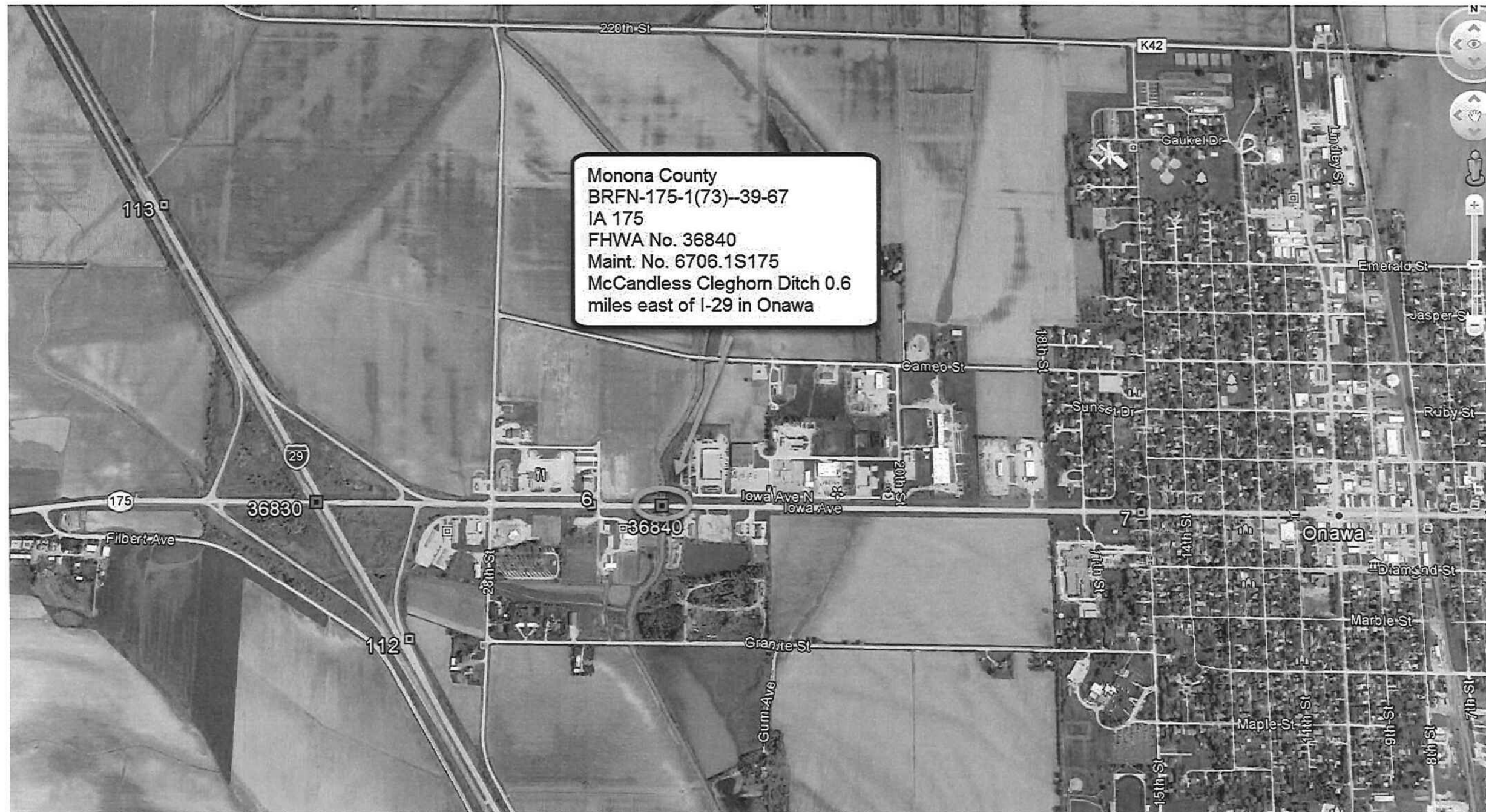
Monona County  
BRFN-175-1(73)--39-67

Comments: Staged CCS bridges may have constructability issues depending upon  
the contractor.

Revisions:  
None

MONONA COUNTY  
BRFN-175-1(73)--39-67  
ON IA 175 OVER  
MCCANDLESS CLEGHORN  
DITCH

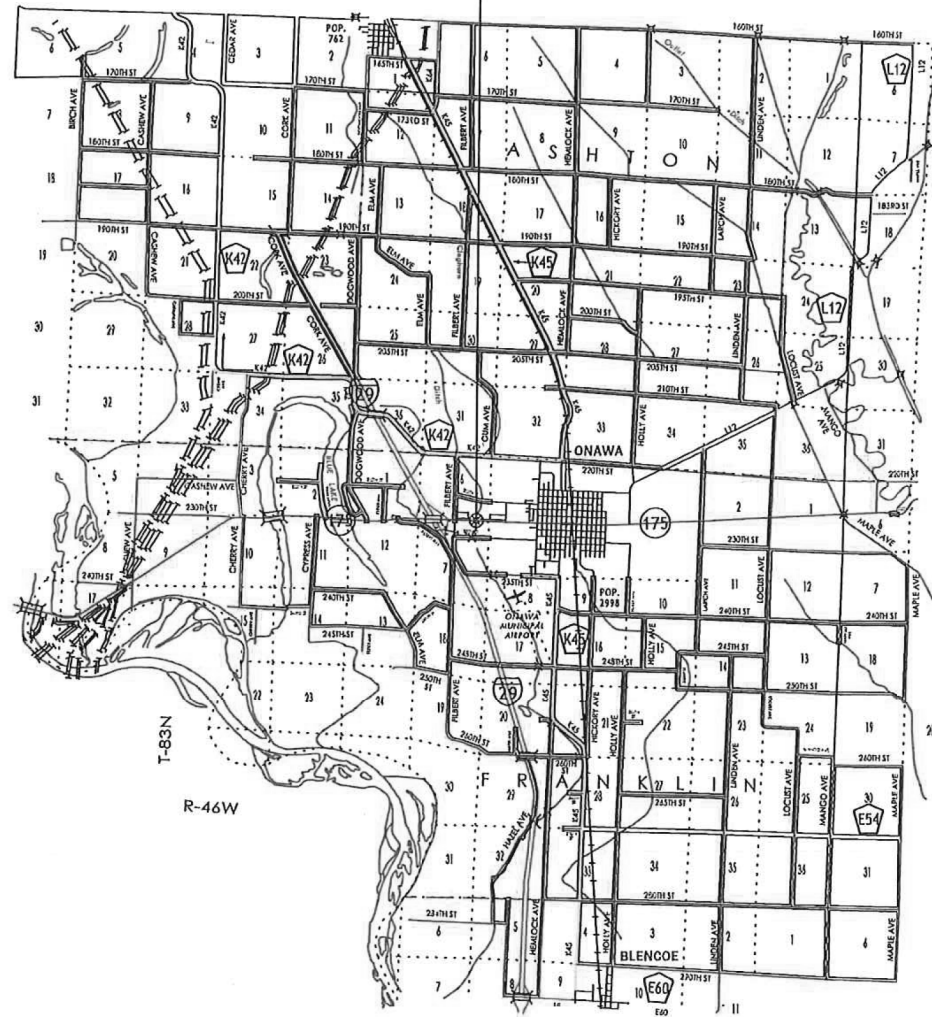




Monona County  
 BRFN-175-1(73)--39-67  
 IA 175  
 FHWA No. 36840  
 Maint. No. 6706.1S175  
 McCandless Cleghorn Ditch 0.6  
 miles east of I-29 in Onawa

# MONONA COUNTY

STA 1778+78.00  
 FHWA 36840  
 MAINT. 6706.1S175  
 DESIGN 258



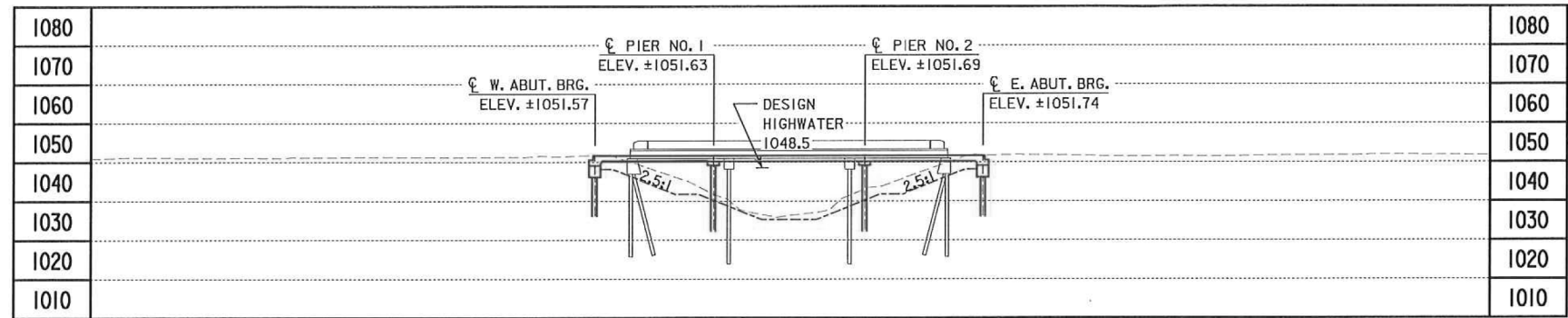
McCandless Cleghorn Ditch  
 0.6 mi of I-29 in Onawa  
 BRFN-175-1(73)-39-67  
 PIN: 17-67-175-010

67

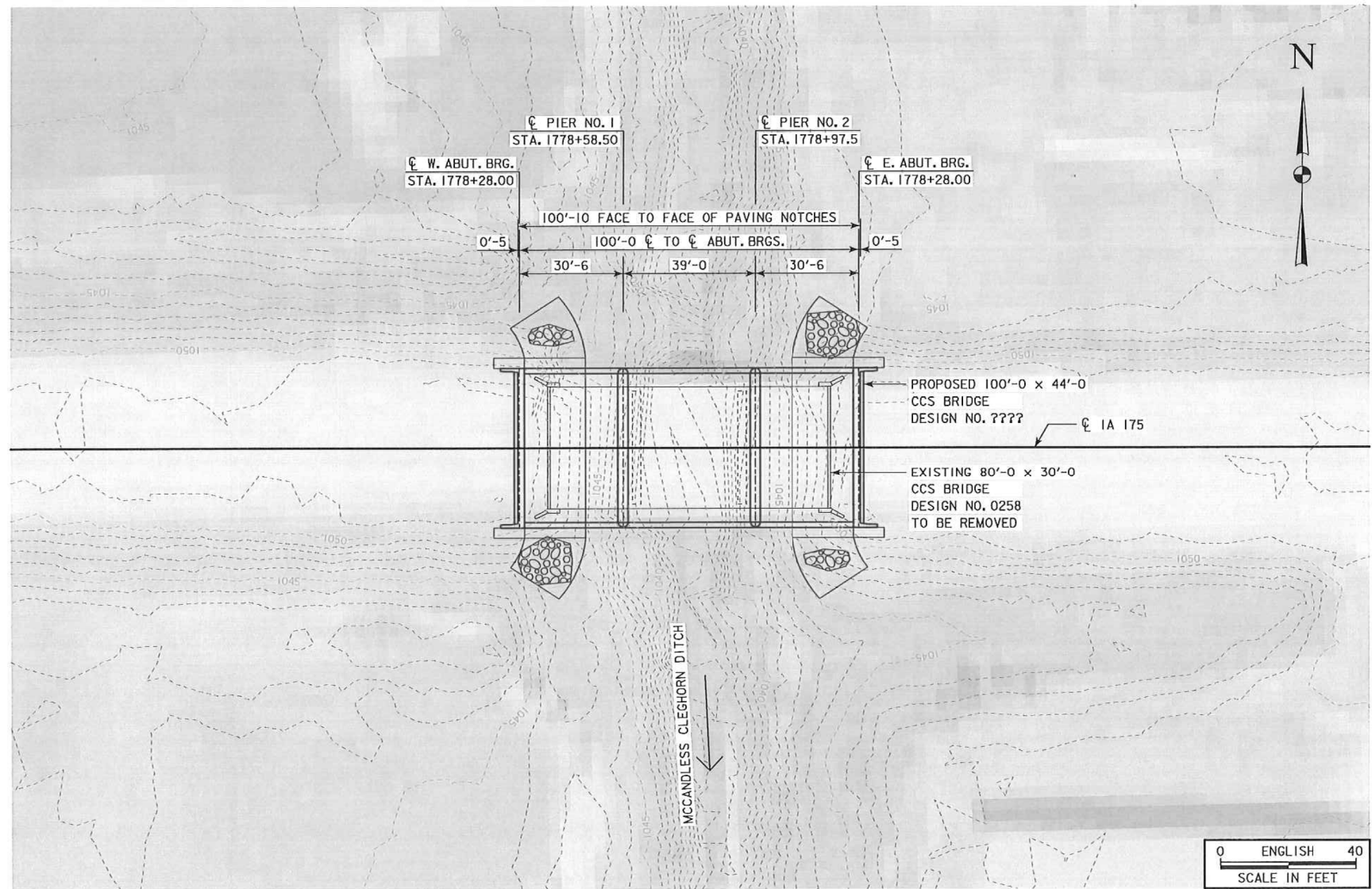
| <b>Utility Name</b>                  | <b>Contact Name</b> | <b>Phone</b> | <b>E-Mail</b>  |
|--------------------------------------|---------------------|--------------|--|
| (CTLIA01)Centurylink                 | Tom Sturmer         | 720.578.8090 | <a href="mailto:Thomas.sturmer@centurylink.com">Thomas.sturmer@centurylink.com</a> |
| (AT2)AT&T Transmission               | Lenny Vohs          | 816.275.4014 | <a href="mailto:lv212@att.com">lv212@att.com</a>                                   |
| (LBIA02)Long Lines Broadband         | Miles, Patton       | 712.2715550  | <a href="mailto:MILES.PATTON@LONGLINES.BIZ">MILES.PATTON@LONGLINES.BIZ</a>         |
| (OWC) Onawa, City of                 | Elaine              | 712.433.1181 | <a href="mailto:EMILLER@ONAWA.COM">EMILLER@ONAWA.COM</a>                           |
| (P10) Black Hills Engy Council Bluff | Chris Dewey         | 712.325.3022 | <a href="mailto:chris.dewey@blackhillscorp.com">chris.dewey@blackhillscorp.com</a> |
| (WP1)Western Iowa Power Cooperative  | Jason Lee           | 712.263.2943 | <a href="mailto:jason.lee@wipco.com">jason.lee@wipco.com</a>                       |



BENCH MARK NO.



LONGITUDINAL SECTION ALONG  $\phi$  APPROACH ROADWAY



SITUATION PLAN

NOTE:  
THIS STRUCTURE IS TO BE STAGED

**HYDRAULIC DATA**

DRAINAGE AREA = 69.8 SQ. MI.  
STREAM SLOPE = 2.1 FT./MI.  
  
 $Q_{50} = 2,730$  CFS  
STAGE = EL. 1048.2  
AVG. BRIDGE VELOCITY = 4.1 FPS  
  
 $Q_{100} = 3,280$  CFS  
STAGE = EL. 1048.5  
AVG. BRIDGE VELOCITY = 4.7 FPS

**UTILITIES LEGEND:**

UTILITY SURVEY NOT CONDUCTED

**LOCATION**

ON IA 175  
OVER MCCANDLESS CLEGHORN DITCH  
T-83N R-45W  
SECTION 6  
FRANKLIN TOWNSHIP  
MONONA COUNTY  
FHWA NO. 36840 (EXISTING)  
BRIDGE MAINT. NO. 6706.1S175  
LATITUDE 42.026891°  
LONGITUDE -96.120759°

PRELIMINARY - CONCEPT

DESIGN FOR 0° SKEW

**100'-0 x 44'-0 CONTINUOUS  
CONCRETE SLAB BRIDGE**

30'-6 END SPANS 39'-0 INTERIOR SPAN

**SITUATION PLAN**

STA. 1778+78.00 ( $\phi$  IA 175) OCTOBER 2018

**MONONA COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. - OF ? FILE NO. ? DESIGN NO. ?

DESIGN TEAM

10/10/2018 8:35:23 AM mericks P:\data\Projects (Prelim)\18\_Monona\_BRFN-175-1(73)--39-67\67175073.dgn Lidar 11x17.pdf.pltcfp

MONONA COUNTY

PROJECT NUMBER BRFN-175-1(73)--39-67

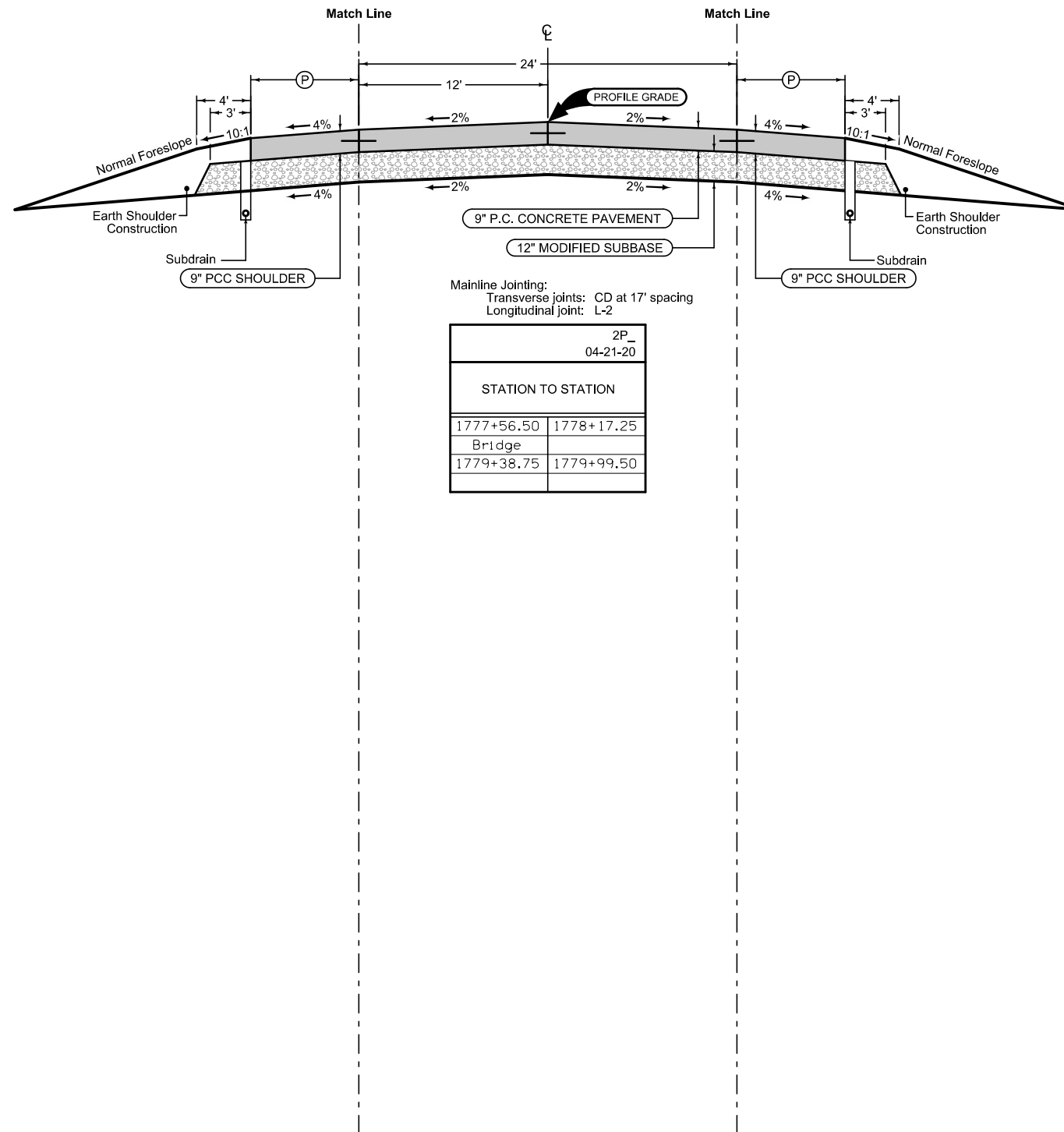
SHEET NUMBER -



**Full Depth PCC Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

| STATION TO STATION |            | (P)<br>Feet |
|--------------------|------------|-------------|
| 1777+56.50         | 1778+17.25 | 10          |
| Bridge             |            |             |
| 1779+38.75         | 1779+99.50 | 10          |



Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

| STATION TO STATION |            |
|--------------------|------------|
| 1777+56.50         | 1778+17.25 |
| Bridge             |            |
| 1779+38.75         | 1779+99.50 |

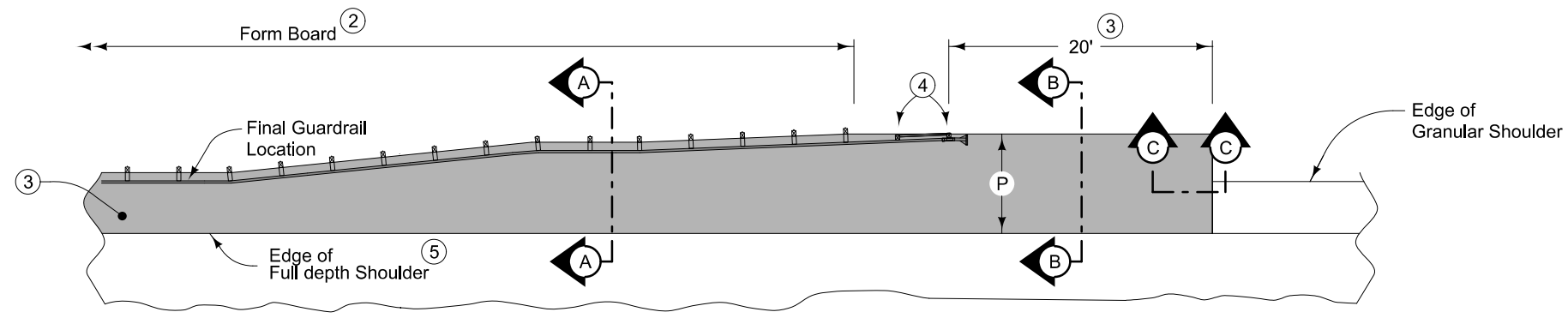
**Full Depth PCC Shoulder**

Shoulder Jointing:  
 Longitudinal joint: L-2 or KT-2  
 Transverse joints: C at 17' spacing

| STATION TO STATION |            | (P)<br>Feet |
|--------------------|------------|-------------|
| 1777+56.50         | 1778+17.25 | 10          |
| Bridge             |            |             |
| 1779+38.75         | 1779+99.50 | 10          |

See Tab 100-24 or 100-25 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.

**IA 175**



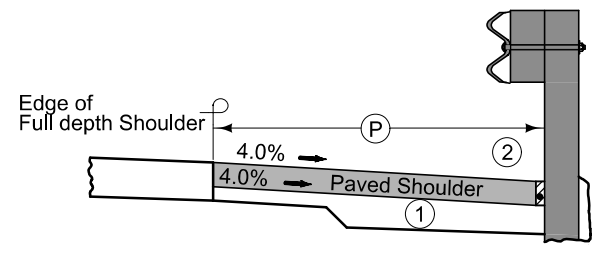
PLAN VIEW

6" PCC paved shoulder at guardrail with the following jointing layout:

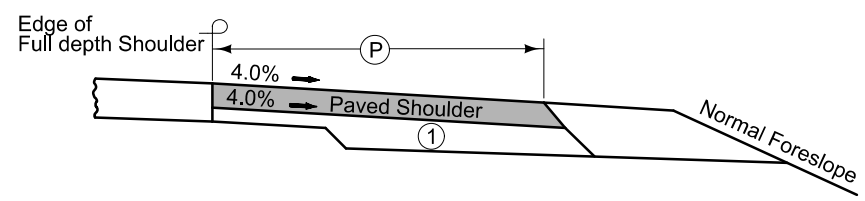
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Paved guardrail shoulder designed assuming 12" blockouts. Field adjust as needed.

Refer to Tabulation 112-9M for shoulder quantities.

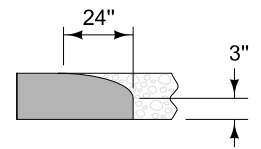


Section A-A



Section B-B

NEW CONSTRUCTION



Section C-C  
Roll down at granular shoulder or earth.

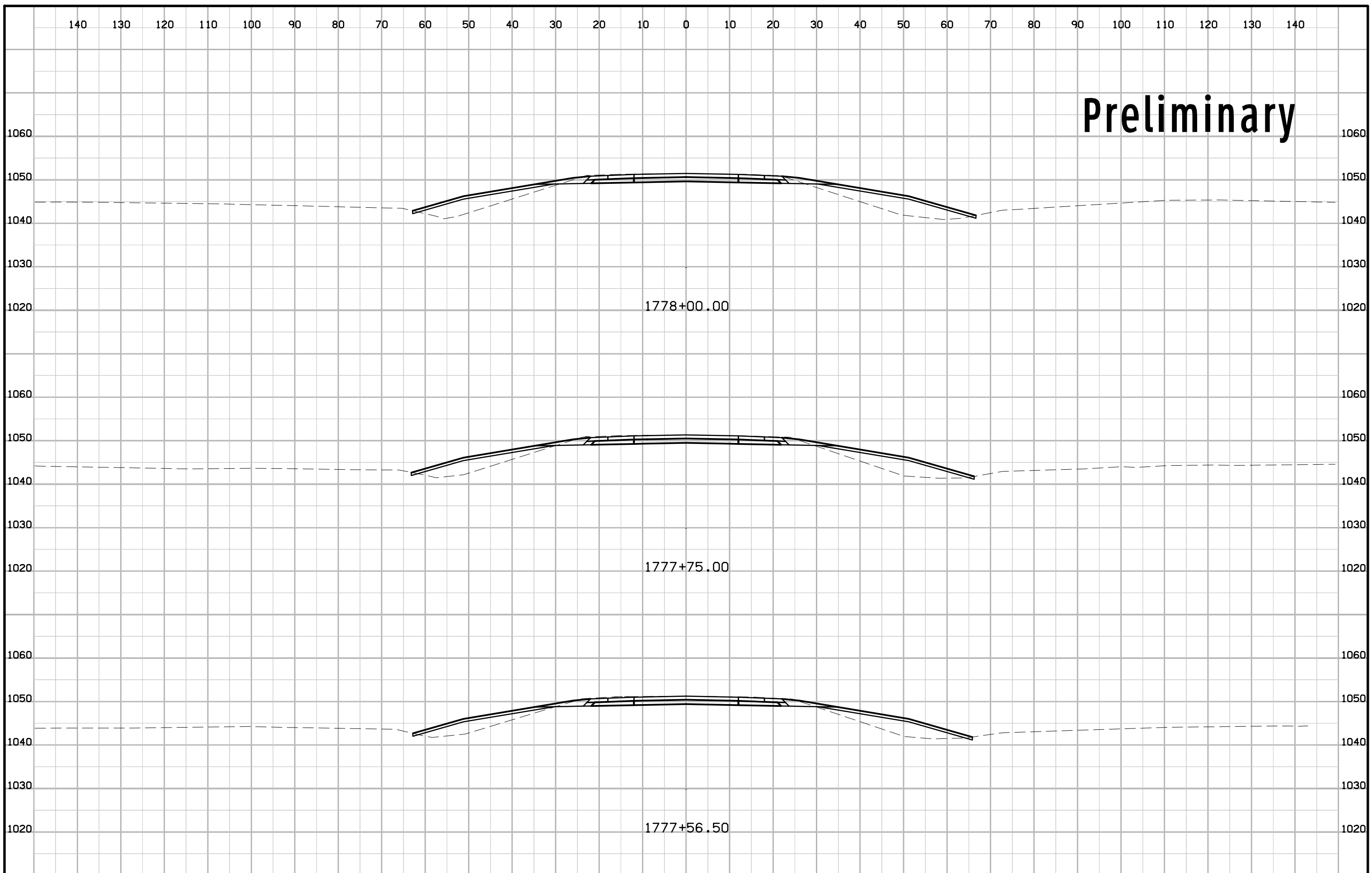
- ① For subgrade treatment, refer to other details in the plan.
- ② When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ⑤ 'KT-1 joint for PCC shoulder.

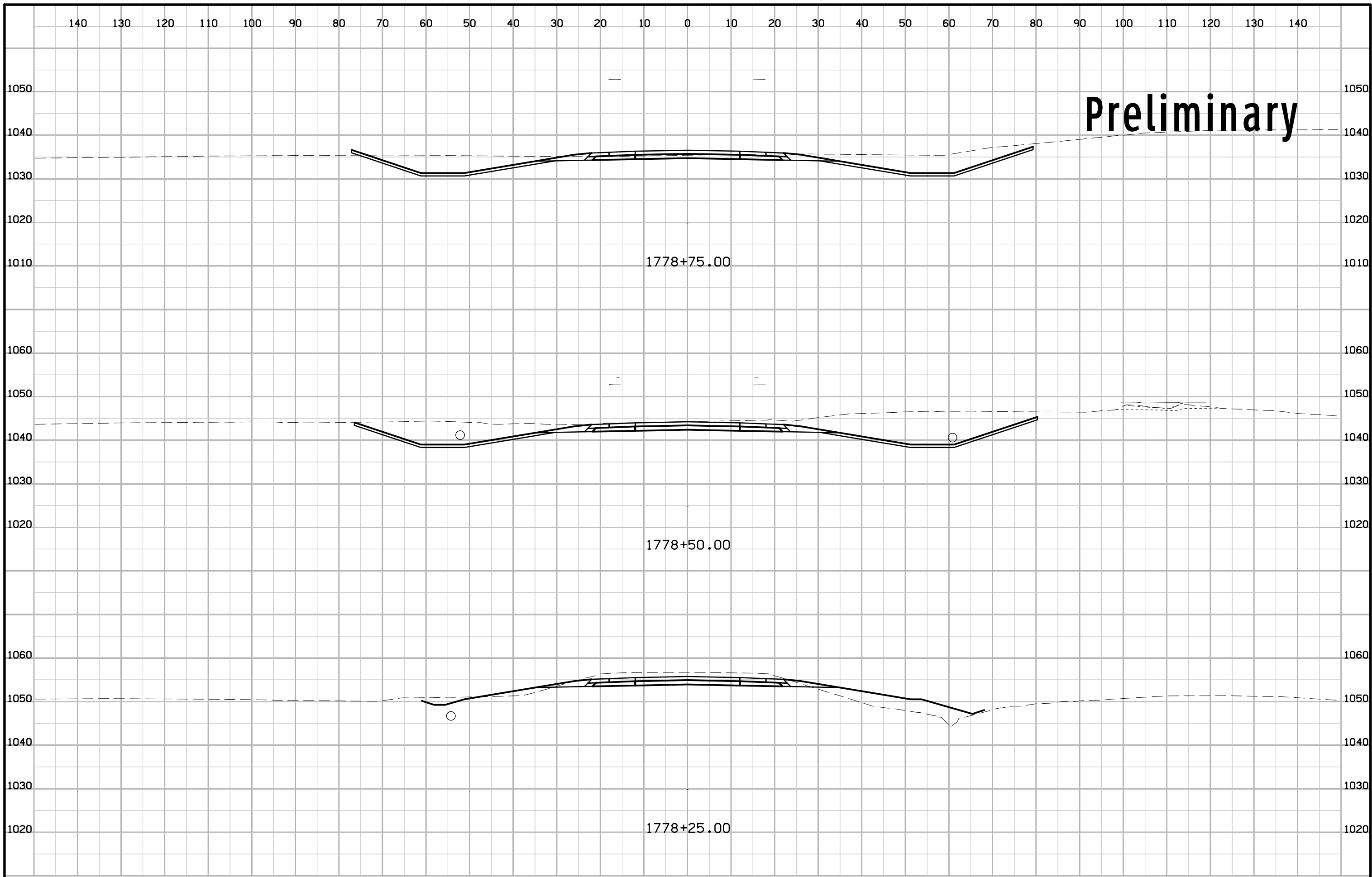
PAVED SHOULDER AT GUARDRAIL





# Preliminary





Preliminary

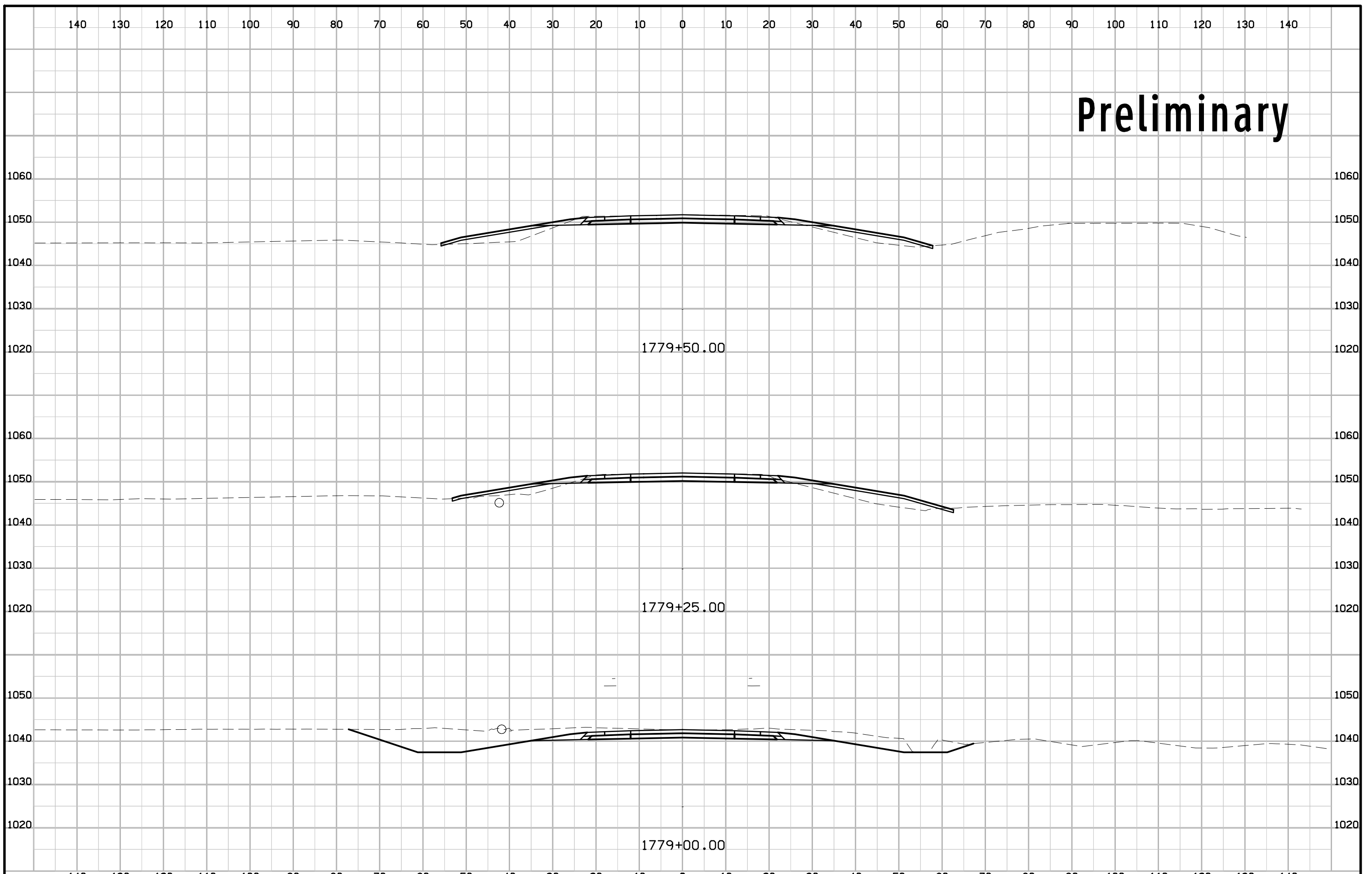
1778+75.00

1778+50.00

1778+25.00



# Preliminary



# Preliminary

