PPCB BRIDGE REPLACEMENT
BRF-063-1(91)--38-26
DAVIS Co.

LETTING DATE 10-18-2022

| INDEX OF SHEETS | |
|---|---|
| No. | DESCRIPTION |
| **A Sheets** | **Title Sheets** |
| * A.1 | Title Sheet |
| * A.2 | Location Map Sheet |
| **B Sheets** | **Typical Cross Sections and Details** |
| B.1 - 3 | Typical Cross Sections and Details |
| **C Sheets** | **Quantities and General Information** |
| C.1 | Project Description |
| C.1 | Estimated Project Quantities |
| C.1 | Estimate Reference Information |
| C.1 | Standard Road Plans |
| **D Sheets** | **Mainline Plan and Profile Sheets** |
| * D.1 | Plan & Profile Legend & Symbol Information Sheet |
| * D.2 | IA 63 |
| **G Sheets** | **Survey Sheets** |
| G.1 - 3 | Reference Ties and Bench Marks |
| G.4 | Horizontal Control Tab. & Super for all Alignments |
| **J Sheets** | **Traffic Control and Staging Sheets** |
| J.1 | Traffic Control Plan |
| * J.2 - 3 | Staging and Traffic Control Sheets Stage 1-3 |
| **V Sheets** | **Bridge and Culvert Situation Plans** |
| * V.1 - 3 | Bridge and Culvert Situation Plans |
| **W Sheets** | **Mainline Cross Sections** |
| W.1 | Cross Sections Legend & Symbol Information Sheet |
| W.2 - 10 | Mainline Cross Sections |
| | * Color Plan Sheets |

IOWA DOT

*Highway Division*

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

# DAVIS COUNTY

## PPCB BRIDGE REPLACEMENT

**IA 63 Over Fox River, 2.1 Mi N of IA 2**

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

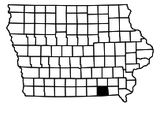
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

| | TOTAL 29 |
|---|---|
| PROJECT IDENTIFICATION NUMBER | |
| 18-26-063-010 | |
| PROJECT NUMBER | |
| BRF-063-1(91)--38-26 | |
| R.O.W. PROJECT NUMBER | |
| NHSN-063-1(92)--2R-26 | |

For Project Location Map
Refer to Sheet No. A.02



| DESIGN DATA 8RBAN | | |
|---|---|---|
| 2022 AADT | 5,300 | V.P.D. |
| 2042 AADT | 5,700 | V.P.D. |
| 2042 DHV | 590 | V.P.H. |
| TRUCKS | 10 | % |
| Total Design ESALs | -- | |

| INDEX OF SEALS | | |
|---|---|---|
| SHEET NO. | NAME | TYPE |
| A.1 | Michael J. Janechek | Primary Signature Block |
| | | |
| V.1 | Phillip M. Harpole | Hydraulic Design |
| | | |
| | | |
| | | |
| | | |

D5 PLAN – Oct. 16, 2020
D4 PLAN – June 21, 2022

**PRELIMINARY PLANS**

Subject to change by final design.

D3 PLAN – July 15, 2020

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER A.1 |
|---|---|---|---|---|---|

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**PROJECT LOCATION**

**US 63 BRIDGE REPLACEMENT**
**STA.: 51+62.00**
**FHWA NO.: 22521**
**MAINT. NO.: 2617.4S063**
**MP: 17.4**

PROJECT LOCATION

T-69N

T-68N

T-67N

R-15W

R-14W

R-13W

R-12W

APPANOOSE CO.

SCHUYLER CO.

SCOTLAND CO.

VAN BUREN CO.

STATE OF MISSOURI

DRAKESVILLE

BLOOMFIELD

BLOOMFIELD MUNICIPAL AIRPORT

WEST GROVE

CLEVELAND

PRAIRIE

PULASKI

UNION

TROY

PERRY

FOX RIVER

WAYACONDAH

FABIUS

GROVE

STILES

SAVANNAH

MONTEREY

MARK

LUNSFORD

LAKE WAPELLO STATE PARK

POP 184

POP 2640

POP 260

LOCATION MAP SCALE
0 1 2 3
Miles

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER A.2 |
|---|---|---|---|---|---|

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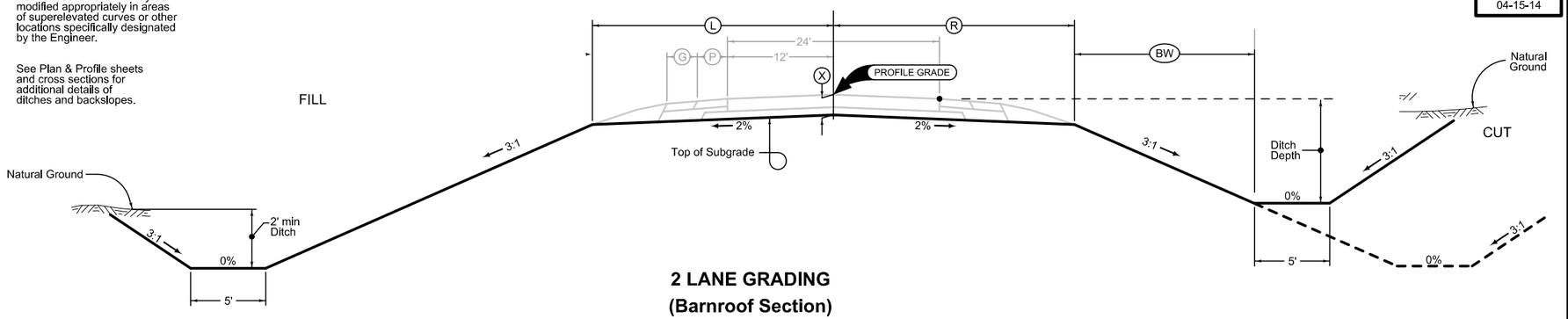
| LOCATION | | | DIMENSIONS | | |
|---|---|---|---|---|---|
| ROAD IDENTIFICATION | STATION TO STATION | | (L) Feet | (R) Feet | (X) Inches |
| IA 63 | 48+90.00 | 54+97.00 | 29.13 | 29.13 | 15.5 |

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.




**2 LANE GRADING**
**(Barnroof Section)**

G_2_Grade_BR
04-15-14

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER B.1 |
|---|---|---|---|---|---|

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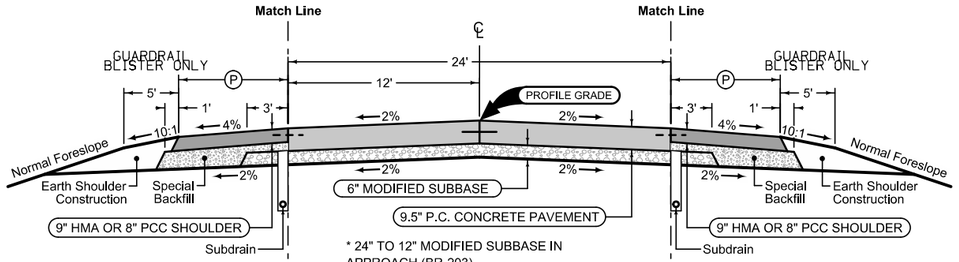
## Paved Shoulder at Guardrail

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

| 2_P_Guard_ 10-17-17 | | |
|---|---|---|
| STATION TO STATION | | (P) Feet |
| 49+14.83 | 50+38.50 | VARIES |
| | | |
| 52+85.50 | 54+34.17 | VARIES |
| | | |
| | | |




* 24" TO 12" MODIFIED SUBBASE IN APPROACH (BR-203)

*12" P.C. CONCRETE PAVEMENT IN APPROACH (BR-203)

Mainline Jointing:
Transverse joints: CD at 20' spacing
Longitudinal joint: L-2

| 2P_ 10-19-10 | | |
|---|---|---|
| STATION TO STATION | | |
| 48+90+00 | 49+68.50 | ROADWAY |
| 49+68.50 | 50+38.50 | APPROACH |
| | | |
| 52+85.50 | 53+55.50 | APPROACH |
| 53+55.50 | 54+97.00 | ROADWAY |

## Paved Shoulder at Guardrail

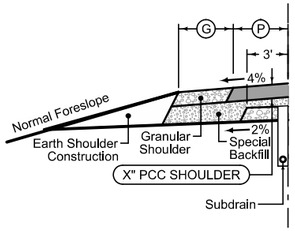
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing:
Longitudinal joint: B

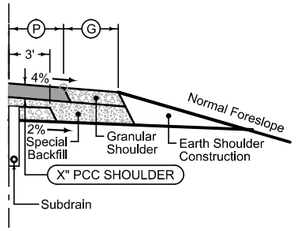
| 2_P_Guard_ 10-17-17 | | |
|---|---|---|
| STATION TO STATION | | (P) Feet |
| 48+90.00 | 50+48.50 | VARIES |
| | | |
| 52+85.50 | 54+09.22 | VARIES |
| | | |
| | | |
| | | |
| | | |

## Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

| 2_C_ 10-15-13 | | | |
|---|---|---|---|
| STATION TO STATION | | (P) Feet | (G) Feet |
| 48+90.00 | 49+14.83 | 6 | 4 |
| | | | |
| 54+34.17 | 54+97.00 | 6 | 4 |
| | | | |




## Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

| 2_C_ 10-15-13 | | | |
|---|---|---|---|
| STATION TO STATION | | (P) Feet | (G) Feet |
| 54+09.22 | 54+97.00 | 6 | 4 |
| | | | |
| | | | |
| | | | |
| | | | |

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.





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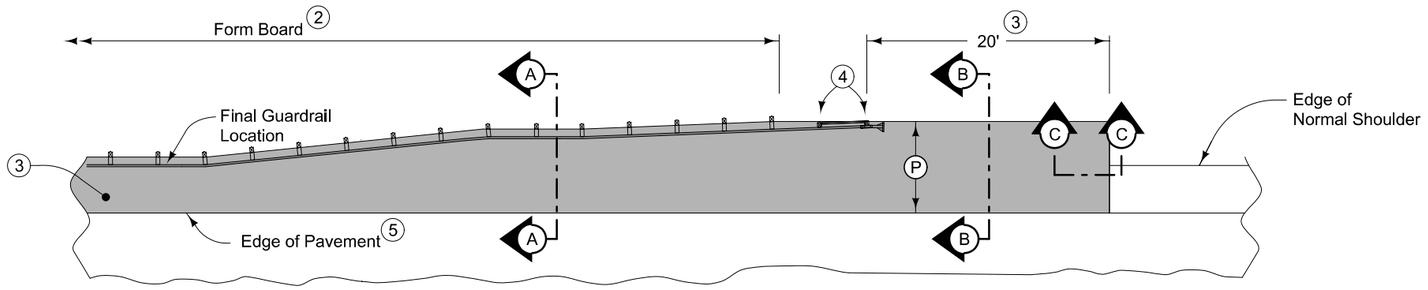
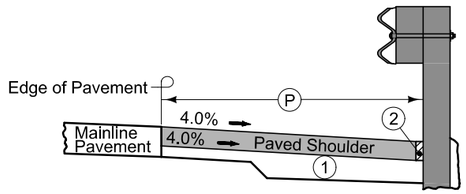
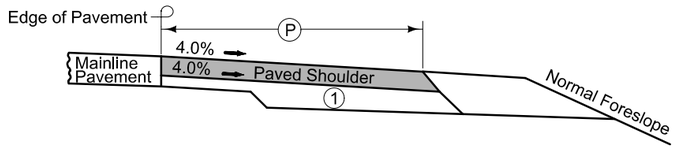
DESIGNER INFO | 7156 | 04-18-17




PLAN VIEW

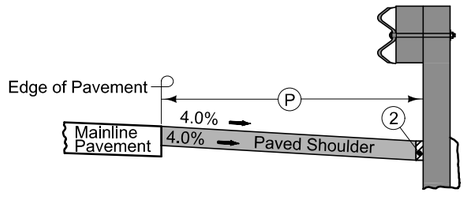



Section A-A

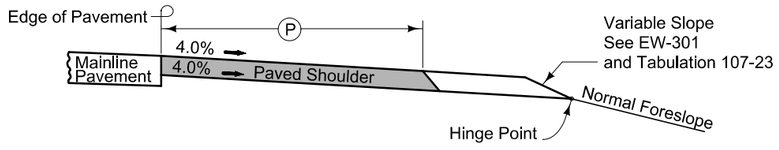



Section B-B

NEW CONSTRUCTION




Section A-A




Section B-B

EXISTING SHOULDER

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted 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.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

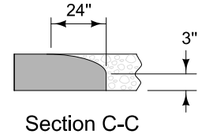
(1) For subgrade treatment, refer to other details in the plan.

(2) PCC option only: 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.
'B' joint for HMA shoulder.




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

PAVED SHOULDER AT GUARDRAIL

100-1D
10-18-05

## PROJECT DESCRIPTION

This project involves the replacement of the IA 63 bridge over Fox River, 2.1 miles N of IA 2, using staged construction.

100-0A
10-28-97

## ESTIMATED ROADWAY QUANTITIES
## (1 DIVISION PROJECT)

| Item No. | Item Code | Item | Unit | Total | As Built Qty. |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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262-6
10-18-05

## UTILITIES
## (NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

105-4
10-18-11

## STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

| Number | Date | Title |
|---|---|---|
| BA-200 | 10-18-16 | Steel Beam Guardrail Components |
| BA-201 | 04-18-17 | Steel Beam Guardrail Barrier Transition Section (MASH TL-3) |
| BA-202 | 10-20-15 | Steel Beam Guardrail Bolted End Anchor |
| BA-205 | 04-19-16 | Steel Beam Guardrail Tangent End Terminal (MASH TL-3) |
| BA-250 | 10-18-16 | Steel Beam Guardrail Installation at Concrete Barrier on Bridge End Post (MASH TL-3) |
| BR-203 | 10-17-17 | Double Reinforced 12" Approach |
| DR-303 | 10-17-17 | Subdrains (Longitudinal) |
| DR-305 | 04-17-18 | Subdrain Outlets (standard Subdrain, Pressure Release and Special) |
| DR-402 | 04-17-18 | Rock Flume for Bridge End Drain |
| EC-201 | 10-16-18 | Silt Fence |
| EC-202 | 10-21-14 | Floating Silt Curtain |
| EC-204 | 04-18-17 | Perimeter and Slope Sediment Control Devices |
| EC-301 | 10-18-16 | Rock Erosion Control (REC) |
| EW-101 | 10-17-17 | Embankment and Rebuilding Embankments |
| EW-102 | 10-20-15 | Allowable Placement of Unsuitable Soil in Embankments |
| EW-201 | 04-19-16 | Bridge Berm Grading without Recoverable Slope (Barnroof Section) |
| EW-301 | 10-20-15 | Guardrail Grading |
| PM-110 | 10-16-18 | Line Types |
| PM-420 | 04-19-11 | Two-Lane Roadway with no Turn Lanes (One-Way Stop Condition) |
| PV-101 | 10-16-18 | Joints |
| SI-173 | 04-19-16 | Object Markers |
| SI-211 | 10-18-16 | Object Markers and Delineater Placement with Guardrail |
| TC-1 | 04-16-13 | Work Not Affecting Traffic (Two-Lane or Multi-Lane) |
| TC-81 | 10-15-19 | Restricted Width Signing (Less Than 14.5 Feet) |
| TC-202 | 04-21-15 | Work Within 15 ft of Traveled Way |
| TC-252 | 04-19-16 | Routes Closed to Traffic |

## SURVEY SYMBOLS

- BCL Bridge Centerline
- BL Topo Breakline
- BRG Bridge
- C Centerline BL of Road (ML or SR)
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- EG Edge of Gravel Road
- EP Edge of Paved Roads (ML or SR)
- EW Edge of Water
- FO – FO1D Fiber Optic Co. 1 - Quality D
- FO2 – FO2D Fiber Optic Co. 2 - Quality D
- GDL Guard Rail Steel
- LIN Miscellaneous Line
- PIP Pipe Culvert
- T1 – TL1D Telephone Line Co. 1 - Quality D
- T2 – TL2D Telephone Line Co. 2 - Quality D
- T3 – TL3D Telephone Line Co. 3 - Quality D
- TOP Top of Bridge Pier
- W – WL1D Water Line Co. 1 - Quality D
- CP Control Point
- BM Bench Mark
- WC Wild Card (Misc. Field Shot)
- GR Ground Shot
- SIGN SI Sign
- TP TPD Telephone Pedestal
- GP GP Guard Post (Less Than 4 Posts)
- BD Bridge Deck
- PCP Photo Control Point
- BBB Bottom of Bridge Beam
- BLS Bridge Low Steel
- TW Top of Water
- OUT Tile Outlet
- SBR Size of Bridge

## UTILITY LEGEND

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- FO – FO1D Fiber Optic Co. 1 - Quality D
- FO2 – FO2D Fiber Optic Co. 2 - Quality D
- GDL Guard Rail Steel
- LIN Miscellaneous Line
- PIP Pipe Culvert
- T1 – TL1D Telephone Line Co. 1 - Quality D
- T2 – TL2D Telephone Line Co. 2 - Quality D
- T3 – TL3D Telephone Line Co. 3 - Quality D
- TOP Top of Bridge Pier
- W – WL1D Water Line Co. 1 - Quality D

## PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

| LINEWORK | Design Color No. | |
|---|---|---|
| Green | (2) | Existing Topographic Features and Labels |
| Blue | (1) | Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation |
| Magenta | (5) | Existing Utilities |
| **SHADING** | **Design Color No.** | |
| Yellow | (4) | Highlight for Critical Notes or Features |
| Red | (3) | Delineates Restricted Areas |
| Lavender | (9) | Temporary Pavement Shading |
| Gray, Light | (48) | Proposed Pavement Shading |
| Gray, Med | (80) | Proposed Granular Shading |
| Gray, Dark | (112) | Proposed Grade and Pave Shading "In conjunction with a paving project" |
| Brown, Light | (236) | Grading Shading |
| Tan | (8) | Proposed Sidewalk Shading |
| Blue, Light | (230) | Proposed Sidewalk Landing Shading |
| Pink | (11) | Proposed Sidewalk Ramp Shading |

## PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

| LINEWORK | Design Color No. | |
|---|---|---|
| Green | (2) | Existing Ground Line Profile |
| Blue | (1) | Proposed Profile and Annotation |
| Magenta | (5) | Existing Utilities |
| Blue, Light | (230) | Proposed Ditch Grades, Left |
| Black | (0) | Proposed Ditch Grades, Median |
| Rust | (14) | Proposed Ditch Grades, Right |

- Reference Point / Station — Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

## RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

# PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

**(COVERS SHEET SERIES D, E, F, & K)**

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER D.1 |
|---|---|---|---|---|---|

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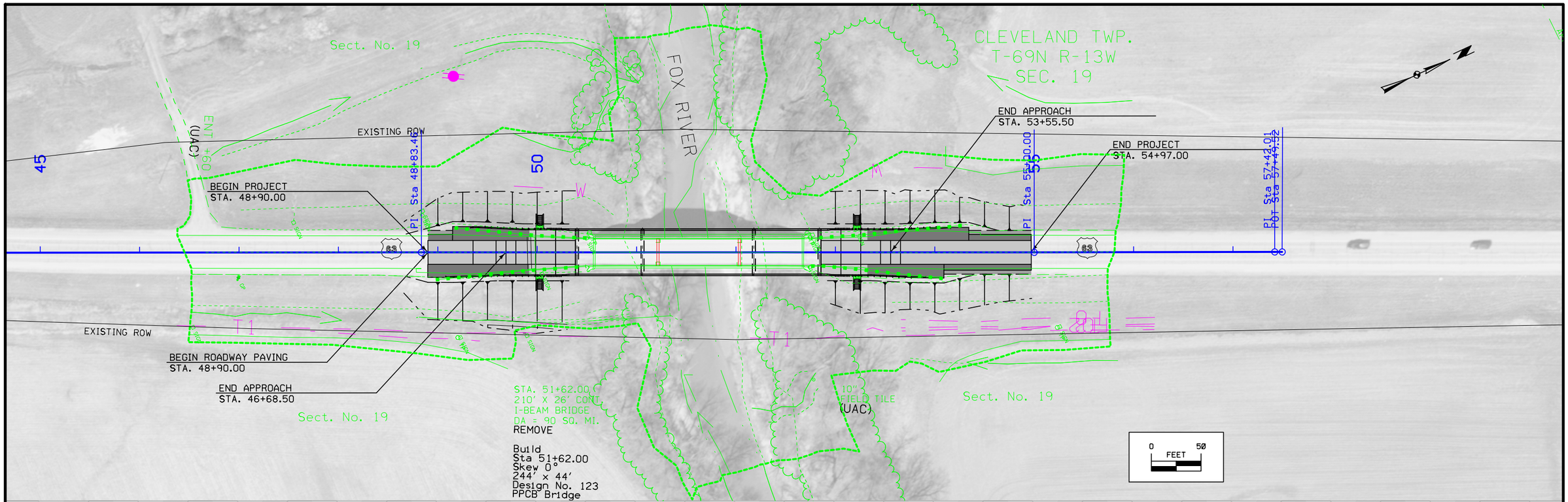


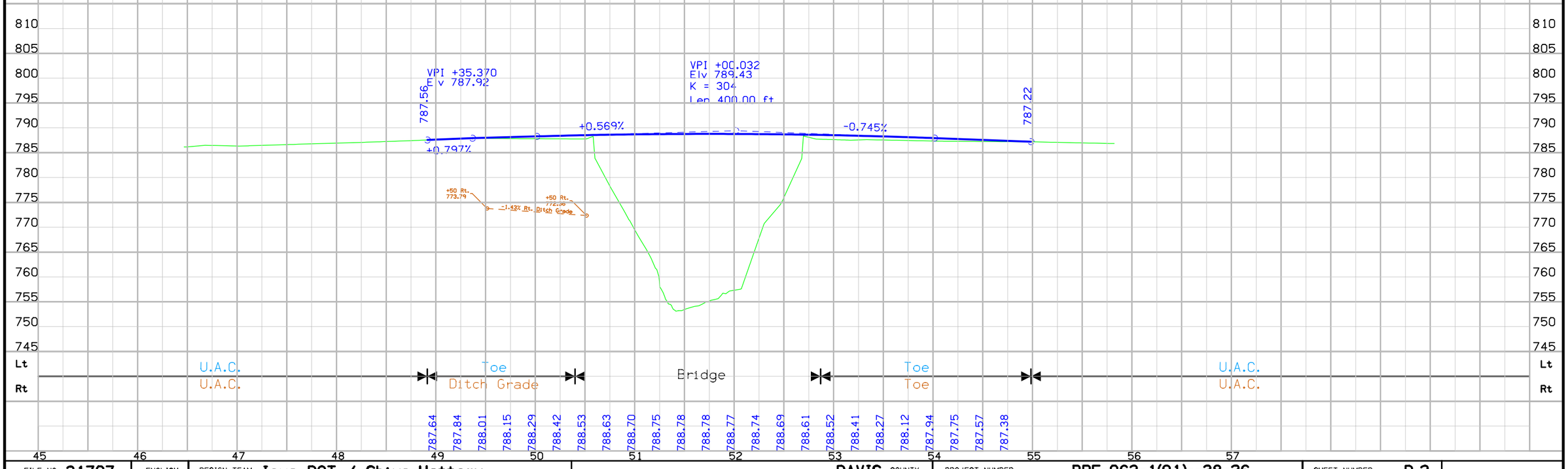


| FILE NO. 31707 | ENGLISH | DESIGN TEAM Iowa DOT / Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER D.2 |
|---|---|---|---|---|---|

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# Survey Information

**Davis County**
**BFRN-063-1(91)–38-26**
**Fox Creek 2.1 mi. N. of IA 2**
**PIN 18-26-063-010**
**Sap-0203.4**

## Party Personnel

Gary Gross – Party Chief
Josh Blaine – Assistant Survey Party Chief

## Date(s) of Survey

Begin Date 05/16/2019
End Date 06/07/2019

## General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction and reconstruction of US 63 over Fox Creek. Project datum and control information is provided by Shive-Hattery, Inc. This project is a Partial DTM with photo control. This survey request was for the US 63 corridor and Fox Creek only.

## Vertical Control

Trimble VRS
Vertical datum for this survey is NAVD88 (Computed using Geoid12A).

This survey observed local control benchmark monument (benchmark bolt in concrete of southeast abutment corner) with Trimble VRS with elevation 788.34. No vertical information was available at the time field work was completed.

This survey observed 2 county control monuments with published NAVD88 heights to compare to local ground control:

Davis County Control mark 116 has a published elevation of 849.86
Survey elevation = 849.61

Davis County Control mark 115 has a published elevation of 876.04
Survey elevation = 876.00

This survey observed 1 NGS Control monument with published NAVD88 heights to compare to local ground control:

NGS 1st order class II mark designated G 7 has a published elevation of 847.22
Survey elevation = 847.23

## Horizontal Control

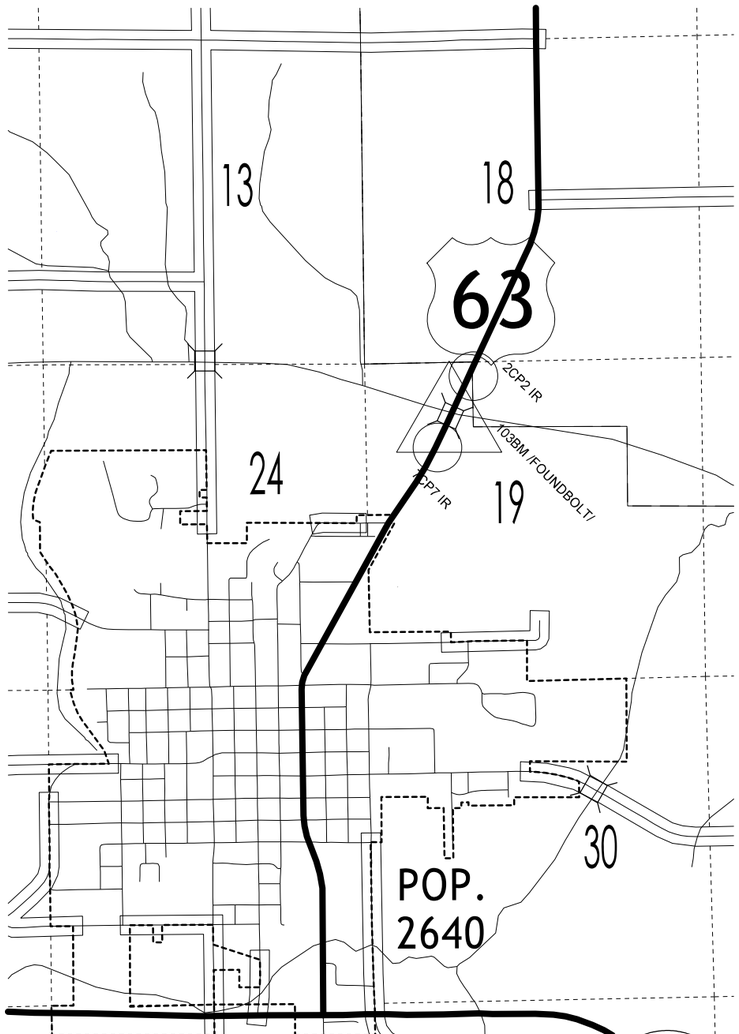
**(Project Coordinates from Trimble VRS Observations)**
The project coordinate system is Iowa Regional Coordinate System Zone 12 (U.S. Survey Feet). This survey control is relative to the Trimble VRS reference stations. Trimble VRS Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by Trimble VRS observations. Additional control points were placed throughout the project using a Total Station setup relative to Point 1 and Point 2 for points 3,4, and 5 and relative to Point 4 and 1 for points 6 and 7.

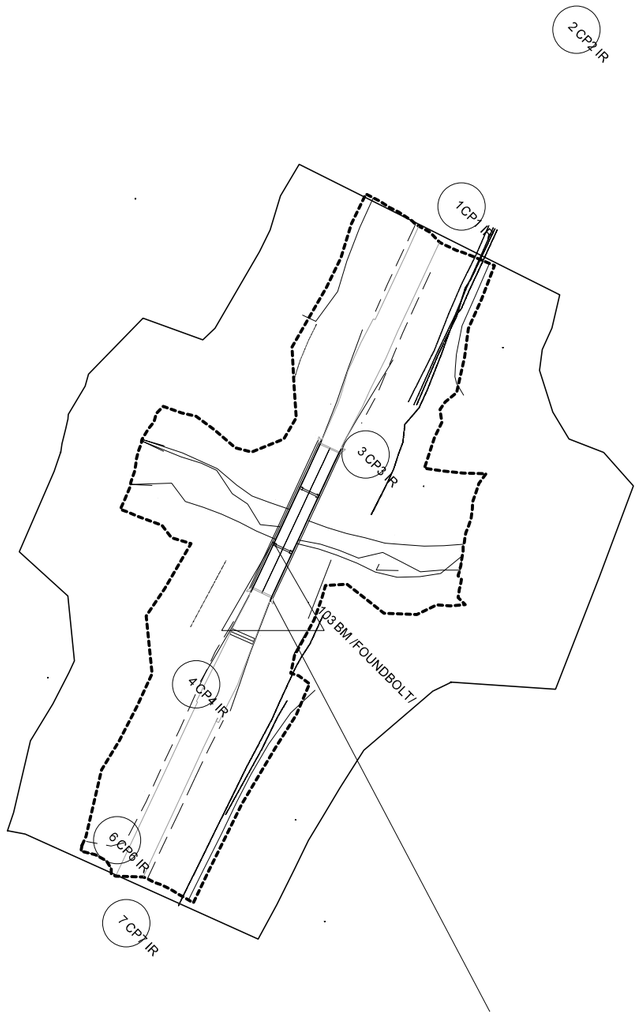
## Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans Davis County Project F50. Survey stationing was equated to the bridge situation plan Sta:51+62.00 and run back and ahead without equation throughout the survey.

# CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points
Primary control is for use with RTK base stations and for RTN validation.
Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.




HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
VERT. DATUM: NAVD88
Ia. Regional Coordinate System Zone 12

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER G.2 |
|---|---|---|---|---|---|

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# HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

## HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

## VERT. DATUM: NAVD88

## Ia. Regional Coordinate System Zone 12

| POINT NUMBER | NORTHING | EASTING | ELEVATION | FEATURE DEFINITION | DESCRIPTION |
|---|---|---|---|---|---|
| 1 | 6148672.66 | 22872909.16 | 786.09 | CP1 | 5/8" Iron Rod |
| 2 | 6148905.44 | 22873060.52 | 775.16 | CP2 | 5/8" Iron Rod |
| 3 | 6148346.31 | 22872783 | 779.54 | CP3 | 5/8" Iron Rod |
| 4 | 6148043.77 | 22872559.92 | 786.48 | CP4 | 5/8" Iron Rod |
| 6 | 6147838.66 | 22872455.9 | 784.34 | CP6 | 5/8" Iron Rod |
| 7 | 6147729.4 | 22872467.86 | 786.37 | CP7 | 5/8" Iron Rod |
| 103 | 6148153.58 | 22872661.12 | 788.34 | BM | BM /FOUNDBOLT/ |

# ALIGNMENT COORDINATES

101-16
10-20-09

| Name | Location | Point on Tangent | | | Begin Spiral | | | Begin Curve | | | Simple Curve PI or Master PI of SCS | | | End Curve | | | End Spiral | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Station | Coordinates | | Station | Coordinates | | Station | Coordinates | | Station | Coordinates | | Station | Coordinates | | Station | Coordinates | |
| | | | Y (Northing) | X (Easting) | | Y (Northing) | X (Easting) | | Y (Northing) | X (Easting) | | Y (Northing) | X (Easting) | | Y (Northing) | X (Easting) | | Y (Northing) | X (Easting) |
| ML0631 | POT | 44+54.90 | 6,147,618.2413 | 22,872,392.5195 | | | | | | | | | | | | | | | |
| ML0633 | POT | 48+83.46 | 6,148,006.7780 | 22,872,573.3600 | | | | | | | | | | | | | | | |
| ML0635 | POT | 55+00.00 | 6,148,565.4821 | 22,872,834.0865 | | | | | | | | | | | | | | | |
| ML0637 | POT | 57+42.01 | 6,148,784.9690 | 22,872,936.0270 | | | | | | | | | | | | | | | |
| ML0638 | POT | 57+49.52 | 6,148,791.7623 | 22,872,939.2250 | | | | | | | | | | | | | | | |

108-23A
08-01-08

## TRAFFIC CONTROL PLAN

1) While bridge and approaches are being removed and replaced, traffic shall be maintained on US 63 at all times by staged construction with temporary signals allowing one lane of traffic.

2) Signage and devices shall be furnished, installed, maintained, and removed by Contractor.

108-26A
08-01-08

## STAGING NOTES

Stage 1:
Remove and replace west portion of roadway, approaches and bridge with traffic shifted to NB lane using temporary signals.
Temporary pavement to be placed for roadway paving

Stage 2:
Remove and replace east half of roadway, approaches and bridge with traffic shifted to SB lane using temporary signals.

Stage 3:
Remove temporary paving on west half of roadway and complete approach and roadway with US 63 traffi shifted to NB lane using temporary signals.

## 511 TRAVEL RESTRICTIONS

| Route | Direction | County | Location Description | Feature Crossed | Object Type | Maint. Bridge No., Structure ID, or FHWA No. | Type of Restriction | Existing Measurement | Construction Measurement | Construction Measurement as Signed | Projected As Built Measurement | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IA 63 | Both | Davis | Fox River (2.1 mi n of IA 2) | Bridge (River) | | | Width | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

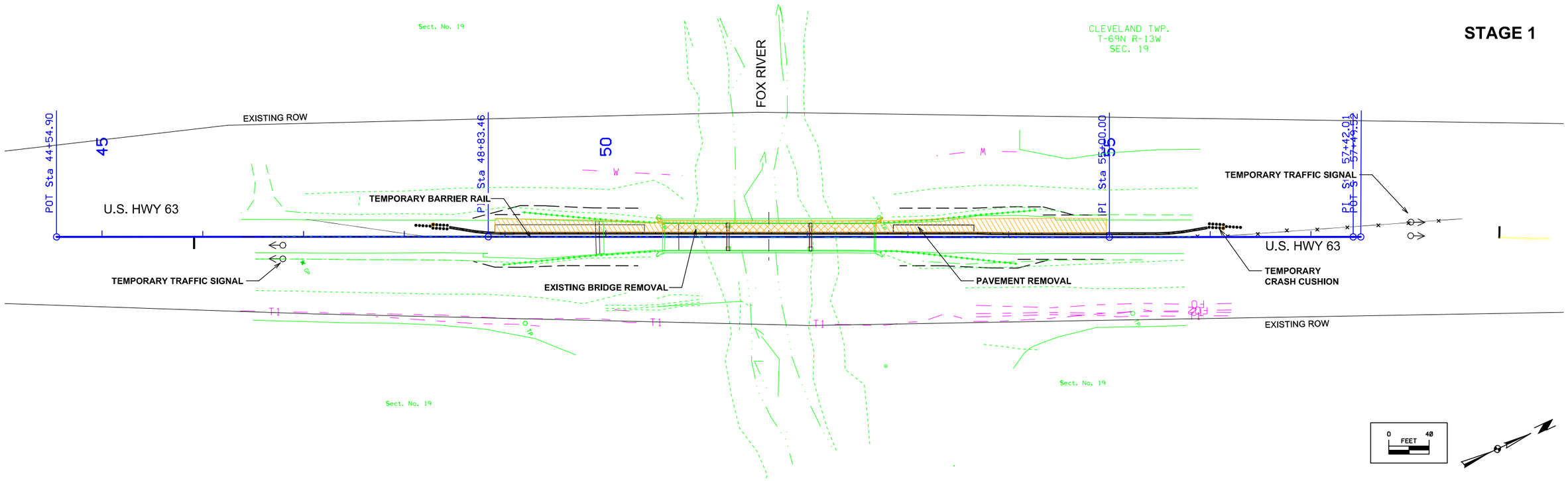
111-01
04-17-12

## COORDINATED OPERATIONS

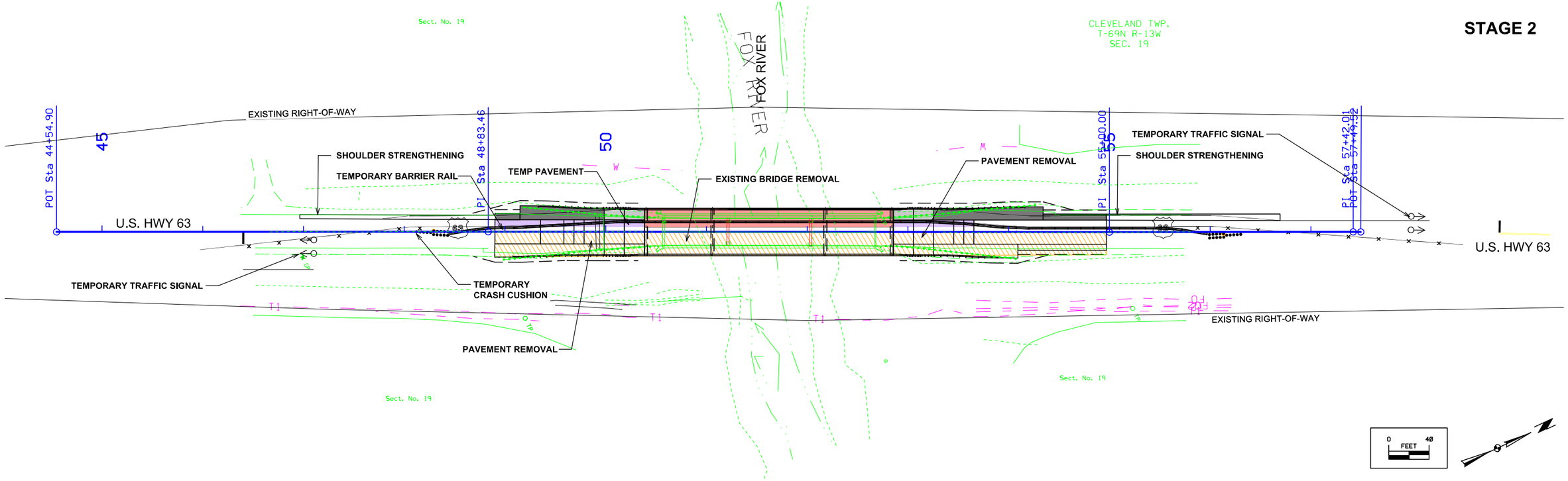
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

| Project | Type of Work |
|---|---|
| | |
| None Provided | |
| | |
| | |
| | |

## STAGE 1




## STAGE 2




| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT / Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER J.2 |
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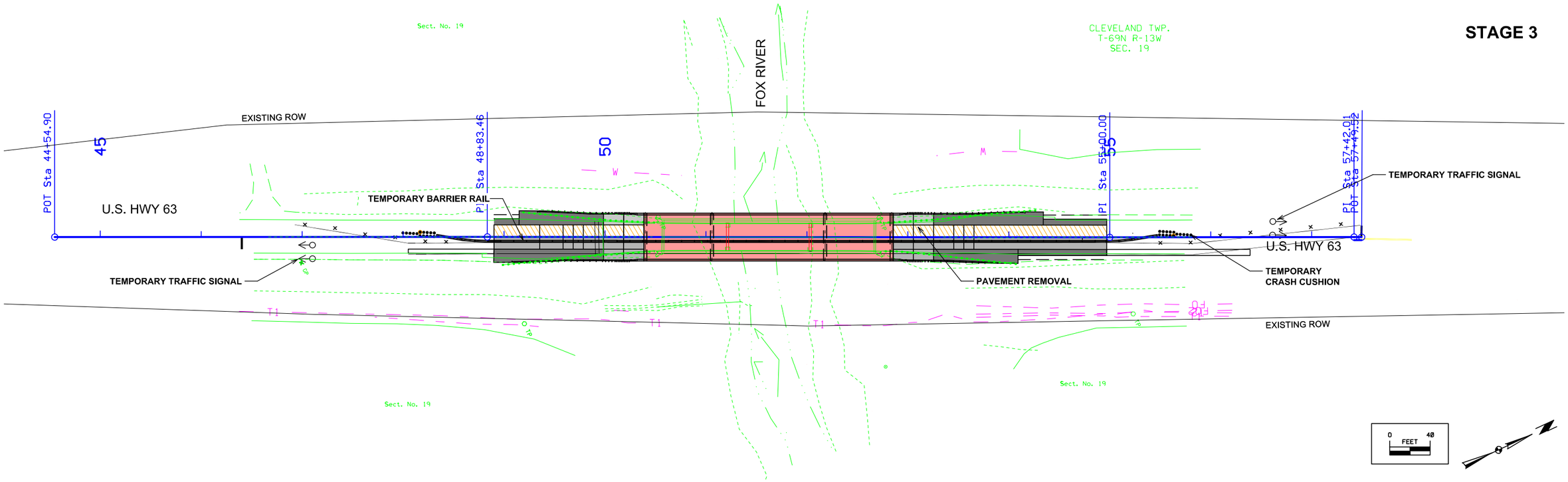
## STAGE 3




## STAGE 2

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT / Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER J.3 |
|---|---|---|---|---|---|

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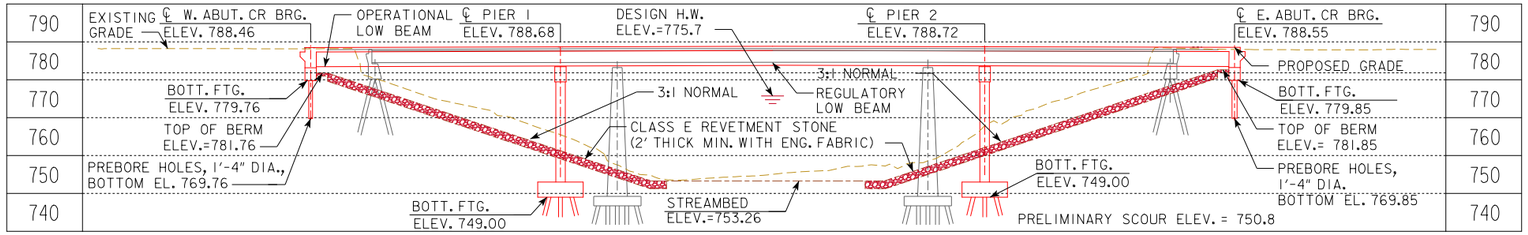
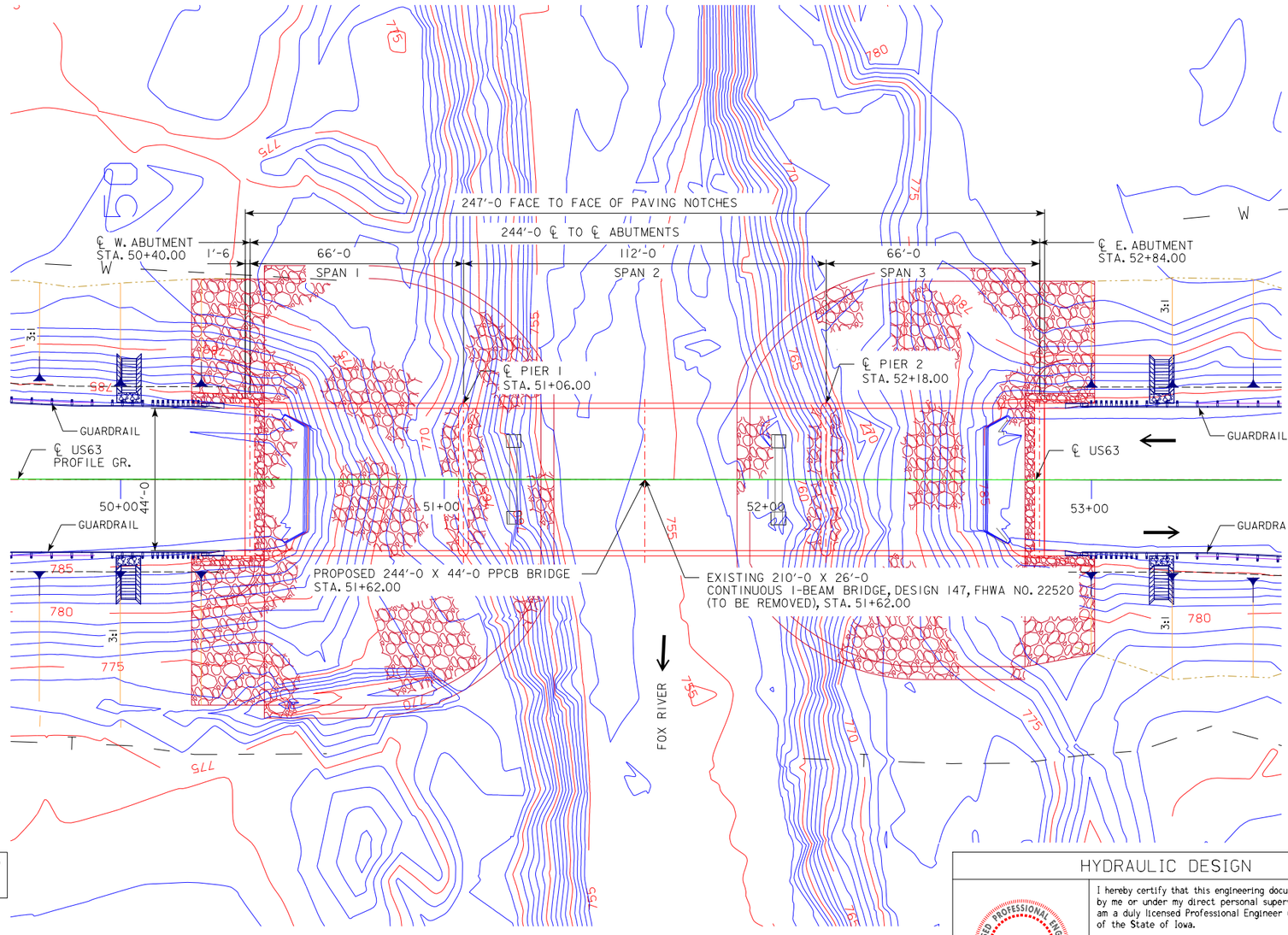
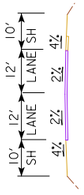
BENCH MARK NO. CONTROL POINT NO. 1 5/8" IRON ROD ELEV. 786.09



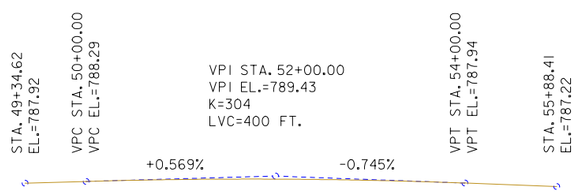

LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY




TYPICAL APPROACH SECTION




TYPICAL BRIDGE SECTION


PROPOSED PROFILE GRADE US 63

## UTILITIES LEGEND:

— W — — — WATER

— T — — — TELEPHONE

UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

## HYDRAULIC DATA

DRAINAGE AREA = 88.7 SQ. MI.
STREAM SLOPE = 7.26 FT./MI.
AVG. LOW WATER STAGE = 754.9

$Q_{50}$= 13600 CFS
STAGE = 775.7 FT.
REGULATORY LOW BEAM = 783.75
BACKWATER = 0.4 FT.
AVG. BRIDGE VELOCITY = 6.7 FPS

$Q_{100}$= 15900 CFS
STAGE = 776.7 FT.
OPERATIONAL LOW BEAM = 783.51
BACKWATER = 0.4 FT.
AVG. BRIDGE VELOCITY = 7.2 FPS

$Q_{200}$= 18200 CFS
STAGE = 777.5 FT.
CALCULATED CHECK SCOUR = 750.8

$Q_{500}$= 21200 CFS
STAGE = 778.2 FT.
CALCULATED CHECK SCOUR = 750.7
ROADWAY OVERTOP = 785.0

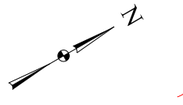
## LOCATION

US63 OVER FOX RIVER
T-69N R-13W
SECTION 19
CLEVELAND TOWNSHIP
DAVIS COUNTY
FHWA NO. 22521
BRIDGE MAINT. NO. 2617.4s063
LATITUDE 40.766501
LONGITUDE -92.404768

## TRAFFIC ESTIMATE

| | | | |
|---|---|---|---|
| 2022 AADT | 5300 | V.P.D. |
| 2042 AADT | 5700 | V.P.D. |
| 2042 DHV | 590 | V.P.H. |
| TRUCKS | 10 | % |

PRELIMINARY




0 ENGLISH 40
SCALE IN FEET

NOTES:
1. TL-4 RAILING PROPOSED
2. TOP OF BRIDGE DECK CROWN 0.03' BELOW PROFILE GRADE
3. CLASS E REVETMENT STONE IS EMBEDDED.
4. BEAM TYPE - BTC.
5. PIER TYPE - T PIER

SITUATION PLAN

## HYDRAULIC DESIGN

LICENSED PROFESSIONAL ENGINEER
PHILIP M. HARPOLE
12910
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature PHILIP M. HARPOLE Date

Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal:

DESIGN FOR 0° SKEW

# 244'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

66'-0 END SPAN (BTC BEAMS), 112'-0 INTERIOR SPAN

## SITUATION PLAN

STATION 51+62.00 (US 63) JULY, 2020

## DAVIS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 31701 DESIGN NO. 123

| DESIGN TEAM | SHIVE-HATTERY | DAVIS COUNTY | PROJECT NUMBER BRFN-063-1(91)--38-26 | SHEET NUMBER V.1 |
|---|---|---|---|---|

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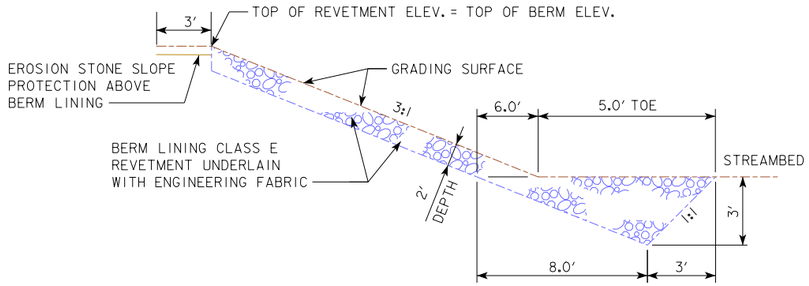
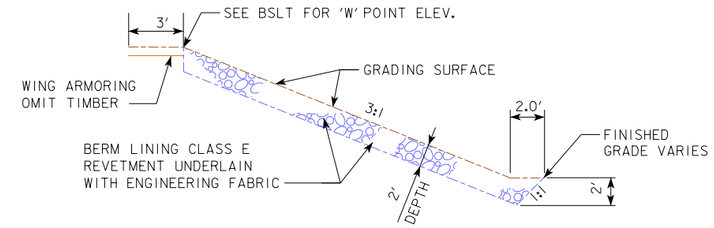



## SECTION THRU EMBEDDED REVETMENT BERM




## SECTION THRU EMBEDDED REVETMENT NORMAL TO BRIDGE WING AT W POINT

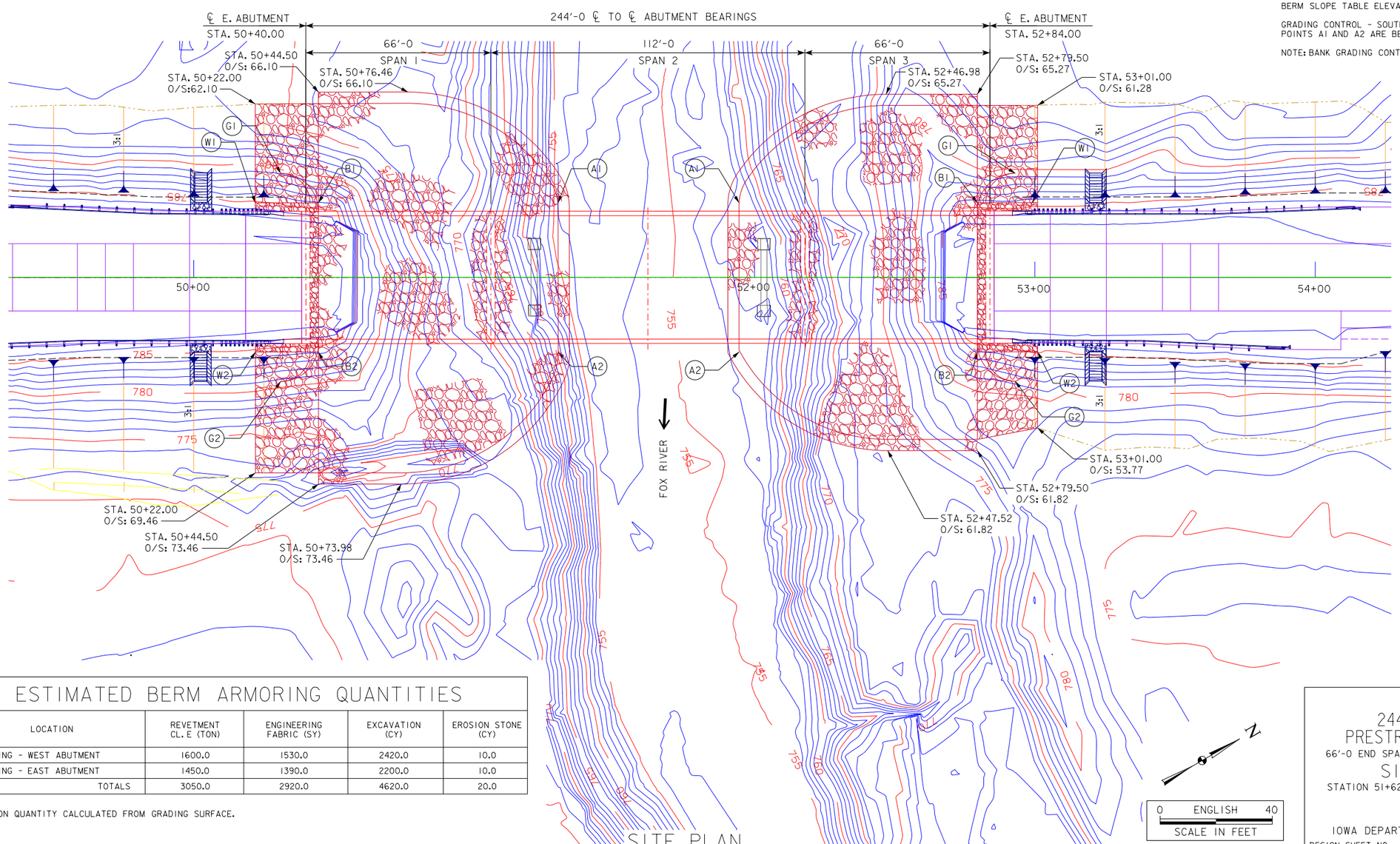
## BERM SLOPE LOCATION TABLE

| | WEST ABUTMENT | | | EAST ABUTMENT | | |
|---|---|---|---|---|---|---|
| | STATION | OFFSET | ELEV. | STATION | OFFSET | ELEV. |
| A1 | 51+29.98 | 26.58 LT | 753.26 | 51+94.50 | 26.58 LT | 753.26 |
| A2 | 52+29.98 | 26.58 RT | 753.26 | 52+94.50 | 26.58 RT | 753.26 |
| B1 | 50+44.50 | 26.58 LT | 781.76 | 52+79.50 | 26.58 LT | 782.60 |
| B2 | 50+44.50 | 26.58 RT | 781.76 | 52+79.50 | 26.58 RT | 782.60 |
| G1 | 50+31.00 | 37.33 LT | 753.26 | 52+93.00 | 37.08 LT | 753.26 |
| G2 | 50+31.00 | 36.83 RT | 753.26 | 52+93.00 | 37.08 RT | 753.26 |
| W1 | 50+22.00 | 26.58 LT | 781.86 | 53+01.00 | 26.58 LT | 782.60 |
| W2 | 50+22.00 | 26.58 RT | 781.86 | 53+01.00 | 26.58 RT | 782.60 |

BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE

GRADING CONTROL - SOUTH AND NORTH:
POINTS A1 AND A2 ARE BERM GRADING CONTROL LINE

NOTE: BANK GRADING CONTROL LINE LOCATED AT BASE OF 3:1 SLOPE




## SITE PLAN

## ESTIMATED BERM ARMORING QUANTITIES

| LOCATION | REVETMENT CL. E (TON) | ENGINEERING FABRIC (SY) | EXCAVATION (CY) | EROSION STONE (CY) |
|---|---|---|---|---|
| BERM LINING - WEST ABUTMENT | 1600.0 | 1530.0 | 2420.0 | 10.0 |
| BERM LINING - EAST ABUTMENT | 1450.0 | 1390.0 | 2200.0 | 10.0 |
| TOTALS | 3050.0 | 2920.0 | 4620.0 | 20.0 |

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

PRELIMINARY

DESIGN FOR 0° SKEW

# 244'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

66'-0 END SPAN (BTC BEAMS), 112'-0 INTERIOR SPAN

## SITUATION PLAN - SITE

STATION 51+62.00 (US 63) JULY, 2020

## DAVIS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 31701 DESIGN NO. 123

DESIGN TEAM SHIVE-HATTERY | DAVIS COUNTY | PROJECT NUMBER BRFN-063-1(91)--38-26 | SHEET NUMBER V.2

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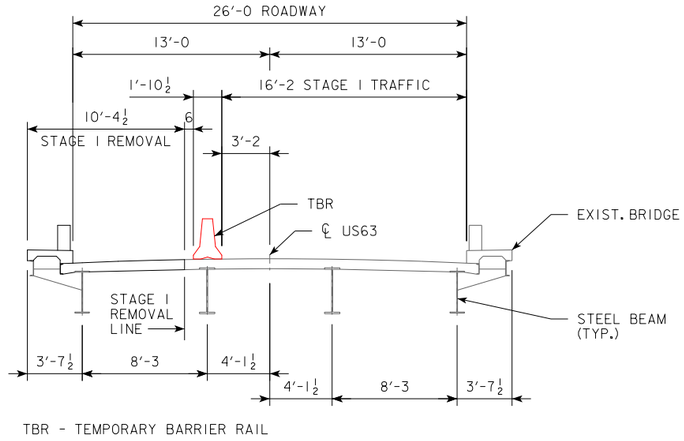
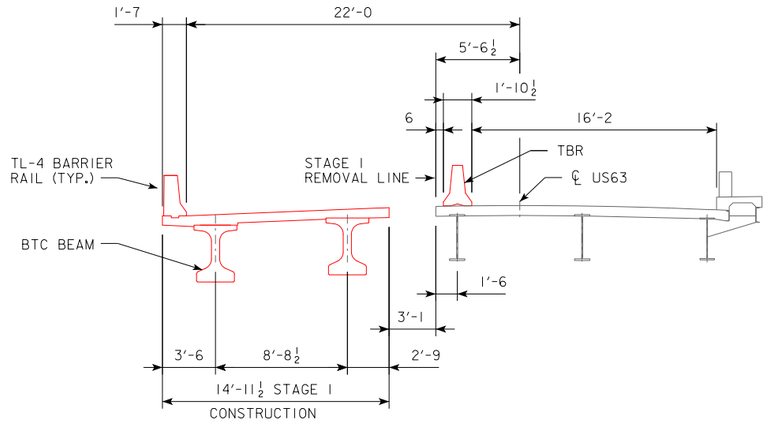
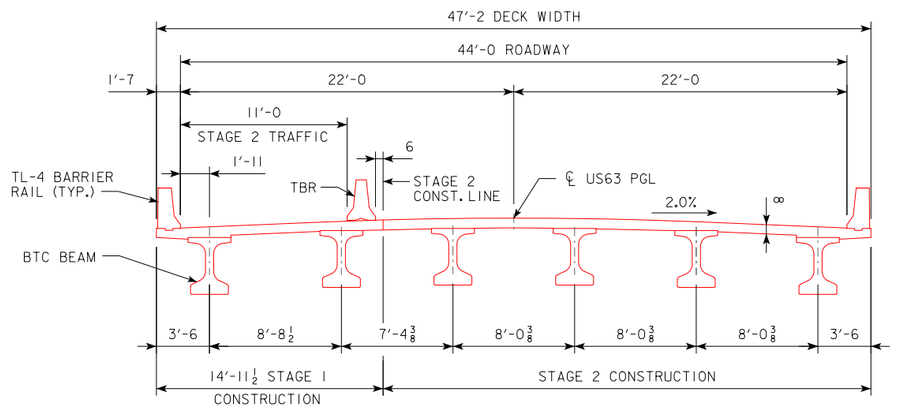



TBR - TEMPORARY BARRIER RAIL

## STAGE I REMOVAL




## STAGE I CONSTRUCTION




## STAGE 2 CONSTRUCTION

DESIGN FOR 0° SKEW

# 244'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

66'-0 END SPAN (BTC BEAMS), 112'-0 INTERIOR SPAN

## STAGE CONSTRUCTION

STATION 51+62.00 (US 63) JULY, 2020

## DAVIS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 31701 DESIGN NO. 123

## LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- Additional Topsoil Removal
- Subgrade Treatment
- Granular Shoulder
- Pavement
- Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

## LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- Topsoil (Class 10)
- Slope Dressing Only
- Class 10 Materials
- Select Loams And Clay-Loams
- Select Sand
- Unsuitable Type A Disposal
- Unsuitable Type B Disposal
- Unsuitable Type C Disposal
- Shale
- Waste
- Broken and Weathered Rock
- Solid Rock
- Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

## SYMBOL LEGEND OF CROSS SECTION SHEETS

Existing ROW — Existing Right-of-Way Limit

Proposed ROW — Proposed Right-of-Way Limit

Temporary ROW — Temporary Right-of-Way Limit

# CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

**(COVERS SHEET SERIES W, X, Y, & Z)**

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.1 |
|---|---|---|---|---|---|

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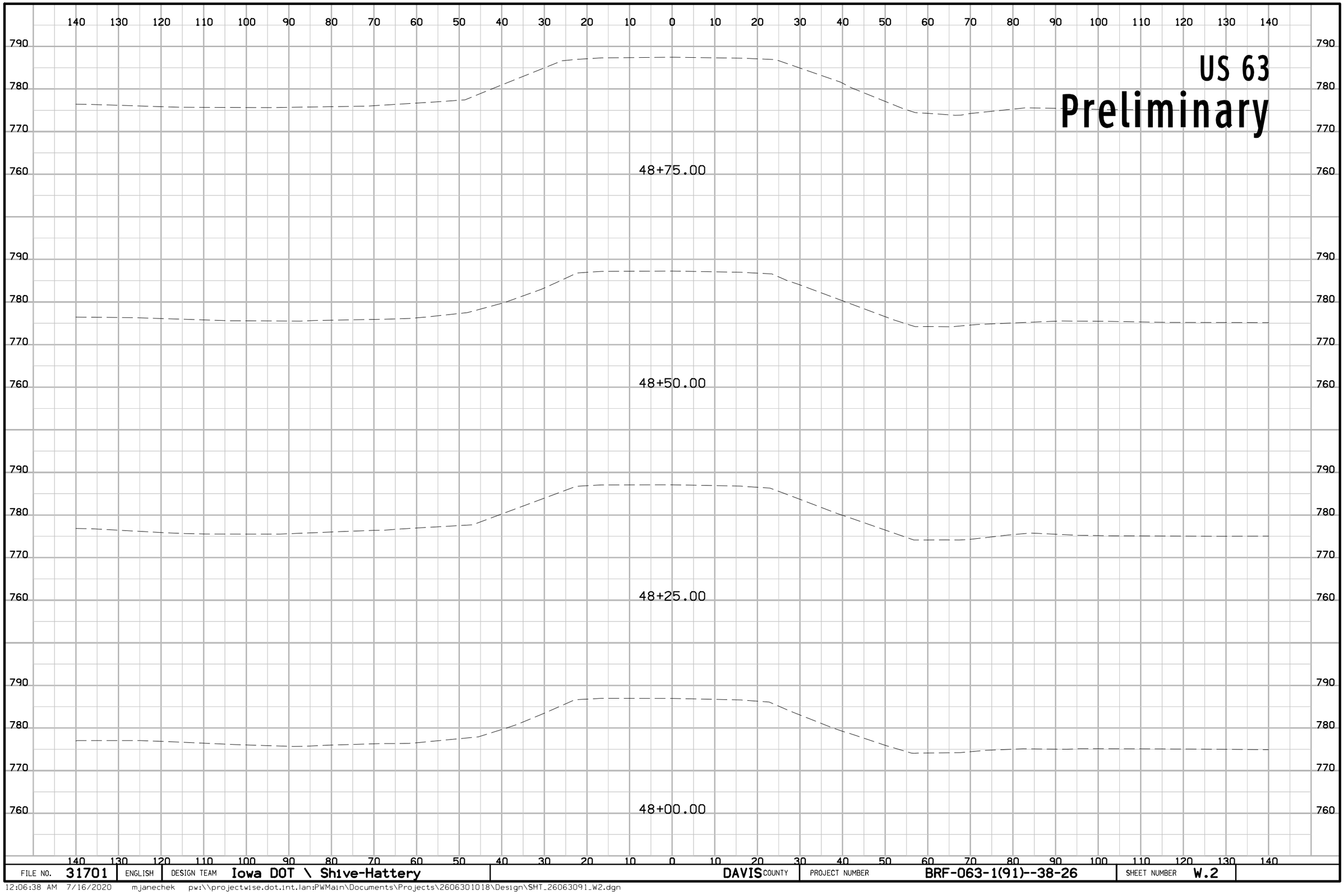
US 63

Preliminary




| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.2 |
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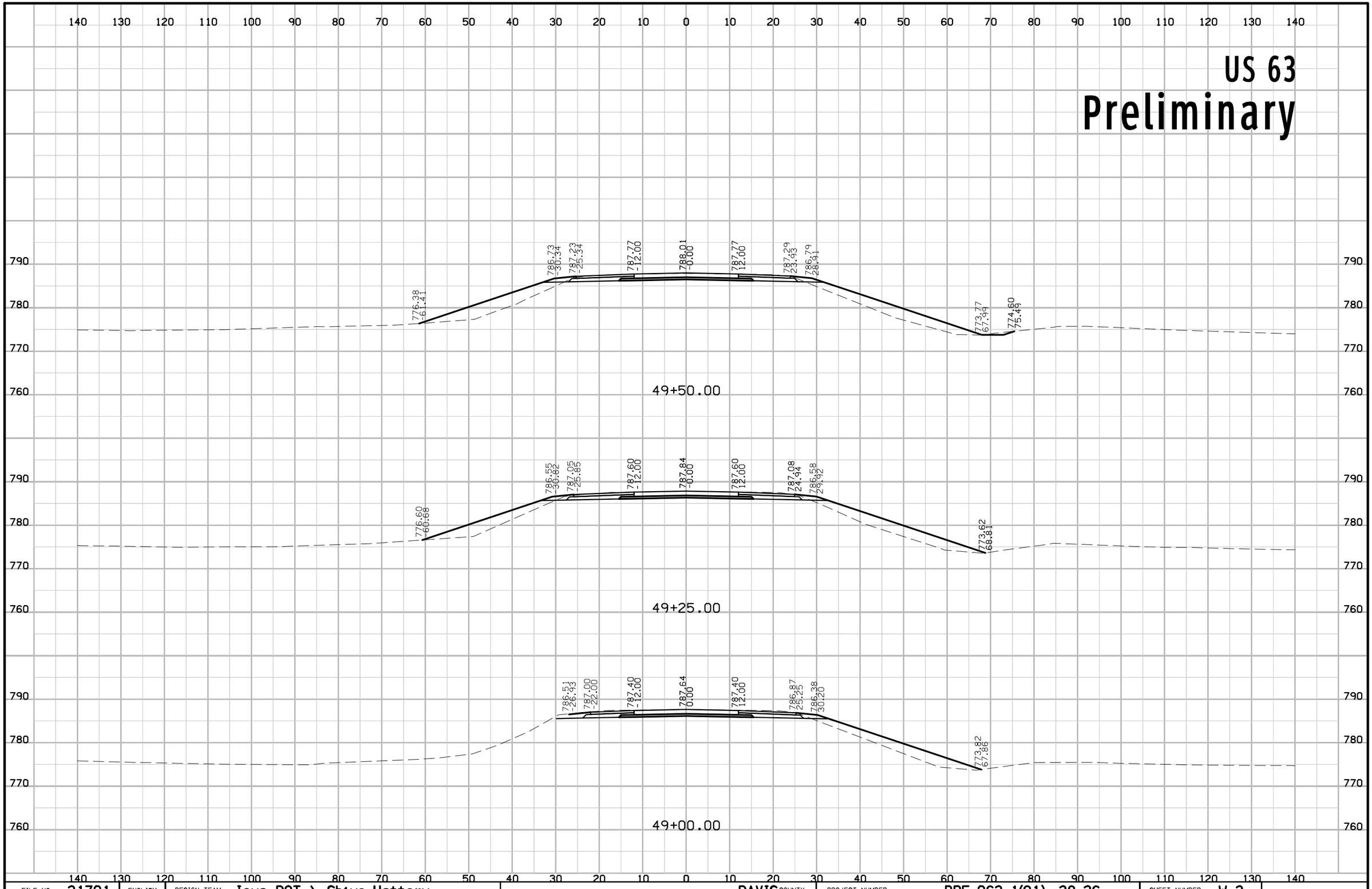
# US 63
# Preliminary




| FILE NO. | 31701 | ENGLISH | DESIGN TEAM | Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER | BRF-063-1(91)--38-26 | SHEET NUMBER | W.3 |
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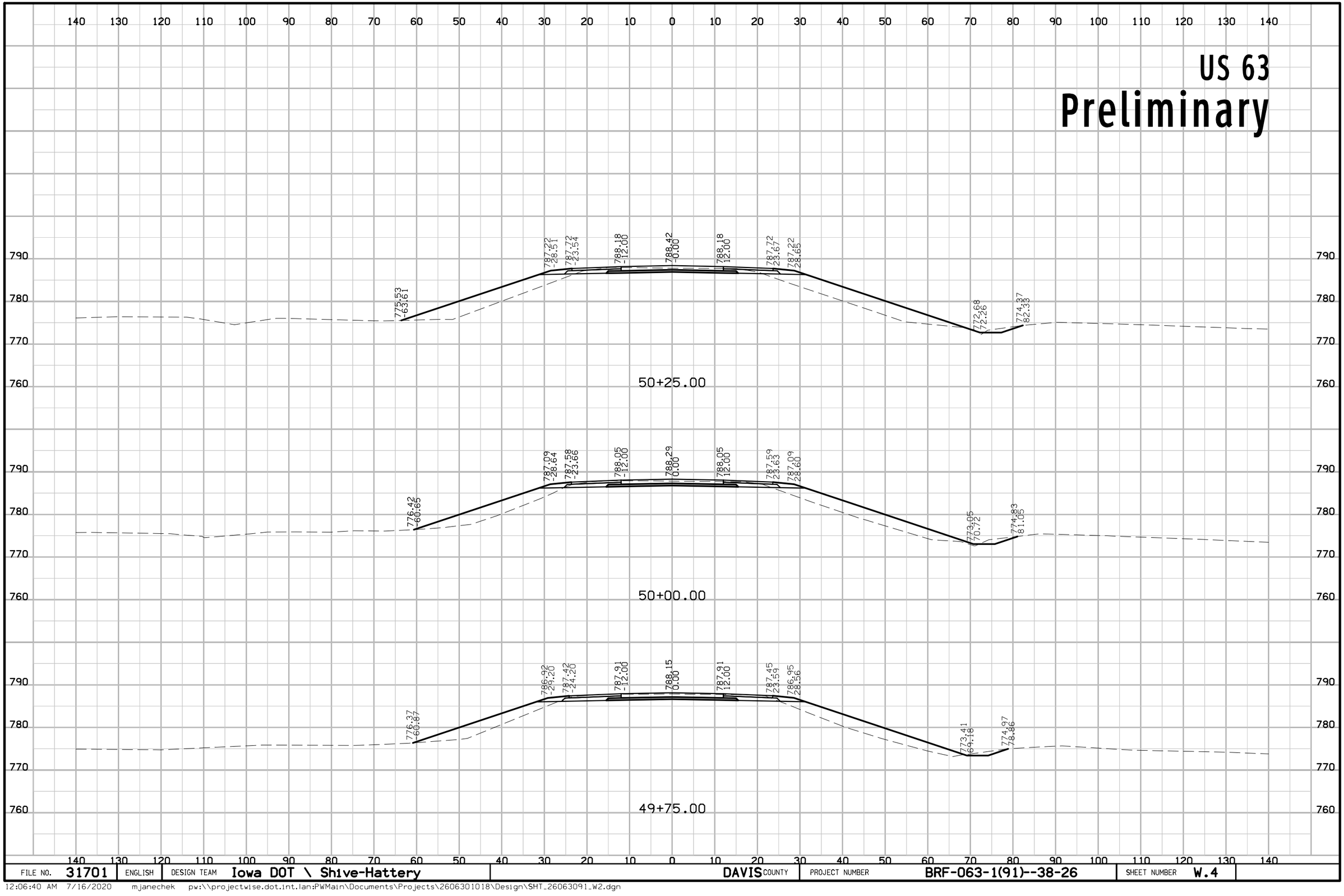
# US 63
# Preliminary

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# US 63
# Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

790
780
770
760
750

788.70
0.00

51+00.00

788.63
0.00

50+75.00

788.53
0.00

50+50.00

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.5 |
|---|---|---|---|---|---|

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# US 63
# Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

790
780
770
760
750
740

788.78
-0.00

51+50.00

788.75
-0.00

51+25.00

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.6 |
|---|---|---|---|---|---|

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# US 63
# Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

790
780
770
760
750
740

788.77
-0.00

52+00.00

788.78
0.00

51+75.00

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.7 |
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# US 63
# Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

790 780 770 760

788.61
-0.00

52+75.00

790 780 770 760

788.69
-0.00

52+50.00

790 780 770 760 750

788.74
-0.00

52+25.00

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.8 |
|---|---|---|---|---|---|

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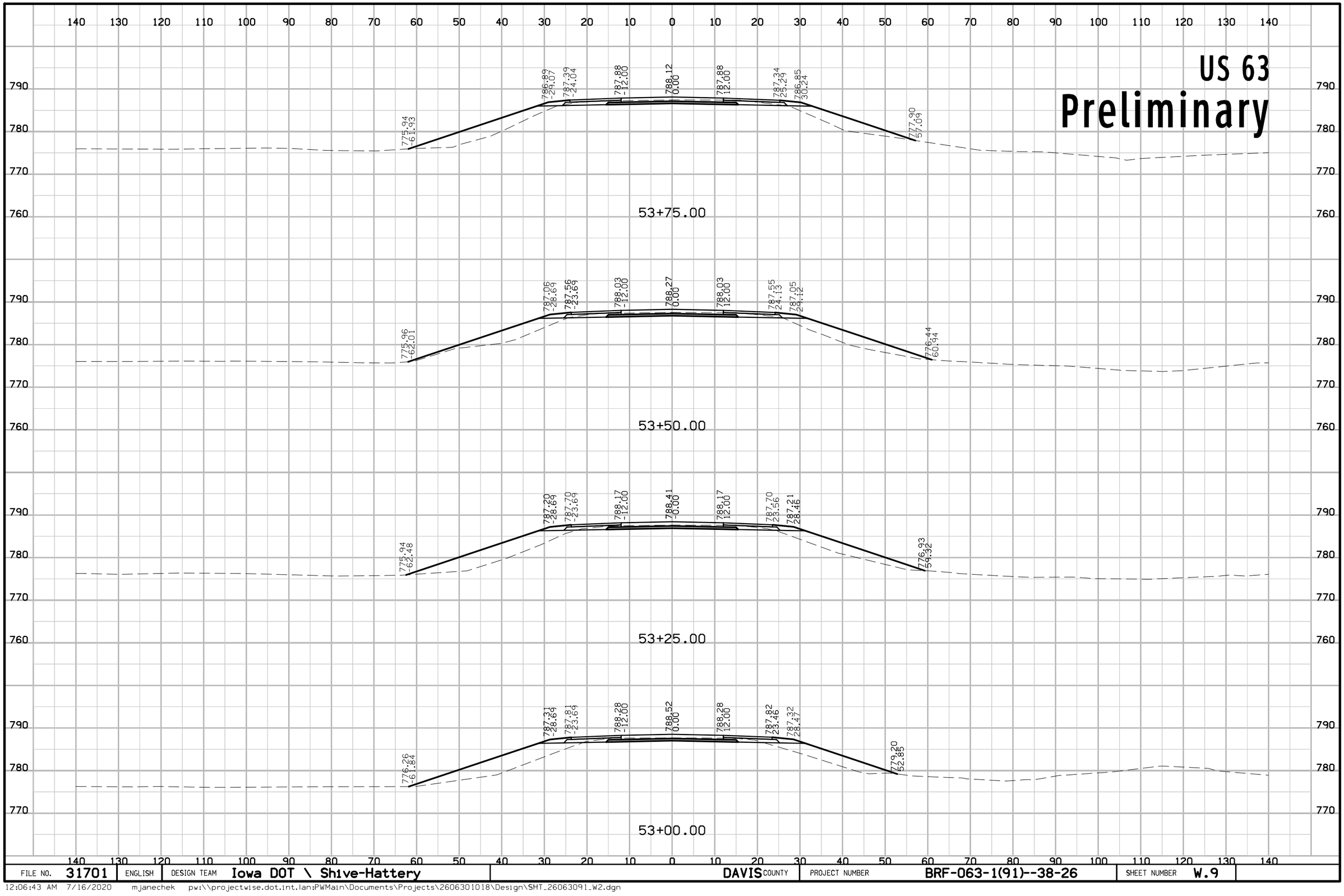
# US 63
# Preliminary




| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.9 |
|---|---|---|---|---|---|

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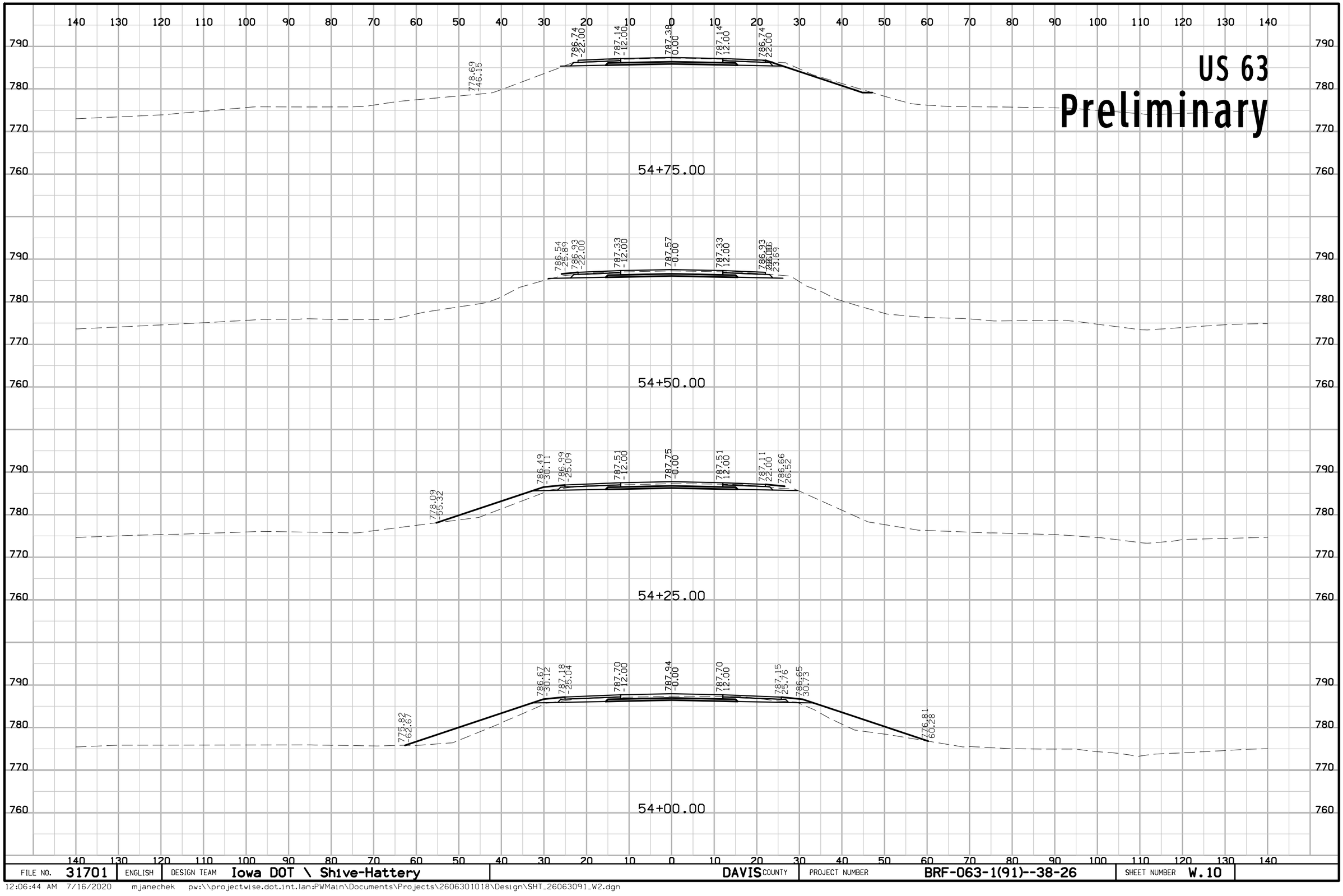
# US 63

# Preliminary




| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.10 |
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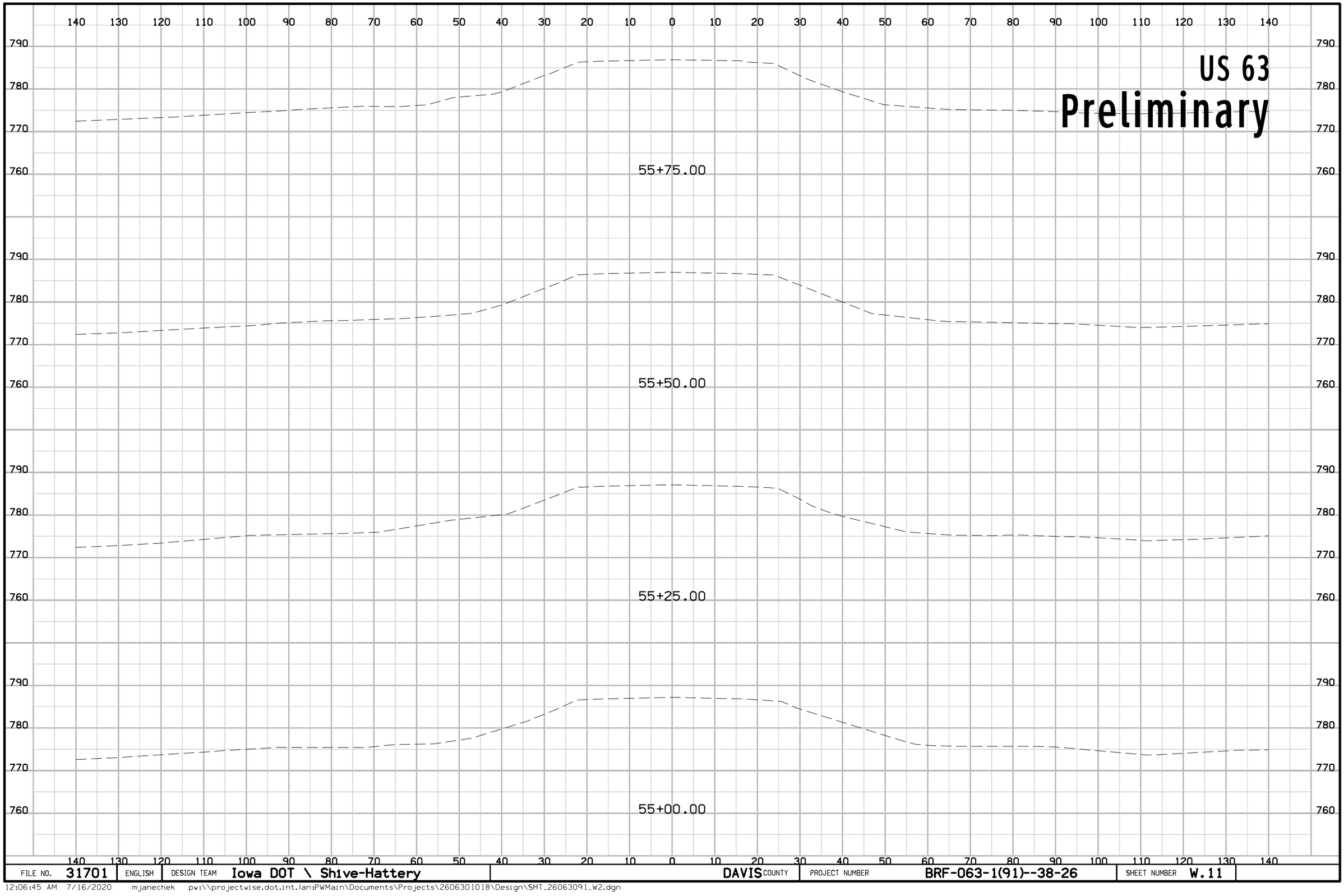
# US 63
# Preliminary




| FILE NO. 31701 | ENGLISH | DESIGN TEAM Iowa DOT \ Shive-Hattery | DAVIS COUNTY | PROJECT NUMBER BRF-063-1(91)--38-26 | SHEET NUMBER W.11 |
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