BRIDGE REPLACEMENT - PPCB
BRF-014-3(56)--38-63
MARION Co.

LETTING DATE 11-21-2023

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 - 2	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Standard Road Plans
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 5	IA 14
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan
* J.2 - 3	Staging and Traffic Control
R Sheets	**Erosion Control Sheets**
RC.1 - 3	Est. Quantities, PPP, General Notes and Tabulations
* RR.1	Erosion Control Legend and Symbol Information Sheet
* RR.2 - 5	Drainage Basin and Erosion Control Device Maps
V Sheets	**Bridge Situation Plans**
* V.1 - 2	Bridge Situation Plan
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 6	IA 14
	* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

MARION COUNTY

BRIDGE REPLACEMENT - PPCB

IA 14 over Brush Creek, 0.2 Miles S. of County Rd G-28

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

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REVISIONS

TOTAL 33
PROJECT IDENTIFICATION NUMBER
19-63-014-030
PROJECT NUMBER
BRF-014-3(56)--38-63
R.O.W. PROJECT NUMBER

DESIGN ACTIVITIES			
	DUE DATE	EVENT	DATE COMPLETED
D02	5/14/2021	Field Exam	6/4/2021
D03	6/18/2021	Drainage Submittal	6/18/2021
B01	9/17/2021	Bridge Submittal	9/3/2021
D05	10/15/2021	ROW Submittal	----

DESIGN DATA RURAL		
2018 AADT	3530	V.P.D.
2044 AADT	3870	V.P.D.
2044 DHV	400	V.P.H.
TRUCKS	12	%
Total Design ESALs	3,363,000	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D05 PLAN – Date: Oct. 15, 2021

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER A.1

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IA 14 BRIDGE REPLACEMENT
FHWA NO. 035211
STA. 1183+29.01

R-20W | R-19W | R-18W

T-77N

T-76N

RED ROCK | SUMMIT | LAKE PRAIR

CARPENTER ST | BRIGGS ST | CARTER DR | CLEMENS ST | COOLIDGE ST | DAKOTA ST | DAKOTA DR | DUBUQUE ST | DUBUQUE DR | ELK HORN DR | ELK HORN ST | ERBE ST | ERBE DR | FAIRFAX ST | FAIRFAX DR | HWY G28 | HWY G40 | HWY T14 | HWY T15 | GRIMES ST | HAYES DR | HEMPSTEAD DR | IDAHO DR | ILLINOIS DR | ILLINOIS ST | NORTH OAK DR | FIFIELD RD | 198TH AVE | 105TH AVE | 110TH AVE | 112TH AVE | 115TH PL | 120TH AVE | 122ND PL | 125TH AVE | 128TH AVE | 135TH AVE | 140TH AVE | 152ND PL | 160TH PL | 167TH PL | 180TH AVE | 190TH AVE | 195TH AVE | 200TH AV | 210TH AVE | 218TH PL | 228TH PL | 240TH PL

OTLEY | PARK HILLS | PAINTED ROCKS | RED ROCK LAKE | ELK ROCK STATE PARK | RED ROCK HEIGHTS | EAGLE ROCK ADD. | DUTCHMAN LANDING | WALLASHUCK PARK | EAGLE CREEK | PELLA MUNICIPAL AIRPORT | PELLA | POP. 10352

Creek | River | Thunder | Teler

S6G | T63 | G18 | G28 | G40 | T15 | T22 | G5T | 14

-33 -34 -35 -36 -37 -38 -39 -40 -41 -42 -43 -48 -49 -50 -51 -53 -54 -55

N

LOCATION MAP SCALE
0 0.5 1
Miles

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER A.2

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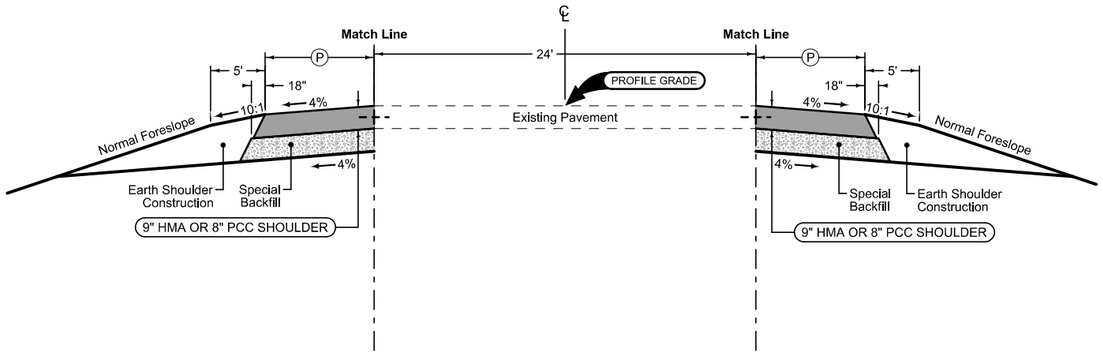
Paved Shoulder at Guardrail

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_ 04-21-20		
STATION TO STATION		(P) Feet
1178+46.35	1180+75.50	13.5-11.6
1186+55.00	1186+86.51	14.4-15.5



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

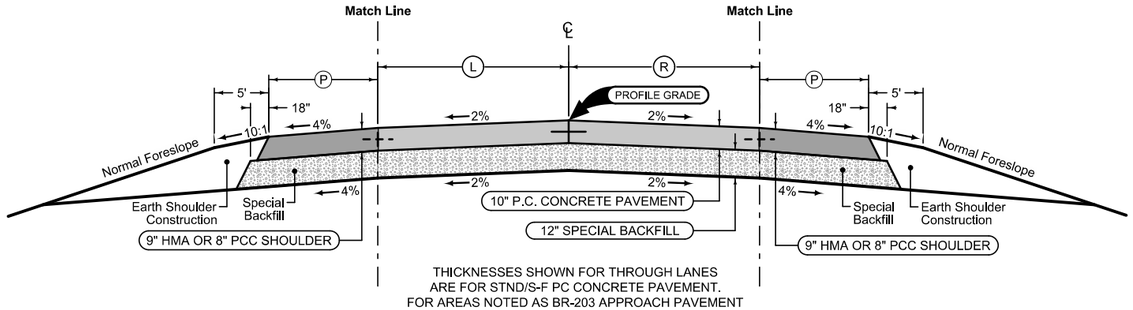
2_P_Guard_ 04-21-20		
STATION TO STATION		(P) Feet
1178+46.35	1180+75.50	13.5-11.6
1186+55.00	1186+98.79	13.1-15.5

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_ 04-21-20		
STATION TO STATION		(P) Feet
1186+22.50	1186+55.00	11.6-14.4

For Paved Shldr, PCC For Bridge End Drain, Refer to DR-402
- Sta. 1185+82.50 to Sta. 1186+22.50



THICKNESSES SHOWN FOR THROUGH LANES
ARE FOR STND/S-F PC CONCRETE PAVEMENT.
FOR AREAS NOTED AS BR-203 APPROACH PAVEMENT
REFER TO STANDARD ROAD PLAN BR-203
FOR DETAILS OF PAVEMENT SECTION.

Mainline Jointing:
STND/SF PC CONCRETE PAVEMENT
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2
BR-203 APPROACH PAVEMENT
Match Jointing per SRP BR-203

2P_ 04-21-20				
STATION TO STATION		(L) Feet	(R) Feet	
1180+75.50	1181+45.50	23.6	23.6	BR-203 APPROACH PAVEMENT
1185+12.51	1185+82.51	23.6	23.6	BR-203 APPROACH PAVEMENT
1185+82.51	1186+55.00	12	12	STND/S-F PC CONCRETE PAVEMENT

See Sheet B.2 for "Paved Shoulder at Guardrail" Details

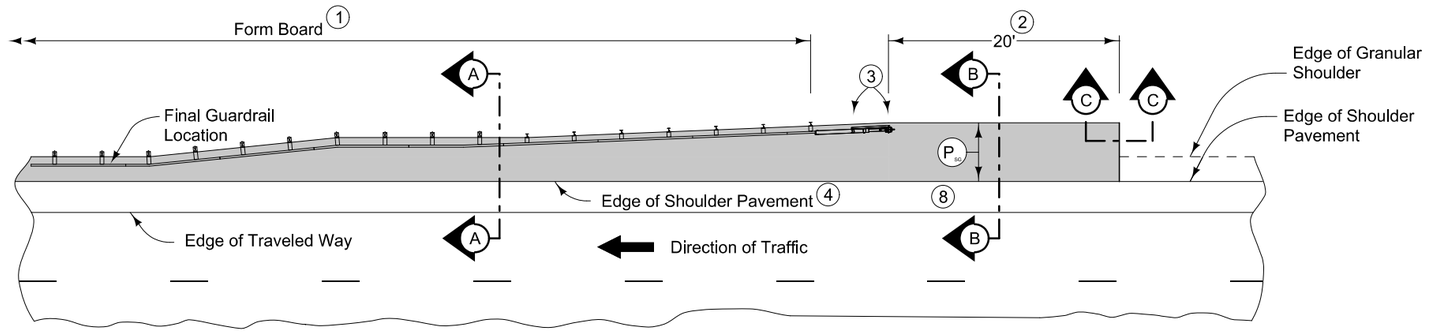
Paved Shoulder at Guardrail

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

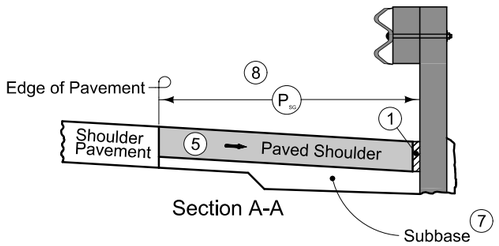
2_P_Guard_ 04-21-20		
STATION TO STATION		(P) Feet
1186+22.50	1186+55.00	11.6-13.1

For Paved Shldr, PCC For Bridge End Drain, Refer to DR-402
- Sta. 1185+82.50 to Sta. 1186+22.50

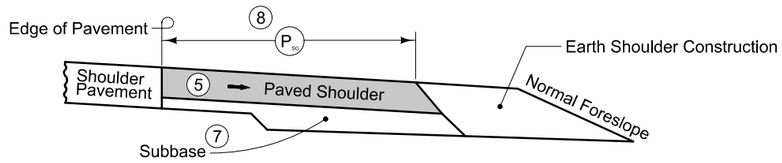
IA 14



PLAN VIEW

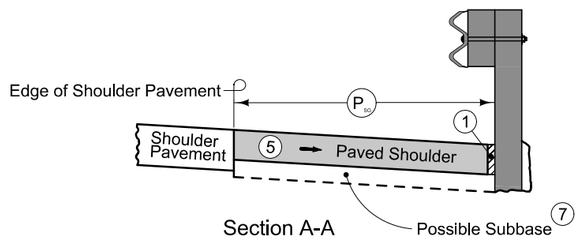


Section A-A

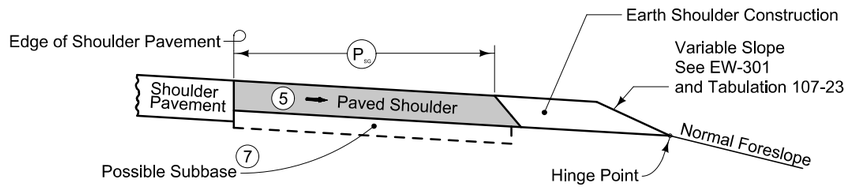


Section B-B

NEW CONSTRUCTION 6



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) 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.

(2) Continue paved shoulder 20 feet beyond the center of the first post.

(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

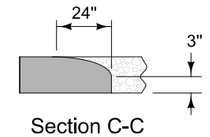
(4) 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.

(5) Match shoulder slope.

(6) The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.

(7) Refer to other details in the plan.

(8) P is based on 8" block is used for BA-205 and BA-225 end terminals and P will need to be reduced by 4 inches when BA-205 and BA-225 are specified.



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

PAVED SHOULDER AT GUARDRAIL
(ADJACENT TO PARTIAL WIDTH PAVED SHOULDER)

100-1D
10-18-05

PROJECT DESCRIPTION

This project involves the replacement of the IA 14 bridge over Brush Creek, 0.2 miles south of County Rd G-28. Associated roadway items are included with this project as detailed in these plans.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.

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	04-20-21	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	10-19-21	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-206	10-19-21	Steel Beam Guardrail Flared End Terminal For Cable Connection
BA-250	04-20-21	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-351	10-19-21	High Tension Cable Guardrail
BR-203	10-19-21	Double Reinforced 12" Approach
BR-211	10-19-21	Bridge Approach (Abutting PCC or Composite Pavement)
DR-303	10-17-17	Subdrains (Longitudinal)
DR-306	10-16-18	Precast Concrete Headwall for Subdrain Outlets
DR-402	10-15-19	Rock Flume for Bridge End Drain
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-201	04-20-21	Silt Fence
EC-202	10-21-14	Floating Silt Curtain
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas
EW-202	04-19-16	Bridge Berm Grading without Recoverable Slope (Non-Barnroof Section)
EW-301	04-20-21	Guardrail Grading
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
PM-110	04-21-20	Line Types
PM-111	04-21-20	Symbols and Legends
PV-101	04-21-20	Joints
PV-102	04-21-20	PCC Curb Details
SI-172	04-19-16	Delineators
SI-173	04-19-16	Object Markers
SI-211	10-18-16	Object Marker and Delineator Placement with Guardrail
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	10-19-21	Work Within 15 ft of Traveled Way
TC-252	04-21-20	Routes Closed to Traffic

SURVEY SYMBOLS

- BCL Bridge Centerline
- BD Bridge Deck
- BL Topo Breakline
- BRG Bridge
- C Centerline BL of Road (ML or SR)
- CON Concrete or A/C Slab
- CU Back of Curb
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- EP Edge of Paved Roads (ML or SR)
- EW Edge of Water
- GDC Guard Rail Cable
- GDL Guard Rail Steel
- GU Gutter In Front of Curb
- LIN Miscellaneous Line
- RIP Rip-Rap
- SH Paved Shoulder
- TOP Top of Bridge Pier
- BM Bench Mark
- PCP Photo Control Point
- CP Control Point
- PI Tangent Point
- PPA MidAmerican Electric
- TP TPD Telephone Pedestal
- WC Wild Card (Misc. Field Shot)
- SBR Size of Bridge
- SIGN SI Sign
- DTM Photogrammetry Elv Control Check
- T1 TL1D Windstream - Quality D
- W WL1D Iowa Regional Utility Association - Quality D
- PLG Location of General Photo
- BLS Bridge Low Steel

SURVEYED UTILITY OWNER SYMBOLS

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

T1 — TL1D, Windstream Communications- Quality D
Luke Niles, Analyst II - Permitting
4001 N. Rodney Parham Rd.
Little Rock, AR 72212
501-748-5893

W — WL1D, Iowa Regional Utility Association (Water) - Quality D
Matt Mahler, CEO
1351 Iowa Speedway Drive
Newton, IA 50208
800-400-6066

PPA, MidAmerican Energy Co. (Electric)
Jordan Hohensee, Customer Project Coordinator
3500 104th Street
Urbandale, IA 50322
515-242-4235

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)

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER D.1

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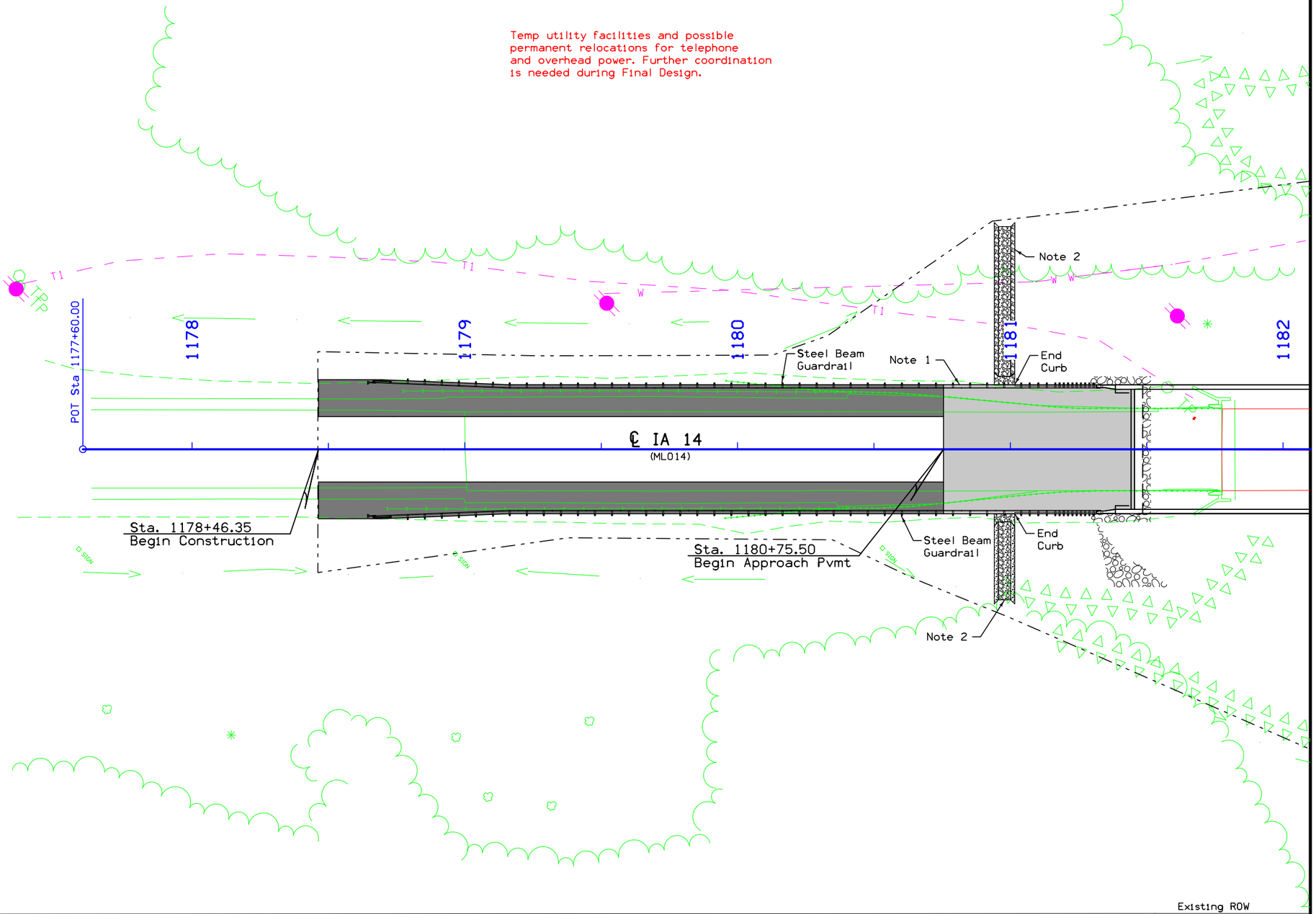
Red Rock TWP.
T-77N R-20W
SEC. 36

Notes:
1. BR-203, 70 ft Standard Bridge Approach
2. DR-402, Rock Flume/Bridge End Drain

Temp utility facilities and possible permanent relocations for telephone and overhead power. Further coordination is needed during Final Design.



0 20 FEET

For Profile Details
Refer to Sheet No. D.3

IA 14

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER D.2

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For Plan Details
Refer to Sheet No. D.2

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER D.3

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Red Rock TWP.
T-77N R-20W
SEC. 36

Notes:
1. BR-203, 70 ft Standard Bridge Approach
2. Connect Existing Cable Guardrail to SRP BA-206 Steel Beam Guardrail Flared End Terminal. See Bid Item 2505-4020580, GUARDRAIL, SPECIAL ANCHOR SECTION (EACH).
3. Profile - Low Point, Sta. 1186+20. Add PCC Panels with Curb to Sta. 1186+20.
4. Extend Through Lanes to Sta. 1186+55.

See Design Manual Section 8C-3 for Est. Ref. Notes During Final Design for GUARDRAIL, SPECIAL ANCHOR SECTION (EACH).

1182 1183 1184 1185 1186 1187

℄ IA 14
(ML014)

Note 1
Steel Beam Guardrail
End Curb
Note 2
Note 3
Note 4
T1
POT Sta 1187+25.00

Steel Beam Guardrail
End Curb
Note 2
Sta. 1186+98.79
End Construction
Sta. 1185+82.51
End Approach Pvmt

Brush Creek

Existing ROW

0 20 FEET

For Profile Details
Refer to Sheet No. D.5

IA 14

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER D.4

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For Plan Details
Refer to Sheet No. D.4

VPT= 1182+25.00
Elv = 792.21
VPC = 1182+29.00
Elv = 792.24
+0.718%
VPI +29.000
Elv 792.96
K = 164
Len 200.00 ft
VPT= 1184+29.00
Elv = 792.46
-0.502%
VPC = 1184+70.00
Elv = 792.25
VPI +60.000
Elv 791.80
K = 297
Len 180.00 ft
VPT= 1186+50.00
Elv = 791.89
+0.103%
Sta. 1186+55.00
End Pvmt Construction
Elev. 791.90

805 800 795 790 785 780 775 770 765 760 755 750 745 740 735 730

1182	1183	1184	1185	1186	1187	1188
792.04	792.18	792.32	792.44	792.53	792.60	792.64	792.66	792.66	792.63	792.58	792.50	792.40	792.30	792.20	792.12	792.04	791.98	791.94	791.90	791.88	791.88	791.88				
778.05	771.21	763.02	754.69	746.65	741.34	740.88	740.88	740.88	743.18	750.28	757.54	764.49	771.41	778.34	791.49	791.87	791.88	791.88	791.87	791.85	791.86	791.87	791.91	791.94	791.96	791.99

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER D.5

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Marion County
BRF-014-3(56)--38-63
Location: Brush Creek 0.2 mi S of Co Rd G28
Type of Work: Bridge-Unspecified
Project Directory: 6301403019
PIN: 19-63-014-030
Sap-0619.3

Party Personnel

Clayton Henningsen- Survey Party Chief
Jason Arn- Survey Party Chief
Paul Harry- Survey Party Chief

Date(s) of Survey

Begin Date	09/15/2020
End Date	09/24/2020

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction on IA 14 0.2 mile south of county road G28. This is a partial terrain and underground structure field survey with aerial image and lidar acquired terrain added in the Photogrammetry section of the Design Office.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. 63014001, 63014002, and D 5 by doing concurrent 5 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

This survey observed 1 Jasper County GPS control with published NAVD88 heights to compare to local ground control:

Jasper County mark designated R06 has a published Elev. 905.04
Survey Elev. = 905.087

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 9 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by conducting concurrent 5 hour static observations on Project Pts. 63014001, 63014002, and R06.

Alignment Information

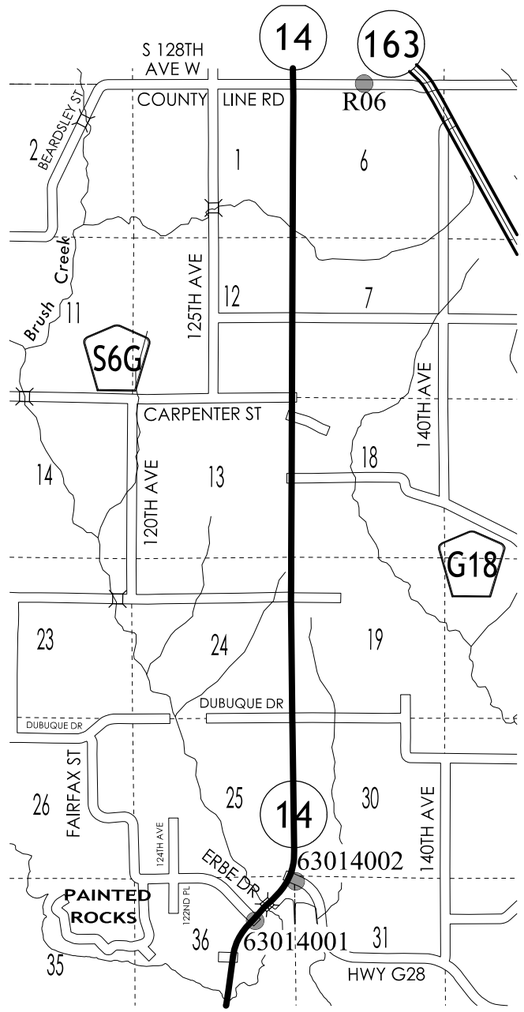
The horizontal alignment for this survey is a retrace of Paving Plans No. P-114(1). Survey stationing was equated to the plan TS at Sta. 1187+31.46 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

TS Sta. 1187+31.46 Paving Plans Project No. P-114(1)
Survey TS Sta. 1187+31.46

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 9

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 9

Point Name	North Coordinate	East Coordinate	Elevation	Feature Code- Monument Description
63014001	7630985.691	19420852.566	793.602	CP 63014001 FROM THE INTERSECTION OF STATE HWY 163 AND STATE HWY 14 AT MONROE GO SOUTH ALONG HWY 14 5.5 MILES TO INTERSECTION WITH ERBR DR ON EAST SIDE OF THE INTERSECTION A SET FENO MONUMENT 0.3 DEEP 12 FEET SOUTHWEST OF A ARROW SIGN 71 FEET SOUTHEAST OF HWY 14 CENTERLINE 78 FEET SOUTH OF A NO PASSING ZONE SIGN
63014002	7632284.363	19422192.452	792.956	CP 63014002 FROM THE INTERSECTION OF STATE HWY 163 AND STATE HWY 14 AT MONROE GO SOUTH ALONG HWY 14 5.2 MILES TO INTERSECTION WITH CO RD G 28 GO 0.04 MI EAST ALONG G 28 ON SOUTH SIDE OF RD A SET FENO MONUMENT 0.3 DEEP 57 FEET SOUTHEAST OF CO RD G 28 SIGN 46 FEET SOUTH OF G 28 CENTERLINE 78 FEET WEST OF DEAD END ROAD CENTERLINE
R06	7658613.174	19424448.269	905.087	CP R06 FROM THE INTERSECTION OF STATE HWY 163 AND STATE HWY 14 AT MONROE GO SOUTH ALONG HWY 14 0.2 MI GO EAST 0.4 MI ON COUNTY LINE ROAD/S 128TH AVE W FOUND JASPER COUNTY GPS CAST IN-PLACE CONCRETE MONUMENT WITH ALUMINUM DISK 30 FEET NORTH OF S 128TH AVE W CENTERLINE 15 FEET EAST OF S 128 TH AVE W SIGN 61 FEET WEST OF A P POLE

ALIGNMENT COORDINATES

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)
1	ML014	1177+60.00	7631086.57	19420850.59															
2	ML014	1187+25.00	7631777.23	19421524.55															

108-23A
08-01-08

TRAFFIC CONTROL PLAN

IA 14
-Both lanes of IA 14 will be closed to traffic for the duration of the project. Offsite detour shall be as shown on J sheets.
Contractor shall erect, maintain, and remove all detour signage and PDMS's.

Erbe Drive
-Maintain traffic for the duration of the project.

County Rd G28
-Maintain traffic for the duration of the project.

Private Entrances
-Maintain access to IA 14 for the duration of the project.

108-26A
08-01-08

STAGING NOTES

Stage 1:
-Close IA 14 to traffic. Install offsite detour signage.
-Remove existing bridge and construct new bridge over Brush Creek.
-Install new approach pavement and shoulders. Construct new guardrail.

Stage 2:
-Install permanent erosion control measures and seeding/fertilizing.
-Open IA 14 to traffic.

MARION X23 TRAFFIC CONTROL

IA 14 over Brush Creek, 0.2 Mi South of County Road G-28, Bridge.

Work includes bridge replacement, replacing bridge approaches, and replacing guardrail.

Traffic Controls

The bridge will be closed to traffic during construction.

Intersections or drives within 1,000 feet of the bridge:

- Erbe Drive, 475 ft south of bridge, west side (to remain open)
- Private Drive, 475 ft south of bridge, east side (to remain open)
- County Rd G28, 1000 ft north of bridge, east side (to remain open)

Traffic control will involve a signed detour route in conjunction with Standard Road Plan TC-252. Use of PDMS's is also assumed. The suggested detour route for SB IA 14 is IA 14 south to IA 163 at Exit 29, then east on IA 163 to Exit 42, then south on County Rd T17 to IA 92, then west on IA 92 to Exit 62. See map on next page. The suggested detour route for NB IA 14 is the same route as previously stated but in reverse order. Part of this route is currently signed as an emergency detour.

B. Detour Analysis

The off-site detour will utilize primary and Marion County routes. The proposed detour route has been evaluated by the Bridges and Structures Rating Engineer and can carry all primary legal loads. The following Marion County structures have been added to the next cycle of bridge inspections:

FHWA #	Structure Type
239611	Steel Girder Bridge
240476	PPCB Bridge
240462	RCB Culvert
240471	Concrete Slab Bridge
240491	RCB Culvert
240410	RCB Culvert

Existing overhead utility lines on the northwest side of bridge will need to be temporarily relocated during construction. Please see the Utilities attachment for a listing of utilities located on the project.

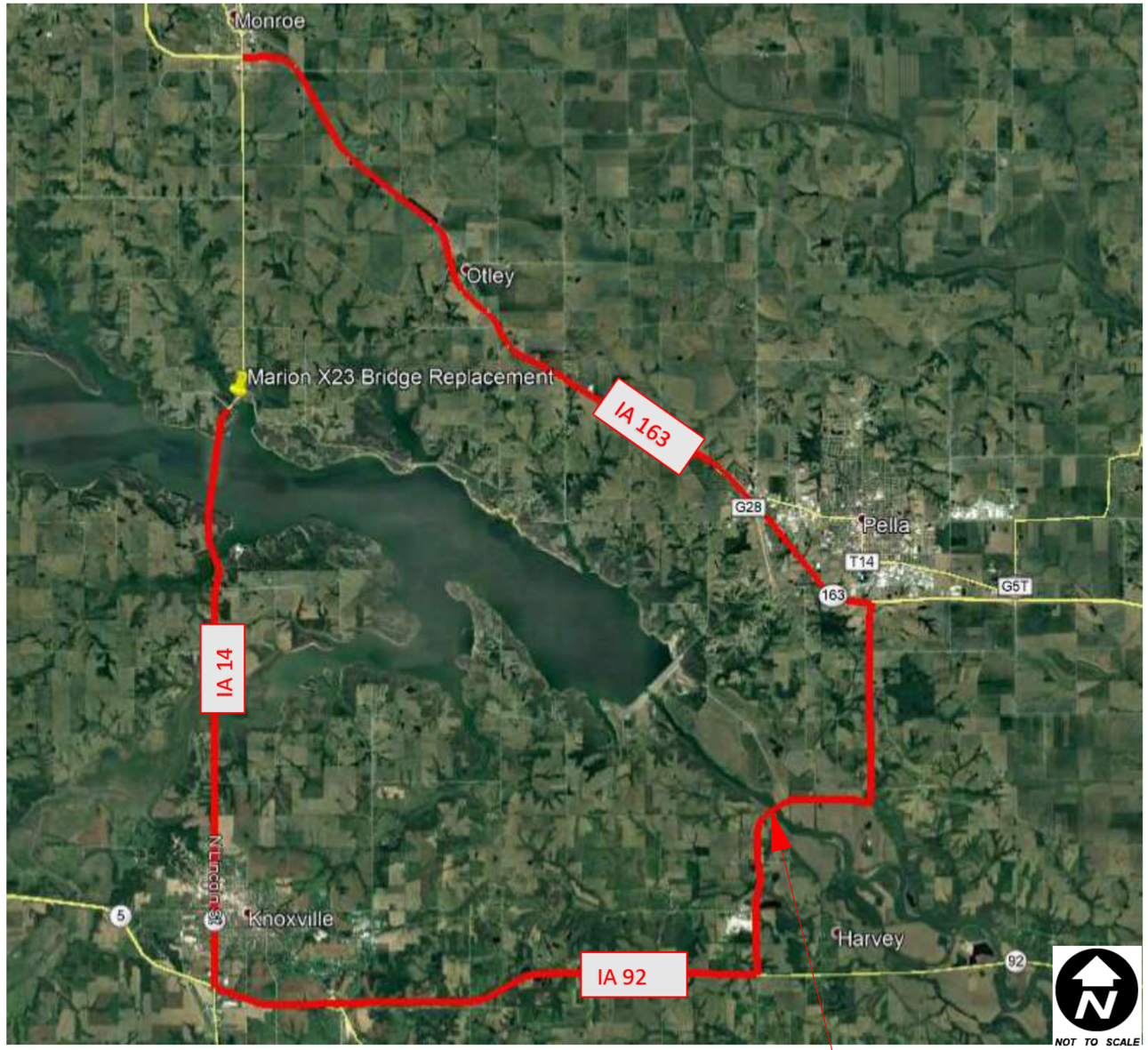
There are two flexible conduits suspended from the northwest curb overhang for the length of the bridge. It is recommended that conduits be included on the proposed bridge for these utilities.

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

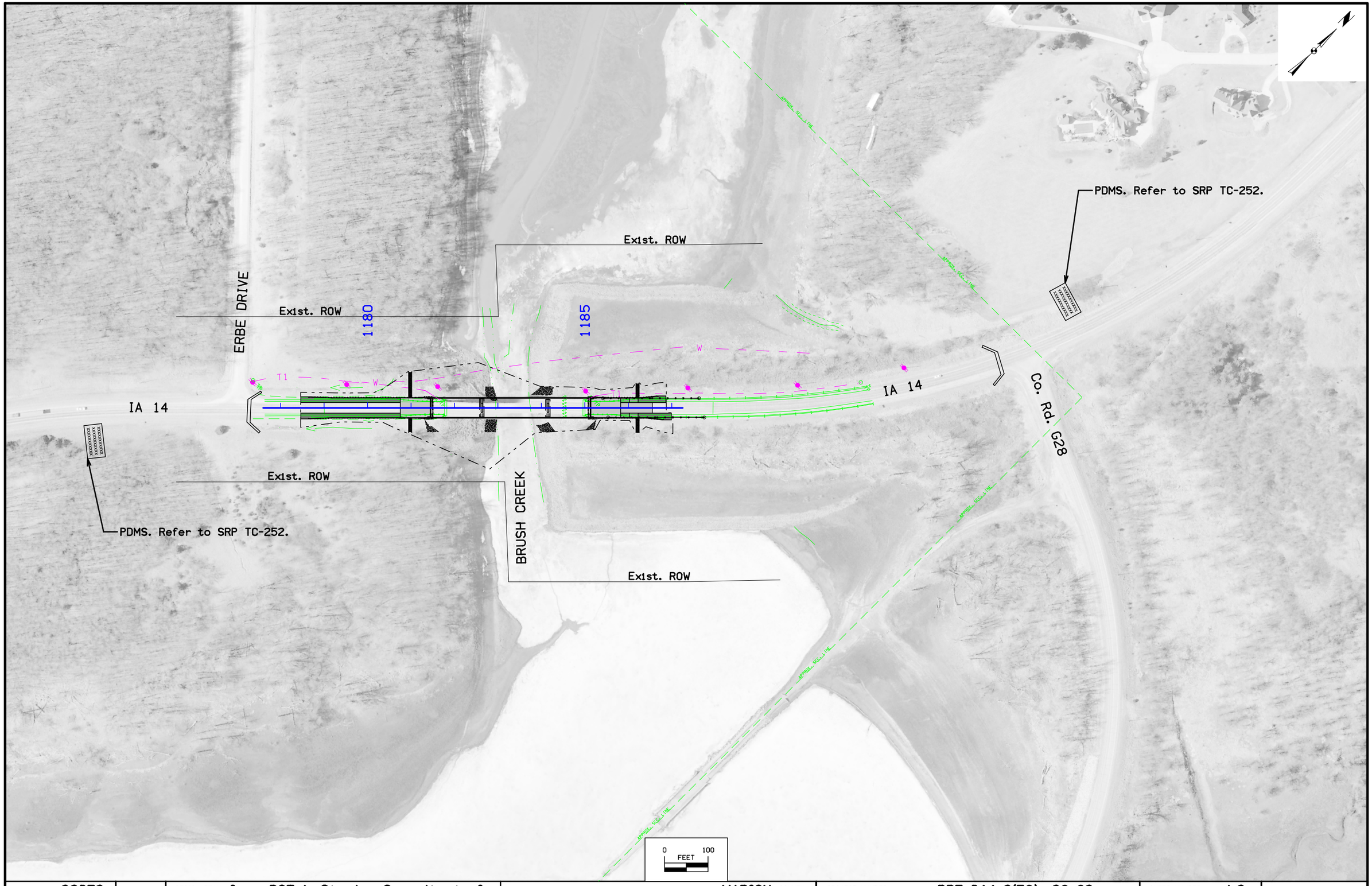
It is anticipated that a Section 404 Permit will be required. It is expected that the work will be covered by Nationwide Permit 14 or Regional Permit 7.

An initial NEPA Section Review for this project identified two resources within a half-mile of the project area. It is recommended to avoid or minimize impacts to these resources based on a desktop review. NEPA review and clearance will be based on further developments in design and the results of additional Location and Environment Bureau desktop and field reviews.

There is an existing conduit



County Route T17 - During Field Exam, concerns were brought up that County many not want to detour state traffic to T17. DOT to coordinate further with County to determine if this route is preferrred or if another route should be used.



FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER J.3

10:46:04 AM 8/12/2021 8877 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6301403019\Design\CADD_Files\Sheet_Files\SHT_63014056_J03.dgn

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.

B. Contractor:
1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.

C. Subcontractors:
1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or perorming work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Implement good housekeeping practices according to Paragraph III, C, 2.

D. RCE/Project Engineer:
1. Is Project Storm Water Manager.
2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
7. Is familiar with the Project PPP and storm water site map.
8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
10. Is signature authority on Notice of Discontinuation.
11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
12. Makes information to determine permit compliance available to the DNR upon their request.

E. Inspector:
1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Makes information to determine permit compliance available to the DNR upon their request.
3. Conducts joint required inspections of the site with the contractor/subcontractor.
4. Completes an inspection report after each inspection.
5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the construction of a new bridge on IA 14 over Brush Creek.

B. This PPP covers approximately 2.4 acres with an estimated 2.4 acres being disturbed. The portion of the PPP covered by this contract has 2.4 acres disturbed.

C. The PPP is located in an area of two soil associations (Sharpsburg-Shelby-Adair and Otley-Ladoga). The estimated weighted average runoff coefficient number for this PPP after completion will be 0.42.

D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE or RC sheets.

E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.

F. Runoff from this work will flow into Brush Creek.

III. CONTROLS

A. The Contractor’s ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
a) Permanently ceased on any portion of the site, or
b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.

c. Storm Water Management
Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS
Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
g. Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
j. Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

POLLUTION PREVENTION PLAN

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
   1. Date of the inspection.
   2. Summary of the scope of the inspection.
   3. Name and qualifications of the personnel making the inspection.
   5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
   6. Major observations related to the implementation of the PPP.
   7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector’s daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____
Signature

_____
Printed or Typed Name

_____
Signature

_____

100-34
10-17-17

STORMWATER DRAINAGE BASIN AND STORAGE

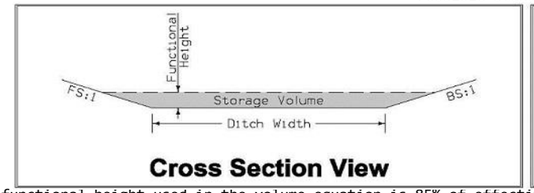
Refer to EC Standards and 570s Details.

Drainage Basin Location						Summary of Stormwater Storage							
Basin No.	Station to Station		Side	Discharge Point		Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Best Management Practice	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	Remarks
				Station	Side	Acres	Acres	Acres		CF	CF	Yes/No	
1	1178+46.00	1180+08.00	LT	1178+46.00	LT	0.1	0.1	0.0	Silt Fence for Ditch Check (EC-201)	1532.3	462.7	Yes	
2	1178+46.00	1180+32.00	RT	1178+46.00	RT	0.2	0.2	0.0	Silt Fence for Ditch Check (EC-201)	1532.3	550.7	Yes	
3	1180+08.00	1183+00.00	LT	1182+95.00	LT	0.5	0.0	0.5	Vegetated Buffer	0.0	0.0	N/A	
4	1180+32.00	1183+00.00	RT	1182+95.00	RT	0.5	0.0	0.5	Vegetated Buffer	0.0	0.0	N/A	
5	1183+72.00	1186+87.00	LT	1183+78.00	LT	0.3	0.0	0.3	Vegetated Buffer	0.0	0.0	N/A	
6	1183+76.00	1187+03.00	RT	1183+84.00	RT	0.3	0.0	0.3	Vegetated Buffer	0.0	0.0	N/A	

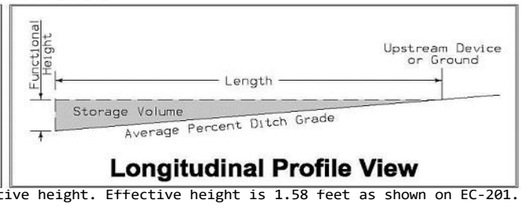
100-18
10-16-18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201



Cross Section View



Longitudinal Profile View

* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.

* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope Ditch Grade	Volume*	
				LF	LF	LF	FS:1	BS:1	FT		CF	
1	1	1177+70.00	Lt	15.0	2.0	15.0	4.0	4.0	5.0	0.5%	487.5	
1	1	1178+40.00	Lt	20.0	2.0	20.0	4.0	4.0	5.0	0.5%	1044.7	
2	1	1177+70.00	Rt	15.0	2.0	15.0	4.0	4.0	5.0	0.5%	487.5	
2	1	1178+40.00	Rt	20.0	2.0	20.0	4.0	4.0	5.0	0.5%	1044.7	
3	1	1180+60.00	Lt	20.0	2.0	20.0					N/A	
3	1	1180+90.00	Lt	20.0	2.0	20.0					N/A	
4	1	1180+70.00	Rt	20.0	2.0	20.0					N/A	
4	1	1181+40.00	Rt	20.0	2.0	20.0					N/A	

100-10
10-21-14

FLOATING SILT CURTAINS

Refer to EC-202

Station	Hanging	Containment	Clean-out (Containment)	Maintenance of Floating Silt Curtain	Remarks
	LF	LF	LF	LF	
1183+00.00	300.0			150.0	West Bank
1183+75.00	200.0			100.0	East Bank

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
1182+00.00	1182+60.00	Both	280.0	West Bridge Berm
1182+65.00	1182+75.00	Both	150.0	West Bridge Berm
1183+90.00	1184+20.00	Both	160.0	East Bridge Berm
1184+75.00	1186+90.00	LT	220.0	along foreslope
1184+95.00	1187+15.00	RT	230.0	along foreslope

100-19
10-19-21

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Location			Perimeter and Slope			Ditch Check		Remarks
			Length of Installation			Length of Installation		
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	LF	LF	
1178+44.00	1181+40.00	LT		300				
1178+44.00	1181+40.00	RT		300				
1185+20.00	1186+90.00	LT		170				
1185+20.00	1187+02.00	RT		190				

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

- Silt Fence
- Perimeter and Slope Sediment Control Device (9")
- Perimeter and Slope Sediment Control Device (12")
- Perimeter and Slope Sediment Control Device (20")
- Open-Throat Curb Intake Sediment Filter
- Concentrated Flow
- Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

- Temporary Sediment Control basin
- Erosion Control for Circular Intake or Manhole Well
- Erosion Control for Rectangular Intake or Manhole Well
- Grate Intake Sediment Filter Bag
- Silt Basin
- Silt Fence Tail
- Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL 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
Black	(Ø)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	Ø%

PATTERN LEGEND OF EROSION CONTROL SHEETS

- Seeding and Fertilizing
- R — Seeding and Fertilizing (Rural)
- U — Seeding and Fertilizing (Urban)
- N — Native Grass Seeding
- ST — Salt Tolerant Seeding
- WL — Wetland Grass Seeding
- WF — Wildflower Seeding
- SOD — Sodding
- Turf Reinforcement Mat Type 1
- Turf Reinforcement Mat Type 2
- Turf Reinforcement Mat Type 3
- Turf Reinforcement Mat Type 4
- Slope Protection, Wood Excelsior Mat
- Transition Mat
- Rock Features, Permanent
- Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER RR.1

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Red Rock TWP.
T-77N R-20W
SEC. 36

Basin 1

Basin 2

Basin 3

Basin 4

1178

1179

1180

1181

1182

℄ IA 14
(MLO14)

Existing ROW

0 FEET 20

IA 14

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER RR.2

3:25:51 PM 9/23/2021 8877 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6301403019\Design\CADD_Files\Sheet_Files\SHT_63014056_RR01.dgn

Red Rock TWP.
T-77N R-20W
SEC. 36

Basin 3

Basin 5

Basin 6

Basin 4

1182

1183

1184

1185

1186

1187

℄ IA 14
(ML014)

Brush Creek

Existing ROW

0 20
FEET

IA 14

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER RR.3

3:27:24 PM 9/23/2021 8877 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6301403019\Design\CADD_Files\Sheet_Files\SHT_63014056_RR01.dgn

Red Rock TWP.
T-77N R-20W
SEC. 36

1178 1179 1180 1181 1182

℄ IA 14
(MLO14)

Existing ROW

0 20
FEET

IA 14

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER RR.4

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Red Rock TWP.
T-77N R-20W
SEC. 36

1182 1183 1184 1185 1186 1187

℄ IA 14
(ML014)

Brush Creek

Existing ROW

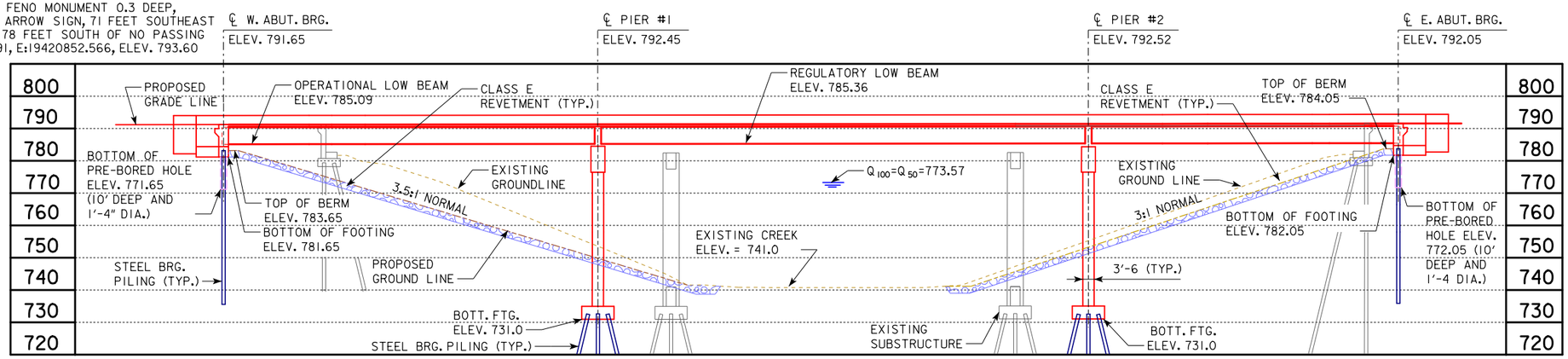
0 20
FEET

IA 14

FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER RR.5

3:30:00 PM 9/23/2021 8877 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\6301403019\Design\CADD_Files\Sheet_Files\SHT_63014056_RR01.dgn

BENCH MARK: 63014001 - FENO MONUMENT 0.3 DEEP, 12 FEET SOUTHWEST OF ARROW SIGN, 71 FEET SOUTHEAST OF HWY 14 CENTERLINE, 78 FEET SOUTH OF NO PASSING ZONE SIGN. N:7630985.691, E:1942852.566, ELEV. 793.60



LONGITUDINAL SECTION ALONG ℄ IA 14

VPI STA. = 1183+29
VPI ELEV. = 792.96
L = 200'
+0.718% -0.502%
VPI STA. = 1181+60
VPI ELEV. = 791.75
L = 130'
VPI STA. = 1185+60
VPI ELEV. = 791.80
L = 180'

PROPOSED PROFILE GRADE IA 14

HYDRAULIC DATA

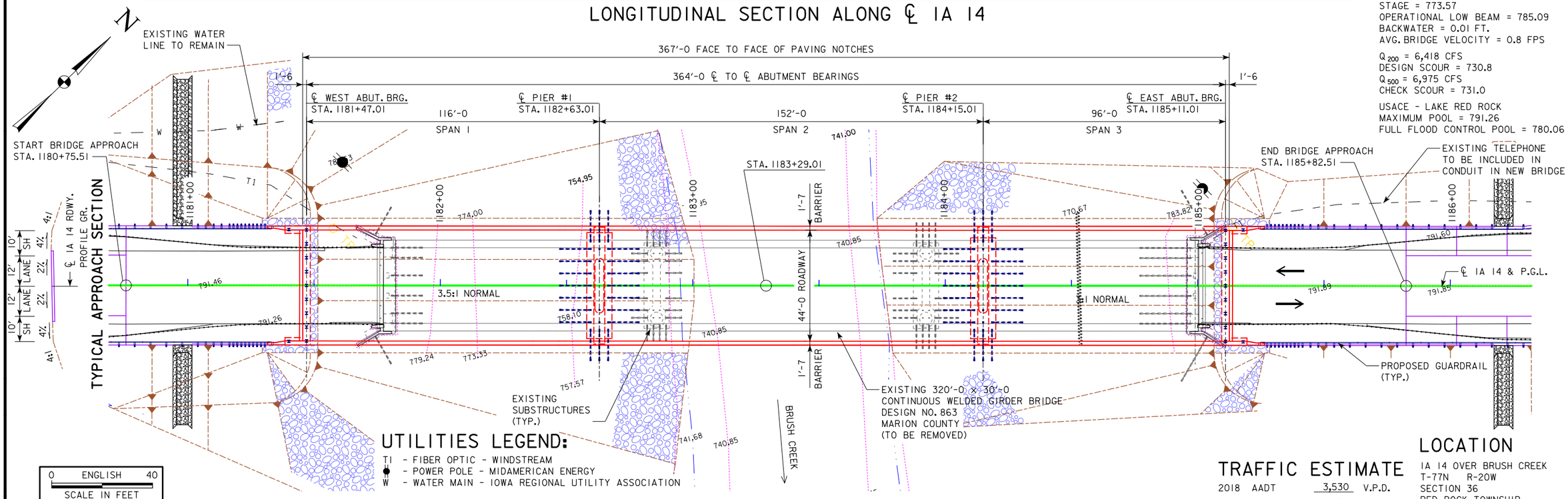
DRAINAGE AREA = 15.1 SQ. MI.
STREAM SLOPE = 2.4 FT./MI.

Q_{50} = 4,222 CFS
STAGE = 773.57
REGULATORY LOW BEAM = 785.36
AVG. BRIDGE VELOCITY = 0.7 FPS

Q_{100} = 4,974 CFS
STAGE = 773.57
OPERATIONAL LOW BEAM = 785.09
BACKWATER = 0.01 FT.
AVG. BRIDGE VELOCITY = 0.8 FPS

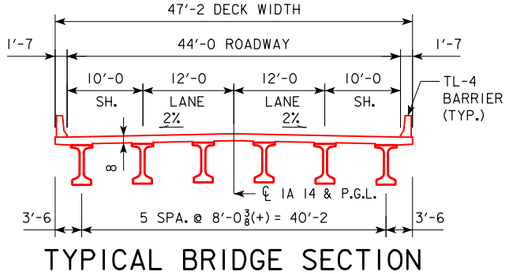
Q_{200} = 6,418 CFS
DESIGN SCOUR = 730.8
Q_{500} = 6,975 CFS
CHECK SCOUR = 731.0

USACE - LAKE RED ROCK
MAXIMUM POOL = 791.26
FULL FLOOD CONTROL POOL = 780.06



SITUATION PLAN

0 ENGLISH 40
SCALE IN FEET



TYPICAL BRIDGE SECTION

UTILITIES LEGEND:

T1 - FIBER OPTIC - WINDSTREAM
● - POWER POLE - MIDAMERICAN ENERGY
W - WATER MAIN - IOWA REGIONAL UTILITY ASSOCIATION

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

PLAN NOTES:

1. TOP OF BRIDGE DECK AT CENTERLINE IA 14 IS 0.03' BELOW THE PROFILE GRADE TO ACCOUNT FOR PARABOLIC CROWN.
2. CLASS E REVETMENT STONE IS EMBEDDED.
3. THE BRIDGE WILL BE DESIGNED TO WITHSTAND THE APPLICABLE EFFECTS OF ICE AND THE HORIZONTAL STREAM LOADS AND UPLIFT FORCES ASSOCIATED WITH THE USACE MAXIMUM POOL ELEVATION FOR LAKE RED ROCK.

GENERAL NOTES:

1. THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 320'-0 X 30'-0 CONTINUOUS WELDED GIRDER BRIDGE, MARION DESIGN NO. 863, FHWA NO. 035210, MAINT. 6351.5S014.
2. AS THIS PROJECT REQUIRES A SOVEREIGN LANDS PERMIT, BID ITEM REFERENCE NOTES SHALL RESTRICT BROKEN CONCRETE AS A SUBSTITUTE FOR REVETMENT.

HYDRAULIC DESIGN

LICENSED PROFESSIONAL ENGINEER
Mark D. Werner
15418
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.

Mark D Werner — 9/3/2021
Signature — Date
Mark D. Werner
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: V.01 & V.02

TRAFFIC ESTIMATE

2018 AADT	3,530	V.P.D.
2044 AADT	3,870	V.P.D.
TRUCKS	12	%

LOCATION

IA 14 OVER BRUSH CREEK
T-77N R-20W
SECTION 36
RED ROCK TOWNSHIP
MARION COUNTY
FHWA NO. 035211
BRIDGE MAINT. NO. 6351.5S014
LATITUDE 41.433646
LONGITUDE -93.104220

PRELIMINARY

DESIGN FOR 0° SKEW

364'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

116'-0 & 96'-0 END SPANS (BTE BEAM TYPE) 152'-0 INTERIOR SPAN

SITUATION PLAN

STA. 1183+29.01 (℄ IA 14) JUNE 2021

MARION COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 2 FILE NO. 32073 DESIGN NO. 223

DESIGN TEAM Stanley Consultants Inc. | MARION COUNTY | PROJECT NUMBER BRF-014-3(56)--38-63 | SHEET NUMBER V.01

9/3/2021 3:51:11 PM 09209 pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\6301403019\BRPrelim\Stanley\STR_63014056_Stanley_Z09.dgn TSL_63_0223_01 11x17_pdf.pltcfg

DESIGN NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.

TL-4 BRIDGE RAILING PROPOSED

PIER TYPE - TEE PIERS

BEAM TYPE - BTE BEAMS - PROVIDE VENT HOLES IN ALL BEAMS.

FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.

BERM SLOPES TO BE CONFIRMED DURING FINAL DESIGN.

POTENTIAL FOR ABC TO BE INVESTIGATED AS DESIGN PROGRESSES.

AT WEST ABUTMENT, SPECIAL ATTENTION NEEDED AS DESIGN PROGRESSES TO THE SUBSURFACE GEOTECHNICAL INVESTIGATION AND DESIGN MEASURES THAT WILL MITIGATE THE EFFECT OF UNSTABLE/SLOPING BEDROCK AND THE OVERLYING SOILS.

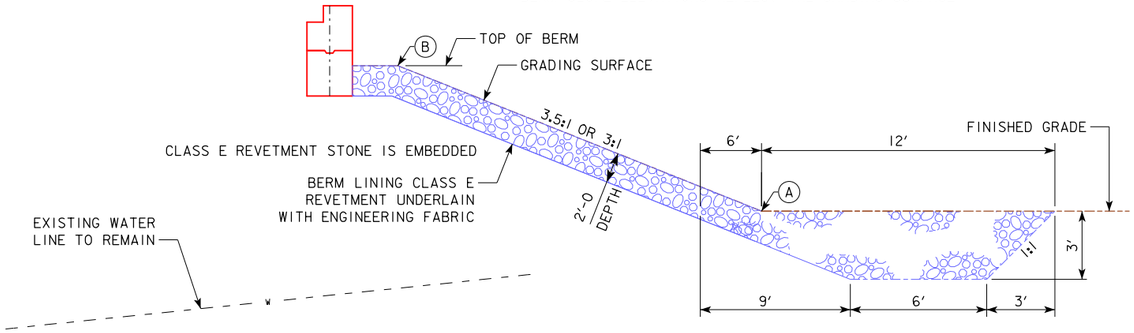
AN IOWA DNR SOVEREIGN LANDS PERMIT WILL BE REQUIRED. AS THIS PROJECT REQUIRES A SOVEREIGN LANDS PERMIT, BID ITEM REFERENCE NOTES SHALL RESTRICT BROKEN CONCRETE AS A SUBSTITUTE FOR REVETMENT.

BENCH MARK: 63014001 - FENO MONUMENT 0.3 DEEP, 12 FEET SOUTHWEST OF ARROW SIGN, 71 FEET SOUTHEAST OF HWY 14 CENTERLINE, 78 FEET SOUTH OF NO PASSING ZONE SIGN. N:7630985.691, E:19420852.566, ELEV. 793.60

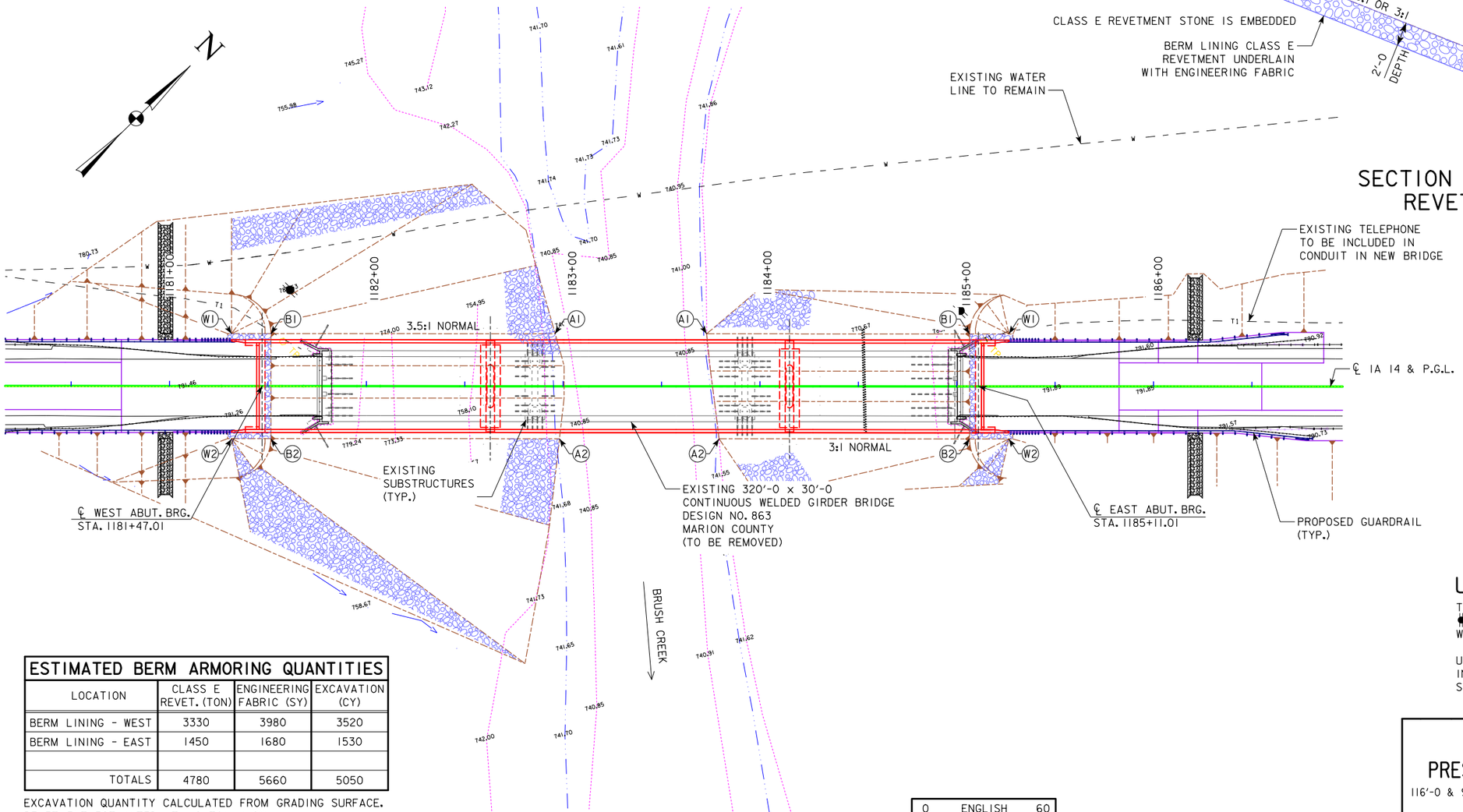
BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	1182+87.01	26.67 LT.	742.12	1183+72.96	26.67 LT.	741.30
A2	1182+91.51	26.67 RT.	741.55	1183+79.22	26.67 RT.	741.30
B1	1181+51.51	26.67 LT.	783.40	1185+06.51	26.67 LT.	783.80
B2	1181+51.51	26.67 RT.	783.40	1185+06.51	26.67 RT.	783.80
W1	1181+31.51	26.67 LT.	790.71	1185+26.51	26.67 LT.	791.11
W2	1181+31.51	26.67 RT.	790.71	1185+26.51	26.67 RT.	791.11

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



SECTION THRU EMBEDDED REVETMENT BERM



SITE PLAN

0 ENGLISH 60
SCALE IN FEET

ESTIMATED BERM ARMORING QUANTITIES

LOCATION	CLASS E REVET. (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING - WEST	3330	3980	3520
BERM LINING - EAST	1450	1680	1530
TOTALS	4780	5660	5050

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
REVETMENT ESTIMATED AT 1.6 TON / CY
EXISTING REVETMENT TO BE REUSED.

UTILITIES LEGEND:

TI - FIBER OPTIC - WINDSTREAM
- POWER POLE - MIDAMERICAN ENERGY
W - WATER MAIN - IOWA REGIONAL UTILITY ASSOCIATION

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

PRELIMINARY

DESIGN FOR 0° SKEW

364'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

116'-0 & 96'-0 END SPANS (BTE BEAM TYPE) 152'-0 INTERIOR SPAN

SITUATION PLAN - SITE

STA. 1183+29.01 (℄ IA 14) JUNE 2021

MARION COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 2 OF 2 FILE NO. 32073 DESIGN NO. 223

DESIGN TEAM Stanley Consultants Inc. | MARION COUNTY | PROJECT NUMBER BRF-014-3(56)--38-63 | SHEET NUMBER V.02

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)

- TS — Topsoil (Class 10)
- SLOPE DRESSING — Slope Dressing Only
- CL 10 — Class 10 Materials
- SEL LO — Select Loams And Clay-Loams
- SEL SA — Select Sand
- UNS A — Unsuitable Type A Disposal
- UNS B — Unsuitable Type B Disposal
- UNS C — Unsuitable Type C Disposal
- SHALE — Shale
- WASTE — Waste
- B&W LS — Broken and Weathered Rock
- ROCK — Solid Rock
- BLDRS — 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

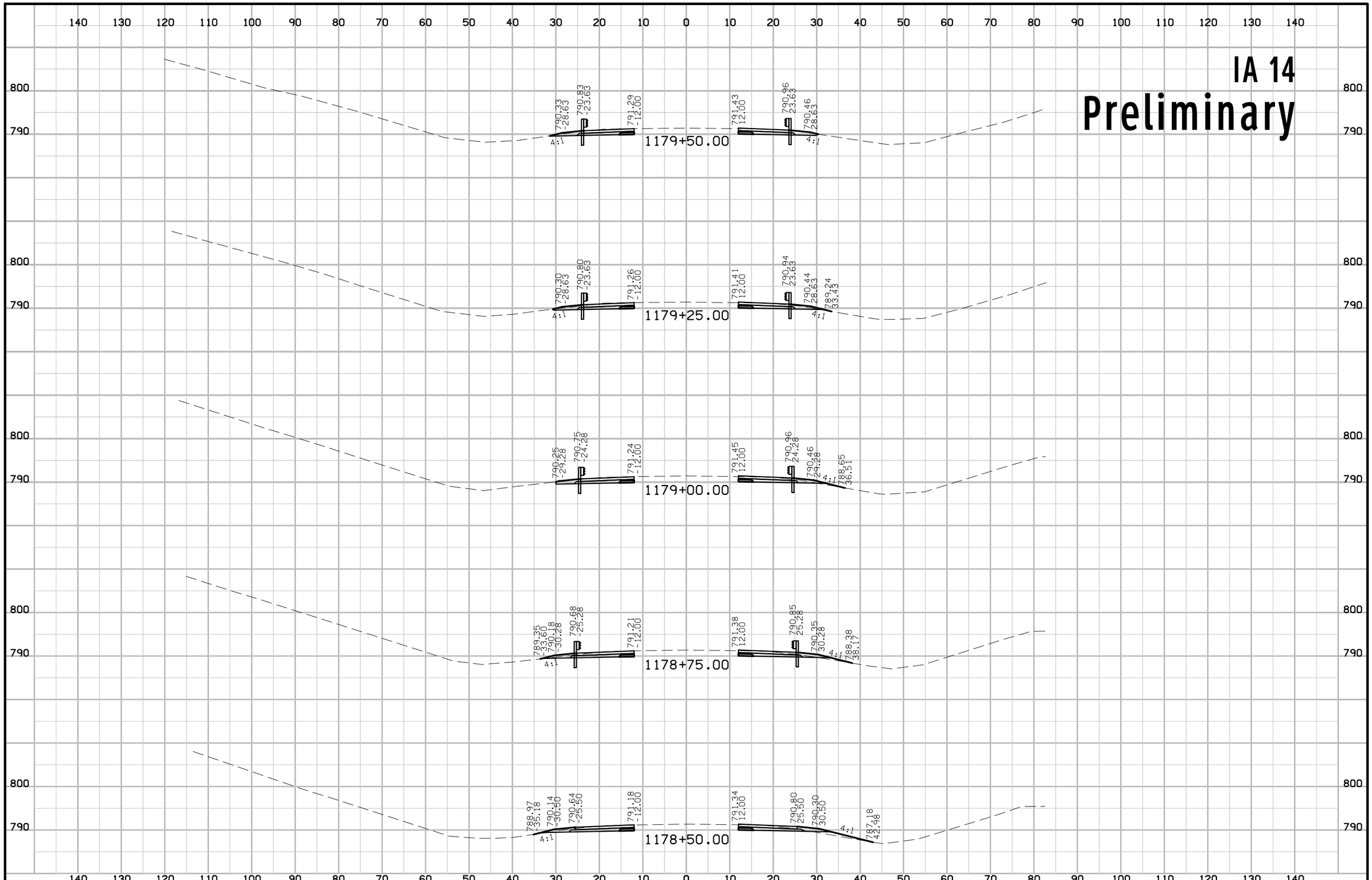
Temporary ROW — Temporary Right-of-Way Limit

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

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

IA 14

Preliminary



FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER W.2

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IA 14
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

800
790
780

785.88
39.86
2.5:1
790.37
28.63
790.87
23.63
791.34
12.00
791.48
12.00
791.02
23.63
790.52
28.63
4:1
784.91
51.05

1180+75.00

800
790

788.63
33.00
790.28
28.63
790.88
23.63
791.34
12.00
791.41
12.00
790.94
23.63
790.64
29.35
2.5:1

1180+50.00

800
790

788.76
35.10
790.28
28.63
790.88
23.63
791.35
12.00
791.40
12.00
790.94
23.63
790.69
29.45
4:1

1180+25.00

800
790

790.38
28.63
790.88
23.63
791.35
12.00
791.43
12.00
790.97
23.63
790.47
28.63

1180+00.00

800
790

790.36
28.63
790.86
23.63
791.32
12.00
791.44
12.00
790.97
23.63
790.47
28.63
4:1
4:1

1179+75.00

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. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER W.3

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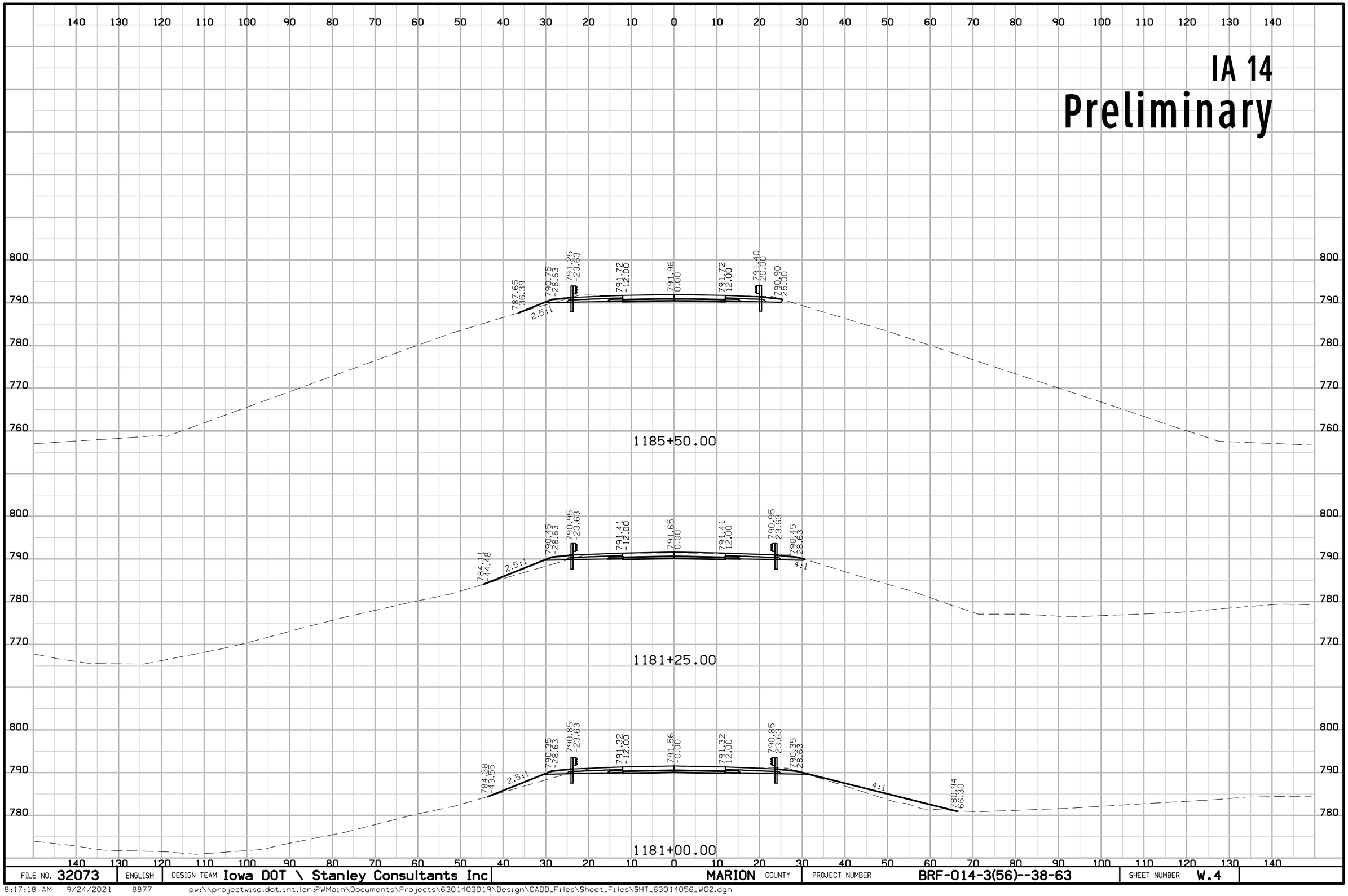
IA 14

Preliminary



FILE NO. 32073	ENGLISH	DESIGN TEAM Iowa DOT \ Stanley Consultants Inc	MARION COUNTY	PROJECT NUMBER BRF-014-3(56)--38-63	SHEET NUMBER W.4

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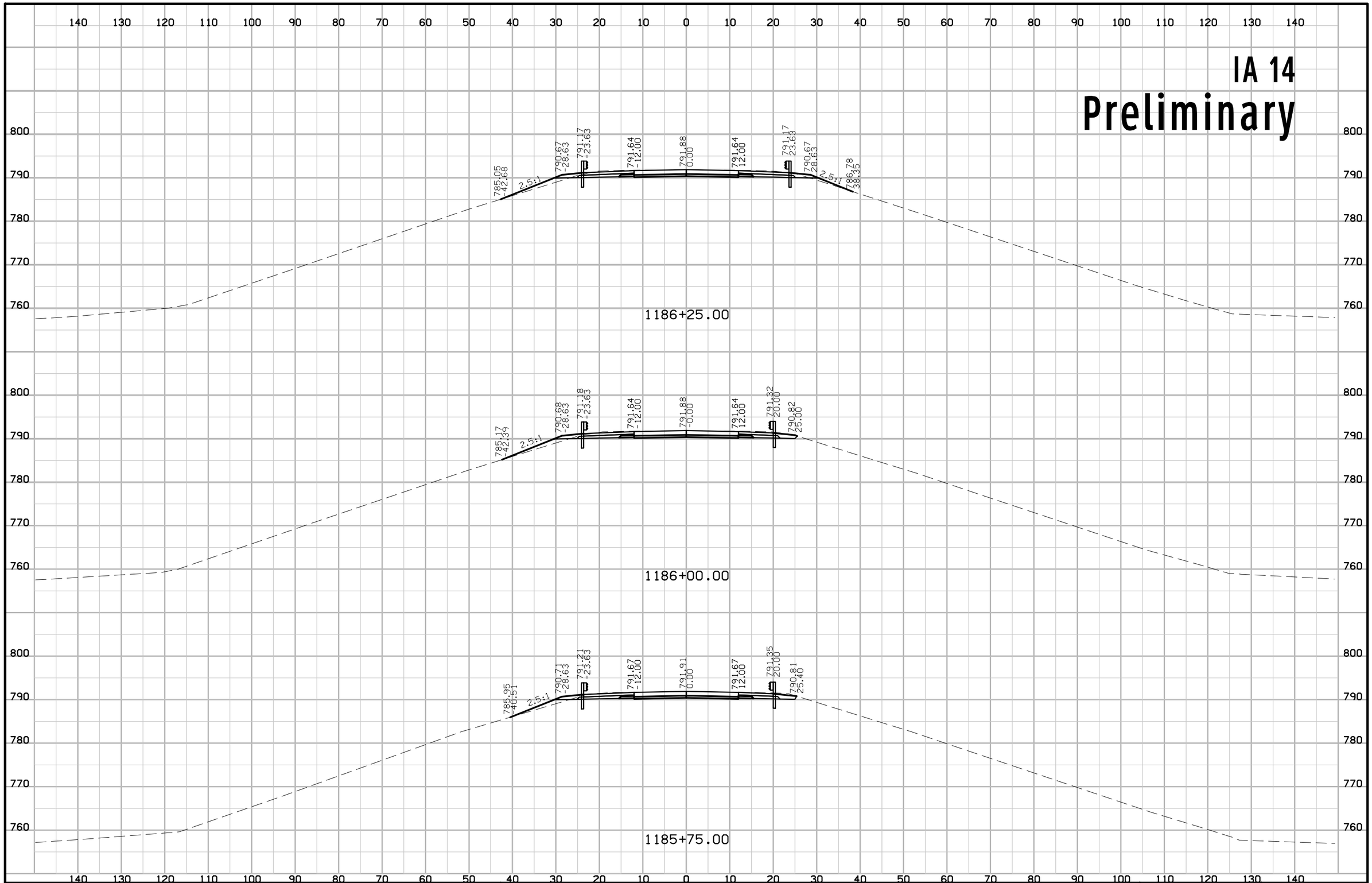
IA 14

Preliminary



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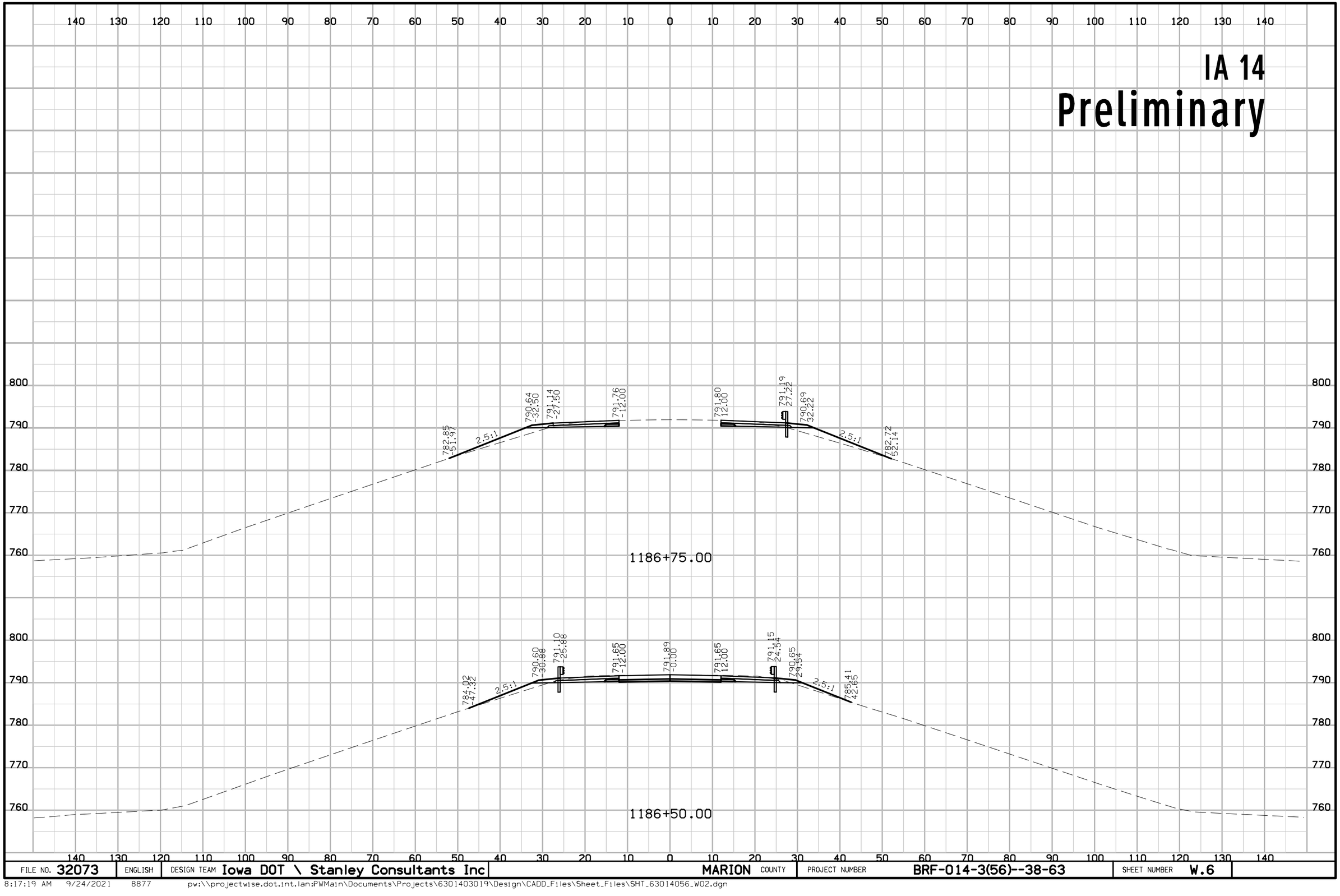
IA 14

Preliminary



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