LETTING DATE 12/16/2025

Bridge Replacement
BRF-218-7(242)--38-07

BLACK HAWK COUNTY

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	Estimated Project Quantities and Reference Notes
C.1	Standard Road Plans
C.1	Tabulations (beg. with tab. of incidentals if needed)
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	US 218
G Sheets	**Survey Sheets**
G.1	Reference Ties and Bench Marks
* G.2	Reference Ties and Bench Marks
G.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	Modified TC-217
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 - 3	Drainage Basin and Erosion Control Device Maps
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
* U.1	Modified BA-108
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 - 8	Mainline Cross Sections
	* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

BLACK HAWK COUNTY

Bridge Replacement

U.S. 218 bridge over Big Creek Overflow
0.3 mile north of County Road D48
in the city of La Porte

<--H - Sheets

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

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

REVISIONS

	TOTAL 32
PROJECT IDENTIFICATION NUMBER	
21-07-218-050	
PROJECT NUMBER	
BRF-218-7(242)--38-07	
R.O.W. PROJECT NUMBER	

DESIGN DATA URBAN		
2021	AADT	3,530 V.P.D.
2045	AADT	3,960 V.P.D.
2045	DHV	430 V.P.H.
TRUCKS		7 %
Total Design ESALs		--

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
V.1/ V.2	Mark D. Werner	Hydraulics

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 11/08/2023

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER A.1

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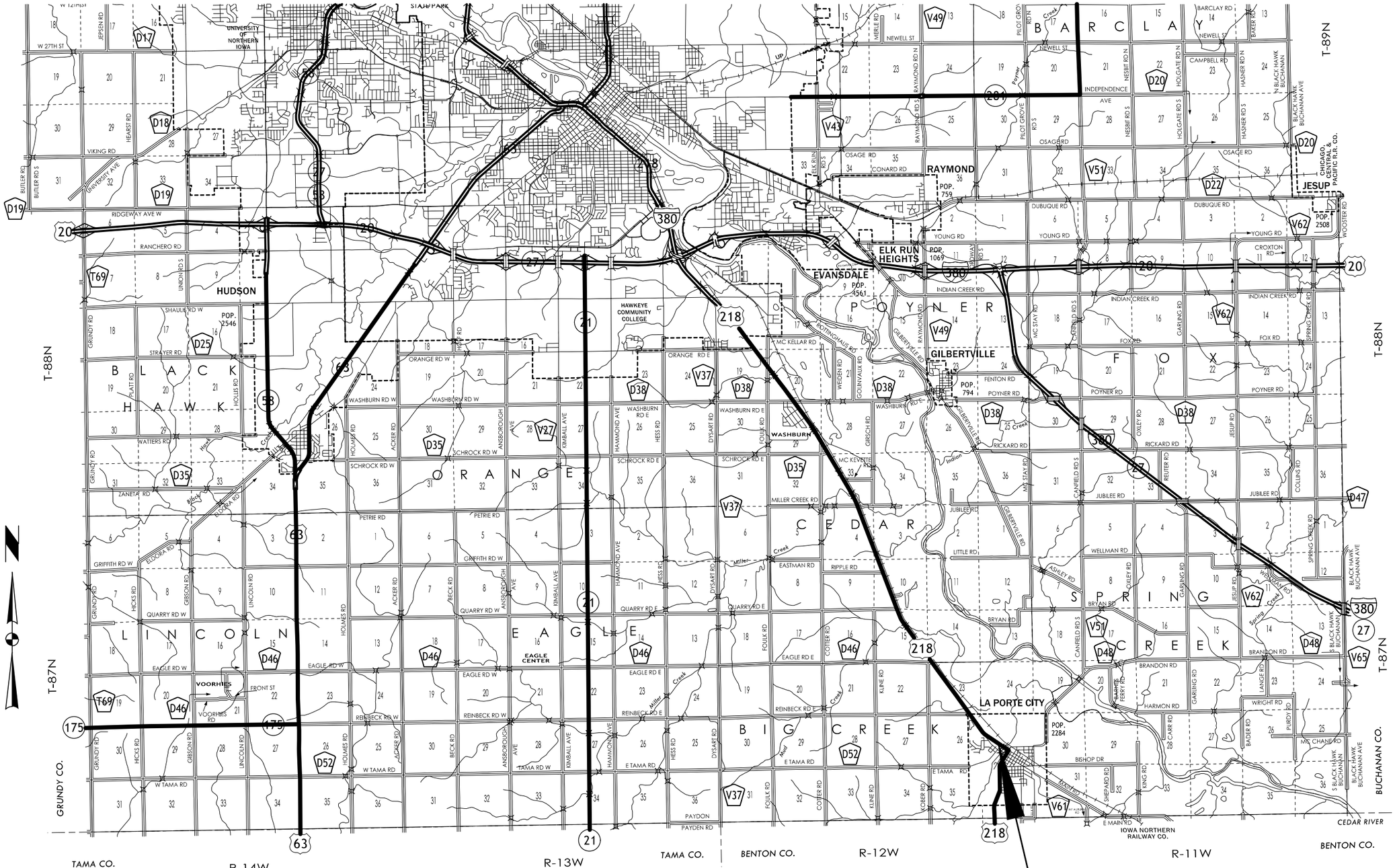
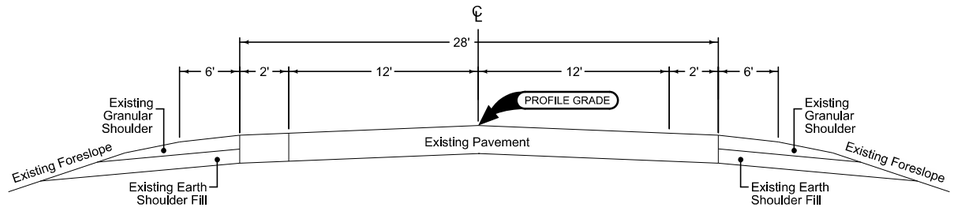
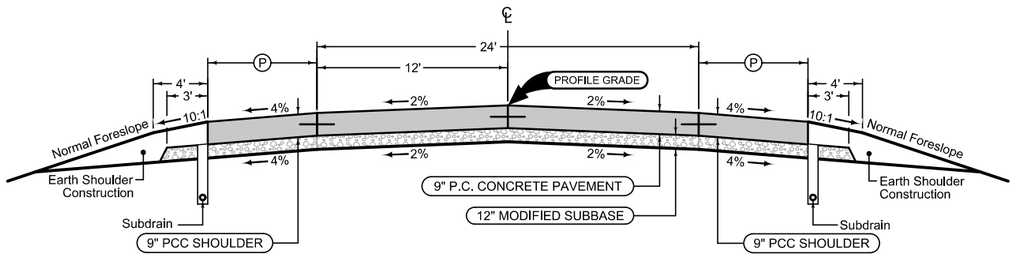


FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER A.2	



EXISTING US 218



Full Depth PCC Shoulder

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

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
82+91.09	84+22.56	10
86+77.44	87+58.00	10

Refer to Standard Road Plan BR-205
for Reinforced Approach Pavement

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

2P_ 04-21-20	
STATION TO STATION	
82+91.09	84+22.56
86+77.44	87+58.00

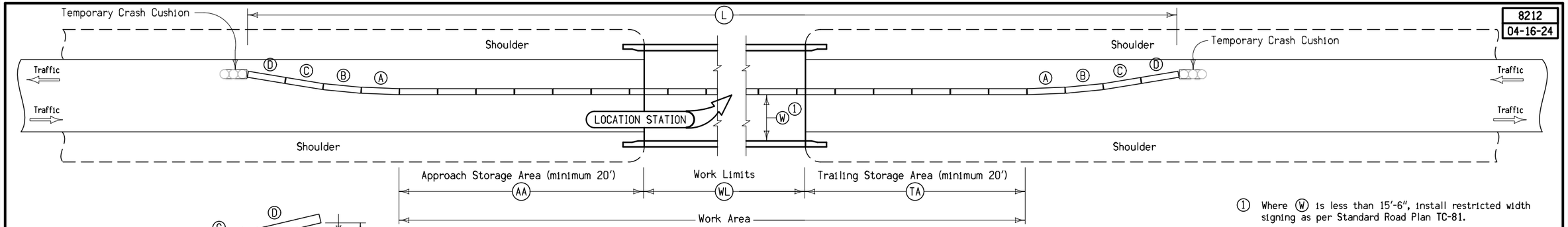
Full Depth PCC Shoulder

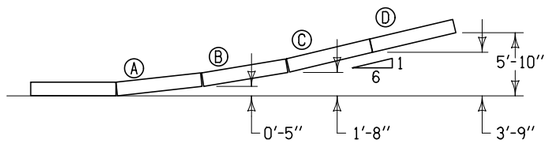
Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: C at 17' spacing

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
82+91.09	84+22.56	10
86+77.44	87+58.00	10

US 218

8212
04-16-24





BARRIER OFFSETS FOR FLARE SECTIONS

Station	Side	AA	WL	TA	L	Anchored	W (1)	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
85+50.00	RT	22.4	466.9	22.4	611.7	X	12 - 6	Stage 1B
85+50.00	LT	22.4	466.9	22.4	611.7		14 - 2	Stage 2

(1) Where (W) is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.

TEMPORARY CONCRETE BARRIER LAYOUT for Two-Way Traffic

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER B.2	

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100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

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

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
BA-401	04-20-21	Temporary Barrier Rail (Precast Concrete)
BA-500	04-20-21	Temporary Crash Cushions Sand Barrel
BR-205	04-16-24	Double Reinforced 12" Approach (Slab Bridge)
BR-213	10-19-21	Bridge Approach (Abutting Pavement)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
DR-401	04-16-24	Scour Protection for Bridge End Drain
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
PM-110	04-16-24	Line Types
PV-101	04-19-22	Joints
PV-102	04-21-20	PCC Curb Details
SI-881	04-16-19	Special Signs for Workzones
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-81	04-18-23	Restricted Width Signing (Less Than 14.5 Feet)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-213	04-18-23	Lane Closure with Flaggers
TC-233	10-17-17	Pavement Marking Operations Two-Lane

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
1	Black Hawk	US-218	1	168.03	176.5	2001		STP-218-7(177)--2C-07	AAC	1.5	BAC	2					WATERLOO SOU	C.LST			
						1973		FN-218-7(30)--21-07	AAC	1	AAC	3.5					WATERLOO SOU	C.LST			VL 95AC MP
						1953		F-200(5)(10)	PCC	9.5							NEWTON QRY.	C.LST	1		

110-13
04-20-10

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
Steel Beam Guardrail & Components	360	LF	IADOT Waterloo Maintenance Garage	Kip Siems - Area Supervisor 319-240-1466	1875 W. Ridgeway Ave. P.O. Box 1888 Waterloo, IA 50704

SURVEY SYMBOLS

AST, Above Ground Storage Tank
BB, Billboard
BBB, Bottom of Bridge Beam
BCL, Bridge Centerline
BD, Bridge Deck
BIN, Grain Bin
BL, Topo Breakline
BLD, Building or Foundation
BLS, Bridge Low Steel
BM, Bench Mark
BNK, Stream Bank
BRG, Bridge
C, Centerline BL of Road -ML or SR
CAV, Cave
CEL, Cell Phone Tower
CIS, Cistern
CON, Concrete or A/C Slab
CP, Control Point
CRP, Corporation Line
CS, Curve Point
CU, Back of Curb
CUL, Culvert
D, Centerline Draw or Stream -Down
DAB, Drainage Area Boundary
DIK, Centerline of Dike or Dam
DTM, Photogrammetry Elv Control Check
DU, Centerline Draw or Stream -Up
EB, Electrical Box
EG, Edge of Gravel Road
ENP, Edge Paved Entrance and Park Lot
ENT, Centerline BL of Entrance
ENU, Edge Unpaved Entrance and Parking
EP, Edge of Paved Roads -ML or SR
EW, Edge of Water
FCL, Chain Link and Security Fence
FENO, FENO Monument
FHD, Fire Hydrants
FLG, Flag Poles
FP, Filler Pipe
FW, Wire Fence
FWD, Wood Fence
GDC, Guard Rail Cable
GDL, Guard Rail Steel
GP, Guard Post -Less Than 4 Posts
GPR, Guard Post -4 or More Posts
GR, Ground Shot
GRV, Grave
GU, Gutter In Front of Curb
GV, Gas Valve
HDG, Hedge Row
HS, Hydric Soil -Wetlands
HT, Electrical Highline Tower
IN, Storm Sewer Intake
INB, Storm Sewer Beehive Intake
LC, Lot Corner
LIN, Miscellaneous Line
LP, L.P. Tank
LUM, Luminaire
MH, Utility Access -Manhole
MIS, Miscellaneous
MM, Mile Marker Post
OUT, Tile Outlet
PC, Curve Point
PCP, Photo Control Point
PCT, Photo Control Target
PI, Tangent Point
PIP, Pipe Culvert
PL, Location of Photo -Wetlands
PLG, Location of General Photo
POC, Curve Point
POST, Spiral Point

PR, Electic Riser Pole
PRO, Profile Shot
PT, Curve Point
REF, Reference Tie Point
RET, Retaining Walls
RIP, Rip-Rap
ROC, Rock Outcropping
ROW, Right of Way Mark
RR, Centerline of Railroad Tracks
RRB, Railroad Signal Box
RRF, Railroad Frog
RRR, Railroad Rail
RRS, Railroad Signal
RRW, Railroad Switch
RT, Radio Tower
S, Soil Sampling Site -Wetlands
SBR, Size of Bridge
SC, Spiral Point
SCR, Section Corner
SEP, Septic Tank
SF, Silt Fence -Wetlands
SG, Staff Gauge -Wetlands
SH, Paved Shoulder
SHR, Shrub
SI, Sign
SL, Speed Limit Sign
SLN, Section Line
SLO, Silo
SNK, Sink Hole
SNP, Unpaved Shoulder
SP, Stream Profile
STP, Stump
SWK, Sidewalk
SWP, Swamp or Marsh
TA, Tower Anchor
TBO, Telephone Booth
TCB, Traffic Signal Box
TDC, Tree Deciduous
TDL, Trafic Detection Loop
TER, Terrace
TEV, Evergeen Tree
TFR, Tree Fruit
TGP, Telegraph Pole
TLNL, Tree Line Left
TLNR, Tree Line Right
TOP, Top of Bridge Pier
TPA, Telephone Pole Co. 1
TPB, Telephone Pole Co. 2
TPC, Telephone Pole Co. 3
TR, Telephone Riser Pole
TRL, Trail
TS, Spiral Point
TSB, Telephone Switch Box
TSG, Traffic Signal
TSL, Traffic Signal and Luminare
TV, Satelite TV Dish
TVP, TV Pedestal
TW, Top of Water
UB, Utility Box
UE, Utility Elevation
UPH, Utility Pot Hole - Quality A
UST, Underground Tank
UV, Underground Utility Vault
VS, Channel Cross Section
WC, Wild Card -Misc. Field Shot
WEL, Well
WHD, Water Hydrant
WHU, RV Water Hook Up
WM, Wind Mill
WND, Wind Turbine
WV, Water Valve

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

— FO —
FO1D, MEDIACOM - Quality D
Brian Kadner
845-544-9656
bkadner@mediacomcc.com

— E1 —
EL1D, LA PORTE CITY UTILITIES - Quality D
Bill Matthes
319-239-4918
bmatthesutil@lpctel.net

— T1 —
TL1D, LA PORTE CITY TELEPHONE - Quality D
David Powell
319-342-3369
lpctel@netins.net

— G —
GL1D, BLACK HILLS ENERGY - Quality D
Chuck Woods
515-343-2037
chuck.woods@blackhillscorp.com

— FO —
FO1D, PEOPLESERVICE LA PORTE CITY - Quality D
Jordan Cooper
563-568-9135
jcooper@peopleservice.com

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.**	
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(10)	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. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER D.1

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Note 1:
BR-205 double reinforced section shall be extended to bridge joints at all four corners due to Modified BA-108 extending to bridge joints.

BIG CREEK
T-87N R-12W
Sec. 25

Existing ROW

Sta. 84+94.58
End Bridge Approach
Begin Bridge Construction

Sta. 86+05.42
End Bridge Construction
Begin Bridge Approach

81+00 82+00 83+00 84+00 85+00 86+00 87+00

US 218
(ML218)

Sta. 82+91.09
Begin Roadway
Pavement
Construction

4" C.M.P. SUBDRAIN TILE
BAD CONDITION

Big Creek Overflow

6" C.P.P. SUBDRAIN TILE
BAD CONDITION

Existing ROW

Sta. 84+22.56
End Roadway Pavement Construction
Begin Bridge Approach

District "3R" project should plan to construct full width, full depth shoulders (NB & SB) from Sta. 81+94 to Sta. 82+91 to accommodate this Bridge Replacement project.

0 FEET 20

DR-401
Typical All Four
Corners

Modified BR-108
See Sheet U.1
Typical All Four
Corners

Sta. 86+77.44
End Bridge Approach
Begin Roadway Pavement Construction

835 830 825 820 815 810 805 800

VPC = 82+91.00
ELV = 822.70

VPT = 84+61.00
ELV = 823.67

VPI = +50.00
ELV = 825.35
L = 170.00
K = 45

VPC = 86+38.00
ELV = 823.69

+1.89%
-1.89%

US 218
(ML218)

-0.76%
+1.89%

VPI = +76.00
ELV = 822.06
L = 170.00
K = 64

VPC = 84+65.00
ELV = 823.74

VPT = 86+35.00
ELV = 823.74

-1.89%

VPI = +98.00
ELV = 822.55
L = 120.00
K = 78

Begin Construction

822.70 822.64 822.54 822.53 822.62 822.80 823.09 823.47 823.92 824.27 824.48 824.55 824.48 824.27 823.92 823.47 823.07 822.76

82+00 83+00 84+00 85+00 86+00 87+00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER D.2

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BIG CREEK
T-87N R-12W
Sec. 25

24" R.C.C.P.

DOMED INLET

Existing ROW

87+00 88+00 89+00 90+00 91+00 92+00 93+00

US 218
(ML218)

Sta. 87+58.00
End Roadway
Pavement
Construction

Existing ROW

District "3R" project should plan to construct full width, full depth shoulders (NB & SB) from Sta. 87+58 to Sta. 89+06 to accommodate this Bridge Replacement project

0 FEET 20

835 830 825 820 815 810 805 800

VPT = 87+58.00
ELV = 822.33

-0.36%

End Construction

822.52 822.37 822.33

88+00 89+00 90+00 91+00 92+00 93+00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER D.3

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SURVEY INDEX

County: Blackhawk
PIN: 21-07-218-050
Project Number: BRF-218-7(242)—38-07
Location: Big Creek overflow 0.3 mi. north of Co. Rd. in La Porte City.
Type of Work: Bridge Replacement

VERTICAL DATUM: NAVD88
GEOID MODEL: GEOID12B

Alignment Information

NO alignment

Survey Personnel

Matthew Fouts – PLS
Daniel Marti – PLS
Drake Marti – Survey Technician
Joshua Randolph – Survey CADD Technician

Date(s) of Survey

Begin Date	01/16/2023
End Date	01/26/2023

General Information

This survey is for preliminary design for the section of approximately 0.2 miles of roadway, there is one bridge along the route. Project datum is provided by Design Survey Office. This project is a full DTM Survey.

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

Project Control

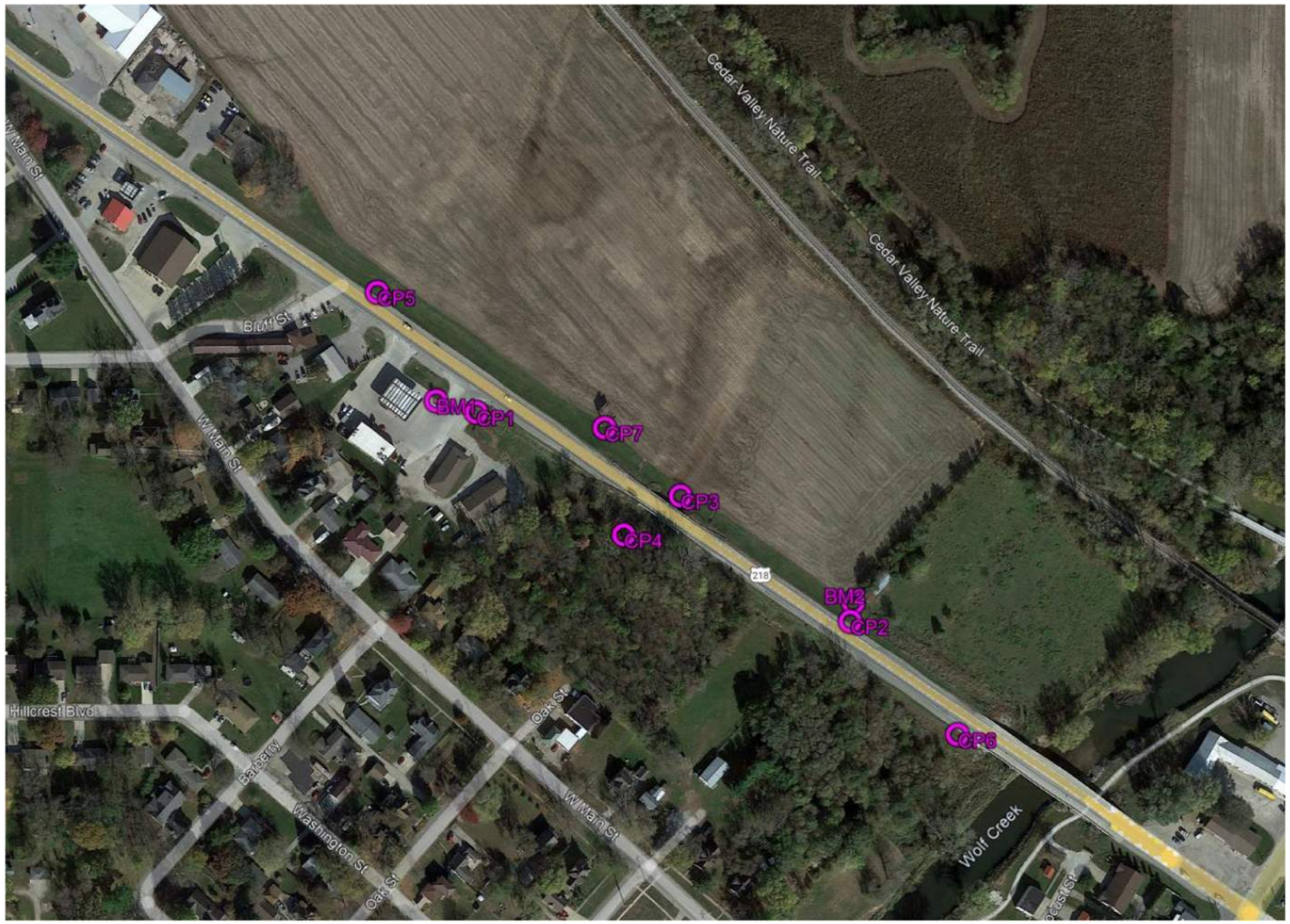
(RTN)
Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. For additional details of the control survey, contact the Preliminary Survey department.

(Static)
Static observations were not used for this survey.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 5 (Waterloo).
(U.S. SURVEY FOOT)

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) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 05 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 12B

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

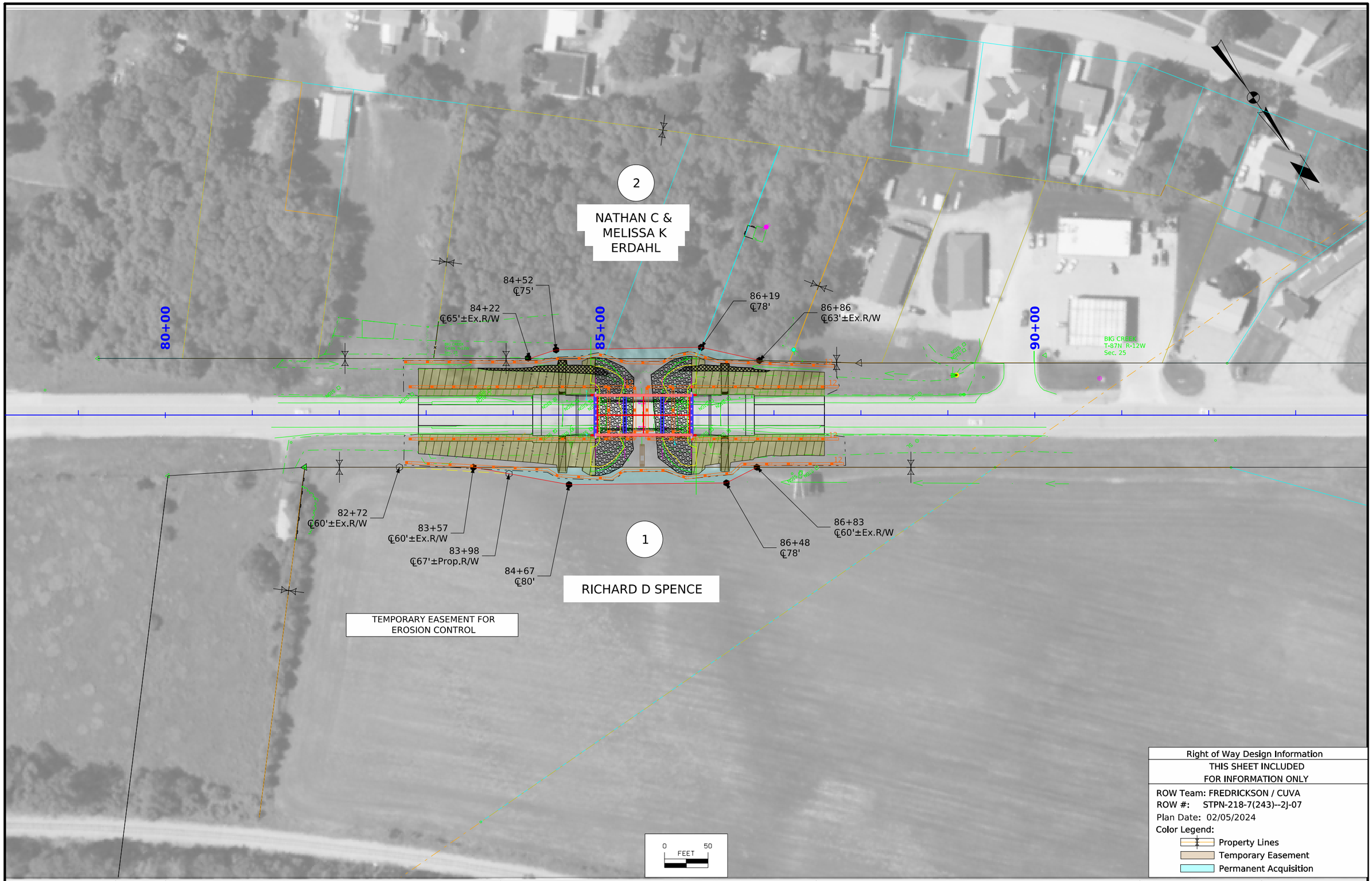
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 05 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 12B

POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	8779299.37	15514573.04	820.70	SET 5/8" REBAR SOUTH OF LA PORTE ROAD AND NORTH OF JOE'S GYM
CP2	8778910.15	15515271.65	822.39	SET 5/8" REBAR IN FIELD ENTRANCE EAST OF BRIDGE ON NORTH SIDE OF ROAD
CP3	8779146.27	15514963.76	813.89	SET 5/8" REBAR NORTH OF THE MIDDLE OF THE BRIDGE
CP4	8779062.63	15514924.96	814.31	SET 5/8" REBAR SOUTH OF THE BRIDGE
CP5	8779510.47	15514394.14	821.67	FENO MONUMENT IN FIELD DRIVE 14'+/- EAST OF ROAD
CP6	8778700.22	15515470.77	825.21	FENO MONUMENT 4' W OF EOR
CP7	8779266.13	15514817.10	814.81	FENO MONUMENT 10' S OF BILLBOARD SIGN
NGS	8766930.23	15534189.10	817.19	NGS MONUMENT IN CONCRETE HEADWALL STAMPED G-157 (SURVEY DISK) PID=NK0076
NGS	8780678.09	15502398.14	951.55	NGS MONUMENT STAMPED PORTE ET 1970 (SURVEY DISK) PID=NK0536
BM1	8779318.57	15514500.40	821.75	SET NORTHEAST BOLT ON THE CASEY'S SIGN
BM2	8778942.75	15515274.99	816.84	SET RAILROAD SPIKE IN SOUTH SIDE OF FENCE

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	US218(ML218)	75+07.45	8778523.37	15515779.05															
2	US218(ML218)	95+93.20	8779704.80	15514060.17															



FILE NO.	ENGLISH	DESIGN TEAM **Stanley Consultants Inc.**	**BLACK HAWK** COUNTY	PROJECT NUMBER **BRF-218-7(242)--38-07**	SHEET NUMBER **H.1**	

4:45:10 PM 2/19/2024 afredri pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\0721805021\ROW\ROW_07218243.dgn

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. At least one lane of traffic shall be maintained on US 218 at all times.

2. Refer to Standard Road Plans shown on Tab 105-4 in C Sheets for other information.

3. Refer to Staging Notes (Tabulation 108-26A) and other J sheets for details of specific closures.

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	

108-25
10-21-14

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
US 218	NB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Barrier	Maint. No.0767.3S218	Horizontal	N/A	12'-6"	11'-6"	N/A	Stage 1B
US 218	SB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Barrier	Maint. No.0767.3S218	Horizontal	N/A	14'-2"	13'-2"	N/A	Stage 2
US 218	NB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Temporary Signal	Maint. No.0767.3S218	Vertical	N/A	15'-0"	N/A	N/A	Stage 1B
US 218	SB	Black Hawk	0.3 mile north of County Road D48 in the city of La Porte	Big Creek Overflow	Temporary Signal	Maint. No.0767.3S218	Vertical	N/A	15'-0"	N/A	N/A	Stage 2

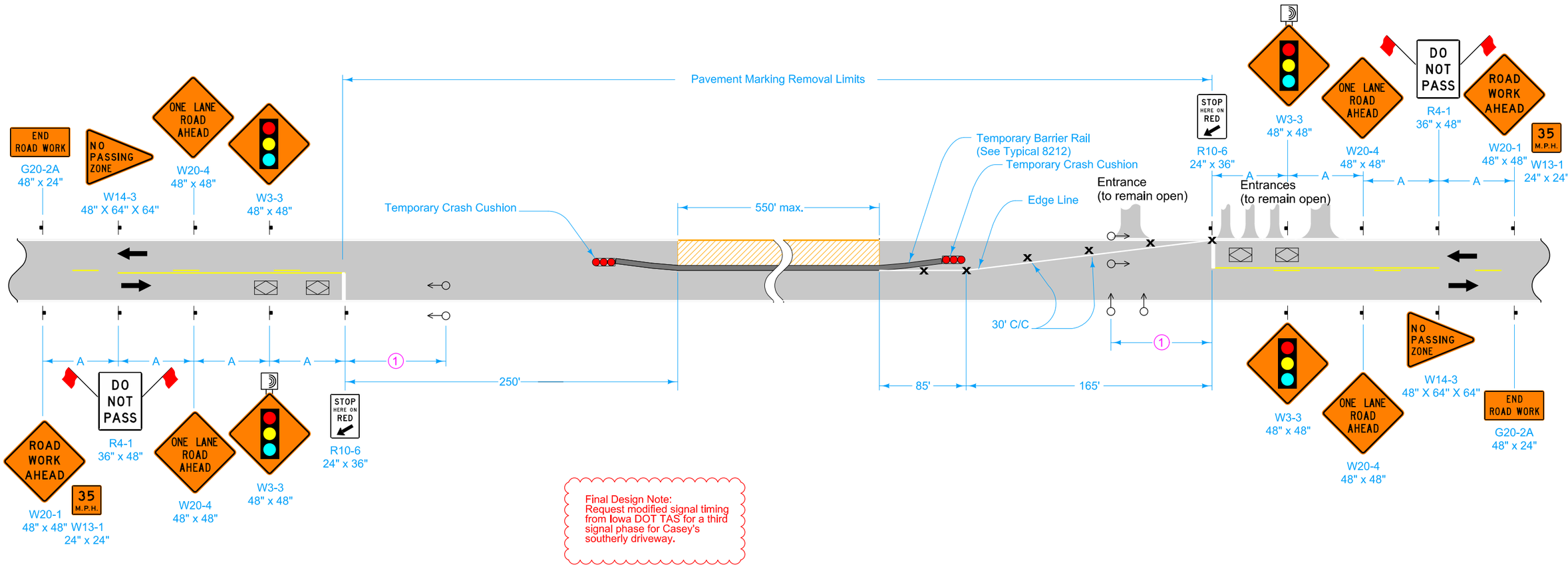
108-26A
08-01-08

STAGING NOTES

Stage 1A
Traffic Control: Close US 218 NB lane. Maintain traffic using single lane closure with flaggers (SRP TC-213).
Construction: Construct US 218 NB lane shoulder strengthening.

Stage 1B
Traffic Control: Close US 218 SB lane using temporary traffic signals and temporary barrier rail (TBR) per Sheet J.2.
Construction: Construct west half of US 218 bridge, approaches, and shoulders.

Stage 2
Traffic Control: Close US 218 NB lane using temporary traffic signals and temporary barrier rail (TBR) per Sheet J.2.
Construction: Construct east half of US 218 bridge, approaches, and shoulders.



Final Design Note:
Request modified signal timing from Iowa DOT TAS for a third signal phase for Casey's southerly driveway.

Contract Items:
- Pavement Marking Items
- Pavement Markings Removed
- Temporary Barrier Rail
- Temporary Crash Cushions
- Temporary Traffic Signals
- Traffic Control

Tabulations:
- 108-22
- 108-28
- 108-30
- 108-33

LEGEND

- Vehicle Detection Area
- Temporary Crash Cushion
- Direction of Traffic
- Traffic Sign
- Drum
- Type 'B' High-Intensity Flashing Warning Light
- Work Area
- Temporary Traffic Signal

TIMING FOR ACTUATED SIGNALS Recommended Settings, secs.	Distance Between Stop Lines	All Red (secs.)*
Initial = 12.0	1050'	20.4-35.7
Extension = 2.5	950'	18.5-32.3
Maximum Green = 45.0	850'	17-30
Yellow = 5.0	750'	15-27
All Red = (see table)	650'	14-23
	550'	12-20

* Range of values are based on operating speeds between 20 and 35 mph

SPEED LIMIT (mph)*	A
35 or less	250'
40 - 45	350'
50 or greater	500'

* Speed Limit refers to regulatory speed limit before road work.

Place Concrete Barrier Markers at 10 ft C/C on bridge rail.

(1) Locate signal heads 70 to 100 feet beyond stop bar. Adjust location of signal heads as field conditions warrant.

MODIFIED
STANDARD ROAD PLAN

REVISION	
9	4-18-23

TC-217
SHEET 1 of 1

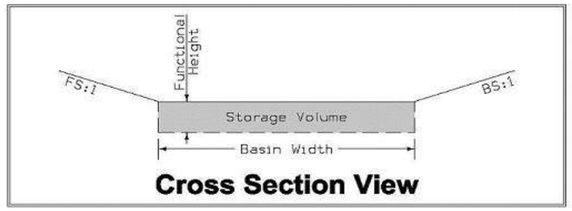
MODIFICATIONS: Added 5 entrances and traffic signals.

LANE CLOSURE WITH SIGNALS AND TBR

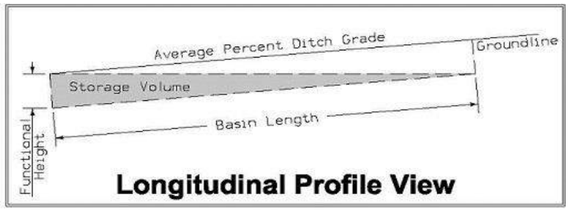
100-14
10-17-17

SILT BASINS

Possible Standard: EW-403



Cross Section View



Longitudinal Profile View

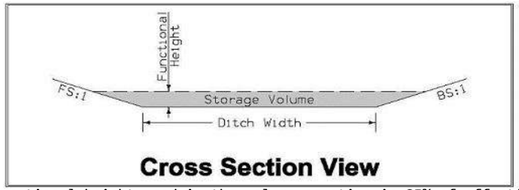
* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
1	85+48.00	Rt	1	1	10.0	50.0	2.85	0.4%	1380.0	

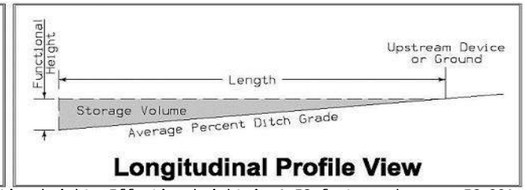
100-18
10-16-18

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	83+65.00	Rt	46.0	4.6	23.0	3.0	0.0	0.0	1.7%	101.5	
1	1	84+40.00	Rt	49.0	4.9	24.5	3.0	0.0	0.0	1.7%	101.5	
1	1	85+15.00	Rt	49.0	4.9	24.5	3.0	0.0	0.0	1.7%	101.5	
1	1	83+65.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.7%	101.5	
1	1	84+40.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.7%	101.5	
1	1	85+15.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.7%	101.5	
1	1	85+79.00	Rt	60.0	6.0	30.0	3.0	0.0	0.0	0.5%	135.3	
1	1	86+79.00	Rt	45.0	4.5	22.5	3.0	6.0	0.0	0.5%	324.7	
1	1	85+79.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.8%	135.3	
1	1	86+79.00	Lt	60.0	6.0	30.0	3.0	0.0	0.0	0.8%	108.2	
1	1	85+47.00	Rt	70.0	7.0	35.0	3.0	3.0	40.0	0.8%	1921.8	
			Totals:	619.0	61.9	309.5					3233.9	

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	
82+75.00	87+75.00	Rt		500.0				
82+75.00	87+75.00	Lt		500.0				
82+80.00	85+40.00	Rt		260.0				
85+55.00	87+75.00	Rt		220.0				
82+80.00	85+40.00	Lt		260.0				
85+55.00	87+75.00	Lt		220.0				
85+10.00	85+10.00	Both		60.0				
85+54.00	85+54.00	Both		60.0				
85+40.00	85+40.00	Both		60.0				
85+84.00	85+84.00	Both		60.0				
		Totals:		2200.0				

100-34
10-17-17

STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

Drainage Basin Location						Summary of Stormwater Storage							Remarks
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?	
				Station	Side	Acres	Acres	Acres		CF	CF	Yes/No	
1	82+91.00	87+58.00	Both	85+50.00	Rt	1.2	1.2	0.0	Silt Fence for Ditch Check (EC-201)	3233.9	4314.9	Yes	
									Silt Basin (EW-403)	1380.0			
									Totals:	4613.9			

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 Bridge Replacement.

B. This PPP covers approximately 1.3 acres with an estimated 1.2 acres being disturbed. The portion of the PPP covered by this contract has 1.2 acres disturbed.

C. The PPP is located in an area of 1 soil association Kenyon - Clyde - Floyd.
The estimated weighted average runoff coefficient number for this PPP after completion will be 0.44.

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 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 Big Creek Overflow.

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.

POLLUTION PREVENTION PLAN

IV. MAINTENANCE PROCEDURES

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

_____

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINESTYLE	Design Element
- - - - - - - - - - - -	Living Snow Fence Single Row
= = = = = = = = = = = = = = = = = =	Living Snow Fence Double Row
———	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS

CELL	Design Element	Plant Diameter
	Clearing	
	Proposed Shrub	6 FT
	Proposed Understory Tree	12 FT
	Proposed Conifer Tree	18 FT
	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS

Brush Clearing

Spray Area

Clearing & Grubbing

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINESTYLE	Design Element
	Silt Fence
9	Perimeter and Slope Sediment Control Device (9")
12	Perimeter and Slope Sediment Control Device (12")
20	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

CELL	Design Element
	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	(0)	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	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

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

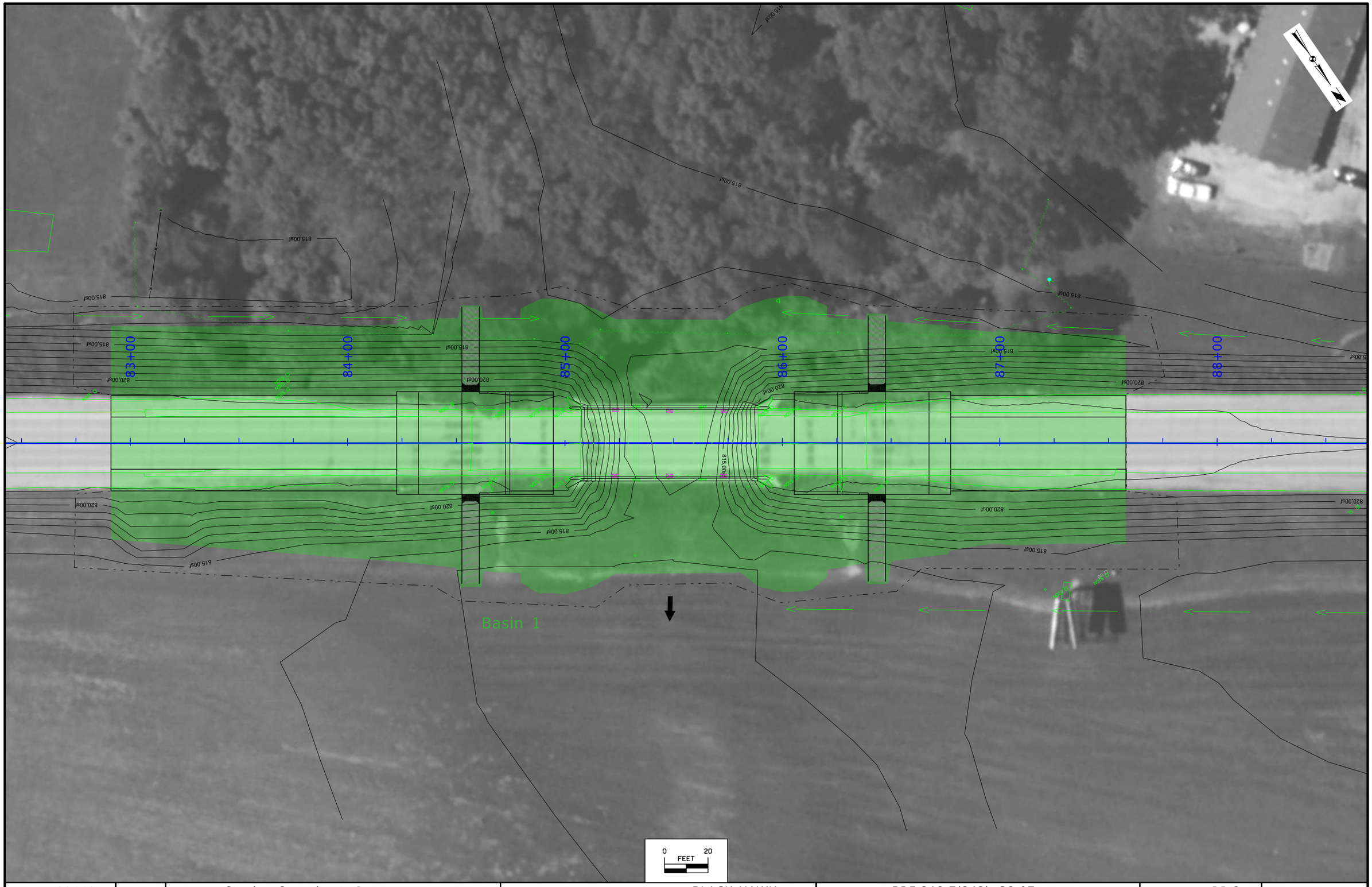
Transition Mat

Rock Features, Permanent

Rock Features, Temporary

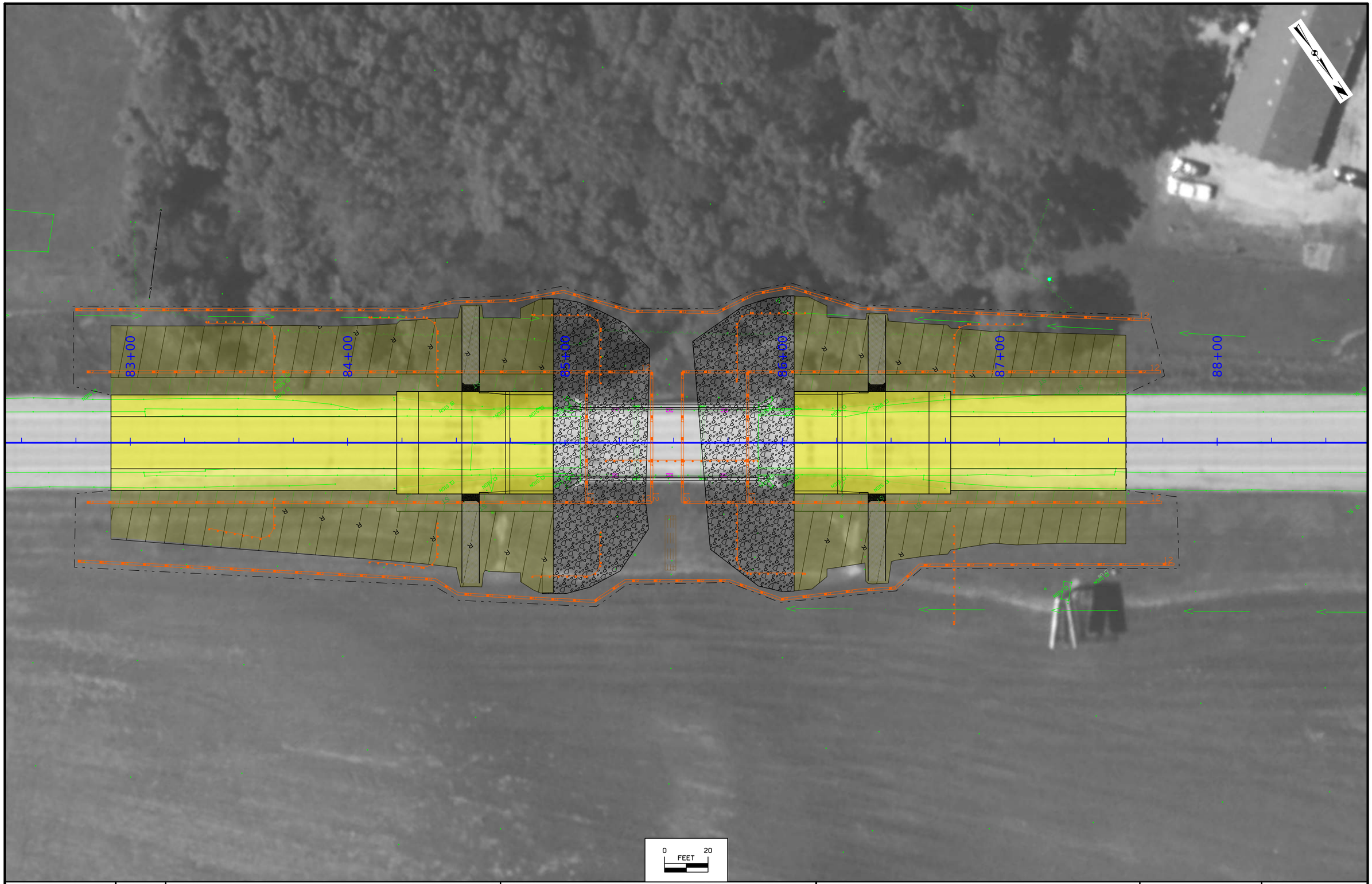
EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)



FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER RR.2	

10:44:08 PM 11/6/2023 9589 pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\0721805021\Design\CADD_Files\Sheet_Files\SHT_07218242_RR02.dgn



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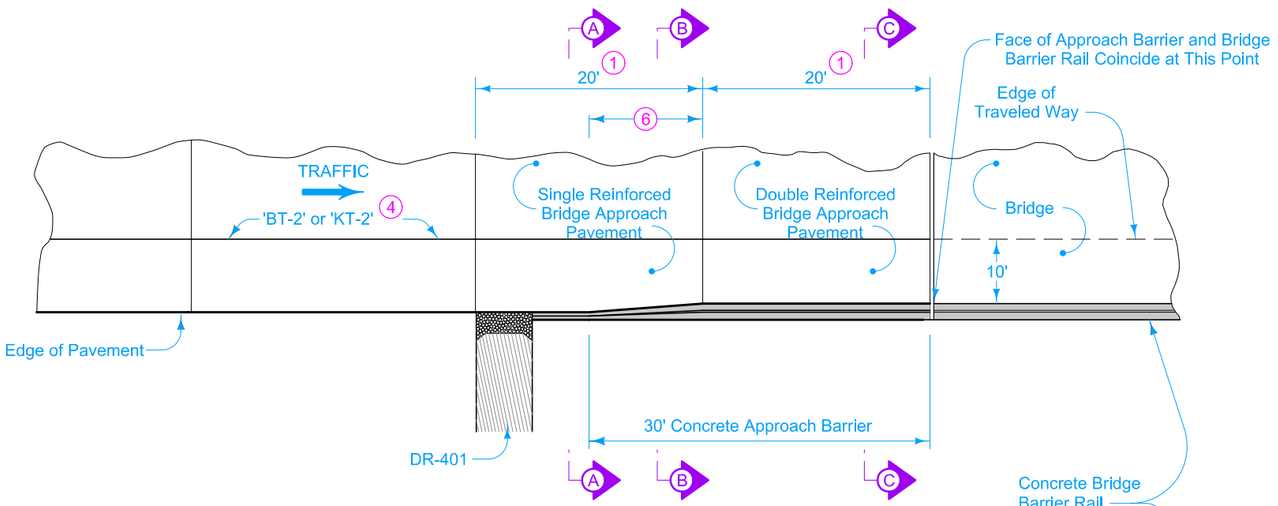
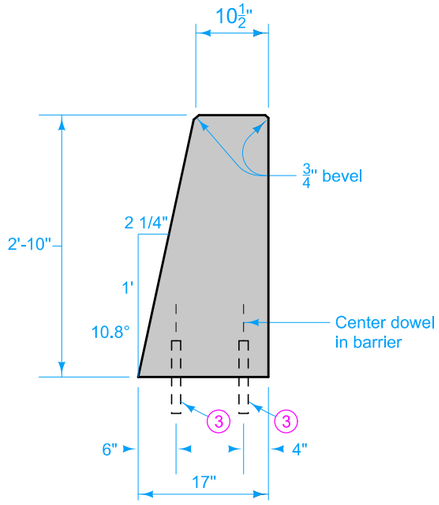


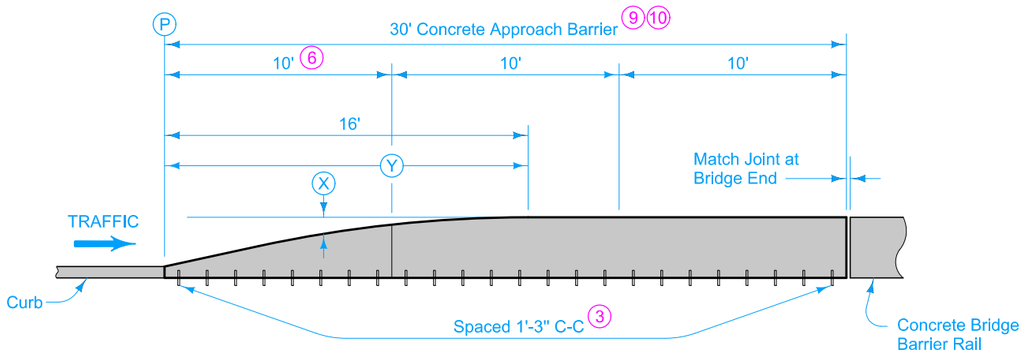
PLAN



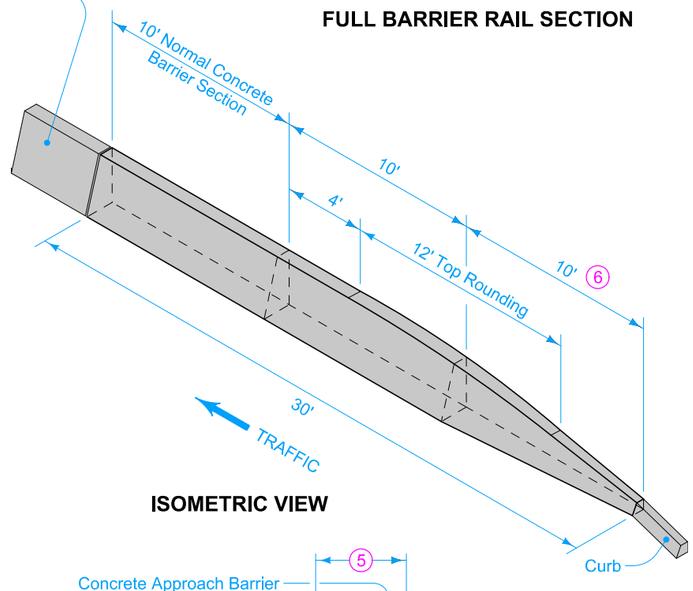
FULL BARRIER RAIL SECTION

Install a 'C' joint in concrete approach barrier to match the location of each joint in both roadway and bridge approach pavement.

1. Typical joint spacing and location. Follow specific project requirements as directed by the Engineer.
3. #8 x 8 inch deformed bars or 1 inch diameter smooth.
4. For joint detail, see PV-101.
5. Bottom width of barrier is maintained at 17 inches.
6. Bottom width of barrier transitions from 8 to 17 inches.
8. Additional concrete quantity required for extended roadway pavement will be included in bridge approach pavement quantity.
9. Place no delineator or object marker in front of, or on, the barrier.
10. Approximately 3 cubic yards of concrete are required to construct barrier as shown. Amount may vary depending on individual site requirements.



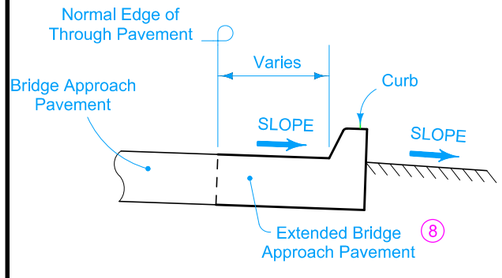
ELEVATION



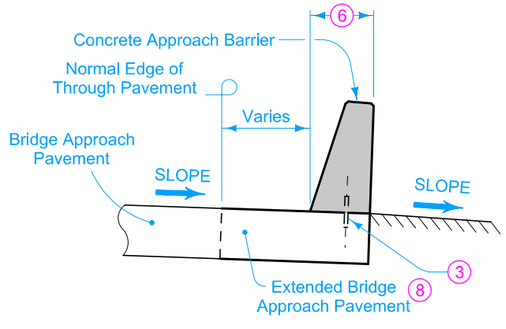
ISOMETRIC VIEW

Barrier shape to be determined during final design

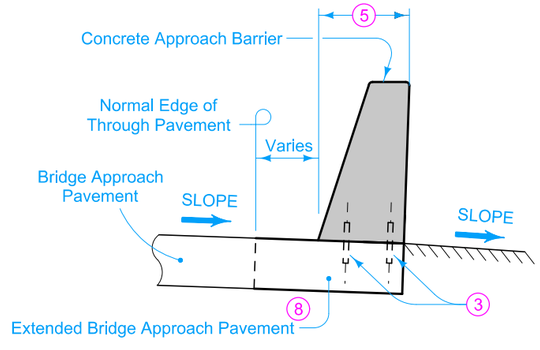
OFFSETS FOR ROUNDED BARRIER TOP																	
Y = Distance from (P)	ft.	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
X = Offset to Rounded Top	ft.	2.13	1.91	1.70	1.48	1.26	1.06	0.87	0.70	0.54	0.42	0.30	0.20	0.12	0.06	0.02	0.00



SECTION A-A



SECTION B-B



SECTION C-C

Contract Item:
Concrete Barrier, Tapered End, BA-108

Tabulation:
108-18B

MODIFIED

STANDARD ROAD PLAN

REVISION	
3	10-18-22

BA-108

SHEET 1 of 1

MODIFICATIONS: Removed sidewalks. Changed extended roadway pavement to be exteded bridge approach pavement.

CONCRETE BARRIER TAPERED END SECTION

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER U.1

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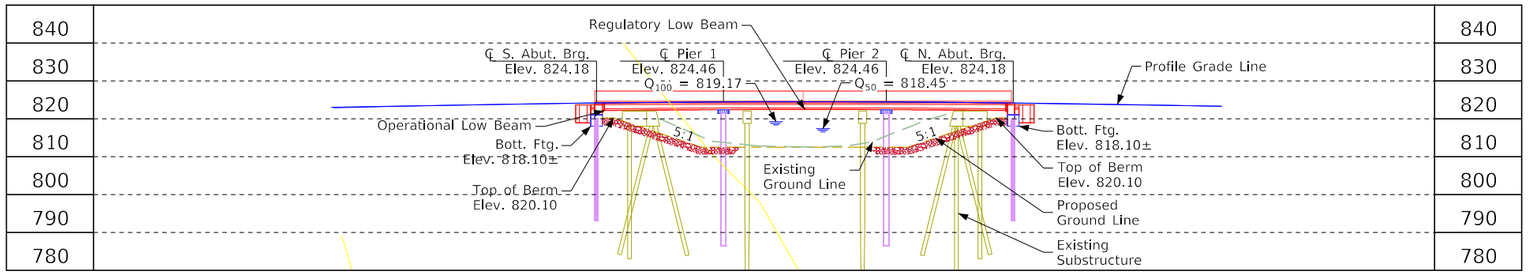
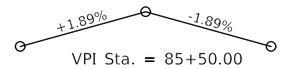
PROGRESS PLANS, NOT FOR CONSTRUCTION



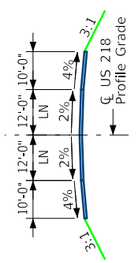
Longitudinal Section along ℄ US 218

BENCH MARK NO. CP3, N:8779146.27, E:15514963.76, ELEV 813.89;
SET ⅝" REBAR NORTH OF THE MIDDLE OF THE BRIDGE

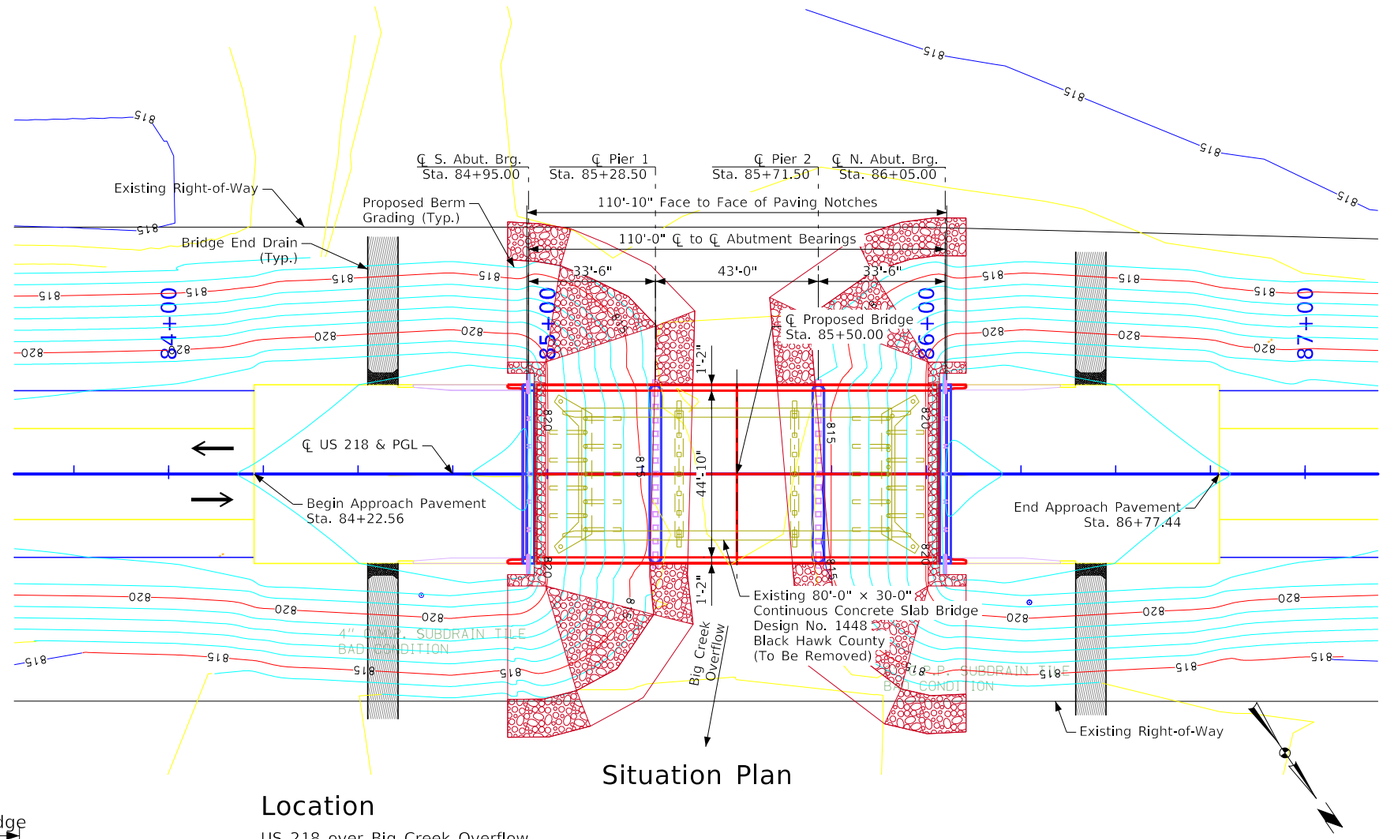


VPC Sta. 84+65.00 VPI Sta. = 85+50.00 VPT Sta. 86+35.00
VPC Elev. = 823.74 VPI Elev. = 825.35 VPT Elev. = 823.74
VC = 170'

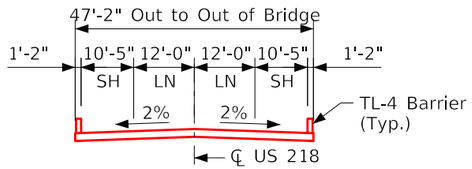
Proposed Profile Grade US 218



Typical Approach Section



Situation Plan



Typical Bridge Section

(Looking Northwest)

Location

US 218 over Big Creek Overflow
In City of La Porte City
T-87N R-12W
Section 25
Big Creek Township
Black Hawk County
FHWA No. 14791
Bridge Maint. No. 0767.3S218
Latitude 42.318244°
Longitude -92.194698°

0 ENGLISH 40
SCALE IN FEET

Traffic Estimate

2021 AADT 3,530 V.P.D.
Trucks 7 %

Utilities Legend

No Known Utilities

Hydraulic Data

RIDB: WolfC_Black_3.0
Drainage Area = 326 sq. mi.
Stream Slope (HGL) = 3.19 ft./mi.
Avg. Low Water Stage = N/A

Q_{50} = 16,000 cfs
Stage = 818.45
Regulatory Low Beam = 822.56
Avg. Bridge Velocity = 1.23 fps

Q_{100} = 18,465 cfs
Stage = 819.17
Operational Low Beam = 822.23
Backwater = 0.03 ft.
Avg. Bridge Velocity = 1.33 fps

Q_{200} = 20,135 cfs
Stage = 819.63
Calculated Design Scour = 809.8

Q_{500} = 23,070 cfs
Stage = 820.49
Avg. Bridge Velocity = 1.56 fps
Calculated Check Scour = 809.7

50-, 100-, 500-year stages and discharges from FEMA HEC-RAS Model
F.I.S datum = NAVD88

Notes

Top of bridge slab at ℄ US 218 is 0.03' below the profile grade to account for parabolic crown.
All units are in feet unless otherwise noted.
Standard Bridge Index J44.
Special Bridge Railing proposed to match nearby Project No. BRF-218-7(227)--38-07.
Pier Type - Fully Encased Pile Bents
Foundation type to be confirmed during final design.
Berm slope to be determined during final design.

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 10-19-2023
Signature Date

MARK D. WERNER
Printed or Typed Name

My license renewal date is December 31, 2023

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

PRELIMINARY

Design For 0° Skew
110'-0" × 44'-0" Continuous Concrete Slab Bridge
33'-6" End Spans 43'-0" Interior Span

Situation Plan

STA. 85+50.00 (℄ US 218)

Black Hawk County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 1 of 3 FHWA No. 14791

FILE NO. 32440 | ENGLISH | DESIGN TEAM Stanley Consultants | BLACK HAWK COUNTY | PROJECT NUMBER BRF-218-7(242)--38-07 | SHEET NUMBER V.01

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PROGRESS PLANS, NOT FOR CONSTRUCTION

Design Notes

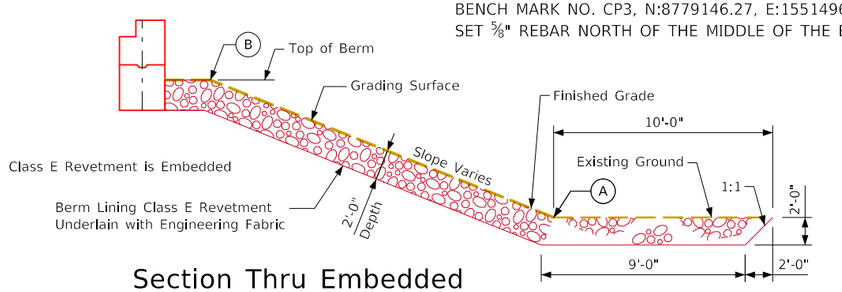
This design is for the replacement of the existing 80'-0" × 30'-0" Continuous Concrete Slab Bridge, Black Hawk Design No. 1448, FHWA No. 14790, Maint. No. 0767.3S218.

An Iowa DNR Flood Plain Permit is required. Preliminary designer will submit the application and place the permit in the PW Regulatory_Permits subdirectory folder upon receipt.

Barrier aesthetics and turndown sections shall match Black Hawk County Design No. 111, Project No. BRF-218-7(227)--38-07.

Final designer shall check barrier and deck overhang system for capacity appropriate for MASH TL-3 crash load.

BENCH MARK NO. CP3, N:8779146.27, E:15514963.76, ELEV 813.89;
SET ⅝" REBAR NORTH OF THE MIDDLE OF THE BRIDGE

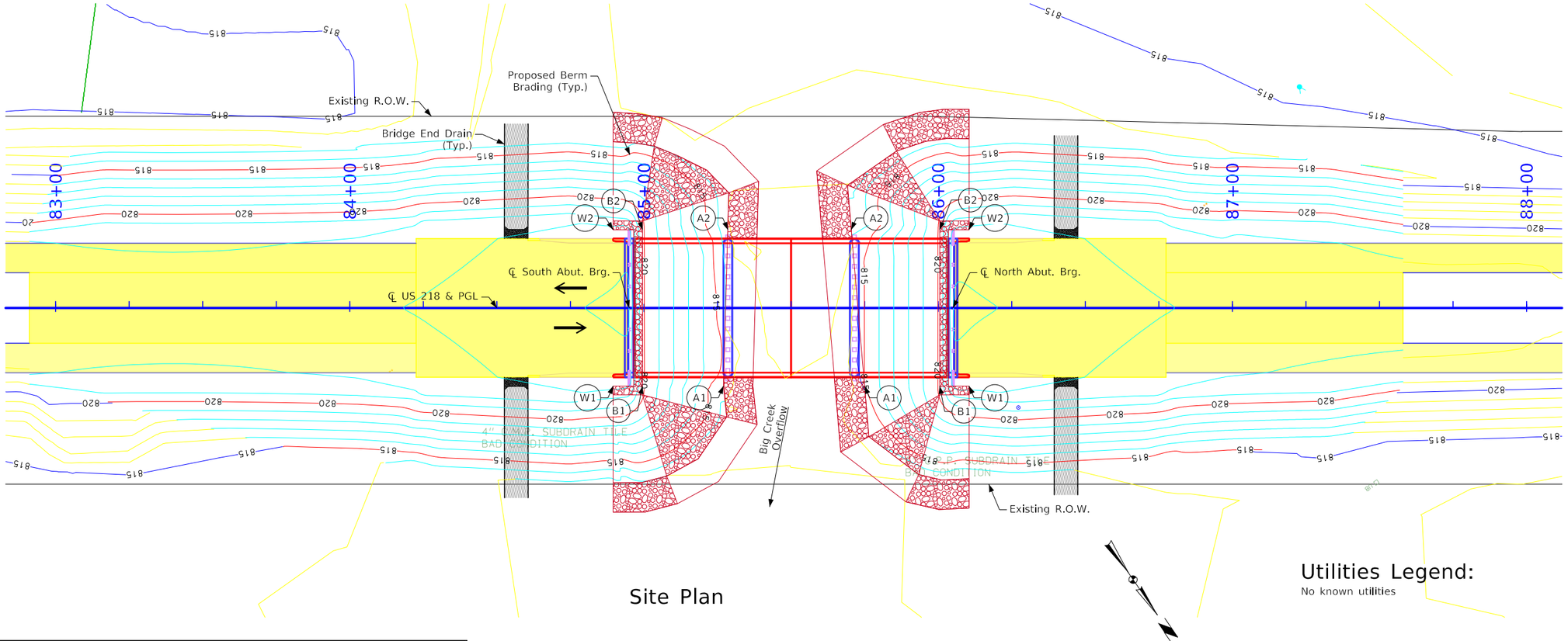


Section Thru Embedded Revetment Berm

Berm Slope Location Table

Points	South Abutment			North Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	85+23.37	26.58 Rt.	815.33	85+72.13	26.58 Rt.	814.38
A2	85+24.52	26.58 Lt.	815.10	85+77.36	26.58 Lt.	814.58
B1	84+99.50	26.58 Rt.	820.10	86+00.50	26.58 Rt.	820.10
B2	84+99.50	26.58 Lt.	820.10	86+00.50	26.58 Lt.	820.10
W1	84+87.50	26.58 Rt.	823.49	86+12.50	26.58 Rt.	823.49
W2	84+87.50	26.58 Lt.	823.49	86+12.50	26.58 Lt.	823.49

Berm slope elevations reflect the grading surface.



Site Plan

0 ENGLISH 40
SCALE IN FEET

Utilities Legend:

No known utilities

Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining – South Abut.	545		634	517
Berm Lining – North Abut.	563		658	536
Totals	1,108		1,292	1,053

Excavation quantity calculated from grading surface. Excavation quantity if for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans.

PRELIMINARY

Design For 0° Skew

110'-0" × 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans 43'-0" Interior Span

Site Plan

STA. 85+50.00 (℄ US 218)

Black Hawk County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 2 of 3 FHWA No. 14791

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER V.02	

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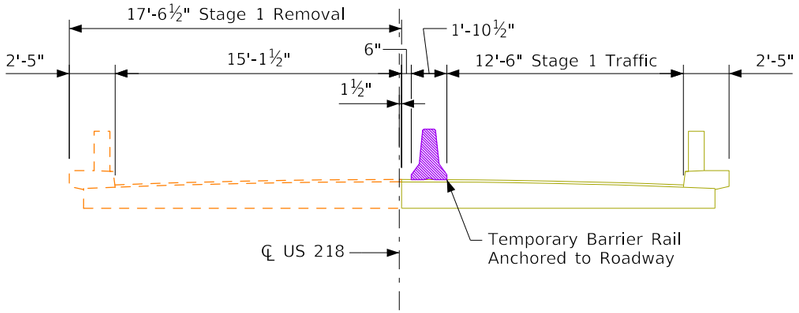
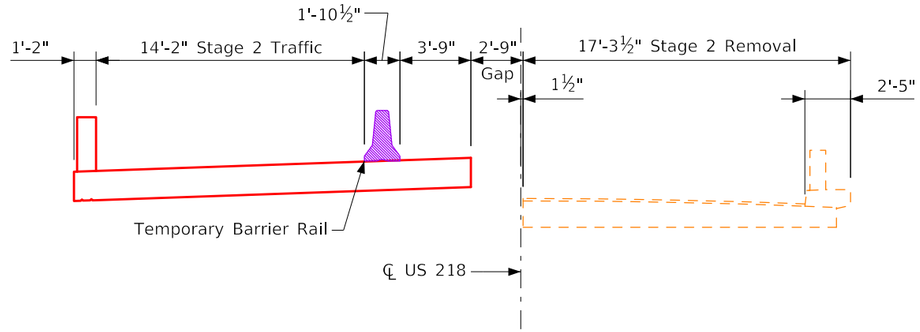
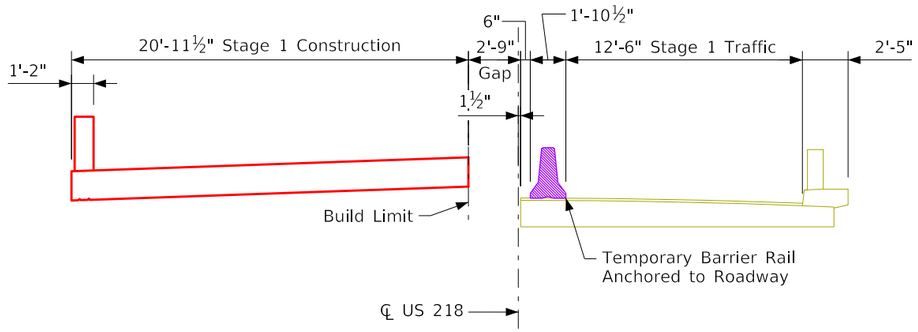
PROGRESS PLANS, NOT FOR CONSTRUCTION



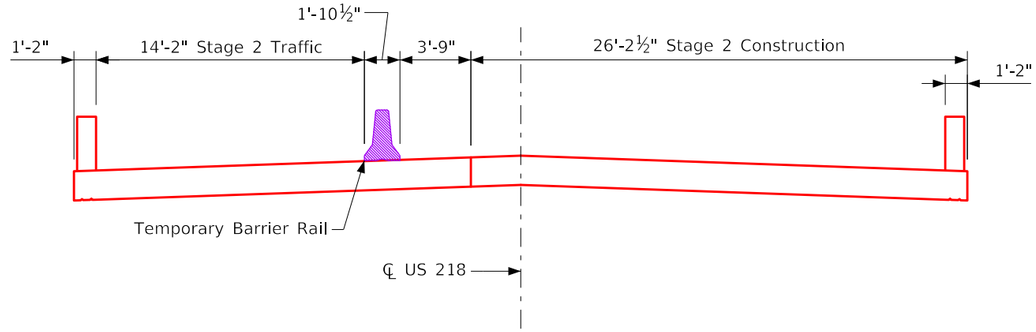
Stage 1 Removals
(Looking North, Typ.)



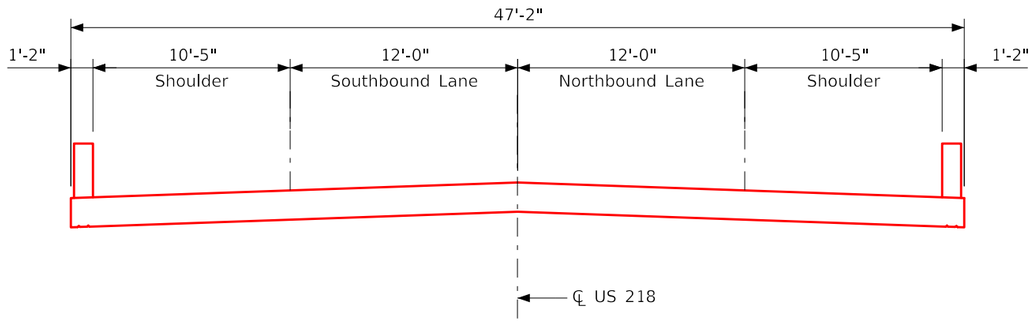
Stage 2 Removals



Stage 1 Construction



Stage 2 Construction



Final Bridge Cross Section

PRELIMINARY

Design For 0° Skew

110'-0" × 44'-0" Continuous Concrete Slab Bridge

33'-6" End Spans 43'-0" Interior Span

Staging Details

STA. 85+50.00 (℄ US 218)

Black Hawk County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 3 of 3 FHWA No. 14791

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER V.03	

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CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature
Aggregate	
(64)	Choke Stone
(42)	Engineering Fabric
(8)	Flooded Backfill
(92)	Macadam Stone
(20)	Modified
(12)	Plowing Shaping
(14)	Porous Backfill
(8)	Revetment Class A
(6)	Revetment Class B
(62)	Revetment Class C
(188)	Revetment Class D
(28)	Revetment Class E
(12)	Shoulder Special Backfill
(12)	Special Backfill
(20)	Subbase
(20)	Subbase Lower
(20)	Subbase Upper
(118)	Subgrade Treatment
Asphalt	
(207)	HMA Base Course
(207)	HMA Interim Course
(207)	HMA Surface Course
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Existing	
(0)	Existing Pavement
Structural	
(112)	Noise Wall
(112)	Noise Wall Footing
(112)	Retaining Wall Back
(112)	Retaining Wall Back Excavate
(112)	Retaining Wall Face
(112)	Retaining Wall Front Excavate
(112)	Retaining Wall Front Footing
(112)	Retaining Wall MSE Gutter
(112)	Retaining Wall Reinforced Earth
Grading	
(8)	Behind Curb Cut
(6)	Granular
(13)	Granular Back Fill
(48)	Rock Undercut
(8)	Shoulder Earth Fill
(2)	Side Slopes
(226)	Side Slopes Dressing
Substrata	
(128)	Boulder Substrata
(48)	Broken Weathered Substrata
(3)	Core Out Substrata
(203)	Existing Pavement Substrata
(6)	Loam Substrata
(80)	Rock Substrata
(4)	Select Sand Substrata
(3)	Shale Substrata
(10)	Topsoil Substrata
Unsuitable / Waste	
(3)	Unsuitable Type A
(13)	Unsuitable Type B
(11)	Unsuitable Type C
(3)	Waste

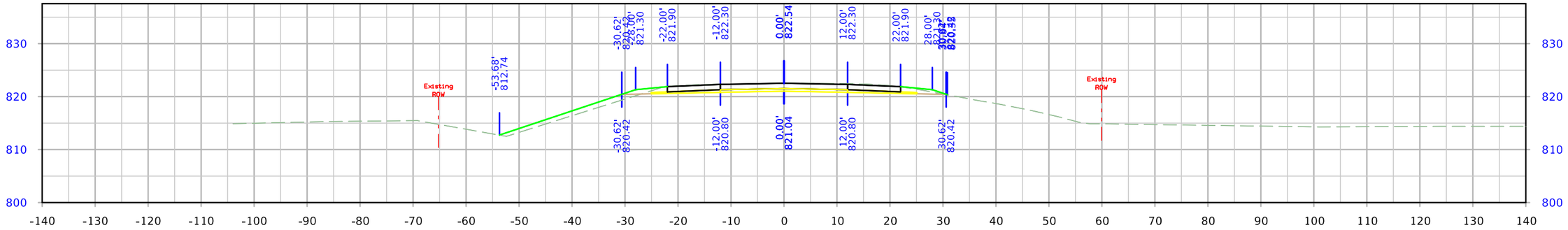
NOTES:

NOTES:

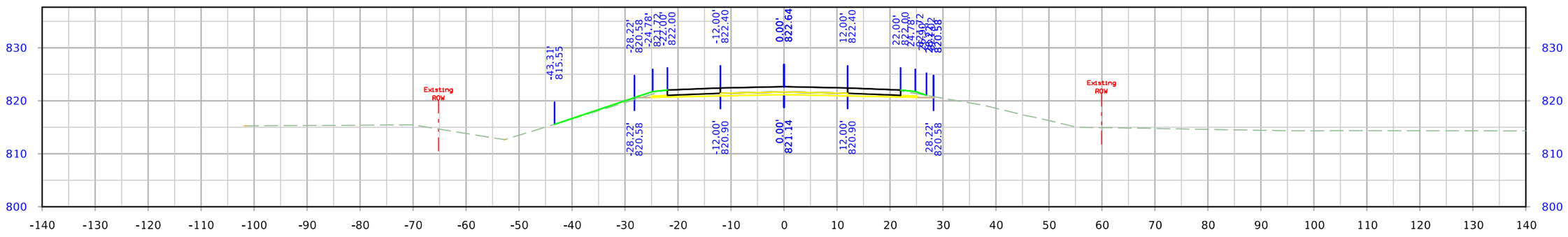
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

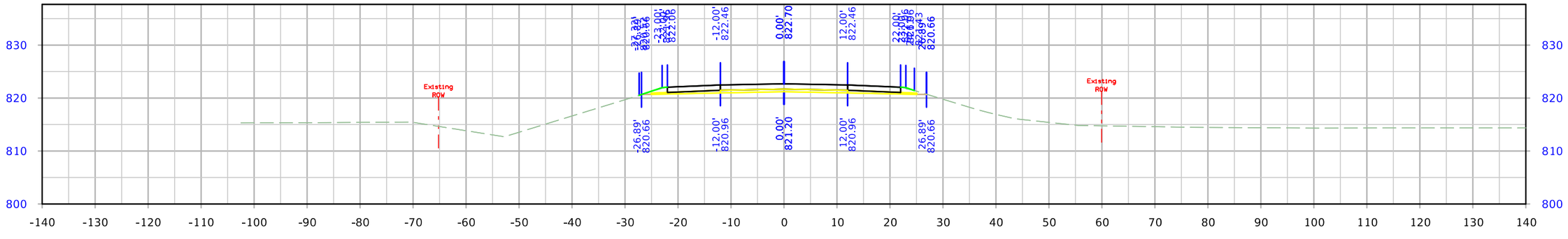
US 218



STA. 83+25.00



STA. 83+00.00



STA. 82+91.09

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.2	

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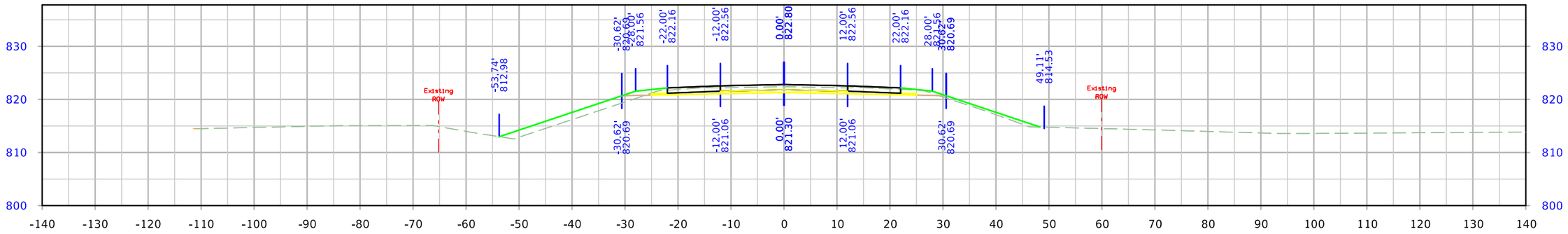
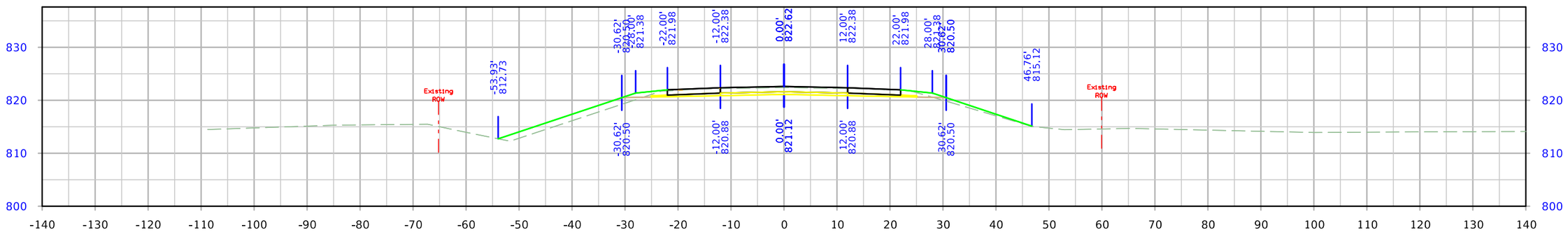
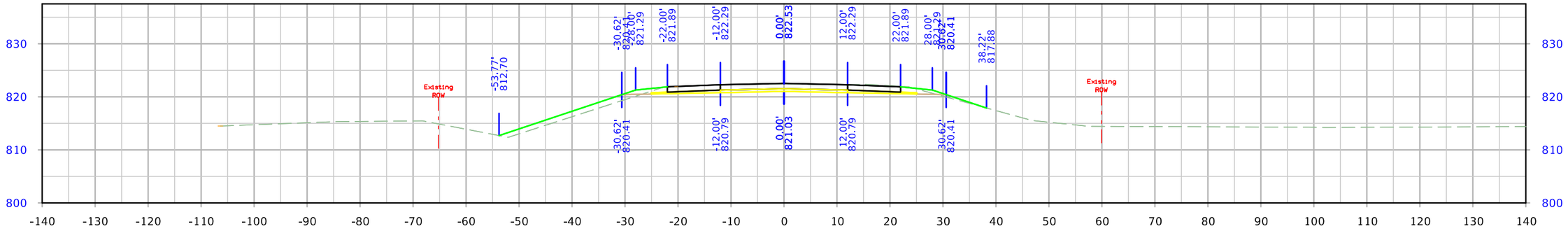
US 218



STA. 84+00.00



STA. 83+75.00



STA. 83+50.00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.3

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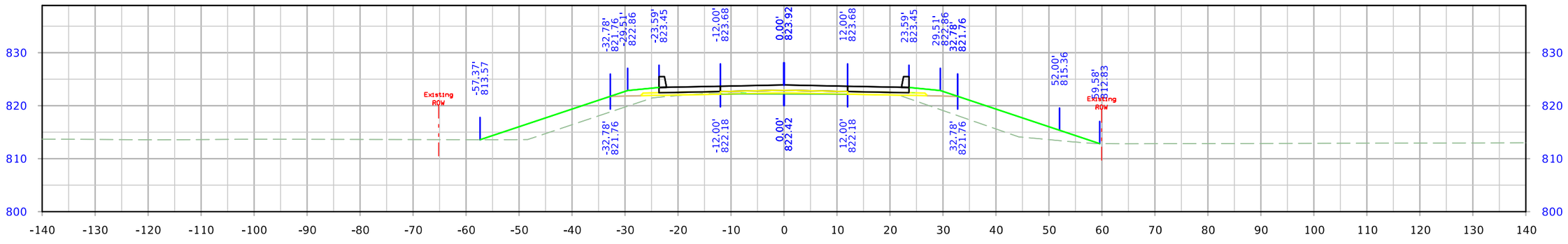
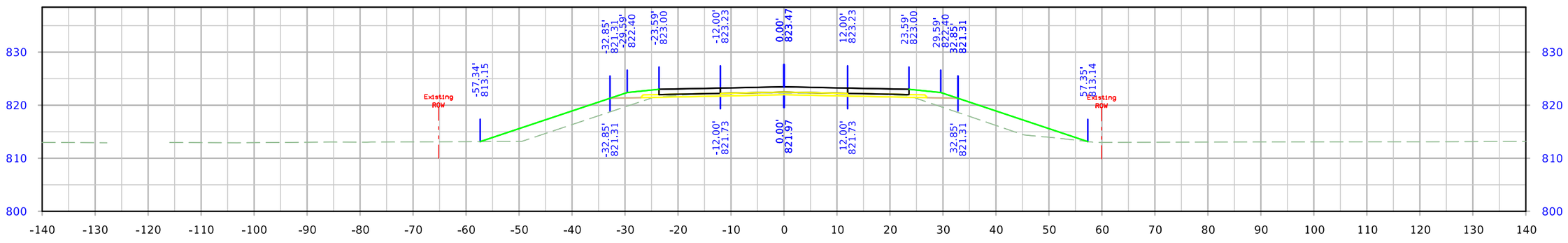
US 218



STA. 84+75.00



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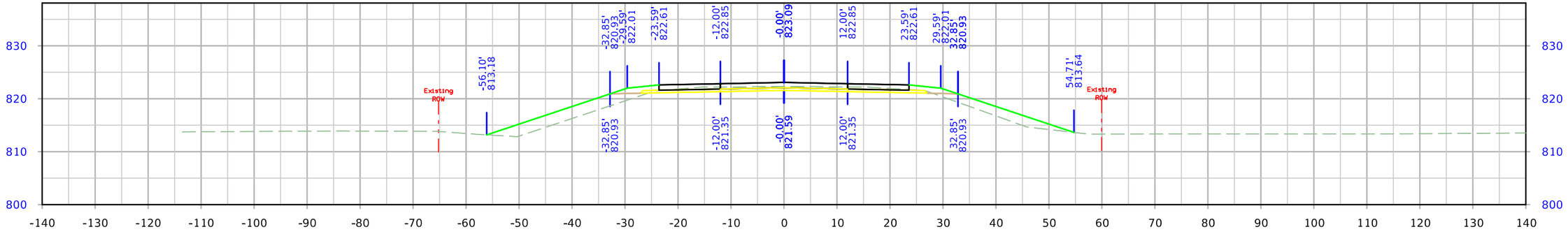

STA. 84+25.00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.4	

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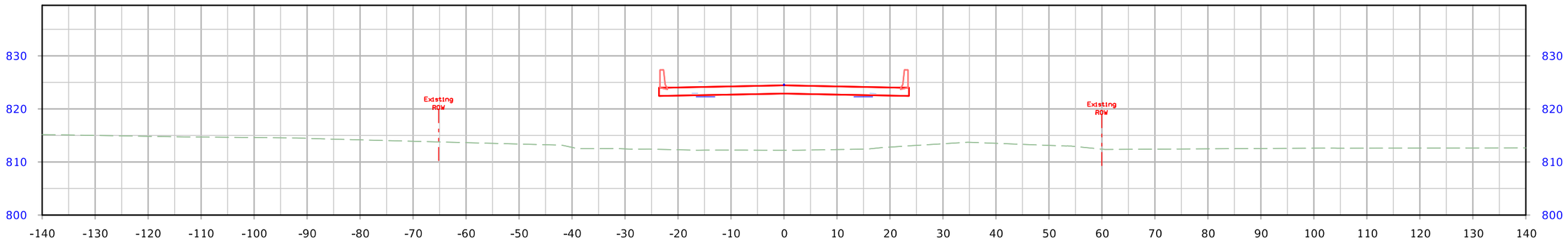
US 218



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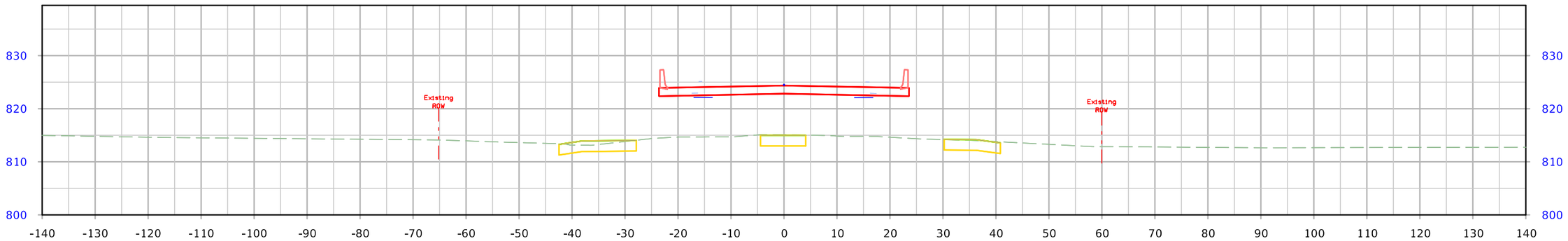

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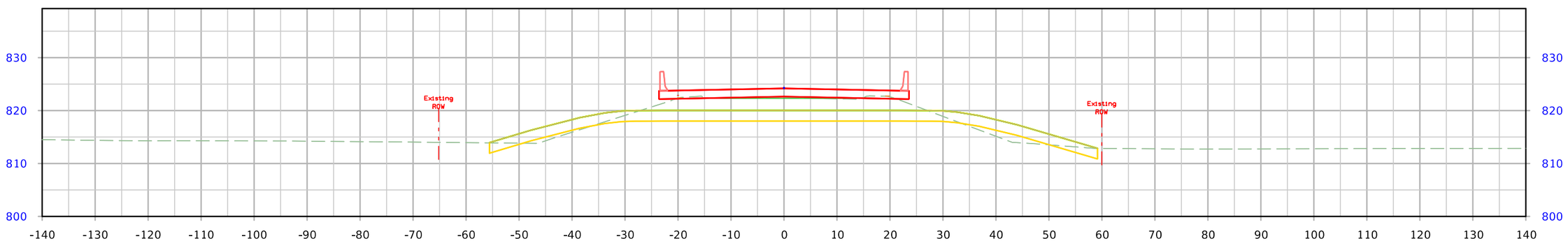
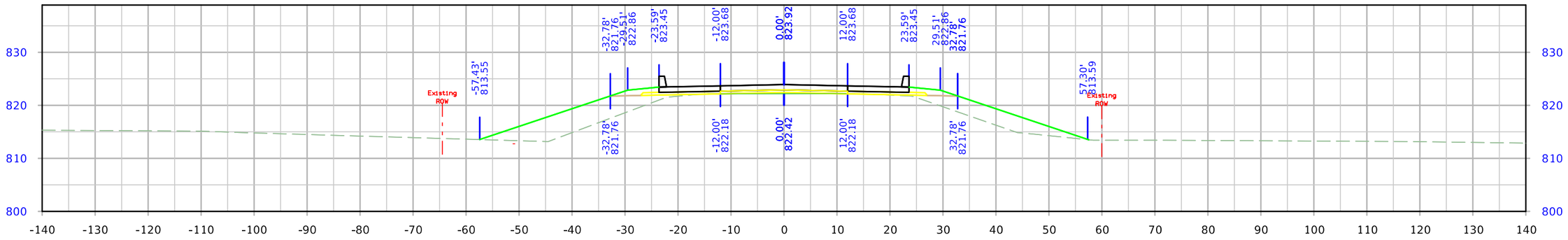


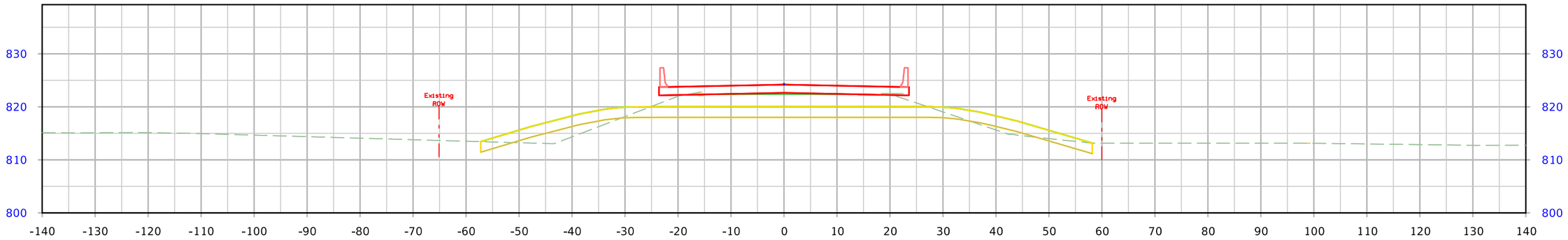
STA. 85+00.00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.5	

US 218



STA. 86+25.00



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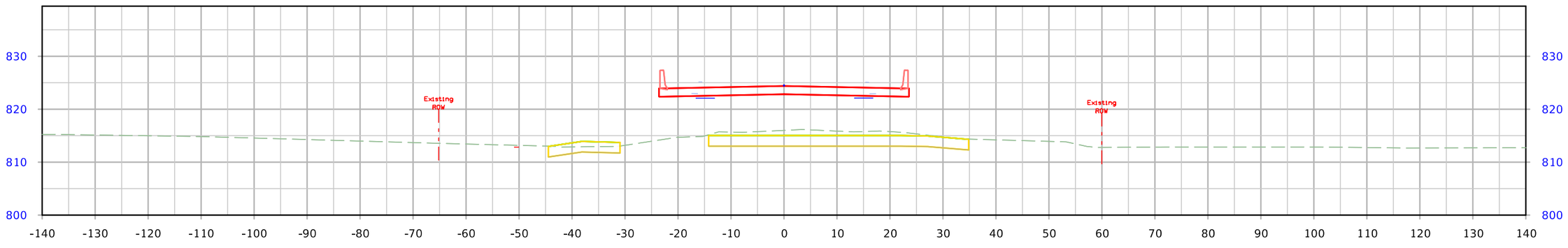

STA. 85+75.00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.6	

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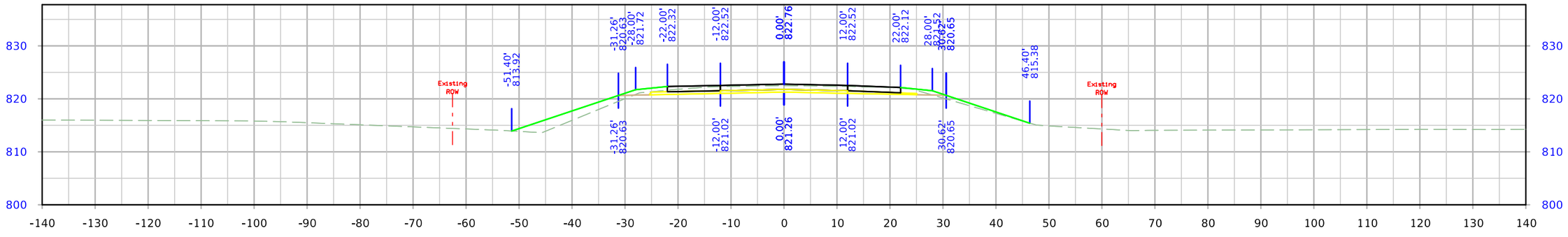
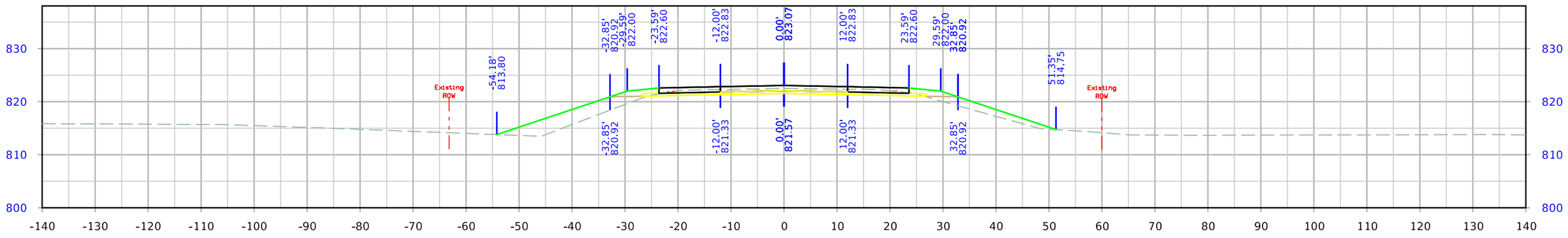
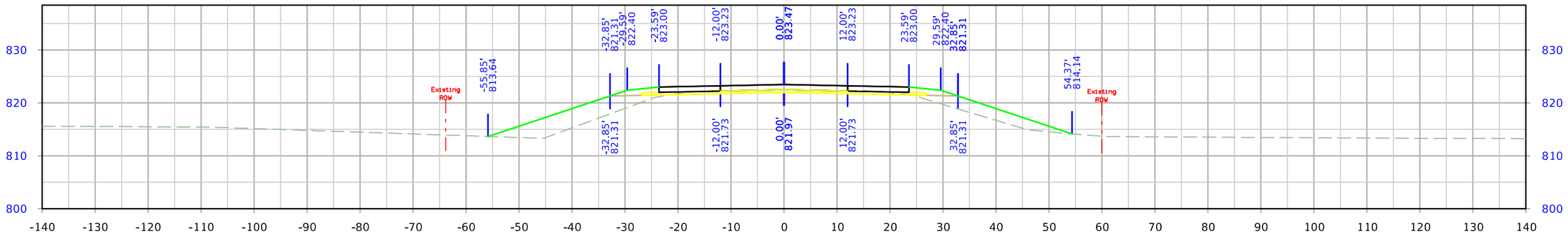
US 218



STA. 87+00.00



STA. 86+75.00



STA. 86+50.00

FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.7

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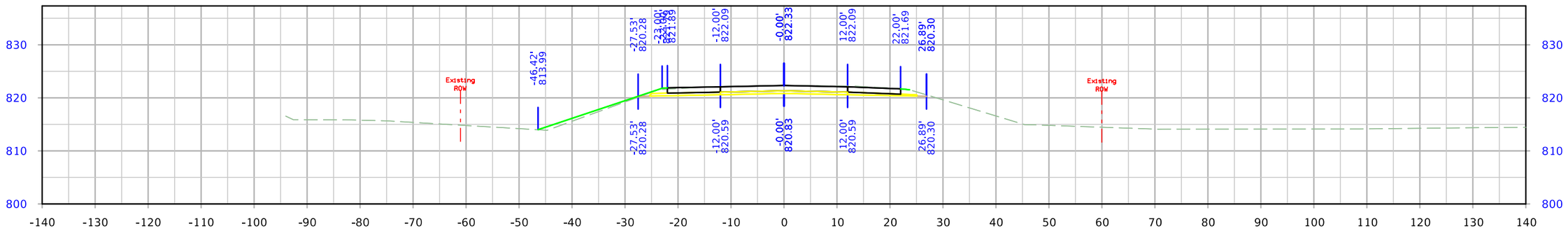
US 218



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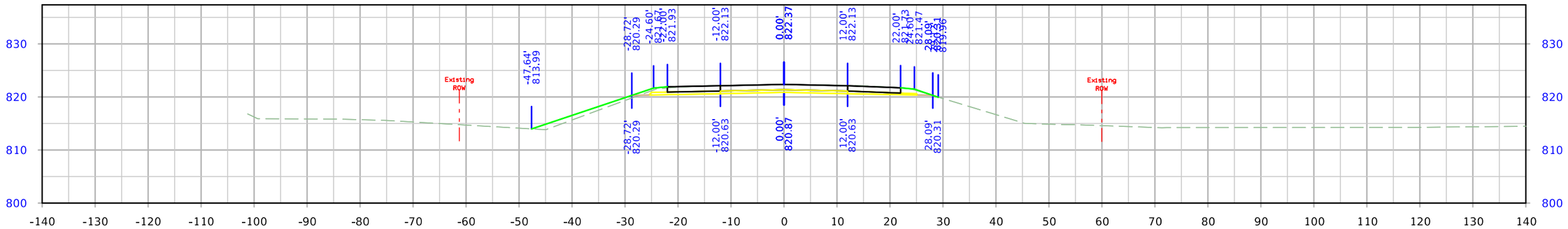
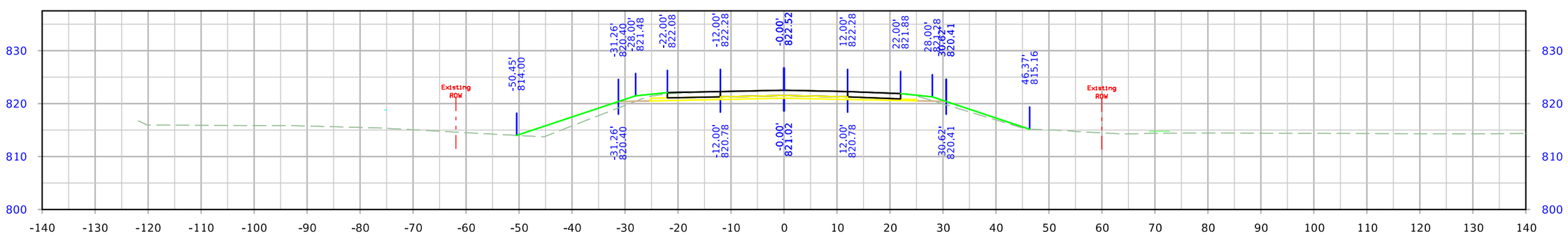


STA. 87+50.00



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FILE NO. 32440	ENGLISH	DESIGN TEAM Stanley Consultants Inc.	BLACK HAWK COUNTY	PROJECT NUMBER BRF-218-7(242)--38-07	SHEET NUMBER W.8	

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