

INDEX OF SHEETS	
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A Sheets	Title Sheets
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B Sheets	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
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* J.2 - 3	Detour Map
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Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

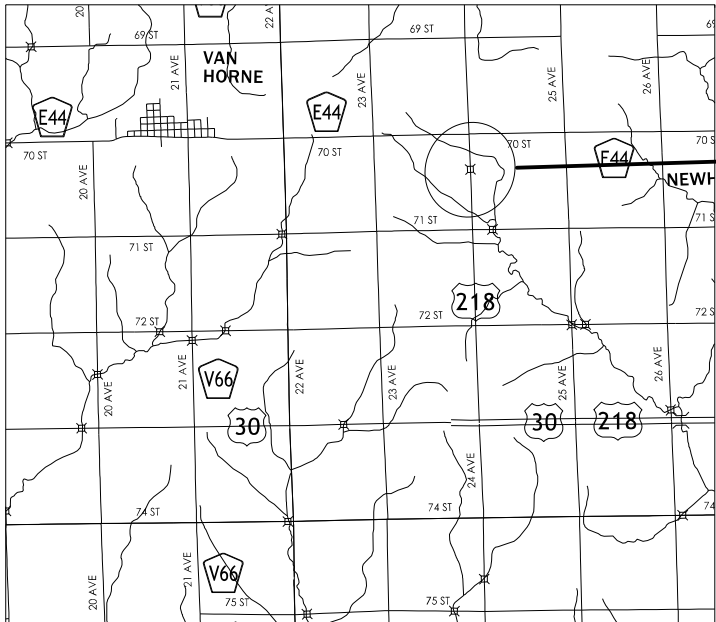
PRIMARY ROAD SYSTEM
BENTON COUNTY
GRADE AND PAVE

Abandoned RR 2.6 mi N of N Jct US 30

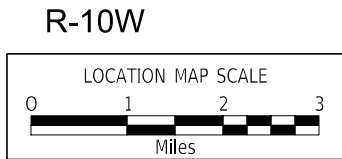
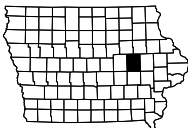
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



PROJECT LOCATION
FHWA # 14301
Maintenance # 0636.8S218



DESIGN DATA RURAL			
2023	AADT	2500	V.P.D.
2043	AADT	2920	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		15	%
Total			
Design	ESALs	--	

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

REVISIONS

TOTAL	
23	
PROJECT IDENTIFICATION NUMBER	
18-06-218-030	
PROJECT NUMBER	
BRF-218-6(58)-38-06	
R.O.W. PROJECT NUMBER	

PRELIMINARY PLANS

Subject to change by final design.

D2/D3 – Date: 10-21-2021

IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE:

District 6

ATTENTION:

Jim Schnoebelen

FROM:

John Bartholomew

OFFICE:

Design

SUBJECT:

Project Concept Statement; (FINAL, D0)

DATE:

October 20, 2020

PROJECT:

Benton County
BRF-218-6(58)--38-06
Pin: 18-06-218-030

This project involves the removal of the US 218 bridge FHWA No. 14301, Maintenance Number 0636.8S218 over an abandoned Railroad, 2.6 miles north of the North Junction of US 30, MP 136.73, Station 139+02.53, Design Number 173.

DATE OF REVIEW: No field review was conducted.

The three alternatives considered were:

1.

Remove bridge, place fill to match existing vertical alignment, grade, reconstruct pavement and replace the existing 24” RCP under the south berm with a 30” RCP, using an off-site detour. The cost of this alternative will be **\$1,211,140**
2.

Replace the existing 24” RCP with a 250’ x 30” RCP under the existing bridge, using the flowable mortar method. Traffic will be maintained at all times. The cost of this alternative will be **\$1,256,000**
3.

Remove bridge, lower the grade 5.5 ft. to better match natural terrain, reconstruct pavement and replace the existing 24” RCP under the south berm with a 250’ x 30” RCP. This alternative was dismissed due to increased costs and longer construction time.

Alternative #2 is the preferred alternative as it is able to maintain traffic at all times on US 218 with only a minor increase in cost.

The Draft Project Concept Statement was sent out for review and comment with concerns to be resolved by Monday, October 19, 2020. Comments received during the review period have been considered and resolved.

This project is recommended for construction in FY 2023. The Design Bureau will coordinate plan preparation with assistance from the Bridge Bureau.

JB
cc:

- C. Purcell

M. J. Kennerly

K. D. Nicholson
- S. J. Megivern

J. S. Nelson

B. Walls
- M. Nop

M. A. Swenson

R. A. Younie
- S. Majors

K. Brink

D. L. Newell
- J. W. Laaser-Webb

W. A. Sorenson

D. E. Sprengeler
- E. C. Wright

M. E. Ross

A. A. Welch
- N. M. Miller

C. C. Poole

B. Hofer
- B. E. Azeltine

T. D. Crouch

S. J. Gent
- S. Anderson

D. Stokes

J. Selmer
- K. K. Patel

S. Godbold

J. Vortherms
- D. R. Claman

J. Hauber

A. Abu-Hawash
- M. E. Khoda

K. Olson

S. Neubauer
- D. Mulholland

E. Engle

M. Hobbs
- N. M. Abuissa

V. A. Brewer

C. L. Cutler
- M. J. Donovan

S. W. Flockhart

S. McElmeel
- M. K. Solberg

T. M. Storey

J. J. Tjaden
- R. R. Walton

J. Tibodeau

M. Sloppy

FINAL PROJECT CONCEPT STATEMENT

US 218 bridge over Abandoned R.R. 2.6 miles north of North Junction US 30

Benton County
BRF-218-6(58)--38-06
PIN: 18-06-218-030
Maint. No.0636.8S218
FHWA No. 14301

Highway Division
Design Bureau

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

October 20, 2020

I. STUDY AREA

A. Project Description

This project involves the replacement of the US 218 bridge (Maint. No. 0636.8S218) over an abandoned Railroad, 2.6 miles north of the North Junction of US 30.

The three alternatives considered were:

1. Remove bridge, place fill to match existing vertical alignment, grade, reconstruct pavement and replace the existing 24” RCP under the south berm with a 30” RCP, using an off-site detour. The cost of this alternative will be **\$1,211,140**
2. Replace the existing 24” RCP with a 250’ x 30” RCP under the existing bridge, using the flowable mortar method. Traffic will be maintained at all times. The cost of this alternative will be **\$1,256,000**
3. Remove bridge, lower the grade 5.5 ft. to better match natural terrain, reconstruct pavement and replace the existing 24” RCP under the south berm with a 250’ x 30” RCP. This alternative was dismissed due to increased costs and longer construction time.

Alternative #2 is the preferred alternative as it is able to maintain traffic at all times on US 218 with only a minor increase in cost.

Benton County
BRF-218-6(58)—38-06
PIN: 18-06-218-030
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B. Need for Project

US 218 is a two-lane roadway. The existing structure is a 3 span, 175 ft. x 44 ft., pretensioned prestressed concrete beam bridge constructed in 1974. A barrier rail modification was done in 1998 which the existing rail was removed, and a cast-in-place concrete barrier rail was installed. The bridge deck and structure show signs of deterioration which would require an overlay and, the paving notches should be addressed. Since the bridge no longer serves its intended purpose, this bridge should be removed instead of repaired. The District also advised that instead of bridge repairs, a removal of the bridge would be prudent. Removal could be done without any easement issues since it has been verified that the railroad no longer has ROW.



Looking North



Looking South



North Profile



South Profile

C. Present Facility

The existing structure is a 172’ x 44’ PPCB bridge constructed in 1973.

US 218 in the project area is 24’ wide PCC pavement with 10’ wide combination shoulders (3ft. HMA and 7 ft. granular) and 3:1 foreslopes, constructed in 1973. HMA resurfacing was accomplished in 1992 (3” HMA) and 2015 (3.5” HMA).

D. Traffic Estimates

The 2023 construction year and 2043 design year average daily traffic estimates are 2,500 ADT with 15% trucks and 2920 ADT with 15% trucks, respectively.

E. Sufficiency Ratings

US 218 is classified as an ‘Area Development’ route and is a maintenance service level “C” road. US 218 is part of the National Highway System. The federal bridge sufficiency rating is 92.8.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2015 through December 31, 2019, there were 0 crashes.

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 – Removal of existing bridge deck and beams, using an off-site detour

The existing 172’ x 44’, PPCB bridge that spans over an abandoned railroad will be removed and replaced with embankment material and new pavement. A 250’ x 30” 4000D reinforced concrete pipe will be required to maintain drainage.

The typical cross section will consist of a 24’ roadway (32’ wide pavement) with 10’ effective shoulders (4’ paved and 6’ granular) and 3:1 foreslopes. The pavement will be 9.5” PCC over 12” of modified subbase. Longitudinal subdrains will be installed.

The roadway will be constructed on the existing horizontal and vertical alignment. The existing ditches will need to be relocated to meet the flowlines of the new RCP culvert location.

The contractor will place and compact embankment under the existing bridge. Once as much embankment as possible has been placed and compacted, the roadway will be closed for the removal of the bridge deck, beams, adjacent bridge approach sections, placement of the remaining quantities of embankment, and construction of the new roadway.

Based on a review of the soil sheets from ERMS, and NCRS soil maps, Soils Design estimates there is approximately 7 feet of soft sandy silty (loess) soils underlain by about 5 feet of stiffer (but still likely compressible) sandy clay underlain by very stiff, relatively incompressible glacial till at this site. Estimating a compressibility in the range of 5 to 6 percent for the upper 12 feet of silty to sandy soils, these soils could be anticipated to settle on the order of 7 to 9 inches under new embankment fill. This settlement could be reduced by a partial core-out and replacement of the upper soils (5 feet). Or the majority of the settlement (80 to 90 percent) could be waited out with a delay in paving after completing the embankment fill. Soils Design recommends a couple of soil borings in order to obtain information to confirm these estimates and a time-rate of settlement.

The closure for the removal of the existing bridge deck and beams and the construction of the new roadway will take approximately 30 days. Traffic will be detoured to an off-site detour.

The drainage area to the site is approximately 20 acres of rolling/flat topography.

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

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

Traffic will be maintained by an off-site detour.

Bridge Items	Estimated Costs
Bridge Removal	\$113,520
Storm pipe fill, plug, and abandon	\$10,300
30” Apron	\$3,300
30” Culv, Concrete Pipe 4000D	\$92,400
Mobilization - 10%	\$21,952
M & C - 15%	<u>\$32,928</u>
Bridge Costs	\$ 274,400
Roadway Items	
Porous backfill	\$700
Special backfill	\$21,100
PCC Pavement	\$40,500
Granular Shoulder	\$6,000
Granular Subbase	\$15,000
Embankment in place, contractor furnished	\$100,500
Guardrail (Removal)	\$5,000
Paved Shoulders	\$14,500
Floodable backfill	\$360,500
Removal of Pavement	\$9,800
Topsoil, Strip, Salvage, and Spread	\$32,800
Subdrain & outlets (4”)	\$11,700
Engineering Fabric	\$1,000
Erosion Control	\$50,000
Traffic Control - 5%	\$33,455
Mobilization - 5%	\$33,455
M & C - 30%	<u>\$200,730</u>
Roadway costs	\$ 936,740
Project Total	\$1,211,140

Alternative #2 - Replace with a culvert utilizing the flowable mortar method

A 250’ x 30” 4000D reinforced concrete pipe (RCB), will be constructed under the existing 172’ x 44’ bridge utilizing the flowable mortar method. The typical section beyond the bridge will consist of a 24’ roadway (32’ wide pavement) with 10’ effective shoulders (4’ paved and 6’ granular) and 3:1 foreslopes.

The new RCP can be built under the existing bridge without disturbing the bridge. After the pipe has been constructed, flooded granular backfill and flowable mortar will be used to fill the void between the RCP and bridge deck. Due to the existence of compressible soils, several applications of flowable mortar may be necessary to maintain contact with the bridge deck. Once the new embankment for the shoulders and 3:1 foreslopes have been placed adjacent to the bridge, the existing concrete bridge barrier, curb, and guardrail can be removed. The existing ditches will need to be relocated to meet the inlet and outlet flowlines of the new RCP. Class E revetment will be placed at the ends of the RCP.

Similar to Alternative #1, approximately 5 feet of compressible soils will need to be removed prior to the placement of the new RCP and new embankment and flowable mortar. Due to the extra load of the flowable mortar in this alternative, it may be necessary to implement an HMA overlay following any settlement of the bridge deck and piers due to the new loading.

The drainage area to the site is approximately 20 acres of rolling/flat topography.

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

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

Traffic will be maintained at all times. However, it will be necessary to reduce traffic down to one lane via the use of flaggers during the removal of the bridge rail, guardrail and placement of the flowable mortar.

Bridge Items	Estimated Costs
Bridge Rail Removal	\$17,500
Storm pipe fill, plug, and abandon	\$10,300
30” Apron	\$3,300
30” Culv, Concrete Pipe 4000D	\$92,400
Mobilization - 10%	\$12,350
M & C - 15%	<u>\$18,550</u>
Bridge Costs	\$ 154,400

Roadway Items

Porous backfill	\$700
Special backfill	\$21,100
PCC Pavement	\$40,500
Granular Shoulder	\$6,000
Granular Subbase	\$15,000
Embankment in place, contractor furnished	\$100,500
Guardrail (Removal)	\$5,000
Paved Shoulders	\$14,500
Floodable backfill	\$307,500
Flowable mortar	\$148,500
HMA (including binder)	\$22,250
Removal of Pavement	\$9,800
Topsoil, Strip, Salvage, and Spread	\$32,800
Subdrain & outlets (4")	\$11,700
Engineering Fabric	\$1,000
Erosion Control	\$50,000
Traffic Control - 5%	\$39,350
Mobilization - 5%	\$39,350
M & C - 30%	\$236,050
Roadway costs	\$1,101,600

Project Total **\$1,256,000**

Alternative #3 - Replace with a culvert and lower grade

Alternative #3 was dismissed due to the increased length of reconstruction required to lower the roadway grade, the higher time of construction, and the increased time spent on out of distance travel for he public.

B. Detour Analysis

Traffic will be maintained at all times.

C. Recommendations

It is recommended that a 240' x 30" diameter, 4000D strength reinforced concrete pipe (RCP) be installed using the flowable mortar method, leaving the existing bridge deck with bridge rails removed as described in Alternative #2.

D. Construction Sequence

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

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to US 218; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

This will not be a traffic critical project.

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

No additional survey is needed at this time.

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

The Location and Environment Bureau has completed a desktop review of the project area and determined that it is unlikely that the project will require a Section 404 permit.

F. Program Status

Site data has been developed by the Office of Design. This project is listed in the 2021-2025 Iowa Transportation Improvement Program, with \$ 2,500,000 programmed for replacement in FY 2023. A schedule of events will be developed following approval of the Project Concept.

JEB

Benton County
BRF-218-6(58)—38-06
PIN: 18-06-218-030
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Utilities

ALLIANT ENERGY
Mary Montgomery
Electric Distribution
Gas Distribution
Gas Transmission
PO Box 351
Cedar Rapids, IA 52406-9874
(319)-786-4768
MaryMontgomery@alliantenergy.com

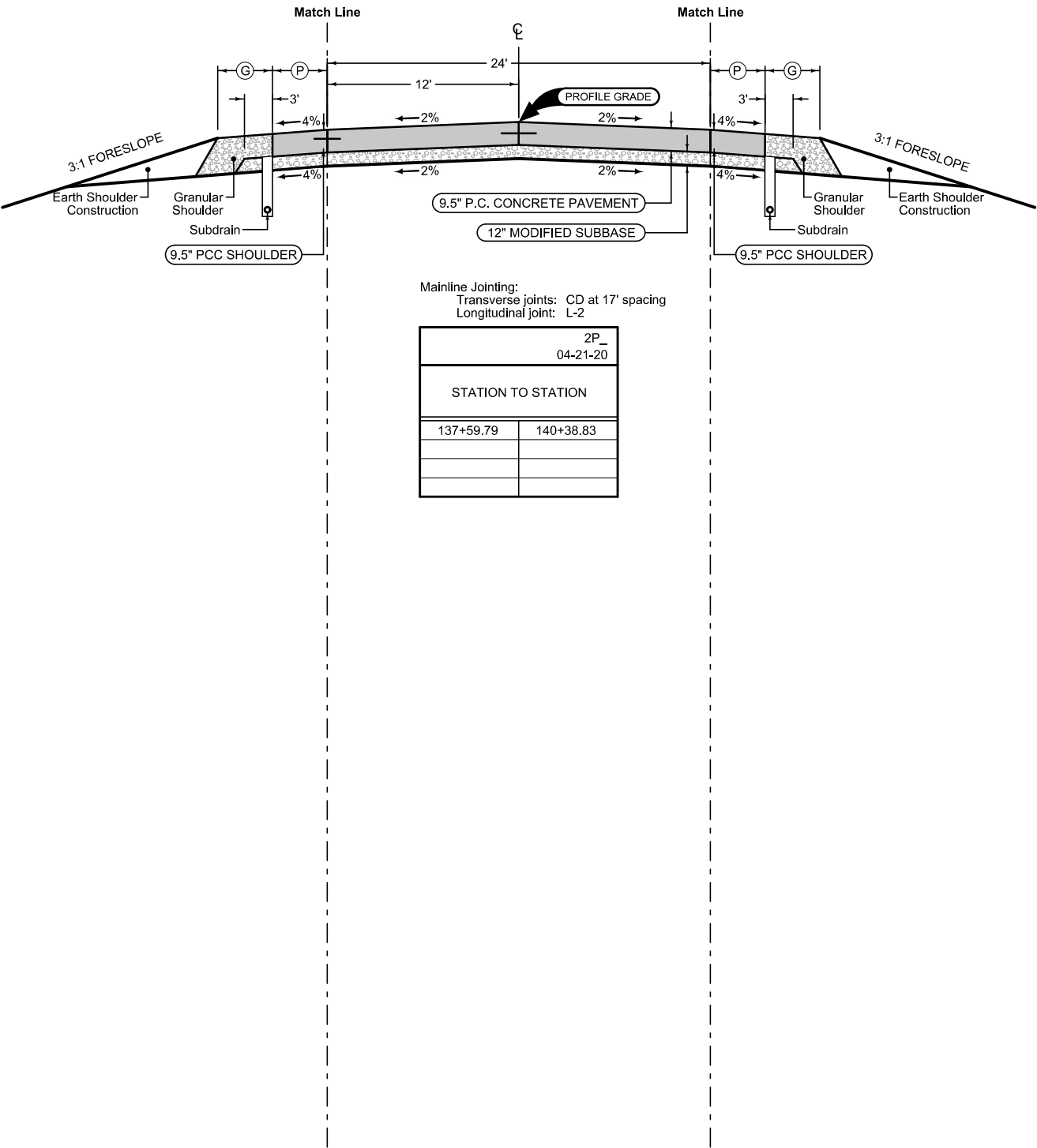
SOUTH SLOPE COOPERATIVE COMMUNICATIONS
Mark Ditch
Fiber Distribution
Telephone
970 N. Front St.
North Liberty, IA 52317
(319)-626-2211
mark@southslope.com

VAN HORNE COOPERATIVE TELEPHONE COMPANY
Ron Schnor
Cable TV
Telephone
204 Main Street
North English, IA 52346
(319)-228-8791
ronschnor@netins.net

Full Depth PCC Combination Shoulder

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

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
137+59.79	140+38.83	6	4

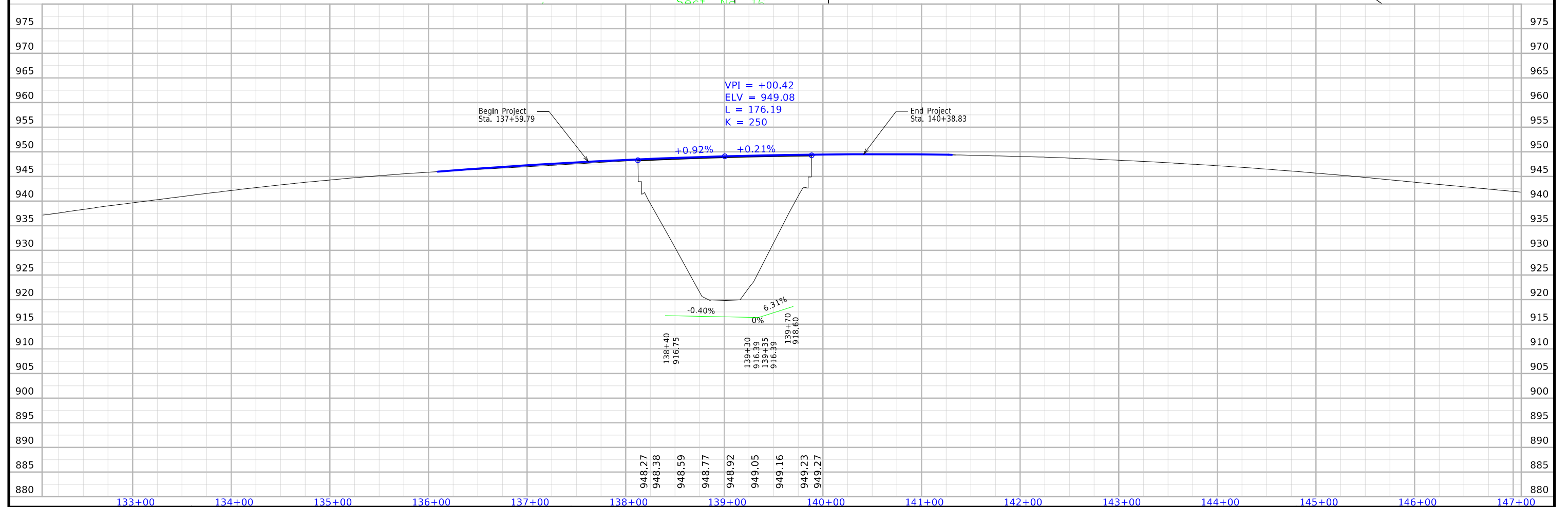
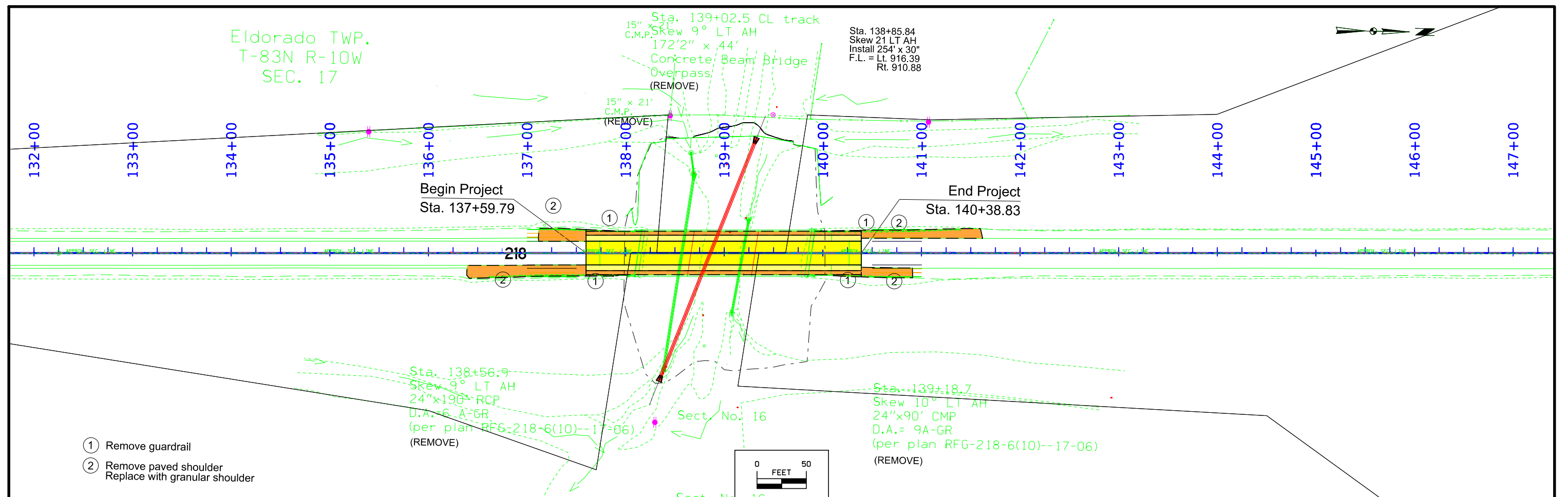


Full Depth PCC Combination Shoulder

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

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
137+59.79	140+38.83	6	4

US 218



Benton County
BRF-218-6(58)—38-06
Abandoned RR 2.6 mi N of N Jct. US 30
PCC Pavement – Grade and Replace
PIN 18-06-218-030
Sap-761.1

Party Personnel
Jason Page – Survey Party Chief
John Hahn - Assistant Survey Party Chief

Date(s) of Survey
Begin Date 03/18/2020
End Date 08/27/2020

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge removal and reconstruction of US Hwy. 218 over abandoned RR grade. Project datum and control information is provided by Design Survey Office. This project is a Full DTM. This survey request was for the US Hwy. 218 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. 100, 2181363, 2181371, and GSVS 184 by conducting one concurrent six-hour static observation. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup relative to Pt. 100 and Pt. 2181363. Two observations with a minimum of four-hours between were collected and used in a weighted average.

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

NGS 2nd. order class I mark designated GSVS 184 has a published Elev. of 897.79
Survey Elev. = 897.59

This survey observed 2 As-Built plan benchmarks to compare to local ground control:

BM No. 1 As-built Plans Project RFG-218-6(10)—17-06 Grade and Pave Elev. 888.69
Survey Elev. = 889.51

BM No. 9 As-built Plan Project RFG-218-6(10)—17-06 Grade and Pave Elev. 949.50
Survey Elev. = 950.13

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 10 (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 one concurrent six-hour static observation at project control Pts. 100, 2181363, 2181371, and GSVS 184.

Utility Information
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

A One-call Design Information Request (Ticket# 552005125) was made July 30, 2020. The following Companies were listed:

(ANE) ALLIANT ENERGY
Contact Name: Alliant Energy Field Engineer
Contact Phone: 8002554268
Contact Email: locate_IPL@alliantenergy.com

(SSC) SOUTH SLOPE TELEPHONE
Contact Name: Brian Frese
Contact Phone: 3192277111
Contact Email: brian@southslope.com

(VH2) VAN HORNE COOPERATIVE TELEPHON
Contact Name: Ron Schnor
Contact Phone: 3192288791
Contact Email: ronschnor@netins.net

Following are the list of contacts made:

Alliant Energy – 7/30/2020 Received an e-mail from Randy Cink, RandyCink@alliantenergy.com, with a .pdf map attached showing their facilities in the project area.

South Slope Telephone – 7/30/2020 Received an e-mail from Brian Frese, brian@southslope.com, stating they have no facilities in the project area.

The Design Information Request (Ticket# 552005125) was converted to a Locate Request (Ticket# 552005266) on 8/06/2020. The following companies were notified:

(ANE) ALLIANT ENERGY
Contact Name: Alliant Energy Field Engineer
Contact Phone: 8002554268
Contact Email: locate_IPL@alliantenergy.com
Locate Requested: N

(SSC) SOUTH SLOPE TELEPHONE
Contact Name: Brian Frese
Contact Phone: 3192277111
Contact Email: brian@southslope.com
Locate Requested: N

(VH2) VAN HORNE COOPERATIVE TELEPHON
Contact Name: Ron Schnor
Contact Phone: 3192288791
Contact Email: ronschnor@netins.net
Locate Requested: N

As of August 6, 2020, all tickets were closed and reported as clear. No marking took place in the field. Alliant Energy overhead electric facilities were surveyed on 8/04/20.

SURVEY SYMBOLS

- CP Control Point
- ▲ SCR Section Corner
- EP Edge of Paved Roads (ML or SR)
- WC Wild Card (Misc. Field Shot)
- BL Topo Breakline
- GDL Guard Rail Steel
- SH Paved Shoulder
- CU Back of Curb
- GU Gutter In Front of Curb
- C Centerline BL of Road (ML or SR)
- — — SNP Unpaved Shoulder
- LIN Miscellaneous Line
- BRG Bridge
 - BD Bridge Deck
 - BCL Bridge Centerline
 - GR Ground Shot
- ⚡ PPA Power Pole Co. 1
- 📷 PLG Location of General Photo
- D Centerline Draw or Stream (Down)
- FW Wire Fence
- ⊗ INB Storm Sewer Beehive Intake
- DU Centerline Draw or Stream (Up)
- PIP Pipe Culvert
 - SOP Size of Pipe or Culvert
- CON Concrete or A/C Slab
- - - - - ENT Centerline BL of Entrance
- - - - - ENU Edge Unpaved Entrance & Parking
- ENP Edge Paved Entrance & Park Lot
 - TOP Top of Bridge Pier
 - BLS Bridge Low Steel
 - PRO Profile Shot
 - SBR Size of Bridge

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

⚡ PPA Power Pole Alliant Energy

Survey Information

Benton County
BRF-218-6(58)—38-06
Abandoned RR 2.6 mi N of N Jct. US 30
PCC Pavement – Grade and Replace
PIN 18-06-218-030
Sap-761.1

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge removal and reconstruction of US Hwy. 218 over abandoned RR grade. Project datum and control information is provided by Design Survey Office. This project is a Full DTM. This survey request was for the US Hwy. 218 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. 100, 2181363, 2181371, and GSVS 184 by conducting one concurrent six-hour static observation. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup relative to Pt. 100 and Pt. 2181363. Two observations with a minimum of four-hours between were collected and used in a weighted average.

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BM No. 1 As-built Plans Project RFG-218-6(10)—17-06 Grade and Pave Elev. 888.69
Survey Elev. = 889.51

BM No. 9 As-built Plan Project RFG-218-6(10)—17-06 Grade and Pave Elev. 949.50
Survey Elev. = 950.13

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans Project Nos. RFG-218-6(10)—17-06 and FN-58 ROW. Survey stationing was equated to the RFG-218-6(10)—17-06 plan POT at Sta. 125+00.00 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 105+77.3 As-built Plans Project No. FN-58 ROW
Survey PI Sta. 105+82.35

PI Sta. 115+77.0 As-built Plans Project No. FN-58 ROW
Survey PI Sta. 115+82.07

POT Sta. 125+00.0 As-built Plans Project No. RFG-218-6(10)—17-06
Survey POT Sta. 125+00.00

POT Sta. 132+25.7 As-built Plans Project No. FN-58 ROW
Survey POT Sta. 132+25.72

POT Sta. 139+02.53 As-built Plans Project No. RFG-218-6(10)—17-06
Survey POT Sta. 139+02.51

POT Sta. 158+29.70 As-built Plans Project No. RFG-218-6(10)—17-06
Survey POT Sta. 158+28.59

PI Sta. 158+65.9 As-built Plans Project No. FN-58 ROW
Survey PI Sta. 158+63.82

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 10 (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 one concurrent six-hour static observation at project control Pts. 100, 2181363, 2181371, and GSVS 184.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans Project Nos. RFG-218-6(10)—17-06 and FN-58 ROW. Survey stationing was equated to the RFG-218-6(10)—17-06 plan POT at Sta. 125+00.00 and run back and ahead without equation throughout the survey.

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PI Sta. 105+77.3 As-built Plans Project No. FN-58 ROW
Survey PI Sta. 105+82.35

PI Sta. 115+77.0 As-built Plans Project No. FN-58 ROW
Survey PI Sta. 115+82.07

POT Sta. 125+00.0 As-built Plans Project No. RFG-218-6(10)—17-06
Survey POT Sta. 125+00.00

POT Sta. 132+25.7 As-built Plans Project No. FN-58 ROW
Survey POT Sta. 132+25.72

POT Sta. 139+02.53 As-built Plans Project No. RFG-218-6(10)—17-06
Survey POT Sta. 139+02.51

POT Sta. 158+29.70 As-built Plans Project No. RFG-218-6(10)—17-06
Survey POT Sta. 158+28.59

PI Sta. 158+65.9 As-built Plans Project No. FN-58 ROW
Survey PI Sta. 158+63.82

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

1a. Regional Coordinate System Zone 10

Coordinate listing from next sheet will be used with 1aRTN 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 10

Project Control Marks are Benchmarks

Point Name	North Coordinate	East Coordinate	Elevation	Feature Code- Monument Description
100	8061421.874	20401589.273	946.408	CP SET 5/8X40 RBR W/DIMPLE TOP BRIDGE BERM 28FT WEST OF CTR HWY 218 AND 91FT SSW OF END SW WING RR OVERPASS BRIDGE
2181363	8059241.416	20401712.087	886.495	CP FD CONC MON 58FT EAST OF CTR US HWY 218 AND 90FT SE OF IHC BRASS PLUG INLT HDWLL RCB AND 125FT SOUTH OF CONC MON
2181371	8063722.660	20401658.496	929.125	FENO SET FENO MON 155FT NORTH OF CTR CO RTE E 44 AND 80FT EAST OF CTR US HWY 218 AND 1.2FT NW OF 5/8 RBR REF POINT
GSVS184	8047515.705	20408100.685	897.594	CP FD NGS VERT ORDER - SECOND CLASS I CONC MON DESIGNATED GSVS 184 WITH WITNESS POST 320FT WEST OF MM 235 AND 44FT SOUTH OF EDGE LINE E BOUND US HWY 30

108-23A
08-01-08

TRAFFIC CONTROL PLAN

U.S. 218 will be closed during construction. Through traffic shall be detoured to U.S. 30, V66, and IA 199.
Refer to J.2-3 sheets for the proposed detour.

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
			No Travel Restrictions Expected									

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	

FILE NO.

ENGLISH

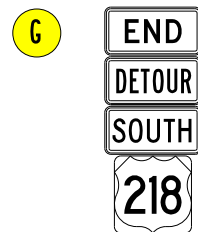
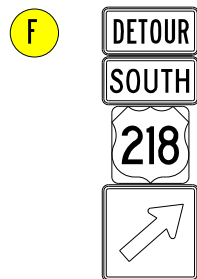
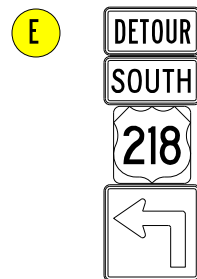
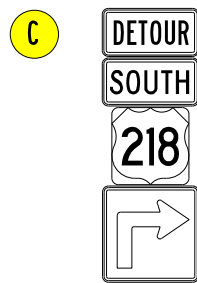
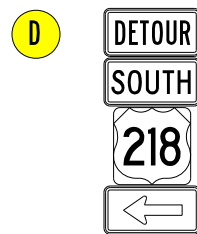
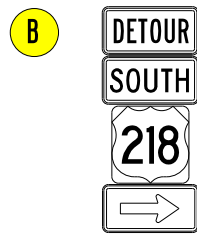
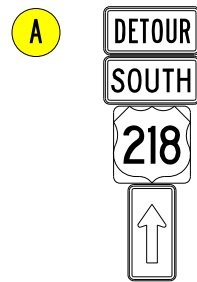
DESIGN TEAM Jia\Altenhofen\

BENTON COUNTY

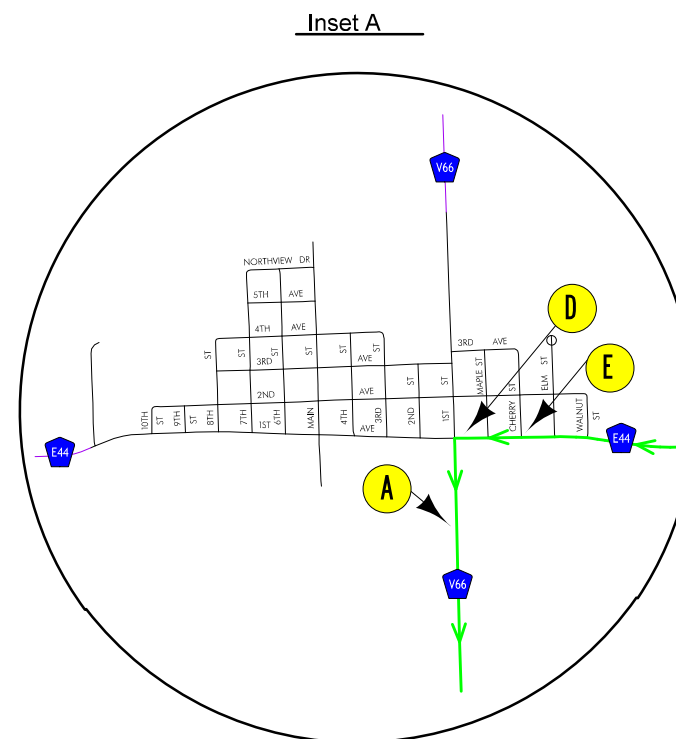
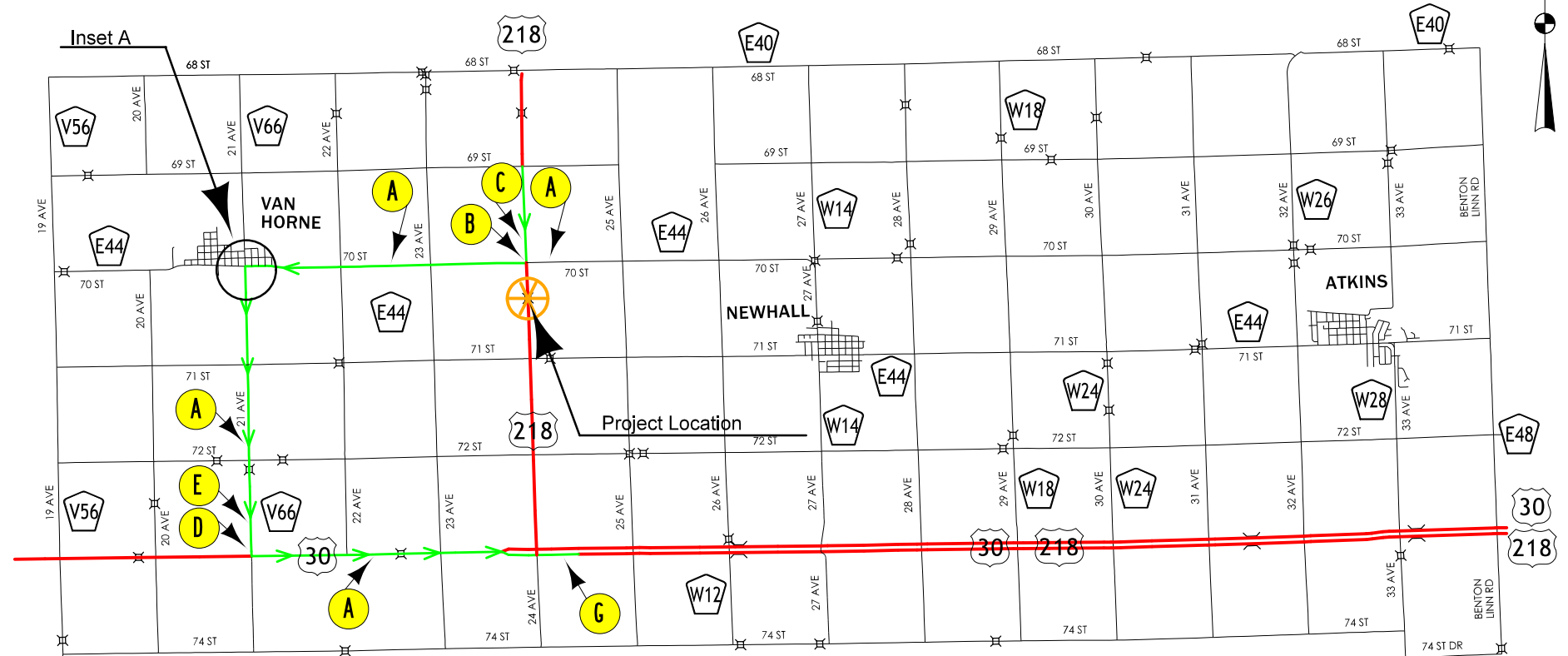
PROJECT NUMBER BRF-218-6(58)--38-06

SHEET NUMBER J.1

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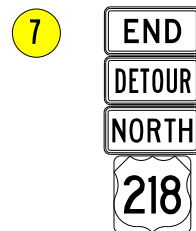
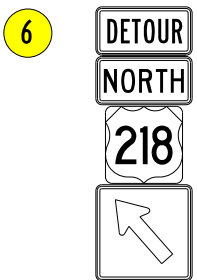
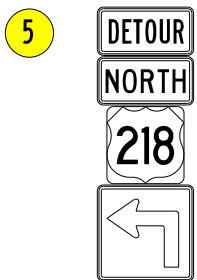
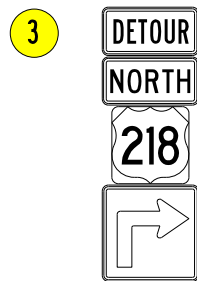
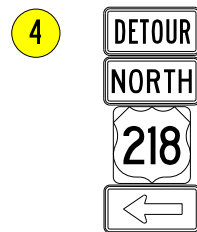
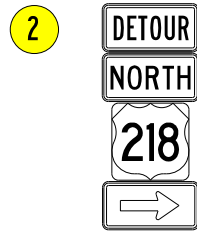
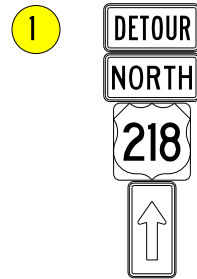
NOTE:
The quantity of detour signs and the locations provided are for guidance. If field conditions (i.e. grade, existing signs, etc.) require a modification, additional signs, or safety concerns arise, please contact the project supervisor and the appropriate accommodations will be made.



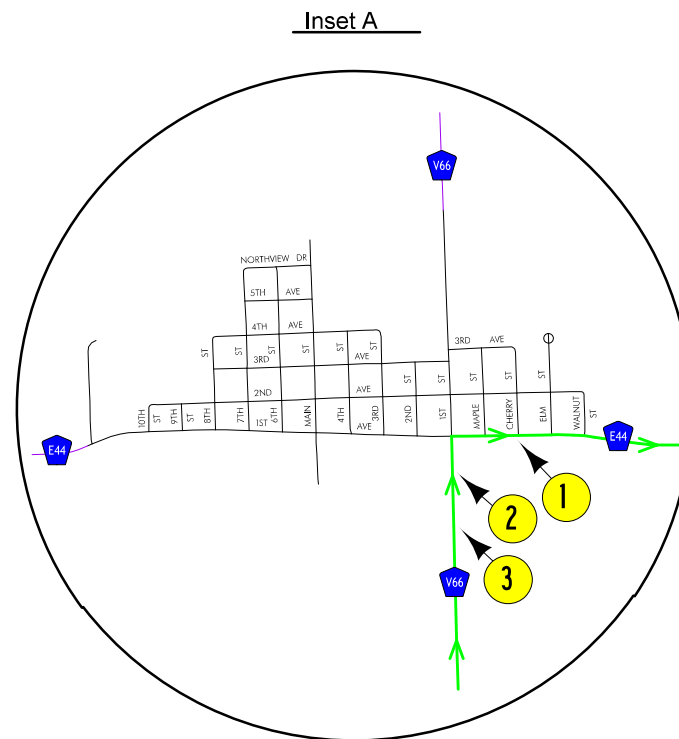
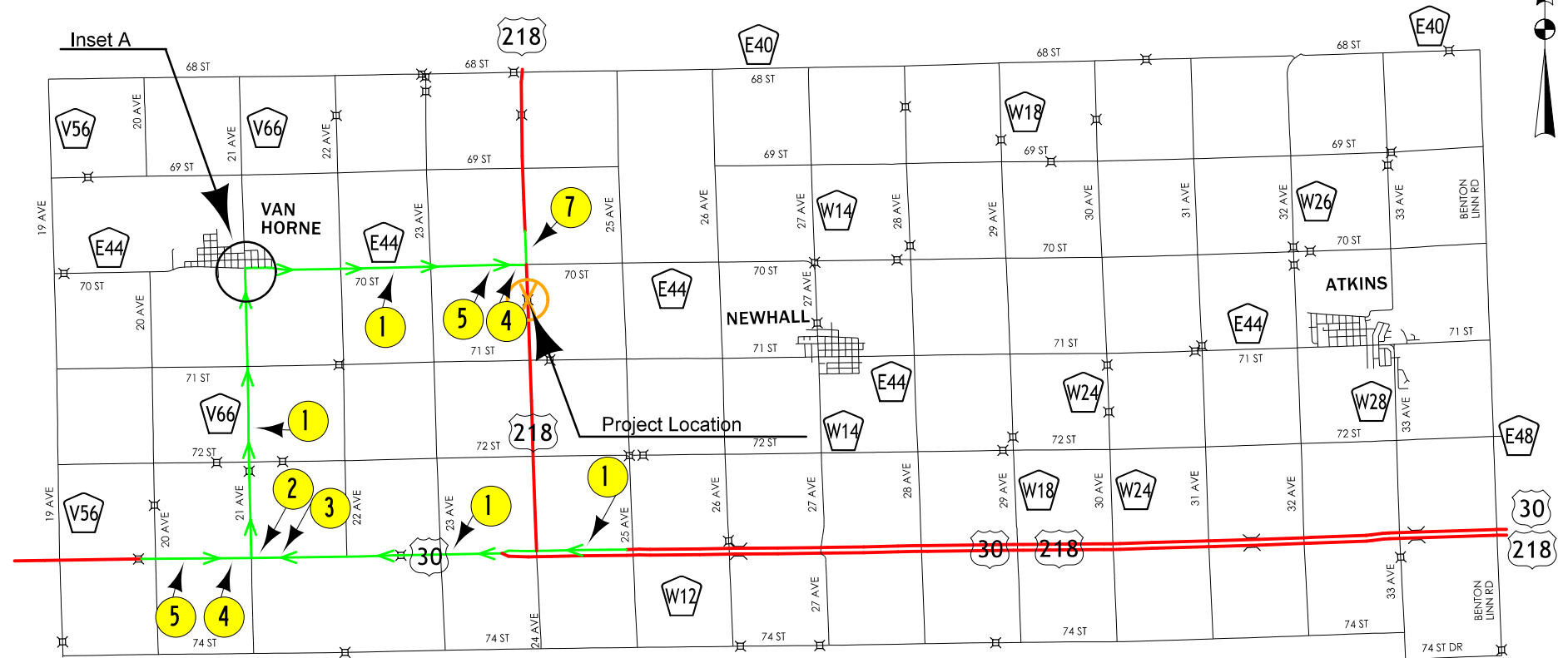
= Location of project
 = Detour Route

NOT TO SCALE

US 218 Detour Signing
Southbound

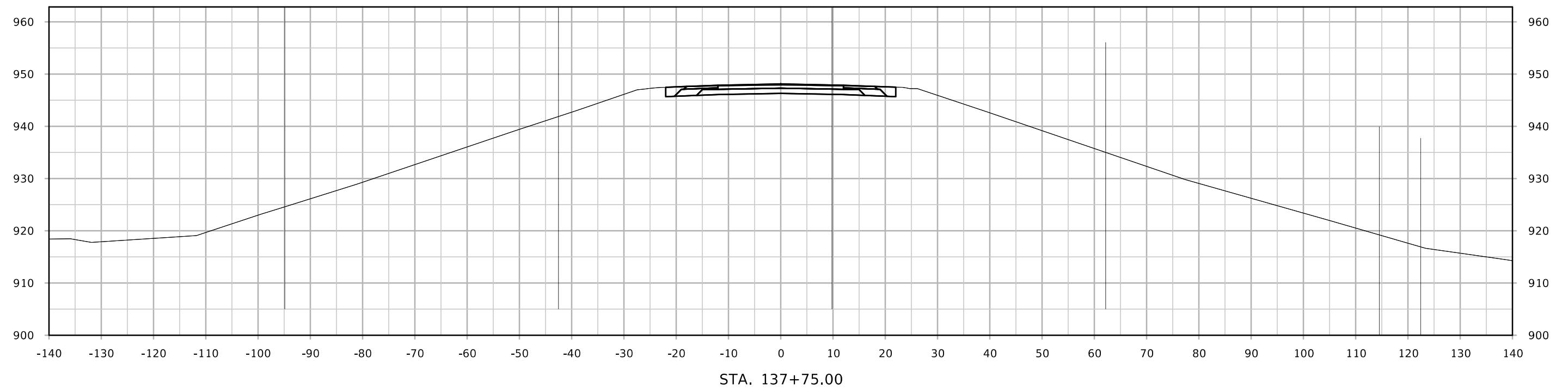
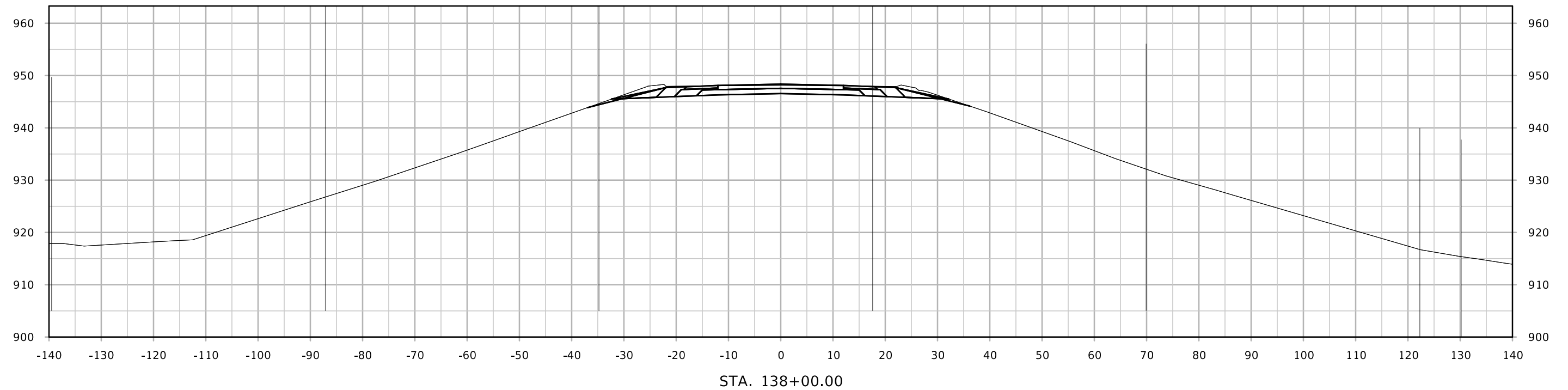


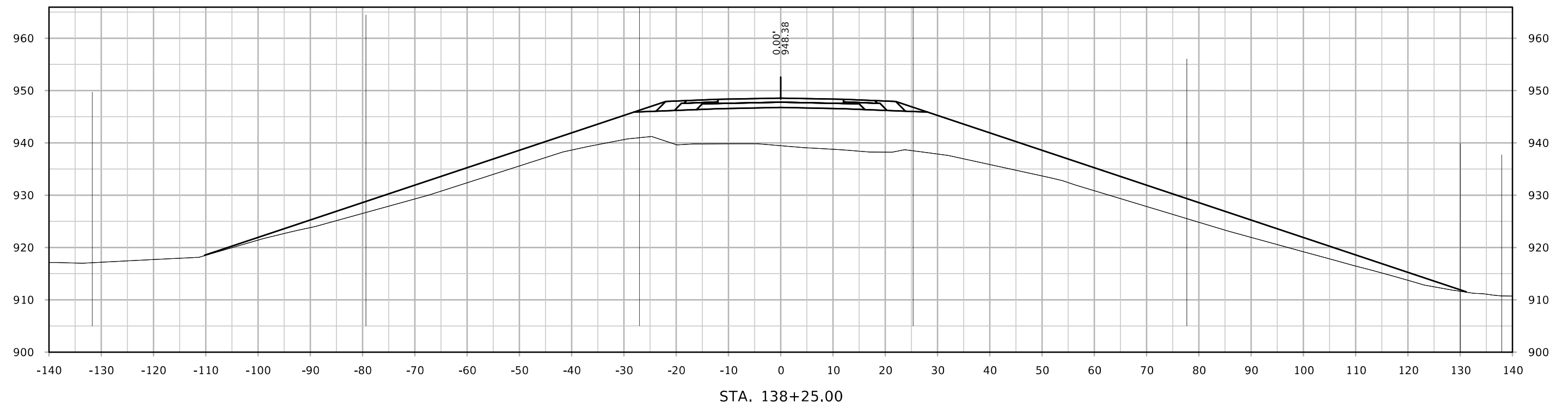
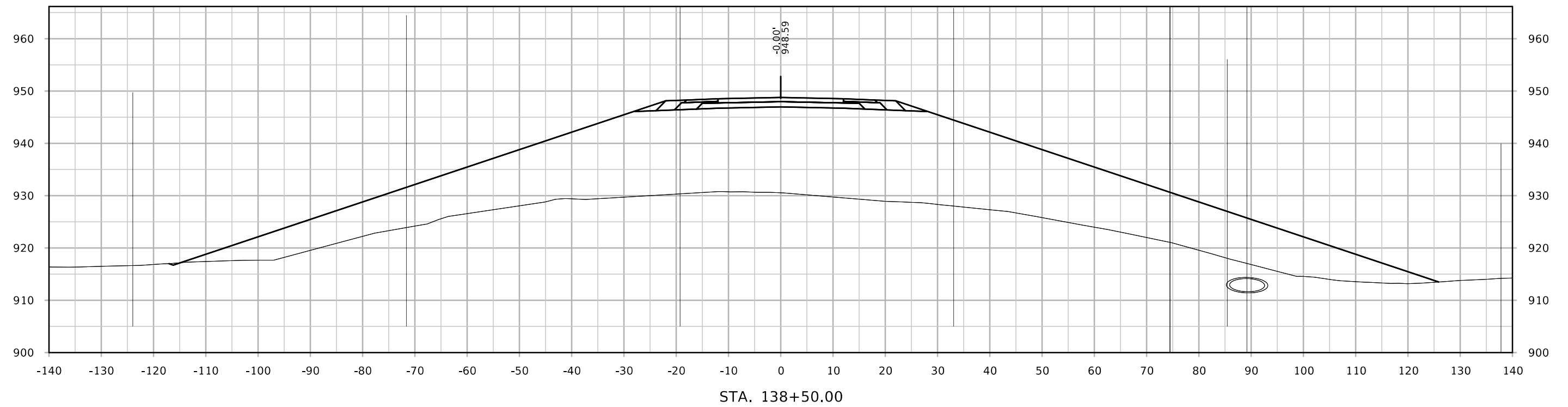
NOTE:
The quantity of detour signs and the locations provided are for guidance. If field conditions (i.e. grade, existing signs, etc.) require a modification, additional signs, or safety concerns arise, please contact the project supervisor and the appropriate accommodations will be made.

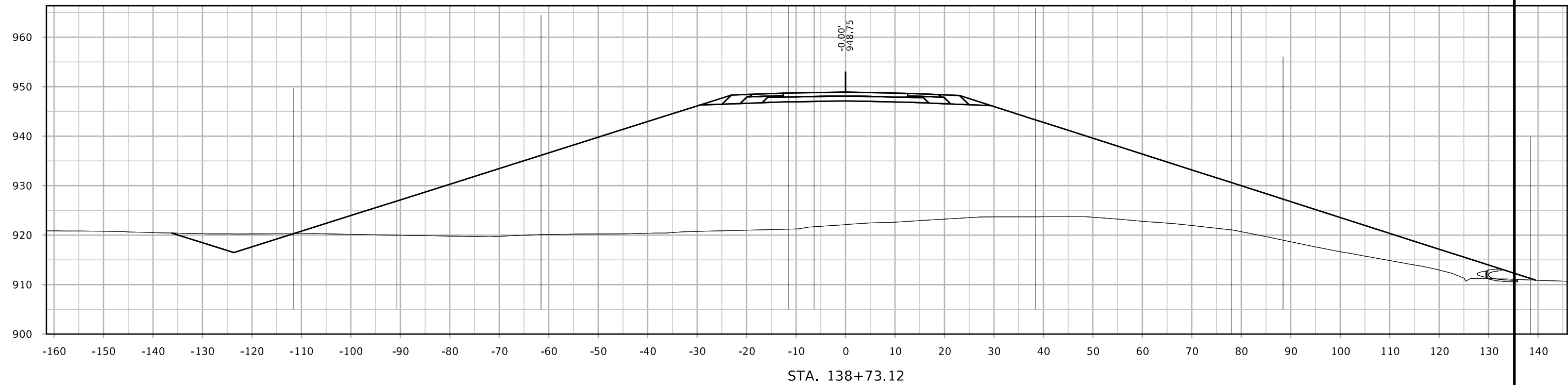
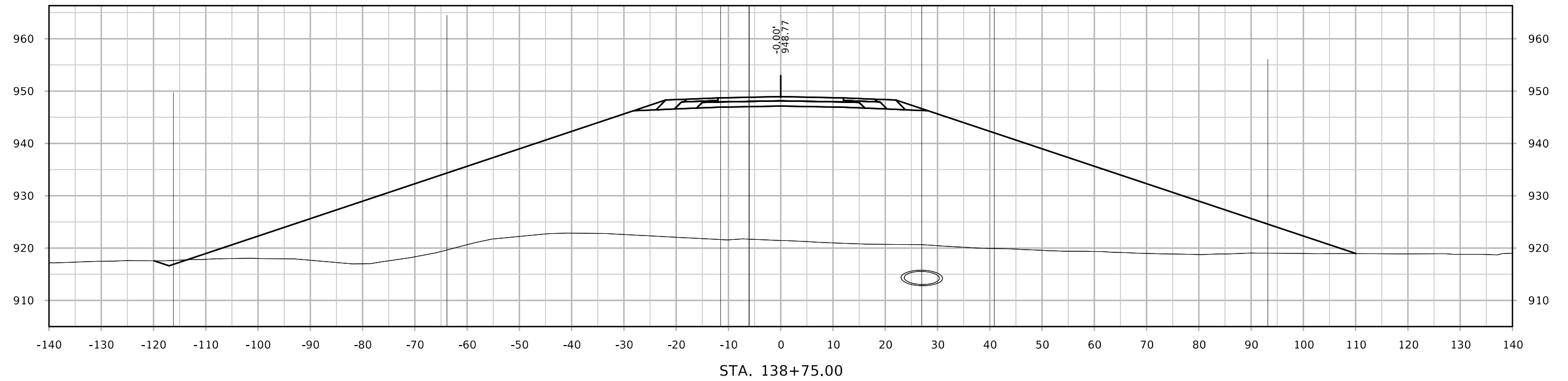


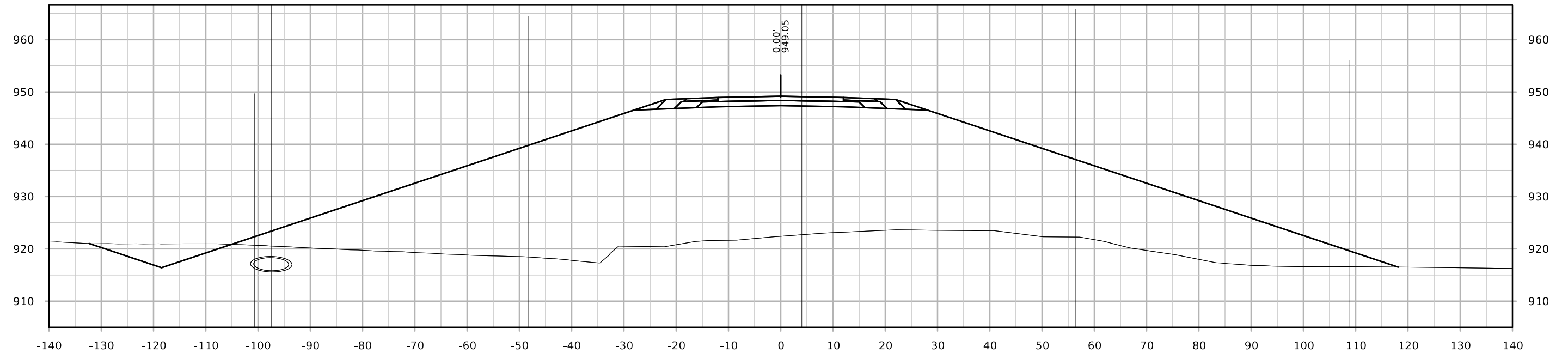
= Location of project
 = Detour Route

NOT TO SCALE
US 218 Detour Signing
Northbound

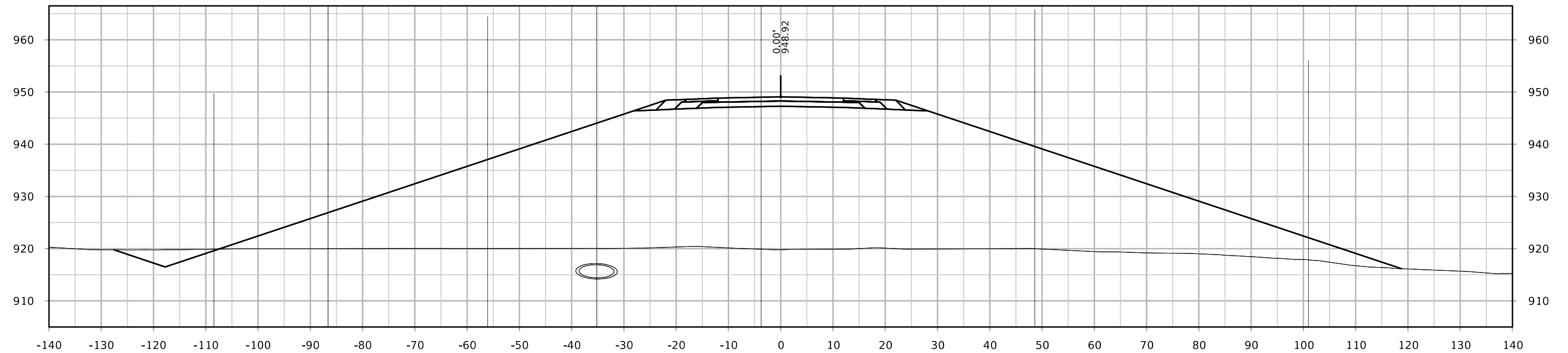








STA. 139+25.00



STA. 139+00.00

