

| INDEX OF SHEETS | |
|---------------------|--|
| No. | DESCRIPTION |
| A Sheets | Title Sheets |
| A.1 | Title Sheet |
| A.2 | Location Map Sheet |
| B Sheets | Typical Cross Sections and Details |
| B.1 - 2 | Typical Cross Sections and Details |
| C Sheets | Quantities and General Information |
| C.1 | Project Description |
| C.1 | Standard Road Plans |
| D Sheets | Mainline Plan and Profile Sheets |
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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
HENRY COUNTY
BRIDGE REPLACEMENT - PPCB
NB US 218 over South Fish Creek
0.7 Miles North of S. Junction County Rd J20

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



Does DOT Maintenance want to salvage steel beam guardrail?

DESIGN DATA RURAL

| | | | |
|--------|--------|-----------|--------|
| 2018 | AADT | 4400 | V.P.D. |
| 2044 | AADT | 6900 | V.P.D. |
| 2044 | DHV | 710 | V.P.H. |
| | TRUCKS | 24 | % |
| Total | | | |
| Design | ESALs | 5,913,440 | |

INDEX OF SEALS

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

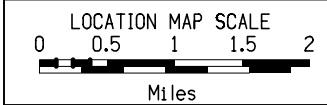
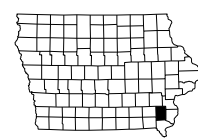
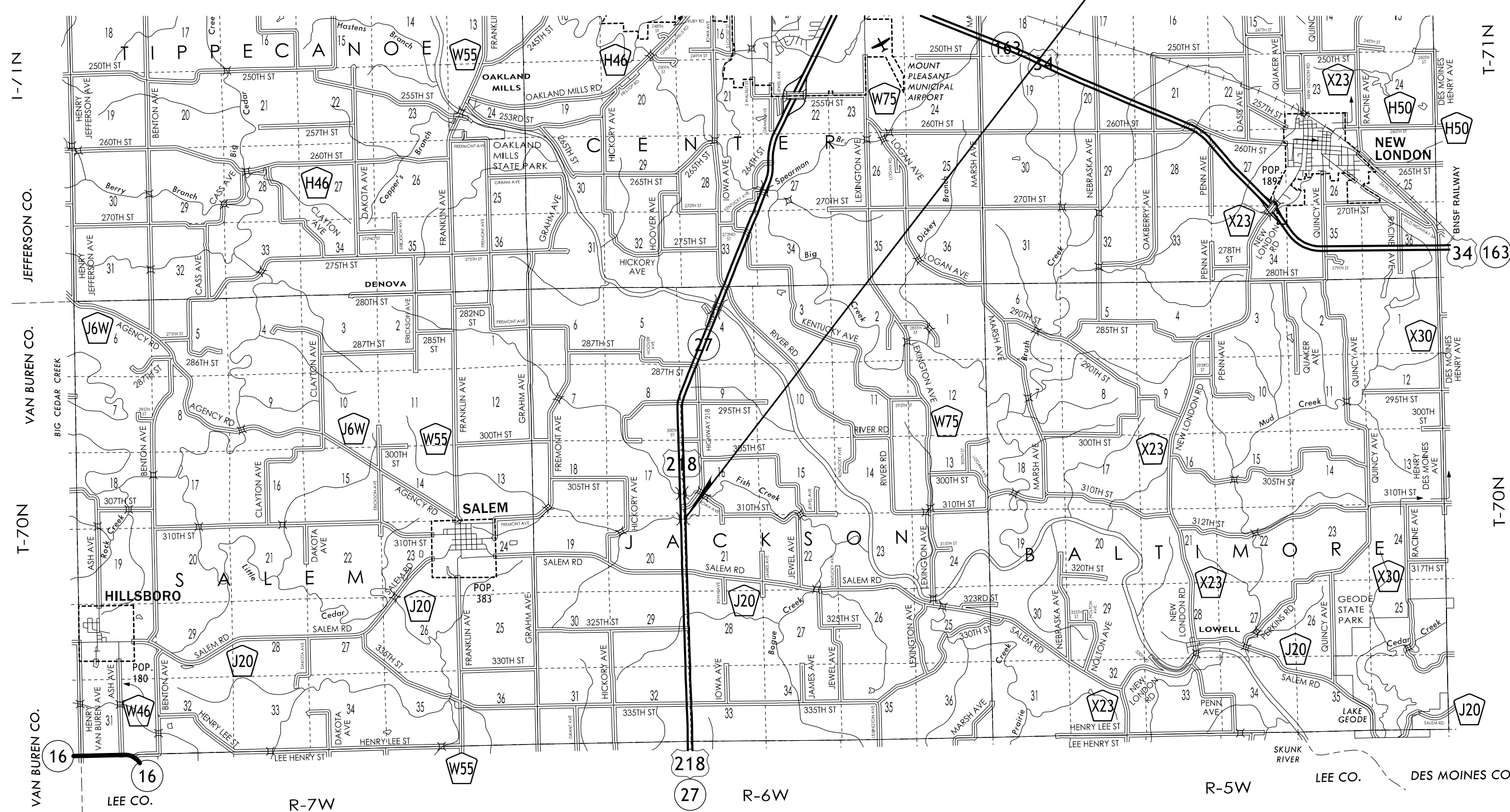
PRELIMINARY PLANS

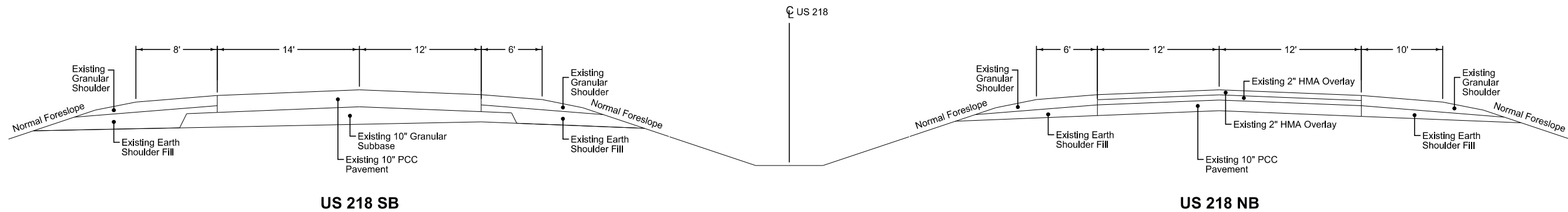
Subject to change by final design.

D3 PLAN - Date: July 29, 2022

| REVISIONS | | TOTAL |
|-------------------------------|--|-------|
| | | 20 |
| PROJECT IDENTIFICATION NUMBER | | |
| 20-44-218-020 | | |
| PROJECT NUMBER | | |
| BRF-218-2(158)--38-44 | | |
| R.O.W. PROJECT NUMBER | | |
| | | |
| | | |

NB US 218 BRIDGE REPLACEMENT
 FHWA NO. 28451
 MAINT. 4434.4R218
 STA. 484+70.00



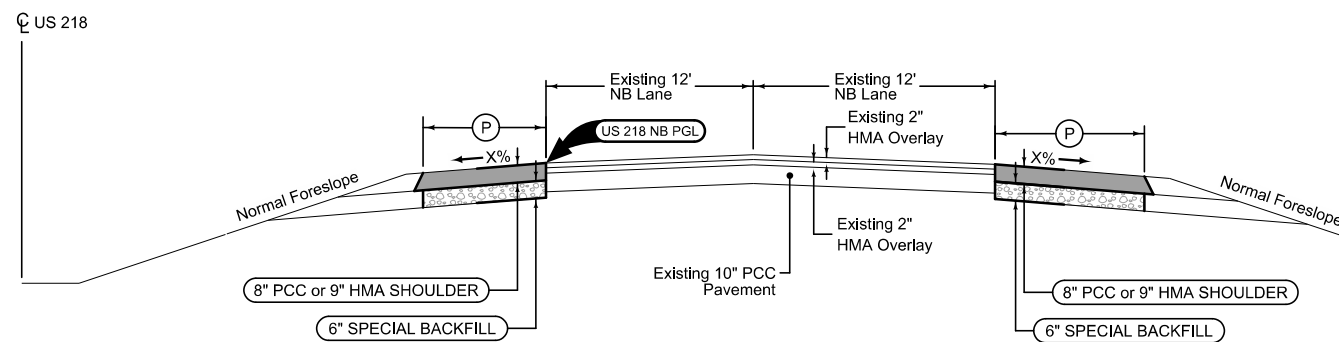


EXISTING US 218

Paved Shoulder Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 17' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

| 4_P_ALT_MODIFIED | | | | |
|---------------------|---------------|-------------|-----------|-----------|
| Direction of Travel | BEGIN STATION | END STATION | (P) Feet | (X) Slope |
| NB | 480+44.57 | 480+64.57 | 9.5 | -4% |
| NB | 480+64.57 | 481+14.68 | 9.5 - 7.5 | -4% |
| NB | 481+14.68 | 482+91.50 | 7.5 | -4% |
| | | | | |
| | | | | |



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

** For Pavement Details at Bridge Approaches, Refer to BR-203
 - Sta. 482+91.50 to Sta. 483+61.50
 - Sta. 485+78.50 to Sta. 486+48.50

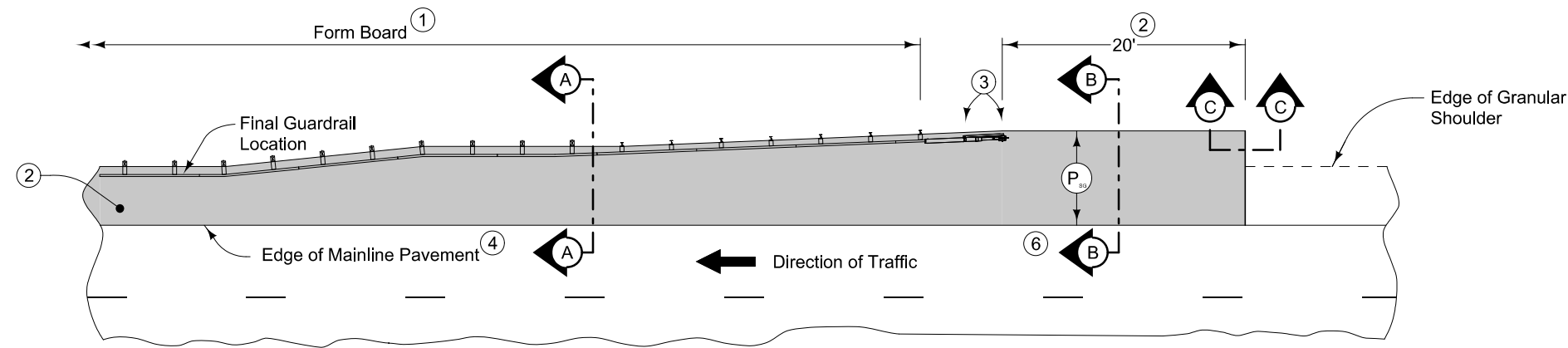
Final Design Note:
 Extend Work Approx. 10 ft North of Proposed North Bridge Approach Pavement to Eliminate Existing EF Joint. See sheet D.2.

Paved Shoulder Alternates

PCC Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at 17' spacing
 HMA Shoulder Jointing:
 Longitudinal joint: B

| 4_P_ALT_MODIFIED | | | | |
|---------------------|---------------|-------------|-------------|-----------|
| Direction of Travel | BEGIN STATION | END STATION | (P) Feet | (X) Slope |
| NB | 480+44.57 | 480+64.57 | 13.5 | -4% |
| NB | 480+64.57 | 481+13.88 | 13.5 - 11.5 | -4% |
| NB | 481+13.88 | 482+91.50 | 11.5 | -4% |
| | | | | |
| | | | | |

US 218 NB



PLAN VIEW

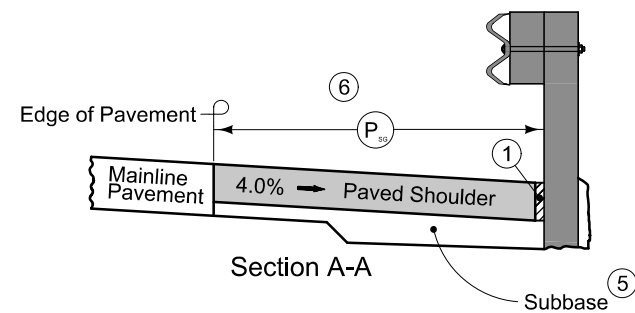
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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

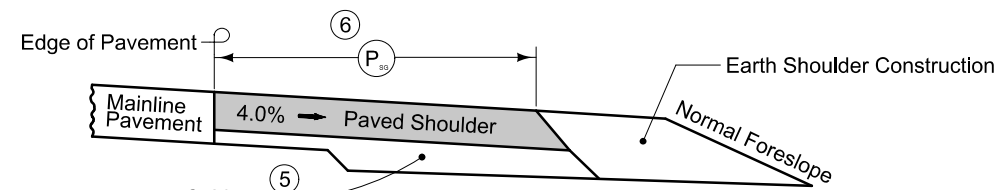
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- ① PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.
- ② Continue paved shoulder 20 feet beyond the center of the first post.
- ③ Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ④ 'KT-1 joint for PCC shoulder. 'B' joint for HMA shoulder.
- ⑤ Refer to other details in the plan.
- ⑥ P is based on 8" block is used for BA-205 and BA-225 end terminals and P will need to be reduced by 4 inches when BA-205 and BA-225 are specified.

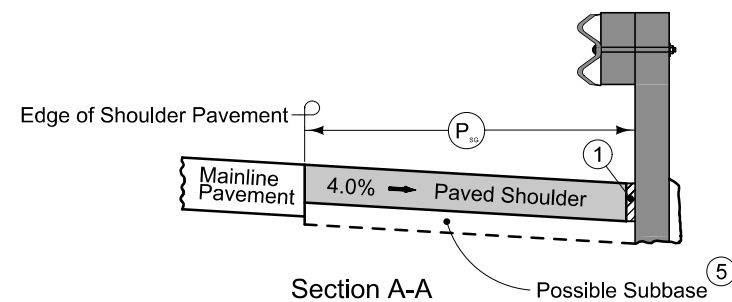


Section A-A

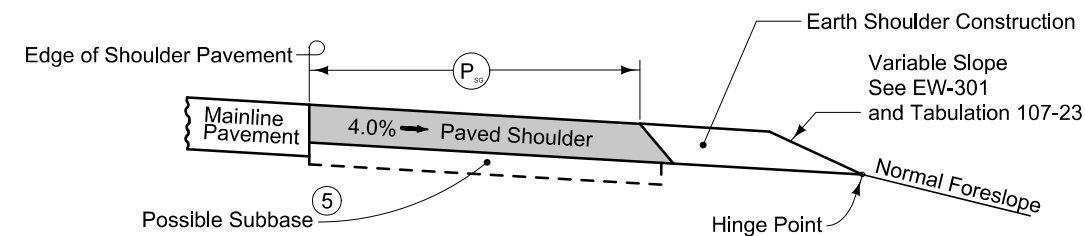


Section B-B

NEW CONSTRUCTION

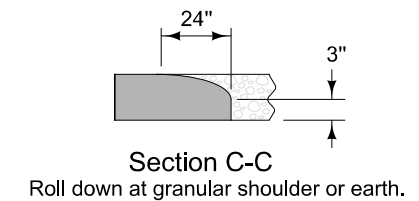


Section A-A



Section B-B

EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL
(GRANULAR SHOULDER ADJACENT TO MAINLINE)

| | |
|--|--------------------|
| PROJECT DESCRIPTION | 100-1D 10-18-05 |
| This project involves the replacement of the Northbound U.S. 218 bridge (Maint. No. 4434.4R218) over South Fish Creek, located 0.7 miles north of south junction of County Road J20. | |

| | | | | | |
|--|--------------------|-------------|-------------|--------------|----------------------|
| ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT) | 100-0A 10-28-97 | | | | |
| Item No. | Item Code | Item | Unit | Total | As Built Qty. |
| | | | | | |
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|---|-------------|--|-------------------|
| STANDARD ROAD PLANS | | | 105-4 10-18-11 |
| The following Standard Road Plans apply to construction work on this project. | | | |
| Number | Date | Title | |
| BA-200 | 04-20-21 | Steel Beam Guardrail Components | |
| BA-201 | 04-19-22 | Steel Beam Guardrail Barrier Transition Section (MASH TL-3) | |
| BA-202 | 10-20-15 | Steel Beam Guardrail Bolted End Anchor | |
| BA-205 | 10-19-21 | Steel Beam Guardrail Tangent End Terminal (MASH TL-3) | |
| BA-250 | 04-20-21 | Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3) | |
| BR-203 | 10-19-21 | Double Reinforced 12" Approach | |
| BR-211 | 10-19-21 | Bridge Approach (Abutting PCC or Composite Pavement) | |
| DR-303 | 10-17-17 | Subdrains (Longitudinal) | |
| DR-306 | 10-16-18 | Precast Concrete Headwall for Subdrain Outlets | |
| DR-402 | 04-19-22 | Rock Flume for Bridge End Drain | |
| EC-201 | 04-20-21 | Silt Fence | |
| EC-202 | 10-21-14 | Floating Silt Curtain | |
| EC-204 | 10-19-21 | Perimeter, Slope and Ditch Check Sediment Control Devices | |
| EC-303 | 10-19-21 | Stabilized Construction Entrance | |
| EC-502 | 04-21-15 | Seeding in Rural Areas | |
| EW-202 | 04-19-16 | Bridge Berm Grading without Recoverable Slope (Non-Barnroof Section) | |
| EW-301 | 04-20-21 | Guardrail Grading | |
| PM-110 | 04-21-20 | Line Types | |
| PV-12 | 10-20-20 | Milled Shoulder Rumble Strips | |
| PV-101 | 04-19-22 | Joints | |
| PV-102 | 04-21-20 | PCC Curb Details | |
| SI-172 | 04-19-16 | Delineators | |
| SI-173 | 04-19-16 | Object Markers | |
| SI-881 | 04-16-19 | Special Signs for Workzones | |
| TC-1 | 10-15-19 | Work Not Affecting Traffic (Two-Lane or Multi-Lane) | |
| TC-402 | 10-19-21 | Work Within 15 ft of Traveled Way | |
| | | | |
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SURVEY SYMBOLS

- CP Control Point
- △ BM Bench Mark
- ▲ PCP Photo Control Point
- SOP Size of Pipe or Culvert
- BL Topo Breakline
- CON Concrete or A/C Slab
- ↓ PLG Location of General Photo
- PIP Pipe Culvert
- GR Ground Shot
- ← DU Centerline Draw or Stream (Up)
- BNK Stream Bank
- TW Top of Water
- DTM Photogrammetry Elv Control Check
- D Centerline Draw or Stream (Down)
- SNP Unpaved Shoulder
- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- SH Paved Shoulder
- LIN Miscellaneous Line
- BD Bridge Deck
- BRG Bridge
- BCL Bridge Centerline
- CU Back of Curb
- GU Gutter In Front of Curb
- OUT Tile Outlet
- TILE --- TIL Tile Line
- PPA Power Pole Co. 1
- TOP Top of Bridge Pier
- BLS Bridge Low Steel
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- SBR Size of Bridge
- MH Utility Access (Manhole)
- UE Utility Elevation
- T1 --- TL1D Telephone Line Co. 1 - Quality D
- W --- WL1D Water Line Co. 1 - Quality D

SURVEYED UTILITY OWNER SYMBOLS

Sub-Surface Utility Mapping Quality Level is in accordance with CII/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, Access Energy Coop
 Tyler Thein
 1800 W. Washington
 P.O. Box 440
 Mt. Pleasant, IA 52641
 319-385-6877
- T1 --- TL1D Telephone Line, Windstream - Quality D
 Luke Niles
 4001 N. Rodney Parham Rd.
 Little Rock, AR 72212
 501-748-5893
- W --- WL1D Water Line, Rathbun Regional Rural Water - Quality D
 Jim Hopp
 1677 Salem Rd
 P.O. Box 261
 Salem, IA 52649
 319-258-2103

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

- Reference Point
- Station
- ▲ 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)

(U.A.C.)
Sta. 481+20(SUR) LT 46'
24"x124' RCP&HDPE
D.A.= Median

JACKSON TWP.
T-70N R-6W
SEC. 20



Refer to Tied Project
BRFN-218-2(155)--39-44
For Work Along SB US 218

481

482

SB US 218

483

484

485

486

South Fish
Creek

Existing EF Joint.

CL US 218

(ML218)

US 218 NB PGL

(MLNB PGL218)

NB US 218

Approx. South End of Exist.
Cable Guardrail per Google
Earth Street-View;
To Be Removed.

Steel Beam
Guardrail (Typ.)

Sta. 482+91.50
Begin NB Bridge Approach

Sta. 486+48.50
End NB Bridge Approach

Sta. 486+58.50
End Construction

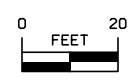
Sta. 480+44.56
Begin Construction

Surveyor Review:
Note difference in Section Lines
coming from "sur" dgn vs. "dis" dgn.

Exist. R.O.W.

DR-402, Rock Flume/
Bridge End Drain (Typ.)

JACKSON TWP.
T-70N R-6W
SEC. 21



Refer to V Sheets for
Bridge Replacement
of NB US 218 over
South Fish Creek

Exist. R.O.W.

US 218

FILE NO. -----

ENGLISH

DESIGN TEAM

Stanley Consultants Inc.

HENRY COUNTY

PROJECT NUMBER

BRF-218-2(158)--38-44

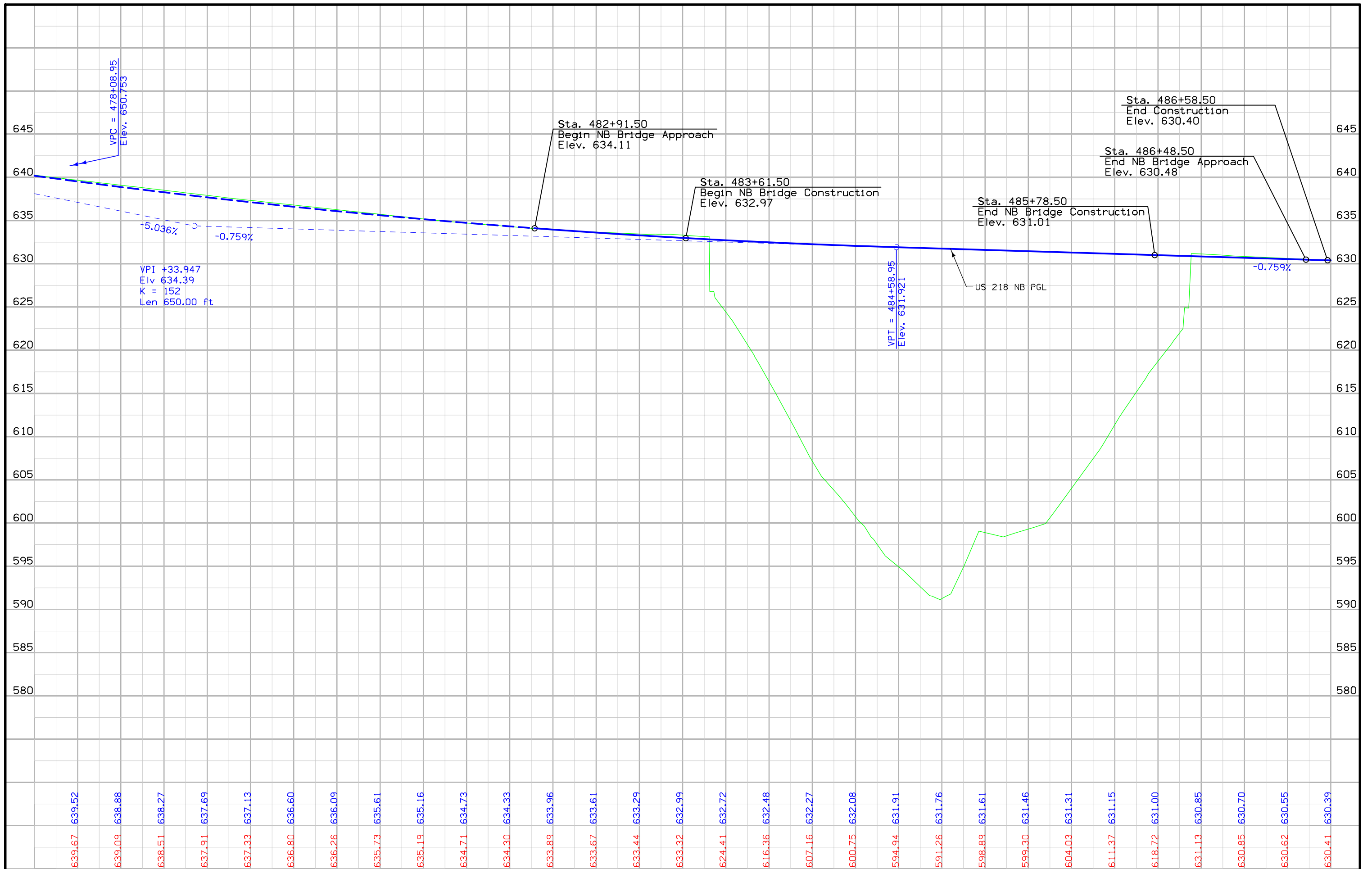
SHEET NUMBER

D.2

10:16:59 AM 7/21/2022

8877

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| | | | | | | | | |
|----------------|---------|-------------|---------------------------------|--------------|----------------|------------------------------|--------------|------------|
| FILE NO. ----- | ENGLISH | DESIGN TEAM | Stanley Consultants Inc. | HENRY COUNTY | PROJECT NUMBER | BRF-218-2(158)--38-44 | SHEET NUMBER | D.3 |
|----------------|---------|-------------|---------------------------------|--------------|----------------|------------------------------|--------------|------------|

Survey Information

County: Henry
SAP 836.5
PIN: 19-44-218-030
Project Number: BRFN-218-2(155)--39-44
Location: North Fish Creek 1.1 mi N of Co Rd J20 (NB)
Type of Work: Bridge-Unspecified
Project Directory: 4421803019

Party Personnel

Nels Sutherland- Party Chief
Myron Fox- Assistant Survey Party Chief

Date(s) of Survey

Begin Date 07/02/2020
End Date 09/03/2020

General Information

Measurement units for this survey are US survey feet. This survey is for a bridge over North and South Fish Creek 1.1 mi N of Co Rd J20 (NB) on Hwy218. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM Survey. This survey request was for the Hwy218 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12B). Benchmarks were placed throughout the project using post processed static observations relative to laRTN Base Network. A minimum of 6hrs of data was simultaneously collected on each of the primary control points. Reference Project# NHSN-218-2(152)--2R-44.

Pt# 318, NGS Monument #LD0867, was checked for vertical tolerance. The difference was less than 0.10ft.

Horizontal Control

The project coordinate system for this survey is laRCS Zone 14 (U.S. Survey Feet). This survey control is relative to laRTN reference stations. laRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Reference Project# NHSN-218-2(152)--2R-44.

Henry County GPS Control Pt# 341 was checked for horizontal tolerance. The difference was less than 0.10ft.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans NHSX-218-2(115)—3H-44. Metric survey stationing was scaled by 3.28083333 at plan POT station 139+34(m) to equal 457+15.13(ft) and ran ahead in US feet without equation throughout the survey. Reference Project# NHSN-218-2(152)--2R-44.

Survey stationing relates to as built plan stationing as follows:

POT Sta.139+34.000(m) Project NHSX-218-2(115)—3H-44
Survey POT Sta. 457+15.13(US ft)

POT Sta.164+47.554(m) Project NHSX-218-2(115)—3H-44
Survey POT Sta. 539+61.65(US ft)

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 utility Design Information request (Ticket# 552004512) was made on 07/01/2020. The following Companies were listed:

Following are the list of contacts made in the order they were received:

Rathbun Water - Received an E-mail from Scott Jackson, onecall@rrwa.net, on 07/24/2020. Attached was a map showing their utility crossing Hwy218 at three locations on the south half of the project area. The utility will be located using the map provided.

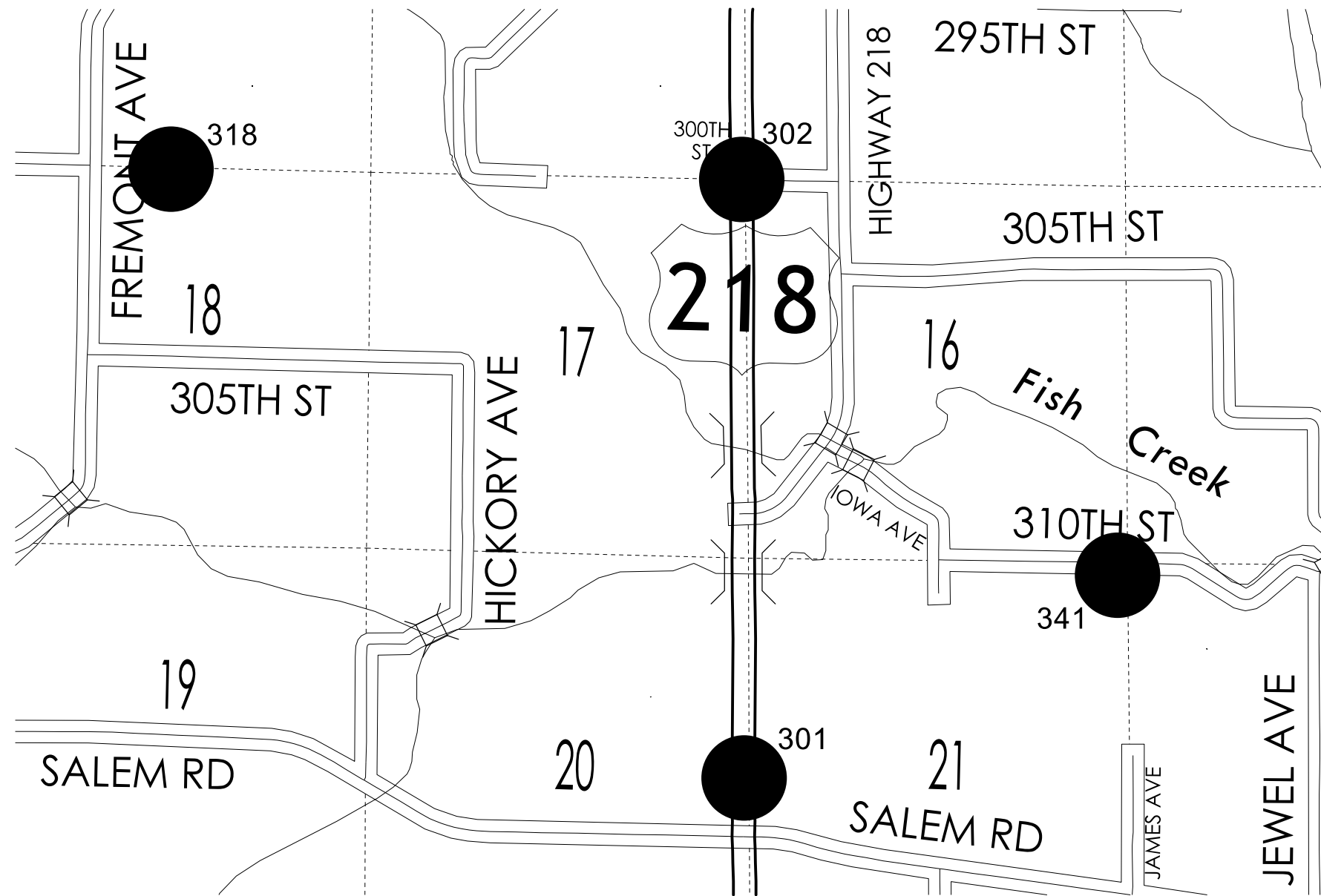
Access Energy – Don Roach, droach@accessenergycoop.com, is the contact person for this utility. Overhead power runs along the east side of Hwy218, north and south through the length of the project. Power poles will be collected and mapped.

Windstream Communications - Received an E-mail from Lisa Zingula, Lisa.Zingula@windstream.com, on 07/01/2020. Attached was a map showing their utility running across Hwy218 just north of the intersection of Old Hwy218. The utility will be located using the map provided.

| <u>Company (Quality)</u> | <u>Symbol</u> | <u>Remark</u> |
|--------------------------|---------------|-----------------------|
| Rathbun Water | WL1D1 | Buried Water Line |
| Access Energy(QLD) | PPA | Power Poles |
| Windstream | TL1D1 | Buried Telephone Line |

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 14

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

1a. Regional Coordinate System Zone 14

Project Control Marks are Benchmarks

| Point Name | North | East | Height | Code Description |
|------------|-------------|-------------|---------|---|
| 318 | 6426901.941 | 24403825.73 | 716.821 | CP NGS 10IN X 10IN CON MON LD0867 WITH DISC 108FT E OF INTERSECTION OF FREMONT AVE AND 300TH ST IN FENCE LINE |
| 341 | 6421302.132 | 24417898.71 | 604.519 | CP HENRY CO MON DISC IN CAN INTERSECTION OF IOWA AVE AND 310TH ST W 2300FT THEN S 28.5FT FROM CL 310TH AVE. |
| 301 | 6418460.044 | 24412895.25 | 712.555 | CP CUT X IN CON 990FT N OF INTERSECTION OF HWY218 AND SALEM RD IN CENTER OF CROSSOVER |
| 302 | 6426706.448 | 24412852.19 | 681.164 | CP CUT X IN CON AT INTERSECTION OF HWY218 AND 300TH ST IN CENTER OF CROSSOVER |

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 | US 218 NB PGL | 478+00.00 | 6420545.17 | 24412939.37 | | | | | | | | | | | | | | | |
| 2 | US 218 NB PGL | 510+00.00 | 6423745.13 | 24412922.66 | | | | | | | | | | | | | | | |

108-23A
08-01-08

TRAFFIC CONTROL PLAN

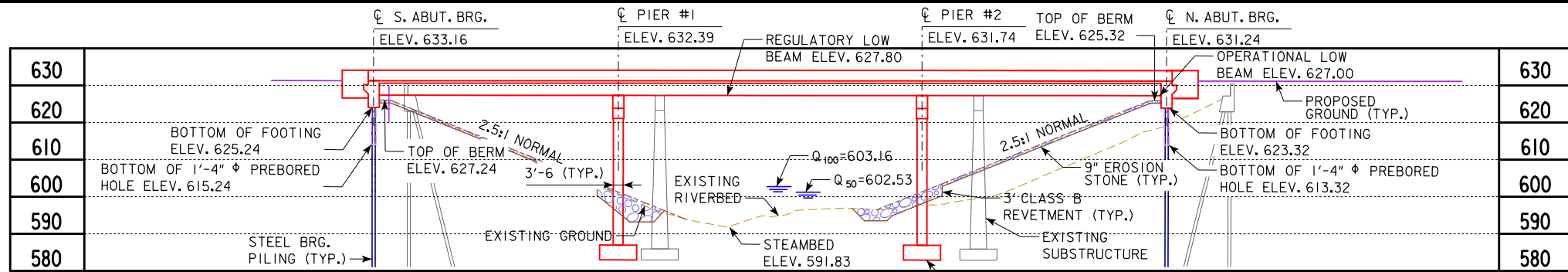
US 218
- Refer to tied project BRFN-218-2(155)--39-44 for Traffic Control Plan.

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 |
|------------------------|--|
| BRFN-218-2(155)--39-44 | NB Bridge replacement over North Fish Creek. |
| | |
| | |



BENCH MARK: CP NGS 10" X 10" CONCRETE MONUMENT LD0867 WITH DISC 108' EAST OF INTERSECTION OF FREMONT AVENUE AND 300TH STREET FENCE LINE

-5.036%
-0.759%
VPC STA. = 478+08.95
VPC ELEV. = 650.753
VPI STA. = 481+33.95
VPI ELEV. = 634.39
L = 650.00'
VPT STA. = 484+58.95
VPT ELEV. = 631.921

PROPOSED PROFILE GRADE N.B. US 218

HYDRAULIC DESIGN



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

Signature: Mark D. Werner Date: XX/XX/2022
Printed or Typed Name: Mark D. Werner
My license renewal date is December 31, 2023

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

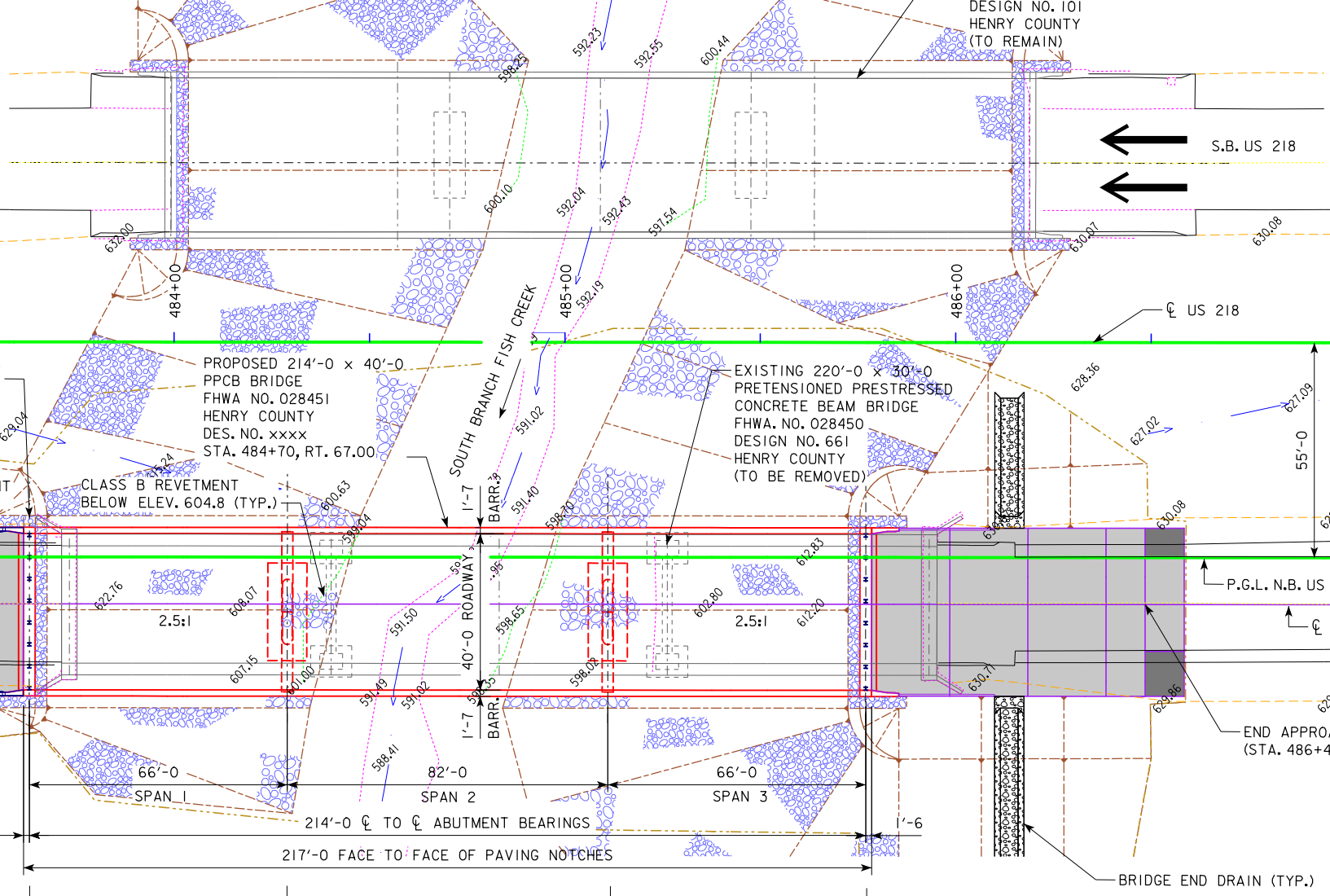
PLAN NOTES:

- TOP OF BRIDGE DECK AT N.B. CENTERLINE US 218 IS 0.21' ABOVE THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.
- CLASS B REVETMENT STONE AND EROSION STONE IS EMBEDDED.

GENERAL NOTES:

- THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 220'-0" X 30'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE, HENRY DESIGN NO. 661, FHWA NO. 028451, MAIN. NO. 4434.R218

LONGITUDINAL SECTION ALONG C N.B. US 218



HYDRAULIC DATA

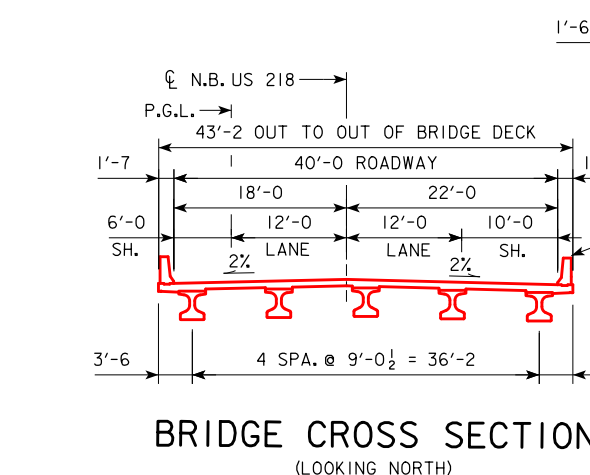
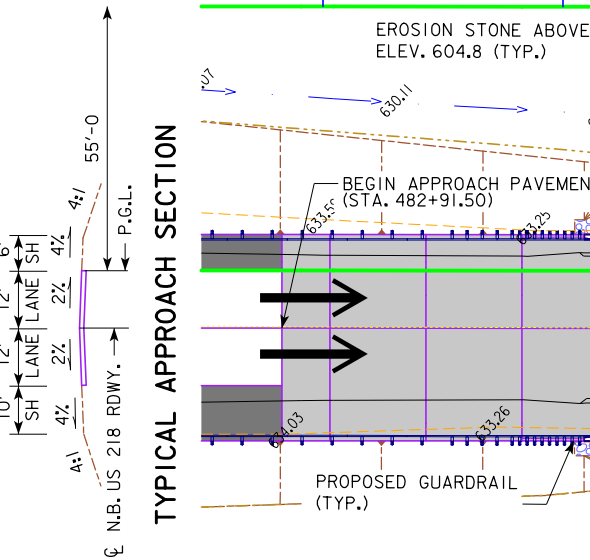
DRAINAGE AREA = 5.7 SQ. MI.
STREAM SLOPE = 23.2 FT./MI.
Q₅₀ = 2,680 CFS
STAGE = 602.53
REGULATORY LOW BEAM = 627.80
AVG. BRIDGE VELOCITY = 8.6 FPS
Q₁₀₀ = 3,190 CFS
STAGE = 603.16
OPERATIONAL LOW BEAM = 627.00
BACKWATER = 1.33 FT.
AVG. BRIDGE VELOCITY = 9.5 FPS
Q₂₀₀ = 4,140 CFS
Q₅₀₀ = 4,550 CFS
CHECK SCOUR = 585.3 Δ
SCOUR DEPTHS BASED ON PRELIMINARY DATA AND SHALL BE VERIFIED ONCE GEOTECHNICAL REPORT IS AVAILABLE.

UTILITIES LEGEND:

TI - BURIED TELEPHONE LINE - WINDSTREAM
P - POWER POLE - ACCESS ENERGY (QLD)
W - BURIED WATER LINE - RATHBUN WATER
UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

LOCATION

N.B. US 218 OVER SOUTH BRANCH FISH CREEK
T-70N R-6W
SECTION 20 & 21
JACKSON TOWNSHIP
HENRY COUNTY
FHWA NO. 028451
BRIDGE MAINT. NO. 4434.4R218
LATITUDE 40.856498
LONGITUDE -91.564627
PRELIMINARY



TRAFFIC ESTIMATE SITUATION PLAN

| | | |
|--------------------|-----------|---------------------------------|
| 2020 AADT | 3950 | V.P.D. |
| 2044 AADT | 6900 | V.P.D. |
| TRUCKS | 23 | % |
| TOTAL DESIGN ESALs | 5,305,000 | (BOTH N.B. AND S.B. DIRECTIONS) |



DESIGN FOR 0° SKEW
214'-0 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
66' END SPANS (BTB BEAM TYPE) 82' INTERIOR SPAN
SITUATION PLAN
STA. 484+70.00, RT. 67.00' (C US218) AUGUST 2022
HENRY COUNTY
IOWA DEPARTMENT OF TRANSPORTATION
DESIGN SHEET NO. 1 OF 2 FILE NO. XXXX DESIGN NO. XXXX

BENCH MARK: CP NGS 10" X 10" CONCRETE MONUMENT LD0867 WITH DISC
108' EAST OF INTERSECTION OF FREMONT AVENUE AND 300TH STREET FENCE LINE

DESIGN NOTES:

ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.

TL-4 BRIDGE RAILING PROPOSED

PIER TYPE - TEE PIERS

BEAM TYPE - BTB BEAMS

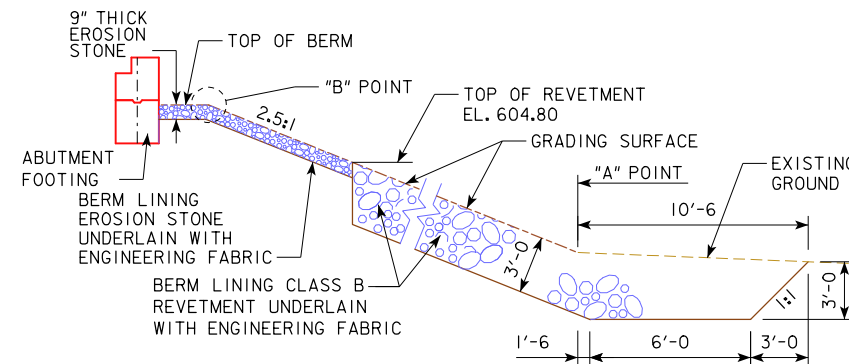
FOUNDATION TYPE TO BE CONFIRMED DURING FINAL DESIGN.
CONSIDER INCLUDING BOTH SPREAD FOOTINGS AND DRILLED
SHAFTS AS PIER FOUNDATION ALTERNATIVES DURING FINAL DESIGN

BERM SLOPES TO BE CONFIRMED DURING FINAL DESIGN.

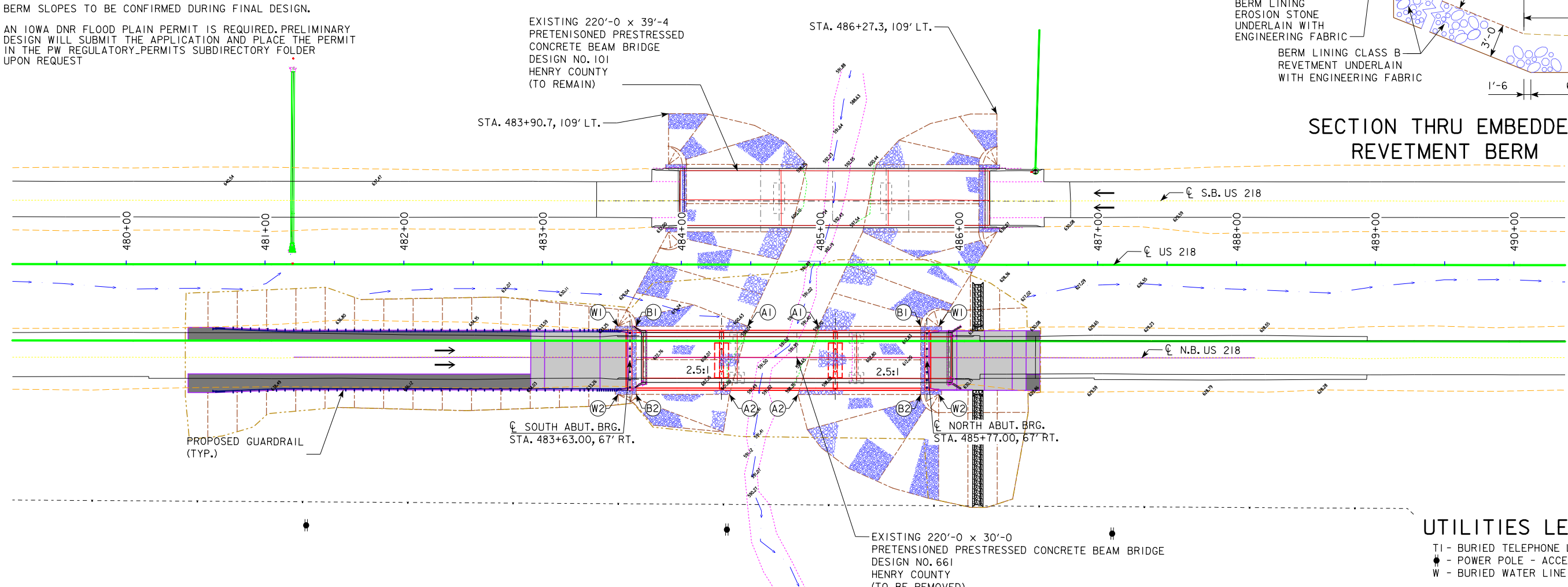
AN IOWA DNR FLOOD PLAIN PERMIT IS REQUIRED. PRELIMINARY
DESIGN WILL SUBMIT THE APPLICATION AND PLACE THE PERMIT
IN THE PW REGULATORY_PERMITS SUBDIRECTORY FOLDER
UPON REQUEST

| POINTS | SOUTH ABUTMENT | | | NORTH ABUTMENT | | |
|--------|----------------|-----------|--------|----------------|-----------|--------|
| | STATION | OFFSET | ELEV. | STATION | OFFSET | ELEV. |
| A1 | 484+47.50 | 44.42 RT. | 599.04 | 484+99.00 | 44.42 RT. | 598.70 |
| A2 | 484+34.75 | 93.58 RT. | 599.04 | 484+84.13 | 93.58 RT. | 598.70 |
| B1 | 483+67.50 | 44.42 RT. | 627.24 | 485+72.50 | 44.42 RT. | 625.32 |
| B2 | 483+67.50 | 93.58 RT. | 627.24 | 485+72.50 | 93.58 RT. | 625.32 |
| W1 | 483+54.50 | 44.42 RT. | 632.02 | 485+85.50 | 44.42 RT. | 630.26 |
| W2 | 483+54.50 | 93.58 RT. | 631.86 | 485+85.50 | 93.58 RT. | 630.10 |

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



SECTION THRU EMBEDDED REVETMENT BERM



UTILITIES LEGEND:
 TI - BURIED TELEPHONE LINE - WINDSTREAM
 PE - POWER POLE - ACCESS ENERGY (QLD)
 W - BURIED WATER LINE - RATHBUN WATER
 UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

| LOCATION | CLASS B REVET. (TON) | EROSION STONE (TON) | ENGINEERING FABRIC (SY) | EXCAVATION (CY) |
|---------------------|----------------------|---------------------|-------------------------|-----------------|
| BERM LINING - SOUTH | 770.0 | 700.0 | 2350.0 | 840.0 |
| BERM LINING - NORTH | 930.0 | 660.0 | 2320.0 | 900.0 |
| TOTALS | 1700.0 | 1360.0 | 4670.0 | 1740.0 |

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
REVETMENT ESTIMATED AT 1.6 TON / CY

PRELIMINARY
 DESIGN FOR 0° SKEW
214'-0" X 40'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
 66' END SPANS (BTB BEAM TYPE) 82' INTERIOR SPAN
SITE PLAN
 STA. 484+70.00, RT. 67.00' (CL US218) AUGUST 2022
HENRY COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION
 DESIGN SHEET NO. 2 OF 2 FILE NO. XXXX DESIGN NO. XXXX

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

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

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

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

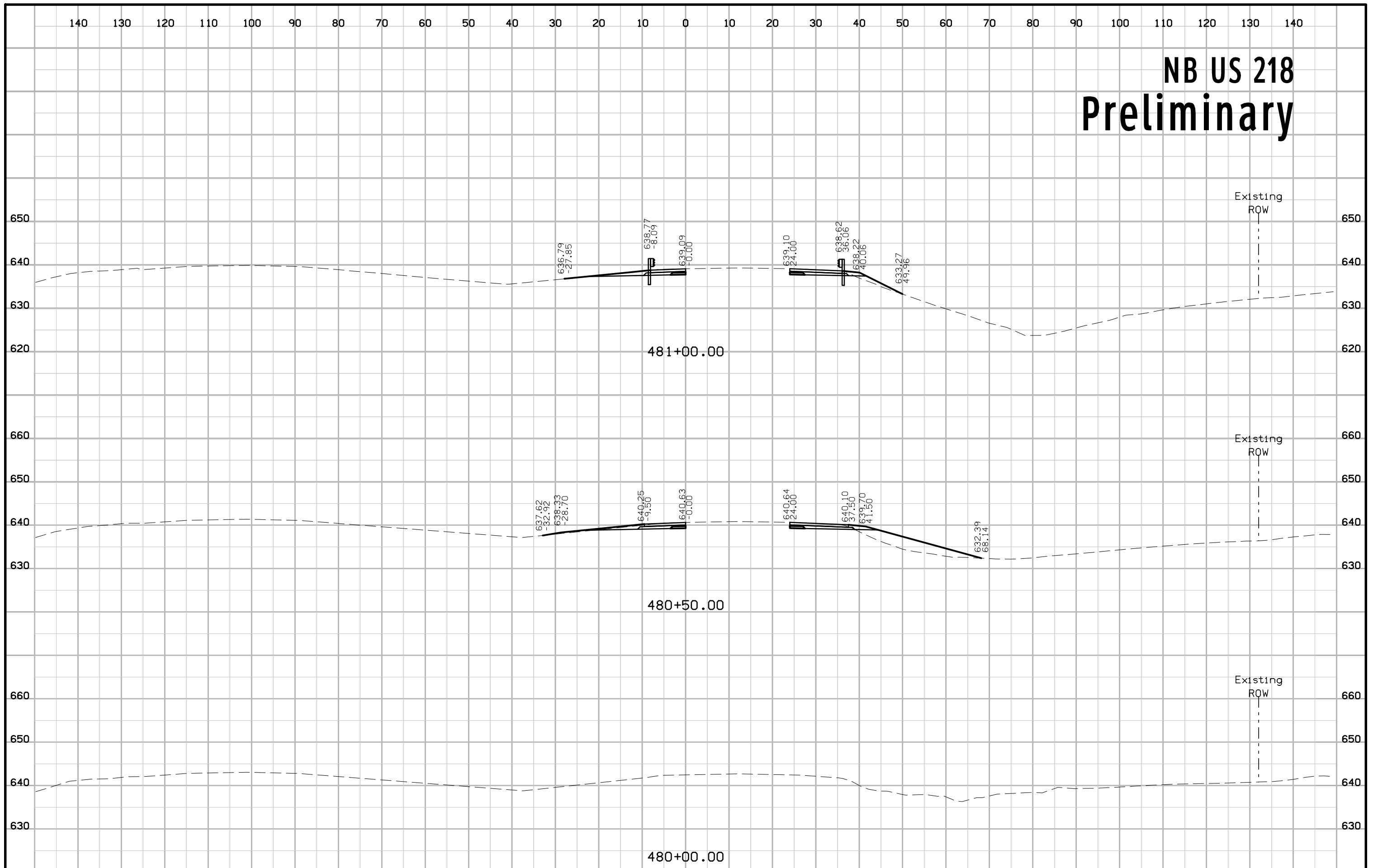
SYMBOL LEGEND OF CROSS SECTION SHEETS

- Existing ROW
----- Existing Right-of-Way Limit
- Proposed ROW
----- Proposed Right-of-Way Limit
- Temporary ROW
----- Temporary Right-of-Way Limit

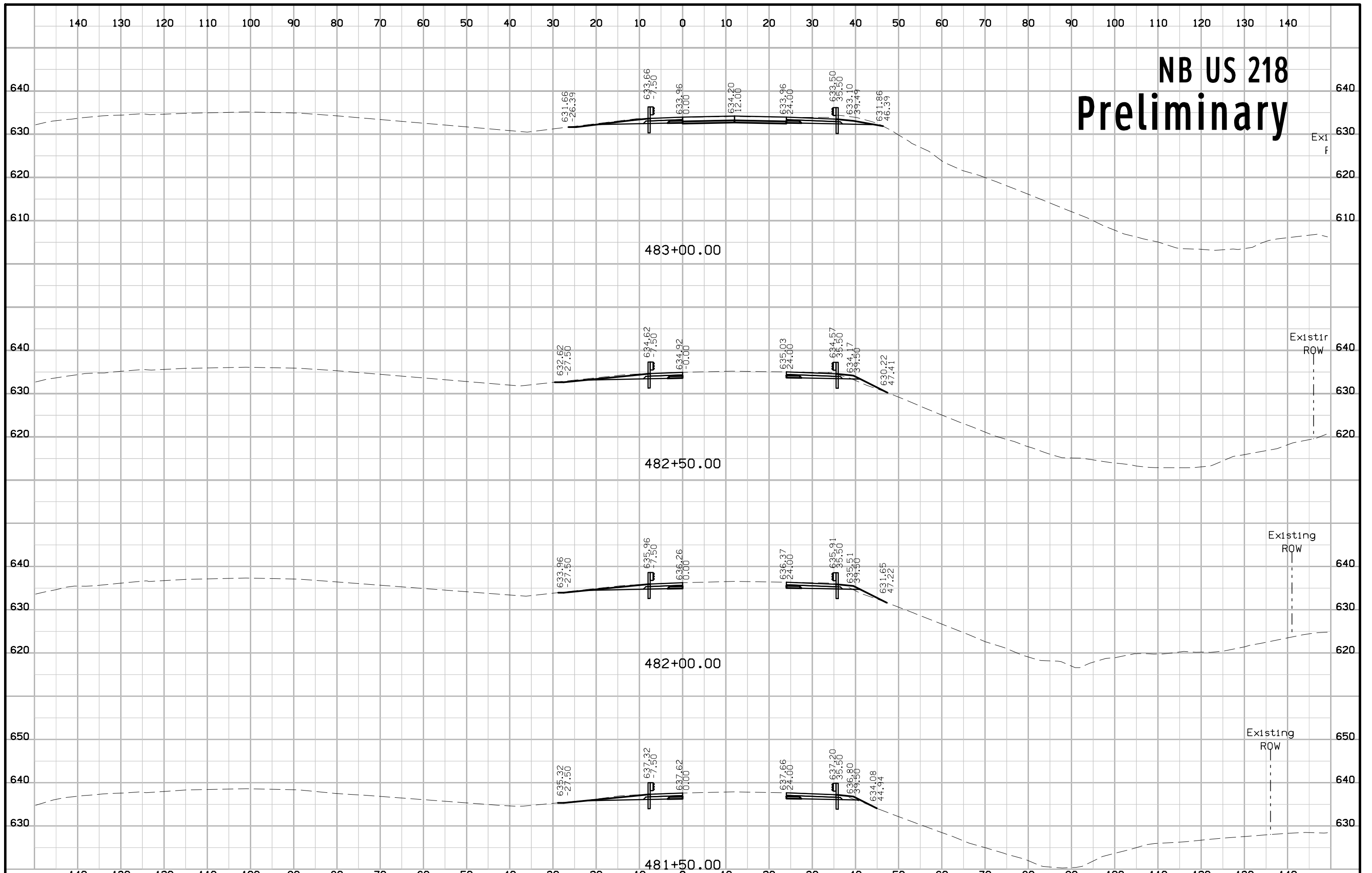
**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

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

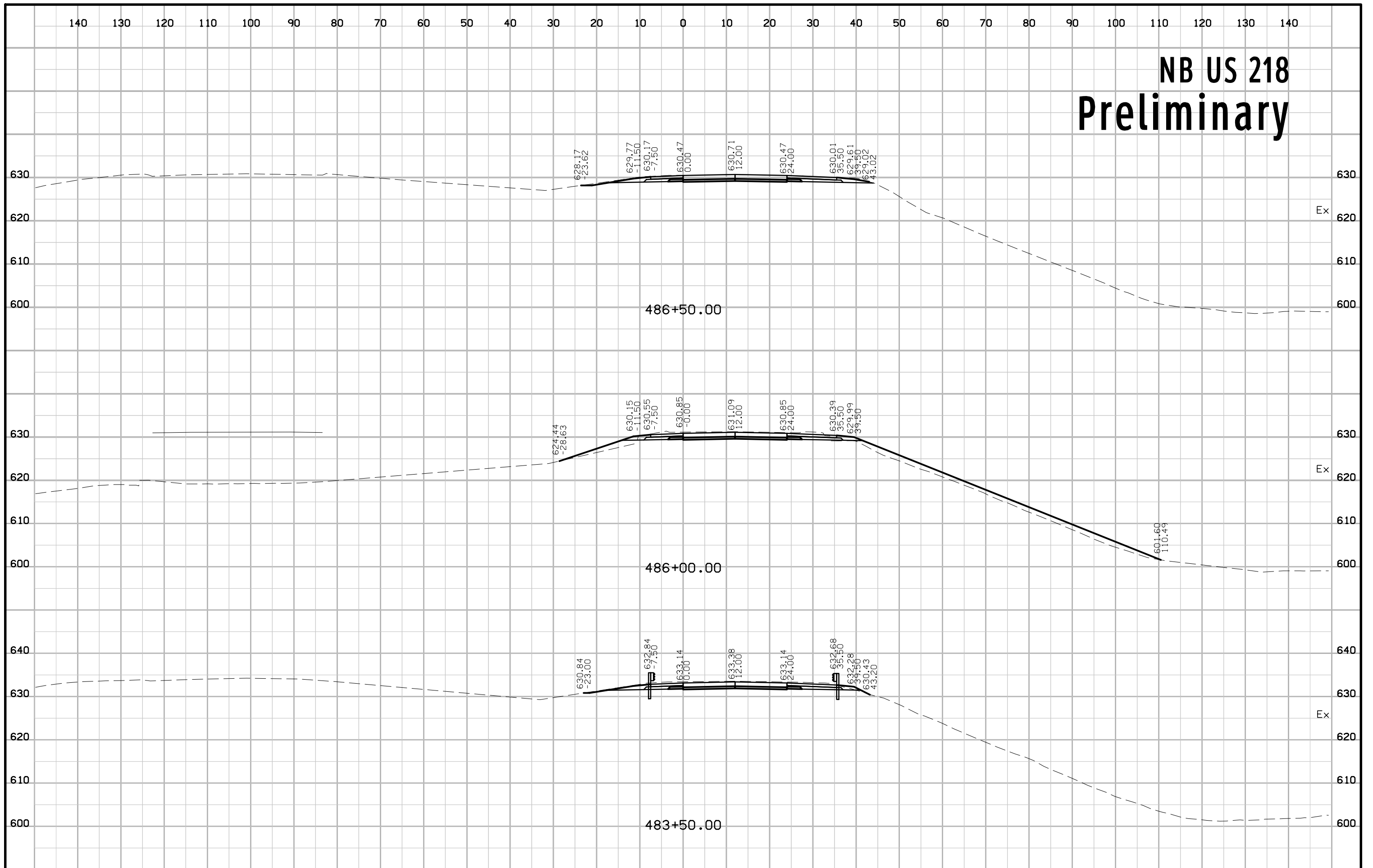
NB US 218 Preliminary



NB US 218 Preliminary



NB US 218 Preliminary



NB US 218 Preliminary

