

RCB Culvert Replacement-Twin Box  
 BRFN-175-9(25)--39-38  
 LETTING DATE  
 11-18-2025

GRUNDY COUNTY



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**GRUNDY COUNTY**  
 RCB Culvert Replacement-Twin Box  
 Munn's Creek 0.8 mi. E. of Co. Rd. T47

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.  
 Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



Refer to the Proposal Form for list of applicable specifications.

REVISIONS

TOTAL

21

PROJECT IDENTIFICATION NUMBER

20-38-175-010

PROJECT NUMBER

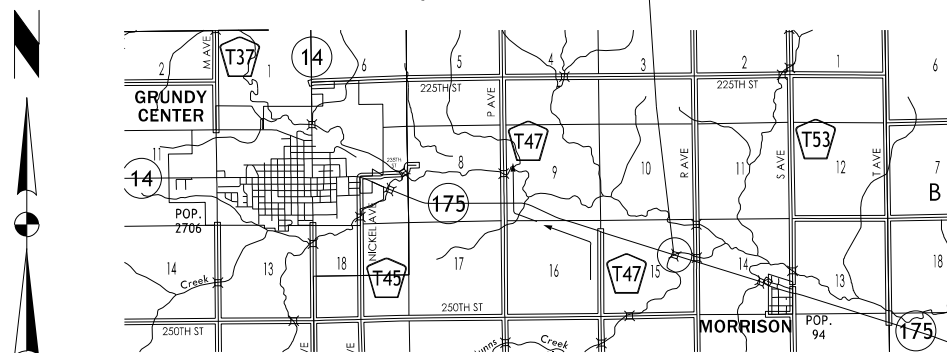
BRFN-175-9(25)--39-38

R.O.W. PROJECT NUMBER

**INDEX OF SHEETS**

| No.             | DESCRIPTION  |
|-----------------|--|
| <b>A Sheets</b> | <b>Title Sheets</b>                                |
| A.1             | Title Sheet/Location Map                           |
| <b>B Sheets</b> | <b>Typical Cross Sections and Details</b>          |
| B.1 - 3         | Typical Cross Sections and Details                 |
| <b>D Sheets</b> | <b>Mainline Plan and Profile Sheets</b>            |
| * D.1           | Plan & Profile Legend & Symbol Information Sheet   |
| * D.2           | IA 175   |
| <b>G Sheets</b> | <b>Survey Sheets</b>                               |
| G.1             | Alignment Coordinates                              |
| G.2 - 4         | Control Point Location Map/Horizontal Control Tab. |
| <b>J Sheets</b> | <b>Traffic Control and Staging Sheets</b>          |
| J.1             | Traffic Control Plan/Tabulation of Special Events  |
| * J.2           | Detour Map   |
| <b>V Sheets</b> | <b>Bridge and Culvert Situation Plans</b>          |
| V.1 - 3         | Bridge and Culvert Situation Plans                 |
| <b>W Sheets</b> | <b>Mainline Cross Sections</b>                     |
| W.1 - 6         | Cross Sections                                     |
|                 | * Color Plan Sheets                                |

Ref. Loc. 208.20  
 FHWA No. 25910  
 Maint. No. 3808.2S175  
 Project Location



**S4 PLAN - Date: 9-6-2024**  
**D4 PLAN - Date: 7-22-2025**  
**Letting - Date: 11-18-2025**

PRELIMINARY PLANS

Subject to change by final design.

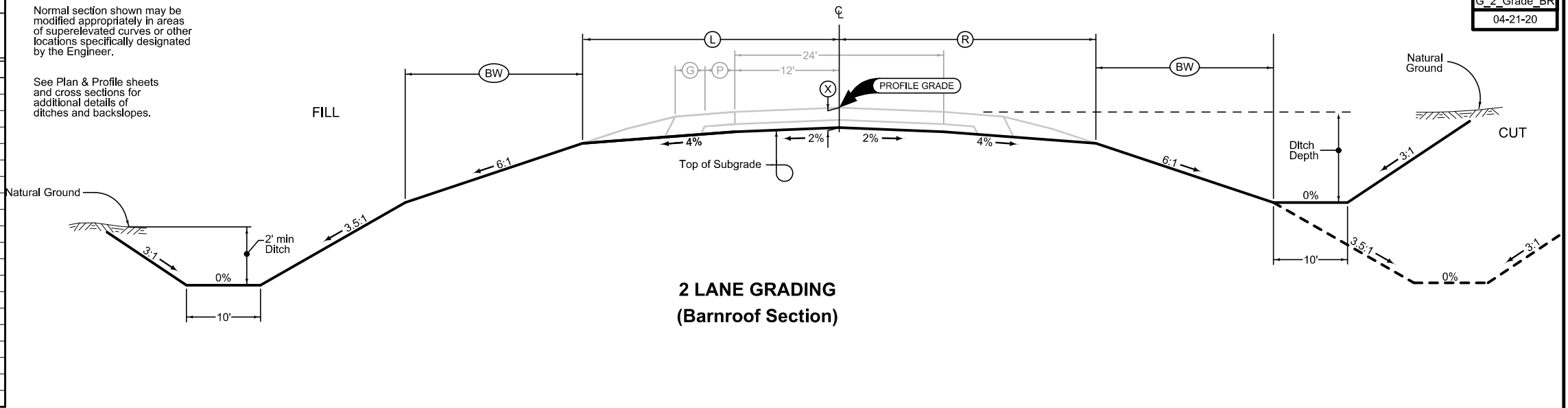
D5 PLAN - Date: 5-12-2024

| INDEX OF SEALS |                  |                         |
|----------------|------------------|-------------------------|
| SHEET NO.      | NAME             | TYPE                    |
| A.1            | Jeremy Vortherms | Primary Signature Block |
|                |                  |                         |
|                |                  |                         |
|                |                  |                         |
|                |                  |                         |
|                |                  |                         |

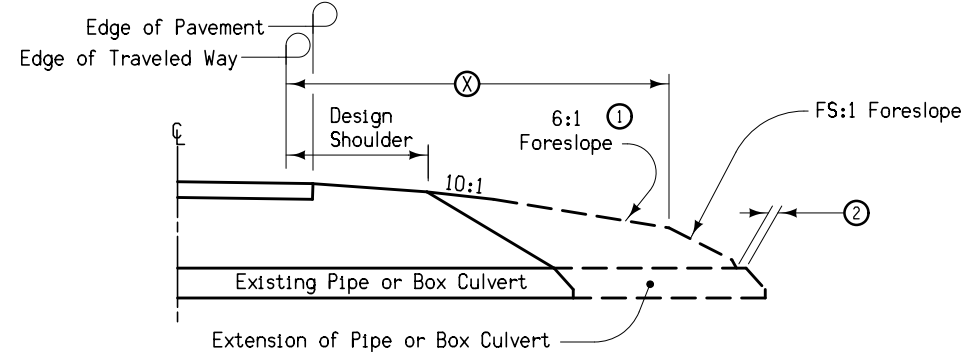
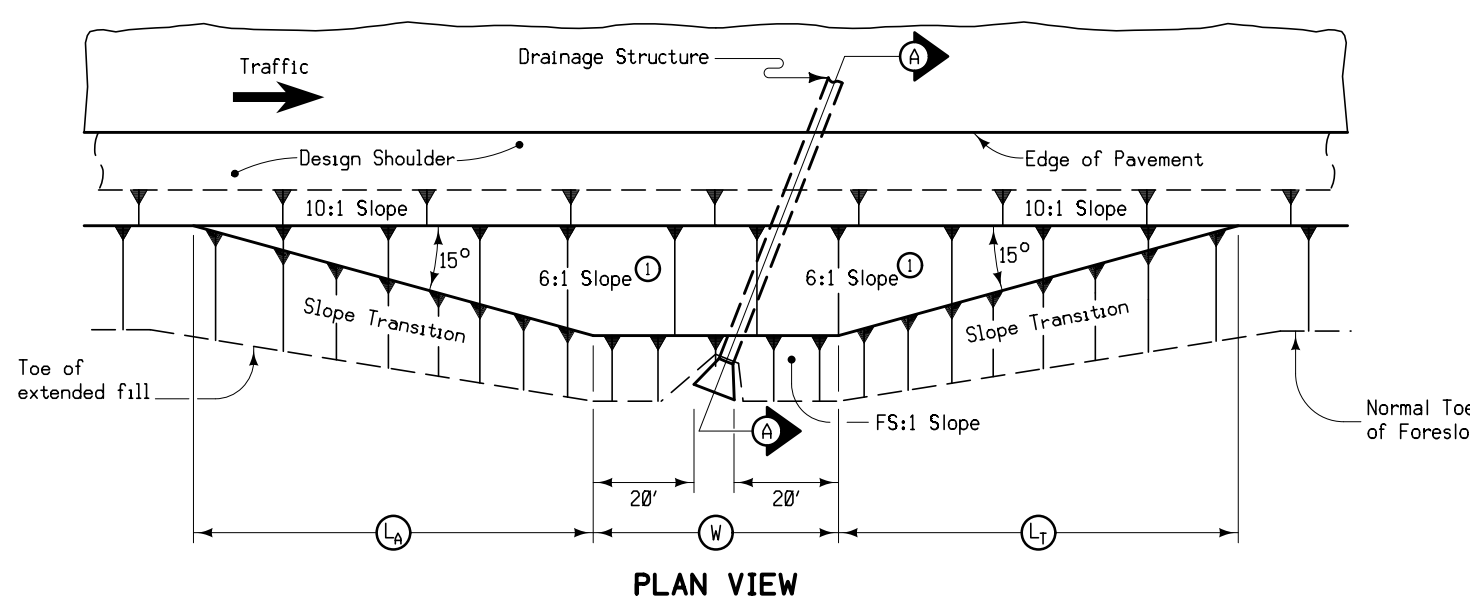
| LOCATION            |                     | DIMENSIONS |      |        |      |
|---------------------|---------------------|------------|------|--------|------|
| ROAD IDENTIFICATION | STATION TO STATION  | (L)        | (R)  | (X)    | (BW) |
|                     |                     | Feet       | Feet | Inches | Feet |
| IA 175              | 364+11.77 366+77.94 | 36.0       | 36.0 | 21.0   | 2.0  |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |
|                     |                     |            |      |        |      |

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

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



G\_2\_Grade\_BR  
04-21-20

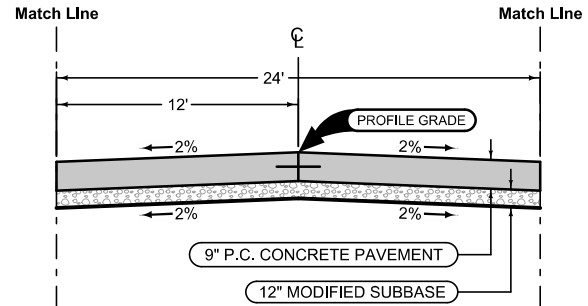


SECTION A-A

| STRUCTURE LOCATION |      | (W)  | (L <sub>A</sub> ) | (L <sub>T</sub> ) | (X)  | (FS) |
|--------------------|------|------|-------------------|-------------------|------|------|
| STATION (3)        | SIDE | Feet | Feet              | Feet              | Feet |      |
| 365+34.10          | Rt   |      |                   |                   |      |      |
| 365+34.10          | Lt   |      |                   |                   |      |      |
|                    |      |      |                   |                   |      |      |
|                    |      |      |                   |                   |      |      |

- At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten as indicated so as to cover the structure. Minimum earth cover is 6 inches.
- ① Slope may be flatter than 6:1.
  - ② 6 inch minimum for pipe installations or to top of headwall on RCB.
  - ③ At C of road.
  - (W) = Pipe or RCB opening width plus 20 feet each side.

**BARNROOF FORESLOPE AT SKEWED DRAINAGE STRUCTURE**



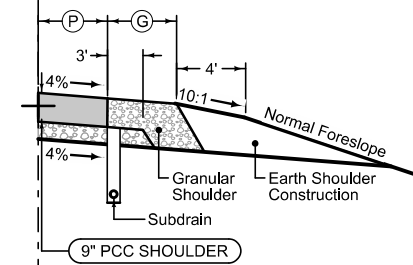
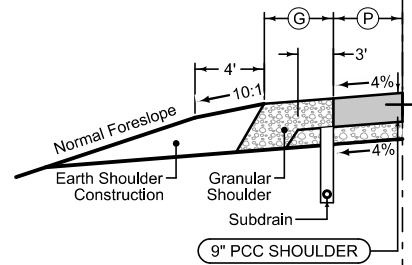
Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

|                    |           |
|--------------------|-----------|
| 2P_                |           |
| 04-21-20           |           |
| STATION TO STATION |           |
| 364+11.77          | 366+77.84 |
|                    |           |
|                    |           |

### 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)  | (G)  |
|                    |           | Feet | Feet |
| 364+11.77          | 366+77.84 | 4    | 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)  | (G)  |
|                    |           | Feet | Feet |
| 364+11.77          | 366+77.84 | 4    | 4    |
|                    |           |      |      |
|                    |           |      |      |

### SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- Sign
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box

### UTILITY LEGEND

F0 Jeff Carson  
 General Manager  
 Grundy Center Municipal Utilities (Fiber Distribution)  
 706 6th St.  
 Grundy Center, IA 50638-1536  
 (319) 825-5207  
 gcmuni@gcmuni.net

Kevin Collins  
 Construction Supervisor  
 Mediacom Communications Corporation  
 (Fiber Distribution)  
 2205 Ingersoll Ave  
 Des Moines, IA 50312  
 (515) 246-1890 Ext. 6668 Cell: (515) 867-3557  
 kcollins1@mediacomcc.com

DANA SCHOENBECK  
 ADMINISTRATIVE ASSISTANT  
 REINBECK (Sanitary Sewer/Water)  
 414 Main Street  
 Reinbeck, IA 50669  
 (319) 788-6404  
 cityasst@reinbeck.net

### 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

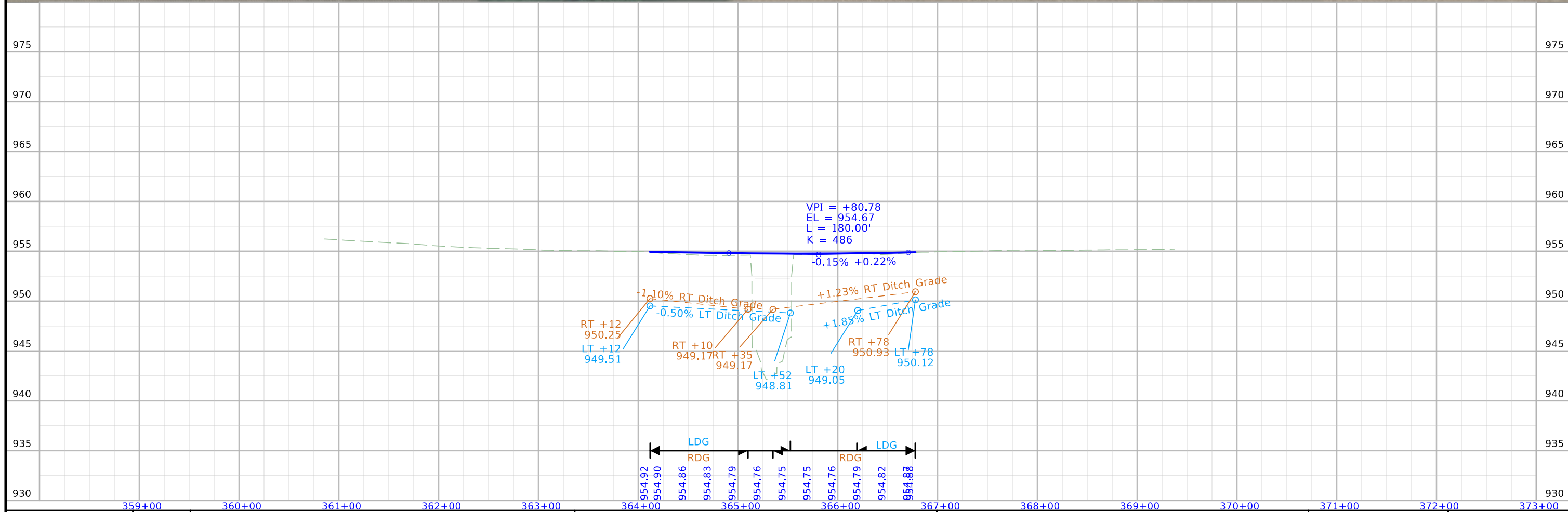
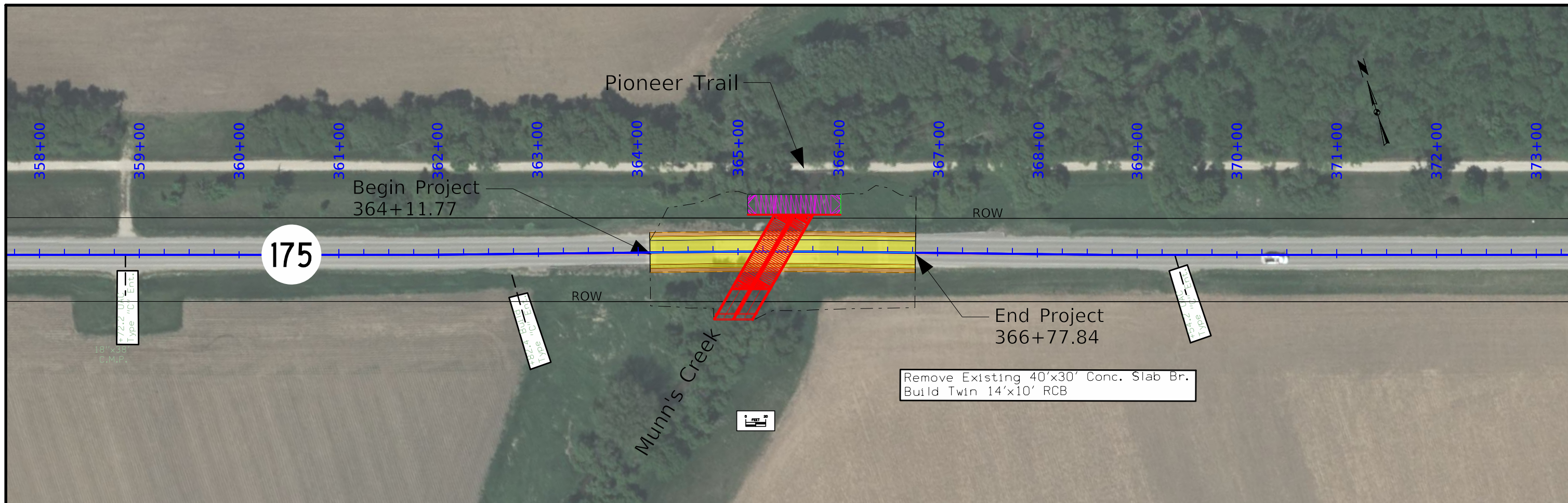
| LINEWORK    |       | Design Color No. |                                 |
|-------------|-------|------------------|---------------------------------|
| Green       | (10)  |                  | Existing Ground Line Profile    |
| Blue        | (1)   |                  | Proposed Profile and Annotation |
| 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
  - Access Control
  - Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



|          |         |                                    |               |                                      |                  |
|----------|---------|------------------------------------|---------------|--------------------------------------|------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Vortherms\Matulac\Vais | GRUNDY COUNTY | PROJECT NUMBER BRFN-175-9(25)--39-38 | SHEET NUMBER D.2 |
|----------|---------|------------------------------------|---------------|--------------------------------------|------------------|

# Survey Information

## SURVEY INDEX

**Grundy County**  
**SAP 849.1**  
**PIN 20-38-175-010**  
**Project Number: BRFN-175-9(25)--39-38**  
**Location: on IA. Hwy. 175 over Munns Creek 0.8 mi E of Co Rd T47**  
**Type of Work: Bridge Replacement**  
**Project Directory: 3817501020**

### Survey Personnel

Geoff Tinker, PLS – Land Surveyor, Sr. (Field Survey & Proj. DGN's)

### Date(s) of Survey

|             |                         |                                       |
|-------------|-------------------------|---------------------------------------|
| Begin Date  | 10/14/2021              | PHO Control and Initial Geom. Align.  |
|             | 10/19/2021 & 10/20/2021 | Final Geom. Align and Initial Prelim. |
|             | 10/26/2021 & 10/27/2021 | Site Prelim.                          |
| End Date(s) | 11/01/2021 & 11/02/2021 | NW Embankment, Waterway, Utilities    |

### General Information

Measurement units for this survey are US survey feet, upon IaRCS Zone 5.  
 This survey is for Bridge Survey (Topo) along IA Hwy. 175 over Munns Creek located 0.8mi. East of Co. Rd. T47.

### Project Control

Coordinates were determined for primary project control points by conducting IAnRTK (IaRTN Network RTK) observations (2x 5-6min OBS. w/Weighted Avg. Solutions), in addition to concurrent Static Survey observations on select points (for QA/QC validations) with Post Processing and Adjustment being constrained to surrounding Iowa Real Time Network (IaRTN) reference stations.

For additional details of the Control Survey, contact the Preliminary Survey Department for assistance.

**PROJECT DATUM: NAD83(2011) EPOCH 2010.00**  
**COORDINATE SYSTEM: IOWA RCS ZONE 5 (Waterloo)**  
**VERTICAL DATUM: NAVD88 (w/Geoid12B)**

## Alignment Information

The Horizontal Alignment for this survey includes the Original C.L. Geom. that defines the Centerline (±) of existing Bridge Structure, in addition to C.L. Roadway Offset Tangents as defined in As-built Plans from **Project F-175-9(6)--20-38** being **1977/1978** "Base Widening" Project that shifted the Old C.L. 3 feet Southerly and defined 100:1 Taper Transitions both Back and Ahead of Existing C.L. Bridge Structure on Original C.L. Alignment. Specific Taper Transition details per **Sheets 12** and **13** for specific Plan/Profile details.

Original Centerline Monuments (Points) were found referencing original C.L. Horizontal Alignment as outlined in above said project, per most recent 2018 Resurfacing Project **STPN-175-9(22)--2J-38** as follows:

|  |  |
|--|--|
| P.I. 324+37.2 HELD (#708)                    | Found Round Head (RH) Nail C.L. HMA JNT. in Curve, and 0.099ft Lt. of Calculated Reference Tie Monument intersections.                       |
| P.I. 376+20.11 (#701)<br>(@ 5182.91ft Meas.) | Found 3/8in Pin North of C.L. HMA JNT., and 0.155ft Rt. of Calculated Reference Tie Monument intersections at Hist. Plan P.I. Sta. 376+19.94 |

Alignment Name: **SURMLOriginal175**  
 START (708) N=8792005.936 E=15375905.743  
 END (701) N=8790378.273 E=15380826.442  
 Tangential Direction: S71°41'48.8"E  
 Tangential Length: 5182.911UsFt

Existing reference Tie Monuments were located to establish Calculated intersection geom. for validation of above P.I. Geom. Points found of record.

No additional Original "nor" Relocated (CL Offset) Monumentation (Points) were found.

Current (1978 Offset) Centerline Alignment referencing original C.L. Horizontal Alignment, was defined by creating 3ft Offset to South (Right) from Original Centerline definition above. Both Existing Pavement Edges and Existing C.L. was located to compare Original C.L. Tangent Offset with existing C.L. Roadway (Current C.L.). Historic Horiz. Curve Tang. (183.56) was held for P.I. 324+37.2 to define **P.T.** reference and **P.O.B.** of Existing C.L. as Sta. **326+20.64 (HELD)** at 3ft RT. of Original Centerline.

Existing C.L. Tangent was extended BACK (W\_NW) to a "potential" Geom. point (Hole in HMA Pvmnt. w/Sounding) within 0.04ft of Exist. C.L. Tang. at 372.82ft. No additional excavation was done to confirm monumentation point.

Historic Horiz. Curve Tang. at East end of Orig. C.L. Tangent (P.I. 376+20.11 Meas.) was also held (160.46) to define **P.C.** reference as **E.O.P.** of Existing C.L. as Sta. **374+59.57** (vs. Plan 374+59.48).

In accordance with the 1978 above referenced Taper Transitions, the following Station P.I. points were calculated to define Existing Centerline through Existing Bridge Structure and Survey Limits to define the Existing C.L. Alignment as part of this Project, as follows:

Alignment name: **SURMLA175**

|   | STATION     | LENGTH   | NORTHING    | EASTING      |
|---|-------------|----------|-------------|--------------|
| BOP/START   | (326+20.64) | 0.000    | 8791945.420 | 15376079.067 |
| POT   | (339+55.01) | 1334.370 | 8791526.280 | 15377345.900 |
| Tangential Direction: S71°41'34.4"E   |             |          |             |              |
| Tangential Length: 1334.370 (3ft O/S Tangent Segment Rt. of Original C.L.)  |             |          |             |              |
| POT   | (339+55.01) | 1334.370 | 8791526.280 | 15377345.900 |
| POT   | (357+77.44) | 3156.800 | 8790953.836 | 15379076.090 |
| Tangential Direction: S71°41'34.4"E   |             |          |             |              |
| Tangential Length: 1822.430 (3ft O/S Tangent Segment Rt. of Original C.L.)  |             |          |             |              |
| POT   | (357+77.44) | 3156.800 | 8790953.836 | 15379076.090 |
| HPI   | (361+92.08) | 3571.440 | 8790823.594 | 15379469.744 |
| Tangential Direction: S71°41'34.4"E   |             |          |             |              |
| Tangential Length: 414.640 (Bgn. 100:1 Transition Ahead)                    |             |          |             |              |
| HPI   | (361+92.08) | 3571.440 | 8790823.594 | 15379469.744 |
| HPI   | (364+92.10) | 3871.458 | 8790732.487 | 15379755.594 |
| Tangential Direction: S72°19'18.2"E   |             |          |             |              |
| Tangential Length: 300.018 (100:1 Transition for 1978 Base Widening Taper)  |             |          |             |              |
| HPI   | (364+92.10) | 3871.458 | 8790732.487 | 15379755.594 |
| HPI   | (365+76.10) | 3955.458 | 8790706.107 | 15379835.344 |
| Tangential Direction: S71°41'48.8"E   |             |          |             |              |
| Tangential Length: 84.000 (thru Existing Bridge Structure on Original C.L.) |             |          |             |              |
| HPI   | (365+76.10) | 3955.458 | 8790706.107 | 15379835.344 |
| HPI   | (368+76.12) | 4255.475 | 8790608.829 | 15380119.153 |
| Tangential Direction: S71°04'49.0"E   |             |          |             |              |
| Tangential Length: 300.017 (100:1 Transition for 1978 Base Widening Taper)  |             |          |             |              |
| HPI   | (365+76.10) | 4255.475 | 8790608.829 | 15380119.153 |
| EOP/END   | (374+59.57) | 4838.926 | 8790425.859 | 15380673.172 |
| Tangential Direction: S71°43'25.4"E   |             |          |             |              |
| Tangential Length: 583.451 (3ft O/S Tangent Segment Rt. of Original C.L.)   |             |          |             |              |

**NOTE:** ALL Stationing and Distances in "UsFt" upon IaRCS Zone 5 (Waterloo) projection.

### Utility Information

Refer to separate Index file Utility Report **Utility Report-38175025.docx** for complete project Utility locate details. For Iowa One Call logging data and other utility details see Utility Survey and Ownership Reports/Emails in the Utility folder of the PrelimSurvey project directory.

### 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 - Ia. RCS Zone 05  
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) EPOCH 2010.00  
 1a. Regional Coordinate System Zone 05

VERT. DATUM: NAVD88  
 Geoid Model 12B  
 Project Control Marks are Bench Marks

| Point Name | Northing    | Easting      | Elevation | Feature Code / Description   |
|------------|-------------|--------------|-----------|--|
| 1          | 8789140.768 | 15384756.942 | 952.481   | FENO FND 5in Dp. nRTK 2xW/A Loc. in open mowed grass area at 21.5ft S/SW of CL Pioneer Trail; and 154.5ft West of West edge Cooley Plumbing gravel Entr.; and 122ft NE of NE end Guardrail of Hwy. 175 Bridge. |
| 381752077  | 8791498.292 | 15377326.595 | 971.342   | FENO SET 4in Dp. nRTK 2xW/A Loc. 56.5ft W/NW of Sta. 340 Sign; and 17.5ft W/NW of CL Field Entr.; and 16.2ft S/SW of ACC Fillet Edge; and 40.5 W/NW of ROW end Post.   |
| 381752083  | 8790512.964 | 15380294.046 | 953.258   | FENO SET Sta370 6in Dp. per Static PP/ADJ Loc. 1.9ft N/NE of Sta. 370 Sign; and 36ft S/SW of CL Hwy. 175; and 133ft SE of CL Field Entr.   |
| 7082       | 8788158.354 | 15375651.708 | 988.178   | CP CCP GPS MON nRTK 2xW/A Loc. 1.5ft East of Carsonite SM Post; and 23.9ft West of West Edge Pvmt.; and 24.5ft North of CL Field Entr.; and 70.4ft South of 3rd P.P. North of Rd. Intersection South.          |
| L30        | 8792061.872 | 15375892.772 | 968.183   | BM NGS per Static PP/ADJ Loc. 167.7ft East of Int. CL Tang. Hwy 175 from SE and T47 South; and 49ft N/NE of CL Hwy. 175; and 6.0ft North of Ref. Tie Mon.; and 32ft S/SW of CL Pioneer Trail.                  |
|            |             |              |           |  |
|            |             |              |           |  |

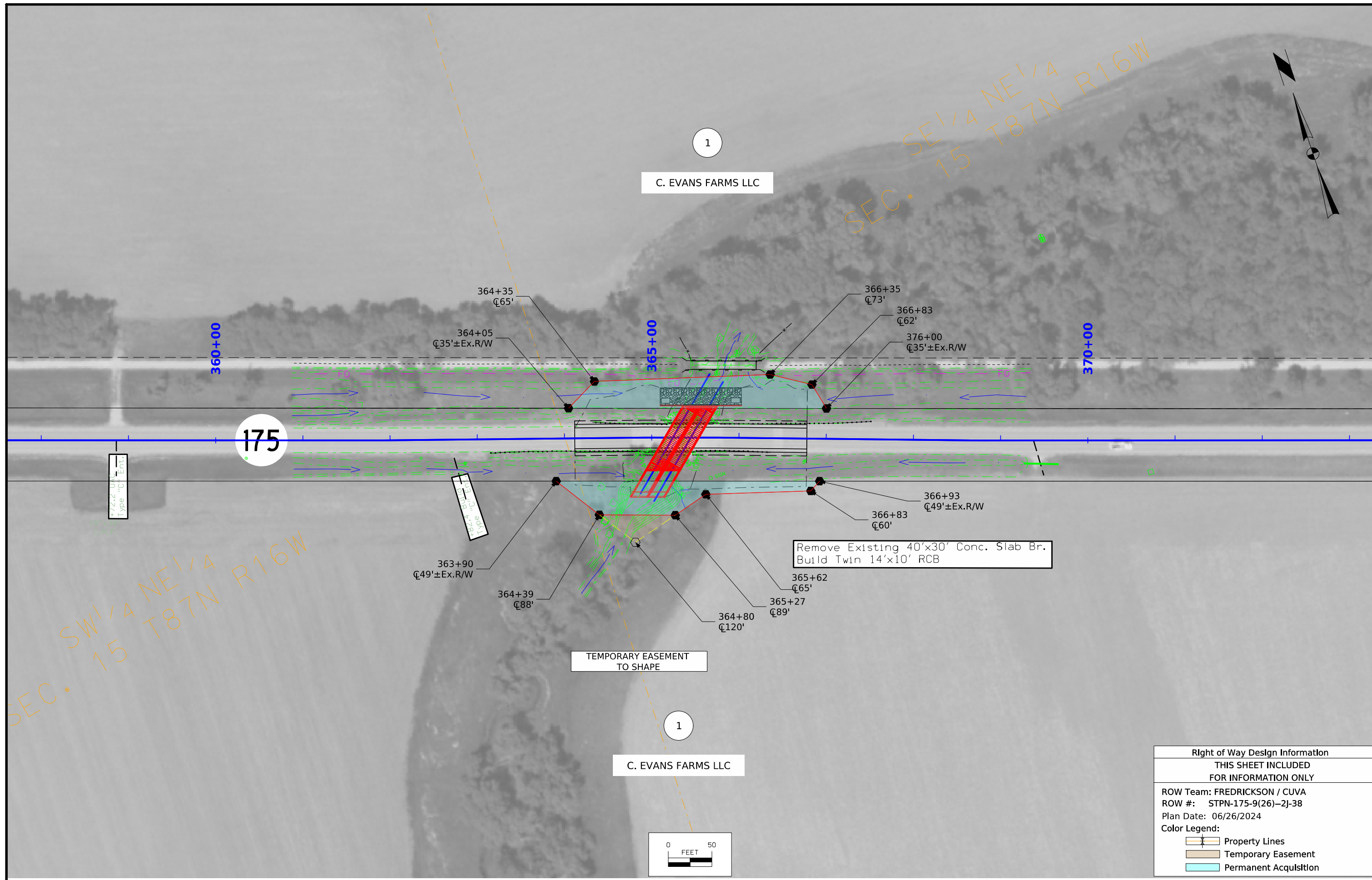
**NOTE:**

The first two digits in the control point name refer to the county number.  
 The next 3 digits refer to the highway number.  
 The next 3 digits refer to the highway milepost.  
 The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.

**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) |
| ML 175 | IA 175   | 324+37.20        | 8792005.94   | 15375905.74 |              |              |             |             |              |             |                                     |              |             |           |              |             |            |              |             |
| ML 175 | IA 175   | 376+20.11        | 8790378.27   | 15380826.44 |              |              |             |             |              |             |                                     |              |             |           |              |             |            |              |             |

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



1

C. EVANS FARMS LLC

SEC. 15 SE 1/4 NE 1/4 T87N R16W

360+00

365+00

370+00

175

7/2.2' Utility  
Type "C" Ent.

18'x36' Utility  
Type "C" Ent.

364+35  
±65'

364+05  
±35'±Ex.R/W

366+35  
±73'

366+83  
±62'

376+00  
±35'±Ex.R/W

366+93  
±49'±Ex.R/W

366+83  
±60'

Remove Existing 40'x30' Conc. Slab Br.  
Build Twin 14'x10' RCB

363+90  
±49'±Ex.R/W

364+39  
±88'

365+62  
±65'

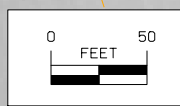
365+27  
±89'

364+80  
±120'

TEMPORARY EASEMENT  
TO SHAPE

1

C. EVANS FARMS LLC



| Right of Way Design Information          |                       |
|--|-----------------------|
| THIS SHEET INCLUDED FOR INFORMATION ONLY |                       |
| ROW Team: FREDRICKSON / CUVA             |                       |
| ROW #: STPN-175-9(26)-2J-38              |                       |
| Plan Date: 06/26/2024                    |                       |
| Color Legend:                            |                       |
|  | Property Lines        |
|  | Temporary Easement    |
|  | Permanent Acquisition |

108-23A  
08-01-08

**TRAFFIC CONTROL PLAN**

IA 175 will be closed to traffic at Munn's Creek. Traffic will be detoured using IA 14, D35 and T53. Refer to the detour map on J.2 for details.

108-25  
10-21-14

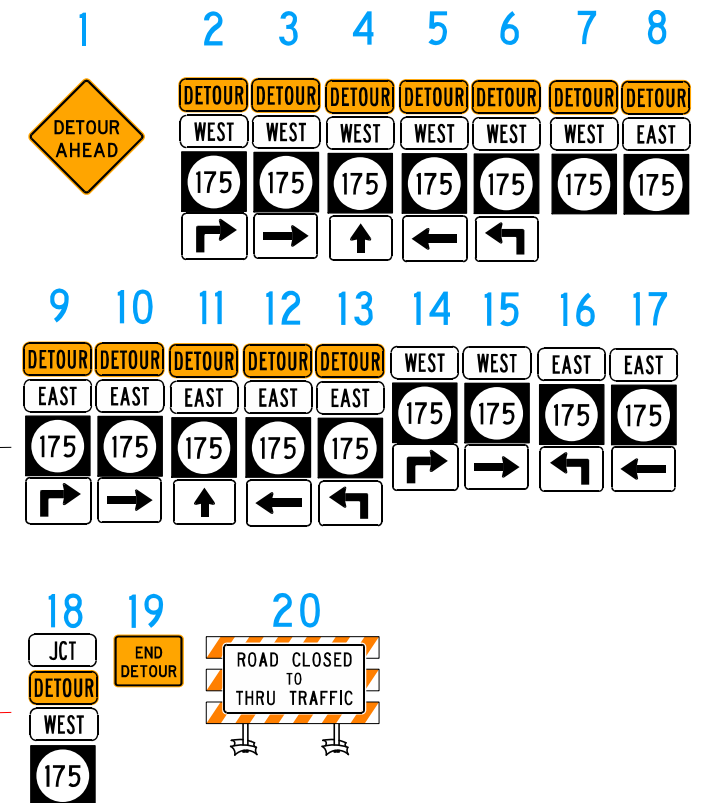
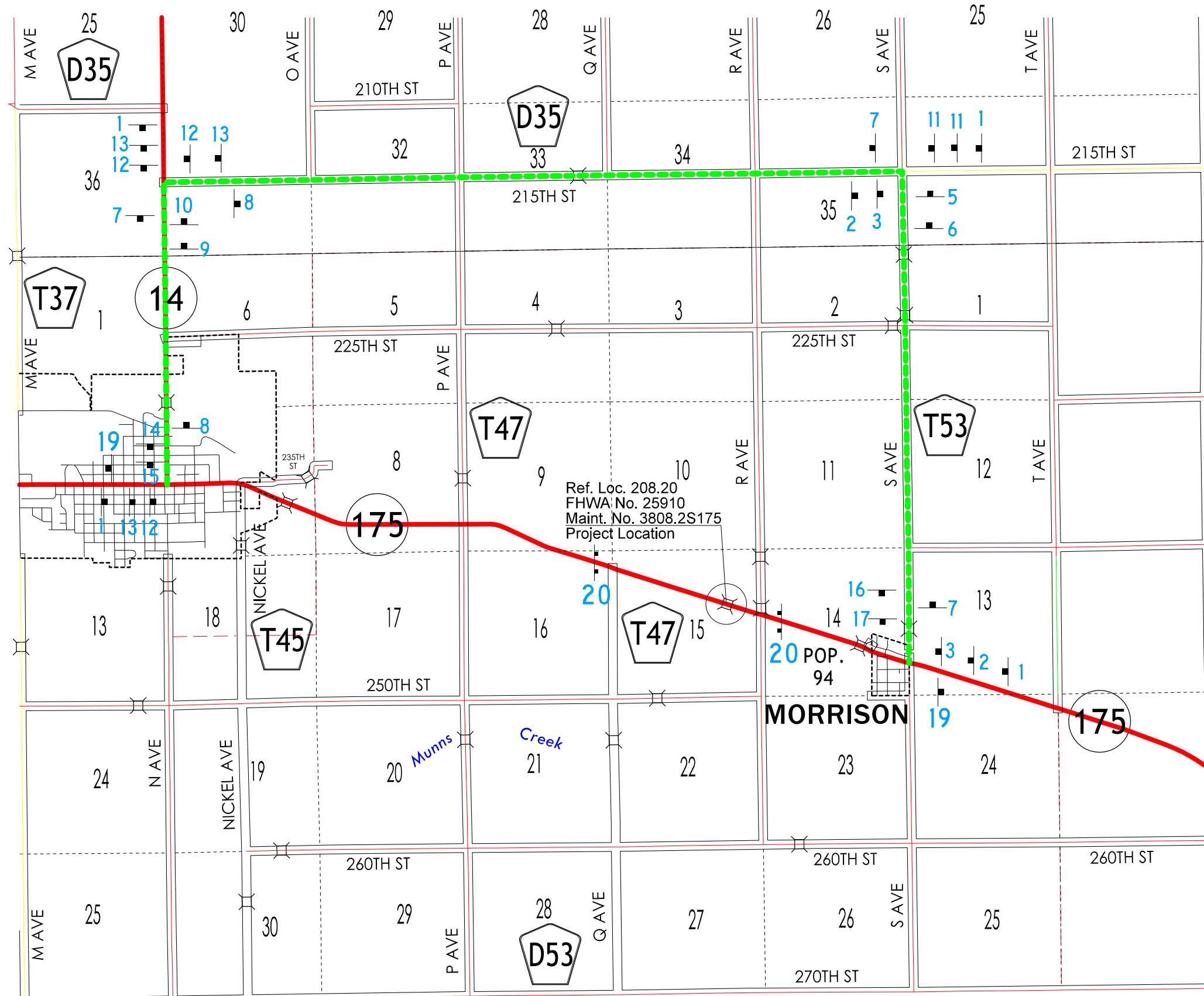
**511 TRAVEL RESTRICTIONS**

| Route | Direction | County | Location Description | Feature Crossed | Object Type | Maint. Bridge No.,<br>Structure ID,<br>or FHWA No. | Type of<br>Restriction | Existing<br>Measurement | Construction<br>Measurement | Construction<br>Measurement<br>as Signed | Projected<br>As Built<br>Measurement | Remarks |
|-------|-----------|--------|----------------------|-----------------|-------------|--|------------------------|-------------------------|-----------------------------|--|--------------------------------------|---------|
|       |           |        | None anticipated.    |                 |             |  |                        |                         |                             |  |                                      |         |

102-15  
08-01-08

**TABULATION OF SPECIAL EVENTS**

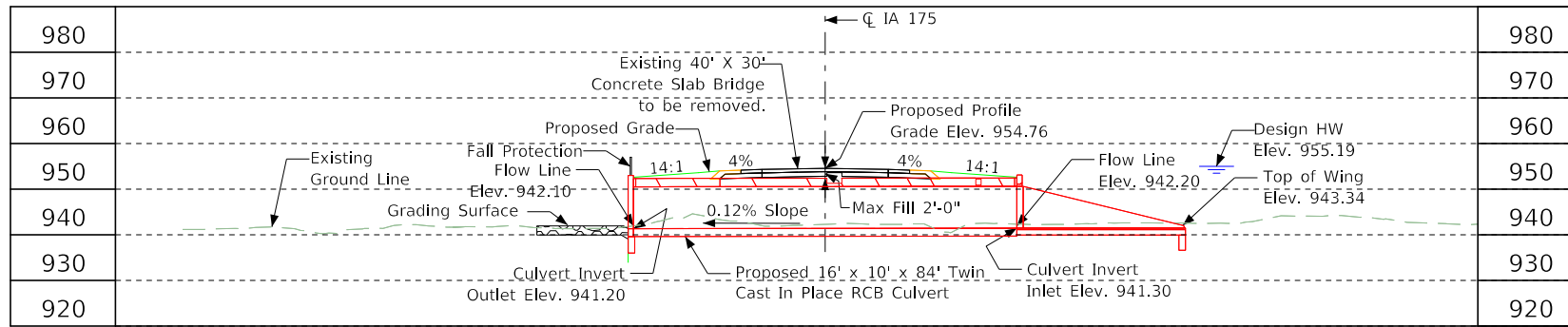
| Event                 | Location  | Date                |
|-----------------------|-----------|---------------------|
| 4th of July Parade    | Grinnell  | 07/04/22            |
| Iowa Hawkeye Football | Iowa City | 9/1/2022-11/30/2022 |
| Iowa State Football   | Ames      | 9/1/2022-11/30/2022 |
|                       |           |                     |
|                       |           |                     |
|                       |           |                     |
|                       |           |                     |
|                       |           |                     |
|                       |           |                     |



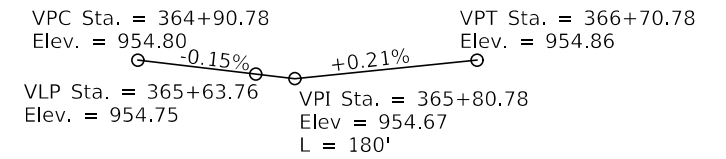
..... Detour Route

Project Location Map  
Grundy County  
BRFN-175-9(25)--29-38  
Bridge Replacement

Control Point: FENO SET Sta. 370, 6in Dp. per Static PP/ADJ Loc. 1.9ft N/NE of Sta. 370 Sign;  
and 36ft S/SW of CL Hwy. 175; and 133ft SE of CL Field Entr., N:8790512.964, E:15380294.046, El. 953.258



Longitudinal Section Along Centerline of Culvert



Proposed Profile  
Grade IA 175

**Hydraulic Data**

RIDB: "MunnC\_Grun, River Mile 0.89"  
Drainage Area = 7.4 sq. mi.  
Q<sub>50</sub> = 2,942 cfs  
Q<sub>100</sub> = 3,482 cfs  
HW Elev. = 955.19 (50 year)  
Exit Velocity = 7.95 fps (50 year)  
Stream Slope = 5.2 Ft./Mi.

**Utilities Legend**

F0 - Fiber Optic

Utilities shown on this sheet are for information only, see Road Design sheets for final utility information.

**Location**

IA 175 over Munns Creek  
T-87N R-16W  
Section 15  
Washington Township  
Grundy County  
FHWA No. 25911  
Asset ID No. 3808.2S175  
Latitude 42.349289°  
Longitude -92.694641°

**Traffic Estimate**

2022 AADT 1,250 V.P.D.  
Trucks 15%  
Total  
Design ESALs 600,000

**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.

*Eric J. Dean*  
Signature Date 4-8-2024  
Eric J. Dean  
Printed or Typed Name  
My license renewal date is December 31, 2024

Pages or sheets covered by this seal: V.1

**Plan Notes:**

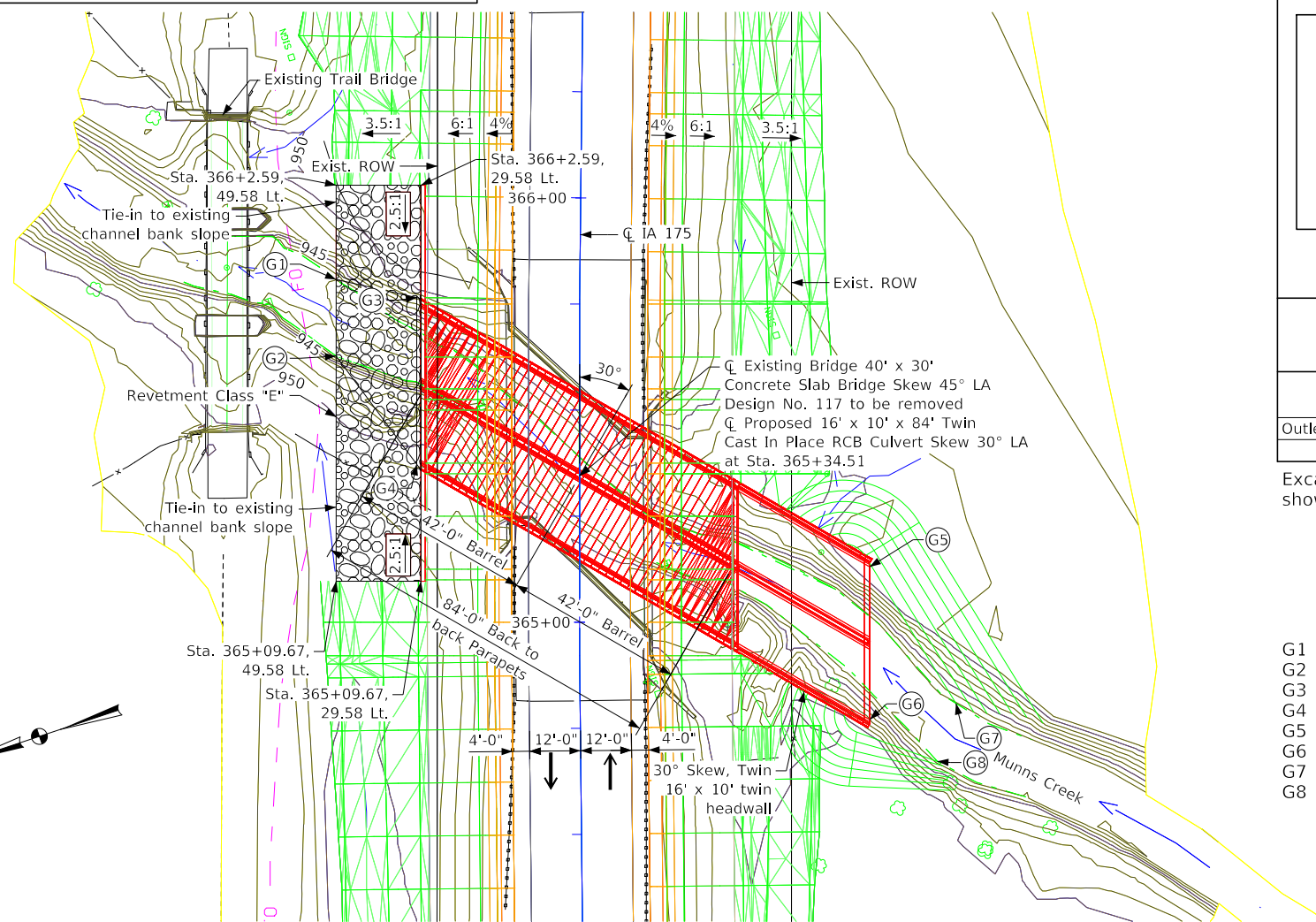
1. Drainage through existing channel must be maintained throughout construction.
2. Flow line of culvert has been set 0.9' below streambed.

**General Notes:**

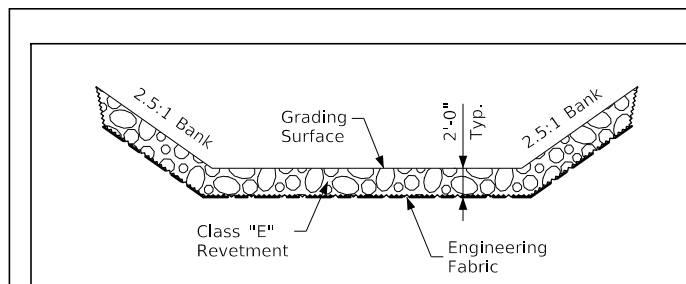
This design is for the replacement of the existing 40' x 30' Concrete Slab Bridge, Grundy County, Design No 117, FHWA No. 25910, Maint. No. 3808.2S175.

**Design Notes:**

1. IA 175 will be closed during construction.
2. Additional ROW will be required.
3. Cast-in-place culvert is nonstandard
4. Revetment is required at the downstream end.



Situation Plan



Typical Channel Protection

**Estimated Revetment Quantities Included With Road Plans**

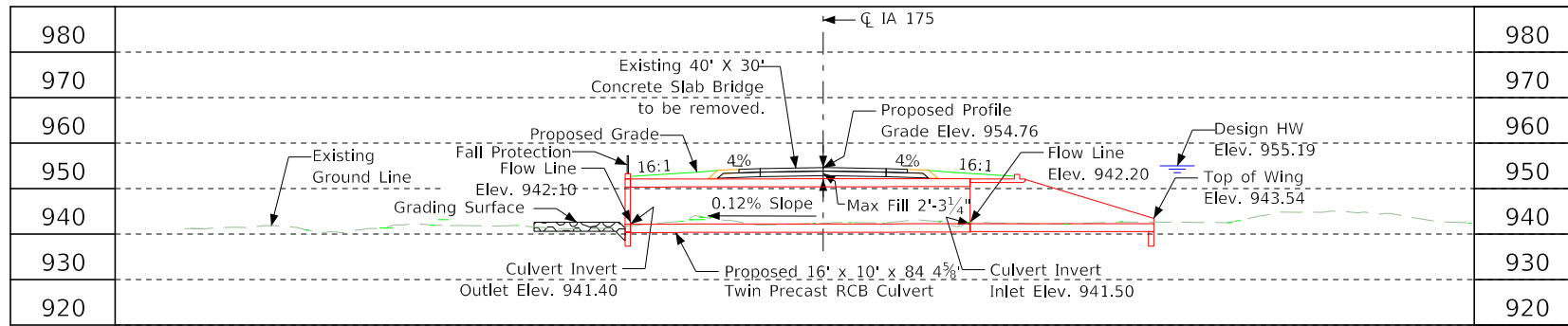
| Location | Revetment Class "E" (Ton) | Engineering Fabric (SY) | CL. 10 Channel Excavation (CY) |
|----------|---------------------------|-------------------------|--------------------------------|
| Outlet   | 227.56                    | 213.33                  | 142.22                         |
| Totals   | 227.56                    | 213.33                  | 142.22                         |

Excavation quantity calculated from grading surface. Quantities shown are for information only.

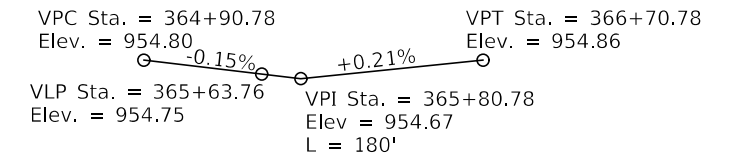
- G1 = Sta. 365+80.12, 57.37 Lt., Elev. 942.00
- G2 = Sta. 365+62.73, 57.37 Lt., Elev. 942.00
- G3 = Sta. 365+76.45, 76.45 Lt., Elev. 942.10
- G4 = Sta. 365+36.45, 38.37 Lt., Elev. 942.10
- G5 = Sta. 365+13.03, 68.38 Rt., Elev. 942.20
- G6 = Sta. 365+76.30, 68.24 Rt., Elev. 942.20
- G7 = Sta. 365+79.90, 88.58 Rt., Elev. 942.30
- G8 = Sta. 364+66.10, 84.37 Rt., Elev. 942.30

Design For 30 Degree (LA)  
**Twin 16' x 10' x 84' Cast In Place Reinforced Concrete Box Culvert**  
Situation Plan  
STA. 365+34.51 (IA 175) Turn-In Date: April, 2024  
Grundy County  
IOWA DEPARTMENT OF TRANSPORTATION  
Design No. 0126 Design Sheet No. 1 of 3 FHWA/Asset 25911

Control Point: FENO SET Sta. 370, 6in Dp. per Static PP/ADJ Loc. 1.9ft N/NE of Sta. 370 Sign;  
 and 36ft S/W of CL Hwy. 175; and 133ft SE of CL Field Entr., N:8790512.964, E:15380294.046, El. 953.258



Longitudinal Section Along CL Culvert



Proposed Profile Grade IA 175

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.

*Eric Dean*  
 Signature Eric J. Dean Date 4-8-2024  
 Printed or Typed Name Eric J. Dean  
 My license renewal date is December 31, 2024

Pages or sheets covered by this seal: V.2

Plan Notes:

1. Drainage through existing channel must be maintained throughout construction.
2. Flow line of culvert has been set 0.7' below streambed.

General Notes:

This design is for the replacement of the existing 40' x 30' Concrete Slab Bridge, Grundy County, Design No 117, FHWA No. 25910, Maint. No. 3808.2S175.

Design Notes:

1. IA 175 will be closed during construction.
2. Additional ROW will be required.
3. Revetment is required at the downstream end.

Hydraulic Data

RIDB: "MunnC\_Grun, River Mile 0.89"  
 Drainage Area = 7.4 sq. mi.  
 $Q_{50} = 2,942$  cfs  
 $Q_{100} = 3,482$  cfs  
 HW Elev. = 955.19 (50 year)  
 Exit Velocity = 7.95 fps (50 year)  
 Stream Slope = 5.2 Ft./Mi.

Utilities Legend

F0 - Fiber Optic

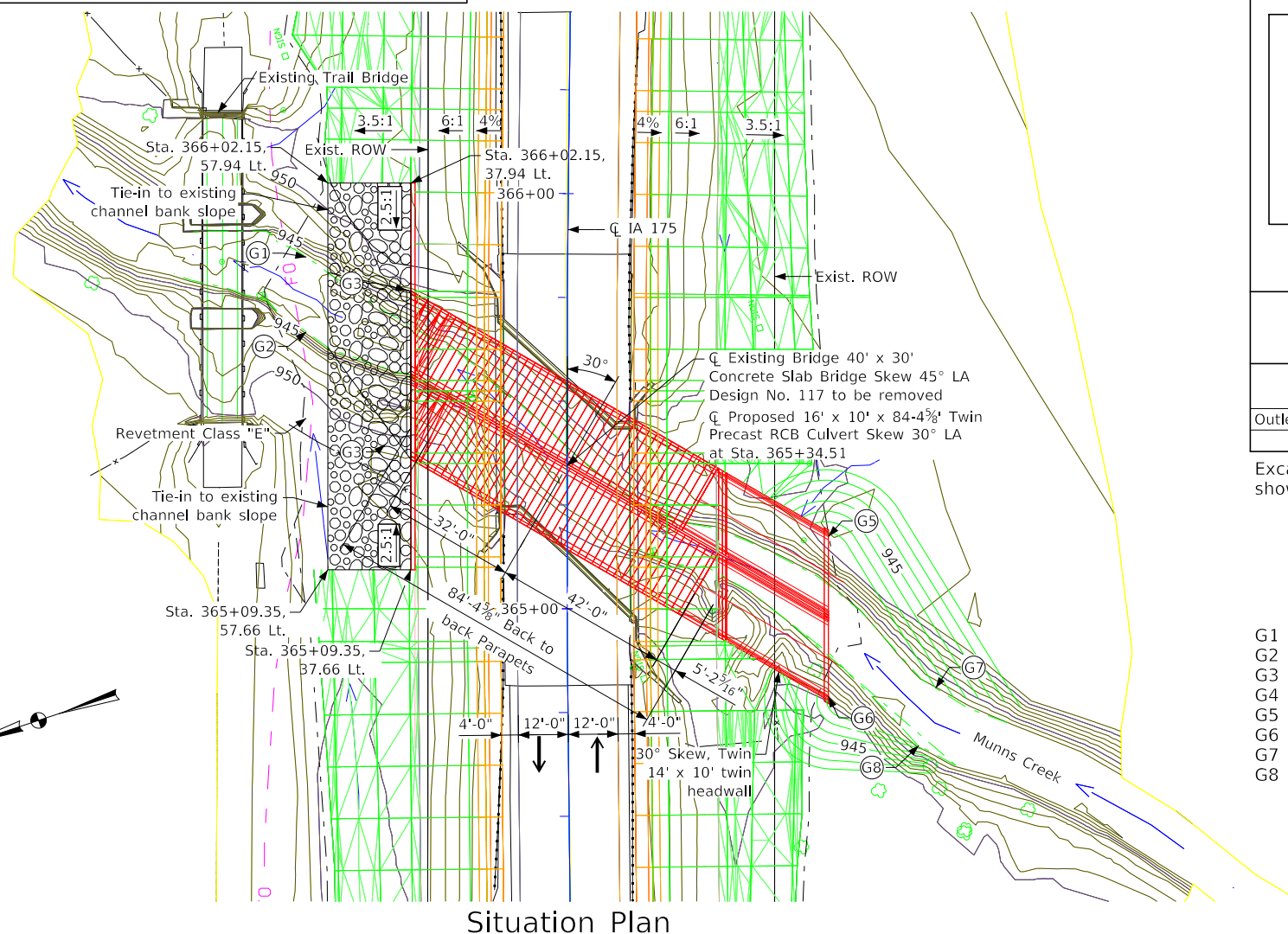
Utilities shown on this sheet are for information only, see Road Design sheets for final utility information.

Location

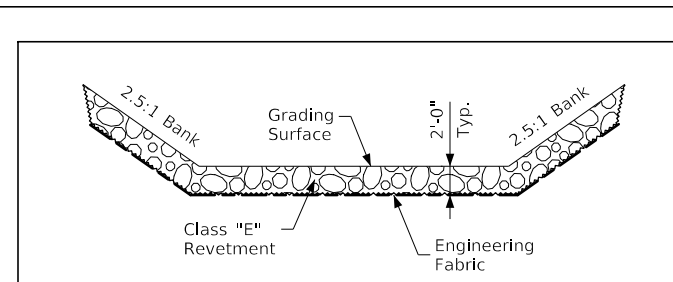
IA 175 over Munns Creek  
 T-87N R-16W  
 Section 15  
 Washington Township  
 Grundy County  
 FHWA No. 25911  
 Asset ID No. 3808.2S175  
 Latitude 42.349289°  
 Longitude -92.694641°

Traffic Estimate

2022 AADT 1,250 V.P.D.  
 Trucks 15%  
 Total  
 Design ESALs 600,000



Situation Plan



Typical Channel Protection

Estimated Revetment Quantities Included With Road Plans

| Location | Revetment Class "E" (Ton) | Engineering Fabric (SY) | CL. 10 Channel Excavation (CY) |
|----------|---------------------------|-------------------------|--------------------------------|
| Outlet   | 228.94                    | 214.63                  | 143.09                         |
| Totals   | 228.94                    | 214.63                  | 143.09                         |

Excavation quantity calculated from grading surface. Quantities shown are for information only.

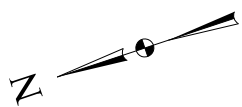
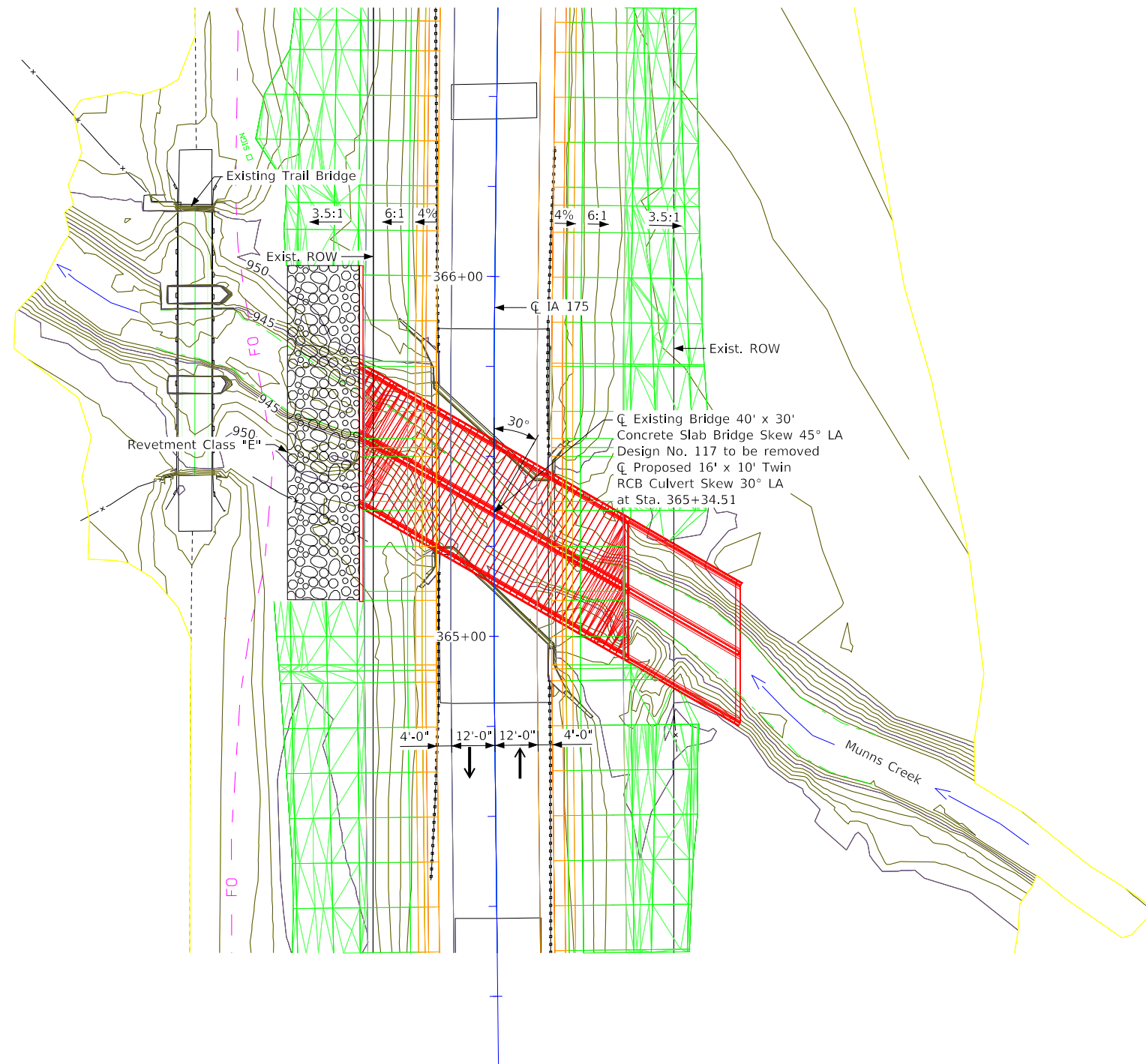
- G1 = Sta. 365+80.34, 57.71 Lt., Elev. 942.00
- G2 = Sta. 365+62.93, 57.66 Lt., Elev. 942.00
- G3 = Sta. 365+76.36, 38.67 Lt., Elev. 942.10
- G4 = Sta. 365+37.29, 38.66 Lt., Elev. 942.10
- G5 = Sta. 365+16.59, 62.88 Rt., Elev. 942.20
- G6 = Sta. 364+79.14, 62.74 Rt., Elev. 942.20
- G7 = Sta. 364+79.90, 88.86 Rt., Elev. 942.30
- G8 = Sta. 364+66.10, 84.37 Rt., Elev. 942.30

Design For 30 Degree (LA)  
**Twin 16' x 10' x 84'-4 5/8" Precast Reinforced Concrete Box Culvert**

Situation Plan

STA. 365+34.51 (IA 175) Turn-In Date: April, 2024  
 Grundy County  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0126 Design Sheet No. 2 of 3 FHWA/Asset 25911

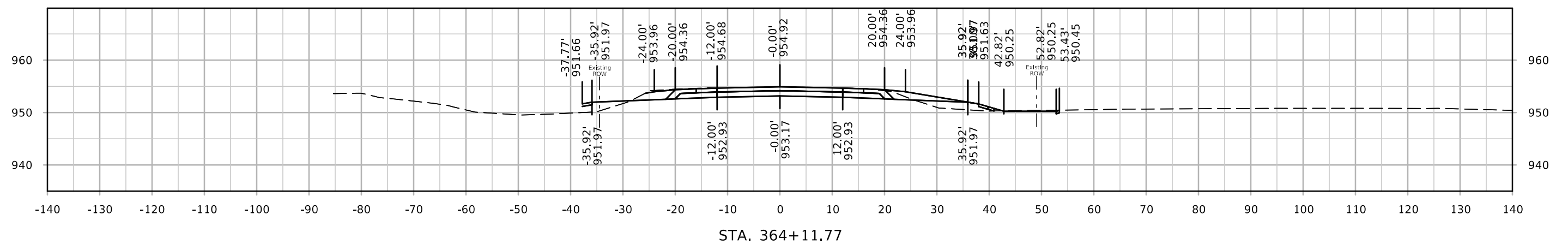
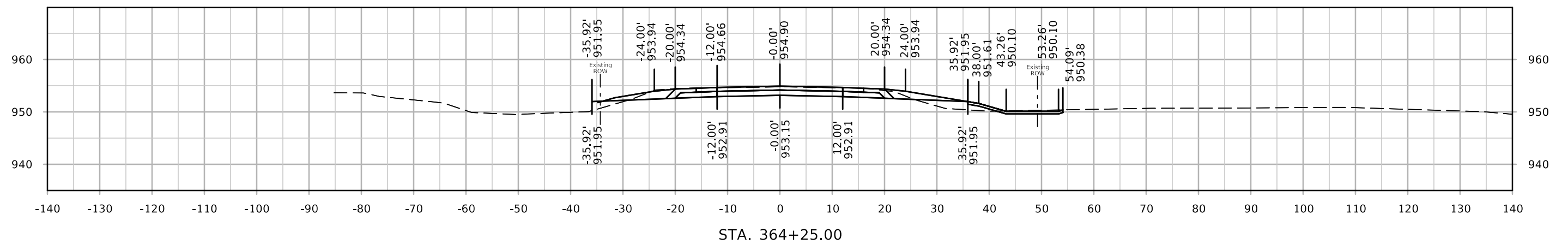
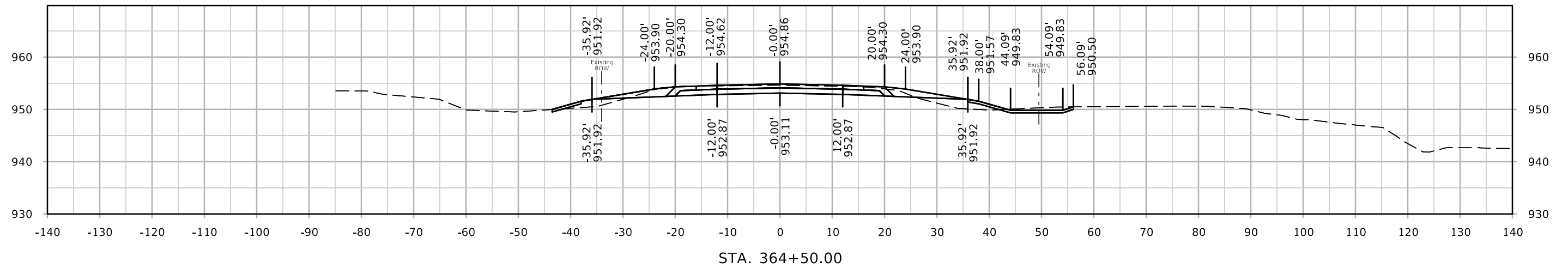




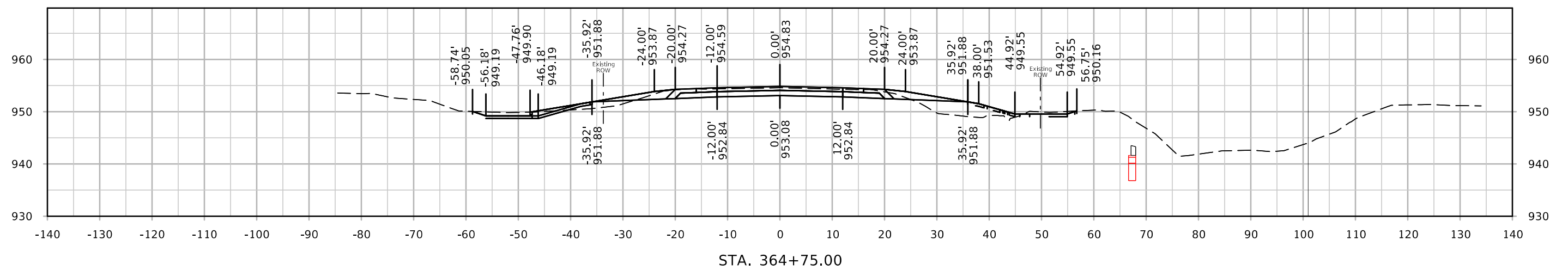
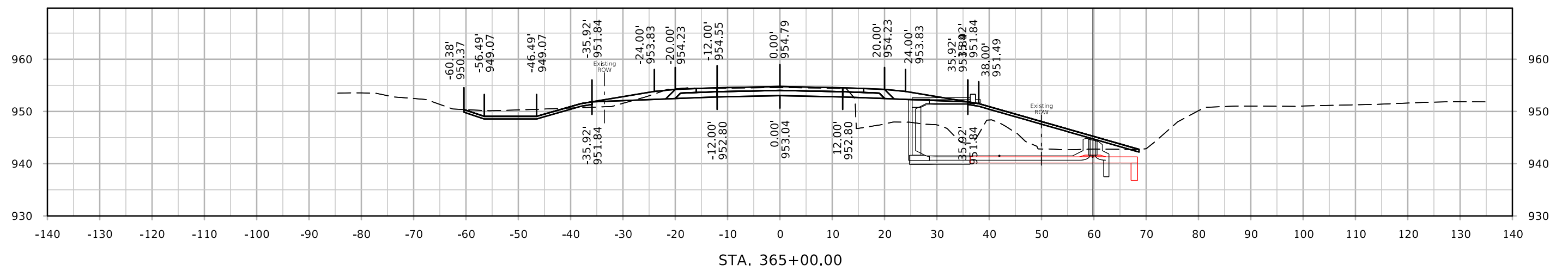
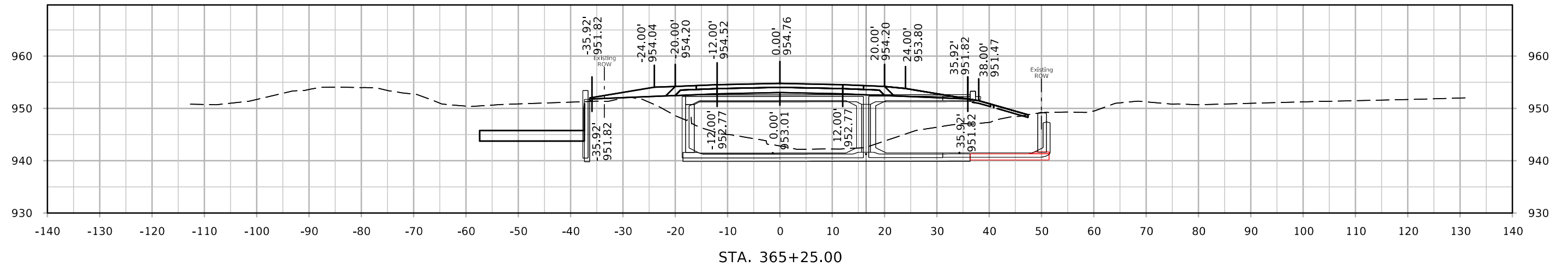
Situation Plan

Design For 30 Degree (LA)  
**Twin 14' x 10' x 84'**  
**Reinforced Concrete Box Culvert**  
 Situation Plan - Site  
 STA. 365+34.51 (IA 175) Turn-in Date: April, 2024  
**Grundy County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 0126 Design Sheet No. 3 of 3 FHWA/Asset 25911

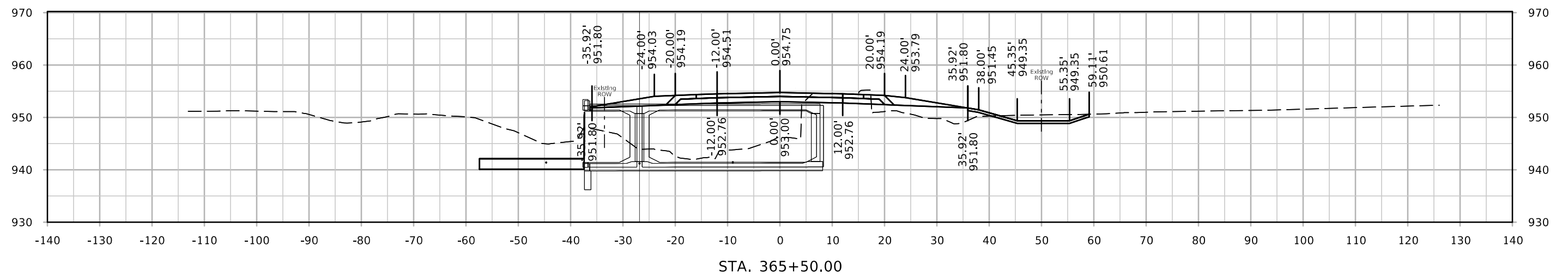
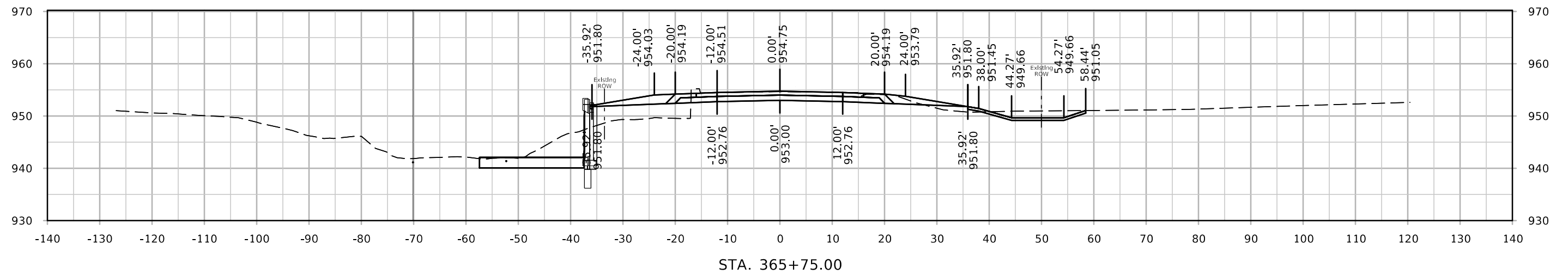
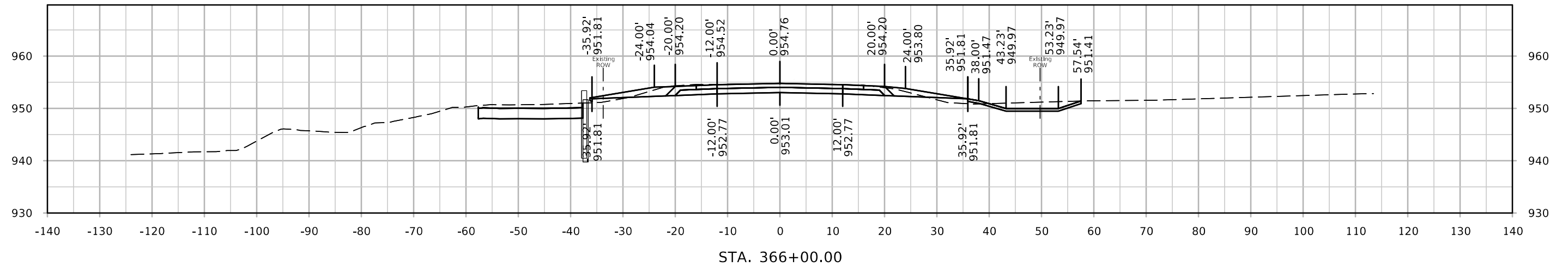
# Preliminary - IA 175



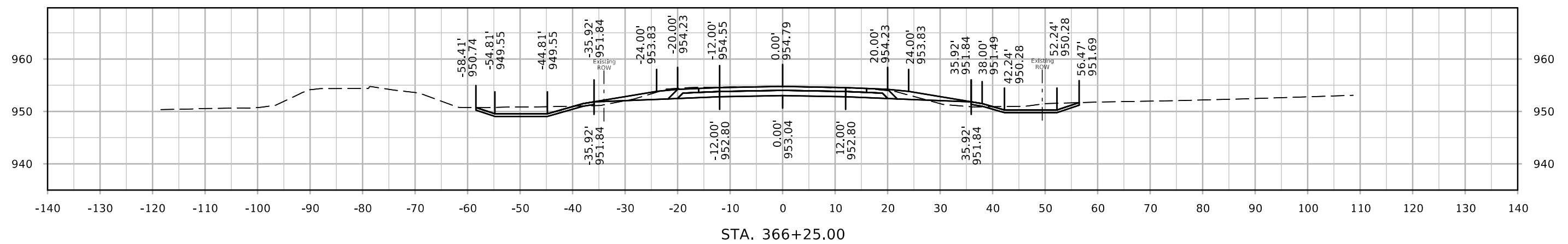
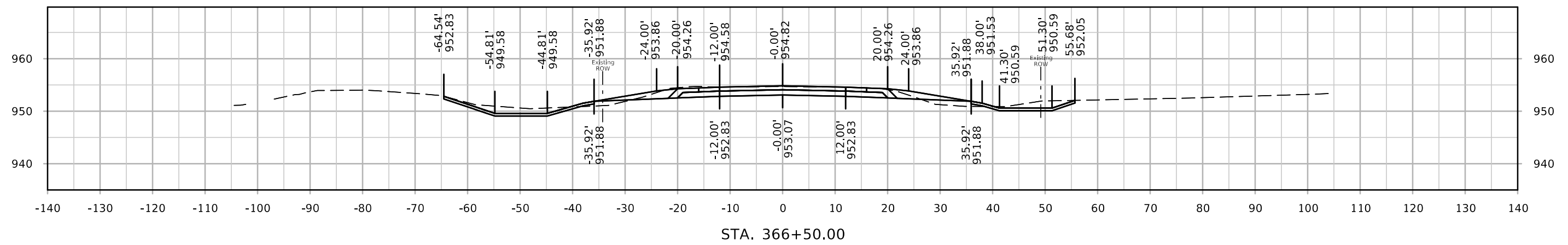
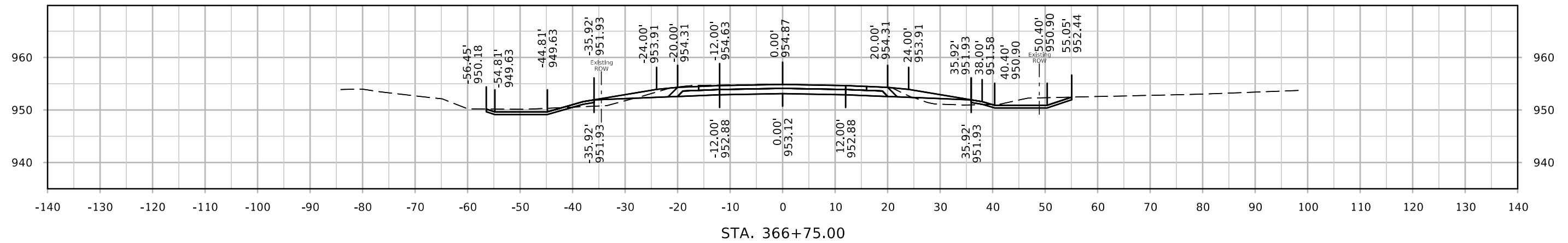
# Preliminary - IA 175



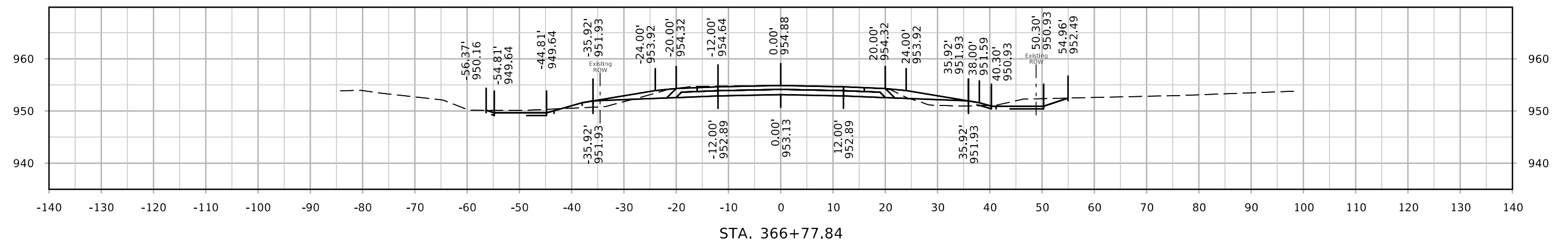
# Preliminary - IA 175



# Preliminary - IA 175



# Preliminary - IA 175



Skew Angle 59° 22' 33.6"

