



**Highway Division**

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
**WEBSTER COUNTY**  
RCB CULVERT REPLACEMENT-SINGLE BOX

Over Tank Pond Creek 0.3 Mile W. Of Co. Rd. P-33

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

PROJECT IDENTIFICATION NUMBER

13-94-175-010

PROJECT NUMBER

BRFN-175-6(33)--39-94

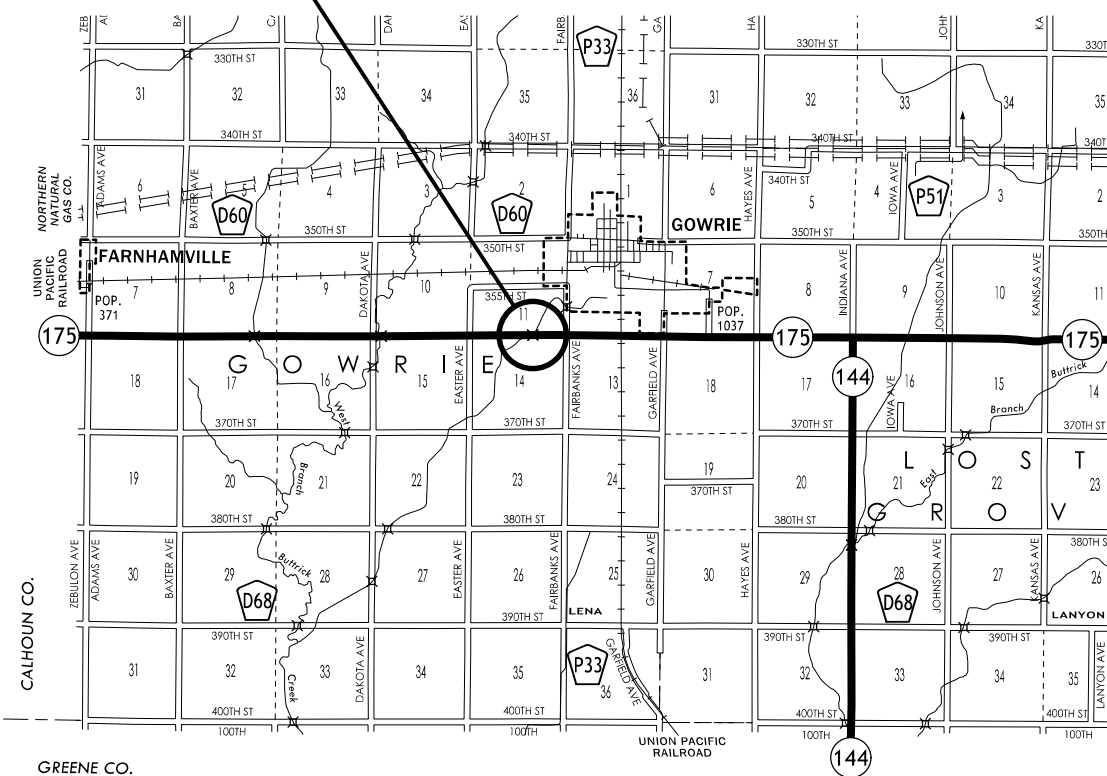
R.O.W. PROJECT NUMBER

STPN-175-6(34)--2J-94

**INDEX OF SHEETS**

No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 2	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 - 2	Reference Ties and Bench Marks
G.3	Horizontal Control Tab. & Super for all Alignments
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
* J.2	Detour Route
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>
V.1	Bridge and Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 5	Mainline Cross Sections
	* Color Plan Sheets

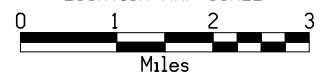
**PROJECT LOCATION**  
M.P. = 116.3



**DESIGN DATA RURAL**

2018	AADT	1200	V.P.D.
2038	AADT	1500	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	31	%
	Total		
	Design ESALs	--	

LOCATION MAP SCALE



D4 PLAN - Date: 8-22-2017

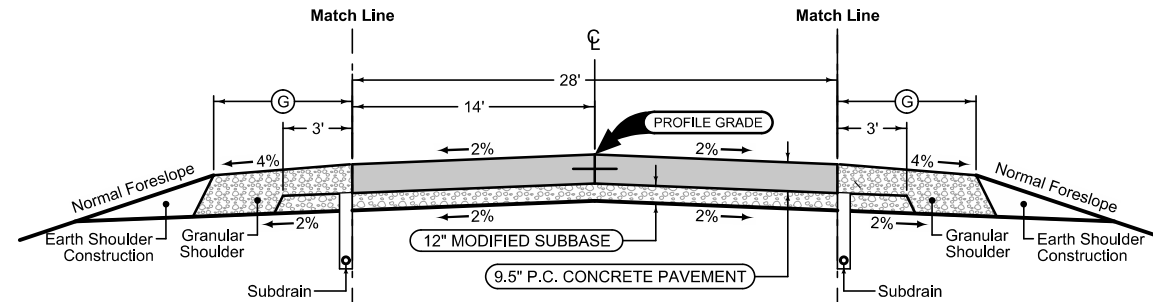
**PRELIMINARY PLANS**

Subject to change by final design.

D5 PLAN - Date: 1-5-2016

**Granular Shoulder**

2_G_		Ⓞ
10-21-14		
STATION TO STATION		Feet
1132+82.00	1134+41.00	6



Mainline Jointing:  
 Transverse joints: CD at 20' spacing  
 Longitudinal joint: L-2

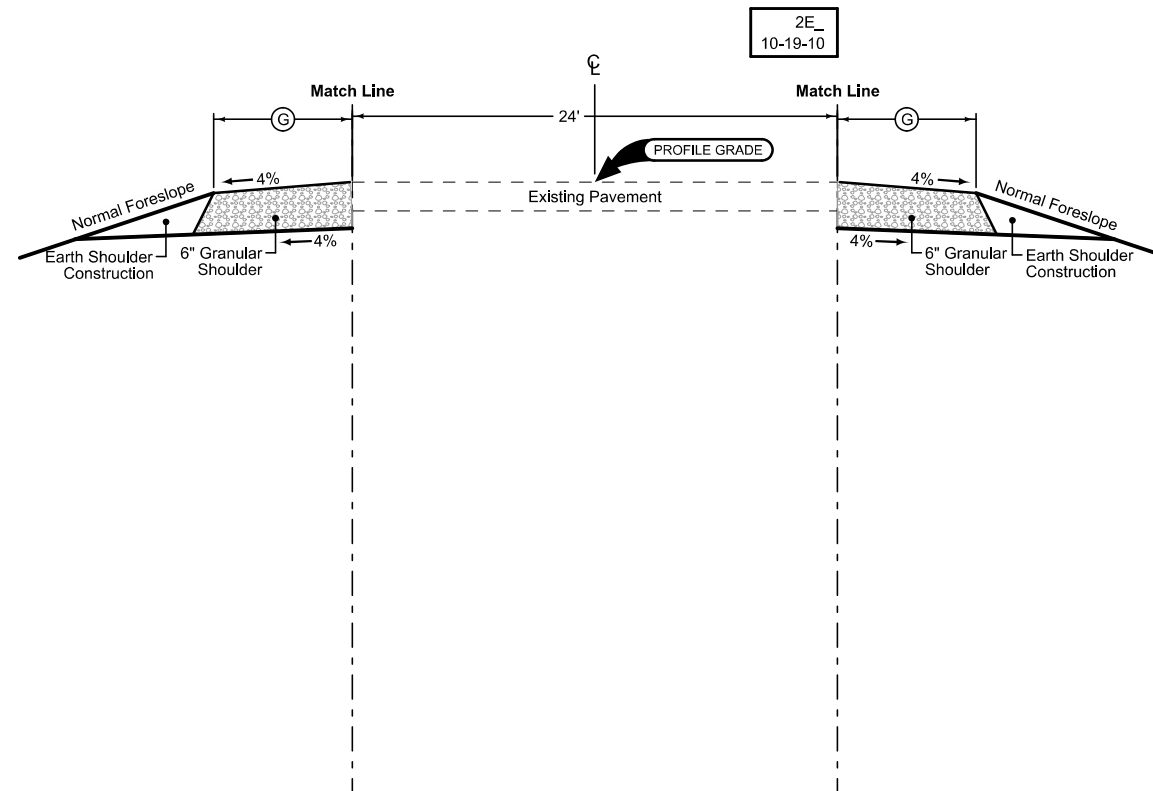
2P_	
10-19-10	
STATION TO STATION	
1132+82.00	1134+41.00

**Granular Shoulder**

2_G_		Ⓞ
10-21-14		
STATION TO STATION		Feet
1132+82.00	1134+41.00	6

**Granular Shoulder**

2_G_		Ⓞ
10-21-14		
STATION TO STATION		Feet
1132+62.00	1132+82.00	6 - 8
1134+41.00	1134+61.00	8 - 6
1134+61.00	1135+00.00	6



**Granular Shoulder**

2_G_		Ⓞ
10-21-14		
STATION TO STATION		Feet
1132+15.00	1132+62.00	6
1132+62.00	1132+82.00	6 - 8
1134+41.00	1134+61.00	8 - 6

See Tab 100-24 or 100-25 for pavement quantities.  
 See Tab 112-9 for shoulder quantities.



### SURVEY SYMBOLS

- GDL Guard Rail Steel
- Midland Power COOP
- BB Billboard
- PIP Pipe Culvert
- FW Wire Fence
- OUT Tile Outlet
- TIL Tile Line
- SNP Unpaved Shoulder
  
- DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- BNK Stream Bank
- EW Edge of Water

### UTILITY LEGEND

- Midland Power COOP

### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

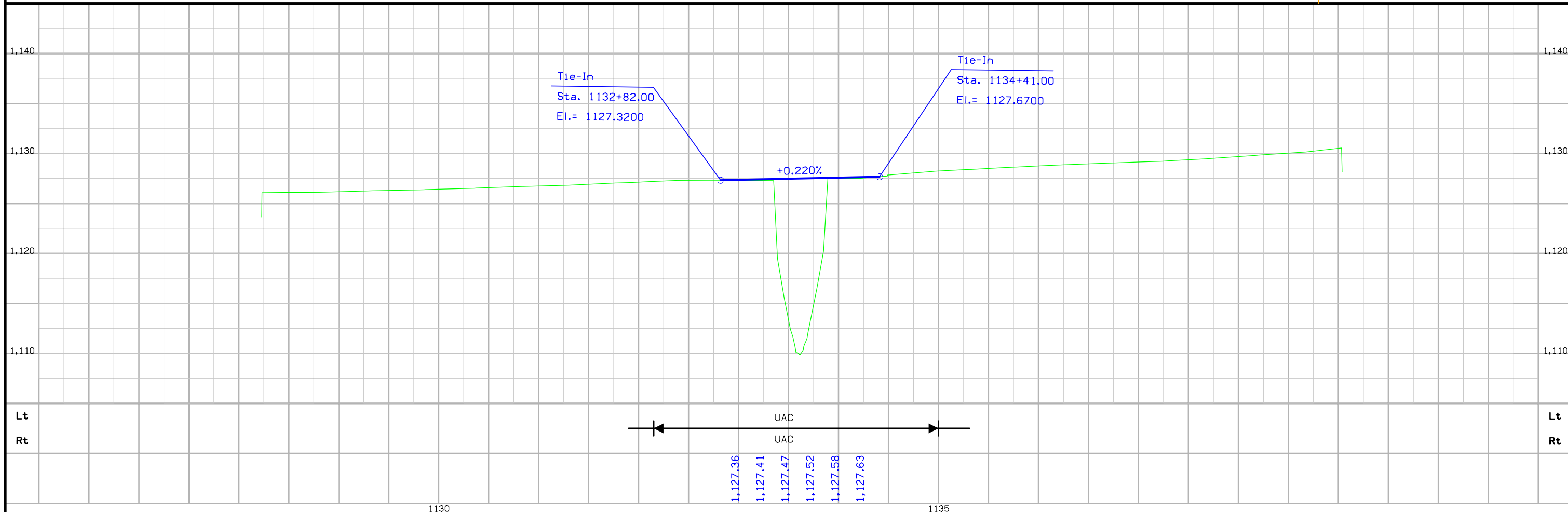
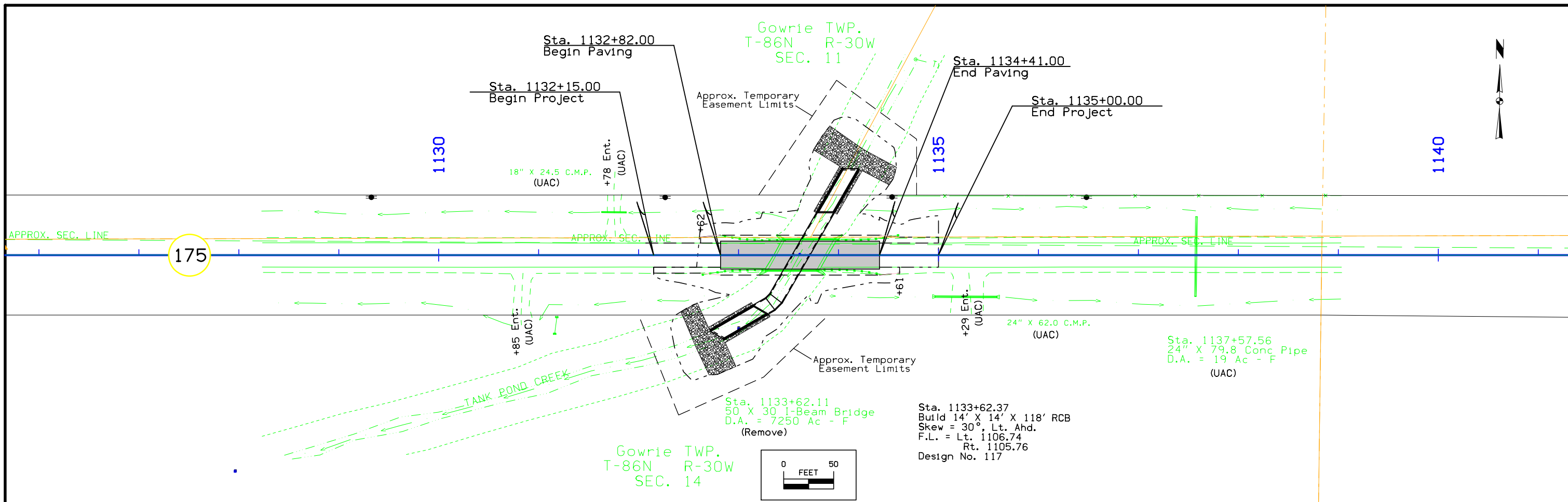
LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- High Tension 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)



## Survey Information

Webster County  
 BRFN-175-6(33)--39-94  
 Over Tank Pond Creek 0.3 Mile W. Of Co. Rd. P-33  
 PIN 13-94-175-010  
 Sap-0820

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction of IA 175 bridge over tank pond creek 0.3 mile west of county road P-33. Project datum and control information is provided by Design Survey Office. This project is a full field survey.

### Vertical Control

Vertical datum for this survey is NAVD88 computed using Geoid 12A. NAVD88 datum was established at project Pt. 94010 and 94011 using 6 hour static GNSS observations to the nearest laRTN reference stations. laRTN reference stations have published GRS80 ellipsoidal heights adjusted to the national CORS network.

2012 Survey elev. Pt. 94010= 1114.59  
 This Survey elev. Pt. 94010= 1114.84  
 2012 survey + 0.25 = this survey

The 2012 survey observed 1 NGS Control Monuments with published NAVD88 height relative with the survey elevation of Pt. 94010

NGS 1st. order class II mark designated D 3 has a published Elev. Of 1134.22  
 2012 Survey Elev. 1134.20 + 0.25  $\frac{1}{64}$  Adjustment this survey = 1134.45

### Horizontal Control

The project coordinate system for this survey is unmodified Iowa State Plane North Zone (U.S. Survey Feet). Due to the fact this survey is for one bridge the  $\frac{1}{64}$  This survey control is relative to laRTN reference stations. laRTN Reference Station coordinates are relative to the National Reference Station network datum:  $\frac{1}{64}$  NAD83 (2011) for Epoch 2010.00. Coordinates were determined using 6 hour static GNSS observations to the nearest laRTN reference stations. laRTN reference stations are adjusted to the national CORS network.

Combined Scale Factor of project= 0.999920

The Combined Scale Factor may be used for total station stakeout and location to survey in the State Plane coordinate system however  $\frac{1}{64}$  a scale factor of 1 should be used for staking structures to ensure the design dimensions are laid out.

### Alignment Information

The horizontal alignment for this survey is a retrace of Fed Aid Project No. 839(5). Survey stationing was equated to the plan POT at Sta. 1125+51.1 and run ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 1125+51.1 Fed Aid Project No. 839(5)  
 Survey POT Sta. 1125+51.1

PI Sta. 1147+00.0 Fed Aid Project No. 839(5)  
 Survey PI Sta. 1146+98.99

## VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
11	3561612.983	4702292.958	1119.432	1129+99.46	74.373	CP	FENO MONUMENT 94011
500	3561673.861	4702617.496	1129.299	1133+24.42	15.767	BM	500 CUT X SW WING BRG
501	3561635.164	4704341.524	1133.335	Off Chain	Off Chain	BM	501 CONC MONUMENT



# GOWRIE

350TH ST

355TH ST

370TH ST

DAKOTA AVE

EASTER AVE

FAIRBANKS AVE

GARFIELD AVE

10

15

14

13

18

5

8

17

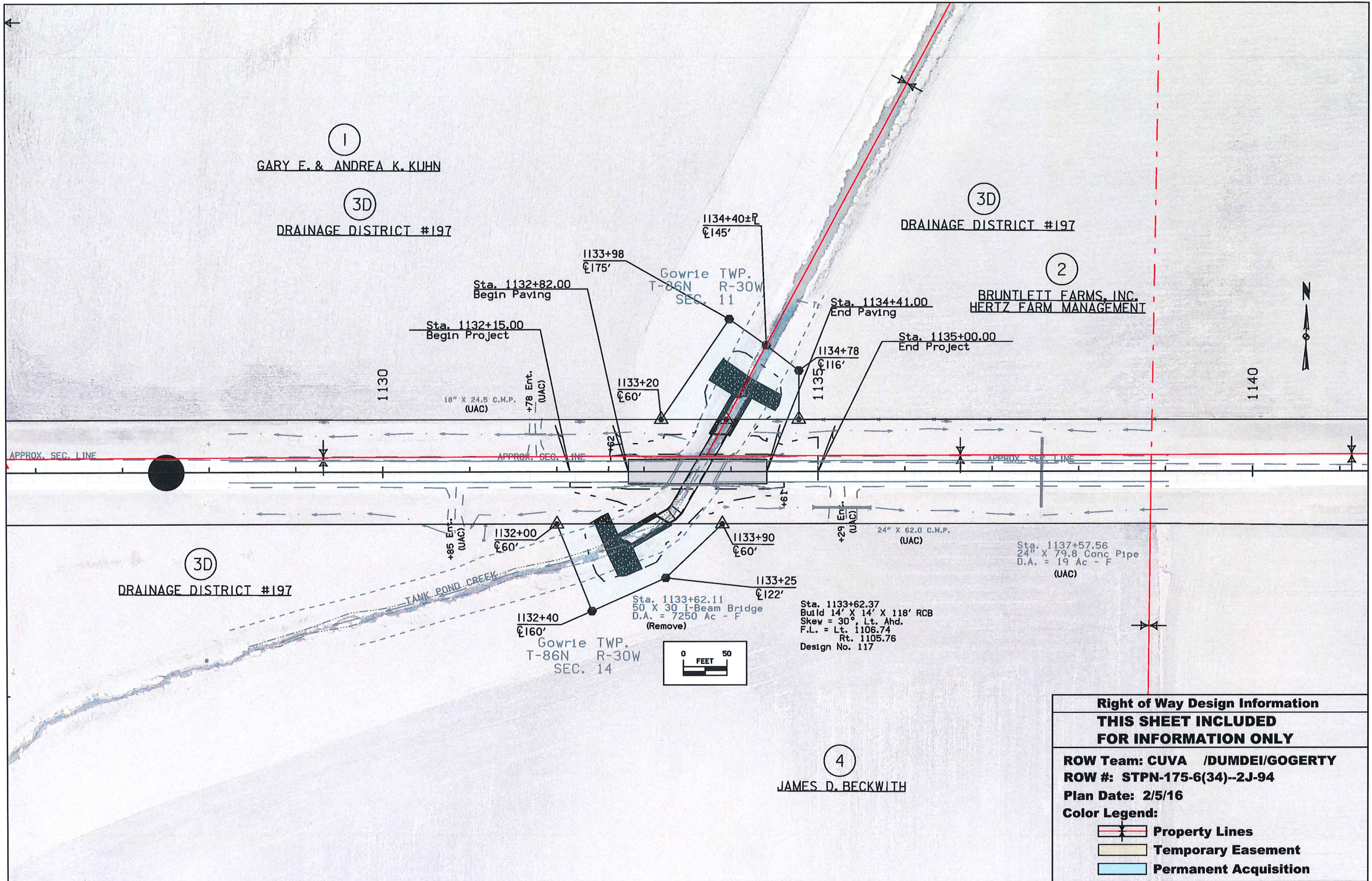
Point # 11  
Point # 500  
Point # 501

POP.  
1037

175

Webster	ROW: STPN-175-6(34)--2J-94				PIN 13-94-175-010												
	Tank Pond Creek 0.3 mi W of Co Rd P33																
			STATE		COUNTY		CITY			BORROW							
PARCEL NO.	OWNER NAME	FEE	EASE	FEE	EASE	FEE	EASE	EXCESS	FEE	T.E.	MITIGATION	OTHER	HOUSE	BUILDING(S)	A/C ONLY	TOTAL ACQ.	
1	Gary E. Kuhn - Fee		0.16 AC														
2	Hertz Farm Management - Fee Bruntlett Farms, Inc. - Fee		0.11 AC														
3D	Drainage District #197 - Fee																
4	James D. Beckwith - Fee		0.25 AC														
4 Parcels	"TOTALS	0 AC	0.52 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC						
		0 SF		0 SF	0 SF	0 SF	0 SF	0 SF	0 SF								





<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
<b>ROW Team: CUVA /DUMDEI/GOGERTY</b> <b>ROW #: STPN-175-6(34)--2J-94</b> <b>Plan Date: 2/5/16</b>	
<b>Color Legend:</b>	
	Property Lines
	Temporary Easement
	Permanent Acquisition



108-23A  
08-01-08

**TRAFFIC CONTROL PLAN**

Road closed for Bridge replacement to the West, BRF-175-6(31)--38-94.

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
			None Expected									

111-01  
04-17-12

**COORDINATED OPERATIONS**

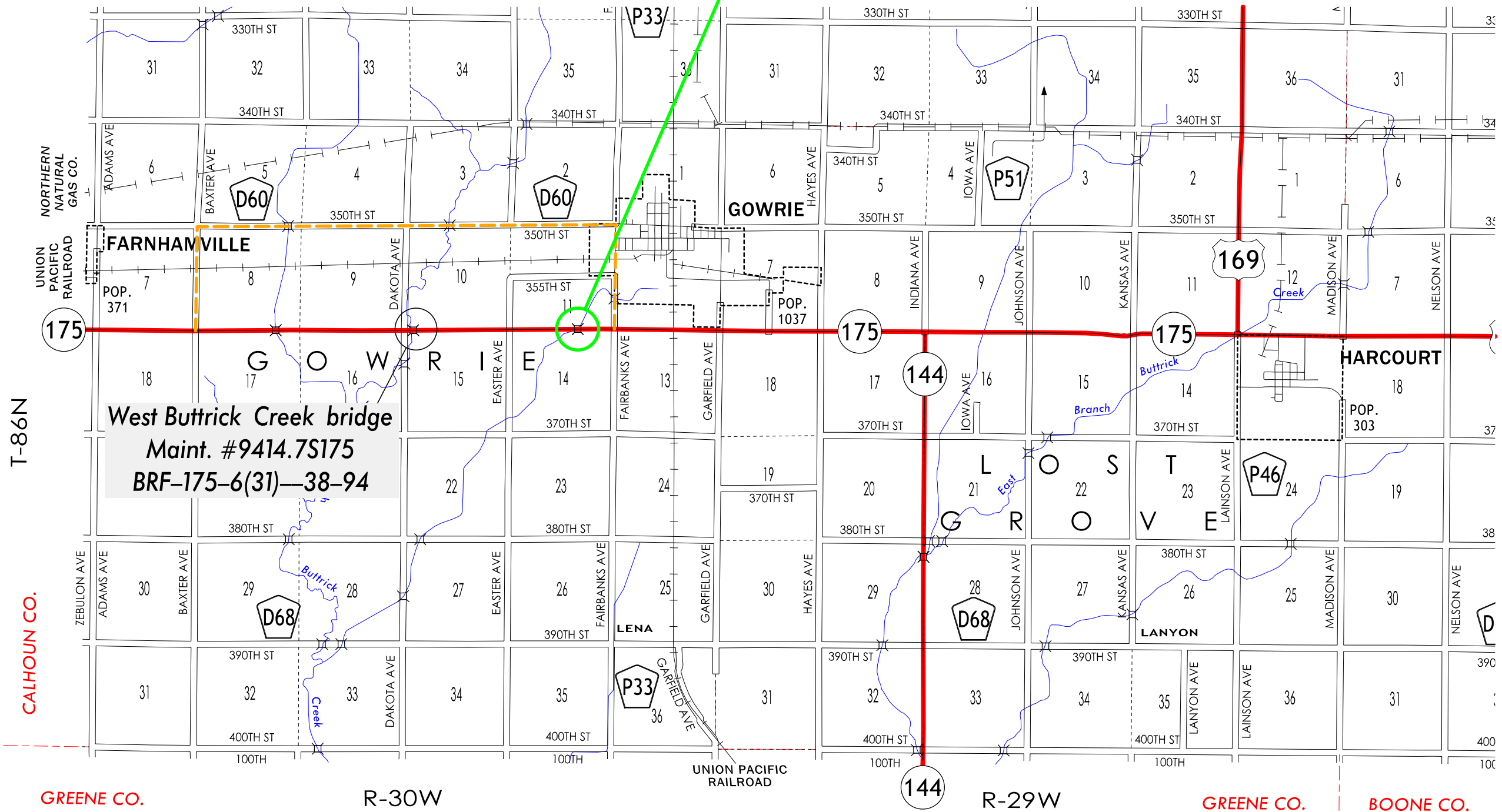
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
BRF-175-6(31)--38-94	Bridge Replacement



**Project Location**  
**Gowrie Township**  
**Sections 11 & 14**  
**T-86N R-30W**

----- Proposed detour



T-86N

CALHOUN CO.

GREENE CO.

R-30W

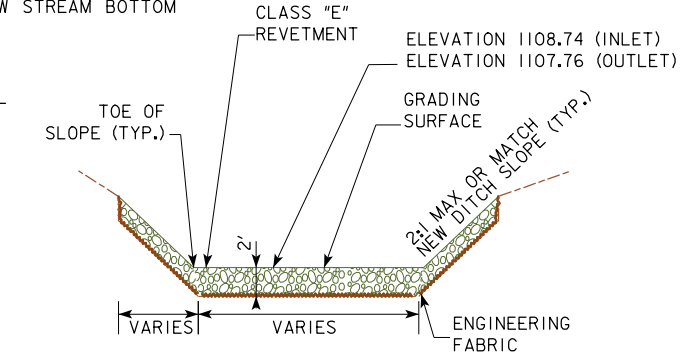
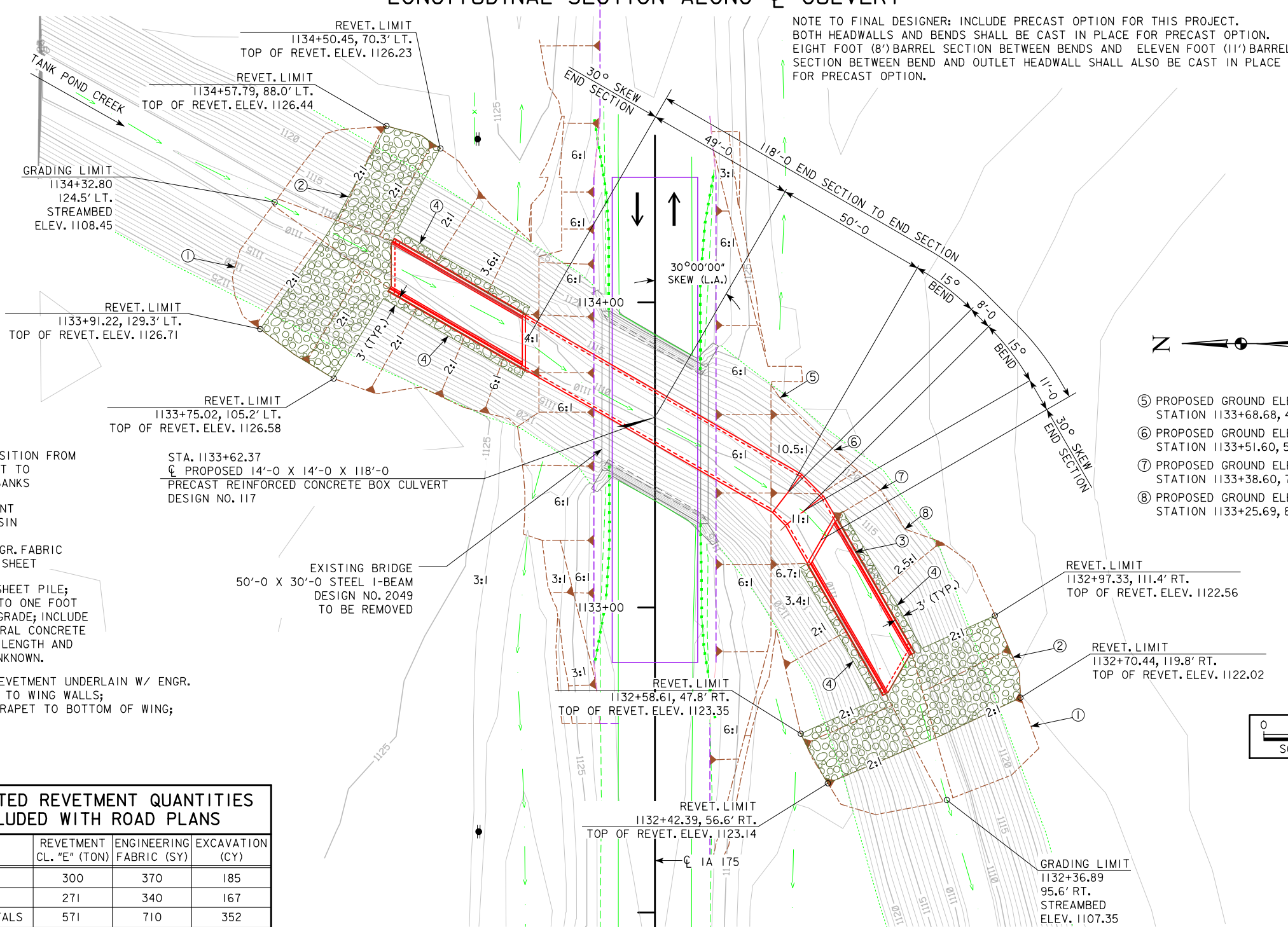
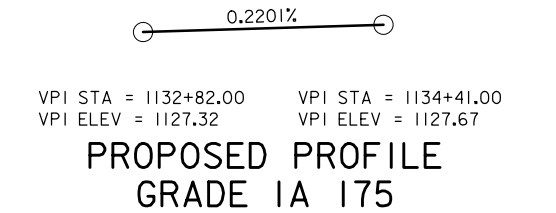
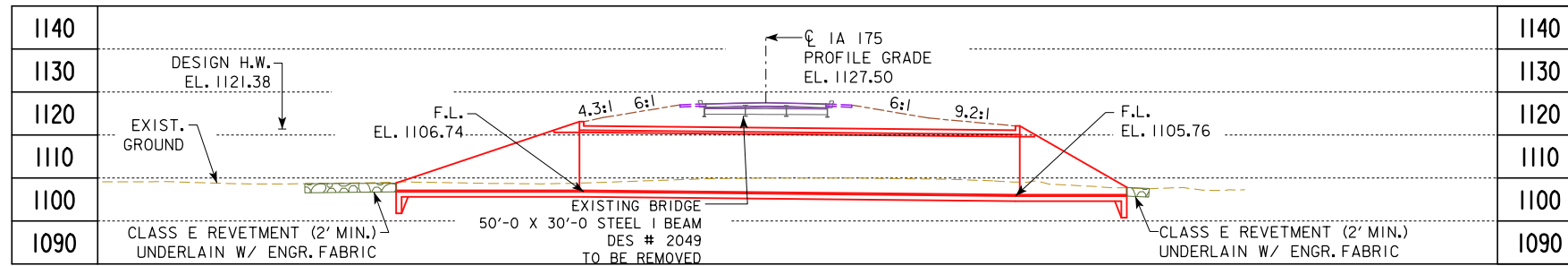
UNION PACIFIC RAILROAD

144

R-29W

GREENE CO.

BOONE CO.



CLASS E REVETMENT INLET AND OUTLET SPLASH BASIN

UTILITIES LEGEND:  
 ● OVERHEAD POWER - MIDLAND POWER COOP

TRAFFIC ESTIMATE

2018 AADT	1200	V.P.D.
2038 AADT	1500	V.P.D.
202_ DHV	-	V.P.H.
TRUCKS	31	%
TOTAL DESIGN ESALS	-	

HYDRAULIC DATA  
 DRAINAGE AREA = 11.0 SQ. MI.  
 Q<sub>50</sub> = 1,330 CFS  
 HW ELEV. = 1121.38  
 STREAM SLOPE = 6.86 FT./MI.

LOCATION  
 IA 175 OVER TANK POND CREEK  
 T-86N R-30W  
 SECTION 11  
 GOWRIE TOWNSHIP  
 WEBSTER COUNTY  
 BRIDGE MAINT. NO. 9416.3S175  
 LATITUDE 42.267825°  
 LONGITUDE -94.307623°

- PROVIDE 20' TRANSITION FROM END OF REVETMENT TO EXISTING DITCH BANKS
- CLASS E REVETMENT INLET SPLASH BASIN 2' THICK UNDERLAIN W/ ENGR. FABRIC SEE DETAIL THIS SHEET
- EXISTING STEEL SHEET PILE; CUT SHEET PILE TO ONE FOOT BELOW FINISHED GRADE; INCLUDE COST IN STRUCTURAL CONCRETE BID ITEM. EXACT LENGTH AND DEPTH OF PILE UNKNOWN.
- PLACE CLASS E REVETMENT UNDERLAIN W/ ENGR. FABRIC ADJACENT TO WING WALLS; INSTALL FROM PARAPET TO BOTTOM OF WING; 3' WIDTH, 2' THICK

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	300	370	185
OUTLET	271	340	167
TOTALS	571	710	352

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

PRELIMINARY  
 DESIGN FOR 30° SKEW (LA)  
**14'-0" X 14'-0" X 118'-0"**  
**REINFORCED CONCRETE BOX CULVERT**  
 SITUATION PLAN  
 STATION 1133+62.37 JANUARY 2016  
**WEBSTER COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 1 FILE NO. 30964 DESIGN NO. 117

**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 L0————— Select Loams And Clay-Loams
- SEL SA————— Select Sand
- UNS A————— Unsuitable Type A Disposal
- UNS B————— Unsuitable Type B Disposal
- UNS C————— Unsuitable Type C Disposal
- SHALE————— Shale
- WASTE————— Waste
- B&W LS————— Broken and Weathered Rock
- ROCK————— Solid Rock
- BLDRS————— Boulders

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

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

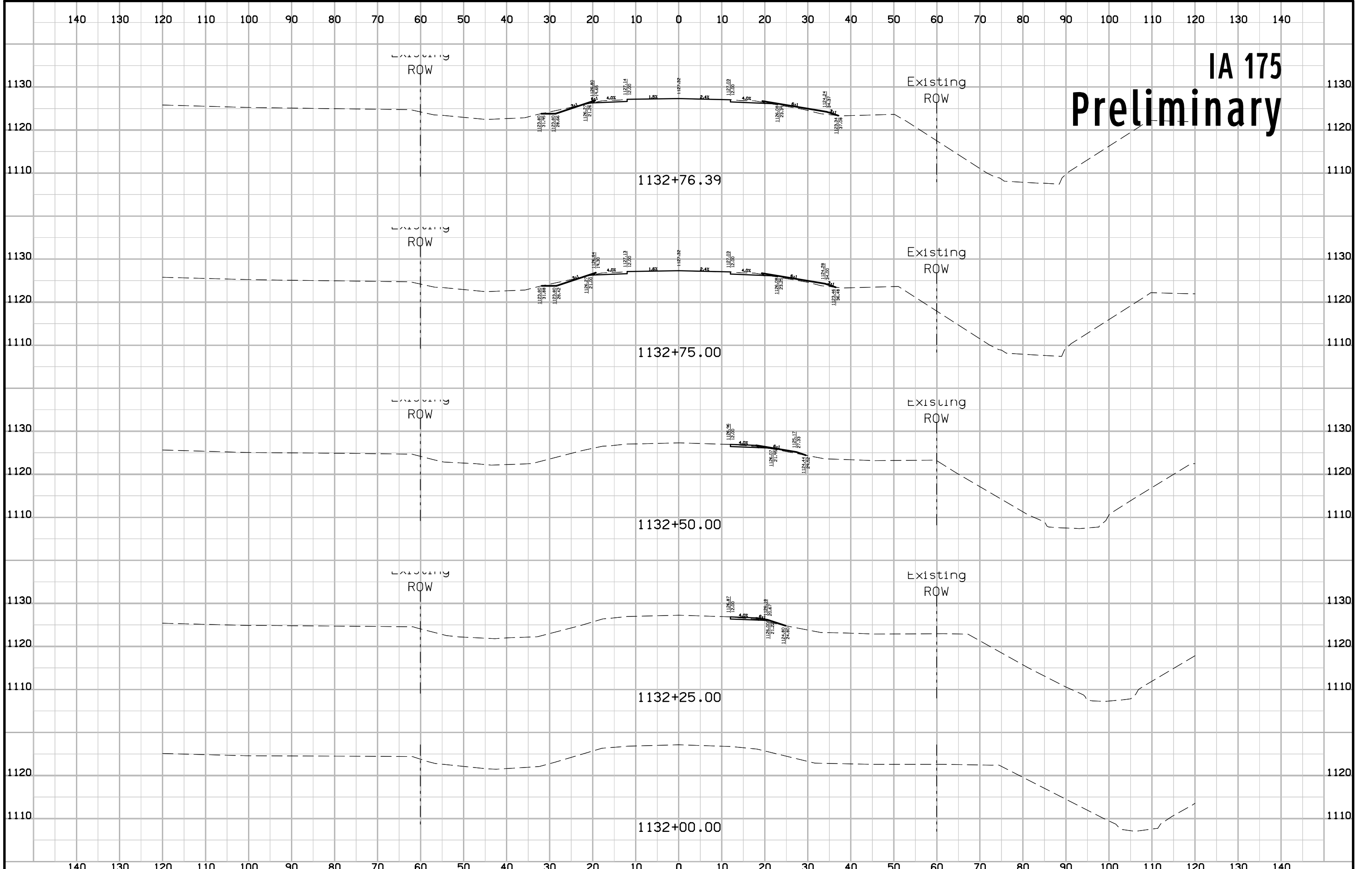
**SYMBOL LEGEND OF CROSS SECTION SHEETS**

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

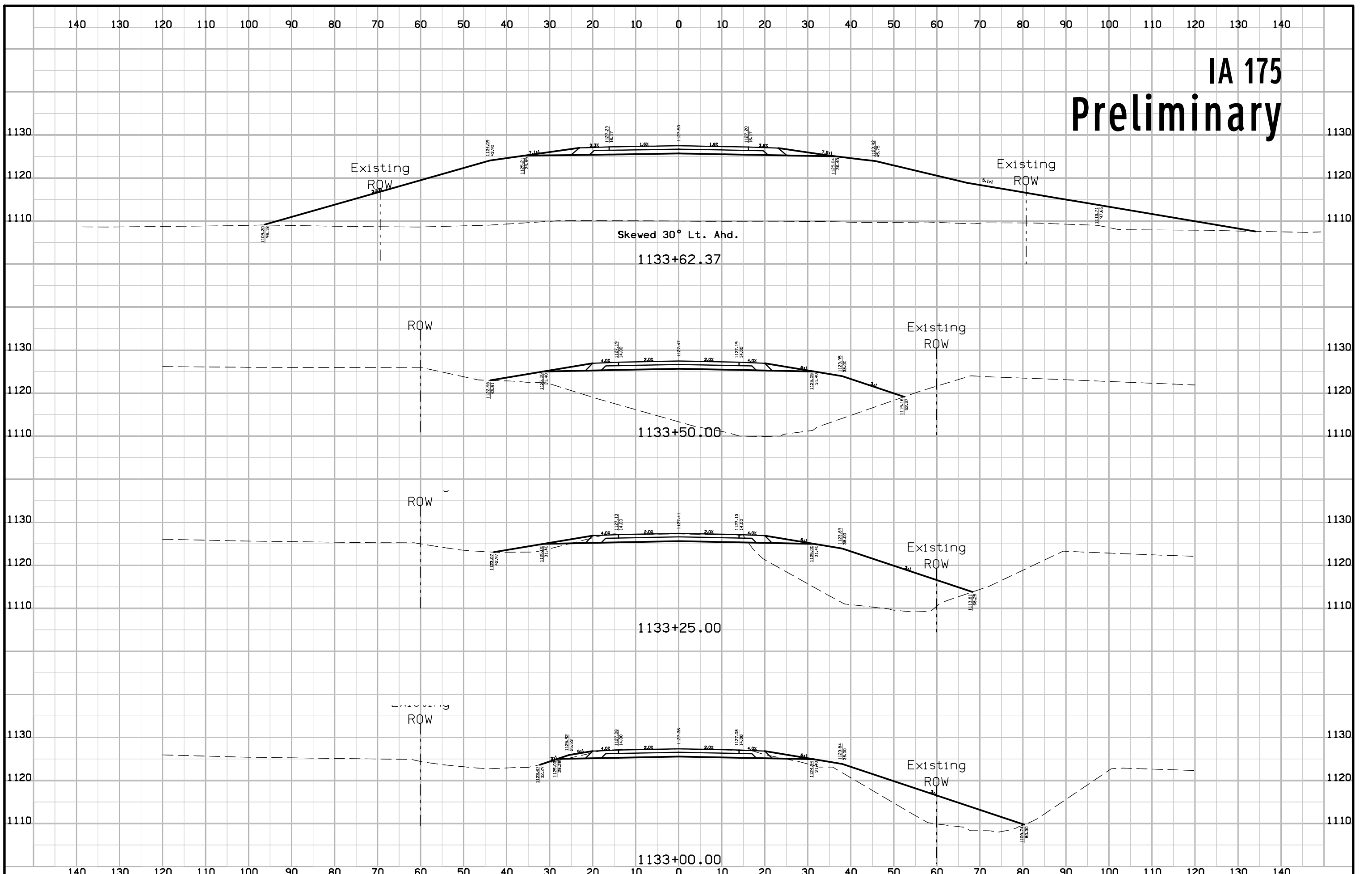
**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

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

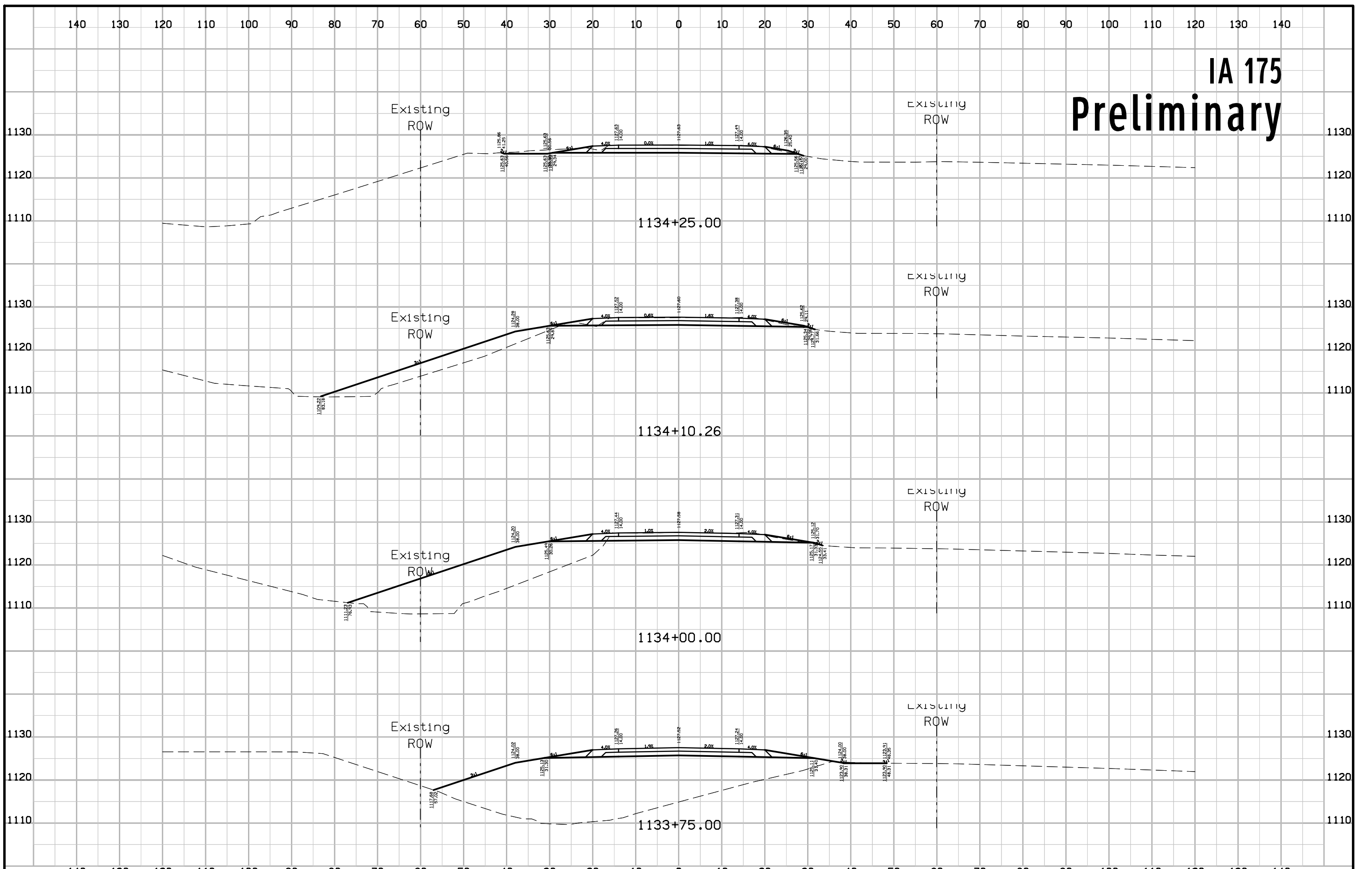
# IA 175 Preliminary



# IA 175 Preliminary



# IA 175 Preliminary





# IA 175 Preliminary

