



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
GRUNDY COUNTY
PIPE CULVERTS

E of Co Rd T53 (4 Locations)

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	16
PROJECT IDENTIFICATION NUMBER	19-38-175-020
PROJECT NUMBER	STPN-175-9(23)--2J-38
R.O.W. PROJECT NUMBER	STPN-175-9(24)--2J-38

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location & Detour Map Sheet
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 4	IA 175
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
V Sheets	Culvert Situation Plans
V.1 - 2	Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.1	Mainline Cross Sections
X Sheets	Side Road Cross Sections
X.1 - 2	Side Road Cross Sections

* Color Plan Sheets

See A.2 for location map

D9 PLAN - Date: 8-4-2020

Letting - Date: 10-20-2020

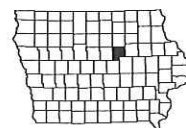
DESIGN DATA RURAL			
2016	AADT	1690	V.P.D.
20--	AADT	--	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	17	%
	Total		
	Design ESALs	--	

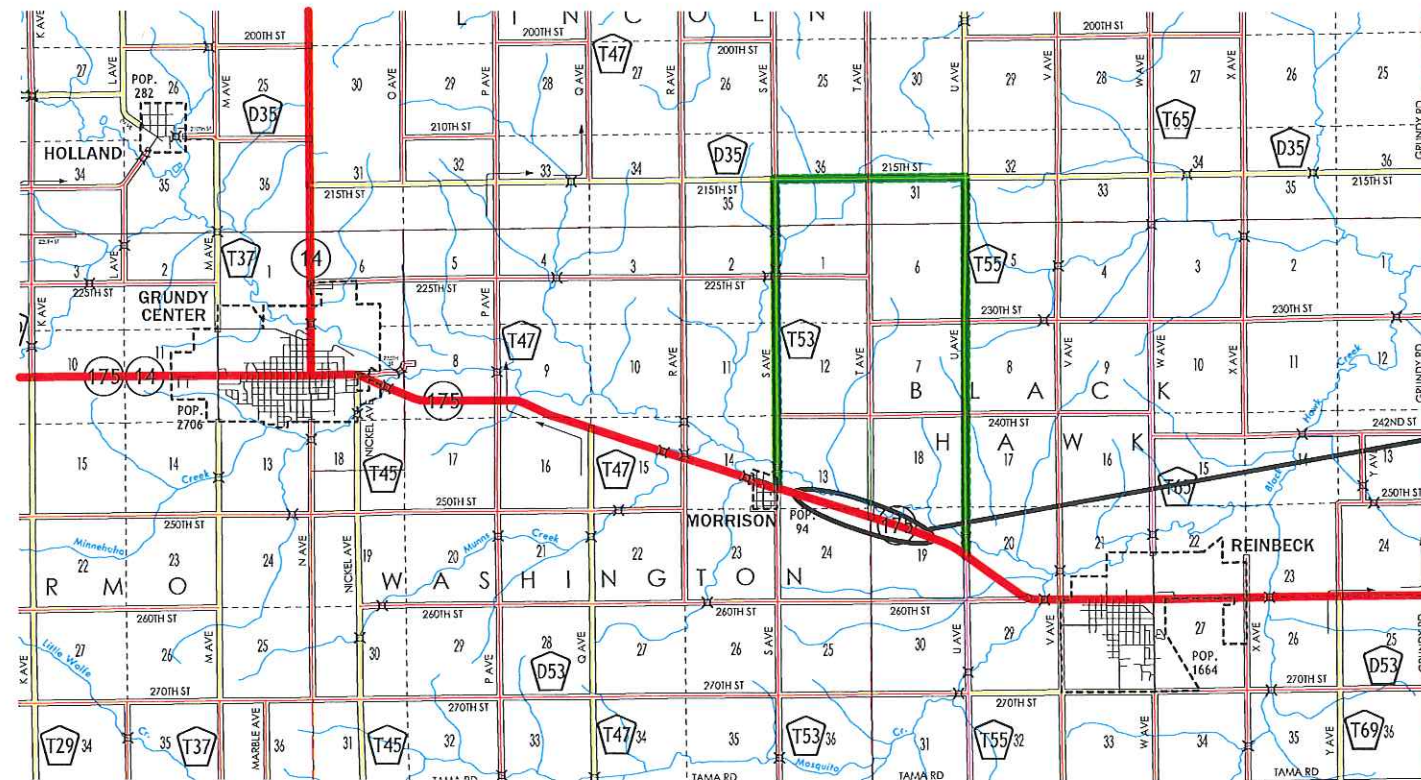
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

PRELIMINARY PLANS

Subject to change by final design.

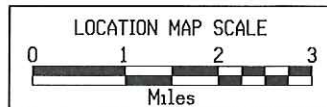
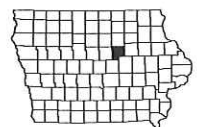
D5 PLAN - Date: 7-29-2019





Project Location
Reference Locations:
209.59, 209.67, 210.48, 210.58

— Detour Route



SURVEY SYMBOLS

make text black

- CP Control Point
- ▲ SCR Section Corner
- SNP Unpaved Shoulder
- ENU Edge Unpaved Entrance & Parking
- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- BL Topo Breakline
- PIP Pipe Culvert
- PRO Profile Shot
- SIGN
- D Centerline Draw or Stream (Down)
- GR Ground Shot
- PPA Power Pole Co. 1
- DU Centerline Draw or Stream (Up)
- TILE TIL Tile Line
- F0 FO1D Fiber Optic Co. 1 - Quality D
- TDC Tree Deciduous
- INB Storm Sewer Beehive Intake
- HDG Hedge Row
- F02 FO2D Fiber Optic Co. 2 - Quality D
- T1 TL1D Telephone Line Co. 1 - Quality D
- W WL1D Water Line Co. 1 - Quality D
- ENP Edge Paved Entrance & Park Lot
- TRL Trail
- ~~~~~ RIP Rip-Rap
- SOP Size of Pipe or Culvert
- REF Reference Tie Point

UTILITY LEGEND

- F02- Windstream Communications
Chris Cook
236 W Maple
Centerville, IA 52544
(641) 437-4826
christopher.l.cook@windstream.com
- Alliant Energy
Gordon Sellers
1284 XE Place
Ames, IA 50014
(515) 268-3436
gordonsellers@alliantenergy.com
- T1- Windstream Communications
Chris Cook
236 W Maple
Centerville, IA 52544
(641) 437-4826
christopher.l.cook@windstream.com
- TV- Grundy Center Municipal Utilities
Jeff Carson
706 6th St.
Grundy Center, IA 50638-1536
(319) 825-5207
gcmuni@gcmuni.net
- W- Iowa Regional Utilities Association
Micheal Madren
3801 Iowa Speedway Drive
Newton, IA 50208
(641) 792-7011
mmadren@irua.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.		
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

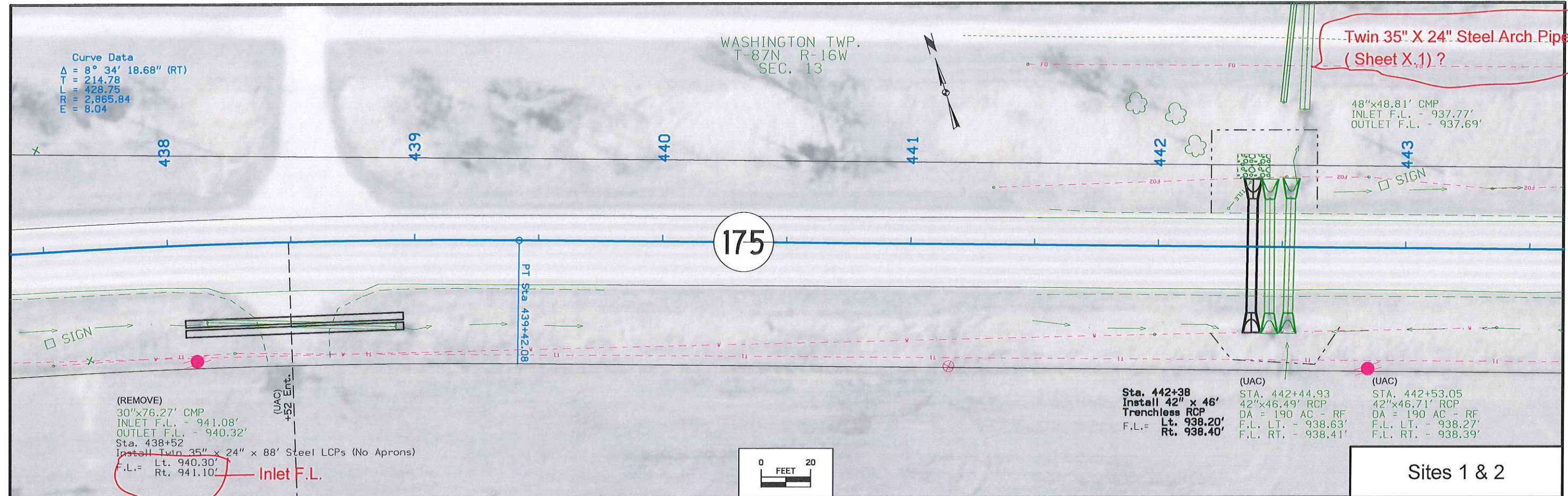
- Reference Point
- Station
- ▲ Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- ▨ Pavement Removal
- ▩ Clearing & Grubbing Area

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

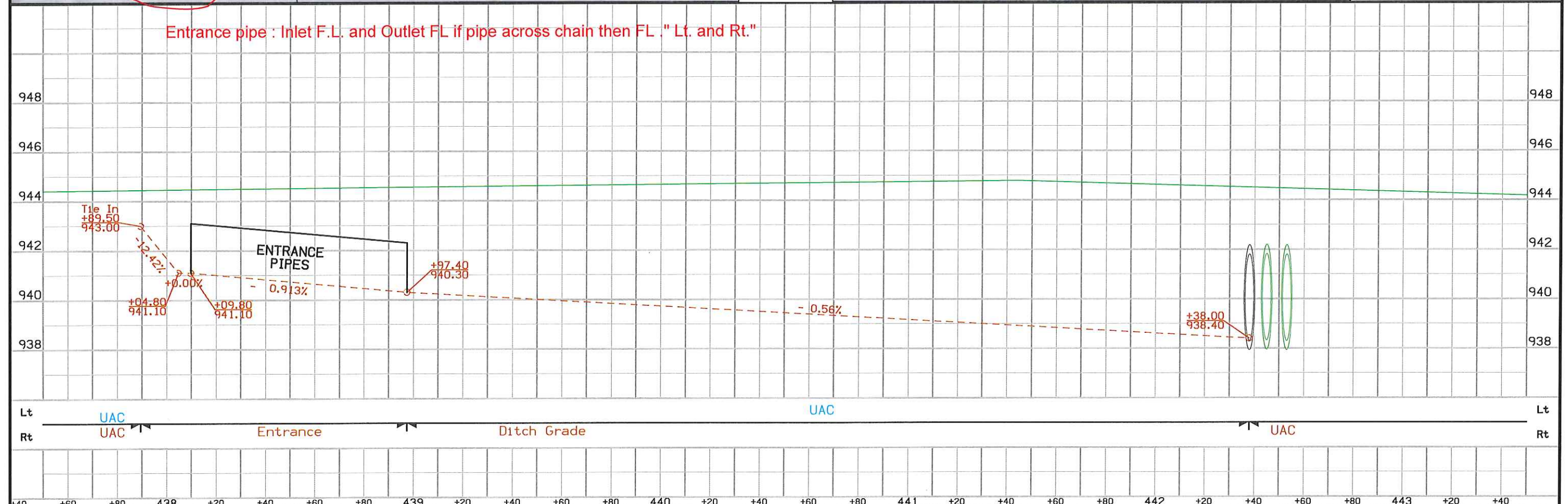
**PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET**

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



Twin 35" X 24" Steel Arch Pipes ?
(Sheet X.1) ?

Entrance pipe : Inlet F.L. and Outlet FL if pipe across chain then FL ." Lt. and Rt."



WASHINGTON TWP.
T-87N R-16W
SEC. 24

483

484

485

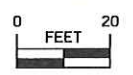
486

487

488

175

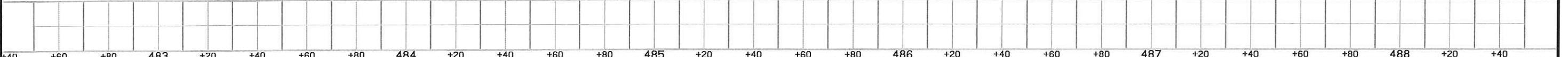
(REMOVE)
30"x31.19' CMP
INLET F.L. - 937.00'
OUTLET F.L. - 936.97'
Sta. 438+52
Install Twin 35" x 24" x 88'
Steel LCPs (No Aprons)
F.L. = Lt. 940.30'
Rt. 941.10'



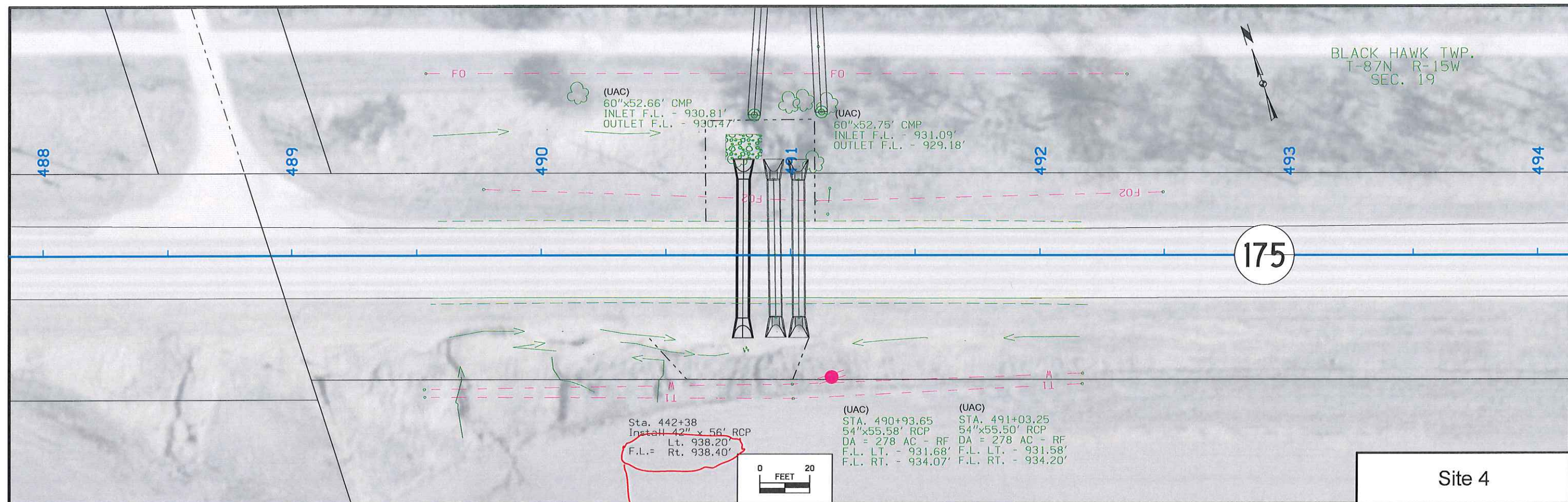
Site 3



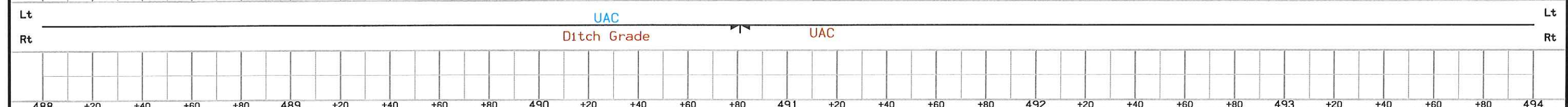
Lt UAC Entrance Ditch Grade Rt



BLACK HAWK TWP.
T-87N R-15W
SEC. 19



Site 4



488 +20 +40 +60 +80 489 +20 +40 +60 +80 490 +20 +40 +60 +80 491 +20 +40 +60 +80 492 +20 +40 +60 +80 493 +20 +40 +60 +80 494

County: Grundy
PIN: 19-38-175-020
Project Number: STPN-175-9(23)--2J-38
Location: In Grundy Co., east of Morrison on Ia175. Four sites at Sta. 438+00+/-, 442+38+/-, 485+40+/-, & 490+81+/-.
Type of Work: Ditch reshaping with drainage pipe updates at each site.
Project Directory: 3817502019

General Information

Measurement units for this survey are U.S. survey feet. This survey was completed to assist in the design of reshaping ditches and updating failing drainage pipes at four sites (Sta. 438+00+/-, 442+38+/-, 485+40+/-, & 490+81+/-) on Ia175 in Grundy Co., just east of the town of Morrison.

Vertical Control

The vertical datum for this survey is NAVD88. The vertical control for this project is relative to said datum, computed using GEOID 12a, and is dependent on the Iowa Real-Time Network (IaRTN) reference stations. Control point elevations were established by 5 redundantly averaged RTK GPS shots utilizing the IaRTN.

Horizontal Control

The horizontal project coordinate system basis for this survey is from the Iowa Regional Coordinate System Zone 9 projection. The Geodetic Datum is NAD83 (2011) EPOCH 2010.0. Control Point horizontal coordinate positions were established by 5 redundantly averaged RTK GPS shots utilizing the Iowa Real-Time Network.

Alignment Information

The horizontal alignment for Ia175 is a retrace of as-built plan F-175-9(6)--20-38. Stationing was held at PI 437+28.11 and was ran back and ahead without equation.

Survey stationing relates to as-built stationing as follows:

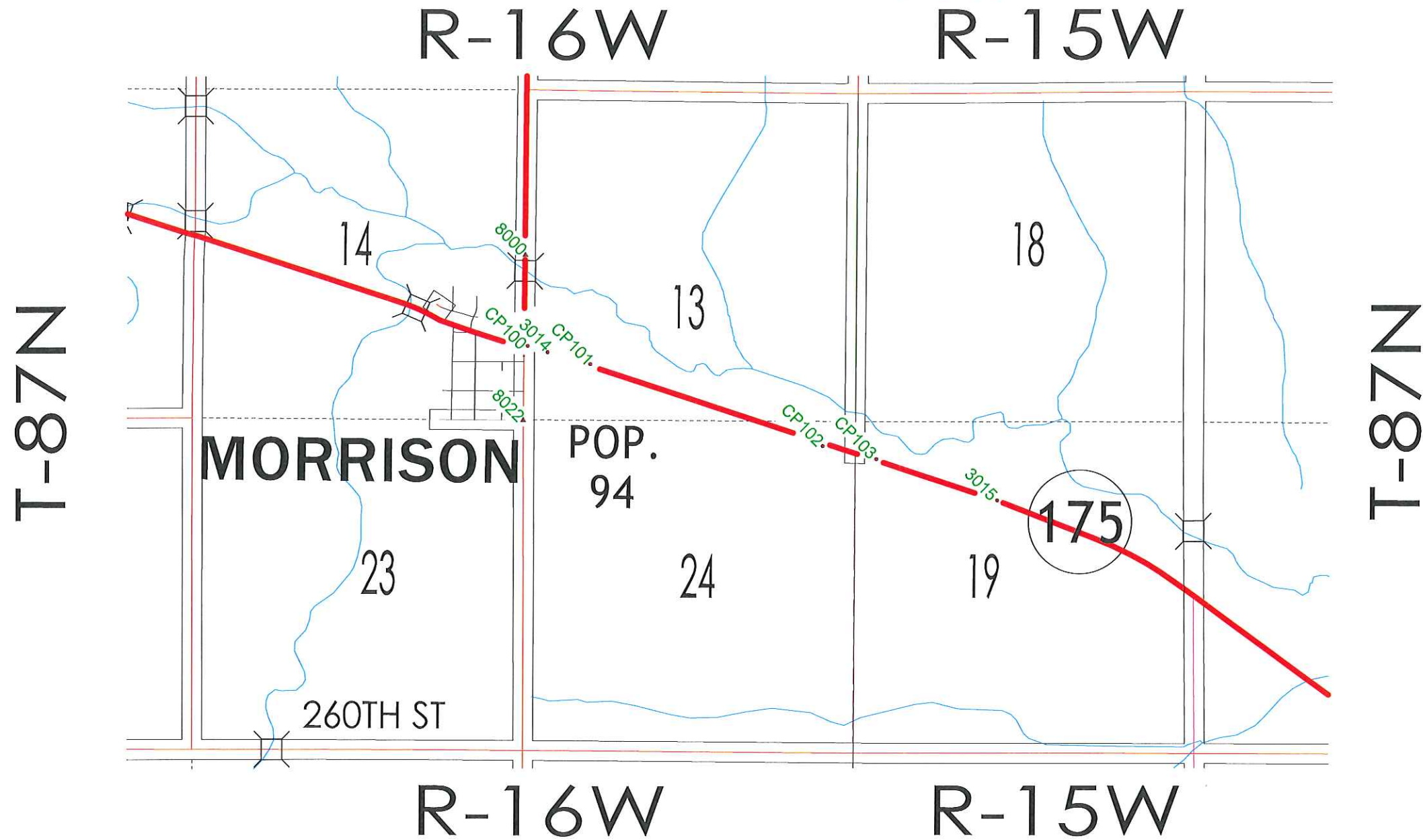
PI Sta. 437+28.11 (F-175-9(6)--20-38) = PI Sta. 437+28.11 (this survey)
Found Hinge nail in A/C mat. surface.

PI Sta. 512+75.43 (F-175-9(6)--20-38) = PI Sta. 512+75.56 (this survey)
Found hinge nail in A/C mat. surface.

CONTROL POINT VICINITY MAP

make text black

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

Ia. Regional Coordinate System Zone 5

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

make text black

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 5

Point Number	Northing	Easting	Elevation	Feature Code	Description
CP100	8788566.65	15386297.19	946.96	CP	SET 5/8" RE-ROD (FLUSH)
CP101	8788272.16	15387294.17	942.89	CP	SET 5/8" RE-ROD (FLUSH)
CP102	8786964.88	15391002.33	940.23	CP	SET 5/8" RE-ROD (FLUSH)
CP103	8786754.55	15391858.71	937.68	CP	SET 5/8" RE-ROD (FLUSH)
3014	8788463.23	15386615.61		CP	P.I. STA. 437+28.11 FOUND HINGE NAIL
3015	8786095.32	15393782.84		CP	P.I. STA. 512+75.43 FOUND HINGE NAIL
8000	8790011.12	15386256.73		SCR	W 1/4 13-87N-16W FOUND 3/8" RE-ROD (5" DEEP)
8022	8787377.93	15386232.68		SCR	SW COR. 13-87N-16W FOUND 1/2" RE-ROD (4" DEEP)

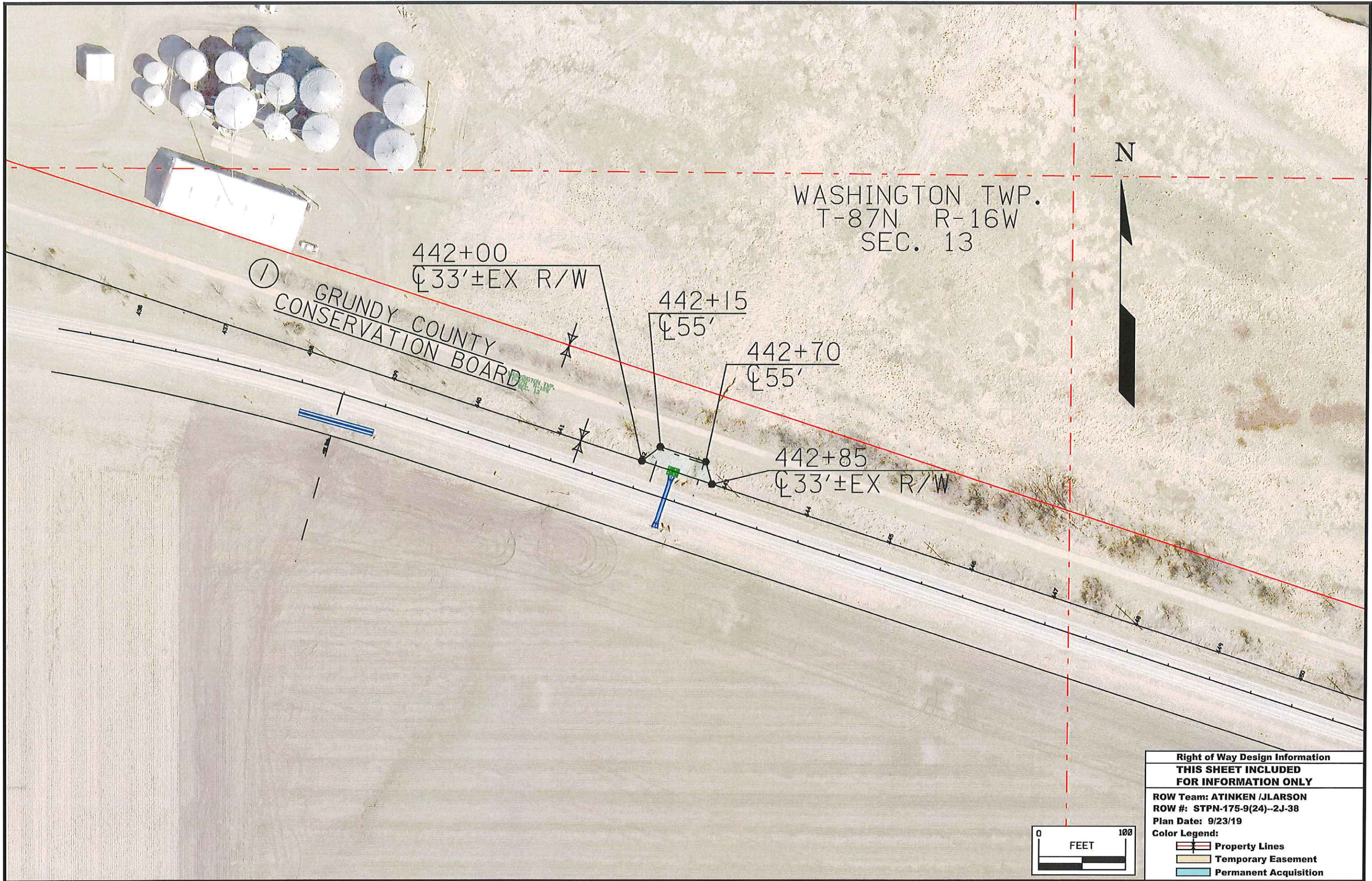
ALIGNMENT COORDINATES

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)
ROWMLA175							435+13.33 R1	8788499.46	15386403.91	437+28.11 R1	8788463.23	15386615.61	439+42.08 R1	8788395.86	15386819.54				
ROWMLA175							511+24.36 R1	8786142.76	15393639.27	512+75.56 R1	8786095.32	15393782.84	514+26.69 R1	8786040.39	15393923.71				
Ent485		0+00.00 R1	8786953.40	15391185.61															
Ent485		1+00.00 R1	8786858.53	15391153.99															
Ent438		0+00.00 R1	8788423.60	15386730.76															
Ent438		2+00.02 R1	8788230.98	15386676.84															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ASCS	Horizontal Alignment Data												Remarks		
			Spiral Data						Curve Data								
			OS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E	
C1	ROWMLA175												8°34'18.7"	214.776	428.750	2866	8.037
C2	ROWMLA175												3°01'19.4"	151.200	302.330	5732	1.994

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



WASHINGTON TWP.
T-87N R-16W
SEC. 13

①
GRUNDY COUNTY
CONSERVATION BOARD

442+00
±33' EX R/W

442+15
±55'

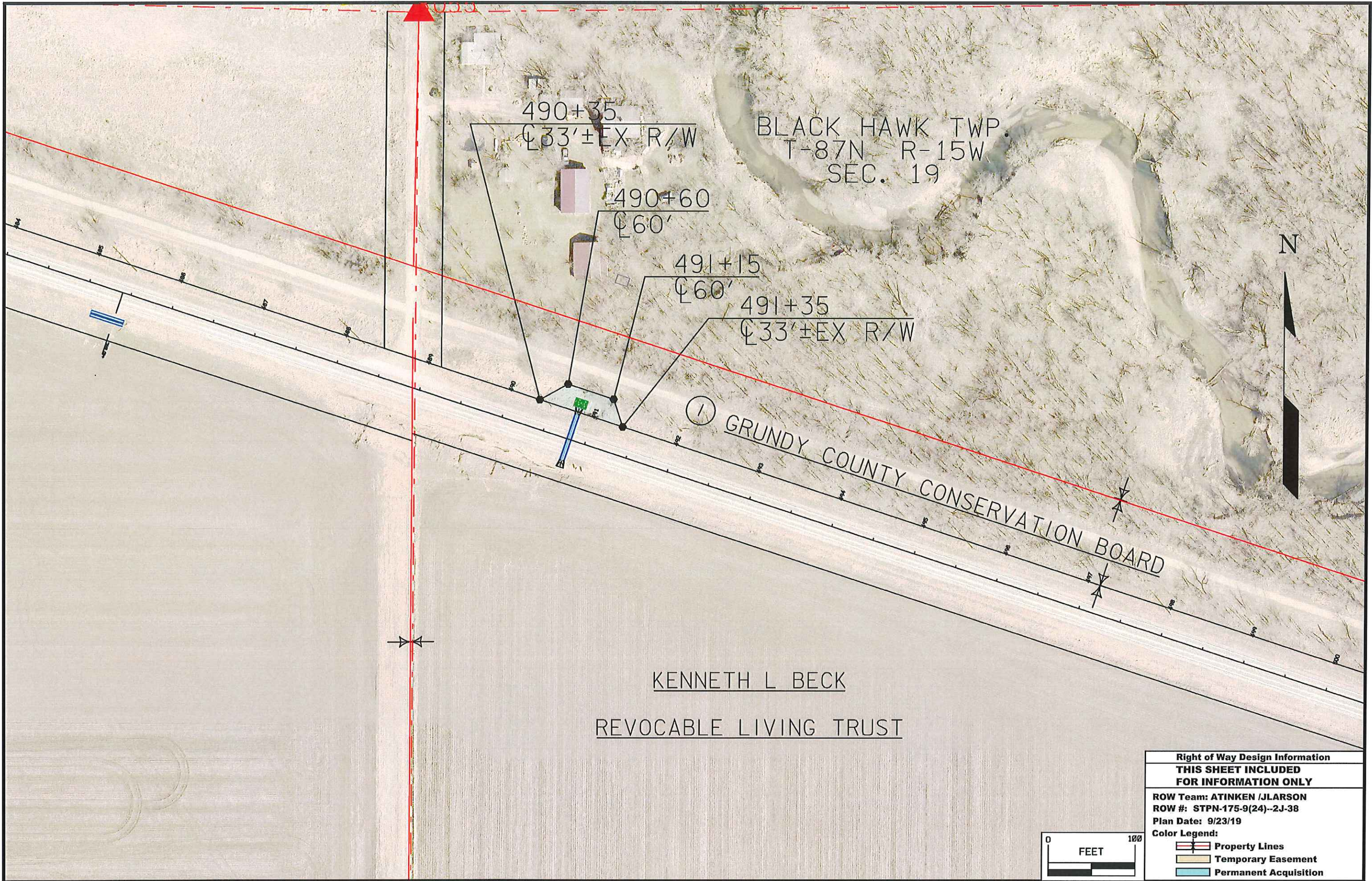
442+70
±55'

442+85
±33' EX R/W

N



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
ROW #: STPN-175-9(24)--2J-38	
Plan Date: 9/23/19	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



BLACK HAWK TWP.
T-87N R-15W
SEC. 19

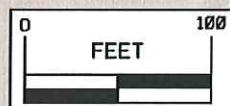
KENNETH L BECK
REVOCABLE LIVING TRUST

① GRUNDY COUNTY CONSERVATION BOARD

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: ATINKEN /JLARSON
ROW #: STPN-175-9(24)--2J-38
Plan Date: 9/23/19

Color Legend:
 Property Lines
 Temporary Easement
 Permanent Acquisition



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
IA 175	Both	Grundy	East of Morrison	NA-- No Restrictions Expected								

coordinated operations
"None Provided"

TRAFFIC CONTROL PLAN

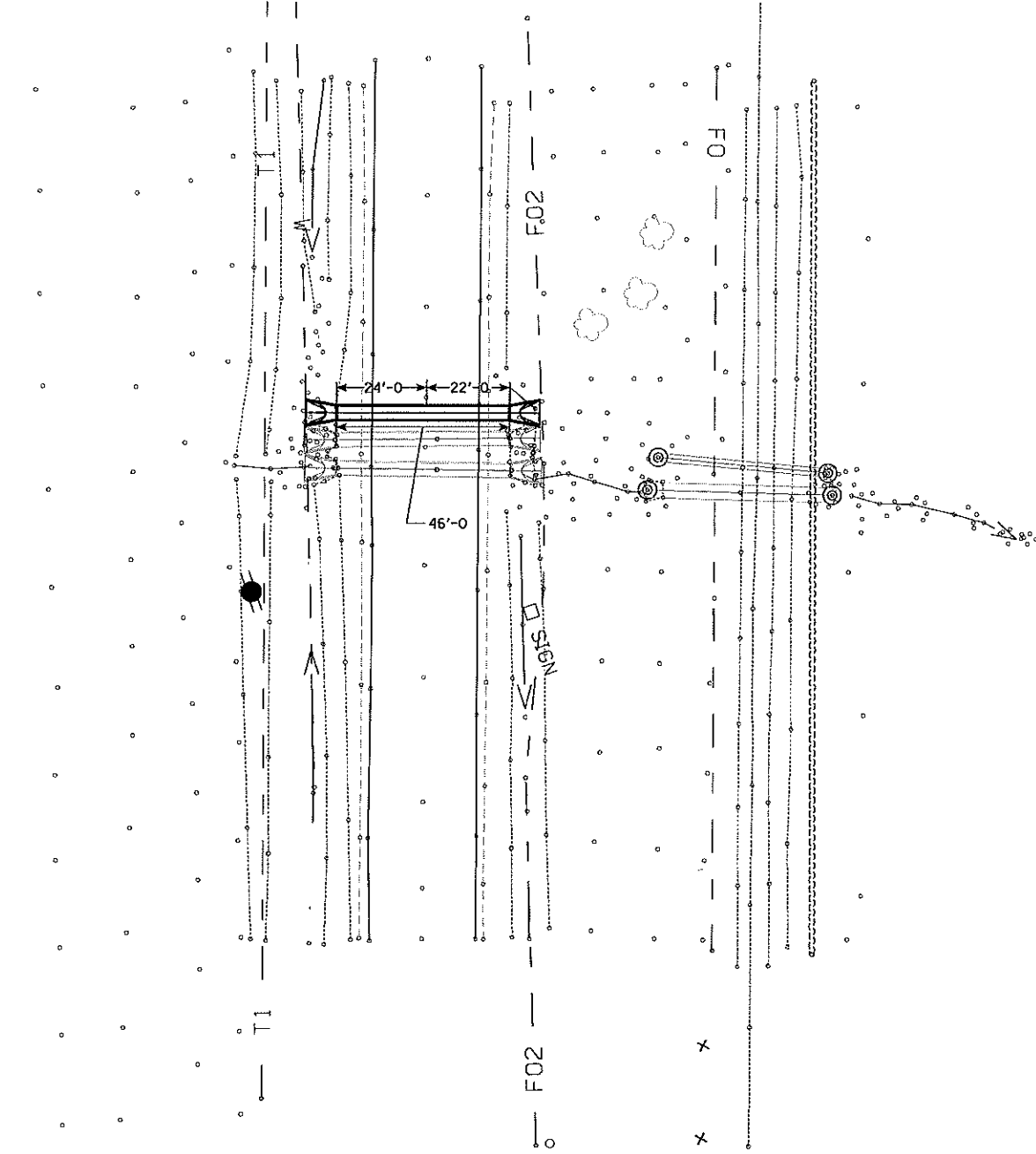
Two Options for discussion at Field Exam:

1. Close Traffic and Detour IA 175 during construction.
2. Maintain traffic during construction via trenchless construction of the roadway culverts.

BENCH MARK NO. CP102 8786964.88 15391002.33 940.23 CP SET 5/8" RE-ROD (FLUSH)

960		960
950		950
940		940
930		930
920		920
910		910

LONGITUDINAL SECTION ALONG ϕ CULVERT



UTILITIES LEGEND:

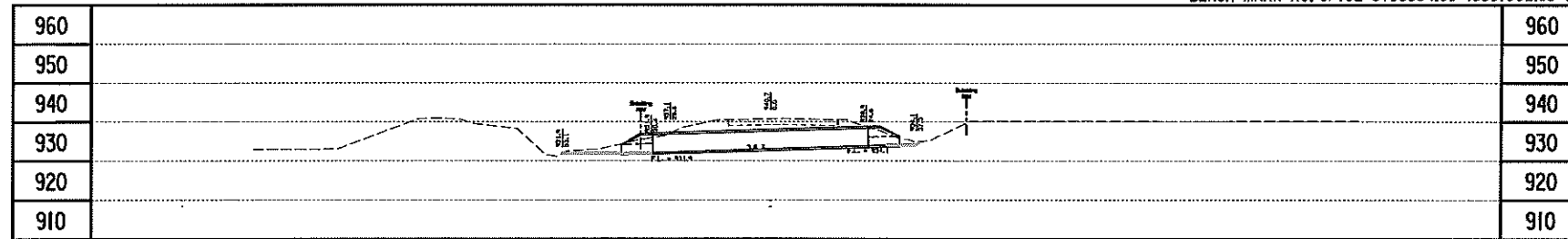
- - 4" DIA. RE-ROD (FLUSH)
- F0 — 10" DIA. FIBER OPTIC CABLE
- F02 — 10" DIA. FIBER OPTIC CABLE
- T — 1" DIA. TELEPHONE CABLE
- W — 4" DIA. WATER MAIN

PRELIMINARY
 DESIGN FOR 0° SKEW
**42" REINFORCED
 CONCRETE PIPE**
 SITUATION PLAN
 STATION 442+38.00
GRUNDY COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF ___ FILE NO. ___ DESIGN NO. ___

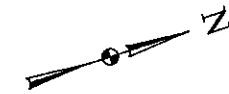
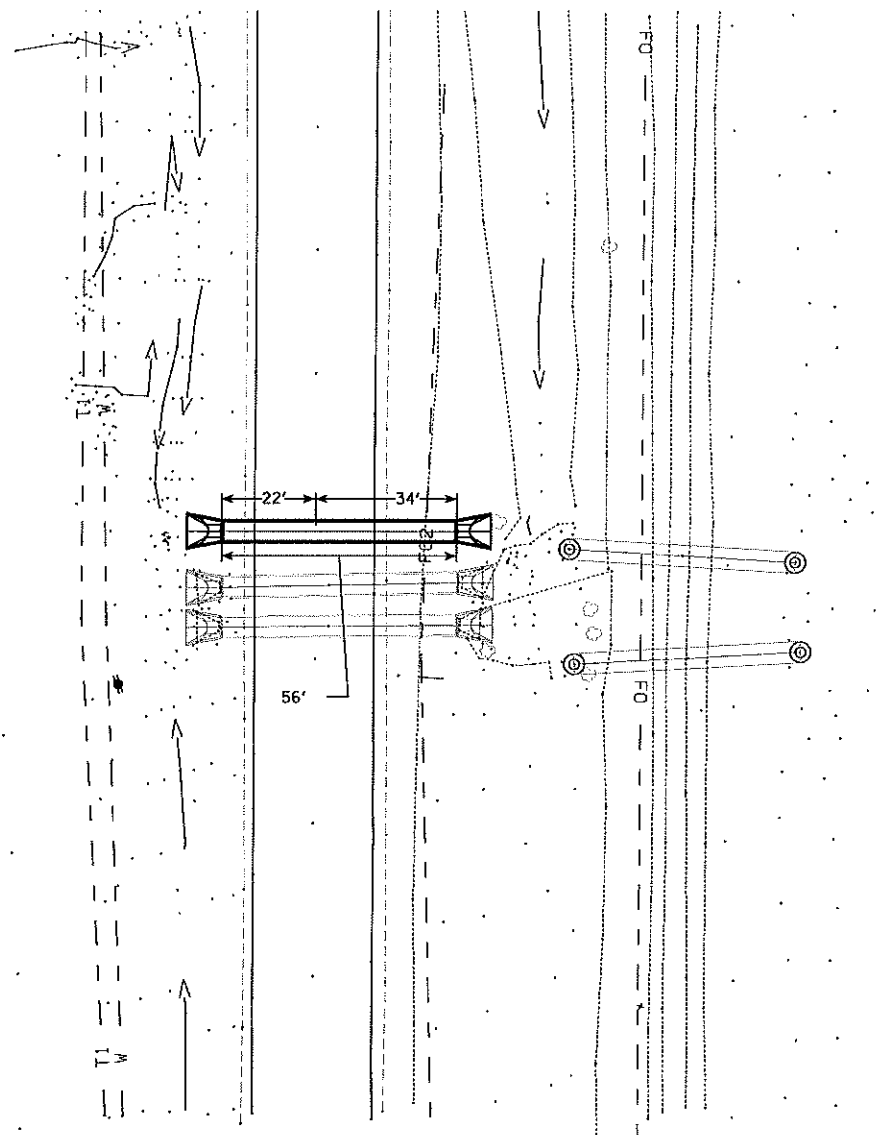
SITUATION PLAN

DESIGN TEAM	GRUNDY COUNTY	PROJECT NUMBER	SHEET NUMBER
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BENCH MARK NO. CP102 8786954.88 I5391002.33 940.23 CP SET 5/8" RE-ROD (FLUSH)



LONGITUDINAL SECTION ALONG ϕ CULVERT



UTILITIES LEGEND:

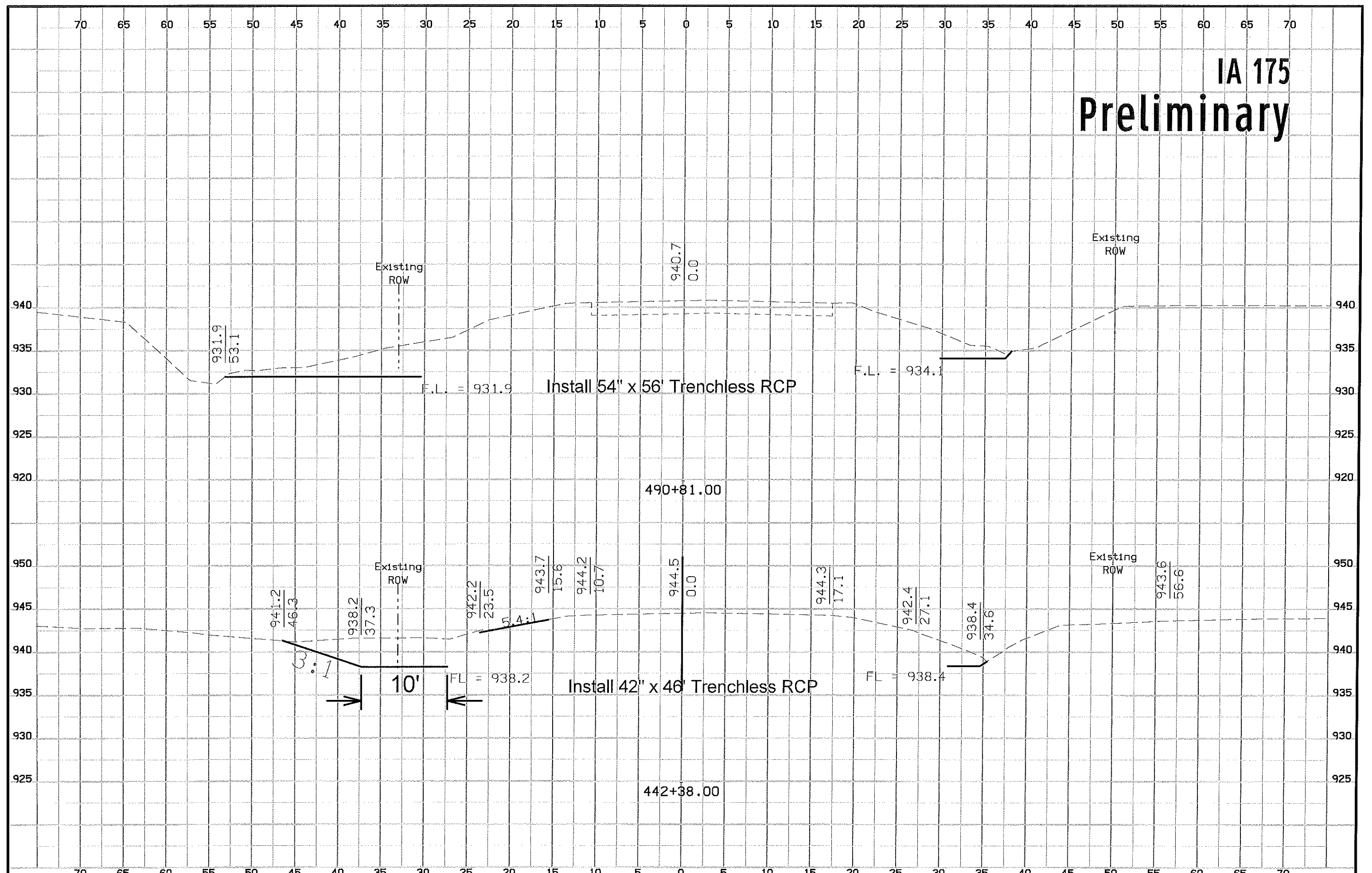
- 12" Water Pipe (C1)
- F0 — 20" Sewer Pipe (C1) - Double
- F02 — 24" Sewer Pipe (C2) - Double
- T — 4" Telephone Pipe (C1) - Double
- V — 4" Storm Sewer (C1) - Double

PRELIMINARY
 DESIGN FOR 0° SKEW
**54" REINFORCED
 CONCRETE PIPE**
 SITUATION PLAN
 STATION 490+81.00
GRUNDY COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. ___ OF 1 FILE NO. 0 DESIGN NO. 0

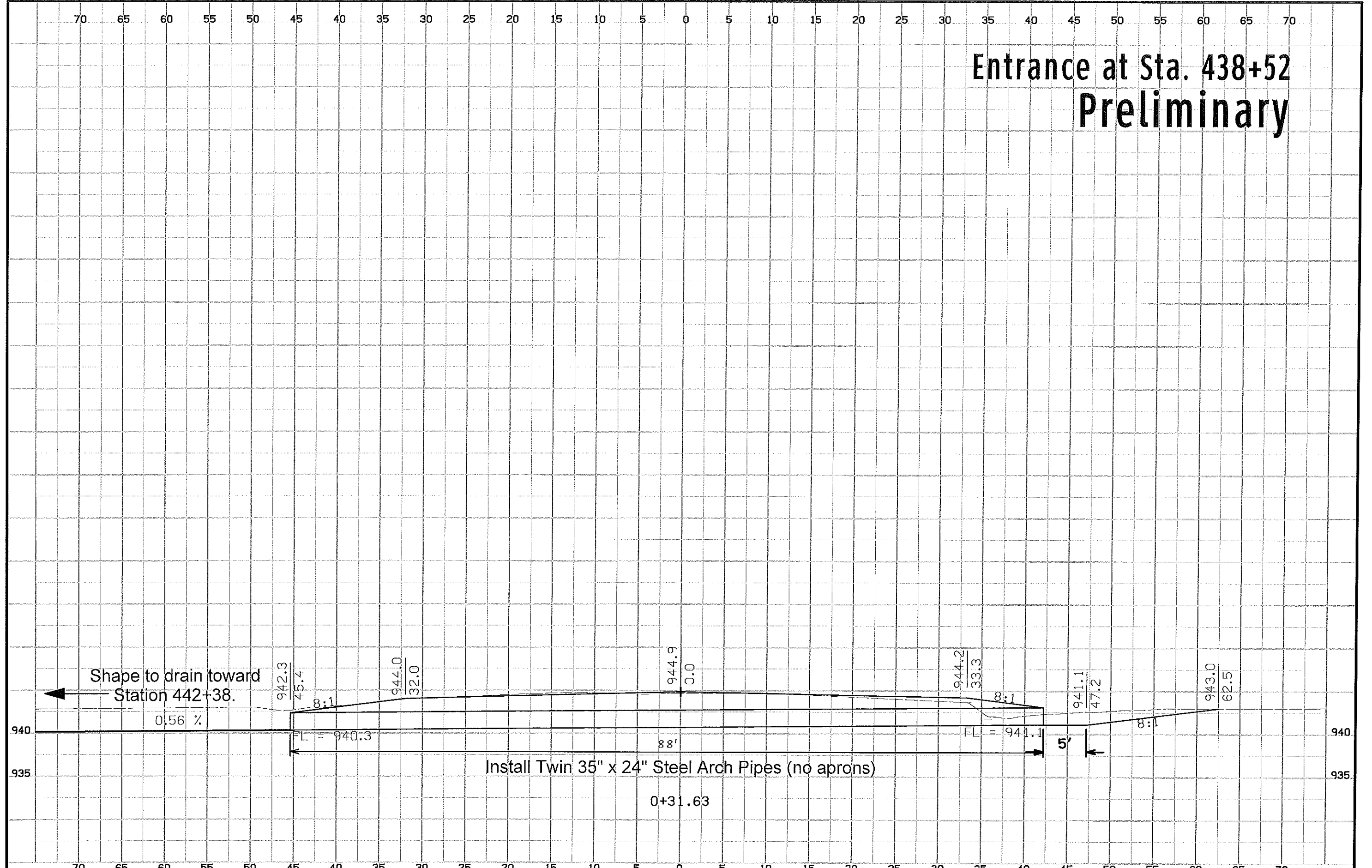
SITUATION PLAN

DESIGN TEAM	GRUNDY COUNTY	PROJECT NUMBER	SHEET NUMBER
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IA 175 Preliminary



Entrance at Sta. 438+52 Preliminary



Entrance at Sta. 485+40 Preliminary

