

CLINTON COUNTY

PIPE CULVERTS  
NHSN-030-9(201)--2R-23

LETTING DATE  
05-16-2023



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM  
CLINTON COUNTY  
PIPE CULVERTS**

0.8 mi E of Co Rd Z40 and 1.7 mi E of Co Rd Z40

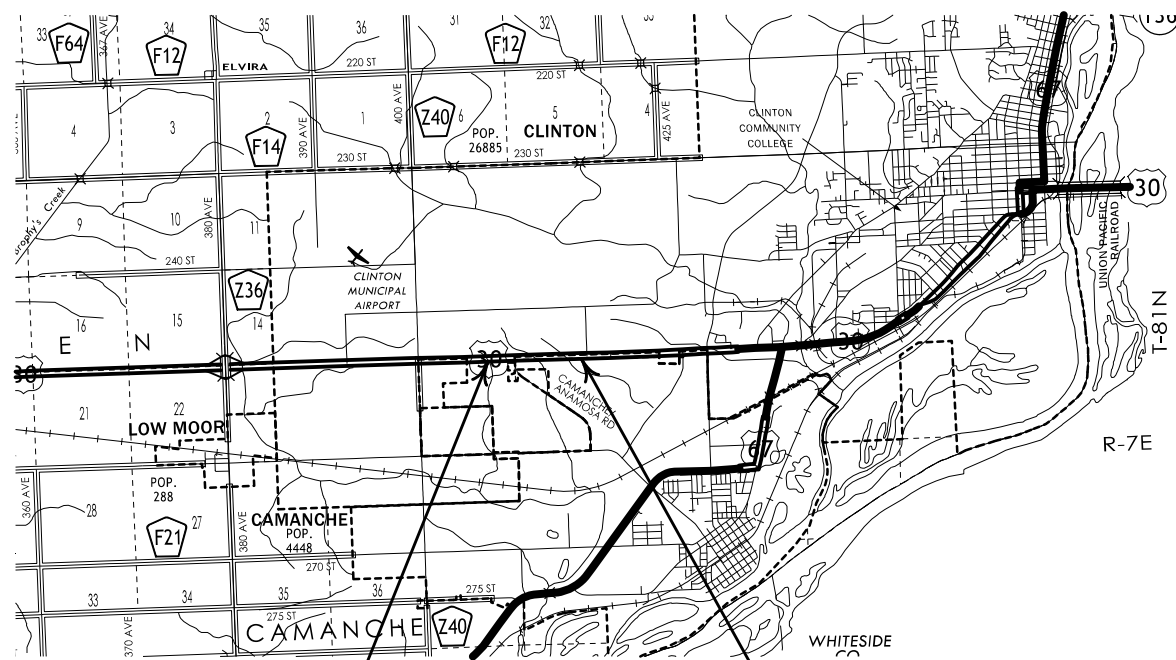
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

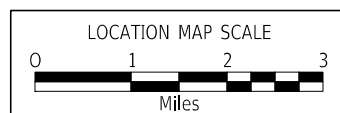
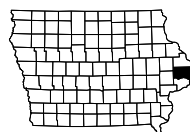


H Sheets



Begin Project  
STA. 1769+50.80  
M.P. 326.13

End Project  
STA. 1820+40.90  
M.P. 327.10



DESIGN DATA RURAL			
2020	AADT	9,400	V.P.D.
20	-- AADT	--	V.P.D.
20	-- DHV	--	V.P.H.
	TRUCKS	16	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
	X	
X	X	X

**PRELIMINARY PLANS**

Subject to change by final design.

**D5 PLAN - Date: 9-30-2022**

REVISIONS

TOTAL

13

PROJECT IDENTIFICATION NUMBER

21-23-030-060

PROJECT NUMBER

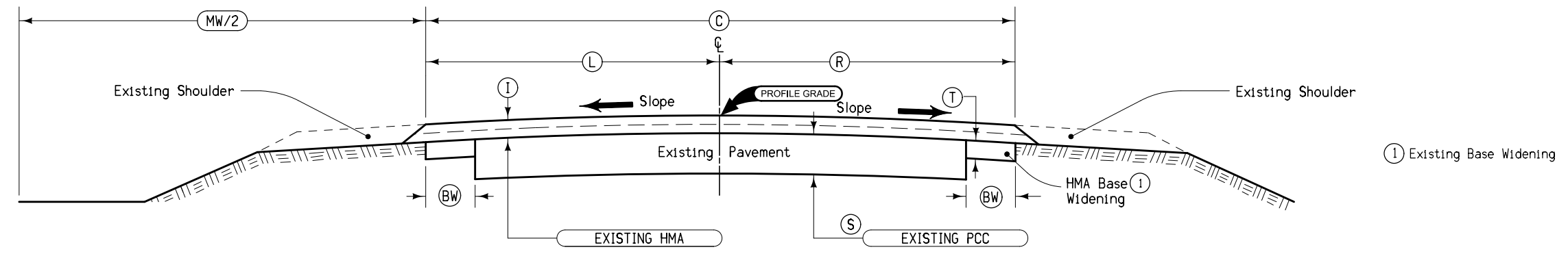
NHSN-030-9(201)--2R-23

R.O.W. PROJECT NUMBER

NHSN-030-9(202)--2R-23

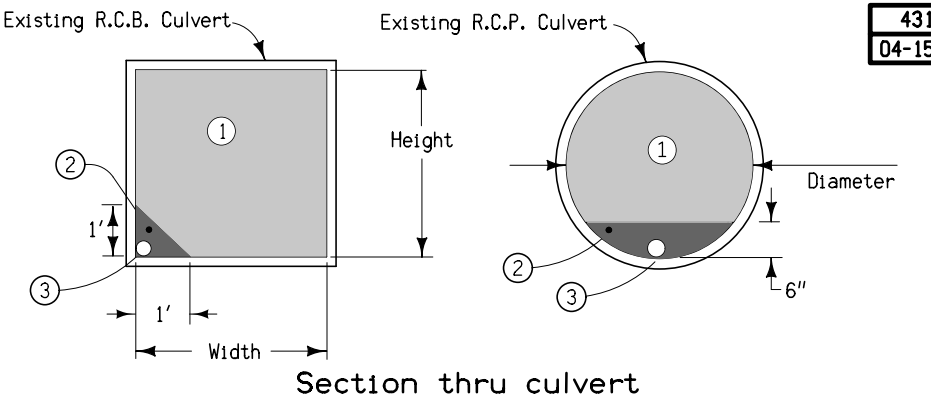
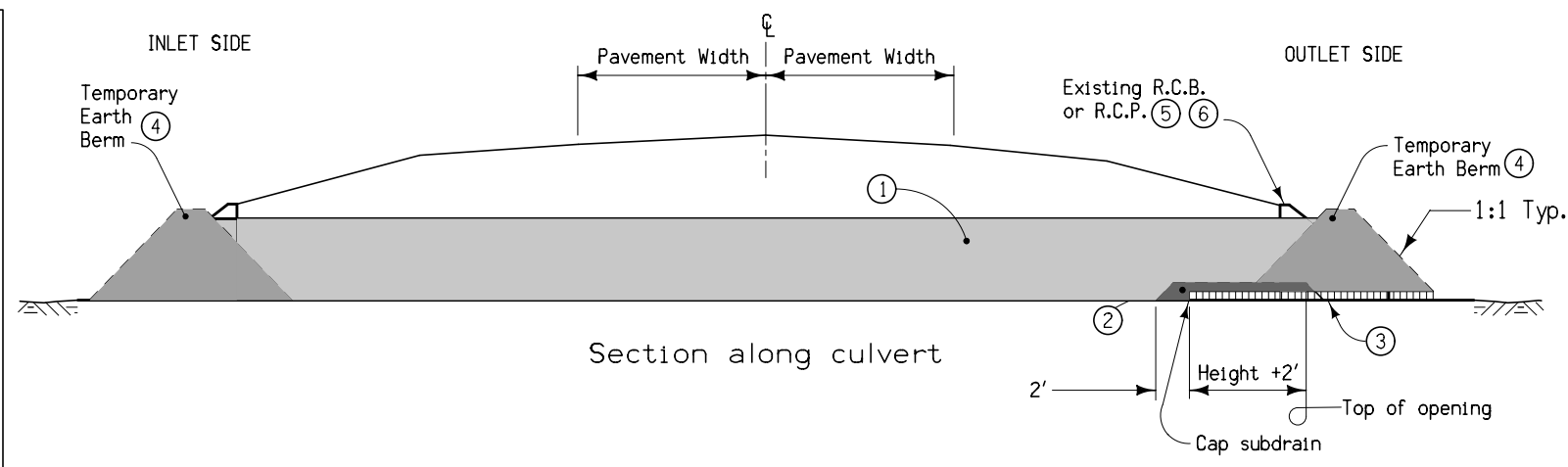
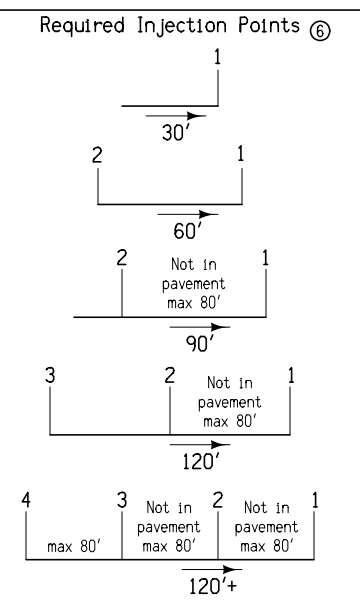
**INDEX OF SHEETS**

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 - 3	ML030
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 3	Reference Ties and Bench Marks
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1 - 2	Mainline Cross Sections
	* Color Plan Sheets



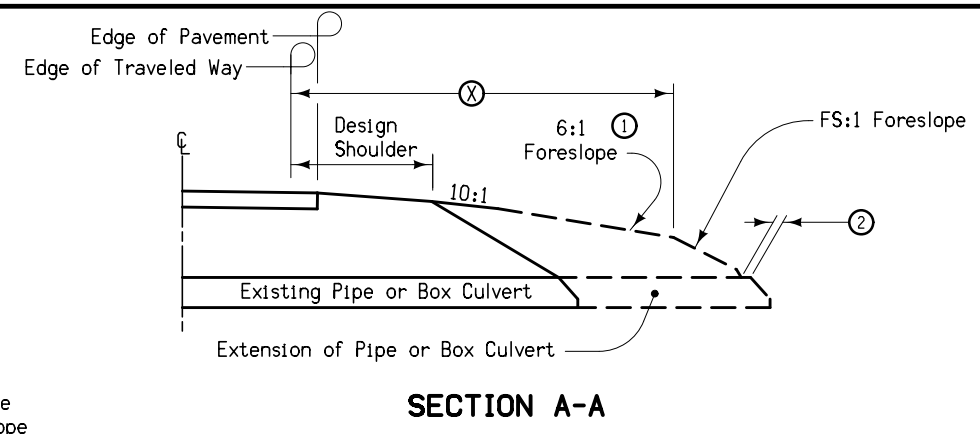
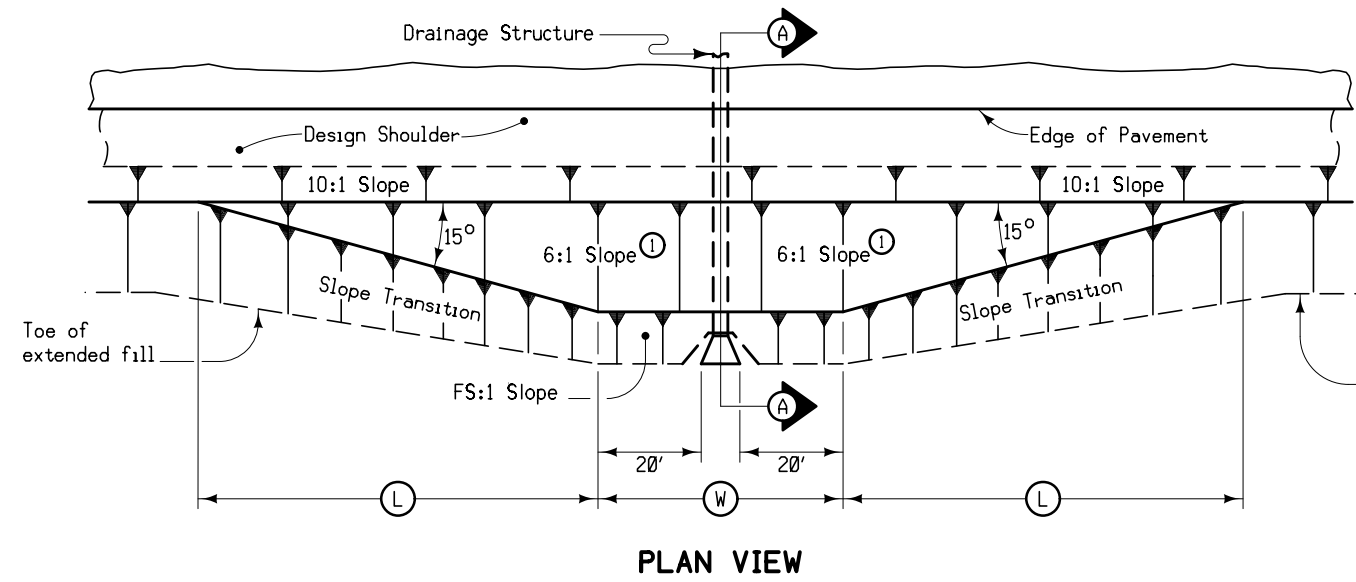
Location		(S)	(I)	(C)	(L)	(R)	(T)	(BW)	Remarks
Road Identification	Station To Station	Inches	Inches	Feet	Feet	Feet	Inches	Feet	
US 30 EB	1769+50.8	1769+50.8	10.0	4.0	26.0	12	14	--	4.0" Asphalt Treated Base
US 30 WB	1769+50.8	1769+50.8	8.0	15.0	32	12	12	3.0	Existing BW on Out.
US 30 WB	1769+50.8	1769+50.8						4.0	Existing BW on Med.
US 30 EB	1820+40.9	1820+40.9	10.0	4.0	26.0	12	14	--	4.0" Asphalt Treated Base
US 30 WB	1820+40.9	1820+40.9	8.0	15.0	32	12	12	3.0	Existing BW on Out.
US 30 WB	1820+40.9	1820+40.9						4.0	Existing BW on Med.

**EXISTING TYPICAL CROSS SECTION  
(FOR INFORMATION ONLY)**



- ① Flowable Mortar.
- ② Granular Backfill.
- ③ 4" subdrain at flowline elevation of culvert shall be extended into the culvert a distance of 2' plus the height of the culvert. Granular Backfill covers subdrain and extends an additional 2'. Subdrain and granular backfill are incidental to flowable mortar.
- ④ Ends of culvert shall be plugged sufficiently to retain flowable mortar. Temporary earth berms are incidental to flowable mortar.
- ⑤ Removal of headwalls may be required.
- ⑥ Outlet shall be filled first. See injection point detail for additional information.

**DETAILS OF CULVERT ABANDONMENT WITH FLOWABLE MORTAR  
(Rectangular structures less than 8' in either height or width.  
Circular structures less than 10' Dia.)**



- Notes:
- At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten the foreslope as indicated so as to cover the structure. Minimum earth cover is 6".
- ① Slope may be flatter than 6:1.
  - ② 6" Minimum for pipe installations or to top of headwall on R.C.B.
  - Ⓜ = Pipe or R.C.B. opening width plus 20 feet each side.

STRUCTURE LOCATION		Ⓜ	Ⓛ	Ⓧ	ⓕ
STATION	SIDE	Feet	Feet	Feet	

**BARNROOF FORESLOPE  
AT DRAINAGE STRUCTURE**

### 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 - FO1D Iowa Communications Network - Quality D  
Mike Broderick  
(515) 725-4610  
mike.broderick@iowa.gov
- F02 - F02D Unknown - Quality D
- GHP - GH1D Alliant Energy - Quality D  
Mary Montgomery  
(319) 786-4768  
marymontgomery@alliantenergy.com
- T1 - TL1D Lumen - Quality D  
Justin Melohn  
(515) 336-6366  
justin.melohn@lumen.com
- W - WL1D Iowa American Water Company - Quality D  
Jarrek Lucke  
(563) 499-1105  
Jarrek.lucke@amwater.com

### 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

### 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
- 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

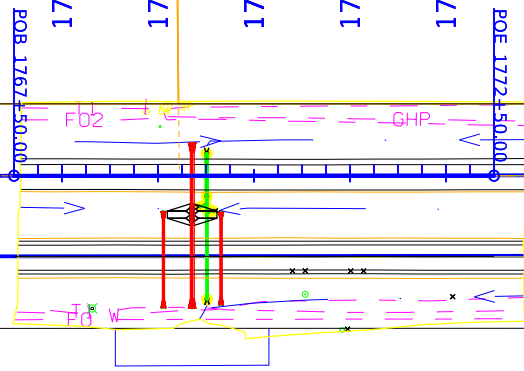
(COVERS SHEET SERIES D, E, F, & K)

Lincoln TWP.  
T-81N R-6E  
SEC. 18

Sta. 1769+35.67  
Install 42" x 156' RCP  
F.L. = Lt. 696.35  
Rt. 694.07  
DR-205 LT  
(Trenchless)  
  
+35.6 Prop.  
Type "M" Dike  
Elev. = 700.84



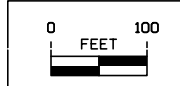
1768+00  
1769+00  
1770+00  
1771+00  
1772+00



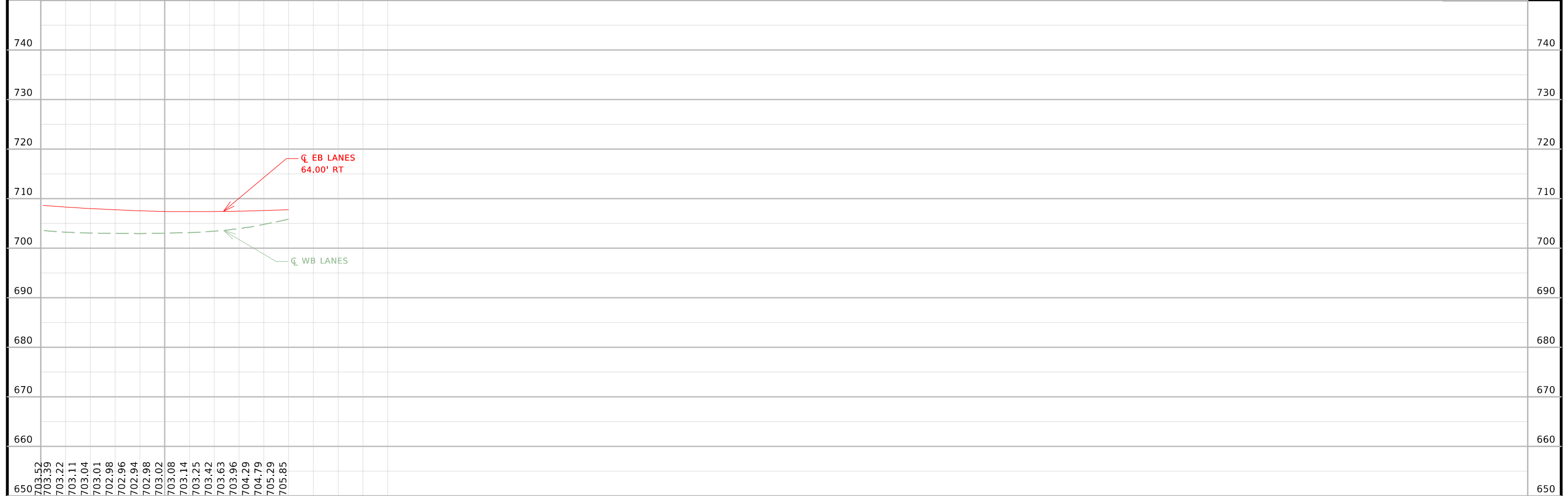
Sta. 1769+50.8 Lt. Lane  
2'x2'x44.7' RCB  
With 30"x107' C.M.P. Ext. Camanche TWP.  
D.A.=40.0 A-R (from plan)  
Plug and Abandon  
T-81N R-6E  
SEC. 19

Sta. 1769+05.67 Off. 84.614' RT  
Install 24" x 88' RCP  
F.L. = Lt. 698.29  
Rt. 696.25  
(Trenchless)

Sta. 1769+65.67 Off. 84.64' RT  
Install 24" x 84' RCP  
F.L. = Lt. 696.97  
Rt. 696.41  
(Trenchless)



U.S. 30



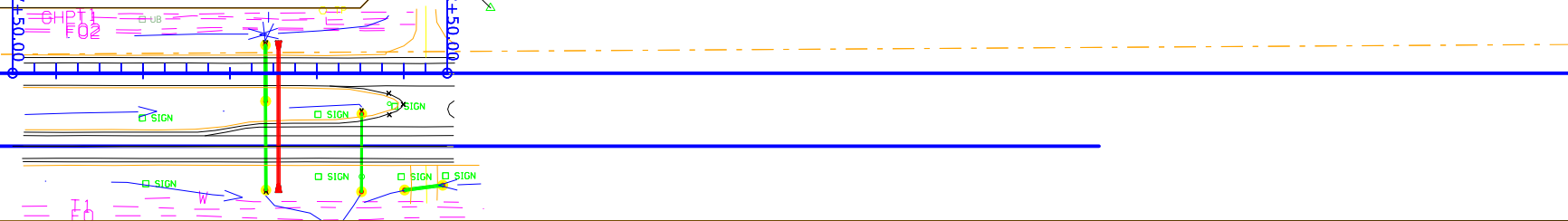
FILE NO.	ENGLISH	DESIGN TEAM	CLINTON COUNTY	PROJECT NUMBER	SHEET NUMBER
		Strum \ McNamara		NHSN-030-9(201)--2R-23	D.2

Lincoln TWP.  
T-81N R-6E  
SEC. 17

Sta. 1820+40.9 Lt. Lane  
2'x2'x64.5' RCB  
with 30"x102' CMP Ext.  
D.A.=30.0 A-R (from plan)

Plug and Abandon

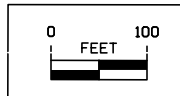
1818+00  
1819+00  
1820+00  
1821+00  
1822+00



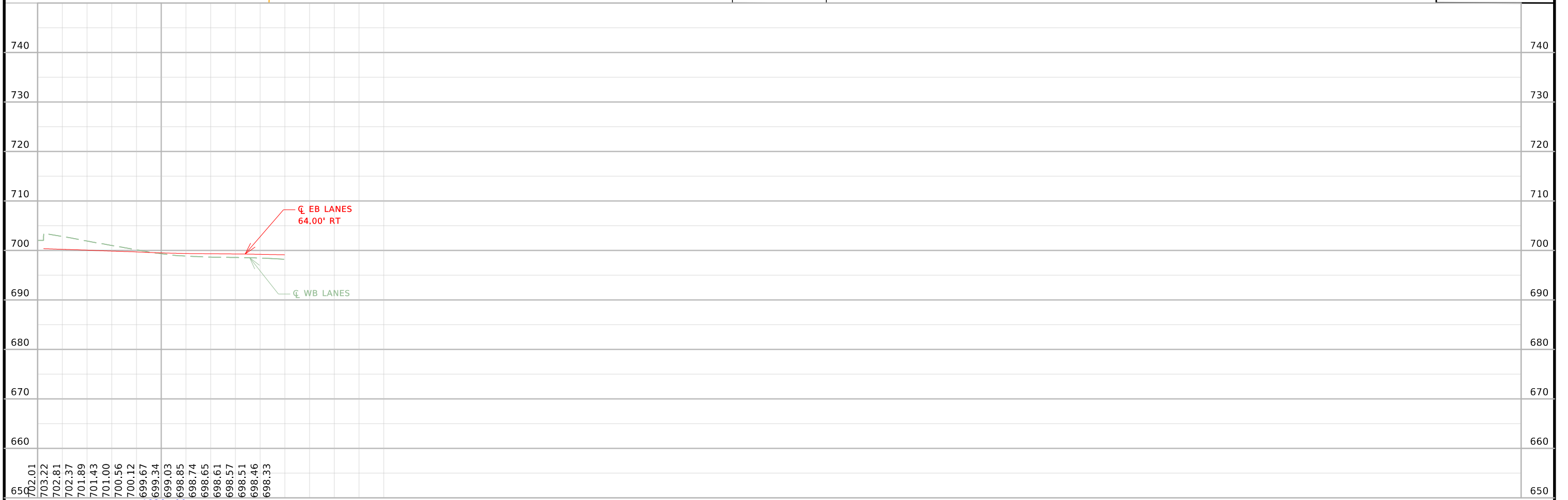
Sta. 1821+51.5 84' Rt.  
Camanche TWP. 24"x90' CMP  
T-81N R-6E  
SEC. 20

36"x44'  
C.M.P.

Sta. 1820+55.91  
Install 36" x 158' RCP  
F.L. = Lt. 691.51  
Rt. 688.07  
(Trenchless)



U.S. 30



FILE NO.	ENGLISH	DESIGN TEAM	CLINTON COUNTY	PROJECT NUMBER	SHEET NUMBER
		Strum \ McNamara		NHSN-030-9(201)--2R-23	D.3

## Survey Information

**Clinton County**  
**NHSN-030-9(201)--2R-23**  
**0.8 mi E of Co Rd X40 and 1.7 mi E of Co Rd X40**  
**PIN 21-23-030-060**

### Party Personnel

Terry Haase – Survey Coordinator  
David Chapman - Party Chief

### Date(s) of Survey

Begin Date 07/12/2021  
End Date 08/24/2021

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed Pipe to be installed under Hwy 30 at two different locations. Site locations are 0.8 mi E of Co Rd X40 and 1.7 mi E of Co Rd X40. Project datum and control information is provided by Davenport RCE Office. This project was a Full Field Survey.

### Vertical Control

Vertical datum for this survey is relative to NAVD88. The Geoid Height of laRTN was held using Geoid 18B. Multiple laRTN observations were averaged to get elevations for Control Points 100, 101, 102, 103.  
Topo Survey was from Base Rover setup with Base occupying CP 100 and CP 103.

### Horizontal Control

The project coordinate system for this survey is Iowa Regional Coordinate System Zone 11. 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. A minimum of three observations with appropriate time spans between Pt. 100 & 101 & 102 & 103 were averaged. The horizontal standard deviation of these observations was less than 0.03 ft. at 95% confidence level (2 sigma).

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. F-30-9(2)--20-23. Survey stationing was equated to the plan POT at STA 1759+06.3 and run ahead without equation throughout the survey.

## 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 11

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 11  
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Code - Description
100	8170471.740	21561908.999	718.980	CP SET 5/8IN X 40IN RBR 0.5 MI EAST OF US HWY 30 & 400TH AVE INTERSECTION IN MEDIAN 42FT WEST OF MEDIAN CROSSOVER
101	8170344.934	21563430.045	705.674	CP SET 5/8IN X 40IN RBR 0.22 MI WEST OF US HWY 30 & ANAMOSA RD INTERSECTION AT TOP OF BACKSLOPE 60FT SOUTH OF EAST BOUND LANE EDGE OF PAVED SHOULDER
102	8170339.955	21567852.094	700.483	CP SET 5/8IN X 40IN RBR 0.13 MI WEST OF US HWY 30 & S 40TH ST INTERSECTION IN SOUTH DITCH 48FT SOUTH OF EAST BOUND LANE EDGE OF PAVED SHOULDER
103	8170449.000	21568522.294	697.365	CP SET 5/8IN X 40IN RBR IN MEDIAN 39FT WEST OF CENTER MEDIAN CROSSOVER AT US HWY 30 & S 40TH ST INTERSECTION

Lincoln TWP.  
T-81N R-6E  
SEC. 18

Sta. 1769+35.67  
Install 42" x 156' RCP  
F.L. = Lt. 696.35  
Rt. 694.07  
DR-205 LT  
(Trenchless)

+35.6 Prop.  
Type "M" Dike  
Elev. =700.84

1770+00

T1  
F02  
GHP  
F02

1768+55  
Q 159' ±EX. R/W

1770+16  
Q 159' ±EX. R/W

1768+55  
Q 200'

1770+16  
Q 200'

Sta. 1769+50.8 Lt. Lane  
2'x2'x44.7' RCB  
With 30"x107' C.M.P. Ext.  
D.A.=40.0 A-R (from plan)

TEMPORARY EASEMENT FOR  
TRENCHLESS PIPE CONSTRUCTION

Plug and Abandon

Camanche TWP.  
T-81N R-6E  
SEC. 19

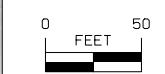
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EQUISTAR CHEMICALS LP

Sta. 1769+05.67 Off. 84.614' RT  
Install 24" x 88' RCP  
F.L. = Lt. 698.29  
Rt. 696.25  
(Trenchless)

Sta. 1769+65.67 Off. 84.64' RT  
Install 24" x 84' RCP  
F.L. = Lt. 696.97  
Rt. 696.41  
(Trenchless)

EQUISTAR CHEMICALS LP



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team:	LARSON / CUVA
ROW #:	NHSN-030-9(202)--2R-23
Plan Date:	10/24/2022
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

Lincoln TWP.  
T-81N R-6E  
SEC. 17

Sta. 1820+40.9 Lt. Lane  
2'x2'x64.5' RCB  
with 30"x102' CMP Ext.  
D.A.=30.0 A-R (from plan)

Plug and Abandon

1820+00

GHP F02 GHP F02

SIGN

SIGN

SIGN

SIGN

SIGN

SIGN

SIGN

SIGN

T1 F0 T1 F0

1820+06  
Q 170' ±EX. R/W

1820+06  
Q 198'

Sta. 1821+51.5 84' Rt.  
24"x40' CMP

1821+07  
Q 170' ±EX. R/W

1821+07  
Q 198'

Camanche TWP.  
T-81N R-6E  
SEC. 20

36"x44'  
C.M.P.

TEMPORARY EASEMENT FOR  
TRENCHLESS PIPE CONSTRUCTION

2

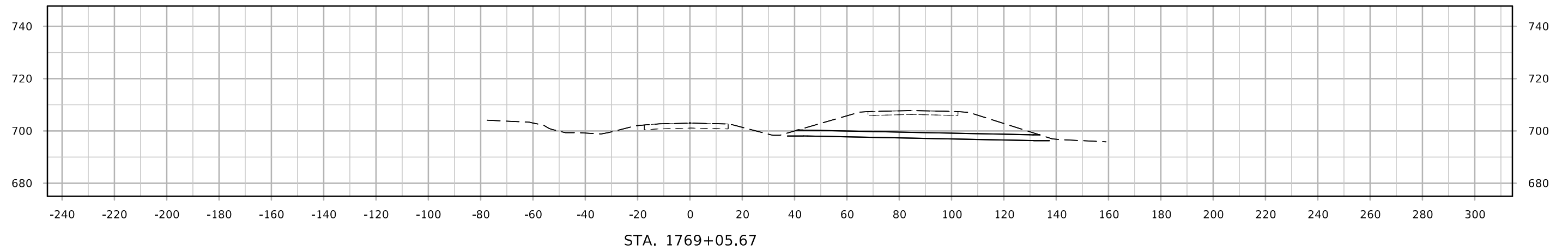
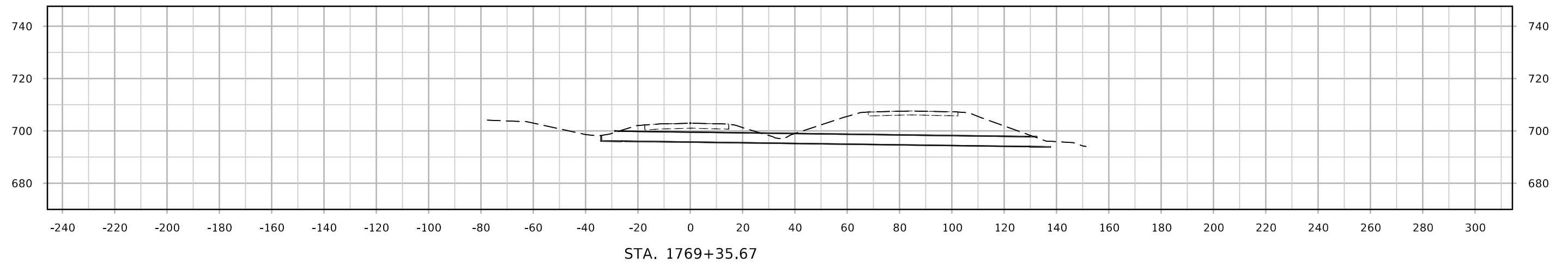
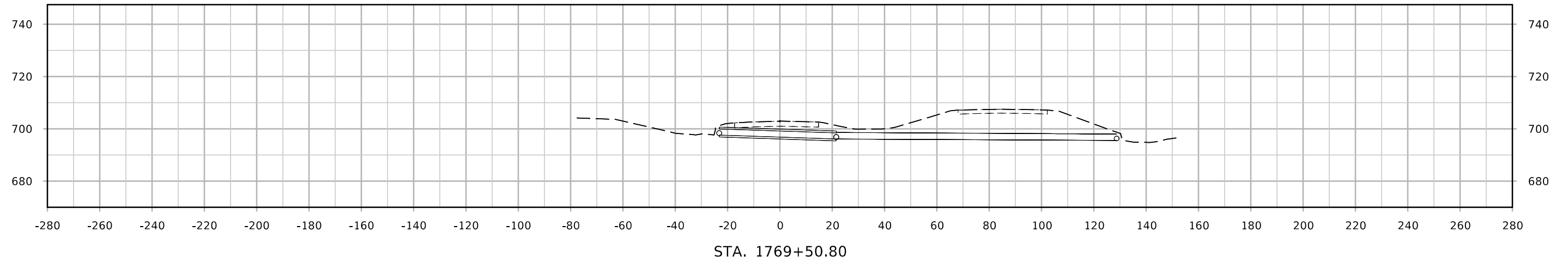
RANDALL S. SEESER

Sta. 1820+55.91  
Install 36" x 158' RCP  
F.L. = Lt. 691.51  
Rt. 688.07  
(Trenchless)

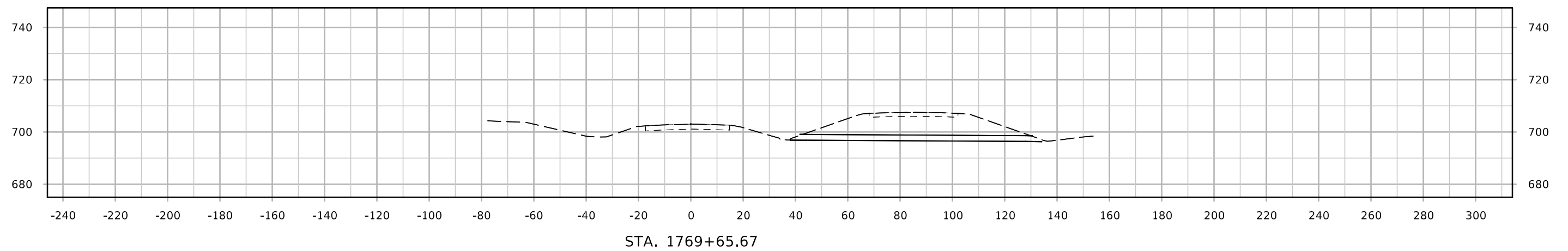


Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team:	LARSON / CUVA
ROW #:	NHSN-030-9(202)--2R-23
Plan Date:	10/24/2022
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

# U.S. 30



# U.S. 30



STA. 1769+65.67

# U.S. 30

