

JONES CO.
RCB CULVERT REPLACEMENT
BRFN-136-2(35)--39-53
 LETTING DATE
 11-16-2021

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Standard Road Plans
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 136
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
J.1	Staging Notes Stage
* J.2	Detour Map
V Sheets	Bridge and Culvert Situation Plans
* V.1 - 2	Bridge and Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 5	Mainline Cross Sections
	* Color Plan Sheets



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM JONES COUNTY RCB CULVERT REPLACEMENT

IA 136 bridge over stream 0.2 miles north of County Road E45

SCALES: As Noted

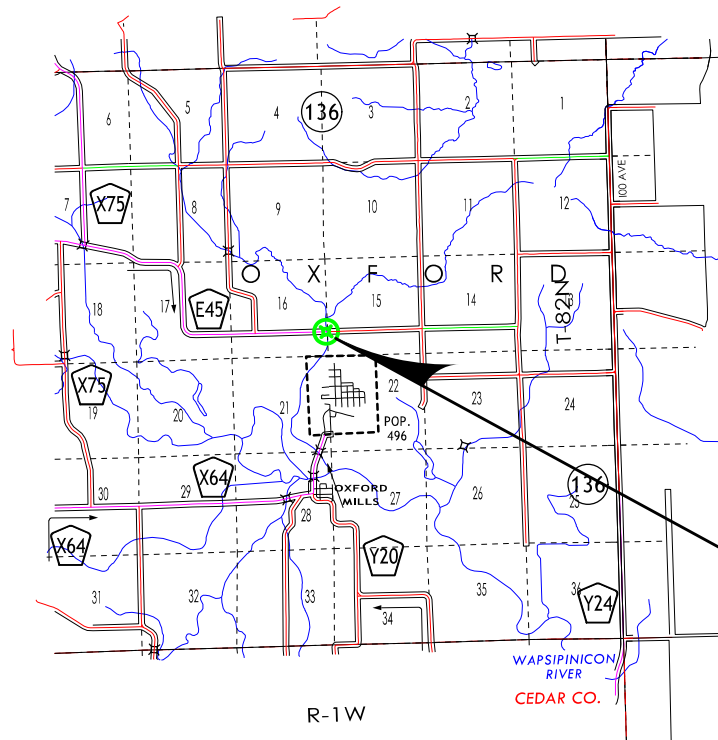
Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL
19
PROJECT IDENTIFICATION NUMBER
17-53-136-020
PROJECT NUMBER
BRFN-136-2(35)--39-53
R.O.W. PROJECT NUMBER
STPN-136-2(36)--2J-53



IA 136 CULVERT REPLACEMENT
 STA.: 45+10.25
 FHWA NO.: 32500
 MAINT. NO.: 5347.3S136
 MILE POST: 47.3

DESIGN DATA RURAL			
2021	AADT	700	V.P.D.
2041	AADT	800	V.P.D.
2041	DHV	80	V.P.H.
	TRUCKS	14	%
Total			
Design	ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Michael J. Janecek	Primary Signature Block

D4 PLAN - Date: July 20, 2021

PRELIMINARY PLANS

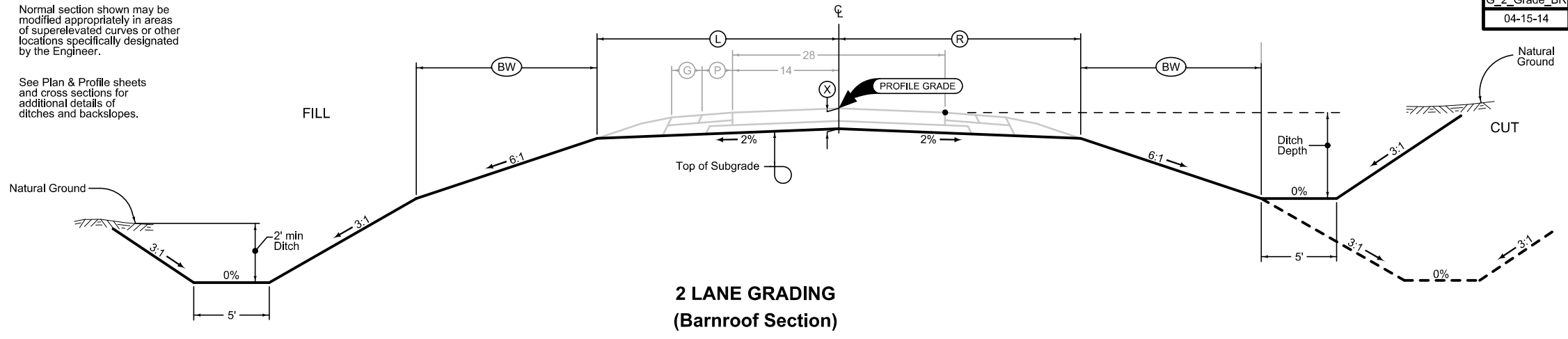
Subject to change by final design.

D5 PLAN - Date: Nov 1, 2019

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	(BW) Feet
IA 136	44+10.79 - 46+05.81	31.82	31.82	17.0	4.18

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

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



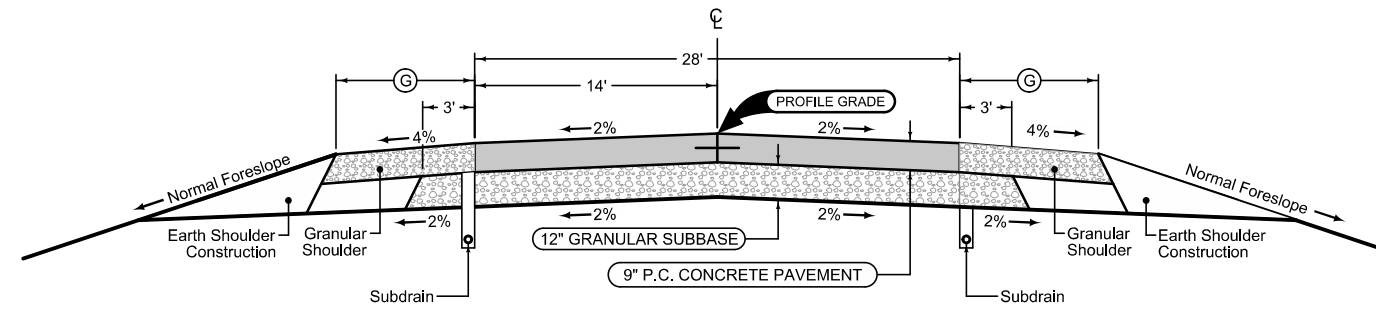
G_2_Grade_BR
04-15-14

Granular Shoulder

2_G_SR_10-19-10		
STATION TO STATION		(G) Feet
44+10.79	46+05.81	4

Granular Shoulder

2_G_SR_10-19-10		
STATION TO STATION		(G) Feet
44+10.79	46+05.81	4



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

2P_10-19-10	
STATION TO STATION	
44+10.79	46+05.81

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

IA 136

SURVEY SYMBOLS

- BBB Bottom of Bridge Beam
- BL Topo Breakline
- C Centerline BL of Road (ML or SR)
- CP Control Point
- CUL Culvert
- EG Edge of Gravel Road
- EP Edge of Paved Roads (ML or SR)
- FO1B Fiber Optic Co. 1 - Quality B
- x — FW Wire Fence
- GR Ground Shot
- LC Lot Corner
- ⊕ MH Utility Access (Manhole)
- MIS Miscellaneous
- PIP Pipe Culvert
- ⊕ PPA Power Pole Co. 1
- RET Retaining Walls
- ROW Right of Way Mark
- SIGN SI Sign
- SIGN SL Speed Limit Sign
- ⊕ TDC Tree Deciduous
- TL1B Telephone Line Co. 1 - Quality B
- TLNR Tree Line Right
- TW Top of Water
- WC Wild Card (Misc. Field Shot)
- ⊕ WV Water Valve
- EL1B Electric Line Co. 1 - Quality B
- ⊕ TPA Power Pole Co. 1

UTILITY LEGEND

This is a POINT 25 Project and is subject to the provisions of IAC 761-115.25

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
 QLA Quality Level A Highest guideline quality level
 QLD Quality Level D Lowest guideline quality level

- ⊕ PPA Power Pole Alliant Energy
 Heather Dee
 319-786-4514
 heatherdee@alliantenergy.com
- ⊕ TPA Power Pole Lost Nation-Elwood Telephone
 Jan Muhl
 563-678-2470
 jan@lencomm.com
- TPD Telephone Pedestal
 Alliant Energy - Quality B
 Lost Nation-Elwood Telephone - Quality B
 Lost Nation-Elwood Telephone - Quality C
- ⊕ WV Water Valve
 City of Oxford Junction
 Kevin Bahnsen
 563-826-2400
 ojctyhal@netins.net
- Mediacom
 Joe Ernster
 319-395-9699, Ext. 354
 jernster@mediacomcc.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.	
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

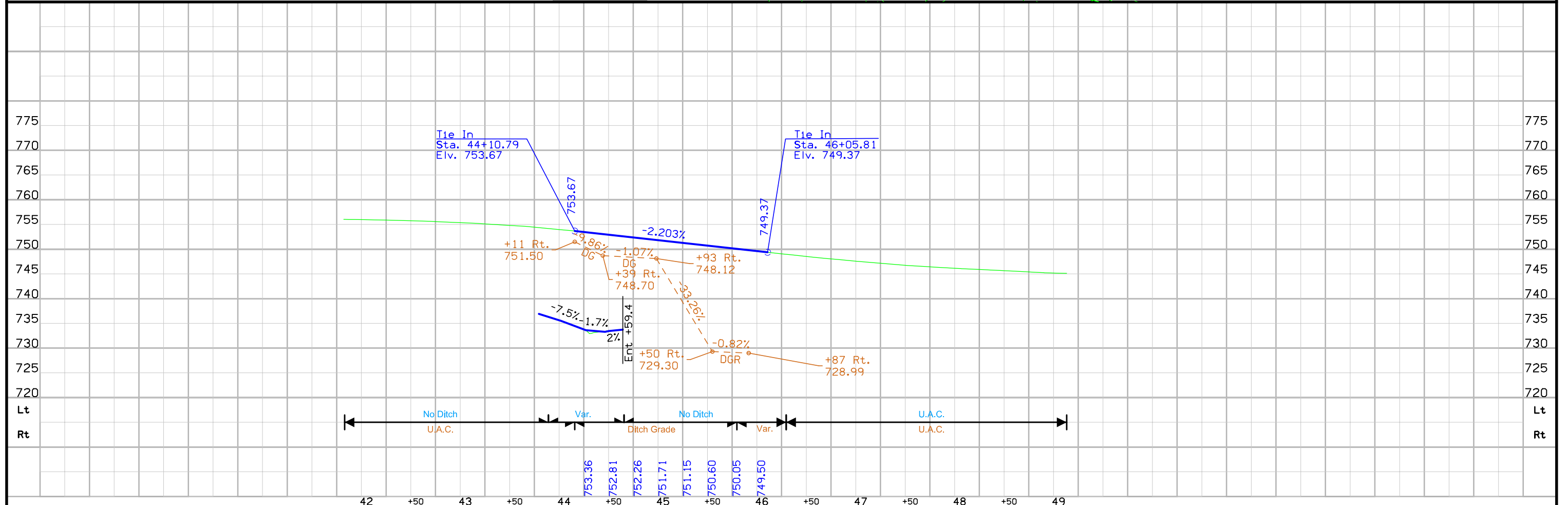
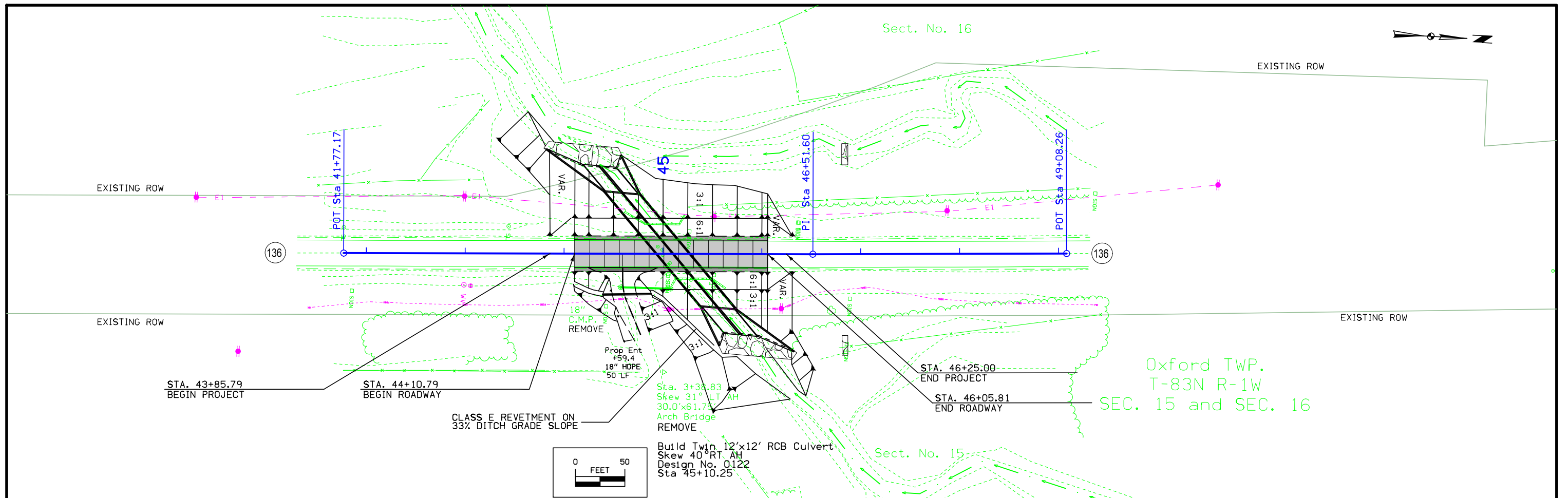
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

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)



Jones County
BRFN-136-2(35)-39-53
Bridge on Hwy 136
0.2mi N of Co Rd E45
PIN 17-53-136-020
Sap-07621

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction and reconstruction of State Highway 136 over Stream 0.2 Miles north of County Road E45. Project datum and control information is provided by Shive-Hattery Inc.. This project is a Full DTM Preliminary Survey and no Photogrammetry was used. This survey request was for the E45 corridor and the Stream information.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12A). Additional benchmarks were placed throughout the project using a Total Station setup relative to Pt. 12 and Pt. 11.

This survey observed 4 local area county Control Monuments with published NAVD88 heights to compare to local ground control:

Jones County Control mark GPS 61 has a published Elev. of 868.70
Survey Elev. = 868.87

Jones County Control mark GPS 70 has a published Elev. of 819.78
Survey Elev. = 819.80

Jones County Control mark GPS 69 has a published Elev. of 879.73
Survey Elev. = 879.78

Jones County Control mark GPS 60 has a published Elev. of 743.59

Horizontal Control

(State Plane Coordinates)

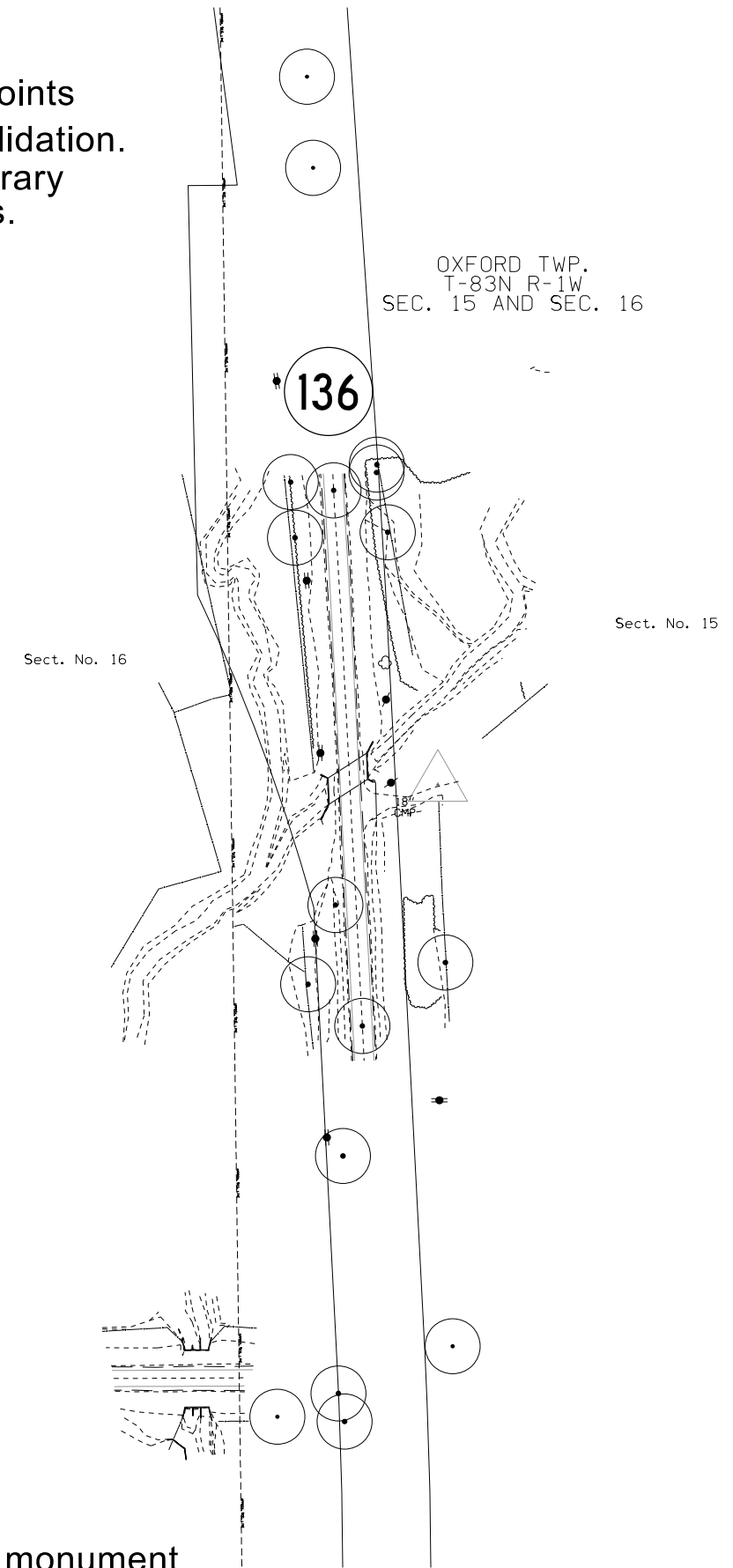
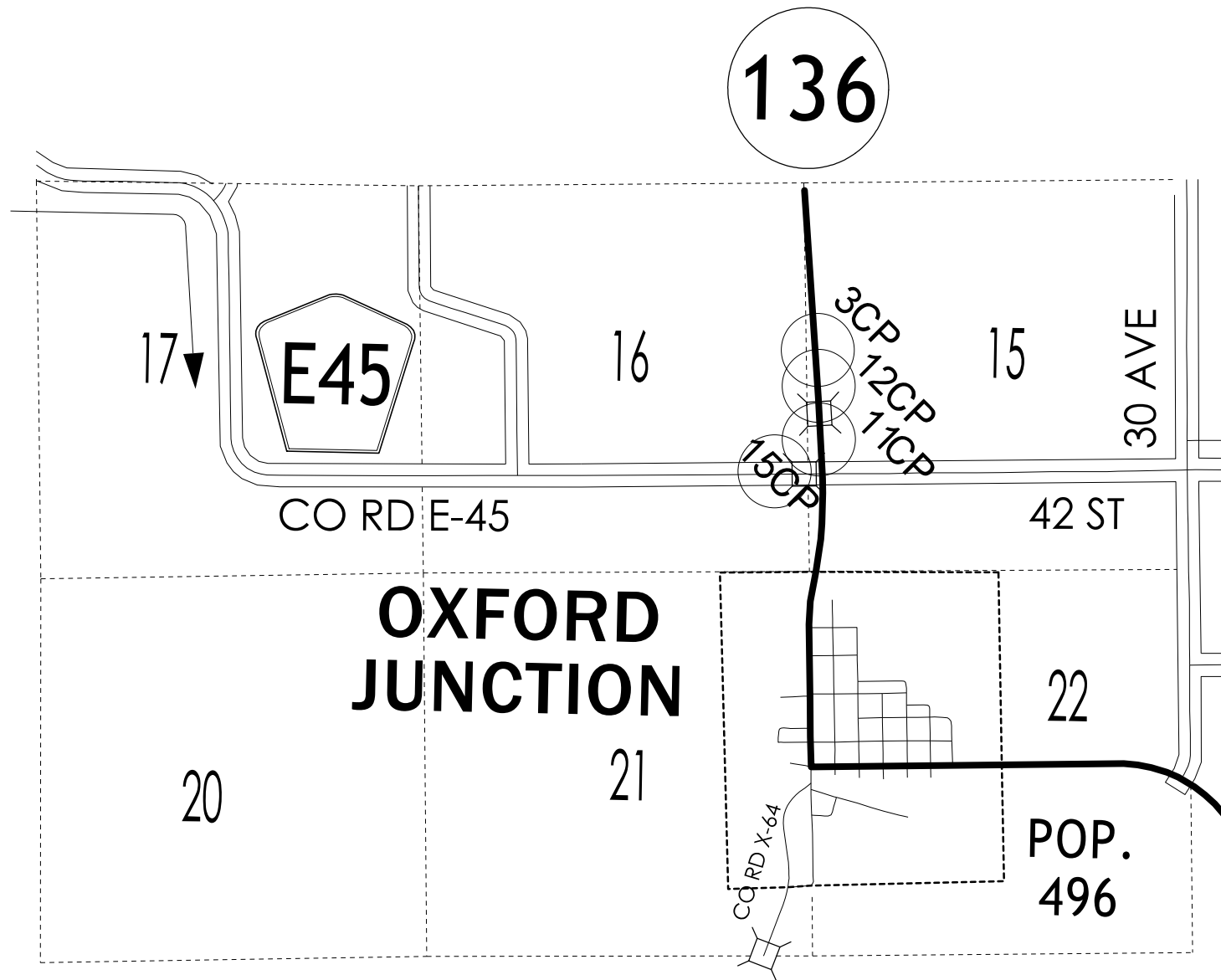
The project coordinate system for this survey is Iowa Regional Coordinate System - Zone 10 (U.S. Survey Feet). This survey control is relative to laRTN reference stations. laRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by laRTN observations with appropriate occupation times. Additional control points were placed throughout the project using a Total Station setup relative to Pt. 12 and Pt. 11.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans Design 1129 Jones County, Preliminary Road Project No. 581. Survey stationing was equated to the plan centerline of culvert at STA 45+16.00 and run back and ahead without equation throughout the survey. No other information was legible to establish the alignment.

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 10

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

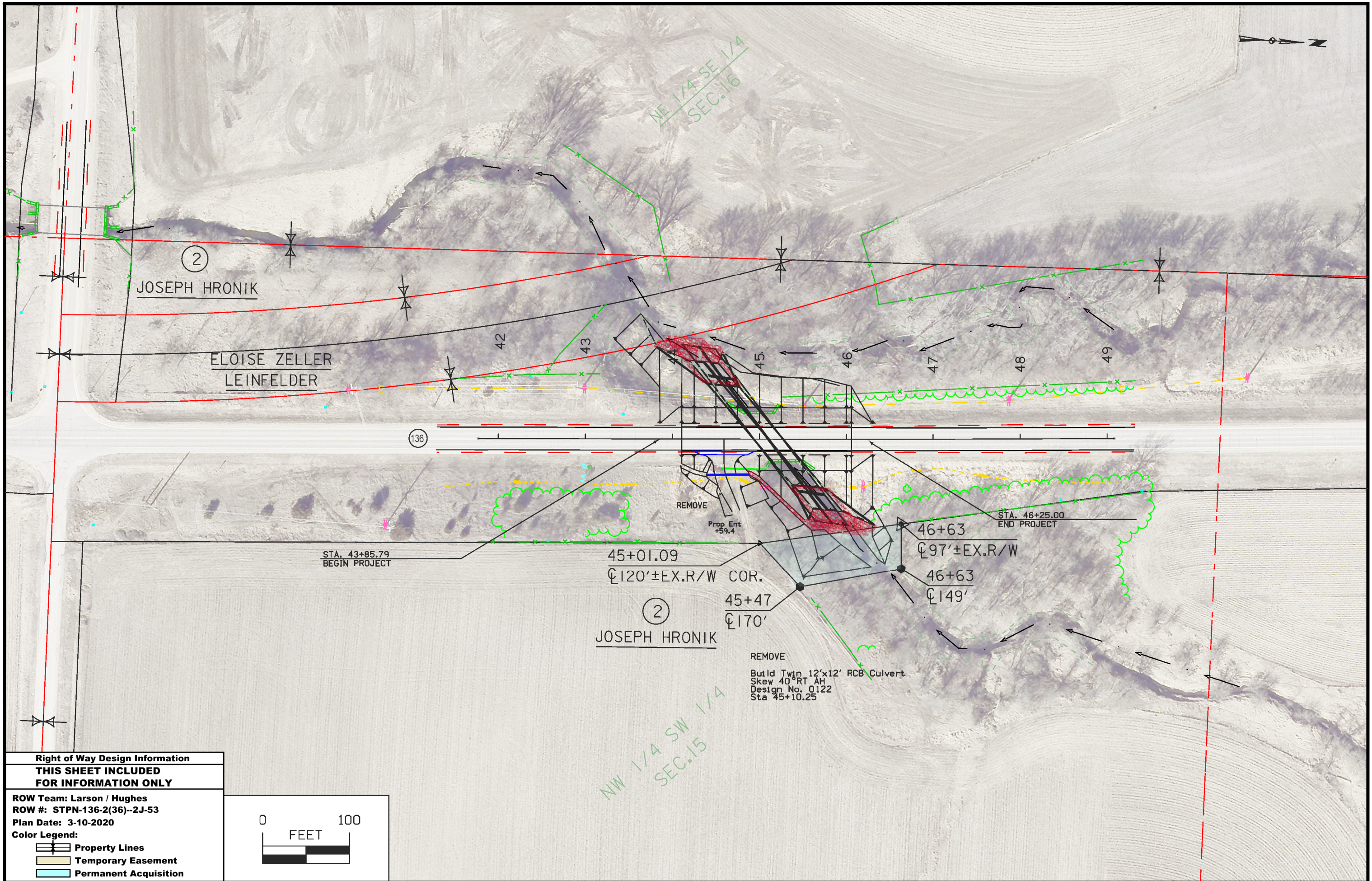
HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 10

Point Name	Northing	Easting	Elevation	Feature Definition	Description
3	8060979.396	20693223.130	738.419	CP	CP
11	8059755.042	20693236.910	754.664	CP	CP
12	8060486.680	20693234.890	744.410	CP	CP
13	8059255.116	20693223.910	745.481	LC	IR 5/8 CAP
14	8059319.453	20693379.560	743.654	LC	IR COUNTY MONUMENT
15	8059316.110	20692631.840	740.620	CP	CP-15
2254	8060063.317	20693188.620	734.244	CP	CP TEMP
2304	8059823.063	20693006.290	735.420	CP	CP TEMP
2327	8059216.920	20693232.330	0.000	LC	IR PK
2328	8059223.501	20693140.680	0.000	LC	IR PK
3153	8060428.925	20693291.120	737.510	LC	IRF 1/2 CONCMON
3214	8060521.050	20693276.350	737.987	LC	IR RAIL
3215	8060510.344	20693275.910	736.802	LC	IRF 1/2 CONCMON
3221	8060486.061	20693217.400	745.098	LC	IR PK
3222	8060925.634	20693189.510	745.097	LC	IR PK
3223	8061049.846	20693181.030	745.187	LC	IR PK
3235	8060497.282	20693158.840	738.427	LC	IRF 1/2 CONCMON
3238	8060421.547	20693164.720	738.583	LC	IRF 1/2 CONCMON
3294	8059756.018	20693256.540	756.025	LC	IR PK
3295	8059920.916	20693219.950	0.000	LC	IR PK
3296	8059578.825	20693230.150	0.000	LC	IR PK
3298	8060124.419	20693254.170	750.299	CP	CP TEMP
3299	8060077.808	20693222.080	750.940	CP	CP TEMP
3300	8060178.595	20693301.380	735.035	CP	CP TEMP
10060	8059842.531	20693369.700	783.167	LC	IR CONC MON
10135	8060085.792	20693359.330	758.463	ROW	ROWR
10167	8059812.812	20693182.630	763.342	LC	IR CONC MON

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



NE 1/4 SE 1/4
SEC. 16

NW 1/4 SW 1/4
SEC. 15

②
JOSEPH HRONIK

ELOISE ZELLER
LEINFELDER

136

STA. 43+85.79
BEGIN PROJECT

②
JOSEPH HRONIK

45+01.09
±120' EX.R/W COR.
45+47
±170'

REMOVE
Build Twin 12'x12' RCB Culvert
Skew 40° RT AH
Design No. 0122
Sta 45+10.25

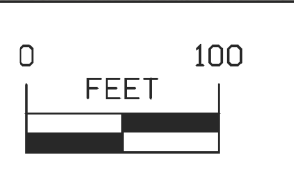
46+63
±97' EX.R/W
46+63
±149'

STA. 46+25.00
END PROJECT

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Larson / Hughes
ROW #: STPN-136-2(36)--2J-53
Plan Date: 3-10-2020

Color Legend:
 Property Lines
 Temporary Easement
 Permanent Acquisition



108-26A
08-01-08

STAGING NOTES

Stage 1:
With traffic using detour, remove and replace bridge over the stream with a culvert.

Stage 2:
Reopen IA 136 to normal traffic pattern.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1) While bridge and approaches are being removed and replaced with RCB culvert, IA 136 traffic shall be maintained via an off-site detour. Detours are furnished, maintained and removed by the Contractor.

2) Contractor will furnish, install, maintain, and remove detour signs. All existing signs that conflict with detour shall be covered. These functions shall be included in the Traffic Control Bid Item.

108-25
10-21-14

511 TRAVEL RESTRICTIONS

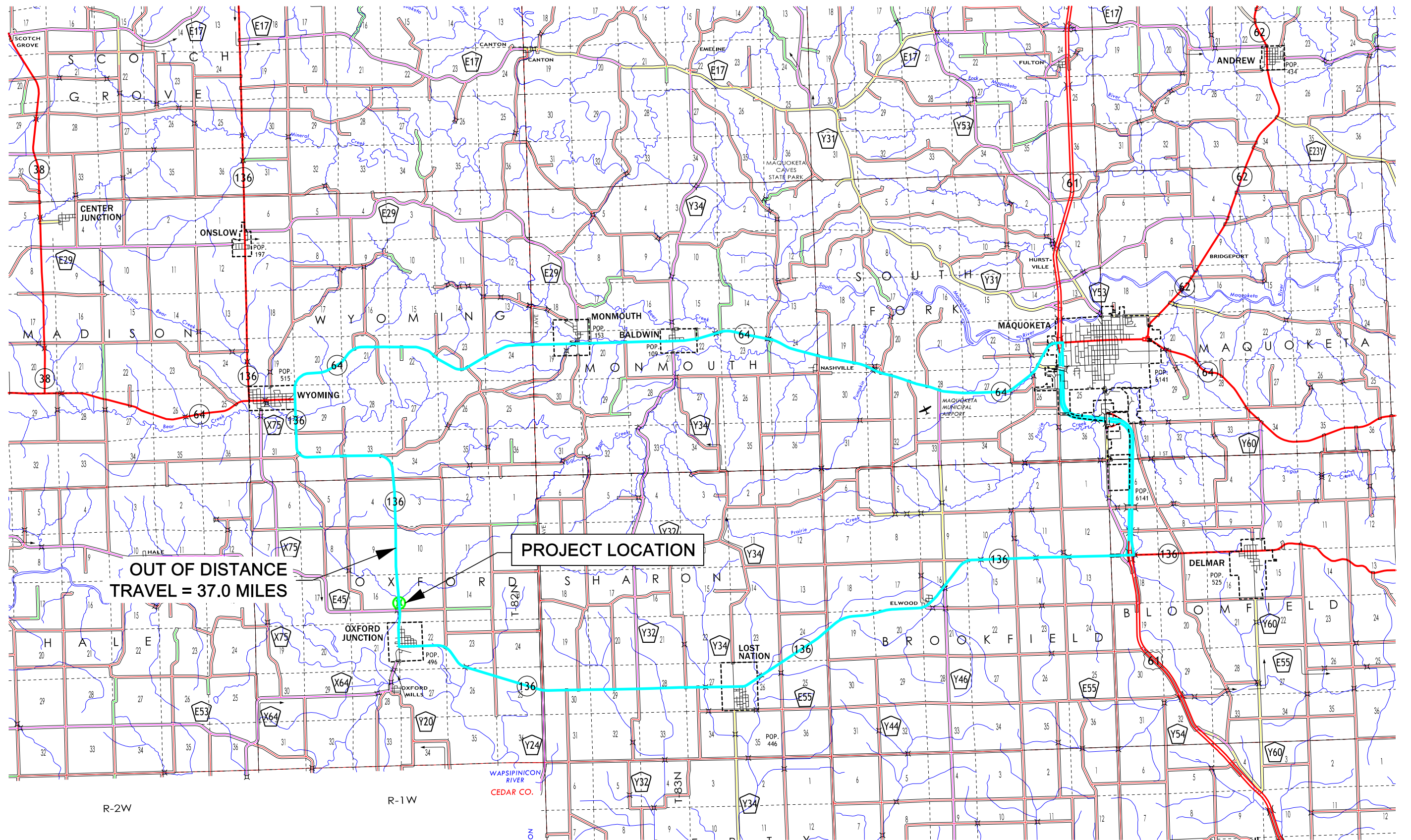
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Travel Restrictions Expected									

111-01
04-17-12

COORDINATED OPERATIONS

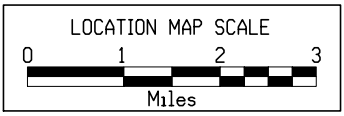
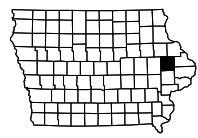
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None Provided	

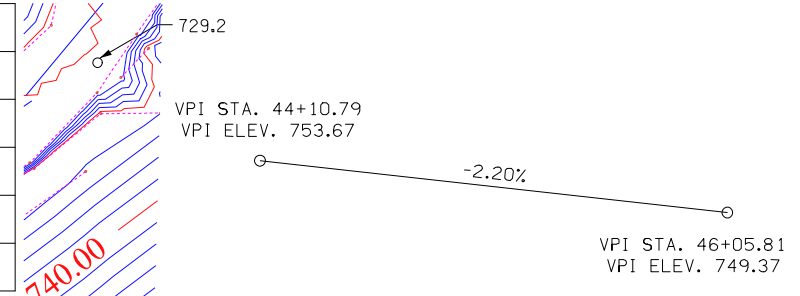
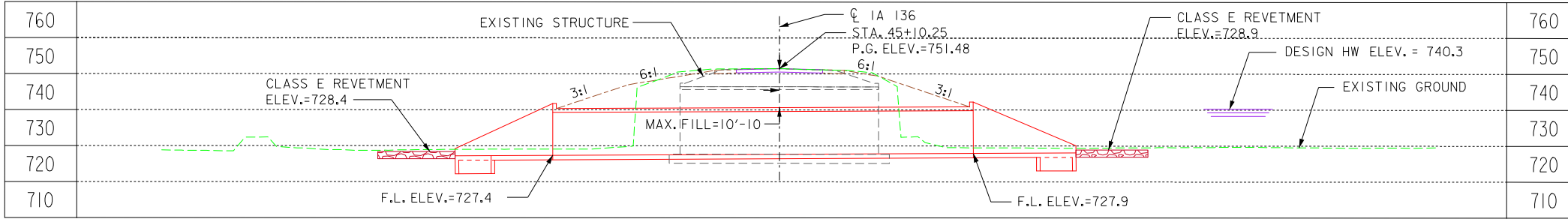


PROJECT LOCATION

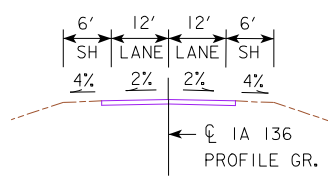
OUT OF DISTANCE TRAVEL = 37.0 MILES



— DETOUR ROUTE



PROPOSED PROFILE GRADE
IA 136



TYPICAL APPROACH SECTION

- PLAN NOTES:
- EXISTING 30' x 34' ARCH BRIDGE DESIGN NO 1129.
 - DRAINAGE THROUGH EXISTING CULVERT/CHANNEL MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.
 - FLOW LINE OF CULVERT NOMINALLY BURIED 1'.
 - UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY. SEE ROADWAY SHEETS FOR FINAL UTILITY INFORMATION.

HYDRAULIC DATA

DRAINAGE AREA = 2.89 SQ. MI.
 $Q_{50} = 1,970$ CFS (DESIGN)
 HW ELEV. = 740.3
 STREAM SLOPE = 35.8 FT./MI.
 $Q^{500} = 2350$ CFS HW ELEV. = 741.1
 $Q = 3400$ CFS HW ELEV. = 748.0

UTILITIES LEGEND:

- FO(B) FIBER OPTIC LINE
- E OVERHEAD ELECTRIC

UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

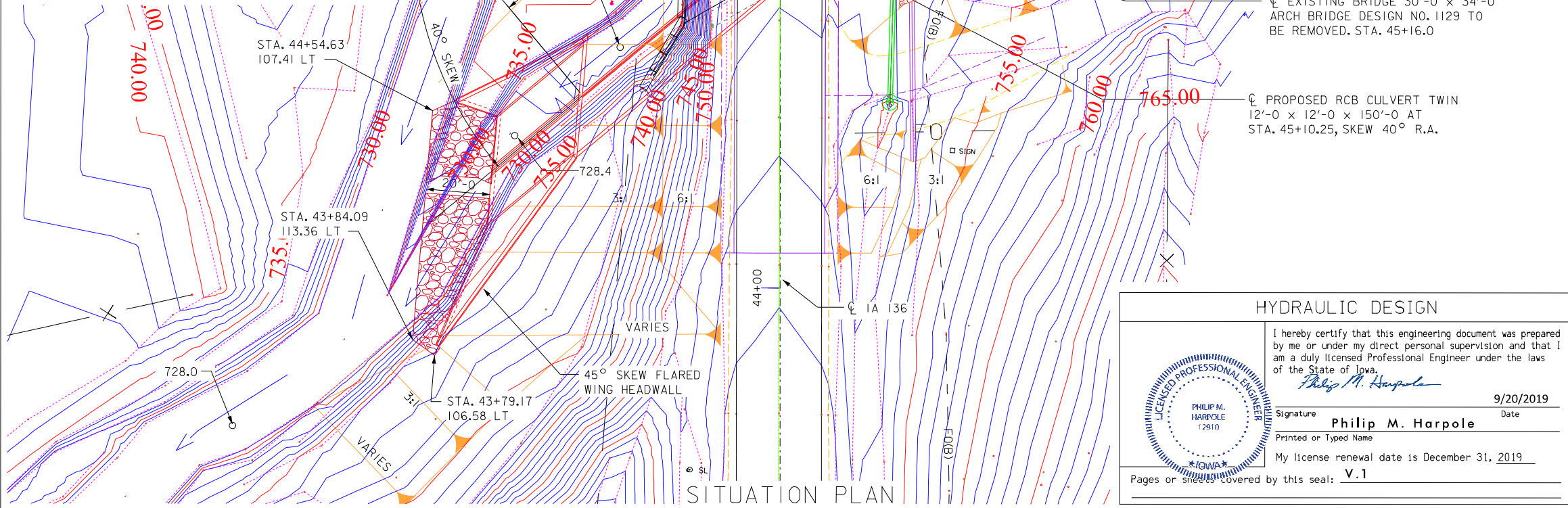
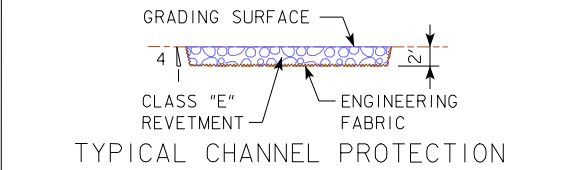
LOCATION TRAFFIC ESTIMATE

IA 136 OVER STREAM 0.2MI	2021 AADT	700	V.P.D.
N. CO RD E45	2041 AADT	800	V.P.D.
T-83N R-1W	2041 DHV	80	V.P.H.
SECTION 15	TRUCKS	14	%
OXFORD TOWNSHIP	TOTAL		
JONES COUNTY	DESIGN ESALS		
FHWA NO. 32501			
BRIDGE MAINT. NO. 5347.3S136			
LATITUDE 41.996030°			
LONGITUDE -90.955796°			

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	148.5	178.5	80
OUTLET	148.5	178.5	80
TOTALS	297	357	160

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



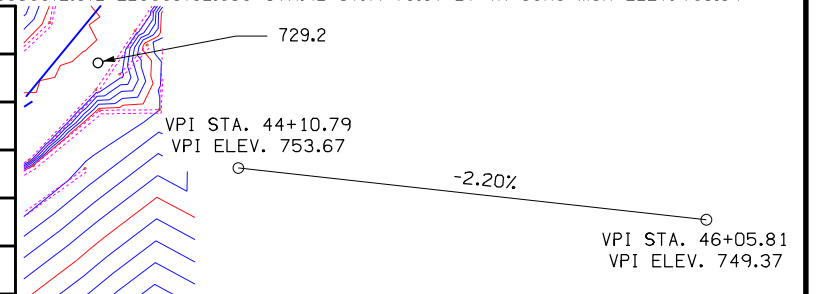
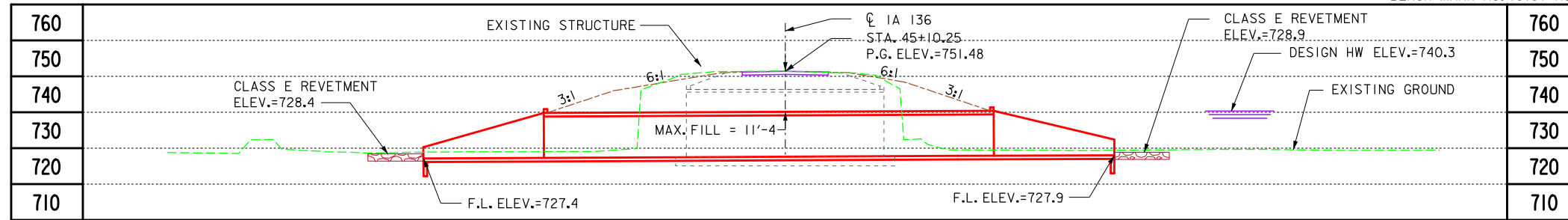
HYDRAULIC DESIGN

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.

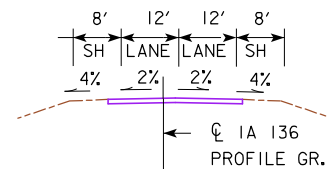
Philip M. Harpole
 Signature Philip M. Harpole Date 9/20/2019
 Printed or Typed Name
 My license renewal date is December 31, 2019

Pages or sheets covered by this seal: 1

PRELIMINARY DESIGN FOR 40° SKEW R.A.
 TWIN 12' x 12' x 150' C.I.P. CULVERT REPLACEMENT
 SITUATION PLAN
 STATION 45+10.25 (IA 136) SEPTEMBER 2019
 JONES COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 1 FILE NO. 31696 DESIGN NO. 122



**PROPOSED PROFILE GRADE
IA 136**



TYPICAL APPROACH SECTION

- PLAN NOTES:
- EXISTING 30' x 34' ARCH BRIDGE DESIGN NO 1129.
 - DRAINAGE THROUGH EXISTING CULVERT/CHANNEL MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.
 - FLOW LINE OF CULVERT NOMINALLY BURIED 1'.
 - THE CULVERT SHALL NOT BE PLACED DIRECTLY ON BEDROCK.
 - UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY. SEE ROADWAY SHEETS FOR FINAL UTILITY INFORMATION.

HYDRAULIC DATA

DRAINAGE AREA = 2.89 SQ. MI.
 Q₅₀ = 1,970 CFS (DESIGN)
 HW ELEV. = 740.3
 STREAM SLOPE = 35.8 FT./MI.
 Q₁₀₀ = 2350 CFS HW ELEV. = 741.1
 Q₅₀₀ = 3400 CFS HW ELEV. = 748.0

UTILITIES LEGEND:

FO(B) FIBER OPTIC LINE
 — E — OVERHEAD ELECTRIC

UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

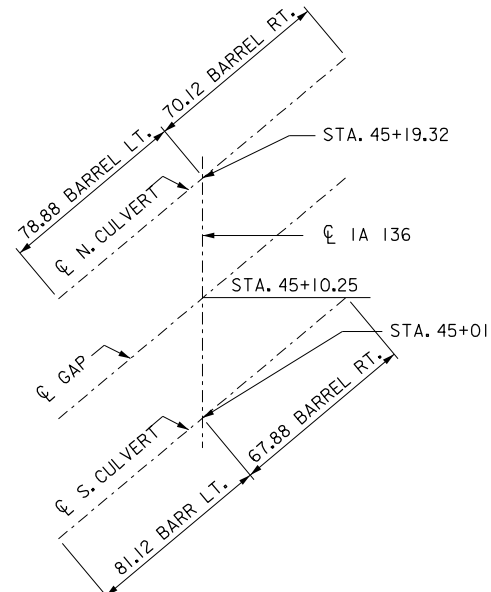
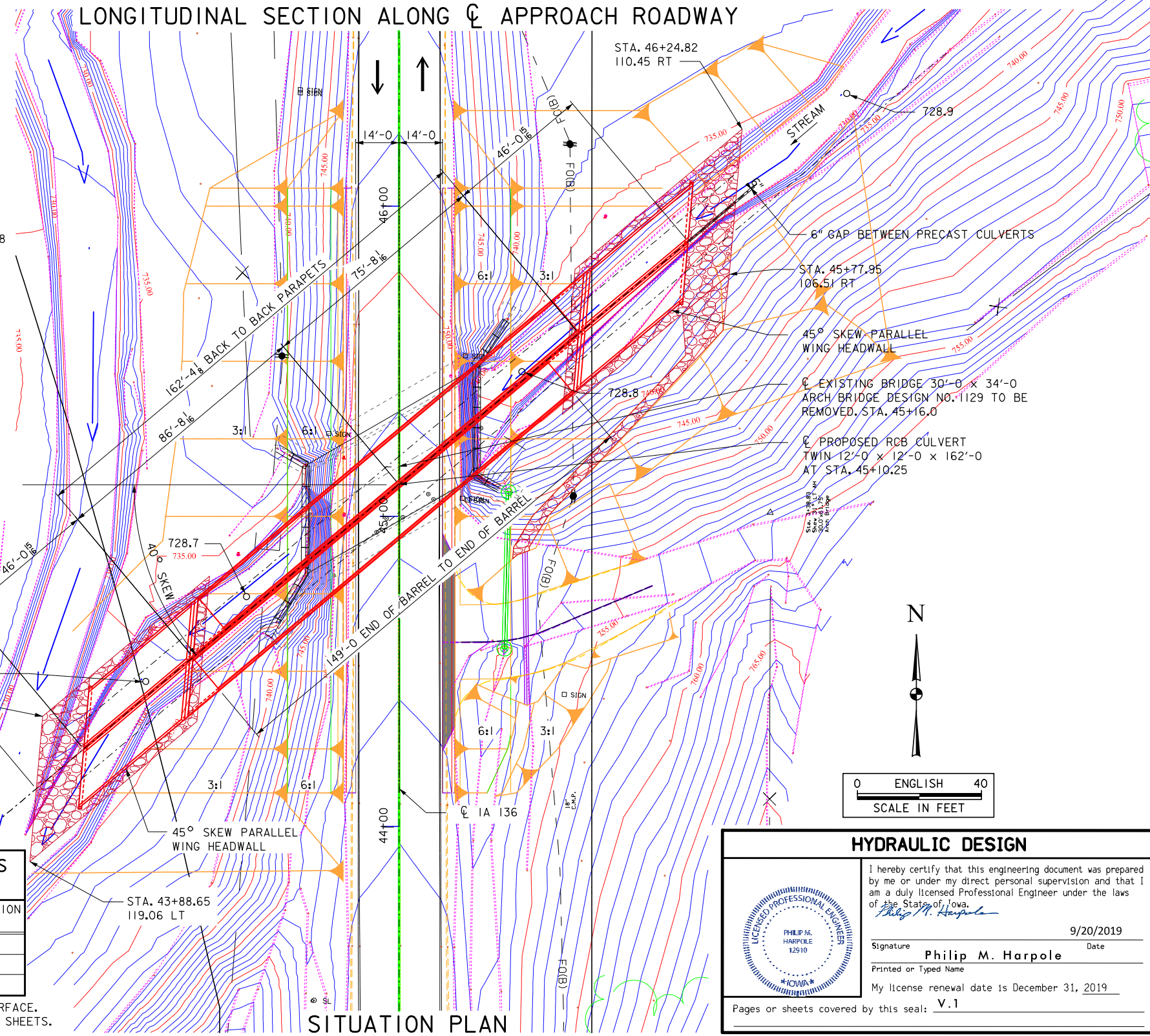
LOCATION

IA 136 OVER STREAM 0.2MI
 N. CO RD E45
 T-83N R-1W
 SECTION 15
 OXFORD TOWNSHIP
 JONES COUNTY
 FHWA NO. 32501
 BRIDGE MAINT. NO. 5347.3S136
 LATITUDE 41.996030°
 LONGITUDE -90.955796°

TRAFFIC ESTIMATE

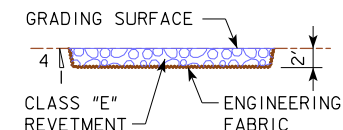
2021 AADT	700	V.P.D.
2041 AADT	800	V.P.D.
2041 DHV	80	V.P.H.
TRUCKS	14	%
TOTAL		
DESIGN ESALs		

LONGITUDINAL SECTION ALONG CL APPROACH ROADWAY



BARREL LAYOUT

LINTEL BEAM AND CURTAIN WALLS SHALL FORM ONE CONTINUOUS LINE AND SHALL NOT BE STAGGERED OR OFFSET.

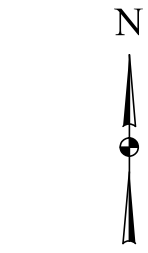


TYPICAL CHANNEL PROTECTION

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	128	209.5	42.5
OUTLET	128	209.5	42.5
TOTALS	256	419	85

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



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.

Philip M. Harpole
 Signature Philip M. Harpole Date 9/20/2019
 Printed or Typed Name
 My license renewal date is December 31, 2019

Pages or sheets covered by this seal: V.1

PRELIMINARY DESIGN FOR 40° SKEW R.A.
TWIN 12' x 12' x 162'-4 1/8\"/>

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
- 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.

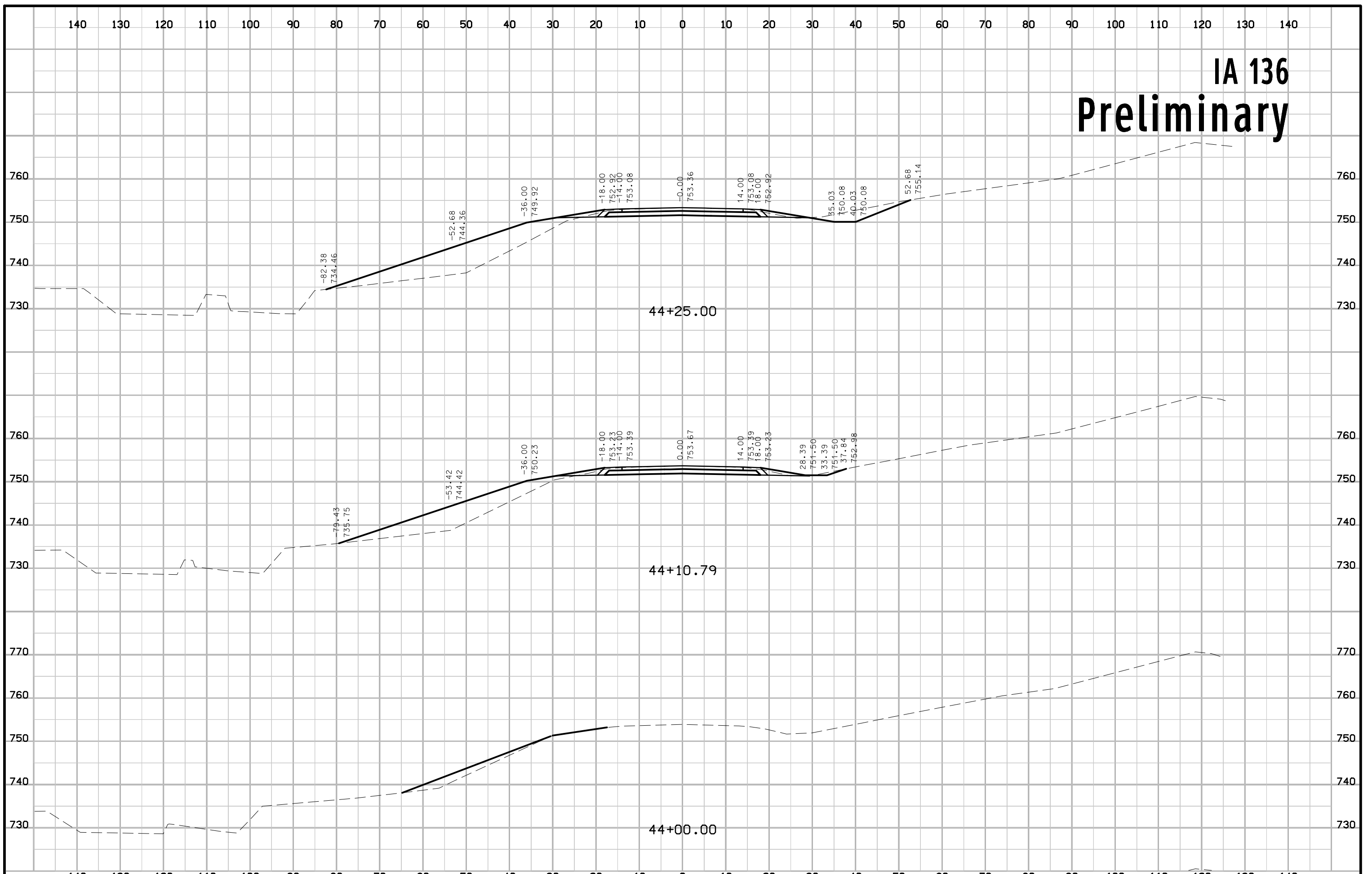
SYMBOL LEGEND OF CROSS SECTION SHEETS

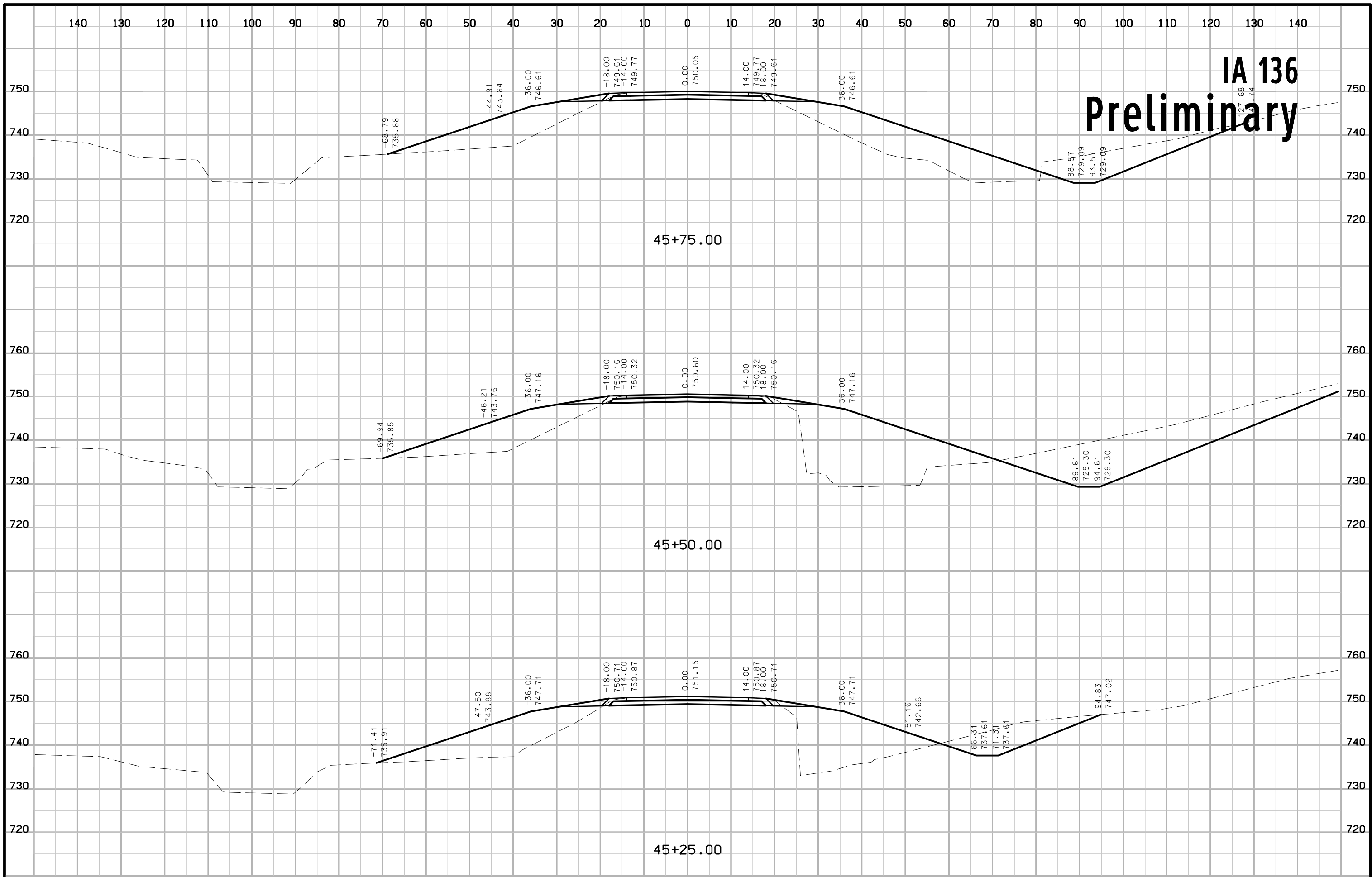
- Existing ROW
|
Existing Right-of-Way Limit
- Proposed ROW
|
Proposed Right-of-Way Limit
- Temporary ROW
|
Temporary Right-of-Way Limit

**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

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

IA 136 Preliminary





IA 136 Preliminary

