LETTING DATE 10/21/2025

Bridge-Unspecified
BRF-003-4(45)--38-99

WRIGHT COUNTY

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
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A.2	Location Map Sheet
A.3 - 14	Concept, Design Criteria, and Questionaire
B Sheets	**Typical Cross Sections and Details**
B.1 - 2	Typical Cross Sections and Details
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 3
G Sheets	**Survey Sheets**
G.1	Survey Information
G.2 - 3	Horizontal and Vertical Control Coordinates
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control Plan
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W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 4	Mainline Cross Sections
	* Color Plan Sheets

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
WRIGHT COUNTY
Bridge-Unspecified
Eagle Creek 5.3 mi E of Jct IA 17

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

REVISIONS

TOTAL
..
PROJECT IDENTIFICATION NUMBER
21-99-003-010
PROJECT NUMBER
BRF-003-4(45)--38-99
R.O.W. PROJECT NUMBER

FIELD EXAM ATTENDEES:

Ashton, Johnson	Iowa DOT- District 2
Kevin, Smith	Iowa DOT- District 2
Brandon,Walls	Iowa DOT - LEB
Brock, Struecker	Iowa DOT- LEB
Jimmy, Ellis	Iowa DOT - Bridge B
Daniel, Kimball	AECOM

Invited:

Nick, Humpal	Iowa DOT- District 2
Roy, Gelbaus	Iowa DOT- District 2
Jason, Ruter	Iowa DOT- District 2
Ron, Richter	Iowa DOT- District 2

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

PRELIMINARY PLANS

Subject to change by final design.

D2/D3 PLAN - Date: 7/14/2023

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	WRIGHT COUNTY	PROJECT NUMBER BRF-003-4(45)--38-99	SHEET NUMBER A1	

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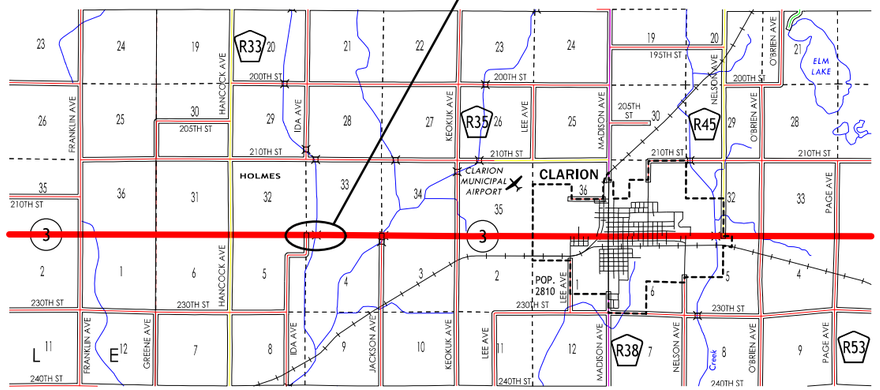
PROJECT LOCATION
IA 3 Over Eagle Creek
Existing FHWA # 54360
Milepost 150.4



LOCATION MAP SCALE
0 1 2 3
Miles

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	WRIGHT COUNTY	PROJECT NUMBER BRF-003-4(45)--38-99	SHEET NUMBER A2	

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IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE:	District 2	**DATE:**	April 12, 2023
ATTENTION:	E. Jon Ranney	**PROJECT:**	Wright County BRF-003-4(45)--38-99 PIN: 21-99-003-010
FROM:	John E. Bartholomew		
BUREAU:	Design		
SUBJECT:	Project Concept Statement; (Final, D0)		

This project involves the replacement of the IA 3 bridge (Maint. No. 9950.4S003) over West Eagle Creek, 5.3 miles east of the east junction of IA 17.

A concept review was held over Microsoft Teams on January 9, 2023. Those present included Nick Humpal and Daryl Erickson from the District 2 Office; Jim Ellis, and Asher Jobson from the Bridges and Structures Bureau; Brandon Walls from the Location and Environment Bureau; and John Bartholomew, Kevin Patel, and Hollie Richey from the Design Bureau.

The two alternatives considered were:
1. Reinforced Concrete Box (RCB) Culvert. Bridge deck will be removed.
2. Single-span 40 ft., BTB beam bridge.

Alternative 1 is the preferred alternative due to the RCB being enough to handle the flow and the Bridge Bureau noting that the BTB beam bridge depth of beam and deck thickness of 3 ft. being too great (see attached concept for details). Additional right of way may be required and has been programmed for $5,000. Traffic will be maintained by offsite detour. The preliminary estimated project cost is **$1,158,600.**

The Draft Project Concept Statement was sent out for review and comment with concerns to be resolved by Tuesday, April 11, 2023. Comments received during the review period have been considered and resolved.

This project is recommended for construction in FY 2026. The Bridges and Structures Bureau will coordinate plan preparation with assistance from the Design Bureau.

JEB:hsr
Attach.
cc:

C. Purcell	M. J. Kennerly	K. D. Nicholson
M. Dell	J. S. Nelson	M. Nop
M. A. Swenson	R. A. Younie	D. E. Sprengeler
S. Majors	A. Poole	K. Brink
D. L. Newell	B. Bradley	J. W. Laaser-Webb
W. A. Sorenson	E. C. Wright	M. E. Ross
A. A. Welch	J. Harris	C. C. Poole
B. Hofer	G. Karssen	B. E. Azeltine
S. J. Gent	S. Anderson	D. Stokes
T. Jerman	K. K. Patel	R. Harris
J. Vortherms	M. Todsen	M. Van Dyke
T. Lovan	L. Su	R. Loecher
R. Meyer	J. Hauber	A. Abu-Hawash
M. E. Khoda	K. Olson	S. Neubauer
J. Ellis	S. Seivert	S. Sersland
B. Walls	R. Gelhaus	J. Bacon
P. Hjelmstad	N. Humpal	D. Erickson
K. Billhorn	B. Strueker	A. Jobson
S. Ebel	FHWA	

FINAL PROJECT CONCEPT STATEMENT

IA 3 bridge over West Eagle Creek, 5.3 miles east of the east junction of IA 17.

Wright County
BRF-003-4(45)--38-99
PIN: 21-99-003-010
Maint. No.9950.4S003
FHWA No. 54360

Highway Division
Design Bureau

John Bartholomew, P.E.
515-239-1540

April 12, 2023

I. STUDY AREA

A. Project Description

This project involves the replacement of the IA 3 bridge (Maint. No. 9950.4S003) over West Eagle Creek, 5.3 miles east of the east junction of IA 17.

The two alternatives considered were:
1. Reinforced Concrete Box (RCB) Culvert. Bridge deck will be removed.
2. Single-span 40 ft., BTB beam bridge.

Alternative 1 is the preferred alternative due to the RCB being enough to handle the flow and the Bridge Bureau noting that the BTB beam bridge depth of beam and deck thickness of 3 ft. being too great. The preliminary estimated project cost is **$1,158,600.**

B. Need for Project

The existing bridge is a 43 ft. x 44 ft. steel beam, built in 1934, widened in 1966 with prestressed concrete girders. The bridge deck was partially replaced in 1981 and is near the end of its useful life and needs replaced. The top and bottom of the deck has numerous hollow areas and leaching transverse cracks. There are areas of section loss at the ends of the steel girders and the paint is near the end of its service life. The abutments have numerous 1/16 inch vertical and horizontal cracks with efflorescence. The bridge was designed for live loads below current standards. Because of the condition of the deck, superstructure, and substructure this bridge should be replaced.

C. Present Facility

The existing structure is a 43 ft. x 44 ft. continuous steel I-beam bridge constructed in 1932 and reconstructed in 1965.

IA 3 in the project area is 18 ft. wide PC7 pavement with 6ft. wide shoulders and 1½ :1 foreslopes, constructed in 1927. ACC resurfacing of 2 in. was accomplished in 1966 and widened to 24 ft. with 3:1 foreslopes. In 1986 AAC resurfacing of 3 in. was accomplished. Widening and HMA resurfacing occurred in 2015. The roadway surface was widened to 40 ft., and 3.5 in. HMA was accomplished.

D. Traffic Estimates

The 2026 construction year and 2046 design year average daily traffic estimates are 3,600 ADT with 16 % trucks and 4,000 ADT with 17 % trucks, respectively.

E. Sufficiency Ratings

IA 3 is classified as an area development route and is a maintenance service level 'B' roadway. The bridge condition index is 57.8 and the bridge condition rating is fair.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2018 through December 31, 2022, there were zero crashes.

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 - Replace with a culvert

The existing 43 ft. x 44 ft. bridge will be replaced with an 84 ft. long twin 12 ft. x 7 ft. reinforced concrete box (RCB) culvert. The typical cross section will consist of a 24 ft. roadway (40 ft. wide pavement) with 8 ft. paved shoulders and 6:1/3:1 foreslopes.

The roadway will be reconstructed on the existing vertical and horizontal alignment. The flow line of the box will be buried 1 ft. below the existing flow line in the channel. This will allow the bottom of the box to silt in and provide a natural bottom for fish passage. The existing ditches will need to be relocated to meet the inlet and outlet flowlines of the new RCB. Class E revetment will be placed at the ends of the RCB.

The RCB will be built under the existing bridge and will need a short closure to complete the removal of the existing structure and patching the roadway. Bridge approaches will be removed and new pavement placed, 9.5 in. PCC, 12 in. modified subbase and 100 percent subdrain coverage. Flowable mortar is not required on this project due to the bridge deck removal. Steel beam guardrail will be removed.

There are four Type 'D' field entrances (one in each quadrant). These entrances will not need to be relocated.

Apply erosion control and rural seeding and fertilizing to all disturbed areas.

Right of way has been programmed for **$5,000** for this project.

Traffic will be maintained by an off-site detour.

The RCB will be built under the existing bridge and will need a short closure to complete the removal of the existing structure and patching the roadway.

Bridge Items	Estimated Costs
New Culvert	$ 550,000
Bridge Removal	18,920
Revetment	25,000
Mobilization - 10%	59,392
M & C - 15%	118,784
Bridge Costs	**$ 772,096**
Programmed ROW	**$5,000**
Roadway Items	
Removal of Pavement	7,200
PCC Pavement	71,000
Modified Subbase	21,100
Flooded Backfill	4,000
Embankment in place, contractor furnished	20,900
Excavation Class 13 Waste	3,300
Excavation Class 20 Waste	4,600
Guardrail Removal	2,400
Subdrain and Subdrain Outlets	6,600
Seeding and Fertilizing	900
Erosion Control	50,000
Stream Mitigation Credits	75,000
Traffic Control - 5%	19,100
Mobilization - 5%	19,100
M & C - 20%	76,300
Roadway Costs	**$ 381,500**
Project Total	**$1,158,600**

B. Detour Analysis

IA 3 will be closed and an off-site detour will be utilized. It is anticipated the detour will be in place for approximately 6 weeks. The detour would follow Hancock Ave./County Road R33 south to 270th St./County Road C54, then east to Madison Ave./County Road R38 north to IA 3. Out of distance travel is approximately 10 miles. The total distance user cost is anticipated to be $374,220. The cost for county road maintenance will be $14,489 as calculated by the Gas Tax Method. Detour signing costs will be $10,000.

C. Recommendations

It is recommended that the present structure be replaced with a reinforced concrete box culvert, as described in Alternative No. 1.

D. Construction Sequence

It is anticipated that all work on this project will be awarded to one prime contractor. The Bridges and Structures Bureau will coordinate the plan preparation with assistance from the Design Bureau.

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to IA 3; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

This will not be a traffic critical project.

Multiple gas lines run through the project area on the south side of the roadway.

No bike path or sidewalk will be required as part of this project.

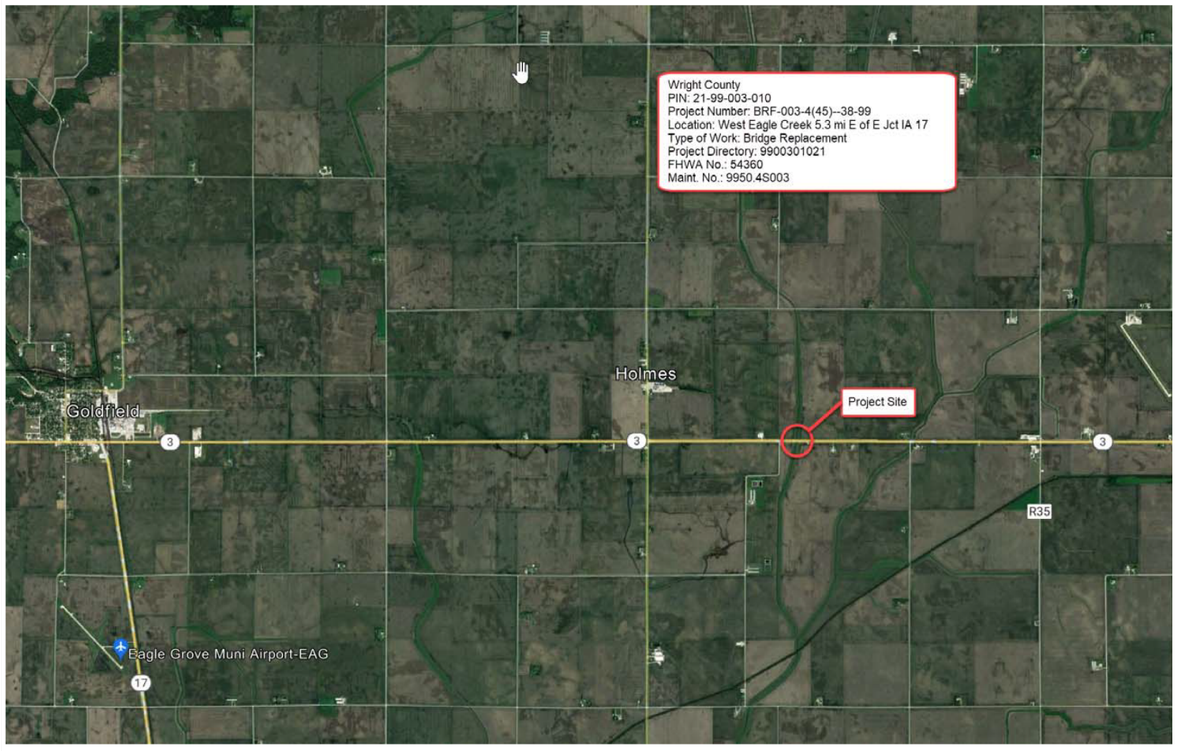
Waterway is not on a state water trail or paddling route.

This project will require a 404 Permit. At this time, it is expected that the project be authorized under a Nationwide Permit. Wetland impacts will be minimal and therefore wetland mitigation is not anticipated to be required for this project. Stream impacts are expected to be greater than 0.03-acre and thus stream mitigation will be required for this project. LEB will purchase stream mitigation credits from an approved mitigation bank in the Upper Des Moines Service Area. Burying the proposed culvert at least one foot below stream bed level to promote fish passage is recommended.

G. Program Status

Site data has been developed by the Design Bureau. This project is listed in the 2023-2027 Iowa Transportation Improvement Program, with $5,000 programmed for right of way in FY 2026, and $980,000 for replacement in FY 2026. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

JEB:hsr



FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	WRIGHT COUNTY	PROJECT NUMBER BRF-003-4(45)--38-99	SHEET NUMBER A7	

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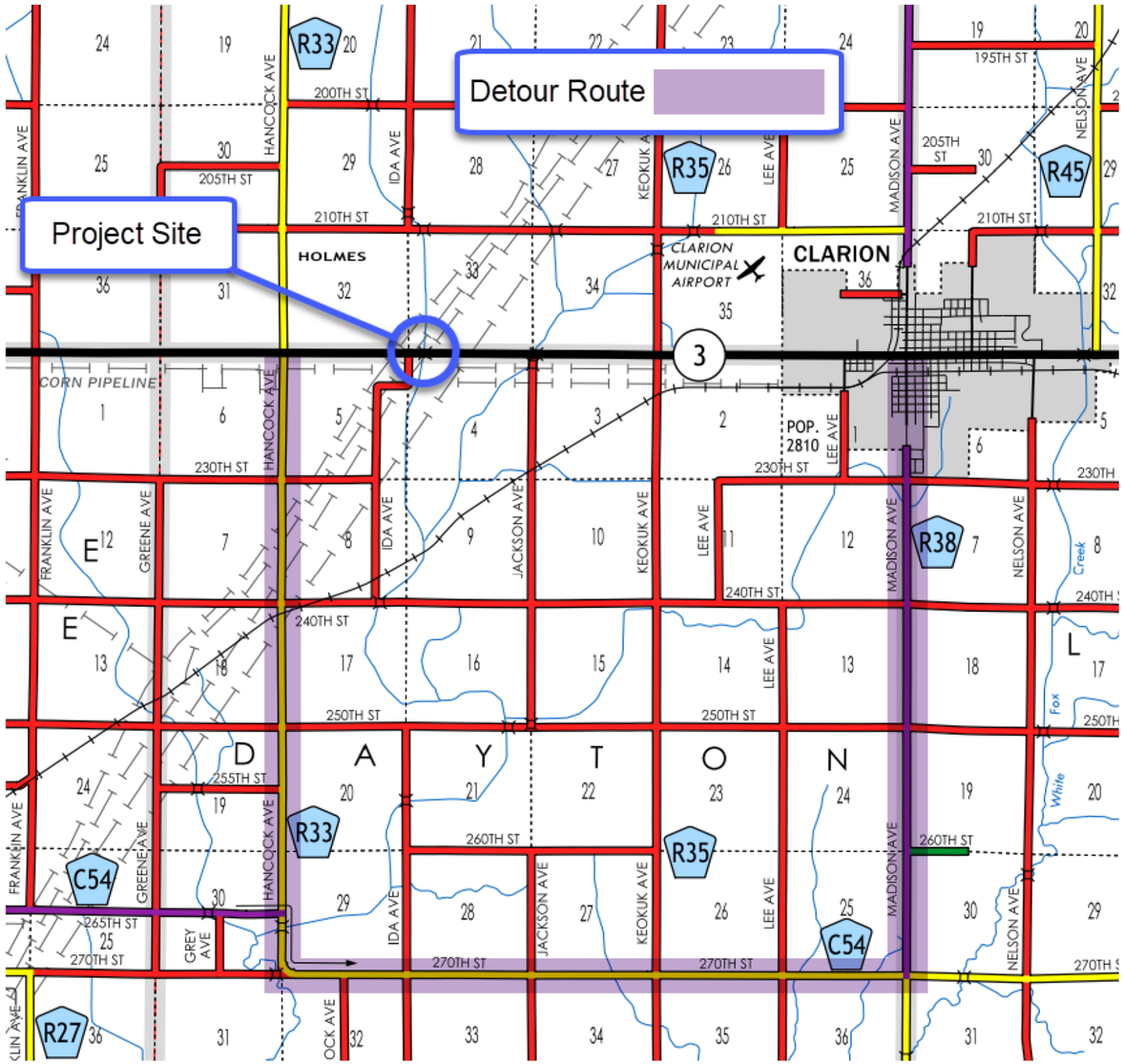

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Bridge Bureau Attachment for Concept Statement

Date: 12/4/22
By: Asher Jobson / Jim Ellis
Location: On IA 3 over Eagle Creek, 5.3 miles E. of E. Jct. IA 17

County: Wright County
Phase No.: BRF-003-4(45)--38-99
Project Code: 21-99-003-010

1. Regulatory/Coordination

a. Iowa DNR Flood Plain permit = No

b. Iowa DNR Sovereign Lands permit = No

c. Local Record of Coordination = Yes

d. Flood Insurance Study = No, Zone A - No Base Flood Elevation (BFE)

e. Drainage District = Yes, D.D. #36

f. Corps of Engineers Section 408 = No

g. State Water Trail or Paddling Route = No

2. Hydrologic/Hydraulic Analysis/RIDB Dataset

a. Design discharges determined = 1,600 cfs - Needs to be compared to AEPD spreadsheet due to size of drainage area slightly greater than 20 sq. mi. - 100% within the Des Moines Lobe.

b. Hydraulic analysis done = Partial, Streamstats - Need to review AEPD spreadsheet due to 100% of drainage area within the Des Moines Lobe.

c. Riverine Infrastructure Database (RIDB) = Yes - EagleC_Hamil - RM 22.12.

d. Project development hydraulic analysis will comply with the RIDB Guidelines at a minimum.

3. Structure/Roadway Layout Considerations

a. A roadway profile grade raise is not anticipated.

b. No shallow rock anticipated. Existing bridge sets on piles, but no note on as-built plans indicating length of piling.

c. Channel shift recommended - No.

d. Additional information regarding channel shift. No additional information.

4. Special Construction Issues

a. No shallow bedrock is anticipated.

b. It is desirable for new structure foundations to avoid existing foundations when possible.

5. **Special Survey** = No.

6. **Aesthetic Enhancements** = No.

7. Other

a. Offsite detour potential. South on Madison, 270th Street, to Hancock. Approximately 15 miles.

b. Try to make culvert width no wider than the existing channel width.

Special Survey:

None.

Roadway	IA 3			
PIN Number	21-99-003-010		**Submittal Date**	
Project Number	BRF-003-4(45)--38-99			**Approval Date**
District	District 2	**Assistant District Engineer**	N. Humpal	
County	WRIGHT		**or**	
Route	IA 3	**Office Director**		
Location	West Eagle Creek 5.3 miles east of east Jct. IA 17			
Work Type	Bridge Replacement			
Segment Manager				
Designer				

Design Manual Section 1C-1
Last Updated: 04-29-19

Rural Two-Lane Highways (Rural Arterials)

Design Element		Preferred	Acceptable	Project Values
Design speed (mph)		60	50	60
Maximum superelevation rate (Refer to Section 2A-2)		6%	8%	N/A
Design lane width (ft)		12	12	12
Full depth paved width (ft)		12	12	12
Right turn lane (ft)		12	10	N/A
Climbing Lane (ft)		12	12	N/A
Left turn lane (ft)		12	10	N/A
Pavement cross-slope (on tangent sections)	Through lanes	2%	1.5% minimum, 2% maximum	N/A
	Auxiliary and turn lanes	3%	3% maximum	N/A
	Crown break at centerline	4%	4% maximum	N/A
Shoulder cross-slope (on tangent sections)		4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	N/A
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard	N/A
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	N/A
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	3:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	N/A
	Curbed roadways	2%	not steeper than 3:1	N/A
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	2.5:1
Transverse Slopes	w/ drainage structures	8:1	6:1	6:1
	w/o drainage structures	10:1	6:1	N/A
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	5 x 10
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	N/A
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	N/A
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft. offset left and right	44
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	N/A
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	N/A
	Over railroad	23.3	23.3	N/A
	Sign trusses and pedestrian bridges	17.5	17	N/A
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	N/A
Level of Service		B	B	N/A

*FHWA notification via email is required if acceptable critera is not met on the NHS system (No formal design exeption is required)

Design year ADT =							

Design Manual Section 1C-1
Last Updated: 04-29-19

Effective Shoulder Width and Type for Two-Lane Highways

Preferred (values shown in feet)			Acceptable (values shown in feet)			Project Values
	Rural Roadways	Urban Roadways		Rural Roadways	Urban Roadways	
Turn lanes with shoulders	6	6	Turn lanes with shoulders	6	0	
Turn lanes with curbs	6	See Section 3C-2	Turn lanes with curbs	6	0	
	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	
Climbing Lanes	6	4	Climbing Lanes	4	0	
Two-Lane Highways	Effective Shoulder Width	Paved Width	Two-Lane Highways	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	Design year ADT > 2000 vpd	8	0*	8 paved
On roadways approaching urban areas (due to increased bike traffic)	10	10				
On all curves with a superelevation rate of 7.0% or greater	10	10				
On roadways with design year ADT > 5000	10	6	Design year ADT between 400 - 2000 vpd	6	0*	
On all other NHS	10	6				
On non-NHS routes with design year ADT > 3000	10	6	Design year ADT < 400 vpd	4	0*	
On non-NHS routes with design year ADT < 3000	8	0*				

*Requires safety edge-Refer to Section 3C-6

Curbs should be located beyond the outer edge of the effective shoulder width in rural areas

Refer to Section 3C-2 for curb offsets in urban areas

Notes:

**No accident history and no grade raise, bridge is being replaced with a culvert adjusting the profile to change the K value is not warranted.

Roadway Design Speed (mph) =														

Design Manual Section 1C-1
Last Updated: 04-29-19

Design Criteria for High Speed Roadways

Design Element			Preferred Criteria – Design Speed, mph						Acceptable Criteria – Design Speed, mph						Project Values
			50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)			425	495	570	645	730	820	425	495	570	645	730	820	570
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e_{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	N/A
		e_{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	N/A
Minimum vertical curve length (ft) (Refer to Section 2B-1)			150	165	180	195	210	225	150	165	180	195	210	225	**42
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	**56
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	339
		roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	N/A
Minimum gradient (%)	(Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						.5
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	4		3				7	6	6	–	–	–	N/A
		Rural roadways							5	5	4	4	4	4	1.25
		Interstates							5	5	4	4	4	4	N/A
Clear zone			See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						30

D2 QUESTIONNAIRE

1. Are any of the following needed?

2. Contractor or designated Borrow area adjacent to the site? NO

3. Field Laboratory? Yes

4. Construction Survey? No

5. Removal and Reinstall Signs? Does the district maintenance crew want to handle this? Or do they prefer the Contractor handle it? Contractor handle it

6. Clearing and Grubbing by area or by unit? If by unit, I need District to provide count. District provided

7. Duration of the project? approx 3 months but 6 weeks for IA3 road closure.

8. Do the shoulders within the construction limits or beyond need to be reconstructed or resurfaced? Shoulder within construction limit

9. Are there existing drainage problems? Water trapped behind levee.

10. Are rumble strips going to be placed with these projects or a separate project? Shoulder and center rumble strips with this project

11. Are there areas adjacent to the project where additional ditching needs done? Ditches need to be relocated

12. Are there any special events which need to be noted in the plan? Or is there a contact person who could provide this information closer to letting the project? if there are any, District will provide

13. Is special erosion control needed (riprap, silt ditches, silt dikes, etc.)? Will address erosion control OLE will provide the note

14. Tile lines? Location? No

15. Speed Limit during construction? 55mph

16. Note existing subdrain outlets for Soils Design. Need to check

17. Are there any entrances within the project limits that have not been previously identified? No

18. Note any special features not shown on plan. No

19. Note condition of existing culverts. N/A

D2 QUESTIONNAIRE

20. Note existing G-Rail lengths and number of posts. Do any of the utilities need relocated (power/telephone poles) either permanently or temporarily for construction? District will take care of these.

21. Speed limit 55mph

22. Is sight distance a problem? No

23. Disposition of existing structure, guardrail, signs, etc. (213-1 or the District office)? Guardrail to maintenance office

24. Any patching need done in the area or do the construction limits need extended? Is the District going to provide locations of patches by milepost? No

25. Are there any historical items within the project? Unknow

26. Are there any endangered species within the area? OLE will provide note if any...

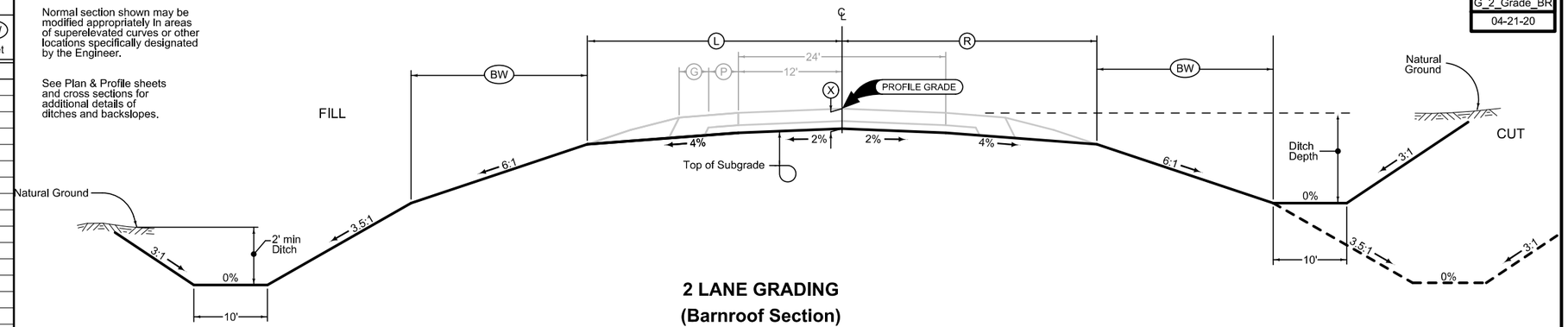
27. Are there any Wetland Impacts or any other Environmental issues? No

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet
IA 3	508+58.70	510+40.70	34	34	21.5	8

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

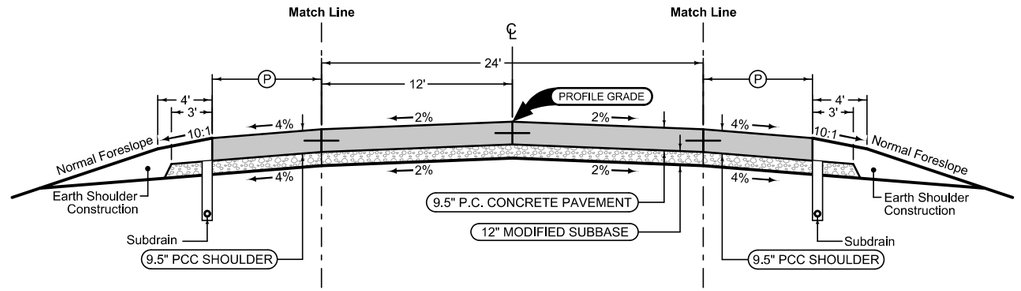


2 LANE GRADING
(Barnroof Section)

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: C at 17' spacing

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
508+58.70	510+40.70	8



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

2P_ 04-21-20	
STATION TO STATION	
508+58.70	510+40.70

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: C at 17' spacing

2_P_FullPCC_ 04-20-21		
STATION TO STATION		(P) Feet
508+58.70	510+40.70	8

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	WRIGHT COUNTY	PROJECT NUMBER BRF-003-4(45)--38-99	SHEET NUMBER B1	

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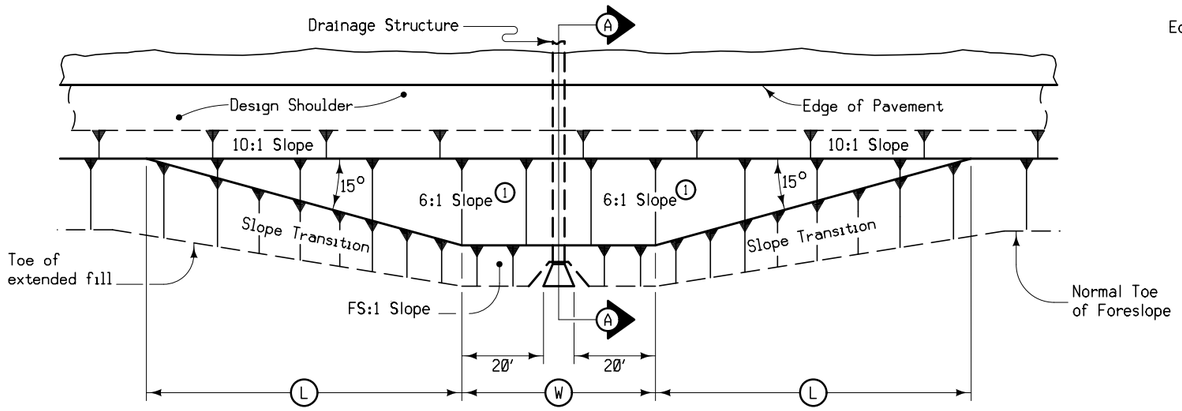
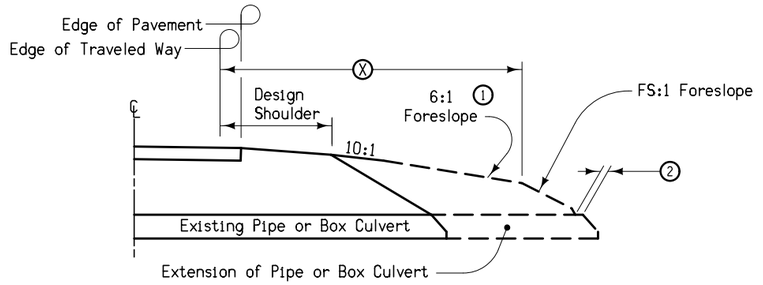


PLAN VIEW



SECTION A-A

STRUCTURE LOCATION		W	L	X	FS
STATION	SIDE	Feet	Feet	Feet	
509+50.70	Lt.	66.5	70	22	3
509+50.70	Rt.	66.5	70	22	3

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.

(W) = Pipe or R.C.B. opening width plus 20 feet each side.

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
- WH Water Hydrant (Rural)
- Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

— FO — Fiber Optic Line
Owner: Communications 1 Network
Contact:
Phone:
Email:

— G — Gas Line
Owner: Northern Natural
Contact:
Phone:
Email:

— T1 — Telephone Line
Owner: CenturyLink
Contact:
Phone:
Email:

Power Line
Owner: MidAmerican Energy
Contact:
Phone:
Email:

*Note: All Utility survey was done at Quality Level "D".

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
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	WRIGHT COUNTY	PROJECT NUMBER BRF-003-4(45)--38-99	SHEET NUMBER D1

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Lake TWP.
T-92N R-25W
SEC. 33

need to combine the construction line with the RCB

Begin Construction
Sta. 508+58.70

End Construction
Sta. 510+40.70

REMOVE

REMOVE

REMOVE

REMOVE

REMOVE

0 50
FEET

Concept:
Ditches need to be relocated how about all the entrance pipes? YES

Gas lines, need to be relocated District will take care of these

Class E revetment quantity at the end of RCB will be provided by bridge office ?

Dan K. will provide the quantity to be included in the plan.

Begin Construction
Sta. 508+58.70

End Construction
Sta. 510+40.70

VPI = +69.00
ELV = 1127.12
L = 0200
K = 084

VPI = +00.00
ELV = 1126.75
L = 0000
K = 039

+0.25% -0.25% -0.25% -0.84%

1126.25 1126.31 1126.37 1126.43 1126.50 1126.56 1126.62 1126.68 1126.75 1126.81 1126.87 1126.93 1127.00 1127.06 1127.09 1127.07 1126.99 1126.92 1126.83 1126.72 1126.60 1126.45 1126.28 1126.10 1125.90

1160 1155 1150 1145 1140 1135 1130 1125 1120 1115 1110 1105 1100 1095 1090 1085 1080 1075 1070 1065

502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00 514+00 515+00 516+00

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	WRIGHT COUNTY	PROJECT NUMBER BRF-003-4(45)--38-99	SHEET NUMBER D2

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SURVEY INDEX

County: Wright
PIN: 21-99-003-010
Project Number: BRF-003-4(45)--38-99
Location: West Eagle Creek 5.3 mi E of E Jct IA 17
Type of Work: Bridge Replacement
Project Directory: 9900301021

Survey Personnel

John Hahn – Survey Party Chief
Robert Fredrickson– Assistant Survey Party Chief

Date(s) of Survey

Begin Date	08/17/2022
End Date	10/05/2022

General Information

Measurement units for this survey are US survey feet. This is a full DTM survey for Iowa Hwy 3 Bridge Replacement over West Eagle Creek 5.3 miles east of East Junction of Iowa Highway 17.

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Two five-minute observations were taken with appropriate time spans between and used in a weighted average to obtain final coordinate values. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 adjustment)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 04 (U.S. survey foot)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2012bu3

Alignments Information

Alignment for the bridge replacement over West Eagle Creek 5.3 mi E of E Jct IA 17 is a retrace of As-built Plan FAP-29 Paving Plans (1932). Survey stationing was equated to the plan PI at Sta. 502+52.30 and run back and ahead without equation.

Survey stationing relates to As-built plan stationing as follows:

N ¼ Corner, Sec. 5-T91N-R25W & PI Sta. 476+17.00 Plan
=Survey PI Sta. 476+17.17

NW Corner, Sec. 4-T91N-R25W & PI Sta. 502+52.30 Plan
= Survey PI Sta. 502+52.30

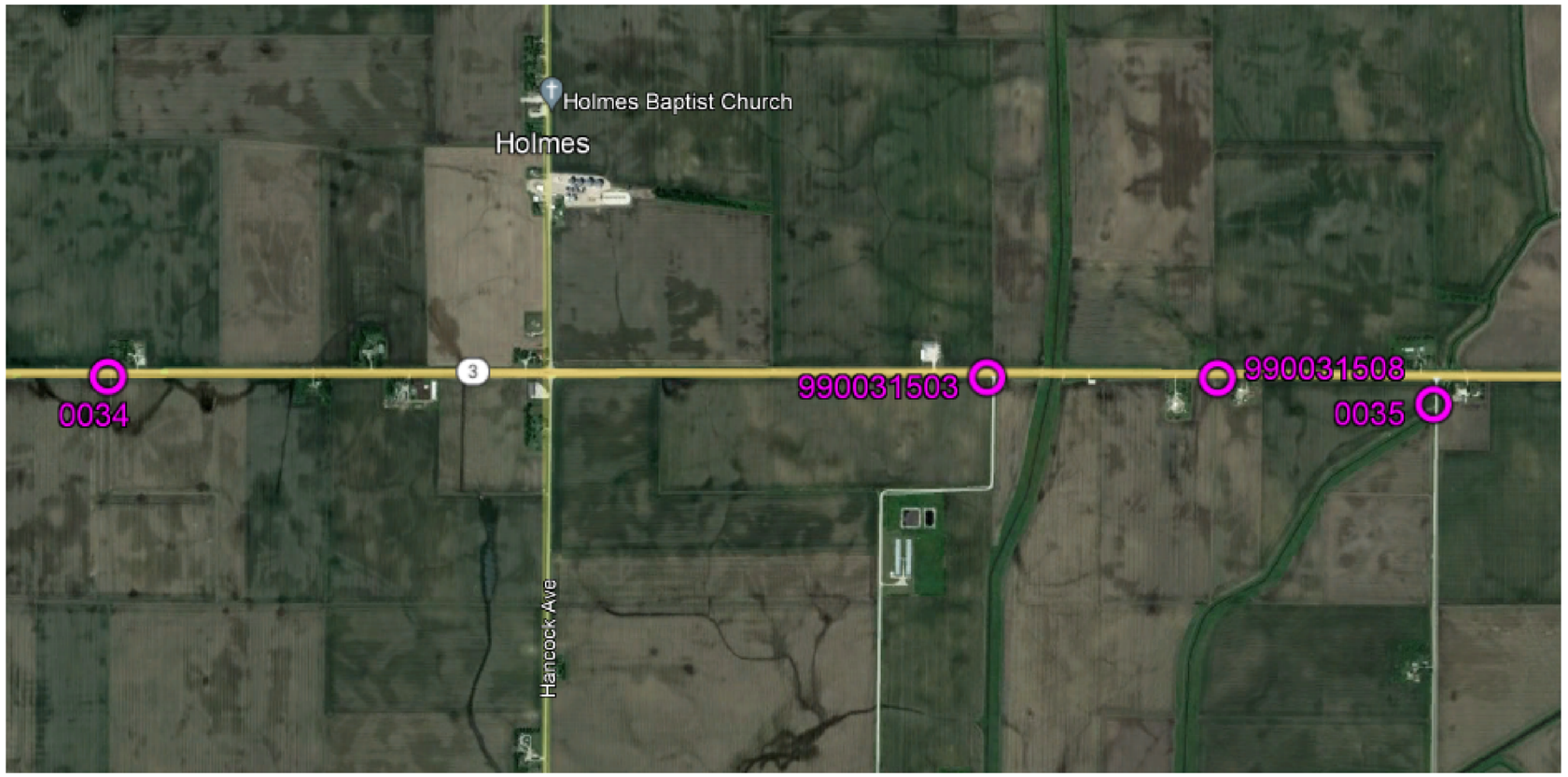
N ¼ Corner, Sec. 4-T91N-R25W & PI Sta. 528+79.90 Plan
= Survey PI Sta. 528+80.28

Utility Information

For logging data and other utility details see Utility Survey and Ownership Report 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 04
VERT. DATUM: NAVD88 - Geoid Model g2012bu3

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
Ia. Regional Coordinate System Zone 04

VERT. DATUM: NAVD88
Geoid Model g2012bu3
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Code/Description
990031508	8673929.92	14776592.25	1130.82	CP FND CONC MON-25FT E OF ROW RAIL-59FT S OF HWY3 CL-127FT SSE OF CONC MON
0035	8673658.34	14779164.96	1124.67	CP FND WRIGHT CNTY GPS CNTRL MON AS DESCRIBED IN GOOD CONDITION
990031503	8673900.00	14773855.38	1127.48	CP FND ROW RAIL W/ X CUT IN-65FT NW OF PP-65FT S OF HWY3 CL-83FT W OF CL OF IDA AVE
0034	8673757.08	14763403.76	1144.15	CP FND WRIGHT CNTY GPS CNTRL MON AS DESCRIBED IN GOOD CONDITION

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.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic on IA 003 shall be maintained via an offsite detour throughout the project.
Refer to following J Sheets for detour route details.

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.

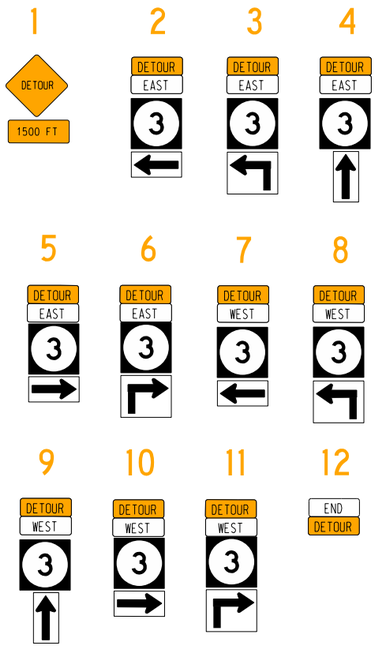
Project	Type of Work
None Provided	

108-25
10-21-14

511 TRAVEL RESTRICTIONS

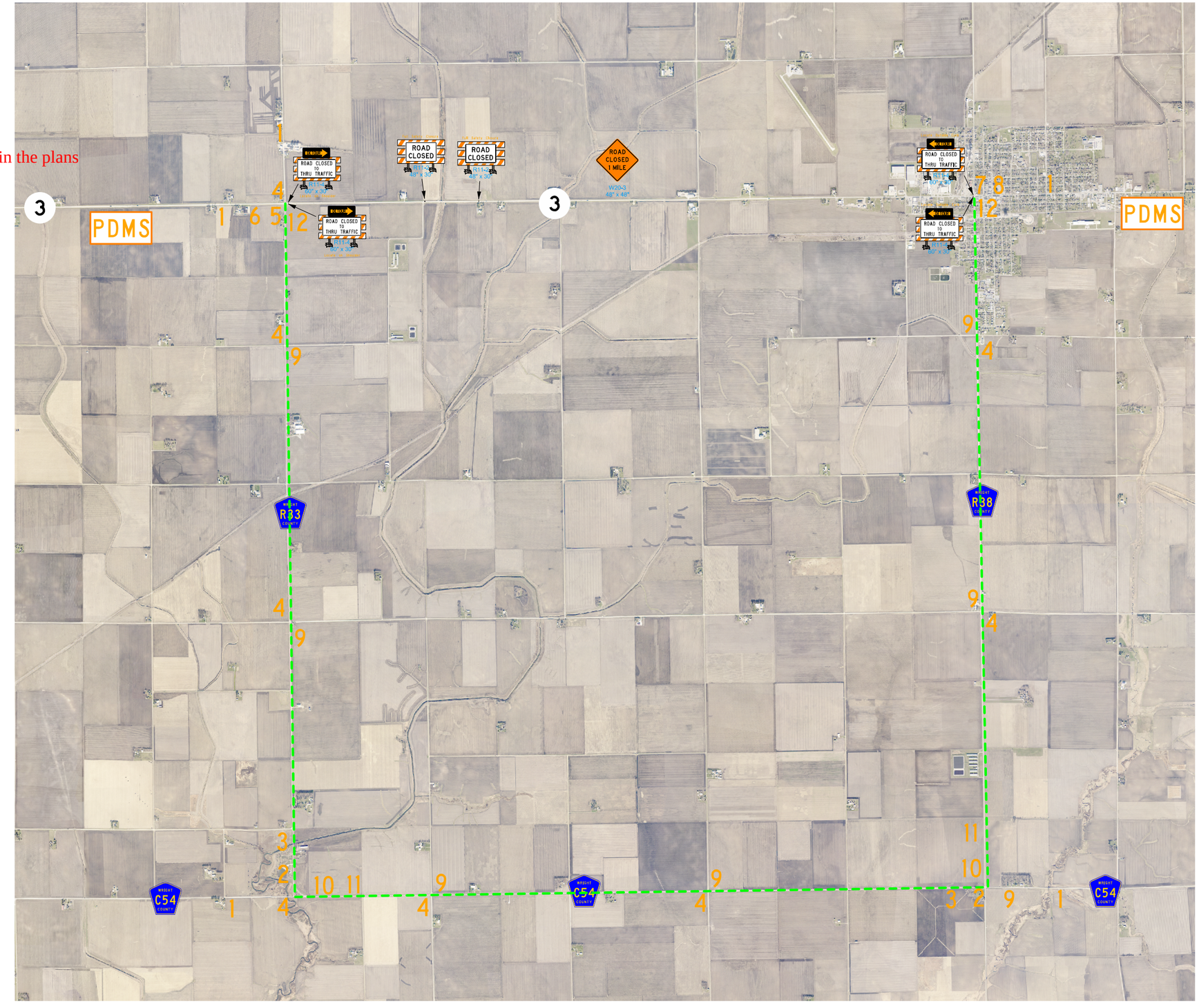
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
IA 003	Both	Wright	Bridge over West Eagle Creek		Road Closure	54360	Horizontal	44	closed			

District will provide detour route sheet to be included in the plans



Detour

PDMS Portable Dynamic Message Sign



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CROSS SECTION VIEW COLOR LEGEND

Design	Color	No.	Feature
Aggregate			
		(64)	Choke Stone
		(42)	Engineering Fabric
		(8)	Flooded Backfill
		(92)	Macadam Stone
		(20)	Modified
		(12)	Plowing Shaping
		(14)	Porous Backfill
		(8)	Revetment Class A
		(6)	Revetment Class B
		(62)	Revetment Class C
		(188)	Revetment Class D
		(28)	Revetment Class E
		(12)	Shoulder Special Backfill
		(12)	Special Backfill
		(20)	Subbase
		(20)	Subbase Lower
		(20)	Subbase Upper
		(118)	Subgrade Treatment
Asphalt			
		(207)	HMA Base Course
		(207)	HMA Interim Course
		(207)	HMA Surface Course
Concrete			
		(0)	Barrier Concrete
		(0)	Barrier Concrete Footing
		(0)	Curb Gutter
		(48)	Flowable Mortar
		(0)	Median Concrete
		(0)	PCC Pavement
		(0)	Sidewalk
Shoulder			
		(209)	Shoulder HMA
		(0)	Shoulder PCC
		(6)	Shoulder Granular
Existing			
		(0)	Existing Pavement
Structural			
		(112)	Noise Wall
		(112)	Noise Wall Footing
		(112)	Retaining Wall Back
		(112)	Retaining Wall Back Excavate
		(112)	Retaining Wall Face
		(112)	Retaining Wall Front Excavate
		(112)	Retaining Wall Front Footing
		(112)	Retaining Wall MSE Gutter
		(112)	Retaining Wall Reinforced Earth
Grading			
		(8)	Behind Curb Cut
		(6)	Granular
		(13)	Granular Back Fill
		(48)	Rock Undercut
		(8)	Shoulder Earth Fill
		(2)	Side Slopes
		(226)	Side Slopes Dressing
Substrata			
		(128)	Boulder Substrata
		(48)	Broken Weathered Substrata
		(3)	Core Out Substrata
		(203)	Existing Pavement Substrata
		(6)	Loam Substrata
		(80)	Rock Substrata
		(4)	Select Sand Substrata
		(3)	Shale Substrata
		(10)	Topsoil Substrata
Unsuitable / Waste			
		(3)	Unsuitable Type A
		(13)	Unsuitable Type B
		(11)	Unsuitable Type C
		(3)	Waste

NOTES:

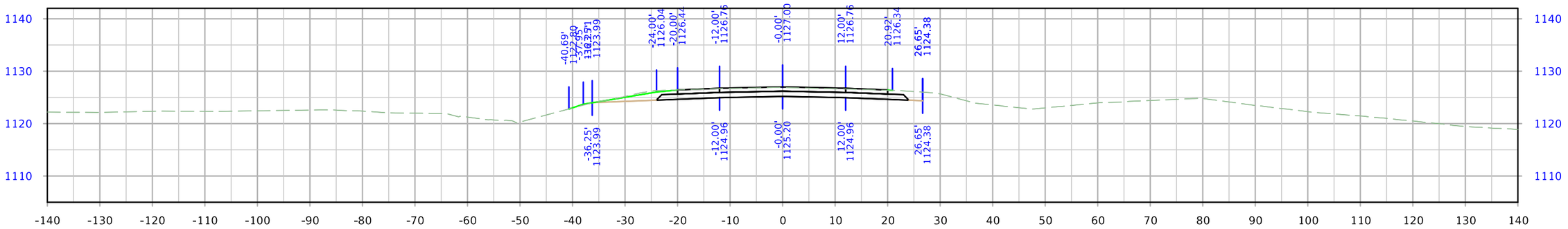
Text

NOTES:

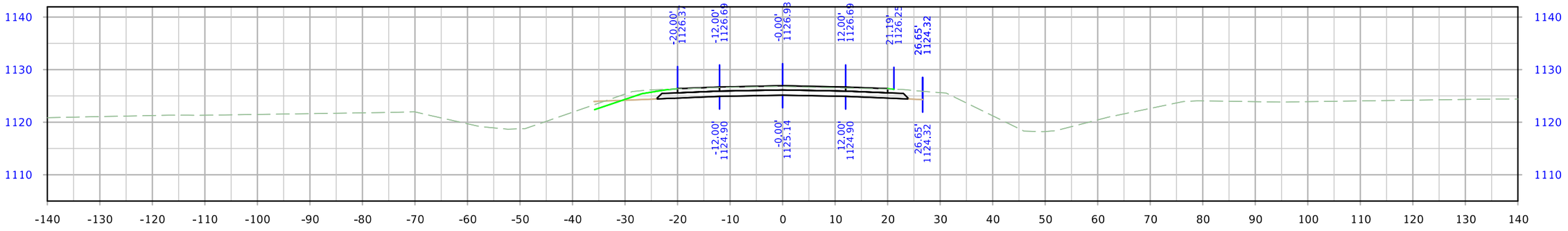
Text

CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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



STA. 509+00.00



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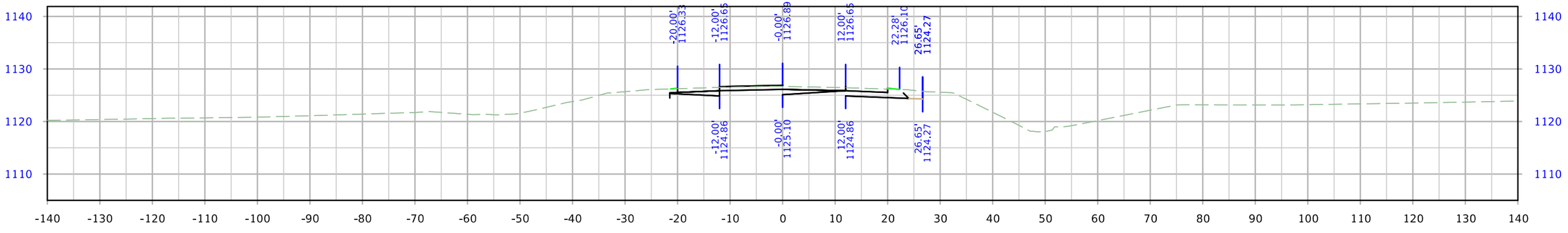

STA. 508+58.70

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	COUNTY	PROJECT NUMBER	SHEET NUMBER W.2

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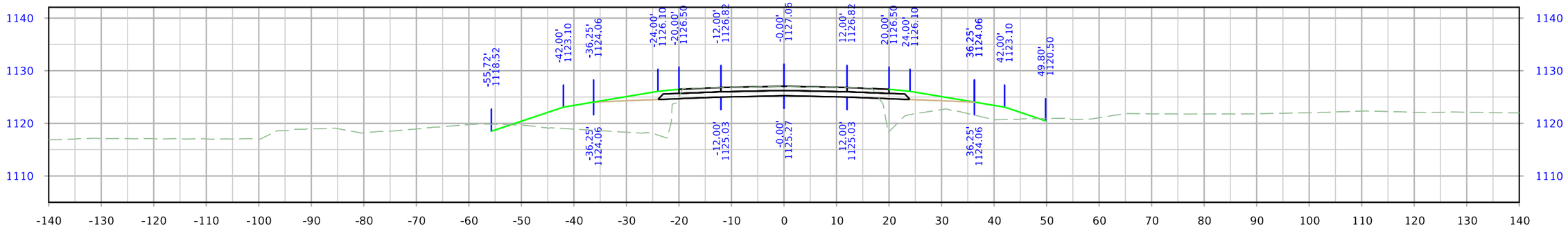

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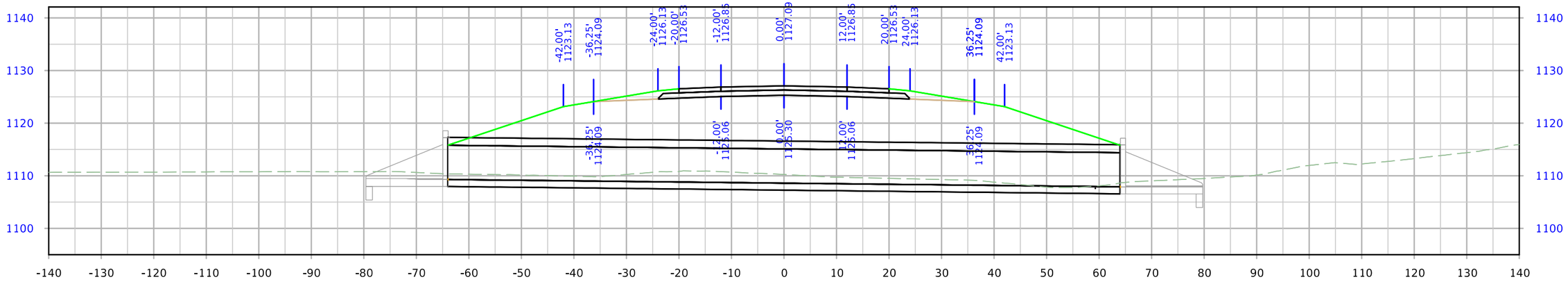
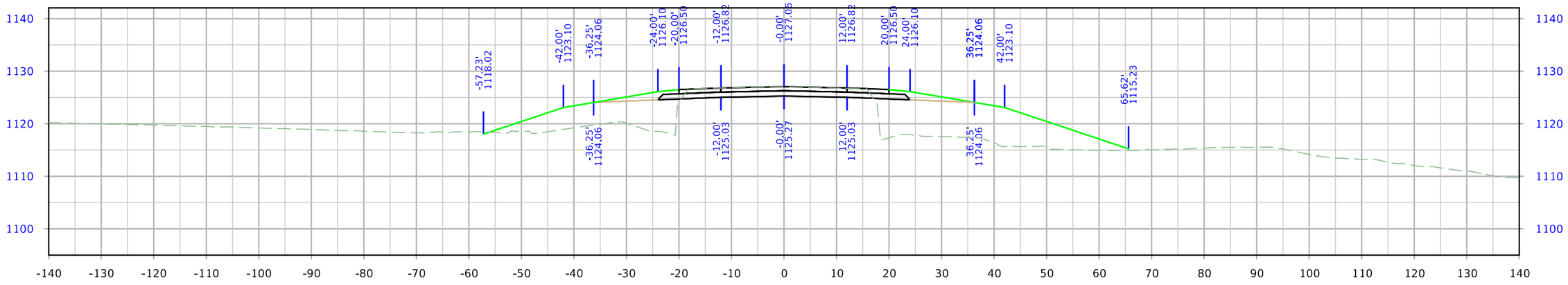


STA. 509+50.00



STA. 509+25.00

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	COUNTY	PROJECT NUMBER	SHEET NUMBER W.3

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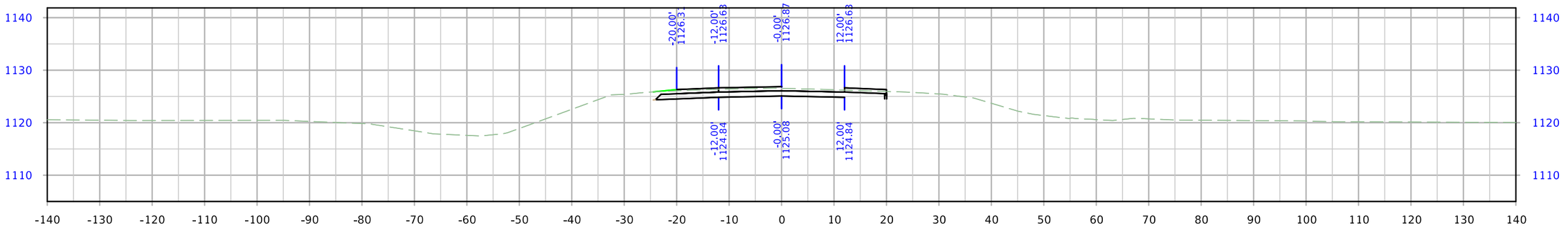
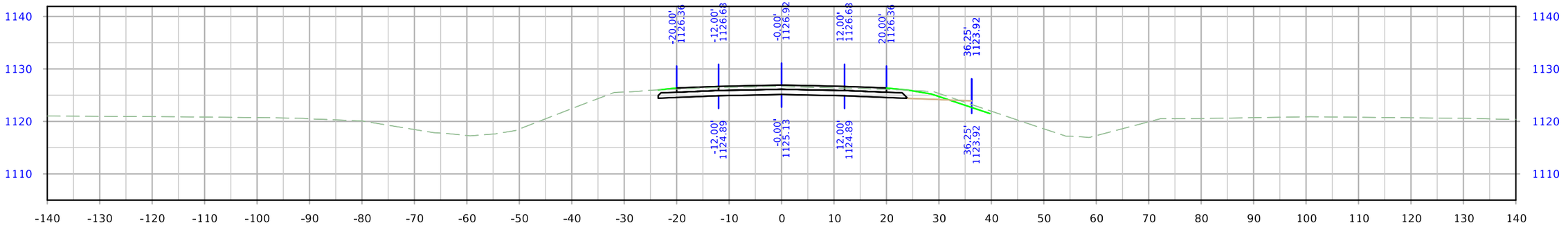


STA. 510+40.70



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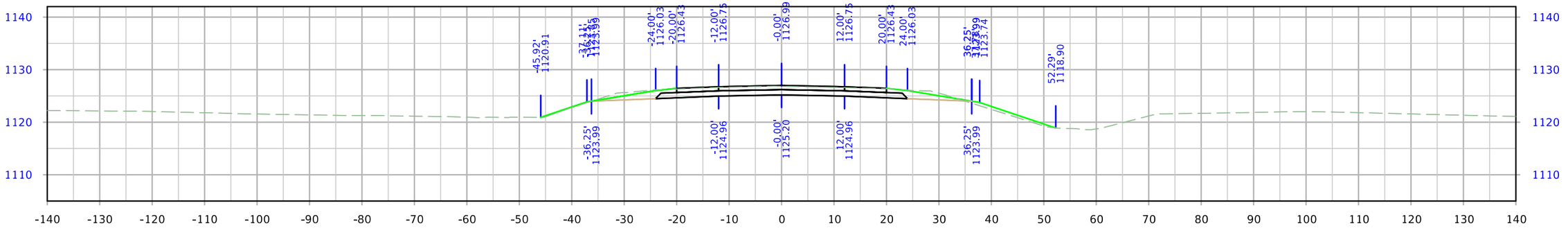

STA. 510+00.00

FILE NO.	ENGLISH	DESIGN TEAM TA/TAP	COUNTY	PROJECT NUMBER	SHEET NUMBER W.4

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