

This project is recommended for construction in FY 2021. The Office of Bridges and Structures will coordinate plan preparation with assistance from the Office of Design.

KKP: als

Attach.

cc:

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M. J. Sankey

B. D. Hofer

B. E. Azeltine

T. D. Crouch

D. E. Sprengeler

J. R. Webb

C. E. Belgarde

B. M. Clancy

M. E. Ross

FINAL PROJECT CONCEPT STATEMENT

U.S. 63 Bridge over Village Creek, 3.1 miles south of U.S. 34

Wapello County
BRF-063-2(161)--38-90
PIN: 15-90-063-010
Maint. No. 9030.6S063
FHWA No. 50610

Highway Division
Office of Design

Kevin K. Patel, P.E.
515-239-1540

May 25, 2016

I. STUDY AREA

A. Project Description

This project involves the rehabilitation of the U.S. 63 bridge (Maint. No. 9030.6S063) over Village Creek, 3.1 miles south of U.S. 34.

The three alternatives considered were:

1. Replace the existing bridge on relocated alignment with a 176 ft. 4 in. x 44 ft. pretensioned, prestressed concrete beam bridge. This alternative would require approximately 3,000 ft. of new pavement. Traffic will be maintained on the existing bridge while the new bridge is constructed. The estimated cost of this alternative is \$7,706,200.
2. Widen the existing bridge from 30 ft. to 44 ft. wide and replace the existing bridge deck. It is estimated that this alternative would provide approximately 35 years of additional service life. Traffic will be maintained via staged construction using temporary signals. The estimated cost of this alternative is \$1,343,600.
3. Overlay the existing bridge deck and replace the bridge joints. This alternative would provide approximately 15-20 additional years of service life. Traffic will be maintained via staged construction using temporary signals. The estimated cost of this alternative is \$526,100.

Alternative 2 is the preferred alternative as it provides benefit from the new wider bridge deck and provides a reduction in future bridge deck maintenance at a lower cost than alternative 1 (see attached concept for details). Right of way will not be required. Traffic will be maintained via staged construction using temporary signals.

B. Need for Project

This is a 154 ft. x 30 ft. steel girder bridge which was constructed in 1965 and overlaid in 1981. The bridge is classified as functionally obsolete (FO) due to the deck geometry. Cracks are found at the top and bottom of the bridge deck. The top of the deck also has many delaminations. The south paving notch is broken and sheared. Deterioration is also found in the superstructure and substructure.



C. Present Facility

The existing structure is a 154 ft. x 30 ft. continuous I-beam bridge constructed in 1965.

U.S. 63 in the project area is 24 ft. wide PCC pavement with 10 ft. wide partially paved shoulders and 3:1 foreslopes, constructed in 1965. HMA resurfacing was accomplished in 2007. This section of U.S. 63 was being developed as a 4-lane divided highway by CH2M Hill Consultants; however, this project has been placed on hold and it currently appears it is unlikely that this 4-lane project will move forward in the near term future.

D. Traffic Estimates

The 2019 and 2039 average daily traffic estimates are 6,100 ADT with 10% trucks and 6,800 ADT with 11% trucks, respectively.

E. Sufficiency Ratings

U.S. 63 is classified as a “Commercial and Industrial” route and is maintenance service level “B” road. The federal bridge sufficiency rating is 53.6.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2010 through December 31, 2014, there was one crash involving an animal in the roadway causing property damage only.

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 - Replace with a 176 ft. 4 in. x 44 ft. bridge on a proposed parallel alignment.

Replace the existing 154 ft. x 30 ft. I beam bridge with a 176 ft. 4 in. x 44 ft. pretensioned, prestressed concrete beam bridge on a proposed parallel alignment.

The typical cross section adjacent to the bridge will consist of a 24 ft. roadway (28 ft. wide pavement) with 10 ft. effective shoulders (2 ft. outside pavement, 4 ft. additional pavement and 4 ft. granular) and 6:1/3.5:1 foreslopes.

The proposed bridge will be built approximately 130 ft. west of the existing bridge which will require approximately 3,000 ft. of roadway reconstruction. When the future 4 lane facility is constructed, the new bridge will become the southbound bridge. Traffic will be maintained on the existing U.S. 63 bridge while the new bridge is constructed.

New bridge approaches will be constructed. New guardrail will be installed and the shoulders will be paved 20 ft. beyond the ends of the guardrail. Class 10 will be necessary to flatten the existing foreslopes and to construct the new guardrail blisters. Place class E revetment for slope protection under the bridge. Construct bridge end drains on each end of the bridge.

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

Right of way would be required for this alternative.

Two lanes of traffic will be maintained on the existing U.S. 63 alignment, with short term one-lane closures to tie-in the new alignment to the existing alignment. Temporary signals will be required during the construction of the tie-in pavement.

<u>Bridge Items</u>	<u>Estimated Costs</u>
New Bridge	\$ 846,400
Bridge Removal	46,100
Erosion stone	900

Revetment	120,000
Mobilization - 10%	101,300
M & C - 15%	<u>167,200</u>
Bridge Costs	\$ 1,281,900

Roadway Items

Embankment in place, contractor furnished	\$ 2,801,200
Bridge Approaches	85,200
PCC Pavement	492,800
Special Backfill	108,400
Granular Subbase	97,300
Paved Shoulder	69,300
Granular Shoulder	28,600
Excavation Class 13 Waste	232,700
Temporary Pavement	160,900
Longitudinal Subdrains, including outlets	37,700
Removal of Pavement	56,700
Guardrail (Includes Removal)	25,400
Paved Shoulders for Guardrail	29,600
Class 10 for Guardrail Blisters	12,000
Bridge End Drains	11,100
Clearing and Grubbing	5,300
Seeding and Fertilizing	5,600
Erosion Control	100,000
Wetland Mitigation	100,000
Traffic Control - 5%	223,000
Mobilization - 5%	223,000
Right of Way	36,000
M & C - 30%	<u>1,482,500</u>
Roadway costs	\$ 6,424,300

Project Total **\$7,706,200**

Alternative #2 – Replace the existing bridge deck and widen the bridge from 30 ft. to 44 ft.

The existing bridge deck will be replaced and widened from 30 ft. to 44 ft. wide. This work is expected to provide a 35 year service life.

The typical cross section adjacent to the bridge will consist of a 24 ft. roadway with 10 ft. effective shoulders. Grading will be required adjacent to the bridge abutment for the increase in paved shoulder width and for the new guardrail blisters. The new foreslopes in this area should be designed such that no additional right of way is

required. The new foreslopes will be steeper than 6:1/3:1 which is typically used; however, as these foreslopes are behind the new bridge guardrail, this should be acceptable.

New bridge approaches will be constructed. Place new guardrail and pave the shoulders 20 ft. beyond the ends of the guardrail.

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

Temporary signals will be utilized to maintain one lane of traffic at a time on the bridge during construction. During the first stage, an 18 ft. travel lane will be provided but during the second stage, an 11 ft. 3 in. lane will be provided. This will require special signing advance of the work zone to detour wide loads.

It may be advantageous to coordinate this project with the Little Soap Creek project (NHSX-36-2(137)--3H-90) so that wide loads are not detoured for two consecutive years. Currently the Little Soap project is schedule for construction in FY 2022.

Right of way will not be required for this alternative.

Estimated Costs

Bridge widening	\$ 331,800
Bridge re-decking	260,700
Pavement removal	3,300
Bridge approaches	85,200
Guardrail (Includes Removal)	25,400
Paved Shoulders for Guardrail	29,600
Embankment for wider foreslopes and guardrail blisters	25,000
Paved shoulder for staging	21,700
Temporary barrier rail	6,600
Temporary crash cushions	2,300
Temporary signals	10,200
Temporary floodlighting	8,100
Erosion control	50,000
Clearing and grubbing	1,300
Traffic control - 5%	43,100
Mobilization - 5%	43,100
Staging - 10%	86,100
M & C - 30%	<u>310,100</u>
Total Estimated Costs	\$ 1,343,600

Alternative #3 – Overlay the existing bridge deck and replace bridge joints

Replace bridge joints and overlay the existing bridge deck. This work is expected to provide 15-20 years of service.

New bridge approaches will be constructed. Place new guardrail and pave the shoulders 20 ft. beyond the ends of the guardrail. Class 10 will be necessary to construct the new guardrail blisters.

Temporary signals will be utilized to maintain one lane of traffic at a time on the bridge during construction. Special signing will be required in advance of the work zone as the minimum width of 14 ft. 6 in. will not be provided.

It may be advantageous to coordinate this project with the Little Soap Creek project (NHSX-36-2(137)--3H-90) so that wide loads are not detoured for two consecutive years. Currently the Little Soap project is schedule for construction in FY 2022.

Right of way will not be required for this alternative.

Estimated Cost

Bridge floor overlay/repair	\$ 94,800
Joint replacement	52,500
Guardrail (Includes Removal)	25,400
Paved Shoulders for Guardrail	21,000
Class 10 for Guardrail Blisters	11,800
Pavement removal	2,900
Bridge approaches	74,600
Paved shoulder for staging	21,700
Temporary concrete barrier rail	6,600
Temporary floodlighting	8,100
Temporary traffic signal	10,200
Temporary crash cushion	2,300
Erosion control	5,000
Traffic control - 5%	16,900
Mobilization - 5%	16,900
Staging – 10%	33,700
M & C - 30%	<u>121,400</u>
Total Estimated Costs	\$ 526,100

B. Detour Analysis

There will be no off-site detour. For Alternatives 2 and 3, traffic will be maintained via staged construction with traffic reduced down to one lane via the use of temporary

traffic signals. For Alternative 1, traffic will continue on the existing roadway and bridge.

During the second stage of bridge widening, an 11 ft. 3 in. lane will be provided. This will require special signing advance of the work zone to detour wide loads. It may be advantageous to coordinate this project with the Little Soap Creek project (NHSX-63-2(137)--3H-90) such that wide loads are not detoured for two consecutive years. Currently the Little Soap Creek project is scheduled for construction in FY 2022.

C. Recommendations

It is recommended that the present structure be repaired and widened, as described in Alternative No. 2.

D. Construction Sequence

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

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to U.S. 63; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

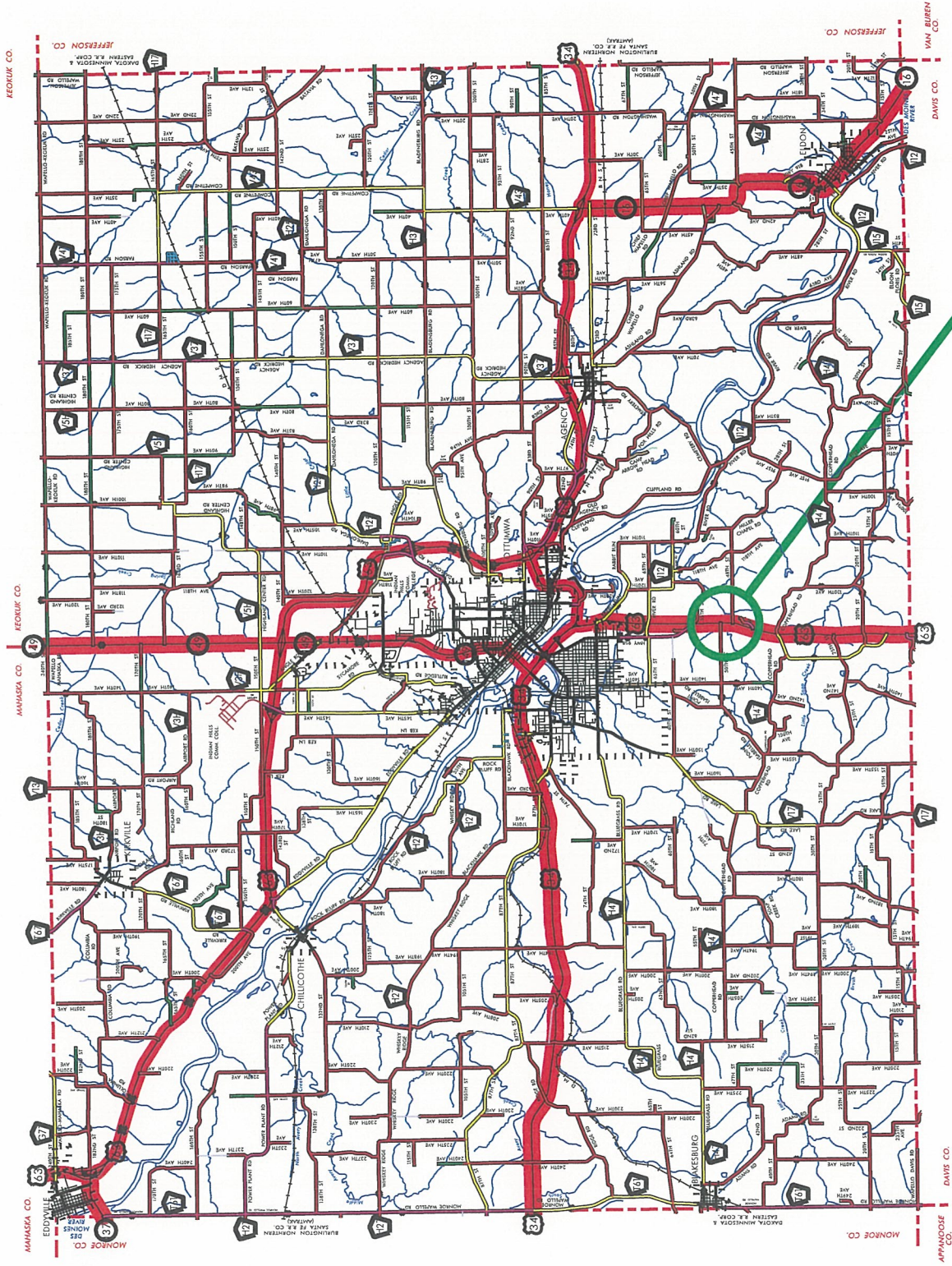
Right of way would be required for Alternative 1. The right of way acquired would be based on the current 2 lane roadway alignment and not the future 4 lane plan. Right of way will not be required for Alternatives 2 or 3.

The endangered Indiana bat has been recorded within 300 ft. of the bridge; therefore, it is recommended to minimize tree clearing as much as possible to avoid a potential mist net survey. There will be no tree clearing between October 1 and March 31.

F. Program Status

Site data has been developed by the Office of Design. This project is not listed in the Draft 2017-2021 Iowa Transportation Improvement Program. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

KKP: als




Maint. 9030.6S063
 FHWA #50610

WAPELLO COUNTY

US 63 Bridge over Village Creek

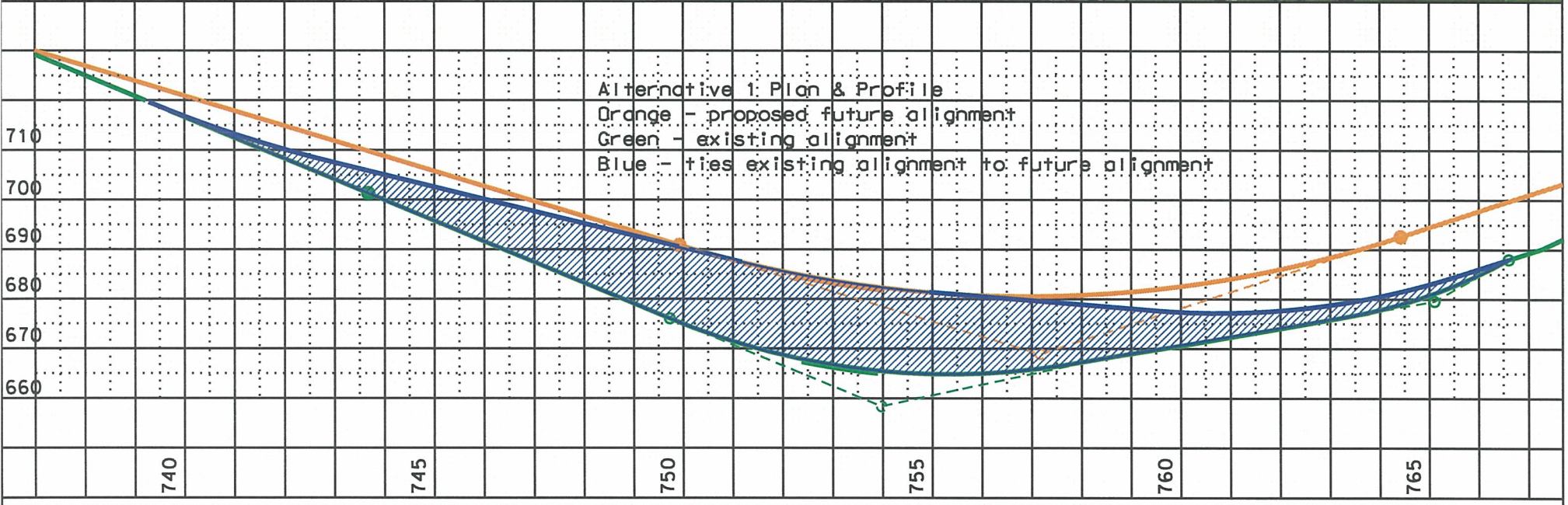
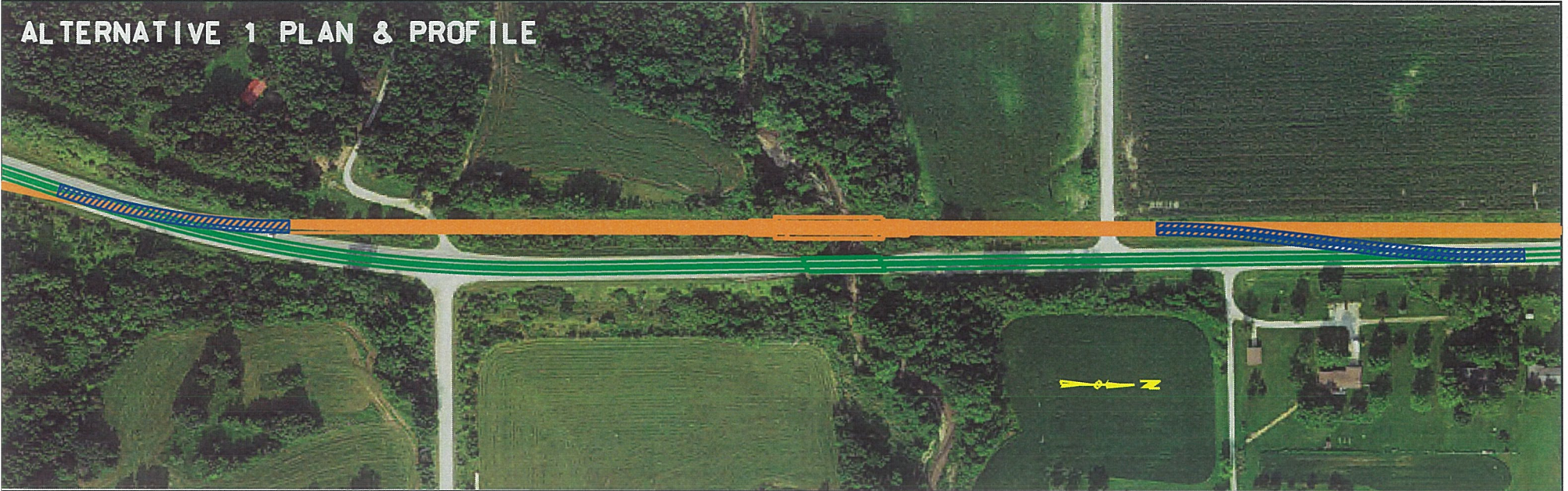
3.1 miles south of US 34



WAPELLO COUNTY
US 63 Bridge over
Village Creek
3.1 mi. south of US34
Keokuk Township
Section 18



ALTERNATIVE 1 PLAN & PROFILE



FINAL PROJECT CONCEPT STATEMENT

U.S. 63 Bridge over Village Creek, 3.1 miles south of U.S. 34

Wapello County
BRF-063-2(161)--38-90
PIN: 15-90-063-010
Maint. No. 9030.6S063
FHWA No. 50610

Highway Division
Office of Design

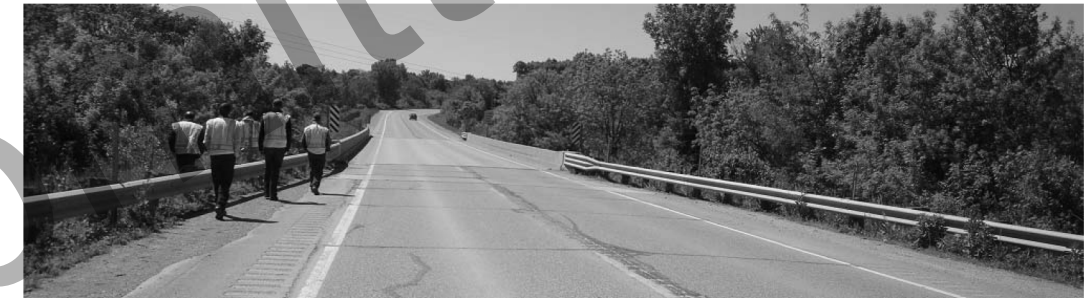
Kevin K. Patel, P.E.
515-239-1540

May 25, 2016

Wapello County
BRF-063-2(161)--38-90
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Page 2

B. Need for Project

This is a 154 ft. x 30 ft. steel girder bridge which was constructed in 1965 and overlaid in 1981. The bridge is classified as functionally obsolete (FO) due to the deck geometry. Cracks are found at the top and bottom of the bridge deck. The top of the deck also has many delaminations. The south paving notch is broken and sheared. Deterioration is also found in the superstructure and substructure.



C. Present Facility

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D. Traffic Estimates

The 2019 and 2039 average daily traffic estimates are 6,100 ADT with 10% trucks and 6,800 ADT with 11% trucks, respectively.

E. Sufficiency Ratings

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F. Access Control

Access rights will not be acquired for this project.

I. STUDY AREA

A. Project Description

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The three alternatives considered were:

1. Replace the existing bridge on relocated alignment with a 176 ft. 4 in. x 44 ft. pretensioned, prestressed concrete beam bridge. This alternative would require approximately 3,000 ft. of new pavement. Traffic will be maintained on the existing bridge while the new bridge is constructed. The estimated cost of this alternative is \$7,706,200.
2. Widen the existing bridge from 30 ft. to 44 ft. wide and replace the existing bridge deck. It is estimated that this alternative would provide approximately 35 years of additional service life. Traffic will be maintained via staged construction using temporary signals. The estimated cost of this alternative is \$1,343,600.
3. Overlay the existing bridge deck and replace the bridge joints. This alternative would provide approximately 15-20 additional years of service life. Traffic will be maintained via staged construction using temporary signals. The estimated cost of this alternative is \$526,100.

Alternative 2 is the preferred alternative as it provides benefit from the new wider bridge deck and provides a reduction in future bridge deck maintenance at a lower cost than alternative 1 (see attached concept for details). Right of way will not be required. Traffic will be maintained via staged construction using temporary signals.

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The proposed bridge will be built approximately 130 ft. west of the existing bridge which will require approximately 3,000 ft. of roadway reconstruction. When the future 4 lane facility is constructed, the new bridge will become the southbound bridge. Traffic will be maintained on the existing U.S. 63 bridge while the new bridge is constructed.

New bridge approaches will be constructed. New guardrail will be installed and the shoulders will be paved 20 ft. beyond the ends of the guardrail. Class 10 will be necessary to flatten the existing foreslopes and to construct the new guardrail blisters. Place class E revetment for slope protection under the bridge. Construct bridge end drains on each end of the bridge.

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

Right of way would be required for this alternative.

Two lanes of traffic will be maintained on the existing U.S. 63 alignment, with short term one-lane closures to tie-in the new alignment to the existing alignment. Temporary signals will be required during the construction of the tie-in pavement.

Bridge Items

	<u>Estimated Costs</u>
New Bridge	\$ 846,400
Bridge Removal	46,100
Erosion stone	900

Revetment	120,000
Mobilization - 10%	101,300
M & C - 15%	<u>167,200</u>
Bridge Costs	\$ 1,281,900

Roadway Items

Embankment in place, contractor furnished	\$ 2,801,200
Bridge Approaches	85,200
PCC Pavement	492,800
Special Backfill	108,400
Granular Subbase	97,300
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Guardrail (Includes Removal)	25,400
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Bridge End Drains	11,100
Clearing and Grubbing	5,300
Seeding and Fertilizing	5,600
Erosion Control	100,000
Wetland Mitigation	100,000
Traffic Control - 5%	223,000
Mobilization - 5%	223,000
Right of Way	36,000
M & C - 30%	<u>1,482,500</u>
Roadway costs	\$ 6,424,300

Project Total **\$7,706,200**

Alternative #2 – Replace the existing bridge deck and widen the bridge from 30 ft. to 44 ft.

The existing bridge deck will be replaced and widened from 30 ft. to 44 ft. wide. This work is expected to provide a 35 year service life.

The typical cross section adjacent to the bridge will consist of a 24 ft. roadway with 10 ft. effective shoulders. Grading will be required adjacent to the bridge abutment for the increase in paved shoulder width and for the new guardrail blisters. The new foreslopes in this area should be designed such that no additional right of way is

required. The new foreslopes will be steeper than 6:1/3:1 which is typically used; however, as these foreslopes are behind the new bridge guardrail, this should be acceptable.

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Temporary signals will be utilized to maintain one lane of traffic at a time on the bridge during construction. During the first stage, an 18 ft. travel lane will be provided but during the second stage, an 11 ft. 3 in. lane will be provided. This will require special signing advance of the work zone to detour wide loads.

It may be advantageous to coordinate this project with the Little Soap Creek project (NHSX-36-2(137)--3H-90) so that wide loads are not detoured for two consecutive years. Currently the Little Soap project is schedule for construction in FY 2022.

Right of way will not be required for this alternative.

Estimated Costs

Bridge widening	\$ 331,800
Bridge re-decking	260,700
Pavement removal	3,300
Bridge approaches	85,200
Guardrail (Includes Removal)	25,400
Paved Shoulders for Guardrail	29,600
Embankment for wider foreslopes and guardrail blisters	25,000
Paved shoulder for staging	21,700
Temporary barrier rail	6,600
Temporary crash cushions	2,300
Temporary signals	10,200
Temporary floodlighting	8,100
Erosion control	50,000
Clearing and grubbing	1,300
Traffic control - 5%	43,100
Mobilization - 5%	43,100
Staging - 10%	86,100
M & C - 30%	310,100
Total Estimated Costs	\$ 1,343,600

Alternative #3 – Overlay the existing bridge deck and replace bridge joints

Replace bridge joints and overlay the existing bridge deck. This work is expected to provide 15-20 years of service.

New bridge approaches will be constructed. Place new guardrail and pave the shoulders 20 ft. beyond the ends of the guardrail. Class 10 will be necessary to construct the new guardrail blisters.

Temporary signals will be utilized to maintain one lane of traffic at a time on the bridge during construction. Special signing will be required in advance of the work zone as the minimum width of 14 ft. 6 in. will not be provided.

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Bridge floor overlay/repair	\$ 94,800
Joint replacement	52,500
Guardrail (Includes Removal)	25,400
Paved Shoulders for Guardrail	21,000
Class 10 for Guardrail Blisters	11,800
Pavement removal	2,900
Bridge approaches	74,600
Paved shoulder for staging	21,700
Temporary concrete barrier rail	6,600
Temporary floodlighting	8,100
Temporary traffic signal	10,200
Temporary crash cushion	2,300
Erosion control	5,000
Traffic control - 5%	16,900
Mobilization - 5%	16,900
Staging – 10%	33,700
M & C - 30%	121,400
Total Estimated Costs	\$ 526,100

B. Detour Analysis

There will be no off-site detour. For Alternatives 2 and 3, traffic will be maintained via staged construction with traffic reduced down to one lane via the use of temporary

traffic signals. For Alternative 1, traffic will continue on the existing roadway and bridge.

During the second stage of bridge widening, an 11 ft. 3 in. lane will be provided. This will require special signing advance of the work zone to detour wide loads. It may be advantageous to coordinate this project with the Little Soap Creek project (NHSX-63-2(137)--3H-90) such that wide loads are not detoured for two consecutive years. Currently the Little Soap Creek project is scheduled for construction in FY 2022.

C. Recommendations

It is recommended that the present structure be repaired and widened, as described in Alternative No. 2.

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

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to U.S. 63; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

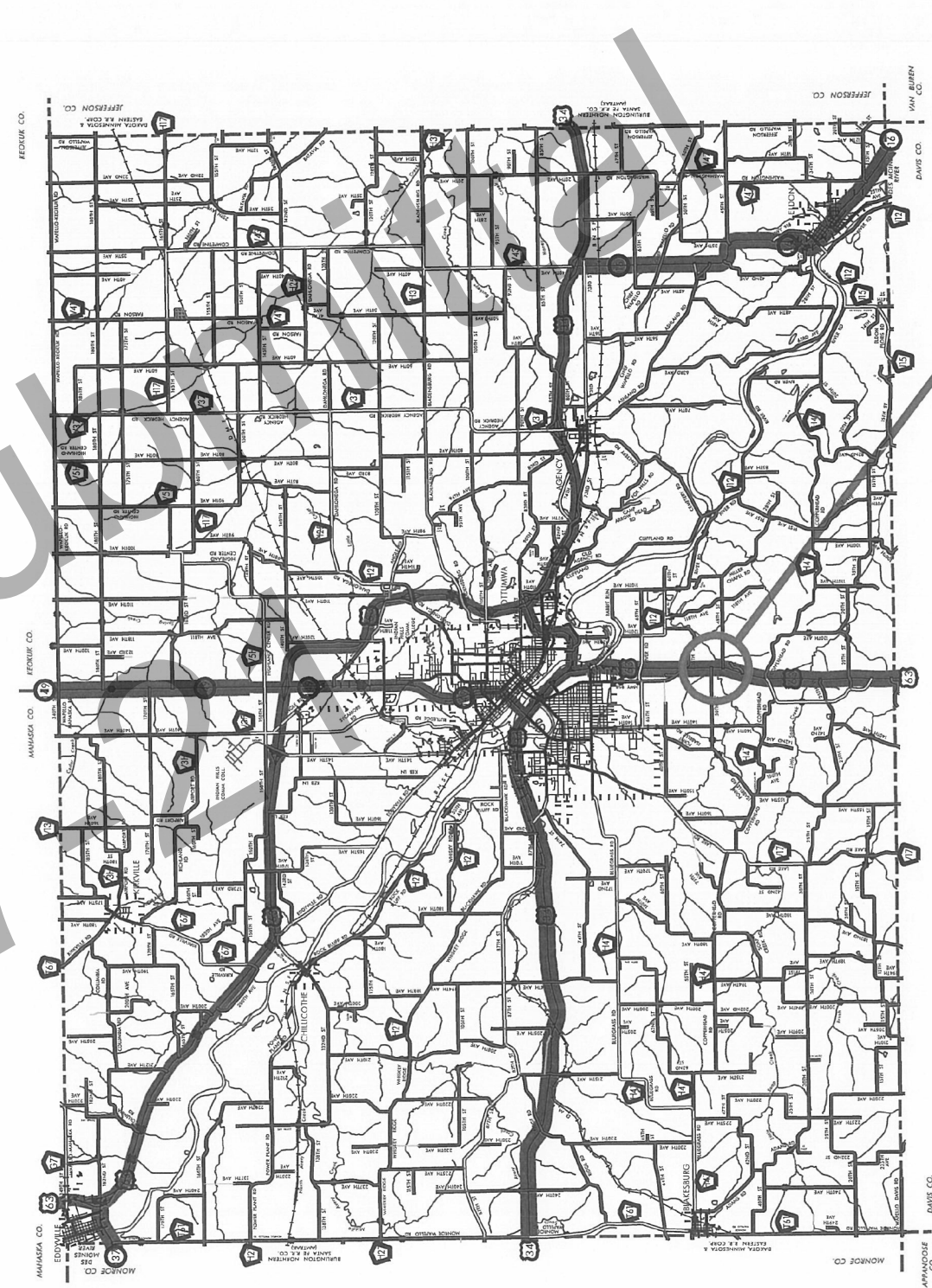
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F. Program Status

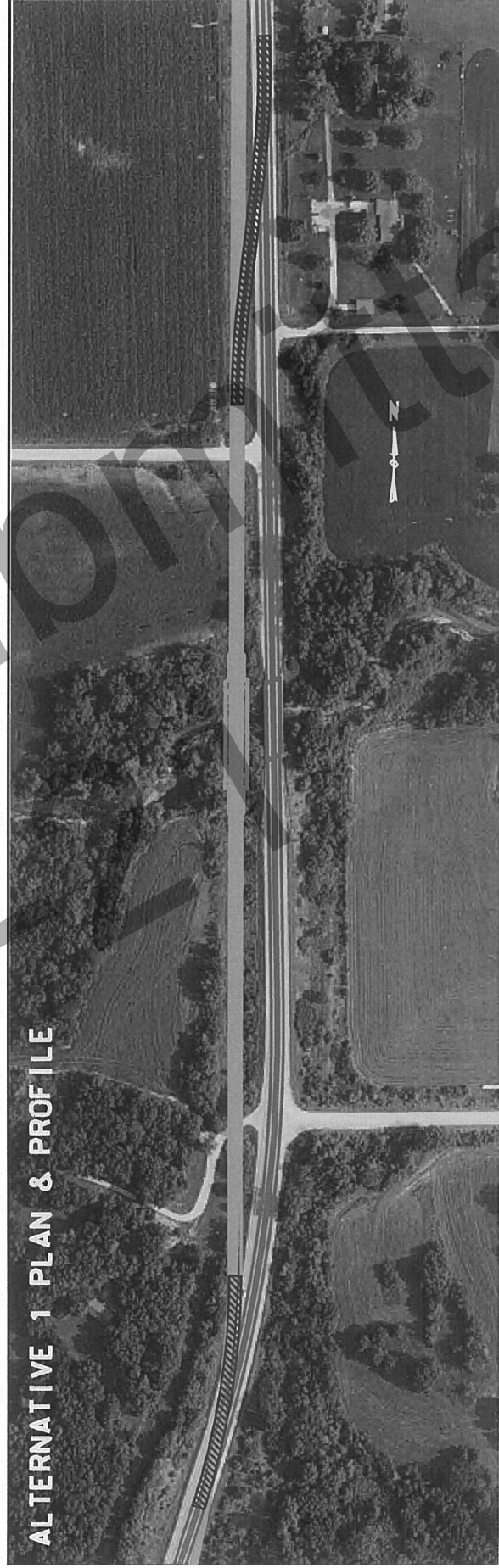
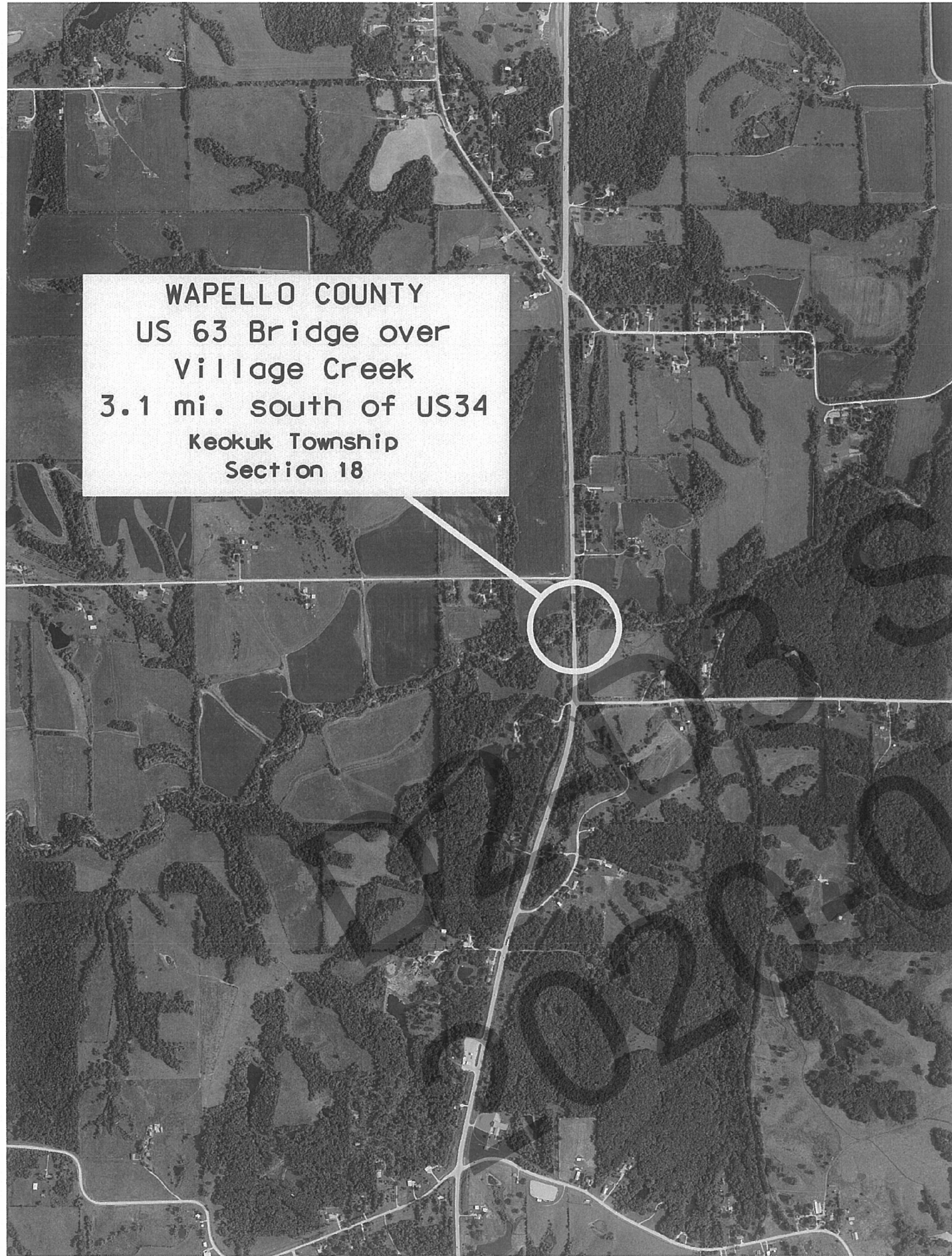
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KKP: als

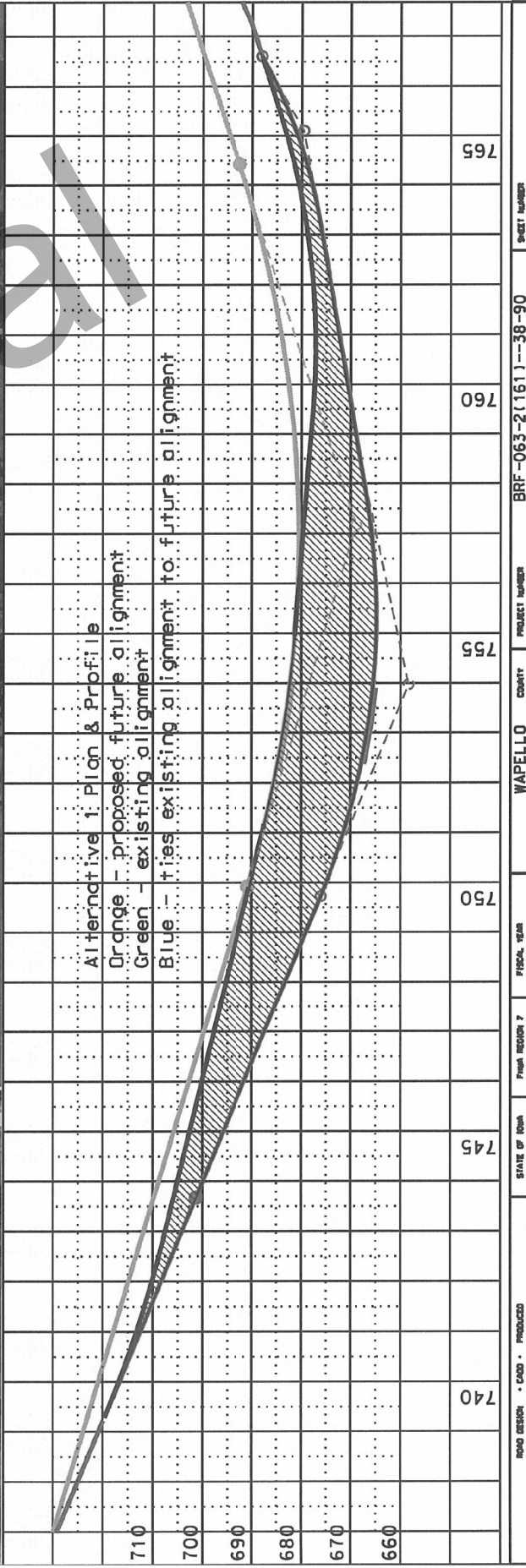


Maint. 9030.6S063
 FHWA #50610

WAPELLO COUNTY
 US 63 Bridge over Village Creek
 3.1 miles south of US 34



ALTERNATIVE 1 PLAN & PROFILE



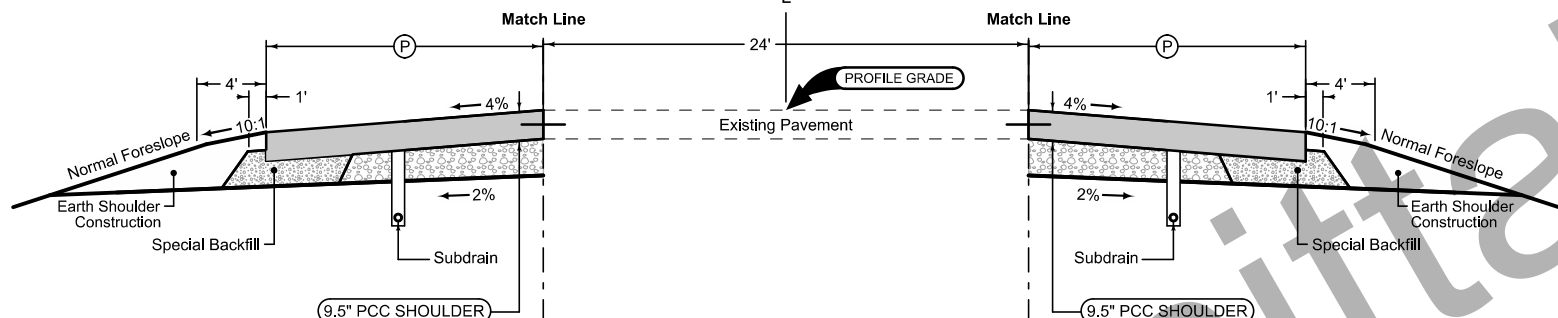
STATE OF IOWA	FRESH REGION 7	FISCAL YEAR	COUNTY	PROJECT NUMBER	SHEET NUMBER
			WAPELLO	BRF-063-2(161)--38-90	

2E_10-19-10

PCC Shoulder at Guardrail

Full-Depth Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C at 17' spacing
 6" Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at mainline spacing

Direction of Travel	STATION TO STATION	(P) Feet



PCC Shoulder at Guardrail

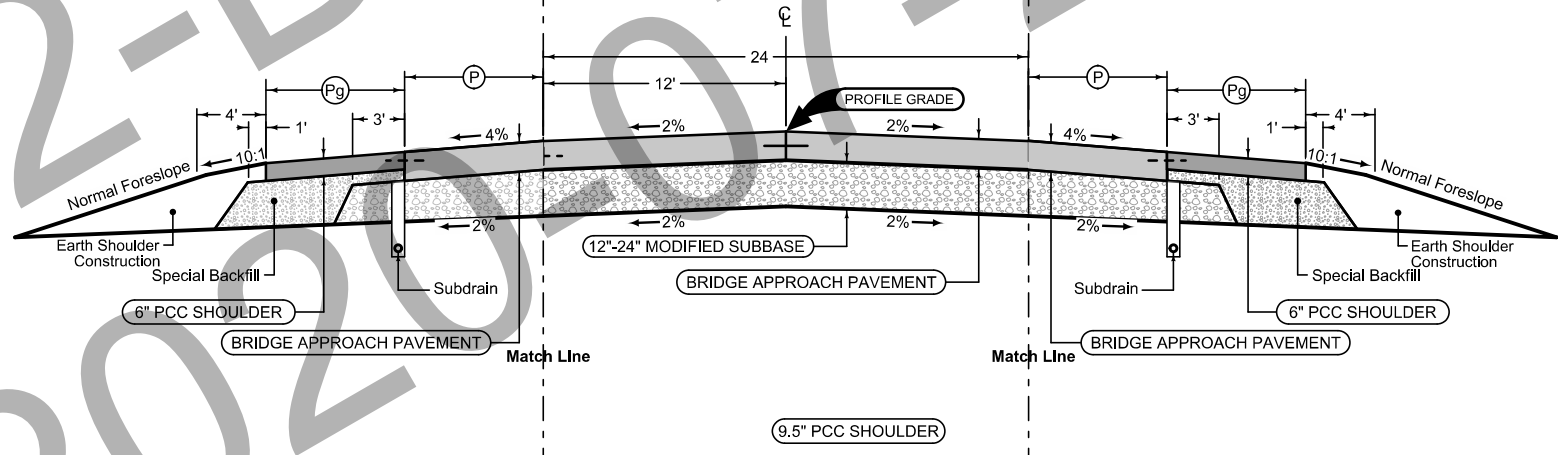
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Direction of Travel	STATION TO STATION	(P) Feet

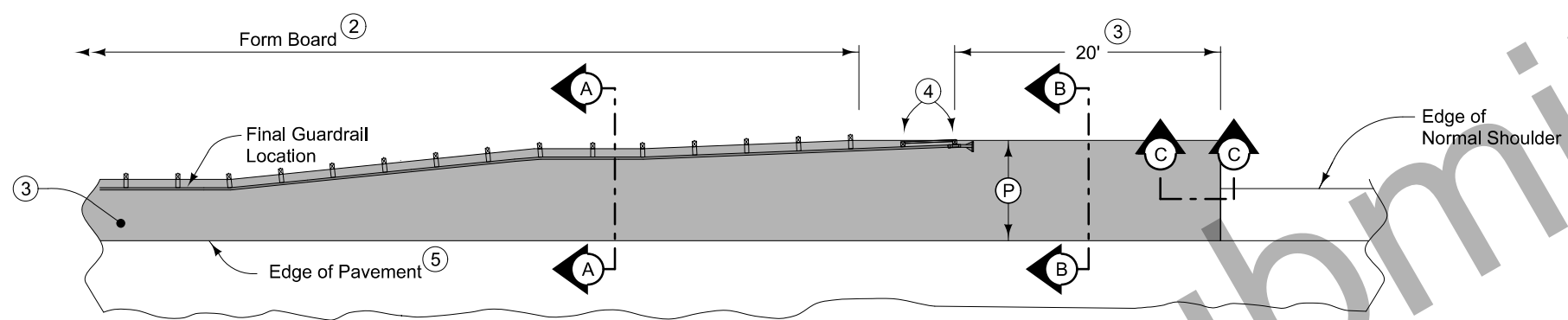
PCC Shoulder at Guardrail

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 6" Shoulder Jointing:
 Longitudinal joint: BT-1 or BT-5
 Transverse joints: C at mainline spacing

Paved Shoulder		(P) Feet	(Pg) Feet
	STATION TO STATION		
SB	752+40.33 752+70.38	0	13.2
SB	752+70.38 753+10.49	0	13.2-11.6
SB	753+10.49 753+12.42	0	11.6
SB	753+12.42 756+63.00	10	1.6
Bridge			
SB	755+51.58 756+03.85	10	1.8
SB	756+03.85 756+16.22	10	1.8-3.04
SB	756+16.22 756+20.38	10	3.04-3.2
SB	756+20.38 756+55.06	0	13.2-14.6
SB	756+55.06 756+86.71	0	14.6



Direction of Travel	STATION TO STATION	(P) Feet	(Pg) Feet
NB	752+45.68 752+77.33	0	14.3
NB	752+77.33 753+12.42	0	14.3-12.9
NB	752+12.42 753+16.16	10	2.9-2.7
NB	753+16.16 753+80.81	10	2.7
Bridge			
NB	755+69.69 756+20.38	10	1.3
NB	756+20.38 756+22.20	0	11.3
NB	756+22.20 756+62.30	0	11.3-12.9



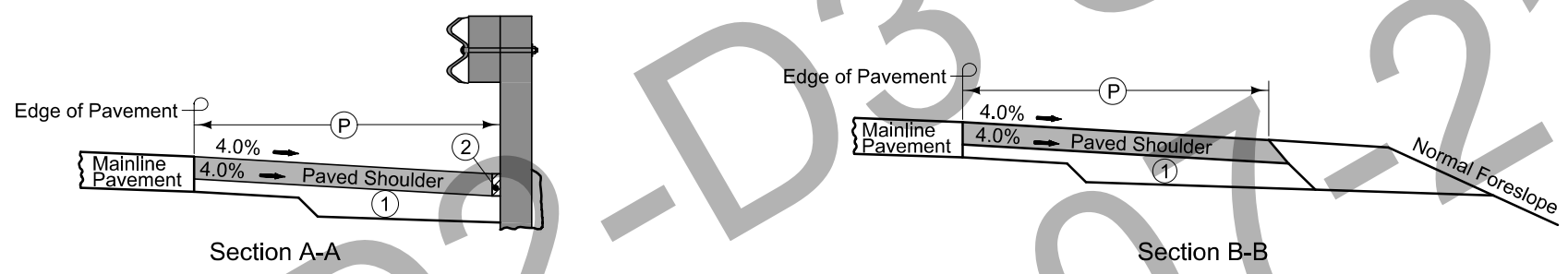
PLAN VIEW

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

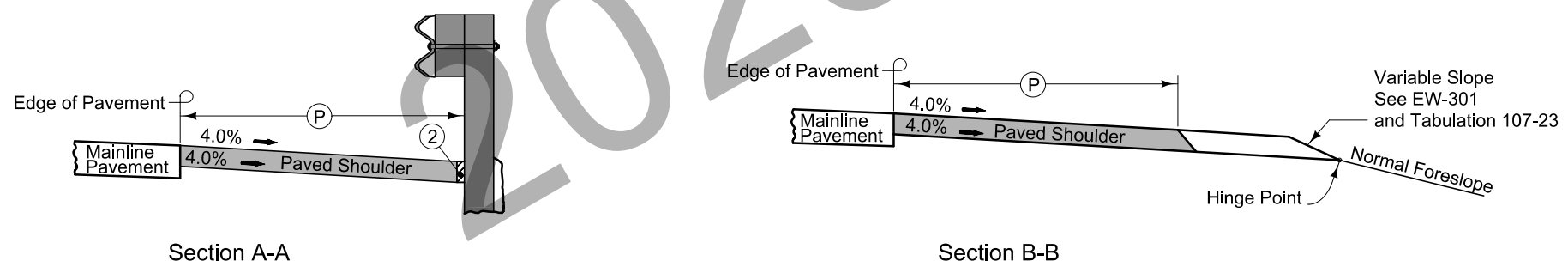
Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' in length. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

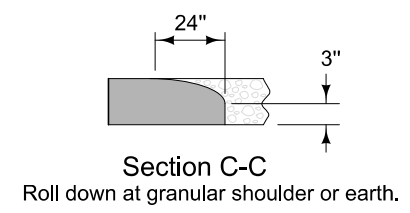


NEW CONSTRUCTION



EXISTING SHOULDER

- ① For subgrade treatment, refer to other details in the plan.
- ② PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ⑤ 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.



PAVED SHOULDER AT GUARDRAIL

SURVEY SYMBOLS

- Guard Rail Steel
- Centerline BL of Road (ML or SR)
- Wire Fence
- Centerline Draw or Stream (Down)
- Centerline Draw or Stream (Up)
- Stream Bank
- Edge of Water
- Sign
- Centerline BL of Entrance
- Tree Line
- Unpaved Shoulder
- Water Line
- Tree Deciduous

UTILITY LEGEND

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.

- FO Centurylink - Quality D
- F02 Iowa Communications Network - Quality D
- W Wapello Rural Water Association - Quality D
- Southern Iowa Electric Cooperative
- ITC

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

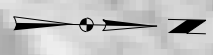
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

- 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

D2-D3
2020-07-21
Submittal

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



STA. 752+12.98
BEGIN PROJECT
REF. LOC. 30.59

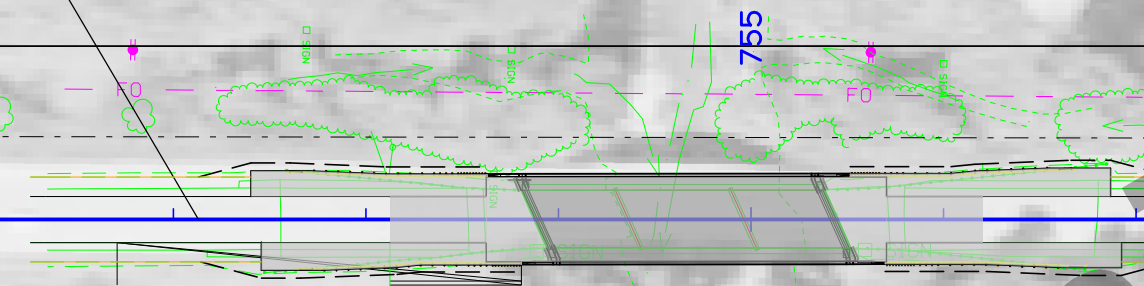
STA. 757+19.43
END PROJECT
REF. LOC. 30.69

POTI Sta 749+72.97

750

755

760



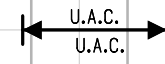
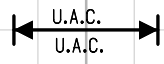
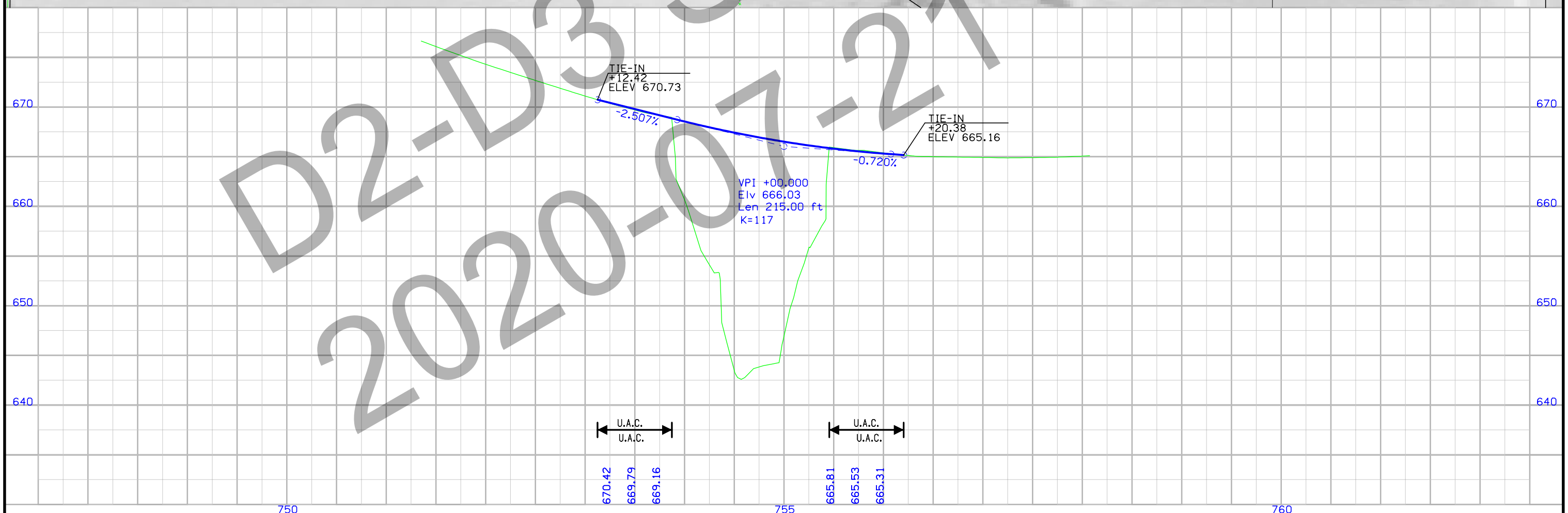
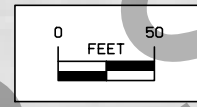
F01
F02

36" x 60" C.M.P.

Keokuk TWP.
T-71N R-13W
SEC. 18

Sec. 7

Sta. 754+66.40
Skew 24° RT AH
154' x 30' Continuous
I-Beam Bridge
D.A.=21 Sq. Miles H



670.42
669.79
669.16

665.81
665.53
665.31

750

755

760

Survey Information

Wapello County
BRF-063-2(161)--38-90
Village Creek 3.1 mi S of US 34
Reconstruction - Bridge Widening
15-90-063-010
Sap-230.5

Party Personnel

Mike Rummelhart- Party Chief

Date(s) of Survey

Begin Date 05/14/2020
End Date 06/22/2020

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Reconstruction - Bridge Widening of the U.S. Hwy 63 bridge over Village Creek 3.9 miles South of US Hwy 34. Project datum and control information is provided by Design Survey Office. Hard surfaces were resurveyed in June 2020. The stream and banks were resurveyed June 2020. Other supplemental ground locations were extracted from an aerial survey tin to create a survey terrain covering the area requested by Kelly Bell May 11, 2020.

Vertical Control

Vertical Control on this project was established on 3 points by transferring elevation from BM # 76 project # NHS 28(26)2c26. Vertical datum for this survey is relative to NAVD88. This survey observed 1 As-Built plan bench marks and a AB plan bridge pier elevation to compare to local ground control:

BM # 76 AB Plans Project # NHS 28(26)2c26 Elevation 666.44
= BM # 500 Survey Elev. = 666.44

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 12 (U.S. Survey Feet). Control point G046 coordinates converted from a previous project to Zone 12. Other control points were observed and established relative to G046.

Alignment Information

The horizontal alignment for this survey is created from Project alignment (surcl). Survey stationing was equated to the ST Sta. 749+72.97 and run ahead without equation throughout the survey.

Survey stationing relates to Project stationing as follows:

ST Sta. 749+72.97 Project Alignment (surcl)
= ST Sta. 202+54.97 AB Plans Project # FN-FGN-42
= ST Sta. 749+72.97 this survey

PI Sta. 768+29.65 Project Alignment (surcl)
= PI Sta. 221+27.72 AB Plans Project # FN-FGN-42
=PI Sta. 768+29.68 this 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 12

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 12

Name	Northing	Easting	Elevation	Feature	Description
G146	6214782.4	22871348.68	752.17	CP	Mark is 243 ft. northeast of entrance & US Hwy 63 @ 4486 US Hwy 63, 27 ft. southeast of US Hwy 63, 12 ft. northwest of a Station Sign 185. A Fero Monument stamped IOWA DEPT OF TRANS SURVEY MARKER, .6 ft. below ground near the east shoulder of US Hwy 63.
G046	6216843.67	22871691.77	669.57	CP	Mark is 76 ft. south of southeast corner of bridge floor over Village Creek, 73 ft. south of south end of east guardrail, south of bridge, 21 ft. east of centerline US Hwy 63, 1 ft. east of guardrail. A rebar .6 ft. below ground near the east shoulder of US Hwy 63.
G047	6219800.93	22871557.34	759.54	CP	Mark is 117 ft. northwest of Station Sign 235, 91 ft. southeast of power pole, 71 ft. west of Station Sign 275, 62 ft. east of conc monument, 24 ft. west of centerline US Hwy 63. A rebar .6 ft. below ground near the west shoulder of US Hwy 63.

D2-D3 Submitted
2020-07-21

ALIGNMENT COORDINATES

101-16
10-20-09

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)
1	ML063	749+72.97 R1	6216496.74	22871676.41															
2	ML063	768+29.68 R1	6218353.14	22871642.65															

D2-D3 Submittal
 2020-07-21

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Temporary signals will be utilized to maintain one lane of traffic at a time on the bridge during construction.
Advance signing shall be required for detouring of wide loads

108-26A
08-01-08

STAGING NOTES

Stage 1
During the first stage, an 18 ft. travel lane will be provided

Stage 2
During the second stage, an 11 ft. 3 in. lane will be provided

111-01
04-17-12

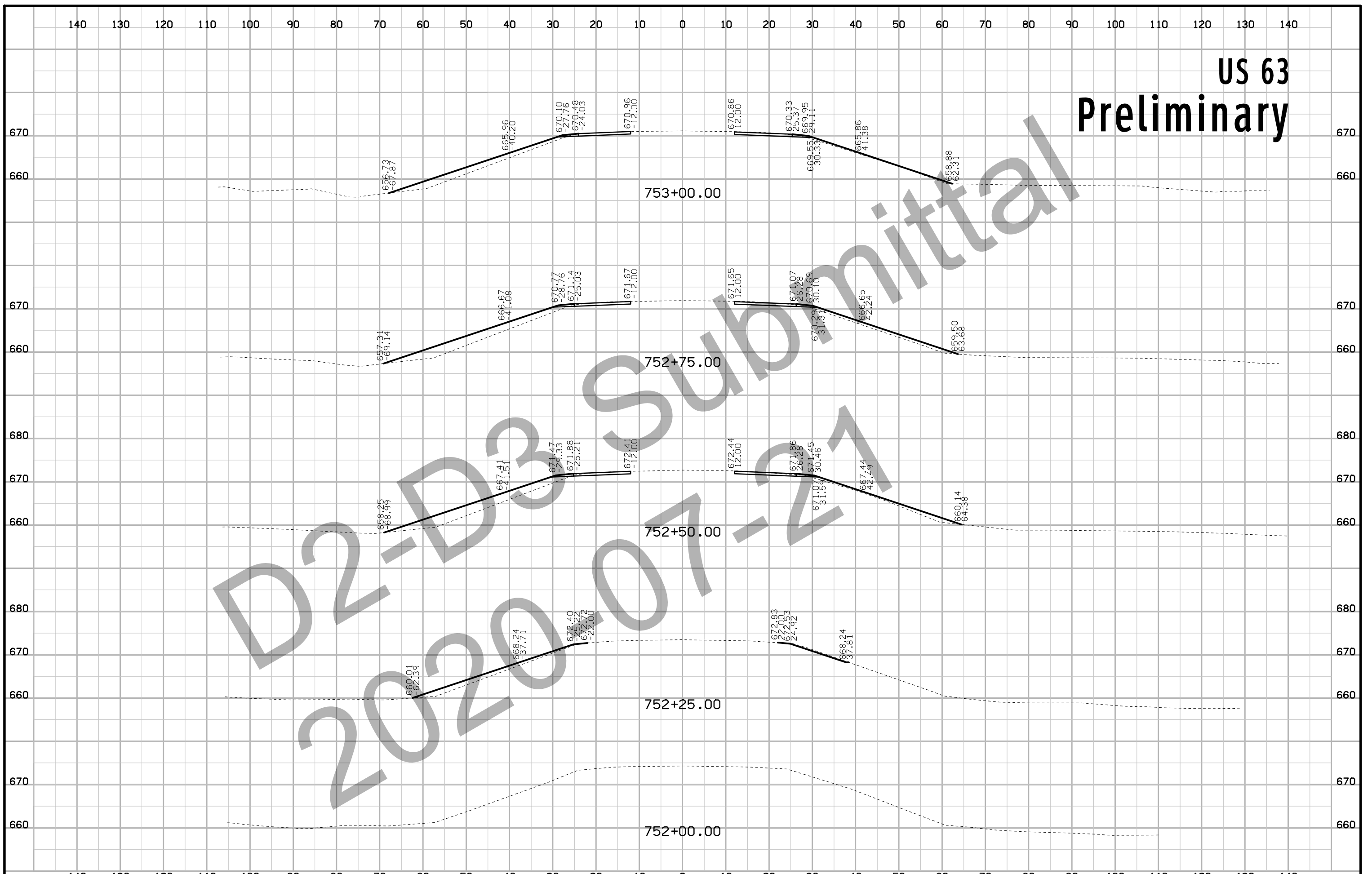
COORDINATED OPERATIONS

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.

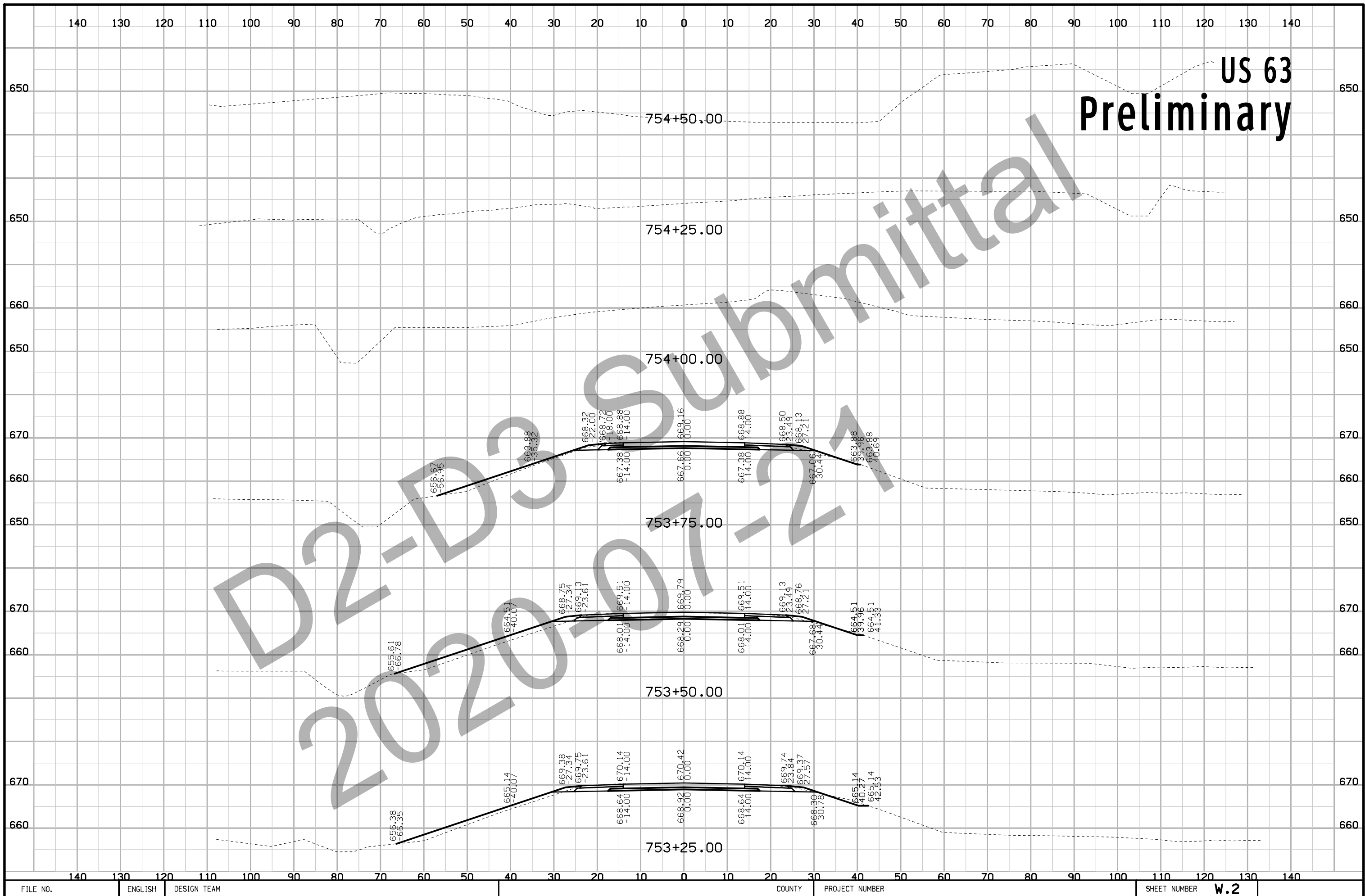
Project	Type of Work
NHSX-36-2(137)--3H-90 Little Soap Creek project	Bridge (Coordinate work so wide loads are not detoured for two consecutive years.)

D2-D3 Submittal
2020-07-21

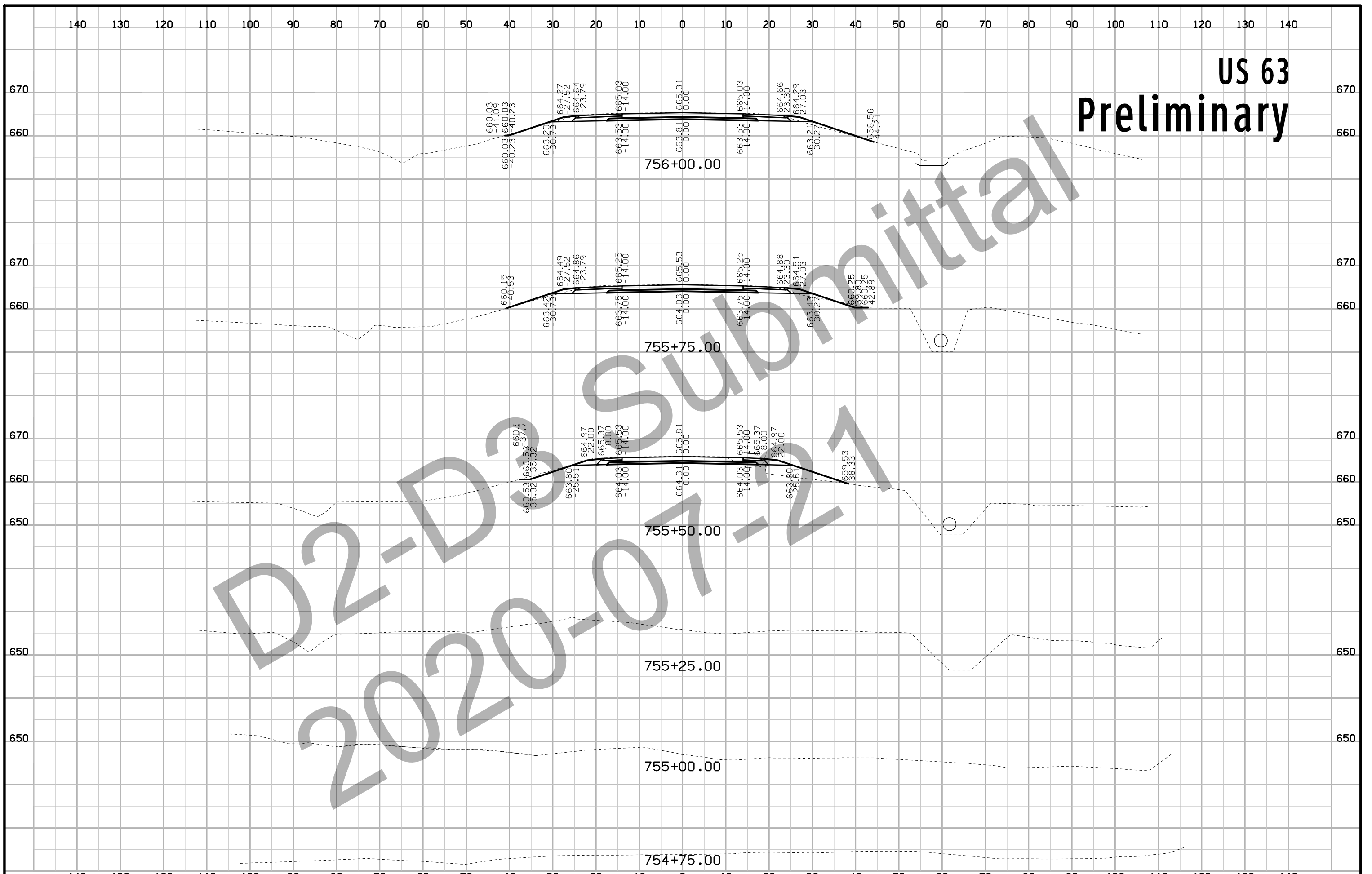
US 63 Preliminary



2020 D2-D3 Submission



US 63 Preliminary



US 63 Preliminary

