Bridge Replacement-PPCB
BRF-061-8(159)--38-31

LETTING DATE 12/20/2022

DUBUQUE COUNTY

IOWA DOT

REVISIONS

TOTAL
12
PROJECT IDENTIFICATION NUMBER
20-31-061-040
PROJECT NUMBER
BRF-061-8(159)--38-31
R.O.W. PROJECT NUMBER
--

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

DUBUQUE COUNTY

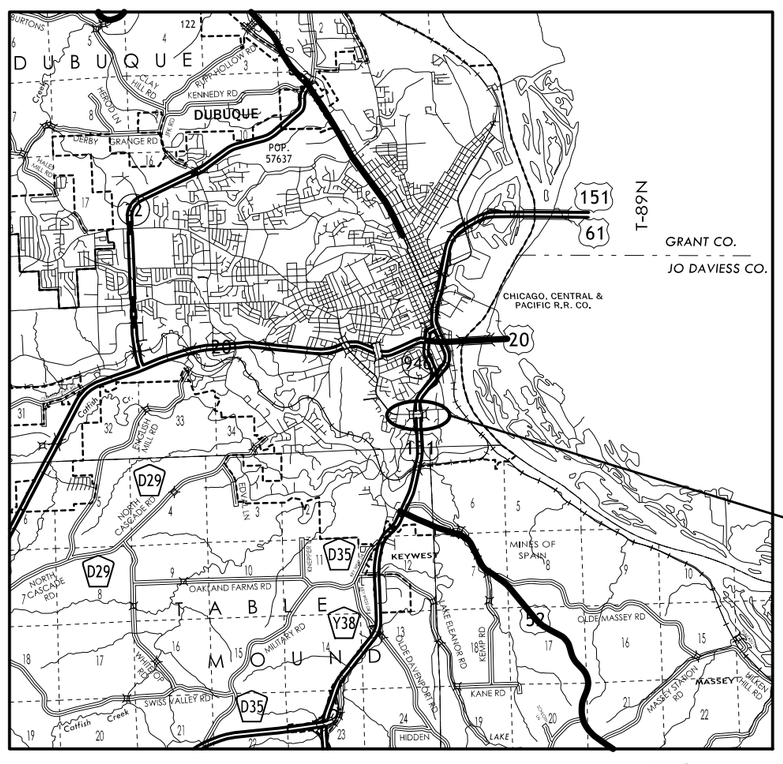
Bridge Replacement-PPCB

Grandview Ave 1.2 mi S of US 20 in Dubuque

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



PROJECT LOCATION
STA 2+52.71

LOCATION MAP SCALE
0 1 2 3
Miles

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

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
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	"GrandView Avenue"
E Sheets	**Side Road Plan and Profile Sheets**
* E.1	"US 61"
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 and 511 Travel Restrictions Note
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
* U.1	Construction Impacts (above and below ground)
	* Color Plan Sheets

DESIGN DATA RURAL

2017	AADT	6000	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		--	%
Total Design ESALs		--	

INDEX OF SEALS

	X	
X	X	X

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN – 04 /29 /2022

FILE NO. 23950	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER A.1

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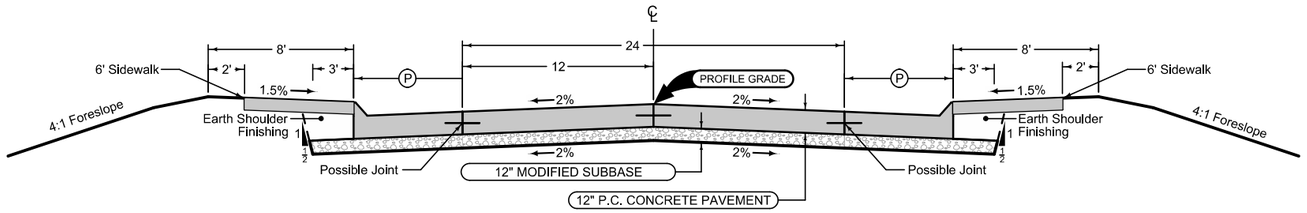
Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
1+95.16	2+15.16	10.5	6" STD
2+98.16	3+18.16	10.5	6" STD

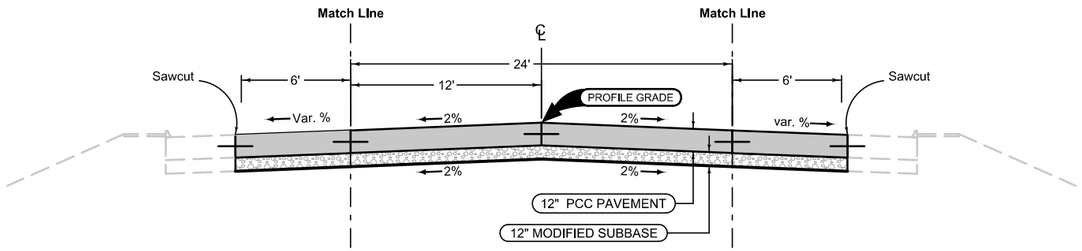


Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
1+95.16	2+15.16	10.5	6" STD.
2+98.16	3+18.16	10.5	6" STD.

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

2P_ 10-19-10	
STATION TO STATION	
1+95.16	2+15.16
2+98.16	3+18.16

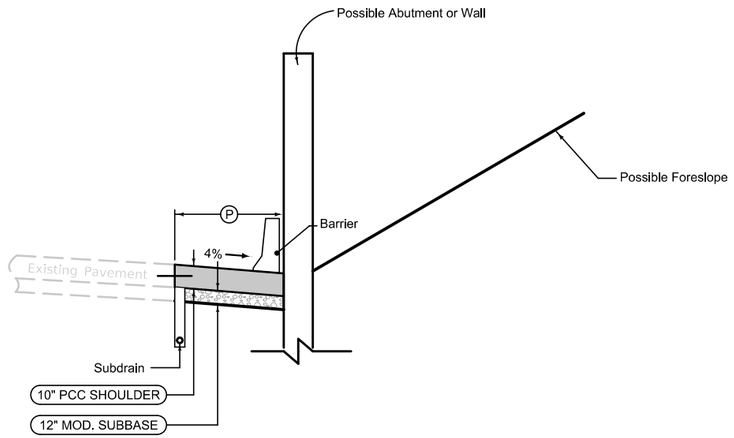


Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

2P_ 04-21-20	
STATION TO STATION	
1+67.70	1+95.16
3+18.16	3+49.58

GRANDVIEW AVENUE
PAVING

FILE NO. 23950	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER B.1



Full Depth PCC Shoulder

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

2_P_FullPCC_
04-21-20

Route	Direction	STATION TO STATION		(P) Feet
US 61	NB	127+35.92	128+36.31	xx'
US 61	SB	127+37.52	128+37.88	xx'

US 61
SHOULDER PAVING

SURVEY SYMBOLS

- SH Paved Shoulder
- EP Edge of Paved Roads (ML or SR)
- C Centerline BL of Road (ML or SR)
- CON Concrete or A/C Slab
- BCL Bridge Centerline
- BRG Bridge
- BD Bridge Deck
- BLS Bridge Low Steel
- GU Gutter In Front of Curb
- CU Back of Curb
- LIN Miscellaneous Line
- SWK Sidewalk
- GR Ground Shot
- BL Topo Breakline
- SIGN SI Sign
- TDC Tree Deciduous
- SHR Shrub
- SBR Size of Bridge
- FENO FENO Monument
- CP Control Point
- WC Wild Card (Misc. Field Shot)
- UB UB Utility Box
- LUM Luminaire
- FHD Fire Hydrants
- PPA Power Pole Co. 1
- MIS Miscellaneous
- LIN Miscellaneous Line
- MH Utility Access (Manhole)
- IN Storm Sewer Intake
- G GL1D Gas Line Co. 1 - Quality D
- E1 EL1D Electric Line Co. 1 - Quality D
- W WL1D Water Line Co. 1 - Quality D
- FO2 FO2D Fiber Optic Co. 2 - Quality D
- FO FO1D Fiber Optic Co. 1 - Quality D
- INB Storm Sewer Beehive Intake
- GV GV Gas Valve
- PIP Pipe Culvert
- UE Utility Elevation
- WV WV Water Valve
- PLG Location of General Photo
- PRO Profile Shot
- TIL TIL Tile Line

UTILITY LEGEND

- G GL1D Gas Line Black Hills Energy - Quality D
- E1 EL1D Electric Line City of Dubuque - Quality D
- W WL1D Water Line City of Dubuque - Quality D
- FO2 FO2D Fiber Optic Centurylink - Quality D
- FO FO1D Fiber Optic City of Dubuque - Quality D
- PPA Power Pole Alliant Energy

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
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
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 23950	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER D.1

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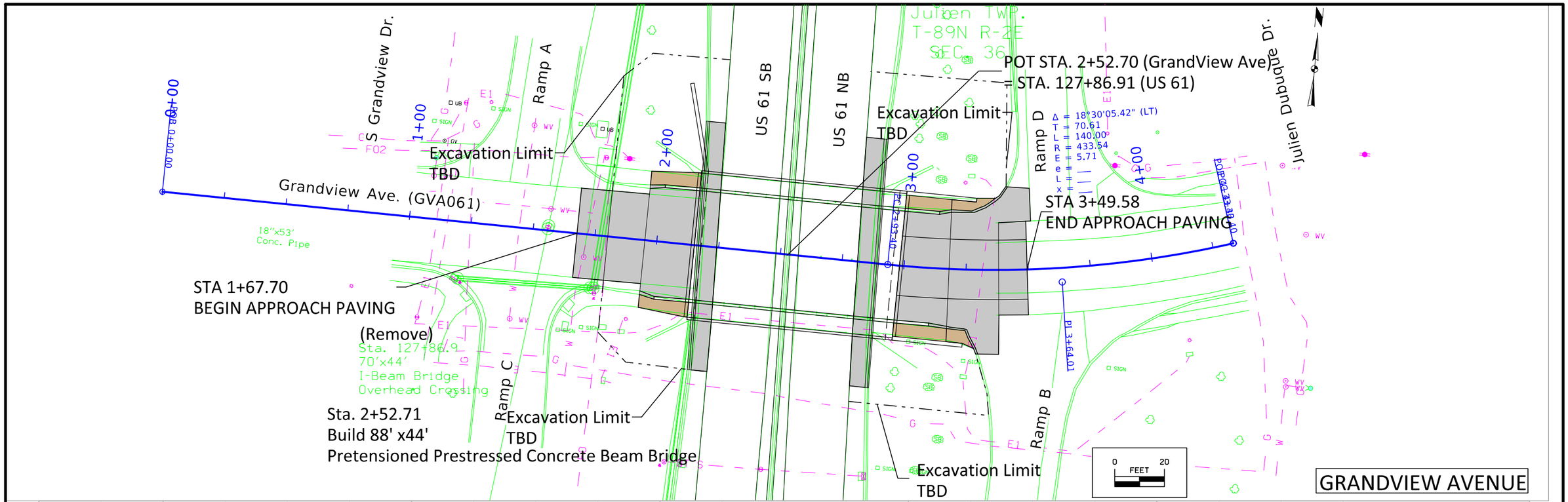

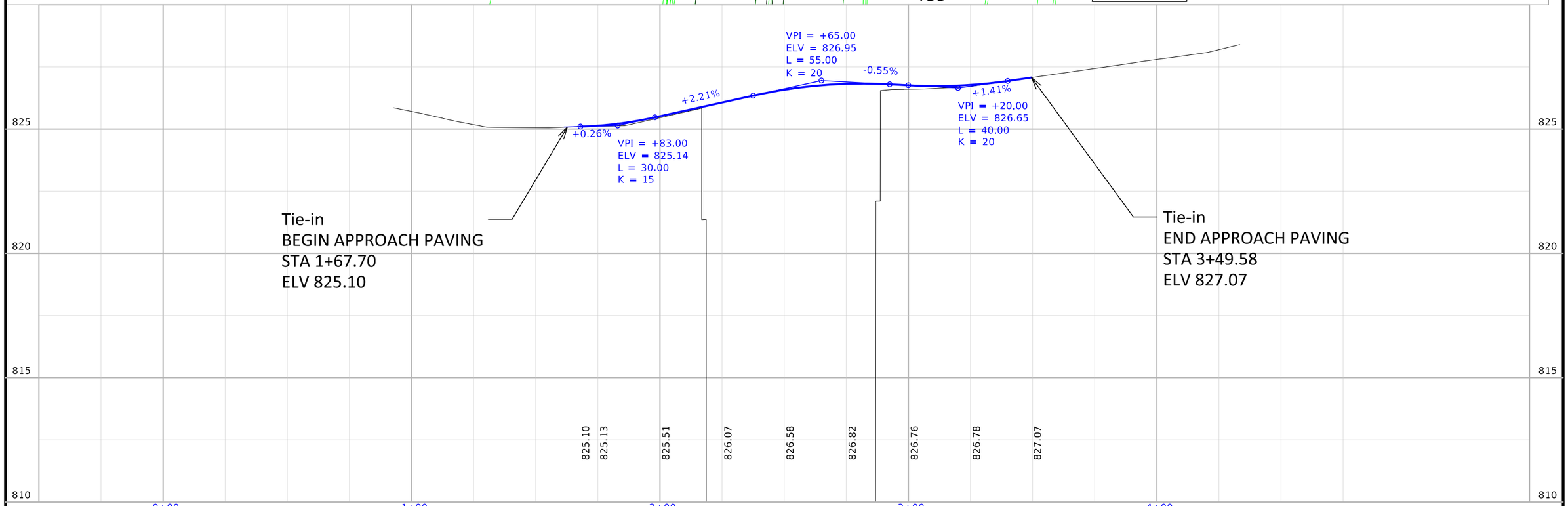

FILE NO. 23950	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER D.2

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STA 127+37.52
BEGIN SB SHOULDER PAVING

STA 128+37.88
END SB SHOULDER PAVING

125+00
126+00
127+00
128+00
129+00
130+00
131+00

US 61 SB

US 61 NB

Prop. 54" Concrete Barrier

Sta. 127+86.9
70'x44'
I-Beam Bridge
Overhead Crossing

STA 127+35.92
BEGIN NB SHOULDER PAVING

STA 128+36.31
END NB SHOULDER PAVING

Grandview Ave

Julien TWP.
T-89N R-2E
SEC. 36

0 FEET 20

US 61

FILE NO. 23950	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER E.1

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Survey Information

Dubuque County
BRF-061-8(159)—38-31
Grandview Ave 1.2 mi S of US 20 in Dubuque
Bridge Replacement-PPCB
PIN 20-31-061-040
Sap-199.3

General Information

Measurement units for this survey are US survey feet. This survey is for proposed replacement of the Grandview Ave bridge over US Hwy 61/52/151. Project datum and control information is provided by Design Survey Office. This project is a Full DTM. This survey request was for the US Hwy 61 and Grandview Ave corridors.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. 524515, 524525, and CP1 by conducting one concurrent five-hour static observation. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup relative to Pts. 524515 and CP1.

No As-Built Plan benchmarks could be located, however survey elevations obtained on the bridge seats have an average vertical difference relationship with the plan bridge seat elevations as follows:
As-built Plan U-UG-17(6) Bridge Design No. 255
West abutment low step bridge seat plan elev. = 819.23
Survey average low step bridge seat elev. = 821.36

East abutment low step bridge seat plan elev. = 819.99
Survey average low step bridge seat elev. = 822.10

The average vertical difference is +2.12 to be applied to as built elevations.

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 11 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by conducting one concurrent five-hour static observation at project control Pts. 524515, 524525, and CP1. Additional control points were placed throughout the project using a GNSS Base-Rover setup relative to Pts. 524515 and CP1.

Alignment Information

The horizontal alignment for U.S. Hwy 61/52/151 this survey is a retrace of As-built Plan No. NHSX-052-2(83)—3H-31. Survey stationing was equated to the plan TS at Sta. 132+11.96 and run back without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

TS Sta. 132+11.96 As-built Plans Project No. NHSX-052-2(83)—3H-31
Survey TS Sta. 132+11.96

POT Sta. 127+86.95 As-built Plans Project No. NHSX-052-2(83)—3H-31
Survey POT Sta. 127+86.91

PT Sta. 102+51.93 As-built Plans Project No. NHSX-052-2(83)—3H-31
Survey PT Sta. 102+51.97

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

Ia. Regional Coordinate System Zone 11

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

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 11

Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Code	Note
524515	8411480.474	21463797.161	821.250	FENO	SET FENO MON TOP OF BACK SLOPE N BOUND US HWY 61 AND S GRANDVIEW AVE OFF RAMP 90 FEET WEST OF JULIEN DUBUQUE DR AND 43 FEET EAST OF MANHOLE
524525	8412632.278	21463592.276	782.582	FENO	SET FENO MON 18 FEET WLY OF S BOUND US 61 AND S GRANDVIEW AVE OFF RAMP 65 FEET SSW OF TRANSMISSION LINE POLE 4.5 FEET EAST OF UTILITY MANHOLE
CP1	8411799.542	21463507.284	827.057	CP	SET 5/8X40 RBR W DIMPLE IN SW QUAD S GRANDVIEW AVE AND ROCKDALE RD 41 FEET WEST OF ROCKDALE RD AND 69 FEET SOUTH OF S GRANDVIEW AVE

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	GVA061	+00.00	8411869.84	21463399.80															
2	GVA061							2+93.40	8411866.54	21463693.18	3+64.02	8411865.74	21463763.79	4+33.40	8411887.39	21463831.00			
3	ML061	102+51.97	8409332.39	21463693.96															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E	
C1	GVA061										18.502°	70.613	139.996	433.543	5.713	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

On US 61, maintain 2 lanes of traffic in both directions at all times, except as follows:
- Utilize TC-454 for the removal of the existing bridge beams and placement of new beams over US 61.
- Utilize TC-421 for construction of abutment, retaining walls, and shoulder construction.

Grandview Ave. will be closed during construction and traffic will be maintained via detour.

Grandview Ave. ramp traffic will be maintained during stages 1 and 3.
Granview Ave. ramp traffic will be closed during stage 2 for abutment construction.

108-26A
08-01-08

STAGING NOTES

Stage 1:
  Traffic:
    Maintain US 61 traffic with TC-454
    Close Grandview Ave. and maintain traffic via detour
  Construction:
    Remove existing bridge

Stage 2:
  Traffic:
    Maintain Grandview Ave. detour
    Close Grandview Ave. Ramps.
  Construction:
    Construct bridge abutments.

Stage 3:
  Traffic:
    Maintain Grandview Ave. detour
    Open Grandview Ave. ramps to traffic.
  Construction:
    Finish bridge construction and approaches.
    Construct US 61 shoulders and barrier.

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
US 61	NB/SB	DUBUQUE	IN DUBUQUE 1 MI S OF US 20	US 61	Bridge	23950-FHWA Number	Vertical	16.25'				

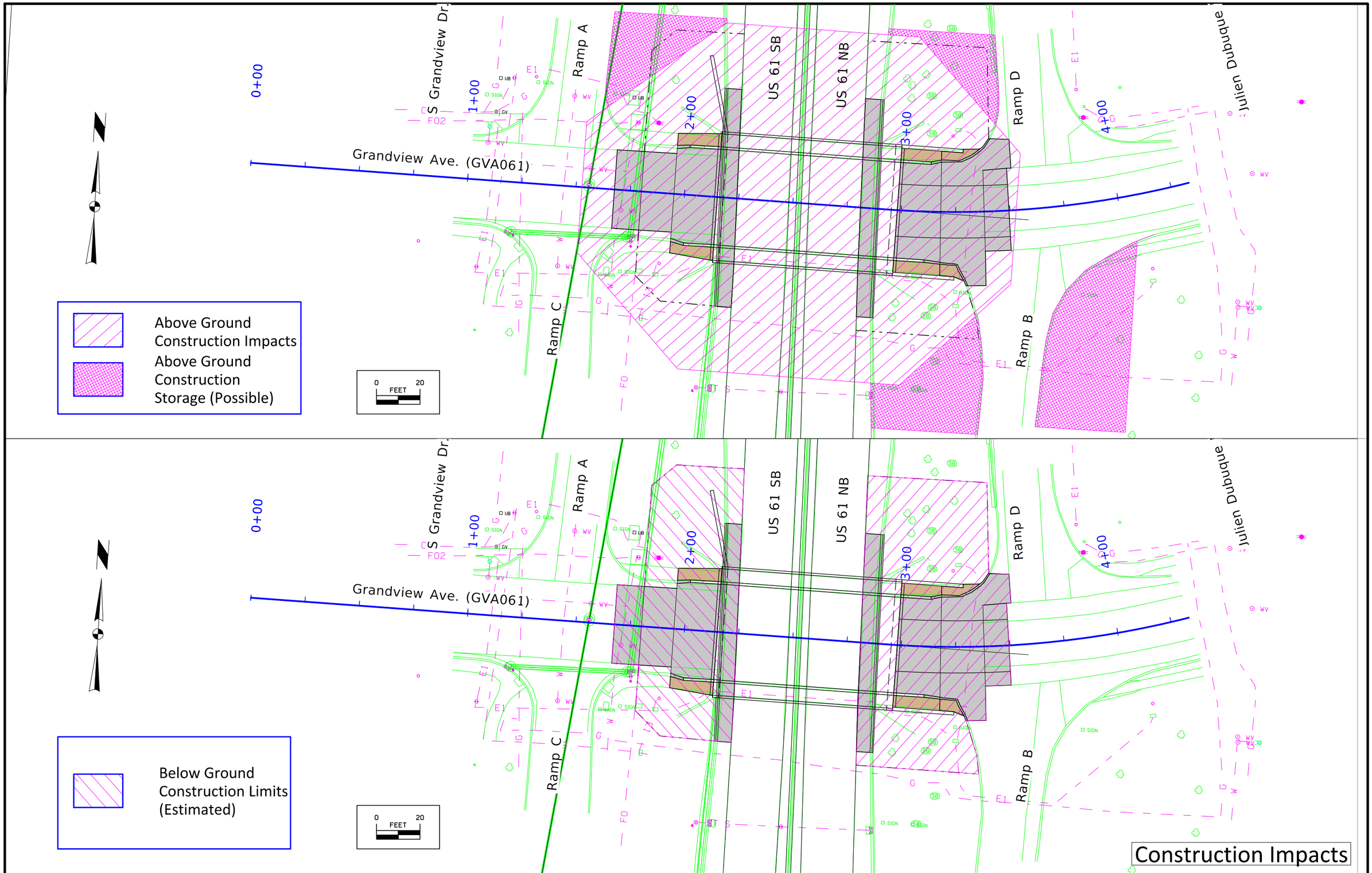
113-2
04-16-13

PEDESTRIAN PATH CLOSURES

Refer to TC-601.

*Assumes 6 foot wide barricade.
Closures may need to be removed and re-established.

Location	Side	Type III Barricades* No.	Remarks
Sidewalk at Grandview Ave over US 61 Bridge	LT	1	SW Quadrant during construction
Sidewalk at Grandview Ave over US 61 Bridge	RT	1	SE Quadrant during construction
Sidewalk at Grandview Ave over US 61 Bridge	LT	1	NW Quadrant during construction
Sidewalk at Grandview Ave over US 61 Bridge	RT	1	NE Quadrant during construction



Construction Impacts

FILE NO. 23950	ENGLISH	DESIGN TEAM HOLST/DEVENDRA	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER U.1

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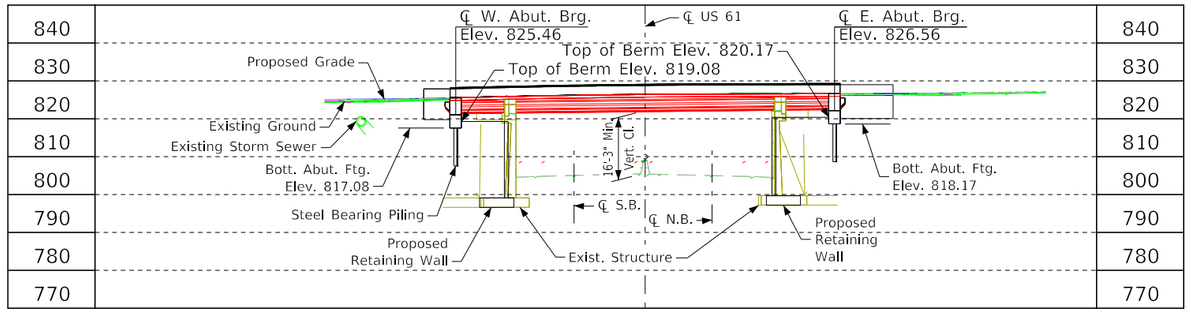
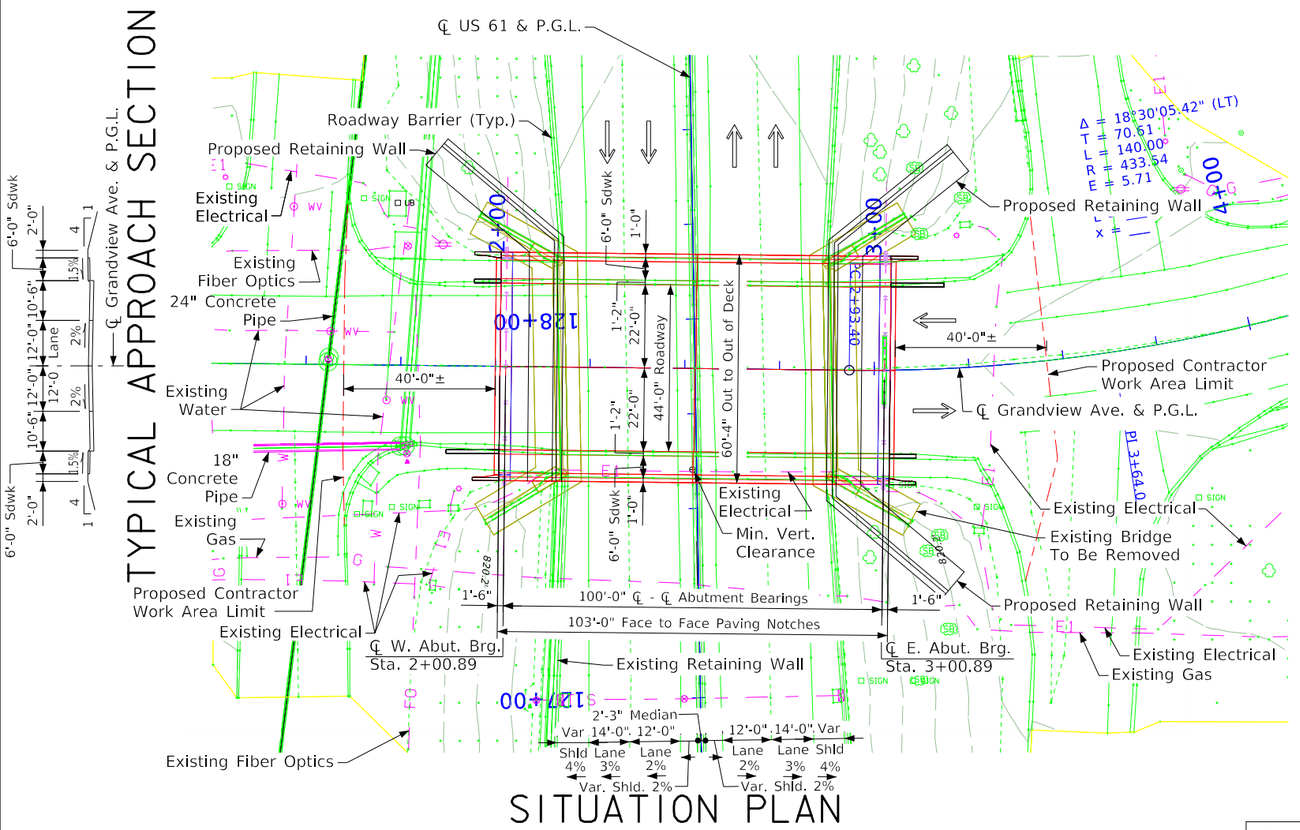
Control Point:
Northing: 8411799.542 Easting: 21463507.284. Elev. 827.057
Set 5/8x40 RBR w dimple in SW quad S Grandview Ave and Rockdale Rd 41 feet West of Rockdale Rd and 69 feet South of S Grandview Ave



LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY



SITUATION PLAN

Utilities Legend

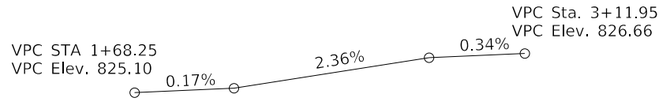
Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

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

- EI — GL1D Gas Line Black Hills Energy - Quality D
- EI — EL1D Electric Line City of Dubuque - Quality D
- W — WL1D Water Line City of Dubuque - Quality D
- FO2 — FO2D Fiber Optic Centurylink - Quality D
- FO — FO1D Fiber Optic City of Dubuque - Quality D
- PPA Power Pole Alliant Energy

N

0 ENGLISH 40
SCALE IN FEET



Notes:

This design is for the replacement of the existing 70' x 44' I-Beam Bridge, Design No. 255, FHWA No. 23950, Maint No. 3145.1O052.

TL-4 Bridge Railing Proposed.

Bridge Aesthetics to be incorporated during final design.

Top of bridge deck at centerline roadway is .03' below the profile grade to account for the parabolic crown.

The foundation type shown is preliminary. Other foundation types will be evaluated, including semi-integral abutment, high abutment, and drilled shaft.

Existing Structure
70'-0 x 44'-0 Steel I Beam Bridge
With 2 - 5'-0 Sidewalks 0° Skew
Design No. 255
Sta. 2+51.24
(To be Removed)

Proposed Profile Grade Grandview Ave.

VPI Sta. = 123+75.00 VC = 1670'
VPI Elev. = 826.13

As-Built Profile Grade US 61

Grandview Ave. Traffic Estimate

2017	AADT	6,000	V.P.D.
20XX	AADT	??,???	V.P.D.
20XX	DHV	????	V.P.H.
Trucks		4	%
Total			
Design ESALs		N.A.	

US 61 Traffic Estimate

2019	AADT	16,200	V.P.D.
20XX	AADT	??,???	V.P.D.
20XX	DHV	????	V.P.H.
Trucks		18	%
Total			
Design ESALs		N.A.	

℄ Grandview Ave. Curve Data

PI Sta. 3+64.01
Δ = 18°30'05.42" (Lt.)
T = 70.61 Ft
L = 140.00 Ft
E = 5.71 Ft
R = 433.54 Ft
PC Sta. 2+93.40
PT Sta. 4+33.40

Minimum Vertical Clearance

Overhead Station = 2+53.447, Offset 26.67' R.T. (℄ Grandview Ave.)
Overhead Elevation = 825.97
Depth of Superstructure = 3.92'
Underpass Station = 127+60.23 (℄ US 61)
Underpass Elevation = 805.74
Minimum Vertical Clearance = 16.31

Location

Grandview Ave. over US 61
T-89N R-2E
Section 36
Julien Township
Dubuque County
City of Dubuque
Bridge Maint. No. 3145.1O052
FHWA No. 23951
Latitude 42.478012°
Longitude -90.667939°

Preliminary

Design For 0° Skew Radius = 433.54'

100'-0" x 44'-0" Pretensioned Prestressed Concrete Beam Bridge w/ 2-6' Sidewalks

100'-0" Single Span BTB Beams

Situation Plan

STA. 2+51.12 (Grandview Ave.) November 2021

DUBUQUE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 323 Design Sheet No. 1 of 2 FHWA No. 23951

FILE NO. 32178	ENGLISH	DESIGN TEAM WHKS & Co.	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER 1	REVISED

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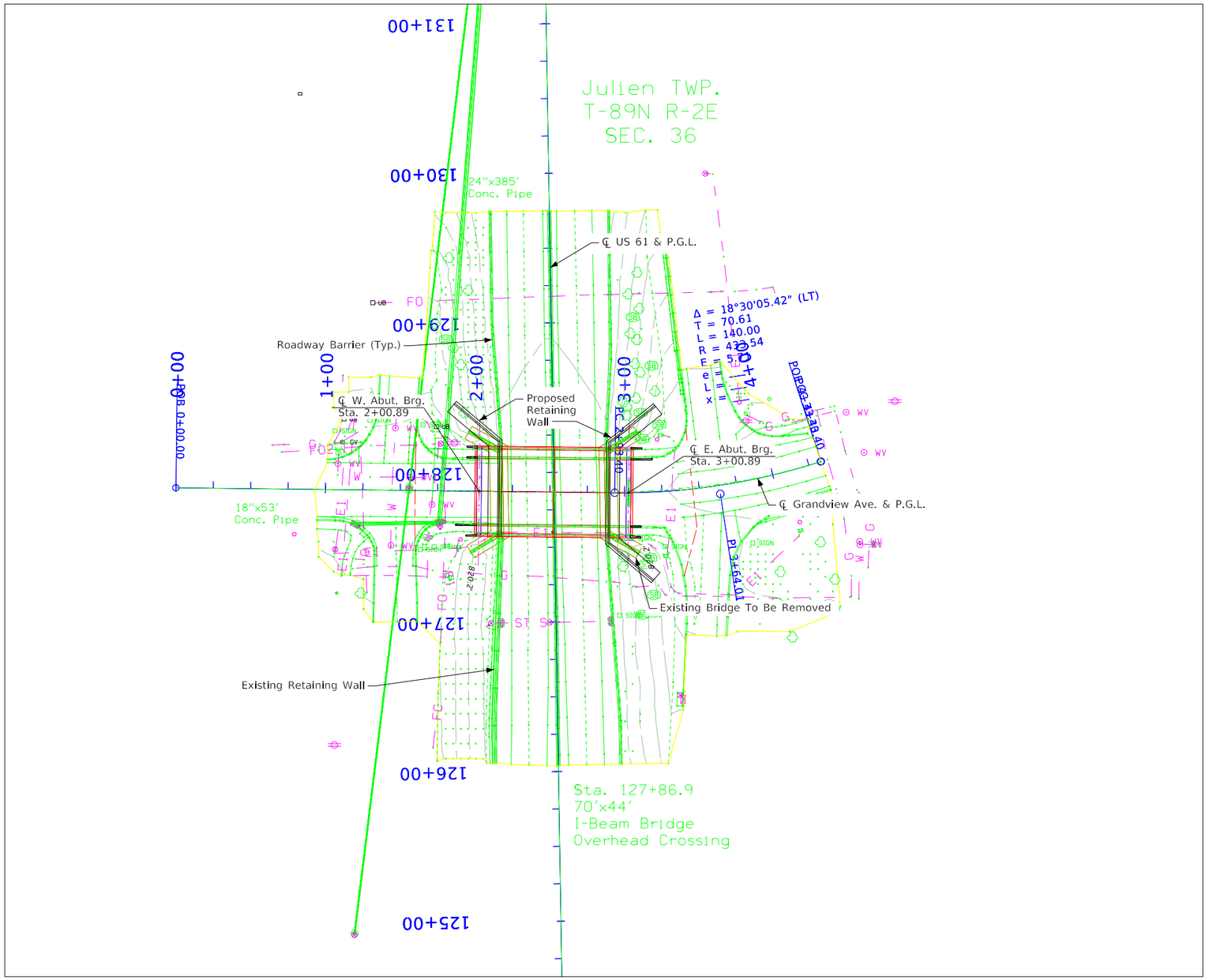
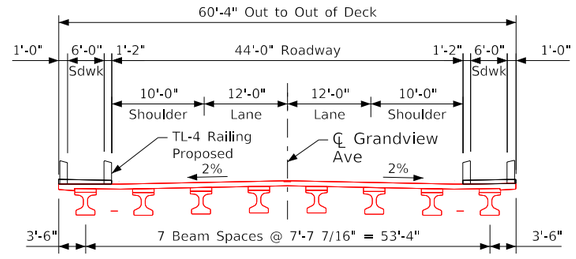
Control Point:
Northing: 8411799.542 Easting: 21463507.284. Elev. 827.057
Set 5/8x40 RBR w dimple in SW quad S Grandview Ave and Rockdale Rd 41 feet West of Rockdale Rd and 69 feet South of S Grandview Ave



SITE PLAN

0 ENGLISH 80
SCALE IN FEET



BRIDGE TRANSVERSE SECTION

N

Design For 0° Skew Radius = 433.54'

100'-0" x 44'-0" Pretensioned Prestressed Concrete Beam Bridge w/ 2-6' Sidewalks

100'-0" Single Span BTB Beams

Situation Plan - Misc.

STA. 2+51.12 (Grandview Ave.) November 2021

DUBUQUE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 323 Design Sheet No. 2 of 2 FHWA No. 23951

FILE NO. 32178	ENGLISH	DESIGN TEAM WHKS & Co.	DUBUQUE COUNTY	PROJECT NUMBER BRF-061-8(159)--38-31	SHEET NUMBER 2	REVISED

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