

LETTING DATE  
10/15/2019

BRIDGE REPLACEMENT-PPCB  
BRF-001-5(104)--38-52

JOHNSON CO.



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
**JOHNSON COUNTY**  
BRIDGE REPLACEMENT-PPCB

Old Womans Creek 0.6 mi S of Co Rd F52

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

18

PROJECT IDENTIFICATION NUMBER

15-52-001-010-03

PROJECT NUMBER

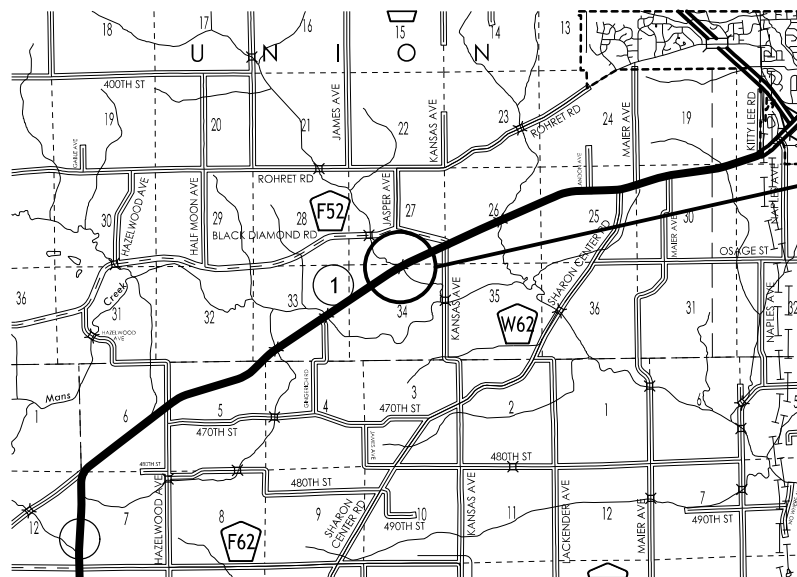
BRF-001-5(104)--38-52

R.O.W. PROJECT NUMBER

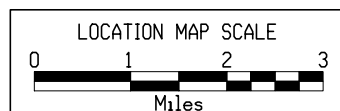
NHSN-001-5(105)--2R-52

INDEX OF SHEETS

No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet & Location Map
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 3	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 1
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 3	Reference Ties and Bench Marks
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* J.1	Traffic Control Plan
* J.2	Detour Location & Details
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1 - 7	IA 1
	* Color Plan Sheets



**Project Location**  
Maint. No. 5278.9S001  
FHWA No. 31690



CUT (ML) 1,800 CY  
FILL+30% (ML) 4,950 CY  
CONTRACTOR FURNISH 3,150 CY

DATES:  
D4 PLAN - JUNE 18, 2019

Iowa Highway 1			
DESIGN DATA RURAL			
2018	AADT	7100	V.P.D.
2038	AADT	8200	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	7	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Kelly C. Bell	Primary Signature Block

**PRELIMINARY PLANS**

Subject to change by final design.

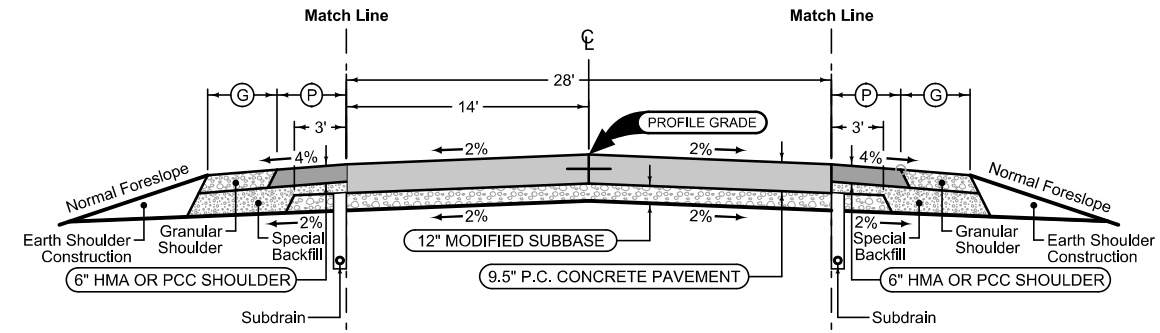
D5 PLAN - Date: February 2, 2018



**Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: B

STATION TO STATION		2_C_ 10-15-13	
		(P) Feet	(G) Feet
598+00.00	601+42.50	4.0	4.0
Bridge			
602+77.50	606+00.00	4.0	4.0



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

STATION TO STATION		2P_ 10-19-10	
598+00.00	601+42.50		
Bridge			
602+77.50	606+00.00		

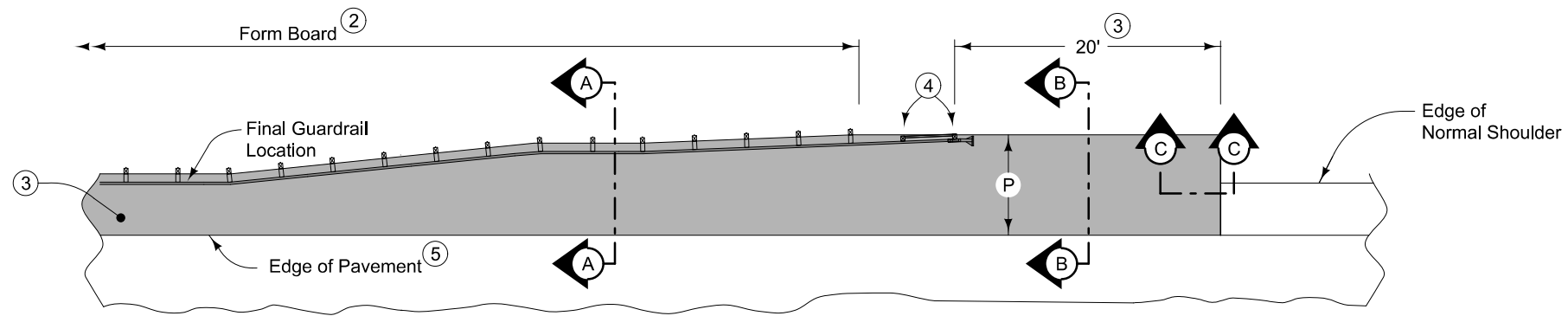
**Combination Shoulder**

Shoulder Jointing:  
Longitudinal joint: B

STATION TO STATION		2_C_ 10-15-13	
		(P) Feet	(G) Feet
598+00.00	601+42.50	4.0	4.0
Bridge			
602+77.50	606+00.00	4.0	4.0

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

**Iowa Highway 1**



PLAN VIEW

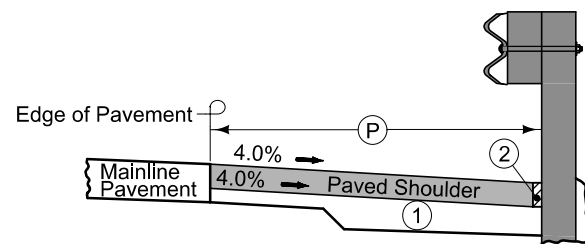
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

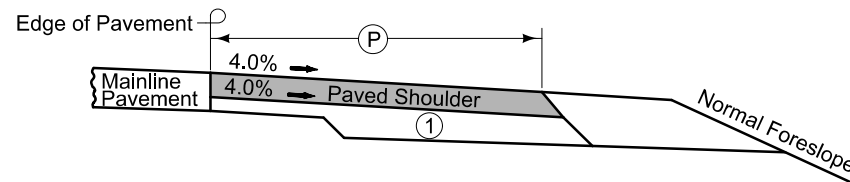
Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

- 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.

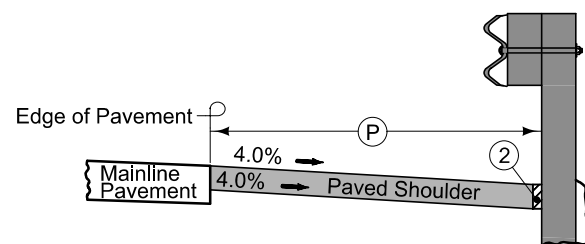


Section A-A

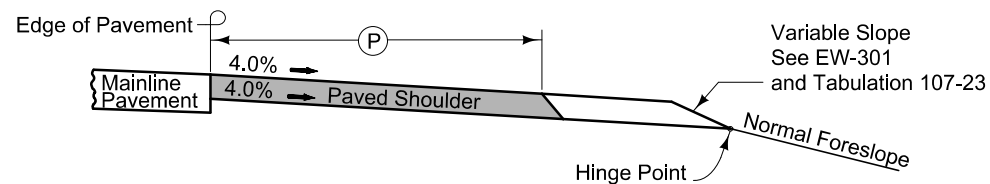


Section B-B

NEW CONSTRUCTION

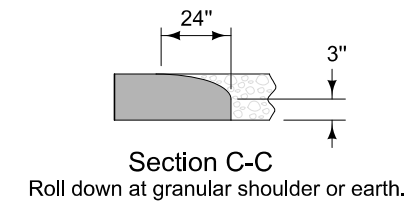


Section A-A



Section B-B

EXISTING SHOULDER



PAVED SHOULDER AT GUARDRAIL

### SURVEY SYMBOLS

- \* TEV Evergreen Tree
- SIGN SI Sign
- OUT Tile Outlet
- TP TPD Telephone Pedestal
- TDC Tree Deciduous
- TSB TSB Telephone Switch Box
- EB EB Electrical Box
- ⊕ SEP Septic Tank
- ⊕ WEL Well
- ⊕ LP L.P. Tank
- ⊕ CIS Cistern
- ⊕ MH Utility Access (Manhole)
- ⊕ PR Electric Riser Pole
- ⊕ SHR Shrub
- ⊕ WH WHD Water Hydrant
- △ STP Stump
- x— FW Wire Fence
- x— FWD Wood Fence
- #— FCL Chain Link and Security Fence
- D Centerline Draw or Stream (Down)
- ← DU Centerline Draw or Stream (Up)
- EW Edge of Water
- ▲ RIP Rip-Rap
- Existing Guardrail

### UTILITY LEGEND

- F0 — Kalona Cooperative Telephone
- T1 — Sharon Telephone Company
- F02 — ICN
- ⊕ Eastern Iowa REC

### 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

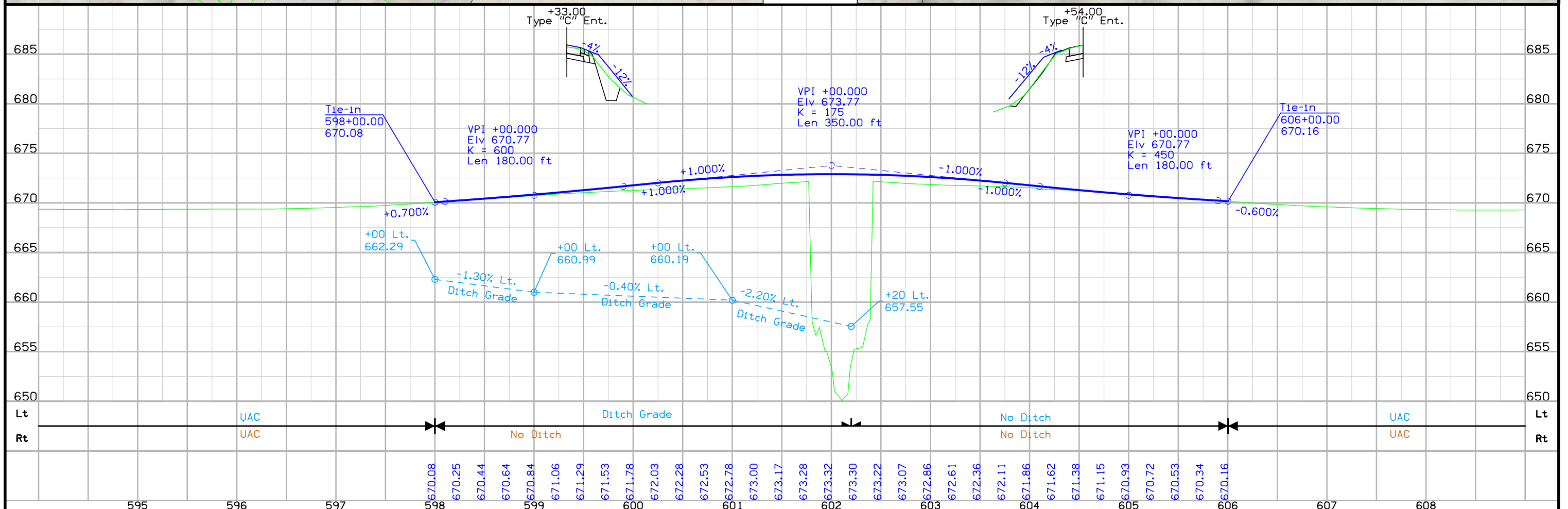
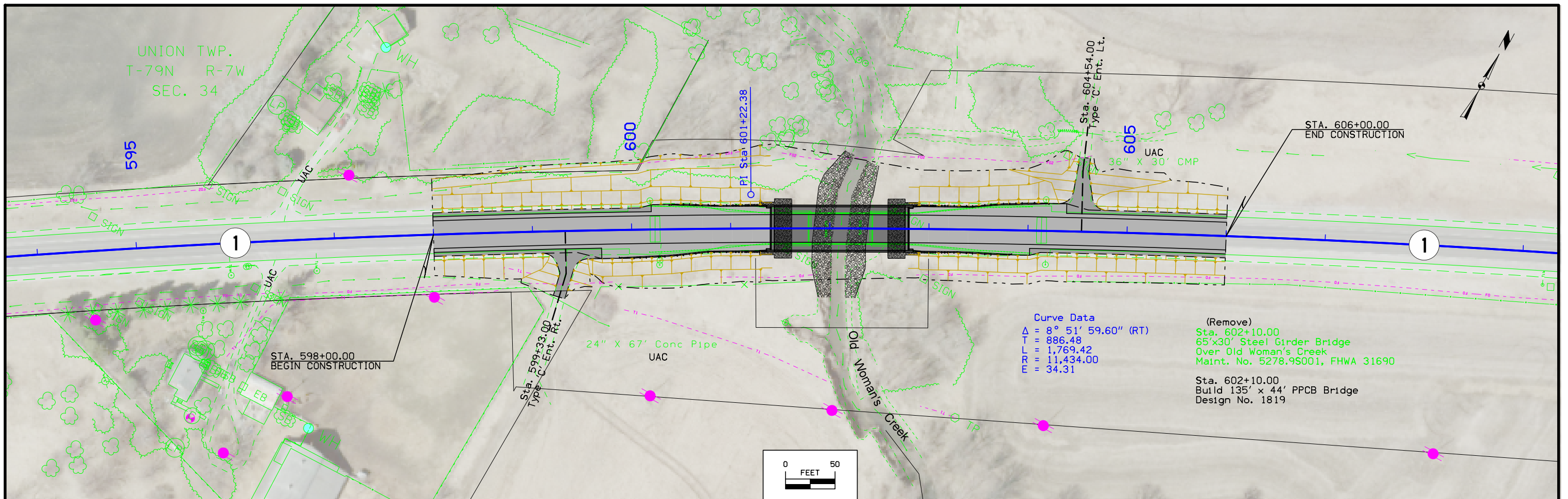
- Reference Point
- Station
- ▲ Section Corner
- Ground Line Intercept
- //// Saw Cut
- +—+— Guardrail
- +—+— Trench Drain
- +—+— High Tension Cable Guardrail
- ~ Sheet Pile
- ▨ Pavement Removal
- ▩ Clearing & Grubbing Area

### 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)



## Survey Information

Johnson County  
BRF-001-5(104)--38-52  
HWY 1 Bridge over Old Womans Creek  
PIN 13-52-001-030  
Sap-0834

### General Information

Measurement units for this survey are US survey feet. This survey is a Bridge survey for unspecified reasons along state highway 1 over Old Woman Creek. Project datum and control information is provided by Design Survey Office. This project is a full DTM with Photo control. The road was resurfaced during the time that the survey was being done. The new asphalt, shoulders, and guardrails were surveyed and mapped.

### Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12A). Benchmarks were placed throughout the project using post processed static observations relative to Pts. 1 and Johnson County Pt. 220. A minimum of 6hrs of data was simultaneously collected on each of these primary control points.

This survey observed 1 Johnson County Control Monument with published NAVD88 Geoid03 heights to compare to local ground control:  
Point name 220 Elev. of 758.49'  
Survey Elev. = 758.46'

### Horizontal Control

The project coordinate system for this survey is Modified Iowa State Plane South Zone (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.

The project coordinate system is modified from Iowa State Plane South at project point 1 project coordinates of N= 591605.026, E= 2144428.984 (US ft.) All project points are scaled about this point using a scale factor of 1.000052919307.

Additional control points were placed throughout the project using post processed static observations relative to Pts. 1 and 2. A minimum of 6hrs of data was simultaneously collected on each point.

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. F-9(7). Survey stationing was equated to the plan PI at STA 601+20.70 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

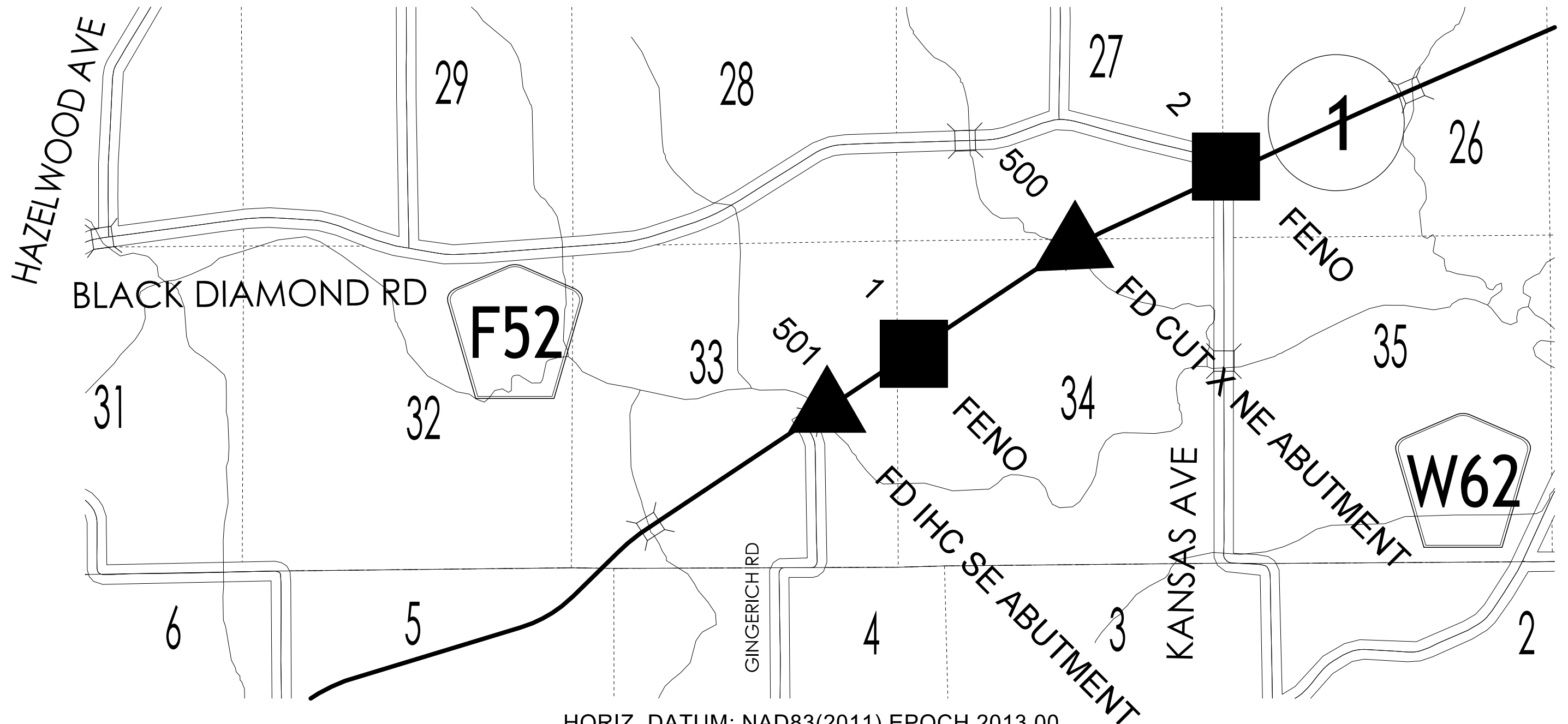
PC Sta. 592+33.1 As-built Plans Project No. F-9(7)  
Survey PC Sta. 592+33.63

PI Sta 601+20.7As-built Plans Project No. F-9(7)  
Survey PI STA 601+20.70

PT Sta 610+04.8 As-built Plans Project No. F-9(7)  
Survey PT STA 610+04.22

### 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 2013.00

VERT. DATUM: NAVD88

State Plane South

Coordinate listing from next sheet will be used with laRTN for monument recovery. No other reference ties are given.



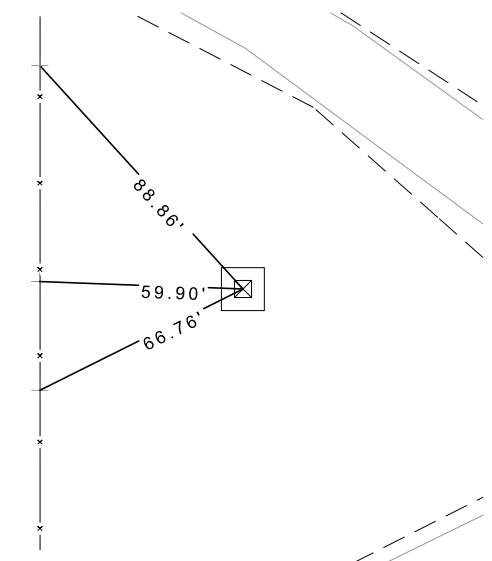
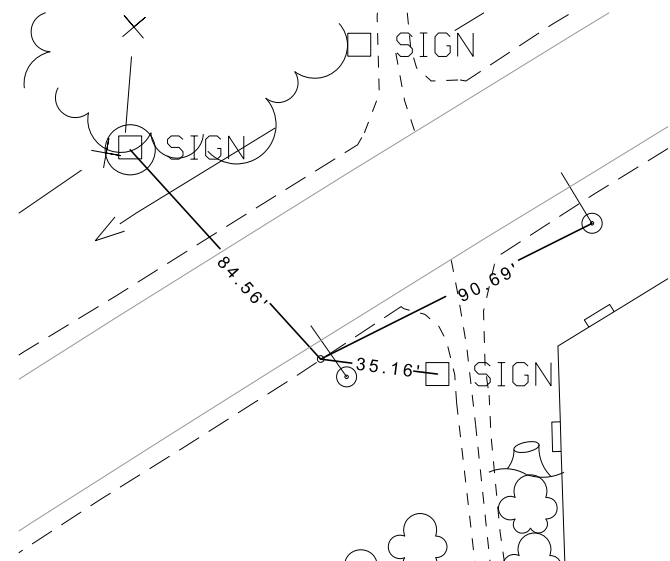
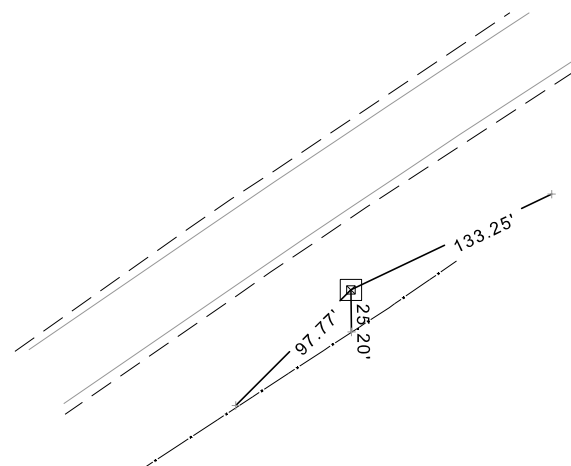
# HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

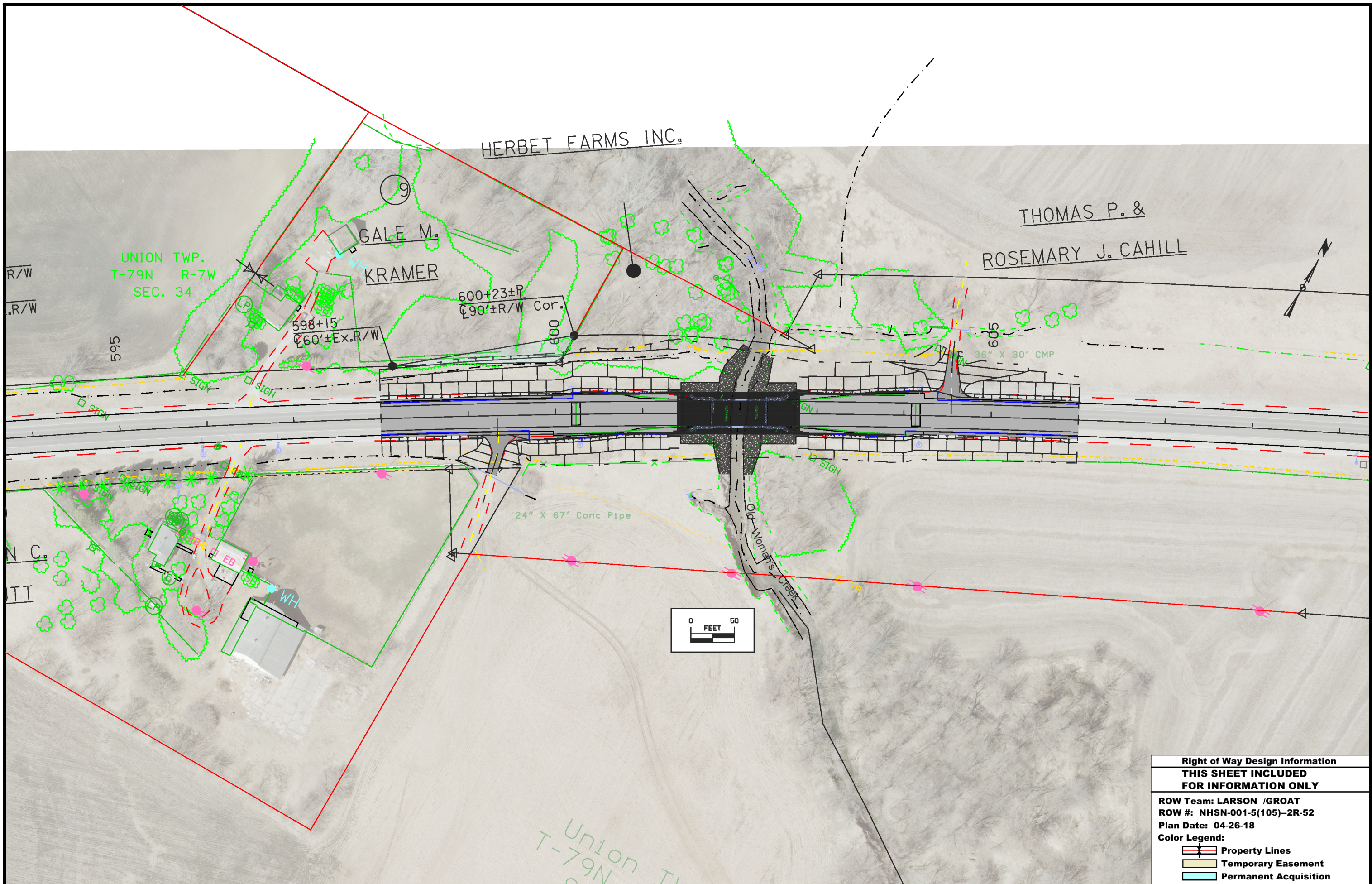
State Plane South

Point	North	East	Elevation	Station	Offset	Feature	Description
500	593363.0570	2147036.0450	672.5017	602+41.35	-17.0362	BM	FD CUT X NE ABUTMENT
501	590696.5287	2143025.4910	673.2497	Off Chain	Off Chain	BM	FD IHC SE ABUTMENT



Johnson ROW: NHSN-001-5(105)--2R-52 PIN 15-52-001-010  
 Approx 2 mi S of Co Rd F52 to Approx 0.6 mi N of Co Rd F52

PARCEL NO.	OWNER NAME	STATE		COUNTY		CITY		EXCESS	TEMP EASE		BORROW		MITIGATION	OTHER	HOUSE	BUILDING(S)	A/C ONLY	TOTAL ACQ.
		FEE	EASE	FEE	EASE	FEE	EASE		FEE	T.E.	FEE	T.E.						
9	Gale M. Kramer - Fee		0.07 AC															
1 Parcel	"TOTALS	0 AC	0.07 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC					
		0 SF		0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF						



R/W  
R/W

UNION TWP.  
T-79N R-7W  
SEC. 34

HERBET FARMS INC.

GALE M.  
KRAMER

THOMAS P. &  
ROSEMARY J. CAHILL

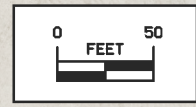
600+23±P  
C90±R/W Cor.

598+15  
C60±Ex.R/W

605  
36" X 30' CMP

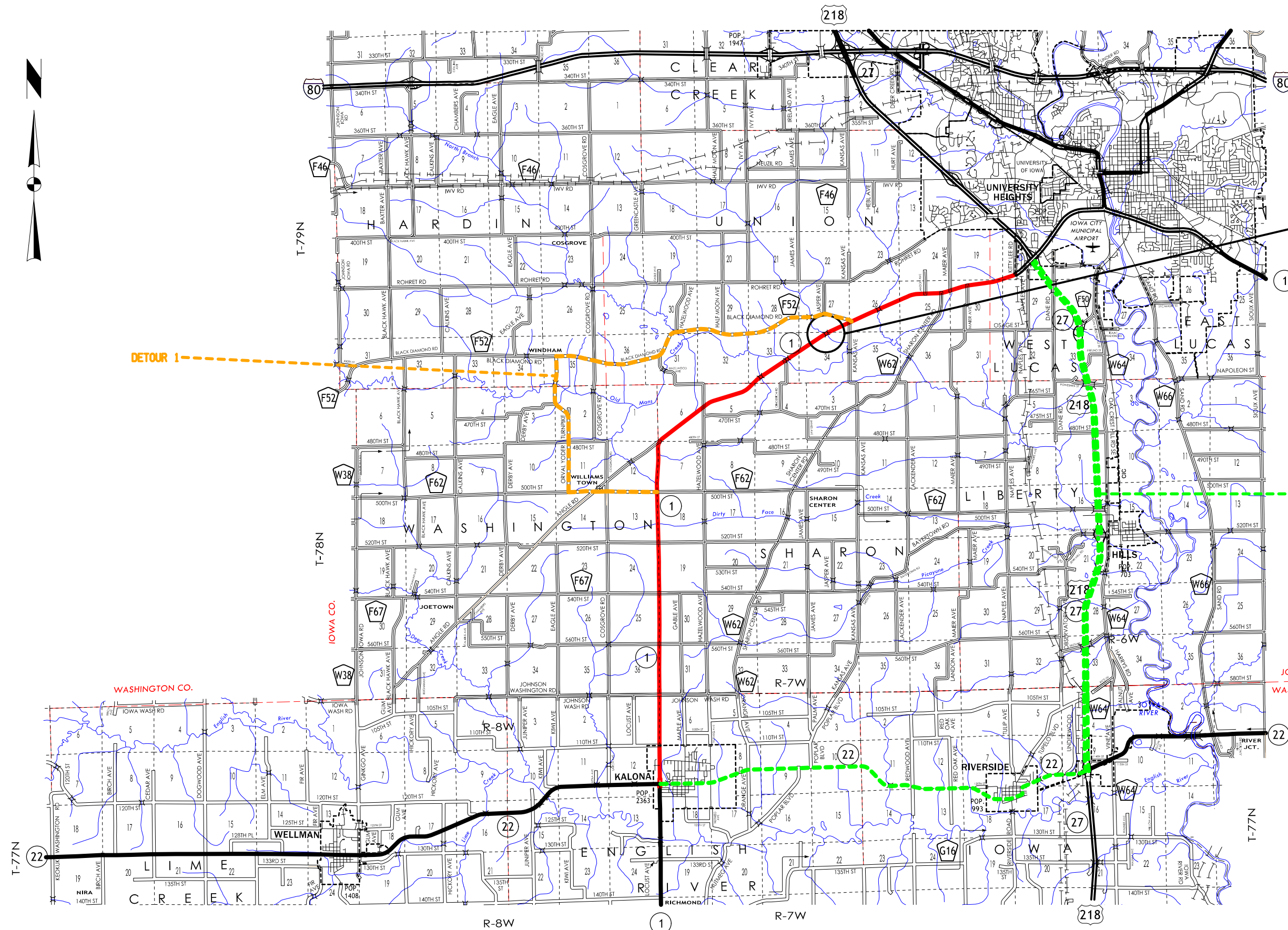
24" X 67' Conc Pipe

Old Woman's Creek



<b>Right of Way Design Information</b>	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
ROW Team: LARSON /GROAT	
ROW #: NHSN-001-5(105)--2R-52	
Plan Date: 04-26-18	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

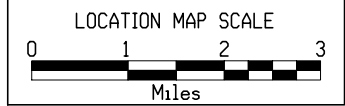




Project Location  
Maint. No. 5278.9S001  
FHWA No. 31690 (Existing)

DETOUR 1

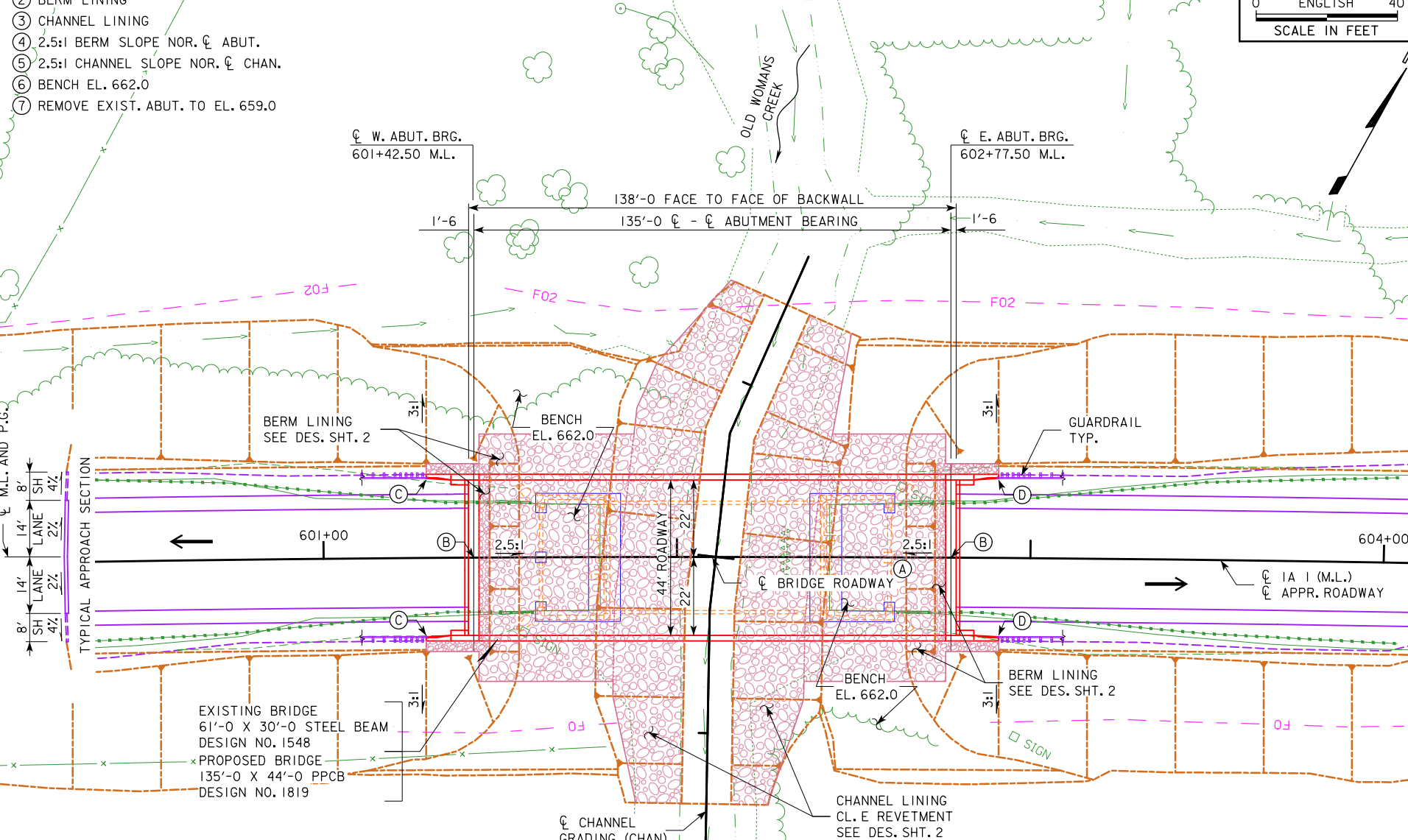
DETOUR 2



685	CL W. ABUT. CR EL. 672.77	DESIGN H.W. EL. 665.5	LOW BEAM EL. 667.2	LOW BEAM EL. 667.0	CL E. ABUT. CR EL. 672.69	685
675		EXIST. LOW BEAM EL. 668.3			PROPOSED GRADE	675
665					EXISTING GROUND	665
655	BERM EL. 665.32 BTM. FTG. EL. 663.32				BERM EL. 665.24 BTM. FTG. EL. 663.24	655
645						645
635	TL-4 BRIDGE RAILING PROPOSED TOP OF BRIDGE DECK CROWN (CR) 0.03 FT. BELOW PROFILE GRADE	THALWEG EL. 651.0				635

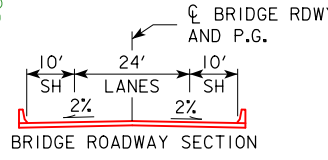
- ① EROSION STONE ABUTMENT FACING
- ② BERM LINING
- ③ CHANNEL LINING
- ④ 2.5:1 BERM SLOPE NOR. CL ABUT.
- ⑤ 2.5:1 CHANNEL SLOPE NOR. CL CHAN.
- ⑥ BENCH EL. 662.0
- ⑦ REMOVE EXIST. ABUT. TO EL. 659.0

**LONGITUDINAL SECTION ALONG CL BRIDGE ROADWAY**

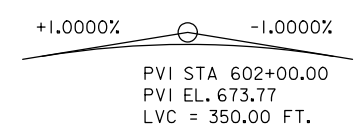


- BRIDGE LAYOUT:**
- CL BRIDGE ROADWAY IS A CHORD BETWEEN CL ABUTS. SKEW IS RELATIVE TO CL BRIDGE ROADWAY.
  - (A) CL BRIDGE ROADWAY AT MID-POINT BRIDGE, 602+10.00 M.L., 0.20' RT.
  - (B) CL BRIDGE ROADWAY = CL M.L. AT CL ABUT.
  - (C) BRIDGE GUTTER LINE AT END WEST WING, 601+29.16 M.L., 22.09' LT. 601+28.85 M.L., 21.91' RT.
  - (D) BRIDGE GUTTER LINE AT END EAST WING, 602+90.84 M.L., 22.09' LT. 602+91.15 M.L., 21.91' RT.

**SITUATION PLAN**



BENCH MARK:  
 BM NO. 501, IHC BUTTON S.E. ABUTMENT  
 X=2,143,025.5 Y=590,696.5  
 IOWA STATE PLANE SOUTH, SURVEY FEET  
 ELEV. = 673.25 NAVD88/IARTN (GE01D12A)



**UTILITIES LEGEND**

- F0 - FIBER OPTIC KALONA COOPERATIVE TELEPHONE
- F02 - FIBER OPTIC IOWA COMMUNICATIONS NETWORK
- PPA - POWER POLE EASTERN IOWA REC
- TI - SHARON TELEPHONE COMPANY

**PROPOSED GRADE ON IA 1**

**HYDRAULIC DATA**

DRAINAGE AREA = 11.2 SQ. MI.  
 STREAM SLOPE = 6.66 FT./MI.  
 AVG. LOW WATER STAGE = EL. 652.8

Q<sub>50</sub> = 3,672 CFS (3,930 CFS)  
 STAGE = EL. 665.5  
 REGULATORY LOW BEAM = EL. 667.2  
 BACKWATER = -1.21 FT.  
 AVG. BRIDGE VELOCITY = 4.6 FPS

Q<sub>100</sub> = 4,276 CFS (4,660 CFS)  
 STAGE = EL. 665.9  
 OPERATIONAL LOW BEAM = 667.0  
 BACKWATER = -1.49 FT.  
 AVG. BRIDGE VELOCITY = 5.1 FPS

Q<sub>200</sub> = 5,245 CFS (6,040 CFS)  
 STAGE = EL. 666.3  
 BACKWATER = -1.30 FT.  
 AVG. BRIDGE VELOCITY = 5.8 FPS  
 CALCULATED DESIGN SCOUR = EL. 646.0

**CURVE DATA**

IA 1 (M.L.)  
 PI STA. 601+22.38  
 PC STA. 592+35.90  
 PT STA. 610+05.32  
 $\Delta = 8^\circ 51' 59.60''$  (RT)  
 T = 886.48'  
 L = 1,769.42'  
 E = 34.31'  
 R = 11,434.00'  
 e = NC

Q<sub>500</sub> = 5,960 CFS (6,620 CFS)  
 STAGE = EL. 666.7  
 AVG. BRIDGE VELOCITY = 6.2 FPS  
 CALCULATED CHECK SCOUR = EL. 641.0

ROADWAY OVERTOP >500 YR. EVENT  
 ROADWAY OVERTOP EL. 669.1  
 STA. 570+00

TABLE VALUES REPRESENT OLD WOMAN'S CREEK (OWC) EVENT. DISCHARGE IN PARANS. REPRESENTS TOTAL OWC STREAMFLOW. STREAMFLOW NOT CARRIED THROUGH BRIDGE DIVERTED TO STRUCTURES AT 553+ (OLD MANS CK. MC) AND 588+ (E. OVERFLOW).

BACKWATER REFERENCES CHANGE FROM EXISTING CONDITION NEAR FIRST HIGH-DAMAGE POTENTIAL DEVELOPMENT UPSTREAM OF PROJECT SITE (RESIDENCE N.W. FLOODPLAIN, MP 78.8).

BRIDGE ACTS AS AN OVERFLOW FOR OLD MANS CREEK FLOOD EVENTS. REFER TO DESIGN NO. 1519 FOR GENERAL IA 1 CROSSING DATA. OLD MANS CK. EVENT HYDRAULIC DATA THIS BRIDGE AS FOLLOWS:

Q<sub>50</sub> = 718 CFS STAGE = EL. 663.9  
 AVG. BRIDGE VELOCITY = 1.2 FPS

Q<sub>100</sub> = 1,278 CFS STAGE = EL. 664.5  
 AVG. BRIDGE VELOCITY = 1.9 FPS

Q<sub>200</sub> = 2,078 CFS STAGE = EL. 665.2  
 AVG. BRIDGE VELOCITY = 2.7 FPS

**TRAFFIC ESTIMATE**

2018 AADT 7,100 V.P.D.  
 2038 AADT 8,200 V.P.D.  
 2039 DHV -- V.P.H.  
 TRUCKS 8%  
 TOTAL DESIGN ESALS --

**LOCATION**

IA 1 OVER OLD WOMANS CREEK (OLD MANS CREEK EAST OVERFLOW)  
 T 79 N R 7 W  
 SECTION 34  
 UNION TOWNSHIP  
 JOHNSON COUNTY  
 BRIDGE MAINT. NO. 5278.9S001  
 FHWA NO. 31691  
 STA. 602+10.00 CL M.L.  
 LATITUDE 41.613709°  
 LONGITUDE -91.647241°

PRELIMINARY

DESIGN FOR 0° SKEW

**135'-0" X 44'-0" PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE**

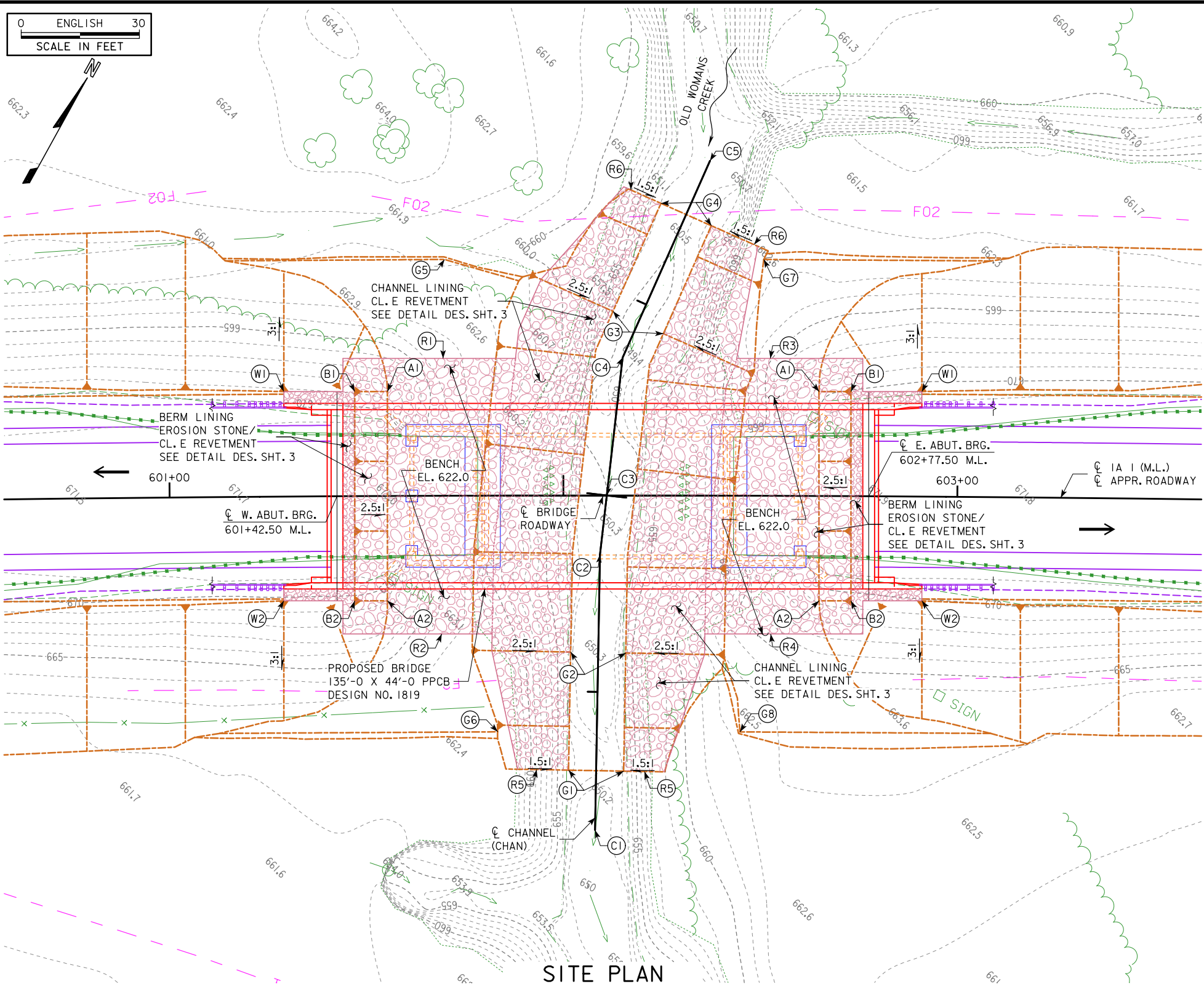
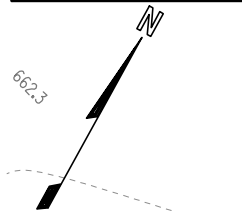
135'-0" SPAN      BTD BEAMS

**SITUATION PLAN**

STATION: 602+10.00 IA 1 (M.L.)      OCT. 2019

**JOHNSON COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 1 OF 3    FILE NO. 31509    DESIGN NO. 1819



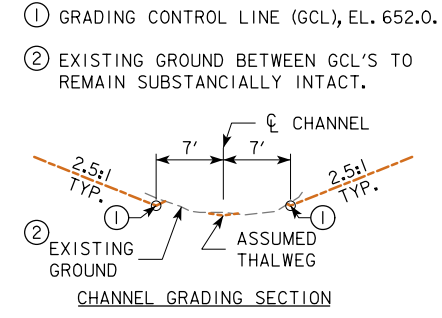
- CHANNEL CONTROL:
- (C1) POT 9+14.89 CL. CHAN. = 602+08.00 M.L., 85.00' RT.
  - (C2) PI 9+84.90 CL. CHAN. = 602+09.28 M.L., 15.00' RT.
  - (C3) POT 10+00.00 CL. CHAN. = 602+11.00 CL. M.L., Δ=83°27'37.02" LT
  - (C4) PI 10+35.23 CL. CHAN. = 602+03.73 M.L., 33.55' LT.
  - (C5) POT 10+89.90 CL. CHAN. = 602+37.00 M.L., 85.00' LT.
- REVETMENT LAYOUT:
- (R1) 35.0' LT. CL. BRIDGE RDWY., END BERM LINING.
  - (R2) 35.0' RT. CL. BRIDGE RDWY., END BERM LINING.
  - (R3) 35.0' LT. CL. BRIDGE RDWY., END BERM LINING.
  - (R4) 35.0' RT. CL. BRIDGE RDWY., END BERM LINING.
  - (R5) 9+30.0 CHAN., BEGIN CHANNEL LINING.
  - (R6) 10+75.0 CHAN., END CHANNEL LINING.

- GRADING CONTROL:
- (G1) 9+30.0 CHAN., 7.0' LT./RT., BEGIN CHANNEL GRADING, BEGIN SIDE SLOPE TRANS., 1.5:1 SLOPE. ASSUMED THALWEG EL. 650.91.
  - (G2) 9+60.0 CHAN., 7.0' LT./RT., END SIDE SLOPE TRANS., 2.5:1 SLOPE.
  - (G3) 10+45.0 CHAN., 7.0' LT./RT., BEGIN SIDE SLOPE TRANS., 2.5:1 SLOPE.
  - (G4) 10+75.0 CHAN., 7.0' LT./RT., END CHANNEL GRADING, END SIDE SLOPE TRANS., 1.5:1 SLOPE. ASSUMED THALWEG EL. 651.10.
  - (G5) 601+70.0 M.L., 60.0' LT., EDGE BENCH, EL. 662.0
  - (G6) 601+83.1 M.L., 60.0' RT., EDGE BENCH, EL. 662.0
  - (G7) 602+50.7 M.L., 60.0' LT., EDGE BENCH, EL. 662.0
  - (G8) 602+45.0 M.L., 60.0' RT., EDGE BENCH, EL. 662.0

**SITE PLAN**

BERM SLOPE LOCATION TABLE						
W. ABUTMENT			E. ABUTMENT			
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	601+55.43	26.51' LT	662.00	602+64.77	26.51' LT	662.00
A2	601+55.17	26.65' RT	662.00	602+65.03	26.65' RT	662.00
B1	601+47.15	26.55' LT	665.32	602+72.85	26.55' LT	665.24
B2	601+46.85	26.61' RT	665.32	602+73.15	26.61' RT	665.24
W1	601+29.19	26.67' LT	672.16	602+90.81	26.67' LT	672.07
W2	601+28.81	26.49' RT	672.16	602+91.19	26.49' RT	672.07

BERM SLOPE ELEVATIONS REFLECT GRADING SURFACE



PRELIMINARY

DESIGN FOR 0° SKEW

**135'-0 X 44'-0 PRETENSIONED  
PRESTRESSED CONCRETE BEAM BRIDGE**

135'-0 SPAN      BTD BEAMS

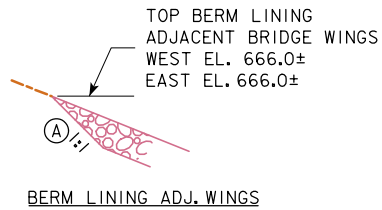
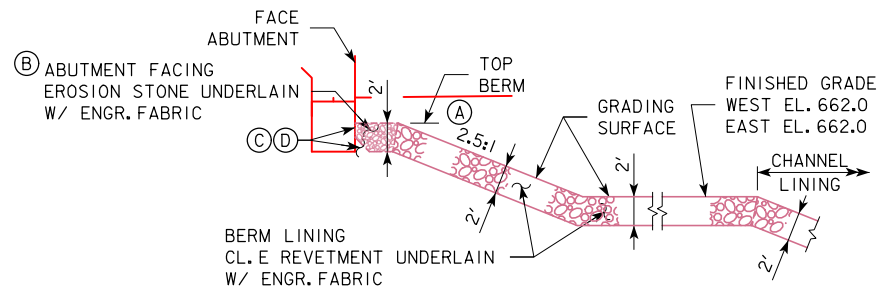
**SITUATION PLAN - SITE**

STATION: 602+10.00 IA 1 (M.L.)      OCT. 2019

**JOHNSON COUNTY**

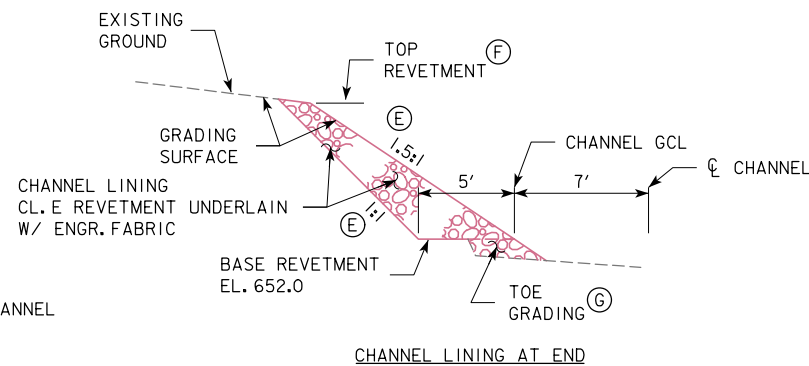
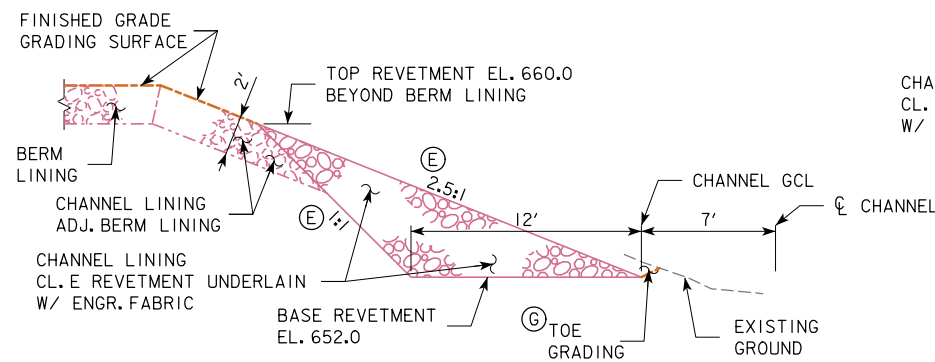
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3      FILE NO. 31509      DESIGN NO. 1819



### SECTION THROUGH BERM LINING

- (A) SLOPE NOR.  $\phi$  ABUT. / GRADING CONTROL LINE (PT. A1-A2).
- (B) EXTEND FACING OUT TO LIMITS OF WING ARMORING.
- (C) 1' X 1' SOIL WEDGE AT FACE ABUTMENT.
- (D) CARRY ENGR. FABRIC UP SOIL WEDGE AND FACE ABUTMENT.



### SECTION THROUGH CHANNEL LINING

- (E) SLOPE NOR. CHANNEL GRADING CONTROL LINE (GCL).
- (F) INTERCEPT W/ EXISTING GROUND OR EL. 662.0 MAX.
- (G) EXCAVATE TO EXISTING GROUND OR FILL W/ REVETMENT AS REQUIRED.

### ESTIMATED REVETMENT QUANTITIES

REVETMENT TYPE - LOCATION	REVETMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING - WEST	274.2	16.2	282.5	181.5
BERM LINING - EAST	252.0	16.2	261.6	167.6
CHANNEL LINING - WEST	453.8	-	409.3	283.6
CHANNEL LINING - EAST	413.3	-	372.5	258.3
TOTALS	1,393.3	32.4	1,325.9	891.0

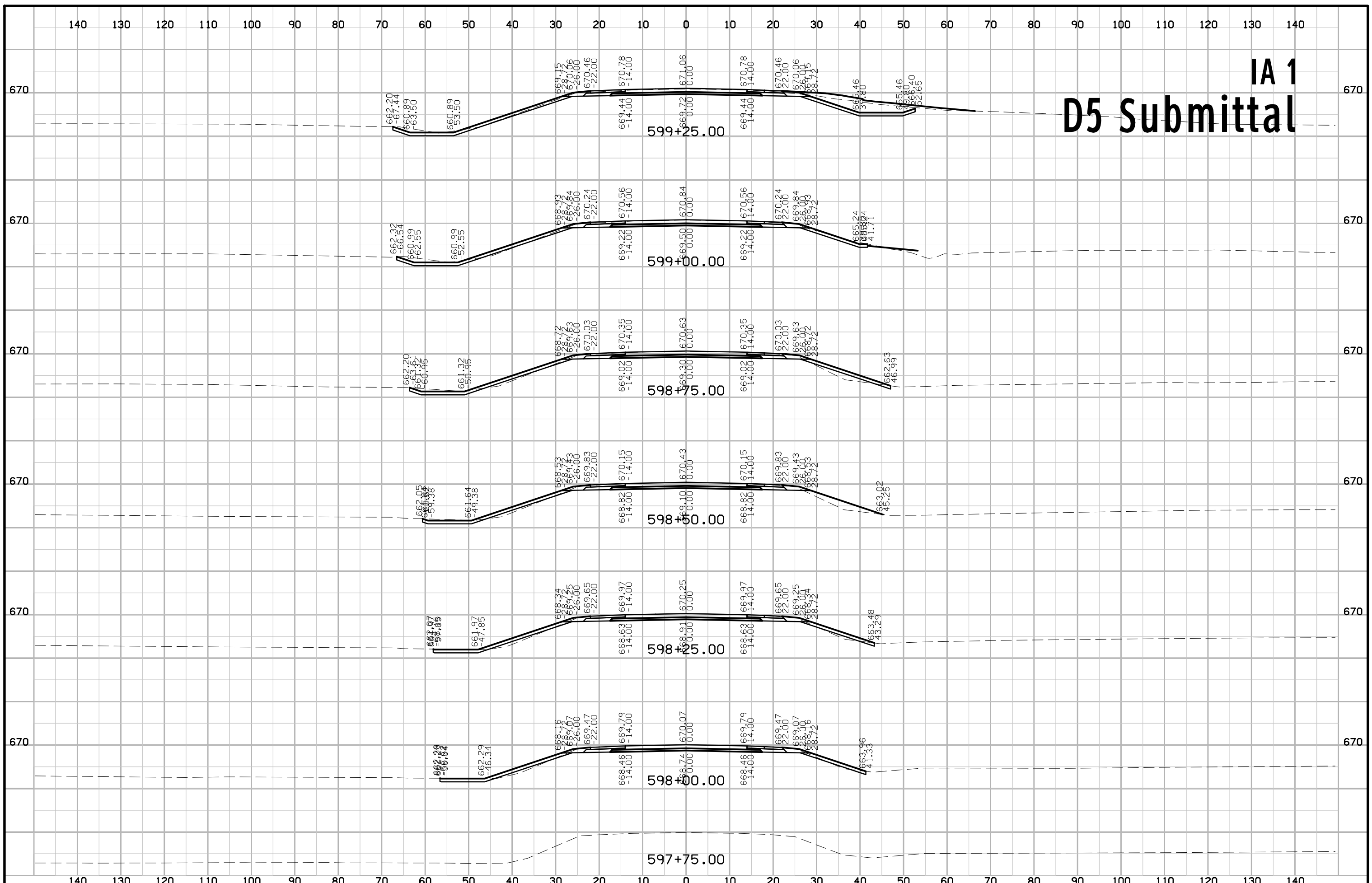
EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.  
 REVETMENT AND EROSION STONE ESTIMATED AT 1.6 TON/CY

PRELIMINARY

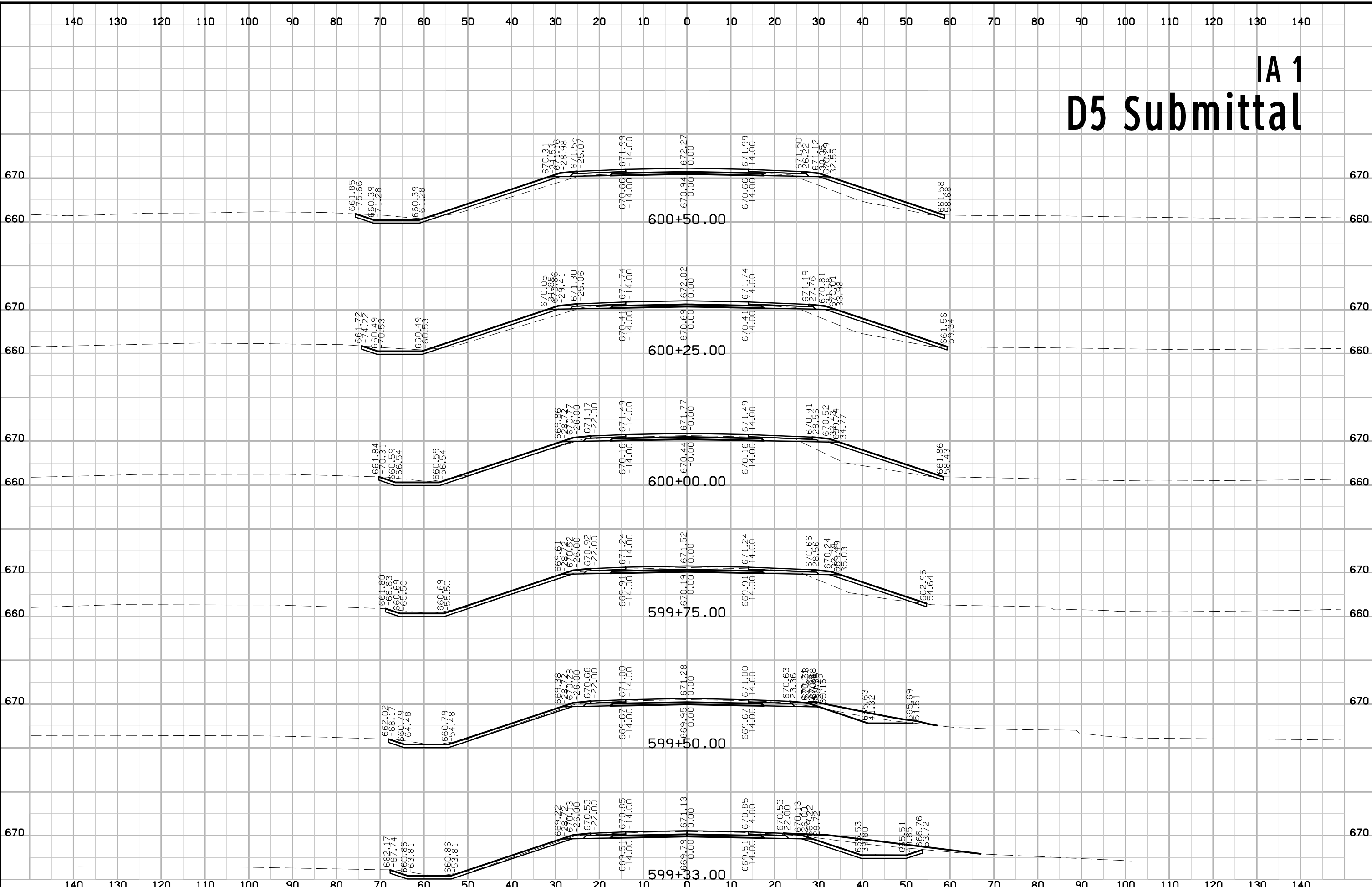
DESIGN FOR 0° SKEW  
**135'-0 X 44'-0 PRETENSIONED  
 PRESTRESSED CONCRETE BEAM BRIDGE**  
 135'-0 SPAN                      BTD BEAMS  
**SITUATION PLAN - MISCELLANEOUS**  
 STATION: 602+10.00 IA 1 (M.L.)                      OCT. 2019  
**JOHNSON COUNTY**  
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
 DESIGN SHEET NO. 3 OF 3    FILE NO. 31509    DESIGN NO. 1819



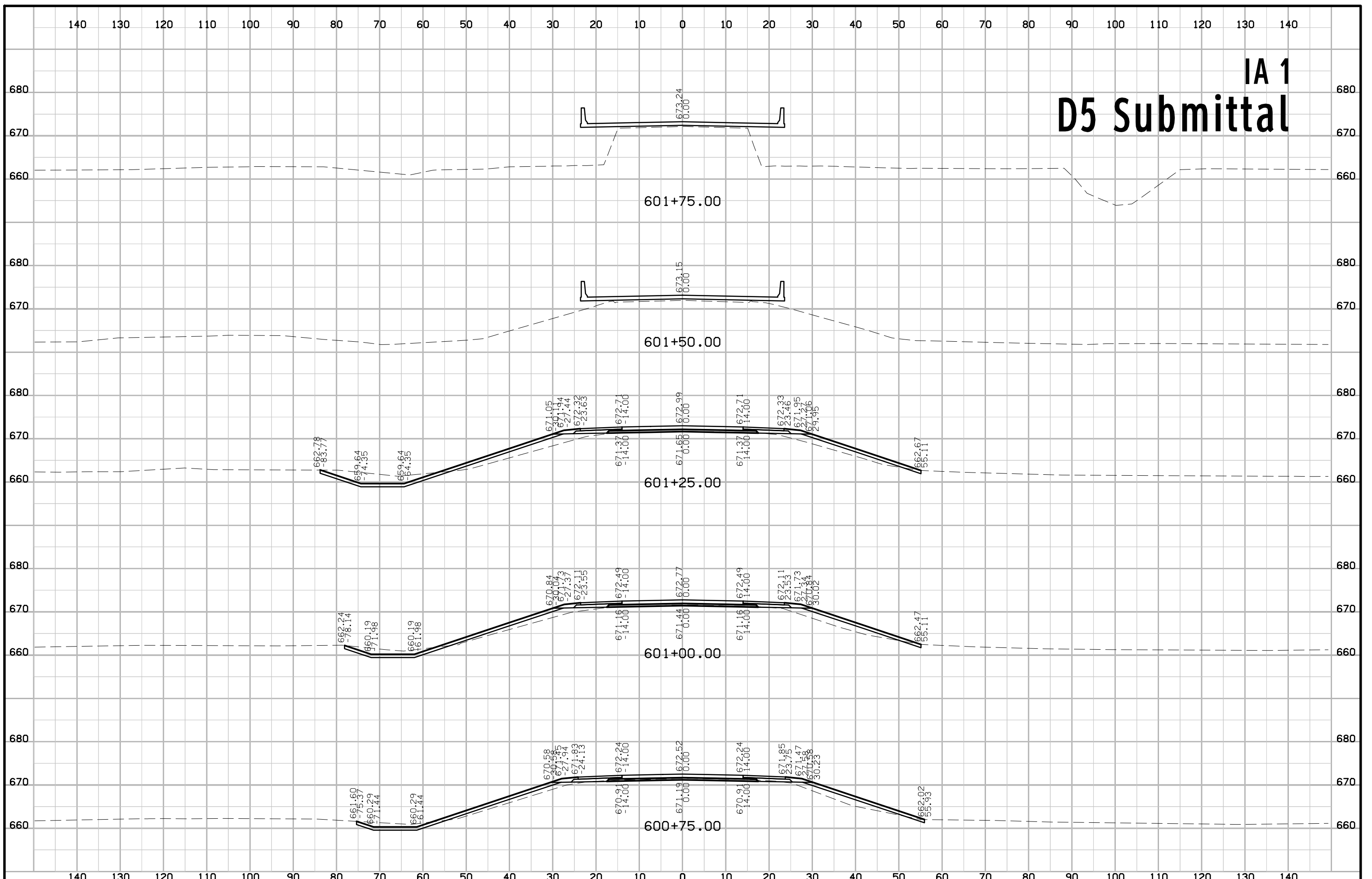
# IA 1 D5 Submittal



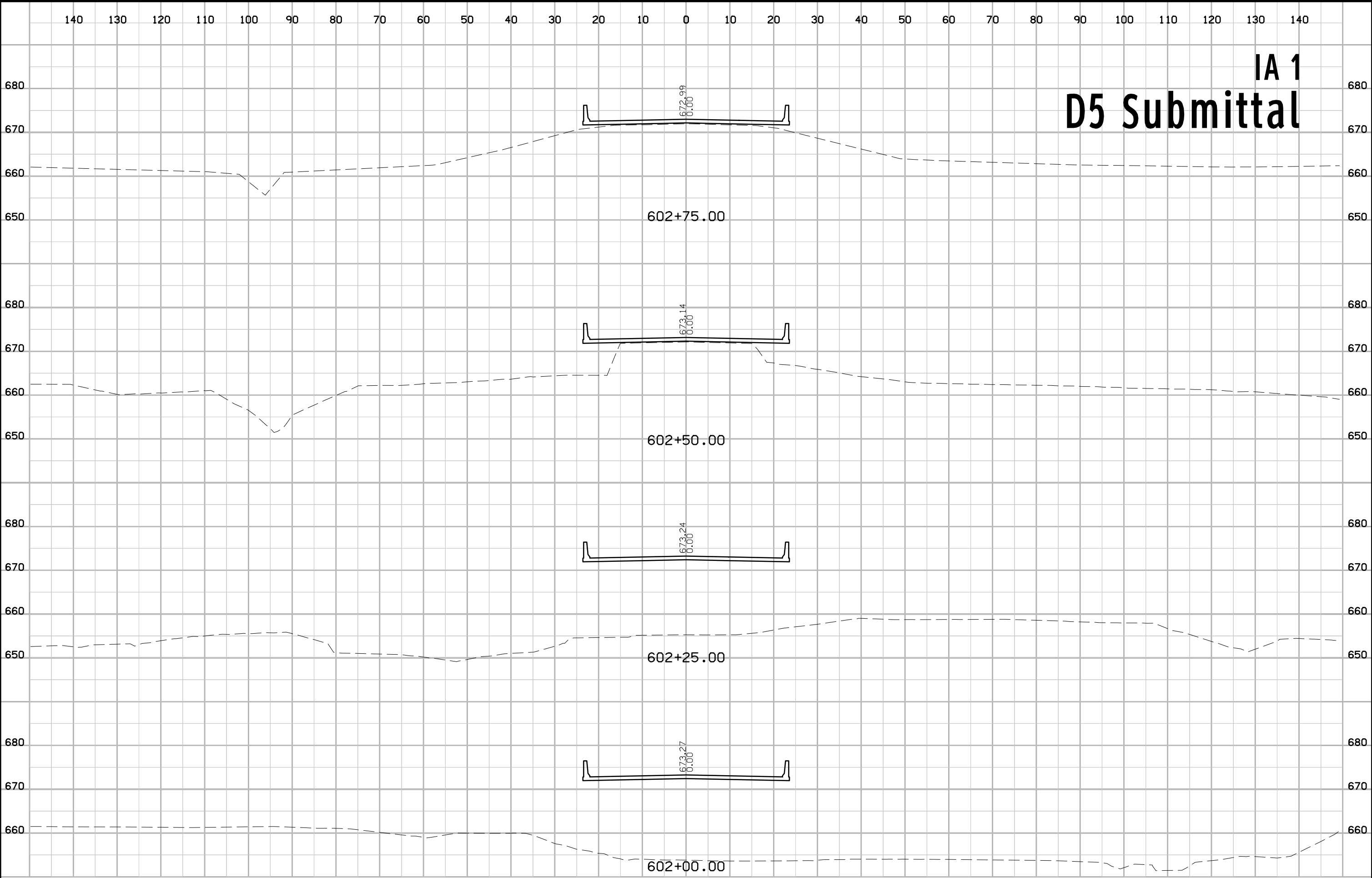
# IA 1 D5 Submittal



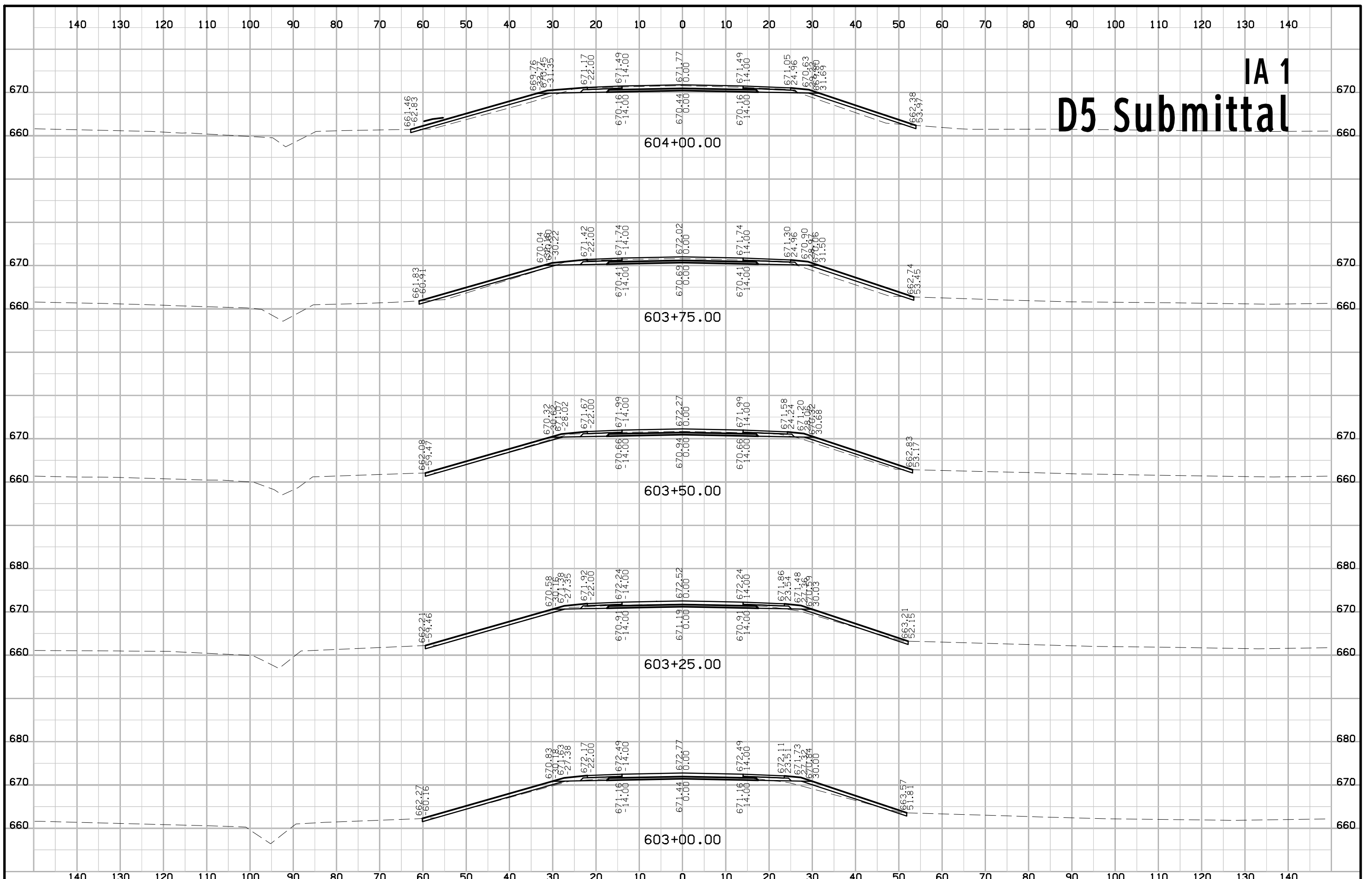
# IA 1 D5 Submittal



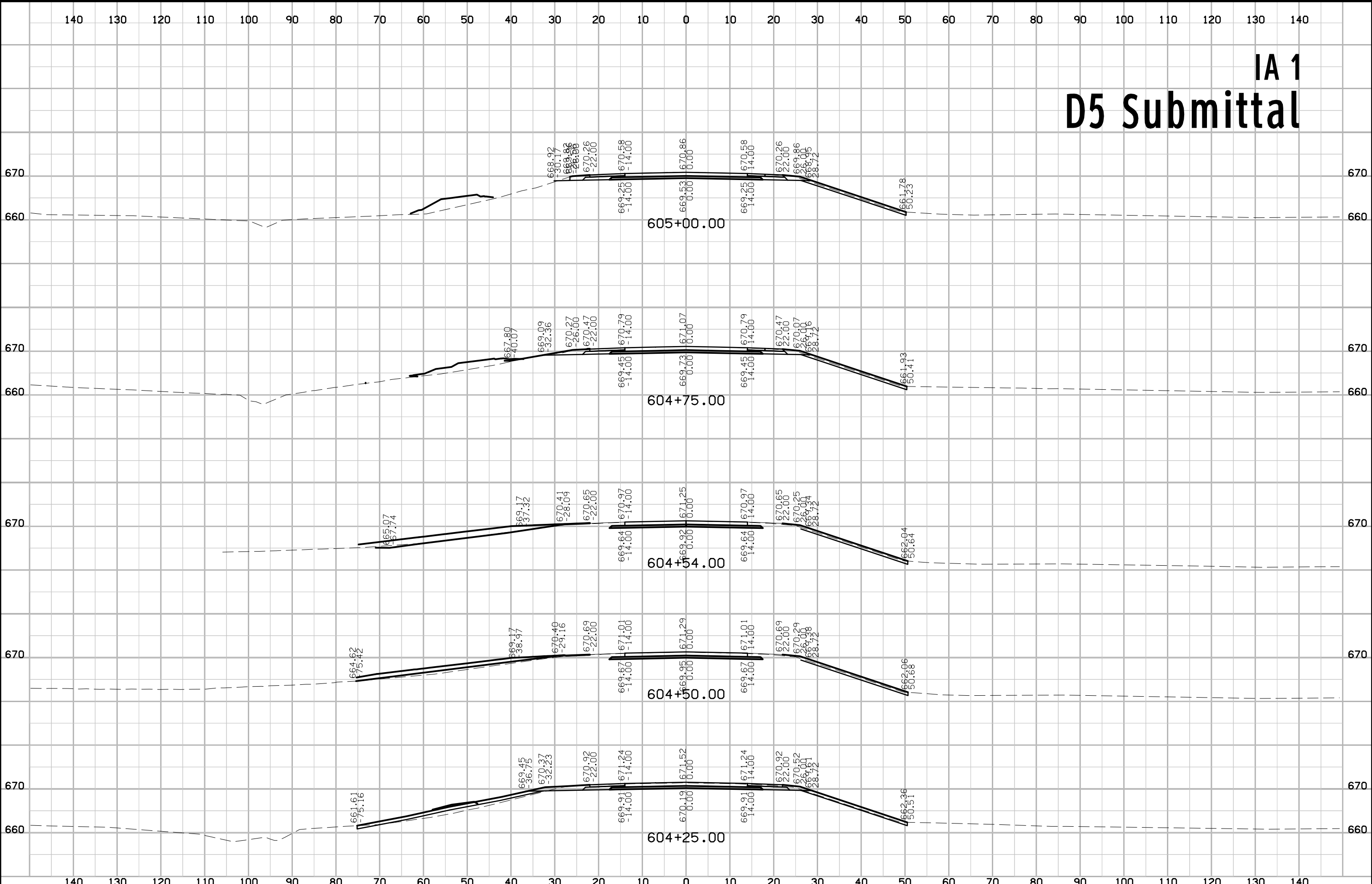
# IA 1 D5 Submittal



# IA 1 D5 Submittal



# IA 1 D5 Submittal



# IA 1 D5 Submittal

