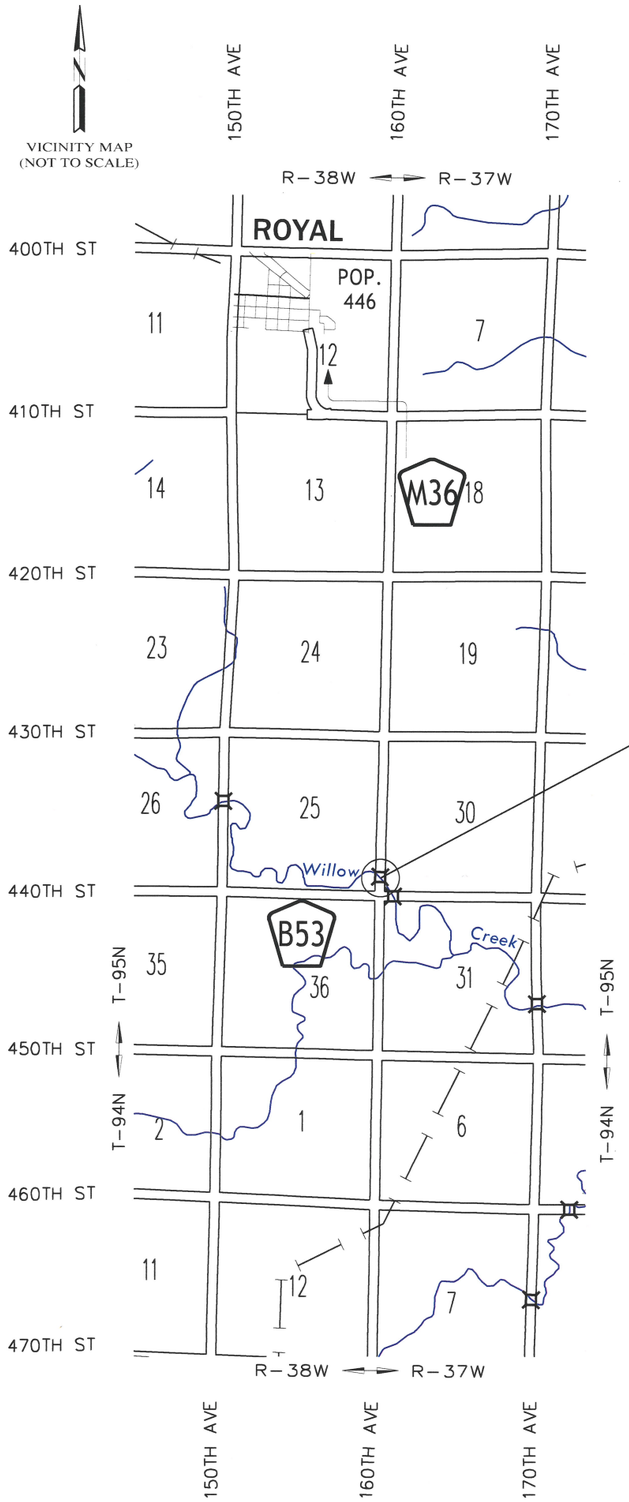
LETTING DATE:
December 15, 2026

CHRISTENSEN BRIDGE
PROJECT NO.:
BROS-C021(165)--5F-21

CLAY
COUNTY



IOWA DOT

Highway Administration

PLANS OF PROPOSED IMPROVEMENT ON THE

FARM TO MARKET SYSTEM
CLAY COUNTY

BRIDGE REPLACEMENT - CCS
PROJECT NO: BROS-C021(165)--5F-21

Located on M-36, over Willow Creek
S30 T95 R37

Refer to the Proposal Form for list of applicable specifications.

NOTE: Clay County is to receive copies of all shop drawings and falsework plans.

Submit to: Clay County Engineer Administration Building
300 West 4th Street, Suite 5
Spencer, Iowa 51301

APPROXIMATE PROJECT LOCATION
STA 6+38
FHWA 116320
EXISTING 71'-0" x 30'-0"
STEEL STRINGER/MULTI-BEAM BRIDGE
PROPOSED 120'-0" x 30'-0"
CCS BRIDGE, 30° LA SKEW



STANDARD ROAD PLANS
Standard Road Plans and Bridge Standards are listed on Sheet C.04.

DESIGN DATA – RURAL			101-4 04-30-02
2023	*AADT*	*120*	*V.P.D.*
2050	*AADT*	*160*	*V.P.D.*

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

TOTAL SHEETS
21

SECTION 404 PERMIT AND CONDITIONS 281-01 09-28-22
Construct this project according to the requirements of the U.S. Army Corps of Engineers Nationwide 401, Permit No. 14 Permit No. #CEMVR-RD-2026-637. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.
These projects are covered by the Iowa Department of Natural Resources NPDES General Permit No. 2. The contractor shall carry out the terms and conditions of General Permit No. 2 and the Storm Water Pollution Prevention Plan which is a part of these contract documents. Refer to Section 2602 of the Standard Specifications for additional information.

INDEX OF SHEETS 105-3 10-18-05

No.	DESCRIPTION
A.01	Title Sheet
A.02	Overall Plan View
B.01–B.03	Details
C.01	Project Description & Estimate of Quantities
C.02	Estimate Reference Info & Standards
C.03	General Construction Notes
C.04	Tabulations
D.01	Plan & Profile
J.01	Traffic Control & Detour Plans
RC.01	Pollution Prevention Plan
RC.02	Tabulation of EC/SC Devices
RR.01	Erosion Control Device Placement Plan View
SPS.01–SPS.02	Sounding Data
V.01	Bridge Notes & Quantity Summaries
V.02	Bridge Situation Plan
V.03	Bridge Deck Elevations
W.01–W.02	Cross Sections

MILEAGE SUMMARY 105-1 09-27-94

Div.	Location	Lin.Ft.	Miles
I	Sta. 4 + 00 TO Sta. 8 + 50	450.00'	0.085
	Net Length of Project	450.00'	0.085
	TOTAL Length of Project	450.00'	0.085

UTILITIES 262-6 10-18-05

DISTRICT	CONTACT NAME	CONTACT PHONE	EMAIL
Iowa "One Call"		800-292-8989	
Iowa Lakes Regional Water	Adam Kuester	712-262-8847	adam.kuester@ilrw.org
Iowa Lakes Electric Cooperative	Kay Dahl	712-362-2694	ioc-dir@ilec.coop
Premier Communications	Jake Van Roekel	712-722-3451	jakevr@mypremieronline.com

LICENSED PROFESSIONAL ENGINEER
Cole M. Budach
27404
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

Cole M. Budach Date 9-11-26

Cole Budach #27404

My license renewal date is December 31, 2027

Pages or sheets covered by this seal:
A.01, A.02, B.01 - B.03, C.01 - C.04, D.01, J.01, RC.01, RC.02, RR.01, V.01 - V.03, W.01, W.02

Clay County Engineer's Office
300 West 4th Street Suite 5
Spencer, IA, 51301
(712) 262-2825

2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
TITLE SHEET

Checked By JMW, CMB
Project No. BROS-C021(165)--5F-21
Drawn: 2/20/26 By AAJ
Revisions:
Sheet A.01

Plot Date: 9/14/2026 1:19 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

GRAPHIC SCALE
0 25 50
(1" = 50')

LEGEND

- EXISTING FENCE
- EXISTING RIGHT OF WAY
- PROPOSED PERM. RIGHT OF WAY
- PROPOSED TEMP. RIGHT OF WAY
- EXISTING OVERHEAD UTILITY
- BURIED TELEPHONE LINE
- BURIED ELECTRIC LINE
- BURIED WATER LINE
- REMOVAL EXISTING BRIDGE
- REMOVE & RELAY EXISTING CONCRETE REVETMENT
- REMOVAL OF HMA PAVEMENT
- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- EXISTING CULVERT PIPE

TWP. 95, RNG. 38, SEC. 25.
CHRISTENSEN FEEDLOT PARTNERSHIP

160TH AVE (M-36)

STA. 4+00 OFFSET 60' LT
STA. 6+00 OFFSET 100' LT
STA. 7+50 OFFSET 100' LT
STA. 8+50 OFFSET 60' LT
175 CY EXISTING CONCRETE REVETMENT
EXISTING 18" CMP TO BE REMOVED
EXISTING GUARDRAIL (TYP.)
EXISTING 71'x30' BRIDGE
275 SY EXISTING HMA PAVEMENT
EXISTING FIELD ENTRANCE
SOIL BORING LOCATES (TYP.) SEE SPS.01/SPS.02
22.0'
43.0'
43.0'
STA. 4+00 OFFSET 60' RT
STA. 5+00 OFFSET 100' RT
50 CY EXISTING CONCRETE REVETMENT
EXISTING 18" CMP TO BE REMOVED
STA. 6+50 OFFSET 100' RT
STA. 8+50 OFFSET 60' RT
DIRECTION OF FLOW
WILLOW CREEK

TWP. 95, RNG. 37, SEC. 30.
ROYAL BEEF, LLC

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300 West 4th Street Suite 5
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(712) 262-2825

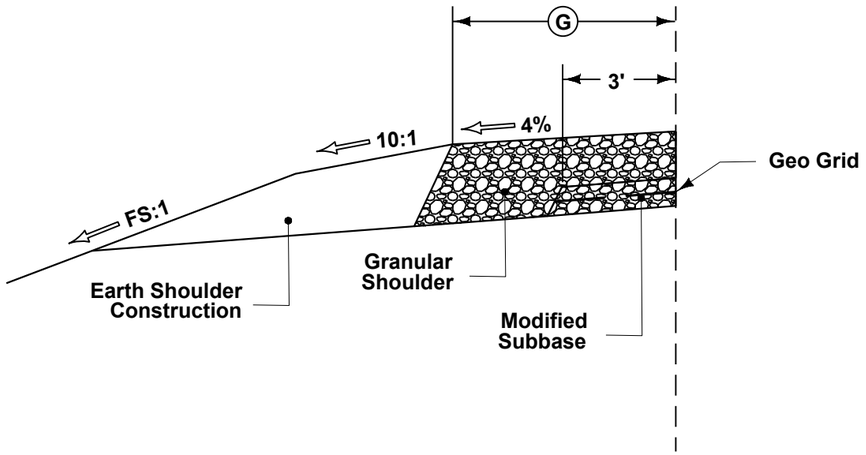
2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
OVERALL PLAN VIEW

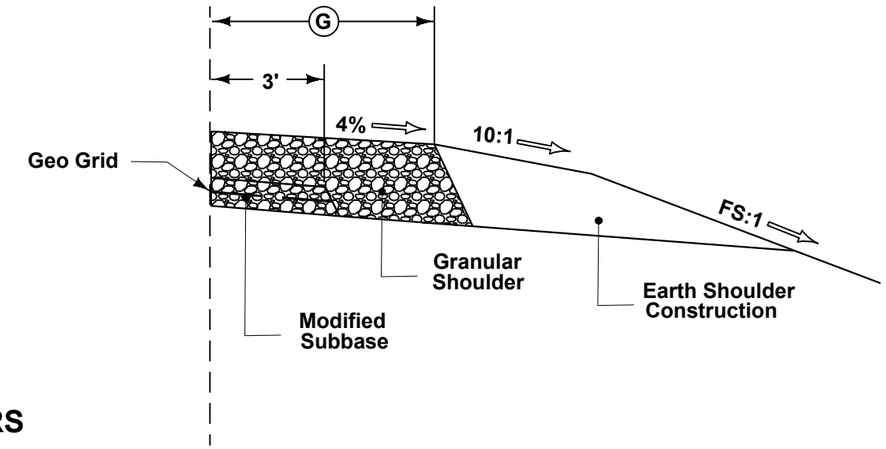
Checked By	Project No.
JMW, CMB	BROS-C021(165)--5F-21

Drawn: 2/24/26 By AAJ
Revisions:

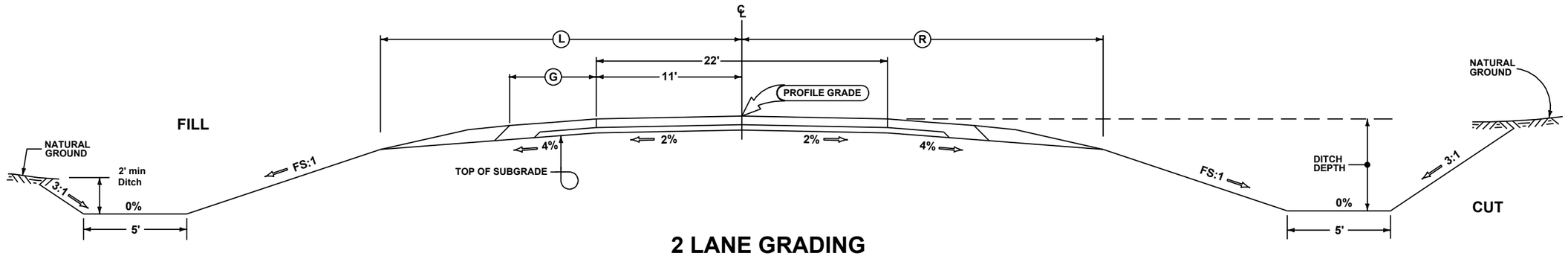
Sheet A.02

Plot Date: 9/14/2026 1:19 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg





GRANULAR SHOULDERS



2 LANE GRADING

LOCATION			DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION		Ⓛ Feet	Ⓖ Feet	FS
160th Ave (M36)	3+75	4+24	17 to 19	6 to 8	2:1 to 3:1
	4+24	4+66	19	8	3:1
	4+66	4+78.75	19 to 22	8 to 11	3:1
	4+78.75	4+98.75	22	11	3:1
	4+98.75	5+50	22 to 20	11 to 9	3:1
	5+50	5+90	20	9	3:1
	7+00	7+44.5	20	9	3:1
	7+44.5	7+95	20 to 22	9 to 11	3:1
	7+95	8+15	22	11	3:1
	8+15	8+27.5	22 to 19	11 to 8	3:1
	8+27.5	8+50	19	8	3:1

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.

LOCATION			DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION		Ⓡ Feet	Ⓖ Feet	FS
160th Ave (M36)	3+74	4+24	17 to 19	6 to 8	2:1 to 3:1
	4+24	4+49	19	8	3:1
	4+49	4+61	19 to 22	8 to 11	3:1
	4+61	4+81	22	11	3:1
	4+81	5+32	22 to 20	11 to 9	3:1
	5+32	5+70	20	9	3:1
	6+75	7+27	20	9	3:1
	7+27	7+75	20 to 22	9 to 11	3:1
	7+75	7+98	22	11	3:1
	7+98	8+10	22 to 20	11 to 9	3:1
	8+10	8+25	20	9	3:1
	8+25	8+50	20 to 19	9 to 8	3:1

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2027 CLAY COUNTY BRIDGE REPLACEMENT - CCS

DETAILS

Checked By: JMW, CMB

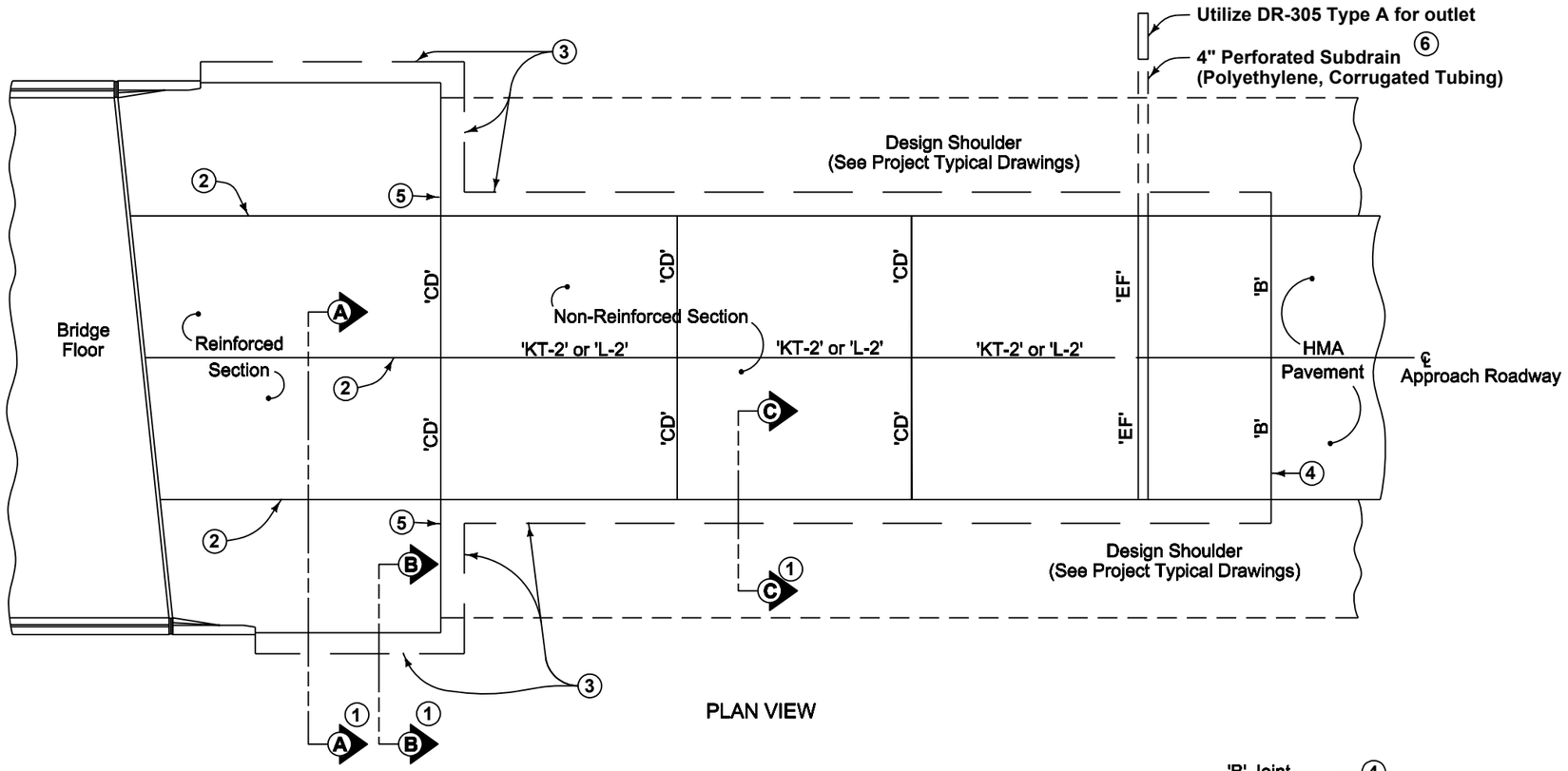
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Revisions:

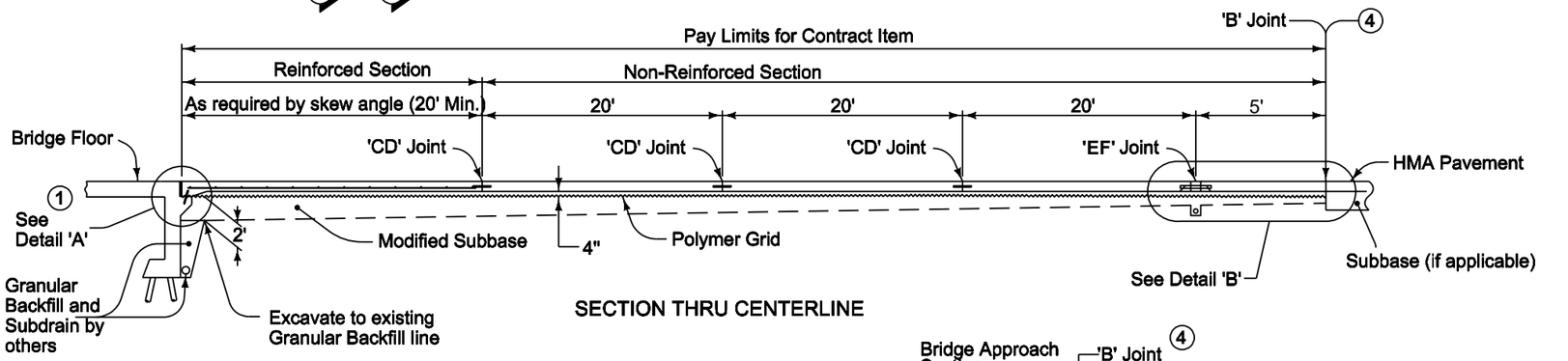
Project No. BROS-C021(165)--5F-21

Sheet B.01

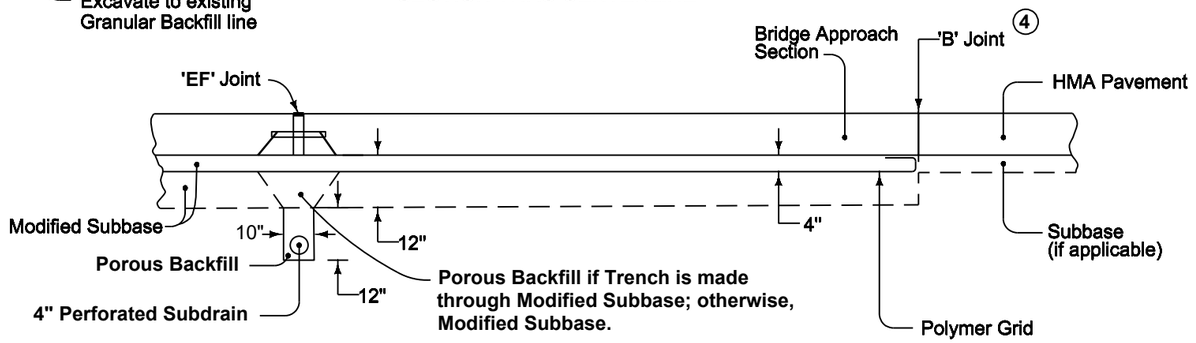
Plot Date: 9/14/2026 1:19 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg



PLAN VIEW



SECTION THRU CENTERLINE



DETAIL 'B'

For joint details, see PV-101.

1. See Sheet B.03
2. Longitudinal Joints (PV-101):
   Single Pour - Saw cut joint per Detail B.
   Two Pours - Use 'KS-1' joint.
3. Excavation limits of Modified Subbase 2 feet outside of pavement edge, see BR-101.
4. The Contractor may need to saw cut the HMA pavement full depth to accommodate the 'B' joint.
5. Place 'RD' joint where PCC shoulder. Place 'B' joint otherwise.
6. Slope subdrain to drain.

Possible Contract Item:
Bridge Approach, Two Lane
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

MODIFIED
STANDARD ROAD PLAN

REVISION 1

SHEET 1 of 1

REVISIONS: Removed curbs, extended non-reinforced section, added Subdrain, added EF joint.

APPROVED BY DESIGN METHODS ENGINEER

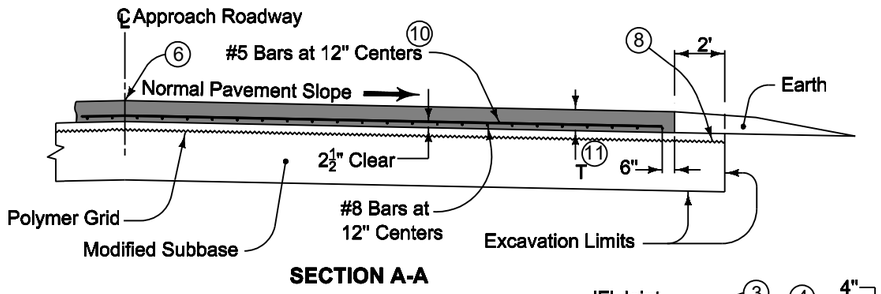
BRIDGE APPROACH SECTION (TWO-LANE, HMA PAVEMENT)

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Spencer, IA, 51301
(712) 262-2825

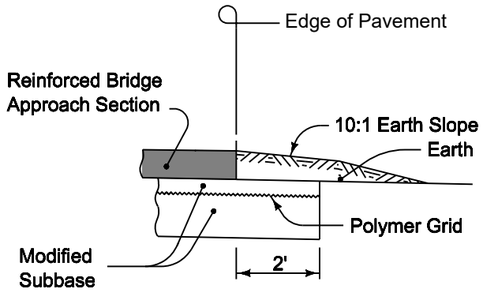
2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
DETAILS

Checked By: JMW, CMB
Drawn: 2/27/26 By AAJ
Revisions:
Project No. BROS-C021(165)--5F-21
Sheet B.02

Plot Date: 9/14/2026 1:19 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg



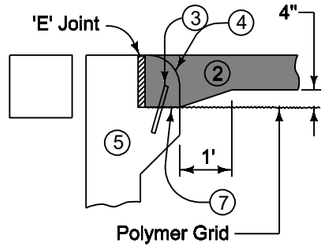
SECTION A-A



SECTION B-B

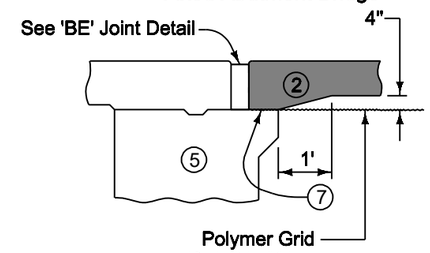
SECTION C-C

TWO LANE APPROACH PAVEMENT
LAYOUT AT A SKEW



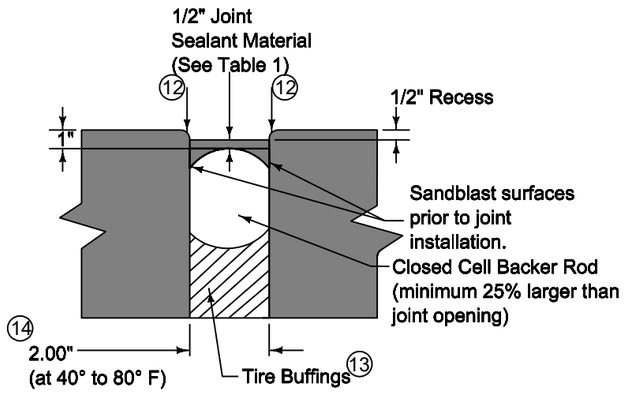
DETAIL 'A'

Fixed Abutment Bridge



DETAIL 'A'

Movable Abutment Bridge



'BE'JOINT
DETAIL

1. Design Shoulder width.
2. Reinforced Bridge Approach Section.
3. Reinforcing Bar.
4. Temporary paving block removed by paving contractor.
5. Bridge Abutment.
6. Longitudinal Joint (PV-101):
   Single pour - Saw cut joint per Detail B.
   Two pours - Use 'KS-1' joint.
7. Secure polymer grid on top of paving notch.
8. Extend polymer grid to 2 feet outside edge of pavement.
9. Trim polymer grid to edge of excavation.
10. If bridge is skewed, place additional #5 bar parallel to skewed face.
11. T = 10 inches.

Sections and details apply to Standard Road Plans BR-112 and BR-102 through BR-107.

12. Edge with ¼ inch tool for length of joint indicated if formed; edging not required when cut with diamond blade saw.
13. Compact tire buffings by spading with a square-nose shovel. Tire buffings shall not be larger than ½ inch.
14. Setting Width Notes:

    - Width is perpendicular to abutment.

    - Temperature of concrete deck on the underside or shaded portion of the deck shall be between 40 to 80 degrees Farenheit when placing approach slab concrete.

    -This 'BE' joint and the setting temperatures may be used for all concrete beam or slab bridges up to 575' in length and for all steel girder bridges up to 400' in length.

Possible Contract Item:
Bridge Approach, Two Lane
Longitudinal Grooving in Concrete, Bridge Deck
Longitudinal Grooving in Concrete, Pavement

Possible Tabulation:
112-6

Table 1
Approved List of Sealant
Dow - Dowsil 902 RCS
Sika - Sikasil 728 RCS
Watson Bowman Acme - Wabo SiliconeSeal
Pecora - 322FC

MODIFIED
STANDARD ROAD PLAN

REVISION 4

SHEET 1 of 1

REVISIONS: Removed curbs, deleted sheet 2,

APPROVED BY DESIGN METHODS ENGINEER

BRIDGE APPROACH SECTION (GENERAL DETAILS)

Clay County Engineer's Office
300 West 4th Street Suite 5
Spencer, IA, 51301
(712) 262-2825

2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
DETAILS

Checked By: JMW, CMB
Drawn: 2/27/26 By AAJ
Revisions:
Project No. BROS-C021(165)--5F-21
Sheet B.03

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

PROJECT DESCRIPTION

100-1D
10-18-05

Project No. BROS-C021(165)--5F-21 Station 6+38 bridge replacement on a 30 degree skew.
This design is for a new 120'-0" x 30'-0" 3-span CCS (Continuous Concrete Slab) bridge on a 30° Left Ahead Skew over Willow Creek in Clay County, Iowa. P10L trestle Type 3 pile bent piers with monolithic pier caps and 2:1 revetment covered berms. The existing bridge is a 71'-0" x 30'-0" Steel Stringer/Multi-Beam bridge with a concrete deck and high timber abutments. Existing CL bridge station is 6+38.

ESTIMATE OF PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
0010	2102-2625000	Embankment In Place	CY	1,100
0020	2102-2710070	Excavation Class 10 - Roadway and Borrow	CY	1,125
0030	2102-2710090	Excavation Class 10 - Waste	CY	305
0040	2104-2710020	Excavation Class 10 - Channel	CY	325
0050	2105-8425015	Topsoil - Strip, Salvage and Spread	CY	600
0060	2121-7425020	Granular Shoulders, Type B	TON	375
0070	2123-7450000	Shoulder Construction, Earth	STA	7
0080	2301-0690210	Bridge Approach, Two Lane	SY	476.2
0090	2401-6745625	Removal of Existing Bridge	LS	1
0100	2402-2720000	Excavation Class 20	CY	100
0110	2402-2721000	Excavation Class 21	CY	180
0120	2403-0100010	Structural Concrete (Bridge)	CY	300.3
0130	2404-7775005	Reinforcing Steel, Epoxy Coated	LB	76,344
0140	2414-6424124	Concrete, Open Railing, TL-4	LF	262.9
0150	2501-0201042	Piles, Steel, HP 10x42	LF	660
0160	2501-0201253	Piles, Steel, HP 12x53	LF	1,540
0170	2501-5478053	Concrete Encasement of Steel H Piles, HP 12x53 (P10L Type 3)	LF	478.5
0180	2505-4008120	Removal of Steel Beam Guardrail	LF	240
0190	2505-4008410	Steel Beam Guardrail Barrier Transition Section, BA-201	EA	4
0200	2505-4021010	Steel Beam Guardrail End Anchor, Bolted	EA	4
0210	2505-4021720	Steel Beam Guardrail Tangent End Terminal, BA-205	EA	4
0220	2507-3250005	Engineering Fabric	SY	2,600
0230	2507-6800061	Revetment - Class E	TON	2,200
0240	2507-6875002	Revetment, Remove and Replace	CY	225
0250	2510-6745850	Removal of Pavement	SY	550
0260	2528-2518000	Safety Closure	EA	2
0270	2528-8445110	Traffic Control	LS	1
0280	2533-4980005	Mobilization	LS	1
0290	2601-2634100	Mulching	AC	0.75
0300	2601-2636043	Seeding and Fertilizing (Rural)	AC	0.75
0310	2602-0000020	Silt Fence	LF	700
0320	2602-0000030	Silt Fence for Ditch Checks	LF	100
0330	2602-0000101	Maintenance of Silt Fence or Silt Fence for Ditch Check	LF	82.5
0340	2602-0000309	Perimeter & Slope Sediment Control Device, 9"	LF	120
0350	2602-0010010	Mobilization, Erosion Control	EA	2
0360	2602-0010020	Mobilization, Emergency Erosion Control	EA	2

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
PROJECT DESCRIPTION &
ESTIMATE OF QUANTITIES

Checked By: JMW, CMB
Drawn: 2/25/26 By AAJ
Revisions:
Project No. BROS-C021(165)--5F-21
Sheet C.01

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description
0010	2102-2625000	EMBANKMENT-IN-PLACE
		No shrinkage factor is applied to bid item quantity. Includes guardrail blister grading. All material for this item will be generated on site through Class 10 excavation.
0020	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW
		See typical sections on Sheet B.01 and Cross-Sections on Sheets W.01-W.02 for details.
0030	2104-2710020	EXCAVATION, CLASS 10, WASTE
		Quantity is an estimate of excess material generate from Class 10 Channel Excavation that is not required for embankment, shaping, or other project work. Material shall be hauled and disposed of at a contractor furnished waste site. The Class 10 Waste item includes all costs associated with loading, hauling, placing, and disposing of the material.
0040	2104-2710020	EXCAVATION, CLASS 10, CHANNEL
		Channel shall be shaped each direction from the bridge. Suitable material may be used to shape stream banks berms and foreslopes. Suitable material shall be approved by Engineer prior to incorporation.
0050	2105-8425015	TOPSOIL, STRIP, SALVAGE, AND SPREAD
		Refer to Tab. 103-10 on Sheet C.04. Quantity is calculated using a typical topsoil thickness of 6 inches.
0060	2121-7425020	GRANULAR SHOULDER, TYPE B
		Class "A" crushed stone shall be used. Quantities based on 140 pcf.
0070	2123-7450000	SHOULDER CONSTRUCTION, EARTH
		Refer to B Sheets for typical sections.
0080	2301-0690210	BRIDGE APPROACH, TWO LANE
		Refer to Tab 112-06 on Sheet C.04. Certified Plant Inspection is Required. Coarse aggregate for this item shall be crushed limestone or quartzite and shall be minimum Class 2 durability. Concrete shall be Class C. Modified Standards shown on Sheets B.02 & B.03. Modified Subbase & Polymer Grid as shown in Sheets B.02 and B.03 are to be incidental to this item, see Tab 112-06 on Sheet C.04 for quantities.
0090	2401-6745625	REMOVAL OF EXISTING BRIDGE
		The lump sum bid for "Removal of Existing Bridge" shall include removal and disposal of the existing structure. All salvageable and unsalvageable material shall become the property of the contractor and shall be removed from the site by the contractor. Bid item also to include removal of deadman anchors for both abutments and wings buried under approaches. Additionally, bid item to include removal of 18" corrugated metal pipe culverts at locations indicated in tab on Sheet C.04. Concrete generated from bridge removal may be utilized as Class E Revetment, provided that all exposed reinforcing steel is cut flush with the concrete surface and the material is broken into pieces of suitable size meeting the requirements of Sections 4130.02 Class E Revetment.
0100	2402-2720000	EXCAVATION, CLASS 20
		This item includes the material to be excavated to remove the existing abutments, wings, and deadman anchors. All suitable material generated may be used to build slopes and shoulders.
0110	2402-2721000	EXCAVATION, CLASS 21
		Includes excavation for piers. Refer to Sheet D.01 for classification limits.
0120	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)
		Includes all resilient joint filler required. Includes furnishing and placing subdrain (including excavation), floodable backfill, geotextile fabric, water flooding, and subdrain outlet at abutments and toe of berm. Coarse aggregate for this item shall be crushed limestone or quartzite and shall be minimum Class 2 durability. Concrete shall be Class C. Contractor to provide Certified Plant Inspection.
0130	2404-7775005	REINFORCING STEEL, EPOXY COATED
		See Sheet V.01 for quantity breakdown.
0140	2414-6424124	CONCRETE, OPEN RAILING, TL-4
		All structural concrete for the rail is to be Class C. Coarse aggregate for this item shall be Crushed Limestone or Quartzite and shall be a minimum Class 2 durability. Contractor to provide Certified Plant Inspection.
0150	2501-0201042	PILES, STEEL, HP 10x42
		For use in Abutments. Piling shall be Grade 50. Includes furnishing and installing rock tips. See Sheet V.01 for Piling Notes.

ESTIMATE REFERENCE INFORMATION CONT.

100-4A
10-29-02

Item No.	Item Code	Description
0160	2501-0201253	PILES, STEEL, HP 12x53
		For use in Piers. Piling shall be Grade 50. Includes furnishing and installing rock tips. See Sheet V.01 for Piling Notes.
0170	2501-5478053	CONCRETE ENCASEMENT OF STEEL H PILES, HP 12X53 (P10L TYPE 3)
		All concrete for this item is to be Class C. Coarse aggregate for this item shall be Crushed Limestone or Quartzite and shall be a minimum of Class 2 durability. Contractor to provide Certified Plant Inspection.
0180	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL
		Refer to Tab. 110-07A on Sheet C.04 for locations.
0190	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201
		Refer to Tab. 108-08A on Sheet C.04 for locations.
0200	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED
		Refer to Tab. 108-08A on Sheet C.04 for locations.
0210	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205
		Refer to Tab. 108-08A on Sheet C.04 for locations.
0220	2507-3250005	ENGINEERING FABRIC
		Includes furnishing and placing material under all revetment to the extents shown on the situation plans.
0230	2507-6800061	REVETMENT, CLASS E
		Quantity estimated at 120 pcf. Refer to Situation Plans for limits or as directed by the Engineer.
0240	2507-6875002	REVETMENT, REMOVE AND REPLACE
		Includes removal, stockpile, and re-installation of the existing revetment material. Existing Revetment material consists of recycled concrete. Location shown on Sheet A.02. Material to be reinstalled shall have any exposed reinforcing steel cut flush with the concrete surface following placement. Payment will be made based upon plant quantity at contract unit price.
0250	2510-6745850	REMOVAL OF PAVEMENT
		Refer to Tab. 110-1 on Sheet C.04 for locations. All removed PCC pavement shall disposed of in accordance to DNR regulations. Contractor is to work with care to not damage existing pavement beyond the removal limits. Failure to protect the existing pavement will result in removal and replacement at the Contractors expense.
0260	2528-2518000	SAFETY CLOSURE
		Refer to Tab. on Sheet J.01 for locations.
0270	2528-8445110	TRAFFIC CONTROL
		Refer to Traffic Control Plan on Sheet J.01. Clay County will furnish County M36 Route markers (MUTCD M1-6). To be installed and maintained by the Contractor.
0280	2533-4980005	MOBILIZATION
		-
0290	2601-2634100	MULCHING
		Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Item is included for areas requiring reshaping and seedbed preparation. Use mulch that is certified noxious weed seed free mulch as certified by the Iowa Crop Improvement Association or Adjacent States Crop Improvement Associations.
0300	2601-2636043	SEEDING AND FERTILIZING (RURAL)
		Quantity includes all areas of exposed soil and within the right of way.
0310	2602-0000020	SILT FENCE
		Refer to Sheet RR.01 for locations and Tab. 100-17 on Sheet RC.02. Bid Item includes 25% additional quantity for field adjustments and replacements.
0320	2602-0000030	SILT FENCE FOR DITCH CHECKS
		Refer to Sheet RR.01 for locations and Tab. 100-18 on Sheet RC.02. Bid Item includes 25% additional quantity for field adjustments and replacements.
0330	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS
		This item is included for cleanout and repair of the silt fence.
0340	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9"
		Refer to Sheet RR.01 for locations and Tab. 100-17 on Sheet RC.02. Bid Item includes 50% additional quantity for field adjustments and replacements.
0350	2602-0010010	MOBILIZATION, EROSION CONTROL
		-
0360	2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL
		-

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
ESTIMATE REFERENCE INFORMATION

Checked By: JMW, CMB
Project No.: BROS-C021(165)--5F-21
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Sheet C.02

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajjennings File Name: Christensen Bridge Replacement.dwg

GENERAL CONSTRUCTION NOTES:

- A PRE-CONSTRUCTION CONFERENCE WILL BE REQUIRED FOR THIS PROJECT PRIOR TO START OF THE WORK.

- HEAVY TRUCK TRAFFIC ON THE EXISTING ADJACENT PAVEMENTS SHALL BE KEPT TO THE MINIMUM NECESSARY FOR THE REQUIRED CONSTRUCTION OPERATIONS. ALL BASE AND EXISTING PAVEMENT REPAIRS NECESSARY DUE TO HAULING DURING CONSTRUCTION ACTIVITIES SHALL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY. LIGHTER HAUL LOADS MAY BE REQUIRED TO PROTECT THE EXISTING SURFACES AND SHALL BE INCLUDED IN THE BID. NO COMPENSATION WILL BE MADE FOR ADDITIONAL HAULING ACTIVITIES OR PLACEMENT MACHINES/OPERATIONS THAT MAY BE REQUIRED TO PROTECT THE EXISTING SURFACES AND BASE MATERIALS.

- WHERE PUBLIC UTILITY LINES AND FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER OF THOSE UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PROVIDE ACCESS TO THOSE UTILITIES THAT REQUIRE SERVICE. UNDERGROUND UTILITIES AND STRUCTURES THAT ARE SHOWN IN THE PLANS SHALL BE CONSIDERED APPROXIMATE ONLY AND SHALL NOT BE USED FOR CONSTRUCTION. IT IS POSSIBLE THAT OTHER UTILITIES MAY EXIST OF WHICH THE LOCATION IS NOT KNOWN. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING THE EXISTENCE AND EXACT LOCATION OF ALL UTILITIES AND STRUCTURES AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR INTERFERENCE OR DELAY CAUSED BY UTILITY COORDINATION OR RELOCATION WORK.

- THE CONTRACTOR SHALL CONTACT IOWA ONE-CALL-SERVICE (1-800-292-8989) AT LEAST 48 HOURS PRIOR TO COMMENCING WORK ON THE PROJECT TO DETERMINE THE APPROXIMATE LOCATIONS OF UTILITIES. DETERMINATION OF EXACT LOCATIONS OF UTILITIES MAY BE COORDINATED WITH THE OWNER OF THE UTILITIES AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

- ALL EXISTING UTILITY POLES, STREET LIGHTS, PEDESTALS AND TRANSFORMERS, EXCEPT THOSE NOTED IN THE PLANS, SHALL REMAIN UNDISTURBED AND FUNCTIONAL DURING CONSTRUCTION.

- ALL WORK SHALL TAKE PLACE WITHIN THE CURRENT ADJACENT PUBLIC ROAD RIGHT-OF-WAY, EASEMENT AREAS OR PROJECT BOUNDARY AS SHOWN IN THE PLAN SHEETS. NO PAYMENT WILL BE MADE FOR REPLACEMENT OR REPAIR TO ITEMS THAT ARE DAMAGED OUTSIDE OF THIS AREA OR WITHIN SAID WORK ZONE THAT ARE NOT NOTED IN THE PLANS. ANY ENCROACHMENT ONTO PRIVATE PROPERTY SHALL BE IN A WRITTEN AGREEMENT BETWEEN THE CONTRACTOR AND THE PROPERTY OWNER.

- THE CONTRACTOR WILL BE REQUIRED TO PROVIDE CONSTRUCTION ACCESS TO THE SITE. THIS SHALL INCLUDE REMOVING, SALVAGING, AND REPLACING ANY REQUIRED ITEMS NECESSARY TO ACCOMMODATE CONSTRUCTION TRAFFIC.

- ACCESS TO THE ADJACENT PROPERTIES SHALL BE MAINTAINED TO THE FULLEST EXTENT POSSIBLE AT ALL TIMES DURING CONSTRUCTION. THIS SHALL REQUIRE KEEPING THE ADJACENT ROADWAYS AND AREAS CLEAN AND FREE OF EQUIPMENT AND DEBRIS.

- THE PROJECT AREA WILL BE CLOSED THROUGH TRAFFIC CONTROL DURING CONSTRUCTION. THE ADJACENT ROADWAYS SHALL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.

- ALL STRUCTURES AND FIXTURES, INCLUDING, BUT NOT LIMITED TO STORM SEWER INTAKES, AND DRAINAGE CULVERTS SHALL BE CLEAN AND FREE OF ALL DEBRIS AFTER CONSTRUCTION ACTIVITIES.

- THE CONTRACTOR SHALL APPLY NECESSARY MOISTURE TO THE CONSTRUCTION AREA TO PREVENT THE SPREAD OF DUST. SEE SECTION 1107.07 OF THE IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION.

- THE CONTRACTOR WILL NOT BE PERMITTED TO PARK OR SERVICE VEHICLES AND EQUIPMENT OR USE UNDISTURBED AREAS FOR STORAGE OF MATERIALS, WITHOUT PRIOR APPROVAL OF THE ENGINEER.

- ALL TOPSOIL IN THE DISTURBED AREAS SHALL BE FREE OF ROCK AND DEBRIS AND SHALL BE SUITABLE FOR THE ESTABLISHMENT OF VEGETATION, SOD AND SEEDING OPERATIONS.

- ANY WASTE MATERIALS THAT ARE GENERATED SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE. UNLESS OTHERWISE NOTED IN THE PLANS

- CERTIFIED CONCRETE PLANT INSPECTION WILL BE PROVIDED BY THE CONTRACTOR. ALL CONCRETE WILL BE CLASS C WITH CLASS 2 DURABILITY COARSE AGGREGATES. COARSE AGGREGATES ARE TO BE CRUSHED LIMESTONE OR QUARTZITE.

- THE MINIMUM BEARING CAPACITY IS TO BE 86 TON PER STEEL HP 12X53 IN THE PIERS AND 81 TON PER STEEL HP 10X42 PILE IN THE ABUTMENTS. PILING ARE TO HAVE ROCK TIPS INSTALLED PRIOR TO ANY PILE DRIVING ACTIVITIES.

- SAFETY CLOSURES AND TRAFFIC CONTROL ARE BID ITEMS FOR THIS PROJECT. SEE SHEET J.01 FOR TABULATION OF SAFETY CLOSURES.

- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY ON THE WORK SITE INCLUDING BUT NOT LIMITED TO THE BRACING OF, SHORING OF, SHAPING OF, AND/OR USE OF A TRENCH BOX IN THE EXCAVATIONS. THIS INCLUDES KNOWLEDGE OF THE COMPLIANCE WITH ALL RULES AND REGULATIONS INTENDED TO PROTECT THE HEALTH AND SAFETY OF THE CONTRACTOR'S, ENGINEER'S, AND OWNER'S PERSONNEL.

- ALL WORK SHALL BE DONE ACCORDING TO OSHA STANDARDS FOR PROTECTION OF LIFE. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE REGULATIONS.

- STANDARD ROAD PLANS AND BRIDGE STANDARDS ARE AVAILABLE ONLINE:
https://erl.iowadot.gov

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
GENERAL CONSTRUCTION NOTES

Drawn: *2/26/26* *By* *AAJ*
Checked By *JMW, CMB*
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Project No. *BROS-C021(165)--5F-21*
Sheet C.03

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

BRIDGE APPROACH SECTION

112-06
2-22-24

Refer to the BR Series.

* Not a bid item

Line No.	Bridge Station	End	Skew Ahead Left (Degrees)	Skew Ahead Right (Degrees)	Pay Length (FT)	(T) Thickness (IN)	Non-Reinf. Area (SY)	Single-Reinf. Area (SY)	Double-Reinf. Area (SY)	SRP Approach	SRP Abutment Type	SRP Abutting Pavement	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Porous * Backfill (CY)	Class 'A' * Crushed Stone Backfill (CY)	Modified * Subbase (TON)	Polymer * Grid (SY)	Special * Backfill (TON)	Remarks
1	6+98.33	N	30		89	10	159.2	78.9		Modified	Fixed	HMA	45	7+82	East	2.5		275	295		
2	5+78.33	S	30		89	10	159.2	78.9		Modified	Fixed	HMA	45	4+94.67	East	2.5		275	295		
				TOTALS	178		318.4	157.8					90			5		550	590		

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

108-08A
10-15-24

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-630, LS-635, LS-630, SI-172, SI-173, and SI-211.

Line No.	Direction of Traffic (1)	Station	Side	Offset (FT)	Barrier Transition Section	Barrier Transition Section (EA)	End Terminal	End Terminal Count (EA)	VT1 (FT)	VF (FT)	VT2 (FT)	ET (FT)	BA-211 Station	BA-211 (Type)	SI-211 (Type) (2)	Delineator SI-172 Type 1 (EA) (2)	Object Marker Type 2 (EA) (2)	Object Marker Type 3 Lt (EA) (2)	Object Marker Type 3 Rt (EA) (2)	Bolted End Anchor BA-202 (Type)	Bolted End Anchor BA-202 (EA)	Post Adapter BA-210 (EA)	Steel Beam Guardrail BA-200 (LF)	Remarks
1	NB	5+69.67	S	15	BA-201	1	BA-205	1	37.5			47.67			3				1	A	1			
2	SB	5+86.99	S	15	BA-201	1	BA-205	1	37.5			47.67			3			1		A	1			
3	NB	6+89.68	N	15	BA-201	1	BA-205	1	37.5			47.67			3				1	A	1			
4	SB	7+07.00	N	15	BA-201	1	BA-205	1	37.5			47.67			3			1		A	1			
				TOTALS		4		4										2	2		4			

GRADING FOR GUARDRAIL INSTALLATIONS

107-23
8-15-22

Refer to EW-301.

(1) Lane(s) to which the installation is adjacent.

Line No.	Direction of Traffic (1)	Station	Side	Foreslope at Guardrail	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	X3 (FT)	Y3 (FT)	X4 (FT)	Y4 (FT)	Z (FT)	Excavation Class 10 (CY)	Embankment-in-Place (CY)	Remarks
1	NB	5+69.67	S	3:1	37.5	9.51					88.3	11.25	62	25	143	
2	SB	5+86.99	S	3:1	37.5	9.51					88.3	11.25	62	55	167	
3	NB	6+89.68	N	3:1	37.5	9.51					88.3	11.25	62	65	18	
4	SB	7+07.00	N	3:1	37.5	9.51					88.3	11.25	62	25	60	
												TOTALS		170	388	

REMOVAL OF STEEL BEAM GUARDRAIL

110-07A
8-15-22

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1	1	NB	5+37.40	5+97.75	E	60
2	2	SB	5+53.58	6+14.14	W	60
3	3	NB	6+62.99	7+22.98	E	60
4	4	SB	6+79.37	7+39.51	W	60
				TOTAL		240

REMOVAL OF PAVEMENT

110-01
4-5-24

* Not a bid item.

Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
1	4+89.62	6+04.48	Both	HMA	275	22	Existing mainline pavement is 8-¾"of HMA. Thickness at bridge may be less due to milling wedge tie ins.
2	6+72.17	7+87.12	Both	HMA	275	22	
				TOTALS	550	44	

TOPSOIL STRIPPING AND PLACEMENT

103-10
8-15-22

Line No.	Road Identification	Dir. of Traffic	Station From	Station To	Topsoil Stripping Thickness (IN)	Topsoil Placement Thickness (IN)	Remarks
1	160th Ave (M36)	Both	4+00	5+78.33	6	6	
2	160th Ave (M36)	Both	6+98.33	8+50	6	6	

REMOVAL OF ENTRANCE PIPE

Removal of entrance pipe is included in the bid item "Removal of Existing Bridge"

Line No.	Station From	Station To	Side	Culvert Length (LF)	Diameter (IN)	Type	Remarks
1	5+15	5+87	West	36	18	CMP	End buried, length is approximate.
2	6+68	6+96	East	28	18	CMP	
3	7+23	7+46	West	24	18	CMP	
		TOTALS		148			

STANDARD ROAD PLANS

105-4
10-15-24

IDENTIFICATION	DATE	DESCRIPTION
BA-200	10/20/26	Steel Beam Guardrail Components
BA-201	10/18/22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10/20/26	Steel Beam Guardrail Bolted End Anchor
BA-205	10/17/23	Steel Beam Guardrail End Terminal (MASH TL-3)
BA-250	10/20/26	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
DR-305	4/19/22	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
EC-201	4/20/21	Silt Fence
EC-204	10/19/21	Perimeter and Slope Sediment Control
EW-301	10/20/26	Guardrail Grading
PV-101	10/20/26	Joints
SI-172	4/19/16	Delineators
SI-173	4/19/16	Object Markers
SI-211	10/18/22	Object Marker and Delineator Placement at Guardrail
TC-252	10/20/26	Routes Closed to Traffic

BRIDGE STANDARDS

105-4
10-15-24

IDENTIFICATION	DATE	DESCRIPTION
J30-01-06	09-2020	Index Sheet
J30-01A-06	09-2020	General Notes
J30-12E-06	09-2020	Superstructure Details 120'-0 Bridge
J30-13E-06	09-2020	Superstructure Details 120'-0 Bridge
J30-20-06	09-2020	Superstructure Details All Bridges
J30-22-06	09-2020	Superstructure Details All Bridges 30° & 45° Skew
J30-23-06	09-2020	Monolithic Pier Cap Details All Bridges
J30-24-06	09-2020	Monolithic Pier Cap Details All Bridges
J30-36-06	09-2020	Abutment Details 30° Skew - Steel Piling
J30-39-06	09-2020	Abutment Details Steel Piling
J30-43-06	09-2020	Open Rail Details (TL-4)
J30-44-06	09-2020	Open Rail Details (TL-4)
J30-45-06	09-2020	Subdrain Details
J30-46-06	09-2020	Wing Armoring Details
J30-48-06	09-2020	Abutment Backfill Details for 15°, 30°, & 45° Skews
P10L	06-2025	LRFD Trestle Pile Bents - P10L

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
TABULATIONS & STANDARDS

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Project No.: BROS-C021(165)--5F-21
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GRAPHIC SCALE
0 20 40
(1" = 40')

ROW
TEMP
W
OH
TEL

BEGINNING OF PCC
BRIDGE APPROACH
STA. 4+89.60
TIE IN TO EXISTING PROFILE

END OF 120' CCS BRIDGE
BEGINNING OF PCC BRIDGE APPROACH
STA. 6+98.33

CLASS 10, CHANNEL
EXCAVATION LIMITS

PROPOSED GUARDRAIL (TYP.)
GRADING PER EW-301
INSTALLATION PER BA-250

S1
S2
S3
S4

4+00
5+00
6+00
7+00
8+00
9+00

PROPOSED PCC
BRIDGE APPROACH (TYP.)

BEGINNING OF 120' CCS BRIDGE
END OF PCC BRIDGE APPROACH
STA. 5+78.33

SOIL BORING LOCATES (TYP.)
SEE SPS.01/SPS.02

END OF PCC BRIDGE APPROACH
STA. 7+87.13
TIE IN TO EXISTING PROFILE

GRAPHIC SCALE
0 15 30
(1" = 30')

ROADWAY DESIGN SPEED: 60 MPH

Station

EXISTING CENTERLINE PROFILE

PROPOSED CENTERLINE PROFILE

1.84%

Class 20
Classification
Line Elev: 1354.00'
Class 21

1390.00'
1380.00'
1370.00'
1360.00'
1350.00'

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
PLAN AND PROFILE VIEW

Checked By	Project No.
JMW, CMB	BROS-C021(165)--5F-21
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PROJECT TRAFFIC CONTROL PLAN

BROS-C021(165)--5F-21

1. THESE ROADS WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.08 OF THE CURRENT STANDARD SPECIFICATIONS.

2. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, AND MAINTAINED BY THE CONTRACTOR. TRAFFIC CONTROL DEVICES SHALL BE FUNCTIONAL AND IN GOOD CONDITION THROUGHOUT THE PROJECT UNTIL REMOVED AT PROJECT COMPLETION.

3. PROPOSED CHANGES IN THE TRAFFIC CONTROL PLAN (INCLUDES LAYOUT SHEETS) SHALL BE REVIEWED WITH THE PROJECT ENGINEER BEFORE CHANGES ARE MADE.

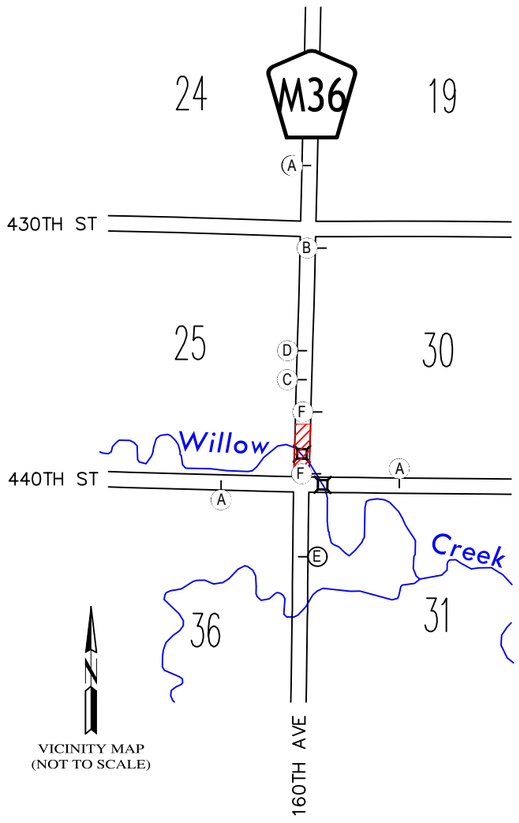
4. THE BID ITEM "TRAFFIC CONTROL" SHALL INCLUDE THE COST OF ALL TRAFFIC CONTROL MEASURES REQUIRED OF THE CONTRACTOR.

5. TRAFFIC CONTROL ON THIS PROJECT SHALL BE IN ACCORDANCE WITH DETAIL SHEET TC-252. SITUATION 5 WILL BE APPLICABLE TO THIS PROJECT.

6. PROPOSED SIGN SPACING MAY BE MODIFIED, AS APPROVED BY THE PROJECT ENGINEER, TO MEET EXISTING FIELD RESTRICTIONS, OR TO PREVENT OBSTRUCTION OF THE MOTORIST'S VIEW OF PERMANENT SIGNING.

7. DURING NON-WORKING HOURS CONTRACTORS EQUIPMENT WILL BE STORED IN A LOCATION WHERE IT WILL NOT BE A HAZARD TO MOTORISTS.

8. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AS ADOPTED BY THE DEPARTEMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC), CHAPTER 130, AND DOT STANDARDS. COVER OR REMOVE ANY CONFLICTING SIGNS.



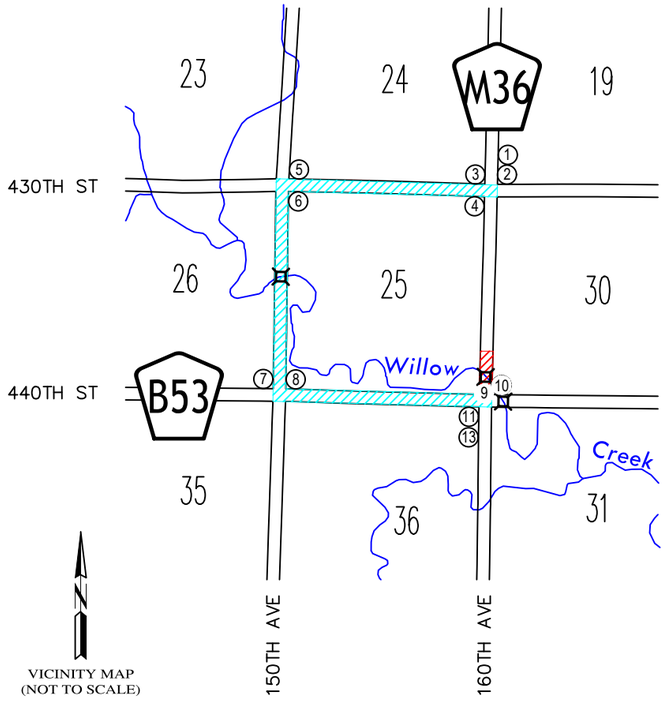
LEGEND

- CLOSURE/PROJECT AREA
- DETOUR
- EXISTING BRIDGE

TABULATION OF TRAFFIC CONTROL SIGNS

Letter	Legend	Total
A	"ROAD WORK AHEAD" W20-1	3
B	(2) TYPE III BARRICADES AND "ROAD CLOSED TO THROUGH TRAFFIC" R11-4	1
C	"ROAD CLOSED 500 FT" W20-3	1
D	"ROAD CLOSED 1000 FT" W20-3	1
E	"ROAD CLOSED AHEAD" W20-3	1
F	(2) TYPE III BARRICADES "BRIDGE OUT" R11-2b "ROAD CLOSED" R11-2 ORANGE MESH FENCE INCLUDED	2

PROJECT DETOUR PLAN



TABULATION OF DETOUR SIGNS

Map No.	MUTCD	Legend	Remarks
1	M4-8 M1-6	End Detour County Route Marker (M-36)	Installed on post 200' North of Intersection
2	M4-8 M3-3 M1-6 M6-3	Detour South County Route Marker (M-36) Straight Ahead Arrow	Installed on post 500' East of Intersection
3	M4-8 M3-3 M1-6 M6-1	Detour South County Route Marker (M-36) Right Arrow	Installed on post 500' North of Intersection
4	M4-8 M3-1 M1-6 M6-1	Detour North County Route Marker (M-36) Left Arrow	Installed on post 500' West of Intersection
5	M4-8 M3-3 M1-6 M6-1	Detour South County Route Marker (M-36) Left Arrow	Installed on post 500' East of Intersection
6	M4-8 M3-1 M1-6 M6-1	Detour North County Route Marker (M-36) Right Arrow	Installed on post 500' South of Intersection

TABULATION OF DETOUR SIGNS CONT.

Map No.	MUTCD	Legend	Remarks
7	M4-8 M3-3 M1-6 M6-1	Detour South County Route Marker (M-36) Left Arrow	Installed on post 500' North of Intersection
8	M4-8 M3-1 M1-6 M6-1	Detour North County Route Marker (M-36) Right Arrow	Installed on post 500' East of Intersection
9	M4-8 M3-1 M1-6 M6-1	Detour North County Route Marker (M-36) Left Arrow	Installed on Type III Barricade Closure
10	M4-8 M3-1 M1-6 M6-3	Detour North County Route Marker (M-36) Straight Ahead Arrow	Installed on post 500' East of Intersection
11	M4-8 M3-3 M1-6 M6-1	Detour South County Route Marker (M-36) Right Arrow	Installed on post 500' West of Intersection
12	M4-8 M1-6	End Detour County Route Marker (M-36)	Installed on post 200' South of Intersection

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
TRAFFIC CONTROL PLAN

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Project No. BROS-C021(165)--5F-21
Sheet J.01

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Pollution Prevention Plan

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed per plan revisions or by contract modification, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITIES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP.

B. Contractor:
1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Specifications Section 2602.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Specifications Section 2602.
4. Installs and maintains appropriate controls. This work may be subcontracted.
5. Supervises and implements good housekeeping practices.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Specifications Section 2602.

C. Subcontractors:
1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if responsible for sediment or erosion controls or involved in land disturbing activities. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Implement good housekeeping practices.

D. RCE/Project Engineer:
1. Is Project Storm Water Manager.
2. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
3. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
4. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
5. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
6. Is familiar with the Project PPP and storm water site map.
7. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
8. Is signature authority on Notice of Discontinuation.

E. Inspector:
1. Updates PPP whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Maintains an up-to-date record that identifies contractors and subcontractors as co-permittees.
3. Makes these plans available to the DNR upon their request.
4. Conducts joint required inspections of the site with the contractor/subcontractor.
5. Completes an inspection report after each inspection.
6. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the construction of a 120' x 30' Continuous Concrete Slab Bridge.

B. This PPP covers approximately 1.5 acres with an estimated 1.5 acres being disturbed. The portion of the PPP covered by this contract has 1.5 acres disturbed.

C. The PPP is located in an area of Everly-Wilmonton-Letri soil association. The estimated weighted average runoff coefficient number for this PPP after completion will be 63.

D. Storm Water Site Map - Multiple sources of information comprise the base storm water site map including:
1. Drainage patterns – Plan and Profile sheets and Situation plans.
2. Proposed Slopes – Cross Sections.
3. Areas of Soil Disturbance – construction limits shown on Plan and Profile sheets.
4. Location of Structural Controls – Plan and Profile Sheet #6
5. Locations of Non-structural Controls – Plan and Profile Sheet #6
6. Locations of Stabilization Practices – generally within construction limits shown on Plan and Profile sheets.
7. Surface Waters (including wetlands) – Project Location Map and Plan and Profile sheets.
8. Locations where storm water is discharged – Plan and Profile sheets.

E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries.

F. Runoff from this work will flow into Willow Creek.

III. CONTROLS

A. The contractor's ECIP specified in Article 2602.03 for accomplishment of storm water controls should clearly describe the intended sequence of major activities and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water monitoring inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B.

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
a) Permanently ceased on any portion of the site, or
b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on sheet #2 of the plans.Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4).
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A,100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on sheet #2 of the plans. Additional information may be found in Tabulations in the C or T sheets of the plans or is referenced in Standard Specifications Section 2105.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on sheet #2 of the plans, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the Plan and Profile sheet #6 or are referenced in the Standard Road Plans Tabulation (105-4).

c. Storm Water Management
1) Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the Estimated Project Quantities (100-0A,100-1A, or 100-1C) and Estimate Reference Information (100-4A) located on sheet #2 of the plans, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS

a. Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
1) Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
2) Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
3) Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
4) Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
5) Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean-up spills and prevent material discharges to the storm drain system and waters of the state.
6) Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
7) Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
8) Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environmental laws such as proper storage of on-site fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
9) Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
10) Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

The contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the contractor and the contracting authority at least once every seven calendar days. Storm water monitoring inspections will include:
1. Date of the inspection.
2. Summary of the scope of the inspection.
3. Name and qualifications of the personnel making the inspection.
4. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
5. Major observations related to the implementation of the PPP.
6. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water monitoring inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - May include Plan Revisions or Contract Modifications for new items, storm water monitoring inspection reports, and fieldbook entries made by the inspector.
C. IDR - Inspector's Daily Report – this contains the inspector's daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Cole M. Budach
Signature

Cole M. Budach
Printed or Typed Name

Signature

Printed or Typed Name

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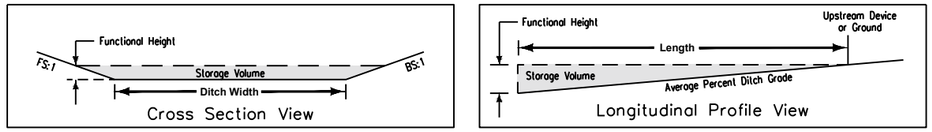
2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
POLLUTION PREVENTION PLAN

Checked By	JMW, CMB
Project No.	BROS-C021(165)--5F-21
Sheet RC.01	
Drawn: 2/26/26 By AAJ	
Revisions:	

SILT FENCES FOR DITCH CHECKS

100-18
8-15-22

Possible Standards: EC-201



* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Line No.	Station	Side	Installation (LF)	Maintenance (LF)	Removal (LF)	Foreslope (FS:1)	Backslope (BS:1)	Ditch Width (FT)	% Slope Ditch Grade	Volume (CF)	Remarks
1	7+60	East	20	2	0	3:1	2:1	5'	2.7%	280.6	
2	7+80	West	20	2	0	3:1	2:1	5'	4.2%	179.6	
3	8+25	East	20	2	0	3:1	2:1	5'	2.7%	280.6	
4	8+40	West	20	2	0	3:1	2:1	5'	4.2%	179.6	

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

100-19
10-15-24

Possible Standards: EC-204

Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1	7+65	-	East	Straw Wattle	9"	20	Ditch Check
2	7+85	-	West	Straw Wattle	9"	20	Ditch Check
3	8+30	-	East	Straw Wattle	9"	20	Ditch Check
4	8+45	-	West	Straw Wattle	9"	20	Ditch Check

TABULATION OF SILT FENCES

100-17
08-15-22

Refer to EC-201

Line No.	Station From	Station To	Side	Length	Remarks
1	3+68	5+68	West	200'	Place at Foreslope Toe
2	3+67	4+86	East	120'	Place at Foreslope Toe
3	7+52	8+67	West	115'	Place along Mid-Foreslope
4	7+28	8+58	East	130'	Place along Mid-Foreslope

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
TABULATION OF EC/SC DEVICES

Checked By: JMW, CMB
Drawn: 2/26/26 By AAJ
Revisions:
Project No. BROS-C021(165)--5F-21
Sheet RC.02

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

GRAPHIC SCALE
0 25 50
(1" = 50')

LEGEND

- EXISTING UTILITY POLE
- EXISTING GUY WIRE
- ROW — EXISTING RIGHT OF WAY
- ROW — PROPOSED PERM. RIGHT OF WAY
- TEMP — PROPOSED TEMP. RIGHT OF WAY
- OH — EXISTING OVERHEAD UTILITY
- EXISTING FENCE
- SILT FENCE
- 9" WATTLE

TWP. 95, RNG. 38, SEC. 25.
CHRISTENSEN FEEDLOT PARTNERSHIP

INSTALL REVETMENT TO A DEPTH OF 2.0' OVER ENGINEERING FABRIC

INSTALL SILT FENCE ALONG TOE OF FORESLOPE AS DIRECTED BY PROJECT ENGINEER

INSTALL WATTLE DITCH CHECKS WITHIN 72 HOURS FOLLOWING SOIL DISTURBING ACTIVITIES OR AS DIRECTED BY PROJECT ENGINEER (TYP.)

160TH AVE (M-36)

3+00 4+00 5+00 6+00 7+00 8+00 9+00

INSTALL SILT FENCE ALONG TOE OF FORESLOPE AS DIRECTED BY PROJECT ENGINEER

INSTALL SILT FENCE DITCH CHECKS AS DIRECTED BY PROJECT ENGINEER (TYP.)

INSTALL SILT FENCE ALONG CONTOUR AT MID-FORESLOPE AS DIRECTED BY PROJECT ENGINEER

DIRECTION OF FLOW

WILLOW CREEK

TWP. 95, RNG. 37, SEC. 30.
ROYAL BEEF, LLC

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
EROSION CONTROL DEVICE
PLACEMENT PLAN VIEW

Checked By: JMW, CMB
Project No.: BROS-C021(165)--5F-21
Drawn: AAJ By 2/24/26
Revisions:
Sheet RR.01

File Name: Christensen Bridge Replacement.dwg
Last Saved By: ajennings
Plot Date: 9/14/2026 1:20 PM

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8161
Project: 160th Ave Bridge Replacement
Date Started: 9/4/26
Date Completed: 9/4/26

Boring No.: S-1
Boring Location: Clay Co., IA
Drill Type: Hollow Stem
Ground Elev.: 101.3

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	DCP Blows Per 1-3/4"
0			12-Inch Asphalt Layer		21-11-19 N= 30									
			12-Inch Gravel Layer											
5			FIRM SILTY CLAY, Dark Brown, Fill		10-9-18 N= 27									
			COARSE SAND, Dark Brown, Fill											
10					5-4-8 N= 12									
15			VERY FIRM GLACIAL MATERIAL, Light Brown and Gray	CL	3-7-11 N= 18									
20			(Dark Gray)		3-8-12 N= 20									
25					6-9-15 N= 24									
30					7-8-13 N= 21									
35					7-11-18 N= 29									
40					5-7-13 N= 20									
45					6-10-17 N= 27									
50			(Gravel/Cobble)		6-12-21 N= 33									
55			FIRM - VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-5-10 N= 15									
60					3-5-10 N= 15									
65			VERY FIRM GLACIAL CLAY, Dark Gray	CL	6-12-21 N= 33									
70					6-10-17 N= 27									
75			GLACIAL MATERIAL, Dark Gray	CL	10-16-28 N= 44									
80			(Cobble)		18-40-43 N= 83									
			END OF BORING AT 81.5 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G8161.GPJ CERTIFIED TESTING.GDT 9/10/26

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8161
Project: 160th Ave Bridge Replacement
Date Started: 9/3/26
Date Completed: 9/3/26

Boring No.: S-2
Boring Location: Clay Co., IA
Drill Type: Hollow Stem
Ground Elev.: 101.0

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	DCP Blows Per 1-3/4"
0			18-Inch Asphalt Layer		11-7-13 N= 20									
			COARSE SAND, Light Gray, Fill											
5			(Concrete Rubble)		12-12-18 N= 30									
			(Concrete Rubble)											
10			(Concrete Rubble)		11-8-12 N= 20									
			(Concrete Rubble)		6-5-9 N= 14									
15			CLAYEY SAND, Yellow Brown	SC	3-3-5 N= 8									
			(Clay Lense)		1-3-6 N= 9									
20			FIRM - VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-6-9 N= 15									
25			VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-8-15 N= 23									
30					3-8-13 N= 21									
35					5-9-14 N= 23									
40					3-7-10 N= 17									
45					6-9-14 N= 23									
50					5-10-14 N= 24									
55					6-11-18 N= 29									
60					6-12-18 N= 30									
65					4-10-16 N= 26									
70					5-10-17 N= 27									
75			(Gravel)		5-14-21 N= 35									
80					5-12-20 N= 32									
			END OF BORING AT 80 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G8161.GPJ CERTIFIED TESTING.GDT 9/10/26

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
SOUNDING DATA

Checked By: JMW, CMB
Project No.: BROS-C021(165)--5F-21

Drawn: 8/19/26 By AAJ
Revisions:

Sheet SPS.01

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8161
Project: 160th Ave Bridge Replacement
Date Started: 9/2/26
Date Completed: 9/2/26

Boring No.: S-3
Boring Location: Clay Co., IA
Drill Type: Hollow Stem
Ground Elev.: 99.3

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot
	14-Inch Asphalt Layer		11-6-11 N= 17
	GRANULAR MATERIAL, Concrete Rubble, Fill		24-30-41 N= 71
			11-16-28 N= 44
10	FIRM SILTY CLAY, Dark Brown, Fill		6-4-7 N= 11
15	FIRM SILTY CLAY, Dark Brown (Sand Lense)	CL	2-3-6 N= 9
20	FIRM - VERY FIRM GLACIAL CLAY, Dark Gray	CL	2-4-7 N= 11
25			3-7-10 N= 17
30			2-5-7 N= 12
35			3-6-9 N= 15
40			3-7-10 N= 17
45	VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-8-12 N= 20
50			5-10-16 N= 26
55			4-7-11 N= 18
60			2-7-10 N= 17
65			4-9-15 N= 24
70			6-10-16 N= 26
75			4-8-13 N= 21
80			6-11-16 N= 27
	END OF BORING AT 80 FEET FREE WATER WAS ENCOUNTERED AT 28 FEET AT TIME OF DRILLING		

Moisture Content, % | Dry Density (PCF) | % Saturation | Hand Penetrometer (TSF) | Unconfined Comp. Strength (TSF) | Liquid Limit % | Plastic Limit % | Plasticity Index % | DCP Blows Per 1-3/4"

LOG OF BORING G8161.GPJ CERTIFIED TESTING.GDT 9/10/26

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8161
Project: 160th Ave Bridge Replacement
Date Started: 9/8/26
Date Completed: 9/8/26

Boring No.: S-4
Boring Location: Clay Co., IA
Drill Type: Hollow Stem
Ground Elev.: 99.0

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot
	12-Inch Asphalt Layer		7-5-9 N= 14
	COARSE SAND, Light Brown, Fill		
5	(Clay Layer)		4-4-8 N= 12
	(Clay Layer)		
10	FIRM SILTY CLAY, Dark Brown, Fill (Cobbles/Possible Boulder)		4-5-10 N= 15
15	FIRM SILTY CLAY, Dark Gray	CL	10-5-6 N= 11
20			5-8-13 N= 21
	VERY FIRM GLACIAL CLAY, Dark Gray	CL	7-11-19 N= 30
25			5-8-13 N= 21
30			6-10-17 N= 27
35			5-8-12 N= 20
40			4-7-11 N= 18
45	FIRM - VERY FIRM GLACIAL CLAY, Dark Gray	CL	3-6-9 N= 15
50	VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-7-13 N= 20
55			6-11-18 N= 29
60			4-10-16 N= 26
65			3-8-15 N= 23
70			6-11-16 N= 27
75			5-11-19 N= 30
80			7-13-22 N= 35
	END OF BORING AT 80 FEET FREE WATER WAS ENCOUNTERED AT 15 FEET AT TIME OF DRILLING		

Moisture Content, % | Dry Density (PCF) | % Saturation | Hand Penetrometer (TSF) | Unconfined Comp. Strength (TSF) | Liquid Limit % | Plastic Limit % | Plasticity Index % | DCP Blows Per 1-3/4"

LOG OF BORING G8161.GPJ CERTIFIED TESTING.GDT 9/10/26

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
SOUNDING DATA

Drawn: 8/19/26 By AAJ	Checked By
Revisions:	JMW, CMB
	Project No.
Sheet SPS.02	BROS-C021(165)--5F-21

Plot Date: 9/14/2026 1:20 PM Last Saved By: ajennings File Name: Christensen Bridge Replacement.dwg

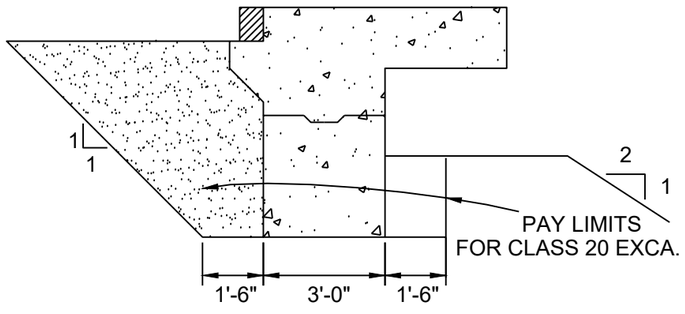
HAZARDOUS MATERIALS NOTES:

SCRAPE SAMPLES OF THIS BRIDGE WERE TAKEN TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. THE ANALYSIS OF TOTAL CHROMIUM IN THE SAMPLE WAS 163 PPM. THE ANALYSIS OF TOTAL LEAD IN THE SAMPLE WAS <12 PPM. THE ANALYSIS SHOWS THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. THE LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH SAFETY REQUIREMENTS. NO OTHER SUBSTANCES WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE LPA'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AN INDICATION OF THE EXISTENCE OF THESE TWO CONSTITUENTS.

SAMPLES WERE ALSO TESTED TO DETERMINE THE PRESENCE OF ASBESTOS. ANALYSIS OF TOTAL ASBESTOS CONTENT ON THE SAMPLES WERE:

SAMPLE 6A: ASBESTOS CONTENT = ND (Not Detected)
SAMPLE 7A: ASBESTOS CONTENT = ND (Not Detected)

THE BIDDER SHOULD NOT RELY ON THE CONTRACTING AUTHORITY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE CHEMICAL CONSTITUENTS.



Backfill Detail

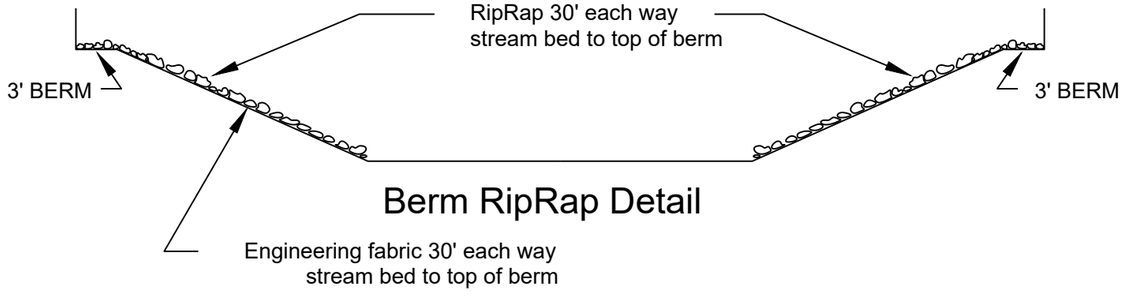
SUMMARY OF CONCRETE	
Location	Structural Concrete (CY)
Deck w/ Monolithic Pier Cap	*270.28*
Abutments @ 12.8 CY EA	*25.6*
Paving Blocks @ 0.8 CY EA	*1.6*
End Sections @ 0.687 CY EA	*2.8*
TL-4 Open Rails @ 21 CY EA	*42.0 **
Pier No. 1 Pile Encasements @ 2.39 CY EA	*26.29 **
Pier No. 2 Pile Encasements @ 2.49 CY EA	*27.39 **
TOTAL	*374.50*

** Quantity not included in bid item Structural Concrete*

SUMMARY OF REINFORCING STEEL	
Location	Epoxy Coated Reinforcing Steel (LB)
North Abutment	*1,729 **
South Abutment	*1,729 **
TL-4 Open Rails	*8,061*
Deck w/ Monolithic Pier Cap	*62,147*
Pier No. 1 Piling Encasements	*1,314.1 **
Pier No. 2 Piling Encasements	*1,363.9 **
TOTAL	*76,344*

** Pile spirals and spiral spacers are to be non-coated reinforcing but may be epoxy coated at the contractors option and expense.*

SUMMARY OF EXCAVATION		
Location	Class 20 Excavation (CY)	Class 21 Excavation (CY)
North Abutment	*50*	*-*
South Abutment	*50*	*-*
Pier No. 1	*-*	*90*
Pier No. 2	*-*	*90*
TOTAL	*100*	*180*



Berm RipRap Detail

PILE NOTES:

THIS PROJECT USES THE LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHODOLOGY FOR DETERMINING PILE CONTRACT LENGTH AND NOMINAL AXIAL BEARING RESISTANCE.

THE FOLLOWING INFORMATION IS REQUIRED TO BE PROVIDED BY THE CONTRACTOR PRIOR TO ANY PILE DRIVING ACTIVITIES:

1. *MAKE, MODEL, AND TYPE OF HAMMER TO BE UTILIZED*
2. *ANVIL WEIGHT*
3. *CAP WEIGHT AND TYPE*
4. *CUSHION TYPE, THICKNESS, AND AREA*
5. *ANY MODIFICATIONS THAT HAVE BEEN MADE TO THE HAMMER SYSTEM*

PIER 1 & 2 PILE NOTES:

THE CONTRACT LENGTH OF 70 FEET FOR THE PIER PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 94.5 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.60.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55. PILE ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF ENCASEMENT ELEVATION 1347.0 FEET.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER PILES IS 86 TONS AT END OF DRIVE OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A MODIFIED IOWA ENR FORMULA.

NORTH ABUTMENT PILE NOTES:

THE CONTRACT LENGTH OF 55 FEET FOR THE NORTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 89.2 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.60.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55. PILE ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING ELEVATION 1367.03 FEET.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR ABUTMENT PILES IS 81 TONS AT END OF DRIVE OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A MODIFIED IOWA ENR FORMULA.

SOUTH ABUTMENT PILE NOTES:

THE CONTRACT LENGTH OF 55 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 89.2 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.60

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55. PILE ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING ELEVATION 1364.80 FEET.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR ABUTMENT PILES IS 81 TONS AT END OF DRIVE OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A MODIFIED IOWA ENR FORMULA.

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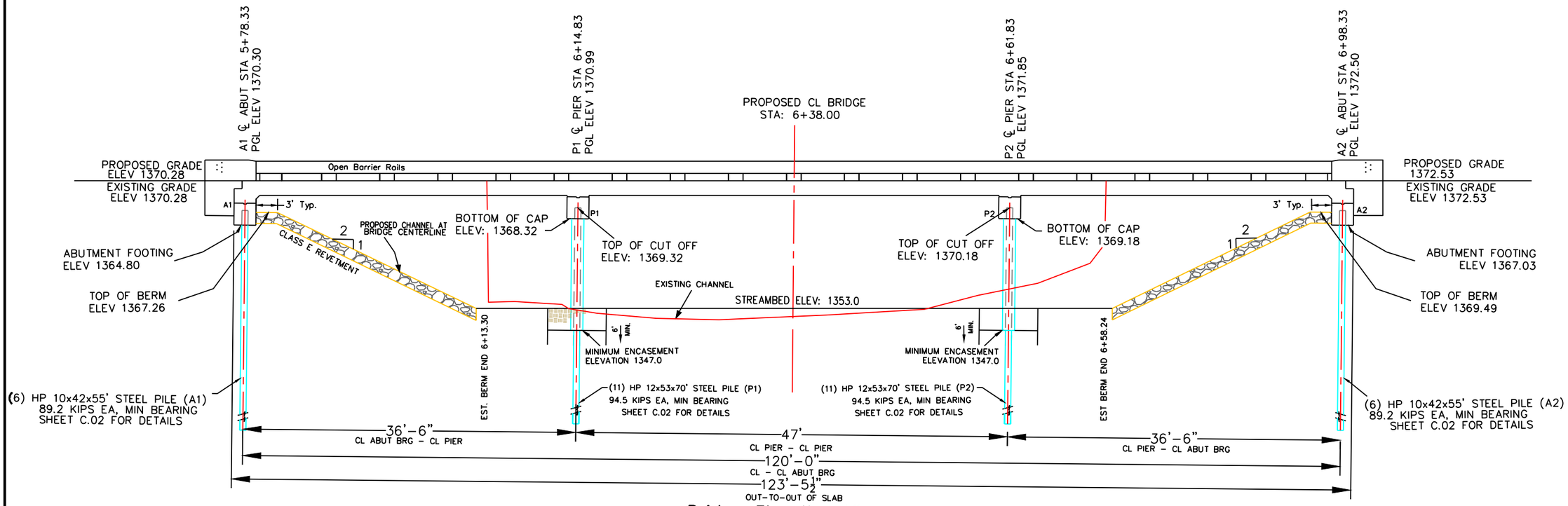
2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
BRIDGE NOTES & QUANTITY SUMMARIES

Checked By JMW, CMB
Project No. BROS-C021(165)--5F-21
Drawn: 3/2/26 By AAJ
Revisions:
Sheet V.01

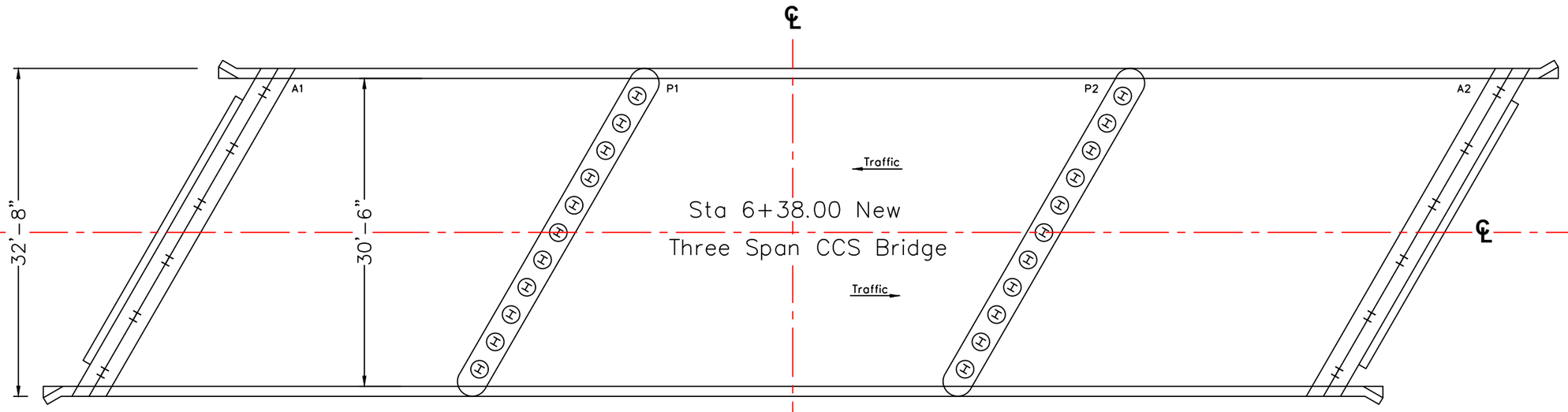
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NOT TO SCALE

DRAINAGE AREA: 42.3 SQ.MI. DESIGN DISCHARGE, Q_{50} : 2,634 C.F.S. DESIGN HIGH WATER = 1,364.36 SITE SLOPE: 3.80 FT. / MI. STREAM STATS BASIN SLOPE (10%-85%): 4.79 FT. / MI. BRIDGE WATERWAY AREA: 1305.85 SQ.FT. DESIGN VELOCITY: 2.05 F.P.S.	Q_{10} = 1,482 C.F.S STAGE = 1,363.24 Q_{25} = 2,128 C.F.S STAGE = 1,363.96 Q_{50} = 2,634 C.F.S STAGE = 1,364.36 Q_{100} = 3,190 C.F.S. STAGE = 1,364.73 Q_{200} = 3,806 C.F.S. STAGE = 1,365.09 Q_{500} = 4,530 C.F.S. STAGE = 1,365.43	ANTICIPATED SCOUR ELEVATION Q_{50} DESIGN FLOOD = 1,347.70 ANTICIPATED SCOUR ELEVATION Q_{100} DESIGN CHECK = 1,347.60



Bridge Elevation View
(LOOKING WEST)



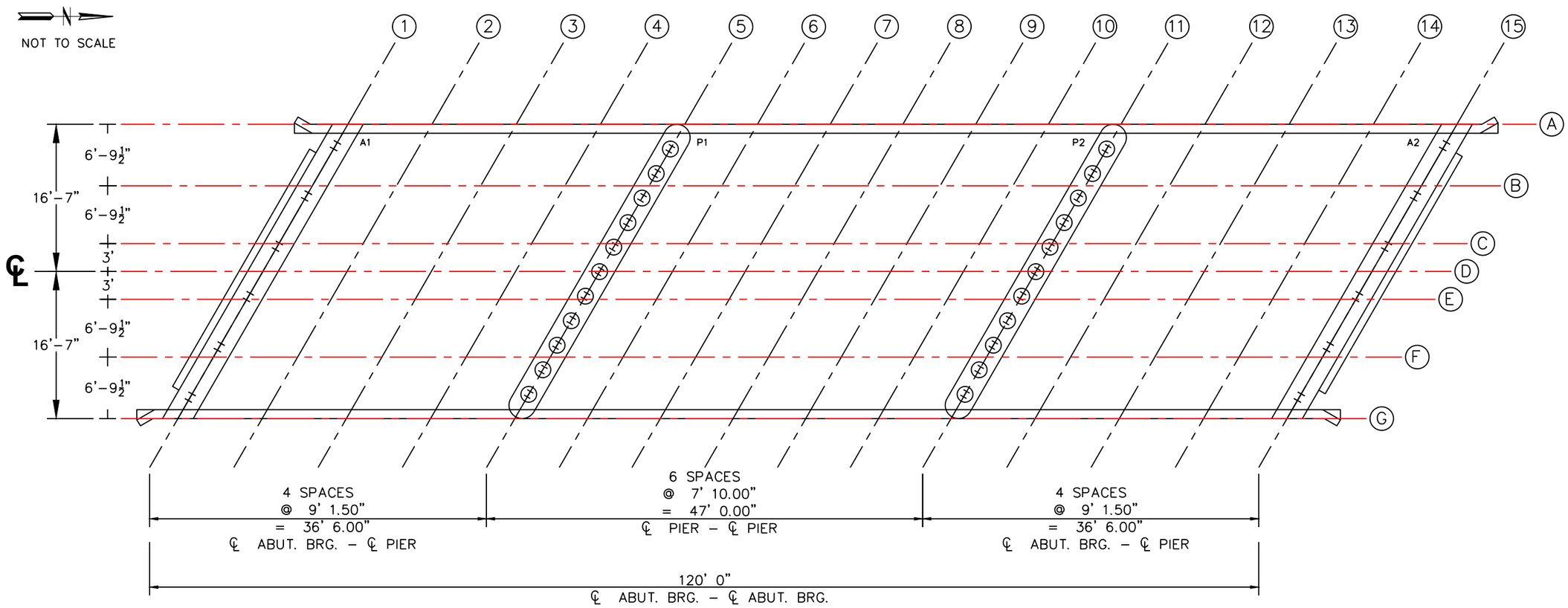
Bridge Superstructure Plan View

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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
BRIDGE SITUATION PLAN

Drawn: 3/2/26 By AAJ	Checked By JMW, CMB	Project No. BROS-C021(165)--5F-21	Sheet V.02
Revisions:			

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TOP OF SLAB ELEVATIONS

LOCATION	CL A1				CL P1						CL P2				CL A2
	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Line 9	Line 10	Line 11	Line 12	Line 13	Line 14	Line 15
STATION @ CL	5+78.33	5+87.46	5+96.58	6+05.71	6+14.83	6+22.66	6+30.50	6+38.33	6+46.16	6+54.00	6+61.83	6+70.86	6+80.08	6+89.21	6+98.33
(A) West Outside Edge of Slab	1370.17'	1370.34'	1370.51'	1370.68'	1370.84'	1370.99'	1371.13'	1371.28'	1371.42'	1371.56'	1371.71'	1371.87'	1372.04'	1372.21'	1372.38'
(B) Mid-Point 2% Crown	1370.23'	1370.40'	1370.57'	1370.74'	1370.90'	1371.05'	1371.19'	1371.33'	1371.48'	1371.62'	1371.77'	1371.93'	1372.10'	1372.27'	1372.43'
(C) 3' Parabolic Crown	1370.30'	1370.47'	1370.64'	1370.80'	1370.97'	1371.11'	1371.26'	1371.40'	1371.55'	1371.69'	1371.83'	1372.00'	1372.17'	1372.34'	1372.50'
(D) Centerline of Roadway	1370.30'	1370.47'	1370.63'	1370.80'	1370.97'	1371.11'	1371.26'	1371.40'	1371.54'	1371.69'	1371.83'	1372.00'	1372.17'	1372.33'	1372.50'
(E) 3' Parabolic Crown	1370.24'	1370.40'	1370.57'	1370.74'	1370.91'	1371.05'	1371.19'	1371.34'	1371.48'	1371.63'	1371.77'	1371.94'	1372.10'	1372.27'	1372.44'
(F) Mid-Point 2% Crown	1370.03'	1370.19'	1370.36'	1370.53'	1370.70'	1370.84'	1370.98'	1371.13'	1371.27'	1371.41'	1371.56'	1371.73'	1371.89'	1372.09'	1372.23'
(G) East Outside Edge of Slab	1369.82'	1369.99'	1370.16'	1370.33'	1370.49'	1370.64'	1370.78'	1370.92'	1371.07'	1371.21'	1371.36'	1371.52'	1371.69'	1371.86'	1372.03'

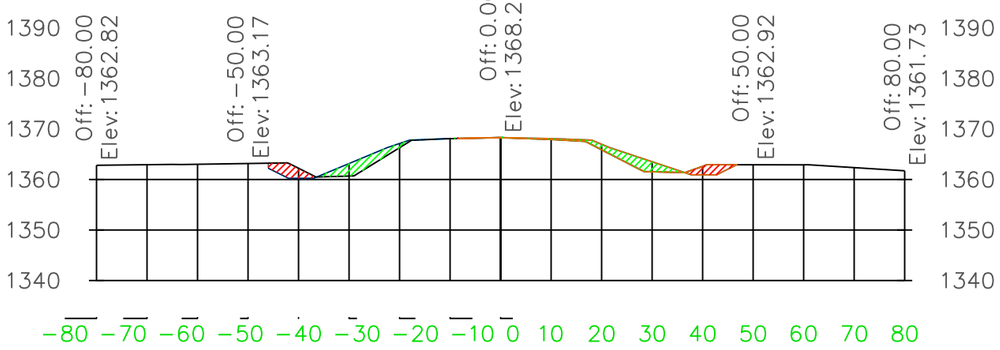
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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
BRIDGE DECK ELEVATIONS

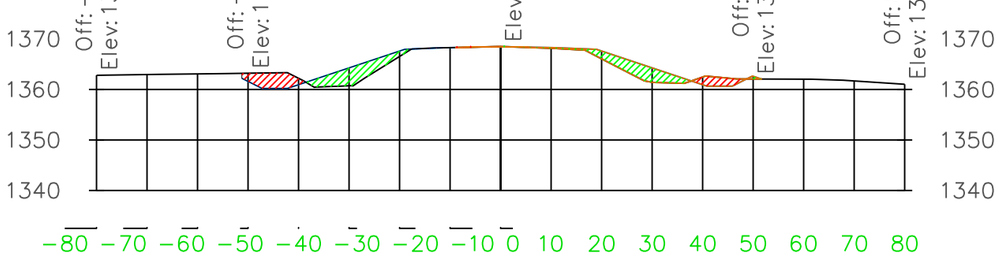
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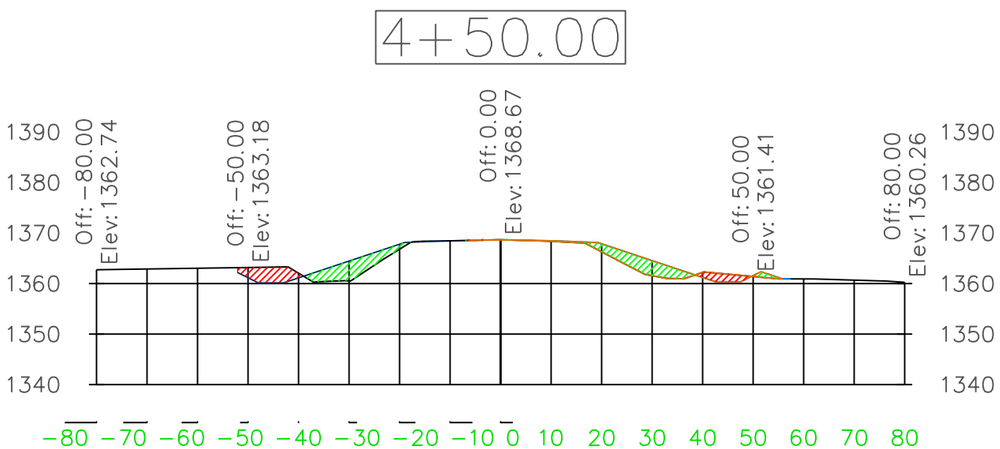
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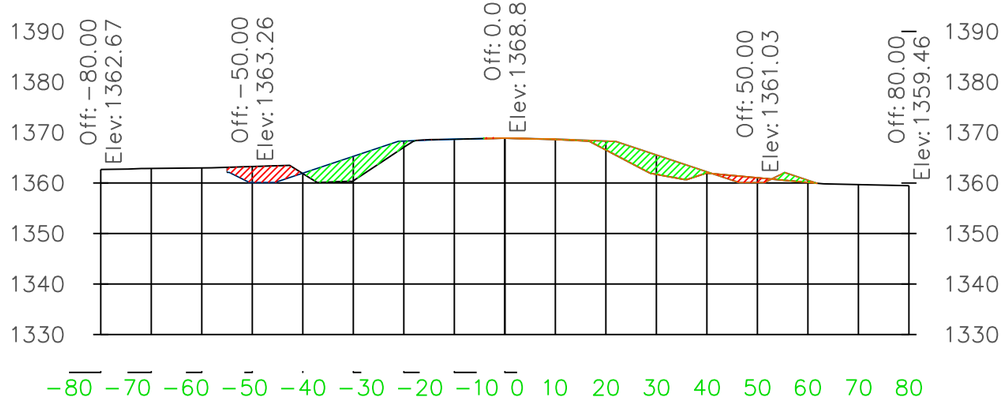
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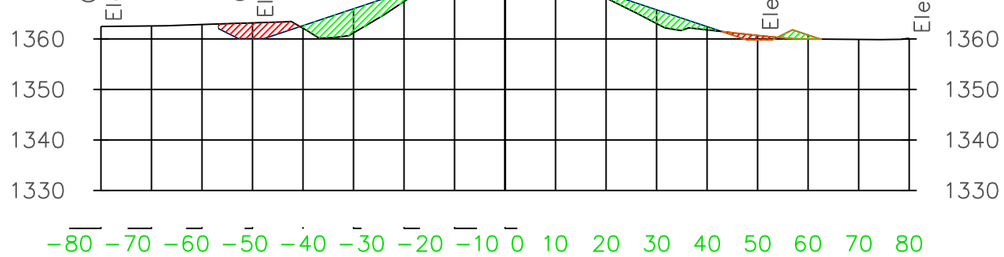
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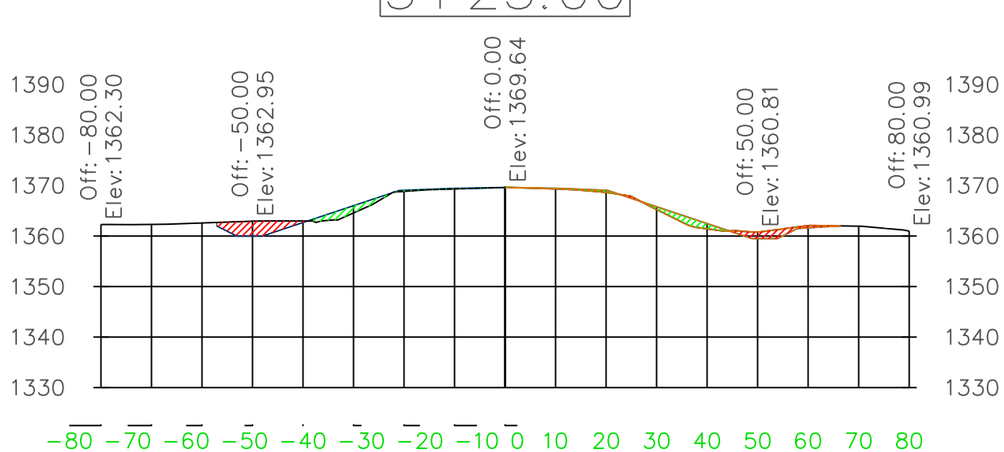
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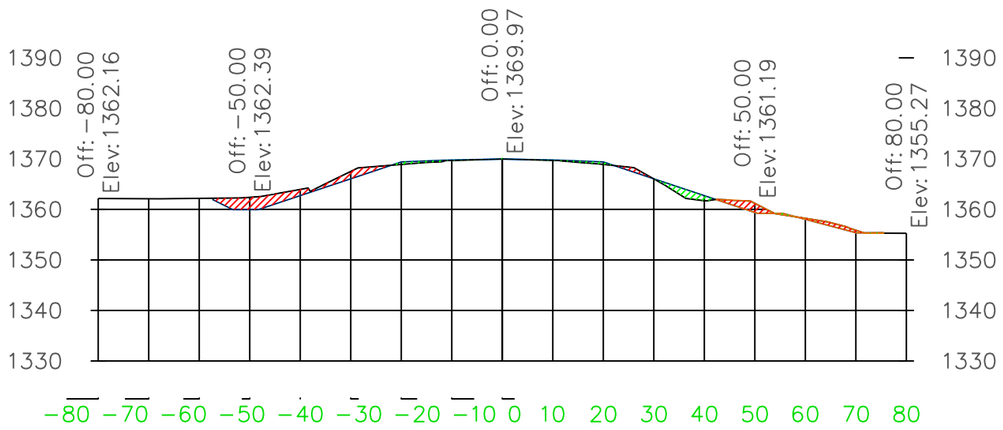
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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
CROSS SECTIONS

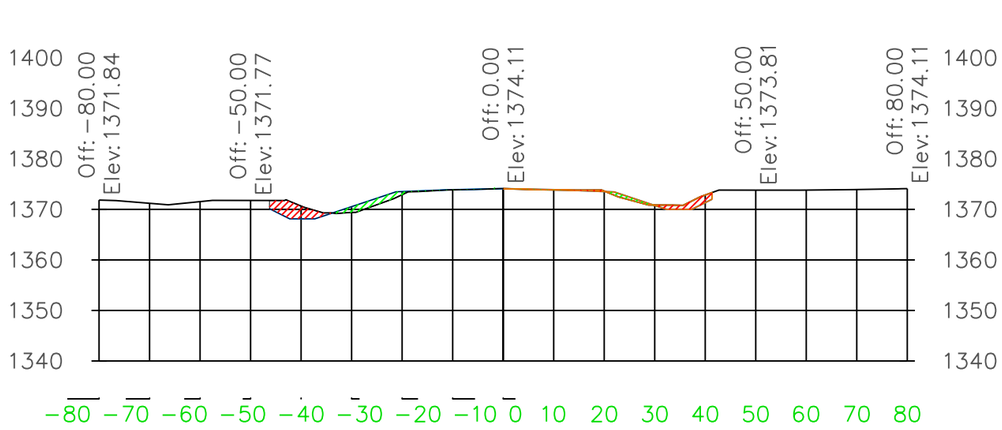
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Sheet W.01			

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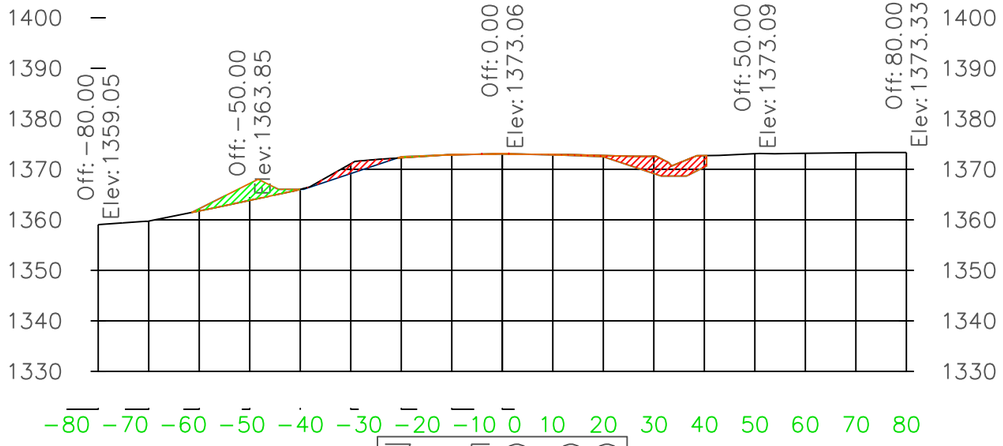
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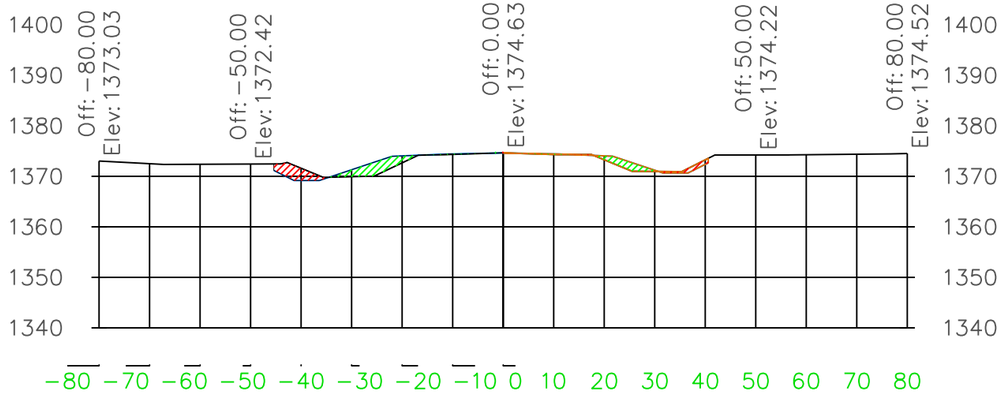
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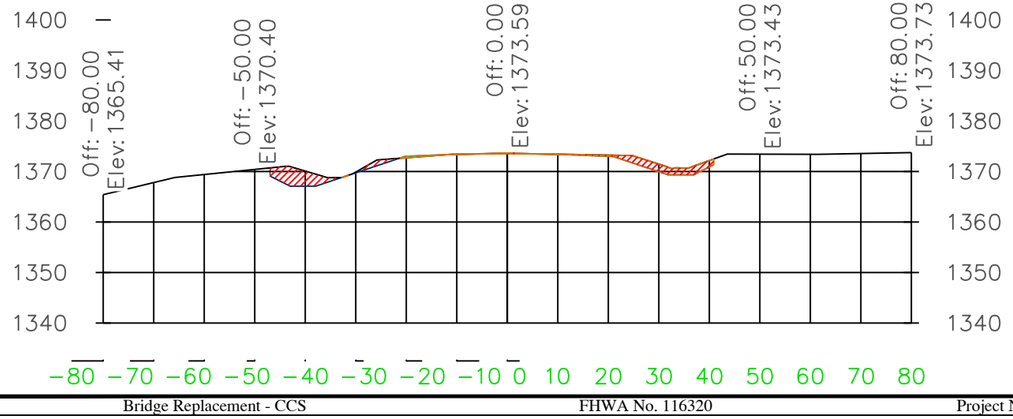
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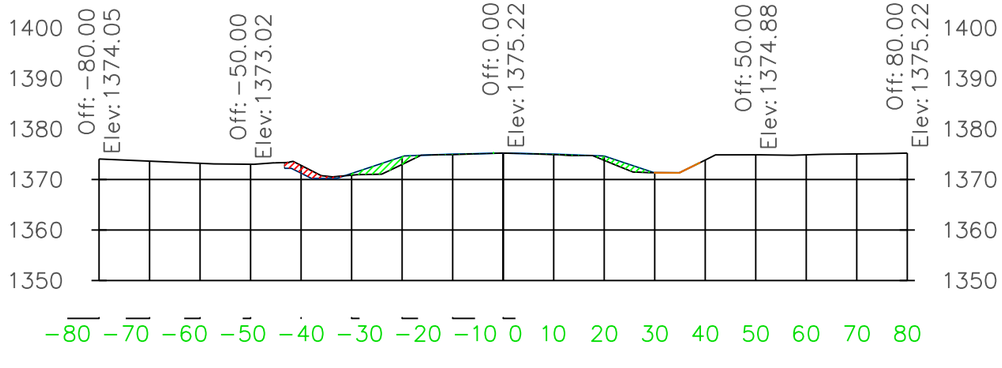
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8+25.00



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2027 CLAY COUNTY
BRIDGE REPLACEMENT - CCS
CROSS SECTIONS

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Sheet W.02	

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