BRIDGE REPLACEMENT (CCS)

BROS-C071(93)--5F-71

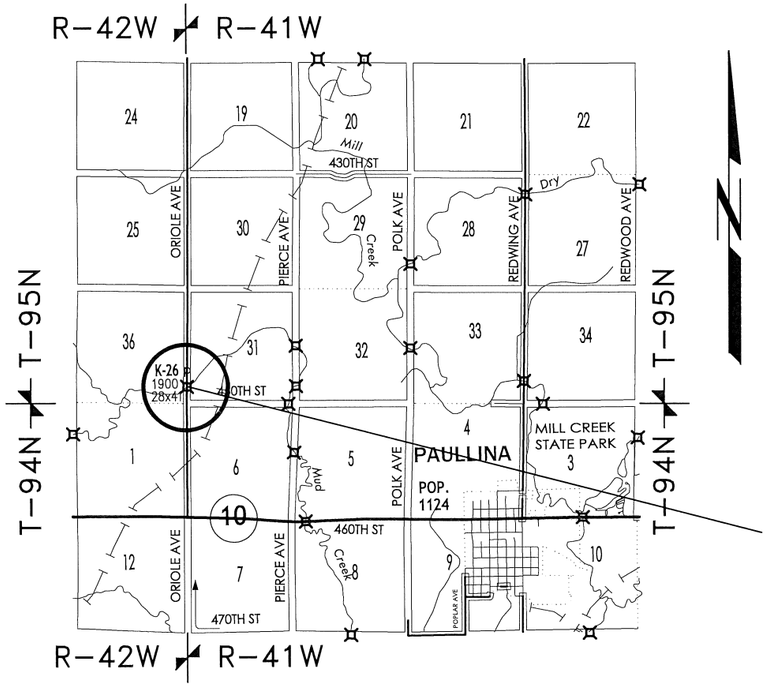
O'BRIEN COUNTY

Project No. BROS-C071(93)--5F-71

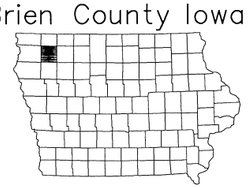
PROJECT TRAFFIC CONTROL PLAN

1. THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. TRAFFIC CONTROL DEVICES, PROCEDURES, LAYOUTS, SIGNING, AND PAVEMENT MARKINGS INSTALLED WITHIN THE LIMITS OF THIS PROJECT SHALL CONFORM TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARTMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC) CHAPER 130. NO PEDESTRIAN FACILITIES ARE PRESENT WITHIN PROJECT LIMITS. DETOUR ROUTE SHOWN ON J.01.
2. MAINTENANCE OF SIGNS, BARRICADES, AND SAFETY CLOSURES BY THE CONTRACTOR SHALL BE AS STATED IN ARTICLE 1107.09 OF THE CURRENT STANDARD SPECIFICATIONS.
3. TRAFFIC CONTROL AND SAFETY CLOSURES ARE BID ITEMS.
4. ROAD/BRIDGE WILL BE COMPLETELY CLOSED WITH NO ADJACENT TRAFFIC.

404 PERMIT NATIONWIDE PERMIT NO. 14: CEMVR-RD-2026-0561



O'Brien County Iowa



2027 CONSTRUCTION

Location Map Scale
0 0.5 1 2
miles

2023 AADT 210 V.P.D.

IOWA DEPARTMENT OF TRANSPORTATION

Highway Administration

PLANS OF PROPOSED IMPROVEMENT ON

FARM TO MARKET SYSTEM

O'BRIEN COUNTY

Bridge Replacement – CCS

Project No. BROS-C071(93)--5F-71

Refer to the Proposal Form for list of applicable specifications.

Bridge And Road Standards are listed on page C.02

Scales: As Noted

On Oriole Ave.
Over Mud Creek,
S31, T95N, R41W

NOTE: O'Brien County is to receive copies of all shop drawings and falsework plans. Submit to:
O'Brien County Engineer's Office
P.O. Box 410
Primghar, Iowa 51245
Fax: 712-957-4740
Voice: 712-957-3425

PROJECT NO. BROS-C071(93)--5F-71
110'-0" x 30'-6" CCS BRIDGE, 0° SKEW, HL-93 LOADINGS, INTEGRAL ABUTMENTS
PILE BENTS - P10L, CROSSING MUD CREEK, 0.78 MILES SOUTH OF
THE NORTHWEST CORNER OF SECTION 31, T-95N, R-41 DALE TOWNSHIP
O'BRIEN COUNTY, IOWA ON COUNTY ROAD ORIOLE AVE.
FHWA 260300
BOP STA. 6+43.50; EOP STA. 9+26.50

District 1	District 4
Jim Thomas	Dennis Vanden Hull
District 2	**District 5**
Barbara Rohwer	Daniel Friedrichsen
District 3	*Approved: Board of Supervisors*
Nancy McDowell — Chairperson	*Date:*

Project No. BROS-C071(93)--5F-71

FHWA No. 260300
Dale K-26

INDEX OF SHEETS

105-3
10-18-05

No.	Description
A.01	Title Sheet - Traffic Control - Mileage Summary
B.01	Typical Cross Sections
C.01	Tabulation Sheets
C.02	Tabulation Sheets Cont.
C.03	Project Description - General Notes
D.01	Plan And Profile
J.01	Detour Plan
Q.01	Soil Borings
Q.02	Soil Borings
V.01	Project Overview
V.02	Bridge Approach Details
V.03	Deck Elevations
X.01	Cross Sections
X.02	Cross Sections
X.03	Cross Sections

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
	Sta: 7+85.00 Centerline	283'0"	0.0535

O'BRIEN COUNTY ENGINEER'S OFFICE: 1-712-957-3425
IOWA "ONE CALL" : 1-800-292-8989

IOWA ONE CALL
800 / 292-8989
TOLL FREE
CALL - BEFORE - YOU - DIG

Utility Contact Information is listed on page C.01

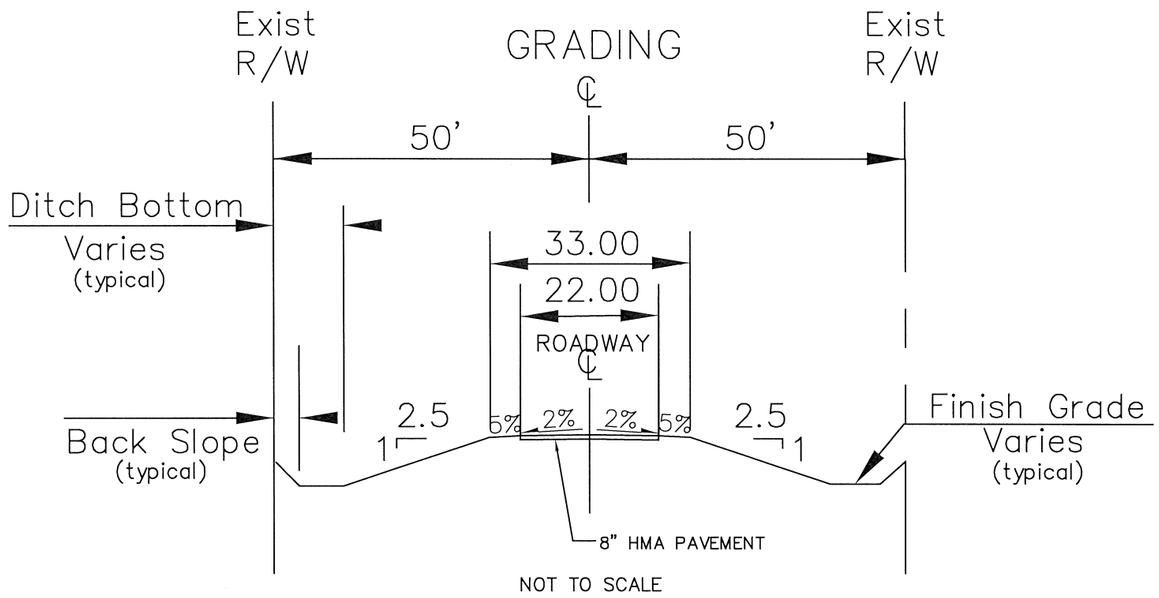
LICENSED PROFESSIONAL ENGINEER
Douglas G Julius
08161
IOWA

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.

Douglas G Julius Iowa Registration No. 08161
My license renewal date is December 31, 2027
Pages or sheets covered by this seal: Date: 7/9/26
A.01, B.01, C.01–C.03, D.01, J.01 V.01–V.03, X.01–X.03

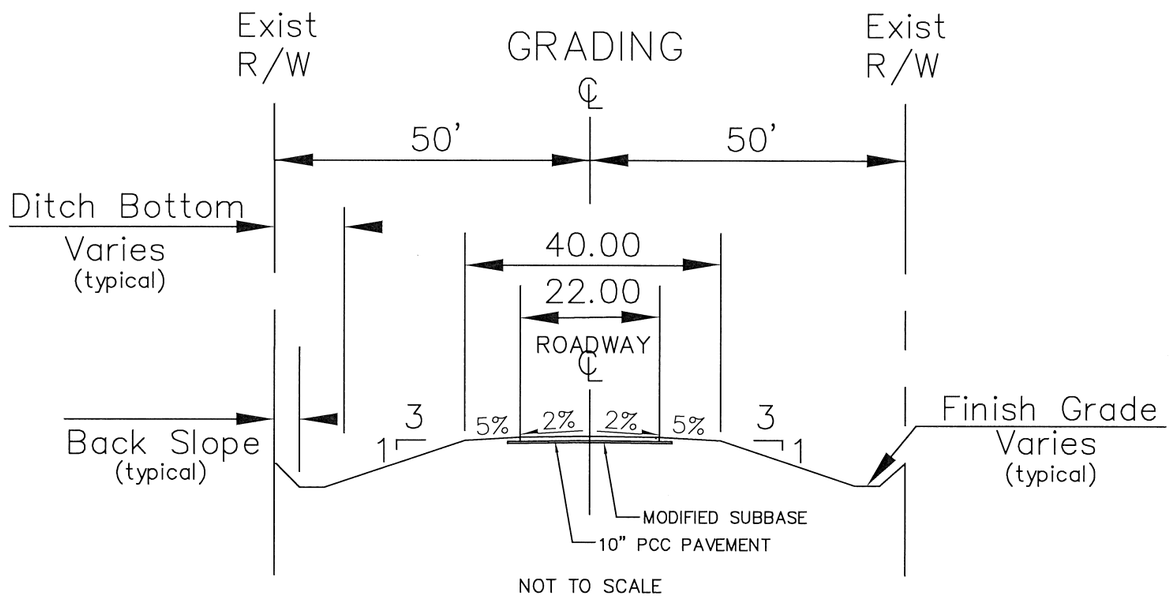
O'Brien County Engineer's Office / PO BOX 410 / Primghar, IA 51245 / Phone: 712-957-3425 / Fax: 712-957-4740

TYPICAL CROSS SECTION A
(Existing Grade)



NOT TO SCALE

TYPICAL CROSS SECTION B
(Proposed Grade)



NOT TO SCALE

LOCATION			TYPICAL CROSS SECTION
ROAD IDENTIFICATION	STATION TO STATION		
Oriole Ave.	Existing Grade	6+43.50	TYPICAL A
Oriole Ave.	6+53.50	7+30.00	TYPICAL B
Oriole Ave.	8+40.00	9+16.50	TYPICAL B
Oriole Ave.	9+26.50	Existing Grade	TYPICAL A

Stations 6+43.50 to 6+53.50 and 9+16.50 to 9+26.50 are a combination of A & B
Contractor to match shoulders and ditch to existing profile

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 2 of 15

ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

This Data Entry Sheet fills Tab 100-1A effective 07-15-97

Item No.	Item Code	Item	Unit	Total	As Built Qty.
0010	2102-2625000	EMBANKMENT-IN-PLACE	CY	314.940	
0020	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	404.720	
0030	2123-7450020	SHOULDER FINISHING, EARTH	CY	101.500	
0040	2301-0690210	BRIDGE APPROACH, TWO LANE	SY	360.360	
0050	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.000	
0060	2402-2720000	EXCAVATION, CLASS 20	CY	699.050	
0070	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	273.300	
0080	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	66,071.000	
0090	2414-6424124	CONCRETE OPEN RAILING, TL-4	LF	242.000	
0100	2501-0201042	PILES, STEEL, HP 10 X 42	LF	500.000	
0110	2501-0201057	PILES, STEEL, HP 10 X 57	LF	1,200.000	
0120	2501-5478042	CONCRETE ENCASEMENT OF STEEL H PILES, HP 10 X 57 (P10L TYPE 3)	LF	205.000	
0130	2505-4008300	STEEL BEAM GUARDRAIL	LF	50.000	
0140	2505-4008420	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-221	EACH	4.000	
0150	2505-4021010	STEEL BEAM GUARDRAIL BARRIER END ANCHOR, BOLTED	EACH	4.000	
0160	2505-4021722	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-225	EACH	4.000	
0170	2507-3250005	ENGINEERING FABRIC	SY	230.000	
0180	2507-6800061	REVETMENT, CLASS E	TON	142.000	
0190	2510-6745850	REMOVAL OF PAVEMENT	SY	476.320	
0200	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1.000	
0210	2528-2518000	SAFETY CLOSURE	EACH	4.000	
0220	2528-8445110	TRAFFIC CONTROL	LS	1.000	
0230	2533-4980005	MOBILIZATION	LS	1.000	
0240	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.420	

PROJECT DESCRIPTION

This Data Entry Sheet fills Tab 100-1D effective 10-18-05

Project No. BROS-C071(93)--SE-71 Station 7+85.00 bridge replacement with a 110'0"x30'6" CCS Bridge on 0 degree skew

This design is for a new 110'0"x30'6" CCS Bridge at station 7+85.00 on a 0° skew over Mud Creek in O'Brien County, Iowa. The existing bridge is a 41'0" x 29'6" single span I-Beam Bridge at station 7+80.32 with a concrete deck and timber abutments.

INDEX OF TABULATIONS

This Data Entry Sheet fills Tab 111-25 effective 10-18-11

Tabulation	Tabulation Title	Sheet No.
100-1A	Estimated Project Quantities (1 Division Project)	C.01
100-1D	Project Description	C.01
100-4A	Estimate Reference Information	C.01
105-1	Mileage Summary	A.01
105-3	Index Of Sheets	A.01
105-4	Standard Road Plans	C.02
NA	Standard Bridge Plans	C.02
107-23	Grading For Guardrail Installations	C.02
108-8A	Steel Beam Guardrail At Concrete Barrier Of Bridge Rail End Structure	C.02
108-13A	Safety Closures	C.01
110-1	Removal Of Pavement	C.02
111-25	Index Of Tabulations	C.01
112-6	Bridge Approach Section	C.02
262-6	Utilities (Not a Point 25 Project)	C.01

UTILITIES
(NOT A POINT 25 PROJECT)

This Data Entry Sheet fills Tab 262-6 effective 10-18-05

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

NORTH WEST RURAL ELECTRIC - Sheila VanBeek (712)707-4935

OSCEOLA COUNTY RURAL WATER - Douglas Westerman (712)735-6795

WINDSTREAM COMMUNICATIONS - Locate Desk (800)289-1901

THE COMMUNITY AGENCY - D.J. Weber (712) 930-5593

	2	2	

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

This Data Entry Sheet fills Tab 108-13A effective 08-01-08

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
0+80.00	1	0	South End Of Mile 450th St.
5+50.00	0	1	Include Orange Mesh Fence
10+00.00	0	1	Include Orange Mesh Fence
47+00.00	1	0	75' South of 440th St.

ESTIMATE REFERENCE INFORMATION

This Data Entry Sheet fills Tab 100-4A effective 10-29-02

Item No.	Item Code	Description
0010	2102-2625000	(Embankment-In-Place) Includes 314.94 CY of material. Contractor to place and compact material for earth shoulders, and roadway slopes. Estimate includes 416.440 CY that comes from suitable materials excavated from Class 10 Channel and Class 20 Excavation. Contractor to remove rocks and debris over 3 inches in diameter. See approach details for station information and roadway typical cross sections on Sheet B.01. Contractor to match preexisting ditch slopes in a uniform manner where applicable.
0020	2104-2710020	(Excavation, Class 10, Channel) Includes 404.720 CY channel cut. Contractor to taper the top of banks of the new bridge opening to existing top of stream bank at the county R.O.W. Excess suitable material to be reused onsite. Includes placement and compaction of material.
0030	2123-7450020	(Shoulder Finishing, Earth) Includes 105.50 CY of Material. Contractor to place and compact material.
0040	2301-0690210	(Bridge Approach, Two Lane) See " Approach Detail" sheet V.02. Non-reinforced approach sections to be paved to 24' width. Class C concrete with Class 3i durability coarse aggregate.
0050	2401-6745625	(Removal of Existing Bridge) Existing bridge is a 41'0" long 29'6" wide I-Beam bridge with concrete deck and timber abutments. The existing structure to become the property of the contractor. Concrete from bridge deck must be fully removed from the site and cannot be used as revetment. All existing substructure shall be removed at least one foot below the finished grade line. Removal of rock and other debris located adjacent to the existing structure, shall be included in the removal of the existing structure.
0060	2402-2720000	(Excavation, Class 20) Includes 699.050 CY of material excavated. See extents for Class 20 material sheet V.01. Class 20 material to be used for roadway and slopes. Includes placement and compaction.
0070	2403-0100010	(Structural Concrete (Bridge)) All concrete to be Class C with Class 3i durability coarse aggregate. See "Tabulations of Concrete" sheet C.03 for quantities per location. Includes 20 CY of granular backfill along the abutments. Includes 100 LF of "Sub drain, Perforated Plastic Pipe, 4 Inch Diameter" and four "sub drain, Outlet, DR-305". Includes 3" Ø PVC pipes in wings, concrete sealer for open rails, wing armoring as per Std J30-46-06 and sub drains with backfill per Std J30-47-06. Certified concrete plant inspection will be provided by contractor.
0080	2404-7775005	(Reinforcing Steel, Epoxy Coated) See "Tabulation of Reinforcing Steel" on Sheet C.03. Quantity based on J30-06 110'0"x30'6" Continuous Concrete Slab Bridge Standards.
0090	2414-6424124	(Concrete Open Railing, TL-4) - Class C concrete with class 3i durability coarse aggregate to be measured and paid by LF. See IDOT Road Standard BA-202 for Guardrail End Anchorage Bolt Pattern and location.
0100	2501-0201042	(Piles, Steel, HP 10 X 42) Steel bearing pile for two integral abutments. (x10) HP10x42x50' with minimum 97.0 KIPS bearing. All piling shall be driven to full penetration if practical, but in no case less than the pile bearing required. If re-taps are required, they shall be performed by the contractor at no additional cost.
0110	2501-0201057	(Piles, Steel, HP 10 X 57) Steel bearing pile for two pier bents. (x20) HP10x57x60' with minimum 100.0 KIPS bearing. All piling shall be driven to full penetration if practical, but in no case less than the pile bearing required. If re-taps are required, they shall be performed by the contractor at no additional cost.
0120	2501-5478042	(Concrete Encasement Of Steel H Piles, HP 10 X 57 (P10L Type 3)) Includes (x20) HP10x57x60' at 10.25' of encasement each with 20" diameter round preferred (16" Square is acceptable). Class C concrete with Class 3i durability coarse aggregate.
0130	2505-4008300	(Steel Beam Guardrail) All Guardrail items include materials for installation. Including items but not limited to: posts, bolts, labor, etc.
0140	2505-4008420	(Steel Beam Guardrail Barrier Transition Section, BA-221)
0150	2505-4021010	(Steel Beam Guardrail Barrier End Anchor, Bolted)
0160	2505-4021722	(Steel Beam Guardrail Tangent End Terminal, BA-225
0170	2507-3250005	(Engineering Fabric) Furnished by contractor and placed on the bridge slopes, berms, and river banks before placing revetment. Details and limitations shown on table "Limits for Class E Revetment Stone" Sheet C.03.
0180	2507-6800061	(Revetment, Class E) Revetment must meet the requirements of article 4130, to be furnished and placed by contractor. Estimated at 105 pcf. Recycled PCC pavement or broken concrete will not be allowed.
0190	2510-6745850	(Removal Of Pavement) Includes 476.32 SY of 8" deep HMA for new PCC bridge approaches. Average 22.25' wide 60' long north and south of new bridge location (includes pavement removal for new bridge construction).
0200	2526-8285040	(Construction Survey) By Contractor
0210	2528-2518000	(Safety Closure) See "Tabulation of Safety Closures" on Sheet C.01 and Project Traffic Control Plan on Sheet A.01.
0220	2528-8445110	(Traffic Control) By Contractor. See Project Traffic Control Plan on Sheet A.01.
0230	2533-4980005	(Mobilization)
0240	2601-2636043	(Seeding And Fertilizing (Rural)) By Contractor.

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 3 of 15

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

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-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

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

This Data Entry Sheet fills Tab 108-8A effective 10-16-18

	Location				Barrier Transition Section	End Terminal Section	Layout Lengths BA-250, BA-260, LS-630, or LS-635					Long-Span System		Delineators and Object Markers (2)				Bid Items											Remarks
															Delineator	Object Marker								BA-250 or LS-630					BA-260 or LS-635		
		(1) Side													SI-172	SI-173									End Terminal					
No.	Direction of Traffic	O = Outside M = Median	Station	Offset	BA-201 ->	BA-205, BA-206 LS-625, LS-626	VT1 min = 40.625 for BA-201 VT1 min = 25.0 for BA-221 If VF > 0, then: VT1 min = 53.125 for BA-201 VT1 min = 37.5 for BA-221	(VT1)	(VF)	(VT2)	(ET)	BA-211		SI-211	Type 1	Type 2	Type 3	Bolted End Anchor		Post Adapter	Steel Beam Guardrail	Barrier Transition Section	Tangent	Flared	Tangent	Flared	Barrier Transition Section	End Terminal Tangent	
				FT	BA-221 ->	BA-225		LF	LF	LF	LF	STATION	TYPE	TYPE	White	OM2-2	OM3-L OM3-R	TYPE	EACH	EACH	LF	EACH	EACH	EACH	EACH	EACH	BA-221	BA-225	
															EACH	EACH	EACH EACH												
1	NB	O	7+24.50	15.63	BA-221	BA-225	25	37.500	0.00	0.00	35.2			2		1	0 1	A	1		12.5						1	1	
2	SB	O	7+24.50	15.63	BA-221	BA-225	25	37.500	0.00	0.00	35.2			2		1	1 0	A	1		12.5						1	1	
3	NB	O	8+45.50	15.63	BA-221	BA-225	25	37.500	0.00	0.00	35.2			2		1	1 0	A	1		12.5						1	1	
4	SB	O	8+45.50	15.63	BA-221	BA-225	25	37.500	0.00	0.00	35.2			2		1	0 1	A	1		12.5						1	1	
														Totals:	0	4	2 2		4	0	50.0	0	0	0	0	0	4	4	

GRADING FOR GUARDRAIL INSTALLATIONS

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

Refer to EW-301

This Data Entry Sheet fills Tab 107-23 effective 10-18-11

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	(1) Direction of Traffic	Station	Side		(X1)	(Y1)	(X2)	(Y2)	(X3)	(Y3)	(X4)	(Y4)	(Z)	Excavation Class 10	Embankment In Place	
														CY	CY	
1	NB	7+24.50	East	3:1	37.5	5.0					72.7	5.0	39.0		91.00	
2	SB	7+24.50	West	3:1	37.5	5.0					72.7	5.0	39.0		85.72	
3	NB	8+45.50	East	3:1	37.5	5.0					72.7	5.0	39.0		119.54	
4	SB	8+45.50	West	3:1	37.5	5.0					72.7	5.0	39.0		137.02	
														Totals:	0.0	433.3	

STANDARD BRIDGE PLANS

The following Standard Bridge Plans apply to construction work on this project.

Number	Date	Title
J30-01-06	Sept, 2020	INDEX SHEET
J30-01A-06	Sept, 2020	GENERAL NOTES
J30-10E-06	Sept, 2020	SUPERSTRUCTURE DETAILS 110'0 BRIDGE
J30-11E-06	Sept, 2020	SUPERSTRUCTURE DETAILS 110'0 BRIDGE
J30-20-06	Sept, 2020	SUPERSTRUCTURE DETAILS ALL BRIDGES
J30-21-06	Sept, 2020	SUPERSTRUCTURE DETAILS ALL BRIDGES
J30-22-06	Sept, 2020	SUPERSTRUCTURE DETAILS ALL BRIDGES
J30-25-06	Sept, 2020	NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES
J30-26-06	Sept, 2020	NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES
J30-34-06	Sept, 2020	ABUTMENT DETAILS 0° SKEW - STEEL PILING
J30-39-06	Sept, 2020	ABUTMENT DETAILS STEEL PILING
J30-43-06	Sept, 2020	OPEN RAIL DETAILS (TL-4)
J30-44-06	Sept, 2020	OPEN RAIL DETAILS (TL-4)
J30-45-06	Sept, 2020	SUBDRAIN DETAILS
J30-46-06	Sept, 2020	WING ARMORING DETAILS
J30-47-06	Sept, 2020	ABUTMENT BACKFILL DETAILS
P10L	June, 2025	LRFD TRESTLE PILE BENTS - P10L

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

This Data Entry Sheet fills Tab 105-4 effective 10-18-11

Number	Date	Title
BA-200	10-20-26	STEEL BEAM GUARDAIL COMPONENTS
BA-202	10-20-26	STEEL BEAM GUARDRAIL BOLTED END ANCHOR
BA-221	10-18-22	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION (MASH TL-2)
BA-225	10-17-23	STEEL MEAN GUARDRAIL TANGENT END TERMINAL (MASH TL-2)
BA-260	10-20-26	STEEL BEAM GUARDRAIL AT CONCRETE BARRIER/BRIDGE RAIL END SECTION
BR-101	10-20-26	BRIDGE APPROACH SECTION (GENERAL DETAILS)
BR-105	10-20-26	BRIDGE APPROACH SECTION (TWO-LANE, HMA PAVEMENT)
EW-301	10-20-26	GUARDRAIL GRADING
LS-635	10-18-22	STEEL BEAM GUARDRAIL INSTALLATION AT CONCRETE BARRIER OR BRIDGE RAIL
PV-101	10-20-26	JOINTS
SI-173	10-18-16	OBJECT MARKERS
SI-211	10-18-22	OBJECT MARKERS AND DELINEATOR PLACEMENT WITH GUARDRAIL
TC-252	10-20-26	ROUTES CLOSED TO TRAFFIC

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

This Data Entry Sheet fills Tab 112-6 effective 04-18-17

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain								Remarks
Bridge Station	End	Skew Ahead Degrees LEFT	Skew Ahead Degrees RIGHT	Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet		* Porous Backfill	* Class 'A' Crushed Stone	* Modified Subbase	* Polymer Grid	* Special Backfill	
				Inches	FT	SY	SY	SY				LF	STA	Side	CY	CY	TON	SY	TON	
7+85.00	South	-	-	10	60	106.67	73.71	-	BR-106	Fixed	HMA	-	NA				68.44	173.71		
7+85.00	North	-	-	10	60	106.67	73.71	-	BR-106	Fixed	HMA	-	NA				68.44	173.71		BAS Non-Reinforced to be 22' Width
				Totals:	213.3	147.4	0.0													

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

This Data Entry Sheet fills Tab 110-1 effective 04-16-13

Begin Station	End Station	Side	Pavement Type	Length	Width	Area	Area	Saw Cut*	Remarks
				FT	FT	FT	SY	LF	
6+68.50	7+60.11	South	HMA	91.61	22.25	2038.3225	226.48	22.25	Existing Pavement is 8" HMA
8+00.44	9+01.50	North	HMA	101.06	22.25	2248.585	249.84	22.25	Existing Pavement is 8" HMA
			Totals:				476.32		

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 4 of 15

GENERAL NOTES

This design is for a new 110'–0" x 30'–6" 3–span Continuous Concrete Slab (CCS) bridge on a 0° skew over Mud Creek in O'Brien County, Iowa, using the J30–06 Standards. Epoxy coated reinforcing steel is to be used for the deck with concrete open rail, P10L trestle Type 3 pile bent piers with non–monolithic caps and 2.5:1 revetment covered berms. The existing bridge is a 41'6" long I–beam bridge with concrete deck, abutment cap and timber piling, back wall, and wings. The existing bridge will become the property of the contractor.

Contractor to taper the top of banks of the new bridge opening to existing top of stream bank at county R.O.W.

Project work begins at Sta. 6+43.50 and ends at Sta. 9+26.50.

Certified concrete plant inspection will be provided by the contractor. All concrete will be Class C with Class 3i durability coarse aggregate.

All utility locates are the responsibility of the contractor.

Standard Road Plans and Bridge Standards are available online:
iowadot.gov/consultants–contractors/design/standard–road–plans
iowadot.gov/consultants–contractors/bridges–structures/bridge–culvert–standards/county–bridge–standards

Sounding and test boring data shown on sheets Q.01 and Q.02 were accumulated for designing and estimating purposes. Their appearance on the plan does not constitute a guarantee that conditions other than those indicated will be encountered. Bridge sounding logs include soil/rock descriptions, stratifications, penetration resistances, and locations of samples. Variations may occur and should be expected at locations other than the bridge sounding locations. The minimum bearing capacity is to be 100.0 KIPS per steel HP10x57x60' in the piers and 97.0 KIPS per steel HP10x42x50' in the abutments. All piling used are required to have steel driving points.

Construction survey and staking by Contractor.

All shop and falsework drawings that require approval shall be approved by a licensed Engineer. These shop and falsework drawings shall not be sent to the Iowa D.O.T. Office of Bridge Design, Ames, Iowa.

Safety Closures and Traffic Control are bid items for this project. See Sheet No. A.01 "Project Traffic Control Plan" and Sheet C.01 for Tabulation and Sheet J.01 for Detour Route and Tabulation.

Free Winter Work does not apply to this project. Once project has begun, working day count will not be suspended during time designated as "Winter Work".

Asbestos: None Detected

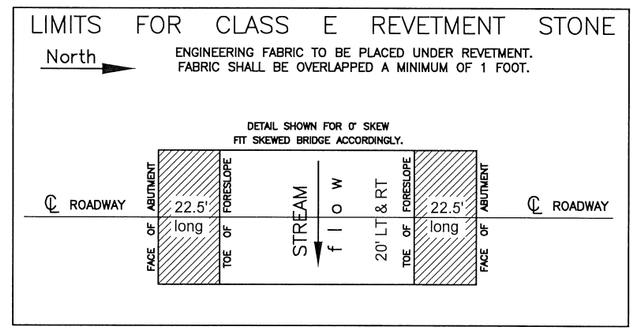
Scrape samples of this bridge were taken to get indication of the existence of and level of total chromium and total lead.
Guardrail: Chromium=<130 ppm, Lead=7,500 ppm
Support Beams: Chromium=1,200 ppm, Lead=160,000 ppm
The analysis shows the existence above regulatory limits for heath safety requirements. 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.

TABULATION OF CONCRETE

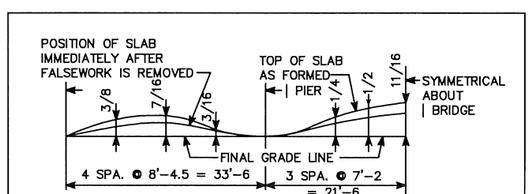
LOCATION	QUANTITY EACH	TOTAL
ABUTMENT (2)	11.100	22.200
PIER (2)	10.700	21.400
SUPERSTRUCTURE	229.700	229.700
	TOTAL (CU YDS)	273.300

TABULATION OF REINFORCING STEEL (EPOXY)

LOCATION	QUANTITY EACH	TOTAL
ABUTMENT (2)	1558.000	3116.000
PIER (2)	778.000	1556.000
SUPERSTRUCTURE	61399.000	61399.000
	TOTAL (lbs.)	66071.000



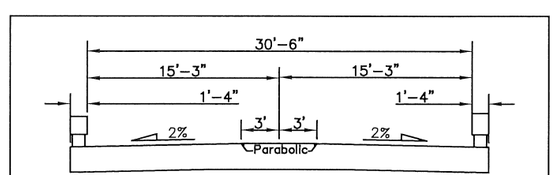
TELEPHONE CONDUIT NOTE:
Contractor may need to install if requested one or two 2" PVC conduits near the side of the deck above the bottom mat of reinforcing steel as directed by the Engineer for the use of Windstream Communications. Conduit will be furnished and delivered by the utility. Labor to install the conduit will be negotiated between the utility and the contractor.



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.

110



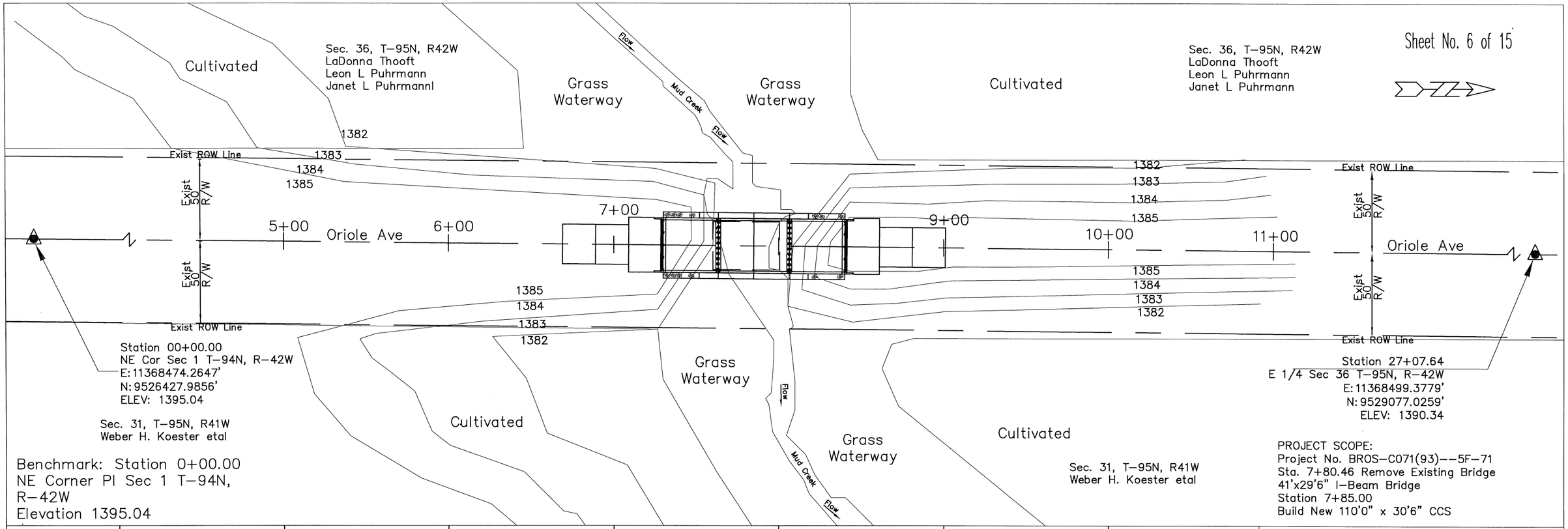
*Note: Top of Bridge Deck Crown Elevation is 0.3 Feet Below Profile Grade Line

J30

Oriole Ave.
Over Mud Creek
T–95N, R–41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude –95.74161331°

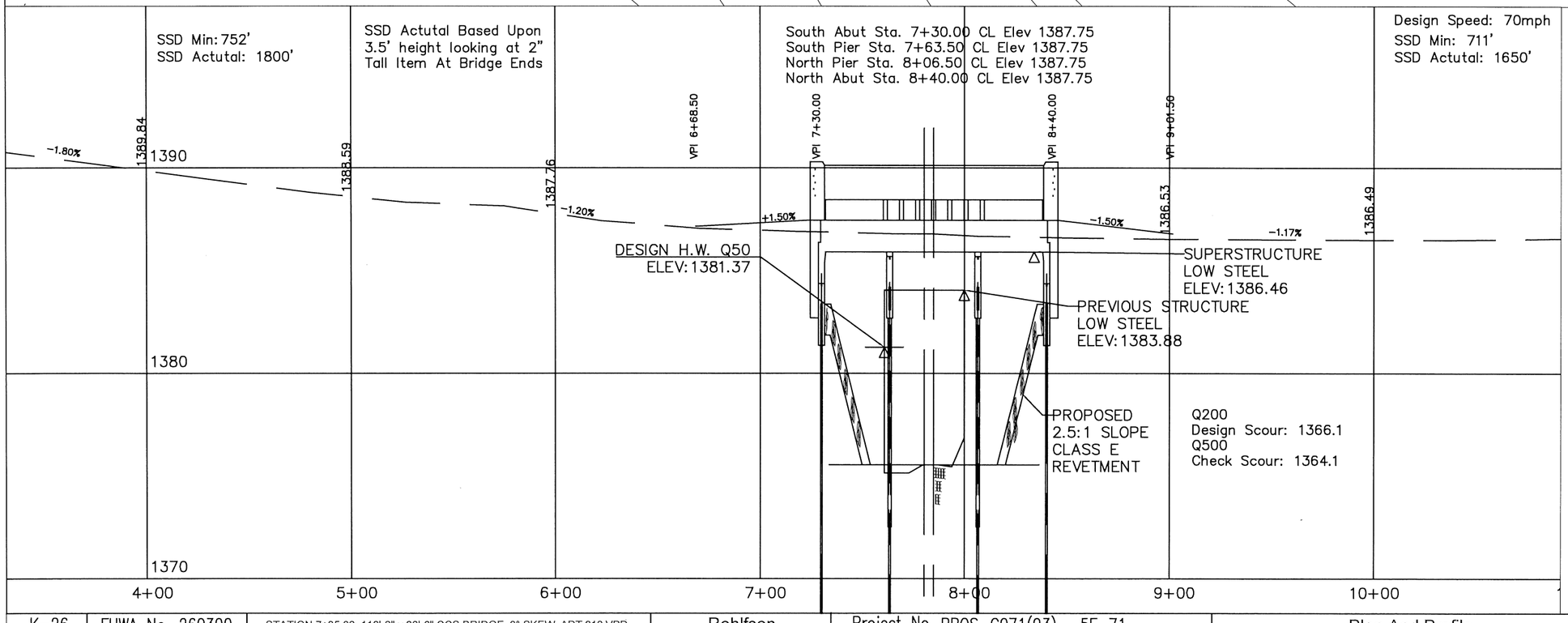
Design For 0° SKEW
110'–0 x 30'–6 CCS
33'–6, 43'–0, 33'–6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 5 of 15



Benchmark: Station 0+00.00
NE Corner Pl Sec 1 T-94N, R-42W
Elevation 1395.04

PROJECT SCOPE:
Project No. BROS-C071(93)--5F-71
Sta. 7+80.46 Remove Existing Bridge
41'x29'6" I-Beam Bridge
Station 7+85.00
Build New 110'0" x 30'6" CCS



HYDRAULIC DATA

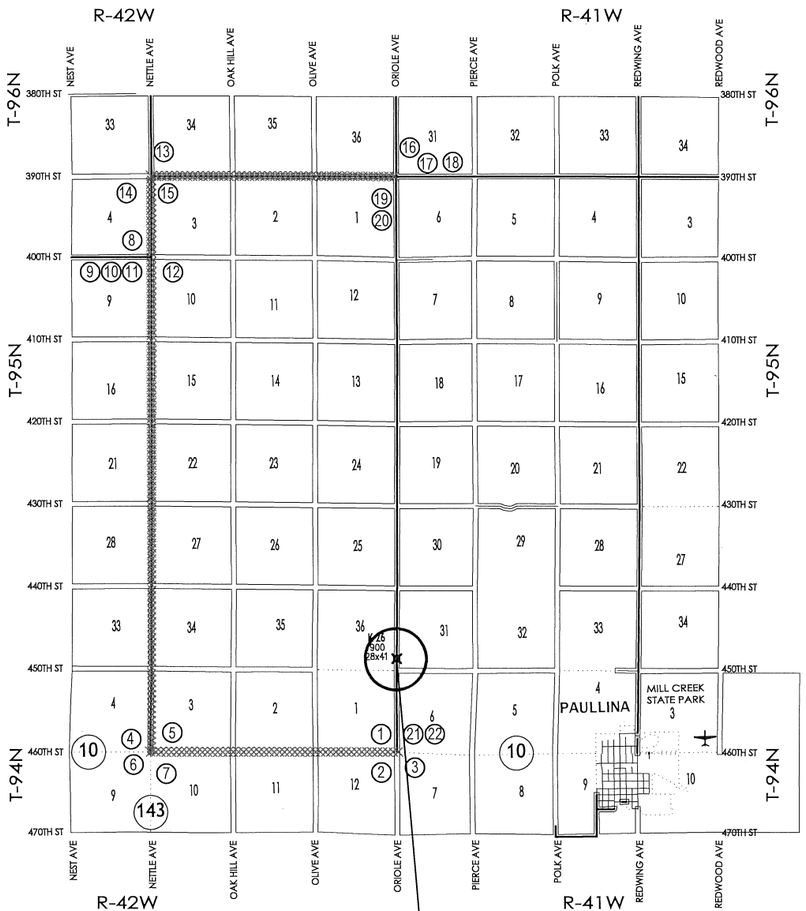
DRAINAGE AREA	12.7	SQ.MI.
DESIGN DISCHARGE Q	2750	C.F.S.
DESIGN HIGHWATER ELEV.	1381.37	FT.
RIVER SLOPE	0.0013	FT./FT.
DESIGN VELOCITY	4.64	F.P.S.

	C.F.S	STAGE	FREEBOARD	BACKWATER
Q5	1200	1380.37	4.45	0.20
Q10	1650	1380.70	4.11	0.39
Q25	2250	1381.09	3.73	0.71
Q50	2750	1381.37	3.44	1.01
Q100	3300	1383.30	3.16	1.39
Q200	3900	1383.57	2.89	1.84
Q500	4750	1383.94	2.52	2.51

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 6 of 15



Detour Signs		Total
M2-1	Jct	9
M4-8	Detour	18
M3-1	North	9
M3-3	South	8
M1-6	County Route Marker (L-40)	20
M6-1	Detour (Right or Left Arrow)	9
M5-1A	Detour Advance (Right Arrow)	1
M6-3	Straight Ahead Arrow	6
M4-8	End Detour	2
R11-3A	Road Closed 9 Miles Ahead	1
R11-3A	Road Closed 1 Mile Ahead	1

DETOUR SIGN TABULATION

Map No.	MUTCD	Legend	Remarks
1	M4-8	Detour	Installed on post 500' West
	M3-1	North	Of intersection
	M1-6	County Route Marker (L-40)	
2	M4-8	End Detour	Installed on post 200' South
	M1-6	County Route Marker (L-40)	Of Intersection
3	M2-1	Jct	Installed on post 500' South
	M4-8	Detour	Of Intersection
	M3-1	North	
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (Left Arrow)	
4	M4-8	Detour	Installed on post 200' North
	M3-3	South	Of Intersection
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (left Arrow)	
5	M4-8	Detour	Installed on post 500' East
	M3-1	North	Of Intersection
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (Right Arrow)	
6	M2-1	Jct	Installed on post 500' West
	M4-8	Detour	Of Intersection
	M3-1	North	
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (left Arrow)	
7	M2-1	Jct	Installed on post 200' South
	M4-8	Detour	Of Intersection
	M3-1	North	
	M1-6	County Route Marker (L-40)	
	M6-3	Straight Ahead Arrow	

DETOUR SIGN TABULATION

Map No.	MUTCD	Legend	Remarks
8	M4-8	Detour	Installed on post 500' North
	M3-3	South	Of intersection
	M1-6	County Route Marker (L-40)	
	M6-3	Straight Ahead Arrow	
9	M4-8	Detour	Installed on post 500' West
	M1-6	County Route Marker (L-40)	Of Intersection
10	M2-1	Jct	Installed on post 200' West
	M4-8	Detour	Of Intersection
	M3-3	South	
	M1-6	County Route Marker (L-40)	
	M5-1A	Detour Advance (Right Arrow)	
11	M2-1	Jct	Installed on post 200' West
	M4-8	Detour	Of intersection
	M3-1	North	
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (Left Arrow)	
12	M4-8	Detour	Installed on post 500' South
	M3-1	North	Of Intersection
	M1-6	County Route Marker (L-40)	
	M6-3	Straight Ahead Arrow	
13	M4-8	Detour	Installed on post 500' East
	M3-3	South	Of intersection
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (Left Arrow)	
14	M2-1	Jct	Installed on post 500' West
	M4-8	Detour	Of intersection
	M3-3	South	
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (Right arrow)	

DETOUR SIGN TABULATION

Map No.	MUTCD	Legend	Remarks
15	M4-8	Detour	Installed on post 200' South
	M3-3	South	Of intersection
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (Right arrow)	
16	M2-1	Jct	Installed on post 500' West
	M4-8	Detour	Of Intersection
	M3-1	North	
	M1-6	County Route Marker (L-40)	
	M6-1	Detour (left Arrow)	
17	M2-1	Jct	Installed on post 500' East
	M4-8	Detour	Of intersection
	M3-3	South	
	M1-6	County Route Marker (L-40)	
	M6-3	Straight Ahead Arrow	
18	M4-8	Detour	Installed on post 200' West
	M3-3	South	Of intersection
	M1-6	County Route Marker (L-40)	
	M6-3	Straight Ahead Arrow	
19	M4-8	End Detour	Installed on post 200' West
	M1-6	County Route Marker (L-40)	Of intersection
20	R11-3A	Road Closed 5 Miles Ahead	Installed on post 500' South
			of intersection
21	R11-3A	Road Closed 1 Miles Ahead	Installed on post 500' North
			of intersection
22	M2-1	Jct	Installed on post 200' East
	M4-8	Detour	Of Intersection
	M3-1	North	
	M1-6	County Route Marker (L-40)	
	M6-3	Straight Ahead Arrow	

MUTCD: Manual on Uniform Traffic Control Devices for Streets and Highways, as adopted by the Department per 761 of the Iowa Administrative Code (IAC), Chapter 130

PROJECT NO. BROS-C071(93)--5F-71
110'-0" x 30'-6" CCS BRIDGE, 0° SKEW, HL-93 LOADINGS, INTEGRAL ABUTMENTS
PILE BENTS - P10L, CROSSING MUD CREEK, 0.78 MILES SOUTH OF
THE NORTHWEST CORNER OF SECTION 31, T-95N, R-41 DALE TOWNSHIP
O'BRIEN COUNTY, IOWA ON COUNTY ROAD ORIOLE AVE.
FHWA 260300
BOP STA. 6+43.50; EOP STA. 9+26.50

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 7 of 15

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8063
Project: Oriole Ave Bridge Replacement
Date Started: 6/11/26
Date Completed: 6/11/26

Boring No.: S-1
Boring Location: O'Brien Co, IA
Drill Type: Hollow Stem
Ground Elev.: 99.8

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	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"
	4-Inch Asphalt Layer		3-6-7 N= 13									
5	FIRM SILTY CLAY, Dark Brown and Medium Brown, Fill		8-6-3 N= 9									
10	STIFF SILTY CLAY, Dark Gray	CL-ML	5-3-3 N= 6									
15	FIRM-VERY FIRM GLACIAL CLAY, Yellow Brown and Gray	CL	3-5-6 N= 11									
20	(Sand Lense)		8-11-13 N= 24									
25	VERY FIRM GLACIAL CLAY, Yellow Brown and Gray	CL	4-8-12 N= 20									
30			6-9-12 N= 21									
35	(Medium Brown and Gray)		4-10-11 N= 21									
40	GLACIAL MATERIAL, Dark Brownish Gray	CL	8-16-18 N= 34									
45			8-16-20 N= 36									
50	(Gravel/Coobbles)		6-14-15 N= 29									
55	(Yellow Brown and Gray)		8-22-29 N= 51									
60	(Brownish Gray)		8-21-25 N= 46									
65			9-26-30 N= 56									
	END OF BORING AT 66.5 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G8063.GPJ CERTIFIED TESTING.GDT 6/25/26

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8063
Project: Oriole Ave Bridge Replacement
Date Started: 6/12/26
Date Completed: 6/12/26

Boring No.: S-2
Boring Location: O'Brien Co, IA
Drill Type: Hollow Stem
Ground Elev.: 99.8

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	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"
	16-Inch Asphalt Layer		3-4-8 N= 12									
5	FIRM SILTY CLAY, Light Brown and Dark Brown, Fill (Dark Gray)		3-3-5 N= 8									
10	FIRM SILTY CLAY, Dark Gray	CL-ML	2-3-6 N= 9									
15	FIRM-VERY FIRM GLACIAL CLAY, Yellow Brown and Gray, Oxidized	CL	3-5-9 N= 14									
20			3-5-9 N= 14									
25	(Brownish Gray)		3-7-11 N= 18									
30	(Gravel/Cobbles) (Gravel/Cobbles)		11-18-27 N= 45									
35	VERY FIRM GLACIAL CLAY, Dark Brownish Gray (Gravel/Cobbles)	CL	4-10-17 N= 27									
40	GLACIAL MATERIAL, Dark Brownish Gray	CL	6-17-25 N= 42									
45			6-18-26 N= 44									
50	(Dark Gray)		7-17-25 N= 42									
55	(Gravel/Cobbles) (Yellow Brown and Gray)		6-20-30 N= 50									
60	(Dark Gray)		7-22-34 N= 56									
65			9-21-32 N= 53									
70	(Gravel/Cobbles)		7-15-23 N= 38									
	END OF BORING AT 71.5 FEET FREE WATER WAS ENCOOUNTERED AT 16 FEET AT TIME OF DRILLING											

LOG OF BORING G8063.GPJ CERTIFIED TESTING.GDT 6/25/26

Soil Boring Locations Shown On V.02

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.

Signature: _____ 6-30-2026 (date)

Name: Matthew R. Dalley, P.E.

License Number: 19700

My license renewal date is December 31, 2027.

Pages or sheets covered by this seal:

This bound report contains 14 pages, including this page.
CTS File Number G8063

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 8 of 15

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8063
Project: Oriole Ave Bridge Replacement
Date Started: 6/11/26
Date Completed: 6/11/26

Boring No.: S-3
Boring Location: O'Brien Co, IA
Drill Type: Hollow Stem
Ground Elev.: 100.0

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"
			18-Inch Asphalt Layer		3-3-5 N= 8									
			6-Inch Sand Layer											
5			FIRM SILTY CLAY, Dark Brown, Fill		2-4-7 N= 11									
10			FIRM SILTY CLAY, Dark Gray	CL-ML	2-3-5 N= 8									
			(Gravel)											
15			FIRM-VERY FIRM GLACIAL CLAY, Yellow Brown and Gray	CL	4-8-10 N= 18									
20			(Light Gray and Yellow Brown, Sand Lense)		4-4-7 N= 11									
25			VERY FIRM GLACIAL CLAY, Yellow Brown and Gray	CL	4-7-11 N= 18									
30			(Mineral Deposits)		4-13-16 N= 29									
35			(Dark Brownish Gray, Mineral Deposits)		24-11-18 N= 29									
40			GLACIAL MATERIAL, Dark Brownish Gray	CL	34-16-26 N= 42									
45			(Mineral Deposits)		28-29-30 N= 59									
50					10-16-23 N= 39									
55			(Cobbles) (Yellow Brown and Gray)		15-26-42 N= 68									
60					48-16-26 N= 42									
			(Gravel/Cobbles)											
65			(Dark Brownish Gray)		27-17-24 N= 41									
70			(Dark Gray)		9-14-22 N= 36									
			END OF BORING AT 71.5 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G8063.GPJ CERTIFIED TESTING.GDT 6/25/26

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G8063
Project: Oriole Ave Bridge Replacement
Date Started: 6/12/26
Date Completed: 6/12/26

Boring No.: S-4
Boring Location: O'Brien Co, IA
Drill Type: Hollow Stem
Ground Elev.: 100.1

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"
			4-Inch Asphalt Layer		4-6-12 N= 18									
			8-Inch Gravel Layer											
5			FIRM SILTY CLAY, Dark Brown and Dark Gray, Fill	CL-ML	4-3-3 N= 6									
			STIFF SILTY CLAY, Dark Brown											
10			(Dark Gray to Medium Gray)		3-3-3 N= 6									
15			FIRM-VERY FIRM GLACIAL CLAY, Yellow Brown and Gray	CL	3-3-5 N= 8									
20					4-5-6 N= 11									
25			VERY FIRM GLACIAL CLAY, Yellow Brown and Gray	CL	6-8-12 N= 20									
30					6-12-18 N= 30									
			(Gravel)											
35					6-13-15 N= 28									
40					6-15-16 N= 31									
45			(Dark Gray, Mineral Deposits)		8-16-18 N= 34									
50			GLACIAL MATERIAL, Dark Brownish Gray	CL	8-16-20 N= 36									
55			(Yellow Brown)		8-27-29 N= 56									
60			(Light Brown)		16-30-31 N= 61									
65			(Dark Gray)		13-25-26 N= 51									
			END OF BORING AT 66.5 FEET FREE WATER WAS ENCOUNTERED AT 16 FEET AT TIME OF DRILLING											

LOG OF BORING G8063.GPJ CERTIFIED TESTING.GDT 6/25/26

Soil Boring Locations Shown On V.02

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.

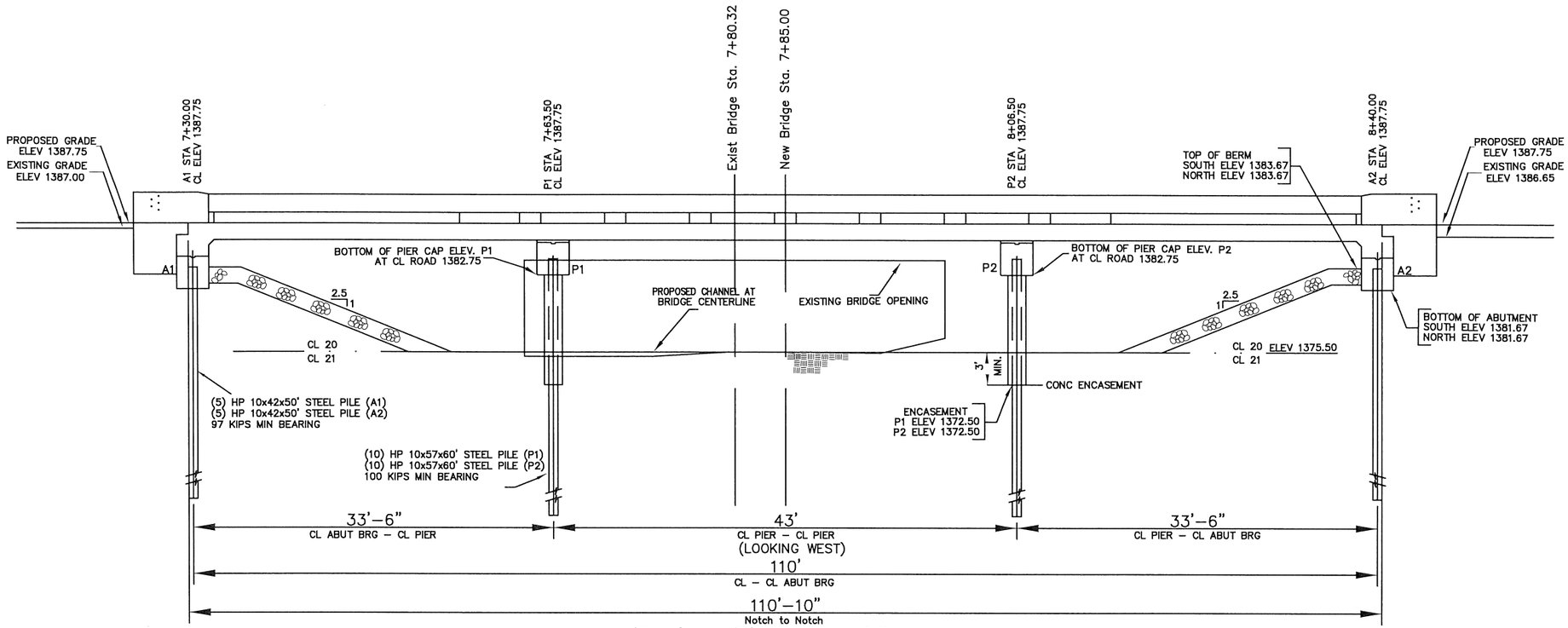
Signature: 6-30-2026 (date)
Name: Matthew R. Dailey, P.E.
License Number: 19700
My license renewal date is December 31, 2027.
Pages or sheets covered by this seal:
This bound report contains 14 pages, including this page.
CTS File Number G8063

Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

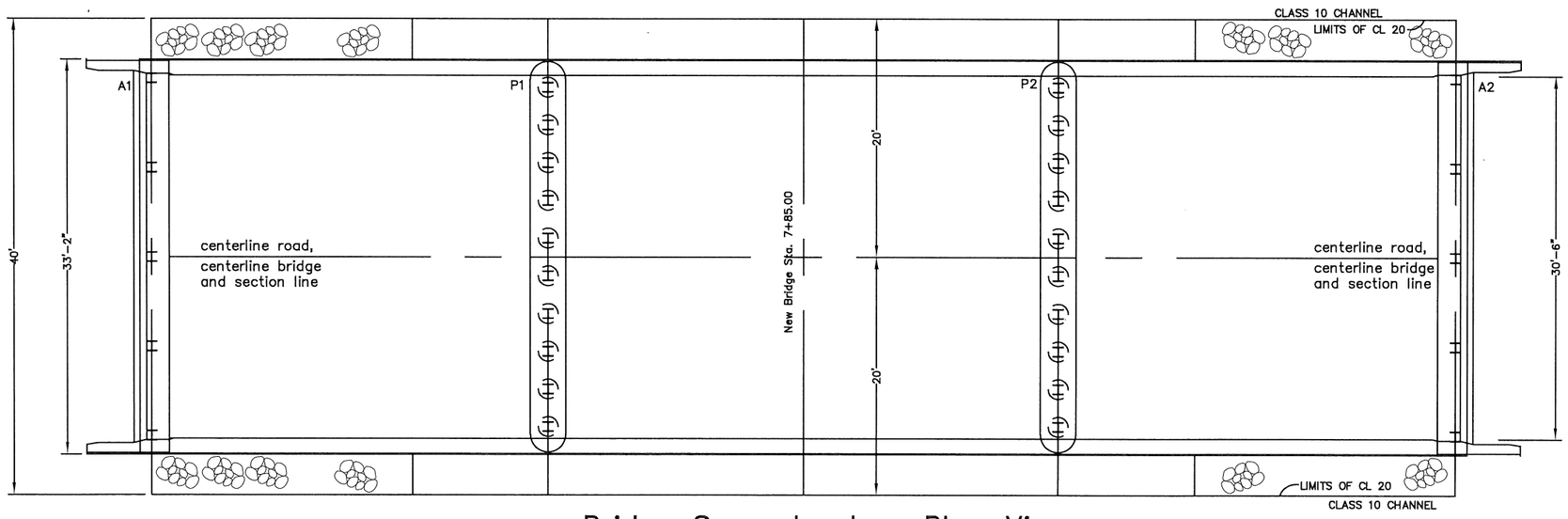
Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 9 of 15

0 10 20
SCALE



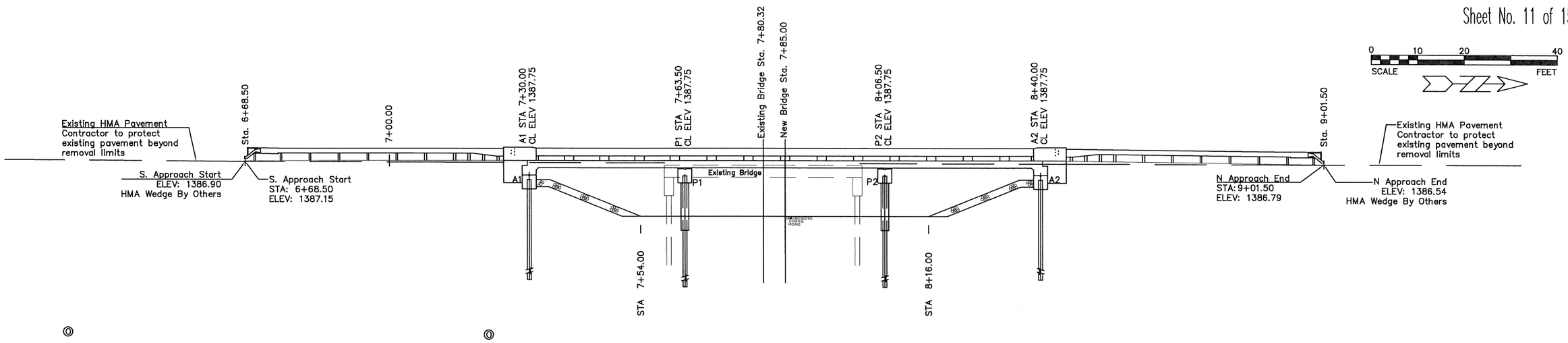
Bridge Elevation View

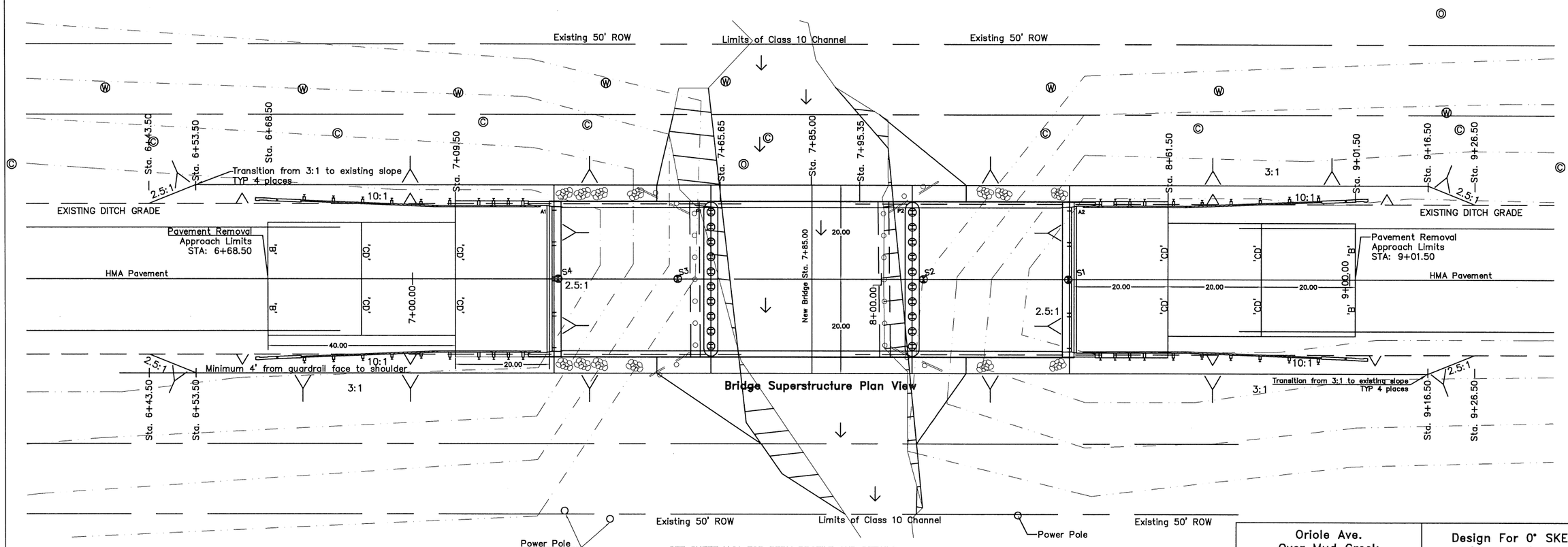


Bridge Superstructure Plan View

Oriole Ave. Over Mud Creek T-95N, R-41W Section 31, Dale Twp. FHWA 260300 Latitude 42.99918285° Longitude -95.74161331°	Design For 0° SKEW 110'-0 x 30'-6 CCS 33'-6, 43'-0, 33'-6 Spans Station 7+85.00 O'Brien County FHWA 260300

Sheet 10 of 15





SEE SHEET V.01 FOR BERM PROFILE AND DETAILS
SEE STANDARD ROAD PLAN BR-106 FOR APPROACH DETAILS
SEE STANDARD ROAD PLAN EW-301 FOR GUARDRAIL GRADING

Ⓞ Osceola County Rural Water
Ⓒ The Community Agency
Ⓦ Windstream Communitcations

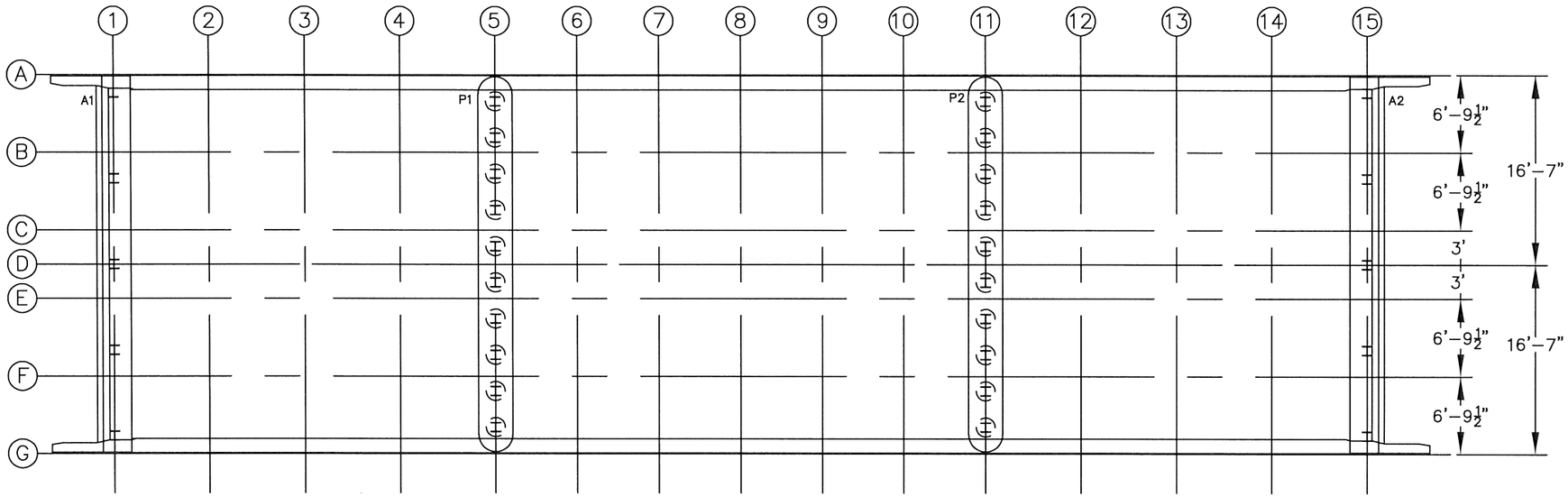
Oriole Ave.
Over Mud Creek
T-95N, R-41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude -95.74161331°

Design For 0° SKEW
110'-0 x 30'-6 CCS
33'-6, 43'-0, 33'-6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

Sheet 11 of 15

K-26	FHWA No. 260300	STATION 7+85.00, 110'-0" x 30'-6" CCS BRIDGE, 0° SKEW, ADT 210 VPD	Rohlfsen	O'BRIEN COUNTY	Bridge Approach Details	Project No. BROS-C071(93)--5F-71	Sheet No. V.02

0 10 20
SCALE



Top of Slab Elevations

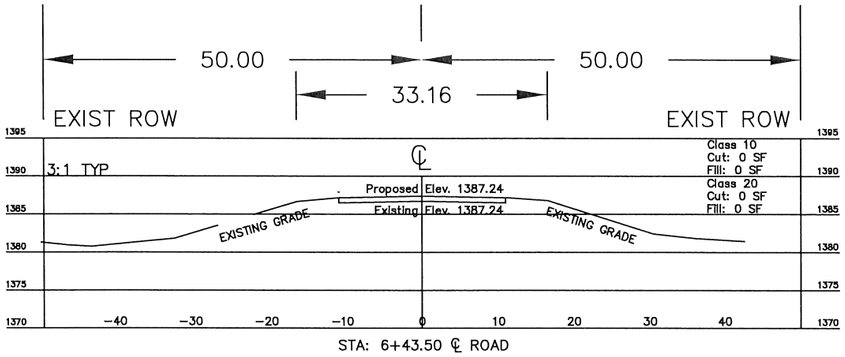
Location	C.L. A1				C.L. P1						C.L. P2				C.L. A2
	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Line 9	Line 10	Line 11	Line 12	Line 13	Line 14	Line 15
Station	7+30.000	7+38.375	7+46.750	7+55.125	7+63.500	7+70.667	7+77.833	7+85.000	7+92.167	7+99.333	8+06.500	8+14.875	8+23.250	8+31.625	8+40.000
West Outside Edge of Slab (A)	1387.448	1387.479	1387.484	1387.464	1387.448	1387.469	1387.490	1387.505	1387.490	1387.469	1387.448	1387.464	1387.484	1387.479	1387.448
Mid-Point 2% Crown (B)	1387.583	1387.615	1387.620	1387.599	1387.583	1387.604	1387.625	1387.641	1387.625	1387.604	1387.583	1387.599	1387.620	1387.615	1387.583
3' Parabolic Crown (C)	1387.719	1387.750	1387.755	1387.734	1387.719	1387.740	1387.760	1387.776	1387.760	1387.740	1387.719	1387.734	1387.755	1387.750	1387.719
Centerline (D)	1387.750	1387.781	1387.786	1387.766	1387.750	1387.771	1387.792	1387.807	1387.792	1387.771	1387.750	1387.766	1387.786	1387.781	1387.750
3' Parabolic Crown (E)	1387.719	1387.750	1387.755	1387.734	1387.719	1387.740	1387.760	1387.776	1387.760	1387.740	1387.719	1387.734	1387.755	1387.750	1387.719
Mid-Point 2% Crown (F)	1387.583	1387.615	1387.620	1387.599	1387.583	1387.604	1387.625	1387.641	1387.625	1387.604	1387.583	1387.599	1387.620	1387.615	1387.583
East Outside Edge of Slab (G)	1387.448	1387.479	1387.484	1387.464	1387.448	1387.469	1387.490	1387.505	1387.490	1387.469	1387.448	1387.464	1387.484	1387.479	1387.448

Anticipated camber has been added to the elevations above. Contractor to verify before construction.

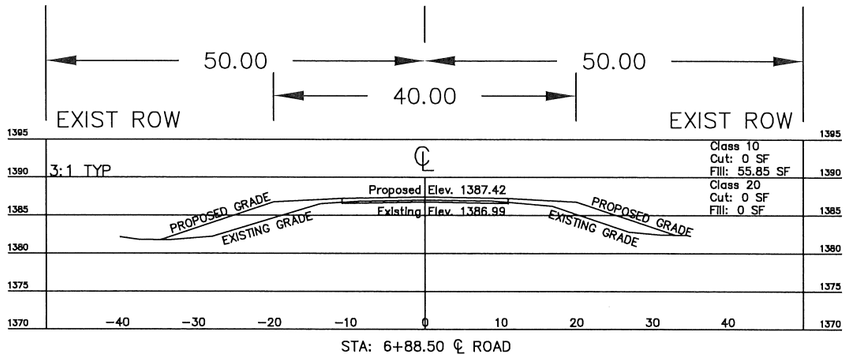
Oriole Ave.
Over Mud Creek
T–95N, R–41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
Longitude –95.74161331°

Design For 0° SKEW
110'–0 x 30'–6 CCS
33'–6, 43'–0, 33'–6 Spans
Station 7+85.00
O'Brien County
FHWA 260300

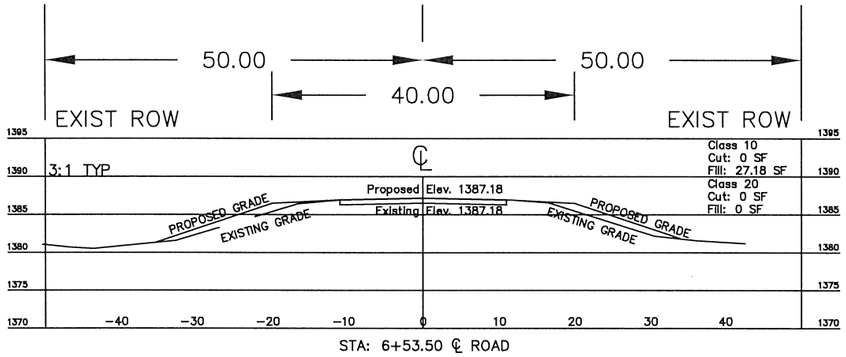
Sheet 12 of 15



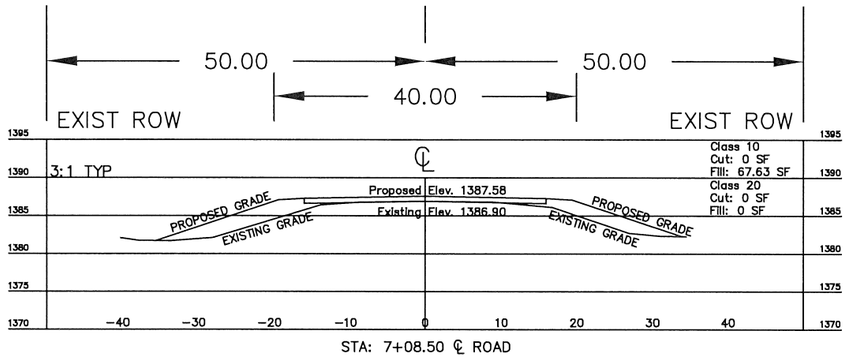
STA: 6+43.50 ℄ ROAD



STA: 6+88.50 ℄ ROAD

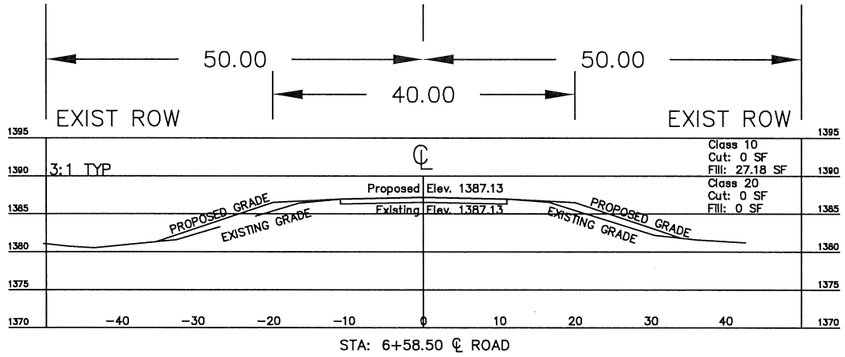


STA: 6+53.50 ℄ ROAD

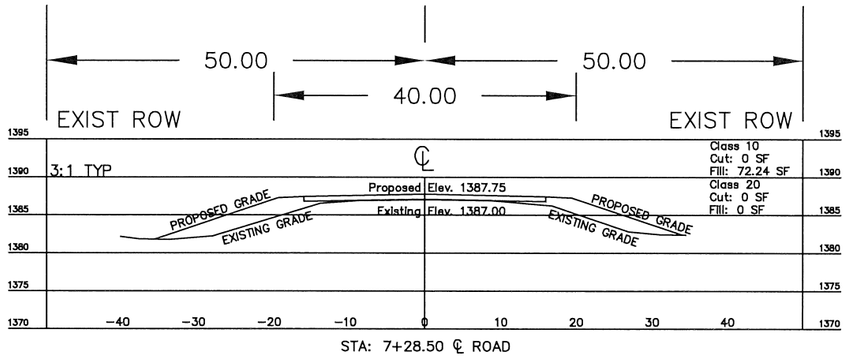


STA: 7+08.50 ℄ ROAD

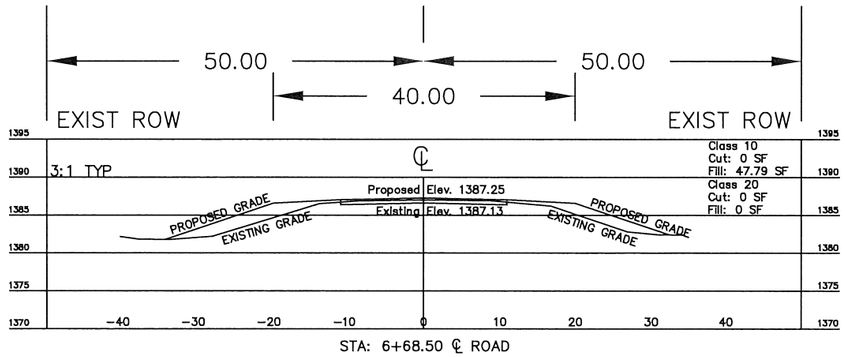
Station 1	Station 2	CL 10 R&B Vol. of Cut	CL 10 R&B Vol. of Fill
6+43.50	6+53.50	0.00	5.03
6+53.50	6+58.50	0.00	5.03
6+58.50	6+68.50	0.00	13.88
6+68.50	6+88.50	0.00	38.39
6+88.50	7+08.50	0.00	45.73
7+08.50	7+28.50	0.00	51.80



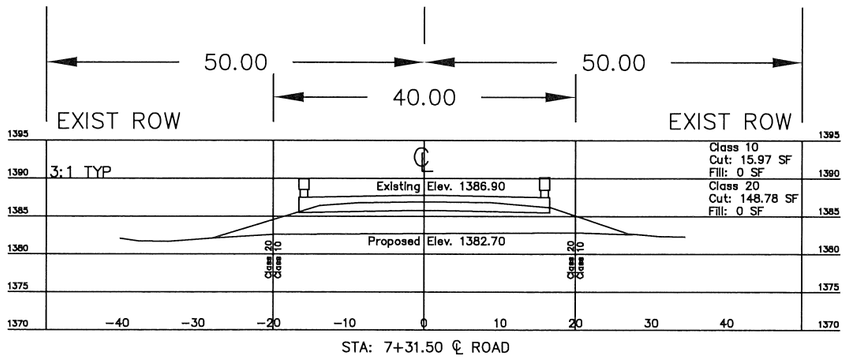
STA: 6+58.50 ℄ ROAD



STA: 7+28.50 ℄ ROAD



STA: 6+68.50 ℄ ROAD

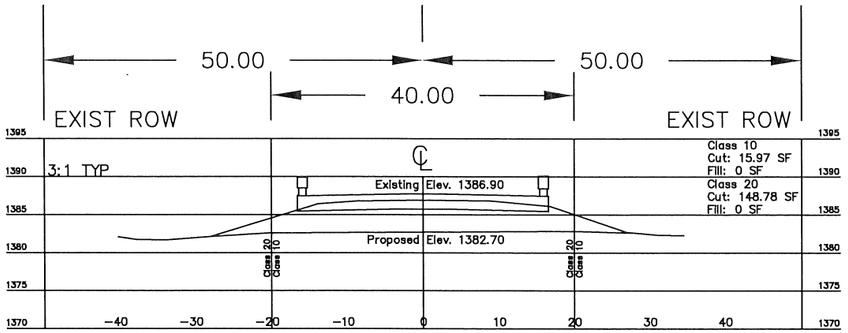


STA: 7+31.50 ℄ ROAD

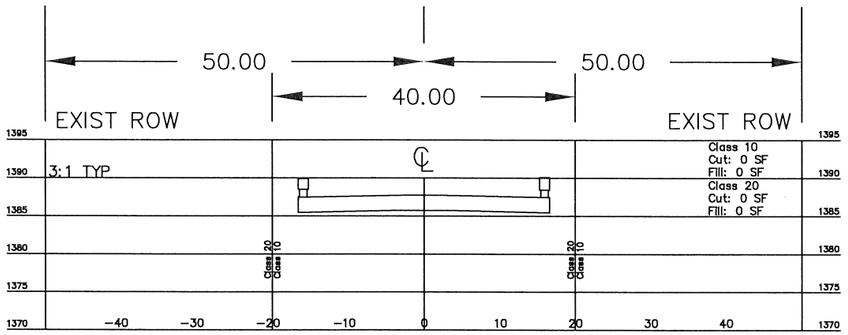
Oriole Ave.
Over Mud Creek
T−95N, R−41W
Section 31, Dale Twp.
FHWA 260300
Latitude 42.99918285°
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Station 7+85.00
O'Brien County
FHWA 260300

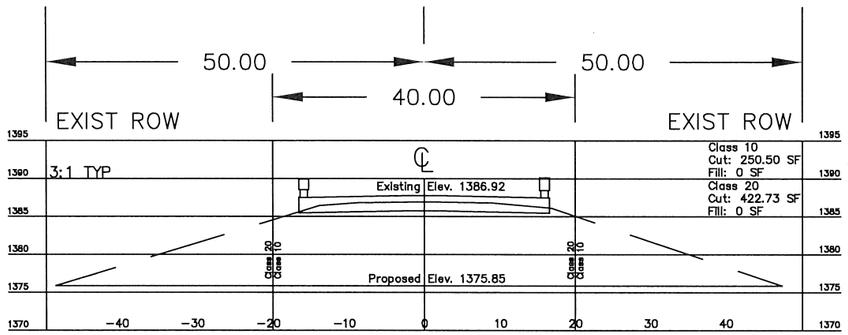
Sheet 13 of 15



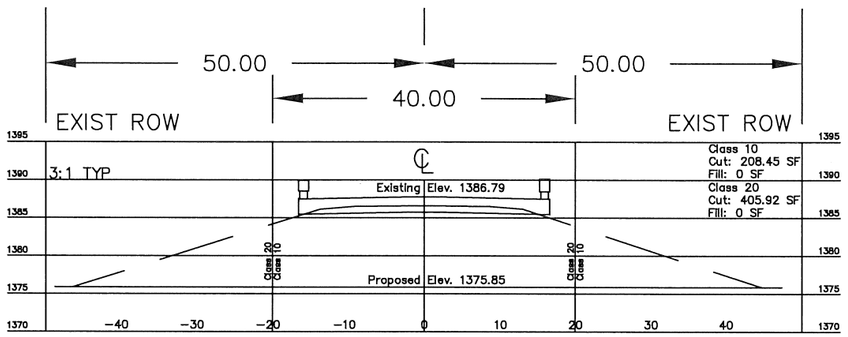
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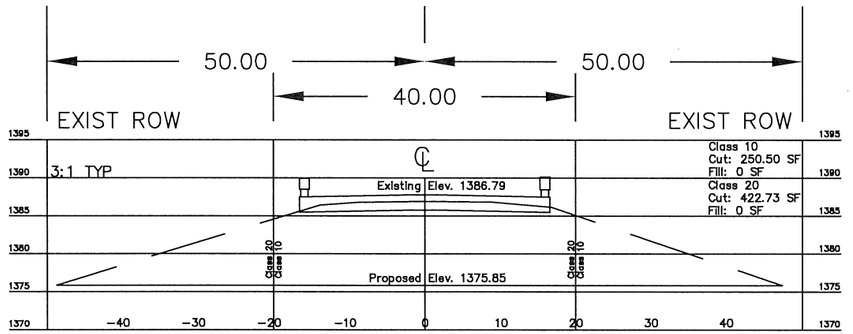
STA: 7+99.80 ℄ ROAD



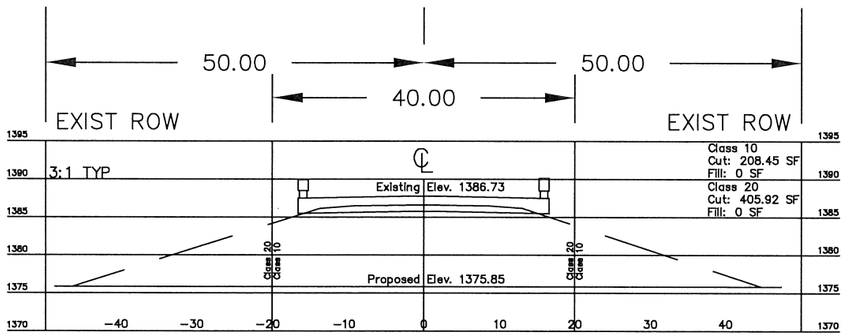
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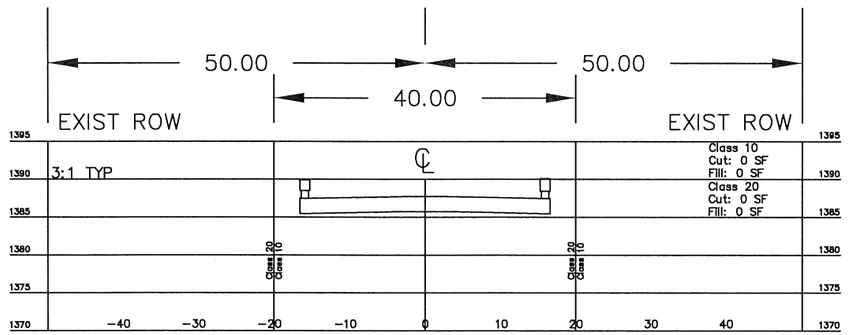
STA: 7+99.80 ℄ ROAD



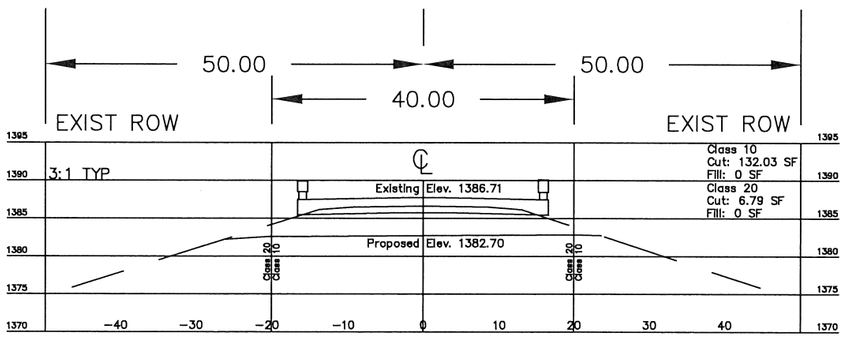
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STA: 8+15.90 ℄ ROAD



STA: 7+60.80 ℄ ROAD



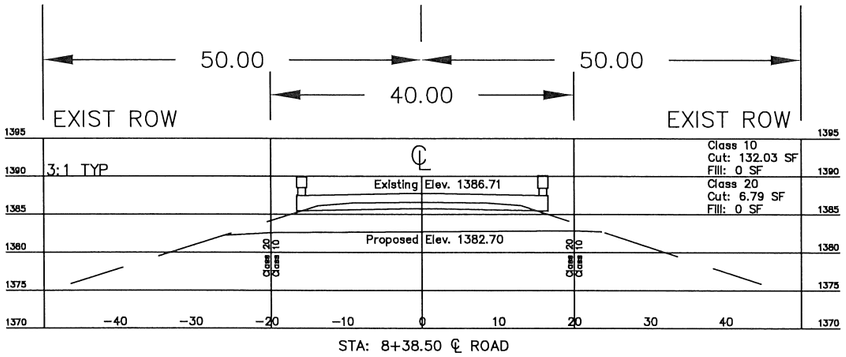
STA: 8+35.50 ℄ ROAD

Station 1	Station 2	CL 10 Chan Vol. Cut	CL 20 Vol Of Cut
7+31.50	7+34.50	1.77	16.53
7+34.50	7+54.00	96.23	206.38
7+54.00	7+60.80	63.09	106.47
7+60.80	7+60.80	0.00	0.00
7+60.80	7+99.80	0.00	0.00
7+99.80	7+99.80	0.00	0.00
7+99.80	8+15.90	124.30	242.05
8+15.90	8+32.50	104.67	126.87
8+32.50	8+35.50	14.67	0.75

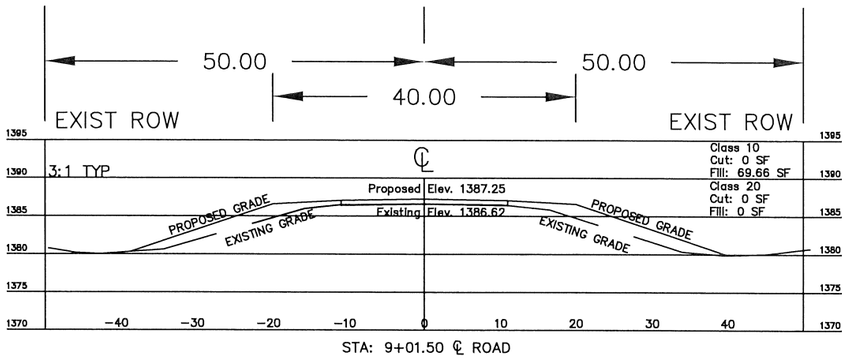
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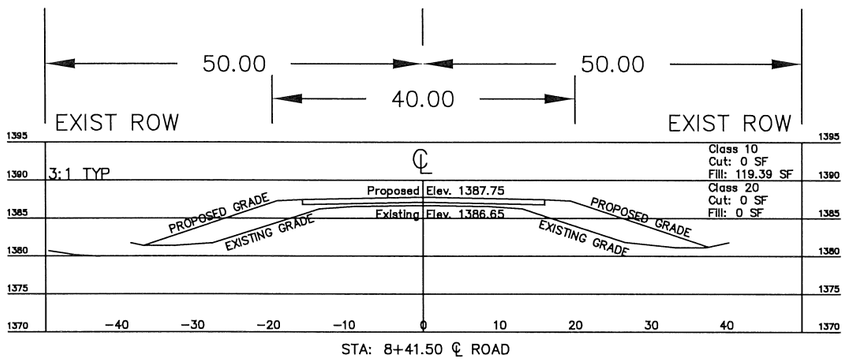
Sheet 14 of 15



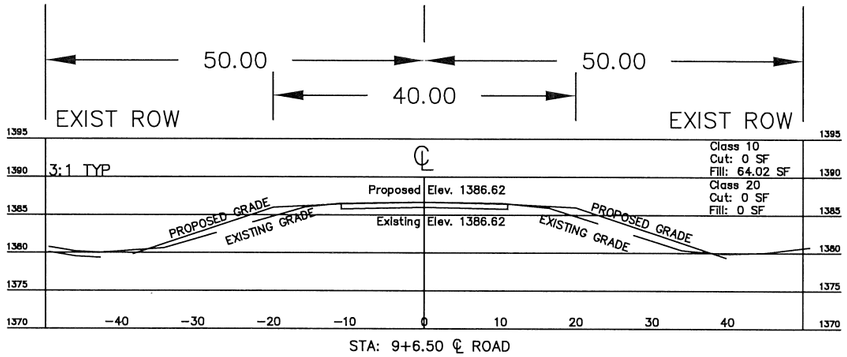
STA: 8+38.50 ℄ ROAD



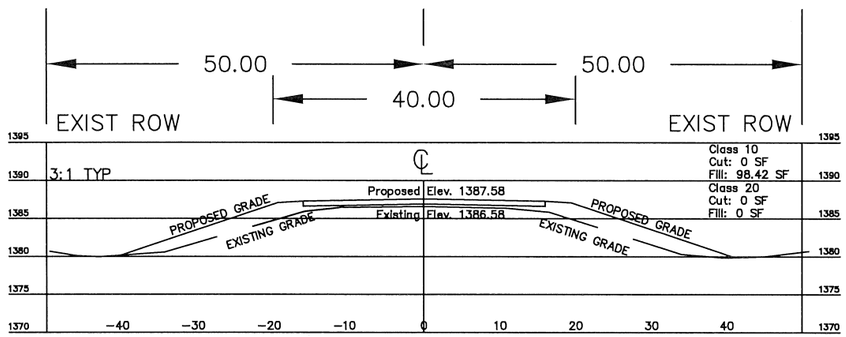
STA: 9+01.50 ℄ ROAD



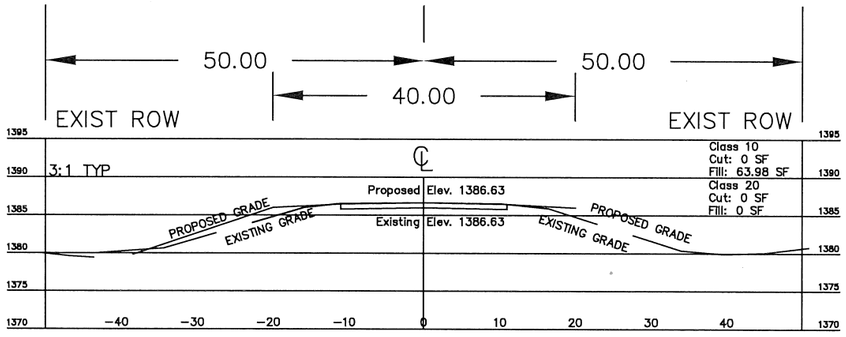
STA: 8+41.50 ℄ ROAD



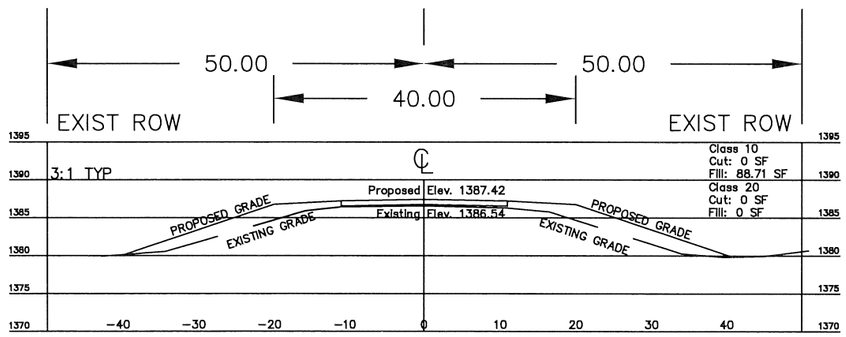
STA: 9+6.50 ℄ ROAD



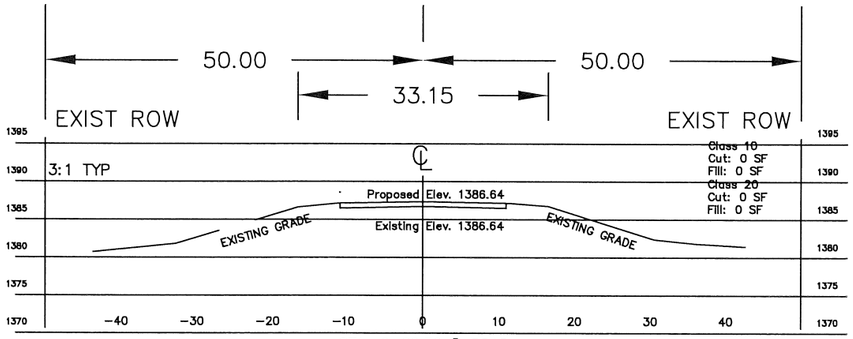
STA: 8+61.50 ℄ ROAD



STA: 9+16.50 ℄ ROAD



STA: 8+81.50 ℄ ROAD



STA: 9+26.50 ℄ ROAD

Station 1	Station 2	CL 10 R&B Vol. of Cut	CL 10 R&B Vol. of Fill
8+41.50	8+61.50	0.00	80.67
8+61.50	8+81.50	0.00	69.31
8+81.50	9+01.50	0.00	58.66
9+01.50	9+06.50	0.00	12.38
9+06.50	9+16.50	0.00	23.70
9+16.50	9+26.50	0.00	11.85

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Sheet 15 of 15