Resolution No. 20-53

RESOLUTION OF FINAL PLAN APPROVAL FOR
PROJECT NUMBER BRS-SWAP-C050(126)—FF-50

Moved by, Cupples seconded by, Carpenter

To sign and approve Final Plans for an I.D.O.T Letting of project BRS-SWAP-C050(126)—FF-50, Continuous Concrete Slab Bridge on County Road S 64th Ave E over Sugar Creek in Section 25 T-79N R-17W in Jasper County, Iowa.

AYES: Carpenter Cupples Talsma

NAYS: _____

Approved this 28th day of July, 2020.

Brandon Talsma
Chairman Board of Supervisors

Dennis Carpenter
Board of Supervisors

Doug Cupples
Board of Supervisors

ATTEST: Dennis Parrott
Dennis Parrott
Jasper County Auditor

PROJECT NUMBER: BROS-SWAP-CO50(126)--FE-50 LETTING DATE: OCTOBER 20, 2020

JASPER COUNTY BRIDGE REPLACEMENT CCS

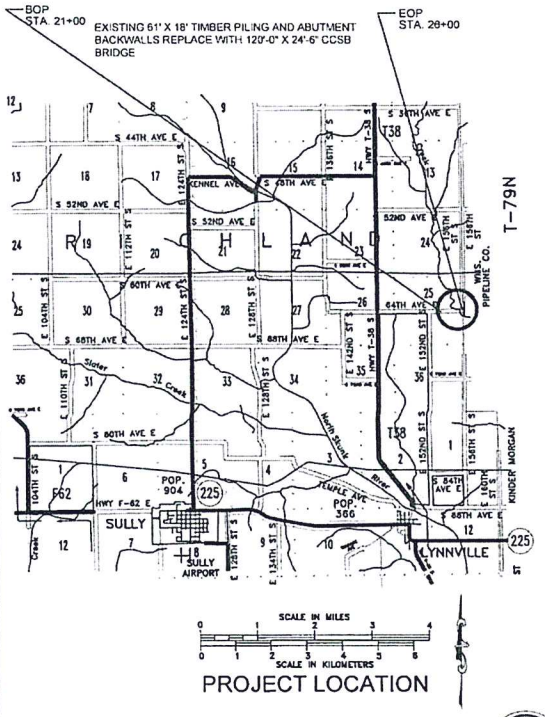
TOTAL SHEETS 8

SECTION 404 PERMIT AND CONDITIONS	281-1 10-18-16
Construct this project according to the requirements of U.S. Army Corps of Engineers NATIONWIDE PERMIT 14,CEMVR-OD-P-2019-0450, Permit No. CEMVR-OD-P-2020-0734. 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.	

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS

THE CONTRACTOR IS REQUIRED TO CONTACT "ONE CALL" AT (800) 292-8989 TO OBTAIN LOCATIONS FOR ALL EXISTING UTILITIES

WORKING DRAWINGS AND FALSEWORK PLANS AND CALCULATIONS SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IOWA. FALSEWORK PLANS SHALL INCLUDE AN ESTIMATE FOR SETTLEMENT OF FORMS, PLANS, DRAWINGS AND CALCULATIONS ARE TO BE SENT TO: JASPER COUNTY ENGINEER
911 NORTH 11TH AVE EAST
NEWTON, IOWA 50208



PROJECT LOCATION

SCALES: AS NOTED

2014 AADT 45 V.P.D.

50

IOWA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLANS OF PROPOSED IMPROVEMENT ON THE

FARM TO MARKET SYSTEM

JASPER COUNTY

BROS-SWAP-CO50(126)--FE-50

BRIDGE REPLACEMENT - CCS

ON S 64TH AVE E, OVER SUGAR CREEK, IN S25 T79 R17
FHWA NO. 196420

JASPER COUNTY BOARD OF SUPERVISORS

Supervisor Date

Supervisor Date

Supervisor Date

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.

LICENSED PROFESSIONAL ENGINEER
RUSSELL A. STUTT
18165
IOWA

BY:_____ DATE:_____

RUSSELL A. STUTT, P.E. 18165
MY LICENSE RENEWAL DATE IS DEC. 31, 2020

SHEETS COVERED BY THIS SEAL: _____
(ENTIRE SUBMISSION UNLESS SPECIFIED HERE)

INDEX OF SHEETS

MILEAGE SUMMARY

DIV	LOCATION		LIN. FT	MILES
	BGN. STA. 21+00	END STA. 26+00	500	0.095

STANDARD BRIDGE PLANS

THE FOLLOWING STANDARD PLANS SHALL BE CONSIDERED APPLICABLE TO CONSTRUCTION WORK ON THIS PROJECT

STANDARD	DATE	STANDARD	DATE	STANDARD	DATE
J24-01-06	06-13	J24-39-06	07-09		
J24-12-06	06-12	J24-40-06	12-08		
J24-13-06	07-09	J24-41-06	07-09		
J24-20-06	06-12	J24-42-06	12-08		
J24-21-06	12-08	J24-43-06	09-14		
J24-23-06	05-14	J24-44-06	09-16		
J24-24-06	12-08	P10L	07-19		
J24-34-06	06-13				

STANDARD ROAD PLANS

THE FOLLOWING STANDARD PLANS SHALL BE CONSIDERED APPLICABLE TO CONSTRUCTION WORK ON THIS PROJECT

STANDARD	DATE	STANDARD	DATE	STANDARD	DATE
EW-101	10-17-17				
EW-202	04-19-16				
EC-103	04-21-15				
EW-301	10-20-15				
EW-401	10-20-15				
SI-173	04-19-16				
TC-252	04-21-20				

IOWA ONE CALL
1-800-292-8989

UTILITY CONTACT INFORMATION

UTILITY COMPANY NAME	CONTACT PERSON	PHONE	CONTACT EMAIL
Lynnville Community Telephone	Josh Rozendaal	641-594-4295	josullytel@netins.net
Pella Cooperative Electric	Tim Vermeer	641-628-1040	tvermeer@pella-cea.org
Searsboro Telephone Company	Josh Rozendaal	641-594-4295	josullytel@netins.net

ESTIMATED ROADWAY QUANTITIES				
Project Number: BROS-SWAP-C050(126)--FE-50				
Item No.	Item Code	Item	Unit	Total
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.1
2	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY	1,578.0
3	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	1,350.0
4	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.00
5	2402-2720000	EXCAVATION, CLASS 20	CY	433
6	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	240.7
7	2404-7775000	REINFORCING STEEL	LB	59,376
8	2414-6424124	CONCRETE OPEN RAILING, TL-4	LF	262.0
9	2501-0201042	PILES, STEEL, HP 10 X 42	LF	1,260
10	2501-5475042	CONCRETE ENCASEMENT OF STEEL H PILES, HP 10 X 42 (P10A TYPE 3)	LF	432.0
11	2507-3250005	ENGINEERING FABRIC	SY	1,100.0
12	2507-6800061	REVETMENT, CLASS E	TON	692.0
13	2518-6910000	SAFETY CLOSURE	EACH	2
14	2528-8445110	TRAFFIC CONTROL	LS	1.00
15	2533-4980005	MOBILIZATION	LS	1.00
16	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA.	LF	780.0

NO. BID ITEM NOTES

1 THE CONTRACTING AUTHORITY HAS CUT DOWN TREES GREATER THAN 9" IN DIAMETER DUE TO THE POTENTIAL FOR THESE TREES BEING INHABITATED BY THE INDIANA BAT (MYOTIS SODALIS). THE CONTRACTOR WILL BE REQUIRED TO REMOVE THE DOWN TREES, GRUB THE STUMPS AND CLEAR AND GRUB THE REMAINING TREES.
ANY LIVING, DEAD, CUT OR FALLEN MATERIAL OF THE ASH (FRAXINUS SPP.) INCLUDING TREES, NURSERY STOCK, LOGS, FIREWOOD, STUMPS, ROOTS, BRANCHES, AND COMPOSTED OR UNCOMPOSTED ASH CHIPS CAN BE FREELY MOVED WITHIN THE YELLOW AREAS OF THE MOST RECENT FEDERAL EAB QUARANTINE & AUTHORIZED TRANSIT HTTPS://WWW.APHIS.USDA.GOV/PLANT_HEALTH/PLANT_PEST_INFO/EMERALD_ ASH_B/DOWNLOADS/EAB_QUARANTINE_MAP.PDF. OBTAIN APPROPRIATE COMPLIANCE AGREEMENTS FROM USDA APHIS PPQ PRIOR TO MOVING ANY OF THE ABOVE LISTED ASH ARTICLES TO AREAS OUTSIDE THE YELLOW ZONE ON THE MAP. FOR QUESTIONS, CONCERNS, AND GENERAL ASSISTANCE, CONTACT: USDA APHIS PPQ, IOWA OFFICE, 515-414-3295 OR IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP 515-725-1470 ENTOMOLOGY@IOWAAGRICULTURE.GOV

2 TYPE "A" COMPACTION REQUIRED. QUANTITY DOES NOT COMPENSATE FOR SHRINKAGE. AFTER ALL AVAILABLE MATERIAL ON SITE HAS BEEN DEPLETED, THE CONTRACTOR SHALL FURNISH ALL REMAINING REQUIRED. NO PAYMENT FOR OVERHAUL SHALL BE MADE ON THIS PROJECT. INCLUDES QUANTITIES TO RELOCATE DRIVEWAY AND FIELD ENTRANCE.

3 INCLUDES COSTS TO EXCAVATE CHANNEL AND SHAPE TO EXTENTS SHOWN ON LONGITUDINAL SECTION ALONG CENTERLINE OF ROADWAY AND THE LIMITS SHOWN ON THE SITUATION PLAN. SUITABLE MATERIAL MAY BE USED TO CONSTRUCT ABUTMENT BERMS, GUARDRAIL BLISTERS OR BE WASTED ON APPROACH ROADWAY FORESLOPES AS DIRECTED BY THE ENGINEER.

4 REMOVE EXISTING TIMBER ABUTMENTS THE BRIDGE DECK AND STEEL BEAMS HAVE BEEN PREVIOUSLY REMOVE BY THE CONTRACTING AUTHORITY. ALL MATERIAL TO BE REMOVED FROM SITE BY CONTRACTOR AND BECOME PROPERTY OF CONTRACTOR. SUPERSTRUCTURE HAS BEEN REMOVED BY CONTRACTING AUTHORITY FORCES.

5 CLASS 20 EXCAVATION MAY BE USED TO CONSTRUCT THE ABUTMENT BERM, OR BE WASTED ON THE APPROACH ROADWAY FORESLOPES . SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02.D.2 OF THE STANDARD SPECIFICATIONS. UNSUITABLE SOIL SHALL BE WASTED OFF SITE.

6 ALL STRUCTURAL CONCRETE IS CLASS "C". CERTIFIED PLANT INSPECTION IS REQUIRED AND IS INCLUDED IN THIS ITEM. INCLUDES FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLETS AT ABUTMENTS. INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. NO ADDITIONAL PAYMENT FOR HEATING AND PROTECTION OF CONCRETE WILL BE ALLOWED, IF NECESSARY.

7 ALL REINFORCING STEEL SHALL BE GRADE 60.

8 ALL STRUCTURAL CONCRETE FOR THE RAIL IS CLASS "C". CERTIFIED PLANT INSPECTION IS REQUIRED AND IS INCLUDED IN THIS ITEM. NO ADDITIONAL PAYMENT FOR HEATING AND PROTECTION OF CONCRETE WILL BE ALLOWED, IF NECESSARY.

9 EACH ABUTMENT 5 HP10X42X45. EACH PIER 9 HP10X42X45. SEE PILE NOTES ON SHEET 5. PILE POINTS SHALL NOT BE USED

10 ALL STRUCTURAL CONCRETE IS CLASS "C". CERTIFIED PLANT INSPECTION IS REQUIRED AND IS INCLUDED IN THIS ITEM. NO ADDITIONAL PAYMENT FOR HEATING AND PROTECTION OF CONCRETE WILL BE ALLOWED, IF NECESSARY.

11 EXTENTS SHOWN ON SHEET 4

12 EXTENTS SHOWN ON SHEET 4. REVETMENT TO BE PLACED AT A THICKNESS OF 1'-6".

13,14 SEE TRAFFIC CONTROL PLAN ON SHEET 8.

DESIGN FOR 0° SKEW

120'-0" x 24'-6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
36'-6" END SPANS

MONOLITHIC PIERS
47'-0" CENTER SPAN

QUANTITIES

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

SPECIFICATIONS
DESIGN: AASHTO LRFD SERIES OF 2004, WITH INTERIMS 2015
CONSTRUCTION: THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION SERIES 2015, PLUS GENERAL SUPPLEMENTAL SPECIFICATIONS; AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS, SHALL APPLY TO THE CONSTRUCTION ON THIS PROJECT.

DESIGN STRESSES
DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 3RD EDITION SERIESN OF 2004
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
STRUCTURAL STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 6, ASTM A709 GRADE 36 (AASHTO M270 GRADE 36) OR ASTM A36.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, F'C=4,000 PSI EXCEPT PRESTRESSED BEAM CONCRETE AS NOTED

GENERAL NOTES
THIS DESIGN IS FOR A 120'-0" x 24'-6" CONTINUOUS CONCRETE SLAB BRIDGE ON S 64th AVE E OVER SUGAR CREEK IN JASPER COUNTY, IOWA.
THIS BRIDGE IS DESIGNED FOR HL-93 LOADING PLUS 20 LBS. PER SQ. FT. OF ROADWAY FOR FUTURE WEARING SURFACE.
ACCESS SHALL BE MAINTAINED TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
THE PRIME CONTRACTOR SHALL EMPLOY CONTROLS TO REDUCE, THE EROSIVENESS OF LAND ADJACENT TO SURFACE WATERS AND WETLANDS. INCLUDING ESTABLISHMENT AND MAINTENANCE OF EROSION CONTROL DURING AND AFTER CONSTRUCTION AND REVEGETATION OF ALL DISTURBED AREAS UPON PROJECT COMPLETION. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL EROSION CONTROL MEASURES.

STANDARD ROAD PLANS ARE AVAILABLE FROM THE IOWA DEPARTMENT OF TRANSPORTATION WEBSITE: http://www.iowadot.gov/erl/index.html.

UTILITY NOTES
SEE SECTION 1107.15 OF THE STANDARD SPECIFICATION REGARDING UTILITY COORDINATION.
WASTE AND DISPOSAL NOTES
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT AREAS (INCLUDING HAUL ROADS) SELECTED FOR WASTE OR DISPOSAL NOT IMPACT 1 CULTURALLY SENSITIVE SITES OR GRAVES OR 2) WETLANDS OR "WATERS OF THE U.S.", INCLUDING STREAMS OR STREAM BANKS BELOW THE "ORDINARY HIGH WATER MARK", WITHOUT AN APPROVED U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE ENGINEER.

HAZARDOUS MATERIALS NOTES
A SCRAPE SAMPLE OF THE EXISTING PAINT WAS TAKEN FROM A STEEL BEAM OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE AND OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 1670 mg/kg. ANALYSIS TOTAL CHROMIUM ON THIS SAMPLE WAS 133 mg/kg. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS, NO OTHER CONSTITUENTS WERE ANALYZED, THE BIDDER SHOULD NOT RELY ON THE COUNTY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.
THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER THAT ANY PAINT REMOVED DURING REMOVAL IS CONTAINED, COLLECTED, AND DISPOSED OF IN ACCORDANCE WITH SECTION 2508 OF THE STANDARD SPECIFICATIONS.
BEFORE DELIVERY OF ANY SCRAP STEEL THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE TO THE RECEIVING FACILITY. THIS NOTICE SHALL AT A MINIMUM INCLUDE:
1. A NOTICE THAT THE SCRAP STEEL IS COATED WITH PAINT THAT HAS REGULATED MATERIALS AT LEVELS THAT COULD BE HAZARDOUS TO EMPLOYEES OR THE ENVIRONMENT.
2. A COPY OF THE SCRAPE SAMPLE PROVIDED IN THE CONTRACT DOCUMENTS.
3. A SIGNATURE BLOCK FOR THE RECEIVING FACILITY TO CONFIRM THEIR RECEIPT OF THIS INFORMATION: A COPY OF THIS NOTICE, SIGNED BY THE RECEIVING FACILITY, SHALL BE RETURNED TO THE ENGINEER BEFORE ANY SCRAP STEEL IS REMOVED FROM THE PROJECT. ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THE ABOVE REMOVAL AND DISPOSAL REQUIREMENTS WILL BE INCIDENTAL TO "REMOVAL OF EXISTING BRIDGE."
IN THE EVENT THAT ASBESTOS IS UNCOVERED AT THE TIME DEMOLITION BEGINS THE CONTRACTOR SHALL NOTIFY THE CONTRACTING AUTHORITY IMMEDIATELY. A LICENSED ASBESTOS CONTRACTOR WILL BE CONTRACTED TO REMOVE ANY REMAINING ASBESTOS DURING THE BRIDGE DEMOLITION.

STREAM CROSSING NOTES
THE CONTRACTOR IS ENCOURAGED TO CONDUCT CONSTRUCTION ACTIVITIES DURING A PERIOD OF LOW FLOW. ANY TEMPORARY CROSSINGS SHALL INCLUDE ENOUGH CULVERTS TO ACCOMMODATE LOW FLOWS AND MUST BE REMOVED AFTER COMPLETION OF WORK ON THIS PROJECT. TEMPORARY STREAM CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD ROAD PLAN EW-401. THE COST OF INSTALLATION, MAINTENANCE AND REMOVAL OF TEMPORARY CROSSINGS INCLUDING CULVERTS, SHALL BE INCLUDED IN THE PRICE BID FOR "MOBILIZATION."
EQUIPMENT FOR HANDLING AND CONVEYING MATERIALS DURING CONSTRUCTION SHALL BE OPERATED TO PREVENT DUMPING OR SPILLING THE MATERIAL INTO WATERBODIES, STREAMS OR WETLANDS.
CARE SHALL BE TAKEN TO PREVENT ANY PETROLEUM PRODUCTS, CHEMICALS OR OTHER DELETERIOUS MATERIALS FROM ENTERING WATERBODIES, STREAMS OR WETLANDS.
CONSTRUCTION EQUIPMENT, ACTIVITIES AND MATERIALS SHALL BE KEPT OUT OF THE STREAMS , WATERBODIES AND WETLANDS TO THE MAXIMUM EXTENT POSSIBLE.

CONCRETE AND REINFORCING STEEL NOTES
ALL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED. BAR CHAIRS SPACED AT NOT N THAN 3'-0" CENTERS IN EITHER DIRECTION SHALL BE USED TO SUPPORT ALL REINFORCING IN ACCORDANCE WITH THE SECTION 2404 OF STANDARD SPECIFICATIONS.
CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.
ALL EXPOSED CORNERS 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.
ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.
KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM THE VERTICAL.

CONTRACTOR'S WORK AREA
THE CONTRACTOR'S WORK AND MATERIAL STORAGE AREA SHALL BE DEFINED BY THE CONTRACTOR AND NOTED TO THE ENGINEER. THE CONTRACTOR SHALL SHAPE, FERTILIZE, AND SEED THIS CONTRACTOR'S AREA IN ORDER TO RETURN IT TO ITS ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR "SEEDING AND FERTILIZING (RURAL)" AND "MULCHING" BID ITEMS. AREAS OUTSIDE THE CONTRACTOR'S AREA DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION, AS DETERMINED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.

PILING NOTES
SOUNDING AND TEST BORING DATA SHOWN ON PLANS WERE PROVIDED FOR DESIGNING AND ESTIMATING PURPOSES. THEIR INCLUSION IN THE PLANS DOES NOT CONSTITUTE A GUARANTEE THAT CONDITIONS OTHER THAN THOSE INDICATED WILL NOT BE ENCOUNTERED.
THIS PROJECT USES THE LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHODOLOGY FOR DETERMINING PILE CONTRACT LENGTH AND NOMINAL AXIAL BEARING RESISTANCE. NOMINAL AXIAL BEARING RESISTANCES WILL BE LARGER THAN BEARING VALUES IN THE PAST, BUT CONSTRUCTION CONTROL BLOW COUNTS WILL BE APPROXIMATELY THE SAME. A WEAP ANALYSIS AND BEARING GRAPH WILL BE PREPARED BY THE CONTRACTING AUTHORITY THAT GIVES THE RELATIONSHIP BETWEEN REQUIRED NOMINAL AXIAL BEARING RESISTANCE AND BLOW COUNT.
ABUTMENT PILES, LRFD CONTRACT LENGTH AND RESISTANCE
THE CONTRACT LENGTH OF 45 FEET FOR THE ABUTMENT PILES IS BASED ON A MIXED SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 93 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.7 FOR ROCK END BEARING. THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.7 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

ABUTMENT PILES, DRIVING AND CONSTRUCTION
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR ABUTMENT PILES IS 66 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 WEAP ANALYSIS WITH BEARING GRAPH.

PIER PILES, LRFD CONTRACT LENGTH AND RESISTANCE
THE CONTRACT LENGTH OF 45 FEET FOR THE PIER PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 103 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL AND 0.7 FOR ROCK END BEARING. THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR OF 0.65 FOR SOIL AND 0.7 FOR ROCK END BEARING

PIER PILES, DRIVING AND CONSTRUCTION CONTROL
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER PILES IS 74 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 WEAP ANALYSIS WITH BEARING GRAPH.

DESIGN FOR 0° SKEW

120'-0" x 24'-6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
36'-6" END SPANS

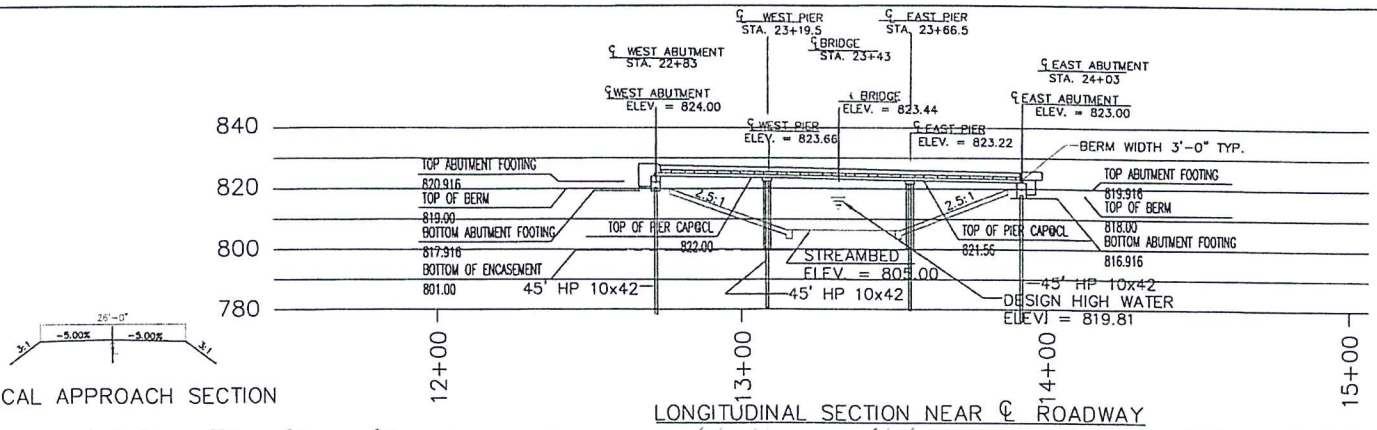
MONOLITHIC PIERS
47'-0" CENTER SPAN

GENERAL NOTES

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION



LONGITUDINAL SECTION NEAR ℄ ROADWAY

TYPICAL APPROACH SECTION

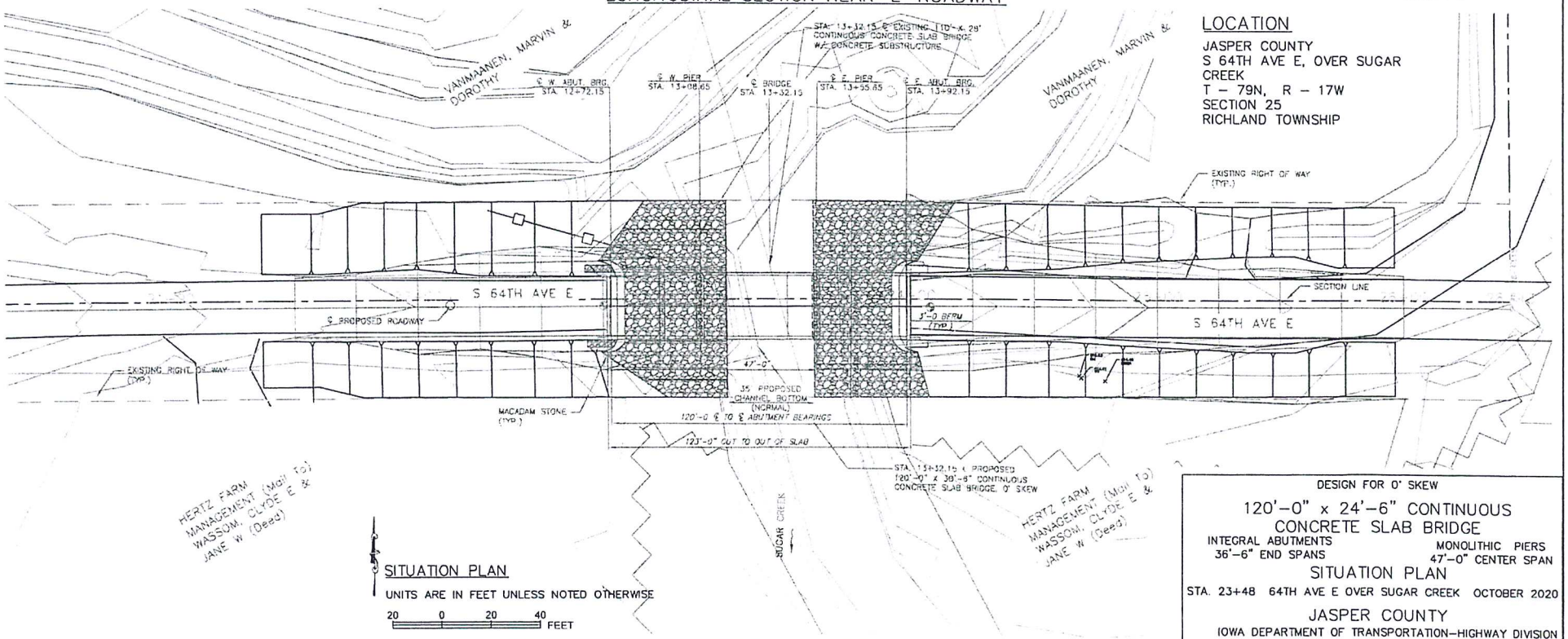
BENCH MARK: BM, SPIKE IN POWER POLE, STA. 24+68.31, 27.32' RT., ELEV. 818.63

HYDRAULICS

DRAINAGE AREA	36.4 SQ. MI.
STREAM SLOPE	0.001261042 FT/FT
BRIDGE WATERWAY AREA	1084.5 S.F.
DESIGN VELOCITY	6.41 FPS
DESIGN HIGH WATER ELEV.	819.81
Q50	6950 CFS
FREEBOARD	2.19FT.
MAX BACKWATER DEPTH	0.62 FT.
STAGE ELEV.	819.81
Q100	7690 CFS
FREEBOARD	1.80 FT.
MAX BACKWATER DEPTH	0.78 FT.
STAGE ELEV.	820.20
Q200	9010 CFS
Q500	11140
CALCULATED SCOUR DEPTH	802.5 FT.

LOCATION

JASPER COUNTY
S 64TH AVE E, OVER SUGAR CREEK
T – 79N, R – 17W
SECTION 25
RICHLAND TOWNSHIP



SITUATION PLAN

UNITS ARE IN FEET UNLESS NOTED OTHERWISE

20 0 20 40 FEET

DESIGN FOR 0° SKEW

120'–0" x 24'–6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
36'–6" END SPANS

MONOLITHIC PIERS
47'–0" CENTER SPAN

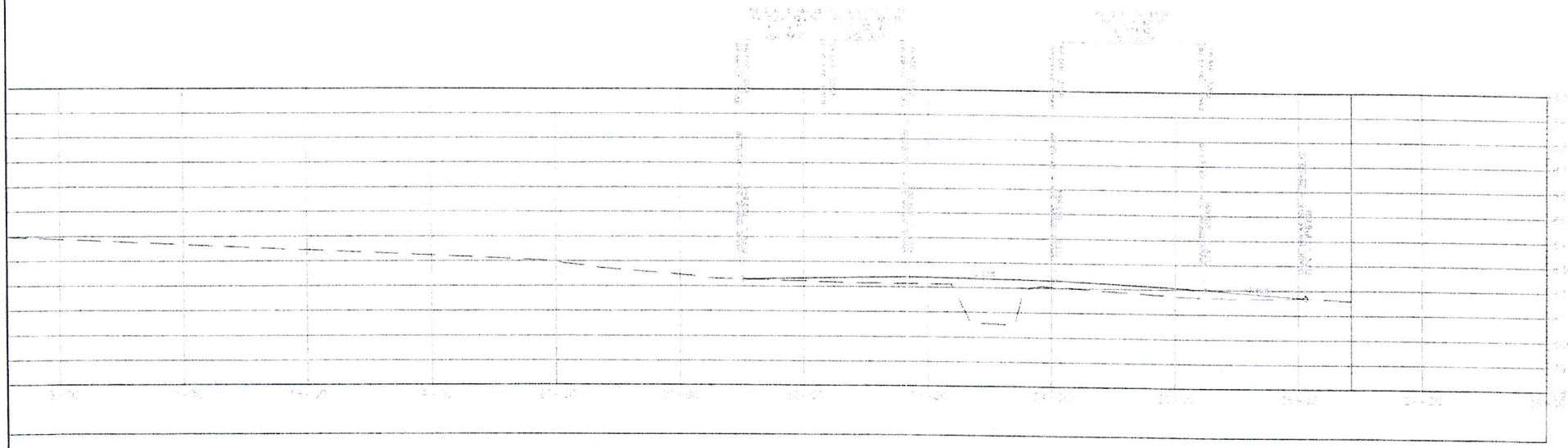
SITUATION PLAN

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION–HIGHWAY DIVISION

BENCH MARK: BM. SPIKE IN POWER POLE, STA. 11+32.13, 60' LT., ELEV. 817.43



PROFILE

UNITS ARE IN FEET UNLESS NOTED OTHERWISE

20 0 20 40 FEET

DESIGN FOR 0° SKEW

120'–0" x 24'–6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
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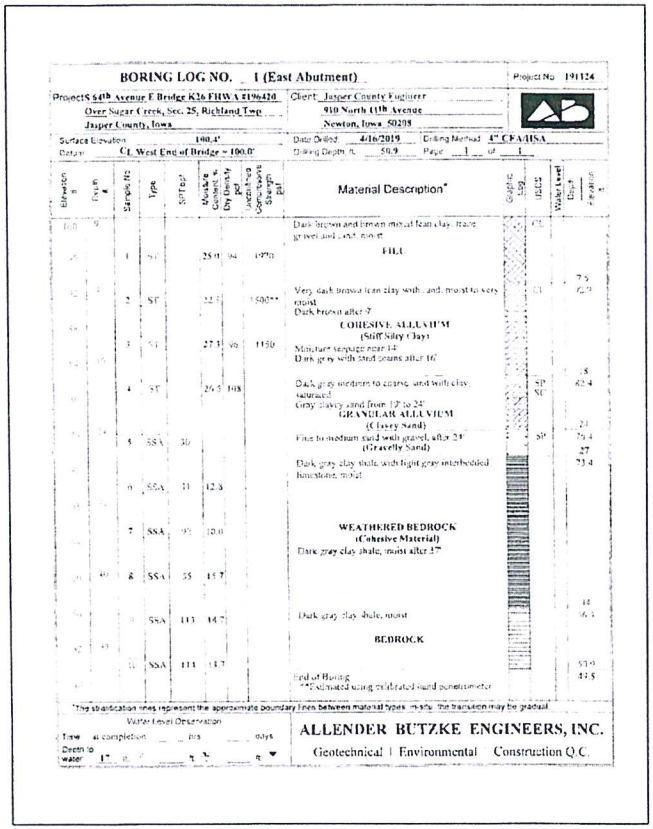
PROFILE

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION–HIGHWAY DIVISION



BORING LOG NO. 1 (East Abutment)

Project No: 191124

Project: 64th Avenue E Bridge K26 FHWA #196420
Over Sugar Creek, Sec. 25, Richland Twp.
Jasper County, Iowa

Client: Jasper County Engineer
910 North 11th Avenue
Newton, Iowa 50208

Surface Elevation: 100.4'
Datum: CL West End of Bridge = 100.0'

Date Drilled: 4/16/2019
Drilling Depth, ft: 50.9

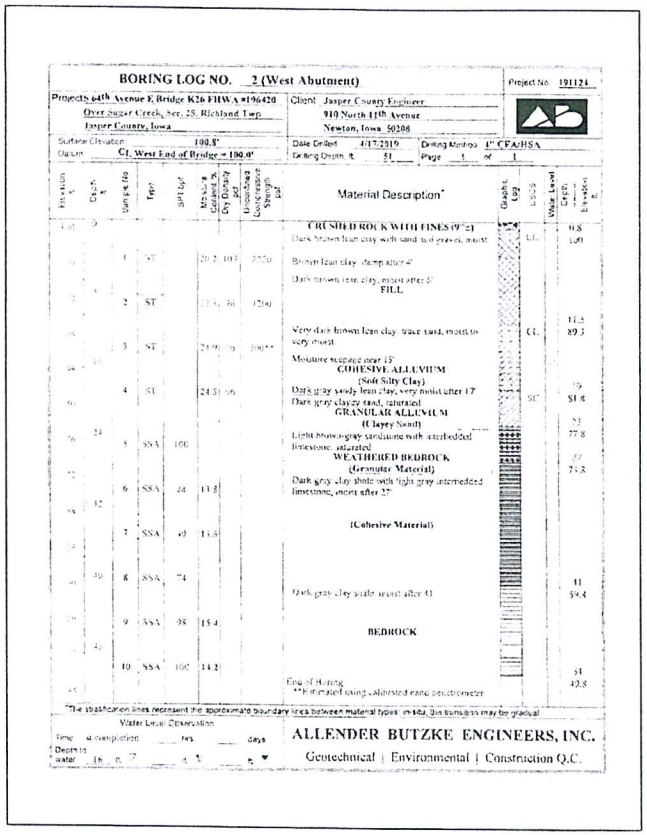
Drilling Method: 4" CFA/HSA
Page: 1 of 1

Elevation, ft	Depth, ft	Sample No	Type	SPT Epf	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf	Material Description*	Graphic Log	USCS	Water Level Depth, ft	Water Level Elevation, ft
100.0	0							Dark brown and brown mix of lean clay, trace gravel and sand, moist		CL		
		1	ST		25.0	104	1970	FILL				
		2	ST		22.5		1500**	Very dark brown lean clay with sand, moist to very moist Dark brown after 7'		CL	7.5	92.9
		3	ST		27.3	99	1150	COHESIVE ALLUVIUM (Stiff Silty Clay) Moisture seepage near 14' Dark gray with steel seams after 16'				
		4	ST		26.5	103		Dark gray mottled to coarse, sand with clay, saturated Gray clayey sand from 12' to 24' GRANULAR ALLUVIUM (Clayey Sand)		SP-SC	18	82.4
		5	SSA	30				Fine to medium sand with gravel, after 24' (Gravelly Sand)		SP	23	77.4
		6	SSA	31	12.8			Dark gray clay shale with light gray interbedded limestone, moist			27	73.4
		7	SSA	95	10.0			WEATHERED BEDROCK (Cohesive Material) Dark gray clay shale, moist after 37'				
		8	SSA	55	15.7							
		9	SSA	113	14.7			Dark gray clay shale, moist			44	56.4
		10	SSA	113	13.7			BEDROCK				
								End of Boring **Estimated using calibrated hand penetrometer			51.0	49.5

*The stratification lines represent the approximate boundary lines between material types in-situ, the transition may be gradual.

Water Level Observation
Time at completion: ___ hrs ___ days
Depth to water: 18' ft, 7' ft, ___ ft

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.



BORING LOG NO. 2 (West Abutment)

Project No: 191124

Project: 64th Avenue E Bridge K26 FHWA #196420
Over Sugar Creek, Sec. 25, Richland Twp.
Jasper County, Iowa

Client: Jasper County Engineer
910 North 11th Avenue
Newton, Iowa 50208

Surface Elevation: 100.8'
Datum: CL West End of Bridge = 100.0'

Date Drilled: 4/17/2019
Drilling Depth, ft: 51

Drilling Method: 4" CFA/HSA
Page: 1 of 1

Elevation, ft	Depth, ft	Sample No	Type	SPT Epf	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf	Material Description*	Graphic Log	USCS	Water Level Depth, ft	Water Level Elevation, ft
100.8	0							CRUSHED ROCK WITH FINES (9"±)				0.8
		1	ST		20.2	103	2520	Dark brown lean clay with sand and gravel, moist Brown lean clay, damp after 4'		CL		100
		2	ST		23.5	98	1260	Dark brown lean clay, moist after 6' FILL				
		3	ST		24.9	99	1040**	Very dark brown lean clay, trace sand, moist to very moist		CL		89.3
		4	ST		24.5	106		Moisture seepage near 15' COHESIVE ALLUVIUM (Soft Silty Clay) Dark gray sandy lean clay, very moist after 17'				
		5	SSA	100				Dark gray clayey sand, saturated GRANULAR ALLUVIUM (Clayey Sand) Light brown gray sandstone with interbedded limestone, saturated		SC	23	77.8
		6	SSA	28	11.8			WEATHERED BEDROCK (Granular Material) Dark gray clay shale with light gray interbedded limestone, moist after 37'			32	73.8
		7	SSA	49	13.8			(Cohesive Material)				
		8	SSA	74								
		9	SSA	98	15.4			Dark gray clay shale, moist after 41'			41	59.8
		10	SSA	100	14.2			BEDROCK				
								End of Boring **Estimated using calibrated hand penetrometer			51	49.8

*The stratification lines represent the approximate boundary lines between material types in-situ, the transition may be gradual.

Water Level Observation
Time at completion: ___ hrs ___ days
Depth to water: 16' ft, 7' ft, ___ ft

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

DESIGN FOR 0° SKEW

120'-0" x 24'-6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
36'-6" END SPANS

MONOLITHIC PIERS
47'-0" CENTER SPAN

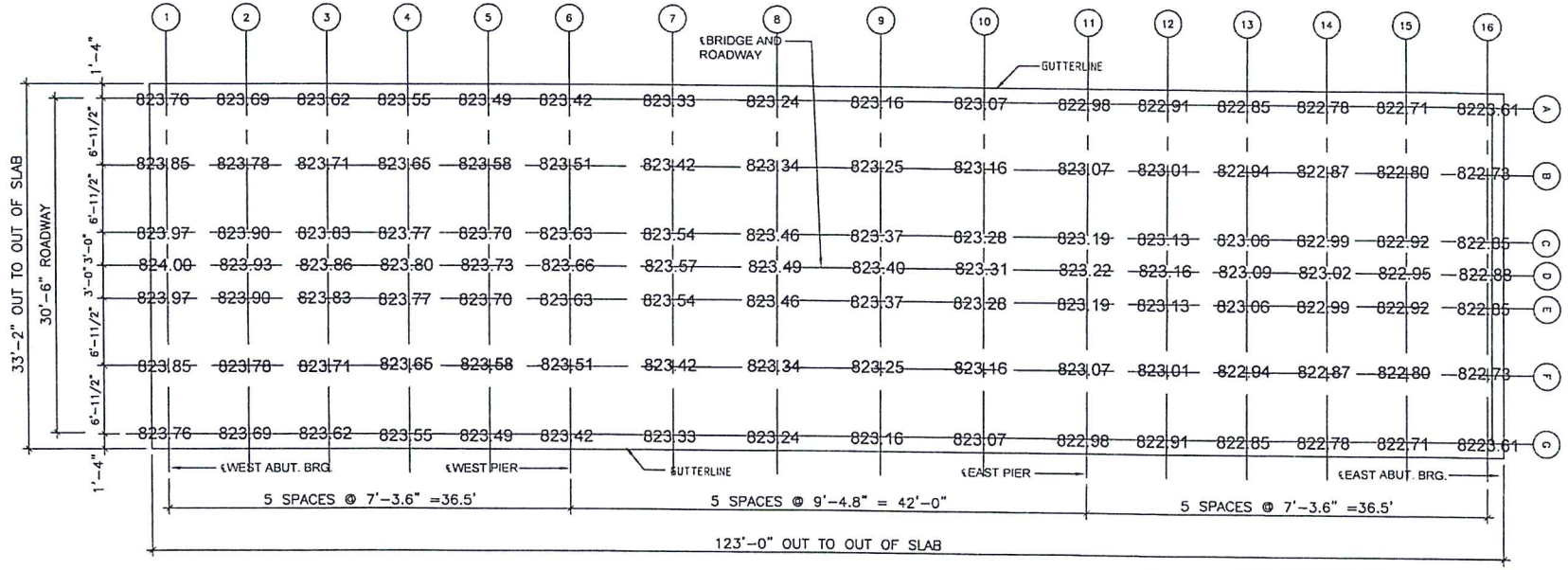
SOUNDING DATA

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

TOP OF SLAB ELEVATIONS																
LOCATION	C.L. W. ABUT. BRG.					C.L. PIER #1					C.L. PIER #2					C.L. E. ABUT. BRG.
	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	LINE 16
NORTH GUTTER LINE	823.76	823.69	823.62	823.55	823.49	823.42	823.33	823.24	823.16	823.07	822.98	822.91	822.85	822.78	822.71	822.64
INTERMEDIATE LINE A	823.85	823.78	823.71	823.65	823.58	823.51	823.42	823.34	823.25	823.16	823.07	823.01	822.94	822.87	822.80	822.73
CROWN LINE B	823.97	823.90	823.83	823.77	823.70	823.63	823.54	823.46	823.37	823.28	823.19	823.13	823.06	822.99	822.92	822.85
C.L. APPROACH ROADWAY	824.00	823.93	823.86	823.80	823.73	823.66	823.57	823.49	823.40	823.31	823.22	823.16	823.09	823.02	822.95	822.88
CROWN LINE C	823.97	823.90	823.83	823.77	823.70	823.63	823.54	823.46	823.37	823.28	823.19	823.13	823.06	822.99	822.92	822.85
INTERMEDIATE LINE D	823.85	823.78	823.71	823.65	823.58	823.51	823.42	823.34	823.25	823.16	823.07	823.01	822.94	822.87	822.80	822.73
SOUTH GUTTER LINE	823.76	823.69	823.62	823.55	823.49	823.42	823.33	823.24	823.16	823.07	822.98	822.91	822.85	822.78	822.71	822.64



DECK ELEVATIONS

NOTE: REFER TO STANDARD BRIDGE PLANS FOR FORM CAMBER REQUIREMENTS TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION.

DESIGN FOR 0° SKEW

120'-0" x 24'-6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
36'-6" END SPANS

MONOLITHIC PIERS
47'-0" CENTER SPAN

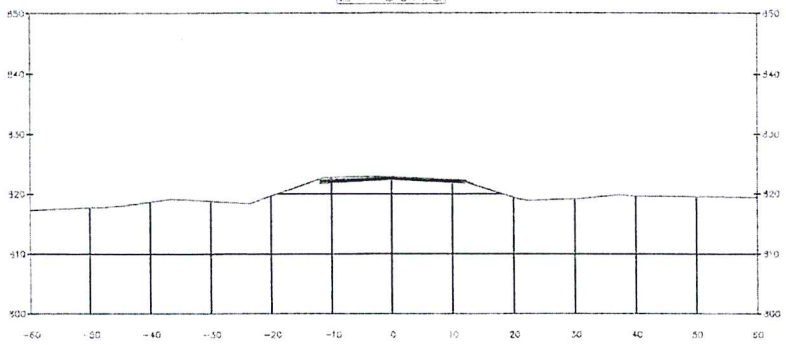
SUPERSTRUCTURE DETAILS

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

21+50.18



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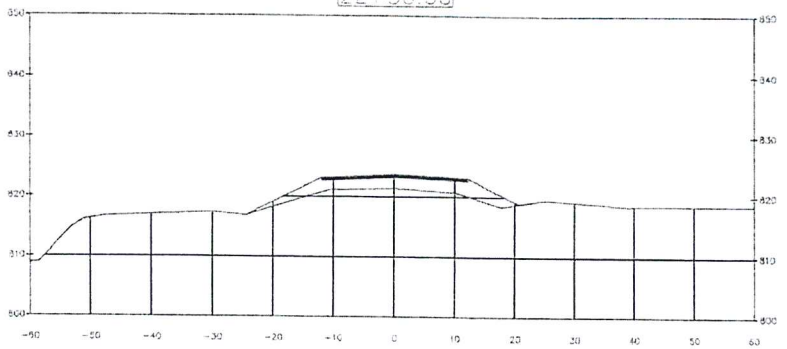

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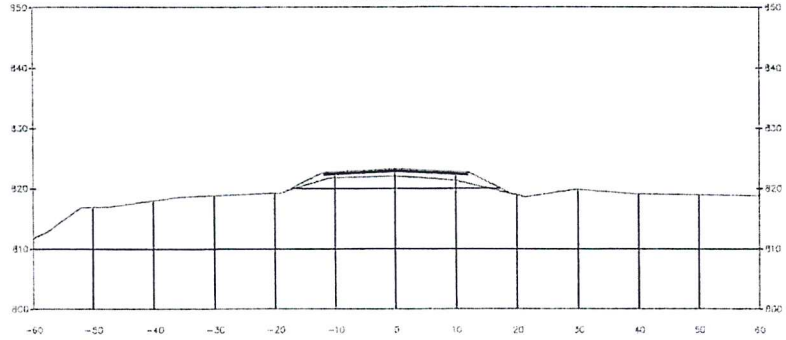

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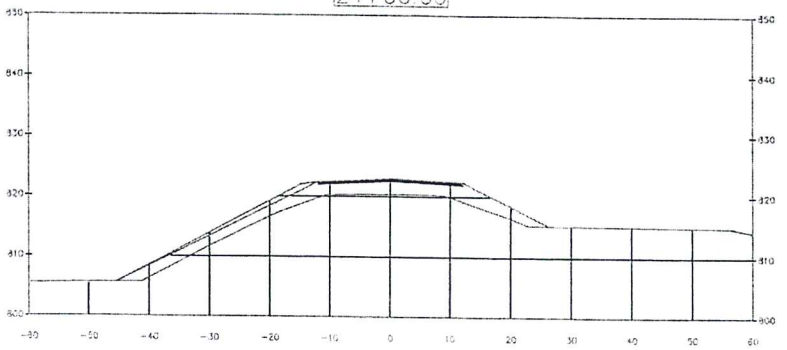


DESIGN FOR 0° SKEW

120'–0" x 24'–6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
36'–6" END SPANS

MONOLITHIC PIERS
47'–0" CENTER SPAN

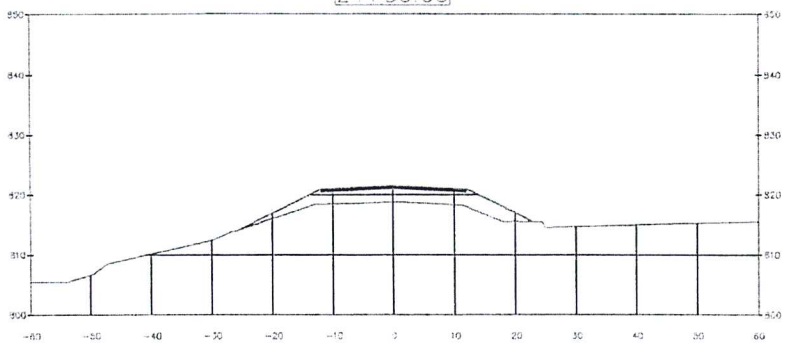
CROSS SECTIONS

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION–HIGHWAY DIVISION

24+50.00



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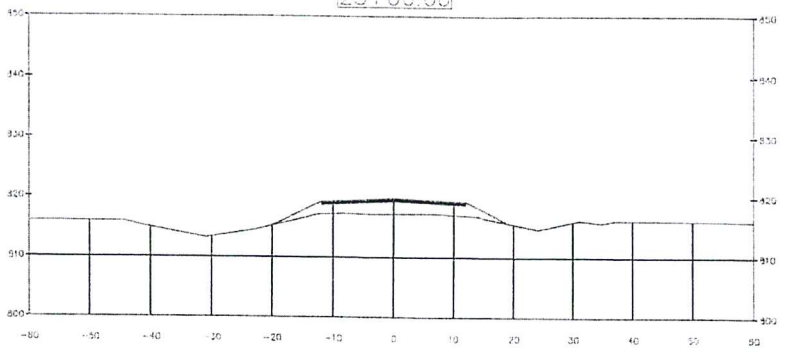

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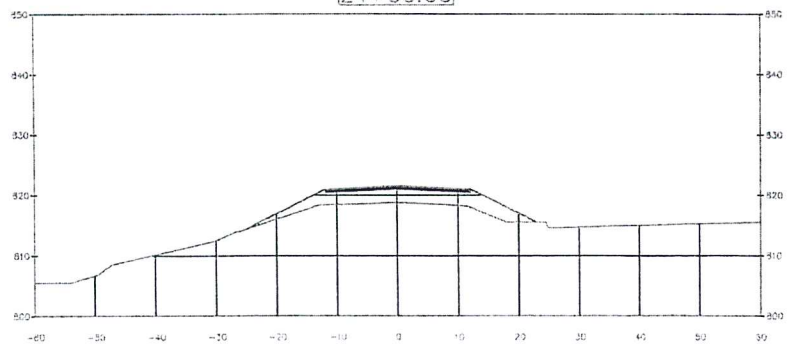

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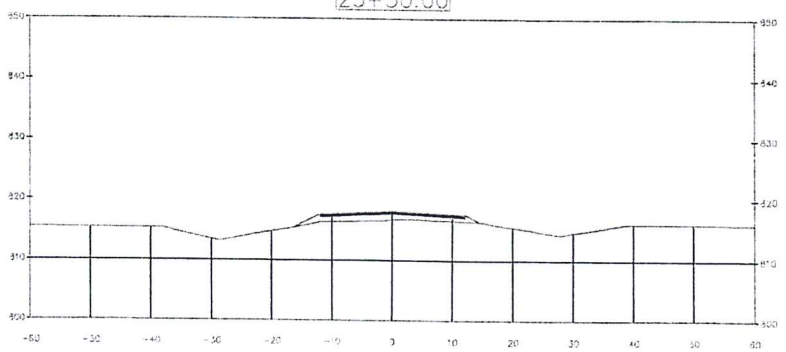

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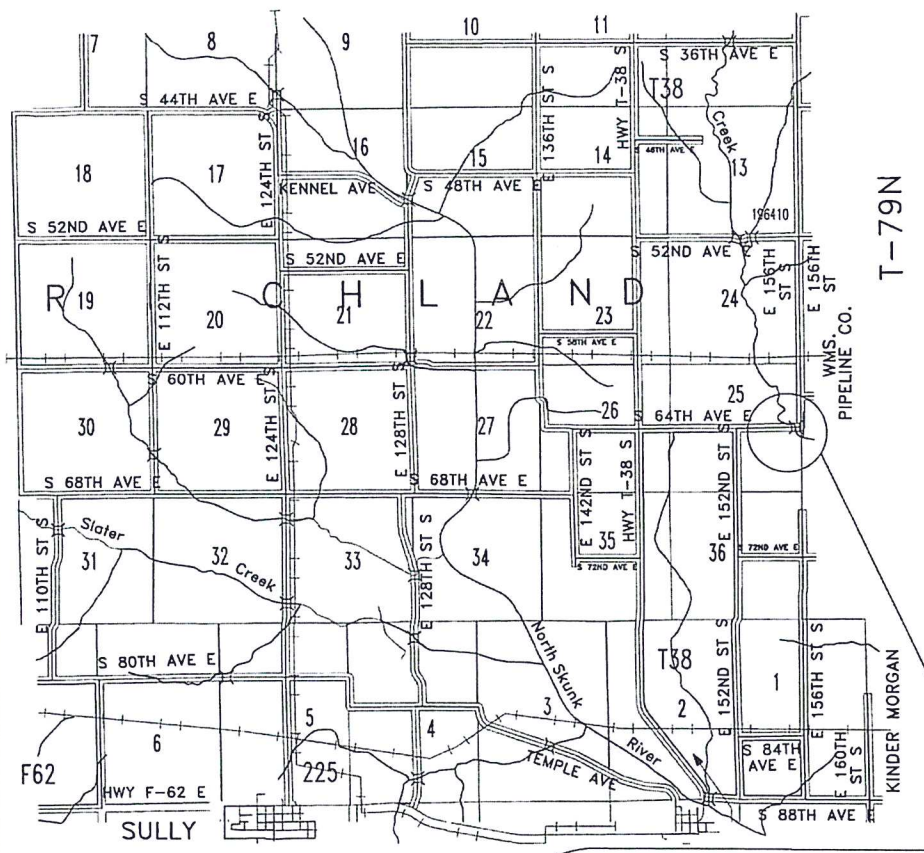
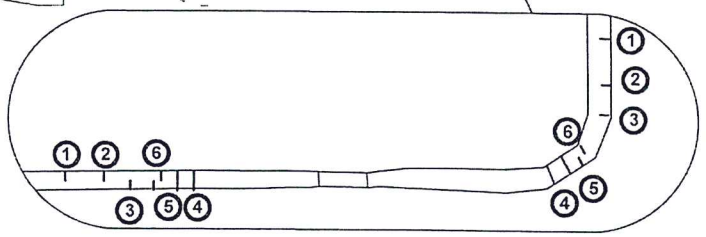
CROSS SECTIONS

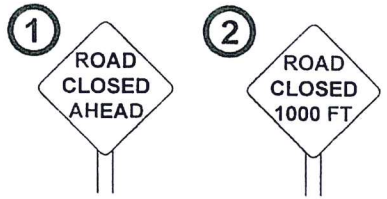
STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION







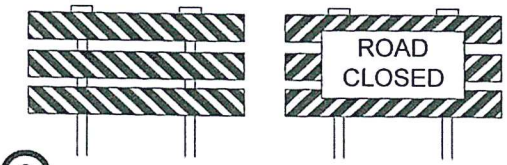
TRAFFIC CONTROL NOTES

1. S. 64th AVE E AND E. 156th ST. S ARE CLOSED TO THRU TRAFFIC.
2. THE EXISTING BRIDGE DECK AND SUPERSTRUCTURE HAS BEEN REMOVED FOR APPROX. 5 YEARS. AS SUCH LOCAL TRAFFIC HAS FOUND THEIR OWN
3. DETOUR ROUTES.
4. NO DETOUR ROUTE SIGNAGE IS REQUIRED.
5. USE STANDARD ROAD PLAN TC-252.

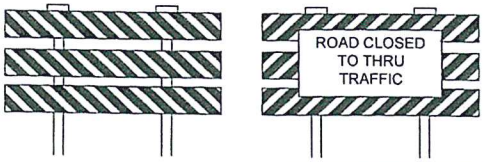
TABULATION	
1	2 EACH
2	2 EACH
3	2 EACH
4	2 EACH
5	2 EACH
6	2 EACH

4 REFLECTIVE ORANGE SNOW FENCE SHOULDER TO SHOULDER

5 TYPE III BARRICADE PAIR



6 TYPE III BARRICADE PAIR



DESIGN FOR 0° SKEW

120'-0" x 24'-6" CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS 35'-6" END SPANS

MONOLITHIC PIERS 47'-0" CENTER SPAN

TRAFFIC CONTROL PLAN

STA. 23+48 64TH AVE E OVER SUGAR CREEK OCTOBER 2020

JASPER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION